Draft

Site Inspection for Former UST KB-100 Site, Marine Corps Base Motor Pool

Marine Corps Base Hawaii, Kaneohe, Hawaii

June 2015

Department of the Navy
Naval Facilities Engineering Command, Hawaii
400 Marshall Road
JBPHH HI 96860-3139

Environmental Technical Services
Contract Number N62742-11-D-1821, CTO 0026

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Prepared For:

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Executive Summary

This report documents the results of a Site Inspection (SI) conducted at the underground storage tank (UST) KB-100 site within United States (U.S.) Marine Corps Base Hawaii (MCB Hawaii), Kaneohe Bay, Oahu, Hawaii (herein referred to as the "Site"). UST KB-100 was installed in the Marine Corps Base Motor Pool area in 1986 and was used until 1997. The UST was removed in December 1997 and was found to be in good condition upon removal from the ground. Two environmental investigations and several rounds of groundwater monitoring have been conducted at the Site since the tank was removed. Previous environmental sampling found only minor contamination in site soils but persistent, low concentrations of chlorinated solvents in the shallow groundwater at the Site. The previous environmental investigations concluded that the former UST KB-100 was not likely the source of the observed solvent contamination at the Site.

This SI was conducted to investigate the residual soil and groundwater contamination present at the Site and to assess potential threats to human health and the environment. The focus of the SI was to delineate the lateral extent of chlorinated solvent contamination in the groundwater and capillary fringe soils present at the Site. A total of seven capillary fringe soil samples were collected from depths of between 5.5 to 7.5 feet below ground surface (bgs). Seven temporary 1.5-inch diameter monitoring wells (TW) were also installed in the area surrounding the former UST KB-100 in January 2015. Each temporary monitoring well was constructed with a ten foot screened interval set at depths of between 4.7 to 14.7 feet bgs. The measured depth to groundwater in these seven wells ranged from 6.45 to 7.43 feet bgs.

One of the seven primary capillary fringe soil samples collected from boring TW-6 contained trichloroethylene (TCE) and cis-1,2-dichloroethylene (cis-1,2-DCE) at concentrations (0.95 and 0.90 milligram per kilogram [mg/kg], respectively) that slightly exceeded their associated State of Hawaii Department of Health (HDOH) Tier 1 Unrestricted Environmental Action Levels (EALs, 0.26 and 0.31 mg/kg, respectively). All other analyte detections in the capillary fringe soils above laboratory detection limits (DLs) were below the analyte's associated Tier 1 Unrestricted EAL.

One of the seven temporary monitoring wells (TW-6) contained groundwater with the degradation product vinyl chloride at a concentration (240 micrograms per liter [µg/L]) that exceeded the Tier 1 Unrestricted EAL of 62 µg/L. Trace levels of perchloroethylene (PCE), TCE, cis-1,2-DCE, and vinyl chloride were also detected in the temporary wells installed at the Site. However, all other analyte detections above laboratory DLs measured in the shallow groundwater samples were below the analyte's associated Tier 1 Unrestricted EAL.

Two permanent four-inch diameter monitoring wells (KB-100-3 and KB-100-4) were installed adjacent to the two temporary monitoring wells (TW-6 and TW-2, respectively) that were found to contain the highest concentrations of solvents during the January 2015 sampling round. Monitoring well KB-100-3 was located just to the north of the former

footprint of UST KB-100 while KB-100-4 was located slightly further north, near the middle of the former concrete wash rack. The PCE and TCE concentrations measured in the permanent monitoring wells in March 2015 were similar to the concentrations detected in the corresponding temporary monitoring wells in January 2015. The vinyl chloride concentration measured in permanent monitoring well KB-100-3 in March 2015 was significantly lower than the concentration level measured in the adjacent temporary well TW-6 sampled in January 2015 (62 µg/L versus 240 µg/L).

The two existing monitoring wells at the UST KB-100 site (KB-100-1 and KB-100-2) had been previously sampled during six rounds of groundwater sampling conducted between May 2003 and June 2009. The low part per billion PCE and TCE concentrations measured in KB-100-2 in January 2015 were significantly lower than the solvent concentrations measured in this well between 2003 and 2009, while the vinyl chloride concentration measured (38 µg/L) was slightly higher than the concentration level (16.9 µg/L) measured during the last round of sampling that was analyzed for solvent concentrations in June 2008 (Table 1-6). The observed reduction of PCE and TCE concentrations and continual presence of slightly higher concentrations of vinyl chloride in this well is evidence that the anaerobic degradation of the residual chlorinated solvent contamination at the Site is ongoing.

The analytical data collected during this SI indicate that the low part per billion concentration levels of solvents present in the shallow groundwater at the Site are declining over time and that active remediation of the Site is not required. The observed solvent concentration likely originated from the area just north of the former UST KB-100 near the edge of the adjacent former vehicle wash rack, based upon the distribution of solvent concentrations detected in the existing and temporary monitoring wells at the Site. While vinyl chloride was detected in one of the temporary monitoring wells (TW-6) sampled in January 2015 at a concentration that exceeded the HDOH Tier 1 Unrestricted EAL, a four-fold lower concentration of vinyl chloride (62 µg/L, equal to the Tier 1 EAL) was detected in a groundwater sample collected from the same location from a permanent, four-inch diameter well (KB-100-3) installed in March 2015. In addition, only one of seven soil samples collected from the capillary fringe at the Site contained sub-part per million levels of solvents (TCE and cis-1,2-DCE) that slightly exceeded the HDOH Tier 1 Unrestricted EAL. The investigation has been successful in characterizing the nature and extent of the de minimus release. Based upon these findings, the residual contamination present in the soils and shallow groundwater at the Site do not pose a risk to human health and the environment. No Further Action (NFA) is recommended for the site.

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Acronyms and Abbreviations

°F	degree Fahrenheit
%D	percent difference
%R	percent recovery
%RSD	percent relative standard deviation
APPL	Agricultural Priority Pollutants Laboratories, Inc.
AST	aboveground storage tank
bgs	below ground surface
BTEX	benzene, toluene, ethylbenzene, and total xylenes
CD-ROM	compact disc-read only memory
CLP	Contract Laboratory Program
COC	chain of custody
CONEX	container express
COPC	contaminant of potential concern
CRQL	Contract Required Quantitation Limit
CSM	Conceptual Site Model
CTO	contract task order
DCE	dichloroethylene
DL	detection limit
DO	dissolved oxygen
DoD	Department of Defense
DON	Department of the Navy
DQAR	Data Quality Assessment Report
DQO	data quality objective
DRO	diesel range organic
DVR	data validation report
E2	Element Environmental, LLC
EAL	environmental action level
EDD	electronic data deliverable
EPA	Environmental Protection Agency, United States
ERP	Environmental Restoration Program
FS	feasibility study
FTL	field team leader
GC/MS	Gas Chromatography/Mass Spectrometer
GHI	GeoTek Hawaii, Inc.
GPR	ground penetrating radar
GPS	global positioning system
HDOH	Hawaii Department of Health
HSP	Health and Safety Plan
HVOC	halogenated volatile organic compound
IAS	Initial Assessment Study
ID	identification
IDW	investigation-derived waste
J	indicates an estimated value

LCS	laboratory control sample
LDC	Laboratory Data Consultants, Inc.
LRO	lube oil range organic
MCB Hawaii	Marine Corps Base Hawaii
MEK	methyl ethyl ketone (also known as 2-butanone)
MeOH	methanol
mg/kg	milligram per kilogram
µg/L	microgram per liter
mg/L	milligram per liter
MKC	Morrison Knudsen Corporation
mL	milliliter
MS/MSD	matrix spike/matrix spike duplicate
MW	monitoring well
NA	not analyzed
NAVFAC	Naval Facilities Engineering Command
ND	not detected
NFA	no further action
NST	National Status and Trends
OWS	oil water separator
PAH	polynuclear aromatic hydrocarbon
PCB	polychlorinated biphenyl
PCE	perchloroethylene or tetrachloroethylene
pH	potential hydrogen
PID	photoionization detection
PPE	personal protective equipment
PPM	Project Procedures Manual
PSQ	principal study question
PVC	polyvinyl chloride
QA	quality assurance
QC	quality control
QSM	Quality Systems Manual
R	indicates the data is rejected and not usable
redox	reduction-oxidation
RI	remedial investigation
RPD	relative percent difference
RRF	relative response factor
RRO	residual range organic
RSL	regional screening level
SCS	Soil Conservation Service
SDG	sample delivery group
SI	site inspection
SOP	standard operating procedure
TCE	trichloroethylene
TPH	total petroleum hydrocarbon

U	indicates the compound or analyte was analyzed for, but not detected at or above the stated limit
UJ	indicates the compound or analyte was analyzed for, but not detected. The sample detection limit is an estimated value
UIC	Underground Injection Control
U.S.	United States
USDA	United States Department of Agriculture
UST	underground storage tank
VOA	volatile organic analysis
VOC	volatile organic compound
WCP	Wil Chee Planning
WP	work plan

Section 1 Introduction

A Site Inspection (SI) was conducted at the former underground storage tank (UST) KB-100 site (herein referred to as the "Site") located in the Marine Corps Base Motor Pool area at the United States (U.S.) Marine Corps Base Hawaii (MCB Hawaii), Kaneohe, on the island of Oahu, Hawaii (Figure 1-1). The SI investigated potential soil and groundwater contamination and assessed potential threats to human health and the environment at the Site.

UST KB-100 was a 550-gallon capacity steel tank installed adjacent to the Building 322 motor pool wash rack in 1986. UST KB-100 was used to store waste oil from an adjacent oil water separator (OWS) at the wash rack through a gravity-fed system. In 1997, the UST was replaced with an aboveground storage tank (AST). During the tank closure process, contamination (lead and vinyl chloride) exceeding the State of Hawaii Department of Health (HDOH) Tier 1 environmental action levels (EALs) was detected in a groundwater sample collected from a monitoring well installed at the Site; however, the tank and associated piping were found to be in good condition upon removal, so it was concluded that UST KB-100 was not the source of the observed contamination. Subsequent soil and groundwater sampling conducted during a 2003 Remedial Investigation (RI, Wil Chee Planning [WCP] 2003) found little contamination in site soils but the continued presence of part per billion levels of chlorinated solvents (tetrachloroethylene [PCE], trichloroethylene [TCE], and vinyl chloride) in the groundwater at the Site.

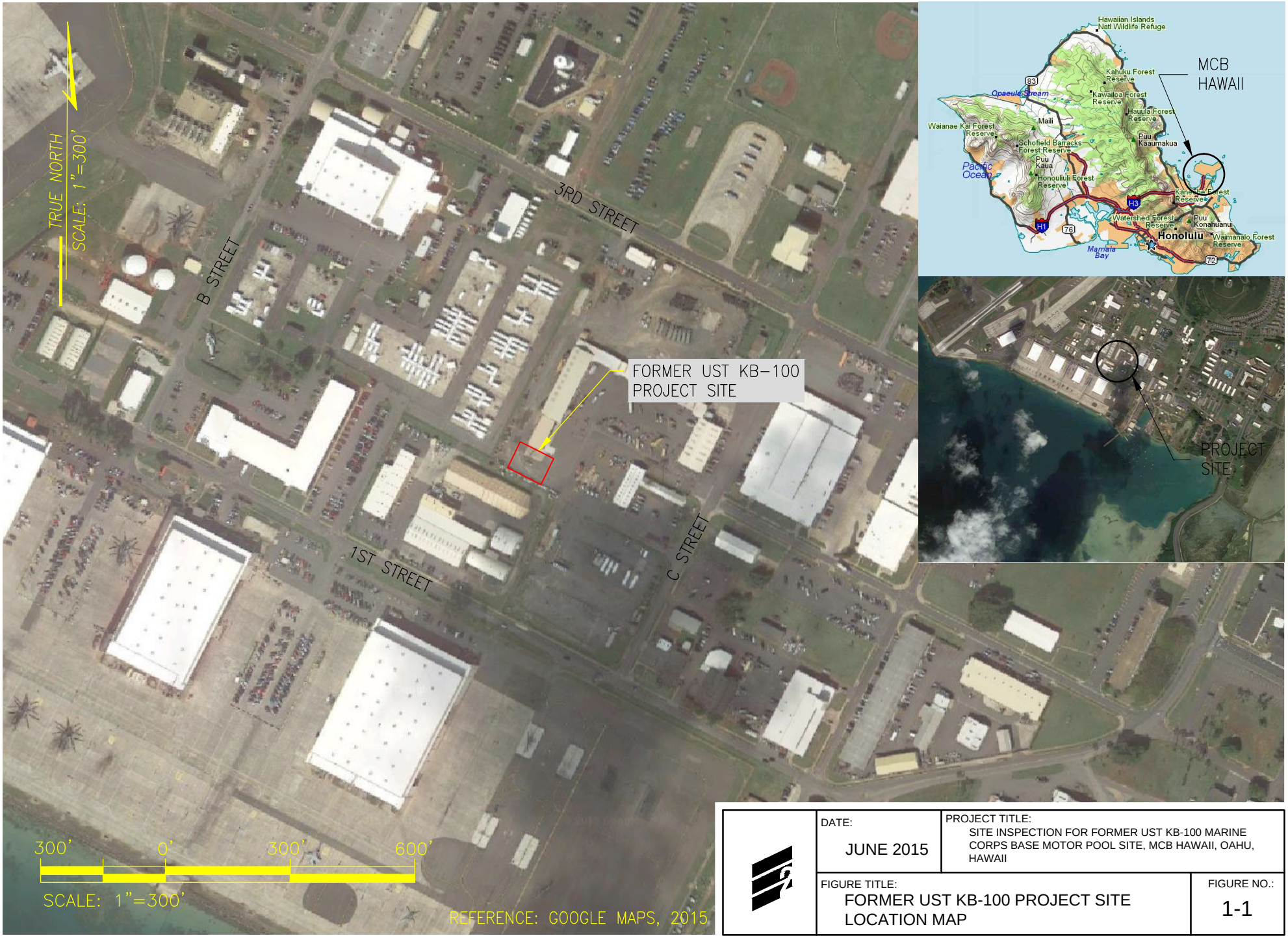
Chemical releases may have occurred due to past storage and disposal practices in the vicinity of the former UST KB-100 site as well as historic operations at the adjacent former UST KB-91 site located to the north. However, while KB-91 and KB-100 are within the same vicinity, the contamination detected at each site is different. The KB-91 site is contaminated with residual fuel product, while the contamination at the KB-100 site is primarily chlorinated solvents in the groundwater, indicating different contamination sources.

Historic operations and storage practices at the Motor Pool is suspected to have released contaminants of potential concern (COPCs) at the Site (Figure 1-2). The focus of the current SI was to delineate the lateral extent of chlorinated solvents in the groundwater at the Site. Soil and groundwater samples collected during the SI were analyzed for the following analytes: volatile organic compounds (VOCs), total petroleum hydrocarbons as diesel range organics (TPH-DRO), TPH as residual range organics (TPH-RRO), and total lead. The SI data collected was used to assess potential risks to human health and the environment posed by these COPCs and to support the development, evaluation, and selection of appropriate response alternatives for the Site.

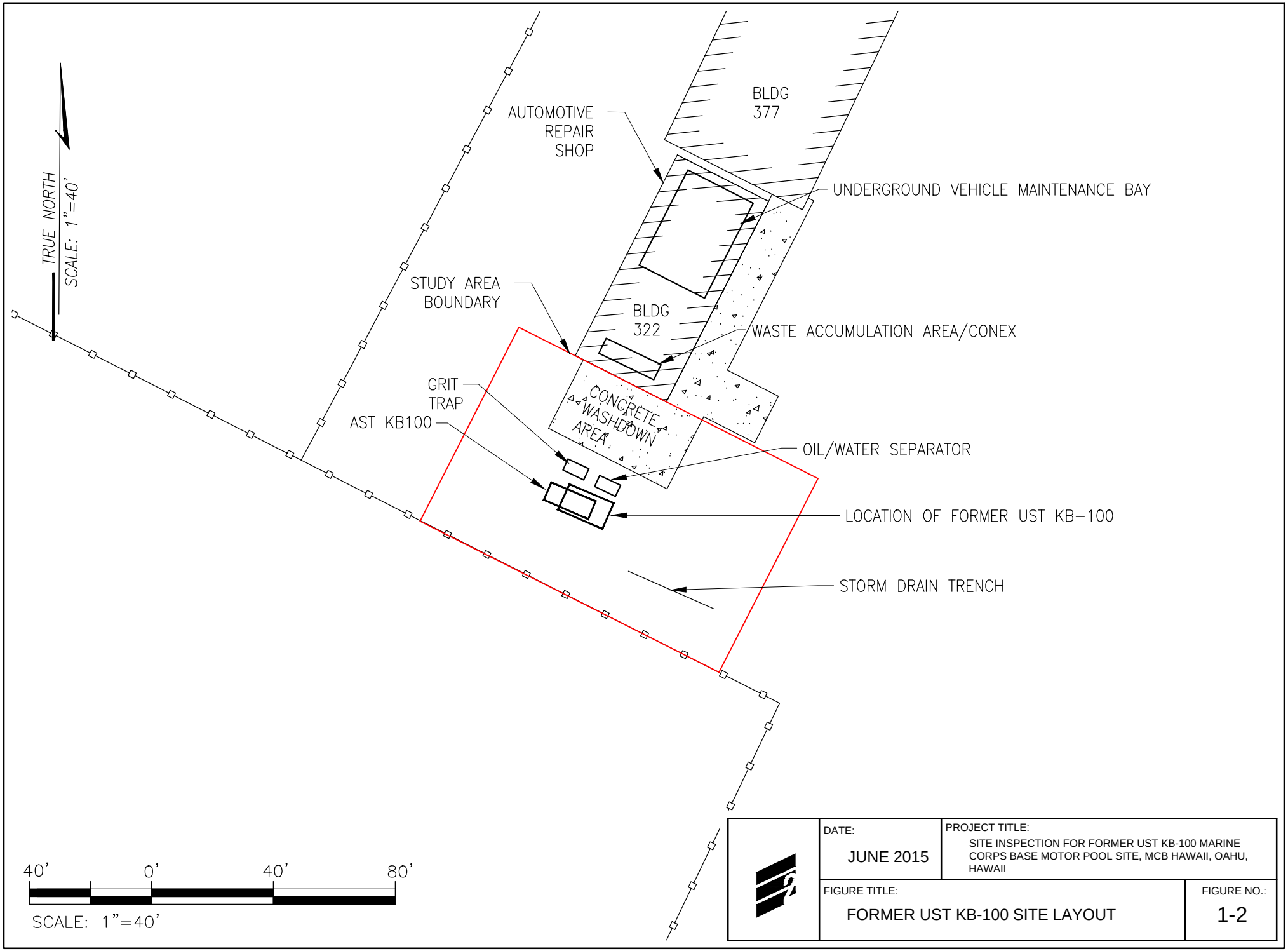
1.1 Site Background and Conditions

1.1.1 Site History

UST KB-100 was a 550-gallon capacity waste oil steel tank that was installed in 1986 and excavated and removed in December 1997. Morrison Knudsen Corporation (MKC) excavated, cleaned, removed, and disposed of the tank. UST KB-100 measured 4 feet in diameter and 6-feet long and was found to be in good condition with no signs of deterioration, damage, or leakage upon removal (MKC 1999). The excavation created during the tank removal work measured 9 feet by 15 feet by 8 feet deep. Approximately 75 gallons of oil and 200 gallons of oily water were pumped from the UST and OWS at the time of UST closure. Both oil and oily water were disposed of off-site. The cleaned tank was transported to Hawaii Metal Recycling for disposal. Soil from the excavation was stockpiled on a polyethylene liner and bermed to prevent storm water runoff (MKC 1999). The clean stockpiled soil was used to backfill the excavation along with base course to prepare the Site for the installation of the current AST. The grit trap and OWS associated with KB-100 remain on-site and active; however, all piping associated with the UST was removed. Soil samples collected during the tank removal work did not contain concentrations of COPCs that exceeded the HDOH Tier 1 EALs. However, contamination was detected in the groundwater at the Site at concentrations exceeding the HDOH Tier 1 EALs. The good condition of KB-100 upon removal suggested that the UST was not the source of the detected groundwater contamination. Potential source areas for the observed trace levels of chlorinated compound contamination include the waste accumulation area located in the southern half of Building 322 and the concrete wash rack located just to the north of former UST KB-100.



	DATE: JUNE 2015	PROJECT TITLE: SITE INSPECTION FOR FORMER UST KB-100 MARINE CORPS BASE MOTOR POOL SITE, MCB HAWAII, OAHU, HAWAII
	FIGURE TITLE: FORMER UST KB-100 PROJECT SITE LOCATION MAP	FIGURE NO.: 1-1



	DATE: JUNE 2015	PROJECT TITLE: SITE INSPECTION FOR FORMER UST KB-100 MARINE CORPS BASE MOTOR POOL SITE, MCB HAWAII, OAHU, HAWAII
	FIGURE TITLE: FORMER UST KB-100 SITE LAYOUT	FIGURE NO.: 1-2

1.1.2 Site Description

MCB Hawaii is located on the windward side of Oahu, and it occupies the entire 2,951-acre Mokapu Peninsula. MCB Hawaii is bordered to the west by Kaneohe Bay, to the north by the Pacific Ocean, to the east by Kailua Bay, and to the south by fishponds. South of the fishponds, MCB Hawaii is bordered by Kaneohe Bay Drive, the City and County of Honolulu (CCH) Kailua Regional Wastewater Treatment Plant, and the residential communities of Kaneohe and Kailua.

The Site is located in the southwest portion of MCB Hawaii, approximately 0.5 mile northeast of the base marina. The Site is accessed by 3rd Street. UST KB-100 was located to the south of an automotive repair shop located within Building 322 (Figure 1-2). The former UST was located adjacent to and south of a concrete washdown area that was formerly used to clean non-military government vehicles. Asphalt pavement surrounds the current AST and OWS present at the Site. Two monitoring wells are located to the west (KB100-1) and south (KB100-2) of former UST KB-100. Building 322 is located north of the concrete washdown area and is an open 20-foot tall building constructed of steel cross beams and a metal canopy roof. The southern half of this building is used as a waste accumulation area. A 20-foot by 5.5-foot container express (CONEX military shipping container) container is located in this area and is used to temporarily store used motor oil and petroleum products that are generated during repair work in the adjacent 24-foot by 35-foot by 4-foot deep underground vehicle maintenance bay located to the north. Vehicle maintenance work on non-military vehicles is conducted in this portion of Building 322. A review of historic aerial photographs available for the area reveals that the configuration of buildings at the Motor Pool has been the same since at least 1959. The concrete wash rack appears to have been constructed between November 1959 and February 1968. The area where UST KB-100 was installed in 1986 contains no surface structures in the 1959 and 1968 aerial photographs.

The SI study area boundary was based on historic sampling information obtained from the UST closure report, the RI conducted by WCP, as well as the WCP semi-annual groundwater monitoring reports (MKC 1999; WCP 2003, 2007, 2008a, 2008b, 2008c, 2011). . The study boundary extends from the northern edge of the concrete washdown area to the fence line to the south and approximately 10 feet to the southeast and 25 feet to the northwest of the 45-foot wide concrete washdown pad.

The vertical boundary of the study area extends from the ground surface to the groundwater table (typically encountered between 6.5 and 8.0 feet bgs, dependent on the local topography). The temporal boundaries of the study included the approximately two-month duration of field activities from January to March 2015. Although the region experiences wet and dry seasons, climatic conditions did not affect field activities and are not believed to have impacted the measured COPC concentrations in site soils and groundwater.

1.1.3 Previous Investigations

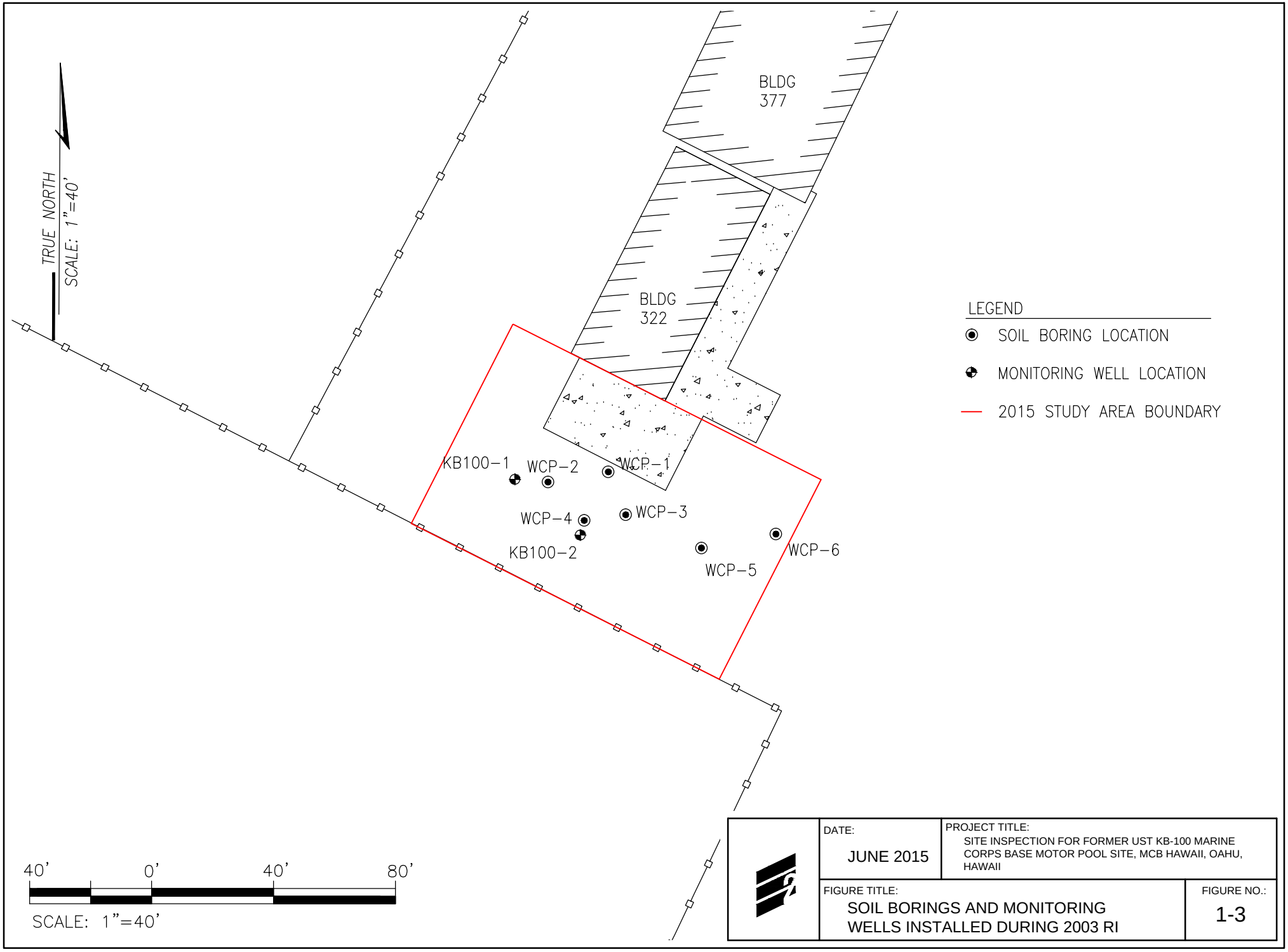
Two environmental investigations and several rounds of groundwater monitoring have been conducted at the Site since the tank was removed in 1997. The environmental sampling and monitoring events that have been conducted at the Site are summarized in Table 1-1. The

soil and groundwater results obtained during the 1997 tank removal work are summarized in Tables 1-2 and 1-3, respectively. The analytes detected in the 12 soil samples collected during the 2003 RI (WCP 2003) are summarized in Table 1-4. The locations of the six boreholes drilled and two monitoring wells installed during the 2003 RI are shown on Figure 1-3. Figure 1-4 presents the maximum motor oil concentrations detected in the soil samples collected from these six boreholes, while Figure 1-5 presents the maximum concentrations of PCE detected in the soil samples collected from these six boreholes.

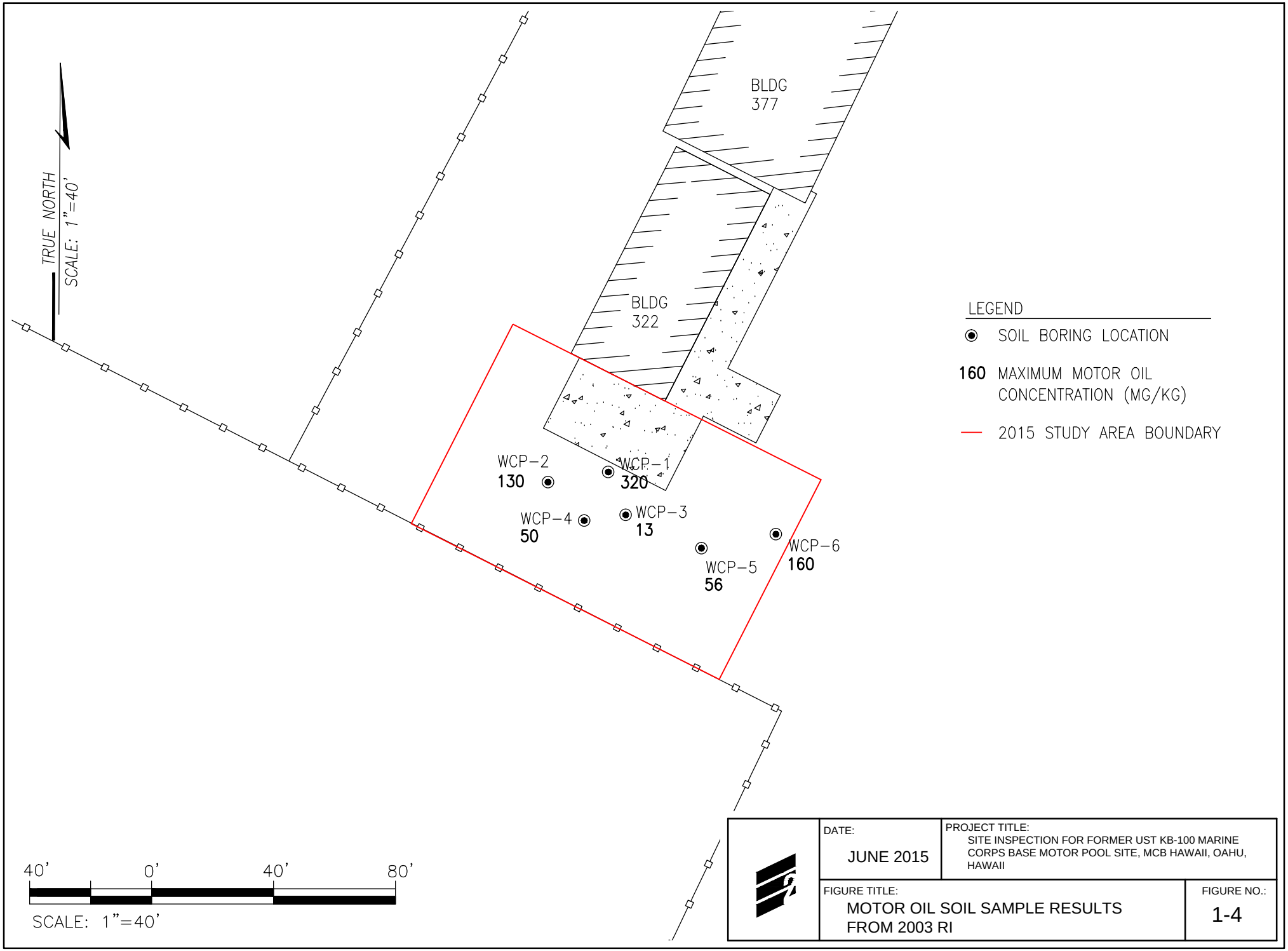
The analytes detected in the two monitoring wells present at the Site (KB-100-1 and KB-100-2) since 2003 are summarized in Tables 1-5 and 1-6, respectively. Free product was not observed in either well during any of the sampling events. Figure 1-6 shows the location of the two monitoring wells (KB-100-1 and KB-100-2) and some of the maximum concentrations of VOCs (PCE, TCE, and vinyl chloride) detected during the various groundwater monitoring events.

The 2003 RI found no evidence of significant residual soil contamination at the Site (Table 1-4). However, chlorinated compounds (PCE, TCE, and vinyl chloride) have consistently been detected in the shallow groundwater at the Site during multiple groundwater sampling events conducted between 1997 and 2009 (Tables 1-3, 1-5, and 1-6).

A Release Response Report (which contained the results of the groundwater monitoring event conducted in June 2009) recommended that the Site be transferred to the Navy's Installation Restoration Program, since it was concluded that the former UST was not the source of the subsurface contamination (WCP 2011).



DATE: JUNE 2015	PROJECT TITLE: SITE INSPECTION FOR FORMER UST KB-100 MARINE CORPS BASE MOTOR POOL SITE, MCB HAWAII, OAHU, HAWAII	
FIGURE TITLE: SOIL BORINGS AND MONITORING WELLS INSTALLED DURING 2003 RI		FIGURE NO.: 1-3



DATE: JUNE 2015	PROJECT TITLE: SITE INSPECTION FOR FORMER UST KB-100 MARINE CORPS BASE MOTOR POOL SITE, MCB HAWAII, OAHU, HAWAII	
FIGURE TITLE: MOTOR OIL SOIL SAMPLE RESULTS FROM 2003 RI		FIGURE NO.: 1-4

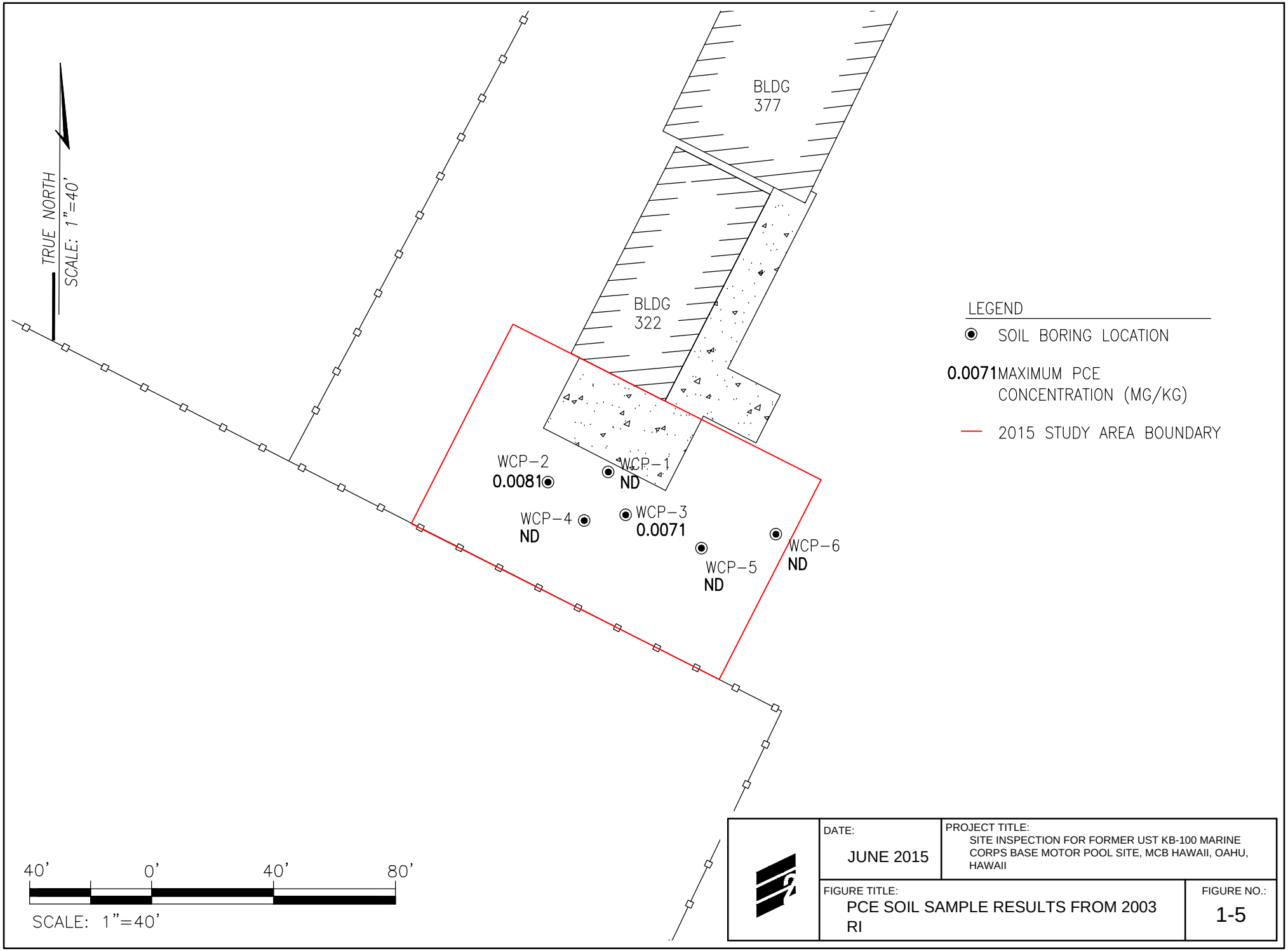


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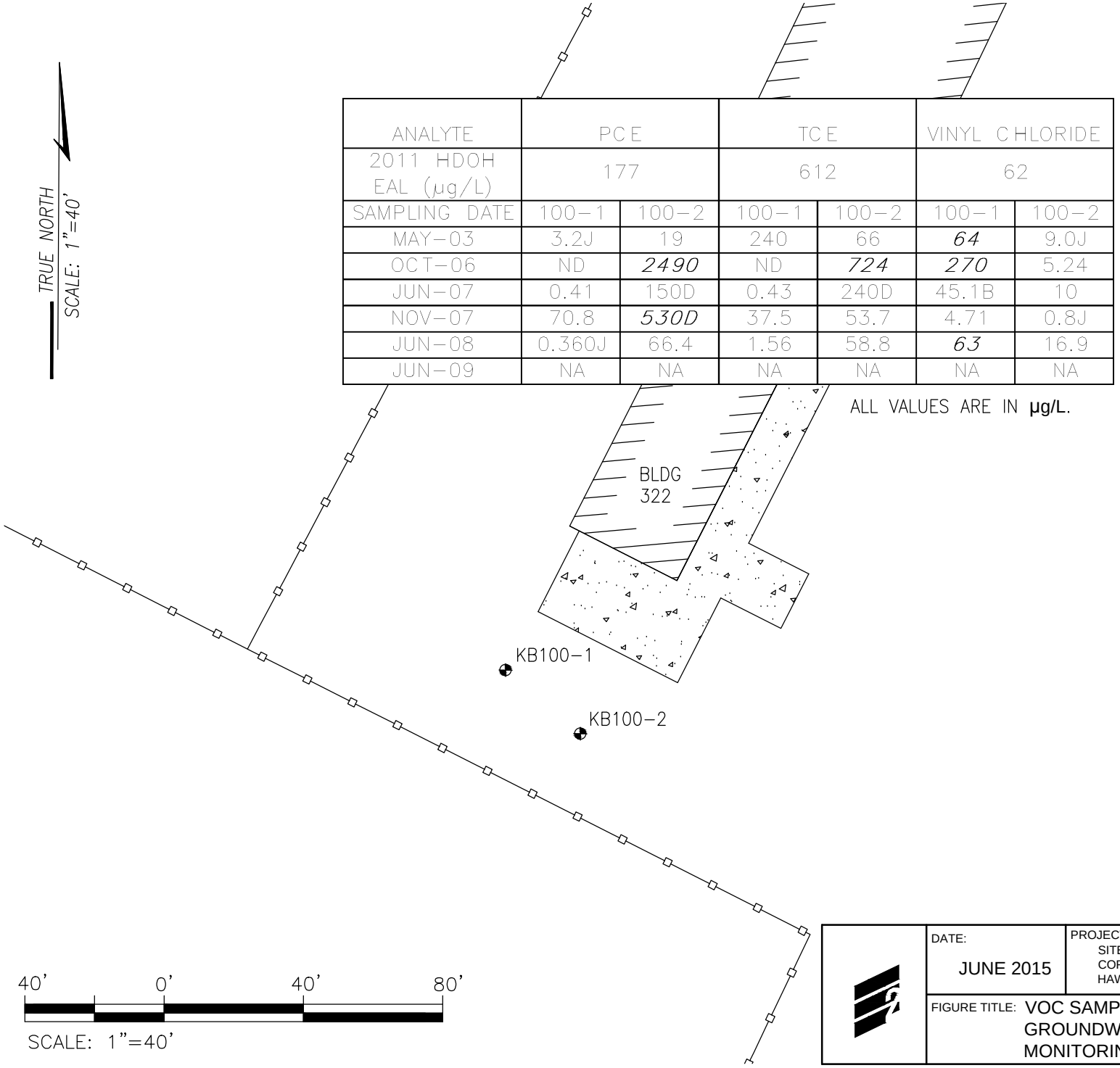
FIGURE TITLE: PCE SOIL SAMPLE RESULTS FROM 2003 RI		FIGURE NO.: 1-5



ANALYTE	PCE		TCE		VINYL CHLORIDE	
2011 HDOH EAL (µg/L)	177		612		62	
SAMPLING DATE	100-1	100-2	100-1	100-2	100-1	100-2
MAY-03	3.2J	19	240	66	*64*	9.0J
OCT-06	ND	*2490*	ND	*724*	*270*	5.24
JUN-07	0.41	150D	0.43	240D	45.1B	10
NOV-07	70.8	*530D*	37.5	53.7	4.71	0.8J
JUN-08	0.360J	66.4	1.56	58.8	*63*	16.9
JUN-09	NA	NA	NA	NA	NA	NA

ALL VALUES ARE IN µg/L.

LEGEND

MONITORING WELL LOCATION

	DATE: JUNE 2015	PROJECT TITLE: SITE INSPECTION FOR FORMER UST KB-100 MARINE CORPS BASE MOTOR POOL SITE, MCB HAWAII, OAHU, HAWAII
	FIGURE TITLE: VOC SAMPLE RESULTS IN GROUNDWATER FROM PRIOR MONITORING EVENTS	FIGURE NO.: 1-6

Table 1-1: Summary of Environmental Sampling Work Conducted at the Former UST KB-100 Site

Investigation Report	Media Sampled	Comments and Findings
UST Removal, Morrison Knudsen Corporation, 1999	Soil	The 4-foot by 6-foot 550-gallon waste oil steel UST was excavated, cleaned, removed, and disposed of in December 1997. The removed tank was in good condition, with no deterioration, damage, or other signs of leakage. One confirmation soil sample was collected from the gley (native grey clay) present at the base of the excavation (6.5 feet bgs). In addition, two discrete soil samples were collected from the approximately 24 cubic yard stockpile of soil removed from the excavation. The TPH-oil, halogenated volatile organic compounds (HVOCs), polychlorinated biphenyls (PCBs), total lead, and total cadmium concentrations were below respective HDOH EALs. Benzo(a)pyrene was detected at an estimated concentration (0.17 mg/kg) that slightly exceeded the associated HDOH Tier 1 EAL (Table 1-2). MKC recommended further investigation and remediation of the Site in order to justify clean closure. The Site was backfilled and restored to its original condition, and the current 550-gallon steel AST was installed at the Site.
	Groundwater	Two unfiltered grab groundwater samples (KB-100-GW01 and -GW02) were collected directly from the UST excavation in December 1997. It is believed that these grab groundwater samples were not filtered at the laboratory prior to analysis. The concentrations of cadmium, lead, TPH-oil, benzo(a)pyrene, and PCBs (Aroclor 1260) detected exceeded the respective HDOH Tier 1 EALs (Table 1-3).
		A monitoring well (KB-100-MW1) was installed 15 feet west of the excavation in April 1998. The groundwater sample collected from the monitoring well was filtered in the field with a 40-micrometer filter. The sample contained concentrations of lead and vinyl chloride above respective HDOH Tier 1 EALs (Table 1-3). Cadmium and Aroclor 1260 were detected at trace levels (sub part per million) while benzo(a)pyrene was not detected in the collected groundwater sample. A confirmed release notification was submitted to the HDOH.
RI, Wil Chee Planning, 2003	Soil	Six soil borings (WCP-1 through WCP-6) were advanced around the former UST excavation in February 2003. Ten confirmation soil samples were collected from the center of the excavation just above the soil-water interface (ranging from 5 to 9.5 feet bgs) and submitted for analysis of TPH-oil and diesel, HVOCs, polynuclear aromatic hydrocarbons (PAHs), PCBs, total lead, and total cadmium. All of the soil sample concentrations were below associated HDOH Tier 1 EALs (see Table 1-4).
	Groundwater	One monitoring well (KB-100-2) was installed along the south wall of the former UST excavation in February 2003. Groundwater samples were collected from the existing well (KB-100-1) and the newly-installed well (KB-100-2). Vinyl chloride was detected in the groundwater at concentrations above the HDOH Tier 1 EAL at 0.064 mg/L and 0.009 mg/L, respectively. The groundwater results for KB-100-1 and -2 are summarized in Tables 1-5 and 1-6, respectively.
Groundwater Monitoring, Wil Chee Planning, 2007, 2008a, 2008b, 2008c	Groundwater	Semi-annual groundwater monitoring was conducted on the two wells (KB-100-1 and -2) in October 2006, June 2007, November 2007, and June 2008. None of the wells contained petroleum product. Samples were analyzed for TPH as diesel and oil, VOCs and HVOCs, PAHs, PCBs, total lead, and total cadmium. The groundwater results for KB-100-1 and -2 are summarized in Tables 1-5 and 1-6, respectively.
Release Response Report, Wil Chee Planning, 2011	Groundwater	The Release Response Report presented the results of the fifth round of groundwater monitoring conducted in June 2009. This report recommended that the Site be transferred to the Navy's Installation Restoration Program, since it was concluded that the former UST was not the source of the subsurface contamination.

Table 1-2: Summary of Soil Sample Data Collected During the 1997 UST Removal Work

Soil Sample Location	Sample Depth (feet bgs)	Cadmium (mg/kg)	Lead (mg/kg)	Oil and Grease (mg/kg)	Aroclor 1260 (mg/kg)	Tetrachloroethylene (PCE) (mg/kg)	Benzo(a)pyrene (mg/kg)	Fluoranthene (mg/kg)
Base of UST	6.5	0.11 J	8.9 J	76.1	ND	0.00356	-	-
Stockpile 1	0 – 6.5	1.0	36	187	0.49	0.00295	**0.17 J**	0.25 J
Stockpile 2	0 – 6.5	0.435	19.5	133	0.24	**0.412**	-	-
HDOH Tier 1 EAL (Table B-1)		14	200	500	1.1	0.088	0.15	460

Notes:
Shaded values exceed the Tier 1 EAL.
- = Not Analyzed or Not Available
mg/kg = milligram per kilogram
J = indicates an estimated value
ND = Not Detected

Table 1-3: Summary of Groundwater Sample Data Collected During 1997 Tank Removal Work

Groundwater Sample ID	Cadmium (µg/L)	Lead (µg/L)	Oil and Grease (mg/L)	Aroclor 1260 (µg/L)	Tetrachloroethylene (PCE) (µg/L)	Trichloroethene (TCE) (µg/L)	Vinyl Chloride (µg/L)	Benzo(a)pyrene (µg/L)	Fluoranthene (µg/L)
KB-100-GW01 (12/2/97 Grab)	-	-	**13.1**	-	-	-	-	-	-
KB-100-GW02 (12/6/97 Grab)	**10.6**	**571**	-	**2.4**	21.4	ND	ND	**8.24**	23.6
KB-100-MW1 (4/29/98 Well)	0.94 J	**41.1 J**	ND	0.88 J	6.0 J	91 J	**91 J**	ND	ND
HDOH Tier 1 EAL (Table D-1d)	3.0	29	2.5	2.0	177	612	62	0.81	130

Notes:
Bold shaded values exceed the Tier 1 EAL.
mg/L = milligram per liter; µg/L = microgram per liter
- = Not Analyzed
ND = Not Detected
J = indicates an estimated value

Table 1-4: Summary of Soil Sample Data Collected During the 2003 RI

Boring Location	Sample Depth (feet bgs)	Cadmium (mg/kg)	Lead (mg/kg)	TPH-Diesel (mg/kg)	TPH-Motor Oil (mg/kg)	Aroclor 1260 (mg/kg)	Tetrachloroethylene (PCE) (mg/kg)	Methylene Chloride (mg/kg)
WCP-1	5	0.83	50	220	320	0.015	ND	ND
WCP-1	7	0.26	0.81	ND	ND	ND	ND	ND
WCP-2	5	3.8	19	21	130	0.11	ND	ND
WCP-2	7	3.4	8.2	9	32	0.038	0.008	ND
WCP-3	7	1.9	4.1	1.7	13	ND	0.007	ND
WCP-4	7	2.7	8.1	9.9	50	0.022	ND	ND
WCP-5	3	0.3	0.68	3.5	56	ND	ND	ND
WCP-5	7	0.91	2.3	1.3	14	ND	ND	0.11
WCP-5	8	1.2	3.1	2.1	31	ND	ND	ND
WCP-5	9.5	ND	ND	ND	ND	ND	ND	ND
WCP-6	5.5	0.31	2	39	160	ND	ND	0.11
WCP-6	7.5	ND	1.8	1.4	ND	ND	ND	0.03
HDOH Tier 1 EAL (Table B-1)		14	200	500	500	1.1	0.088	1.1

Notes:
ND = Not Detected
mg/kg = milligram per kilogram

Table 1-5: Summary of Groundwater Sample Data Collected from KB-100-1 between 2003 and 2015

Well ID		100-1	100-1	100-1	100-1	100-1	100-1	100-1	100-1	100-1	2011 HDOH Tier 1 EAL (Table D-1d)
Sample Date		5/20/2003	10/16/2006	10/16/2006	10/16/2006	6/11/2007	11/6/2007	6/18/2008	6/10/2009	1/20/2015	
Cadmium (µg/L)	MDL	5.00	1.00	1.00	-	0.33	1	0.6	0.6	-	3.0
	Result	0.4 J	ND	ND	0.02	ND	ND	ND	ND	-	
Lead (µg/L)	MDL	3	0.31	0.31	-	0.11	0.31	0.31	0.31	0.4	29
	Result	11	0.365 J	ND	0.05	0.38 J	0.313 J	ND	ND	ND	
TPH-DRO (mg/L)	MDL	0.05	-	-	-	-	-	-	0.161	-	2.5
	Result	0.32	-	-	-	-	-	-	0.679	-	
TPH-RRO (mg/L)	MDL	0.30	0.113	0.11	-	-	0.106	0.333	0.333	-	2.5
	Result	0.30	0.705	0.623	ND	ND	0.629 J	0.483 J	0.601J	-	
Aroclor-1260 (µg/L)	MDL	0.97	0.033	0.0333	-	0.158	0.0337	0.0337	0.0326	-	2.0
	Result	ND	ND	ND	ND	ND	ND	ND	ND	-	
1,1-Dichloroethene (µg/L)	MDL	5	0.31	0.31	-	0.185	0.31	0.31	-	0.3	3,900
	Result	2.9 J	ND	ND	ND	0.98 J	ND	0.740 J	-	1.1	
Tetrachloroethene (PCE) (µg/L)	MDL	5	0.31	0.31	-	0.226	3.1	0.31	-	0.3	177
	Result	3.2 J	ND	ND	ND	0.41	70.8	0.360 J	-	0.4 J	
Trichloroethene (TCE) (µg/L)	MDL	42	0.31	0.31	-	0.209	0.31	0.31	-	0.3	612
	Result	240	ND	ND	ND	0.43	37.5	1.56	-	2.7	
Vinyl chloride (µg/L)	MDL	10	15.5	15.5	-	3.54	0.31	3.1	-	0.3	62
	Result	**64**	**269**	**270**	**250 D**	**45.1 B**	4.71	**63**	-	22	
Acenaphthene (µg/L)	MDL	10	0.0161	0.0161	-	0.0133	0.0162	0.0161	0.0161	-	200
	Result	ND	ND	ND	ND	0.0237 J	ND	ND	ND	-	
Fluoranthene (µg/L)	MDL	10	0.0161	0.0161	-	0.00847	0.0162	0.0161	0.0161	-	130
	Result	ND	ND	ND	ND	0.028 J	ND	ND	ND	-	
Naphthalene (µg/L)	MDL	10	0.0333	0.0333	-	0.0146	0.0335	0.0333	0.0333	-	210
	Result	ND	ND	ND	0.013	ND	ND	0.0484 J	ND	-	

Notes:
Bold shaded values exceed the Tier 1 EAL.
- = Not Analyzed or Not Available; ND = Not Detected; MDL = Method Detection Limit
mg/L = milligram per liter; µg/L = microgram per liter
D = indicates reported result is from a dilution; J = indicates an estimated value; B = indicates analyte is found in a blank associated with the sample

Table 1-6: Summary of Groundwater Sample Data Collected from KB-100-2 between 2003 and 2015

Well ID		100-2	100-2	100-2	100-2	100-2	100-2	100-2	100-2	100-2	100-2	100-2	2011 HDOH EAL (Table D-1d)
Sample Date		**5/20/2003**	**10/16/2006**	**6/11/2007**	**6/11/2007**	**6/11/2007**	**11/6/2007**	**11/6/2007**	**11/6/2007**	**6/18/2008**	**6/10/2009**	**1/20/2015**	
Cadmium (µg/L)	MDL	5.00	1.00	0.33	0.33	-	1	1	-	0.6	0.6	-	3
	Result	ND	ND	ND	ND	ND	ND	ND	0.06	ND	ND	-	
Lead (µg/L)	MDL	3.00	0.31	0.11	0.11	-	0.31	0.31	-	0.31	0.31	0.4	29
	Result	ND	ND	ND	ND	0.04	0.312 J	ND	0.13	ND	0.436 J	ND	
TPH-DRO (mg/L)	MDL	0.05	0.11	-	-	-	0.109	0.106	-	0.33	0.163	-	2.5
	Result	0.32	0.597	ND	ND	0.18 Z	0.403 J	0.459 J	0.15 O	0.374 J	0.167 J	-	
TPH-RRO (mg/L)	MDL	0.30	0.11	-	-	-	0.109	0.106	-	0.33	0.337	-	2.5
	Result	0.26 J	0.597	ND	ND	0.18 Z	0.403 J	0.459 J	0.15 O	0.374 J	0.338 J	-	
Aroclor-1260 (µg/L)	MDL	0.5	0.0337	0.158	0.158	-	0.0326	0.0333	-	0.0341	0.0337	-	2
	Result	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	-	
1,1-Dichloroethene (µg/L)	MDL	5.0	0.31	0.185	0.185	-	0.31	0.31	-	0.31	-	0.5	3,900
	Result	1.0 J	ND	0.74 J	0.8 J	0.94	ND	ND	ND	ND	-	ND	
Tetrachloroethene (PCE) (µg/L)	MDL	5	31	4.52	4.52	-	15.5	15.5	-	0.31	-	0.3	177
	Result	19	**2,490**	35.4 B	50.6 B	**150 D**	**472**	**475**	**530 D**	66.4	-	0.35 J	
Trichloroethene (TCE) (µg/L)	MDL	5	31	4.18	4.18	-	0.31	0.31	-	0.31	-	0.3	612
	Result	66	**724**	87.2 B	114 B	240 D	52.8	53.7	46 D	58.8	-	0.64 J	
Vinyl chloride (µg/L)	MDL	10	0.31	0.221	0.221	-	0.31	0.31	-	0.31	-	0.3	62
	Result	9.0 J	5.24	8.47	8.14	10	0.75 J	0.8 J	ND	16.9	-	38	
Acenaphthene (µg/L)	MDL	10	0.0161	0.173	0.185	-	0.0162	0.0155		0.016	0.0161	-	200
	Result	ND	ND	ND	0.222 J	ND	ND	ND	ND	ND	ND	-	
Naphthalene (µg/L)	MDL	10	0.0333	0.0146	0.0146	-	0.0335	0.0321		0.033	0.0333	-	210
	Result	ND	ND	ND	ND	ND	ND	0.034 J	0.014	ND	ND	-	

Notes:
Shaded values exceed the Tier 1 EAL.
mg/L = milligram per liter; µg/L = microgram per liter
- = Not Analyzed or Not Available
ND = Not Detected
MDL = Method Detection Limit
D = indicates reported result is from a dilution; J = indicates an estimated value; B = indicates analyte is found in a blank associated with the sample; O = indicates that the chromatographic fingerprint of the sample resembles an oil but does not match the calibration standard

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Section 2 Physical Characteristics

Regional physical background information about climate, geology, soils, topography, hydrology, and groundwater for the MCB Hawaii area and the Site is presented in this section.

2.1 Climate

Average wind speeds on Oahu range from 10 to 15 miles per hour, with northeasterly trade winds prevailing approximately 80 percent of the time. Trade winds are the strongest and blow most consistently between April and November. The northeasterly trade winds carry a large quantity of moisture from the Pacific Ocean to the island. Southerly or "Kona" winds occur roughly less than half the time during the months of December through March. Orographic lifting as the trade winds encounter the Ko'olau Mountain Range causes the air temperature to drop and air moisture to precipitate. The mean annual precipitation at the upper reaches of the Ko'olau Mountains is approximately 150 inches, and the windward side of the island generally experiences more rainfall than the leeward side. The orographic effect also tends to produce most of the precipitation in the form of passing showers in the evenings and early mornings.

Oahu's overall climate is warm and humid year round. Average daily temperatures range between 65 and 85 degrees Fahrenheit (°F), with relative humidity ranging from 30 to 90 percent on Oahu. Based on a 38-year study at MCB Hawaii, the mean daily temperature at the project site is 71.6°F, and the average annual rainfall is 38.9 inches. Prevailing northeasterly trade winds occur at MCB Hawaii throughout the year at a mean wind speed of 7.0 knots (Juvik and Juvik, 1998).

2.2 Geology and Soils

MCB Hawaii is located on Mokapu Peninsula, on the windward side of the island of Oahu. Three remnant hydromagmatic volcanic features – Ka'au or Pyramid Rock, Pu'u Hawaii Loa, and Ulupau Crater – dominate the topography of the peninsula. These volcanic features erupted during the post-erosional phase of volcanism on the island (Honolulu Volcanic Series) between 500,000 and 1,000,000 years ago. The volcanic activity associated with these eruptions produced layered ash deposits, which blanketed much of MCB Hawaii. The ash eventually underwent a cementing process that transformed the originally unconsolidated ash into a cemented tuff. Large fluctuations in sea levels produced coral reefs atop the base of these volcanic vents, which today comprise much of the peninsula's relatively porous, calcareous land surface. Other portions of the peninsula are covered by sand dunes created by the prevailing trade winds blowing the sand present on the long beaches fringing the windward Mokapu shores inland.

The Site soils consist of the Mamala Series, specifically primarily Mamala stony, silty clay loam (MnC). Mamala Series soils consist of shallow and well-drained soils along coastal plains. These soils are part of the Kaena-Waialua Association. The soils were formed in alluvium deposited over the coral limestone and calcareous sand. Permeability is moderate,

runoff is very slow to medium, and the erosion hazard is slight to moderate. The available water capacity of the soil is approximately 2.2 inches per foot in the surface layer and 1.9 inches per foot in the subsoil. MnC soils can exist on 0 to 12 percent slopes, but in most places the slope does not exceed 6 percent (United States Department of Agricultural Soil Conservation Service [USDA SCS] 1972). MKC reported the presence of a native grey clay at a depth of approximately 6.5 feet bgs in the approximately 8-foot deep excavation created during removal of UST KB-100 (MKC 1999).

2.3 Topography and Drainage

The topography of the Site is relatively flat, and the surrounding ground surface is paved with asphalt. The groundwater monitoring well installed during MKC's UST closure investigation indicated that the static water level at the site was approximately 7.5 feet below ground surface (bgs) at the time of installation (MKC 1999). Runoff on the concrete washdown area located approximately 10 feet to the north of the former UST KB-100 flows to a drain located in the middle of the concrete washdown area. A six-inch deep, concrete-lined trench storm water drain is located to the southeast of the former UST KB-100 and is designed to intercept overland flow. The runoff that enters this drain first runs to the west to B Street, then south to 1st Street, west along 1st Street, and south towards Kaneohe Bay where the runoff ultimately discharges.

2.4 Regional Groundwater Use

The aquifer systems on Mokapu Peninsula are designated the same as those present in the nearby town of Kailua by aquifer identification and classification maps. According to this designation, the Site is underlain by two aquifers: a shallow, basal, unconfined sedimentary aquifer and a deeper, basal, confined, dike/flank lava aquifer. The shallow, basal, unconfined sedimentary aquifer is currently used, is ecologically important, is low in salinity (i.e., between 250 and 1,000 milligrams per liter [mg/L] chloride), is irreplaceable, and has a high vulnerability to contamination. The deeper aquifer (located several hundred feet below sea level at the project site) is designated a basal, confined, dike/flank lava aquifer that is currently used for drinking water and is considered to be irreplaceable with a low vulnerability to contamination (Mink and Lau 1990).

Despite this designation, MCB Hawaii lies seaward of the Underground Injection Control (UIC) line and does not contain a viable drinking water source. The HDOH developed the UIC line to delineate the boundary between non-drinking water aquifers and underground sources of drinking water throughout the state. Areas that are seaward of the UIC line are considered to be located above non-drinking water aquifers. The shallow, basal, unconfined sedimentary aquifer (also known as a caprock aquifer) beneath the Site is minimally influenced by tides and is encountered at an approximate depth of 7.5 feet bgs. The shallow groundwater in this aquifer is likely highly brackish and not suitable for human consumption. A compilation of water level measurements that were made during the Initial Assessment Study (IAS) conducted at MCB Hawaii in 1983 showed no well-defined shallow groundwater gradients on Mokapu Peninsula (Luecker et al. 1984). A hydraulic gradient of around one

foot per mile and a groundwater flow velocity of around 10 feet per year for the shallow aquifer system were estimated for the peninsula.

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Section 3 Project Objectives, Screening Criteria, and Pathway Analysis

3.1 Project Objectives

The data quality objectives (DQOs) for this SI were developed based on the document *Guidance for the Data Quality Objectives Process* (U.S. Environmental Protection Agency [EPA] QA/G-4) (EPA 2006) and are presented in detail in the project Work Plan (*WP*, Element Environmental, LLC [E2] 2014a).

3.1.1 Problem Statement

This SI was conducted to investigate residual soil and groundwater contamination present at the Site and to assess potential threats to human health and the environment. The SI focused on delineating the lateral extent of chlorinated solvent contamination in the groundwater and capillary fringe soils present at depths between approximately 6.5 and 8.0 feet bgs. No significant soil contamination was detected at the Site during the previous 2003 RI (WCP 2003).

This SI focused on characterizing the type and concentration of chlorinated solvents in the shallow groundwater aquifer at the Site due to the following attributes of the Site:

1) It is anticipated that the volume (and associated aerial extent) of residual soil contamination at the Site (if present) is small and related to an isolated spill event (thus difficult to detect by soil sampling).
2) There is no obvious source area at the Site for the observed chlorinated solvent contamination.
3) Delineation of the plume of the original contaminant(s) (PCE and/or TCE) and potential daughter degradation byproducts (TCE and vinyl chloride) present at the Site will allow identification of the contaminant source area. As a result, the environmental data collected during this SI was used to determine the probable source of contamination at the Site, to evaluate the apparent ongoing anaerobic degradation of the chlorinated solvents, and to assess associated threats to human health and the environment.

The project team reviewed and discussed historical site information (Section 1.1.1) and current site usage and conditions to develop the following problem statement:

- Evaluate the potential presence of COPCs in site soils and groundwater at the Site and assess the associated threats to human health and the environment.

3.1.2 The Decision Rules

Five principal study questions (PSQs) were developed for this project:

- Do COPC concentrations in capillary fringe soils at the Site exceed human and ecological risk-based screening criteria?
- If COPCs in capillary fringe soils at the Site exceed human and ecological risk-based screening criteria, do COPCs in capillary fringe soils at the Site pose an unacceptable risk to human health and/or the environment?
- What is the lateral extent of chlorinated solvent contamination at the Site?
- Do COPC concentrations in the shallow groundwater at the Site exceed human and ecological risk-based screening criteria?
- If COPCs in groundwater at the Site exceed human and ecological risk-based screening criteria, do COPCs in groundwater at the Site pose an unacceptable risk to human health and/or the environment?

In order to address the PSQs, the following actions were taken:

- Collected chemical concentration data for capillary fringe soils and shallow groundwater samples at the Site.
- Identified locations of all soil and groundwater samples collected within the Site.
- Collected a single soil sample from the capillary fringe at seven locations where temporary monitoring wells were installed. A total of seven discrete subsurface soil samples and one duplicate sample were collected and concentrations of COPCs detected in these samples were compared to project-specific screening criteria. Sections 4.3.2 and 4.3.3 discuss the soil sample collection field activities conducted, and Section 5.1 discusses the resulting soil sample analytical results.
- Analyzed the capillary fringe soil samples for the following analytes: TPH-DRO/RRO (8015C), VOCs (8260B), and lead (6020A). (Note that the analytical laboratory reports RRO as Lube Oil Range Organics [LRO].)
- Installed a total of seven small diameter (1.5-inch) temporary monitoring wells in the approximately 60-foot by 60-foot area surrounding the former UST KB-100 in order sample the underlying groundwater. Section 4.3.4 discusses the groundwater monitoring well installation work conducted.
- Collected groundwater samples from the seven temporary monitoring wells and the two existing monitoring wells (KB-100-1 and KB-100-2). A total of nine primary groundwater samples and one duplicate sample were collected and concentrations of COPCs detected in these samples were compared to project-specific screening criteria. Section 4.3.6 discusses the groundwater sample collection field activities conducted, and Section 5.2 discusses the resulting groundwater sample analytical results.

- Analyzed the groundwater samples for the following analytes: TPH-DRO/RRO (8015C), VOCs (8260B), and lead (6020A).

- Installed two permanent four-inch diameter monitoring wells at optimal monitoring locations within the Site based upon the lateral distribution of chlorinated solvent contamination observed in the seven temporary and two existing monitoring wells.

- Collected two primary groundwater samples from the two new four-inch diameter monitoring wells at the Site.

- Made field observations and recorded Unified Soil Classification System soil descriptions.

The following decision rules were developed to address the decision statements:

- If any COPC concentrations in capillary fringe soils at the Site exceed risk-based screening criteria, then Tier 1 human health and/or ecological risk screening assessments will be conducted. Conversely, if no COPC concentrations in vadose zone soils at the Site exceed risk-based screening criteria, then no Tier 1 human health or ecological risk screening assessments will be necessary, and no further action (NFA) will be recommended for soil at the Site.

- If any COPC concentrations in shallow groundwater at the Site exceed risk-based screening criteria, then Tier 1 human health and/or ecological risk screening assessments will be conducted. Conversely, if no COPC concentrations in shallow groundwater at the Site exceed risk-based screening criteria, then no Tier 1 human health or ecological risk screening assessments will be necessary, and NFA will be recommended for groundwater at the Site.

- If the Tier 1 risk screening assessment results indicate that COPCs in soil and/or shallow groundwater at the Site pose unacceptable risk to human health and/or the environment, then the need for further action at the Site will be evaluated in a remedial investigation/feasibility study (RI/FS). Conversely, if the Tier 1 risk screening assessment results indicate that COPCs in soil and groundwater at the Site do not pose unacceptable risk to human health and/or the environment, then NFA will be recommended for the Site.

3.2 Screening Criteria

The screening criteria used for this project were the HDOH Tier 1 Unrestricted EALs for soil (Table B-1) and groundwater (Table D-1d) (HDOH 2011). HDOH EALs were used in lieu of EPA Regional Screening Levels (RSLs) (EPA 2011) because EALs consider the use of site-specific data, whereas RSLs are generic screening criteria. The EALs used in this SI were for sites with groundwater that is not a current or potential source of drinking water and the nearest surface water body is more than 150 meters away from the Site.

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Section 4 Site Investigation Activities

Field activities were conducted at the Site between December 2014 and March 2015, in accordance with the project *WP* and *Health and Safety Plan (HSP*, E2 2014a, 2014b). Discrete soil samples were collected from the capillary fringe (from depths between 5.5 and 7.5 feet bgs) of seven borings drilled down to 10 feet bgs (Figure 4-1). A total of seven temporary monitoring wells were installed in the boreholes from which the capillary fringe soil samples were collected. Groundwater samples were collected from these seven temporary wells in January 2015, as well as from two existing monitoring wells, in order to evaluate the lateral extent of solvent contamination present in the area surrounding the former UST KB-100 (Figure 4-2). Two permanent four-inch diameter monitoring wells were installed at the Site in March 2015 adjacent to the two temporary well sites that yielded the highest solvent concentrations during the January 2015 sampling. Groundwater samples were collected from these two new monitoring wells.

4.1 Rationale

Historical site activities, anecdotal evidence cited in the 1984 IAS prepared by the Naval Energy and Environmental Support Activity, current site configurations, current site use, previous environmental sampling results, present day activities at the adjacent facility, and proposed future improvements to the former UST KB-100 site were reviewed and used to determine the environmental sample locations used during this SI.

4.2 Sampling and Analysis Program

The project *WP* (E2 2014a) details the COPCs, analytical methods and parameters, and the number of environmental samples necessary to produce sufficient environmental data to evaluate the problem statement (Section 3.1.1).

4.3 Methodology

SI activities were conducted in accordance with standard operating procedures (SOPs) presented in the *Project Procedures Manual* (PPM, Department of the Navy [DON] 2007). The project *WP* (E2 2014a) provided a detailed description of the general sampling methodology employed during the fieldwork conducted at the project site.

Field measurements and observations during all field activities were documented in a project-dedicated field logbook (copies of pages are provided in Appendix A) and field forms (Appendix B). Site photographs are provided in Appendix C.

4.3.1 Utility Clearance

Prior to the initiation of intrusive activities, the soil and groundwater sampling locations were marked on the early morning of December 23, 2014 by the field crew using flagging, marking paint, and cones. Potential underground utilities were then located in the vicinity of the

proposed sampling locations later that day. In order to locate the underground utilities, two subsurface survey devices were used: a Magnum Force Field metal detector manufactured by White's Electronics, Inc. and a U.S. Radar, Inc. Subsurface Imaging System Ground Penetrating Radar (GPR) Device, Model MK-2. These devices were used throughout the project site to delineate the location of underground utilities in accordance with the Naval Facilities Engineering Command (NAVFAC) Pacific Environmental Restoration Program (ERP) *Procedure I-A-5, Utility Clearance* (DON 2007). The underground utilities identified during the geophysical survey were marked on the ground surface with marking paint and avoided during intrusive subsurface activities. The geophysical survey report for the Site is included in Appendix D.

4.3.2 Capillary Fringe Soil Sampling

The following sub-surface soil samples were collected from near the capillary fringe during this SI:

- On January 13, 2015, a total of 10 primary and quality assurance/quality control (QA/QC) discrete sub-surface soil samples (EKB100001 through EKB100010) were collected from the project site. Discrete samples were collected from the capillary fringe over an approximately 0.5-foot depth interval, which ranged in depths of between 5.5 to 7.5 feet bgs in the seven boring locations (TW-1 through TW-7) drilled at the Site (Figure 4-1).

Each discrete soil sample consisted of roughly 100 grams of soil, which was placed in an eight-ounce glass jar and three (3) 40-milliliter (mL) volatile organic analysis (VOA) vials (one with methanol [MeOH] preservative and the other two with 5 mLs of deionized water and a stir bar) provided by the analytical laboratory. The samples were retrieved from an acetate liner generated by a Geoprobe drilling rig operated by GeoTek Hawaii, Inc. (GHI). Two five-foot intervals of soil core were recovered from each boring location. The capillary fringe in the recovered cores was visually identified by the presence of saturated soil in the bottom of the second five-foot interval core. The soil samples collected for analysis were transferred directly from the acetate liner using an EnCore® sampling device (to fill the VOA vials) and a hand trowel (to fill the 8-ounce jar). The sample was typically collected from the six- to nine-inch interval of soil located directly above the saturated section of the core.

Upon collection in the field, the soil samples were placed into the containers provided by the laboratory; labeled with a unique sample number, date and time of collection, and boring location; sealed with a custody seal that was signed and dated by sampling personnel; and placed into sealable plastic bubble wrap bags and food-grade, re-sealable plastic bags. The soil samples were then placed in coolers containing wet ice for preservation in the field before re-packing with gel ice for shipment to the analytical laboratory. Field measurements and observations were documented in a project-dedicated field logbook as well as on the NAVFAC Pacific ERP boring log template (*Figure I-B-1-1, Field Log of Boring*) (DON 2007). Table 4-1 summarizes the number of primary and QA/QC discrete soil samples collected during the SI field activities.

Table 4-1: Capillary Fringe Soil Samples Collected During the 2015 SI

Analyte/ Analytical Group	No. of Samples	No. of Field Replicates	No. of Field Duplicates	No. of MS/MSD Pairs[a]	No. of Field Blanks[b]	No. of Equip. Rinsate	No. of VOA Trip Blanks[c]	Total No. of Samples Sent to Lab
Discrete Soil Samples Collected from Seven Sampling Locations								
TPH-DRO/RRO	7	0	1	1	1	1	0	11
VOCs	7	0	1	1	1	1	1	12
Total Lead	7	0	1	1	1	1	0	11

a Matrix spike/matrix spike duplicate (MS/MSD) samples were collected in the field similar to a primary sample.
b One (1) field blank was collected per water source. Only one water source was required for the entire project.
c One (1) set of trip blanks per cooler shipped with water samples.

4.3.3 Soil Classification

Samples were classified according to NAVFAC Pacific ERP *Procedure I-E, Soil and Rock Classification* (DON 2007). The range in sample depth below the ground surface was measured in the field using a tape measure that recorded the length of soil recovered in each core. The soil lithology, odors, and photoionization detector (PID) headspace readings measured on each recovered core were recorded in the field on standard boring logs and are included in Appendix B. Electronic versions of the boring logs that summarize the boring log data gathered for each boring location are presented in Appendix E.

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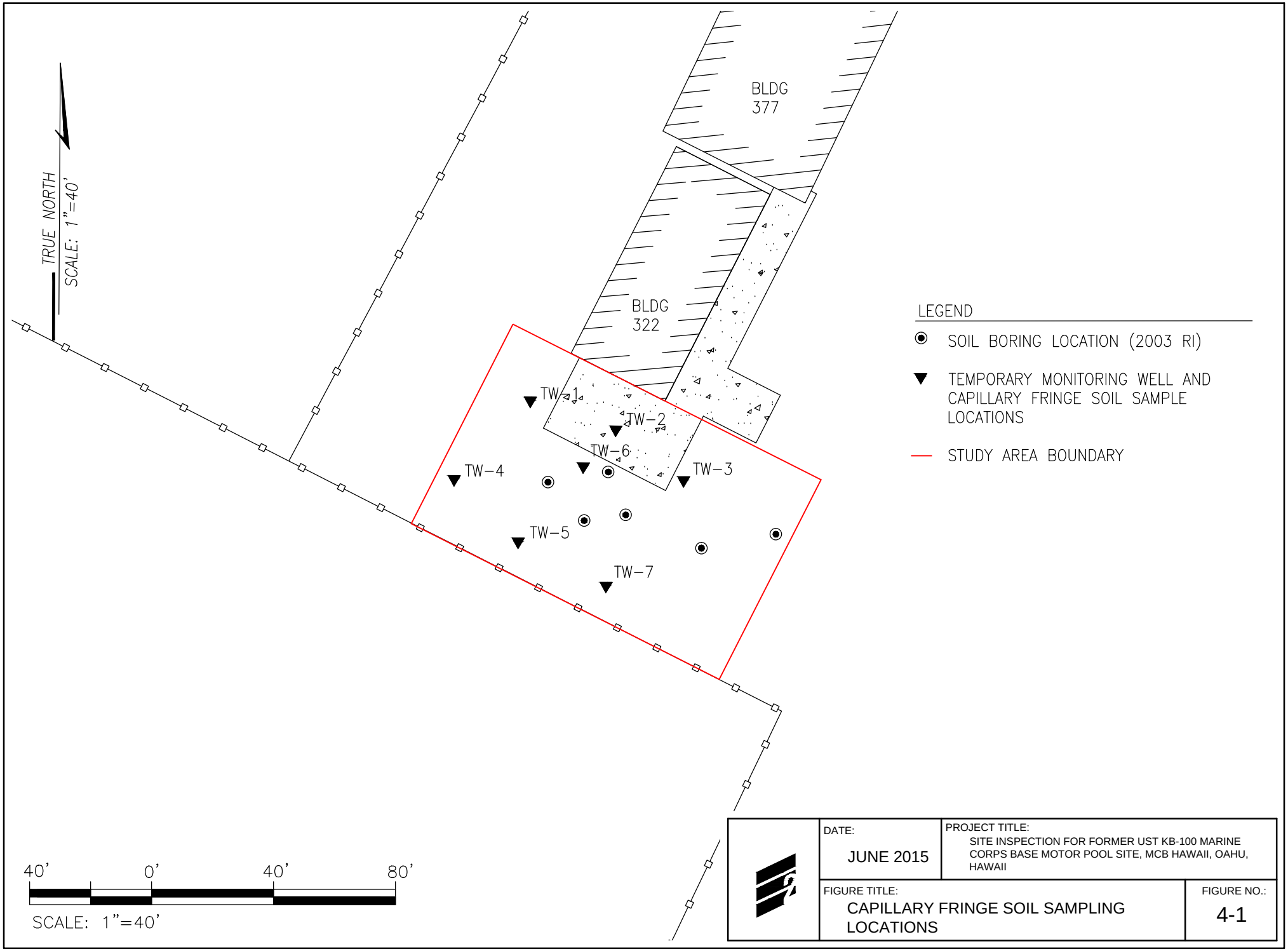
TRUE NORTH
SCALE: 1"=40'
BLDG 377
BLDG 322
TW-1
TW-2
TW-3
TW-4
TW-5
TW-6
TW-7
LEGEND
SOIL BORING LOCATION (2003 RI)
TEMPORARY MONITORING WELL AND CAPILLARY FRINGE SOIL SAMPLE LOCATIONS
STUDY AREA BOUNDARY
40' 0' 40' 80'
SCALE: 1"=40'
DATE:
JUNE 2015
PROJECT TITLE:
SITE INSPECTION FOR FORMER UST KB-100 MARINE CORPS BASE MOTOR POOL SITE, MCB HAWAII, OAHU, HAWAII
FIGURE TITLE:
CAPILLARY FRINGE SOIL SAMPLING LOCATIONS
FIGURE NO.:
4-1

4.3.4 Temporary Groundwater Monitoring Well Installation

Seven 1.5-inch diameter temporary groundwater monitoring wells (TW-1 through TW-7) were installed on January 13, 2015 within the Site (Figure 4-2). These temporary monitoring wells were composed of polyvinyl chloride (PVC) with a 2½-inch diameter pre-packed five-foot length screen section containing #3 sand and 10 slot perforations. The locations of the wells were chosen in order to attempt to fully delineate the extent of suspected groundwater contamination present at the Site.

The temporary groundwater monitoring wells were installed in general accordance with NAVFAC Pacific ERP *Procedure I-C-1, Monitoring Well Installation and Abandonment* (DON 2007). Because these wells were temporary, no cement was placed in the annular space above the bentonite that was placed atop the well intake sand pack. These temporary monitoring wells were initially developed a minimum of three days after they were installed by lowering a surge block down each well, then removing three borehole volume equivalents of groundwater from each well. NAVFAC Pacific ERP *Procedure I-C-2, Monitoring Well Development* (DON 2007) was adhered to during monitoring well development. Monitoring well construction details were recorded on the NAVFAC Pacific ERP monitoring well construction template (*Figure I-C-1-5, Well Completion Record)* (DON 2007) and are found in Appendix B. Electronic versions of the seven monitoring well construction logs are presented in Appendix F. The development details for the monitoring wells, which includes water quality parameters measured during development, were recorded on the NAVFAC Pacific ERP well development template (*Figure I-C-2-1, Well Development Record)* (DON 2007) and are found in Appendix B.

4.3.5 Permanent Groundwater Monitoring Well Installation

Two permanent four-inch diameter monitoring wells (KB-100-3 and KB-100-4) were installed at the Site on March 2, 2015 (Figure 4-3). The locations of these permanent monitoring wells were based on the lateral distribution of chlorinated solvents measured in the groundwater samples collected from the seven temporary and two existing monitoring wells during the initial round of groundwater sampling conducted in January 2015. The two permanent wells were installed adjacent to the two temporary wells that yielded the highest concentrations of solvents (TW-2 and TW-6). Permanent monitoring well KB-100-3 was located adjacent to TW-6 while KB-100-4 was located adjacent to TW-2.

The two permanent groundwater monitoring wells were installed in general accordance with NAVFAC Pacific ERP *Procedure I-C-1, Monitoring Well Installation and Abandonment* (DON 2007). These permanent monitoring wells were initially developed a minimum of one week after they were installed by lowering a surge block down each well, then removing three borehole volume equivalents of groundwater from each well. NAVFAC Pacific ERP *Procedure I-C-2, Monitoring Well Development* (DON 2007) was adhered to during monitoring well development.

4.3.6 Groundwater Sampling

The following groundwater samples were collected during this SI:

- On January 20, 2015, ten shallow groundwater samples (EKB100011 through EKB100021) were collected from the seven temporary monitoring wells (TW-1 through TW-7) and two existing monitoring wells (KB-100-1 and KB-100-2) at the Site. Free product was not observed in any of these monitoring wells.
- On March 10, 2015, two additional groundwater samples (EKB100022 and EKB100023) were collected from the two new permanent monitoring wells (KB-100-3 and KB-100-4). Free product was not observed in either of these monitoring wells.

Groundwater samples were collected in accordance with NAVFAC Pacific ERP *Procedure I-C-3, Monitoring Well Sampling* (DON 2007) and was conducted after each well had been developed. The depth to groundwater at the temporary monitoring wells ranged from 6.45 feet bgs at TW-4 to 7.43 feet bgs at TW-1 during sampling activities. Water was purged from each monitoring well prior to sample collection using a low flow bladder pump and dedicated tubing. A Horiba water quality meter was calibrated and utilized to measure potential hydrogen (pH), conductivity, dissolved oxygen (DO), reduction-oxidation (redox) potential, and turbidity in the groundwater during purging activities. Purging was considered complete when three consecutive field parameter measurements stabilized within approximately 10 percent of one another. The low flow bladder pump and dedicated tubing were then used to collect the groundwater samples. Parameter measurements and sampling data were recorded on the NAVFAC Pacific ERP groundwater sampling log template (*Figure I-C-3-1, Groundwater Sampling Log)* (DON 2007), which can be found in Appendix B. The water quality parameters measured during development and purging activities are recorded on field forms provided in Appendix B. In addition, recovered water was visually inspected for the presence of suspended sediment and hydrocarbon sheen. No measurable free product was observed on the groundwater surface at any of the sampling locations.

Each groundwater sample consisted of two (2) 40-mL unpreserved VOA vials, two (2) 1-Liter amber glass bottles, and one (1) 500-mL nitric acid-preserved poly bottle provided by the analytical laboratory.

Upon collection in the field, the groundwater samples were placed into the containers provided by the laboratory; labeled with a unique sample number, date and time of collection, and monitoring well location; sealed with a custody seal that was signed and dated by sampling personnel; and placed into sealable plastic bubble wrap bags and food-grade, re-sealable plastic bags. The groundwater samples were then placed in coolers containing wet ice for preservation in the field before re-packing with gel ice for shipment to the analytical laboratory. Table 4-2 below summarizes the number of primary and QA/QC groundwater samples collected during the SI field activities.

Table 4-2: Groundwater Samples Collected During the 2015 SI

Analyte/ Analytical Group	No. of Samples	No. of Field Replicates	No. of Field Duplicates	No. of MS/MSD Pairs[a]	No. of Field Blanks[b]	No. of Equip. Rinsate	No. of VOA Trip Blanks[c]	Total No. of Samples Sent to Lab
Groundwater Samples Collected from Two Existing, Seven Temporary, and Two New Permanent MWs								
TPH	11	0	2	1	0	1	0	15
VOCs	11	0	2	1	0	1	2	17
Total Lead	11	0	2	1	0	1	0	15

a MS/MSD pair was collected in the field similar to a primary sample.
b One (1) field blank was collected per water source. Only one water source was required for the entire project, and is indicated under the discrete soil samples collected during the SI (see Table 4-1).
c One (1) set of trip blanks per cooler shipped.

4.3.7 Monitoring Well Surveying

A hand-held global positioning system (GPS) unit and survey level was utilized to survey the geographical locations of the various two- and four-inch diameter PVC monitoring wells installed and previously existing at the former UST KB-100 site. Table 4-3 lists the northing and easting coordinates of all monitoring wells (permanent and temporary), along with the top of the casing of each permanent monitoring well. The elevation of the top of the well casings was determined by running a level survey from previously surveyed monitoring wells located just to the north of the project site. The estimated general groundwater flow direction at the site is shown in Figure 4-4 based upon water level measurements made on March 27, 2015 in wells located at the former UST KB100 site, at the adjacent former UST KB-91 site and in a series of wells located inland and to the north of the project site.

Table 4-3: Survey Data for Monitoring Wells at the Former UST KB-100 Site

Well ID	Northing	Easting	Top of Casing Elevation (feet)
TW-1	21° 26.594'	157° 45.882'	not measured
TW-2	21° 26.589'	157° 45.885'	not measured
TW-3	21° 26.590'	157° 45.872'	not measured
TW-4	21° 26.589'	157° 45.886'	not measured
TW-5	21° 26.586'	157° 45.882'	not measured
TW-6	21° 26.591'	157° 45.878'	not measured
TW-7	21° 26.584'	157° 45.877'	not measured
KB-100-1	21° 26.590'	157° 45.881'	7.40
KB-100-2	21° 26.588'	157° 45.878'	7.26
KB-100-3	21° 26.591'	157° 45.878'	7.57
KB-100-4	21° 26.593'	157° 45.877'	7.50

Note:
Elevations are referred to Mean Lower Water (M.L.W.) + 100 feet, having been established from existing MCB Hawaii controls.

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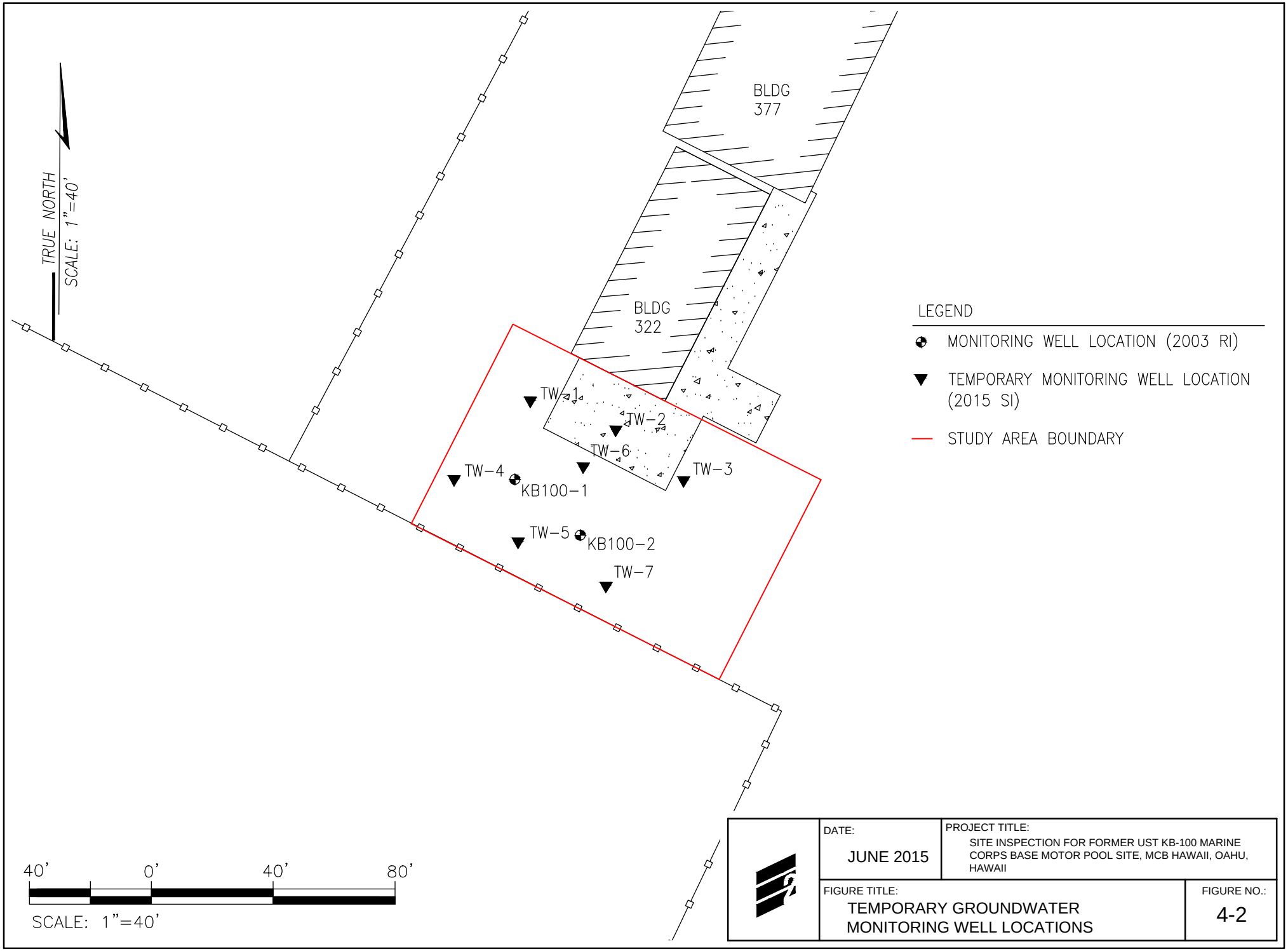
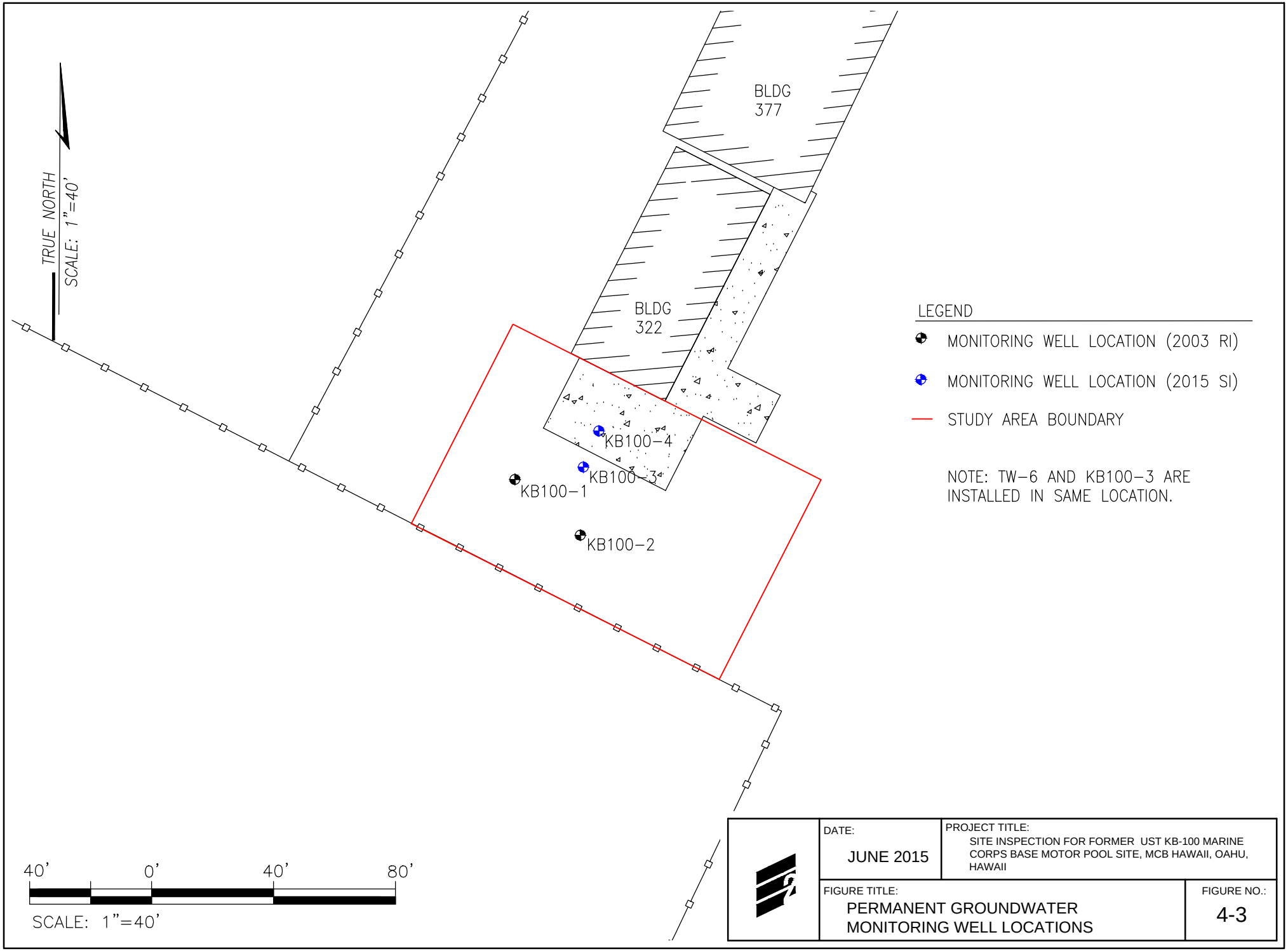
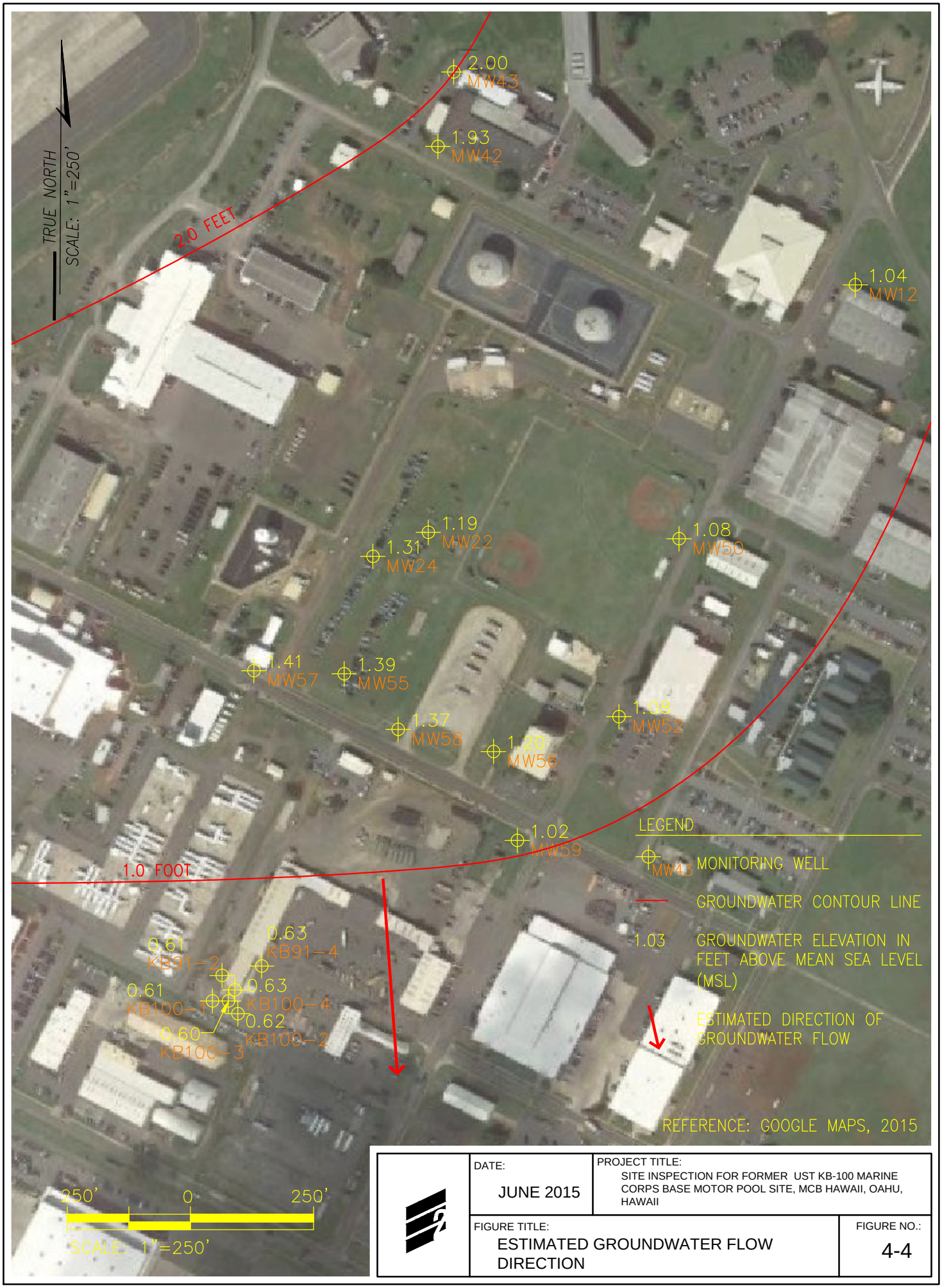


DATE: JUNE 2015	PROJECT TITLE: SITE INSPECTION FOR FORMER UST KB-100 MARINE CORPS BASE MOTOR POOL SITE, MCB HAWAII, OAHU, HAWAII	
FIGURE TITLE: TEMPORARY GROUNDWATER MONITORING WELL LOCATIONS		FIGURE NO.: 4-2



DATE: JUNE 2015	PROJECT TITLE: SITE INSPECTION FOR FORMER UST KB-100 MARINE CORPS BASE MOTOR POOL SITE, MCB HAWAII, OAHU, HAWAII	
FIGURE TITLE: PERMANENT GROUNDWATER MONITORING WELL LOCATIONS		FIGURE NO.: 4-3



	DATE: JUNE 2015	PROJECT TITLE: SITE INSPECTION FOR FORMER UST KB-100 MARINE CORPS BASE MOTOR POOL SITE, MCB HAWAII, OAHU, HAWAII
	FIGURE TITLE: ESTIMATED GROUNDWATER FLOW DIRECTION	FIGURE NO.: 4-4

4.3.8 Sample Designation and Labeling

The samples were assigned a field identification (ID) number (not revealed to the laboratory) and a unique EPA ID number (used on the chain-of-custody [COC] forms) in accordance with NAVFAC Pacific ERP *Procedure I-A-9, Sample Naming* (DON 2007). Table 4-4 lists the laboratory ID numbers assigned to the various soil and groundwater samples collected during this SI along with the associated Field ID, EPA ID, and sample description.

Table 4-4: Samples Collected at the Former UST KB-100 Site

E2 Field ID	EPA ID	Laboratory ID	Matrix	Sample Description
January 2015, Sample Delivery Group (SDG) 75351				
EKB100SI-S-D-TW1-01-A-6.5-7.0	EKB100001	AZ09545	Soil	Discrete Soil Sample from Boring TW-1
EKB100SI-S-D-TW2-01-A-6.0-6.5	EKB100002	AZ09546	Soil	Discrete Soil Sample from Boring TW-2
EKB100SI-S-D-TW3-01-A-6.0-6.5	EKB100003	AZ09547	Soil	Discrete Soil Sample from Boring TW-3
EKB100SI-S-D-TW4-01-A-6.0-6.5	EKB100004	AZ09548	Soil	Discrete Soil Sample from Boring TW-4
EKB100SI-S-D-TW5-01-A-5.5-6.0	EKB100005	AZ09549	Soil	Discrete Soil Sample from Boring TW-5
EKB100SI-S-D-TW5-02-D-5.5-6.0	EKB100006	AZ09550	Soil	Duplicate of Discrete Soil Sample from Boring TW-5
EKB100SI-S-D-TW6-01-A-7.0-7.5	EKB100007	AZ09551	Soil	Discrete Soil Sample from Boring TW-6
EKB100SI-S-D-TW7-01-A-5.5-6.0	EKB100008	AZ09552	Soil	Discrete Soil Sample from Boring TW-7 (MS/MSD Samples Collected)
EKB100SI-W-D-01-R	EKB100009	AZ09553	Water	Rinsate of Decontaminated Soil Sampling Equipment
EKB100SI-W-D-01-F	EKB100010	AZ09554	Water	Field Source Water Blank
January 2015, SDG 75427				
EKB100SI-W-D-TW1-01-A	EKB100011	AZ09997	Water	Groundwater Sample from TW-1
EKB100SI-W-D-TW2-01-A	EKB100012	AZ09998	Water	Groundwater Sample from TW-2
EKB100SI-W-D-TW6-01-A	EKB100013	AZ09999	Water	Groundwater Sample from TW-6
EKB100SI-W-D-TW6-02-D	EKB100014	AZ10000	Water	Duplicate of Groundwater Sample from TW-6
EKB100SI-W-D-TW3-01-A	EKB100015	AZ10001	Water	Groundwater Sample from TW-3
EKB100SI-W-D-TW7-01-A	EKB100016	AZ10002	Water	Groundwater Sample from TW-7
EKB100SI-W-D-TW5-01-A	EKB100017	AZ10003	Water	Groundwater Sample from TW-5
EKB100SI-W-D-TW4-01-A	EKB100018	AZ10004	Water	Groundwater Sample from TW-4
EKB100SI-W-D-KB1001-01-A	EKB100019	AZ10005	Water	Groundwater Sample from KB-100-1
EKB100SI-W-D-KB1002-01-A	EKB100020	AZ10006	Water	Groundwater Sample from KB-100-2 (MS/MSD Samples Collected)
EKB100SI-W-D-02-R	EKB100021	AZ10007	Water	Rinsate of Decontaminated Groundwater Sampling Equipment
March 2015, SDG 75798				
EKB100SI-W-D-KB1003-01-A	EKB100022	AZ12342	Water	Groundwater Sample from KB-100-3
EKB100SI-W-D-KB1004-01-A	EKB100023	AZ12343	Water	Groundwater Sample from KB-100-4

4.3.9 Sample Handling, Storage, and Shipping

Sample custody procedures were followed in accordance with those established in NAVFAC Pacific ERP *Procedure III-E, Record Keeping, Sample Labeling, and Chain-of-Custody Procedures*, and *Procedure III-F, Sample Handling, Storage, and Shipping Procedures* (DON 2007). The COC forms filled out for the samples collected during this SI are included in Appendix G.

4.3.10 Equipment Decontamination

Sample collection equipment that was reused was decontaminated prior to each use in accordance with NAVFAC Pacific ERP *Procedure I-F, Equipment Decontamination* (DON 2007) to minimize the potential for cross-contamination among sample depth intervals, sampling locations, and sites.

The field team decontaminated non-disposable sampling equipment with the following five-step process:

1. Sampling equipment was scrubbed with a nylon brush in a plastic 5-gallon bucket of Liquinox® detergent and potable water;
2. Sampling equipment was rinsed with a nylon brush in a plastic 5-gallon bucket of distilled water;
3. Sampling equipment was sprayed with isopropyl alcohol;
4. Sampling equipment was rinsed in a 5-gallon bucket of distilled water; and
5. Sampling equipment was sprayed with distilled water.

All consumable equipment (e.g., gloves, acetate sampling sleeves, etc.) and liquid and solid wastes (e.g., decontamination water, purge water, soil cuttings etc.) were handled in accordance with the investigation-derived waste (IDW) procedures described in Section 4.3.11 below.

4.3.11 Investigation-Derived Waste

IDW consists of all materials generated during the sampling that may be contaminated with COPCs. The field activities generated waste including, but not limited to, the following:

- Soil cuttings from discrete soil sampling and well installation,
- Well development water and purge water,
- Decontamination water, and
- Disposable personal protective equipment (PPE) and sampling equipment.

Soil cuttings, development/purge water, and decontamination water generated during field activities were drummed on site in steel 55-gallon open top drums. IDW drums were labeled in accordance with NAVFAC Pacific ERP *Procedure I-A-6, IDW Management, Section 5.4.3, Drum Labeling* (DON 2007). After being classified as non-hazardous waste, the drum contents will be disposed of by Motu Services, LLC in June 2015. The paperwork for the IDW generated during this project is currently being process by PVT landfill. Copies of the non-hazardous IDW manifests will be included in Appendix H.

Disposable PPE and sampling equipment (e.g., acetate drill rod sleeves, etc.) were not heavily soiled; therefore, they were rendered non-hazardous through physical removal of adhering gross soil. The PPE and disposable sampling equipment were collected in plastic trash bags and disposed of off-site as non-hazardous municipal waste.

All waste materials generated in the support zone were considered non-IDW trash and were properly disposed of as municipal waste.

4.3.12 Field Documentation

Field measurements and observations were documented in a project-dedicated field logbook with reference to borehole log sheets, well completion log sheets, well development log sheets, and groundwater well purge and sample collection log sheets. All field data was recorded into logs or entered into the field logbook. The field logbook was maintained in accordance with NAVFAC Pacific ERP *Procedure III-D, Logbooks* (DON 2007). The logbook was clearly identified with the name of the activity, person assigned responsibility for maintenance of the logbook, and the beginning and ending dates of the entries. Entries were recorded with indelible ink in chronological order and in sufficient detail to enable a reviewer to reconstruct pertinent events that occurred during the course of the fieldwork. The logbook served as the primary record of field activities and was maintained in good condition in a clean area. Entries on pre-printed data forms followed the same requirements as used in entering information into the logbook. Logbook entries from the field activities can be found in Appendix A.

The logbook contains a record of general field activities. Entries were signed or initialed by the individual making the entries at the end of each day. Page numbers were entered on each logbook page. The Field Team Leader (FTL) or designated field personnel scanned completed pages periodically and the logbook was reviewed on a regular basis during the course of the fieldwork.

After the completion of field activities, field data entered onto field logs (Appendix B) were converted into electronic format, and the logs were kept on file in E2's office (Appendices E and F). The project *WP* (E2 2014a) details the documentation and records procedures followed during this project.

4.3.13 Laboratory Documentation

The analytical laboratory (Agricultural Priority Pollutants Laboratories, Inc. [APPL]) provided fully documented data packages (or Sample Delivery Groups [SDGs]) that included a cover page, case narrative, results for field samples, results for associated QA/QC data, raw data, and chromatograms. Laboratory data package deliverables included electronic data deliverables (EDDs), using a template provided by NAVFAC Hawaii, and final hard copy deliverables. Analytical data was transferred directly using electronic versions of the data obtained from the analytical laboratory. Data was stored, organized, sorted, and queried using the database created for this project.

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Section 5 Site Inspection Findings

5.1 Capillary Fringe Soil Sampling

A total of seven (7) primary and one (1) duplicate discrete sub-surface soil samples were collected from within the boundaries of the Site. The discrete sub-surface soil samples were collected from a 0.5-foot interval near the approximate capillary fringe ranging in depth from about 5.5 to 7.5 feet bgs at the various boring locations. The soil samples were analyzed for the following COPCs:

- TPH-DRO/RRO (SW-846 8015C);
- VOCs (SW-846 8260B); and
- Total Lead (SW-846 6020A).

One (1) soil sample (EKB100007 from Boring TW-6) out of the eight (8) soil samples collected contained TCE and cis-1,2-DCE at concentrations that exceeded their associated HDOH Tier 1 Unrestricted EALs. The soil sample analytical results compared to the HDOH Tier 1 Unrestricted EALs are presented in Table 5-1. The PCE and TCE soil results are depicted on Figure 5-1. For the figures, the highest concentration detected in either the primary or field duplicate sample collected from a given location is shown. For the discrete soil samples:

- VOC compound TCE was detected in sample EKB100007 from Boring TW-6 at a concentration of 0.95 mg/kg, slightly exceeding the Tier 1 Unrestricted EAL of 0.26 mg/kg.
- VOC compound cis-1,2-DCE was detected in sample EKB100007 from Boring TW-6 at a concentration of 0.9 mg/kg, slightly exceeding the Tier 1 Unrestricted EAL of 0.31 mg/kg.
- All other analyte detections above laboratory DLs were below the analyte's associated Tier 1 Unrestricted EAL.

The complete analytical laboratory reports are summarized in Appendix I and contained in their entirety in Appendix J (presented on compact disc-read only memory [CD-ROM]).

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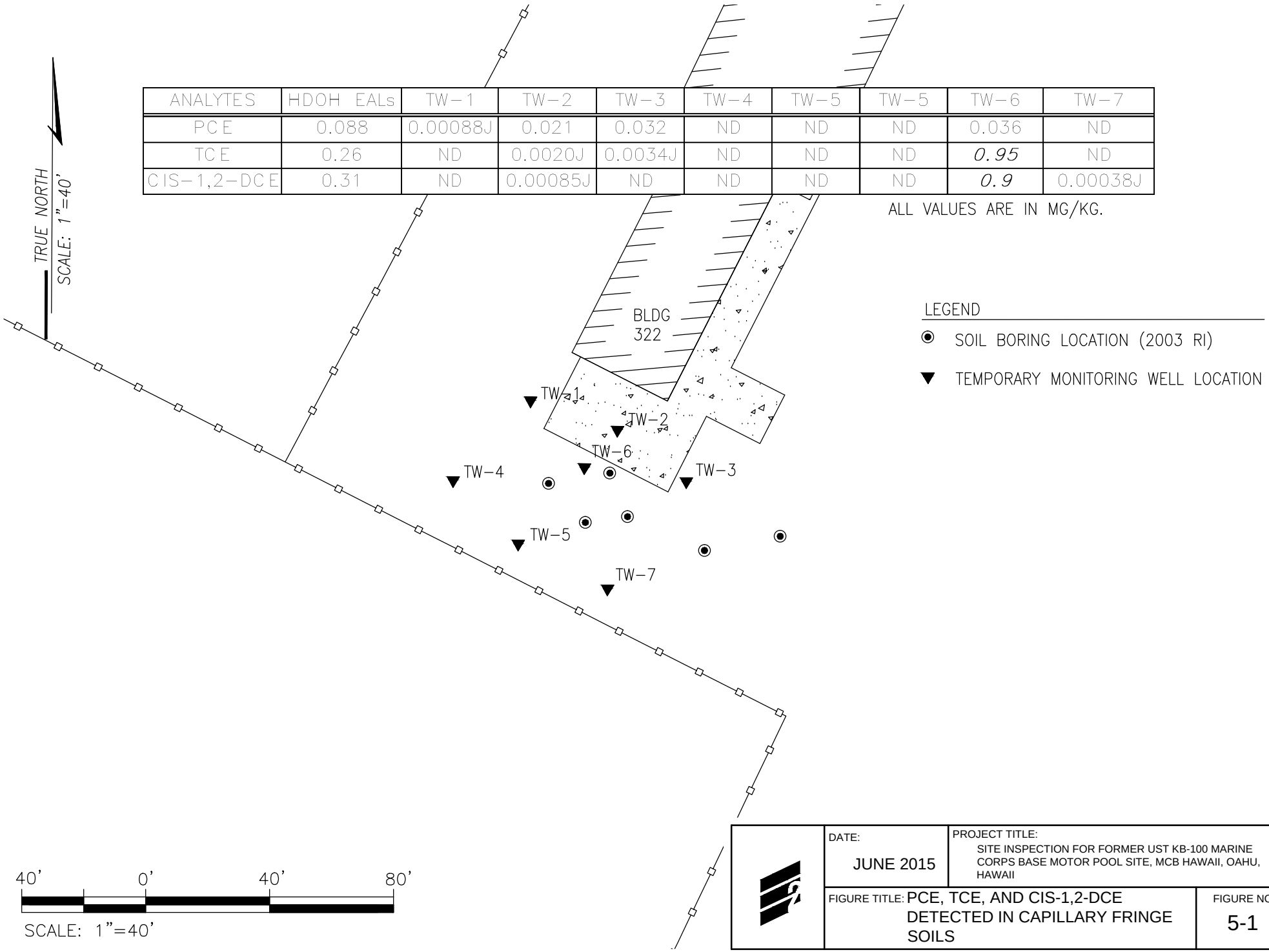
ANALYTES	HDOH EALs	TW-1	TW-2	TW-3	TW-4	TW-5	TW-5	TW-6	TW-7
PCE	0.088	0.00088J	0.021	0.032	ND	ND	ND	0.036	ND
TCE	0.26	ND	0.0020J	0.0034J	ND	ND	ND	*0.95*	ND
CIS-1,2-DCE	0.31	ND	0.00085J	ND	ND	ND	ND	*0.9*	0.00038J

ALL VALUES ARE IN MG/KG.



	DATE: JUNE 2015	PROJECT TITLE: SITE INSPECTION FOR FORMER UST KB-100 MARINE CORPS BASE MOTOR POOL SITE, MCB HAWAII, OAHU, HAWAII
	FIGURE TITLE: PCE, TCE, AND CIS-1,2-DCE DETECTED IN CAPILLARY FRINGE SOILS	FIGURE NO.: 5-1

Table 5-1: January 2015 Soil Sample Analytical Results compared to HDOH Tier 1 Unrestricted EALs

Analyte	HDOH Tier 1 EALs[1]	Boring TW-1	Boring TW-2	Boring TW-3	Boring TW-4	Boring TW-5	Boring TW-5 (Dup)	Boring TW-6	Boring TW-7
	EKB100:	**001**	**002**	**003**	**004**	**005**	**006**	**007**	**008**
TPH (EPA 8015C)									
TPH-DRO	500	ND	ND	ND	ND	ND	ND	ND	16
TPH-LRO/RRO	500	ND	ND	ND	ND	ND	ND	ND	74
VOCs (EPA 8260B)									
Ethylbenzene	21	0.0073	0.0045	0.0030 J	0.0019 J	ND	ND	ND	ND
Xylenes	45	0.0028 J	0.0022 J	0.0016 J	0.0012 J	0.0018 J	0.00057 J	0.00092 J	0.0021 J
Toluene	32	ND	ND	ND	ND	0.0026 J	ND	ND	0.0026 J
Acetone	1.0	ND	ND	ND	ND	0.0088 J	0.011 J	0.043 J	0.016 J
2-Butanone (MEK)	15	ND	ND	ND	ND	ND	0.041 J	0.01 J	0.0055 J
Tetrachloroethylene (PCE)	0.088	0.00088 J	0.021	0.032	ND	ND	ND	0.036	ND
Trichloroethylene (TCE)	0.26	ND	0.0020 J	0.0034 J	ND	ND	ND	**0.95**	ND
Cis-1,2-Dichloroethylene (DCE)	0.31	ND	0.00085 J	ND	ND	ND	ND	**0.9**	0.00038 J
Trans-1,2-Dichloroethylene (DCE)	2.7	ND	ND	ND	ND	ND	ND	0.14	ND
Vinyl Chloride	0.072	ND	ND	ND	ND	ND	ND	0.02	ND
Metals (EPA 6020A)									
Total Lead	200	0.13	0.27	0.46	3.6	12.2	17.7	0.33	0.37

Notes:
All results presented in mg/kg
J - Indicates an estimated value.
ND - Indicates the compound or analyte was analyzed for, but not detected at or above the stated limit.
Red Boldface - Indicates the results exceed the HDOH Tier 1 EAL
[1]HDOH Tier 1 Unrestricted EALs, Environmental Management Division, Fall 2011. Sites for unrestricted use with groundwater that is not a current or potential source of drinking water and the nearest surface water body is more than 150 meters away (Table B-1).

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5.2 Temporary Groundwater Well Sampling

Groundwater samples were collected from the seven (7) temporary monitoring wells and the two (2) existing monitoring wells in January 2015. One groundwater sample was collected from each well and analyzed for the following COPCs:

- TPH-DRO/RRO (SW-846 8015C);
- VOCs (SW-846 8260B); and
- Total Lead (SW-846 6020A).

The groundwater analytical results obtained from the existing and temporary monitoring wells indicated the following:

- VOC compound vinyl chloride was detected in both the primary and field duplicate groundwater samples collected from temporary monitoring well TW-6 at concentrations of 230 and 240 µg/L, respectively, exceeding the Tier 1 Unrestricted EAL of 62 µg/L.

- All other analyte detections above laboratory DLs in the shallow groundwater samples collected from the existing and temporary monitoring wells were below the analyte's associated Tier 1 Unrestricted EAL.

The PCE, TCE, cis-1,2-DCE, and vinyl chloride groundwater sample analytical results from the seven (7) temporary monitoring wells installed in January 2015 and the two (2) existing monitoring wells are summarized in Table 5-2 and depicted on Figures 5-2 through 5-5, respectively.

5.3 Permanent Groundwater Well Sampling

Groundwater samples were collected from the two (2) new permanent four-inch diameter monitoring wells installed at the Site in March 2015 (KB-100-3 and KB-100-4). One sample was collected from each permanent well and analyzed for the following COPCs:

- TPH-DRO/RRO (SW-846 8015C);
- VOCs (SW-846 8260B); and
- Total Lead (SW-846 6020A).

The groundwater analytical results obtained from the permanent monitoring wells indicated the following:

- VOC compound vinyl chloride was detected in the groundwater sample collected from permanent monitoring well KB-100-4 at a concentration of 62 µg/L, which equals the Tier 1 Unrestricted EAL of 62 µg/L.

- All other analyte detections above laboratory DLs in the shallow groundwater samples collected from the permanent monitoring wells were below the analyte's associated Tier 1 Unrestricted EAL.

The PCE and TCE groundwater sample analytical results obtained from the two (2) permanent four-inch diameter monitoring wells installed in March 2015 are summarized in Table 5-3 and depicted on Figures 5-2 and 5-3.

Table 5-2: January 2015 Groundwater Sample Analytical Results compared to HDOH Tier 1 Unrestricted EALs

Analyte	HDOH Tier 1 EALs[1]	TW-1	TW-2	TW-3	TW-4	TW-5	TW-6	TW-6 (Duplicate)	TW-7	KB-100-1	KB-100-2
	EKB100:	**011**	**012**	**015**	**018**	**017**	**013**	**014**	**016**	**019**	**020**
TPH (EPA 8015C)											
TPH-DRO	2,500	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
TPH-LRO/RRO	2,500	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
VOCs (EPA 8260B)											
Ethylbenzene	300	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Xylenes	1,000	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Toluene	400	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Acetone	1,500	1.5 J	8.2 J	ND	ND	ND	ND	ND	ND	ND	ND
2-Butanone (MEK)	14,000	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Tetrachloroethylene (PCE)	180	ND	2.2	1.2	ND	ND	25	26	ND	0.4 J	0.35 J
Trichloroethylene (TCE)	610	ND	2.9	0.3 J	ND	0.2 J	30	30	0.3 J	2.7	0.64 J
Cis-1,2-Dichloroethylene (DCE)	1,100	3.1	8.4	23	0.28 J	0.56 J	230	220	0.84 J	160	87
1,1-Dichloroethene	47	ND	ND	ND	ND	ND	0.45 J	0.41 J	ND	1.1	ND
Trans-1,2-Dichloroethylene (DCE)	2,600	ND	7.9	26	0.3 J	0.25 J	150	140	0.47 J	50	46
Vinyl Chloride	62	ND	ND	0.47 J	ND	ND	**240**	**230**	ND	22	38
Metals (EPA 6020A)											
Total Lead	29	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND

Notes:
All results presented in µg/L
J - Indicates an estimated value.
ND - Indicates the compound or analyte was analyzed for, but not detected at or above the stated limit.
Red Boldface - Indicates the results exceed the HDOH Tier 1 EAL
[1]HDOH Tier 1 Unrestricted EALs, Environmental Management Division, Fall 2011. Sites for unrestricted use with groundwater that is not a current or potential source of drinking water and the nearest surface water body is more than 150 meters away (Table D-1d).

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Table 5-3: March 2015 Groundwater Sample Analytical Results compared to HDOH Tier 1 Unrestricted EALs

Analyte	HDOH Tier 1 EALs[1]	KB-100-3	KB-100-4
	EKB100:	022	023
TPH (EPA 8015C)			
TPH-DRO	2,500	ND	ND
TPH-LRO/RRO	2,500	ND	ND
VOCs (EPA 8260B)			
Ethylbenzene	300	ND	ND
Xylenes	1,000	ND	ND
Toluene	400	ND	ND
Acetone	1,500	ND	ND
2-Butanone (MEK)	14,000	ND	ND
Tetrachloroethylene (PCE)	180	3.6	5.5
Trichloroethylene (TCE)	610	22	1.2
Cis-1,2-Dichloroethylene (DCE)	1,100	200 E	1.1
1,1-Dichloroethene	47	ND	ND
Trans-1,2-Dichloroethylene (DCE)	2,600	81	0.57 J
Vinyl Chloride	62	**62**	ND
Metals (EPA 6020A)			
Total Lead	29	ND	ND

Notes:
All results presented in µg/L
J - Indicates an estimated value.
ND - Indicates the compound or analyte was analyzed for, but not detected at or above the stated limit.
Bold and Red - Indicates the results exceed (or equates) the HDOH Tier 1 EAL
[1]HDOH Tier 1 Unrestricted EALs, Environmental Management Division, Fall 2011. Sites for unrestricted use with groundwater that is not a current or potential source of drinking water and the nearest surface water body is more than 150 meters away (Table D-1d).

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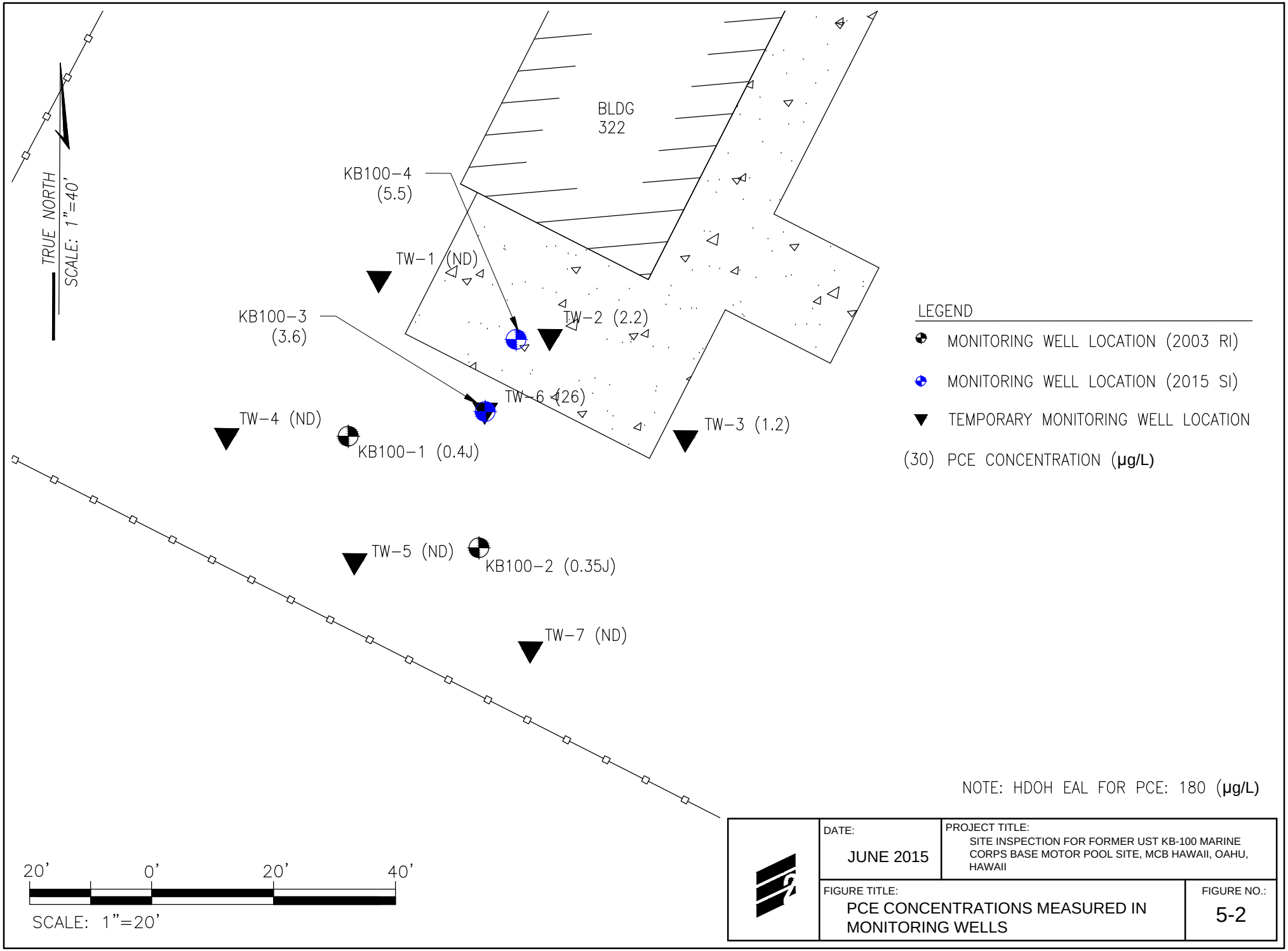
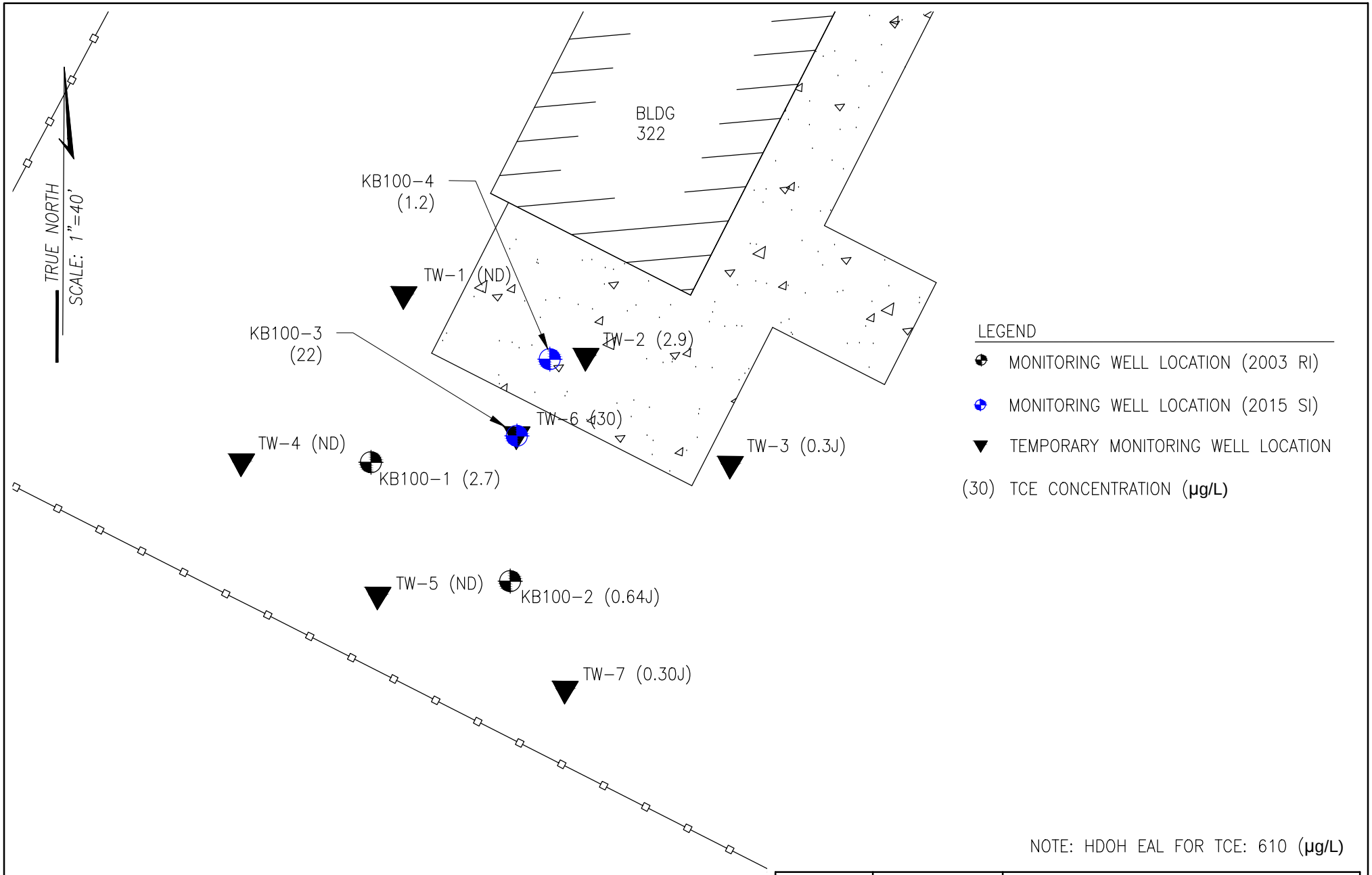
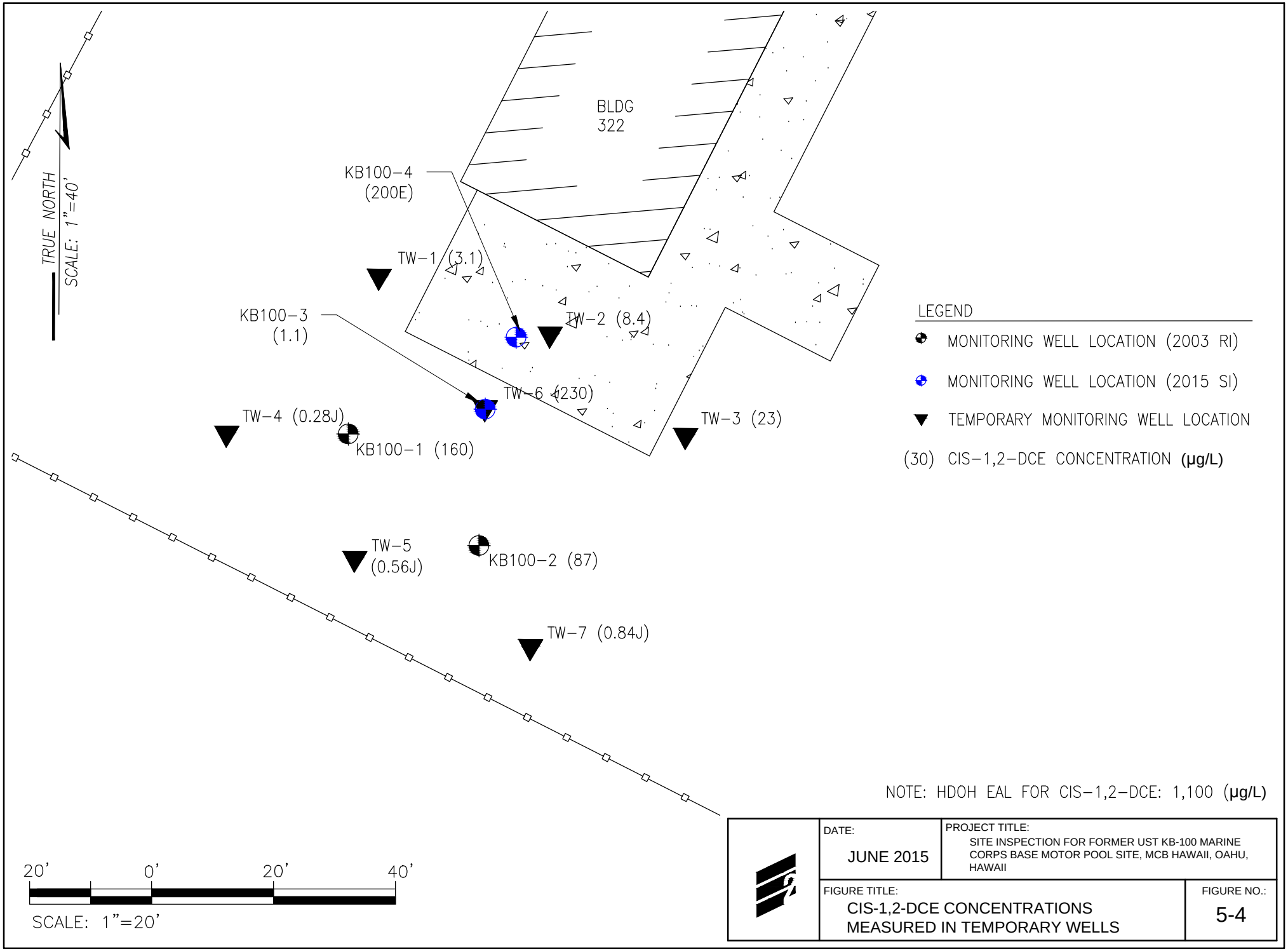


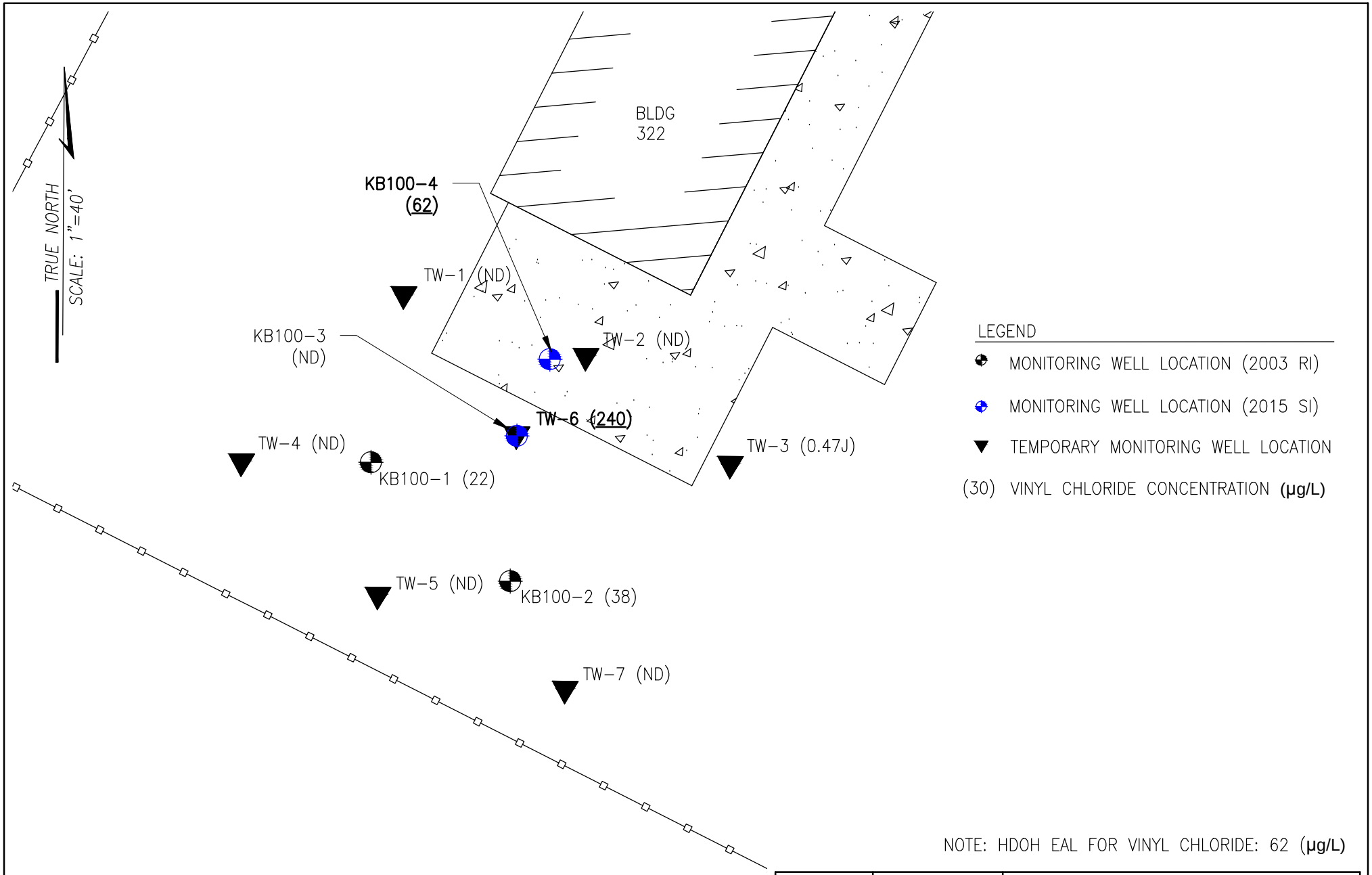
	DATE: JUNE 2015	PROJECT TITLE: SITE INSPECTION FOR FORMER UST KB-100 MARINE CORPS BASE MOTOR POOL SITE, MCB HAWAII, OAHU, HAWAII
	FIGURE TITLE: PCE CONCENTRATIONS MEASURED IN MONITORING WELLS	FIGURE NO.: 5-2



	DATE: JUNE 2015	PROJECT TITLE: SITE INSPECTION FOR FORMER UST KB-100 MARINE CORPS BASE MOTOR POOL SITE, MCB HAWAII, OAHU, HAWAII
	FIGURE TITLE: TCE CONCENTRATIONS MEASURED IN MONITORING WELLS	FIGURE NO.: 5-3



	DATE: JUNE 2015	PROJECT TITLE: SITE INSPECTION FOR FORMER UST KB-100 MARINE CORPS BASE MOTOR POOL SITE, MCB HAWAII, OAHU, HAWAII
	FIGURE TITLE: CIS-1,2-DCE CONCENTRATIONS MEASURED IN TEMPORARY WELLS	FIGURE NO.: 5-4



DATE: JUNE 2015	PROJECT TITLE: SITE INSPECTION FOR FORMER UST KB-100 MARINE CORPS BASE MOTOR POOL SITE, MCB HAWAII, OAHU, HAWAII	
FIGURE TITLE: VINYL CHLORIDE CONCENTRATIONS MEASURED IN TEMPORARY WELLS		FIGURE NO.: 5-5

5.4 Conceptual Site Model

The Conceptual Site Model (CSM) for the Site is presented on Figure 5-6 and is briefly discussed in this section. The CSM identifies potential exposure pathways for the ecological and human receptors that were evaluated during this SI.

The CSM is based on anecdotal information provided by Mr. Jeff Larson, MCB Hawaii Environmental, as well as observations made by E2 personnel at the Site during the site reconnaissance conducted in July 2013 and the environmental data collected during this SI. Information recorded during the 1999 UST removal investigation (MKC 1999), the 2003 RI (WCP 2003), subsequent groundwater monitoring events (WCP 2007, 2008a, 2008b, 2008c), and the Release Response Report that contained results for the groundwater monitoring event held in June 2009 (WCP 2011) was also considered. Previous investigations (MKC 1999, WCP 2011) have concluded that the contamination present at the Site is not likely due to leakage from the former UST KB-100.

The major contaminants detected in the groundwater at the site include three VOCs – tetrachloroethylene (PCE), trichloroethylene (TCE), and vinyl chloride – rather than the motor oil/diesel contamination that would have arisen from historic leakage of the former UST. Mr. Larson was not aware of prior activity in the vicinity of the project site that would have contributed to the presence of the observed VOC contamination, other than the possibility that these chemicals were dumped in the adjacent concrete washdown area to the north at some point in the past and seeped through the concrete. An IAS of MCB Hawaii conducted in 1983 mentioned that mechanics and other utility workers at the MCB Hawaii auto shop may have used certain chlorinated solvents or degreasers (Luecker et al. 1984).

UST KB-100 was excavated and removed from the Site in 1997. No obvious sources of ongoing contamination were observed at the Site during the two site reconnaissance visits or were identified by MCB Hawaii environmental personnel (Mr. Jeff Larson and Mr. Bill Otto, the Facility Supervisor) during discussions about the current activities conducted at the project site. Because the source of the contamination at the Site is believed to no longer be active, the CSM focuses on secondary sources (i.e., surface and subsurface soil contamination) and release mechanisms when evaluating potential pathways for exposure to human and ecological receptors. Based on the potential release of petroleum, VOCs, and metals from historic practices at the project site, the list of COPCs for the SI included:

- Total Petroleum Hydrocarbon (TPH) - Diesel Range Organics (DRO) [C_{12} thru C_{24}], and Residual Range Organics (RRO) [$>C_{24}$];
- Volatile Organic Compounds (VOCs) - includes a wide range of VOCs such as Benzene, Toluene, Ethylbenzene and Xylenes (BTEX) and solvents such as 1,1,1-Trichloroethane, PCE, TCE, Vinyl Chloride, and Carbon Tetrachloride; and
- Total Lead.

The suite of analyses evaluated was appropriate for this Site based on historic sampling information and site use. Contamination of site soil from historic use appears to have been minimal; the concentrations of COPCs detected in site soils during the 2003 RI did not

exceed the HDOH Tier 1 EALs (Table 1-4). However, historic groundwater monitoring detected vinyl chloride and PCE at concentrations that exceed HDOH Tier 1 EALs (Tables 1-5 and 1-6). Polynuclear aromatic hydrocarbons (PAHs) and cadmium were excluded from the COPCs since there were no Tier 1 EAL exceedances of these constituents during the 2003 RI (Table 1-4) and during subsequent rounds of groundwater sampling conducted between 2003 and 2009 (Tables 1-5 and 1-6). The focus of the current SI was chlorinated solvents (i.e., PCE, TCE, vinyl chloride) detected in groundwater at the Site during several previous rounds of groundwater monitoring. The facility surrounding the former UST KB-100 site is still in use by civilian base personnel.

As shown on Figure 5-6, the receptors that have potentially complete exposure pathways include on-site occupational workers (i.e., Motor Pool personnel) and on-site construction workers. Potential transport mechanisms to be considered include direct contact, air transport, and leaching to groundwater. Potential complete exposure routes include incidental ingestion and dermal contact with soil. Inhalation of VOCs and particulates is not a concern since the Site is open and there are no enclosed structures present at the Site.

5.5 Screening Human Health Risk Assessment

A screening human health risk assessment was completed to evaluate the risks posed by the COPCs detected at the Site. Soil sample results from the current SI, which are summarized in Sections 5.1 and 5.2, determined that trace, sub-part per million levels of PCE and TCE exist within the site soils near the capillary fringe (between 5.5 to 7.5 feet bgs) at concentrations ranging from ND to 0.036 mg/kg and ND to 0.95 mg/kg, respectively. The groundwater sample results did not indicate elevated levels of the COPCs in the groundwater underlying the former UST KB-100 site, with the exception of a single exceedance of vinyl chloride (a degradation product) measured in temporary well TW-6.

5.5.1 Tier 1 Environmental Hazard Evaluation

The preliminary screening evaluation considered the soil and groundwater data collected during this SI. The HDOH Tier 1 EALs for an unrestricted land use scenario were conservatively selected for the initial screening evaluation. Based upon the characteristics of the Site, the Tier 1 EALs for sites with groundwater that is not a current or potential source of drinking water and with a surface water body more than 150 meters away were used in the screening. Due to the depth to the residual contamination detected in the shallow groundwater and capillary fringe soils, direct exposure pathways for ecological receptors are not considered to be complete.

Hazards were evaluated utilizing the December 2011 revision of the HDOH Tier 1 EAL tables (HDOH 2011). This assessment compares the highest COPC concentrations to the Tier 1 Unrestricted EALs while considering only limited site-specific conditions. The discrete sub-surface soil sample results, as well as the groundwater sample results that contained analytes exceeding the Tier 1 EALs, are highlighted in Tables 5-1 and 5-2, respectively.

The primary COPCs detected in the discrete soil samples are TCE and cis-1,2-DCE. TCE and cis-1,2-DCE contamination was encountered only in sub-surface soils located near the center of the Site (Figure 5-1). Based on the likely nature of the contaminant deposition (i.e., localized releases) and the sub-surface soil sample results, the trace levels of solvents encountered at the Site are suspected to be localized around a "hot-spot" area near boring TW-6. The solvent contamination detected at the Site is suspected to have originated from the area just north of the former UST KB-100 near the edge of the adjacent former vehicle wash rack.

Trace levels of solvents were also detected in the shallow groundwater near the center of the Site. However, groundwater monitoring conducted at the Site since 2003 suggests that the low levels of solvents at the Site are undergoing natural attenuation, have not migrated any significant distance from the former UST KB-100 site, and do not threaten any existing drinking water sources.

5.6 Summary of Current Site Risks

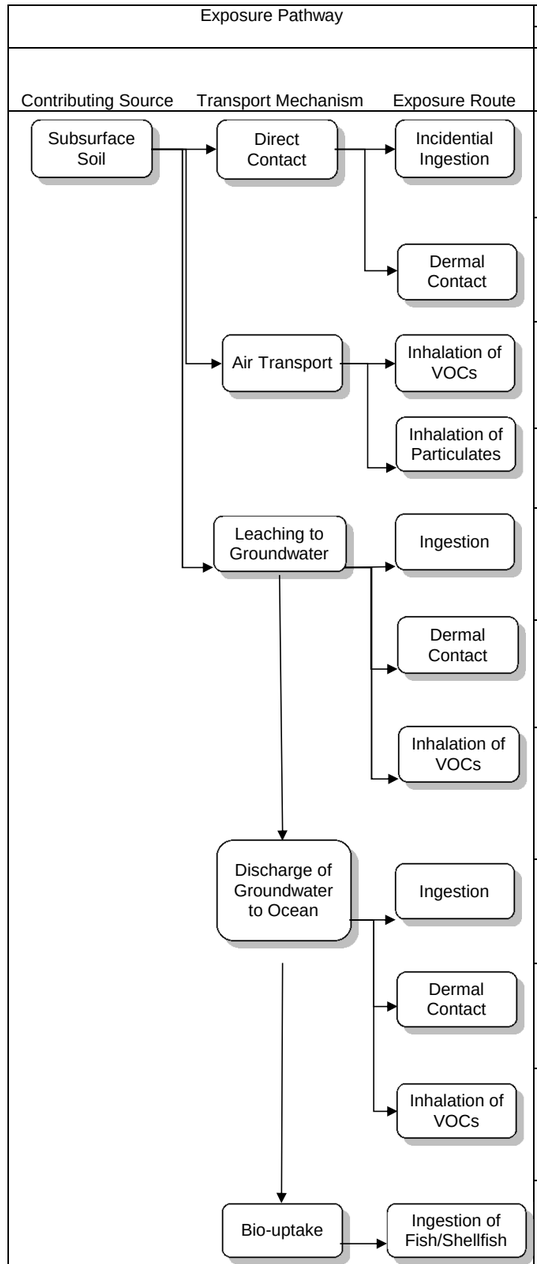
The discrete soil sample data indicates that trace levels of solvents are confined to a limited area near the center of the Site. The capillary fringe soil at TW-6 contained levels of TCE and cis-1,2-DCE (0.95 mg/kg and 0.90 mg/kg, respectively) that slightly exceeded the Tier 1 EALs (0.26 mg/kg and 0.31 mg/kg, respectively). Previous investigations indicate that the soil contamination at the Site is largely confined to the capillary fringe. This SI delineated the extent of sub-surface solvent (PCE and DCE) contamination to cover a limited area of approximately 400 square feet centered around TW-6 (Figures 5-2 and 5-3, respectively). The lateral extent of contamination is estimated to be limited to a roughly one-foot thick depth horizon corresponding to the capillary fringe at the Site. This yields an estimated total volume of contaminated soil of around 400 cubic feet, or roughly 15 cubic yards. Because of the limited volume and lateral extent of soil contamination present at the Site, no additional follow-on soil sampling is required.

Although the soil sample results were compared to the Tier 1 EALs for unrestricted use, the current site use is industrial (motor pool) and the soil and groundwater contamination is greater than 6 feet bgs. Thus, the direct exposure action levels for the construction/trench worker exposure scenario (Table I-3) are more appropriate for the conditions present at the Site. The Tier 1 EALs for TCE and cis-1,2-DCE for the construction/trench worker are 27.4 mg/kg and 320 mg/kg, respectively. The trace levels of solvents that remain at the Site are significantly lower than these construction/trench worker exposure EALs.

In summary, the analytical data collected during this SI, as well as the risk screening of this data, suggest that the residual contamination present at the Site from historic releases of solvents due to past site practices do not pose an unacceptable risk to human health under current site use conditions. Since the soil and groundwater contamination at the Site is encountered at depths of greater than six feet bgs, there are no complete exposure pathways for potential ecological receptors. The groundwater data collected from the temporary wells installed during this EHE indicate that the solvent contamination has not migrated any significant distance at the Site. In addition, the historic groundwater data collected at the Site

since 2003 indicates that the low levels of solvent contamination are slowly decreasing as a result of natural degradation processes. These observations in addition to the absence of nearby drinking water sources to the Site indicate that the low residual levels of solvents that remain in Site groundwater do not pose a risk to human or ecological receptors.

FIGURE 5-6
CONCEPTUAL SITE MODEL
UST KB-100 MOTOR POOL SITE
MARINE CORPS BASE HAWAII, KANEOHE, HAWAII



Exposure Pathway	Receptors					
	Current Land Use		Future Land Use			
Contributing Source / Transport Mechanism / Exposure Route	Onsite Occupational Workers	Ecological Receptors	Onsite Occupational Workers	Onsite Construction Workers	Ecological Receptors	Rationale
Subsurface Soil / Direct Contact / Incidential Ingestion	Incomplete	Incomplete	Incomplete	Potentially Complete	Incomplete	Incomplete for occupational workers users who will not come into direct contact with subsurface soils. Potentially complete for construction workers because possible excavation activities could allow direct contact and thus possible ingestion of subsurface soils. Incomplete for ecological receptors who will not come into direct contact with subsurface soils.
Subsurface Soil / Direct Contact / Dermal Contact	Incomplete	Incomplete	Incomplete	Potentially Complete	Incomplete	Incomplete for occupational workers and who will not come into direct contact with subsurface soils. Potentially complete for construction workers because possible excavation activities could allow direct contact and thus possible ingestion of subsurface soils. Incomplete for ecological receptors who will not come into direct contact with subsurface soils.
Subsurface Soil / Air Transport / Inhalation of VOCs	Insignificant	Insignificant	Insignificant	Potentially Complete	Insignificant	Air transport and inhalation of VOCs by onsite construction workers is potentially complete should the subsurface soil become exposed during excavation activities. Vapor intrusion at Site is potentially complete, but insignificant due to the open nature of the Site (i.e. no confined space). Ecological receptor exposure is insignificant compared to other pathways.
Subsurface Soil / Air Transport / Inhalation of Particulates	Incomplete	Incomplete	Incomplete	Potentially Complete	Incomplete	Air transport and inhalation of particulates by onsite construction workers is potentially complete should the subsurface soil become exposed during excavation activities. Incomplete for occupational workers and ecological receptors who would not be exposed to particulates from subsurface soils.
Subsurface Soil / Leaching to Groundwater / Ingestion	Incomplete	Incomplete	Incomplete	Potentially Complete	Incomplete	Incomplete for occupational workers and ecological receptors because there is no point of exposure such as a spring and groundwater is at a depth of 7.5 feet bgs, and shallow groundwater is not a current or likely future source of drinking water. Potentially complete for future construction workers during excavation activities because groundwater contamination is present on-site.
Subsurface Soil / Leaching to Groundwater / Dermal Contact	Incomplete	Incomplete	Incomplete	Potentially Complete	Incomplete	Incomplete for occupational workers and ecological receptors because there is no point of exposure such as a spring and groundwater is at a depth of 7.5 feet bgs, and shallow groundwater is not a current or likely future source of drinking water. Potentially complete for future construction workers during excavation activities because groundwater contamination is present on-site.
Subsurface Soil / Leaching to Groundwater / Inhalation of VOCs	Insignificant	Incomplete	Insignificant	Potentially Complete	Incomplete	Insignificant for occupational users and ecological receptors because there is no point of exposure such as a spring and groundwater is at a depth of 7.5 feet bgs, and shallow groundwater is not a current or likely future source of drinking water. Potentially complete for future construction workers during excavation activities because groundwater contamination is present on-site. Vapor intrusion into Building 322 is potentially complete.
Subsurface Soil / Leaching to Groundwater / Discharge of Groundwater to Ocean / Ingestion	Incomplete	Insignificant	Incomplete	Incomplete	Insignificant	Incomplete for occupational and construction workers because no coastline is present onsite and the closest coastline is not utilized by these workers. Insignificant for ecological receptors due to the great distance to the shoreline.
Subsurface Soil / Leaching to Groundwater / Discharge of Groundwater to Ocean / Dermal Contact	Incomplete	Insignificant	Incomplete	Incomplete	Insignificant	Incomplete for occupational and construction workers because no coastline is present onsite and the closest coastline is not utilized by these workers. Insignificant for ecological receptors due to the great distance to the shoreline.
Subsurface Soil / Leaching to Groundwater / Discharge of Groundwater to Ocean / Inhalation of VOCs	Incomplete	Insignificant	Incomplete	Incomplete	Insignificant	Incomplete for occupational workers and construction workers because no coastline is present onsite and the closest coastline is not utilized by these workers. Insignificant for ecological receptors due to the great distance to the shoreline.
Subsurface Soil / Leaching to Groundwater / Discharge of Groundwater to Ocean / Bio-uptake / Ingestion of Fish/Shellfish	Incomplete	Insignificant	Incomplete	Incomplete	Insignificant	Incomplete for the current and future onsite workers, construction workers and recreational users because the shoreline near the site is not used for recreational fishing. Insignicant for marine benthic organisms (fish and shellfish) inhabiting sediments off the nearshore environment because of the great distance to the shoreline.

Section 6 Quality Control and Validation

6.1 Quality Assurance and Quality Control

Field data and analytical laboratory data were reviewed and verified to ensure that the data presented in this report reflect what was actually done and fulfill applicable requirements in the Department of Defense (DoD) Quality Systems Manual (QSM) for Environmental Laboratories, Version 5.0 July 2013 (DoD 2013) and the project *WP* (E2 2014a). Soil and groundwater samples were analyzed by APPL located in Clovis, California, and validated by Laboratory Data Consultants, Inc. (LDC) located in Carlsbad, California. Laboratory data review and verification is described below in Section 6.3. Following laboratory generation, review, and submittal of the analytical results, the data were reviewed and verified in-house by the project chemist, as described in Section 6.4.

The field duplicate and laboratory QC samples were reviewed and verified against the criteria specified in the DoD QSM and against in-house laboratory criteria when applicable criteria were not available in the DoD QSM. QC results for laboratory analyses were evaluated for all soil and groundwater data collected as part of this SI from January to March 2015.

6.2 Analytical Laboratory Review

The analytical laboratory reviewed data as follows:

- The analyst performing the analyses reviewed 100 percent of the data.
- The analyst review was followed by a 100 percent review by a peer or senior section analyst.
- The laboratory QA section performed a complete review of 10 percent of the data.
- The laboratory project manager performed a final review on all completed data deliverables.

6.3 Data Validation

Analytical data was validated at 100 percent normal validation and at 10 percent full validation, which is an intensive review of the data that requires the validator to recalculate concentrations from the raw data generated by the laboratory. Deliverables for full validation efforts include validated data, validation reports, and a Data Quality Analysis Report. Validated data consisted of Contract Laboratory Program (CLP)-equivalent forms with associated qualifiers and qualification codes. Validation reports included a case narrative describing discrepancies or anomalies in the data and the validated data themselves. Summaries of the three Data Validation Reports (DVRs) are summarized in Table 6-1 below, while the full DVRs can be found in Appendix K (on CD-ROM).

Table 6-1: Data Validation Reports Summary

LDC Project #	APPL SDG #	Description	Sample IDs
33690	75351	Discrete soil samples from 7 borings (converted into temporary monitoring wells), and source water and decontaminated soil sampling equipment rinsate water samples	EKB100001 – EKB100010
33725	75427	Groundwater samples from 7 temporary and 2 existing monitoring wells, and decontaminated groundwater sampling equipment rinsate water sample	EKB100011 – EKB100021
34041	75798	Groundwater samples from 2 permanent monitoring wells	EKB100022 – EKB100023

6.4 Data Verification and Review

The project chemist and subcontractor data evaluators verified the analytical data as follows:

- The APPL laboratory hard copy deliverables (Appendix J) were compared to the laboratory EDD to verify consistency among deliverables.
- The APPL laboratory data were reviewed against the DoD QSM criteria and against in-house laboratory criteria when criteria were not available in the DoD QSM. APPL laboratory data were also reviewed for consistency with the field records (COC forms and field logs) and the field QC samples.
- Data validation was performed by LDC. The full DVRs and the Data Quality Assessment Report (DQAR) can be found in Appendix K and L, respectively.

6.4.1 Assessment Parameters

The review of laboratory data performed by LDC followed the U.S. Navy ERP, including *Procedure II-A, Data Validation Procedure and Procedure II-S, Data Quality Assessment Report Procedure* (DON 2007) and the U.S. DoD QSM for Environmental Laboratories, Version 5.0 (July 2013), as well as the requirements outlined in the *WP* for this project (E2 2014a). The laboratory data review assessed the following parameters:

- Sample review
- Technical holding times
- Gas Chromatography/Mass Spectrometer (GC/MS) instrument performance check
- Initial calibration
- Continuing calibration
- Blanks
- Surrogate spikes
- MS/MSDs

- Laboratory control samples (LCSs)
- Internal standards
- Target compound identifications
- Compound quantitation and Contract Required Quantitation Limits (CRQLs)
- Field duplicates
- Field triplicates

6.4.2 Overall Assessment of Data

The analysis was conducted within all specifications of the methods. Some results were rejected in all three of the SDGs. In addition, some exceptions were encountered that render some of the data qualified as an estimated value (see Section 6.4.3 below).

6.4.3 Data Validation Summary

A summary of the data validation exceptions discovered during review of the analytical laboratory data collected during this SI is summarized in Table 6-2 below.

Table 6-2: Data Validation Exceptions Summary

SDG	Sample IDs	Compound	Flag	A or P	Reason
75351	EKB100008	cis-1,3-dichloropropene Styrene	UJ (all NDs)	A	MS/MSD %R
75351	EKB100008	Chloromethane Vinyl chloride	UJ (all NDs)	A	MS/MSD RPD
75351	EKB100007	cis-1,2-dichloroethene Trichloroethene	R	A	Overall assessment of data (%D)
75427	EKB100020	cis-1,2-dichloroethene trans-1,2-dichloroethene Vinyl chloride	J (all detects)	A	Duplicate %R (Q)
75427	EKB100013	cis-1,2-dichloroethene Vinyl chloride	R	A	Overall assessment of data (%D)
75427	EKB100014	cis-1,2-dichloroethene trans-1,2-dichloroethene Vinyl chloride	R	A	Overall assessment of data (%D)
75427	EKB100019	cis-1,2-dichloroethene	R	A	Overall assessment of data (%D)
75427	All samples for TPH-LRO	TPH-LRO	-	-	LCS recovery high at 120%
75798	EKB100022, EKB100023, Trip Blank	Vinyl chloride Chloroform	J (all detects) UJ (all NDs)	A	Initial calibration %RSD
75798	EKB100022	cis-1,2-dichloroethene	R	A	Overall assessment of data (%D)

Notes:

J (Estimated): The compound or analyte was analyzed for and positively identified by the laboratory; however, the reported concentration is estimated due to non-conformances discovered during data validation.

U (Non-detect): The compound or analyte was analyzed for and positively identified by the laboratory; however the analyte should be considered non-detect at the reported concentration due to the presence of contaminants detected in the associated blank(s).

UJ (Non-detected estimated): The compound or analyte was reported as not detected by the laboratory; however the reported quantitation/detection limit is estimated due to non-conformances discovered during data validation.

R (Rejected): The sample results were rejected due to gross non-conformances discovered during data validation. Data qualified as rejected is not usable.

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Section 7 Conclusions

7.1 Summary

A SI was completed to investigate the residual soil and groundwater contamination present at the former UST KB-100 Marine Corps Base Motor Pool site and to assess potential threats to human health and the environment. Seven boreholes were drilled around the former UST KB-100 from which soil samples were collected from the capillary fringe and temporary monitoring wells installed. One of the seven primary capillary fringe soil samples collected from boring TW-6 contained TCE and cis-1,2-DCE at concentrations that slightly exceeded their associated HDOH Tier 1 Unrestricted EALs. All other analyte detections in the capillary fringe soils above laboratory DLs were below the analyte's associated Tier 1 Unrestricted EAL. One of the seven temporary and two existing monitoring wells (TW-6) contained groundwater with a vinyl chloride concentration (240 µg/L) that exceeded the Tier 1 Unrestricted EAL of 62 µg/L. Trace levels of PCE, TCE, cis-1,2-DCE, and vinyl chloride were also detected in these wells; however, these and all other analyte detections above laboratory DLs measured in the shallow groundwater samples collected from the temporary and existing monitoring wells were below the analyte's associated Tier 1 Unrestricted EAL.

Two permanent four-inch diameter monitoring wells (KB-100-3 and KB-100-4) were installed at the location of two of the temporary monitoring wells (TW-6 and TW-2, respectively). The vinyl chloride concentration measured in the permanent monitoring well (KB-100-3) in March 2015 was significantly lower than the concentration of vinyl chloride measured in the corresponding temporary well in January 2015 (62 µg/L versus 240 µg/L).

The overall concentration of solvents present in the shallow groundwater has generally declined since groundwater sampling began at the Site in May 2003. The low part per billion PCE and TCE concentrations measured in KB-100-2 in January 2015 were significantly lower than the solvent concentrations measured in this well between 2003 and 2009, while the vinyl chloride concentration measured (38 µg/L) in January 2015 was slightly higher than the concentration level (16.9 µg/L) measured during the last round of sampling conducted in June 2008 (Table 1-6). The observed reduction of PCE and TCE concentrations and continual presence of slightly higher concentrations of vinyl chloride in this well is evidence that the anaerobic degradation of the residual chlorinated solvent contamination at the Site is ongoing.

The contamination present in the soils and shallow groundwater at the Site do not pose a risk to human health and the environment. Ecological receptors are not at risk to the contamination present at the Site because of the lack of a complete exposure pathway.

7.2 Recommendations

Trace levels of solvent contamination are present in a limited volume in soils and groundwater. The concentration of solvents in soils and groundwater slightly exceed

unrestricted land use Tier 1 EALs. However, due to the limited volume and lateral extent of contamination present at the Site, no additional investigation or remediation is necessary. No further action is recommended for this site.

Section 8 References

Department of Health, State of Hawaii (HDOH). 2011. *Evaluation of Environmental Hazards at Sites with Contaminated Soil and Groundwater*. Tables originally released in Summer 2008, updated in December 2011. Hawaii Department of Health, Office of Hazard Evaluation and Emergency Response.

Department of the Navy (DON). 2007. *Project Procedures Manual, U.S. Navy Environmental Restoration Program, NAVFAC Pacific*. Pearl Harbor, HI. Pacific Division, Naval Facilities Engineering Command. February.

Element Environmental, LLC (E2). 2014a. *Final Work Plan, Site Inspection for UST KB-100, Marine Corps Base Hawaii, Kaneohe, Hawaii.* Department of the Navy, Naval Facilities Engineering Command, Hawaii, Contract Number N62742-11-D-1821, CTO 0026. June.

———. 2014b. *Final Health and Safety Plan, Site Inspection for UST KB-100, Marine Corps Base Hawaii, Kaneohe, Hawaii.* Department of the Navy, Naval Facilities Engineering Command, Hawaii, Contract Number N62742-11-D-1821, CTO 0026. June.

Environmental Protection Agency, United States (EPA). 2006. *Guidance on Systematic Planning Using the Data Quality Objectives Process*. EPA QA/G-4. EPA/240/B-06/001. Office of Environmental Information. February.

———. 2011. *EPA Region 9 Preliminary Remediation Goals Tables*. San Francisco. June.

Juvik, Sonia P. and James O. Juvik, eds. et al (Juvik and Juvik). 1998. *Atlas of Hawaii, Third Edition.* Department of Geography, University of Hawaii Press. November.

Luecker, E.B., J.E. Edkins, J.R. Francis, N. Morgan, R.J. Watts, and L. Lay. 1984. *Navy Assessment and Control of Installation Pollutants. Initial Assessment Study of Marine Corps Air Station Kaneohe Bay, Hawaii, UIC: M00318*. Assessment report prepared by the Naval Energy and Environmental Support Activity, Port Hueneme, California.

Mink, J.F. and L.S. Lau. 1990. *Aquifer Identification and Classification of Oahu: Groundwater Protection Strategy for Hawaii* (February 1990 (rev); vii + 28 pp.), Water Resources Research Center, Technical Report Number 179.

Morrison Knudsen Corporation (MKC). 1999. *Site Assessment Report, Underground Storage Tank KB-100, Marine Corps Base Hawaii, Kaneohe, Oahu.* Prepared for USACE-POD, Fort Shafter, Hawaii. May.

United States Department of Agriculture, Soil Conservation Service (USDA SCS). 1972. *Soil Survey of Islands of Kauai, Oahu, Maui, Molokai, and Lanai, State of Hawaii*, in cooperation with the University of Hawaii Agricultural Experiment Station. Washington. August 1972.

Wil Chee Planning (WCP). 2003. *Remedial Investigation and Release Response Report, MCBH – Building 322, KB-100, Remedial Investigation of Various Former UST Sites at Marine Corps Base Hawaii (MCBH) and Camp Smith, Oahu, Hawaii.* December.

———. 2007. *KB-91 and KB-100 Semi-Annual Groundwater Monitoring Letter Report, Remedial Investigation and Remedial Action of Former Underground Storage Tank Sites at Various Marine Corps Installations, Oahu, Hawaii. Baseline Groundwater Monitoring Results for October 2006.* January.

———. 2008a. *KB-91 and KB-100 Semi-Annual Groundwater Monitoring Letter Report, Remedial Investigation and Remedial Action of Former Underground Storage Tank Sites at Various Marine Corps Installations, Oahu, Hawaii. Groundwater Monitoring Results for June and November 2007*. February.

———. 2008b. *KB-100 Semi-Annual Groundwater Monitoring Letter Report, Remedial Investigation and Remedial Action of Former Underground Storage Tank Sites at Various Marine Corps Installations, Oahu, Hawaii. Groundwater Monitoring Results for October 2006, and June and November 2007.* May.

———. 2008c. *KB-100 Semi-Annual Groundwater Monitoring Letter Report, Remedial Investigation and Remedial Action of Former Underground Storage Tank Sites at Various Marine Corps Installations, Oahu, Hawaii. Groundwater Monitoring Results for October 2006, June and November 2007, and June 2008.* September.

———. 2011. *Release Response Report, Marine Corps Base Hawaii Former Tank KB-100. Remedial Investigation and Remedial Action of Former Underground Storage Tanks Sites and Various Marine Corps Installations*. April.

Appendix A

Field Logbook

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E2 project #

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CONTENTS

PAGE	REFERENCE	DATE

12/23/14 Toning & utility locate
MDH & SS arrived @ site @ 7:45
review locations for drilling
activities.

9:10 Mike Benedict w/ ULS
arrived to initiate toning
9:15 site & safety debrief
9:30 start locating & marking
prefered locations
11:10 Sump under drain on NW
corner of pit ~ 3.5 feet of
used oil NE corner of waste
sump also about 3.5' deep
11:50 large asymetrical signal on
metal detector to the SE. possible
UST
12:00 Lunch
13:00 Resume marking boring
locations
15:00 Survey complete for day
must return 12/24/14 am
for final work

Rite in the Rain

1/7/14 site visit with GeoTek mark arrive @ 0800, visit site, review boring locations & assess potential safety concerns. leave site @ 0830.

MJH 1/13/15

1-13-15

Activity - Soil sampling @ UST-91 via DP drill rig.

Task Team Members & Equipment Steve Spengler, Matt Neal, Austin Lutey, Mann Heslett, Karen Rogers, Pat Collins
6620 DT, mini RAE 2000

Activity Location - MCBH Motor pool around bldg 322

Weather
clear skies no wind

Level of PPE - Level D

Method I-B-1, I-C-1, I-E, I-H

References
Navy ppm / project work plan / HSP

Rite in the Rain

1/13/2005 - Tuesday

0900 - Safety briefing

0907 - A.L. Measures DTW @ MW KB-100-2

DTW = 6.42' BTOC & 6.7' BGS.

0924 MDH Calibrate miniRAE 2000 PID w/ 100 ppm Isobutylene lot 11-4364

1007 Start sampling

1145 PID reading of soil

1240 Lunch until 1340

1350 prepare rinse & equipment blank

1/13/2005 - Tuesday

Sap Time	EPA ID	Sample ID
1023	EKB100001	KB100S1-S-D-MW1-01-A -6.5-7.0
1038	EKB100002 E	KB100S1-S-D-MW2-01-A -6.0-6.5
1051	EKB100003	KB100S1-S-D-MW3-01-A-6.0-6.5
1058	EKB100004	KB100S1-S-D-MW4-01-A-6.0-6.5
1112	EKB100005	KB100S1-S-D-MW-5-01-A-5.5-6.0
1115	EKB100006	KB100S1-S-D-MW5-01-D-5.5-6.0
1119	EKB100007	KB100S1-S-D-MW6-01-A-7.0-7.5
1137	EKB100008	KB100S1-S-D-MW7-01-~~AG~~ A 5.5-6.0
1137	EKB100008MS	KB100S1-S-D-MW7-01-MS~~D~~ 5.5-6.0
1137	EKB100008MSD	KB100S1-S-D-MW7-01-MSD 5.5-6.0
1350	EKB100009	KB100S1-W-D-MW7-01-R
1400	EKB100010	KB100S1-W-D-MW7-01-F

Rite in the Rain

1/13/95 - Tuesday

Drill time	Boring ID	EPA SAND	Depth range	# of cont.
10:07	TW-1	EKB100001	6.5' - 7.0'	4
10:19	TW-2	EKB100002	6.0' - 6.5'	4
1036	TW-3	EKB100003	6.0' - 6.5'	4
1053	TW-4	EKB100004	6.0' - 6.5'	4
1058	TW-5	EKB100005	5.5' - 6.0'	4
1058	TW-5 (dup)	EKB100006	5.5' - 6.0'	4
1114	TW-6	EKB100007	7.0' - 7.5'	4
1127	TW-7	EKB100008/ (MS/MSD)	5.5 - 6.0	12
N/A	Equipment Blk	EKB100009	N/A	8
N/A	Reagent Blk	EKB100010	N/A	8
TRIP BLANK - Ø				1

1/13/95 - Tuesday

Start time Drill	Boring ID	Depth	Stop Drill time	PID reading	
10:07	TW-1	2	10:19	0.8	0.8
		4		1.1	1.1
		6		1.2	
		8		1.1	
10:23	TW-2	2	10:31	0.9	
		4		1.1	
		6		1.1	
		8		1.2	
1036	TW-3	2	1044	1.0	
		4		0.9	
		6		0.9	
		8		0.9	
1053 ~~1039~~ M 1/13/95	TW-4	2	1056	1.1	
		4		1.3	
		6		1.6	
		8		0.9	
1056	TW-5	2	1111	0.9	
		4		0.6	
		6		1.0	
		8		0.9	

See work plan figure 8 for boring locations

Rite in the Rain

1/13/15 - Tuesday

Drill start	Boring ID	Depth	Drill start	PID
1114	TW-6	2	1121	0.6
		4		0.5
		6		2.4
		8		8.5
1127	TW-7	2	1136	1.5
		4		2.2
		6		3.1
		8		3.4
	TW-8	2		
		4		
		6		
		8		

1/14/2015 - Wednesday

0800 - E2 onsite, mobilize equipment & set up work area.

Activity: Soil Sampling and MW Installation.

Task Team Members & Equip:
E2: M. Neal, S. Spengler, M. Heskett, A. Lutey, B. Balek.
GeoTek: K. Rogers, Pat Collins.

Activity Location: MCBH Motor Pool, Near Bldg. 322, UST's 91 & 100.

Weather: Partly Cloudy, No Breeze ~75°F

PPE: Level D.

PPM Methods: I-B-1, I-C-1, I-E, I-H.

References: Navy PPM, ~~Project~~ Project WP/HASP (E2, 2014), EM 385-1-1.

Rite in the Rain

1-14-2015 WEDNESDAY

0830	DAILY HRS BRIEFING BY MN
0845	DRILLERS SET-UP RIG OVER B1
0915	MARVIN HESKETT (EZ) ON-SITE
0945	NAVY (ERIC SHIGAKI) ON-SITE
0950	GEOTEK STARTS CONCRETE CORING IN THE OIL CHANGE PITS
1038	MH CALIBRATES PID
1041	ES (NAVY) LEAVES
1140	LEAVE SITE FOR LUNCH (EXCEPT PC)
1245	RETURN TO SITE
1300	DRILLERS SET-UP RIG OVER B5
1450	DRILLERS START TO CLEAN-UP
1500	CLEAN-UP
	COLLECT PID READINGS
1530	LEAVE SITE

WEDNESDAY 1-14-2015

SAMPLE LOG:

TIME	EPA ID	SAMPLE ID
0921	EKB91001	KB91EHE-S-D-B1-01-A-~~1.5~~ 2.0 DB
0925	EKB91002	KB91EHE-S-D-B1-02-A-4.0
0929	EKB91003	KB91EHE-S-D-B1-03-A-9.0
0937	EKB91004	KB91EHE-S-D-B2-01-A-2.5
0939	EKB91005	KB91EHE-S-D-B2-02-A-4.0
0941	EKB91006	KB91EHE-S-D-B2-03-A-9.0
0943	EKB91007	KB91EHE-S-D-B3-01-A-2.0
0945	EKB91008	KB91EHE-S-D-B3-02-A-4.0
0947	EKB91009	KB91EHE-S-D-B3-03-A-7.5
1000	EKB91010	KB91EHE-S-D-B4-01-A-2.0
1003	EKB91011	KB91EHE-S-D-B4-02-A-4.0
1006	EKB91012	KB91EHE-S-D-B4-03-A-8.0
1308	EKB91013	KB91EHE-S-D-B5-01-A-2.5
1310	EKB91014	KB91EHE-S-D-B5-02-A-4.0
1312	EKB91015	KB91EHE-S-D-B5-03-A-7.5
1314	EKB91016	KB91EHE-S-D-B5-04-D-7.5
1316	EKB91017	KB91EHE-S-D-B8-01-A-1.5
1318	EKB91018	KB91EHE-S-D-B8-02-A-4.0
1320	EKB91019	KB91EHE-SD-B8-03-A-7.5
1322	EKB91020	KB91EHE-SD-B8-04-D-7.5
1324	EKB91021	KB91EHE-SD-B9-01-A-1.5
1326	EKB91022	KB91EHE-S-D-B9-02-A-4.0

Rite in the Rain

 1-14-15 WEDNESDAY

BORING DRILL LOG:

START	END	ID	DEPTH (FT BGS)	PID (PPM)
0910	0917	B-1	~~1.0-2.0~~ ~~0.5-1.5~~ BB	2.4
			3.0-4.0	0.6
			7.0-9.0	0.7
0922	0928	B-2	1.5-2.5 ~~0.5-1.5~~ BB	29.9
			3.0-4.0	9.6
			7.0-9.0	49.3
0933	0938	B-3	1.0-2.0 ~~0.5-1.5~~ BB	17.0
			3.0-4.0	15.9
			6.5-7.5	19.1
0940	0946	B-4	1.0-2.0	19.3
			3.0-4.0	13.1
			7.0-8.0	19.1
1302	1307	B-5	1.5-2.5	12.9
			3.0-4.0	10.5
			6.5-7.5	13.2
1309	1315	B-8	0.5-1.5	24.5
			3.0-4.0	19.4
			6.5-7.5	7250
1316	1322	B-9	0.5-1.5	13.5
			3.0-4.0	15.8
			6.0-7.0	41.1
1324	1332	B-21	1.0-2.0	10.5
			3.0-4.0	9.3
			5.5-6.5	6.1

START	END	ID	DEPTH	PID
1330	1334	B-22	1.0-2.0	3.5
			3.0-4.0	8.5
			6.0-7.0	0.5
1336	1342	B-23	1.5-2.5	9.6
			3.0-4.0	12.6
			6.0-7.0	19.7
			8.5-9.0	7200
1346	1351	B-12	1.0-2.0	12.3
			3.0-4.0	14.7
			7.0-8.0	>500
1352	1405 ~~1357~~ BB	B-6	1.0-2.0	28.2
			3.0-4.0	24.9
			6.5-7.5	17.2
1408 ~~1400~~ BB	1415 ~~1405~~ BB	B-7	1.0-2.0	1.6
			3.0-4.0	10.2
			6.5-7.5	7200
1420	1431	B-17	1.0-2.0	22.3
			3.0-4.0	14.3
			6.0-7.0	25.6
1433	1437	B-19	1.0-2.0	8.3
			3.0-4.0	2.6
			6.5-7.5	3.2

Rite in the Rain.

SAMPLE LOG:

TIME	EPA ID	SAMPLE ID
1328	EKB91Ø23	KB91EHE-S-D-B9-03-A-7.0
1330	EKB91Ø24	-04-D-7.0
1332	EKB91Ø25	KB91EHE-S-D-B21-01-A-2.0
1334	EKB91Ø26	-02-A-4.0
1336	EKB91Ø27	-03-A-6.5
1340	EKB91Ø28	KB91EHE-S-D-B22-01-A-2.0
1342	Ø29	-02-A-4.0
~~1344~~	Ø30	-03-A-7.0
1352	EKB91Ø31	KB91EHE-S-D-B23-01-B-2.5
1354	Ø32	-02-A-4.0
1356	Ø33	-03-A-7.0
1358	Ø34	-04-A-9.0
1400	EKB91Ø35	KB91EHE-S-D-B12-01-A-2.0
1402	Ø36	-02-A-4.0
1404	Ø37	-03-A-8.0
1414	EKB91Ø38	KB91EHE-S-D-B6-01-A-2.0
1416	Ø39	-02-A-4.0
1418	Ø40	-03-A-7.5
1420	Ø41	-04-D-7.5
* 1424	EKB91Ø42 MS/MSD	KB91EHE-S-D-B7-01-A-2.0
* 1426	Ø43 MS/MSD	-02-A-4.0
1428	Ø44	-03-A-7.5
1430	Ø45	-04-D-7.5

TIME	EPA ID	SAMPLE ID
1454	EKB91Ø46	KB91EHE-S-D-B17-01-A-2.0
1456	Ø47	02-A-4.0
1458	Ø48	03-A-7.0
1502	EKB91Ø49	KB91EHE-S-D-B19-01-A-2.0
1504	Ø50	-02-A-4.0
1506	Ø51	-03-A-7.5

NOTE: ALL SOIL SAMPLES ARE DISCRETE, AND CONSIST OF 4 CONTAINERS*:

1) 8 OZ JAR - DRO/RRO, PAHs
2) 2 40 ML VOA W/STIRBAR - VOCs
3) 1 40 ML VOA W/5mL MEOH - VOCs/~~GRO~~ BB

* EKB91Ø42/MS/MSD AND EKB91Ø43/MS/MSD HAVE A TOTAL OF 11 CONTAINERS EACH.

Rite in the Rain.

1-15-2015 THURSDAY

ACTIVITY: SOIL SAMPLING @ UST 91
DEVELOP MWs

TASK TEAM MEMBERS & EQUIPMENT:
E2 - S. SPENGLER, M. HESKETT, A. LUTEY,
B. BALETE (UTILITY VEHICLE / PU TRUCK)
GEOTEK - ~~K. ROGERS~~ P. COLLINS, J. SHJEGSTAD
- 6620DT DRILL RIG, SUPPORT TRUCK/
TRAILER

ACTIVITY LOCATION: MCBH MOTOR POOL NEAR
BLDG. 322, USTs 91 AND 100

WEATHER: MOSTLY CLOUDY, 73° - 79°, 82% - 60% HUMIDITY,
WINDS SE 5 MPH - S 8 MPH

PPE: LEVEL D

PPM METHODS: I-B-1, I-E, I-F, I-H, I-C-2,
III-B, III-D, III-E, III-F

REFERENCES: NAVY PPM, PROJECT WP/HSP (E2, 2014),
EM 385-1-1

THURSDAY 1-15-2015

0800	E2 ON-SITE
	MOBILIZE EQUIPMENT AND SET-UP
0820	GEOTEK ON-SITE
0825	MH CALIBRATES PID
0830	DAILY H&S BRIEFING BY AL
0845	DRILLER SET UP RIG OVER PIT,
	FILL YESTERDAY'S HOLES W/3/8" HOLEPLUG
	WHILE E2 COLLECTS YESTERDAY'S PID
	READINGS FOR REMAINING BAGS.
0907	START DRILLING IN PIT (B-14, 10, 13, 11, 15)
0910	E2 COLLECTS EQUIPMENT RINSATE
	WATER SAMPLE (OVER DECON'ED SHOE),
	WITH MENEHUNE WATER CO.
	STEAMED DISTILLED WATER. SAMPLE
	CONSISTS OF 4 1-L AMBERS AND
	3 40-ML VIALS (ALL UNPRESERVED).
0935	COLLECT DUPLICATE @ B13 (3-5' bgs).
0954	CONTINUE DRILLING LAST 3 (B-18, 20, 16),
	DRILLING THROUGH CONCRETE FIRST,
	THEN FINISHING BORING (B-16, 20, 18)
1030	DRILLERS CONTINUE EQUIP. DECON.
1100	DRILLERS CONTINUE FILLING HOLES,
	THEN WILL FINISH W/CONCRETE
	OR ASPHALT, AS APPLICABLE.

Rite in the Rain

1-15-2015 THURSDAY

BORING DRILL LOG:

START	END	ID	DEPTH (FT BGS)	PID (PPM)
0907	0910	B-14	2.0-3.0	1805
0916	0919	B-10	2.0-3.0	684
0924	0926	B-13	3.0-5.0 IN PIT	714
0930	0933	B-11	2.0-3.0	1,277
0938	0941	B-15	2.0-3.0	894
0954	0958	B-18	– PRE-CORED CONCRETE.	
0959	1001	B-20	–	
1002	1012	B-16	1.0-2.0	8.3
			3.0-4.0	6.5
			6.0-7.0	19.2
1014	1024 ~~1028~~ BB	B-20	1.0-2.0	9.7
			3.0-4.0	18.7
			6.0-7.0	17.5
1026	1034	B-18	1.0-2.0	5.1
			3.0-4.0	12.6
			6.0-7.0	0.5
			8.6-9.0	76.4

SAMPLE LOG:

TIME	EPA ID	SAMPLE ID
0920	EKB91Ø52	KB91EHE-S-D-B14-01-A-3.0
0925	EKB91Ø53	KB91EHE-S-D-B10-01-A-3.0
0930	EKB91Ø54	KB91EHE-S-D-B13-01-A-5.0
0945	EKB91Ø55	KB91EHE-S-D-B11-01-A-3.0
0950	EKB91Ø56	KB91EHE-S-D-B15-01-A-3.0
0910	EKB91Ø57	KB91EHE-W-D-01-R
0935	EKB91Ø58	KB91EHE-S-D-B13-02-D-5.0
1015	EKB91Ø59	KB91EHE-S-D-~~B18~~ B16 DR -01-A-2.0
1020	EKB91Ø60	-02-A-4.0
1025	EKB91Ø61 MS/MSD *	-03-A-7.0
1030	EKB91Ø62	KB91EHE-S-D-B20-01-A-2.0
1035	63	-02-A-4.0
1040	64	-03-A-7.0
1045	EKB91Ø65	KB91EHE-S-D-B18-01-A-2.0
1050	66	-02-A-4.0
1055	67	-03-A-7.0
1100	68	-04-A-9.0
1130	EKB91Ø69	KB91EHE-S-MI-01-A-2.0
1140	70	MI-02-A-4.0
1150	71	MI-03-A-CF

* SEE NOTE RE: # CONTAINERS ON PAGE 17.

MI SAMPLES CONSIST OF ONLY 1 BAG.

Rite in the Rain.

1-15-2015 THURSDAY

1105 COLLECT PID READINGS

1130 COLLECT MI SOIL SAMPLES, CONSISTING OF INCREMENTS FROM THE 3 SAMPLE INTERVALS: ~0.5-2.5' bgs
3.0-4.0' bgs
CAPILLARY FRINGE 6.0-9.0' bgs

THE TOP 2 INTERVALS ARE FROM ALL BORINGS OUTSIDE THE OIL CHANGE PIT. THE BOTTOM INTERVAL IS FROM ALL BORINGS, INCLUDING THOSE IN THE PIT. THE TOP OF THE PIT IS 4.5' BELOW GROUND SURFACE. CONCRETE SLAB IN THE PIT WAS ABOUT 8" THICK ON AVERAGE (RANGED FROM 6-13" THICK).

1155 CLEANUP, GS LEAVES SITE

1205 BB, MH, GEOTEK LEAVE SITE

1220 - AL, MH Break for Lunch

1310 - Return from lunch, proceed to gauge DTW & DTB @ all wells (New & Existing).

1/15/2015 - Thursday

From Bpal Casing

Time	Well ID.	DTW	DTP	DTB.
13:27	3	7.34	~~7.31~~ NA	15.14
13:29	2	7.12	"	15.14
13:30	1	7.48	"	15.14
13:32	4	6.46	"	15.14
13:33	5	6.58	"	14.60
13:34	7	6.44	"	15.14
13:35	6	6.96	"	15.14
13:36	KB100-1	6.70	"	11.22
13:37	KB100-2	6.60	"	14.80

KB 100-1 / ~~[illegible]~~ - 3/4" Diameter Well
KB-100-2 - 2" Diameter Well
KB-91-2 - "
KB-91-1 - "
KB-91-3 - "

Time	Well ID	DTW	DTP	DTB
13:40	KB-91-2	7.20	NA	14.92
13:42	KB-91-1	7.06	NA (~~[illegible]~~ Sheen?)	7.95
	(note: free product, heavy oil observed on probe			
13:45	KB-91-3	7.20	7.19	Not heard

No product in KB-91-3 looks like motor oil

Rite in the Rain.

1/15/2015 Thursday -

13:~~45~~30 - 14:15 Surge blocked the seven temporary 1.5" diameter wells installed at UST KB-100 site

14:15 - 15:30 Developed seven temporary wells using the mini squirt pump. Typically removed 5 gallons per well and recorded a minimum of three water quality measurements using a YSI meter. Note turbidity meter malfunctioned so only monitored the following water quality parameters pH, Temp, Conductivity, DO, REDOX, Salinity.

Departed the site at 15:30

1/20/2015 - Tuesday

Activity: GW Sampling @ UST KB-100 site

Task Team(s): E2: A. Lutey, S. Spengler, M. Heskett

Equipment: YSI 556 WQM, GeoTech Bladder Pump(s), GeoTech Peristaltic Pump.

Location: MCBH Motor pool, UST KB-100 site

Weather: Partly Cloudy, Sl. Breeze (SW) ~5 mph., ~72°F

PPE: Level D.

PPM Methods: I-C-3

References: Navy PPM, EM 385-1-1, E2 WP/HASP, 2014.

Rite in the Rain

1/20/15 – Tuesday

0700 – E2 onsite.
– Set up @ UST KB-100 site @ McBit Motor Pool.
0724 – A.L. conducts tailgate safety meeting.
0730 – Mitt Calibrates YSI 556 meter.
0740 – Set up @ TW-1. using Bladder Pump.
0900 – Mobilize to TW-2. location
0911 – Start low flow purge @ TW-2
09:38 – Collect Sample TW-2
10:08 – Collect Duplicate Sample from TW-6 (Sample times 10:08 and 10:20
10:45 Collect Sample TW-3
11:15 Collect Sample TW-7
12:01 Collect Sample TW-4
13:45 Collect Sample KB-100-1
14:45 Collected Sample KB-100-2 +MS/MSD
15:00 Collected Rinsate Sample EKB100021

1/20/15 – Tuesday

Sample ID.	Time	# Cont.	Desc.
EKB100011	0845	6	GW Sample from TW-1.
EKB100012	0938	6	TW-2
EKB100013	10:08	6	TW-6
EKB100014 (Field Duplicate)	10:20	6	TW-6-Dup
EKB100015	10:45	6	TW-3
EKB100016	11:15	6	TW-7
EKB100017	11:50	6	TW-5
EKB100018	12:30	6	TW-4
EKB100019	13:45	6	KB-100-1
EKB100020	14:45	18	KB-100-2
EKB100020-MS			
EKB100020-MSD			
EKB100021	15:00		Rinsate Sample

Rite in the Rain.

March 2, 2015 Monday

Arrival at MCBH UST 91/100 Site @ 7:45
Met drillers from Geotek at the site, conducted the healthal safety briefing.

8:15 - 9:35: Installed a 4-inch monitoring well adjacent to temporary well #6. Well was installed to a depth of 14 feet bgs.

9:45 - 11:20 Installed a 4-inch monitoring well just west of Temporary Well #2, Well was installed to a depth of 14 feet bgs.

12:20 - 13:45 Installed a 4-inch monitoring well just to the east of existing well KB-91-3. Well was installed to a depth of 14 feet bgs.

Removed 4 gallons of water from KB-91-2.
Removed 1 gallon of water from KB-91-1, observed spotty sheen and trace oil in the development water.
Removed ~ 3/4 gallon of oil/water from KB-91-3, The material removed from the well consisted of ~ 80% oil and 20% water. The product is a dark color oil product

Rite in the Rain

March 4, 2015 Wednesday

Arrived at the site ~ 10:30
~~Purged~~ Marvin Hesketh and Steve Spangler present
Purged and developed the 3 new 4-inch diameter wells installed at the UST 91 and UST 100 sites, as well as one existing 2" diameter well at the UST-100 site.

The ~~other~~ two other existing 2" diameter wells at the UST-100 site were not sampled due to the presence of free product observed in these two wells on Monday, March 2.

Between 25-35 gallons of water were removed from each well during development.

Each of the new 4-inch wells ~~had~~ were surged using a 4-inch diameter surge block from 11-12 AM.

Water quality parameters were monitored in each total well volume during the course of well development.

Rite in the Rain

March 10, 2015 Tuesday

Activity: Water Sampling @ UST 91 & 100

TASK TEAM MEMBERS & EQUIPMENT:
EZ - S SPENGLER, D BALETE,
M. HESSETT (utility vehicle / PU TRUCK)

ACTIVITY LOCATION: MCBH MOTORPOOL
NEAR BLDG 322, USTS 91 & 100

WEATHER: PARTLY CLOUDY 65° - 72°
HUMIDITY 72% WINDS NE @ 5mph

PPE: LEVEL D

PPM METHODS: I-C-3

REFERENCES: NAVY PPM EM 385-1-1
EZ WP / HASP 2014

Rite in the Rain

MARCH 10, 2015

0740 EZ ONSITE

0820 DAILY H&S BRIEFING

0825 START WELL ~~DEVELOPMENT~~ PURGING / SAMPLING @ KB-100-3 (6 CONTAINERS)

0945 SS LEAVES SITE TO GET TARP

0950 START WELL ~~DEVELOPMENT~~ PURGING / SAMPLING @ KB-100-4 (6 CONTAINERS)

1030 SS RETURNS TO SITE

1100 START WELL PURGING / SAMPLING @ KB-91-4 (7 CONTAINERS)

COLLECT A DUPLICATE AND MS/MSD.

1215 COLLECT EQUIPMENT RINSATE SAMPLE (2 AMBERS, 3 VOAS = 5 CONTAINERS)

1225 LUNCH, BB LEAVES

1320 @ KB-91-2 (7 containers)

1:25 START well purging of KB-91-2

14:15 START SAMPLING " "

15:00 Leave Site

MARCH 10, 2015

SAMPLE LOG:

TIME	EPA ID	SAMPLE ID
0930	EKB100022	KB100EHE-W-D-MW3-01-A
1045	EKB100023	KB100EHE-W-D-MW4-01-A
1140	EKB91072	KB91EHE-W-D-MW4-01-A
1200	EKB91073	KB91EHE-W-D-MW4-02-D
1140	EKB91074 EB	2 MS/MSD KB91EHE-W-D-MW4-03-M
1215	EKB91074	KB91EHE-W-D-~~MW4~~ R
14:15	EKB91075	KB91EHE-W-D-MW2-01-A
~~14:15~~		

WELL LOG:

TIME	WELL ID	DTW (FT)	DIAMETER (IN)
0827	KB-100-3	6.76	4
0829	KB-100-4	6.66	4
0833	KB-91-2	7.05	2
0831	KB-91-4	6.51	4

Rite in the Rain.

DRUM LOG:

DRUM NO.	CONTENTS	DATE COLECTED	BORING/WELL
1	~~SOIL CUTTINGS~~ DB	~~1/20~~ DB 1/20/15	~~KB-91-4~~ DB
2	~~SOIL CUTTINGS~~ DB	1/20/15	~~KB-100-3~~ DB
3	~~SOIL CUTTINGS~~ DB	1/20/15	~~KB-100-4~~ DB
4	PURGE / DECON WATER	1/20/15	
5	SOIL CUTTINGS	3/2/15	KB-100-3
6	SOIL CUTINGS	3/2/15	KB-100-4
7	SOIL CUTINGS	3/2/15	KB-91-4
8	DEVELOPMENT WATER	3/4/15	KB100-3/4
9	PURGE WATER	3/10/15	KB-91-4

Rite in the Rain

Appendix B

Field Forms

Soil Boring Logs

Monitoring Well Completion Records

Monitoring Well Development Logs

Groundwater Sampling Logs

E2 Safety Briefing Forms

Field Log of Boring

BORING NUMBER: Temp Well 1

SHEET 1 OF 1

PROJECT NAME	PROJECT NUMBER	ELEVATION AND DATUM	LOCATION
UST KB-100	CTO 026		MCBH
DRILLING COMPANY: GeoTek	DRILLER: Kevin Rogers	DATE AND TIME STARTED: 1/13/15 10:07	DATE AND TIME COMPLETED: 1/13/15 10:14
DRILLING EQUIPMENT: 6620DT (Geoprobe)	DRILLING METHOD: Direct Push	COMPLETION DEPTH: 10'	TOTAL NO. OF SAMPLES: 1
SIZE AND TYPE OF BIT: 2 1/4"	HOLE DIAMETER: 2 1/4	NO. OF SAMPLES: BULK / SS	DRIVE / PITCHER
DRILLING FLUID	DRILLING ANGLE	WATER LEVEL: FIRST	AFTER ____ HOURS
SAMPLE HAMMER — TYPE / DRIVING WT. / DROP		HYDROGEOLOGIST/DATE: Spengler 1/13	CHECKED BY/DATE

Headspace Reading (ppm) LITHOLOGY	DEPTH (FEET)	SAMPLES	RECOVERY	BLOWN COUNT	DESCRIPTION	USCS SYMBOL	ESTIMATED PERCENT OF GR	SA	FI	COMMENTS
	0				Dry (10YR 2/1)					
0.8 @ 2'			↑		0-10" Black, gravelly basalt base course		70	20	10	
1.1 @ 4'			80%		10" - 7.0' Dry to moist, Very pale brown (10YR 7/3) gravelly sand		10	90	0	
	5.0		↓							Sample Interval 6.5'-7.0'
1.2 @ 6'			↑		7.0 - 9.5 wet, greenish gray (6/1) sandy plastic clay		0	10	90	
1.1 @ 8'			80%							
	10.0		↓		9.5-10.0 wet, greenish gray (6/1) sandy coralline gravel		60	35	5	
	15.0									

Figure I-B-1-1: Field Log of Boring

Note: Drillers observed throughout the site that drilling was somewhat difficult to a depth of 4 to 4.5 feet bgs and then became soft at deeper depths in every hole drilled.

Field Log of Boring

BORING NUMBER: Temp Well 2

SHEET 1 OF 1

PROJECT NAME: UST KB-100	PROJECT NUMBER: CTO 026	ELEVATION AND DATUM:	LOCATION: MCBH
DRILLING COMPANY: GeoTek	DRILLER: Kevin Rogers	DATE AND TIME STARTED: 1/13/15 10:23	DATE AND TIME COMPLETED: 1/13/15 10:31
DRILLING EQUIPMENT: Geoprobe 6620DT	DRILLING METHOD: Direct Push	COMPLETION DEPTH: 8'	TOTAL NO. OF SAMPLES: 1
SIZE AND TYPE OF BIT: 2 1/4"	HOLE DIAMETER: 2 1/4"	NO. OF SAMPLES: BULK: SS:	DRIVE: PITCHER:
DRILLING FLUID:	DRILLING ANGLE:	WATER LEVEL: FIRST	AFTER ____ HOURS
SAMPLE HAMMER: TYPE: DRIVING WT.: DROP:		HYDROGEOLOGIST/DATE: Spengler 1/13	CHECKED BY/DATE:

Headspace Reading (ppm) LITHOLOGY	DEPTH (FEET)	SAMPLES	RECOVERY	BLOWN COUNT	DESCRIPTION	USCS SYMBOL	ESTIMATED PERCENT OF GR	SA	FI	COMMENTS
	0				0.3" Concrete Pad					
					3'-9" dry grayish brown (10YR 5/2) gravelly sand		15	80	5	
0.9 @ 2'	2		20%		9"-6.5' dry to moist very pale brown (10YR 7/3) gravelly sand		20	80	0	
1.1 @ 4'	4									
	5									
1.1 @ 6'	6				6.5-7.5 wet, greenish gray (6/1) clayey sand		0	85	15	Sample collected 6'-6.5'
			100%							
1.2 @ 8'	8				7.5-8.0 wet, greenish gray (6/1) sandy clay		0	10	90	
	9									
	10									

Figure I-B-1-1: Field Log of Boring

Field Log of Boring

BORING NUMBER: Temp Well 3

SHEET 1 OF 1

PROJECT NAME	PROJECT NUMBER	ELEVATION AND DATUM	LOCATION
UST KB-100	CTO 026		MCBH
DRILLING COMPANY: Geo Tek	DRILLER: Kevin Rogers	DATE AND TIME STARTED: 1/13/15 10:36	DATE AND TIME COMPLETED: 1/13/15 10:44
DRILLING EQUIPMENT: Geoprobe 6620DT	DRILLING METHOD: Direct Push	COMPLETION DEPTH: 10'	TOTAL NO. OF SAMPLES: 1
SIZE AND TYPE OF BIT: 2 1/4"	HOLE DIAMETER: 2 1/4"	NO. OF SAMPLES / BULK / SS	DRIVE / PITCHER
DRILLING FLUID	DRILLING ANGLE	WATER LEVEL / FIRST	AFTER ____ HOURS
SAMPLE HAMMER — TYPE / DRIVING WT. / DROP		HYDROGEOLOGIST/DATE: Spengle 1/13	CHECKED BY/DATE

Headspace Reading (ppm) LITHOLOGY	DEPTH (FEET)	SAMPLES	RECOVERY	BLOWCOUNT	DESCRIPTION	USCS SYMBOL	ESTIMATED PERCENT OF GR	SA	FI	COMMENTS
	0				0-1' Dry, black (10YR 2/1) gravelly base course		70	20	10	
1.0 @2'	2		60%		1-6.0 Dry to moist, very pale brown (10YR 7/3) gravelly sand		30	70	0	
0.9 @4'	4									
	5									
0.9 @6'	6		80%		6.0-8.5 wet, greenish gray (6/1) silty ~~clay~~ sandy clay		0	10	90	Sample interval 6'-6.5' bgs
0.9 @8'	8				8.5-10.0 wet, greenish gray (6/1) clayey gravel		60	20	20	
	9									
	10									

Figure I-B-1-1: Field Log of Boring

Field Log of Boring

BORING NUMBER: Temp Well 4

SHEET 1 OF 1

PROJECT NAME: UST KB-100	PROJECT NUMBER: CTO 026	ELEVATION AND DATUM:	LOCATION: MCBH
DRILLING COMPANY: Geo Tek	DRILLER: Kevin Rogers	DATE AND TIME STARTED: 1/13/15 10:53	DATE AND TIME COMPLETED: 1/13/15 10:56
DRILLING EQUIPMENT: Geoprobe 6620DT	DRILLING METHOD: Direct Push	COMPLETION DEPTH: 10'	TOTAL NO. OF SAMPLES: 1
SIZE AND TYPE OF BIT: 2 1/4"	HOLE DIAMETER: 2 1/4"	NO. OF SAMPLES: BULK: SS:	DRIVE: PITCHER:
DRILLING FLUID:	DRILLING ANGLE:	WATER LEVEL: FIRST	AFTER _____ HOURS
SAMPLE HAMMER: TYPE: DRIVING WT.: DROP:		HYDROGEOLOGIST/DATE: Spengler 1/13	CHECKED BY/DATE:

Headspace Reading (ppm) LITHOLOGY	DEPTH (FEET)	SAMPLES	RECOVERY	BLOWCOUNT	DESCRIPTION	USCS SYMBOL	ESTIMATED PERCENT OF GR	SA	FI	COMMENTS
	0									
					0-6' Wet to moist very pale brown (10YR 7/3) gravelly sand		15	85	0	
1.1 @2'	2		2.0'							
1.3 @4'	4									
	5									
1.6 @6'	6				6-7 wet, very pale brown (10YR 7/3) silty clay		0	15	85	Sample Depth interval 6'-6.5'
0.9 @8'	8		1.0'		7-8.5 wet, greenish gray (6/1) plastic clay		0	10	90	
	9				8.5-10 wet greenish gray (6/1) gravelly sand		40	55	5	
	10									

Figure I-B-1-1: Field Log of Boring

Field Log of Boring

BORING NUMBER: Temp Well 5

SHEET 1 OF 1

PROJECT NAME: UST KB-100	PROJECT NUMBER: CTO 026	ELEVATION AND DATUM:	LOCATION: MCBH
DRILLING COMPANY: GeoTek	DRILLER: Kevin Rogers	DATE AND TIME STARTED: 1/13/15 10:59	DATE AND TIME COMPLETED: 1/13/15 11:11
DRILLING EQUIPMENT: Geoprobe 6620DT	DRILLING METHOD: Direct Push	COMPLETION DEPTH: 10	TOTAL NO. OF SAMPLES: 2
SIZE AND TYPE OF BIT: 2 1/4"	HOLE DIAMETER: 2 1/4"	NO. OF SAMPLES: BULK / SS	DRIVE / PITCHER
DRILLING FLUID:	DRILLING ANGLE:	WATER LEVEL: FIRST	AFTER _____ HOURS
SAMPLE HAMMER: TYPE / DRIVING WT. / DROP		HYDROGEOLOGIST/DATE: Spengler 1/13	CHECKED BY/DATE

Headspace Ready (ppm) / LITHOLOGY	DEPTH (FEET)	SAMPLES	RECOVERY	BLOW COUNT	DESCRIPTION	USCS SYMBOL	ESTIMATED PERCENT OF GR	SA	FI	COMMENTS
	0									Double drilled this site to allow collection of a field duplicate soil sample
					0-9" Dry, Black (10YR2/1) gravelly basalt base course		55	45	0	
0.9 @2'	2		2.0 ft		9"-4.8' Dry to moist very pale brown (10YR7/3) gravelly sand		35	60	5	
0.6 @4'	4									
	5				4.8'-7.0 Moist to wet brown (10YR5/3) to greenish gray (6/1) plastic silty clay		0	15	85	Sample Depth 5.5'-6.0' (collected field duplicate for this interval)
1.0 @6'	6		2.8 ft		7.0-8.2' Wet, greenish gray (6/1) plastic clay		0	5	95	
0.9 @8'	8				8.2-10.0 Wet, dark greenish gray (4/1) gravelly sand		30	65	5	
	9									
	10									

Figure I-B-1-1: Field Log of Boring

Field Log of Boring

BORING NUMBER: Temp Well 6

SHEET 1 OF 1

PROJECT NAME: UST KB-100	PROJECT NUMBER: CTO 026	ELEVATION AND DATUM:	LOCATION: MCBH
DRILLING COMPANY: GeoTek	DRILLER: Kevin Rogers	DATE AND TIME STARTED: 1/13/15 11:14	DATE AND TIME COMPLETED: 1/13/15 11:20
DRILLING EQUIPMENT: Geoprobe 6620DT	DRILLING METHOD: Direct Push	COMPLETION DEPTH: 10'	TOTAL NO. OF SAMPLES: 1
SIZE AND TYPE OF BIT: 2 1/4"	HOLE DIAMETER: 2 1/4"	NO. OF SAMPLES: BULK: SS:	DRIVE: PITCHER:
DRILLING FLUID:	DRILLING ANGLE:	WATER LEVEL: FIRST	AFTER _____ HOURS
SAMPLE HAMMER: TYPE: DRIVING WT.: DROP:		HYDROGEOLOGIST/DATE: Speyer 1/13	CHECKED BY/DATE:

Headspace Reading (ppm) LITHOLOGY	DEPTH (FEET)	SAMPLES	RECOVERY	BLOWS	DESCRIPTION	USCS SYMBOL	ESTIMATED PERCENT OF GR	SA	FI	COMMENTS
	0				0-9" Dry (10YR 2/1) Black gravelly based base core		65	30	5	
0.6 @2'	2		2.0 ft		9"-7.0' dry to moist very pale brown (10YR 7/3) gravelly sand		20	80	0	
0.5 @4'	4									
	5									
2.4 @6'	6									
			1.5 ft		7.0-9.0 Wet, greenish gray (6/1) Sandy clay		0	15	85	SAMPLE Depth 7'-7.5' bgs
8.5 @8'	8									
	9				9.0-10.0 Wet, dark greenish gray (3/1) gravelly sand		30	65	5	
	10									

Figure I-B-1-1: Field Log of Boring

Field Log of Boring

BORING NUMBER: Temp Well 7

SHEET 1 OF 1

PROJECT NAME: UST KD-100	PROJECT NUMBER: CTO 026	ELEVATION AND DATUM:	LOCATION: MCBH
DRILLING COMPANY: GeoTek	DRILLER: Kevin Rogers	DATE AND TIME STARTED: 1/13/15 11:27	DATE AND TIME COMPLETED: 1/13/15 11:36
DRILLING EQUIPMENT: Geoprobe 6620 DT	DRILLING METHOD: Direct Push	COMPLETION DEPTH: 10'	TOTAL NO. OF SAMPLES: 2
SIZE AND TYPE OF BIT: 2 1/4"	HOLE DIAMETER: 2 1/4"	NO. OF SAMPLES: BULK: SS:	DRIVE: PITCHER:
DRILLING FLUID:	DRILLING ANGLE:	WATER LEVEL: FIRST	AFTER _____ HOURS
SAMPLE HAMMER: TYPE DRIVING WT. DROP		HYDROGEOLOGIST/DATE: Spengler 1/13	CHECKED BY/DATE:

Headspace Ready (ppm) LITHOLOGY	DEPTH (FEET)	SAMPLES	RECOVERY	BLOWCOUNT	DESCRIPTION	USCS SYMBOL	ESTIMATED PERCENT OF GR	SA	FI	COMMENTS
	0				0-9" Dry, ~~[illegible]~~ black (10YR 2/1) gravelly basal base course					
1.5@2'	2		5.5'		9"-5.5' Dry to moist very pale brown (10YR 7/3) gravelly sand		35	65	0	
2.2@4'	4									
	5									
3.1@6'	6		7.0'		5.5-8.5 Wet greenish gray (6/1) plastic clay		0	5	95	SAMPLE COLLECTED FROM 5.5-6.0' bgs Collected a MS/MSD sample from this hole
3.4@8'	9				8.5-10.0' Wet, gelatinous greenish gray (4/1) gravelly sand		40	55	5	
	9									
	10									

Figure I-B-1-1: Field Log of Boring

JOB NO.: CTO 026 WELL NO. Temp Well 1 HYDROGEOLOGIST: S. Spengler

CLIENT: NAVFAC HAWAII DRILLER: Kevin Rogers

WELL LOCATION: UST KB-100 DATE/TIME: 1/13/2015 / 14:20

DETAILS OF CONSTRUCTION

Date Completed: 1/13/15 14:20

Borehole Diameter (in.): 3 1/4"

Type and Size of Casing (in.): 1.5"

Type and Size of Screen (in.): PVC/10 slot Screen

Screen Perforation Diameter (in.): 10 slot

Screen Length (ft.): 10'

Centralizer Depths (ft.): NA

Completion Technique

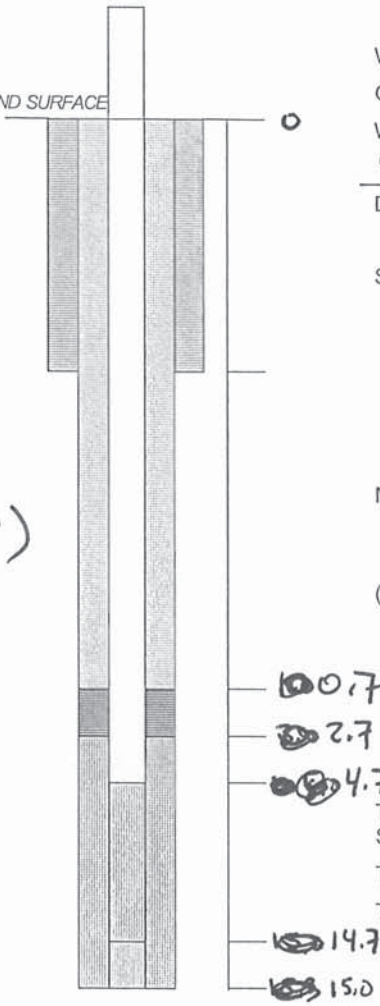
1. Type of Filter Pack and Placement Method
   #3 SAND - Pre Pack (2 1/2")
2. Type of Bentonite and Placement Method
   3/8" Holeplug, bentonite chips
3. Type of Grout Mixture and Placement Method
   None (Temporary Well)

Description of Potential Problems With Well:

None

Development Technique

Surge Block / Mini-Purge Pump



Well Head Elevation

Ground Surface Elev.

Well Head Completion Method: Pre-Packed Well Screen

Drilling Method/Rig Type: Direct Push

Surface Casing: Type: Welded Metal Plate; Diameter: 3.5"; Length: ~6"

MATERIALS

Cement (sks.): None

Filter Pack Material (ft.³): 12.3 linear feet #3 sand

Casing Material (ft.): 4.7

Bentonite (ft.³): 2.0 linear feet

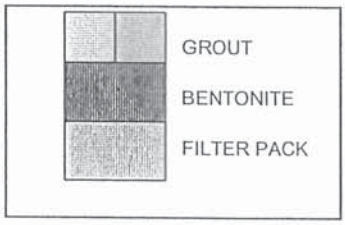
Top of Bentonite Seal: 0.7 ft.

Top of Filter Pack: 2.7 ft.

Top of Screen: 4.7 ft.

Bottom of Screen: 14.7 ft.

Bottom of Hole: 15 ft.



NOTE: ALL DEPTHS ARE REFERENCED TO GROUND SURFACE

DTW @ 7.43 @ 15:01D on 1/13 below top of casing

Figure I-C-1-5

Well Completion Record

JOB NO.: CTO 026 WELL NO. Temp Well 2 HYDROGEOLOGIST: S. Spengler

CLIENT: NAVFAC HAWAII DRILLER: Kevin Rogers

WELL LOCATION: UST KB-100 DATE/TIME: 1/13/2015 / 14:45

DETAILS OF CONSTRUCTION

Date Completed: 1/13/15/ 14:45

Borehole Diameter (in.): 3 1/4"

Type and Size of Casing (in.): 1.5"

Type and Size of Screen (in.): PVC/10 Slot Screen/1.5" Diameter

Screen Perforation Diameter (in.): 10 Slot

Screen Length (ft.): 10'

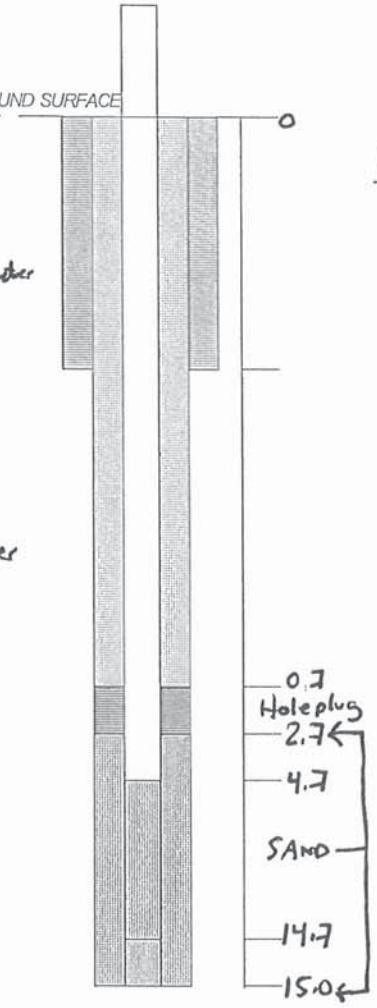
Centralizer Depths (ft.): NA

Completion Technique

1. Type of Filter Pack and Placement Method
   #3 SAND - Pre-Pack, 2 1/8" Diameter
2. Type of Bentonite and Placement Method
   3/8" Holeplug, bentonite chips
3. Type of Grout Mixture and Placement Method
   None (Temporary Well)

Description of Potential Problems With Well:
None

Development Technique
Surge Block / Mini-Purge Pump



Well Head Elevation

Ground Surface Elev.

Well Head Completion Method
Pre-Packed Well Screen

Drilling Method/Rig Type: Direct Push

Surface Casing: Type Welded metal Plate
Diameter 3.5"
Length 6"

MATERIALS

Cement (sks.): None

Filter Pack Material ($ft.^3$): 12.8 linear feet, #3 San

Casing Material (ft.): 4.7

Bentonite ($ft.^3$): 2.0 linear feet

Top of Bentonite Seal: 0.7 ft.

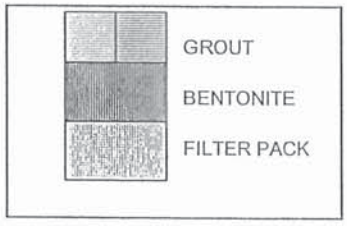
Top of Filter Pack: 2.7 ft.

Top of Screen: 4.7 ft.

Bottom of Screen: 14.7 ft.

Bottom of Hole: 15.0 ft.

DTW = 7.07' 15:19



NOTE: ALL DEPTHS ARE REFERENCED TO GROUND SURFACE

Figure I-C-1-5

Well Completion Record

JOB NO.: CTO 026 WELL NO. Temp Well 3 HYDROGEOLOGIST: S. Spengler

CLIENT: NAVFAC HAWAII DRILLER: Kevin Rogers

WELL LOCATION: UST 1KB-100 DATE/TIME: 1/13/2015 / 15:00

DETAILS OF CONSTRUCTION

Date Completed: 1/13/15 15:00

Borehole Diameter (in.): 3 1/4"

Type and Size of Casing (in.): 1.5"

Type and Size of Screen (in.): PVC/10 slot Screen/1.5" Diameter

Screen Perforation Diameter (in.): 10 slot

Screen Length (ft.): 10'

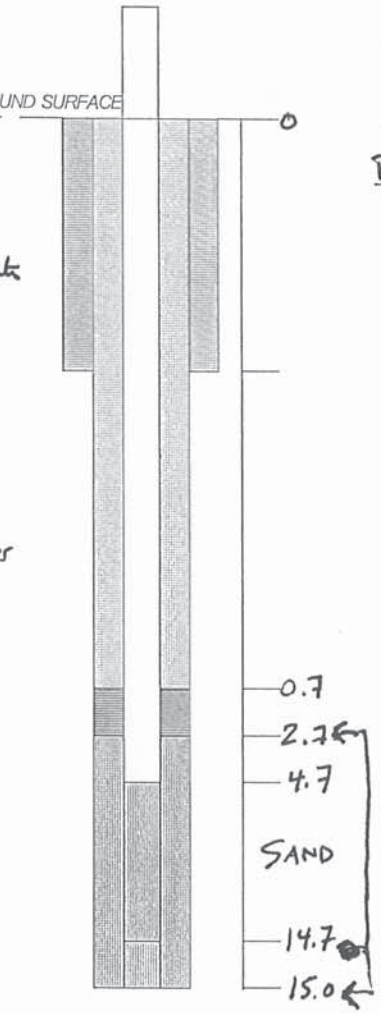
Centralizer Depths (ft.): NA

Completion Technique

1. Type of Filter Pack and Placement Method
   #3 SAND - Pre Pack, 2 1/2" Diameter
2. Type of Bentonite and Placement Method
   3/8" Holeplug, bentonite chips
3. Type of Grout Mixture and Placement Method
   None (Temporary Well)

Description of Potential Problems With Well:
None

Development Technique
Surge Block / Mini Purge Pump



Well Head Elevation

Ground Surface Elev.

Well Head Completion Method
Pre-Packed Well Screen

Drilling Method/Rig Type: Direct Push

Surface Casing: Type: Welded metal Plate
Diameter: 3.5"
Length: 6"

MATERIALS

Cement (sks.): None

Filter Pack Material (ft.^{3}): 12.0 linear feet #3 Sand

Casing Material (ft.): 4.7

Bentonite (ft.^{3}): 2.0 linear feet

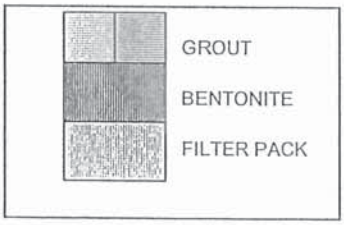
Top of Bentonite Seal: 0.7 ft.

Top of Filter Pack: 2.7 ft.

Top of Screen: 4.7 ft.

Bottom of Screen: 14.7 ft.

Bottom of Hole: 15.0 ft.



NOTE: ALL DEPTHS ARE REFERENCED TO GROUND SURFACE

DTW = 7.29' @ 15:14

Figure I-C-1-5

Well Completion Record

JOB NO.: GTO 626 WELL NO. Temp Well 4 HYDROGEOLOGIST: S. Spengler

CLIENT: NAVFAC HAWAII DRILLER: Kevin Rogers

WELL LOCATION: UST KB-100 DATE/TIME: 1/13/2015 / 14:10

DETAILS OF CONSTRUCTION

Date Completed: 1/13/15 14:10

Borehole Diameter (in.): 3 1/4"

Type and Size of Casing (in.): 1.5"

Type and Size of Screen (in.): PVC / 10 Slot Screen / 1.5" Diameter

Screen Perforation Diameter (in.): 10 Slot

Screen Length (ft.): 10'

Centralizer Depths (ft.): NA

Completion Technique

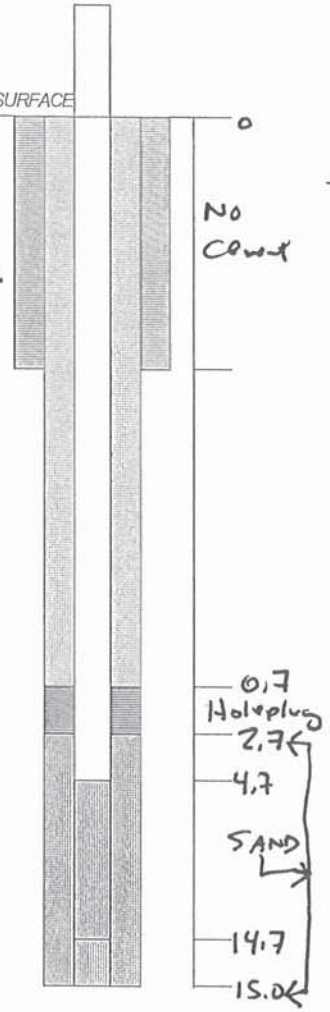
1. Type of Filter Pack and Placement Method
   #3 SAND - PRE PACK, 2 1/2" Diameter
2. Type of Bentonite and Placement Method
   3/8" Holeplug, bentonite chips
3. Type of Grout Mixture and Placement Method
   None (Temporary Well)

Description of Potential Problems With Well:

None

Development Technique

Surge Block / ~~[illegible]~~ Mini-Purge Pump



Well Head Elevation

Ground Surface Elev.

Well Head Completion Method: Pre-Packed Well Screen

Drilling Method/Rig Type: Direct Push

Surface Casing: Type: Welded Metal Plate; Diameter: ~~Ø~~3.5"; Length: 6"

MATERIALS

Cement (sks.)	None
Filter Pack Material (ft.^{3})	12.3 linear feet, #3 sand
Casing Material (ft.)	4.7
Bentonite (ft.^{3})	2.0 linear feet

Top of Bentonite Seal	0.7	ft.
Top of Filter Pack	2.7	ft.
Top of Screen	4.7	ft.
Bottom of Screen	14.7	ft.
Bottom of Hole	15.0	ft.

GROUT

BENTONITE

FILTER PACK

NOTE: ALL DEPTHS ARE REFERENCED TO GROUND SURFACE

DTW 6.45 @ 15:06 on 1/13
Below top of Casing

Figure I-C-1-5

Well Completion Record

JOB NO.: CTO 026 WELL NO. Temp Well 5 HYDROGEOLOGIST: S. Spengler

CLIENT: NAVFAC HAWAII DRILLER: Kevin Rogers

WELL LOCATION: UST KB-100 DATE/TIME: 1/13/2015 / 13:45

DETAILS OF CONSTRUCTION

Date Completed: 1/13/15 13:45

Borehole Diameter (in.): 3 1/4"

Type and Size of Casing (in.): 1.5"

Type and Size of Screen (in.): PVC/10 Slot Screen/1.5" Diameter

Screen Perforation Diameter (in.): 10 Slot

Screen Length (ft.): 10'

Centralizer Depths (ft.): NA

Completion Technique

1. Type of Filter Pack and Placement Method

#3 SAND - Pre Packed, 2 1/2" Diameter

2. Type of Bentonite and Placement Method

3/8" Holeplug, bentonite chips

3. Type of Grout Mixture and Placement Method

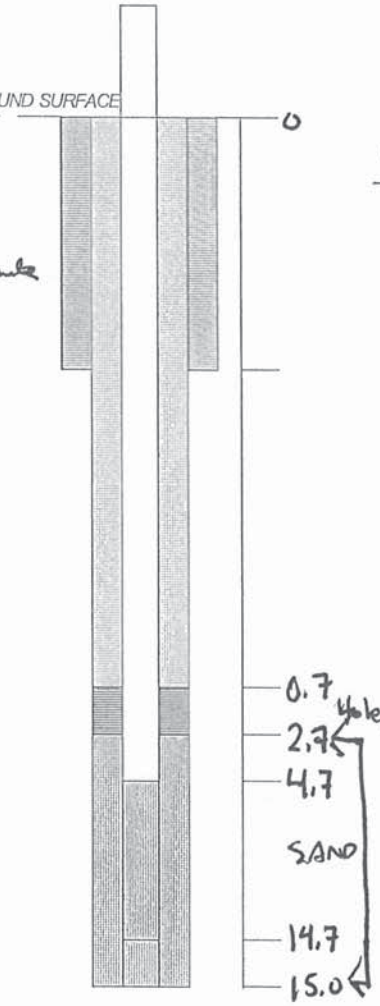
None (Temporary Well)

Description of Potential Problems With Well:

None

Development Technique

Surge Block / Mini Purge Pump



Well Head Elevation

Ground Surface Elev.

Well Head Completion Method

Pre-Packed Well Screen

Drilling Method/Rig Type: Direct Push

Surface Casing: Type: Welded Metal Plate

Diameter: 3.5"

Length: 6"

MATERIALS

Cement (sks.): None

Filter Pack Material (ft.^{3}): 12.0 linear feet/#3 San

Casing Material (ft.): 4.7

Bentonite (ft.^{3}): 2.0 linear feet

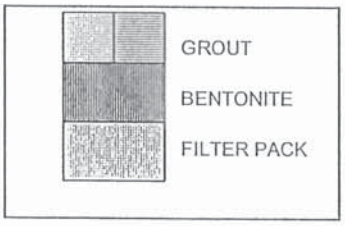
Top of Bentonite Seal: 0.7 ft.

Top of Filter Pack: 2.7 ft.

Top of Screen: 4.7 ft.

Bottom of Screen: 14.7 ft.

Bottom of Hole: 15.0 ft.



NOTE: ALL DEPTHS ARE REFERENCED TO GROUND SURFACE

DTW = 6.54 @ 15:01 on 1/13 below top of casing

Figure I-C-1-5

Well Completion Record

JOB NO.: CJO 026 WELL NO. Temp Well 6 HYDROGEOLOGIST: S. Spengler

CLIENT: NAVFAC Hawaii DRILLER: Kevin Rogers

WELL LOCATION: UST KB-100 DATE/TIME: 1/13/2015 / 15:15

DETAILS OF CONSTRUCTION

Date Completed 1/13/15 / 15:15

Borehole Diameter (in.) 3 1/4"

Type and Size of Casing (in.) 1.5"

Type and Size of Screen (in.) PVC / 10 slot Screen / 1.5" Diameter

Screen Perforation Diameter (in.) 10 slot

Screen Length (ft.) 10'

Centralizer Depths (ft.) NA

Completion Technique

1. Type of Filter Pack and Placement Method

#3 SAND - Pre Packed, 2 1/2" Diameter

2. Type of Bentonite and Placement Method

3/8" Holeplug, bentonite chips

3. Type of Grout Mixture and Placement Method

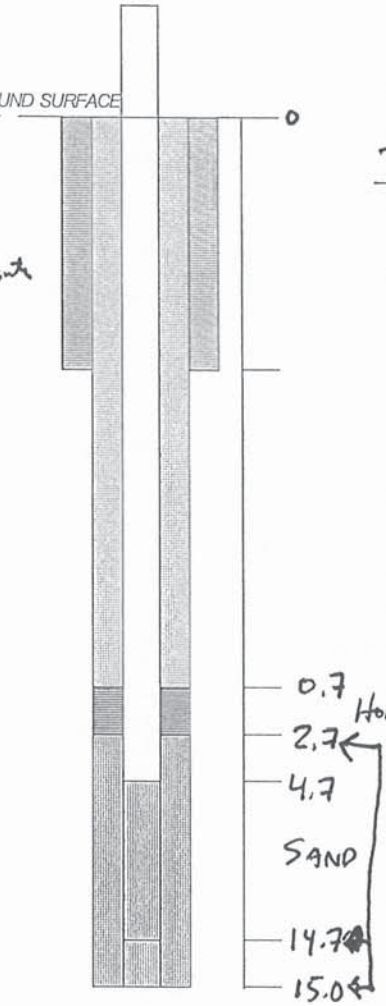
None (Temporary Well)

Description of Potential Problems With Well:

None

Development Technique

Surge Block / Mini-Purge Pump



Well Head Elevation

Ground Surface Elev.

Well Head Completion Method

Pre-Packed Well Screen

Drilling Method/Rig Type Direct Push

Surface Casing: Type Welded Metal Plate

Diameter 3.5"

Length 6"

MATERIALS

Cement (sks.) None

Filter Pack Material (ft.^{3}) 12.6 linear feet / #3 SAND

Casing Material (ft.) 4.7

Bentonite (ft.^{3}) 2.0 linear feet

Top of Bentonite Seal 0.7 ft.

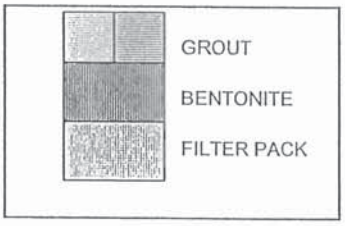
Top of Filter Pack 2.7 ft.

Top of Screen 4.7 ft.

Bottom of Screen 14.7 ft.

Bottom of Hole 15.0 ft.

DTW = 6.96' @ 15:14



NOTE: ALL DEPTHS ARE REFERENCED TO GROUND SURFACE

Figure I-C-1-5

Well Completion Record

JOB NO.: CTO 026 WELL NO. Temp Well 7 HYDROGEOLOGIST: S. Spengler

CLIENT: NAVFAC HAWAII DRILLER: Kevin Rogers

WELL LOCATION: UST KB-100 DATE/TIME: 1/13/2015

DETAILS OF CONSTRUCTION

Date Completed: 1/13/15

Borehole Diameter (in.): 3 1/4"

Type and Size of Casing (in.): 1.5"

Type and Size of Screen (in.): PVC/10 Slot Screen/1.5" Diameter

Screen Perforation Diameter (in.): 10 slot

Screen Length (ft.): 10'

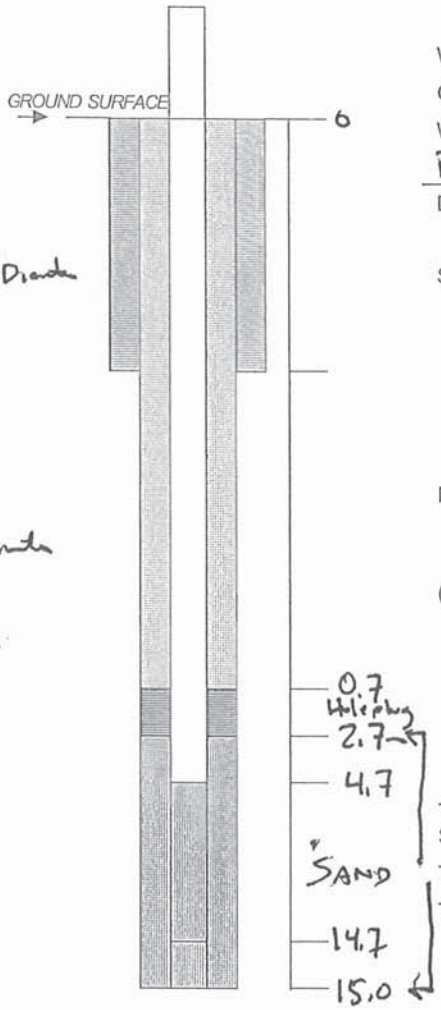
Centralizer Depths (ft.): NA

Completion Technique

1. Type of Filter Pack and Placement Method
   #3 SAND-Pre Packed, 2 1/2" Diameter
2. Type of Bentonite and Placement Method
   3/8" Holeplug, bentonite chips
3. Type of Grout Mixture and Placement Method
   None (Temporary Well)

Description of Potential Problems With Well:
None

Development Technique
Surge Block/Mini-Purge Pump



Well Head Elevation

Ground Surface Elev.

Well Head Completion Method
Pre-Packed Well Screen

Drilling Method/Rig Type: Direct Push

Surface Casing: Type: Welded Metal Plate
Diameter: 3.5"
Length: 6"

MATERIALS

Cement (sks.): None

Filter Pack Material (ft.³): 12.3 linear feet/#3 Sand

Casing Material (ft.): 4.7

Bentonite (ft.³): 2.0 linear feet

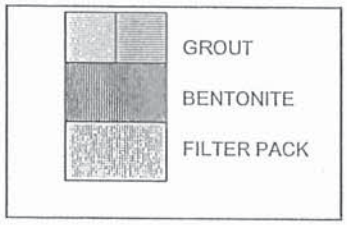
Top of Bentonite Seal: 0.7 ft.

Top of Filter Pack: 2.7 ft.

Top of Screen: 4.7 ft.

Bottom of Screen: 14.7 ft.

Bottom of Hole: 15.0 ft.



NOTE: ALL DEPTHS ARE REFERENCED TO GROUND SURFACE

Figure I-C-1-5

Well Completion Record

Field Log of Boring

BORING NUMBER: B-1

SHEET 1 OF 1

PROJECT NAME: UST KB-91	PROJECT NUMBER: CTO 026	ELEVATION AND DATUM:	LOCATION: MCBH
DRILLING COMPANY: GeoTek	DRILLER: Kevin Rogers	DATE AND TIME STARTED: 1/14/15 9:10	DATE AND TIME COMPLETED: 1/14/15 9:17
DRILLING EQUIPMENT: Geoprobe 6620DT	DRILLING METHOD: Direct Push	COMPLETION DEPTH: 9'	TOTAL NO. OF SAMPLES: 3
SIZE AND TYPE OF BIT: 2 1/4"	HOLE DIAMETER: 2 1/4"	NO. OF SAMPLES: BULK / SS	DRIVE / PITCHER
DRILLING FLUID:	DRILLING ANGLE:	WATER LEVEL: FIRST	AFTER _____ HOURS
SAMPLE HAMMER: TYPE / DRIVING WT. / DROP		HYDROGEOLOGIST/DATE: SPSNGLER 1/13	CHECKED BY/DATE:

Headspace Reading (ppm) LITHOLOGY	DEPTH (FEET)	SAMPLES	RECOVERY	BLOWN COUNT	DESCRIPTION	USCS SYMBOL	ESTIMATED PERCENT OF GR	SA	FI	COMMENTS
	0							40	5	
					0-1 Dry, black (10YR2/1) gravelly base course		55	~~30~~	~~15~~	
	1									
PID= 2.4										Sample 1-2
	2		70%							
	3				1-8 Dry to moist, very pale brown (10YR7/3) gravelly sand		25	75	0	
PID= 0.6										
	4									Sample 3-4
	5									
										water table ~7.5' bgs
	6									
	7		75%							Sample ~~6-7.5~~ 7.0-8.0
PID= 0.7										
	8				8-~~9~~8.7 wet, greenish gray (6/1) plastic clay		0	5	95	Slight smell in 8-9 sample
	9				8.7-9.0 wet, greenish gray (6/1) clayey sand		0	90	10	

Figure I-B-1-1: Field Log of Boring

Field Log of Boring

BORING NUMBER: B-2

SHEET 1 OF 1

PROJECT NAME: UST KB-91	PROJECT NUMBER: CTO 026	ELEVATION AND DATUM:	LOCATION: MCBH
DRILLING COMPANY: Geo Tek	DRILLER: Kevin Rogers	DATE AND TIME STARTED: 1/14/15 9:22	DATE AND TIME COMPLETED: 1/14/15 9:29
DRILLING EQUIPMENT: Geoprobe 6620 DT	DRILLING METHOD: Direct Push	COMPLETION DEPTH: 9'	TOTAL NO. OF SAMPLES: 3
SIZE AND TYPE OF BIT: 2 1/4"	HOLE DIAMETER: 2 1/4"	NO. OF SAMPLES: BULK: SS:	DRIVE: PITCHER:
DRILLING FLUID:	DRILLING ANGLE:	WATER LEVEL: FIRST	AFTER _____ HOURS
SAMPLE HAMMER: TYPE: DRIVING WT.: DROP:		HYDROGEOLOGIST/DATE: Spengler 1/13	CHECKED BY/DATE

LITHOLOGY (Hedgy Ready)	DEPTH (FEET)	SAMPLES	RECOVERY	BLOWN	DESCRIPTION	USCS SYMBOL	ESTIMATED PERCENT OF GR	SA	FI	COMMENTS
	0									
					0-1.5' Dry, black (10YR2/1) gravelly base course		65	35	0	
	1									
	2									SAMPLE 1.5-2.5
PID=29.9					1.5-7.8 Dry to moist very pale brown (10YR7/3) gravelly sand		30	70	0	
	3		70%							SAMPLE 3.0-4.0
	4									
	5									
PID=9.6	6									water table ~7.0' bgs
	7		80%							
PID=49.3	8				7.8-8.5 Wet, greenish gray (6/1) plastic clay		0	0	100	SAMPLE 7.0-9.0
	9				8.5-9.0 Wet, greenish gray (6/1) sand with minor clay		0	95	5	

Figure I-B-1-1: Field Log of Boring

Field Log of Boring

BORING NUMBER: B-3

SHEET 1 OF 1

PROJECT NAME: UST KB-91	PROJECT NUMBER: CTO 026	ELEVATION AND DATUM:	LOCATION: MCBH
DRILLING COMPANY: GeoTek	DRILLER: Kevin Rogers	DATE AND TIME STARTED: 1/14/15 9:33	DATE AND TIME COMPLETED: 1/14/15 9:30
DRILLING EQUIPMENT: Geoprobe 6620DT	DRILLING METHOD: Direct Push	COMPLETION DEPTH: 9'	TOTAL NO. OF SAMPLES: 3
SIZE AND TYPE OF BIT: 2 1/4"	HOLE DIAMETER: 2 1/4"	NO. OF SAMPLES: BULK: SS:	DRIVE: PITCHER:
DRILLING FLUID:	DRILLING ANGLE:	WATER LEVEL: FIRST	AFTER _____ HOURS
SAMPLE HAMMER: TYPE: DRIVING WT.: DROP:		HYDROGEOLOGIST/DATE: SPENGLER 1/13	CHECKED BY/DATE

Headspace Reading (ppm) LITHOLOGY	DEPTH (FEET)	SAMPLES	RECOVERY	BLOWN COUNT	DESCRIPTION	USCS SYMBOL	ESTIMATED PERCENT OF GR	SA	FI	COMMENTS	
	0										
					0-9" Dry black (10YR 2/1)		60	35	15		
	1				gravelly base course						
PID=17.0										Sample 1-2	B-3-1
	2		70%								
	3				9"-6.5' Dry to moist		25	70	5		
PID=15.9					Very pale brown (10YR 7/3)					Sample 3.0-4.0	B-3-2
	4				gravelly sand						
	5										
	6										
	7		80%		6.5'-8.6' Wet, greenish		0	0	100	Sample 6.5-7.5	B-3-3
PID=19.1					gray (6/1) plastic clay						
	8										
	9				8.6'-9.0' wet, greenish gray (6/1) sand		5	95	0		

Figure I-B-1-1: Field Log of Boring

Field Log of Boring

BORING NUMBER: B-4

SHEET 1 OF 1

PROJECT NAME: UST KB-91	PROJECT NUMBER: CTO 026	ELEVATION AND DATUM:	LOCATION: McBH
DRILLING COMPANY: Geo Tek	DRILLER: Kevin Rogers	DATE AND TIME STARTED: 1/14/15 9:40	DATE AND TIME COMPLETED: 1/14/15 9:46
DRILLING EQUIPMENT: Geoprobe 6620DT	DRILLING METHOD: Direct Push	COMPLETION DEPTH: 9'	TOTAL NO. OF SAMPLES: 3
SIZE AND TYPE OF BIT: 2 1/4"	HOLE DIAMETER: 2 1/4"	NO. OF SAMPLES: BULK: SS:	DRIVE: PITCHER:
DRILLING FLUID:	DRILLING ANGLE:	WATER LEVEL: FIRST	AFTER _____ HOURS
SAMPLE HAMMER: TYPE: DRIVING WT.: DROP:		HYDROGEOLOGIST/DATE: SPENGLER 1/13	CHECKED BY/DATE:

Headspace Reading (ppm) / LITHOLOGY	DEPTH (FEET)	SAMPLES	RECOVERY	BLOWS	DESCRIPTION	USCS SYMBOL	ESTIMATED PERCENT OF GR	SA	FI	COMMENTS	
	0										
					0-9" Dry, black (10YR2/1) gravelly base course		65	30	5		
	1										
PID = 19.5										SAMPLE 1-2	B4-1
	2		2.0		9"-7.5' Dry to wet very pale brown (10YR7/3) gravelly sand		30	70	0		
	3		7.0								
PID = 13.7										SAMPLE 3-4	B4-2
	4										
	5										
	6										
	7		5.0								
										SAMPLE 7-9	B4-3
					7.5'-8.5' Wet, greenish gray (6/1) plastic clay		0	0	100		
PID = 19.1	8										
	9				8.5'-9.0' Wet, greenish gray (6/1) sand		0	95	5		

Figure I-B-1-1: Field Log of Boring

Field Log of Boring

BORING NUMBER	PROJECT NAME	PROJECT NUMBER	ELEVATION AND DATUM	LOCATION
B-5	UST KB-91	GTO 026		MCBH
	DRILLING COMPANY: GeoTek	DRILLER: Kevin Rogers	DATE AND TIME STARTED: 1/14/15 13:02	DATE AND TIME COMPLETED: 1/14/15 13:00
	DRILLING EQUIPMENT: Geoprobe 6620DT	DRILLING METHOD: Direct Push	COMPLETION DEPTH: 9	TOTAL NO. OF SAMPLES: 4
	SIZE AND TYPE OF BIT: 2 1/4"	HOLE DIAMETER: 2 1/4"	NO. OF SAMPLES: BULK / SS	DRIVE / PITCHER
	DRILLING FLUID	DRILLING ANGLE	WATER LEVEL: FIRST	AFTER _____ HOURS
	SAMPLE HAMMER: TYPE / DRIVING WT. / DROP		HYDROGEOLOGIST/DATE: Springer 1/13	CHECKED BY/DATE

Headspace Reading (ppm) LITHOLOGY	DEPTH (FEET)	SAMPLES	RECOVERY	BLOW COUNT	DESCRIPTION	USCS SYMBOL	ESTIMATED PERCENT OF GR	SA	FI	COMMENTS
	0				0-1.5 Dark, black (10YR2/1) gravelly basecourse		50	35	15	
	1									
PID=12.9	2		80%							SAMPLE 1.5-2.5
	3				1.5-7.0 Dry to wet very pale brown (10YR7/3) gravelly sand		25	70	5	
PID=10.5	4									SAMPLE 3-4
	5				water ~6.5-7.0					
PID=13.2	6									
	7		80%		7.0-8.7 wet, greenish gray (6/1) plastic clay with minor sand		0	10	90	SAMPLE 6.5-7.5 (collect Field Duplicate)
	8									
	9				8.7-9.0 wet, dark greenish gray (4/1) sand		0	95	5	

Figure I-B-1-1: Field Log of Boring

Field Log of Boring

BORING NUMBER: B-6

SHEET 1 OF 1

PROJECT NAME: UST KB-91	PROJECT NUMBER: CTO 026	ELEVATION AND DATUM:	LOCATION: MCBH
DRILLING COMPANY: Geo Tek	DRILLER: Kevin Rogers	DATE AND TIME STARTED: 1/14/15 13:52	DATE AND TIME COMPLETED: 1/14/15 14:05
DRILLING EQUIPMENT: Geoprobe 6620DT	DRILLING METHOD: Direct Push	COMPLETION DEPTH: 9'	TOTAL NO. OF SAMPLES: 4
SIZE AND TYPE OF BIT: 2 1/4"	HOLE DIAMETER: 2 1/4"	NO. OF SAMPLES: BULK: SS:	DRIVE: PITCHER:
DRILLING FLUID:	DRILLING ANGLE:	WATER LEVEL: FIRST	AFTER ____ HOURS
SAMPLE HAMMER: TYPE: DRIVING WT.: DROP:		HYDROGEOLOGIST/DATE: S Pengelee 1/15	CHECKED BY/DATE:

Headspace Reading (ppm) LITHOLOGY	DEPTH (FEET)	SAMPLES	RECOVERY	BLOWN COUNT	DESCRIPTION	USCS SYMBOL	ESTIMATED PERCENT OF GR	SA	FI	COMMENTS
	0									
					0-4" Concrete Slab					
					4"-1.0' basalt base core		80	20	0	
	1									SAMPLE 1-2
PID=28.2					1.0-7.0 moist to wet		30	70	0	
	2				very pale brown (10YR 7/3)					
					gravelly sand					
	3									
PID=24.9										SAMPLE 3-4
	4									
	5									
	6									
	7									
PID=17.2					7.0-8.5: Wet greenish		0	10	90	SAMPLE 6.5-7.5
	8				gray (6/1) sandy clay					COLLECT DUPLICATE
	9				8.5-9.0 Wet, dark greenish gray (4/1) sand.		0	95	5	

Figure I-B-1-1: Field Log of Boring

Field Log of Boring

BORING NUMBER: B7

SHEET 1 OF 1

PROJECT NAME: USJ ICB-91	PROJECT NUMBER: CTO 026	ELEVATION AND DATUM:	LOCATION: MCDH
DRILLING COMPANY: GeoTek	DRILLER: Kevin Rogers	DATE AND TIME STARTED: 1/14/15 14:08	DATE AND TIME COMPLETED: 1/14/15 14:15
DRILLING EQUIPMENT: Geoprobe 6620 DT	DRILLING METHOD: Direct Push	COMPLETION DEPTH: 9	TOTAL NO. OF SAMPLES: 6
SIZE AND TYPE OF BIT: 2 1/4"	HOLE DIAMETER: 2 1/4"	NO. OF SAMPLES: BULK: SS:	DRIVE: PITCHER:
DRILLING FLUID:	DRILLING ANGLE:	WATER LEVEL: FIRST	AFTER _____ HOURS
SAMPLE HAMMER: TYPE: DRIVING WT.: DROP:		HYDROGEOLOGIST/DATE: Spangler 1/13	CHECKED BY/DATE:

Headspace Reading (ppm) LITHOLOGY	DEPTH (FEET)	SAMPLES	RECOVERY	BLOWN COUNT	DESCRIPTION	USCS SYMBOL	ESTIMATED PERCENT OF GR	SA	FI	COMMENTS
	0				0-4" Concrete Slab					
	1				4"-1.0 gravelly sand		25	70	5	
PID=1.6					base coarse					1.0-2.0
	2		85%		light blush gray (8/1)					Collect MS/MSD
	3									
PID=10.2					1.0-5.5' Moist yellowish		2	98	0	3.0-4.0
	4				brown (10YR 5/6) sand					Collect MS/MSD
	5									
										Water Table 7.0 bgs
	6				5.5-6.5 Moist, very pale brown		35	65	0	
					(10YR 7/3) gravelly sand					
	7		65%		6.5-7.2 wet, dark greenish		55	40	5	Sample 6.5-7.5
PID=7200					gray (4/1) sandy gravel					Collect Duplicate
	8				7.2-8.6 wet greenish		0	0	100	
					gray (6/1) plastic clay					
	9				8.6-9.0 wet, dark greenish		30	65	5	
					gray (4/1) gravelly sand					

distinct sheen

Figure I-B-1-1: Field Log of Boring

Field Log of Boring

BORING NUMBER			
B-8			SHEET 1 OF 1
PROJECT NAME: UST KB-91	PROJECT NUMBER: CTO 026	ELEVATION AND DATUM:	LOCATION: MCBH
DRILLING COMPANY: Geo Tek	DRILLER: Kevin Rogers	DATE AND TIME STARTED: 1/14/15 1309	DATE AND TIME COMPLETED: 1/14/15 13:15
DRILLING EQUIPMENT: Geoprobe 6620 DT	DRILLING METHOD: Direct Push	COMPLETION DEPTH: 9	TOTAL NO. OF SAMPLES: 4
SIZE AND TYPE OF BIT: 2 1/4"	HOLE DIAMETER: 2 1/4"	NO. OF SAMPLES: BULK: SS:	DRIVE: PITCHER:
DRILLING FLUID:	DRILLING ANGLE:	WATER LEVEL: FIRST	AFTER _____ HOURS
SAMPLE HAMMER: TYPE: DRIVING WT.: DROP:		HYDROGEOLOGIST/DATE: SPENGLER 1/15	CHECKED BY/DATE:

Headspace Reading (ppm) LITHOLOGY	DEPTH (FEET)	SAMPLES	RECOVERY	BLOWN COUNT	DESCRIPTION	USCS SYMBOL	ESTIMATED PERCENT OF GR	SA	FI	COMMENTS
	0									
PID=24.5	1				0-8" Dark, black (10YR 2/1) gravelly base course					SAMPLE 0.5-1.5
	2		2.5'		6"-5.5' Moist brownish yellow (10YR 5/6) gravelly sand		10	80	10	
PID=19.4	3									SAMPLE 3.0-4.0
	4									
	5									
	6		2.0'		5.5-6.5 Moist, very pale brown (10YR 7/3) gravelly sand		25	70	5	Water Table ~7
PID > 250	7				6.5-8.0 Wet greenish gray (6/1) sandy gravel		60	35	5	SAMPLE 6.5-7.5 Collected Field Duplicate
	8				8.0-9.0 Wet greenish gray (6/1) clayey sand		0	85	15	
	9									

Figure I-B-1-1: Field Log of Boring

Field Log of Boring

BORING NUMBER			
B-9			SHEET 1 OF 1
PROJECT NAME: UST KB-91	PROJECT NUMBER: CTO 026	ELEVATION AND DATUM:	LOCATION: MCBH
DRILLING COMPANY: Geo Tek	DRILLER: Kevin Rogers	DATE AND TIME STARTED: 1/14/15 13:16	DATE AND TIME COMPLETED: 1/14/15 13:22
DRILLING EQUIPMENT: Geoprobe 6620DT	DRILLING METHOD: Direct Push	COMPLETION DEPTH: 9	TOTAL NO. OF SAMPLES: 4
SIZE AND TYPE OF BIT: 2 1/4"	HOLE DIAMETER: 2 1/4"	NO. OF SAMPLES: BULK: SS:	DRIVE: PITCHER:
DRILLING FLUID:	DRILLING ANGLE:	WATER LEVEL: FIRST	AFTER _____ HOURS
SAMPLE HAMMER: TYPE: DRIVING WT.: DROP:		HYDROGEOLOGIST/DATE: SPENGLER 1/13	CHECKED BY/DATE

Headspace Ready LITHOLOGY (ppm)	DEPTH (FEET)	SAMPLES	RECOVERY	BLOWCOUNT	DESCRIPTION	USCS SYMBOL	ESTIMATED PERCENT OF GR	SA	FI	COMMENTS
	0									
					0-0.5 Dry, black		60	40	0	
	1									SAMPLE 0.5-1.5
PID=13.5					0.5-1.3 Dry, brownish yellow (10YR5/6) gravelly sand		25	70	5	
	2		70%		1.3-1.5 Dry black asphalt					
	3									
PID=15.9					1.5-5.5 Dry to moist, brownish yellow (10YR5/6) sand		0	100	0	Sample 3-4
	4									
	5									
					5.5-7.0 Moist to wet, very pale brown (10YR7/3) gravelly sand		30	65	5	
	6									
PID=41.7										SAMPLE 6-7.0 Field Duplicate
	7		60%		7.0-8.0 Wet greenish gray (6/1) clayey sand		0	80	20	
	8				8.0-8.4 Wet greenish gray plastic clay		0	0	100	Hydrocarbon Sheen seen in the saturated portion of the core.
	9				8.4-9.0 Wet, dark greenish gray (4/1) clayey sand		0	90	10	

Figure I-B-1-1: Field Log of Boring

Field Log of Boring

BORING NUMBER			
B-10			

SHEET 1 OF 1

PROJECT NAME	PROJECT NUMBER	ELEVATION AND DATUM	LOCATION
UST KB-91	CTO 026		MCBH
DRILLING COMPANY: GeoTek	DRILLER: Jon Shjeegstad	DATE AND TIME STARTED: 1/15/15 9:16	DATE AND TIME COMPLETED: 1/15/15 9:15
DRILLING EQUIPMENT: Geoprobe 6620 DT	DRILLING METHOD: Direct Push	COMPLETION DEPTH: 5	TOTAL NO. OF SAMPLES: 1
SIZE AND TYPE OF BIT: 2 1/4"	HOLE DIAMETER: 2 1/4"	NO. OF SAMPLES: BULK / SS	DRIVE / PITCHER
DRILLING FLUID	DRILLING ANGLE	WATER LEVEL: FIRST	AFTER ____ HOURS
SAMPLE HAMMER — TYPE / DRIVING WT. / DROP		HYDROGEOLOGIST/DATE: Spangler 1/15	CHECKED BY/DATE

LITHOLOGY (Headspace)	DEPTH (FEET)	SAMPLES	RECOVERY	BLOWCOUNT	DESCRIPTION	USCS SYMBOL	ESTIMATED PERCENT OF GR	SA	FI	COMMENTS
	0				0-8" Concrete Slab					
	1									
	2		85%		8"-2.5' moist greenish gray (6/1) gravelly sand		10	85	5	water table ~2.5' bgs
PID=634	3				2.5'-4.2 wet, dark greenish gray (4/1) sandy gravel		65	35	0	Sample 2-3
	4									Smelly soil encountered between ~2-5' bgs
	5				4.2-5.0 wet, greenish gray (6/1) clayey sand		5	80	15	
	6									
	7									
	8									
	9									

Figure I-B-1-1: Field Log of Boring

Field Log of Boring

BORING NUMBER: B-11

SHEET 1 OF 1

PROJECT NAME: UST KB-91	PROJECT NUMBER: CTO 026	ELEVATION AND DATUM:	LOCATION: MCBH
DRILLING COMPANY: Geo Tek	DRILLER: Jo Shyegstad, Kevin Rogers	DATE AND TIME STARTED: 1/15/15 9:30	DATE AND TIME COMPLETED: 1/15/15 9:33
DRILLING EQUIPMENT: Geoprobe 6620 DT	DRILLING METHOD: Direct Push	COMPLETION DEPTH: 5	TOTAL NO. OF SAMPLES: 1
SIZE AND TYPE OF BIT: 2 1/4"	HOLE DIAMETER: 2 1/4"	NO. OF SAMPLES: BULK: SS:	DRIVE: PITCHER:
DRILLING FLUID:	DRILLING ANGLE:	WATER LEVEL: FIRST	AFTER _____ HOURS
SAMPLE HAMMER: TYPE: DRIVING WT.: DROP:		HYDROGEOLOGIST/DATE: SPENGLER 1/15	CHECKED BY/DATE:

LITHOLOGY	DEPTH (FEET)	SAMPLES	RECOVERY	BLOWCOUNT	DESCRIPTION	USCS SYMBOL	ESTIMATED PERCENT OF GR	SA	FI	COMMENTS
Headspace	0				0-8" Concrete Core					
	1				8"-2.0 Dry to moist very pale brown (10YR7/3) gravelly sand		40	60	0	
	2				2.0-5.0 Wet dark greenish gray (4/1) Sandy gravel		60	35	5	
PID = 1277	3		65%							Sample 2-3'
	4									Smell encountered throughout the depth interval 2-5' bgs
	5									
	6									
	7									
	8									
	9									

Figure I-B-1-1: Field Log of Boring

Field Log of Boring

BORING NUMBER: B-12

SHEET 1 OF 1

PROJECT NAME: UST KB-91	PROJECT NUMBER: CTO 026	ELEVATION AND DATUM:	LOCATION: MCBH
DRILLING COMPANY: Geo Tek	DRILLER: Kevin Rogers	DATE AND TIME STARTED: 1/14/15 13:46	DATE AND TIME COMPLETED: 1/14/15 13:51
DRILLING EQUIPMENT: Geoprobe 6620DT	DRILLING METHOD: Direct Push	COMPLETION DEPTH: 9	TOTAL NO. OF SAMPLES: 3
SIZE AND TYPE OF BIT: 2 1/4"	HOLE DIAMETER: 2 1/4"	NO. OF SAMPLES: BULK: SS:	DRIVE: PITCHER:
DRILLING FLUID:	DRILLING ANGLE:	WATER LEVEL: FIRST	AFTER _____ HOURS
SAMPLE HAMMER: TYPE: DRIVING WT.: DROP:		HYDROGEOLOGIST/DATE: Spengler 1/13	CHECKED BY/DATE

LITHOLOGY	DEPTH (FEET)	SAMPLES	RECOVERY	BLOWCOUNT	DESCRIPTION	USCS SYMBOL	ESTIMATED PERCENT OF GR	SA	FI	COMMENTS
	0				0-4" Concrete Slab					
	1				4"-1' basalt gravel		80	15	5	
PID= 12.3										Sample 1-2'
	2		75%							
	3				1'-5.5' dry to moist brownish yellow (10YR5/4) Sand		0	95	5	
PID= 14.7	4									Sample 3-4'
	5									
	6				5.5'-6.5 moist, very pale brown (10YR7/3) gravelly sand		35	65	0	
	7		60%		6.5-9.0 wet, greenish gray (6/1) gravelly Sand		40	60	0	Water level ~7.0
PID= 7[illegible]500	8									Sample 7.0-8.0
	9									

Figure I-B-1-1: Field Log of Boring

Field Log of Boring

BORING NUMBER: B-13

SHEET 1 OF 1

PROJECT NAME: USI KB-91	PROJECT NUMBER: CTO 026	ELEVATION AND DATUM	LOCATION: MCBH
DRILLING COMPANY: GeoTek	DRILLER: Jon Shjegstad	DATE AND TIME STARTED: 1/15/15 9:24	DATE AND TIME COMPLETED: 1/15/15 9:26
DRILLING EQUIPMENT: GeoProbe 6620DT	DRILLING METHOD: Direct Push	COMPLETION DEPTH: 5	TOTAL NO. OF SAMPLES: 2
SIZE AND TYPE OF BIT: 2 1/4"	HOLE DIAMETER: 2 1/4"	NO. OF SAMPLES: BULK / SS	DRIVE / PITCHER
DRILLING FLUID	DRILLING ANGLE	WATER LEVEL: FIRST	AFTER _____ HOURS
SAMPLE HAMMER: TYPE / DRIVING WT. / DROP		HYDROGEOLOGIST/DATE: Spengler 1/15	CHECKED BY/DATE

LITHOLOGY	DEPTH (FEET)	SAMPLES	RECOVERY	BLOWCOUNT	DESCRIPTION	USCS SYMBOL	ESTIMATED PERCENT OF GR	SA	FI	COMMENTS
	0				0-8" Concrete Core					
	1				8" - 1.2' Moist greenish gray (6/1) sandy gravel		70	30	0	water table @ ~2.5' bgs
	2		No Sample							
PID = 714	3				1.2 - 5.0 moist to wet, dark greenish gray (4/1) sandy gravel.		60	30	10	SAMPLE 2-3 Field Duplicate
	4									
	5									Carbonate exists from ~2' to 5' bgs
	6									
	7									
	8									
	9									

Figure I-B-1-1: Field Log of Boring

Field Log of Boring

BORING NUMBER			
B-14			

SHEET 1 OF 1

PROJECT NAME	PROJECT NUMBER	ELEVATION AND DATUM	LOCATION
USS KRB-91	CTO 026		MCBH
DRILLING COMPANY: GeoTek	DRILLER: Jon Shjegstad	DATE AND TIME STARTED: 1/15/15 9:07	DATE AND TIME COMPLETED: 1/15/15 9:10
DRILLING EQUIPMENT: Geoprobe 6620DT	DRILLING METHOD: Direct Push	COMPLETION DEPTH: 5	TOTAL NO. OF SAMPLES: 1
SIZE AND TYPE OF BIT: 2 1/4"	HOLE DIAMETER: 2 1/4"	NO. OF SAMPLES: BULK / SS	DRIVE / PITCHER
DRILLING FLUID	DRILLING ANGLE	WATER LEVEL: FIRST	AFTER _____ HOURS
SAMPLE HAMMER: TYPE / DRIVING WT. / DROP		HYDROGEOLOGIST/DATE: Spengler 1/15	CHECKED BY/DATE

LITHOLOGY	DEPTH (FEET)	SAMPLES	RECOVERY	BLOWCOUNT	DESCRIPTION	USCS SYMBOL	ESTIMATED PERCENT OF GR	SA	FI	COMMENTS
	0				8" Concrete Slab					
	1				8"-5.0'		35	60	5	
PID 71905	2		2.3		moist to wet, greenish gray (6/1) gravelly sand					Water Table ~2.5' bgs
	3		5.0							SAMPLE 2-3
	4									Observed globules of fuel in the core at depth around the water table
	5									
	6									Soil at the bottom of the core was also contaminated
	7									
	8									
	9									

Figure I-B-1-1: Field Log of Boring

Field Log of Boring

BORING NUMBER	PROJECT NAME	PROJECT NUMBER	ELEVATION AND DATUM	LOCATION
B-15	UST KB-91	CTO 026		MCBH

SHEET 1 OF 1

DRILLING COMPANY	DRILLER	DATE AND TIME STARTED	DATE AND TIME COMPLETED
GeoTek	Jon Shjegstad	1/15/15 9:38	1/15/15 9:41

DRILLING EQUIPMENT	DRILLING METHOD	COMPLETION DEPTH	TOTAL NO. OF SAMPLES
Geoprobe 6620DT	Direct Push		

SIZE AND TYPE OF BIT	HOLE DIAMETER	NO. OF SAMPLES	BULK	SS	DRIVE	PITCHER
2 1/4	2 1/4"					

DRILLING FLUID	DRILLING ANGLE	WATER LEVEL	FIRST	AFTER ____ HOURS

SAMPLE HAMMER			HYDROGEOLOGIST/DATE	CHECKED BY/DATE
TYPE	DRIVING WT.	DROP	Spensbover	

LITHOLOGY	DEPTH (FEET)	SAMPLES	RECOVERY	BLOWCOUNT	DESCRIPTION	USCS SYMBOL	ESTIMATED PERCENT OF GR	SA	FI	COMMENTS
	0				0-8" Core - Concrete					
	1				8"-3.2' Dry to wet very pale brown (10YR7/3)		55	45	0	Water Table ~2.5' bgs
PID = 894	2									
	3		70%		3.2-4.2 wet, dark greenish gray (4/1) gravelly clayey sand		30	40	30	SAMPLE COLLECT 2-3'
	4				4.2-5.0 wet, greenish gray (6/1) gravelly sand		20	70	10	
	5									
	6									
	7									
	8									
	9									

Figure I-B-1-1: Field Log of Boring

Field Log of Boring

BORING NUMBER							
B-16							SHEET 1 OF 1
PROJECT NAME: UST KB-91	PROJECT NUMBER: CTO 026	ELEVATION AND DATUM			LOCATION: MCBH		
DRILLING COMPANY: GeoTek	DRILLER: Jo-Shjegstad	DATE AND TIME STARTED: 1/15/15 10:02			DATE AND TIME COMPLETED: 1/15/15 10:12		
DRILLING EQUIPMENT: GeoProbe 6620 DT	DRILLING METHOD: Direct Push	COMPLETION DEPTH: 9			TOTAL NO. OF SAMPLES: 4		
SIZE AND TYPE OF BIT: 2 1/4"	HOLE DIAMETER: 2 1/4"	NO. OF SAMPLES	BULK	SS	DRIVE	PITCHER	
DRILLING FLUID	DRILLING ANGLE	WATER LEVEL	FIRST		AFTER _____ HOURS		
SAMPLE HAMMER TYPE DRIVING WT. DROP		HYDROGEOLOGIST/DATE: SPRINGER			CHECKED BY/DATE		

LITHOLOGY	DEPTH (FEET)	SAMPLES	RECOVERY	BLOWN COUNT	DESCRIPTION	USCS SYMBOL	ESTIMATED PERCENT OF GR	SA	FI	COMMENTS
	0				0 0-8"					
	1				Concrete Slab at base Coarse gravel					
PID = 8.3	2									SAMPLE 1-2
					8"-6.0 dry to moist, very pale brown (10YR 7/3) gravelly sand		40	55	5	
	3		75%							
PID = 6.5	4									SAMPLE 3-4
	5									Water Table
	6				6.0-8.7 Wet, greenish gray (6/1) Sandy clay		0	15	85	SAMPLE 6-7
PID = 12.2	7		80%							MS/MSD Samples Collected
	8									
	9				8.7-9.0 Wet, dark greenish gray (4/1) Sand		5	90	5	

Figure I-B-1-1: Field Log of Boring

Field Log of Boring

BORING NUMBER: B-17

SHEET 1 OF 1

PROJECT NAME: UST KB-91	PROJECT NUMBER: CTO 026	ELEVATION AND DATUM:	LOCATION: MCBH
DRILLING COMPANY: GeoTek	DRILLER: Kevin Rogers	DATE AND TIME STARTED: 1/14/15 14:20	DATE AND TIME COMPLETED: 1/14/15 14:31
DRILLING EQUIPMENT: Geoprobe 6620 DT	DRILLING METHOD: Direct Push	COMPLETION DEPTH: 9'	TOTAL NO. OF SAMPLES: 3
SIZE AND TYPE OF BIT: 2 1/4"	HOLE DIAMETER: 2 1/4"	NO. OF SAMPLES: BULK: SS:	DRIVE: PITCHER:
DRILLING FLUID:	DRILLING ANGLE:	WATER LEVEL: FIRST	AFTER _____ HOURS
SAMPLE HAMMER: TYPE: DRIVING WT.: DROP:		HYDROGEOLOGIST/DATE: SPENGLER 1/13	CHECKED BY/DATE:

LITHOLOGY	DEPTH (FEET)	SAMPLES	RECOVERY	BLOW COUNT	DESCRIPTION	USCS SYMBOL	ESTIMATED PERCENT OF GR	SA	FI	COMMENTS
	0									
					0-1 Concrete Slab and rubble base cover					
	1									
PID= 22.3										SAMPLE 1-2
	2				1-6.5 Moist, very pale brown (10YR 7/3) gravelly sand		20	75	5	
	3		75%							
	4									SAMPLE 3-4
PID= 14.3										
	5									
	6									
PID= 25.6										SAMPLE 6-7
	7				6.5-8.6 Wet, greenish gray (6/1) sandy clay		0	10	90	
			85%							
	8									
	9				8.6-9.0 Wet dark greenish gray (4/1) sand		10	80	10	

Figure I-B-1-1: Field Log of Boring

Field Log of Boring

BORING NUMBER							
B-18							

SHEET 1 OF 1

PROJECT NAME	PROJECT NUMBER	ELEVATION AND DATUM	LOCATION
UST ICB-91	CTO 026		MCBH
DRILLING COMPANY: GeoTek	DRILLER: Jo-Shyngstad	DATE AND TIME STARTED: 1/15/15 10:26	DATE AND TIME COMPLETED: 1/15/15 10:34
DRILLING EQUIPMENT: Geoprobe 6620DT	DRILLING METHOD: Direct Push	COMPLETION DEPTH: 9	TOTAL NO. OF SAMPLES: 4
SIZE AND TYPE OF BIT: 2 1/4"	HOLE DIAMETER: 2 1/4"	NO. OF SAMPLES: BULK / SS	DRIVE / PITCHER
DRILLING FLUID	DRILLING ANGLE	WATER LEVEL: FIRST	AFTER _____ HOURS
SAMPLE HAMMER: TYPE / DRIVING WT. / DROP		HYDROGEOLOGIST/DATE: Spengler 1/15	CHECKED BY/DATE

LITHOLOGY	DEPTH (FEET)	SAMPLES	RECOVERY	BLOW COUNT	DESCRIPTION	USCS SYMBOL	ESTIMATED PERCENT OF GR	SA	FI	COMMENTS
	0				0-4" Concrete and rubble base cove					
	1									
PID=5.1					9"-6.0' Dry to moist very pale brown gravelly sand		40	55	5	SAMPLE 1-2
	2		70%							
	3									
PID=12.6	4									SAMPLE 3-4
	5									
	6				6.0'-8.6 moist to wet greenish gray (6/1) plastic clay		0	2	98	SAMPLE 6-7
PID=0.5	7		30%							
	8									
PID=76.4	9				8.6-9.0 wet, dark greenish gray (4/1) gravelly sand.		20	80	0	SAMPLE 8.6-9.0

Figure I-B-1-1: Field Log of Boring

In some cores, the shell was encountered in both the clay and sand layers.

Note: Collected a fourth sample of the sand layer that was encountered beneath the plastic clay. In this and some other cores collected, a strong petroleum odor was detected in the underlying sand layer but was not detected in the overlying clay layer.

Field Log of Boring

BORING NUMBER: B-19

SHEET 1 OF 1

PROJECT NAME: UST KB-91	PROJECT NUMBER: CTO 026	ELEVATION AND DATUM:	LOCATION: MCBH
DRILLING COMPANY: GeoTek	DRILLER: Kevin Rogers	DATE AND TIME STARTED: 1/14/15 14:33	DATE AND TIME COMPLETED: 1/14/15 14:37
DRILLING EQUIPMENT: Geoprobe 6620DT	DRILLING METHOD: Direct Push	COMPLETION DEPTH: 9'	TOTAL NO. OF SAMPLES: 3
SIZE AND TYPE OF BIT: 2 1/4'	HOLE DIAMETER: 2 1/4"	NO. OF SAMPLES: BULK: SS:	DRIVE: PITCHER:
DRILLING FLUID:	DRILLING ANGLE:	WATER LEVEL: FIRST	AFTER _____ HOURS
SAMPLE HAMMER: TYPE: DRIVING WT.: DROP:		HYDROGEOLOGIST/DATE: SPENGLER 1/13	CHECKED BY/DATE:

LITHOLOGY	DEPTH (FEET)	SAMPLES	RECOVERY	BLOWCOUNT	DESCRIPTION	USCS SYMBOL	ESTIMATED PERCENT OF GR	SA	FI	COMMENTS
	0									
					0-1 Concrete Slab and subbase gravel, light					
	1				brush gray (8/1)					
PID=0.3										SAMPLE 1-2
	2				1.0-5.5 Dry to moist		25	70	5	
					very pale brown (10YR 7/3)					
	3									
PID=2.6			5.5'		gravelly sand					SAMPLE 3-4
	4									
	5									Water at 7.0
					5.5-6.2 moist to wet, greenish		0	5	95	
	6				gray (6/1) plastic clay					
					6.2-7.0 Wet, greenish gray		0	55	45	
PID=3.2					(6/1) clayey sand					
	7									SAMPLE 6.5-7.5'
			8.0'		7.0-8.6 wet greenish gray		0	5	95	
	8				(6/1) plastic clay					
	9				8.6-9.0 Wet, dark greenish		20	75	5	
					gray (4/1) gravelly sand					

Figure I-B-1-1: Field Log of Boring

Field Log of Boring

BORING NUMBER: B-20

SHEET 1 OF 1

PROJECT NAME: VST KB-91	PROJECT NUMBER: CTO 026	ELEVATION AND DATUM:	LOCATION: MCBH
DRILLING COMPANY: Geo Tek	DRILLER: Jon Stjegstad	DATE AND TIME STARTED: 1/15/15 10:14	DATE AND TIME COMPLETED: 1/15/15 10:204
DRILLING EQUIPMENT: Geoprobe 6620DT	DRILLING METHOD: Direct Push	COMPLETION DEPTH: 9	TOTAL NO. OF SAMPLES: 3
SIZE AND TYPE OF BIT: 2 1/4"	HOLE DIAMETER: 2 1/4"	NO. OF SAMPLES: BULK / SS	DRIVE / PITCHER
DRILLING FLUID:	DRILLING ANGLE:	WATER LEVEL: FIRST	AFTER ____ HOURS
SAMPLE HAMMER: TYPE / DRIVING WT. / DROP		HYDROGEOLOGIST/DATE: SPENGLER 1/15	CHECKED BY/DATE

LITHOLOGY	DEPTH (FEET)	SAMPLES	RECOVERY	BLOW COUNT	DESCRIPTION	USCS SYMBOL	ESTIMATED PERCENT OF GR	SA	FI	COMMENTS
	0				0-8" Concrete Slab and base course					
PID=9.7	1				8"-5.0 Dry to moist very pale brown gravelly sand		30	65	5	SAMPLE 1-2
	2									
PID=18.7	3		70%							SAMPLE 3-4
	4									
	5				5.0-8.8 moist to wet greenish gray (6/1) sandy clay		0	35	65	water table ~6.5' bgs
PID=17.5	6									SAMPLE 6-7
	7		70%							
	8									
	9				8.8-9.0 wet, dark greenish gray (4/1) sand		0	95	5	

Figure I-B-1-1: Field Log of Boring

Field Log of Boring

BORING NUMBER: B-21

SHEET 1 OF 1

PROJECT NAME: UST KB-91	PROJECT NUMBER: CTO 026	ELEVATION AND DATUM:	LOCATION: MCBH
DRILLING COMPANY: GeoTek	DRILLER: Kevin Rogers	DATE AND TIME STARTED: 1/14/15 13:24	DATE AND TIME COMPLETED: 1/14/15 13:32
DRILLING EQUIPMENT: Geoprobe 6620DT	DRILLING METHOD: Direct Push	COMPLETION DEPTH: 9	TOTAL NO. OF SAMPLES: 3
SIZE AND TYPE OF BIT: 2 1/4"	HOLE DIAMETER: 2 1/4"	NO. OF SAMPLES: BULK: SS:	DRIVE: PITCHER:
DRILLING FLUID:	DRILLING ANGLE:	WATER LEVEL: FIRST	AFTER _____ HOURS
SAMPLE HAMMER: TYPE: DRIVING WT.: DROP:		HYDROGEOLOGIST/DATE: Spegler 1/14/15	CHECKED BY/DATE:

LITHOLOGY	DEPTH (FEET)	SAMPLES	RECOVERY	BLOWCOUNT	DESCRIPTION	USCS SYMBOL	ESTIMATED PERCENT OF GR	SA	FI	COMMENTS
	0									
					0-1' Dry, black (10YR 2/1)		70	25	5	
	1				gravelly base course					
PID = 10.5										SAMPLE 1-2
	2		7.5 ft							
	3				1-6.5 dry to moist,		20	75	5	
PID = 9.3					very pale brown (10YR 7/3)					SAMPLE 3-4
	4				gravelly sand					
	5									
										water ~6.0'
	6									SAMPLE 5.5-6.5
PID = 6.7										
	7		9.0 ft		6.5-8.5 wet greenish gray (6/1) sandy clay		0	15	85	
	8									
	9				8.5-9.0 wet, dark greenish gray (4/1) sand		0	95	5	

Figure I-B-1-1: Field Log of Boring

Field Log of Boring

BORING NUMBER: B-22

SHEET 1 OF 1

PROJECT NAME: UST KB-91	PROJECT NUMBER: CTO 026	ELEVATION AND DATUM:	LOCATION: MCBH
DRILLING COMPANY: GeoTek	DRILLER: Kevin Rogers	DATE AND TIME STARTED: 1/14/15 13:30	DATE AND TIME COMPLETED: 1/14/15 13:34
DRILLING EQUIPMENT: Geoprobe 6620DT	DRILLING METHOD: Direct Push	COMPLETION DEPTH: 9	TOTAL NO. OF SAMPLES: 3
SIZE AND TYPE OF BIT: 2 1/4"	HOLE DIAMETER: 2 1/4"	NO. OF SAMPLES: BULK: SS:	DRIVE: PITCHER:
DRILLING FLUID:	DRILLING ANGLE:	WATER LEVEL: FIRST	AFTER _____ HOURS
SAMPLE HAMMER: TYPE: DRIVING WT.: DROP:		HYDROGEOLOGIST/DATE: Spegler 1/14/15	CHECKED BY/DATE:

LITHOLOGY	DEPTH (FEET)	SAMPLES	RECOVERY	BLOWCOUNT	DESCRIPTION	USCS SYMBOL	ESTIMATED PERCENT OF GR	SA	FI	COMMENTS
	0									
					0-1 Dry black (10YR 2/1)		65	30	5	
					gravelly asphalt base coarse					
PID=3.5	1									SAMPLE 1-2
	2		80%		1-6 dry to moist, very		35	65	0	
					pale brown (10YR 7/3)					
					gravelly sand					
PID=8.5	3									SAMPLE 3-4
	4									
	5									
										water ~6.5' bgs
	6									
PID=0.5			100%		6-6.5 Wet greenish gray (6/1)		0	70	30	SAMPLE 6-7
	7				clayey silt					
					6.5-8.86 wet greenish gray (6/1)		0	10	90	
	8				Sandy clay					
	9				8.6-9.0 wet, dark greenish		0	95	5	
					gray (4/1) sand					

Figure I-B-1-1: Field Log of Boring

Field Log of Boring

BORING NUMBER	PROJECT NAME	PROJECT NUMBER	ELEVATION AND DATUM	LOCATION
B-23	UST KB-91	CTO 026		MCB#
	DRILLING COMPANY: GeoTek	DRILLER: Kevin Rogers	DATE AND TIME STARTED: 1/14/15 13:36	DATE AND TIME COMPLETED: 1/14/15 13:42
	DRILLING EQUIPMENT: GeoProbe 6620DT	DRILLING METHOD: Direct Push	COMPLETION DEPTH: 9	TOTAL NO. OF SAMPLES: 4
	SIZE AND TYPE OF BIT: 2 1/4"	HOLE DIAMETER: 2 1/4"	NO. OF SAMPLES: BULK / SS	DRIVE / PITCHER
	DRILLING FLUID	DRILLING ANGLE	WATER LEVEL: FIRST	AFTER _____ HOURS
	SAMPLE HAMMER: TYPE / DRIVING WT. / DROP		HYDROGEOLOGIST/DATE: SPENGLER 1/14/15	CHECKED BY/DATE

SHEET 1 OF 1

LITHOLOGY	DEPTH (FEET)	SAMPLES	RECOVERY	BLOW COUNT	DESCRIPTION	USCS SYMBOL	ESTIMATED PERCENT OF GR	SA	FI	COMMENTS
	0				0-1.5 Dry black (10YR 2/1) gravelly asphalt base course		70	25	5	
	1									SAMPLE 1.5-2.5
PID= 9.6										
	2		75%		1.5-6.5 Dry to moist very pale brown (10YR 7/3) gravelly sand		25	75	0	
	3									
PID= 12.6										
	4									SAMPLE 3.0-4.0
	5									
										water @ 6
	6									
PID= 19.7										SAMPLE 6-7
	7		100%		6.5-7.6 wet, greenish gray (6/1) clayey sand		0	70	30	
	8				7.6-8.5 wet, greenish gray (6/1) sandy clay		0	5	95	
	9				8.5-9.0 wet, dark greenish gray (4/1) sandy gravel		55	40	5	SAMPLE 8.5-9.0

PID 7200

Very smelly at both depth, so took a fourth sample from this hole

Figure I-B-1-1: Field Log of Boring

JOB NO.: CTO 026 WELL NO. MW-KB-91-4 HYDROGEOLOGIST: S. SPENGLER

CLIENT: NAVFAC HAWAII DRILLER: Quinton Wilson

WELL LOCATION: UST KB-91 DATE/TIME: 3/2/2015

DETAILS OF CONSTRUCTION

Date Completed: 3/2/15

Borehole Diameter (in.): 10"

Type and Size of Casing (in.): 4.0" PVC

Type and Size of Screen (in.): PVC/20 Slot Screen

Screen Perforation Diameter (in.): 20 Slot

Screen Length (ft.): 10'

Centralizer Depths (ft.): NA

Completion Technique

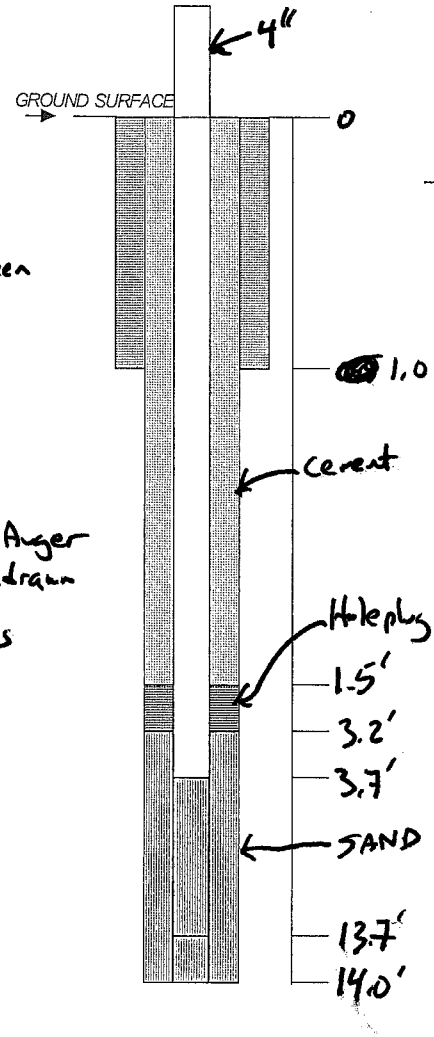
1. Type of Filter Pack and Placement Method
   #3 SAND, Pour Down hole as Auger withdrawn
2. Type of Bentonite and Placement Method
   3/8" Holeplug, bentonite Chips
3. Type of Grout Mixture and Placement Method
   Cement

Description of Potential Problems With Well:

None

Development Technique

Surge Block / Mini Purge Pump



Well Head Elevation

Ground Surface Elev. ~8 Feet

Well Head Completion Method

Traffic rated well cover

Drilling Method/Rig Type B-59 Auger Rig

Surface Casing: Type Steel Well Cover

Diameter 8" Steel

Length 1.0' Deep

MATERIALS

Cement (sks.) 0.5 linear feet

Filter Pack Material (ft.^{3}) 10.8 linear feet

Casing Material (ft.) 3.7 linear feet

Bentonite (ft.^{3}) 1.7 linear feet

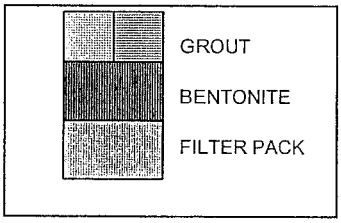
Top of Bentonite Seal 1.5 ft.

Top of Filter Pack 3.2 ft.

Top of Screen 3.7 ft.

Bottom of Screen 13.7 ft.

Bottom of Hole 15 ft.



NOTE: ALL DEPTHS ARE REFERENCED TO GROUND SURFACE

MW-KB-91-4: Well located ~50 feet to the east of Building 322

Figure I-C-1-5

Well Completion Record

JOB NO.: CTO 026 WELL NO. MW-KB100-3 HYDROGEOLOGIST: S. Spengler

CLIENT: NAVFAC HAWAII DRILLER: Quinton Wilson

WELL LOCATION: UST KB-100 DATE/TIME: 3/2/2015

DETAILS OF CONSTRUCTION

Date Completed: 3/2/15

Borehole Diameter (in.): 10"

Type and Size of Casing (in.): 4.0" PVC

Type and Size of Screen (in.): PVC/20 Slot Screen

Screen Perforation Diameter (in.): 20 Slot

Screen Length (ft.): 10'

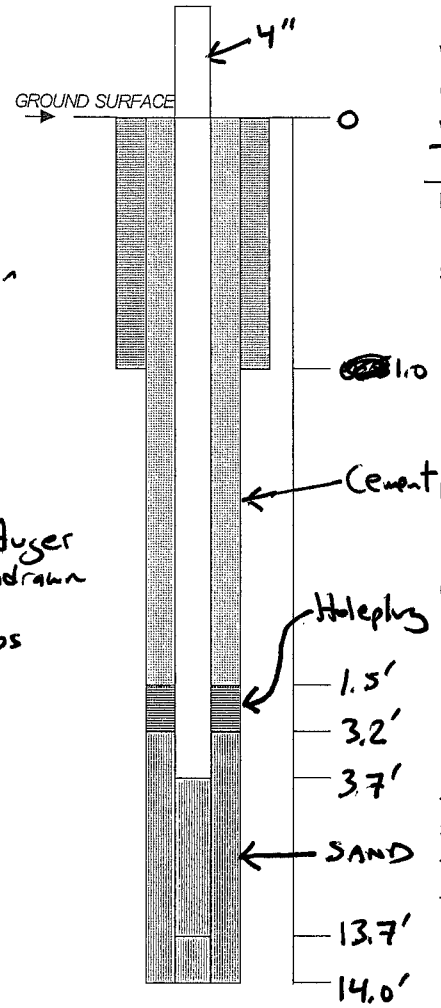
Centralizer Depths (ft.): NA

Completion Technique

1. Type of Filter Pack and Placement Method
   #3 SAND, Pour down hole as Auger Withdrawn
2. Type of Bentonite and Placement Method
   3/8" Hole plug, bentonite chips
3. Type of Grout Mixture and Placement Method
   Cement

Description of Potential Problems With Well:
None

Development Technique
Surge Block / Mini Purge Pump



Well Head Elevation: ~7.7 Feet

Ground Surface Elev.: ~8 Feet

Well Head Completion Method: Traffic rated well cover (EMCO)

Drilling Method/Rig Type: 13.59 Auger Rig

Surface Casing: Type Steel Well Cover
Diameter 8" Steel
Length 1.0' Deep

MATERIALS

Cement (sks.): _____

Filter Pack Material (ft.^{3}): 10.3 linear feet

Casing Material (ft.): 3.7 linear feet

Bentonite (ft.^{3}): 1.7 linear feet

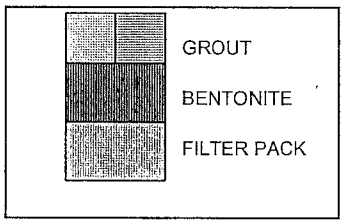
Top of Bentonite Seal: 1.5 ft.

Top of Filter Pack: 3.2 ft.

Top of Screen: 3.7 ft.

Bottom of Screen: 13.7 ft.

Bottom of Hole: 15.0 ft.



NOTE: ALL DEPTHS ARE REFERENCED TO GROUND SURFACE

MW-KB-100-3 : Well located adjacent to Temporary Well 6

Figure I-C-1-5

Well Completion Record

JOB NO.: CTo 026 WELL NO. MW-KB100-4 HYDROGEOLOGIST: S. Spengler

CLIENT: NAVFAC HAWAII DRILLER: Quinton Wilson

WELL LOCATION: UST KB-100 DATE/TIME: 3/2/2015

DETAILS OF CONSTRUCTION

Date Completed: 3/2/15

Borehole Diameter (in.): 10"

Type and Size of Casing (in.): 4.0" PVC

Type and Size of Screen (in.): PVC/20 Slot Screen

Screen Perforation Diameter (in.): 20 Slot

Screen Length (ft.): 10'

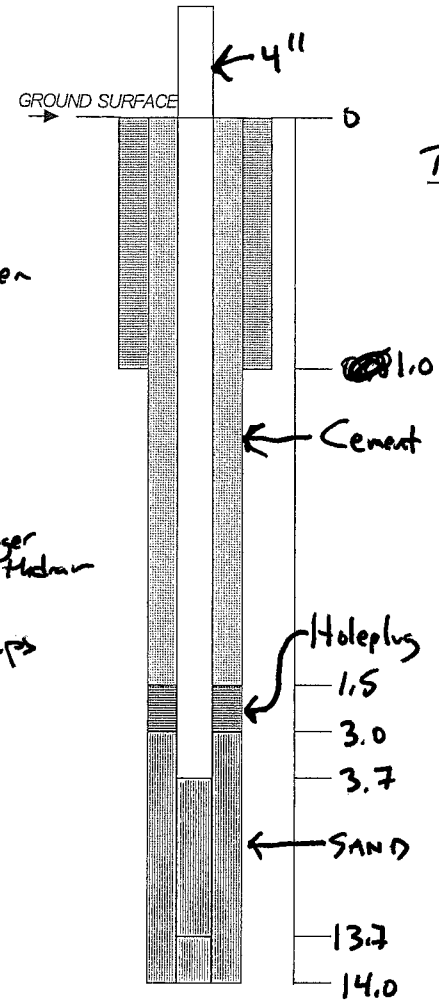
Centralizer Depths (ft.): NA

Completion Technique

1. Type of Filter Pack and Placement Method
   #3 SAND, Pour down hole as Auger withdraw
2. Type of Bentonite and Placement Method
   3/8" Holeplug, bentonite chips
3. Type of Grout Mixture and Placement Method
   Cement

Description of Potential Problems With Well:
None

Development Technique
Surge Block / Mini-Purge Pump



Well Head Elevation: ~7.5 Feet

Ground Surface Elev.: ~8 Feet

Well Head Completion Method: Traffic rated well cover

Drilling Method/Rig Type: B-59 Auger Rig

Surface Casing: Type: Steel Well Cover
Diameter: 8" Steel
Length: 1.0' Deep

MATERIALS

Cement (sks.): 0.5 linear feet

Filter Pack Material (ft.^{3}): 11.0 linear feet

Casing Material (ft.): 3.7 linear feet

Bentonite (ft.^{3}): 1.5 linear feet

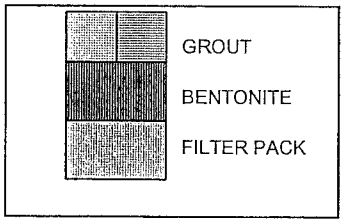
Top of Bentonite Seal: 1.5 ft.

Top of Filter Pack: 3.0 ft.

Top of Screen: 3.7 ft.

Bottom of Screen: 13.7 ft.

Bottom of Hole: 15.0 ft.



NOTE: ALL DEPTHS ARE REFERENCED TO GROUND SURFACE

MW-KB-100-4: Well located adjacent to Temporary Well 2

Figure I-C-1-5

Well Completion Record

JOB NO.: CTO 026 WELL NO. Temp Well 1 HYDROGEOLOGIST: S. Spengler

CLIENT: NAVFAC HAWAII DRILLER: Kevin Rogers

WELL LOCATION: UST KB-100 DATE/TIME: 1/13/2015 / 14:20

DETAILS OF CONSTRUCTION

Date Completed: 1/13/15 14:20

Borehole Diameter (in.): ~~2~~ 3 1/4"

Type and Size of Casing (in.): 1.5"

Type and Size of Screen (in.): PVC/10 slot Screen

Screen Perforation Diameter (in.): 10 slot

Screen Length (ft.): 10'

Centralizer Depths (ft.): NA

Completion Technique

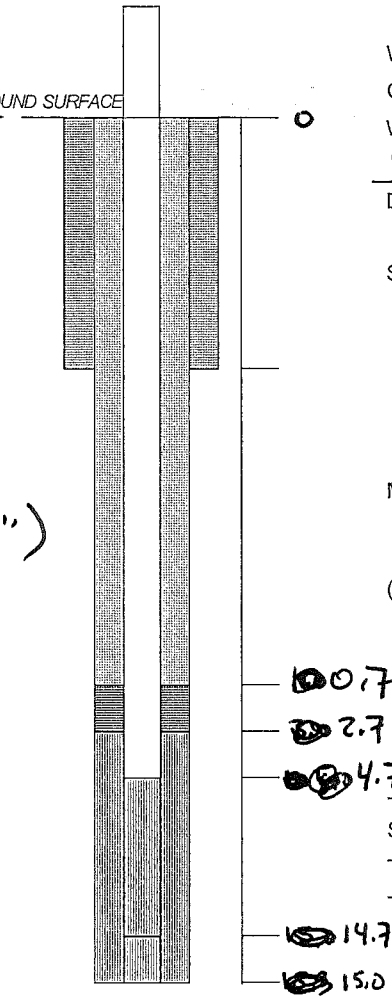
1. Type of Filter Pack and Placement Method
   #3 SAND - Pre Pack (2 1/2")
2. Type of Bentonite and Placement Method
   3/8" Holeplug, bentonite chips
3. Type of Grout Mixture and Placement Method
   None (Temporary Well)

Description of Potential Problems With Well:

None

Development Technique

Surge Block / Mini-Purge Pump



Well Head Elevation: _____

Ground Surface Elev.: _____

Well Head Completion Method: Pre-Packed Well Screen

Drilling Method/Rig Type: Direct Push

Surface Casing: Type: Welded Metal Plate; Diameter: 3.5"; Length: ~6"

MATERIALS

Cement (sks.): None

Filter Pack Material (ft.^{3}): 12.0 linear feet #3 sand

Casing Material (ft.): 4.7

Bentonite (ft.^{3}): 2.0 linear feet

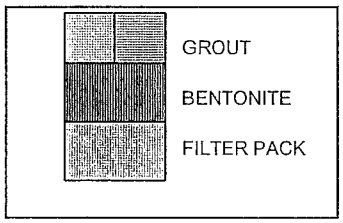
Top of Bentonite Seal: 0.7 ft.

Top of Filter Pack: 2.7 ft.

Top of Screen: 4.7 ft.

Bottom of Screen: 14.7 ft.

Bottom of Hole: 15 ft.



NOTE: ALL DEPTHS ARE REFERENCED TO GROUND SURFACE

DTW @ 7.43 @ 15:010 on 1/13 below top of casing

Figure I-C-1-5

Well Completion Record

JOB NO.: CTO 026 WELL NO. Temp Well 2 HYDROGEOLOGIST: S. Spengler

CLIENT: NAVFAC HAWAII DRILLER: Kevin Rogers

WELL LOCATION: UST KB-100 DATE/TIME: 1/13/2015 / 14:45

DETAILS OF CONSTRUCTION

Date Completed: 1/13/15/ 14:45

Borehole Diameter (in.): 3 1/4"

Type and Size of Casing (in.): 1.5"

Type and Size of Screen (in.): PVC/10 Slot Screen/1.5" Diameter

Screen Perforation Diameter (in.): 10 Slot

Screen Length (ft.): 10'

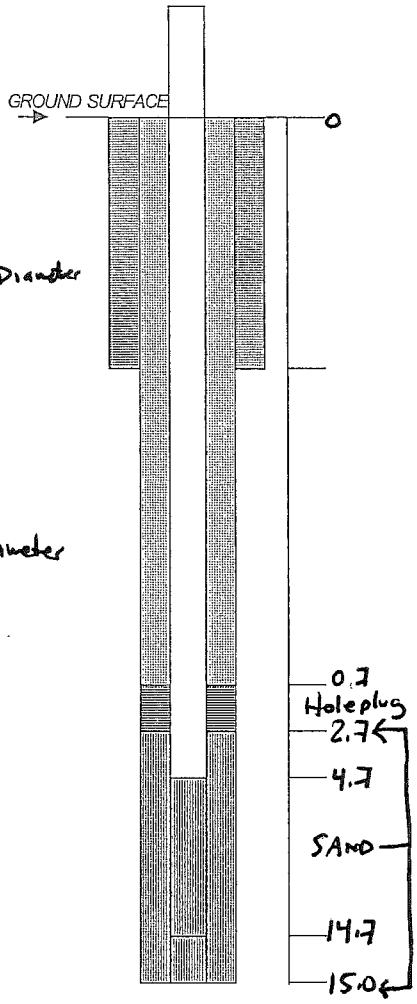
Centralizer Depths (ft.): NA

Completion Technique

1. Type of Filter Pack and Placement Method
   #3 SAND - Pre-Pack, 2 1/8" Diameter
2. Type of Bentonite and Placement Method
   3/8" Holeplug, bentonite chips
3. Type of Grout Mixture and Placement Method
   None (Temporary Well)

Description of Potential Problems With Well:
None

Development Technique
Surge Block / Mini-Purge Pump



Well Head Elevation

Ground Surface Elev.

Well Head Completion Method
Pre-Packed Well Screen

Drilling Method/Rig Type: Direct Push

Surface Casing: Type: Welded metal Plate
Diameter: 3.5"
Length: 6"

MATERIALS

Cement (sks.): None

Filter Pack Material (ft.^{3}): 12.8 linear feet, #3 San

Casing Material (ft.): 4.7

Bentonite (ft.^{3}): 2.0 linear feet

Top of Bentonite Seal: 0.7 ft.

Top of Filter Pack: 2.7 ft.

Top of Screen: 4.7 ft.

Bottom of Screen: 14.7 ft.

Bottom of Hole: 15.0 ft.

DTW = 7.07' 15:18

GROUT

BENTONITE

FILTER PACK

NOTE: ALL DEPTHS ARE REFERENCED TO GROUND SURFACE

Figure I-C-1-5

Well Completion Record

JOB NO.: CTO 026 WELL NO. Temp Well 3 HYDROGEOLOGIST: S. Spengler

CLIENT: NAVFAC HAWAII DRILLER: Kevin Rogers

WELL LOCATION: UST 1KB-100 DATE/TIME: 1/13/2015 / 15:00

DETAILS OF CONSTRUCTION

Date Completed: 1/13/15 15:00

Borehole Diameter (in.): 3 1/4"

Type and Size of Casing (in.): 1.5"

Type and Size of Screen (in.): PVC/10 slot Screen/1.5" Diameter

Screen Perforation Diameter (in.): 10 slot

Screen Length (ft.): 10'

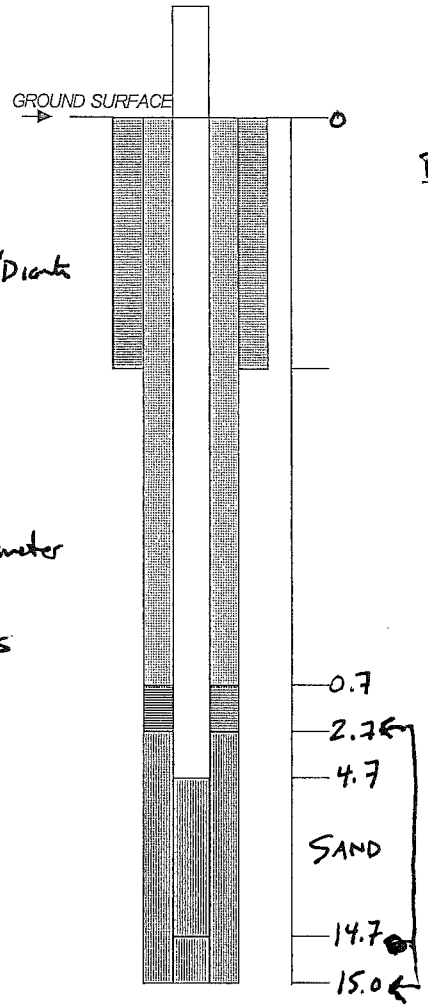
Centralizer Depths (ft.): NA

Completion Technique

1. Type of Filter Pack and Placement Method
   #3 SAND - Pre Pack, 2 1/2" Diameter
2. Type of Bentonite and Placement Method
   3/8" Holeplug, bentonite chips
3. Type of Grout Mixture and Placement Method
   None (Temporary Well)

Description of Potential Problems With Well:
None

Development Technique
Surge Block / Mini Purge Pump



Well Head Elevation

Ground Surface Elev.

Well Head Completion Method
Pre-Packed Well Screen

Drilling Method/Rig Type: Direct Push

Surface Casing: Type: Welded Metal Plate
Diameter: 3.5"
Length: 6"

MATERIALS

Cement (sks.): None

Filter Pack Material ($ft.^3$): 12.0 linear feet #3 sand

Casing Material (ft.): 4.7

Bentonite ($ft.^3$): 2.0 linear feet

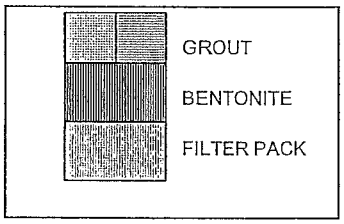
Top of Bentonite Seal: 0.7 ft.

Top of Filter Pack: 2.7 ft.

Top of Screen: 4.7 ft.

Bottom of Screen: 14.7 ft.

Bottom of Hole: 15.0 ft.



NOTE: ALL DEPTHS ARE REFERENCED TO GROUND SURFACE

DTW = 7.29' @ 15:14

Figure I-C-1-5

Well Completion Record

JOB NO.: CTO 026 WELL NO. Temp Well 4 HYDROGEOLOGIST: S. Spengler

CLIENT: NAVFAC HAWAII DRILLER: Kevin Rogers

WELL LOCATION: UST KB-100 DATE/TIME: 1/13/2015 / 14:10

DETAILS OF CONSTRUCTION

Date Completed: 1/13/15 14:10

Borehole Diameter (in.): 3 1/4"

Type and Size of Casing (in.): 1.5"

Type and Size of Screen (in.): PVC / 10 Slot Screen / 1.5" Diam

Screen Perforation Diameter (in.): 10 Slot

Screen Length (ft.): 10'

Centralizer Depths (ft.): NA

Completion Technique

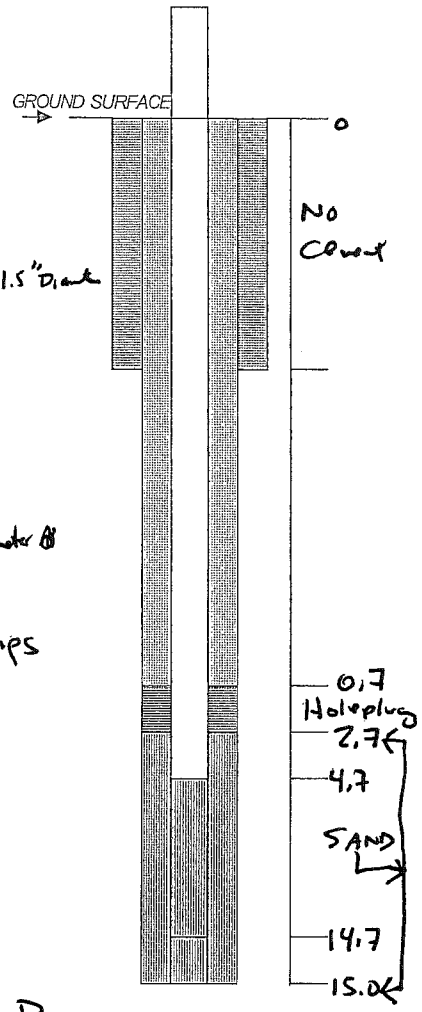
1. Type of Filter Pack and Placement Method
   #3 SAND - PRE PACK, 2 1/2" Diameter
2. Type of Bentonite and Placement Method
   3/8" Holeplug, bentonite chips
3. Type of Grout Mixture and Placement Method
   None (Temporary Well)

Description of Potential Problems With Well:

None

Development Technique

Surge Block / ~~[illegible]~~ Mini-Purge Pump



Well Head Elevation

Ground Surface Elev.

Well Head Completion Method: Pre-Packed Well Screen

Drilling Method/Rig Type: Direct Push

Surface Casing: Type: Welded Metal Plate; Diameter: ~~Ø~~ 3.5"; Length: 6"

MATERIALS

Cement (sks.): None

Filter Pack Material (ft.^{3}): 12.3 linear feet, #3 sand

Casing Material (ft.): 4.7

Bentonite (ft.^{3}): 2.0 linear feet

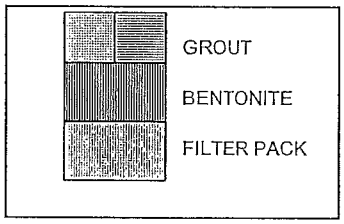
Top of Bentonite Seal: 0.7 ft.

Top of Filter Pack: 2.7 ft.

Top of Screen: 4.7 ft.

Bottom of Screen: 14.7 ft.

Bottom of Hole: 15.0 ft.



NOTE: ALL DEPTHS ARE REFERENCED TO GROUND SURFACE

DTW 6.45 @ 15:06 on 1/13
Below top of Casing

Figure I-C-1-5

Well Completion Record

JOB NO.: CTO 026 WELL NO. Temp Well 5 HYDROGEOLOGIST: S. Spengler

CLIENT: NAVFAC HAWAII DRILLER: Kevin Rogers

WELL LOCATION: UST KB-100 DATE/TIME: 1/13/2015 / 13:45

DETAILS OF CONSTRUCTION

Date Completed: 1/13/15 13:45

Borehole Diameter (in.): 3 1/4"

Type and Size of Casing (in.): 1.5"

Type and Size of Screen (in.): PVC/10 Slot Screen/1.5" Diameter

Screen Perforation Diameter (in.): 10 Slot

Screen Length (ft.): 10'

Centralizer Depths (ft.): NA

Completion Technique

1. Type of Filter Pack and Placement Method

#3 SAND - Pre Packed, 2 1/2" Diameter

2. Type of Bentonite and Placement Method

3/8" Holeplug, bentonite chips

3. Type of Grout Mixture and Placement Method

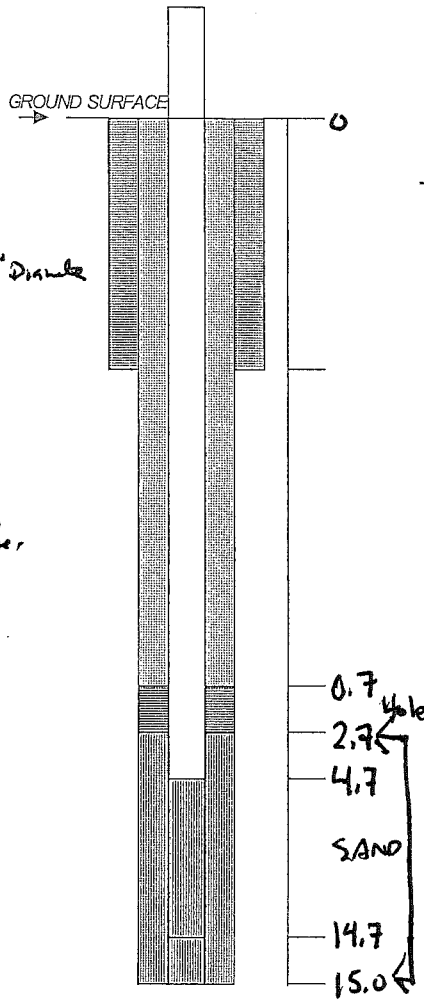
None (Temporary Well)

Description of Potential Problems With Well:

None

Development Technique

Surge Block / Mini Purge Pump



Well Head Elevation

Ground Surface Elev.

Well Head Completion Method

Pre-Packed Well Screen

Drilling Method/Rig Type: Direct Push

Surface Casing: Type: Welded Metal Plate

Diameter: 3.5"

Length: 6"

MATERIALS

Cement (sks.): None

Filter Pack Material (ft.^{3}): 12.0 ^{3}/linear feet/#3 sa

Casing Material (ft.): 4.7

Bentonite (ft.^{3}): 2.0 linear feet

Top of Bentonite Seal: 0.7 ft.

Top of Filter Pack: 2.7 ft.

Top of Screen: 4.7 ft.

Bottom of Screen: 14.7 ft.

Bottom of Hole: 15.0 ft.

GROUT

BENTONITE

FILTER PACK

NOTE: ALL DEPTHS ARE REFERENCED TO GROUND SURFACE

DTW = 6.54 @ 15:01 on 1/13 below top of casing

Figure I-C-1-5

Well Completion Record

JOB NO.: CJO 026 WELL NO. Temp Well 6 HYDROGEOLOGIST: S. Spengler

CLIENT: NAVFAC Hawaii DRILLER: Kevin Rogers

WELL LOCATION: UST KB-100 DATE/TIME: 1/13/2015 / 15:15

DETAILS OF CONSTRUCTION

Date Completed: 1/13/15 / 15:15

Borehole Diameter (in.): 3 1/4"

Type and Size of Casing (in.): 1.5"

Type and Size of Screen (in.): PVC / 10 slot Screen / 1.5" Diam

Screen Perforation Diameter (in.): 10 slot

Screen Length (ft.): 10'

Centralizer Depths (ft.): NA

Completion Technique

1. Type of Filter Pack and Placement Method

#3 SAND - Pre Packed, 2 1/2" Diameter

2. Type of Bentonite and Placement Method

3/8" Holeplug, bentonite chips

3. Type of Grout Mixture and Placement Method

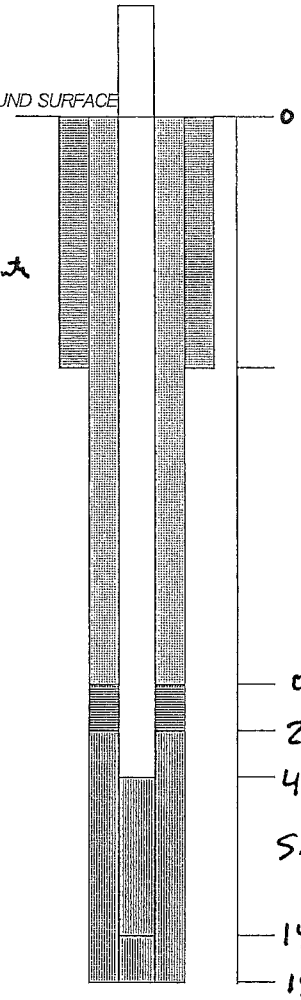
None (Temporary Well)

Description of Potential Problems With Well:

None

Development Technique

Surge Block / Mini-Purge Pump



Well Head Elevation: _____

Ground Surface Elev.: _____

Well Head Completion Method: Pre-Packed Well Screen

Drilling Method/Rig Type: Direct Push

Surface Casing: Type: Welded Metal Plate

Diameter: 3.5"

Length: 6"

MATERIALS

Cement (sks.): None

Filter Pack Material (ft.^{3}): 12.8 linear feet / #3 Sand

Casing Material (ft.): 4.7

Bentonite (ft.^{3}): 2.0 linear feet

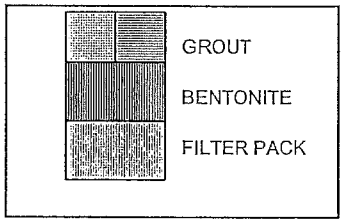
Top of Bentonite Seal: 0.7 ft.

Top of Filter Pack: 2.7 ft.

Top of Screen: 4.7 ft.

Bottom of Screen: 14.7 ft.

Bottom of Hole: 15.0 ft.



NOTE: ALL DEPTHS ARE REFERENCED TO GROUND SURFACE

DTW = 6.96' @ 15:14

Figure I-C-1-5

Well Completion Record

WELL DEVELOPMENT LOG

PROJECT	WELL NO.	SITE	PREPARED BY
MCBH UST KB-91	KB-91-2	KB-91	S. Spengler

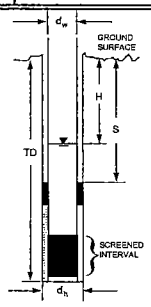
METHOD
- OVERPUMPAGE ☒
- BAILER ☐
- SURGE BLOCK ☐
- AIR LIFT ☐
- OTHER _____

INITIAL WATER LEVEL 7.12'
FINAL WATER LEVEL DTB=14.85'

REMARKS:

CAPACITY OF CASING (GALLONS/LINEAR FOOT)	VOLUME BETWEEN CASNIG AND HOLE (GALLONS/LINEAR FOOT) (ASSUMING 40% POROSITY)
1" - 0.012	1" CASING AND 2" HOLE - 0.013
2" - 0.16	2" CASING AND 6" HOLE - 0.52
4" - 0.65	2" CASING AND 8" HOLE - 0.98
6" - 0.1.47	4" CASING AND 10" HOLE - 1.37
	4" CASING AND 12" HOLE - 2.09

HOLE DIAMETER d_h =
WELL CASING INSIDE DIAMETER $d_w ID$ =
OUTSIDE DIAMETER $d_w OD$ = _____
DEPTH TO: WATER LEVEL H =
BASE OF SEAL S = _____
BASE OF WELL TD =
EST. FILTER PACK POROSITY P = _____



WELL VOLUME CALCULATION :

$$\text{CASING VOLUME} = V_c = \Pi\left(\frac{d_w ID}{2}\right)^2 (TD - H) = 3.14\left(\frac{\_\_\_}{2}\right)^2 (\_\_\_ - \_\_\_) = \_\_\_\_$$

$$\text{FILTER PACK PORE VOLUME} = V_f = \Pi\left[\left(\frac{d_h}{2}\right)^2 - \left(\frac{d_w OD}{2}\right)^2\right](TD - (S \text{ or } H^*)(P) = \_\_\_\_$$

(* if S > H, use S; if S < H, use H)

$$= 3.14\left[\left(\frac{\_\_\_}{2}\right)^2 - \left(\frac{\_\_\_}{2}\right)^2\right](\_\_\_ - \_\_\_)(\_\_\_) = \_\_\_\_$$

TOTAL WELL VOLUME = VT = Vc + Vf = ____ + ____ = _____ $ft.^3$ x 7.48 = _____ gal.

DEVELOPMENT LOG:

DATE	TIME BEGIN/END	METHOD	ELAPSED TIME	FLOW RATE (gpm)	CUMULATIVE WATER REMOVED GALLONS	WATER QUALITY pH	TEMP	CONDUC-TIVITY	D.O.* mg/L	REDOX	TURBID-ITY	COMMENTS
3/4	11:30	bailer	11:35		2	7.57	27.5	858	3.65	189.7	OR	
			11:41		3.5	7.63	27.8	861	3.07	153	1000	
			11:49		6.5	7.68	28.2	890	2.48	-18.5	164	
			11:54		9.0	7.68	28.2	892	1.85	-20.4	83.4	

* = Dissolved Oxygen

WELL DEVELOPMENT LOG

PROJECT	WELL NO.	SITE	PREPARED BY
MCBH UST KB-91	KB-91-4	KB-91	S. Spangler

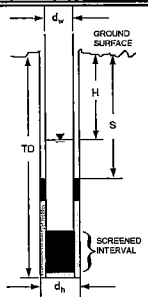
METHOD
- OVERPUMPAGE ☒
- BAILER ☐
- SURGE BLOCK ☒
- AIR LIFT ☐
- OTHER _____

INITIAL 6.59' WATER LEVEL
FINAL WATER LEVEL DTB=13.61'

REMARKS:

CAPACITY OF CASING (GALLONS/LINEAR FOOT)	VOLUME BETWEEN CASNIG AND HOLE (GALLONS/LINEAR FOOT) (ASSUMING 40% POROSITY)
1" - 0.012	1" CASING AND 2" HOLE - 0.013
2" - 0.16 4" - 0.65 6" - 0.1.47	2" CASING AND 6" HOLE - 0.52 2" CASING AND 8" HOLE - 0.98 4" CASING AND 10" HOLE - 1.37 4" CASING AND 12" HOLE - 2.09

HOLE DIAMETER d_h =
WELL CASING INSIDE DIAMETER $d_w ID$ =
OUTSIDE DIAMETER $d_w OD$ = _____
DEPTH TO: WATER LEVEL H =
BASE OF SEAL S = _____
BASE OF WELL TD =
EST. FILTER PACK POROSITY P = _____



WELL VOLUME CALCULATION :

$$\text{CASING VOLUME} = V_c = \Pi\left(\frac{d_w ID}{2}\right)^2 (TD - H) = 3.14\left(\frac{\quad}{2}\right)^2 (\_\_\_ - \_\_\_) = \_\_\_\_$$

$$\text{FILTER PACK PORE VOLUME} = V_f = \Pi\left[\left(\frac{d_h}{2}\right)^2 - \left(\frac{d_w OD}{2}\right)^2\right](TD - (S \text{ or } H^*)(P) = \_\_\_\_$$

(* if S > H, use S; if S < H, use H)

$$= 3.14\left[\left(\frac{\quad}{2}\right)^2 - \left(\frac{\quad}{2}\right)^2\right](\_\_\_ - \_\_\_)(\_\_\_) = \_\_\_\_$$

TOTAL WELL VOLUME = VT = Vc + Vf = ____ + ____ = _____ $ft.^3$ x 7.48 = _____ gal.

DEVELOPMENT LOG:					CUMULATIVE WATER REMOVED	WATER QUALITY						COMMENTS
DATE	TIME BEGIN/END	METHOD	ELAPSED TIME	FLOW RATE (gpm)	GALLONS	pH	TEMP	CONDUC-TIVITY mS	D.O.*	REDOX	TURBID-ITY	
3/4	13:08	fresh pump	7 min		7	8.03	29.3	1.04	4.37	-27.2	634	
			13:17		12	8.17	29.5	1.82	3.76	8.0	174	
			13:25		20	8.27	29.3	2.13	1.91	8.9	53.2	
			13:32		27	8.26	29.5	2.26	1.51	4.7	134	

* = Dissolved Oxygen

WELL DEVELOPMENT LOG

PROJECT	WELL NO.	SITE	PREPARED BY
MCBH UST KB-100 SI	KB-100-1	KB-100	S. Spaeth

METHOD
- OVERPUMPAGE ☒
- BAILER ☐
- SURGE BLOCK ☐
- AIR LIFT ☐
- OTHER _____

INITIAL 6.62 WATER LEVEL

FINAL WATER LEVEL

REMARKS: DTB= 11.22

CAPACITY OF CASING (GALLONS/LINEAR FOOT)	VOLUME BETWEEN CASNIG AND HOLE (GALLONS/LINEAR FOOT) (ASSUMING 40% POROSITY)
1" - 0.012	1" CASING AND 2" HOLE - 0.013
2" - 0.16	2" CASING AND 6" HOLE - 0.52
4" - 0.65	2" CASING AND 8" HOLE - 0.98
6" - 0.1.47	4" CASING AND 10" HOLE - 1.37
	4" CASING AND 12" HOLE - 2.09

HOLE DIAMETER d_h =

WELL CASING INSIDE DIAMETER $d_w ID$ =

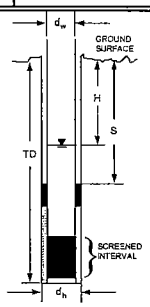
OUTSIDE DIAMETER $d_w OD$ = _____

DEPTH TO: WATER LEVEL H =

BASE OF SEAL S = _____

BASE OF WELL TD =

EST. FILTER PACK POROSITY P = _____



WELL VOLUME CALCULATION :

$$\text{CASING VOLUME} = V_c = \Pi\left(\frac{d_w ID}{2}\right)^2 (TD - H) = 3.14\left(\frac{\quad}{2}\right)^2 (\_\_\_ - \_\_\_) = \_\_\_\_$$

$$\text{FILTER PACK PORE VOLUME} = V_f = \Pi\left[\left(\frac{d_h}{2}\right)^2 - \left(\frac{d_w OD}{2}\right)^2\right](TD - (S \text{ or } H^*)(P) = \_\_\_\_$$

(* if S > H, use S; if S < H, use H)

$$= 3.14\left[\left(\frac{\quad}{2}\right)^2 - \left(\frac{\quad}{2}\right)^2\right](\_\_\_ - \_\_\_)(\_\_\_) = \_\_\_\_$$

TOTAL WELL VOLUME = VT = Vc + Vf = ____ + ____ = _____ $ft.^3$ x 7.48 = _____ gal.

DEVELOPMENT LOG:

DATE	TIME BEGIN/END	METHOD	ELAPSED TIME	FLOW RATE (gpm)	CUMULATIVE WATER REMOVED GALLONS	WATER QUALITY pH	TEMP °C	CONDUCTIVITY	D.O.* %	REDOX	TURBIDITY NTU	COMMENTS SAL
1/16	14:00				0.525	7.78	23.96	0.865	45.2	+14.9	71000	
1/16	14:15				0.5	8.74	24.64	0.771	33.5	-49.2	71000	
1/16	14:35				1.0	8.81	25.20	0.768	24.5	-56.5	71000	0.37

* = Dissolved Oxygen

WELL DEVELOPMENT LOG

PROJECT	WELL NO.	SITE	PREPARED BY
MCBH UST KB-100 SI	KB-100-2	KB-100	Spengler

METHOD
- OVERPUMPAGE ☒
- BAILER ☐
- SURGE BLOCK ☐
- AIR LIFT ☐
- OTHER _____

INITIAL 6.60 WATER LEVEL

FINAL WATER LEVEL

REMARKS: DTB = 14.60

CAPACITY OF CASING (GALLONS/LINEAR FOOT)

1" - 0.012

2" - 0.16
4" - 0.65
6" - 0.1.47

VOLUME BETWEEN CASNIG AND HOLE (GALLONS/LINEAR FOOT) (ASSUMING 40% POROSITY)

1" CASING AND 2" HOLE - 0.013

2" CASING AND 6" HOLE - 0.52 ✓
2" CASING AND 8" HOLE - 0.98
4" CASING AND 10" HOLE - 1.37
4" CASING AND 12" HOLE - 2.09

HOLE DIAMETER d_h =

WELL CASING INSIDE DIAMETER d_wID =

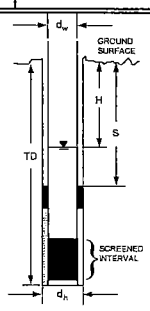
OUTSIDE DIAMETER d_wOD = _____

DEPTH TO: WATER LEVEL H =

BASE OF SEAL S = _____

BASE OF WELL TD =

EST. FILTER PACK POROSITY P = _____



WELL VOLUME CALCULATION :

$$\text{CASING VOLUME} = V_c = \Pi\left(\frac{d_wID}{2}\right)^2(TD - H) = 3.14\left(\frac{\quad}{2}\right)^2(\_\_\_ - \_\_\_) = \_\_\_\_$$

$$\text{FILTER PACK PORE VOLUME} = V_f = \Pi\left[\left(\frac{d_h}{2}\right)^2 - \left(\frac{d_wOD}{2}\right)^2\right](TD - (S \text{ or } H^*)(P) = \_\_\_\_$$

(* if S > H, use S; if S < H, use H)

$$= 3.14\left[\left(\frac{\quad}{2}\right)^2 - \left(\frac{\quad}{2}\right)^2\right](\_\_\_ - \_\_\_)(\_\_\_) = \_\_\_\_$$

TOTAL WELL VOLUME = VT = Vc + Vf = ____ + ____ = _____ ft.^{3} x 7.48 = _____ gal.

DEVELOPMENT LOG:

DATE	TIME BEGIN/END	METHOD	ELAPSED TIME	FLOW RATE (gpm)	CUMULATIVE WATER REMOVED GALLONS	WATER QUALITY pH	TEMP	CONDUC-TIVITY	D.O.*	REDOX	~~TURBID-ITY~~ SALINITY	COMMENTS
1/15	15:14	mini-pump	0		0						0.35	
	15:15	"	1		1	9.03	28.17	0.729	9.9	-76.3	~~[illegible]~~	
	15:17	"	3		3.5	9.16	28.14	0.753	12.1	-65.0	0.36	
	15:19	"	5		5.0	9.18	28.16	0.775	10.9	-56.4	0.38	

* = Dissolved Oxygen

WELL DEVELOPMENT LOG

PROJECT	WELL NO.	SITE	PREPARED BY
MCBH UST KB-100 SI	KB-100-3	KB-100	S. Spangler

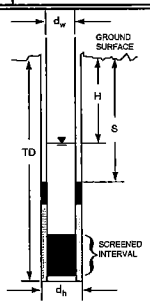
METHOD
- OVERPUMPAGE ☒
- BAILER ☐
- SURGE BLOCK ☒
- AIR LIFT ☐
- OTHER _____

INITIAL 6.79' WATER LEVEL
FINAL WATER LEVEL 13.95' DTB

REMARKS: Near TW-6

CAPACITY OF CASING (GALLONS/LINEAR FOOT)	VOLUME BETWEEN CASNIG AND HOLE (GALLONS/LINEAR FOOT) (ASSUMING 40% POROSITY)
1" - 0.012	1" CASING AND 2" HOLE - 0.013
2" - 0.16 4" - 0.65 6" - 0.1.47	2" CASING AND 6" HOLE - 0.52 2" CASING AND 8" HOLE - 0.98 4" CASING AND 10" HOLE - 1.37 4" CASING AND 12" HOLE - 2.09

HOLE DIAMETER d_h =
WELL CASING INSIDE DIAMETER $d_w ID$ =
OUTSIDE DIAMETER $d_w OD$ = _____
DEPTH TO: WATER LEVEL H =
BASE OF SEAL S = _____
BASE OF WELL TD =
EST. FILTER PACK POROSITY P = _____



WELL VOLUME CALCULATION :

$$\text{CASING VOLUME} = V_c = \Pi\left(\frac{d_w ID}{2}\right)^2 (TD - H) = 3.14\left(\frac{\quad}{2}\right)^2 (\_\_\_ - \_\_\_) = \_\_\_\_$$

$$\text{FILTER PACK PORE VOLUME} = V_f = \Pi\left[\left(\frac{d_h}{2}\right)^2 - \left(\frac{d_w OD}{2}\right)^2\right](TD - (S \text{ or } H^*)(P) = \_\_\_\_$$

(* if S > H, use S; if S < H, use H)

$$= 3.14\left[\left(\frac{\quad}{2}\right)^2 - \left(\frac{\quad}{2}\right)^2\right](\_\_\_ - \_\_\_)(\_\_\_) = \_\_\_\_$$

TOTAL WELL VOLUME = VT = Vc + Vf = ____ + ____ = _____ $ft.^3$ x 7.48 = _____ gal.

DEVELOPMENT LOG:

DATE	TIME BEGIN/END	METHOD	ELAPSED TIME	FLOW RATE (gpm)	CUMULATIVE WATER REMOVED GALLONS	WATER QUALITY pH	TEMP	CONDUCTIVITY mS	D.O.* mg/L	REDOX	TURBIDITY	COMMENTS
3/4	1236	Tag pump	10 min		10	8.23	28.7	1.57	2.2	-33.7	150	
			12:47		16	8.22	28.7	1.59	1.56	-32.2	45	
			12:57		24	8.20	28.7	1.62	0.83	-26.5	755	
			13:03		32	8.22	28.7	1.62	0.71	-38.6	142	

* = Dissolved Oxygen

WELL DEVELOPMENT LOG

PROJECT	WELL NO.	SITE	PREPARED BY
MCBH UST KB-100 SI	KB-100-4	KB-100	S. Spangler

METHOD
- OVERPUMPAGE ☒
- BAILER ☐
- SURGE BLOCK ☒
- AIR LIFT ☐
- OTHER _____

INITIAL 6.58' WATER LEVEL

FINAL WATER LEVEL DTB=13.5

REMARKS: Near TW-2

CAPACITY OF CASING (GALLONS/LINEAR FOOT)	VOLUME BETWEEN CASNIG AND HOLE (GALLONS/LINEAR FOOT) (ASSUMING 40% POROSITY)
1" - 0.012	1" CASING AND 2" HOLE - 0.013
2" - 0.16	2" CASING AND 6" HOLE - 0.52
4" - 0.65	2" CASING AND 8" HOLE - 0.98
6" - 0.1.47	4" CASING AND 10" HOLE - 1.37
	4" CASING AND 12" HOLE - 2.09

HOLE DIAMETER d_h =

WELL CASING INSIDE DIAMETER $d_w ID$ =

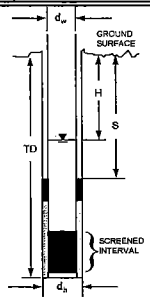
OUTSIDE DIAMETER $d_w OD$ = _____

DEPTH TO: WATER LEVEL H =

BASE OF SEAL S = _____

BASE OF WELL TD =

EST. FILTER PACK POROSITY P = _____



WELL VOLUME CALCULATION :

$$\text{CASING VOLUME} = V_c = \Pi\left(\frac{d_w ID}{2}\right)^2 (TD - H) = 3.14\left(\frac{\quad}{2}\right)^2 (\_\_\_ - \_\_\_) = \_\_\_$$

$$\text{FILTER PACK PORE VOLUME} = V_f = \Pi\left[\left(\frac{d_h}{2}\right)^2 - \left(\frac{d_w OD}{2}\right)^2\right](TD - (S \text{ or } H^*)(P) = \_\_\_$$

(* if S > H, use S; if S < H, use H)

$$= 3.14\left[\left(\frac{\quad}{2}\right)^2 - \left(\frac{\quad}{2}\right)^2\right](\_\_\_ - \_\_\_)(\_\_\_) = \_\_\_$$

TOTAL WELL VOLUME = VT = Vc + Vf = ___ + ___ = _____ ft.^{3} x 7.48 = _____ gal.

DEVELOPMENT LOG:					CUMULATIVE WATER REMOVED	WATER QUALITY						COMMENTS
DATE	TIME BEGIN/END	METHOD	ELAPSED TIME	FLOW RATE (gpm)	GALLONS	pH	TEMP	CONDUC-TIVITY mS	D.O.* mg/L	REDOX	TURBID-ITY	
3/4	11:55	trash pump	7min		10	8.22	29.1	1.26	2.62	3.1	1000	
			12:15		14	8.19	29.1	1.35	1.72	-10.0	1000	
			12:18		17	8.19	29.1	1.41	1.84	-21.0	404	
			12:23		20	8.19	29.1	1.43	1.53	-21.4	72.7	
			12:25		22	8.12	29.0	1.44	1.55	-20.7	49.2	
			12:32		26	8.19	29.1	1.45	.88	-51.6	51.7	

* = Dissolved Oxygen

WELL DEVELOPMENT LOG

PROJECT	WELL NO.	SITE	PREPARED BY
MCBH UST KB-100 SI	TW-1	KB-100	S. Spe[illegible]

METHOD
- OVERPUMPAGE ☒
- BAILER ☐
- SURGE BLOCK ☒
- AIR LIFT ☐
- OTHER _____

INITIAL 7.48' WATER LEVEL

FINAL WATER LEVEL

REMARKS: DTB = 15.14

CAPACITY OF CASING (GALLONS/LINEAR FOOT)

1" - 0.012

2" - 0.16
4" - 0.65
6" - 0.1.47

VOLUME BETWEEN CASNIG AND HOLE (GALLONS/LINEAR FOOT) (ASSUMING 40% POROSITY)

1" CASING AND 2" HOLE - 0.013

2" CASING AND 6" HOLE - 0.52
2" CASING AND 8" HOLE - 0.98
4" CASING AND 10" HOLE - 1.37
4" CASING AND 12" HOLE - 2.09

HOLE DIAMETER d_h =

WELL CASING INSIDE DIAMETER $d_w ID$ =

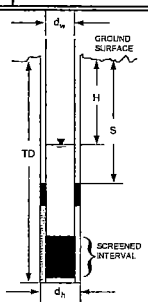
OUTSIDE DIAMETER $d_w OD$ = _____

DEPTH TO: WATER LEVEL H =

BASE OF SEAL S = _____

BASE OF WELL TD =

EST. FILTER PACK POROSITY P = _____



WELL VOLUME CALCULATION :

$$\text{CASING VOLUME} = V_c = \Pi\left(\frac{d_w ID}{2}\right)^2 (TD - H) = 3.14\left(\frac{\_\_\_}{2}\right)^2 (\_\_\_ - \_\_\_) = \_\_\_\_$$

$$\text{FILTER PACK PORE VOLUME} = V_f = \Pi\left[\left(\frac{d_h}{2}\right)^2 - \left(\frac{d_w OD}{2}\right)^2\right](TD - (S \text{ or } H^*)(P) = \_\_\_\_$$

(* if S > H, use S; if S < H, use H)

$$= 3.14\left[\left(\frac{\_\_\_}{2}\right)^2 - \left(\frac{\_\_\_}{2}\right)^2\right](\_\_\_ - \_\_\_)(\_\_\_) = \_\_\_\_$$

TOTAL WELL VOLUME = VT = Vc + Vf = ____ + ____ = _____ $ft.^3$ x 7.48 = _____ gal.

DEVELOPMENT LOG:

DATE	TIME BEGIN/END	METHOD	ELAPSED TIME	FLOW RATE (gpm)	CUMULATIVE WATER REMOVED GALLONS	pH	TEMP °C	CONDUCTIVITY mS/cm	D.O.* %	REDOX mV	TURBIDITY NTU	COMMENTS
1/15	14:39	mini purge	0		0							
	14:40	"	1		1.0	9.02	29.63	0.899	13.3	-146.9	0.44	
	14:42	"	2.5		2.5	9.15	29.76	0.954	32.9	-154.0	0.47	pumped dry after
	14:46	"	5.0		5.0	9.13	29.36	0.925	21.2	-157.6	0.45	~3 gallons

* = Dissolved Oxygen

WELL DEVELOPMENT LOG

PROJECT	WELL NO.	SITE	PREPARED BY
MCBH UST KB-100 SI	TW-2	KB-100	SPENGLER

METHOD
- OVERPUMPAGE ☒
- BAILER ☐
- SURGE BLOCK ☒
- AIR LIFT ☐
- OTHER _____

INITIAL 7.12' WATER LEVEL

FINAL WATER LEVEL

REMARKS: DTB = 15.14'

CAPACITY OF CASING (GALLONS/LINEAR FOOT)

1" - 0.012

2" - 0.16
4" - 0.65
6" - 0.1.47

VOLUME BETWEEN CASNIG AND HOLE (GALLONS/LINEAR FOOT) (ASSUMING 40% POROSITY)

1" CASING AND 2" HOLE - 0.013

2" CASING AND 6" HOLE - 0.52
2" CASING AND 8" HOLE - 0.98
4" CASING AND 10" HOLE - 1.37
4" CASING AND 12" HOLE - 2.09

HOLE DIAMETER d_h =

WELL CASING INSIDE DIAMETER $d_w ID$ =

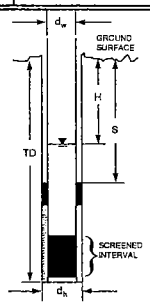
OUTSIDE DIAMETER $d_w OD$ = _____

DEPTH TO: WATER LEVEL H =

BASE OF SEAL S = _____

BASE OF WELL TD =

EST. FILTER PACK POROSITY P = _____



WELL VOLUME CALCULATION :

$$\text{CASING VOLUME} = V_c = \Pi\left(\frac{d_w ID}{2}\right)^2 (TD - H) = 3.14\left(\frac{\quad}{2}\right)^2 (\_\_\_ - \_\_\_) = \_\_\_\_$$

$$\text{FILTER PACK PORE VOLUME} = V_f = \Pi\left[\left(\frac{d_h}{2}\right)^2 - \left(\frac{d_w OD}{2}\right)^2\right](TD - (S \text{ or } H^*)(P) = \_\_\_\_$$

(* if S > H, use S; if S < H, use H)

$$= 3.14\left[\left(\frac{\quad}{2}\right)^2 - \left(\frac{\quad}{2}\right)^2\right](\_\_\_ - \_\_\_)(\_\_\_) = \_\_\_\_$$

TOTAL WELL VOLUME = VT = Vc + Vf = ____ + ____ = _____ ft.^{3} x 7.48 = _____ gal.

DEVELOPMENT LOG:

DATE	TIME BEGIN/END	METHOD	ELAPSED TIME	FLOW RATE (gpm)	CUMULATIVE WATER REMOVED GALLONS	WATER QUALITY pH	TEMP °C	CONDUCTIVITY mS/cm	D.O.* %	REDOX ORP	TURBIDITY SAL	COMMENTS
1/15	14:20	mini p-g	1		0.5	10.07	29.65	0.760	23.4	-102.3	NM	
"	14:23	"	3		2.0	9.56	29.59	0.878	15.4	-149.5	0.43	
"	14:25	"	5		4.0	9.43	29.60	1.002	15.7	-146.2	0.49	
"	14:26	"	6		5.0	9.45	29.73	1.013	16.8	-143.0	0.50	

* = Dissolved Oxygen

WELL DEVELOPMENT LOG

PROJECT	WELL NO.	SITE	PREPARED BY
MCBH UST KB-100 SI	TW-3	KB-100	A. Lwley

METHOD
- OVERPUMPAGE ☒
- BAILER ☐
- SURGE BLOCK ☒
- AIR LIFT ☐
- OTHER _____

INITIAL 7.34' WATER LEVEL

FINAL WATER LEVEL

REMARKS: DTB = 15.14'

CAPACITY OF CASING (GALLONS/LINEAR FOOT)

1" - 0.012

2" - 0.16
4" - 0.65
6" - 0.1.47

VOLUME BETWEEN CASNIG AND HOLE (GALLONS/LINEAR FOOT) (ASSUMING 40% POROSITY)

1" CASING AND 2" HOLE - 0.013
1.5" C. & 3.25" Hole - 0.3
2" CASING AND 6" HOLE - 0.52
2" CASING AND 8" HOLE - 0.98
4" CASING AND 10" HOLE - 1.37
4" CASING AND 12" HOLE - 2.09

HOLE DIAMETER d_h = 3.25"

WELL CASING INSIDE DIAMETER d_wID = 1.5"

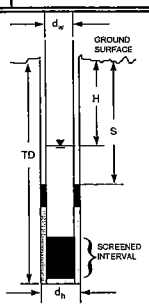
OUTSIDE DIAMETER d_wOD = _____

DEPTH TO: WATER LEVEL H = 7.34'

BASE OF SEAL S = _____

BASE OF WELL TD = 15.14'

EST. FILTER PACK POROSITY P = _____



Water Column: 7.80'

WELL VOLUME CALCULATION:

$$\text{CASING VOLUME} = V_c = \Pi\left(\frac{d_wID}{2}\right)^2(TD - H) = 3.14\left(\frac{\quad}{2}\right)^2(\_\_\_ - \_\_\_) = \_\_\_\_$$

$$\text{FILTER PACK PORE VOLUME} = V_f = \Pi\left[\left(\frac{d_h}{2}\right)^2 - \left(\frac{d_wOD}{2}\right)^2\right](TD - (S \text{ or } H^*)(P) = \_\_\_\_$$

(* if S > H, use S; if S < H, use H)

$$= 3.14\left[\left(\frac{\quad}{2}\right)^2 - \left(\frac{\quad}{2}\right)^2\right](\_\_\_ - \_\_\_)(\_\_\_) = \_\_\_\_$$

TOTAL WELL VOLUME = VT = Vc + Vf = 1.25 + 2.34 = 3.59 ft.^{3} x 7.48 = _____ gal.

DEVELOPMENT LOG:

DATE	TIME BEGIN/END	METHOD	ELAPSED TIME (min)	FLOW RATE (gpm)	CUMULATIVE WATER REMOVED GALLONS	pH	TEMP	CONDUC-TIVITY	D.O.* (%)	REDOX	TURBID-ITY	COMMENTS
1/15	1408	Mini purge	—		0.5	8.03	29.87	1.72	23.7	125.5		
	1411		3		1.5	8.23	29.56	1.32	28.3	-23.2		
	1414		6		2.5	8.67	29.95	1.20	42.2	-67.4		
	1417		9		3.5	8.67	29.91	1.13	43.2	-76.6		Bailed dry after ~3.5 gallons removed

* = Dissolved Oxygen

WELL DEVELOPMENT LOG

PROJECT	WELL NO.	SITE	PREPARED BY
MCB UST KB-100 SI	TW-4	KB-100	S. Spangler

METHOD
- OVERPUMPAGE ☒
- BAILER ☐
- SURGE BLOCK ☒
- AIR LIFT ☐
- OTHER _____

INITIAL 6.46' WATER LEVEL

FINAL WATER LEVEL

REMARKS: DTB = 15.14

CAPACITY OF CASING (GALLONS/LINEAR FOOT)

1" - 0.012

2" - 0.16
4" - 0.65
6" - 0.1.47

VOLUME BETWEEN CASNIG AND HOLE (GALLONS/LINEAR FOOT) (ASSUMING 40% POROSITY)

1" CASING AND 2" HOLE - 0.013

2" CASING AND 6" HOLE - 0.52
2" CASING AND 8" HOLE - 0.98
4" CASING AND 10" HOLE - 1.37
4" CASING AND 12" HOLE - 2.09

HOLE DIAMETER d_h =

WELL CASING INSIDE DIAMETER $d_w ID$ =

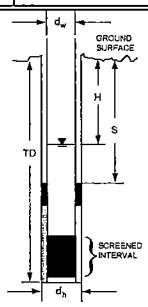
OUTSIDE DIAMETER $d_w OD$ = _____

DEPTH TO: WATER LEVEL H =

BASE OF SEAL S = _____

BASE OF WELL TD =

EST. FILTER PACK POROSITY P = _____



WELL VOLUME CALCULATION :

$$\text{CASING VOLUME} = V_c = \Pi\left(\frac{d_w ID}{2}\right)^2 (TD - H) = 3.14\left(\frac{\quad}{2}\right)^2 (\_\_\_ - \_\_\_) = \_\_\_\_$$

$$\text{FILTER PACK PORE VOLUME} = V_f = \Pi\left[\left(\frac{d_h}{2}\right)^2 - \left(\frac{d_w OD}{2}\right)^2\right](TD - (S \text{ or } H^*)(P) = \_\_\_\_$$

(* if S > H, use S; if S < H, use H)

$$= 3.14\left[\left(\frac{\quad}{2}\right)^2 - \left(\frac{\quad}{2}\right)^2\right](\_\_\_ - \_\_\_)(\_\_\_) = \_\_\_\_$$

TOTAL WELL VOLUME = VT = Vc + Vf = ____ + ____ = _____ $ft.^3$ x 7.48 = _____ gal.

DEVELOPMENT LOG:

DATE	TIME BEGIN/END	METHOD	ELAPSED TIME	FLOW RATE (gpm)	CUMULATIVE WATER REMOVED GALLONS	WATER QUALITY pH	TEMP °C	CONDUCTIVITY mS/cm	D.O.* %	REDOX ORP	TURBIDITY ~~SALINITY~~	COMMENTS
1/15	14:51	Mini Purge	0	0	0							
"	14:52	"	1	1	1	9.31	28.63	0.780	13.8	-149.0	0.38	
"	14:54	"	3	3	3	9.27	28.89	0.733	13.1	-160.3	0.36	
"	14:55	"	5	5	5	9.48	28.92	0.823	18.7	-147.6	0.40	

* = Dissolved Oxygen

WELL DEVELOPMENT LOG

PROJECT	WELL NO.	SITE	PREPARED BY
MCBH UST KB-100 ST	TW-5	KB-100	S Spengler

METHOD
- OVERPUMPAGE ☒
- BAILER ☐
- SURGE BLOCK ☒
- AIR LIFT ☐
- OTHER _____

INITIAL 6.58 WATER LEVEL

FINAL WATER LEVEL

REMARKS: DTB = 14.60

CAPACITY OF CASING (GALLONS/LINEAR FOOT)

1" - 0.012

2" - 0.16
4" - 0.65
6" - 0.1.47

VOLUME BETWEEN CASNIG AND HOLE (GALLONS/LINEAR FOOT) (ASSUMING 40% POROSITY)

1" CASING AND 2" HOLE - 0.013

2" CASING AND 6" HOLE - 0.52
2" CASING AND 8" HOLE - 0.98
4" CASING AND 10" HOLE - 1.37
4" CASING AND 12" HOLE - 2.09

HOLE DIAMETER d_h =

WELL CASING INSIDE DIAMETER $d_w ID$ =

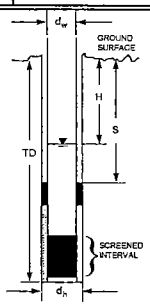
OUTSIDE DIAMETER $d_w OD$ = _____

DEPTH TO: WATER LEVEL H =

BASE OF SEAL S = _____

BASE OF WELL TD =

EST. FILTER PACK POROSITY P = _____



WELL VOLUME CALCULATION :

$$\text{CASING VOLUME} = V_c = \Pi\left(\frac{d_w ID}{2}\right)^2 (TD - H) = 3.14\left(\frac{\quad}{2}\right)^2 (\_\_\_ - \_\_\_) = \_\_\_\_$$

$$\text{FILTER PACK PORE VOLUME} = V_f = \Pi\left[\left(\frac{d_h}{2}\right)^2 - \left(\frac{d_w OD}{2}\right)^2\right](TD - (S \text{ or } H^*)(P) = \_\_\_\_$$

(* if S > H, use S; if S < H, use H)

$$= 3.14\left[\left(\frac{\quad}{2}\right)^2 - \left(\frac{\quad}{2}\right)^2\right](\_\_\_ - \_\_\_)(\_\_\_) = \_\_\_\_$$

TOTAL WELL VOLUME = VT = Vc + Vf = ____ + ____ = _____ ft.^{3} x 7.48 = _____ gal.

DEVELOPMENT LOG:

DATE	TIME BEGIN/END	METHOD	ELAPSED TIME	FLOW RATE (gpm)	CUMULATIVE WATER REMOVED GALLONS	WATER QUALITY pH	TEMP °C	CONDUCTIVITY mS/cm	D.O.* %	REDOX ORP	TURBIDITY SALINITY	COMMENTS
1/15	14:59	min purge	0		0							
	14:59	"	1		1	9.11	28.38	0.776	24.5	-101.4	0.38	
	15:01	"	3		3	9.11	28.27	0.735	27.7	-104.6	0.36	
	15:03	"	5		5	9.19	28.22	0.722	16.0	-99.1	0.35	

* = Dissolved Oxygen

WELL DEVELOPMENT LOG

PROJECT	WELL NO.	SITE	PREPARED BY
MCBH UST KB-10U SI	TW-6	KB-10U	SPENGLER

METHOD
- OVERPUMPAGE ☒
- BAILER ☐
- SURGE BLOCK ☒
- AIR LIFT ☐
- OTHER _____

INITIAL 6.96 WATER LEVEL

FINAL WATER LEVEL

REMARKS: DTB = 15.14

CAPACITY OF CASING (GALLONS/LINEAR FOOT)

1" - 0.012

2" - 0.16
4" - 0.65
6" - 0.1.47

VOLUME BETWEEN CASNIG AND HOLE (GALLONS/LINEAR FOOT) (ASSUMING 40% POROSITY)

1" CASING AND 2" HOLE - 0.013

2" CASING AND 6" HOLE - 0.52
2" CASING AND 8" HOLE - 0.98
4" CASING AND 10" HOLE - 1.37
4" CASING AND 12" HOLE - 2.09

HOLE DIAMETER d_h =

WELL CASING INSIDE DIAMETER $d_w ID$ =

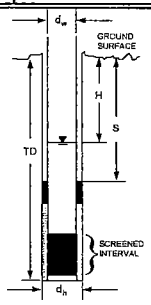
OUTSIDE DIAMETER $d_w OD$ = _____

DEPTH TO: WATER LEVEL H =

BASE OF SEAL S = _____

BASE OF WELL TD =

EST. FILTER PACK POROSITY P = _____



WELL VOLUME CALCULATION :

$$\text{CASING VOLUME} = V_c = \Pi\left(\frac{d_w ID}{2}\right)^2 (TD - H) = 3.14\left(\frac{\quad}{2}\right)^2 (\_\_\_ - \_\_\_) = \_\_\_\_$$

$$\text{FILTER PACK PORE VOLUME} = V_f = \Pi\left[\left(\frac{d_h}{2}\right)^2 - \left(\frac{d_w OD}{2}\right)^2\right](TD - (S \text{ or } H^*)(P) = \_\_\_\_$$

(* if S > H, use S; if S < H, use H)

$$= 3.14\left[\left(\frac{\quad}{2}\right)^2 - \left(\frac{\quad}{2}\right)^2\right](\_\_\_ - \_\_\_)(\_\_\_) = \_\_\_\_$$

TOTAL WELL VOLUME = VT = Vc + Vf = ____ + ____ = _____ ft.^{3} x 7.48 = _____ gal.

DEVELOPMENT LOG:

DATE	TIME BEGIN/END	METHOD	ELAPSED TIME	FLOW RATE (gpm)	CUMULATIVE WATER REMOVED GALLONS	WATER QUALITY pH	TEMP	CONDUCTIVITY mS/cm	D.O.* %	REDOX ORP	TURBIDITY Saltwater	COMMENTS
~~1415~~	14:30	Mini purge	0	-	0 ~~0.5~~	~~9.04~~	~~29.14~~	~~1.023~~	~~22.1~~	~~-69.5~~	~~0.50~~	
	14:31	"	0.5		0.5	9.04	29.14	1.023	22.1	-69.5	0.50	
	14:32	"	1.5		1.5	8.97	29.12	1.041	12.9	-102.5	0.51	
	14:33	"	3.05		3.5	9.04	29.22	1.337	15.5	-86.5	0.66	
	14:35	"	5.0		5.0	9.08	29.14	1.437	23.4	-89.2	0.72	

* = Dissolved Oxygen

WELL DEVELOPMENT LOG

PROJECT	WELL NO.	SITE	PREPARED BY
MCBH UST KB-100 SI	TW-7	KB100	S Spaeth

METHOD
- OVERPUMPAGE ☒
- BAILER ☐
- SURGE BLOCK ☒
- AIR LIFT ☐
- OTHER _____

INITIAL 6.44 WATER LEVEL

FINAL WATER LEVEL

REMARKS: DTB = 15.14

CAPACITY OF CASING (GALLONS/LINEAR FOOT)

1" - 0.012

2" - 0.16
4" - 0.65
6" - 0.1.47

VOLUME BETWEEN CASNIG AND HOLE (GALLONS/LINEAR FOOT) (ASSUMING 40% POROSITY)

1" CASING AND 2" HOLE - 0.013

2" CASING AND 6" HOLE - 0.52
2" CASING AND 8" HOLE - 0.98
4" CASING AND 10" HOLE - 1.37
4" CASING AND 12" HOLE - 2.09

HOLE DIAMETER d_h =

WELL CASING INSIDE DIAMETER $d_w ID$ =

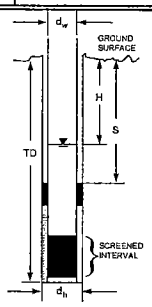
OUTSIDE DIAMETER $d_w OD$ = _____

DEPTH TO: WATER LEVEL H =

BASE OF SEAL S = _____

BASE OF WELL TD =

EST. FILTER PACK POROSITY P = _____



WELL VOLUME CALCULATION :

$$\text{CASING VOLUME} = V_c = \Pi\left(\frac{d_w ID}{2}\right)^2 (TD - H) = 3.14\left(\frac{\quad}{2}\right)^2 (\_\_\_ - \_\_\_) = \_\_\_\_$$

$$\text{FILTER PACK PORE VOLUME} = V_f = \Pi\left[\left(\frac{d_h}{2}\right)^2 - \left(\frac{d_w OD}{2}\right)^2\right](TD - (S \text{ or } H^*)(P) = \_\_\_\_$$

(* if S > H, use S; if S < H, use H)

$$= 3.14\left[\left(\frac{\quad}{2}\right)^2 - \left(\frac{\quad}{2}\right)^2\right](\_\_\_ - \_\_\_)(\_\_\_) = \_\_\_\_$$

TOTAL WELL VOLUME = VT = Vc + Vf = ____ + ____ = _____ $ft.^3$ x 7.48 = _____ gal.

DEVELOPMENT LOG:

DATE	TIME BEGIN/END	METHOD	ELAPSED TIME	FLOW RATE (gpm)	CUMULATIVE WATER REMOVED GALLONS	WATER QUALITY pH	TEMP °C	CONDUCTIVITY mS/cm	D.O.* %	REDOX ORP	TURBIDITY Saline	COMMENTS
1/15	15:06	mini purge	0		0							
	15:07	"	1		1	9.27	28.64	0.799	12.0	-84.7	0.39	
	15:09	"	3		3	9.19	28.61	0.739	11.0	-104.1	0.36	
	15:11	"	5		5	9.23	28.57	0.733	10.8	-106.8	0.35	

* = Dissolved Oxygen

GROUNDWATER SAMPLING LOG

WELL NO. KB-91-2 LOCATION: KMCB11 PROJECT NO:

DATE: 3/10/15 TIME: 0833 CLIMATIC CONDITIONS: SUNNY 60°F

STATIC WATER LEVEL: 2.15 m / 7.05' TOTAL DEPTH: 14.85'

WELL PURGING: LENGTH OF SATURATED ZONE: 7.8' LINEAR FEET

2"Φ VOLUME OF WATER TO BE EVACUATED: GALS./LINEAR FT. 0.1632 X

7.8' LINEAR FT. OF SATURATION X CASING VOLUMES = GALS.

METHOD OF REMOVAL: Bladder Pump PUMPING RATE:

WELL PURGE DATA:

SALINITY (ppt)	DATE/ TIME	GALLONS REMOVED	pH	SP. COND. (mS/cm)	D.O. (mg/L)	REDOX (ORP)	TURBIDITY (NTU)	TEMP (°C)
0.42	3/10/15 1320	1.2	7.57	0.86	2.81	131.1	36.3	28.2
0.42	3/10/15 1337	2.0	7.58	0.86	2.55	110.2	25.2	28.2
0.42	3/10/15 1343	2.5	7.58	0.86	2.11	55.4	15.8	28.2
0.42	" 13:53	3.0	7.59	0.86	1.51	-22.9	8.9	28.1
0.42	" 14:02	4.0	7.57	0.86	1.19	-57.9	7.1	28.2
0.42	" 14:07	4.5	7.59	0.85	1.11	-60.6	6.1	28.3
0.42	" 14:11	4.8	7.59	0.85	1.06	-63.8	5.4	28.3

SAMPLE WITHDRAWAL METHOD:

APPEARANCE OF SAMPLE COLOR

TURBIDITY

SEDIMENT

OTHER

LABORATORY ANALYSIS PARAMETERS AND PRESERVATIVES TPH-DRO/RRO, VOCs, PAHs

NUMBER AND TYPES OF SAMPLE CONTAINERS USED: 4-1L AMBERS, 3-40ML VOAs (UNPRESERVED)

SAMPLE IDENTIFICATION NUMBER(S) EKB091

DECONTAMINATION PROCEDURES: NAVY PPM I-F

NOTES:

SAMPLED BY: SS, MH, BB

SAMPLES DELIVERED TO: TRANSPORTERS:

DATE: TIME:

CAPACITY OF CASING (GALLONS/LINEAR FOOT)
2"-0.16•4"-0.65•6"-1.47•8"-2.61•10"-4.08•12"-5.87

Figure I-C-3-1: Groundwater Sampling Log

GROUNDWATER SAMPLING LOG

WELL NO. KB91-4 LOCATION: KMCBH PROJECT NO:

DATE: 3/10/15 TIME: 0831 1.985 m CLIMATIC CONDITIONS: MOSTLY CLOUDY 75°

STATIC WATER LEVEL: 6.51' TOTAL DEPTH: 13.61'

WELL PURGING: LENGTH OF SATURATED ZONE: 7.1' LINEAR FEET

4"ϕ VOLUME OF WATER TO BE EVACUATED: 0.65 GALS./LINEAR FT. X

7.1' LINEAR FT. OF SATURATION X CASING VOLUMES = 4.615 GALS.

METHOD OF REMOVAL: BLADDER PUMP PUMPING RATE:

WELL PURGE DATA:

SALINITY (ppt)	DATE/ TIME	GALLONS REMOVED	pH	SP. COND. (mS/cm)	D.O. (mg/L)	REDOX (ORP)	TURBIDITY (NTU)	TEMP (°C)
0.33	3/10/15 @1122	2.50	7.73	0.68	4.75	145.2	4.88	29.3
0.33	1124	3.0	7.73	0.68	4.67	146.3	3.86	29.3
0.33	1130	4.0	7.73	0.68	4.48	148.9	1.65	29.4
0.33	1137	4.5	7.73	0.68	4.60	150.4	1.23	29.3

SAMPLE WITHDRAWAL METHOD: BLADDER PUMP

APPEARANCE OF SAMPLE COLOR CLEAR

TURBIDITY NONE

SEDIMENT NONE

OTHER

LABORATORY ANALYSIS PARAMETERS AND PRESERVATIVES TPH-DRO/RRO, VOCs, PAHs

NUMBER AND TYPES OF SAMPLE CONTAINERS USED: 4-1L AMBERS, 3-40mL VOAs (UNPRESERVED)

SAMPLE IDENTIFICATION NUMBER(S) EKB91072 @1140, EKB91073 (DUP) @1140, EKB91072-MS/MSD

DECONTAMINATION PROCEDURES: NAVY PPM I-F

NOTES:

SAMPLED BY: SS, MH, BB

SAMPLES DELIVERED TO: TRANSPORTERS:

DATE: TIME:

CAPACITY OF CASING (GALLONS/LINEAR FOOT)
2"-0.16•4"-0.65•6"-1.47•8"-2.61•10"-4.08•12"-5.87

Figure I-C-3-1: Groundwater Sampling Log

100-2
DTW 6.50
DTB 14.73

7.49 π (4.06)(0.5/12)² = 0.16 gallon

GROUNDWATER SAMPLING LOG

WELL NO. KB-100-1 LOCATION: MCBH UST KB-100 PROJECT NO: UST KB-100

DATE: 1/20/15 TIME: 13:20 CLIMATIC CONDITIONS: CLR

STATIC WATER LEVEL: 6.61 TOTAL DEPTH: 10.67

WELL PURGING: LENGTH OF SATURATED ZONE: 4.06 LINEAR FEET

VOLUME OF WATER TO BE EVACUATED: GALS./LINEAR FT. X

4.06 LINEAR FT. OF SATURATION X CASING VOLUMES = 0.16 GALS.

METHOD OF REMOVAL: Bladder Pump PUMPING RATE:

WELL PURGE DATA:

DATE/ TIME	GALLONS REMOVED	pH	SP. COND.	D.O.	REDOX	TURBIDITY	Sal	Temp
1320	0	—	—	—	—	—		
13:24	0.25	9.45	0.749	28.4	-114.3	238	0.36	28.39
13:28	0.50	9.40	0.762	15.0	-125	72	0.37	28.37
13:31	0.75	9.40	0.771	11.0	-130.3	34	0.37	28.37
13:34	1.25	9.41	0.780	8.3	-134.6	21	0.38	28.39
13:37	1.5	9.40	0.788	6.7	-137.9	13.6	0.38	28.40
13:41	2.0	9.39	0.793	5.8	-140.9	9.7	0.38	28.38

SAMPLE WITHDRAWAL METHOD: Bladder Pump

APPEARANCE OF SAMPLE COLOR: Clear

TURBIDITY: Low

SEDIMENT: Low

OTHER:

LABORATORY ANALYSIS PARAMETERS AND PRESERVATIVES: TPH DRO/RRO, Lead (Total) VOCs

NUMBER AND TYPES OF SAMPLE CONTAINERS USED: 2-1-liter Ambers, 1-500ml Poly 3-40ml VOAs (unpreserved)

SAMPLE IDENTIFICATION NUMBER(S): EKB100019

DECONTAMINATION PROCEDURES: NAVY PPM I-F

NOTES:

SAMPLED BY:

SAMPLES DELIVERED TO: TRANSPORTERS:

DATE: TIME:

CAPACITY OF CASING (GALLONS/LINEAR FOOT)
2"-0.16•4"-0.65•6"-1.47•8"-2.61•10"-4.08•12"-5.87

Figure I-C-3-1: Groundwater Sampling Log

GROUNDWATER SAMPLING LOG

WELL NO. KB-100-2 LOCATION: UST MCBH KB-100 PROJECT NO: UST KB-100

DATE: 1/20/15 TIME: 14:12 CLIMATIC CONDITIONS: CLR

STATIC WATER LEVEL: 6.50 TOTAL DEPTH: 14.78

WELL PURGING: LENGTH OF SATURATED ZONE: 8.38 LINEAR FEET

VOLUME OF WATER TO BE EVACUATED: 0.1632 GALS./LINEAR FT. X

8.38 LINEAR FT. OF SATURATION X CASING VOLUMES = 1.37 GALS.

METHOD OF REMOVAL: Bladder Pump PUMPING RATE:

WELL PURGE DATA:

DATE/ TIME	GALLONS REMOVED	pH	SP. COND.	D.O.	REDOX	TURBIDITY	SAL	Temp(C)
14:12	0	–	–	–	–	–		
14:20	0.25	9.74	0.737	19.2	-72.5	43.7	0.36	28.45
14:26	0.50	9.66	0.732	12.2	-76.5	34.3	0.35	28.13
14:32	0.75	9.66	0.731	11.2	-78.4	30.9	0.35	28.11
14:35	1.00	9.65	0.729	10.4	-78.9	26.5	0.35	28.10
14:38	1.25	9.64	0.729	10.2	-78.5	25.3	0.35	28.4
14:41	1.50	9.63	0.729	9.7	-79.0	24.2	0.35	28.05

SAMPLE WITHDRAWAL METHOD: Bladder Pump

APPEARANCE OF SAMPLE COLOR: Clear

TURBIDITY: Low

SEDIMENT: Low

OTHER: Slight Cloudiness or emulsion observed

LABORATORY ANALYSIS PARAMETERS AND PRESERVATIVES: TPH DRO/RRO, Lead (total) VOCs

NUMBER AND TYPES OF SAMPLE CONTAINERS USED: 2 - 1-Liter Amber, 1 - 500ml Poly 3 - 40 ml VOAs (unpreserved) - Collect MS/MSD so triple this # of samples

SAMPLE IDENTIFICATION NUMBER(S): EKB100020 ; MS/MSD SAMPLES: EKB100020-MS / 20-MSD

DECONTAMINATION PROCEDURES: NAVY PPM I-F

NOTES:

SAMPLED BY:

SAMPLES DELIVERED TO: TRANSPORTERS:

DATE: TIME:

CAPACITY OF CASING (GALLONS/LINEAR FOOT)
2"-0.16•4"-0.65•6"-1.47•8"-2.61•10"-4.08•12"-5.87

Figure I-C-3-1: Groundwater Sampling Log

GROUNDWATER SAMPLING LOG

WELL NO. KB-100-3 LOCATION: KMCBH PROJECT NO:

DATE: 3/10/15 TIME: 0827 CLIMATIC CONDITIONS: PARTLY CLOUDY 66°F

STATIC WATER LEVEL: 2.06m / 6.76' TOTAL DEPTH: 13.95'

WELL PURGING: LENGTH OF SATURATED ZONE: 7.19' LINEAR FEET

4"Ø VOLUME OF WATER TO BE EVACUATED: 0.65 GALS./LINEAR FT. X

7.19' LINEAR FT. OF SATURATION X CASING VOLUMES = 4.67 GALS.

METHOD OF REMOVAL: BLADDER PUMP PUMPING RATE:

WELL PURGE DATA:

SALINITY (ppt)	DATE/ TIME	GALLONS REMOVED	pH	SP. COND. (mS/cm)	D.O. (mg/L)	REDOX (ORP)	TURBIDITY (NTU)	TEMP (°C)
0.56	3/10/15 0900	0.5	7.95	1.13	1.25	+121	5.6	27.8
0.56	0910	0.75	7.95	1.13	1.21	117.4	5.26	27.9
0.56	0920	1.2	7.95	1.13	1.10	114.8	4.66	27.9

SAMPLE WITHDRAWAL METHOD: BLADDER PUMP

APPEARANCE OF SAMPLE COLOR CLEAR

TURBIDITY NONE

SEDIMENT NONE

OTHER

LABORATORY ANALYSIS PARAMETERS AND PRESERVATIVES TPH-DRO/RRO, LEAD (TOTAL), VOCs

NUMBER AND TYPES OF SAMPLE CONTAINERS USED: 2-1L AMBERS, 1-500mL POLY (HNO3), 3-40mL VOAS (UNPRESERVED)

SAMPLE IDENTIFICATION NUMBER(S) EKB100022 @ 0930

DECONTAMINATION PROCEDURES: NAVY PPM I-F

NOTES:

SAMPLED BY: SS, MH, BB

SAMPLES DELIVERED TO: TRANSPORTERS:

DATE: TIME:

CAPACITY OF CASING (GALLONS/LINEAR FOOT)

2"-0.16•4"-0.65•6"-1.47•8"-2.61•10"-4.08•12"-5.87

Figure I-C-3-1: Groundwater Sampling Log

GROUNDWATER SAMPLING LOG

WELL NO. KB100-4 LOCATION: KMCBH PROJECT NO:

DATE: 3/10/15 TIME: 0829 CLIMATIC CONDITIONS: PARTLY CLOUDY 75 ~~66~~°F

STATIC WATER LEVEL: 2.03m / 6.66' TOTAL DEPTH: 13.5'

WELL PURGING: LENGTH OF SATURATED ZONE: 6.84' LINEAR FEET

4"Ø VOLUME OF WATER TO BE EVACUATED: 0.65 ~~0.34~~ GALS./LINEAR FT. X

6.84' LINEAR FT. OF SATURATION X CASING VOLUMES = 4.45 GALS.

METHOD OF REMOVAL: BLADDER PUMP PUMPING RATE:

WELL PURGE DATA:

SALINITY (ppt)	DATE/ TIME	GALLONS REMOVED	pH	SP. COND. (mS/cm)	D.O. (mg/L)	REDOX (ORP)	TURBIDITY (NTU)	TEMP (°C)
0.24	3/10/15 1012	1.20	7.70	0.50	5.93	130.4	3.82	29.0
0.24	1016	2.0	7.70	0.50	5.41	134.5	3.54	29.0
0.25	1021	2.5	7.72	0.53	4.69	140.1	1.96	29.0
0.27	1026	3.0	7.73	0.57	3.78	143.0	1.69	29.0
0.29	1030	3.5	7.75	0.60	2.97	143.5	1.04	29.0
0.31	1036	4.0	7.77	0.64	2.10	143.7	0.94	29.1
0.33	1040	4.5	7.78	0.68	1.84	143.4	1.05	29.1
0.35	1044	4.75	7.79	0.72	1.78	143.1	0.90	29.2

SAMPLE WITHDRAWAL METHOD: BLADDER PUMP

APPEARANCE OF SAMPLE COLOR CLEAR

TURBIDITY NONE

SEDIMENT NONE

OTHER

LABORATORY ANALYSIS PARAMETERS AND PRESERVATIVES TPH-DRO/RRO, LEAD (TOTAL), VOCs

NUMBER AND TYPES OF SAMPLE CONTAINERS USED: 2-1L AMBERS, 1-500mL POLY (HNO3)
3-40mL VOAS (UNPRESERVED)

SAMPLE IDENTIFICATION NUMBER(S) EKB100023@1045

DECONTAMINATION PROCEDURES: NAVY PPM I-F

NOTES:

SAMPLED BY: SS, MH, BB

SAMPLES DELIVERED TO: TRANSPORTERS:

DATE: TIME:

CAPACITY OF CASING (GALLONS/LINEAR FOOT)
2"-0.16•4"-0.65•6"-1.47•8"-2.61•10"-4.08•12"-5.87

Figure I-C-3-1: Groundwater Sampling Log

GROUNDWATER SAMPLING LOG

WELL NO. TW-1 LOCATION: MCBH KB100 PROJECT NO:

DATE: 1/20/14 TIME: 0743. CLIMATIC CONDITIONS: light wind, sunny
STATIC WATER LEVEL: 7.37' BTOC TOTAL DEPTH: 15.14' BTOC
WELL PURGING: LENGTH OF SATURATED ZONE: 7.77 LINEAR FEET
VOLUME OF WATER TO BE EVACUATED: 0.1632 GALS./LINEAR FT. X
7.77 LINEAR FT. OF SATURATION X CASING VOLUMES = 1.27 GALS.
METHOD OF REMOVAL: Bladder pump PUMPING RATE: ~0.3 L/min.

WELL PURGE DATA:

DATE/ TIME	GALLONS REMOVED	pH	SP. COND. (mS/cm²)	D.O. (%)	REDOX (ORP)	TURBIDITY (NTU)	Temp (°C)
0815	0.25	8.82	1.027	20.3	28.2	11.7	27.53
0819	0.50	8.86	1.027	15.8	4.1	10.1	27.52
0826	0.75	8.87	1.006	12.8	-11.7	5.13	27.20
0838	1.00	8.88	0.982	14.3	-49.9	3.39	27.10
0840	1.15	8.84	0.979	13.6	-50.7	3.83	27.04
0842	1.25	8.81	0.980	13.5	-50.9	3.52	27.03

SAMPLE WITHDRAWAL METHOD: Bladder Pump.
APPEARANCE OF SAMPLE COLOR Clear
TURBIDITY Low
SEDIMENT Light
OTHER No odor/sheen.
LABORATORY ANALYSIS PARAMETERS AND PRESERVATIVES TPH-DRO/ORO (No preserve), Lead (HNO3), VOCS (NO Preserve).
NUMBER AND TYPES OF SAMPLE CONTAINERS USED: 3 x 40 ml VOA's, 1 x 500 ml Poly, 2x 1L Ambers.
SAMPLE IDENTIFICATION NUMBER(S) FKB100011 @ 0845
DECONTAMINATION PROCEDURES: Navy PPM I-F

NOTES:
SAMPLED BY: AL, MH
SAMPLES DELIVERED TO: TRANSPORTERS:
DATE: TIME:

CAPACITY OF CASING (GALLONS/LINEAR FOOT)
2"-0.16•4"-0.65•6"-1.47•8"-2.61•10"-4.08•12"-5.87

Figure I-C-3-1: Groundwater Sampling Log

GROUNDWATER SAMPLING LOG

WELL NO. TW-2 LOCATION: MCBH KBAY PROJECT NO: UST KB-100

DATE: 1/20/15 TIME: 0905 CLIMATIC CONDITIONS: Sunny, Clear

STATIC WATER LEVEL: 7.08 TOTAL DEPTH: 15.14

WELL PURGING: LENGTH OF SATURATED ZONE: 7.07 LINEAR FEET

VOLUME OF WATER TO BE EVACUATED: 0.1632 GALS./LINEAR FT. X

8.07 LINEAR FT. OF SATURATION X CASING VOLUMES = 1.32 GALS.

METHOD OF REMOVAL: PUMPING RATE:

WELL PURGE DATA:

DATE/ TIME	GALLONS REMOVED	pH	SP. COND.	D.O.	REDOX	TURBIDITY NTU	SAL	Temp °C
1/20 9:10	0							
9:15	0.25	9.65	0.915	9.72	-123.9	45.8	0.45	28.53
9:20	0.50	9.56	0.926	9.62	-127.4	20.1	0.45	28.53
9:24	0.75	9.61	0.917	6.68	-129.5	11.0	0.45	28.55
9:27	1.00	9.60	0.913	7.33	-130.7	5.45	0.45	28.55
9:30	1.25	9.61	0.920	7.92	-130.9	4.27	0.45	28.55
9:34	1.50	9.60	0.925	7.78	-129.2	3.67	0.45	28.57

SAMPLE WITHDRAWAL METHOD: Bladder Pump

APPEARANCE OF SAMPLE COLOR: Clear

TURBIDITY: Low

SEDIMENT: Low

OTHER: No odor detected, no sheen observed

LABORATORY ANALYSIS PARAMETERS AND PRESERVATIVES

NUMBER AND TYPES OF SAMPLE CONTAINERS USED: 3x 40ml VOAs (unpreserved), 1-500ml Poly (HNO_3 preserve), 2-1 liter Amber Jars

TPH-DRO/RRO (No Preserve), Lead (HNO_3), VOC's (No preserve)

SAMPLE IDENTIFICATION NUMBER(S) EKB00012 @ 9:38.

DECONTAMINATION PROCEDURES: NAVF PPM I-F

NOTES:

SAMPLED BY: SS, MH, AL

SAMPLES DELIVERED TO: TRANSPORTERS:

DATE: TIME:

CAPACITY OF CASING (GALLONS/LINEAR FOOT)
2"-0.16•4"-0.65•6"-1.47•8"-2.61•10"-4.08•12"-5.87

Installed bladder pump - 2.5' below the Water Table Surface

Figure I-C-3-1: Groundwater Sampling Log

GROUNDWATER SAMPLING LOG

WELL NO. TW-3 LOCATION: MCB11 KB-103 PROJECT NO: UST KB-10

DATE: 1/20/15 TIME: 10:25 CLIMATIC CONDITIONS: CLR

STATIC WATER LEVEL: 7.30 TOTAL DEPTH: 15.14

WELL PURGING: LENGTH OF SATURATED ZONE: 7.84 LINEAR FEET

VOLUME OF WATER TO BE EVACUATED: 0.1632 GALS./LINEAR FT. X

7.84 LINEAR FT. OF SATURATION X CASING VOLUMES = 1.28 GALS.

METHOD OF REMOVAL: Bladder Pump PUMPING RATE:

WELL PURGE DATA:

DATE/ TIME	GALLONS REMOVED	pH	SP. COND. mS/cm	D.O. mg/L	REDOX	TURBIDITY	SAL	Temp
10:25	0	9.08	1.670	9.2	-44.2	12.2	0.84	28.71
10:32	0.25	9.07	1.662	10.0	-48.6	7.3	0.83	28.71
10:35	0.5	9.06	1.625	10.7	-52.3	4.3	0.81	28.80
10:38	1.0	9.05	1.576	11.5	-56.1	3.6	0.79	28.83
10:42	1.5	9.05	1.521	11.6	-60.3	2.1	0.76	28.82

SAMPLE WITHDRAWAL METHOD: Bladder Pump

APPEARANCE OF SAMPLE COLOR: Clear

TURBIDITY: Low

SEDIMENT: Low

OTHER:

LABORATORY ANALYSIS PARAMETERS AND PRESERVATIVES: TPH-DRC/RRO, Lead (Total) VOCs

NUMBER AND TYPES OF SAMPLE CONTAINERS USED: 2-1 Liter Ambers, 1-500ml Poly ~~2-1 Liter Ambers~~ 3-40ml VOAs (unpreserved)

SAMPLE IDENTIFICATION NUMBER(S): EKB100015 @ 10:45

DECONTAMINATION PROCEDURES: NAVY PPM I-F

NOTES:

SAMPLED BY: SS, AL, MH

SAMPLES DELIVERED TO: TRANSPORTERS:

DATE: TIME:

CAPACITY OF CASING (GALLONS/LINEAR FOOT)
2"-0.16•4"-0.65•6"-1.47•8"-2.61•10"-4.08•12"-5.87

Figure I-C-3-1: Groundwater Sampling Log

GROUNDWATER SAMPLING LOG

WELL NO. Tw-4 LOCATION: MCBH UST KB-100 PROJECT NO: UST KB-100

DATE: 1/20/15 TIME: 12:01 CLIMATIC CONDITIONS: CL

STATIC WATER LEVEL: 6.39 ft TOTAL DEPTH: 15.14

WELL PURGING: LENGTH OF SATURATED ZONE: 8.75 LINEAR FEET

VOLUME OF WATER TO BE EVACUATED: 0.1632 GALS./LINEAR FT. X

8.75 LINEAR FT. OF SATURATION X CASING VOLUMES = 1.43 GALS.

METHOD OF REMOVAL: Bladder Pump PUMPING RATE:

WELL PURGE DATA:

DATE/ TIME	GALLONS REMOVED	pH	SP. COND. (mS/cm²)	D.O. (%)	REDOX (ORP)	TURBIDITY (NTU)	(PPT) Sal	(°C) Temp
1214	0.75	9.88	0.833	10.0	-89.8	3.49	0.41	27.96
1217	1.25	9.89	0.827	7.7	-97.9	3.21	0.40	27.95
1220	1.50	9.89	0.819	6.3	-109	2.0	0.40	27.95
1223	1.75	9.88	0.809	5.6	-117	1.7	0.39	27.95
1226	2.00	9.87	0.803	5.3	-122	1.3	0.39	27.95

SAMPLE WITHDRAWAL METHOD: Bladder Pump

APPEARANCE OF SAMPLE COLOR Clear

TURBIDITY Low

SEDIMENT Low

OTHER Moderate hydrogen sulfide odor

LABORATORY ANALYSIS PARAMETERS AND PRESERVATIVES TPH DRO/RRO, Lead (Total) VOCs

NUMBER AND TYPES OF SAMPLE CONTAINERS USED: 2-1 liter Ambers, 1-500-1 Poly, 3-40ml VOAs (unpreserved)

SAMPLE IDENTIFICATION NUMBER(S) EKB-100010

DECONTAMINATION PROCEDURES: NAVY PPM I-F

NOTES:

SAMPLED BY: SS, AL, MH

SAMPLES DELIVERED TO: TRANSPORTERS:

DATE: TIME:

CAPACITY OF CASING (GALLONS/LINEAR FOOT)
2"-0.16•4"-0.65•6"-1.47•8"-2.61•10"-4.08•12"-5.87

Figure I-C-3-1: Groundwater Sampling Log

6" Turbine w/ MI
no mag
w/ lead
8" Homogen
Tu-m
6.35 - Tu-4

GROUNDWATER SAMPLING LOG

WELL NO. Tw-5 LOCATION: MCBH KB-100 PROJECT NO: UST KB-100

DATE: 1/20/15 TIME: 11:25 CLIMATIC CONDITIONS: Clr

STATIC WATER LEVEL: 6.49 TOTAL DEPTH: 15.14

WELL PURGING: LENGTH OF SATURATED ZONE: 8.65 LINEAR FEET

VOLUME OF WATER TO BE EVACUATED: 0.1632 GALS./LINEAR FT. X

8.65 LINEAR FT. OF SATURATION X CASING VOLUMES = 1.41 GALS.

METHOD OF REMOVAL: Bladder Pump PUMPING RATE:

WELL PURGE DATA:

DATE/ TIME	GALLONS REMOVED	pH	SP. COND.	D.O.	REDOX	TURBIDITY		
11:25	0	-	-	-	-	—		
11:29	0.25	9.18	0.775	8.8	-3.5	30.8	0.38	27.39
11:35	0.75	9.20	0.765	6.9	-21.3	12.2	0.37	27.34
11:40	1.25	9.27	0.759	6.1	-31.2	5.9	0.37	27.34
11:42	1.50	9.31	0.753	5.6	-36.3	4.0	0.37	27.39
11:45	20	9.32	0.751	3.2	-39.9	3.4	0.36	27.40
11:49	2.25	9.35	0.748	4.9	-43.2	2.3	0.36	27.40

SAMPLE WITHDRAWAL METHOD: Bladder Pump

APPEARANCE OF SAMPLE COLOR Clear

TURBIDITY Low

SEDIMENT Low

OTHER

LABORATORY ANALYSIS PARAMETERS AND PRESERVATIVES TPH-DRO/RRO, Lead (total) VOCs

NUMBER AND TYPES OF SAMPLE CONTAINERS USED: 2-1 Liter Ambers, 1-500ml Poly 3-40ml VOAs (unpreserved)

SAMPLE IDENTIFICATION NUMBER(S) EKB 100017 @ 11:50

DECONTAMINATION PROCEDURES: NAVY PPM I-F

NOTES:

SAMPLED BY: SS, AL, MH

SAMPLES DELIVERED TO: TRANSPORTERS:

DATE: TIME:

CAPACITY OF CASING (GALLONS/LINEAR FOOT)
2"-0.16•4"-0.65•6"-1.47•8"-2.61•10"-4.08•12"-5.87

Figure I-C-3-1: Groundwater Sampling Log

GROUNDWATER SAMPLING LOG

WELL NO. TW-6 LOCATION: MCBH KBay PROJECT NO: UST KB-100

DATE: 1/20/15 TIME: 9:40 CLIMATIC CONDITIONS: CLR

STATIC WATER LEVEL: 6.92 TOTAL DEPTH: 15.14

WELL PURGING: LENGTH OF SATURATED ZONE: 8.22 LINEAR FEET

VOLUME OF WATER TO BE EVACUATED: 0.1632 GALS./LINEAR FT. X

8.22 LINEAR FT. OF SATURATION X CASING VOLUMES = 1.34 GALS.

METHOD OF REMOVAL: Bladder Pump PUMPING RATE: ~0.34

WELL PURGE DATA:

DATE/ TIME	GALLONS REMOVED	pH	SP. COND.	D.O. %	REDOX ORP	TURBIDITY	SAL	Temp
9:40	0							
9:45	0.25	9.11	0.669	13.4	-78.7	23.1	0.32	28.05
9:50	0.50	9.15	0.746	12.6	-90.4	23.5	0.36	28.00
9:55	0.75	9.16	0.846	12.1	-100.0	17.8	0.41	27.96
10:00	1.00	9.20	0.915	12.1	-110.6	9.84	0.45	28.04
10:03	1.50	9.23	0.961	11.4	-118.0	7.36	0.47	28.07
10:05	2.00	9.24	0.989	11.0	-122.7	5.93	0.49	28.1

SAMPLE WITHDRAWAL METHOD: Bladder Pump

APPEARANCE OF SAMPLE COLOR Clear

TURBIDITY Low

SEDIMENT

OTHER

LABORATORY ANALYSIS PARAMETERS AND PRESERVATIVES TPH-DRO/RRO, Lead (Total) VOCs

NUMBER AND TYPES OF SAMPLE CONTAINERS USED: 2-1 liter Ambers, 1-500ml Poly ~~2 x 1 liter Ambers~~ 3-40ml VOAs (unpreserved) Collected a field duplicate (Sample #4 3 bottles)

SAMPLE IDENTIFICATION NUMBER(S) EKB100013 @ 10:08 EKB100014 @ 10:20 Field Duplicate

DECONTAMINATION PROCEDURES: NAVY PPM I-F

NOTES:

SAMPLED BY: SS, AL, MH

SAMPLES DELIVERED TO: TRANSPORTERS:

DATE: TIME:

CAPACITY OF CASING (GALLONS/LINEAR FOOT)
2"-0.16•4"-0.65•6"-1.47•8"-2.61•10"-4.08•12"-5.87

Figure I-C-3-1: Groundwater Sampling Log

6.45 DTW

GROUNDWATER SAMPLING LOG

WELL NO. TW-7 LOCATION: MCBH KB PROJECT NO: UST KB-100

DATE: 1/20/15 TIME: 10:59 CLIMATIC CONDITIONS: CLR

STATIC WATER LEVEL: 6.35 TOTAL DEPTH: 15.14

WELL PURGING: LENGTH OF SATURATED ZONE: 8.79 LINEAR FEET

VOLUME OF WATER TO BE EVACUATED: 0.1632 GALS./LINEAR FT. X

8.79 LINEAR FT. OF SATURATION X CASING VOLUMES = 1.43 GALS.

METHOD OF REMOVAL: PUMPING RATE:

WELL PURGE DATA:

DATE/ TIME	GALLONS REMOVED	pH	SP. COND.	D.O. %	REDOX	TURBIDITY	SAL	Temp
~~10:59~~	~~0~~	~~9.52~~	~~0.795~~	~~7.4~~	~~-25.8~~		~~0.39~~	~~27.81~~
11:03	0.25	9.52	0.795	7.4	-25.9	4.2	0.38	27.51
11:06	0.5	9.45	0.777	6.8	-30.6	2.5	0.38	27.76
11:10	0.75	9.47	0.773	6.3	-38.5	1.5	0.39	27.74
11:13	1.25	9.49	0.773	5.7	-41.2	1.2	0.37	27.72

SAMPLE WITHDRAWAL METHOD: Bladder Pump

APPEARANCE OF SAMPLE COLOR: Clear

TURBIDITY: Low

SEDIMENT: Low

OTHER:

LABORATORY ANALYSIS PARAMETERS AND PRESERVATIVES: TPH-DRO/RRO, Lead (Total) VOCs

NUMBER AND TYPES OF SAMPLE CONTAINERS USED: 2-1 liter Ambers, 1-500 ml Poly 3-40 ml VOAs (unpreserved)

SAMPLE IDENTIFICATION NUMBER(S): EKB100016 @ 11:15

DECONTAMINATION PROCEDURES: NAVY PPM I-F

NOTES:

SAMPLED BY: SS, AL, MH

SAMPLES DELIVERED TO: TRANSPORTERS:

DATE: TIME:

CAPACITY OF CASING (GALLONS/LINEAR FOOT)
2"-0.16•4"-0.65•6"-1.47•8"-2.61•10"-4.08•12"-5.87

Figure I-C-3-1: Groundwater Sampling Log

E2 SAFETY BRIEFING FORM

Project name: UST KB-91 and UST KB-100, MCBH, Oahu, Hawaii
Project location: UST KB-91 and UST KB-100
MCBH, Oahu, Hawaii

Date: 1-13-15
Time: 0900

Type of Safety Meeting: ☒ Initial Safety Briefing ☐ Daily Safety Meeting

Name of Person Conducting Meeting: M. Neal

TOPIC DISCUSSED: AHAs

a. Vehicular awareness - Motor Pool
b. Drill rig safety
c. Sun exposure
d. PPE - level D
e.

NAME (PRINT/SIGN) OF EMPLOYEES ATTENDING:

1. Pat Collins / [signature]
2. Kevin Rogers [signature]
3. Steve Sopka [signature]
4. M Heslett / [signature]
5. AUSTIN LUTEY [signature]
6. BERNICE BALETE [signature]
7.
8.

EZ/CRZ PERSONNEL ACCESS:

LOG-IN	LOG-OUT
1.	1.
2.	2.
3.	3.
4.	4.
5.	5.
6.	6.
7.	7.
8.	8.

E2 SAFETY BRIEFING FORM

Project name: UST KB-91 and UST KB-100, MCBH, Oahu, Hawaii
Project location: UST KB-91 and UST KB-100
MCBH, Oahu, Hawaii

Date: 1-14-15
Time: 0830

Type of Safety Meeting: ☐ Initial Safety Briefing ☒ Daily Safety Meeting

Name of Person Conducting Meeting: M. Neal

TOPIC DISCUSSED: AHAs

a. Traffic Awareness
b. PPE
c. Slips/Trips/Falls
d. Electric safety (GFCIs)
e.

NAME (PRINT/SIGN) OF EMPLOYEES ATTENDING:

1. AUSTIN LUTEY
2. BERNICE BALETE
3. Kevin Rogers
4. PAT COLLINS
5. STEVE SPENCER
6. Mervin Hesketh
7. ERIC SHIGAKI NAVFAC HI
8.

EZ/CRZ PERSONNEL ACCESS:

LOG-IN	LOG-OUT
1. ERIC SHIGAKI (9:51 am)	1. Shigaki 10:41 am
2.	2.
3.	3.
4.	4.
5.	5.
6.	6.
7.	7.
8.	8.

E2 SAFETY BRIEFING FORM

Project name: UST KB-91 and UST KB-100, MCBH, Oahu, Hawaii Date: 1/15/2015
Project location: UST KB-91 and UST KB-100 Time: 0830
MCBH, Oahu, Hawaii

Type of Safety Meeting: ☐ Initial Safety Briefing ☒ Daily Safety Meeting

Name of Person Conducting Meeting: Austin Lutey

TOPIC DISCUSSED: Drilling / overhead Hazards.

a. PPE Level D

b. Traffic

c. Slips, Trips, Falls

d. Hydration

e. Bio Hazards

NAME (PRINT/SIGN) OF EMPLOYEES ATTENDING:

1. Pat Collins
2. Mann Heskett
3. Jon Shigestad
4. Steve Spencer
5. Bernice Balete
6.
7.
8.

EZ/CRZ PERSONNEL ACCESS:

LOG-IN	LOG-OUT
1.	1.
2.	2.
3.	3.
4.	4.
5.	5.
6.	6.
7.	7.
8.	8.

E2 SAFETY BRIEFING FORM

Project name: UST KB-91 and UST KB-100, MCBH, Oahu, Hawaii Date: 1/20/14
Project location: UST KB-91 and UST KB-100 Time: 0720
MCBH, Oahu, Hawaii

Type of Safety Meeting: ☐ Initial Safety Briefing ☐ Daily Safety Meeting

Name of Person Conducting Meeting: Austin Lutey

TOPIC DISCUSSED: Site specific safety

a. PPE

b. Hydration

c. Slips, trips & falls

d. Sample handling

e.

NAME (PRINT/SIGN) OF EMPLOYEES ATTENDING:

1. M Hesketh / MOR
2. S Spaulding
3. A. Lutey
4.
5.
6.
7.
8.

EZ/CRZ PERSONNEL ACCESS:

LOG-IN	LOG-OUT
1.	1.
2.	2.
3.	3.
4.	4.
5.	5.
6.	6.
7.	7.
8.	8.

E2 SAFETY BRIEFING FORM

Project name: UST KB-91 and UST KB-100, MCBH, Oahu, Hawaii
Project location: UST KB-91 and UST KB-100
MCBH, Oahu, Hawaii

Date: 2/27/15
Time: 8:00

Type of Safety Meeting: ☐ Initial Safety Briefing ☒ Daily Safety Meeting

Name of Person Conducting Meeting: STEVE SPENGLER

TOPIC DISCUSSED: Removal of Temporary Wells and Installation of Permanent Wells

a. PPE Level D

b. Traffic

c. Hydration

d.

e.

NAME (PRINT/SIGN) OF EMPLOYEES ATTENDING:

1. QUINTON WILSON GTA
2.
3. Gabe Gutierrez
4. Jon Shjegstad
5. STEVE SPENGLER
6.
7.
8.

EZ/CRZ PERSONNEL ACCESS:

LOG-IN	LOG-OUT
1.	1.
2.	2.
3.	3.
4.	4.
5.	5.
6.	6.
7.	7.
8.	8.

E2 SAFETY BRIEFING FORM

Project name: UST KB-91 and UST KB-100, MCBH, Oahu, Hawaii Date: 3/2/15
Project location: UST KB-91 and UST KB-100 MCBH, Oahu, Hawaii Time:

Type of Safety Meeting: ☐ Initial Safety Briefing ☒ Daily Safety Meeting

Name of Person Conducting Meeting: STEVE SPRINGER

TOPIC DISCUSSED: Install 3 Permant 4" monitoring wells

a. PPE level D

b. Traffic

c. Hydration

d.

e.

NAME (PRINT/SIGN) OF EMPLOYEES ATTENDING:

1. QUINTON WILSON
2. Jon Shjegstad
3.
4.
5.
6.
7.
8.

EZ/CRZ PERSONNEL ACCESS:

LOG-IN	*LOG-OUT*
1.	1.
2.	2.
3.	3.
4.	4.
5.	5.
6.	6.
7.	7.
8.	8.

E2 SAFETY BRIEFING FORM

Project name: UST KB-91 and UST KB-100, MCBH, Oahu, Hawaii
Project location: UST KB-91 and UST KB-100
MCBH, Oahu, Hawaii

Date: 3/4/2015
Time: 10:45

Type of Safety Meeting: ☐ Initial Safety Briefing ☒ Daily Safety Meeting

Name of Person Conducting Meeting: STEVEN SPENGLER

TOPIC DISCUSSED: Developing New 4" Diameter Monitoring Wells

a. Level D PPE
b. Hydration
c. Traffic Hazards
d. Lifting Hazards
e.

NAME (PRINT/SIGN) OF EMPLOYEES ATTENDING:

1. Marvin Heskett/MOD
2. Steve Spengler
3.
4.
5.
6.
7.
8.

EZ/CRZ PERSONNEL ACCESS:

LOG-IN	*LOG-OUT*
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2.	2.
3.	3.
4.	4.
5.	5.
6.	6.
7.	7.
8.	8.

E2 SAFETY BRIEFING FORM

Project name: UST KB-91 and UST KB-100, MCBH, Oahu, Hawaii Date: 3/10/2015
Project location: UST KB-91 and UST KB-100 Time: 0820
MCBH, Oahu, Hawaii

Type of Safety Meeting: ☐ Initial Safety Briefing ☒ Daily Safety Meeting

Name of Person Conducting Meeting: STEVEN SPENGLER

TOPIC DISCUSSED: GW SAMPLE COLLECTION

a. LEVEL D PPE

b. HYDRATION

c. TRAFFIC HAZARDS

d. SLIPS, TRIPS, FALL HAZARDS

e.

NAME (PRINT/SIGN) OF EMPLOYEES ATTENDING:

1. BERNICE BALETE [signature] 5.
2. Mann Heskett [signature] 6.
3. 7.
4. 8.

EZ/CRZ PERSONNEL ACCESS:

LOG-IN	LOG-OUT
1.	1.
2.	2.
3.	3.
4.	4.
5.	5.
6.	6.
7.	7.
8.	8.

Appendix C
Site Photographs

Former UST KB100 MCB Motor Pool Site

Photograph 1 – Former UST KB-100 Site.

Photograph 2 – Former UST KB-100 Site with Building 322 to the left and the Motor Pool area behind.

Photograph 3 – Typical stratigraphy at the Site.

Photograph 4 – Clayey soil encountered at the bottom of the monitoring wells.

Photograph 5 – Temporary monitoring well screen.

Photograph 6 – Installing the temporary monitoring wells.

Photograph 7 – Collecting a groundwater sample from a temporary monitoring well.

Photograph 8 – Retrieving the temporary monitoring wells.

Photograph 9 – Installing permanent monitoring well KB-100-3.

Photograph 10 – Groundwater sampling.

Appendix D

Geophysical Survey Report

SEATTLE / PORTLAND/ ALASKA/ SAN DIEGO/ LA / SAC
WWW.ULSSERVICESCORP.COM
WWW.GEOMARKOUT.COM

CORPORATE ADDRESS / INQUIRIES
P.O. Box 724, Pocatello, ID 83204 (Mail only)
6742 West Buckskin Rd., Pocatello, ID 83201 (Parcels only)
Ph. (208) 234-1441 (800) 301-4420 FAX (208) 234-1507

FIELD SERVICES:
SEATTLE/SAC/ AK/ PACIFIC:
15151 52 nd Ave. S, Suite 2 Seattle, WA 98188
1 866 804-5734
SOCAL 1 800 528-8206
9065 Calle Del Verde, Santee, CA 92071

ULS SERVICES CORP

GEOMARKOUT a trade name of ULS Services Corporation

Work Order Agreement

Job Site Location 3rd and C Street (Motor Pool) UST Sites KB – 91 and KB -100	Job PO TO
City, State MCB Kaneohe	Job Date 23-24 Dec 14

CLIENT ELEMENT ENVIRONMENTAL LLC	**LABOR HOURS W/REPORT/ HRS** 2 days w report
CITY, STATE, ZIP HONOLULU	**TELEPHONED**
PHONE/FAX	**HAND DELIVERED**
E-MAIL	**E-MAILED**

WORK REQUESTED: UTILITY LOCATE (MARKOUT) AT 31 PROPOSED LOCATIONS IN AND AROUND FORMER UST KB-91, LUBE PIT AREA, AND SUMP AND OIL-WATER SEPERATOR. INCLUDES GENERAL SURVEY SURROUNDING AREA.

WORK PERFORMED	**PRELIMINARY REVIEW OF CLIENT PROVIDED UTILITY DRAWINGS/AS-BUILTS:** NONE
VISUAL SITE INSPECTION (MANHOLES, DRAINS): SURFACE ONLY	**EMPCL CONDUCTIVE UTILITY SURVEY:** CHECK GAS: X ELECTRIC: X COMM.: X WATER: X
EMIMD METAL DETECTION SURVEY : AMBIENT NOISE AND SETTINGS) LOW NOISE | GAIN 7.5 | LOW ELV HI SETTINGS ACHIEVED **OFF CONCRETE**	**EM INSERTION :** NF ULS DOES NOT PROVIDE DRAIN INSERTION
GPR NON-CONDUCTIVE SURVEY: FAIR TO GOOD RESPONCE OVER KNOWNS	**CLIENT ON-SITE REVIEW OF FINDINGS:** YES

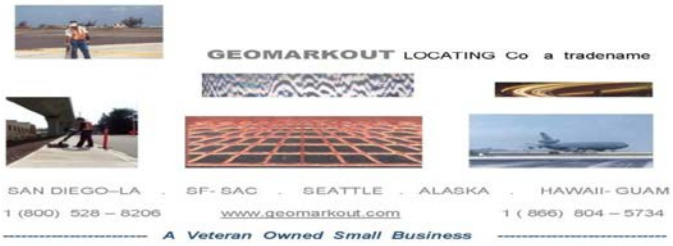
GENERAL LIMITATIONS

NOTE: The work described herein is performed to industry standards (or higher) using multiple methodology and QA/QC protocol. ULS cannot guarantee the accuracy or the ability to detect all underground facilities and potential interferences. Non-conductive or conductive utilities/facilities may not be detected due to variables and constraints beyond ULS control. Where known, constraints and limitations will be brought to the client's attention. Excavation work may result in injury to persons and/or damage to facilities. Client and/or excavator are advised to take all steps necessary to avoid contact with underground facilities. This includes, but is not limited to, safe digging practices, hand tooling in congested areas and within two feet on side of marked utilities (distance may vary by law), utility drawing review, site facilities representative review, and "one-call" utilities notification. ULS and its representatives are not responsible for injury to persons or damage to facilities. This document and accompanying pages will be delivered to the client before commencement of intrusive work for the client's review. If any questions arise, please notify our office immediately.

NOTE: Specific comments/limitations/constraints, known and recognized will be recorded on attached pages (field notes). Caution – some facilities (conductive or non- conductive) may not be detected. Not all limitations and constraints may be recognized.

SIGNATURE OF ULS REPRESENTATIVE ON-SITE mwb		**PAGE** 1 **OF**

ULS SERVICES CORPORATION



……

ULS SERVICES CORP
GEOMARKOUT
a trade name of ULS Services Corp

KB -91 / KB-100 23 DEC 2014

METHODS:

ARRIVED SITE MET CLIENT. COMPLETED HS TAILGATE. DISCUSSED PROPOSED WORK AND AREAS OF CONCERN.

CHECKED FOR SURFACE UTILITY MANIFESTATIONS SUCH AS VALVES, METERS, CONDUITS, TRENCHING SEAMS/ SURFACE SCARS, VAULTS- SUMPS, AND EXISTING ONE CALL MARKINGS.

OTHER METHODS UTILIZED INCLUDE: EM PIPE AND CABLE LOCATION USING AMBIENT, GROUND INDUCTION AND CONNNECTION MODE SWEEPS. EM INDUCTION METAL DETECTION AND GPR. A 5 X 5 FOOT CARTISIAN GRID PATH IS WALKED ACROSS THE SURROUNDING AREA OF PROPOSED ZONE USING THE ABOVE METHODS.

GENERAL OBSERVATIONS - INSTRUMENT RESPONCE:

WEATHER IS DAMP TO DRY. GROUND SURFACE CONSISTS OF REINFORCED CONCRETE, ASPHALT, AND GRAVELY AREAS.

EMIMD METAL DETECTOR BACKGROUND EM NOISE IS LOW ALLOWING FOR HIGH GAIN SETTING, LOW SCAN ELEVATION AND OPTIMUM DETECTION. EMPCL UTILITY INDUCTION BROADCAST IS GOOD. GPR PENETRATION AND RESOLUTION IS GOOD. **OBSERVATIONS ARE MARKED WITH WHITE PAINT AND COLOR CODE FOR IDENTIFIED UTILITIES (IE: GREEN – SD AND SS; RED: ELECTRIC).**

SEE OBSERVATION COMMENTS TO UPPER RIGHT SIDE AND BELOW ……>

X	**SITE WALK**
X	VISUALS
X	**ONECALL /DIG ALERT RECALL? NEED TO CALL**
X	**UTILITY MAINS**
X	**ELECTRIC** NONE.IN AREA ELECT TO BLDG IS OVERHEAD IN CEILING TO BLDG AND ENTERS FORM NE NEAR ENTRY TO MOTOR POOL (SEE SECONDARY BELOW)
X	TELEPHONE SAME AS E
X	NAT GAS **NONE**
X	WATER NONE IN AREA OF PROPOSED.
X	SEWER/STORM CAUTION NORTH AND SOUTH SIDES LF.
X	**STORM DRIANS / SEWER – CAUTION EAST AND SOUTH BLDG**
X	**SECONDARYS CAUTION ELECTRIC TO LUBE PIT ALONG WALL UNDERGROUND NORTH SIDE PIT. ABAND E TO FORMER GAS STATION ACROSS EAST SIDE LUBE PIT AREA.**
	OTHER
X	**FUEL SYSTEM. FORMER SYSTEM TO EASTLUBE PIT AREA APPEARS TO BE REMOVED (NOT IN SCOPE).**
	TANKS/LIMITS
	PUMPS/VISUAL
	CONDUIT
	PIPING

ULS SERVICES CORP
GEOMARKOUT
a trade name of ULS Services Corp

KB -91 / KB-100 23 DEC 2014

SPECIFIC OBSERVATIONS:

ELECTRIC AIR AND WATER INSIDE LUBE PIT AND CANOPY AREA EXIST OVERHEAD WITH EXCEPTION OF 1) MAIN UNDERGROUND ELECTRICAL FEED TO LÛBE PÎT ALONG NORTH SIDE ALONG BLDG WALL; 2) A SECOND CONDUIT WHICH FEEDS AST SYSTEM SOUTH OF LUBE PIT CANOPY; AND 3) POTENTIAL ABANDONED ELECTRICAL CONDUIT THAT TRENDS SE FROM LUBE PIT/ BLDG OVER TO FORMER FUELING STATION DISPENSOR ISLANDS AND KIOSK.

EXISTING (DEEP – APPROX 10-15 FEET BLS) SEWER MAINS TRENDS ALONG EAST AND SOUTH SIDES OF BLDG. AND LUBE CANOPY. A SHALLOWER SD PIPES TRENDS IN SAME MANNER. BOTH FLOW TO WEST – SW OFFSITE.

A UNKNOWN CONDUCTIVE LINÊATION WHICH APPEARS TO BE APPROXIMATELY 5-7 FT BLS TRENDS FROM SOUTH END LUBE PIT CANOPY SOUTH ACROSS EAST SIDE AST AND SUMP - O/W SYSTEM TOWARDS VACANT SITE TO SOUTH.

SURFACE SCAR LINEATIONS ARE OBSERVED TRENDING N-S AT WEST SIDE LUBE CANOPY, WHERE REPORTED FORMER UST KB-91 IS, INDICATING POTENTIAL REPORTED UST PIPING. NO CONDUCTIVE SIGNAL IS DETECTED. SOME GPR IGNITURE OBSERVED INDICTIONPOTENTIAL TRE

ALWAYS ADVISE LOCATING ENERGY ISOLATION SOURCES SUCH AS ELECTRIC AND WATER OR AS APPLICABLE FUEL AND NATURAL GAS OR PROPANE. SAWCUT – ROTAR DRILL, JACKHAMMAR, DRIVE AND TRENCH CAREFULLY AND SAFEFLY. HANDTOOLING IS ALWAYS ADVISED.

END REPORT /

Printout..'

Saturday, December 27, 2014 1:07 PM

ELEMENT ENVIRONMENTAL/ULS SERVICES CORP
mwb 23 DEC 14

UTILITY CLEARANCES/GEOPHYSICAL SURVEY
UST SITES KB-91 AND KB-100, MOTOR POOL, MCB KANEOHE

UTILITY CLEARANCES / GEOPHYSICAL LOCATION
UST SITES KB-91 AND KB-100, MOTOR POOL
MCB KANEOHE, HAWAII
FORMER UST KB-91 AREA
CANOPY OVER LUBE PIT
SCRAP & OIL WATER SEPARATOR TANK
FUEL AST
FORMER FUEL DISPENSOR AREA
SS/SD FLOW IS NW
Legend
UNKNOWN_CONDUCTIVE_UTILITY
ELECTRIC
ABANDONED _ELECTRIC
POTENTIAL_SEWER_LATERAL
SD PIPE (SHALLOW)
SEWER_MAIN (DEEP)
FORMER_FUEL_ISLANDS
N
0 25 50 100 150 200
Feet
MAP PROJECTION
NAD_1983_HARN_StatePlane_Hawaii_3_FIPS_5103_Feet
Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AEX, Getmapping, Aerogrid, IGN, IGP, swisstopo, and the GIS User Community
ULS Services Corp mwb 23 Dec 2014

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ORTH

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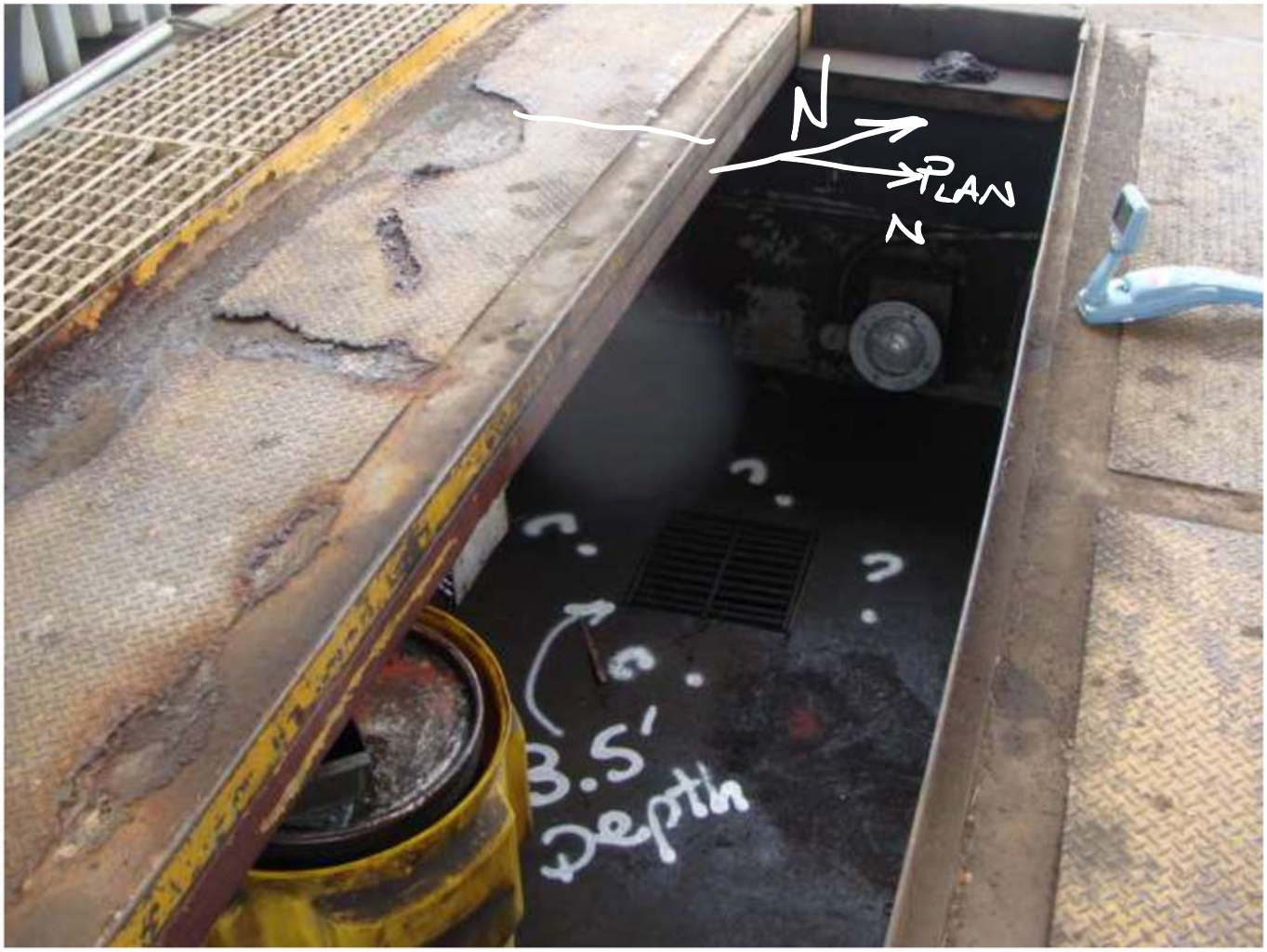
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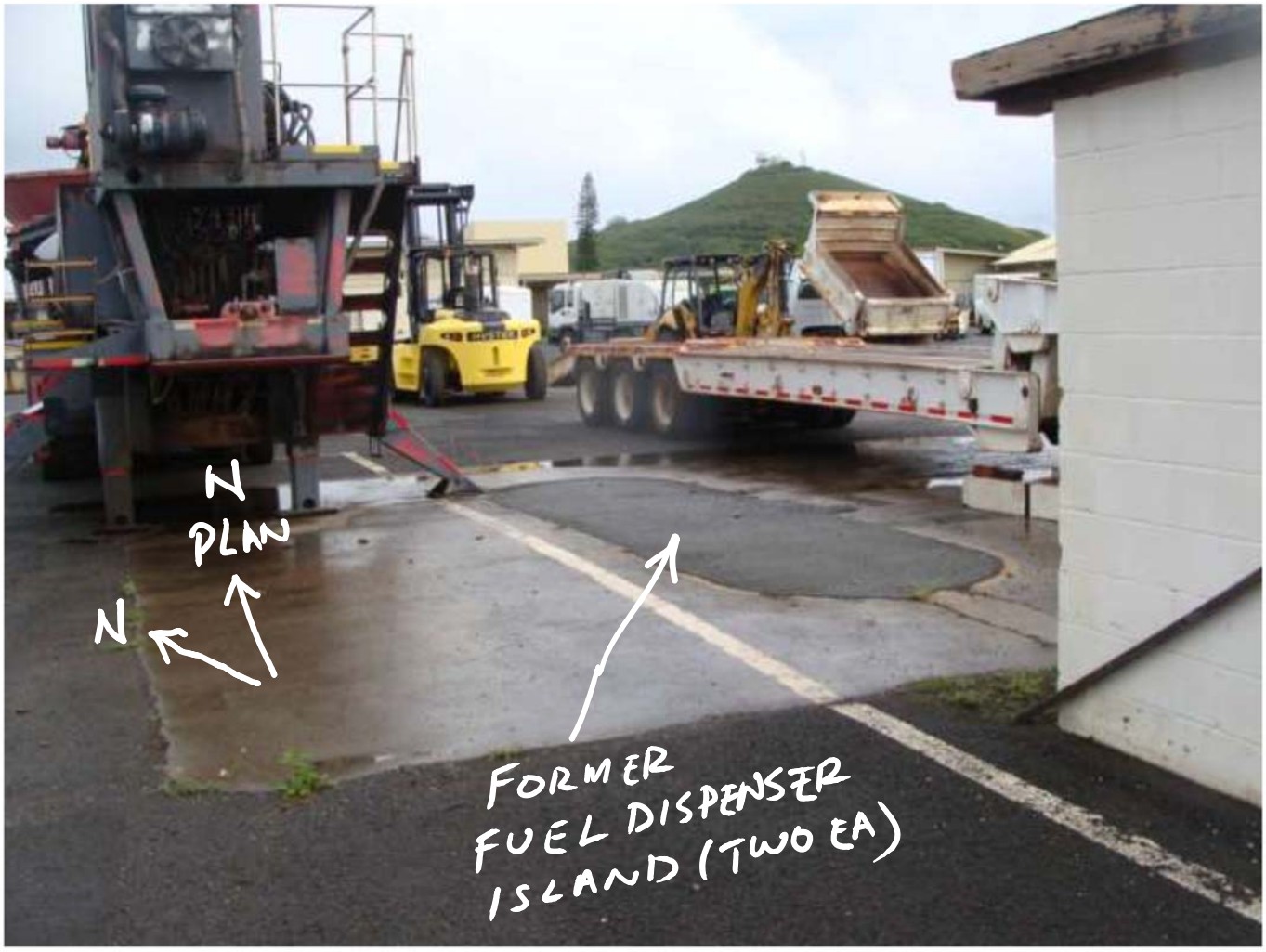
DEEP SS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ISLAND (TWO EA)

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SS
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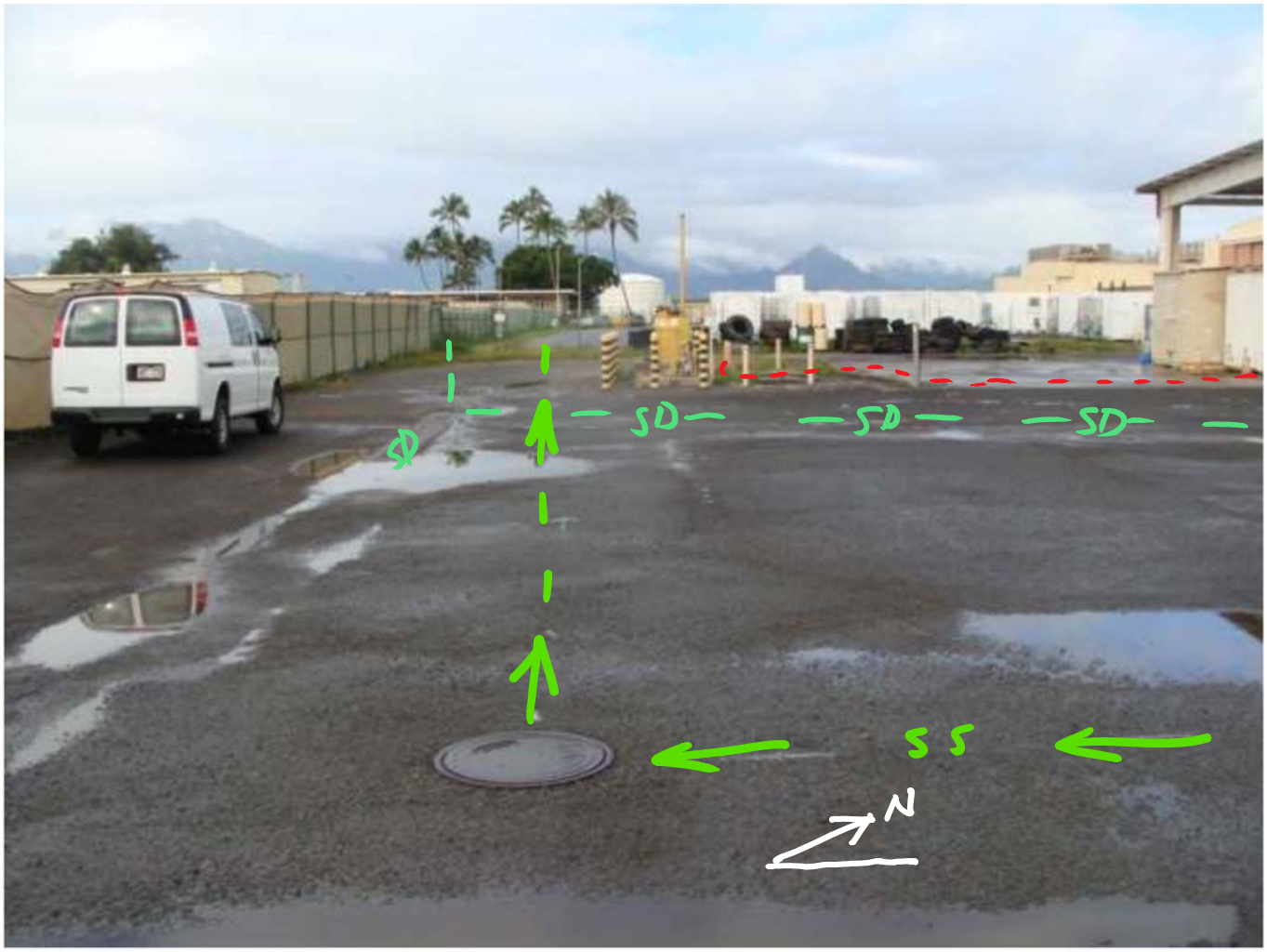
FORMER
FUEL STATION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SD
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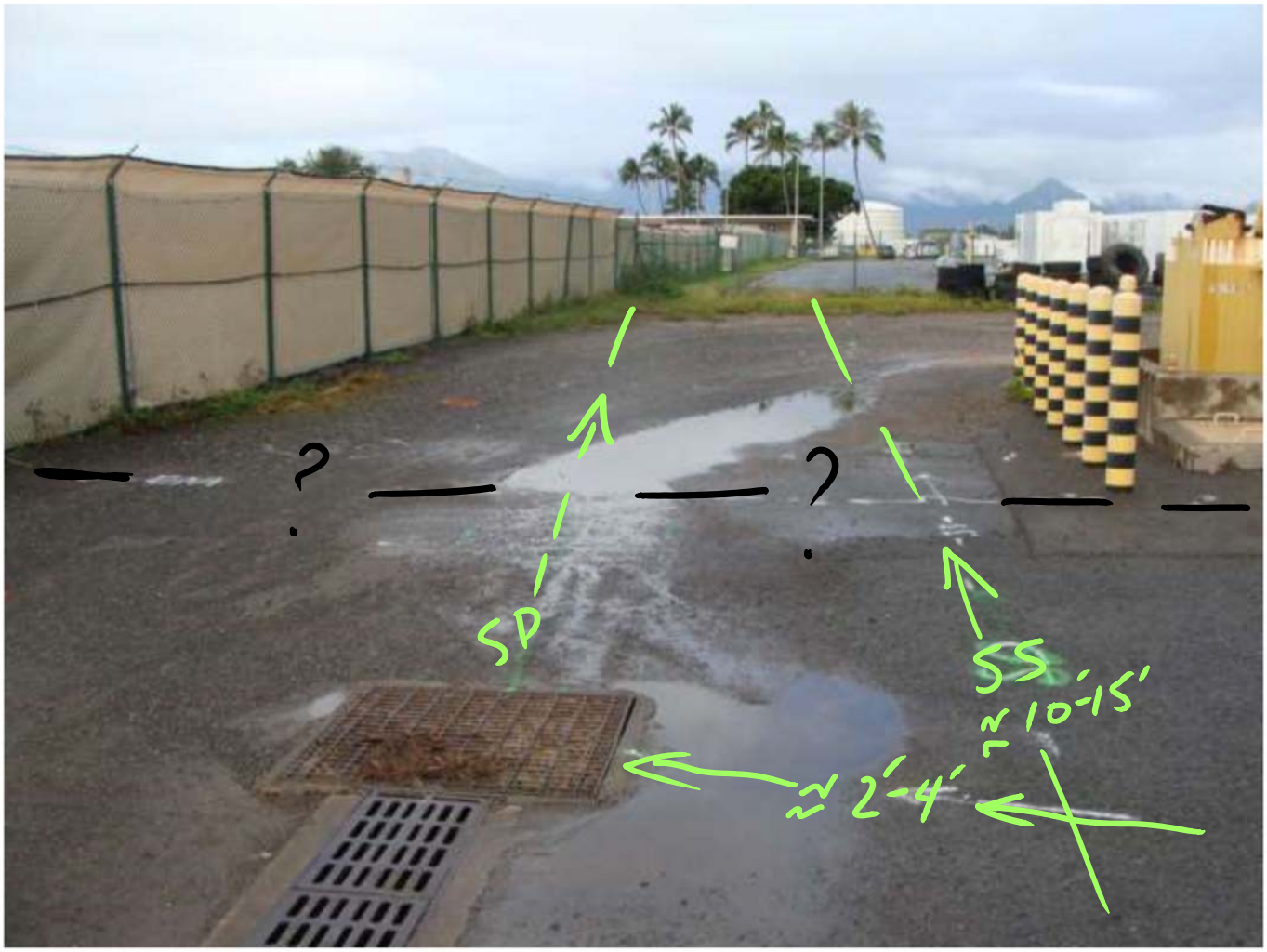
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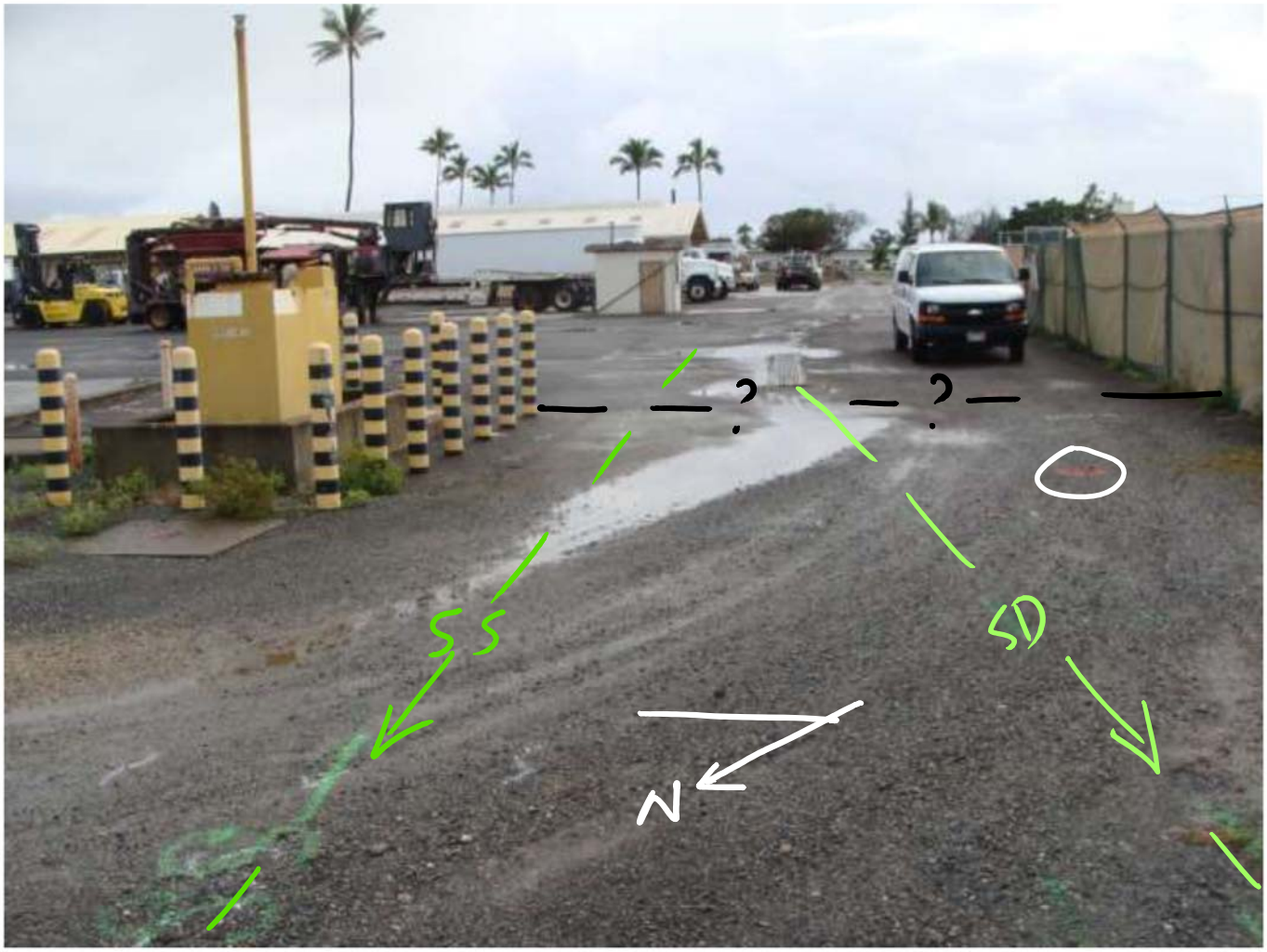
≈ 2'-4'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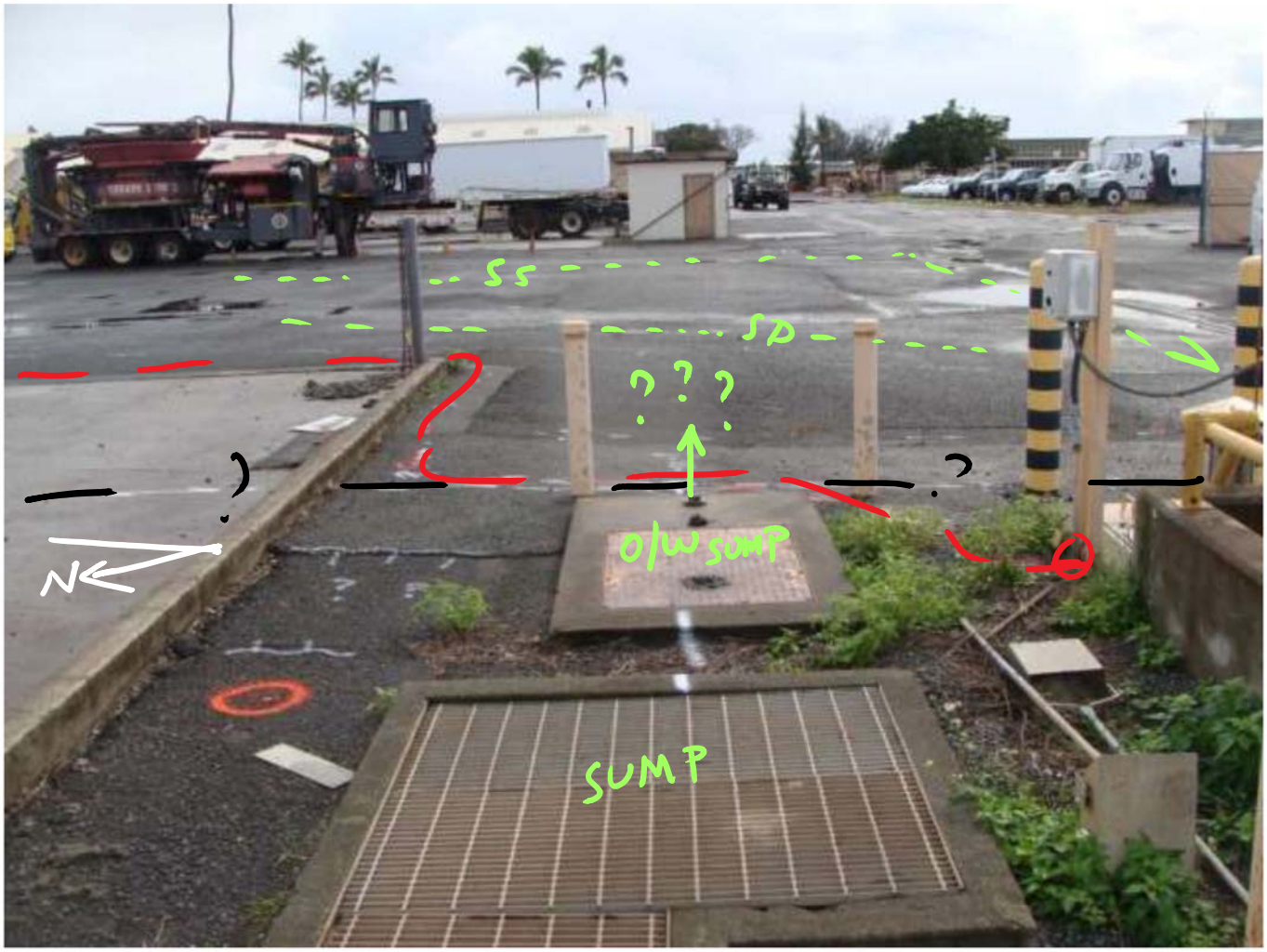
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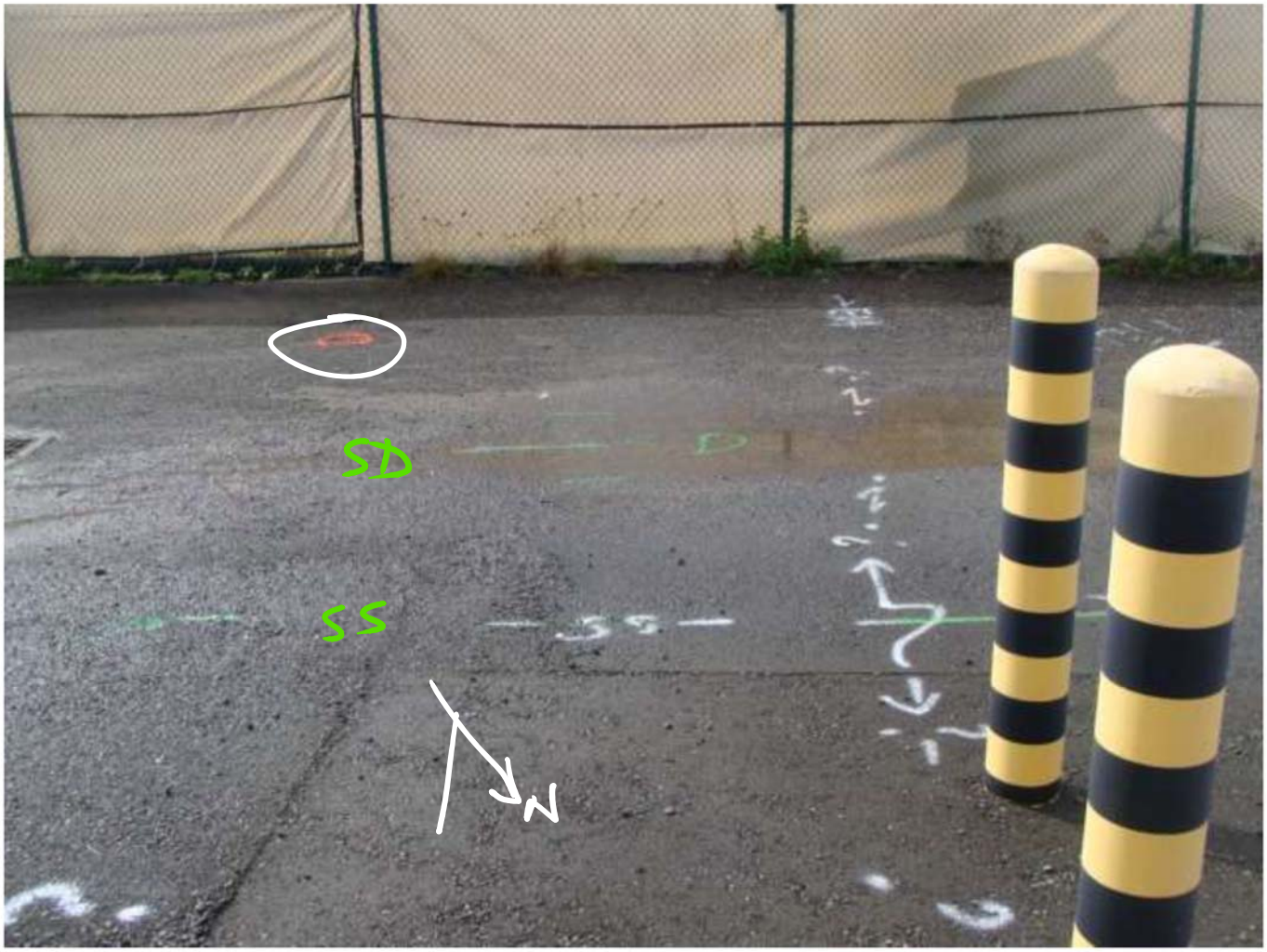
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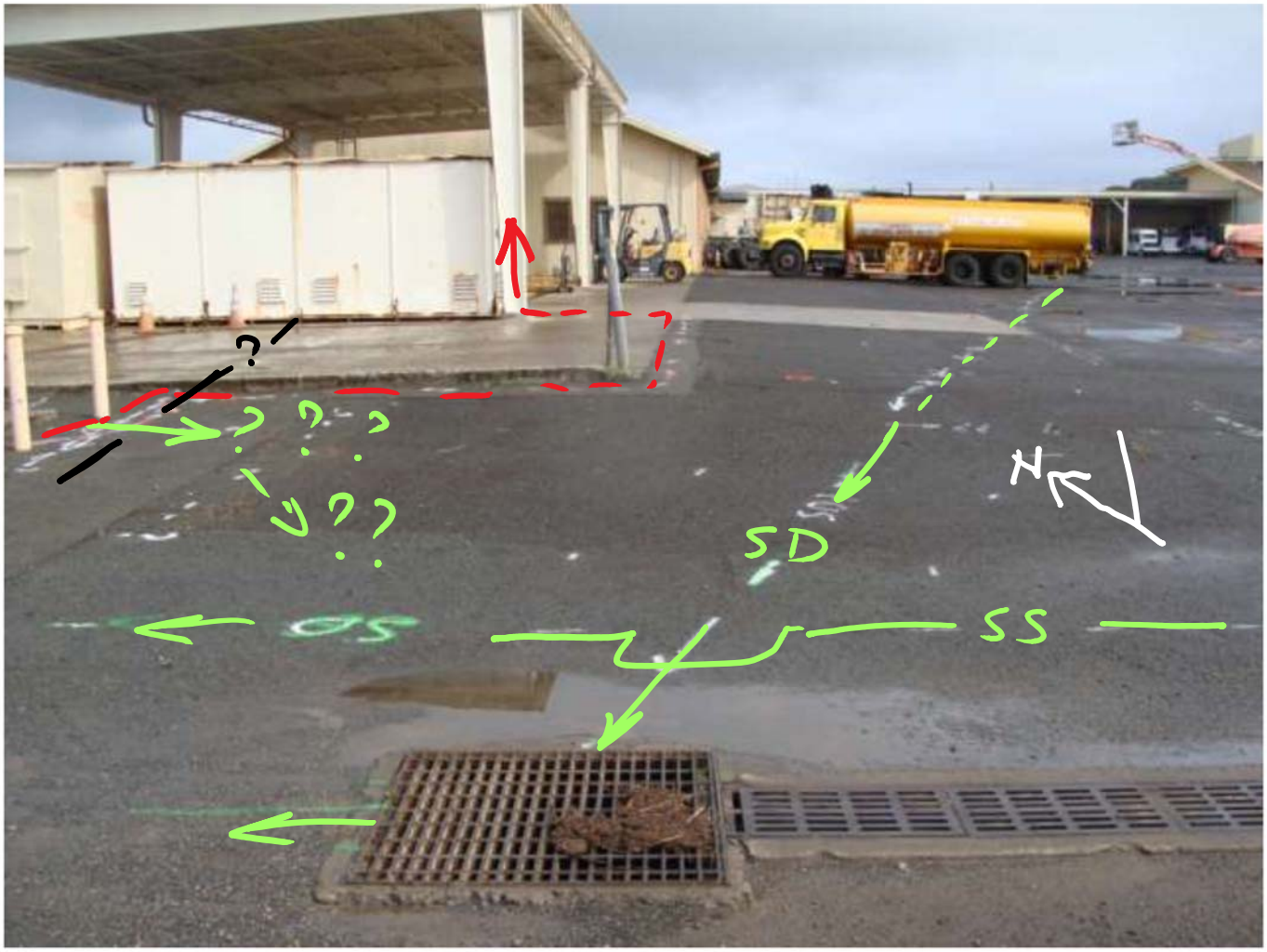
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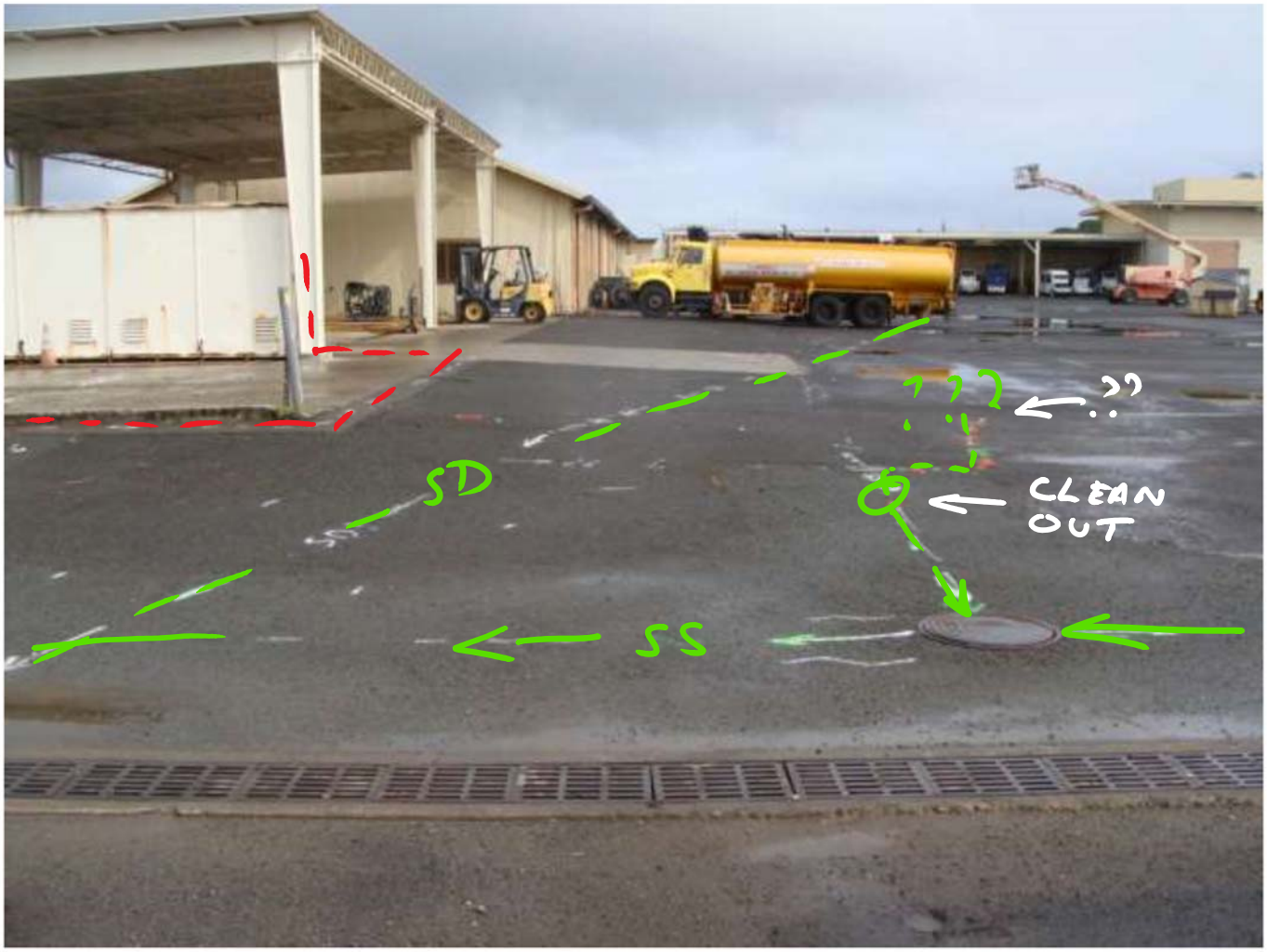
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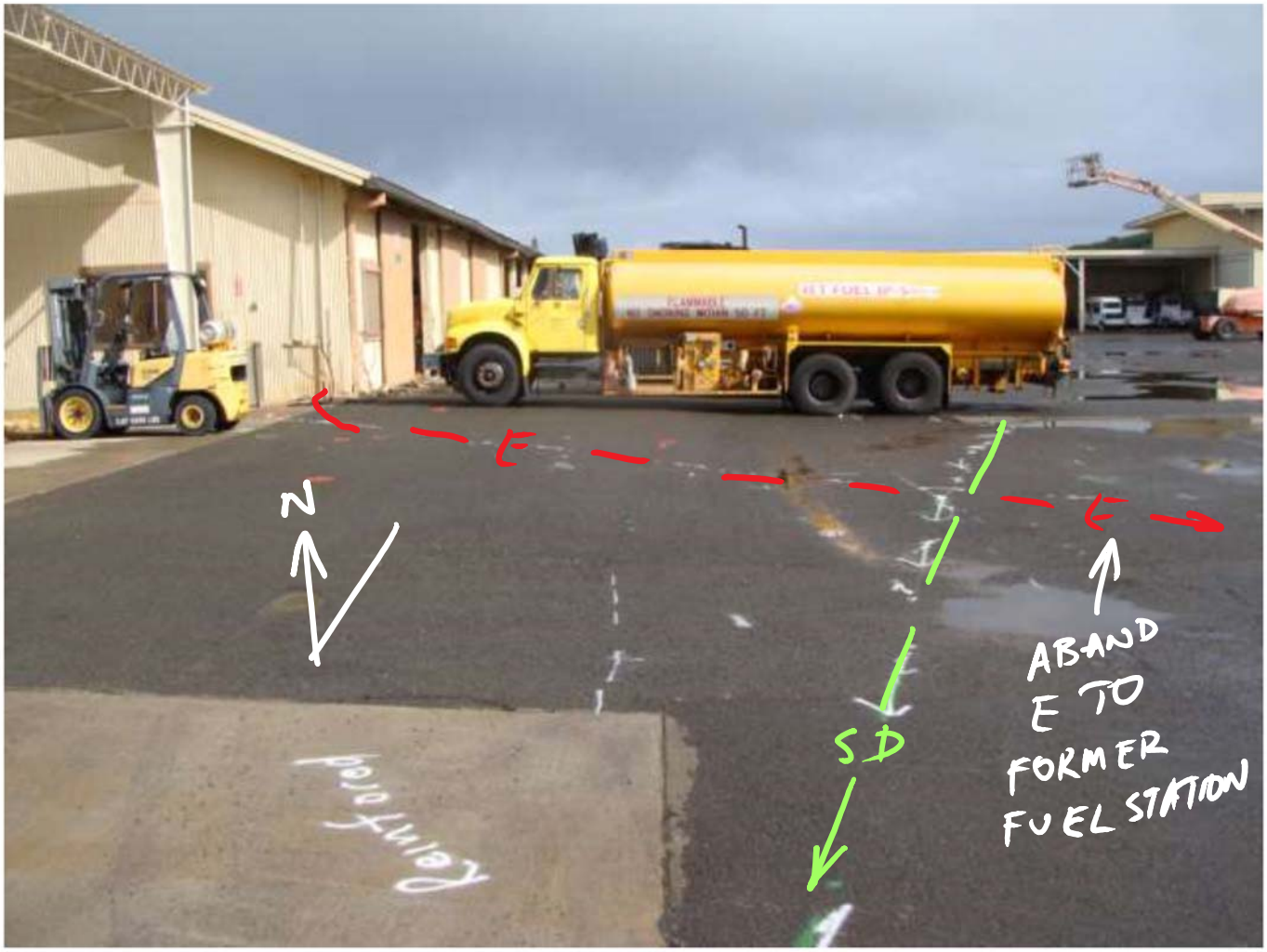
6PR
LINEATION
SS CLEANOUT
ORIGIN UNKNOWN

5'-7'
???

EM 5'-6"
N


N
E
E
SD
ABAND
E TO
FORMER
FUEL STATION

JET FUEL JP-5
FLAMMABLE
NO SMOKING WITHIN 50 FT
1863
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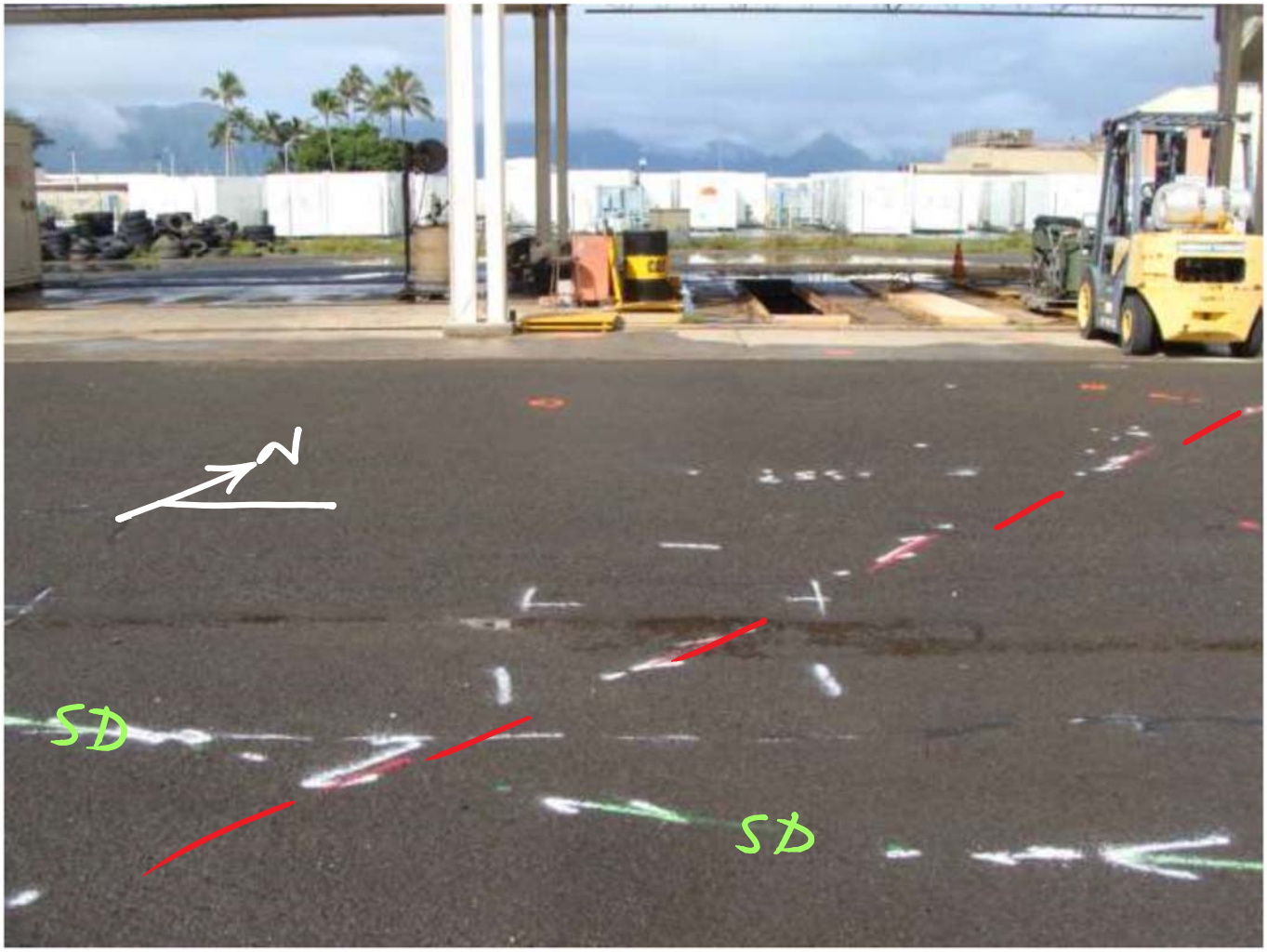
EN. 50

SD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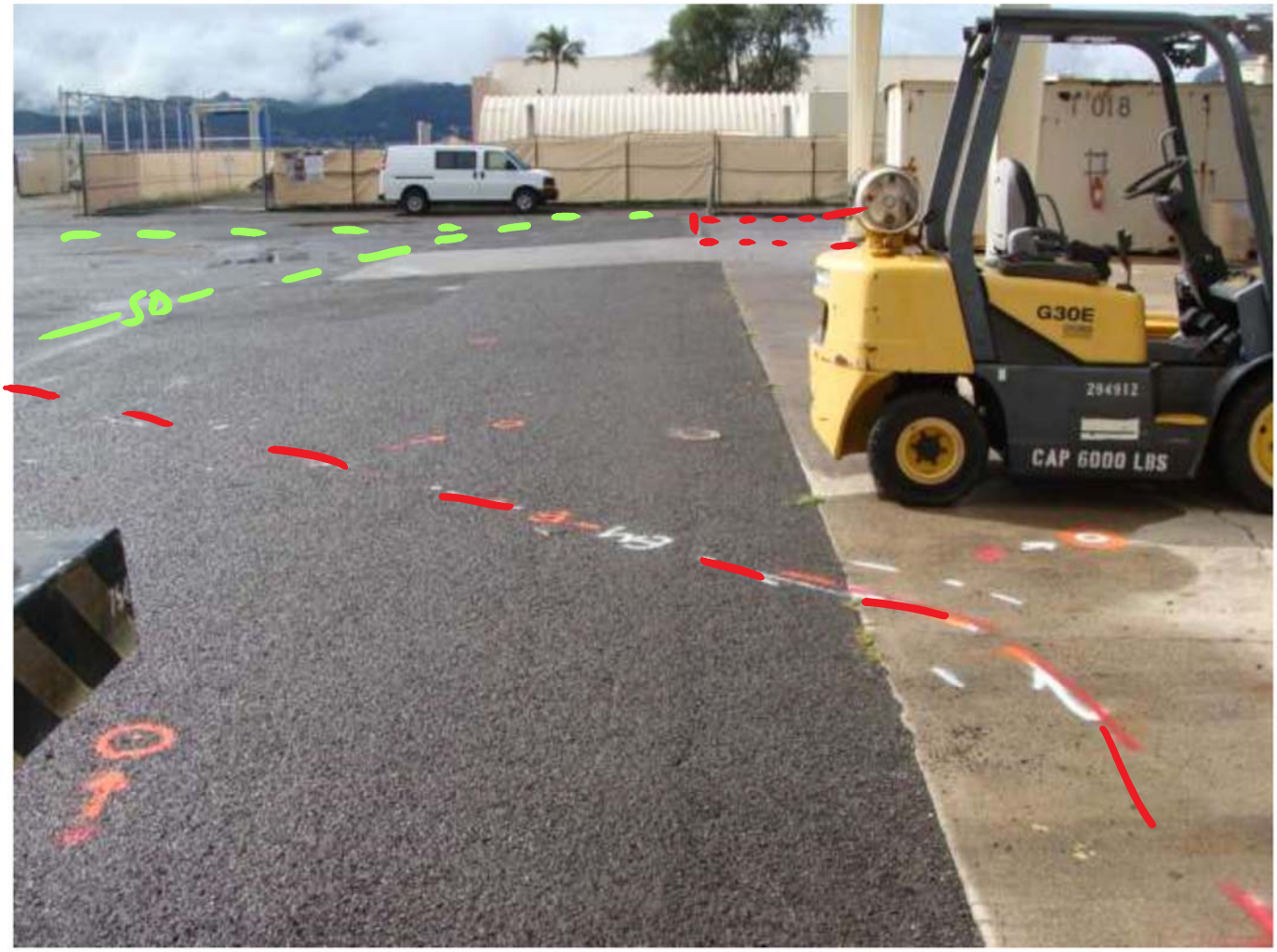
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CAP 6000 LBS

NO STEP

G30E
294912
CAP 6000 LBS
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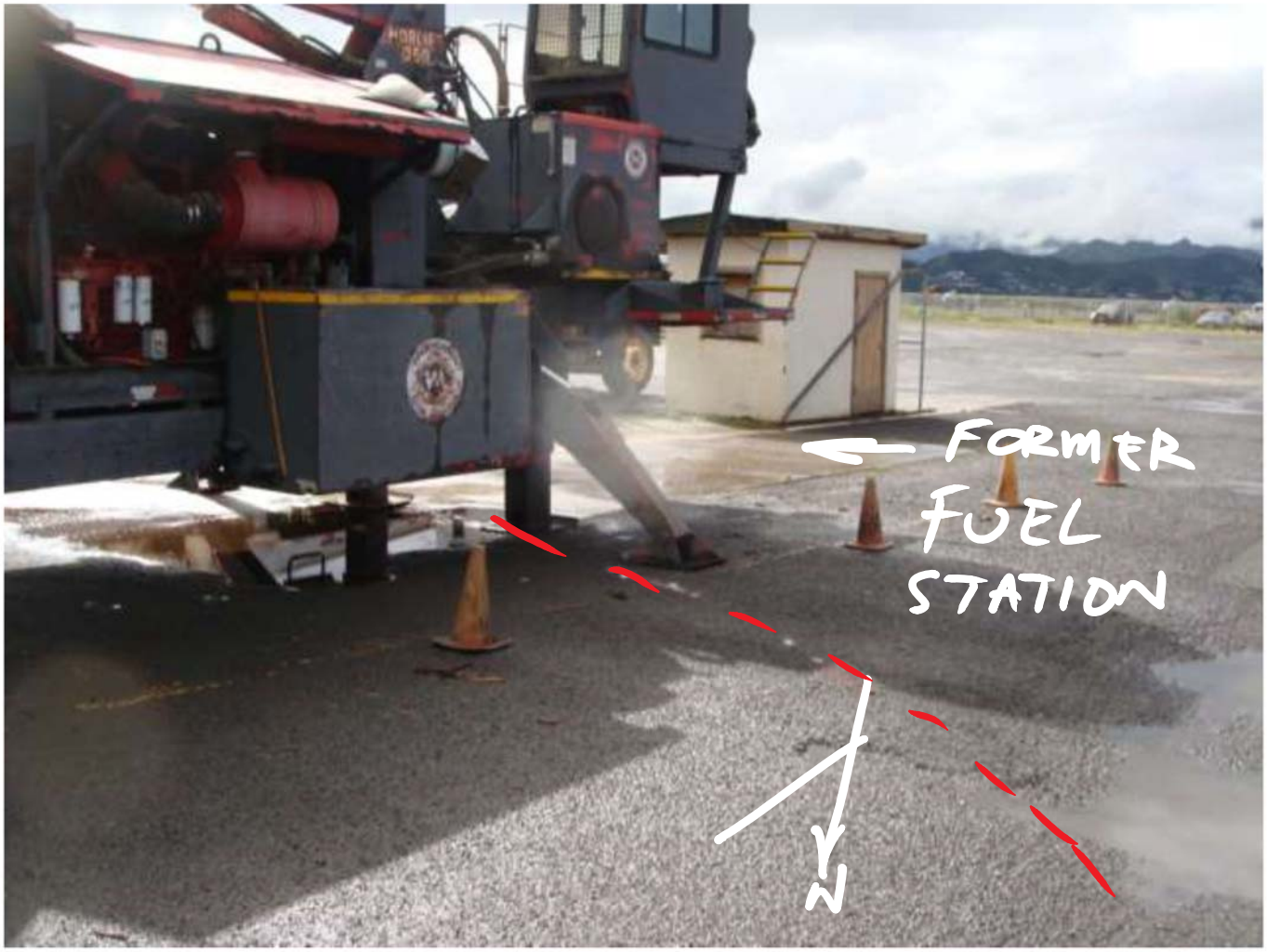
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FUEL
STATION
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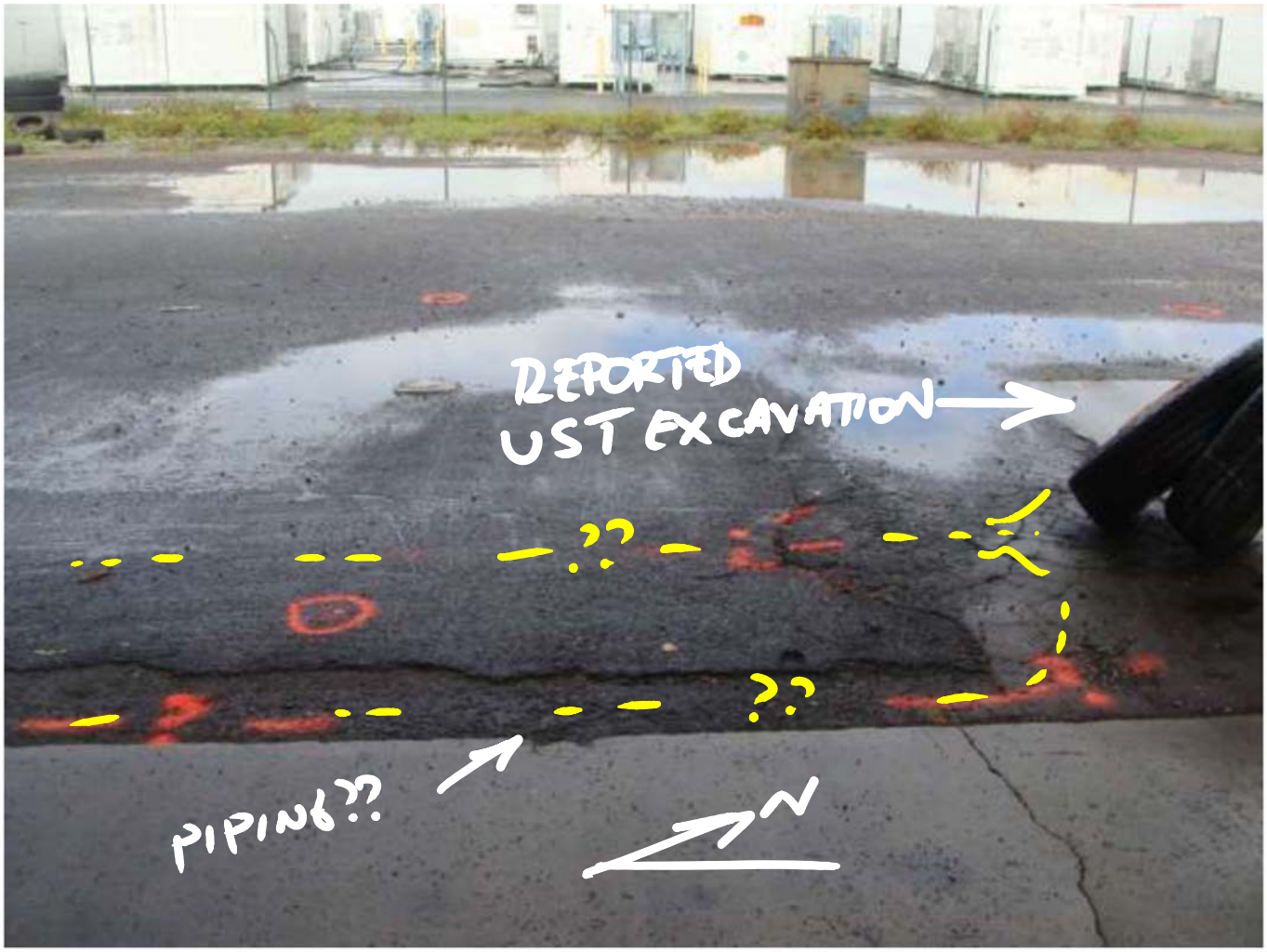
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UST EXCAVATION
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??
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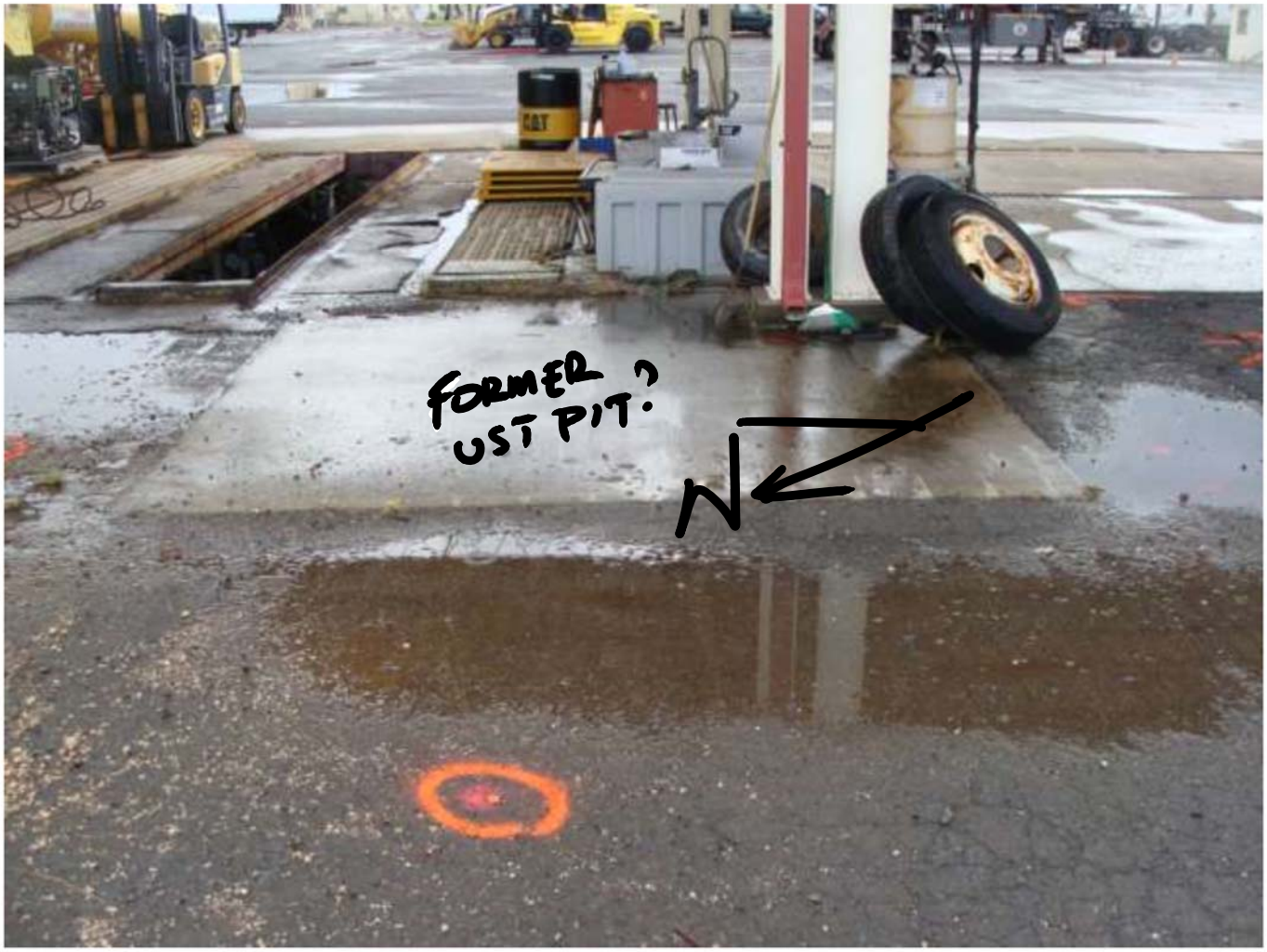
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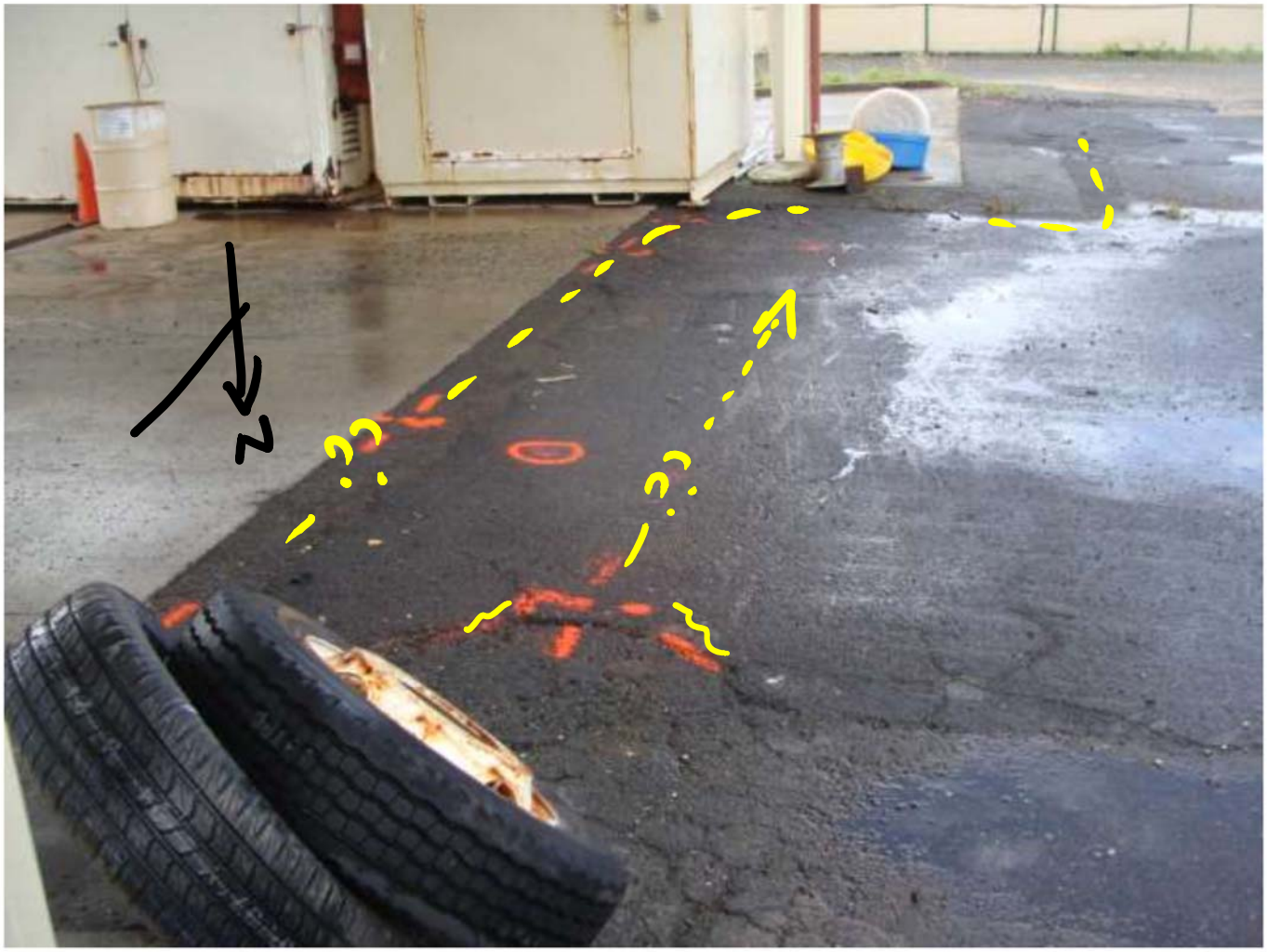
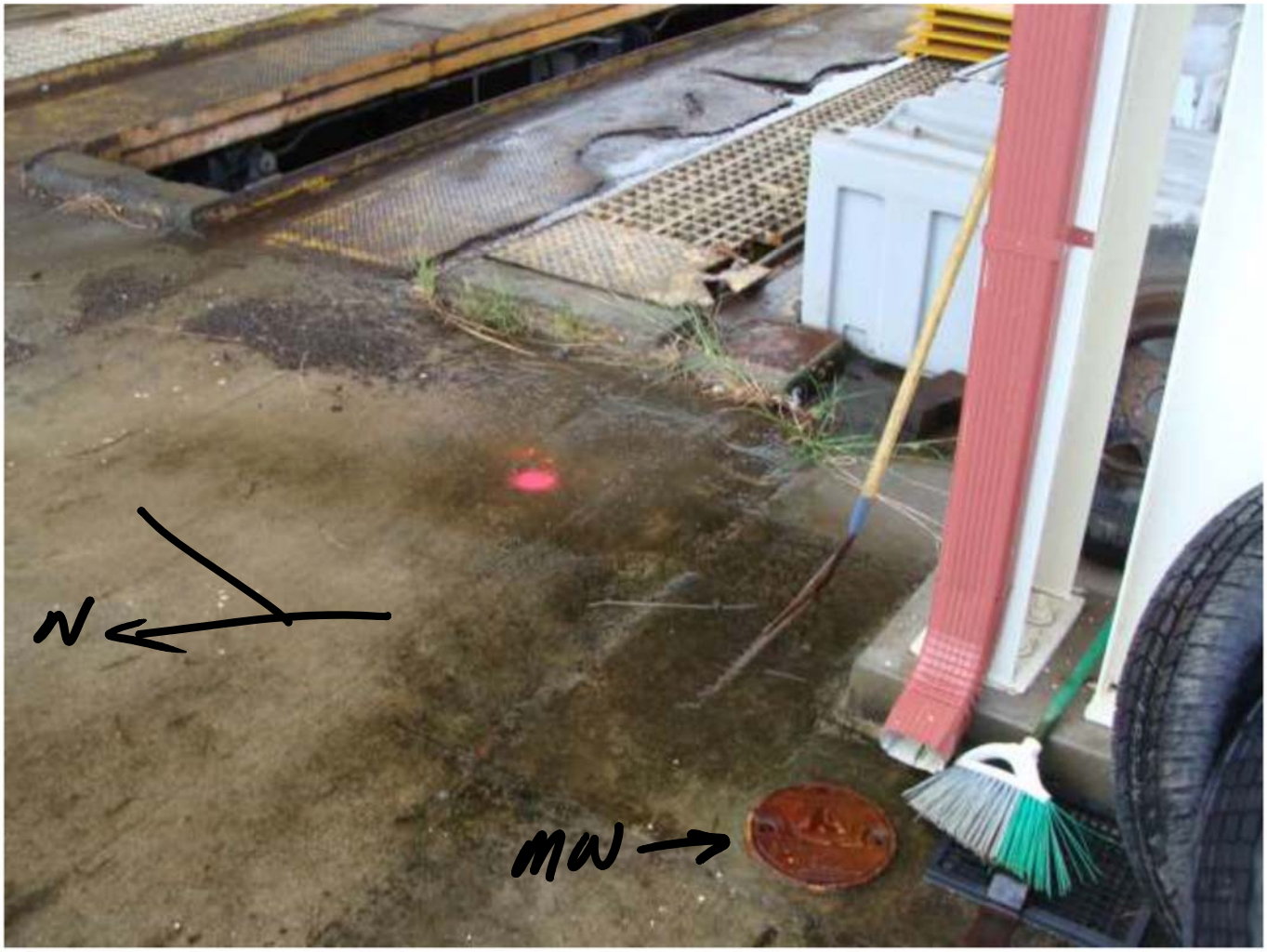


OPEN FLAME
FEET


N
MW

N

SD
SS
??
METAL
ANOMALY
N

N

Appendix E

Soil Boring Logs

Field Log of Boring

Boring Number	Temp Well 1			Sheet 1 of 1
Project Name UST KB100	Project Number CTO 026	Elevation and Datum		Location 21°26'594" N 157°45'882 W
Drilling Company GeoTek	Driller Kevin Rogers	Date and Time Started 1/13/15: 10:07		Date and Time Completed 1/13/15: 10:24
Drilling Equipment Geoprobe 6620DT	Drilling Method Direct Push	Completion Depth 10' bgs		Total No. of Samples 1
Size and Type of Bit Macrocore - 5 Ft Drive Length	Hole Diameter 2 1/4" OD; 1 1/2" Sample Core	No. of Samples:	Bulk NA / SS 1	Drive NA / Pitcher NA
Drilling Fluid None	Drilling Angle Vertical	Water Level:		After _____ Hours NA
Sample Hammer Type NA Driving Wt. NA Drop NA		Hydrogeologist/Date S. Spengler 1/13/15		Checked By/Date M. Heskett 1/24/15

Lithology	Depth (Feet)	Samples	Recovery	Blow Count	Description	USCS Symbol	Estimated % Of GR	SA	FI	Comments
										Macrocore driven 0-5' & 5-10' bgs
	0				0-10": Dry, black (10YR2/1),	GW	70%	20%	10%	PID = 0.8 ppm @ 2' bgs
					gravelly basalt base course					PID = 1.1 ppm @ 4' bgs
	1				10"-7': Dry to moist, very pale	SP	10%	90%	0%	PID = 1.2 ppm @ 6' bgs
					brown (10YR7/3), gravelly sand					PID = 1.1 ppm @ 8' bgs
	2		80%							
	3									
	4									Sample IDs:
										KB100SI-S-D-MW1-01-A-7.0
	5									
	6									
										EPA IDs:
										EKB100001
	7		80%		7-9.5': Wet, greenish gray (6/1)	CH	0%	10%	90%	
	8				sandy plastic clay					Drilling difficult to depths of
										4-4.5' bgs, soil was softer at
	9									deeper depths throughout
										site.
	10				9.5-10': Wet, greenish gray	GM	60%	35%	5%	
					(6/1) sandy coralline gravel					

Field Log of Boring

Boring Number	Temp Well 2		Sheet 1 of 1
Project Name UST KB100	Project Number CTO 026	Elevation and Datum	Location 21°26'589" N 157°45'885" W
Drilling Company GeoTek	Driller Kevin Rogers	Date and Time Started 1/13/15: 10:23	Date and Time Completed 1/13/15: 10:31
Drilling Equipment Geoprobe 6620DT	Drilling Method Direct Push	Completion Depth 8' bgs	Total No. of Samples 1
Size and Type of Bit Macrocore - 5 Ft Drive Length	Hole Diameter 2 1/4" OD; 1 1/2" Sample Core	No. of Samples: Bulk NA; SS 1	Drive NA; Pitcher NA
Drilling Fluid None	Drilling Angle Vertical	Water Level:	After _____ Hours NA
Sample Hammer Type NA Driving Wt. NA Drop NA		Hydrogeologist/Date S. Spengler 1/13/15	Checked By/Date M. Heskett 1/24/15

Lithology	Depth (Feet)	Samples	Recovery	Blow Count	Description	USCS Symbol	Estimated % Of GR	SA	FI	Comments
										Macrocore driven 0-5' & 5-8' bgs
	0				0-3": Concrete slab					PID = 0.9 ppm @ 2' bgs
					3-9": Dry, grayish brown	SP	15%	80%	5%	PID = 1.1 ppm @ 4' bgs
	1				(10YR5/3) gravelly sand					PID = 1.1 ppm @ 6' bgs
					9"-6.5': dry to moist, very pale	SP	20%	80%	0%	PID = 1.2 ppm @ 8' bgs
	2		60%		brown (10YR7/3) gravelly sand					
	3									
	4									Sample IDs:
										KB100SI-S-D-MW2-01-A-6.5
	5									
	6				6.5-7.5': wet, greenish gray	SC	0%	85%	15%	EPA IDs:
			100%		(6/1) clayey sand					EKB100002
	7				7.5-8': Wet, greenish gray (6/1)	CL	0%	10%	90%	
					sandy clay					Drilling difficult to depths of
	8									4-4.5' bgs, soil was softer at
	9									deeper depths throughout
										site.
	10									

Field Log of Boring

Boring Number	Temp Well 3			Sheet 1 of 1
Project Name UST KB100	Project Number CTO 026	Elevation and Datum		Location 21°26'590" N 157°45'872" W
Drilling Company GeoTek	Driller Kevin Rogers	Date and Time Started 1/13/15: 10:36		Date and Time Completed 1/13/15: 10:44
Drilling Equipment Geoprobe 6620DT	Drilling Method Direct Push	Completion Depth 10' bgs		Total No. of Samples 1
Size and Type of Bit Macrocore - 5 Ft Drive Length	Hole Diameter 2 1/4" OD; 1 1/2" Sample Core	No. of Samples:	Bulk NA / SS 1	Drive NA / Pitcher NA
Drilling Fluid None	Drilling Angle Vertical	Water Level:		After _____ Hours NA
Sample Hammer Type NA Driving Wt. NA Drop NA		Hydrogeologist/Date S. Spengler 1/13/15		Checked By/Date M. Heskett 1/24/15

Lithology	Depth (Feet)	Samples	Recovery	Blow Count	Description	USCS Symbol	Estimated % Of GR	SA	FI	Comments
										Macrocore driven 0-5' & 5-10' bgs
	0				0-1': Dry, black (10YR2/1),	GW	70%	20%	10%	PID = 1.0 ppm @ 2' bgs
					gravelly basalt base course					PID = 0.9 ppm @ 4' bgs
	1				1-6.0': Dry to moist, very pale	SP	30%	70%	0%	PID = 0.9 ppm @ 6' bgs
					brown (10YR7/3), gravelly sand					PID = 0.9 ppm @ 8' bgs
	2		60%							
	3									
	4									Sample IDs:
										KB100SI-S-D-MW3-01-A-6.5
	5									
	6									EPA IDs:
										EKB100003
	7		60%		6-8.5': Wet, greenish gray (6/1)	CL	0%	10%	90%	
	8				silty sandy clay					Drilling difficult to depths of
										4-4.5' bgs, soil was softer at
	9				8.5-10': Wet, greenish gray	GC	60%	20%	20%	deeper depths throughout
					(6/1) clayey gravel					site.
	10									

Field Log of Boring

Boring Number	Temp Well 4			Sheet 1 of 1
Project Name UST KB100	Project Number CTO 026	Elevation and Datum		Location 21°26'589" N 157°45'886" W
Drilling Company GeoTek	Driller Kevin Rogers	Date and Time Started 1/13/15: 10:53		Date and Time Completed 1/13/15: 10:56
Drilling Equipment Geoprobe 6620DT	Drilling Method Direct Push	Completion Depth 10' bgs		Total No. of Samples 1
Size and Type of Bit Macrocore - 5 Ft Drive Length	Hole Diameter 2 1/4" OD; 1 1/2" Sample Core	No. of Samples:	Bulk NA / SS 1	Drive NA / Pitcher NA
Drilling Fluid None	Drilling Angle Vertical	Water Level:		After _____ Hours NA
Sample Hammer Type NA Driving Wt. NA Drop NA		Hydrogeologist/Date S. Spengler 1/13/15		Checked By/Date M. Heskett 1/24/15

Lithology	Depth (Feet)	Samples	Recovery	Blow Count	Description	USCS Symbol	Estimated % Of GR	SA	FI	Comments
										Macrocore driven 0-5' & 5-10' bgs
	0				0-6': Wet to moist, very pale	SP	15%	85%	0%	PID = 1.1 ppm @ 2' bgs
					brown (10YR7/3), gravelly sand					PID = 1.3 ppm @ 4' bgs
	1									PID = 1.6 ppm @ 6' bgs
										PID = 0.9 ppm @ 8' bgs
	2		60%							
	3									
										Sample IDs:
	4									KB100SI-S-D-MW4-01-A-6.5
	5									
	6				6-7': Wet, very pale brown	CL	0%	15%	85%	EPA IDs:
					(10YR7/3) silty clay					EKB100004
	7		70%		7-8.5': Wet, greenish gray (6/1)	CH	0%	10%	90%	
					plastic clay					Drilling difficult to depths of
	8									4-4.5' bgs, soil was softer at
					8.5-10': Wet, greenish gray	SP	40%	55%	5%	deeper depths throughout
	9				(6/1) gravelly sand					site.
	10									

Field Log of Boring

Boring Number	Temp Well 5			Sheet 1 of 1
Project Name UST KB100	Project Number CTO 026		Elevation and Datum	Location 21°26'586" N 157°45'882" W
Drilling Company GeoTek	Driller Kevin Rogers		Date and Time Started 1/13/15: 10:58	Date and Time Completed 1/13/15: 11:11
Drilling Equipment Geoprobe 6620DT	Drilling Method Direct Push		Completion Depth 10' bgs	Total No. of Samples 2
Size and Type of Bit Macrocore - 5 Ft Drive Length	Hole Diameter 2 1/4" OD; 1 1/2" Sample Core	No. of Samples:	Bulk NA / SS 2	Drive NA / Pitcher NA
Drilling Fluid None	Drilling Angle Vertical	Water Level:		After _____ Hours NA
Sample Hammer Type NA Driving Wt. NA Drop NA		Hydrogeologist/Date S. Spengler 1/13/15		Checked By/Date M. Heskett 1/24/15

Lithology	Depth (Feet)	Samples	Recovery	Blow Count	Description	USCS Symbol	Estimated % Of GR	SA	FI	Comments
										Macrocore driven 0-5' & 5-10' bgs
	0				0-9": Dry, black (10YR2/1)	GW	55%	45%	0%	PID = 0.9 ppm @ 2' bgs
					gravelly basaltic base course					PID = 0.6 ppm @ 4' bgs
	1				9"-4.8': Dry to moist, very pale	SP	35%	60%	5%	PID = 1.0 ppm @ 6' bgs
					brown (10YR7/3) gravelly sand					PID = 0.9 ppm @ 8' bgs
	2		70%							
	3									
										Sample IDs:
	4									KB100SI-S-D-MW5-01-A-6.0
					4.8-7': Moist to wet, brown	CH	0%	15%	85%	KB100SI-S-D-MW5-01-D-6.0
	5				(10YR5/3) to greenish gray					
					(6/1) plastic silty clay					
	6									EPA IDs:
										EKB100005, EKB100006
	7		85%		7-8.2': Wet, greenish gray (6/1)	CH	0%	5%	95%	
					plastic clay					Drilling difficult to depths of
	8									4-4.5' bgs, soil was softer at
					8.2-10': Wet, dark greenish	SP	30%	65%	5%	deeper depths throughout
	9				gray (3/1) gravelly sand					site.
	10									

Field Log of Boring

Boring Number	Temp Well 6		Sheet 1 of 1
Project Name **UST KB100**	Project Number **CTO 026**	Elevation and Datum	Location **21°26'591" N 157°45'878" W**
Drilling Company **GeoTek**	Driller **Kevin Rogers**	Date and Time Started **1/13/15: 11:14**	Date and Time Completed **1/13/15: 11:21**
Drilling Equipment **Geoprobe 6620DT**	Drilling Method **Direct Push**	Completion Depth **10' bgs**	Total No. of Samples **1**
Size and Type of Bit **Macrocore - 5 Ft Drive Length**	Hole Diameter **2 1/4" OD; 1 1/2" Sample Core**	No. of Samples: Bulk **NA**, SS **1**	Drive **NA**, Pitcher **NA**
Drilling Fluid **None**	Drilling Angle **Vertical**	Water Level:	After _____ Hours **NA**
Sample Hammer Type **NA** Driving Wt. **NA** Drop **NA**		Hydrogeologist/Date **S. Spengler 1/13/15**	Checked By/Date **M. Heskett 1/24/15**

Lithology	Depth (Feet)	Samples	Recovery	Blow Count	Description	USCS Symbol	Estimated % Of GR	SA	FI	Comments
										Macrocore driven 0-5' & 5-10' bgs
	0				**0-9": Dry, black (10YR2/1)**	**GW**	65%	30%	5%	PID = **0.6** ppm @ **2'** bgs
					gravelly basaltic base course					PID = **0.5** ppm @ **4'** bgs
	1				**9"-7.0': Dry to moist, very pale**	**SP**	20%	80%	0%	PID = **2.4** ppm @ **6'** bgs
					brown (10YR7/3) gravelly sand					PID = **8.5** ppm @ **8'** bgs
	2		**60%**							
	3									
	4									Sample IDs:
										KB100SI-S-D-MW6-01-A-7.5
	5									
	6									EPA IDs:
										EKB100007
	7		**75%**		**7-9': Wet, greenish gray (6/1)**	**CL**	0%	15%	85%	
	8				**sandy clay**					Drilling difficult to depths of
										4-4.5' bgs, soil was softer at
	9				**9-10': Wet, dark greenish**	**SP**	30%	65%	5%	deeper depths throughout
					gray (3/1) gravelly sand					site.
	10									

Field Log of Boring

Boring Number	Temp Well 7		Sheet 1 of 1
Project Name UST KB100	Project Number CTO 026	Elevation and Datum	Location 21°26'584" N 157°45'877" W
Drilling Company GeoTek	Driller Kevin Rogers	Date and Time Started 1/13/15: 11:27	Date and Time Completed 1/13/15: 11:36
Drilling Equipment Geoprobe 6620DT	Drilling Method Direct Push	Completion Depth 10' bgs	Total No. of Samples 2
Size and Type of Bit Macrocore - 5 Ft Drive Length	Hole Diameter 2 1/4" OD; 1 1/2" Sample Core	No. of Samples: Bulk NA; SS 2	Drive NA; Pitcher NA
Drilling Fluid None	Drilling Angle Vertical	Water Level:	After _____ Hours NA
Sample Hammer Type NA Driving Wt. NA Drop NA		Hydrogeologist/Date S. Spengler 1/13/15	Checked By/Date M. Heskett 1/24/15

Lithology	Depth (Feet)	Samples	Recovery	Blow Count	Description	USCS Symbol	Estimated % Of GR	SA	FI	Comments
										Macrocore driven 0-5' & 5-10' bgs
	0				0-9": Dry, black (10YR2/1)	GW				PID = 1.5 ppm @ 2' bgs
					gravelly basaltic base course					PID = 2.2 ppm @ 4' bgs
	1				9"-5.5': Dry to moist, very pale	SP	35%	65%	0%	PID = 3.1 ppm @ 6' bgs
					brown (10YR7/3) gravelly sand					PID = 3.4 ppm @ 8' bgs
	2		55%							
	3									
	4									Sample IDs:
										KB100SI-S-D-MW7-01-A-6.0
										KB100SI-S-D-MW7-01-MS-6.0
	5									KB100SI-S-D-MW7-01-MSD-6.0
	6				5.5-8.5': Wet, greenish gray	CH	0%	5%	95%	
					(6/1) plastic clay					EPA IDs:
	7									EKB100008, MS/MSD
			70%							
	8									Drilling difficult to depths of 4-4.5' bgs, soil was softer at
	9				8.5-10': Wet, dark greenish	SP	40%	55%	5%	deeper depths throughout
					gray (4/1) gravelly sand					site.
	10									

Appendix F

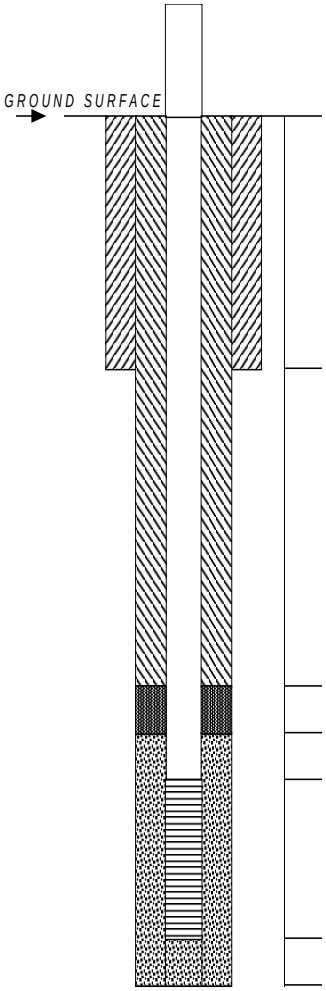
Monitoring Well Construction Logs

WELL COMPLETION RECORD

JOB NO.: CTO 026 WELL NO. Temp Well 1 HYDROGEOLOGIST: S. Spengler

CLIENT: NAVFAC Hawaii DRILLER: Kevin Rogers

WELL LOCATION: UST KB-100 DATE/TIME: 1/13/2015 / 14:20



Well Head Elevation

Ground Surface Elev.

Well Head Completion Method

Pre-Packed Well Section

Drilling Method/Rig Type: Direct Push

DETAILS OF CONSTRUCTION

Date Completed	1/13/15
Borehole Diameter (in.)	3 ¼”
Type and Size of Casing (in.)	1.5”
Type and Size of Screen (in.)	PVC / 10 Slot Screen
Screen Perforation Diameter (in.)	10 Slot
Screen Length (ft.)	10
Centralizer Depths (ft.)	NA

Completion Technique

1. Type of Filter Pack and Placement Method

   #3 Sand – Pre Pack (2 ½”)

2. Type of Bentonite and Placement Method

   3/8” Holeplug, bentonite chips

3. Type of Grout Mixture and Placement Method

   None (temporary well)

Description of Potential Problems With Well:

None

Development Technique

Surge Block/Mini-Purge Pump

Surface Casing:	Type	Metal Plate
	Diameter	3.5”
	Length	~6”

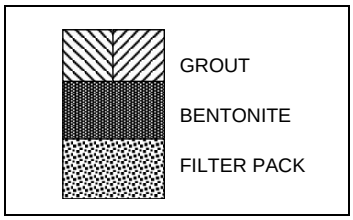
MATERIALS

Cement (sks.)	None
Filter Pack Material ($ft.^3$)	12.3 linear feet
Casing Material (ft.)	4.7
Bentonite ($ft.^3$)	2.0 linear feet

Top of Bentonite Seal	0.7	ft.
Top of Filter Pack	2.7	ft.
Top of Screen	4.7	ft.

DTW=7.43’ bgs @15:10 on 1/13/15

NOTE: ALL DEPTHS ARE REFERENCED TO GROUND SURFACE



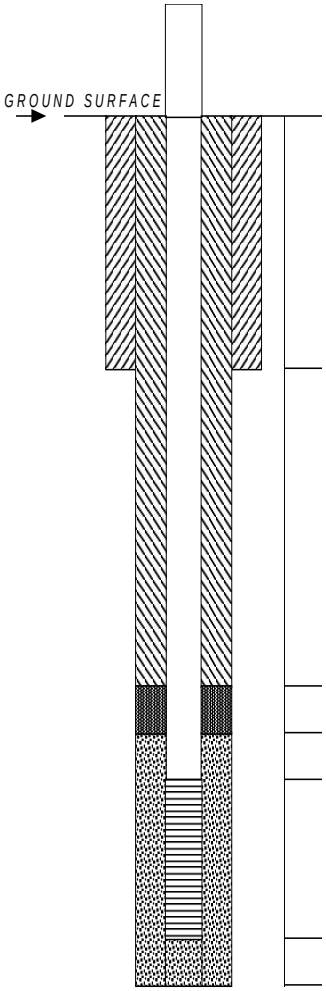
Bottom of Screen	14.7	ft.
Bottom of Hole	15.0	ft.

WELL COMPLETION RECORD

JOB NO.: CTO 026 WELL NO. Temp Well 2 HYDROGEOLOGIST: S. Spengler

CLIENT: NAVFAC Hawaii DRILLER: Kevin Rogers

WELL LOCATION: UST KB-100 DATE/TIME: 1/13/2015 / 14:45



Well Head Elevation

Ground Surface Elev.

Well Head Completion Method

Pre-Packed Well Section

Drilling Method/Rig Type: Direct Push

DETAILS OF CONSTRUCTION

Date Completed	1/13/15
Borehole Diameter (in.)	3 ¼”
Type and Size of Casing (in.)	1.5”
Type and Size of Screen (in.)	PVC / 10 Slot Screen
Screen Perforation Diameter (in.)	10 Slot
Screen Length (ft.)	10
Centralizer Depths (ft.)	NA

Completion Technique

1. Type of Filter Pack and Placement Method

   #3 Sand – Pre Pack (2 ½”)

2. Type of Bentonite and Placement Method

   3/8” Holeplug, bentonite chips

3. Type of Grout Mixture and Placement Method

   None (temporary well)

Description of Potential Problems With Well:

None

Development Technique

Surge Block/Mini-Purge Pump

Surface Casing:	
Type	Metal Plate
Diameter	3.5”
Length	~6”

MATERIALS

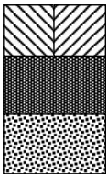
Cement (sks.)	None
Filter Pack Material ($ft.^3$)	12.3 linear feet
Casing Material (ft.)	4.7
Bentonite ($ft.^3$)	2.0 linear feet

Top of Bentonite Seal	0.7	ft.
Top of Filter Pack	2.7	ft.
Top of Screen	4.7	ft.

DTW=7.07’ bgs @15:18 on 1/13/15

NOTE: ALL DEPTHS ARE REFERENCED TO GROUND SURFACE

Bottom of Screen	14.7	ft.
Bottom of Hole	15.0	ft.

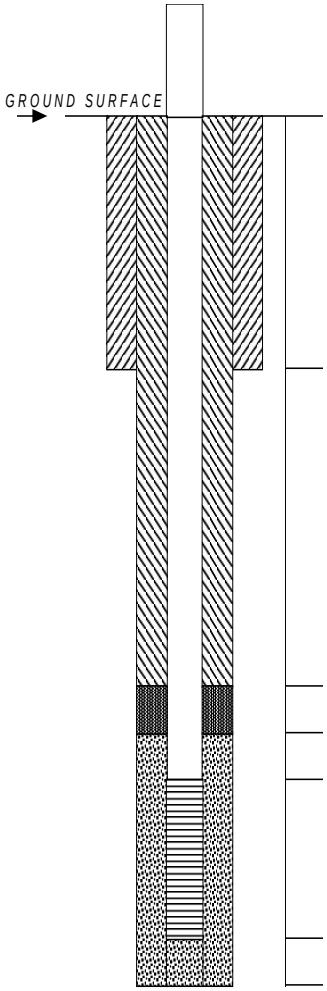


WELL COMPLETION RECORD

JOB NO.: CTO 026 WELL NO. Temp Well 3 HYDROGEOLOGIST: S. Spengler

CLIENT: NAVFAC Hawaii DRILLER: Kevin Rogers

WELL LOCATION: UST KB-100 DATE/TIME: 1/13/2015 / 15:00



Well Head Elevation

Ground Surface Elev.

Well Head Completion Method

Pre-Packed Well Section

Drilling Method/Rig Type: Direct Push

DETAILS OF CONSTRUCTION

Date Completed	1/13/15
Borehole Diameter (in.)	3 ¼”
Type and Size of Casing (in.)	1.5”
Type and Size of Screen (in.)	PVC / 10 Slot Screen
Screen Perforation Diameter (in.)	10 Slot
Screen Length (ft.)	10
Centralizer Depths (ft.)	NA

Completion Technique

1. Type of Filter Pack and Placement Method

   #3 Sand – Pre Pack (2 ½”)

2. Type of Bentonite and Placement Method

   3/8” Holeplug, bentonite chips

3. Type of Grout Mixture and Placement Method

   None (temporary well)

Description of Potential Problems With Well:

None

Development Technique

Surge Block/Mini-Purge Pump

Surface Casing:	Type	Metal Plate
	Diameter	3.5”
	Length	~6”

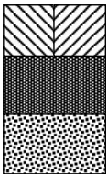
MATERIALS

Cement (sks.)	None
Filter Pack Material ($ft.^3$)	12.3 linear feet
Casing Material (ft.)	4.7
Bentonite ($ft.^3$)	2.0 linear feet

Top of Bentonite Seal	0.7	ft.
Top of Filter Pack	2.7	ft.
Top of Screen	4.7	ft.

DTW=7.29’ bgs @15:14 on 1/13/15

NOTE: ALL DEPTHS ARE REFERENCED TO GROUND SURFACE



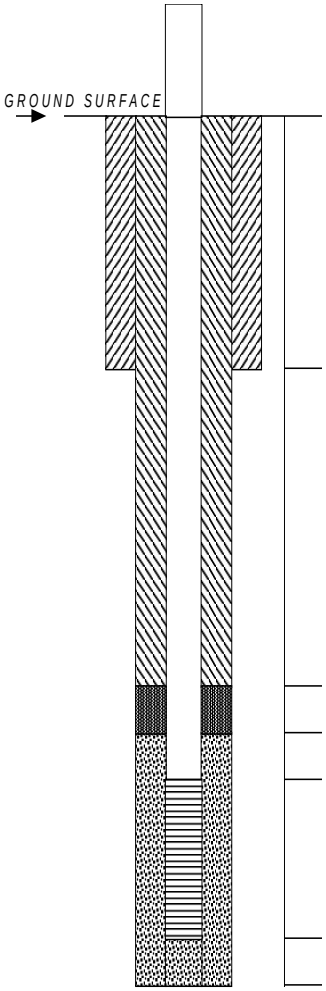
Bottom of Screen	14.7	ft.
Bottom of Hole	15.0	ft.

WELL COMPLETION RECORD

JOB NO.: CTO 026 WELL NO. Temp Well 4 HYDROGEOLOGIST: S. Spengler

CLIENT: NAVFAC Hawaii DRILLER: Kevin Rogers

WELL LOCATION: UST KB-100 DATE/TIME: 1/13/2015 / 14:10



Well Head Elevation

Ground Surface Elev.

Well Head Completion Method

Pre-Packed Well Section

Drilling Method/Rig Type: Direct Push

DETAILS OF CONSTRUCTION

Date Completed	1/13/15
Borehole Diameter (in.)	3 ¼”
Type and Size of Casing (in.)	1.5”
Type and Size of Screen (in.)	PVC / 10 Slot Screen
Screen Perforation Diameter (in.)	10 Slot
Screen Length (ft.)	10
Centralizer Depths (ft.)	NA

Completion Technique

1. Type of Filter Pack and Placement Method

   #3 Sand – Pre Pack (2 ½”)

2. Type of Bentonite and Placement Method

   3/8” Holeplug, bentonite chips

3. Type of Grout Mixture and Placement Method

   None (temporary well)

Description of Potential Problems With Well:

None

Development Technique

Surge Block/Mini-Purge Pump

Surface Casing:	Type	Metal Plate
	Diameter	3.5”
	Length	~6”

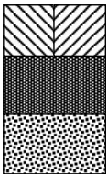
MATERIALS

Cement (sks.)	None
Filter Pack Material ($ft.^3$)	12.3 linear feet
Casing Material (ft.)	4.7
Bentonite ($ft.^3$)	2.0 linear feet

Top of Bentonite Seal	0.7	ft.
Top of Filter Pack	2.7	ft.
Top of Screen	4.7	ft.

DTW=6.45’ bgs @15:00 on 1/13/15

NOTE: ALL DEPTHS ARE REFERENCED TO GROUND SURFACE



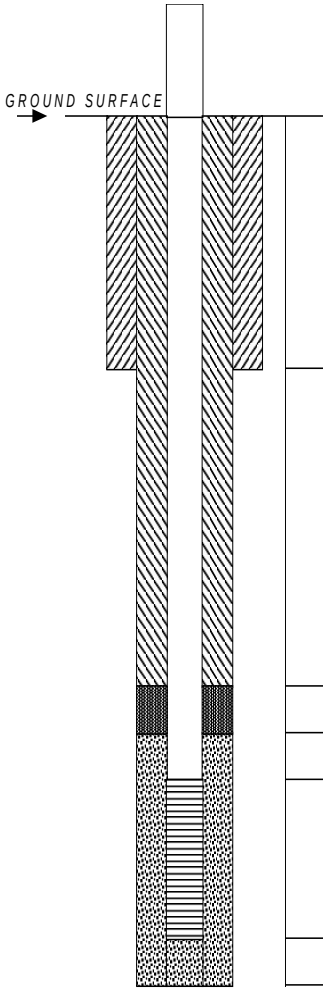
Bottom of Screen	14.7	ft.
Bottom of Hole	15.0	ft.

WELL COMPLETION RECORD

JOB NO.: CTO 026 WELL NO. Temp Well 5 HYDROGEOLOGIST: S. Spengler

CLIENT: NAVFAC Hawaii DRILLER: Kevin Rogers

WELL LOCATION: UST KB-100 DATE/TIME: 1/13/2015 / 13:45



Well Head Elevation

Ground Surface Elev.

Well Head Completion Method

Pre-Packed Well Section

Drilling Method/Rig Type: Direct Push

Surface Casing: Type: Metal Plate; Diameter: 3.5”; Length: ~6”

DETAILS OF CONSTRUCTION

Date Completed: 1/13/15

Borehole Diameter (in.): 3 ¼”

Type and Size of Casing (in.): 1.5”

Type and Size of Screen (in.): PVC / 10 Slot Screen

Screen Perforation Diameter (in.): 10 Slot

Screen Length (ft.): 10

Centralizer Depths (ft.): NA

Completion Technique

1. Type of Filter Pack and Placement Method

   #3 Sand – Pre Pack (2 ½”)

2. Type of Bentonite and Placement Method

   3/8” Holeplug, bentonite chips

3. Type of Grout Mixture and Placement Method

   None (temporary well)

Description of Potential Problems With Well:

None

Development Technique

Surge Block/Mini-Purge Pump

MATERIALS

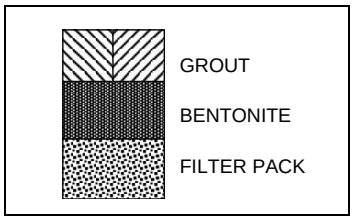
Cement (sks.)	None
Filter Pack Material ($ft.^3$)	12.3 linear feet
Casing Material (ft.)	4.7
Bentonite ($ft.^3$)	2.0 linear feet

Top of Bentonite Seal	0.7	ft.
Top of Filter Pack	2.7	ft.
Top of Screen	4.7	ft.

DTW=6.54’ below top of casing @15:01 on 1/13/15

Bottom of Screen	14.7	ft.
Bottom of Hole	15.0	ft.

NOTE: ALL DEPTHS ARE REFERENCED TO GROUND SURFACE

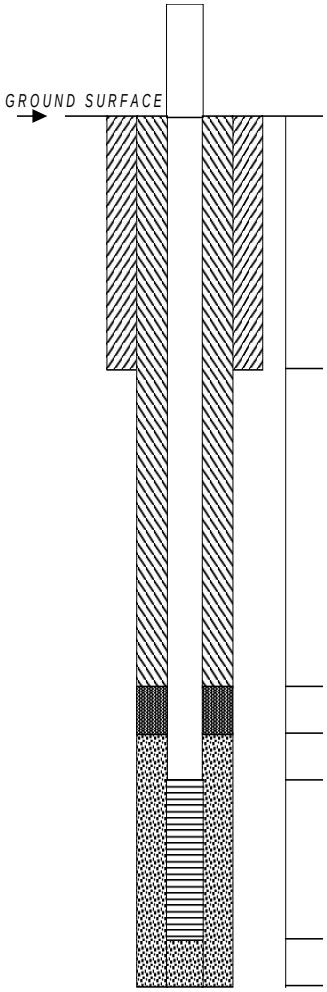


WELL COMPLETION RECORD

JOB NO.: CTO 026 WELL NO. Temp Well 6 HYDROGEOLOGIST: S. Spengler

CLIENT: NAVFAC Hawaii DRILLER: Kevin Rogers

WELL LOCATION: UST KB-100 DATE/TIME: 1/13/2015 / 15:15



Well Head Elevation

Ground Surface Elev.

Well Head Completion Method

Pre-Packed Well Section

Drilling Method/Rig Type: Direct Push

DETAILS OF CONSTRUCTION

Date Completed	1/13/15
Borehole Diameter (in.)	3 ¼”
Type and Size of Casing (in.)	1.5”
Type and Size of Screen (in.)	PVC / 10 Slot Screen
Screen Perforation Diameter (in.)	10 Slot
Screen Length (ft.)	10
Centralizer Depths (ft.)	NA

Completion Technique

1. Type of Filter Pack and Placement Method

   #3 Sand – Pre Pack (2 ½”)

2. Type of Bentonite and Placement Method

   3/8” Holeplug, bentonite chips

3. Type of Grout Mixture and Placement Method

   None (temporary well)

Description of Potential Problems With Well:

None

Development Technique

Surge Block/Mini-Purge Pump

Surface Casing:	Type	Metal Plate
	Diameter	3.5”
	Length	~6”

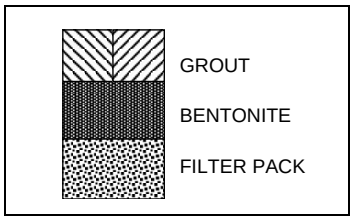
MATERIALS

Cement (sks.)	None
Filter Pack Material ($ft.^3$)	12.3 linear feet
Casing Material (ft.)	4.7
Bentonite ($ft.^3$)	2.0 linear feet

Top of Bentonite Seal	0.7	ft.
Top of Filter Pack	2.7	ft.
Top of Screen	4.7	ft.

DTW=6.54’ bgs @15:14 on 1/13/15

NOTE: ALL DEPTHS ARE REFERENCED TO GROUND SURFACE



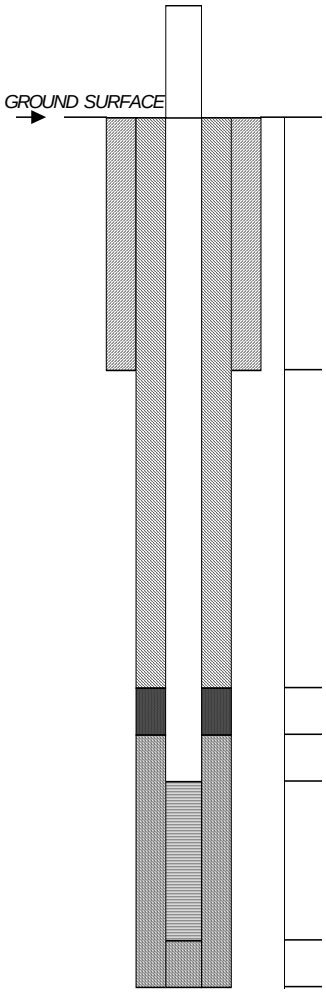
Bottom of Screen	14.7	ft.
Bottom of Hole	15.0	ft.

WELL COMPLETION RECORD

JOB NO.: CTO 026 WELL NO. Temp Well 7 HYDROGEOLOGIST: S. Spengler

CLIENT: NAVFAC Hawaii DRILLER: Kevin Rogers

WELL LOCATION: Former UST KB-100 Site DATE/TIME: 1/13/2015 / 11:36



Well Head Elevation

Ground Surface Elev.

Well Head Completion Method

Pre-Packed Well Section

Drilling Method/Rig Type Direct Push

DETAILS OF CONSTRUCTION

Date Completed	1/13/15
Borehole Diameter (in.)	3¼”
Type and Size of Casing (in.)	1.5”
Type and Size of Screen (in.)	PVC / 10 Slot Screen
Screen Perforation Diameter (in.)	10 Slot
Screen Length (ft.)	10
Centralizer Depths (ft.)	NA

Completion Technique

1. Type of Filter Pack and Placement Method

   #3 Sand – Pre Pack (2½”)

2. Type of Bentonite and Placement Method

   3/8” Holeplug, bentonite chips

3. Type of Grout Mixture and Placement Method

   None (temporary well)

Description of Potential Problems With Well:

None

Development Technique

Surge Block/Mini-Purge Pump

Surface Casing:

Type	Metal Plate
Diameter	3.5”
Length	~6”

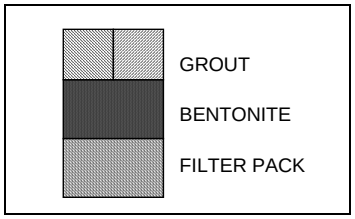
MATERIALS

Cement (sks.)	None
Filter Pack Material (ft.^{3})	12.3 linear feet
Casing Material (ft.)	4.7
Bentonite (ft.^{3})	2.0 linear feet

Top of Bentonite Seal	0.7	ft.
Top of Filter Pack	2.7	ft.
Top of Screen	4.7	ft.

DTW=6.54’ bgs @15:14 on 1/13/15

NOTE: ALL DEPTHS ARE REFERENCED TO GROUND SURFACE



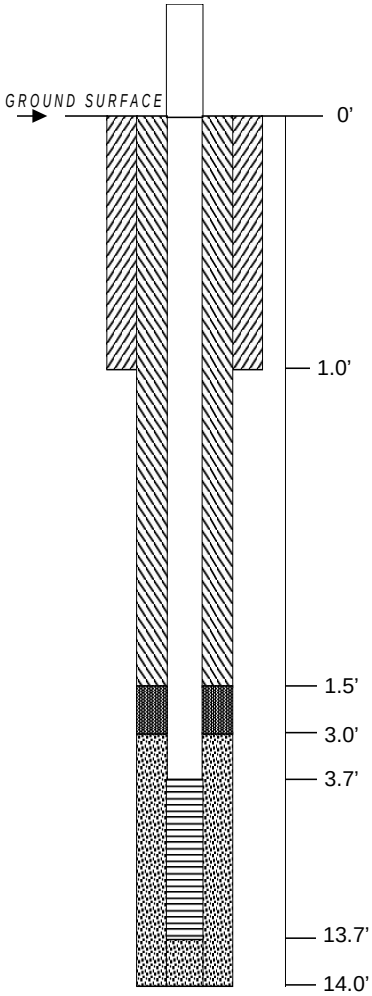
Bottom of Screen	14.7	ft.
Bottom of Hole	15.0	ft.

WELL COMPLETION RECORD

JOB NO.: CTO 026 WELL NO. MW-KB-100-3 HYDROGEOLOGIST: S. Spengler

CLIENT: NAVFAC Hawaii DRILLER: Quinton Wilson

WELL LOCATION: UST KB-100, adj. to Temp. MW2 DATE/TIME: 3/02/2015



Well Head Elevation	7.7 ft
Ground Surface Elev.	~8 ft
Well Head Completion Method	
Traffic rated well cover	
Drilling Method/Rig Type	B-59 Auger Rig

Surface Casing:	Type	Steel Well Cover
	Diameter	8"
	Length	~1' deep

DETAILS OF CONSTRUCTION

Date Completed	03/02/15
Borehole Diameter (in.)	10"
Type and Size of Casing (in.)	4.0" PVC
Type and Size of Screen (in.)	PVC / 20 Slot Screen
Screen Perforation Diameter (in.)	20 Slot
Screen Length (ft.)	10
Centralizer Depths (ft.)	NA

Completion Technique

1. Type of Filter Pack and Placement Method

   #3 Sand – poured downhole as augur withdrawn

2. Type of Bentonite and Placement Method

   3/8" Holeplug, bentonite chips

3. Type of Grout Mixture and Placement Method

   Cement

Description of Potential Problems With Well:

None

Development Technique

Surge Block/Mini-Purge Pump

MATERIALS

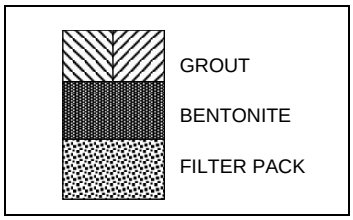
Cement (sks.)	0.5 LF
Filter Pack Material ($ft.^3$)	10.8 LF
Casing Material (ft.)	3.7 LF
Bentonite ($ft.^3$)	1.7 LF

Top of Bentonite Seal	1.5	ft.
Top of Filter Pack	3.2	ft.
Top of Screen	3.7	ft.

DTW= 6.76' bgs @ 0827 on 3/10/15

NOTE: ALL DEPTHS ARE REFERENCED TO GROUND SURFACE

Bottom of Screen	13.7	ft.
Bottom of Hole	15.0	ft.

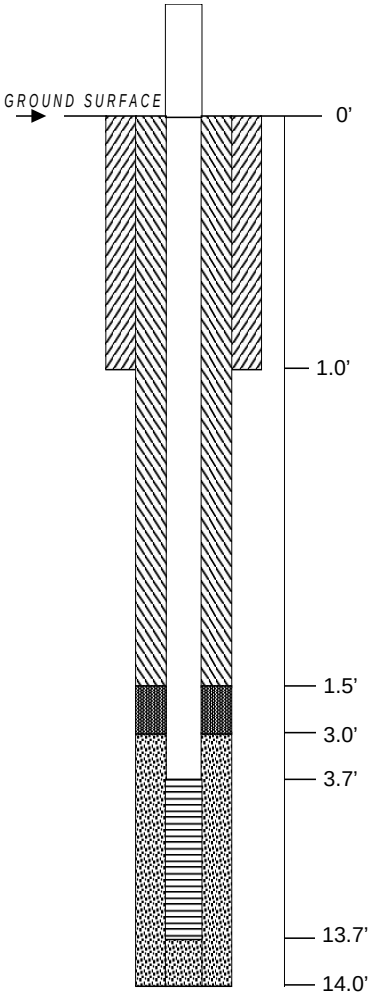


WELL COMPLETION RECORD

JOB NO.: CTO 026 WELL NO. MW-KB-100-4 HYDROGEOLOGIST: S. Spengler

CLIENT: NAVFAC Hawaii DRILLER: Quinton Wilson

WELL LOCATION: UST KB-100, adj. to Temp. MW2 DATE/TIME: 3/02/2015 / 9:45



Well Head Elevation 7.5 ft

Ground Surface Elev. ~8 ft

Well Head Completion Method

Traffic rated well cover

Drilling Method/Rig Type B-59 Auger Rig

Surface Casing: Type Steel Well Cover

Diameter 8"

Length ~1' deep

DETAILS OF CONSTRUCTION

Date Completed 03/02/15

Borehole Diameter (in.) 10"

Type and Size of Casing (in.) 4.0" PVC

Type and Size of Screen (in.) PVC / 20 Slot Screen

Screen Perforation Diameter (in.) 20 Slot

Screen Length (ft.) 10

Centralizer Depths (ft.) NA

Completion Technique

1. Type of Filter Pack and Placement Method

   #3 Sand – poured downhole as augur withdrawn

2. Type of Bentonite and Placement Method

   3/8" Holeplug, bentonite chips

3. Type of Grout Mixture and Placement Method

   Cement

Description of Potential Problems With Well:

None

Development Technique

Surge Block/Mini-Purge Pump

MATERIALS

Cement (sks.) 0.5 LF

Filter Pack Material ($ft.^3$) 11.0 LF

Casing Material (ft.) 3.7 LF

Bentonite ($ft.^3$) 1.5 LF

Top of Bentonite Seal 1.5 ft.

Top of Filter Pack 3.0 ft.

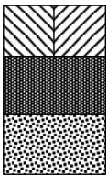
Top of Screen 3.7 ft.

DTW=6.66' bgs @10:45 on 3/10/15

NOTE: ALL DEPTHS ARE REFERENCED TO GROUND SURFACE

Bottom of Screen 13.7 ft.

Bottom of Hole 15.0 ft.



GROUT

BENTONITE

FILTER PACK

Appendix G

Chain of Custody Forms

APPL LABS

APPL, Inc.
908 N Temperance Ave
Clovis, CA 93611

Phone: (559) 275-2175
Fax: (559) 275-4422

CHAIN OF CUSTODY RECORD

75351 3.5°C 3.0°C 2 coolers in shipment

C.O.C. 48043

Report to: PLEASE PRINT

Company Name: ELEMENT ENVIRONMENTAL, LLC Phone: (808) 488-1200

Address: 98-030 HEKAHA STREET, UNIT 9
AIEA, HI 96701 Fax: (808) 488-1300 EMAIL sspengler@ezhi.com

Attn: STEVEN SPENGLER CELL (808) 869-3953

Invoice to: PLEASE PRINT

Company Name: SAME AS "REPORT TO:" Phone:

Address: Fax:

Attn:

Project Name/Number: MCBH UST KB-100 / 130034 SI

Sampler (Print): Matt Neal

Purchase Order Number: 130034

Sampler (Signature):

Date Shipped: 1-13-15

Carrier: FEDEX

Waybill No.:

Comments:

Sample Identification	Location	Date Collected	Time Collected	Time Zone	No. of Containers	Matrix: Aq	Matrix: Sed.	Matrix: Soil	TPH-DRO/RRO 8015	VOCs 8260	Lead 6010									Comments
EKB100001	MCBH UST KB-100	1-13-15	1023	HST	4			X	X	X	X									
EKB100002	MCBH UST KB-100	1-13-15	1038	HST	4			X	X	X	X									
EKB100003	MCBH UST KB-100	1-13-15	1051	HST	4			X	X	X	X									
EKB100004	MCBH UST KB-100	1-13-15	1058	HST	4			X	X	X	X									
EKB100005	MCBH UST KB-100	1-13-15	1112	HST	4			X	X	X	X									
EKB100006	MCBH UST KB-100	1-13-15	1115	HST	4			X	X	X	X									
EKB100007	MCBH UST KB-100	1-13-15	1119	HST	4			X	X	X	X									
EKB100008	MCBH UST KB-100	1-13-15	1137	HST	12			X	X	X	X									MS/MSD
EKB100009	MCBH UST KB-100	1-13-15	1350	HST	8	X			X	X	X									
EKB100010	MCBH UST KB-100	1-13-15	1400	HST	8	X			X	X	X									
TRIP BLANK - 01	MCBH UST KB-100	—	—	—	3	X				X										

Shuttle Temperature:

Turnaround Requested: Check one
☒ Standard 2-3 wk ☐ One week ☐ 24/48 Hrs. ☐ Other

Sample Disposal:
☐ Return to client ☒ Disposal by Lab (30-day retention)

Relinquished by sampler:	Date	Time	Received by:	Relinquished by:	Date	Time	Received by:
	1/13/15	1405					

Relinquished by:	Date	Time	Received by:	Relinquished by:	Date	Time	Received at lab by:
					1/14/15	10:25	Yang Lo

White: Return to client with report Yellow: Laboratory Copy Pink: Sampler

See reverse side for Container Preservative and Sampling Information

~~75440~~ 1/23/15
75427

3.0
3.0
2.5
3.0

ELECTRONIC CHAIN OF CUSTODY RECORD

APPL, Inc. Phone: (559) 275-2175

908 N Temperance Ave, Clovis, CA 93611 Fax: (559) 275-4422

C.O.C.

Report to: PLEASE PRINT
Company Name: Element Environmental LLC Phone: 808-864-3953 Address: 98-030 Hekaha St, Unit 9
Aiea HI 96701 Fax: 808-488-1300
Attn: Steve Spengler Email: sspengler@e2hi.com

Invoice to: PLEASE PRINT
Company Name: Element Environmental LLC Phone: 808-864-3953 Address: 98-030 Hekaha St, Unit 9
Aiea HI 96701 Fax: 808-488-1300
Attn: Steve Spengler Email: sspengler@e2hi.com

Project Name/Number: MCBH Motor Pool UST KB-100
Purchase Order Number: 130034
Sampler (Print): Austin Lutey
Sampler (Signature):

Date Shipped: 1-21-15
Carrier: FedEx
Tracking No.:
Comments:

Sample Identification	Location	Date Collected	Time Collected	Time Zone	No. of Containers	Matrix: Aq	Sed.	Soil		TPH-DRO-8015B	TPH-RRO-8015B	VOCs-8260B	TOTAL LEAD-6020								
EKB100011	TW-1	1/20/2015	8:45	HST	6	X				X	X	X	X								
EKB100012	TW-2	1/20/2015	9:38	HST	6	X				X	X	X	X								
EKB100013	TW-6	1/20/2015	10:08	HST	6	X				X	X	X	X								
EKB100014	TW-6	1/20/2015	10:20	HST	6	X				X	X	X	X								
EKB100015	TW-3	1/20/2015	10:45	HST	6	X				X	X	X	X								
EKB100016	TW-7	1/20/2015	11:15	HST	6	X				X	X	X	X								
EKB100017	TW-5	1/20/2015	11:50	HST	6	X				X	X	X	X								
EKB100018	TW-4	1/20/2015	12:30	HST	6	X				X	X	X	X								
EKB100019	KB-100-1	1/20/2015	13:45	HST	6	X				X	X	X	X								
EKB100020 (MS/MSD)	KB-100-2	1/20/2015	14:45	HST	18	X				X	X	X	X								
EKB100021	Rinseate	1/20/2015	15:00	HST	6	X				X	X	X	X								

Shuttle Temperature:

Turnaround Requested: Check one
Standard 2-3 wk One week 24/48 Hrs. Other

Sample Disposal:
Return to client Disposal by Lab (30-day retention)

Relinquished by sampler:	Date	Time	Received by:	Relinquished by:	Date	Time	Received by:
AUSTIN LUTEY	1/21/15	1400					

Relinquished by:	Date	Time	Received by:	Relinquished by:	Date	Time	Received at lab by:
					1/23/15	08:50	Yang

Note: The first sampled date of the ARF will be used as the COC number unless indicated otherwise.

ELECTRONIC CHAIN OF CUSTODY RECORD

APPL, Inc. Phone: (559) 275-2175

908 N Temperance Ave, Clovis, CA 93611 Fax: (559) 275-4422 C.O.C.

Report to: PLEASE PRINT
Company Name: Element Environmental LLC Phone: 808-864-3953 Address: 98-030 Hekaha St, Unit 9
Aiea HI 96701 Fax: 808-488-1300
Attn: Steve Spengler Email: sspengler@e2hi.com

Invoice to: PLEASE PRINT
Company Name: Element Environmental LLC Phone: 808-864-3953 Address: 98-030 Hekaha St, Unit 9
Aiea HI 96701 Fax: 808-488-1300
Attn: Steve Spengler Email: sspengler@e2hi.com

Project Name/Number: MCBH Motor Pool UST KB-100
Purchase Order Number: 130034
Sampler (Print): Austin Lutey
Sampler (Signature):

Date Shipped: 1-21-15
Carrier: FedEx
Tracking No.:
Comments:

Sample Identification	Location	Date Collected	Time Collected	Time Zone	No. of Containers	Matrix: Aq	Sed.	Soil		TPH-DRO-8015B	TPH-RRO-8015B	VOCs-8260B	TOTAL LEAD-6020								
Trip Blank - 02	Trip Blank	-	-	-	2	X						X									
Trip Blank - 03	Trip Blank	-	-	-	2	X						X									
Trip Blank - 04	Trip Blank	-	-	-	2	X						X									

Shuttle Temperature:

Turnaround Requested: Check one: Standard 2-3 wk One week 24/48 Hrs. Other

Sample Disposal: Return to client Disposal by Lab (30-day retention)

Relinquished by:	Date	Time	Received by:	Relinquished by:	Date	Time	Received by:
Austin Lutey	1/21/15	1400					
Relinquished by:	Date	Time	Received by:	Relinquished by:	Date	Time	Received at lab by:
					1/23/15	08:50	Yang

Note: The first sampled date of the ARF will be used as the COC number unless indicated otherwise.

5.0, 4.5, 4.0
75798
a,b,c

APPL LABS

APPL, Inc.
908 N Temperance Ave
Clovis, CA 93611

Phone: (559) 275-2175
Fax: (559) 275-4422

CHAIN OF CUSTODY RECORD

C.O.C. 48033

Report to: PLEASE PRINT

Company Name: ELEMENT ENVIRONMENTAL, LLC Phone: (808) 488-1200

Address: 98-030 HEKAHA ST, UNIT 9
AIEA, HI 96701 Fax: (808) 488-1300

Attn: STEVE SPENGLER CELL: (808) 864-3953

Invoice to: PLEASE PRINT

Company Name: SAME AS: "REPORT TO:" Phone:

Address: Fax:

Attn:

Project Name/Number: 130034 / KM CBH MOTOR POOL USTS

Sampler (Print): MARVIN HESKETT, STEVE SPENGLER, BERNICE BALETE

Purchase Order Number: 130034

Sampler (Signature): [signature]

Date Shipped: 3-11-15
Carrier: FEDEX
Waybill No. 8703-4236-6542
Comments:

Sample Identification	Location	Date Collected	Time Collected	Time Zone	No. of Containers	Matrix: Aq	Matrix: Sed.	Matrix: Soil	TPH-DRO/GRO (8015B)	VOCs (8260B)	TOTAL LEAD (6020)	PAHs (8270C)	Comments
EKB100022	UST KB-100	3/10/15	0930	HST	6	X			X	X	X		
EKB100023	UST KB-100	↓	1045	↓	6	X			X	X	X		
EKB91072	UST KB-91		1140		14	X			X	X		X	MS/MSD
EKB91073	UST KB-91		1200		7	X			X	X		X	
EKB91074	UST KB-91		1215		5	X			X	X		X	
EKB91075	UST KB-91		1415		7	X			X	X		X	
TRIP BLANK-1	UST KB-91		1415		3	X				X			
TRIP BLANK-2	UST KB-100	↓	1415	↓	3	X				X			

Shuttle Temperature:

Turnaround Requested: Check one
☒ Standard 2-3 wk ☐ One week ☐ 24/48 Hrs. ☐ Other

Sample Disposal:
☐ Return to client ☒ Disposal by Lab (30-day retention)

Relinquished by:	Date	Time	Received by:	Relinquished by:	Date	Time	Received by:
B. BALETE [signature]	3/11/15	1430					
Relinquished by:	Date	Time	Received by:	Relinquished by:	Date	Time	Received at lab by:
					3/12/15	9:30	[signature]

White: Return to client with report Yellow: Laboratory Copy Pink: Sampler

See reverse side for Container Preservative and Sampling Information

Appendix H
Non-Hazardous IDW Manifests
(Pending)

Appendix I

Summary of Analytical Data

Table I-1: Discrete Soil Sample Detection Limits

Table I-2: Groundwater Sample Detection Limits

Table I-1: Soil Sample Detection Limits

	Boring:	TW-1			TW-2			TW-3			TW-4			TW-5			TW-5 (Dup)			TW-6			TW-7		
	E2 / Lab Sample ID Numbers:	EKB100001 / AZ09545			EKB100002 / AZ09546			EKB100003 / AZ09547			EKB100004 / AZ09548			EKB100005 / AZ09549			EKB100006 / AZ09550			EKB100007 / AZ09551			EKB100008 / AZ09552		
Analyte	HDOH Tier 1 EAL (mg/kg)	Analyte Value (mg/kg)	Qualifier	DL	Analyte Value (mg/kg)	Qualifier	DL	Analyte Value (mg/kg)	Qualifier	DL	Analyte Value (mg/kg)	Qualifier	DL	Analyte Value (mg/kg)	Qualifier	DL	Analyte Value (mg/kg)	Qualifier	DL	Analyte Value (mg/kg)	Qualifier	DL	Analyte Value (mg/kg)	Qualifier	DL
VOCs (EPA 8260B)																									
1,1,1-TRICHLOROETHANE	222.90	ND		0.00057	ND		0.0006	ND		0.00066	ND		0.00059	ND		0.00055	ND		0.00051	ND		0.0006	ND		0.00061
1,1,2,2-TETRACHLOROETHANE	0.0090	ND		0.0017	ND		0.0018	ND		0.002	ND		0.0018	ND		0.0017	ND		0.0015	ND		0.0018	ND		0.0018
1,1,2-TRICHLOROETHANE	0.0089	ND		0.00038	ND		0.0004	ND		0.00044	ND		0.0004	ND		0.00037	ND		0.00035	ND		0.00041	ND		0.00041
1,1-DICHLOROETHANE	0.33	ND		0.00048	ND		0.00051	ND		0.00056	ND		0.00051	ND		0.00047	ND		0.00044	ND		0.00051	ND		0.00052
1,1-DICHLOROETHENE	8.92	ND		0.0011	ND		0.0011	ND		0.0012	ND		0.0011	ND		0.0011	ND		0.00097	0.0017	J	0.0011	ND		0.0012
1,2,3-TRICHLOROPROPANE	0.0013	ND		0.0018	ND		0.0018	ND		0.002	ND		0.0018	ND		0.0017	ND		0.0016	ND		0.0019	ND		0.0019
1,2-DIBROMOETHANE	0.00087	ND		0.002	ND		0.0021	ND		0.0023	ND		0.0021	ND		0.002	ND		0.0018	ND		0.0021	ND		0.0022
1,2-DICHLOROETHANE	0.020	ND		0.0011	ND		0.0011	ND		0.0013	ND		0.0011	ND		0.0011	ND		0.00099	ND		0.0012	ND		0.0012
1,2-DICHLOROPROPANE	0.052	ND		0.001	ND		0.0011	ND		0.0012	ND		0.0011	ND		0.001	ND		0.00092	ND		0.0011	ND		0.0011
2-BUTANONE (MEK)	15.36	ND		0.004	ND		0.0042	ND		0.0046	ND		0.0041	ND		0.0039	0.0041	J	0.0036	0.01	J	0.0042	0.0055	J	0.0043
4-METHYL-2-PENTANONE (MIK)	0.50	ND		0.0013	ND		0.0014	ND		0.0015	ND		0.0014	ND		0.0013	ND		0.0012	ND		0.0014	ND		0.0014
ACETONE	1.011	ND		0.004	ND		0.0042	ND		0.0046	ND		0.0042	0.0088	J	0.0039	0.011	J	0.0036	0.043	J	0.0042	0.016	J	0.0043
BENZENE	0.67	ND		0.0009	ND		0.00094	ND		0.001	ND		0.00094	ND		0.00087	ND		0.00081	ND		0.00095	ND		0.00096
BROMODICHLOROMETHANE	0.014	ND		0.00098	ND		0.001	ND		0.0011	ND		0.001	ND		0.00095	ND		0.00088	ND		0.001	ND		0.0011
BROMOFORM	43.91	ND		0.0011	ND		0.0012	ND		0.0013	ND		0.0012	ND		0.0011	ND		0.001	ND		0.0012	ND		0.0012
BROMOMETHANE	0.22	ND		0.0023	ND		0.0024	ND		0.0026	ND		0.0024	ND		0.0022	ND		0.0021	ND		0.0024	ND		0.0024
CARBON TETRACHLORIDE	0.087	ND		0.0011	ND		0.0012	ND		0.0013	ND		0.0012	ND		0.0011	ND		0.001	ND		0.0012	ND		0.0012
CHLOROBENZENE	2.23	ND		0.0007	ND		0.00073	ND		0.0008	ND		0.00073	ND		0.00068	ND		0.00063	ND		0.00074	ND		0.00075
CHLOROETHANE	11.48	ND		0.0022	ND		0.0023	ND		0.0025	ND		0.0023	ND		0.0021	ND		0.002	ND		0.0023	ND		0.0024
CHLOROFORM	0.023	ND		0.002	ND		0.0021	ND		0.0023	ND		0.0021	ND		0.002	ND		0.0018	ND		0.0022	ND		0.0022
CHLOROMETHANE	0.29	ND		0.0026	ND		0.0027	ND		0.003	ND		0.0027	ND		0.0025	ND		0.0023	ND		0.0027	ND		0.0028
CIS-1,2-DICHLOROETHYLENE	0.31	ND		0.00031	0.00085	J	0.00033	ND		0.00036	ND		0.00033	ND		0.0003	ND		0.00028	**1.3**		0.011	0.00038	J	0.00034
CIS-1,3-DICHLOROPROPENE	0.13	ND		0.0013	ND		0.0014	ND		0.0015	ND		0.0014	ND		0.0013	ND		0.0012	ND		0.0014	ND		0.0014
DIBROMOCHLOROMETHANE	0.022	ND		0.0012	ND		0.0013	ND		0.0014	ND		0.0013	ND		0.0012	ND		0.0011	ND		0.0013	ND		0.0013
ETHYLBENZENE	20.80	0.0073		0.0014	0.0045	J	0.0015	0.003	J	0.0017	0.0019	J	0.0015	ND		0.0014	ND		0.0013	ND		0.0015	ND		0.0015
METHYLENE CHLORIDE	1.11	ND		0.00083	ND		0.00086	ND		0.00095	ND		0.00086	ND		0.0008	ND		0.00074	ND		0.00087	ND		0.00089
STYRENE	2.90	ND		0.0017	ND		0.0018	ND		0.002	ND		0.0018	ND		0.0017	ND		0.0016	ND		0.0018	ND		0.0019
TETRACHLOROETHENE	0.088	0.00088	J	0.00077	0.021		0.0008	0.032		0.00089	ND		0.0008	ND		0.00075	ND		0.00069	0.036		0.00081	ND		0.00083
TOLUENE	31.89	ND		0.0018	ND		0.0019	ND		0.0021	ND		0.0019	0.0026	J	0.0018	ND		0.0017	ND		0.002	0.0026	J	0.002
TRANS-1,2-DICHLOROETHYLENE	2.67	ND		0.00048	ND		0.00051	ND		0.00056	ND		0.00051	ND		0.00047	ND		0.00044	0.14		0.00051	ND		0.00052
TRANS-1,3-DICHLOROPROPENE	0.13	ND		0.0011	ND		0.0012	ND		0.0013	ND		0.0012	ND		0.0011	ND		0.001	ND		0.0012	ND		0.0012
TRICHLOROETHYLENE	0.26	ND		0.0013	0.002	J	0.0014	0.0034	J	0.0015	ND		0.0014	ND		0.0013	ND		0.0012	**0.87**		0.011	ND		0.0014
VINYL CHLORIDE	0.072	ND		0.0021	ND		0.0022	ND		0.0025	ND		0.0022	ND		0.0021	ND		0.0019	0.02		0.0023	ND		0.0023
XYLENES (TOTAL)	44.58	0.0028	J	0.00061	0.0022	J	0.00064	0.0016	J	0.00071	0.0012	J	0.00064	0.0018	J	0.00059	0.00057	J	0.00055	0.00092	J	0.00065	0.0021	J	0.00066
TPH (EPA 8015C-e)																									
TPH-DRO (C10-C24)	500.00	ND		0.92	ND		0.97	ND		1.1	ND		0.97	ND		0.9	ND		0.83	ND		0.98	16	T3M	0.99
TPH-RRO/LRO (C24-C36)	500.00	ND		5	ND		5.2	ND		5.7	ND		5.2	ND		4.8	ND		4.5	ND		5.3	74	J	5.4
Metals (EPA 6020A)																									
LEAD (PB)	200.00	0.13		0.03	0.27		0.03	0.46		0.03	3.6		0.03	12.2		0.03	17.7		0.03	0.33		0.03	0.37		0.03

Note: HDOH Tier 1 Unrestricted SAL, Table B-1 Potentially impacted groundwater is NOT a current or potential drinking water resource; surface water body is NOT located within 150 meters of release site.

Table I-2: Groundwater Sample Detection Limits

	MW:	TW-1			TW-2			TW-3			TW-4			TW-5				TW-6			TW-6 (Dup)			TW-7			KB-100-1			KB-100-2		
	E2 / Lab Sample ID Numbers:	EKB100011 / AZ09997			EKB100012 / AZ09998			EKB100015 / AZ10001			EKB100018 / AZ10004			EKB100017 / AZ10003				EKB100013 / AZ09999			EKB100014 / AZ10000			EKB100016 / AZ10002			EKB100019 / AZ10005			EKB100020 / AZ10006		
Analyte	**HDOH Tier 1 EAL (ug/L)**	**Analyte Value (ug/L)**	**Qualifier**	**DL**	**Analyte Value (ug/L)**	**Qualifier**	**DL**	**Analyte Value (ug/L)**	**Qualifier**	**DL**	**Analyte Value (ug/L)**	**Qualifier**	**DL**	**Analyte Value (ug/L)**	**Qualifier**	**LOQ**	**DL**	**Analyte Value (ug/L)**	**Qualifier**	**DL**	**Analyte Value (ug/L)**	**Qualifier**	**DL**	**Analyte Value (ug/L)**	**Qualifier**	**DL**	**Analyte Value (ug/L)**	**Qualifier**	**DL**	**Analyte Value (ug/L)**	**Qualifier**	**DL**
VOCs (EPA 8260B)																																
1,1,1-TRICHLOROETHANE	6,000.00	ND		0.14	ND		0.14	ND		0.14	ND		0.14	ND		1	0.14	ND		0.14	ND		0.14	ND		0.14	ND		0.14	ND		0.14
1,1,2,2-TETRACHLOROETHANE	204.98	ND		0.1	ND		0.1	ND		0.1	ND		0.1	ND		1	0.1	ND		0.1	ND		0.1	ND		0.1	ND		0.1	ND		0.1
1,1,2-TRICHLOROETHANE	104.05	ND		0.2	ND		0.2	ND		0.2	ND		0.2	ND		1	0.2	ND		0.2	ND		0.2	ND		0.2	ND		0.2	ND		0.2
1,1-DICHLOROETHANE	47.00	ND		0.19	ND		0.19	ND		0.19	ND		0.19	ND		1	0.19	ND		0.19	ND		0.19	ND		0.19	ND		0.19	ND		0.19
1,1-DICHLOROETHENE	3,900.00	ND		0.3	ND		0.3	ND		0.3	ND		0.3	ND		1	0.3	0.45	J	0.3	0.41	J	0.3	ND		0.3	1.1		0.3	ND		0.3
1,2,3-TRICHLOROPROPANE	140.00	ND		0.39	ND		0.39	ND		0.39	ND		0.39	ND		2	0.39	ND		0.39	ND		0.39	ND		0.39	ND		0.39	ND		0.39
1,2-DIBROMOETHANE	15.74	ND		0.2	ND		0.2	ND		0.2	ND		0.2	ND		1	0.2	ND		0.2	ND		0.2	ND		0.2	ND		0.2	ND		0.2
1,2-DICHLOROETHANE	157.43	ND		0.14	ND		0.14	ND		0.14	ND		0.14	ND		1	0.14	ND		0.14	ND		0.14	ND		0.14	ND		0.14	ND		0.14
1,2-DICHLOROPROPANE	100.00	ND		0.17	ND		0.17	ND		0.17	ND		0.17	ND		1	0.17	ND		0.17	ND		0.17	ND		0.17	ND		0.17	ND		0.17
2-BUTANONE (MEK)	14,000.00	ND		0.6	ND		0.6	ND		0.6	ND		0.6	ND		10	0.6	ND		0.6	ND		0.6	ND		0.6	ND		0.6	ND		0.6
4-METHYL-2-PENTANONE (MIK)	170.00	ND		1.9	ND		1.9	ND		1.9	ND		1.9	ND		10	1.9	ND		1.9	ND		1.9	ND		1.9	ND		1.9	ND		1.9
ACETONE	1,500.00	1.5	J	0.95	8.2	J	0.95	ND		0.95	ND		0.95	ND		10	0.95	ND		0.95	ND		0.95	ND		0.95	ND		0.95	ND		0.95
BENZENE	1,700.00	ND		0.16	ND		0.16	ND		0.16	ND		0.16	ND		1	0.16	ND		0.16	ND		0.16	ND		0.16	ND		0.16	ND		0.16
BROMODICHLOROMETHANE	98.01	ND		0.14	ND		0.14	ND		0.14	ND		0.14	ND		1	0.14	ND		0.14	ND		0.14	ND		0.14	ND		0.14	ND		0.14
BROMOFORM	5,100.00	ND		0.14	ND		0.14	ND		0.14	ND		0.14	ND		1	0.14	ND		0.14	ND		0.14	ND		0.14	ND		0.14	ND		0.14
BROMOMETHANE	456.23	ND		0.24	ND		0.24	ND		0.24	ND		0.24	ND		2	0.24	ND		0.24	ND		0.24	ND		0.24	ND		0.24	ND		0.24
CARBON TETRACHLORIDE	98.35	ND		0.1	ND		0.1	ND		0.1	ND		0.1	ND		1	0.1	ND		0.1	ND		0.1	ND		0.1	ND		0.1	ND		0.1
CHLOROBENZENE	160.00	ND		0.21	ND		0.21	ND		0.21	ND		0.21	ND		1	0.21	ND		0.21	ND		0.21	ND		0.21	ND		0.21	ND		0.21
CHLOROETHANE	160.00	ND		0.21	ND		0.21	ND		0.21	ND		0.21	ND		1	0.21	ND		0.21	ND		0.21	ND		0.21	ND		0.21	ND		0.21
CHLOROFORM	93.58	ND		0.07	ND		0.07	ND		0.07	ND		0.07	ND		1	0.07	ND		0.07	ND		0.07	ND		0.07	ND		0.07	ND		0.07
CHLOROMETHANE	371.92	ND		0.42	ND		0.42	ND		0.42	ND		0.42	ND		1	0.42	ND		0.42	ND		0.42	ND		0.42	ND		0.42	ND		0.42
CIS-1,2-DICHLOROETHYLENE	1,094.06	3.1		0.16	8.4		0.16	23		0.16	0.28	J	0.16	0.56	J	1	0.16	230		0.8	220		0.8	0.84	J	0.16	160		0.32	87		0.16
CIS-1,3-DICHLOROPROPENE	260.00	ND		0.15	ND		0.15	ND		0.15	ND		0.15	ND		1	0.15	ND		0.15	ND		0.15	ND		0.15	ND		0.15	ND		0.15
DIBROMOCHLOROMETHANE	337.81	ND		0.19	ND		0.19	ND		0.19	ND		0.19	ND		1	0.19	ND		0.19	ND		0.19	ND		0.19	ND		0.19	ND		0.19
ETHYLBENZENE	300.00	ND		0.23	ND		0.23	ND		0.23	ND		0.23	ND		1	0.23	ND		0.23	ND		0.23	ND		0.23	ND		0.23	ND		0.23
METHYLENE CHLORIDE	3,933.96	ND		0.35	ND		0.35	ND		0.35	ND		0.35	ND		5	0.35	ND		0.35	ND		0.35	ND		0.35	ND		0.35	ND		0.35
STYRENE	32.00	ND		0.25	ND		0.25	ND		0.25	ND		0.25	ND		1	0.25	ND		0.25	ND		0.25	ND		0.25	ND		0.25	ND		0.25
TETRACHLOROETHENE	176.72	ND		0.24	2.2		0.24	1.2		0.24	ND		0.24	ND		1	0.24	25		0.24	26		0.24	ND		0.24	0.4	J	0.24	0.35	J	0.24
TOLUENE	400.00	ND		0.17	ND		0.17	ND		0.17	ND		0.17	ND		1	0.17	ND		0.17	ND		0.17	ND		0.17	ND		0.17	ND		0.17
TRANS-1,2-DICHLOROETHYLENE	2,600.00	ND		0.19	7.9		0.19	26		0.19	0.3	J	0.19	0.25	J	1	0.19	150		0.19	140		0.95	0.47	J	0.19	50		0.19	46		0.19
TRANS-1,3-DICHLOROPROPENE	260.00	ND		0.18	ND		0.18	ND		0.18	ND		0.18	ND		1	0.18	ND		0.18	ND		0.18	ND		0.18	ND		0.18	ND		0.18
TRICHLOROETHYLENE	611.91	ND		0.16	2.9		0.16	0.3	J	0.16	ND		0.16	0.2	J	1	0.16	30		0.16	30		0.16	0.3	J	0.16	2.7		0.16	0.64	J	0.16
VINYL CHLORIDE	62.04	ND		0.23	ND		0.23	0.47	J	0.23	ND		0.23	ND		1	0.23	**240**		1.15	**230**		1.15	ND		0.23	22		0.23	38		0.23
XYLENES (TOTAL)	1,000.00	ND		0.19	ND		0.19	ND		0.19	ND		0.19	ND		2	0.19	ND		0.19	ND		0.19	ND		0.19	ND		0.19	ND		0.19
TPH (EPA 8015C-e)																																
TPH-DRO (C10-C24)	2,500.00	ND		40.4	ND		40.4	ND		40.4	ND		40.4	ND		150	40.4	ND		40.4	ND		40.4	ND		40.4	ND		40.4	ND		40.4
TPH-LRO (C24-C36)	2,500.00	ND		106	ND		106	ND		106	ND		106	ND		500	106	ND		106	ND		106	ND		106	ND		106	ND		106
Metals (EPA 6020A)																																
LEAD (PB)	29.00	ND		0.19	ND		0.19	ND		0.19	0.42	J	0.19	ND		3	0.19	ND		0.19	ND		0.19	ND		0.19	ND		0.19	ND		0.19

Note: HDOH Tier 1 Unrestricted GAL, Table D-1d Potentially impacted groundwater is NOT a current or potential drinking water resource; surface water body is NOT located within 150 meters of release site.

Appendix J

Analytical Laboratory Reports

[Complete analytical laboratory reports are included on the attached CD-ROM.]

908 North Temperance Ave. ∇ Clovis, CA 93611 ∇ Phone 559-275-2175 ∇ Fax 559-275-4422

Certification Number: CA1312
NELAP Certification number: CA00046
DoD-ELAP Certificate number: 74807

Data Validatable Report

January 30, 2015

Element Environmental
98-030 Hekaha Street, Unit 9
Aiea, Hawaii 96701

Attn: Steve Spengler

Title: Report of Data: Case 75351

Project: MCBH UST KB-100 SI / 130034

Contract #: Prime contract # for DoD: Not stated
Subcontract: 130034

Dear Mr. Spengler:

Eight soil and three water samples were received January 14, 2015, in good condition. Written results for the requested analysis are provided on this January 30, 2015.

Results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

If you have any questions or require further information, please contact your APPL Project Manager, Cynthia Clark, cclark@applinc.com, at your convenience. Thank you for choosing APPL, Inc.

I certify that this data package is in compliance with the terms and conditions of the contract, both technically and for completeness, for other than the conditions detailed above. These test results meet all requirements of NELAC and DoD QSM. Release of the hard copy has been authorized by the Laboratory Manager or her designee, as verified by the following signature.

Sharon Dehmlow, Laboratory Director
APPL, Inc.

SD/ab
Enclosure
cc: File

Number of pages in this report: 598

Data Validation Package
for
MCBH UST KB-100 SI / 130034

ARF 75351

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SAMPLE RECEIPT INFORMATION

Sample receipt information

ARF: 75351

Project: MCBH UST KB-100 SI / 130034

Sample Receipt Information:

The samples were received on January 14, 2015, at 3.5°C and 3.0°C. The sample group was assigned Analytical Request Form (ARF) number 75351. The sample number and requested analyses were compared to the chain of custody and email communications. No exception was encountered.

Sample Table

CLIENT ID	APPL ID	Matrix	Date Sampled	Date Received
EKB100001	AZ09545	SOIL	01/13/15	01/14/15
EKB100002	AZ09546	SOIL	01/13/15	01/14/15
EKB100003	AZ09547	SOIL	01/13/15	01/14/15
EKB100004	AZ09548	SOIL	01/13/15	01/14/15
EKB100005	AZ09549	SOIL	01/13/15	01/14/15
EKB100006	AZ09550	SOIL	01/13/15	01/14/15
EKB100007	AZ09551	SOIL	01/13/15	01/14/15
EKB100008	AZ09552	SOIL	01/13/15	01/14/15
EKB100009	AZ09553	WATER	01/13/15	01/14/15
EKB100010	AZ09554	WATER	01/13/15	01/14/15
TRIP BLANK-01	AZ09555	WATER	01/13/15	01/14/15

Percent moisture was determined using CLP 4.0.

The samples and blanks were screened for J-value responses between the detection limit (DL) and limit of quantitation (LOQ).

APPL's laboratory control limits generated in house statistically do not meet the control limits listed in DoD QSM 4.2 for all analytes. Laboratory control spike recoveries for this project meet all control limits listed in the DoD QSM 4.2 except where noted. A copy of our in house generated control limits is available upon request. In addition, a copy of our LOQ control limits, established using 7 data points, are also available upon request.

Only the portion of the injection log relative to these samples is included. A full sequence log is available upon request.

Measurement uncertainty can be reported upon request.

CASE NARRATIVE

EPA Method 8015C

Total Petroleum Hydrocarbons – DRO and LRO

Sample Preparation:

The soil samples were extracted according to EPA method 3550B. The water samples were extracted according to EPA method 3510C. The samples were extracted within holding time.

Sample Analysis Information:

The samples were analyzed according to the method using an Agilent Gas Chromatograph with a flame ionization detector. Because of the dark nature of the extracts, two samples and the MS/MSD were injected at a dilution factor five; the reporting limits were not raised because the curve supports the reporting limit.

Quality Control/Assurance

Calibrations:

Initial and continuing calibrations were performed according to the method. All calibration criteria were met.

Blanks:

No target compound was detected at or above one-half the LOQ in the method blanks.

Spikes:

Laboratory Control Spikes (LCS) were used for quality assurance. All spike recovery acceptance criteria were met.

Sample EKB100008 was designated by the client for MS/MSD analysis. TPH-DRO recovered below the 64% lower control limit in the MSD; and TPH-LRO recovered below the 50% lower control limit in the MS. All other spike recoveries were acceptable.

Surrogates

Surrogate recoveries are summarized on the Form 2&8. All surrogate recoveries were within the control limits.

Summary:

No analytical exception was encountered. All data generated are acceptable.

EPA Method 8260B
Volatile Organic Compounds

Sample Preparation:

The soil samples were purged according to EPA method 5035. The water samples were purged according to EPA method 5030B.

Sample Analysis Information:

The samples were analyzed according to the EPA method 8260B using an Agilent Gas Chromatograph with a mass spectrometer detector. All holding times were met.

Quality Control/Assurance:

Calibrations:

Initial and continuing calibrations were performed according to the method. All calibration criteria were met.

Blanks:

No target analyte was detected above one half the LOQ in the method blanks.

Spikes:

Laboratory Control Spikes (LCS) were used for quality assurance. All LCS acceptance criteria were met.

Sample EKB100008 was designated by the client for MS/MSD analysis. One analyte recovered below its lower control limit in the MS. All other spike recoveries were acceptable.

Surrogates:

Surrogate recoveries are summarized on Form 2 & 8. All surrogate recoveries were within the control limits.

Tuning:

The instrument was tuned using BFB. All method criteria were met.

Internal Standards:

The internal standard area counts were compared to the mid-point of the initial calibration according to method 8260. All method criteria were met.

Summary:

No analytical exception was encountered. The data generated are acceptable.

EPA Method 6020A
Metals

Digestion Information:

The water samples were digested according to EPA methods 3015, and the soil samples were digested according to EPA methods 3050B. No exception was encountered. All holding times were met

Analysis Information:

Samples:

The samples were analyzed for lead according to EPA method 6020A using an Agilent 7500cx ICP-MS.

Calibrations:

Calibrations were performed according to the method with no deviations for the initial calibration and the initial calibration verification. The initial calibration verification is prepared from a second source standard. All method criteria were met.

Blanks:

No target metal was detected above one-half the LOQ in the method blanks.

Spikes:

Laboratory Control Spikes (LCS), Matrix Spikes (MS/MSD), serial dilution tests (DT), and post digestion spike (PDS) were used for quality assurance. All LCS acceptance criteria were met.

Sample EKB100008 was designated by the client for soil MS/MSD analysis. Sample EKB100010 was designated by the laboratory for water MS/MSD analysis. All acceptance criteria were met in the MS/MSD, DT and PDS for both water and soil analyses.

Internal Standards:

All method acceptance criteria were met in the internal standards.

Summary:

No analytical exception was noted.

APPL Inc.
Abbreviations and Flags

FLAG	DESCRIPTION
#	Recovery or RPD outside control limits
*	Recovery or RPD outside control limits
B	Analyte detected in associated method blank
C1	Reason for correction: wrote incorrect response
C2	Reason for correction: calculated incorrectly
C3	Reason for correction: needs to be rechecked
C4	Reason for correction: data not usable
DO	Diluted out
E	Exceeds linear range
F	Estimated value
G1	Includes a wide range of hydrocarbons which does not match our gasoline standard
G10	Includes a match to hydrocarbon profiles within the range of mineral spirits
G11	Includes a match to hydrocarbon profiles within the range of JP-4
G12	Pattern does not match the gasoline standard; the carbon range for this sample is consistent with JP8
G13	Closely resembles the hydrocarbon profile of aviation gasoline
G14	Analyte concentration may be biased due to carry over
G2	Closely resembles the boiling point hydrocarbon profile consistent with weathered gasoline
G3	Includes higher boiling hydrocarbons
G4	Includes dominant peak(s) not indicative of petroleum hydrocarbons
G5	Is mainly dominant peak(s) not indicative of petroleum hydrocarbons
G6	Contains recognizable contaminant peak(s) which has been removed from quantitation
G7	Is mainly a match to hydrocarbons within the range of gasoline
G8	Closely resembles the boiling point hydrocarbon profile consistent with weathered gasoline
G9	Includes hydrocarbons within the range of kerosene
J	Estimated value
M	Matrix effect
MI1	Manual integration: integration does not follow baseline
MI2	Manual integration: non-target peak interference
MI3	Manual integration: to split a peak that was integrated as one peak by the computer.
MI4	Manual integration: to integrate a split peak
MI5	Manual integration: the whole peak or part of the peak was not integrated
MI6	Manual integration: computer integrated wrong peak
MI7	Manual integration: other – (See case narrative)
MDL	Method detection limit
ND	Not detected
NT	Non-target
Q	Acceptance criteria not met
T1 I	Includes wide range of hydrocarbons not indicative of diesel
T1 M	Is mainly wide range of hydrocarbons not necessarily indicative of diesel
T2 I	Includes lower boiling hydrocarbons, i.e. mineral spirits, kerosene, stoddard solvent, white gas
T2 M	Is mainly lower boiling hydrocarbons, i.e. mineral spirits, kerosene, stoddard solvent, white gas
T3 I	Includes higher boiling hydrocarbons, i.e. asphaltene, waster oil, motor oil, or weathered diesel fuel
T3 M	Is mainly,higher boiling hydrocarbons, i.e. asphaltene, waster oil, motor oil, or weathered diesel fuel
T4 I	Includes dominant peak(s) not indicative of hydrocarbons
T4 M	Is mainly dominant peak(s) not indicative of hydrocarbons
T5	Contains recognizable contaminant peak(s) which has been removed from quantitation
T6	Is mainly a match to hydrocarbons within range of diesel fuel
T7	Closely resembles the boiling point hydrocarbon profile consistent with diesel fuel
T8	Includes a match to hydrocarbon profiles within range of diesel and kerosene fuel
T9 I	Includes non-diesel hydrocarbons within boiling point range of diesel fuel
T9 M	Is mainly non-diesel hydrocarbons within boiling point range of diesel fuel
U	Not detected
Y	Percent difference between primary and confirmation column > 40%

CHAIN OF CUSTODY,

ARF, CRF, AND

CLIENT COMMUNICATION

APPL - Analysis Request Form 75351

Client: Element Environmental
Address: 98-030 Hekaha St., Unit 9
Aiea, HI 96701
Attn: Steve Spengler
Phone: 808-488-1200 Fax: 808-488-1300
Job: MCBH UST KB-100 SI / 130034
PO #: 130034
Chain of Custody (Y/N): Y # 48043
RAD Screen (Y/N): Y pH (Y/N): Y
Turn Around Type: 14 DAYS

Received by: YL
Date Received: 01/14/15 Time: 10:25
Delivered by: FED EX
Shuttle Custody Seals (Y/N): Y Time Zone: -10
Chest Temp(s): 3.5,3.0°C
Color: VOA,E-Brn,O-OrgGrn
Samples Chilled until Placed in Refrig/Freezer: Y
Project Manager: Cynthia Clark
QC Report Type: DVP4/NEDD/HI
Due Date: 01/28/15

Comments:
login to sspengler@e2hl.com & mheskett@e2hl.com
1 hard copy to LDC, 1 labeled CD to Steve
Guidance: DOD QSM v4.2; use DOD forms LOQ/LOD database/DL

EDD: NEDD/NIRIS and APPL Excel to sspengler@ mheskett@e2hl.com & akong@lab-data.com

Sample Distribution:
GC: 8-$DROCT30S, 2-$DROWCT008
Extractions: 8-_SON004, 2-_SEP011
VOA: 8-$86BKB91S, 3-$86BKB91W
Metals: 8-$62A14S(Pb), 2-$62A14W(Pb)
Wetlab: 8-MOIST
Other: 8-_M3050, 8-_M3051A, 2-_M3015

Charges:

Invoice To:

	Client ID	APPL ID	Sampled	Analyses Requested
1.	EKB100001	AZ09545S	01/13/15 10:23	$62A14S(Pb), $86BKB91S, $DROCT30S, MOIST
2.	EKB100002	AZ09546S	01/13/15 10:38	$62A14S(Pb), $86BKB91S, $DROCT30S, MOIST
3.	EKB100003	AZ09547S	01/13/15 10:51	$62A14S(Pb), $86BKB91S, $DROCT30S, MOIST
4.	EKB100004	AZ09548S	01/13/15 10:58	$62A14S(Pb), $86BKB91S, $DROCT30S, MOIST

Note: All times, excluding sample collection times, are Pacific Time Zone unless noted otherwise. Collection times are in: -10 UTC

5.	EKB100005		AZ09549S	01/13/15 11:12	$62A14S(Pb), $86BKB91S, $DROCT30S, MOIST
6.	EKB100006		AZ09550S	01/13/15 11:15	$62A14S(Pb), $86BKB91S, $DROCT30S, MOIST
7.	EKB100007		AZ09551S	01/13/15 11:19	$62A14S(Pb), $86BKB91S, $DROCT30S, MOIST
8.	EKB100008	ms/msd	AZ09552S	01/13/15 11:37	$62A14S(Pb), $86BKB91S, $DROCT30S, MOIST
9.	EKB100009		AZ09553W	01/13/15 13:50	$62A14W(Pb), $86BKB91W, $DROWCT008
10.	EKB100010		AZ09554W	01/13/15 14:00	$62A14W(Pb), $86BKB91W, $DROWCT008
11.	TRIP BLANK-01		AZ09555W	01/13/15 00:01	$86BKB91W

APPL Sample Receipt Form

ARF# **75351**

Sample	Container Type	Count	pH
AZ09545	21 8oz Jar	1	NA
	42 40mL VOA, MeOH prsvd	1	NA
	45 40mL VOA, BISULF w/stirb	2	NA
AZ09546	21 8oz Jar	1	NA
	42 40mL VOA, MeOH prsvd	1	NA
	45 40mL VOA, BISULF w/stirb	2	NA
AZ09547	21 8oz Jar	1	NA
	42 40mL VOA, MeOH prsvd	1	NA
	45 40mL VOA, BISULF w/stirb	2	NA
AZ09548	21 8oz Jar	1	NA
	42 40mL VOA, MeOH prsvd	1	NA
	45 40mL VOA, BISULF w/stirb	2	NA
AZ09549	21 8oz Jar	1	NA
	42 40mL VOA, MeOH prsvd	1	NA
	45 40mL VOA, BISULF w/stirb	2	NA
AZ09550	21 8oz Jar	1	NA
	42 40mL VOA, MeOH prsvd	1	NA
	45 40mL VOA, BISULF w/stirb	2	NA
AZ09551	21 8oz Jar	1	NA
	42 40mL VOA, MeOH prsvd	1	NA
	45 40mL VOA, BISULF w/stirb	2	NA
AZ09552	21 8oz Jar	3	NA
	42 40mL VOA, MeOH prsvd	3	NA
	45 40mL VOA, BISULF w/stirb	6	NA
AZ09553	6 PL 500mL - HNO3	1	1.7
	15 VOAs - NP	3	NA
	17 Amber Liter	4	NA
AZ09554	6 PL 500mL - HNO3	1	1.7
	15 VOAs - NP	3	NA
	17 Amber Liter	4	NA
AZ09555	15 VOAs - NP	1	NA

Sample	Container Type	Count	pH

APPL LABS

APPL, Inc.
908 N Temperance Ave
Clovis, CA 93611

Phone: (559) 275-2175
Fax: (559) 275-4422

CHAIN OF CUSTODY RECORD

75351 3.5°C 3.0°C 2 coolers in shipment

C.O.C. 48043

Report to: PLEASE PRINT

Company Name: ELEMENT ENVIRONMENTAL, LLC Phone: (808) 488-1200

Address: 98-030 HEKAHA STREET, UNIT 9
AIEA, HI 96701 Fax: (808) 488-1300 EMAIL sspengler@ezhi.com

Attn: STEVEN SPENGLER CELL (808) 869-3953

Invoice to: PLEASE PRINT

Company Name: SAME AS "REPORT TO:" Phone:

Address: Fax:

Attn:

Project Name/Number: MCBH UST KB-100 / 130034 SI

Sampler (Print): Matt Neal

Purchase Order Number: 130034

Sampler (Signature):

Date Shipped: 1-13-15

Carrier: FEDEX

Waybill No.:

Comments:

Sample Identification	Location	Date Collected	Time Collected	Time Zone	No. of Containers	Matrix: Aq	Matrix: Sed.	Matrix: Soil	TPH-DRO/RRO 8015	VOCs 8260	Lead 6010									Comments
EKB100001	MCBH UST KB-100	1-13-15	1023	HST	4			X	X	X	X									
EKB100002	MCBH UST KB-100	1-13-15	1038	HST	4			X	X	X	X									
EKB100003	MCBH UST KB-100	1-13-15	1051	HST	4			X	X	X	X									
EKB100004	MCBH UST KB-100	1-13-15	1058	HST	4			X	X	X	X									
EKB100005	MCBH UST KB-100	1-13-15	1112	HST	4			X	X	X	X									
EKB100006	MCBH UST KB-100	1-13-15	1115	HST	4			X	X	X	X									
EKB100007	MCBH UST KB-100	1-13-15	1119	HST	4			X	X	X	X									
EKB100008	MCBH UST KB-100	1-13-15	1137	HST	12			X	X	X	X									MS/MSD
EKB100009	MCBH UST KB-100	1-13-15	1350	HST	8	X			X	X	X									
EKB100010	MCBH UST KB-100	1-13-15	1400	HST	8	X			X	X	X									
TRIP BLANK - 01	MCBH UST KB-100	—	—	—	3	X				X										

Shuttle Temperature:

Turnaround Requested: Check one
☒ Standard 2-3 wk ☐ One week ☐ 24/48 Hrs. ☐ Other

Sample Disposal:
☐ Return to client ☒ Disposal by Lab (30-day retention)

Relinquished by sampler:	Date	Time	Received by:	Relinquished by:	Date	Time	Received by:
	1/13/15	1405					

Relinquished by:	Date	Time	Received by:	Relinquished by:	Date	Time	Received at lab by:
					1/14/15	10:25	Yang Lo

White: Return to client with report Yellow: Laboratory Copy Pink: Sampler

See reverse side for Container Preservative and Sampling Information

COOLER RECEIPT FORM **ARF: 75351**

1) Project: MCBH UST KB-100 SI / 130034 Date Received: 01/14/15

2) Coolers: Number of Coolers: 2

3) YES Were custody seals present and intact?
How many? 4 Name/Date on seal? SEE BELOW

4) YES Was there a shipping slip? Carrier name: FED EX

5) Type of packing in cooler: X bubble wrap ___ popcorn ___ foam X plastic bags
X wet ice ___ dry ice ___ no ice ___ other

6) YES Were cooler temperatures acceptable?

7) Serial number of certified NIST thermometer use J5297

8) Cooler temp(s): In °C

1: 3.5	2: 3.0	3:	4:	5:	6:
7:	8:	9:	10:	11:	12:

Chain of custody:

9) YES Was a chain of custody received?

10) YES Were the custody papers complete/signed in the appropriate places?

Sample Labels:

11) YES Were all sample labels complete (sample ID, date/time of sampling, etc.)?

12) YES Did all container labels agree with custody papers?

Sample Containers:

13) YES Were all containers sealed in separate bags?

14) YES Did all containers arrive in good condition:(unbroken, no leakage, no cracked/broken lids)?

15) YES Were correct containers and preservatives used for the tests indicated?

16) YES Was a sufficient amount of sample sent for tests indicated?

17) Yes Were bubbles present in volatile samples?
If yes, the following were received with air bubbles:
Larger than a pea:
Smaller than a pea: AZ09555W01

Preservation Hold time:

18) Yes Was a sufficient amount of holding time remaining to analyze the samples?

19) Yes Was the pH taken of all non-VOA preserved samples and written on the sample container?

20) Yes Was the pH of acid preserved non-VOA samples < 2?

21) NA Was the pH of sodium hydroxide preserved samples for Cyanide > 12 and Sulfide >9?

22) NO Were unpreserved VOA Vials received?

23) NA Are unpreserved VOA vials noted in the ADD TEST FIELD on the ARF?
pH strip lot number: 90B05
Lab notified if pH was not adequate:

CUSTODY SEAL
Initials: WW
Date: 1/15/15

Notes/Deficiencies:

Personnel receiving samples: BB Second reviewer: YL
Personnel labeling samples:
Project manager notified: Date/Time of notification
Name of client notified: Date/Time of notification

EPA 8015 Modified
Total Petroleum Hydrocarbons

EPA 8015 Modified
Total Petroleum Hydrocarbons
QC Summary

Method Blank
TPHe Soil EPA 8015C

APPL Inc.
908 North Temperance Avenu
Clovis, CA 93611

Blank Name/QCG: **150115S-09552 - 193919**
Batch ID: #DROCT-150115B

Sample Type	Analyte	Result	LOQ	LOD	DL	Units	Extraction Date	Analysis Date
BLANK	TPH-DRO (C10-C24)	1.00 U	5.0	1.00	0.65	mg/kg	1/15/2015	1/28/2015
BLANK	TPH-LRO (C24-C36)	10.0 U	50	10.0	3.5	mg/kg	1/15/2015	1/28/2015
BLANK	SURROGATE: OCTACOSANE (S)	120	47-140			%	1/15/2015	1/28/2015
BLANK	SURROGATE: ORTHO-TERPHEN	91.7	58-128			%	1/15/2015	1/28/2015

Quant Method: CTO121.M
Run #: 127053
Instrument: Apollo
Sequence: 150127
Initials: LA

GC SC-Blank-REG MDLs
Printed: 1/30/2015 1:42:34 PM

Method Blank
TPH-d Water EPA 8015C

APPL Inc.
908 North Temperance Avenu
Clovis, CA 93611

Blank Name/QCG: **150115W-09553 - 193933**
Batch ID: #DROWC-150115A

Sample Type	Analyte	Result	LOQ	LOD	DL	Units	Extraction Date	Analysis Date
BLANK	TPH-DRO (C10-C24)	50.0 U	150	50.0	40.4	ug/L	1/15/2015	1/23/2015
BLANK	TPH-LRO (C24-C36)	500.0 U	500	500.0	106.0	ug/L	1/15/2015	1/23/2015
BLANK	SURROGATE: OCTACOSANE (S)	92.3	28-142			%	1/15/2015	1/23/2015
BLANK	SURROGATE: ORTHO-TERPHEN	68.8	57-132			%	1/15/2015	1/23/2015

Quant Method:CTO121.M
Run #:121061
Instrument:Apollo
Sequence:150121
Initials:LA

GC SC-Blank-REG MDLs
Printed: 1/30/2015 1:42:34 PM

Form 2 & 8

Surrogate Recovery

Lab Name: APPL, Inc. SDG No: 75351

Case No: 75351 Date Analyzed: 1/28/2015

Matrix: SOIL Instrument: Apollo

APPL ID.	Client Sample No.	SURROGATE: OCTACOSANE (S)			SURROGATE: ORTHO-TERPHENYL (S)		
		Limits	Result	Qualifier	Limits	Result	Qualifier
150115B-BLK	Blank	47-140	120		58-128	91.7	
AZ09545	EKB100001	47-140	90.9		58-128	69.1	
AZ09546	EKB100002	47-140	96.3		58-128	73.1	
AZ09547	EKB100003	47-140	105		58-128	79.5	
AZ09548	EKB100004	47-140	96.4		58-128	73.2	
AZ09549	EKB100005	47-140	93.1		58-128	71.3	
AZ09550	EKB100006	47-140	100		58-128	76.2	
AZ09551	EKB100007	47-140	97.0		58-128	74.8	
AZ09552-MS	Matrix Spike	47-140	117		58-128	89.3	
AZ09552-MSD	Matrix SpikeD	47-140	99.7		58-128	79.3	
AZ09552	EKB100008	47-140	109		58-128	70.9	
150115B-LCS	Lab Control Spike	47-140	90.6		58-128	80.2	

Comments: Batch: #DROCT-150115B

Form 2 & 8

Surrogate Recovery

Lab Name: APPL, Inc. SDG No: 75351

Case No: 75351 Date Analyzed: 1/23/2015

Matrix: WATER Instrument: Apollo

APPL ID.	Client Sample No.	SURROGATE: OCTACOSANE (S)			SURROGATE: ORTHO-TERPHENYL (S)		
		Limits	Result	Qualifier	Limits	Result	Qualifier
150115A-BLK	Blank	28-142	92.3		57-132	68.8	
150115A-LCS	Lab Control Spike	28-142	89.3		57-132	81.3	
AZ09553	EKB100009	28-142	87.4		57-132	66.4	
AZ09554	EKB100010	28-142	89.3		57-132	67.6	

Comments: Batch: #DROWC-150115A

Laboratory Control Spike Recovery
TPHe Soil EPA 8015C

APPL ID: **150115S-09552 LCS - 193919**
Batch ID: #DROCT-150115B

APPL Inc.
908 North Temperance Avenue
Clovis, CA 93611

Compound Name	Spike Level mg/kg	SPK Result mg/kg	SPK % Recovery	Recovery Limits
TPH-DRO (C10-C24)	39.7	36.9	92.9	64-122
TPH-LRO (C24-C36)	39.8	33.3	83.7	50-150
SURROGATE: OCTACOSANE (S)	2.98	2.70	90.6	47-140
SURROGATE: ORTHO-TERPHENYL (S)	2.98	2.39	80.2	58-128

Comments: _____

Primary	SPK
Quant Method :	CTO121.M
Extraction Date :	1/15/2015
Analysis Date :	1/30/2015
Instrument :	Apollo
Run :	127180
Initials :	LA

Printed: 1/30/2015 1:42:27 PM
APPL Standard LCS

Laboratory Control Spike Recovery
TPH-d Water EPA 8015C

APPL ID: **150115W-09553 LCS - 193933**
Batch ID: #DROWC-150115A

APPL Inc.
908 North Temperance Avenue
Clovis, CA 93611

Compound Name	Spike Level ug/L	SPK Result ug/L	SPK % Recovery	Recovery Limits
TPH-DRO (C10-C24)	2000	1890	94.5	61-143
TPH-LRO (C24-C36)	2000	1790	89.5	61-143
SURROGATE: OCTACOSANE (S)	150	134	89.3	28-142
SURROGATE: ORTHO-TERPHENYL (S)	150	122	81.3	57-132

Comments: _____

Primary	SPK
Quant Method :	CTO121.M
Extraction Date :	1/15/2015
Analysis Date :	1/23/2015
Instrument :	Apollo
Run :	121062
Initials :	LA

Printed: 1/30/2015 1:42:27 PM
APPL Standard LCS

Matrix Spike Recoveries

TPHe Soil EPA 8015C

APPL ID: **150115S-09552 MS - 193919**
Batch ID: #DROCT-150115B
Sample ID: AZ09552
Client ID: EKB100008

APPL Inc.
908 North Temperance Avenue
Clovis, CA 93611

Compound Name	Spike Lvl mg/kg	Matrix Result mg/kg	SPK Result mg/kg	DUP Result mg/kg	SPK % Recovery	DUP % Recovery	Recovery Limits	RPD %	RPD Limits
TPH-DRO (C10-C24)	39.9	10	41.3	35.1	78.4	62.9 #	64-122	16.2	30
TPH-LRO (C24-C36)	39.8	48	65.5	68.3	44.0 #	51.0	50-150	4.2	30
SURROGATE: OCTACOSANE (S)	3.00	NA	3.52	2.99	117	99.7	47-140		
SURROGATE: ORTHO-TERPHENYL (S)	3.00	NA	2.68	2.38	89.3	79.3	58-128		

= Recovery is outside QC limits.

Comments:

Primary	SPK	DUP
Quant Method :	CTO121.M	CTO121.M
Extraction Date :	1/15/2015	1/15/2015
Analysis Date :	1/28/2015	1/28/2015
Instrument :	Apollo	Apollo
Run :	127070	127071
Initials :	LA	

Printed: 1/30/2015 1:42:24 PM
APPL MSD SCII

EPA 8015C-e

Form 4

Blank Summary

Lab Name: APPL, Inc.
SDG No: 75351
Case No: 75351
Date Analyzed: 1/23/2015
Matrix: WATER
Instrument: Apollo
Blank ID: 150115A-BLK
Time Analyzed: 0406

APPL ID.	Client Sample No.	File ID.	Date Analyzed
150115A-BLK	Blank	121061	1/23/2015 0406
150115A-LCS	Lab Control Spike	121062	1/23/2015 0430
AZ09553	EKB100009	121083	1/23/2015 1254
AZ09554	EKB100010	121084	1/23/2015 1318

Comments: Batch: #DROWC-150115A

Printed: 1/30/2015 1:42:18 PM
Form 4, Blank Summary

EPA 8015C-e

Form 4

Blank Summary

Lab Name: APPL, Inc. SDG No: 75351

Case No: 75351 Date Analyzed: 1/28/2015

Matrix: SOIL Instrument: Apollo

Blank ID: 150115B-BLK Time Analyzed: 0752

APPL ID.	Client Sample No.	File ID.	Date Analyzed
150115B-BLK	Blank	127053	1/28/2015 0752
AZ09545	EKB100001	127056	1/28/2015 0904
AZ09546	EKB100002	127064	1/28/2015 1219
AZ09547	EKB100003	127065	1/28/2015 1244
AZ09548	EKB100004	127066	1/28/2015 1308
AZ09549	EKB100005	127067	1/28/2015 1333
AZ09550	EKB100006	127068	1/28/2015 1358
AZ09551	EKB100007	127069	1/28/2015 1423
150115B-MS	Matrix Spike	127070	1/28/2015 1447
150115B-MSD	Matrix SpikeD	127071	1/28/2015 1512
AZ09552	EKB100008	127076	1/28/2015 1716
150115B-LCS	Lab Control Spike	127180	1/30/2015 1122

Comments: Batch: #DROCT-150115B

EPA 8015 Modified
Total Petroleum Hydrocarbons
Sample Data

TPHe Soil EPA 8015C

Element Environmental
98-030 Hekaha St., Unit 9
Aiea, HI 96701

APPL Inc.
908 North Temperance Avenue
Clovis, CA 93611

Attn: Steve Spengler
Project: MCBH UST KB-100 SI / 130034
Sample ID: EKB100001
Sample Collection Date: 1/13/2015

ARF: 75351
APPL ID: AZ09545
QCG: #DROCT-150115B-193919

Method	Analyte	Result	LOQ	LOD	DL	Units	Extraction Date	Analysis Date
(Solid Concentrations and Limits have been adjusted to reflect 29.7 Percent Moisture.)								
EPA 8015C-	TPH-DRO (C10-C24)	1.40 U	7.1	1.40	0.92	mg/kg	1/15/2015	1/28/2015
EPA 8015C-	TPH-LRO (C24-C36)	14.0 U	71	14.0	5.0	mg/kg	1/15/2015	1/28/2015
EPA 8015C-	SURROGATE: OCTACOSANE (S)	90.9	47-140			%	1/15/2015	1/28/2015
EPA 8015C-	SURROGATE: ORTHO-TERPHENYL (S	69.1	58-128			%	1/15/2015	1/28/2015

Quant Method: CTO121.M
Run #: 127056
Instrument: Apollo
Sequence: 150127
Dilution Factor: 1
Initials: LA

Printed: 1/30/2015 1:42:31 PM
APPL-F1-SC-MCRes/MCPQL-REG MDLs

Quantitation Report (QT Reviewed)

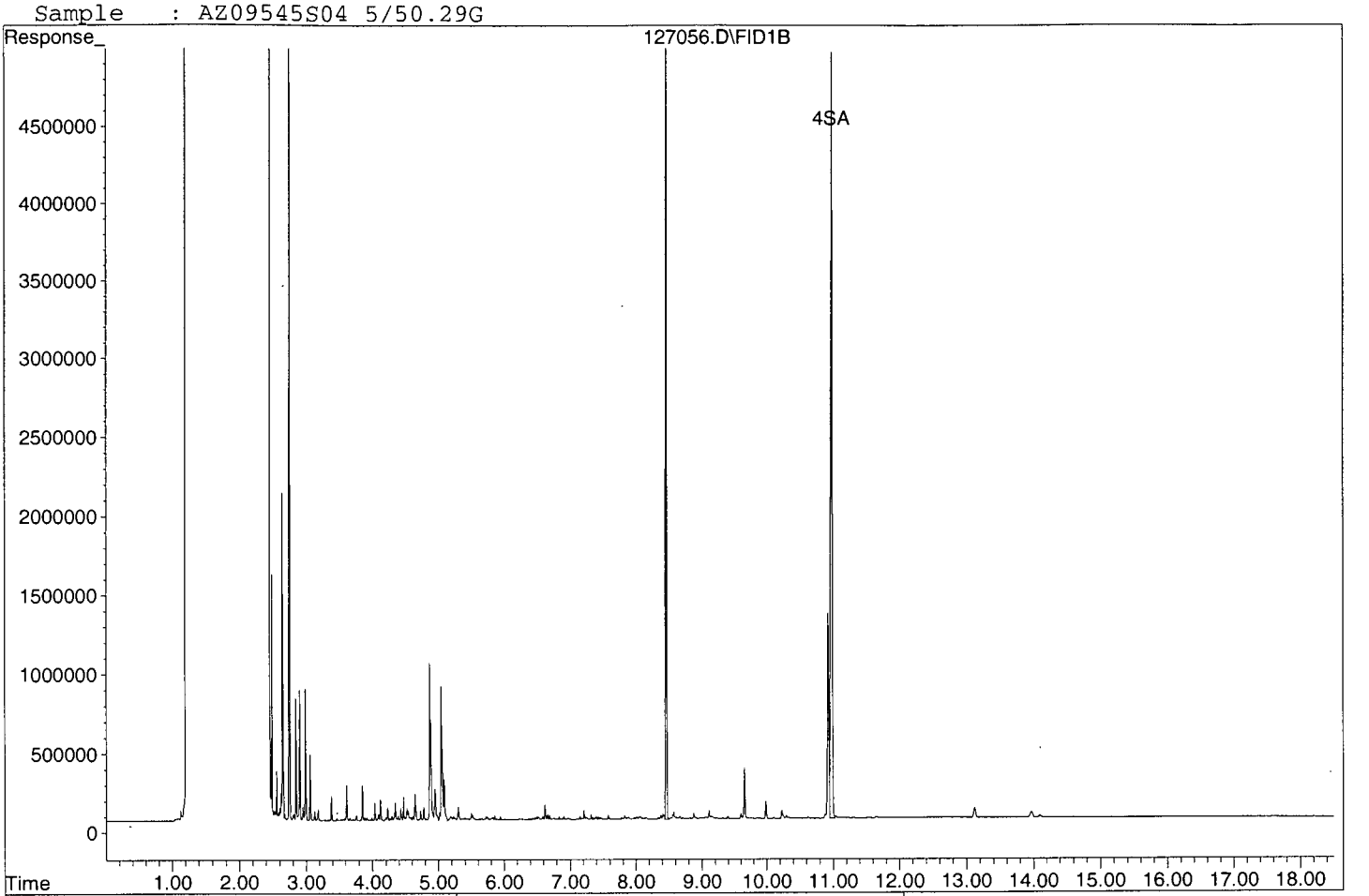
Data File : G:\APOLLO\DATA\150127\127056.D Vial: 56
Acq On : 1-28-15 9:04:55 Operator: lac
Sample : AZ09545S04 5/50.29G Inst : Apollo
Misc : Soil Multiplr: 99.42
IntFile : events.e
Quant Time: Jan 30 10:46 2015 Quant Results File: CTO121.RES

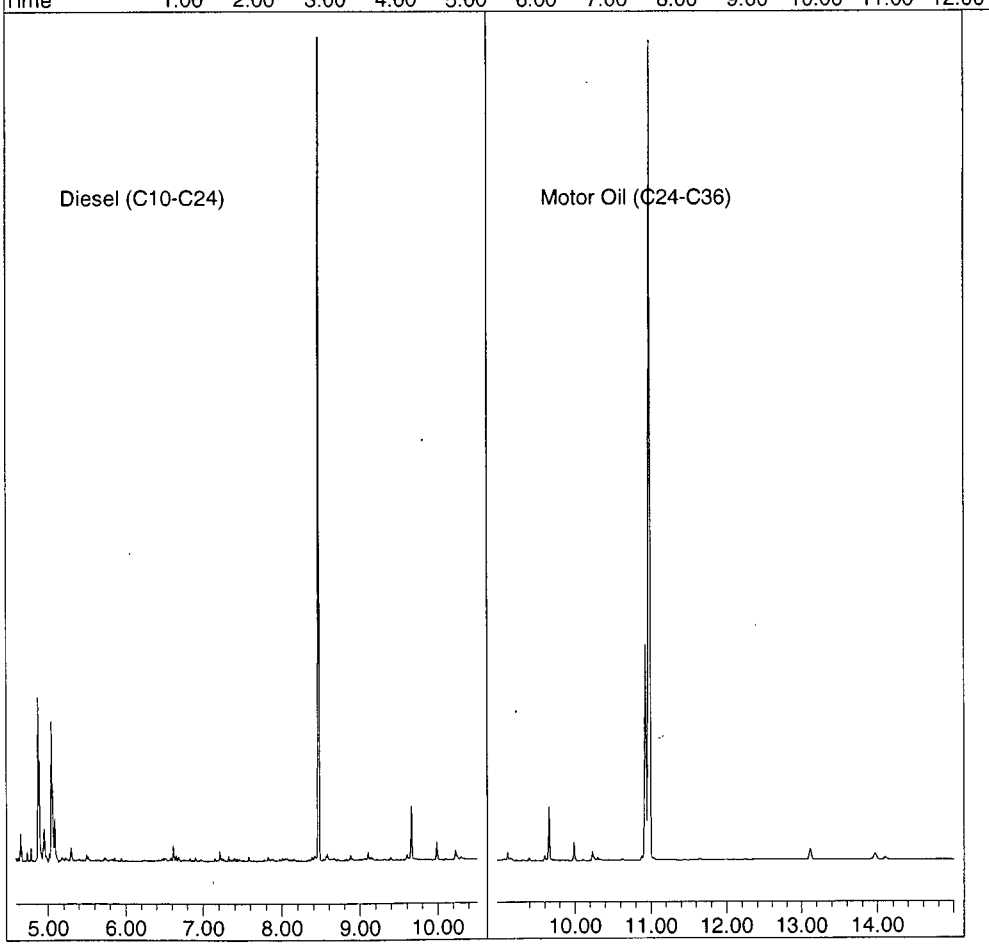
Method : G:\APOLLO\DATA\150121\CTO121.M (Chemstation Integrator)
Title : 8015 B&C
Last Update : Mon Jan 26 09:50:19 2015
Response via : Multiple Level Calibration

Volume Inj. : 2UL
Signal Phase : DB-5
Signal Info : FID02A

Compound	R.T.	Response	Conc Units
System Monitoring Compounds			
3) SA Ortho-Terphenyl(S)	8.47	77208452	2060.061 ppb
Surrogate Spike 2982.700		Recovery	= 69.07%
4) SA Octacosane(S)	10.98	73605880	2711.327 ppb
Surrogate Spike 2982.700		Recovery	= 90.90%
Target Compounds			

Data File: G:\APOLLO\DATA\150127\127056.D
Sample : AZ09545S04 5/50.29G





TPHe Soil EPA 8015C

Element Environmental
98-030 Hekaha St., Unit 9
Aiea, HI 96701

APPL Inc.
908 North Temperance Avenue
Clovis, CA 93611

Attn: Steve Spengler
Project: MCBH UST KB-100 SI / 130034
Sample ID: EKB100002
Sample Collection Date: 1/13/2015

ARF: 75351
APPL ID: AZ09546
QCG: #DROCT-150115B-193919

Method	Analyte	Result	LOQ	LOD	DL	Units	Extraction Date	Analysis Date
(Solid Concentrations and Limits have been adjusted to reflect 32.8 Percent Moisture.)								
EPA 8015C-	TPH-DRO (C10-C24)	1.50 U	7.4	1.50	0.97	mg/kg	1/15/2015	1/28/2015
EPA 8015C-	TPH-LRO (C24-C36)	15.0 U	74	15.0	5.2	mg/kg	1/15/2015	1/28/2015
EPA 8015C-	SURROGATE: OCTACOSANE (S)	96.3	47-140			%	1/15/2015	1/28/2015
EPA 8015C-	SURROGATE: ORTHO-TERPHENYL (S	73.1	58-128			%	1/15/2015	1/28/2015

Quant Method: CTO121.M
Run #: 127064
Instrument: Apollo
Sequence: 150127
Dilution Factor: 1
Initials: LA

Printed: 1/30/2015 1:42:31 PM
APPL-F1-SC-MCRes/MCPQL-REG MDLs

Quantitation Report (QT Reviewed)

Data File : G:\APOLLO\DATA\150127\127064.D Vial: 64
Acq On : 1-28-15 12:19:32 Operator: lac
Sample : AZ09546S04 5/50.08G Inst : Apollo
Misc : Soil Multiplr: 99.84
IntFile : events.e
Quant Time: Jan 30 10:48 2015 Quant Results File: CTO121.RES

Method : G:\APOLLO\DATA\150121\CTO121.M (Chemstation Integrator)
Title : 8015 B&C
Last Update : Mon Jan 26 09:50:19 2015
Response via : Multiple Level Calibration

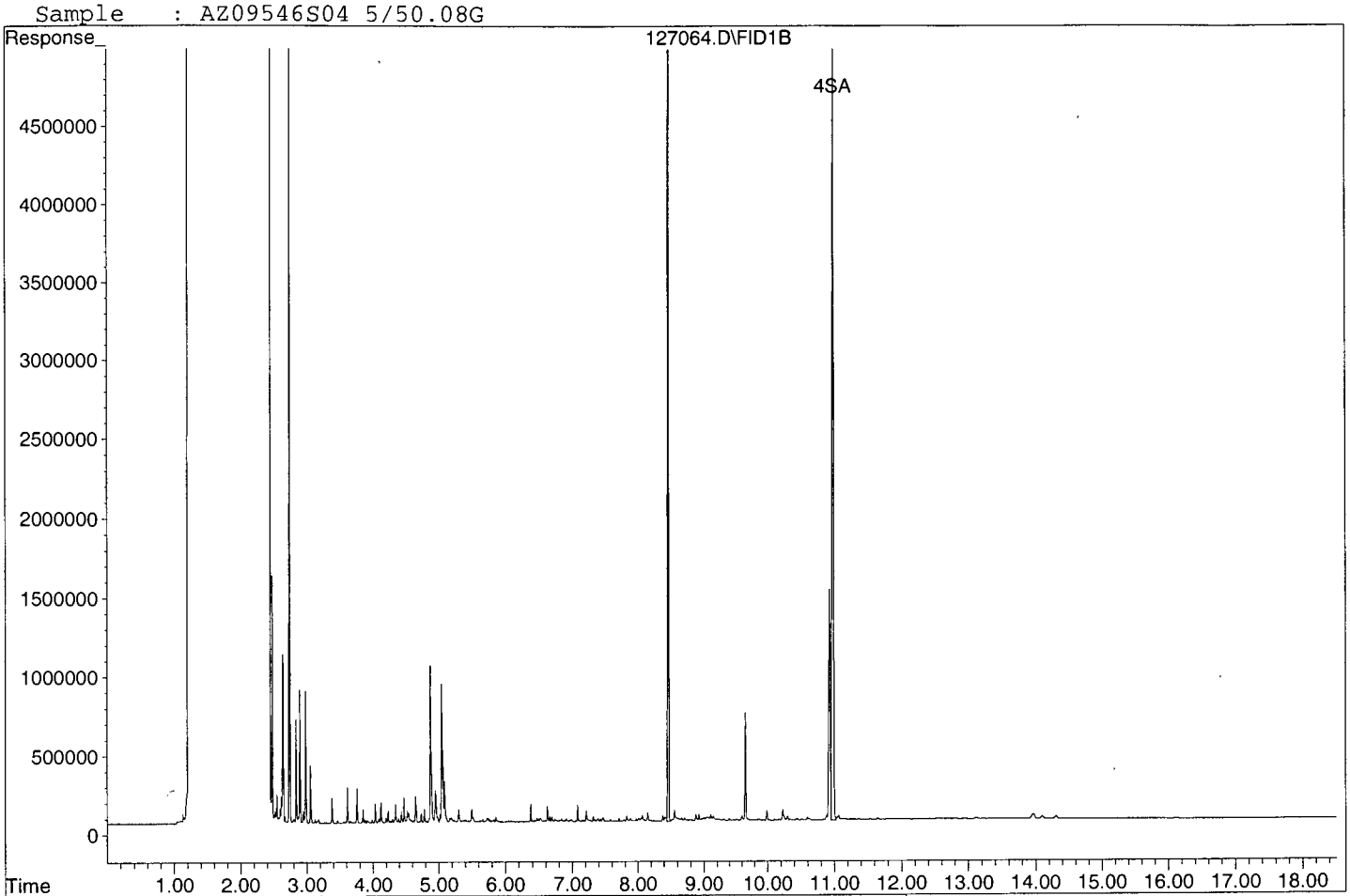
Volume Inj. : 2UL
Signal Phase : DB-5
Signal Info : FID02A

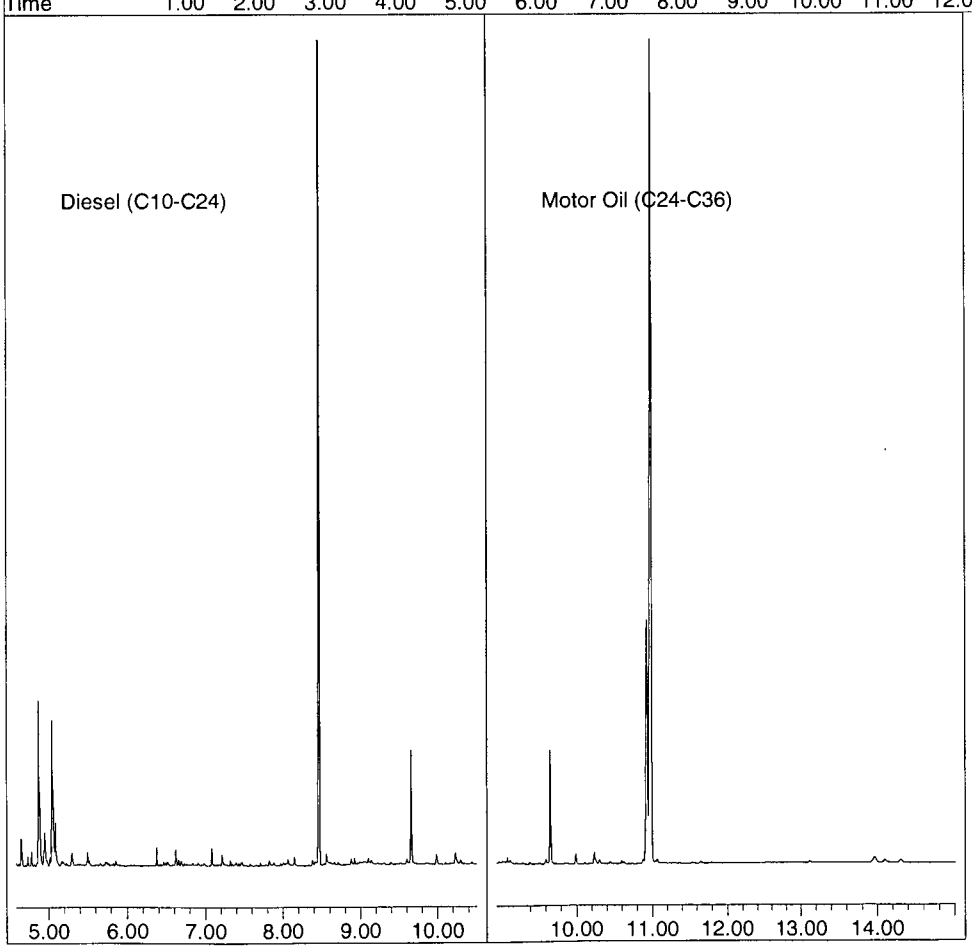
Compound	R.T.	Response	Conc Units
System Monitoring Compounds			
3) SA Ortho-Terphenyl(S)	8.47	81714271	2189.429 ppb
Surrogate Spike 2995.208		Recovery	= 73.10%
4) SA Octacosane(S)	10.99	77982170	2884.579 ppb
Surrogate Spike 2995.208		Recovery	= 96.31%

Target Compounds

Quantitation Report

Data File: G:\APOLLO\DATA\150127\127064.D
Sample : AZ09546S04 5/50.08G





TPHe Soil EPA 8015C

Element Environmental
98-030 Hekaha St., Unit 9
Aiea, HI 96701

APPL Inc.
908 North Temperance Avenue
Clovis, CA 93611

Attn: Steve Spengler
Project: MCBH UST KB-100 SI / 130034
Sample ID: EKB100003
Sample Collection Date: 1/13/2015

ARF: 75351
APPL ID: AZ09547
QCG: #DROCT-150115B-193919

Method	Analyte	Result	LOQ	LOD	DL	Units	Extraction Date	Analysis Date
(Solid Concentrations and Limits have been adjusted to reflect 39.1 Percent Moisture.)								
EPA 8015C-	TPH-DRO (C10-C24)	1.60 U	8.2	1.60	1.10	mg/kg	1/15/2015	1/28/2015
EPA 8015C-	TPH-LRO (C24-C36)	16.0 U	82	16.0	5.7	mg/kg	1/15/2015	1/28/2015
EPA 8015C-	SURROGATE: OCTACOSANE (S)	105	47-140			%	1/15/2015	1/28/2015
EPA 8015C-	SURROGATE: ORTHO-TERPHENYL (S	79.5	58-128			%	1/15/2015	1/28/2015

Quant Method: CTO121.M
Run #: 127065
Instrument: Apollo
Sequence: 150127
Dilution Factor: 1
Initials: LA

Printed: 1/30/2015 1:42:31 PM
APPL-F1-SC-MCRes/MCPQL-REG MDLs

Quantitation Report (QT Reviewed)

Data File : G:\APOLLO\DATA\150127\127065.D Vial: 65
Acq On : 1-28-15 12:44:10 Operator: lac
Sample : AZ09547S04 5/50.62G Inst : Apollo
Misc : Soil Multiplr: 98.78
IntFile : events.e
Quant Time: Jan 30 10:48 2015 Quant Results File: CTO121.RES

Method : G:\APOLLO\DATA\150121\CTO121.M (Chemstation Integrator)
Title : 8015 B&C
Last Update : Mon Jan 26 09:50:19 2015
Response via : Multiple Level Calibration

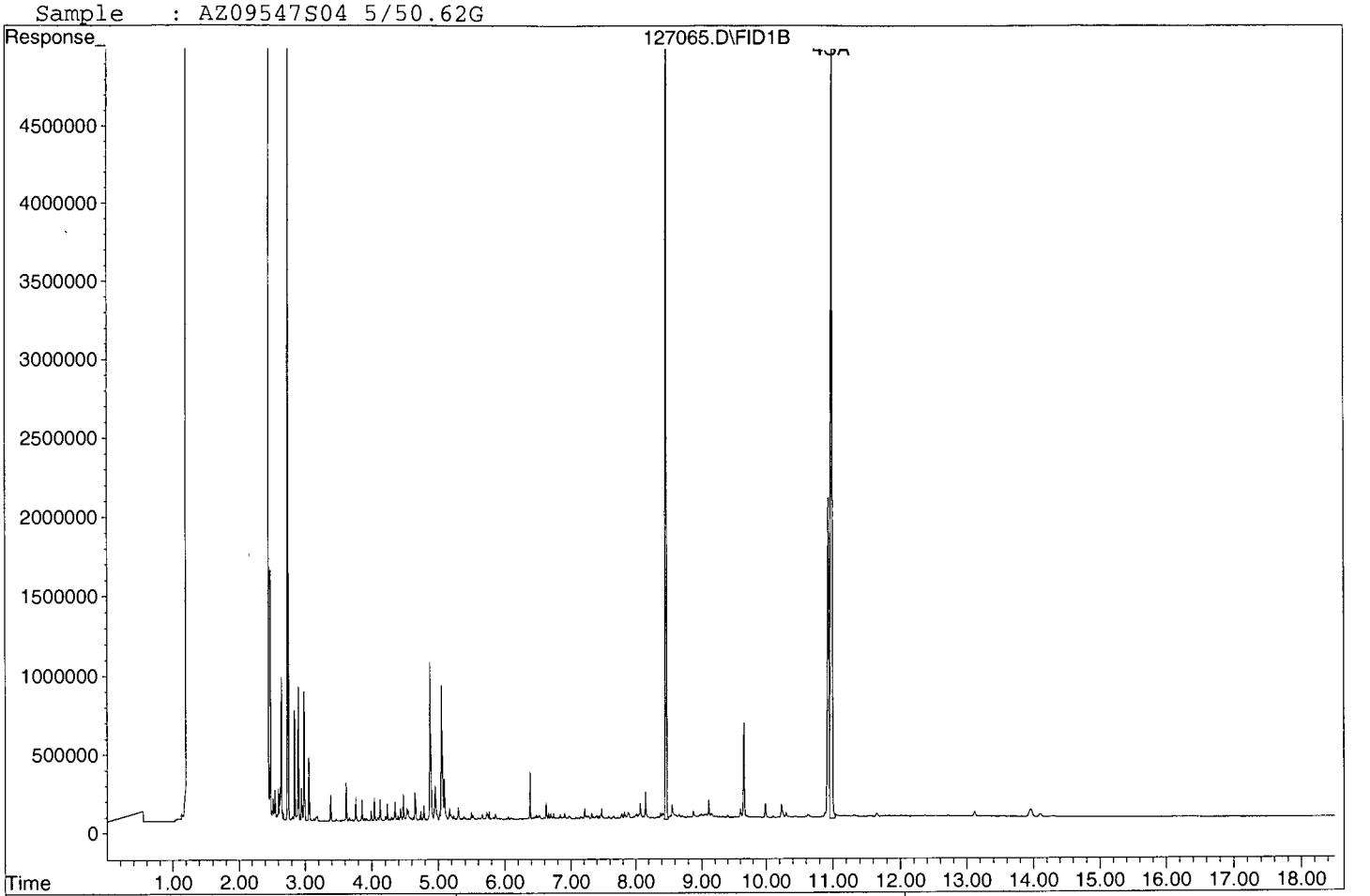
Volume Inj. : 2UL
Signal Phase : DB-5
Signal Info : FID02A

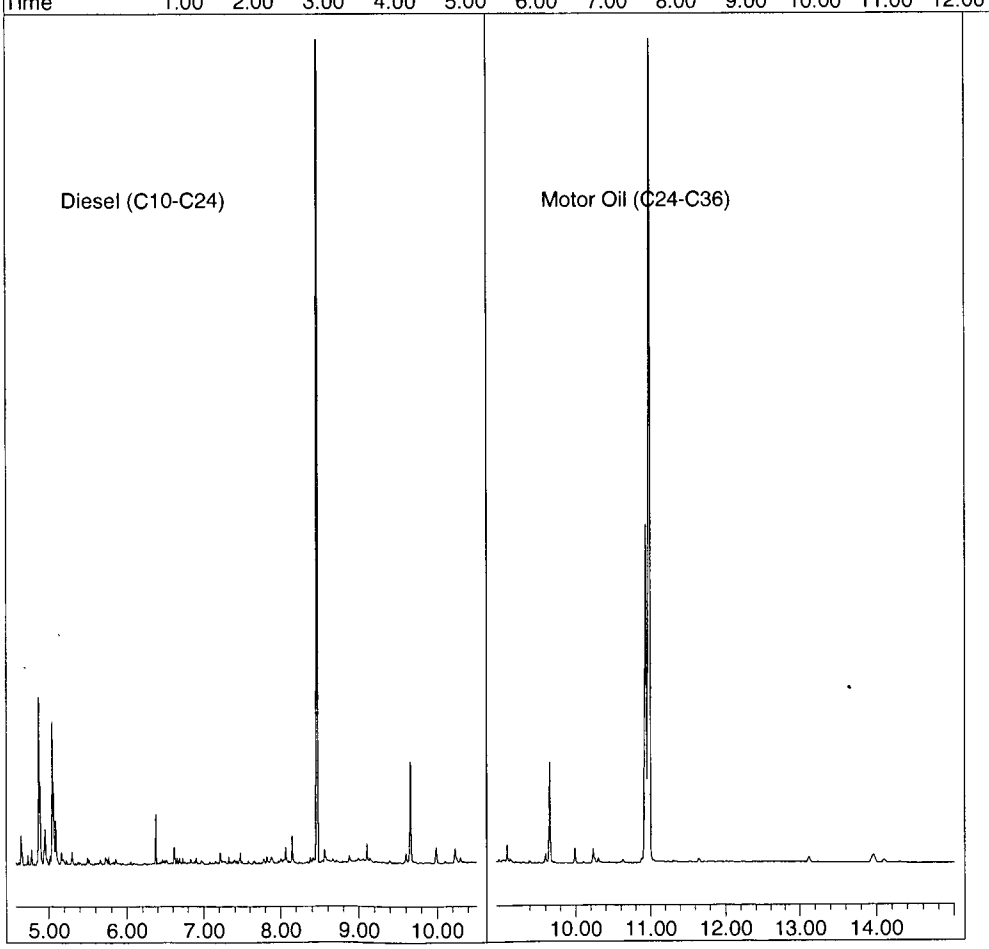
Compound	R.T.	Response	Conc Units
System Monitoring Compounds			
3) SA Ortho-Terphenyl(S)	8.47	88898890	2356.521 ppb
Surrogate Spike 2963.256		Recovery	= 79.52%
4) SA Octacosane(S)	10.99	84787478	3102.850 ppb
Surrogate Spike 2963.256		Recovery	= 104.71%

Target Compounds

Quantitation Report

Data File: G:\APOLLO\DATA\150127\127065.D
Sample : AZ09547S04 5/50.62G





TPHe Soil EPA 8015C

Element Environmental
98-030 Hekaha St., Unit 9
Aiea, HI 96701

APPL Inc.
908 North Temperance Avenue
Clovis, CA 93611

Attn: Steve Spengler
Project: MCBH UST KB-100 SI / 130034
Sample ID: EKB100004
Sample Collection Date: 1/13/2015

ARF: 75351
APPL ID: AZ09548
QCG: #DROCT-150115B-193919

Method	Analyte	Result	LOQ	LOD	DL	Units	Extraction Date	Analysis Date
(Solid Concentrations and Limits have been adjusted to reflect 32.7 Percent Moisture.)								
EPA 8015C-	TPH-DRO (C10-C24)	1.50 U	7.4	1.50	0.97	mg/kg	1/15/2015	1/28/2015
EPA 8015C-	TPH-LRO (C24-C36)	15.0 U	74	15.0	5.2	mg/kg	1/15/2015	1/28/2015
EPA 8015C-	SURROGATE: OCTACOSANE (S)	96.4	47-140			%	1/15/2015	1/28/2015
EPA 8015C-	SURROGATE: ORTHO-TERPHENYL (S	73.2	58-128			%	1/15/2015	1/28/2015

Quant Method: CTO121.M
Run #: 127066
Instrument: Apollo
Sequence: 150127
Dilution Factor: 1
Initials: LA

Printed: 1/30/2015 1:42:31 PM
APPL-F1-SC-MCRes/MCPQL-REG MDLs

Quantitation Report (QT Reviewed)

Data File : G:\APOLLO\DATA\150127\127066.D Vial: 66
Acq On : 1-28-15 13:08:57 Operator: lac
Sample : AZ09548S04 5/50.50G Inst : Apollo
Misc : Soil Multiplr: 99.01
IntFile : events.e
Quant Time: Jan 30 10:48 2015 Quant Results File: CTO121.RES

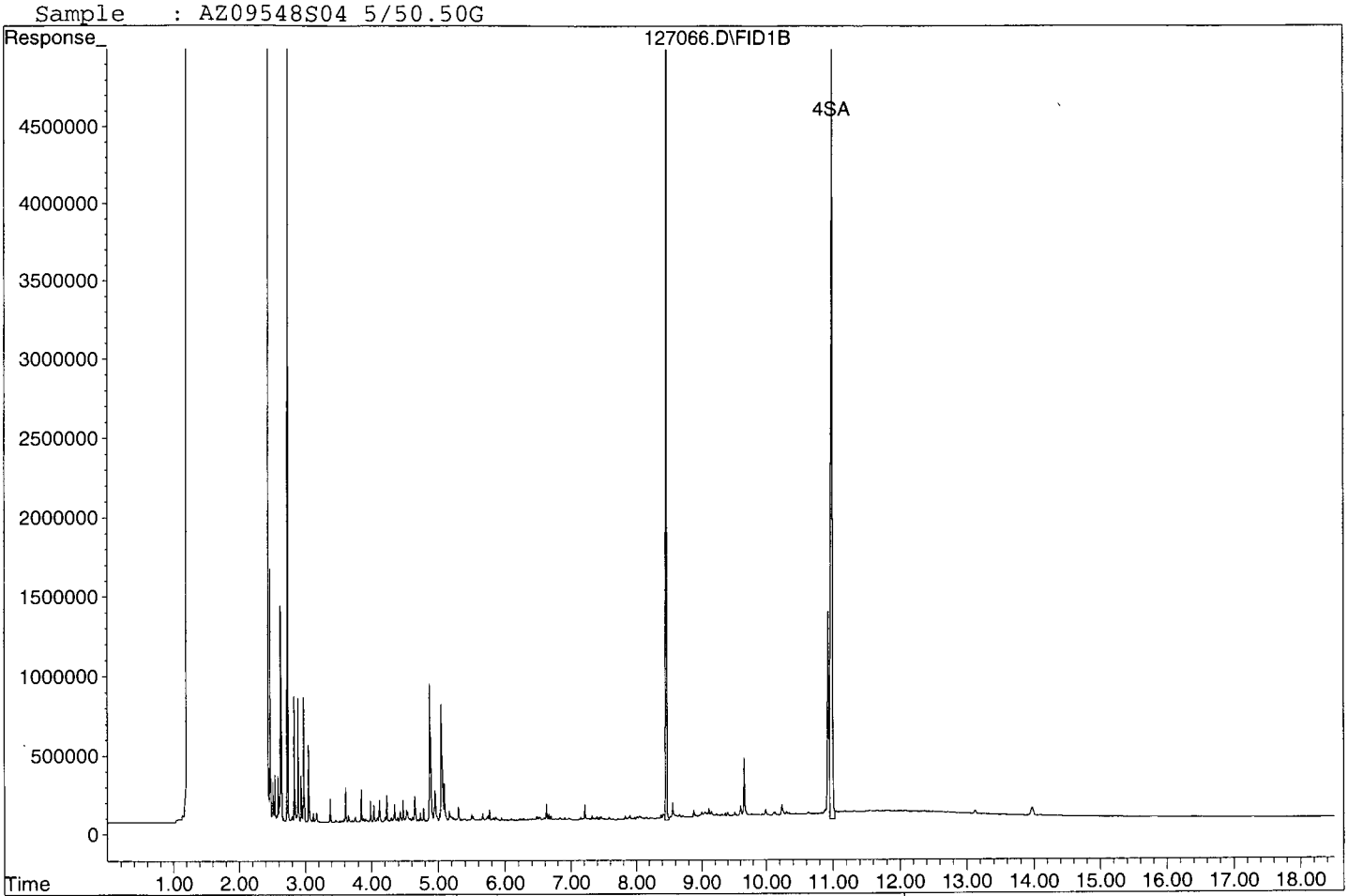
Method : G:\APOLLO\DATA\150121\CTO121.M (Chemstation Integrator)
Title : 8015 B&C
Last Update : Mon Jan 26 09:50:19 2015
Response via : Multiple Level Calibration

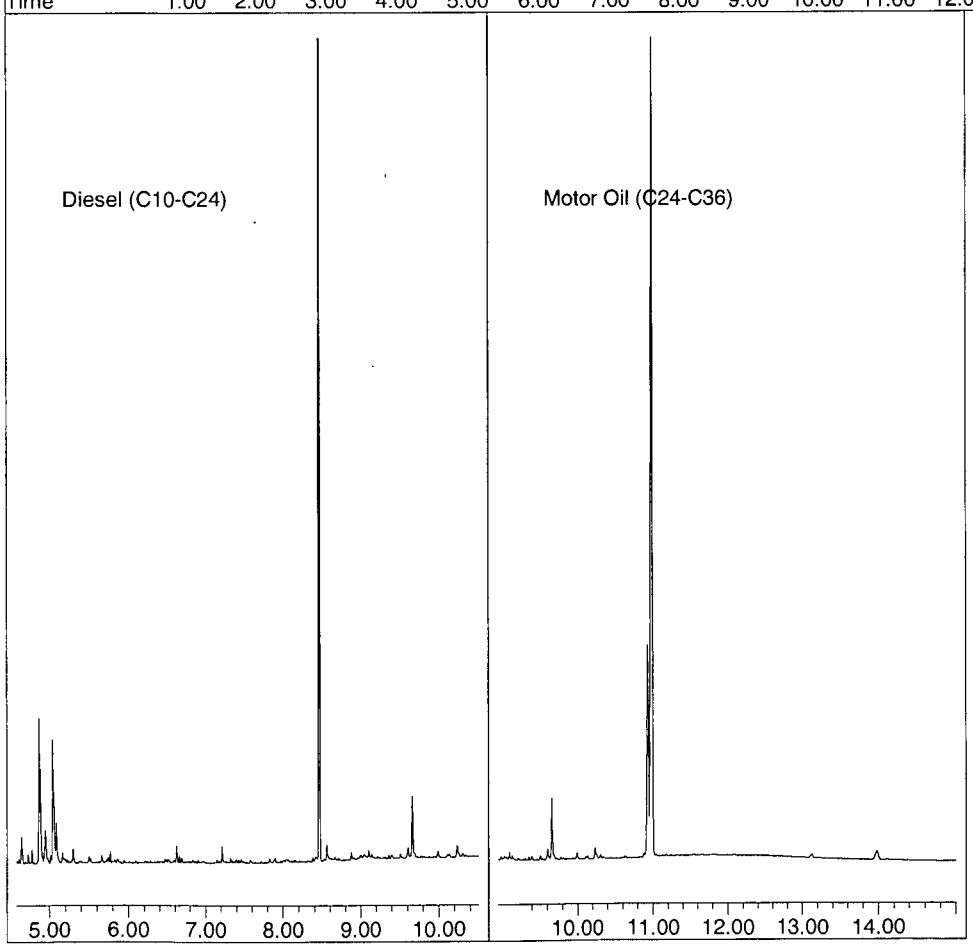
Volume Inj. : 2UL
Signal Phase : DB-5
Signal Info : FID02A

Compound	R.T.	Response	Conc Units
System Monitoring Compounds			
3) SA Ortho-Terphenyl(S)	8.47	81850148	2174.830 ppb
Surrogate Spike 2970.297		Recovery	= 73.22%
4) SA Octacosane(S)	10.99	78053078	2863.188 ppb
Surrogate Spike 2970.297		Recovery	= 96.39%
Target Compounds			

Quantitation Report

Data File: G:\APOLLO\DATA\150127\127066.D
Sample : AZ09548S04 5/50.50G





TPHe Soil EPA 8015C

Element Environmental
98-030 Hekaha St., Unit 9
Aiea, HI 96701

APPL Inc.
908 North Temperance Avenue
Clovis, CA 93611

Attn: Steve Spengler
Project: MCBH UST KB-100 SI / 130034
Sample ID: EKB100005
Sample Collection Date: 1/13/2015

ARF: 75351
APPL ID: AZ09549
QCG: #DROCT-150115B-193919

Method	Analyte	Result	LOQ	LOD	DL	Units	Extraction Date	Analysis Date
(Solid Concentrations and Limits have been adjusted to reflect 27.7 Percent Moisture.)								
EPA 8015C-	TPH-DRO (C10-C24)	1.40 U	6.9	1.40	0.90	mg/kg	1/15/2015	1/28/2015
EPA 8015C-	TPH-LRO (C24-C36)	14.0 U	69	14.0	4.8	mg/kg	1/15/2015	1/28/2015
EPA 8015C-	SURROGATE: OCTACOSANE (S)	93.1	47-140			%	1/15/2015	1/28/2015
EPA 8015C-	SURROGATE: ORTHO-TERPHENYL (S	71.3	58-128			%	1/15/2015	1/28/2015

Quant Method: CTO121.M
Run #: 127067
Instrument: Apollo
Sequence: 150127
Dilution Factor: 1
Initials: LA

Printed: 1/30/2015 1:42:31 PM
APPL-F1-SC-MCRes/MCPQL-REG MDLs

Quantitation Report (QT Reviewed)

Data File : G:\APOLLO\DATA\150127\127067.D Vial: 67
Acq On : 1-28-15 13:33:38 Operator: lac
Sample : AZ09549S04 5/50.20G Inst : Apollo
Misc : Soil Multiplr: 99.60
IntFile : events.e
Quant Time: Jan 30 10:48 2015 Quant Results File: CTO121.RES

Method : G:\APOLLO\DATA\150121\CTO121.M (Chemstation Integrator)
Title : 8015 B&C
Last Update : Mon Jan 26 09:50:19 2015
Response via : Multiple Level Calibration

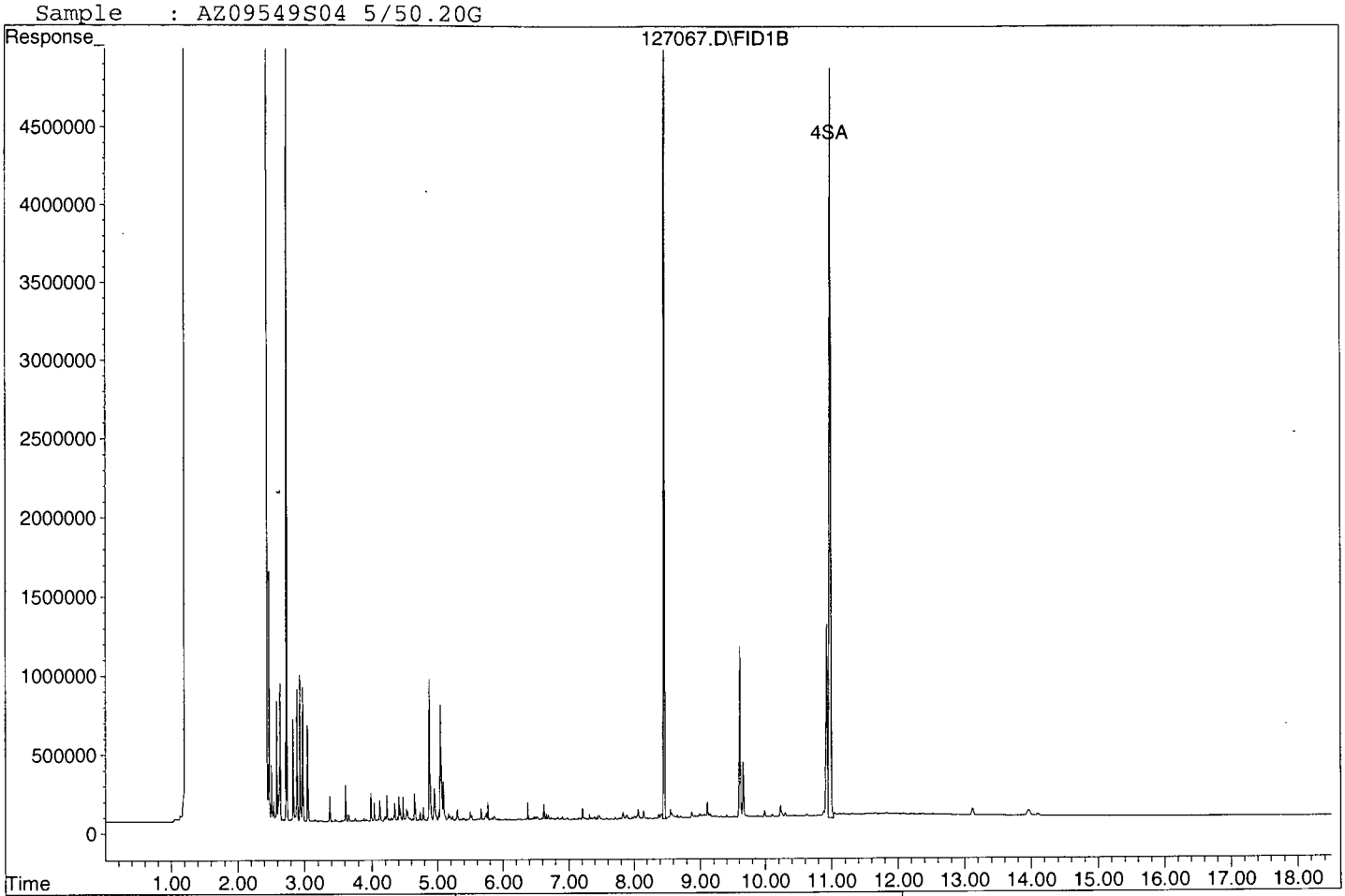
Volume Inj. : 2UL
Signal Phase : DB-5
Signal Info : FID02A

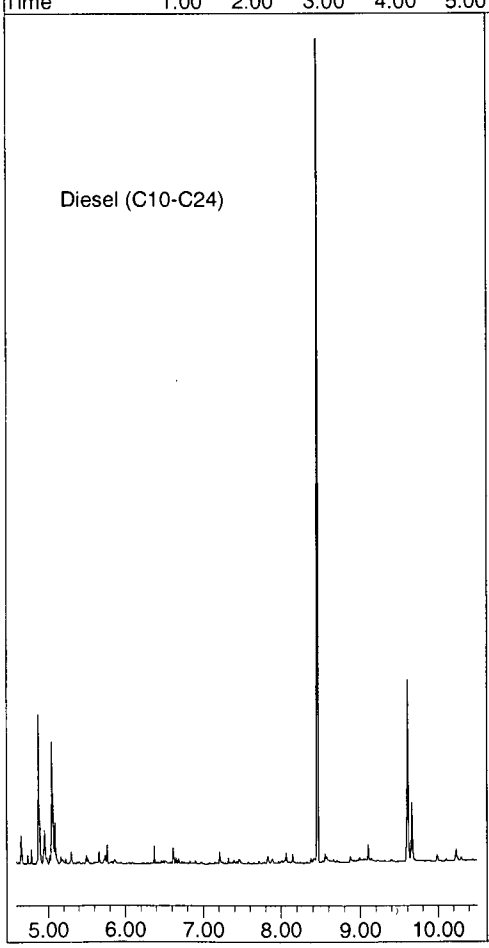
Compound	R.T.	Response	Conc Units
System Monitoring Compounds			
3) SA Ortho-Terphenyl(S)	8.47	79651912	2129.069 ppb
Surrogate Spike 2988.048		Recovery	= 71.25%
4) SA Octacosane(S)	10.99	75346944	2780.438 ppb
Surrogate Spike 2988.048		Recovery	= 93.05%

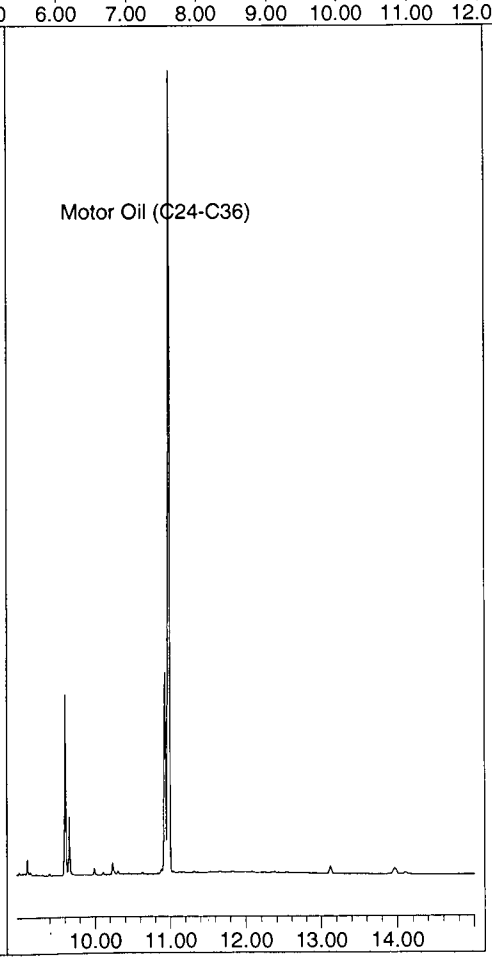
Target Compounds

Quantitation Report

Data File: G:\APOLLO\DATA\150127\127067.D
Sample : AZ09549S04 5/50.20G







TPHe Soil EPA 8015C

Element Environmental
98-030 Hekaha St., Unit 9
Aiea, HI 96701

APPL Inc.
908 North Temperance Avenue
Clovis, CA 93611

Attn: Steve Spengler
Project: MCBH UST KB-100 SI / 130034
Sample ID: EKB100006
Sample Collection Date: 1/13/2015

ARF: 75351
APPL ID: AZ09550
QCG: #DROCT-150115B-193919

Method	Analyte	Result	LOQ	LOD	DL	Units	Extraction Date	Analysis Date
(Solid Concentrations and Limits have been adjusted to reflect 22.0 Percent Moisture.)								
EPA 8015C-	TPH-DRO (C10-C24)	1.30 U	6.4	1.30	0.83	mg/kg	1/15/2015	1/28/2015
EPA 8015C-	TPH-LRO (C24-C36)	13.0 U	64	13.0	4.5	mg/kg	1/15/2015	1/28/2015
EPA 8015C-	SURROGATE: OCTACOSANE (S)	100	47-140			%	1/15/2015	1/28/2015
EPA 8015C-	SURROGATE: ORTHO-TERPHENYL (S	76.2	58-128			%	1/15/2015	1/28/2015

Quant Method: CTO121.M
Run #: 127068
Instrument: Apollo
Sequence: 150127
Dilution Factor: 1
Initials: LA

Printed: 1/30/2015 1:42:31 PM
APPL-F1-SC-MCRes/MCPQL-REG MDLs

Quantitation Report (QT Reviewed)

Data File : G:\APOLLO\DATA\150127\127068.D Vial: 68
Acq On : 1-28-15 13:58:19 Operator: lac
Sample : AZ09550S04 5/50.70G DF5 Inst : Apollo
Misc : Soil Multiplr: 493.10
IntFile : events.e
Quant Time: Jan 30 10:48 2015 Quant Results File: CTO121.RES

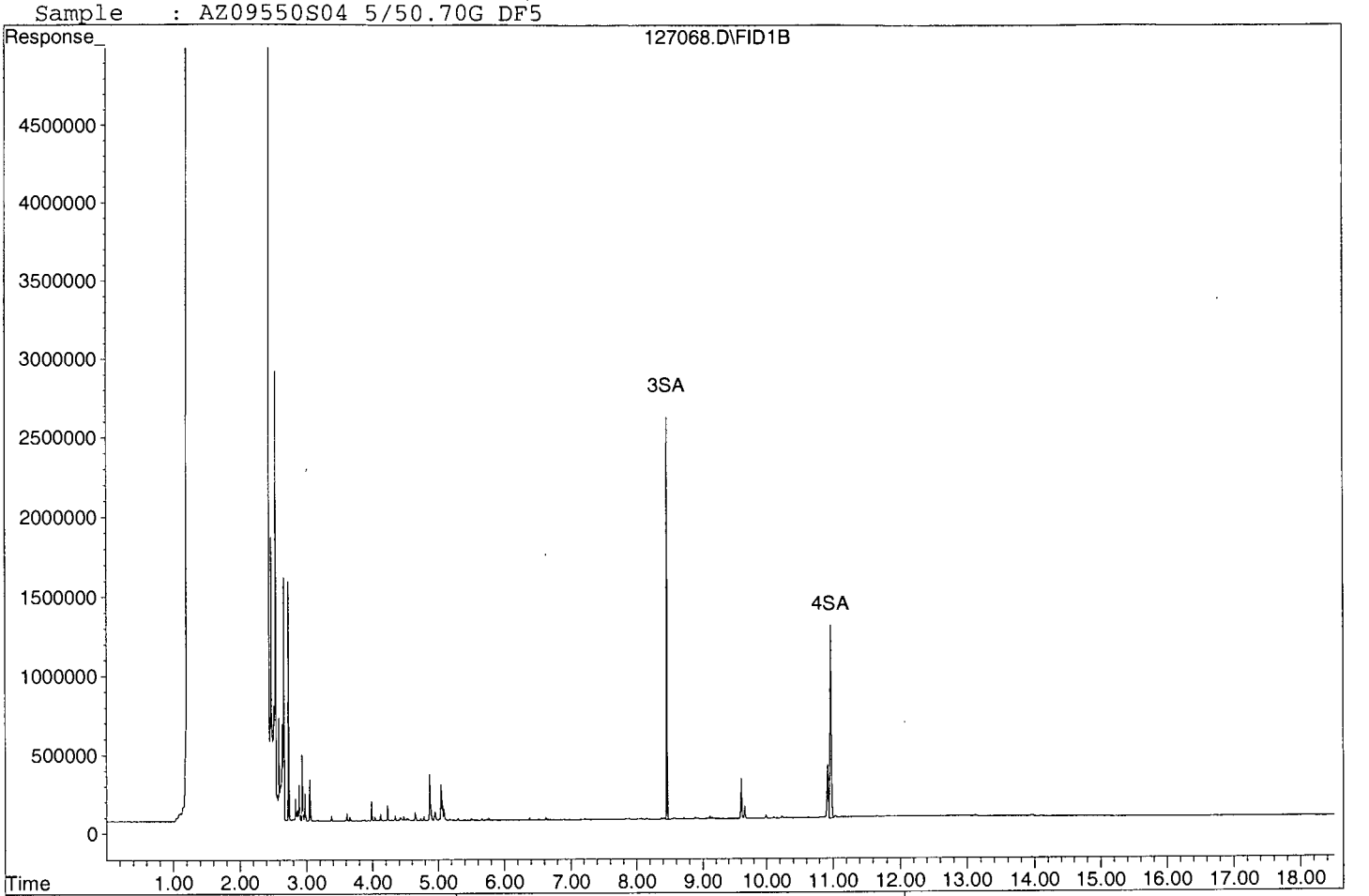
Method : G:\APOLLO\DATA\150121\CTO121.M (Chemstation Integrator)
Title : 8015 B&C
Last Update : Mon Jan 26 09:50:19 2015
Response via : Multiple Level Calibration

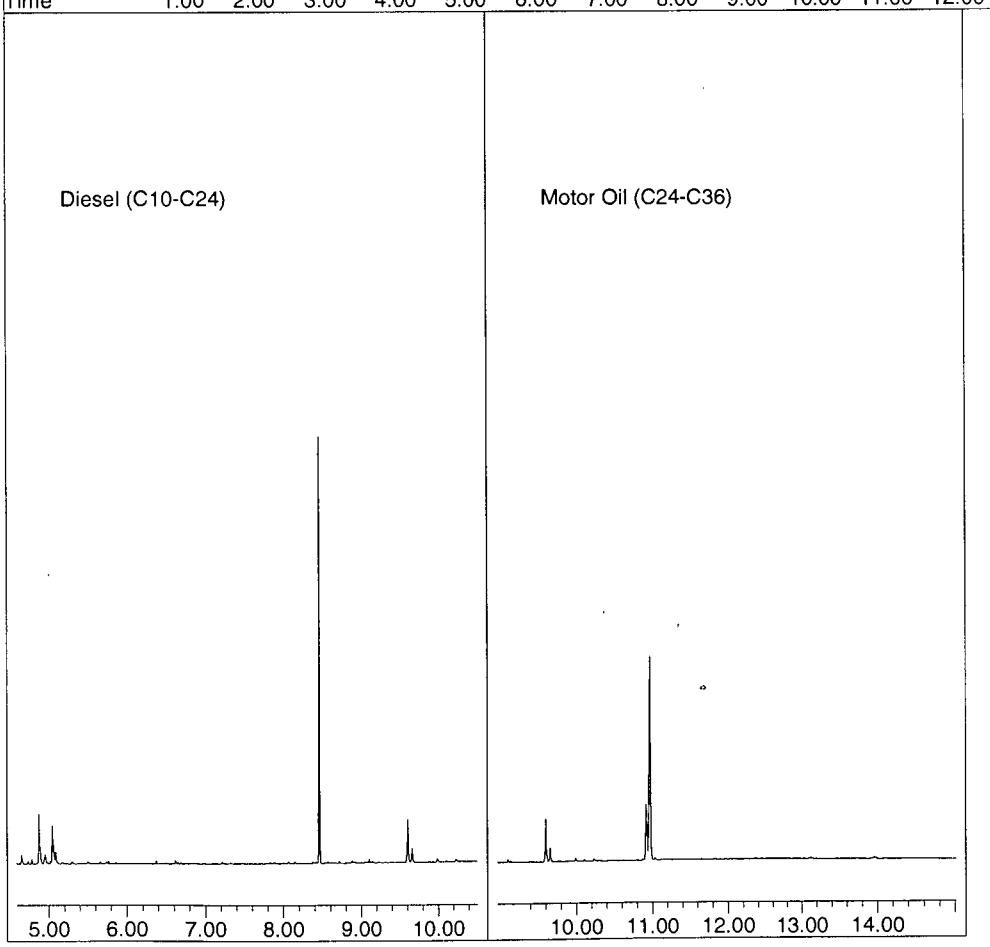
Volume Inj. : 2UL
Signal Phase : DB-5
Signal Info : FID02A

Compound	R.T.	Response	Conc Units
System Monitoring Compounds			
3) SA Ortho-Terphenyl(S)	8.46	17027219	2253.218 ppb
Surrogate Spike 2958.580		Recovery	= 76.16%
4) SA Octacosane(S)	10.97	16197495	2959.112 ppb
Surrogate Spike 2958.580		Recovery	= 100.02%
Target Compounds			

Quantitation Report

Data File: G:\APOLLO\DATA\150127\127068.D
Sample : AZ09550S04 5/50.70G DF5





TPHe Soil EPA 8015C

Element Environmental
98-030 Hekaha St., Unit 9
Aiea, HI 96701

APPL Inc.
908 North Temperance Avenue
Clovis, CA 93611

Attn: Steve Spengler

Project: MCBH UST KB-100 SI / 130034

ARF: 75351

Sample ID: EKB100007

APPL ID: AZ09551

Sample Collection Date: 1/13/2015

QCG: #DROCT-150115B-193919

Method	Analyte	Result	LOQ	LOD	DL	Units	Extraction Date	Analysis Date
(Solid Concentrations and Limits have been adjusted to reflect 33.6 Percent Moisture.)								
EPA 8015C-	TPH-DRO (C10-C24)	1.50 U	7.5	1.50	0.98	mg/kg	1/15/2015	1/28/2015
EPA 8015C-	TPH-LRO (C24-C36)	15.0 U	75	15.0	5.3	mg/kg	1/15/2015	1/28/2015
EPA 8015C-	SURROGATE: OCTACOSANE (S)	97.0	47-140			%	1/15/2015	1/28/2015
EPA 8015C-	SURROGATE: ORTHO-TERPHENYL (S	74.8	58-128			%	1/15/2015	1/28/2015

Quant Method: CTO121.M
Run #: 127069
Instrument: Apollo
Sequence: 150127
Dilution Factor: 1
Initials: LA

Printed: 1/30/2015 1:42:31 PM
APPL-F1-SC-MCRes/MCPQL-REG MDLs

Quantitation Report (QT Reviewed)

Data File : G:\APOLLO\DATA\150127\127069.D Vial: 69
Acq On : 1-28-15 14:23:04 Operator: lac
Sample : AZ09551S04 5/50.80G Inst : Apollo
Misc : Soil Multiplr: 98.43
IntFile : events.e
Quant Time: Jan 30 10:49 2015 Quant Results File: CTO121.RES

Method : G:\APOLLO\DATA\150121\CTO121.M (Chemstation Integrator)
Title : 8015 B&C
Last Update : Mon Jan 26 09:50:19 2015
Response via : Multiple Level Calibration

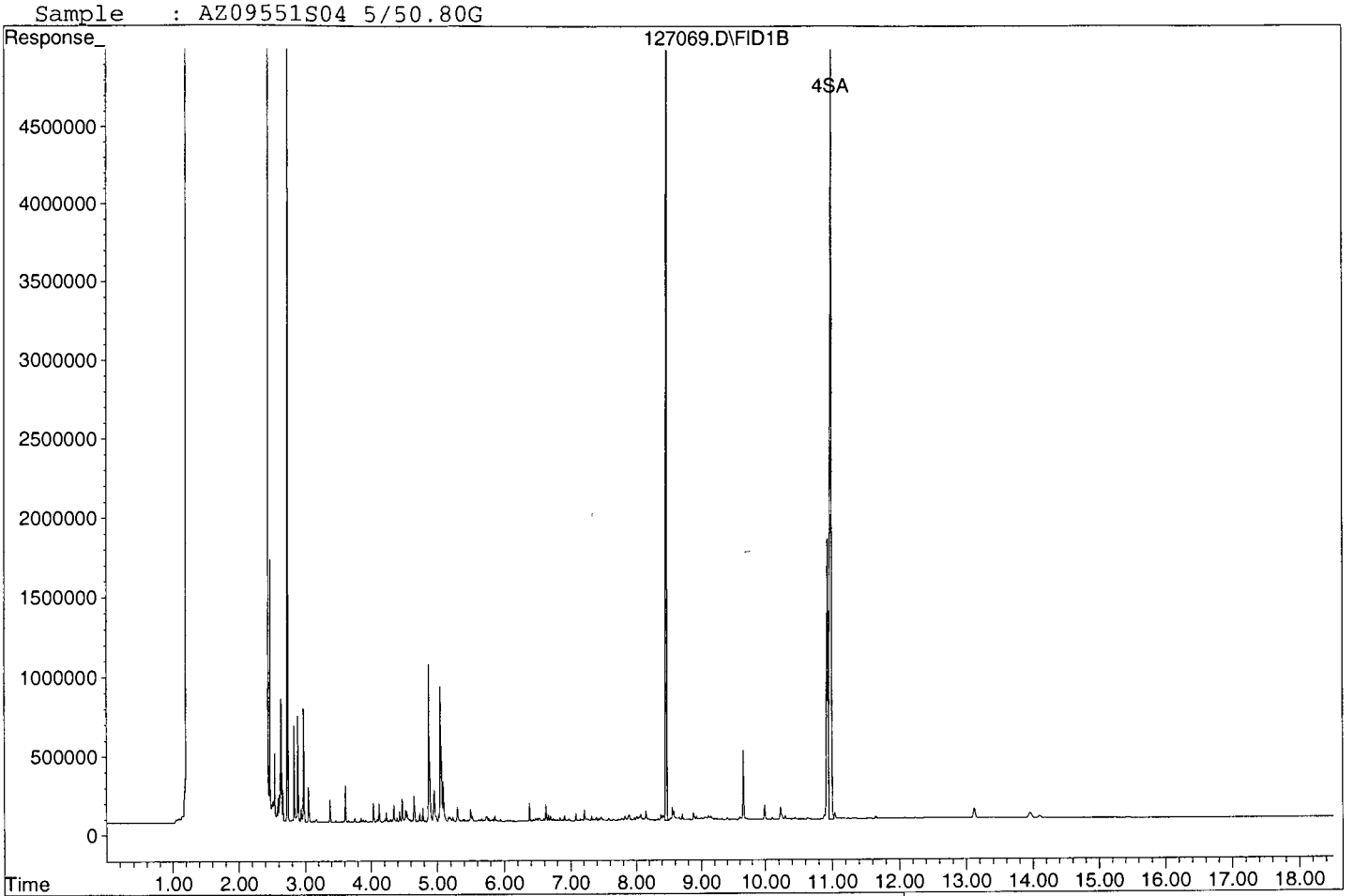
Volume Inj. : 2UL
Signal Phase : DB-5
Signal Info : FID02A

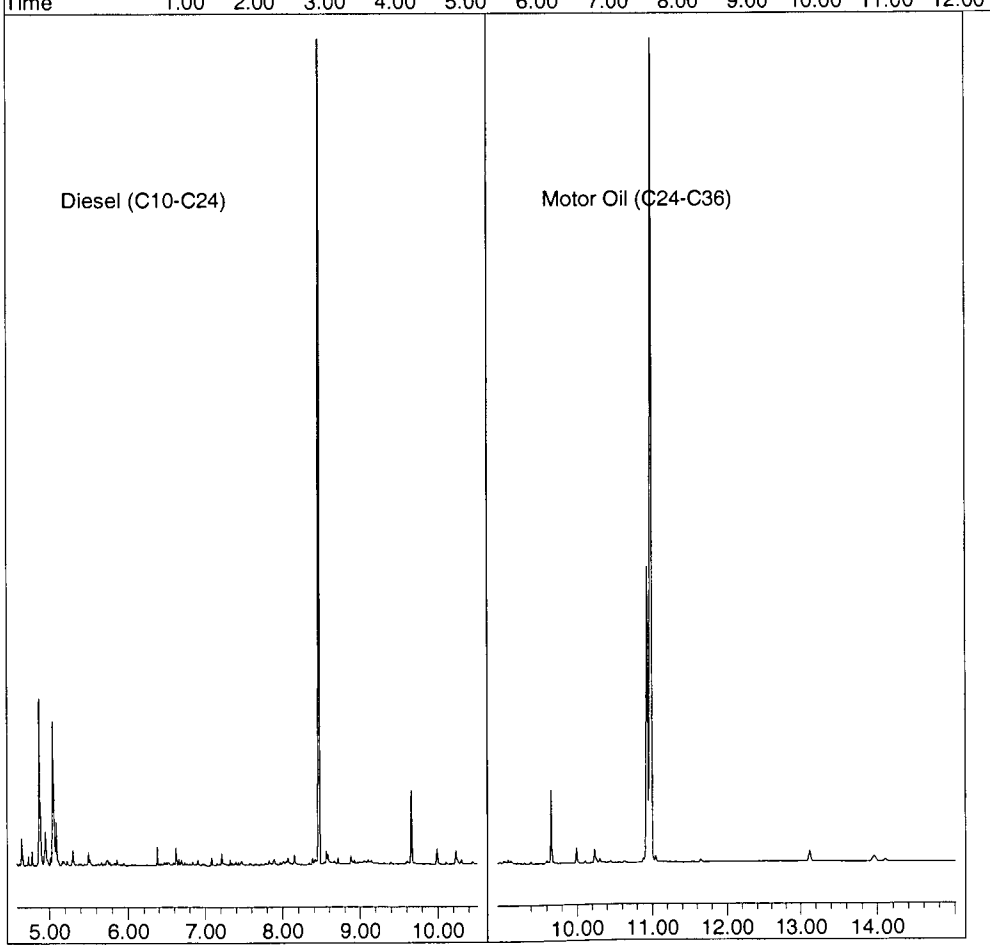
Compound	R.T.	Response	Conc Units
System Monitoring Compounds			
3) SA Ortho-Terphenyl(S)	8.47	83641317	2209.298 ppb
Surrogate Spike 2952.756		Recovery	= 74.82%
4) SA Octacosane(S)	10.99	78557674	2864.680 ppb
Surrogate Spike 2952.756		Recovery	= 97.02%

Target Compounds

Quantitation Report

Data File: G:\APOLLO\DATA\150127\127069.D
Sample : AZ09551S04 5/50.80G





TPHe Soil EPA 8015C

Element Environmental
98-030 Hekaha St., Unit 9
Aiea, HI 96701

APPL Inc.
908 North Temperance Avenue
Clovis, CA 93611

Attn: Steve Spengler
Project: MCBH UST KB-100 SI / 130034
Sample ID: EKB100008
Sample Collection Date: 1/13/2015

ARF: 75351
APPL ID: AZ09552
QCG: #DROCT-150115B-193919

Method	Analyte	Result	LOQ	LOD	DL	Units	Extraction Date	Analysis Date
(Solid Concentrations and Limits have been adjusted to reflect 34.6 Percent Moisture.)								
EPA 8015C-	TPH-DRO (C10-C24)	16 ++	7.6	1.50	0.99	mg/kg	1/15/2015	1/28/2015
EPA 8015C-	TPH-LRO (C24-C36)	74 J	76	15.0	5.4	mg/kg	1/15/2015	1/28/2015
EPA 8015C-	SURROGATE: OCTACOSANE (S)	109	47-140			%	1/15/2015	1/28/2015
EPA 8015C-	SURROGATE: ORTHO-TERPHENYL (S	70.9	58-128			%	1/15/2015	1/28/2015

J = Estimated value.
++(T3M) The analyst has noted that the chromatogram of this sample is mainly higher boiling hydrocarbons.

Quant Method: CTO121.M
Run #: 127076
Instrument: Apollo
Sequence: 150127
Dilution Factor: 1
Initials: LA

Printed: 1/30/2015 1:42:31 PM
APPL-F1-SC-MCRes/MCPQL-REG MDLs

Quantitation Report (QT Reviewed)

Data File : G:\APOLLO\DATA\150127\127076.D Vial: 76
Acq On : 1-28-15 17:16:20 Operator: lac
Sample : AZ09552S11 5/50.90G DF5 Inst : Apollo
Misc : Soil Multiplr: 491.16
IntFile : events.e
Quant Time: Jan 30 10:43 2015 Quant Results File: CTO121.RES

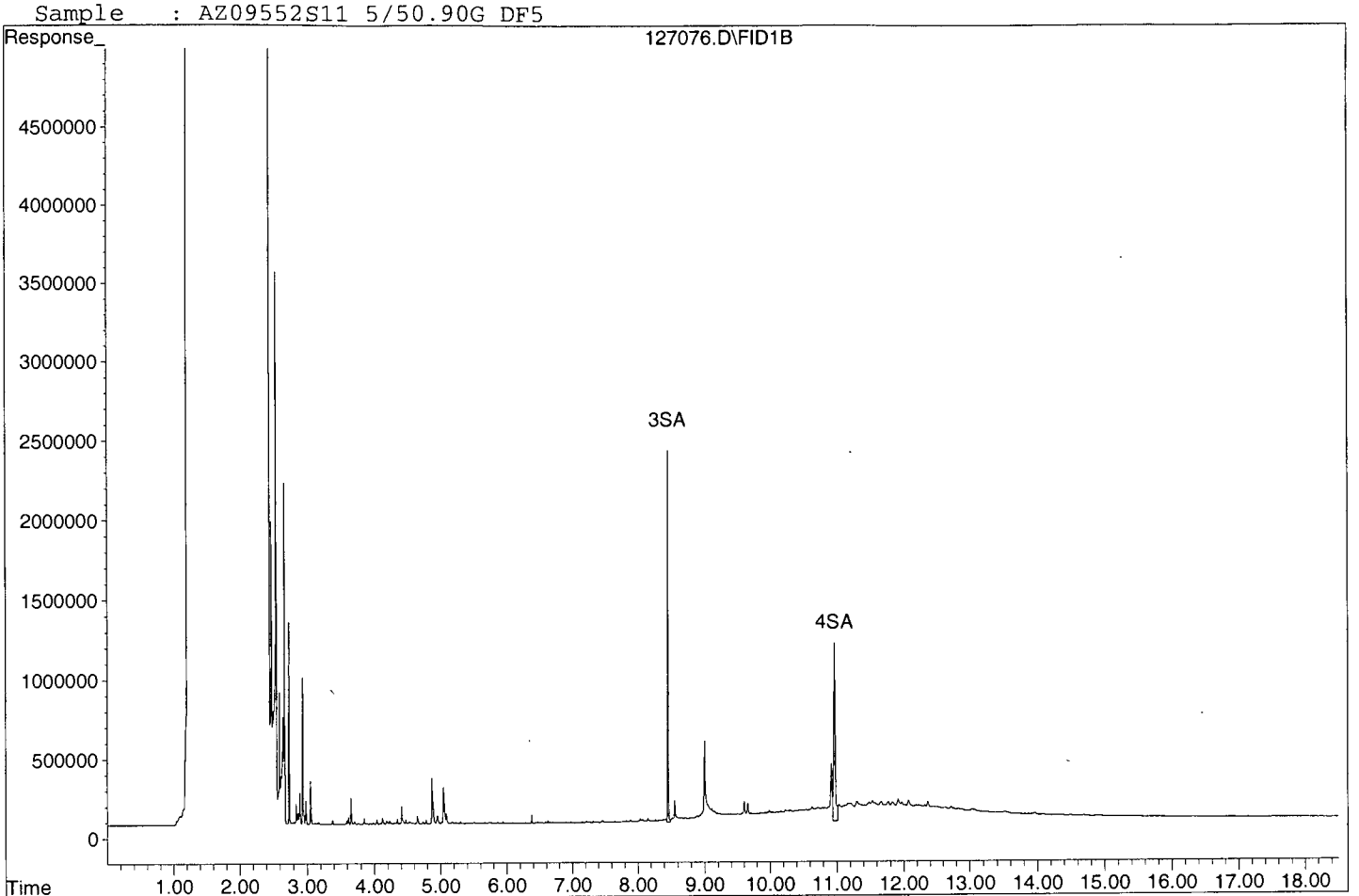
Method : G:\APOLLO\DATA\150121\CTO121.M (Chemstation Integrator)
Title : 8015 B&C
Last Update : Mon Jan 26 09:50:19 2015
Response via : Multiple Level Calibration

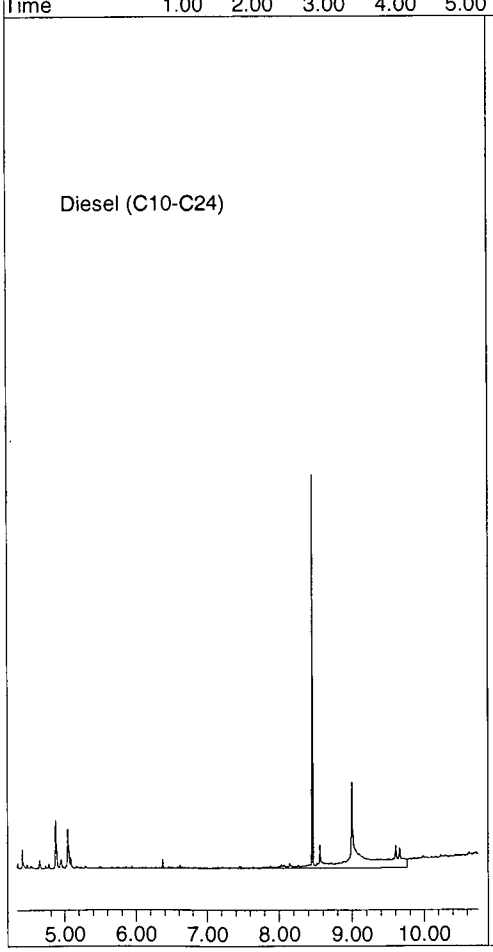
Volume Inj. : 2UL
Signal Phase : DB-5
Signal Info : FID02A

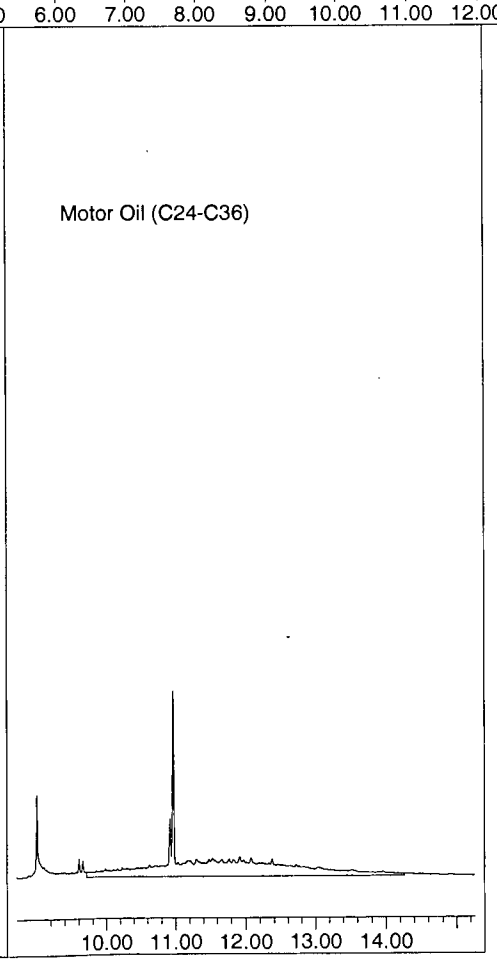
Compound	R.T.	Response	Conc Units
System Monitoring Compounds			
3) SA Ortho-Terphenyl(S)	8.46	15856319	2090.026 ppb
Surrogate Spike 2946.955		Recovery	= 70.92%
4) SA Octacosane(S)	10.97	17706689	3222.112 ppb
Surrogate Spike 2946.955		Recovery	= 109.34%
Target Compounds			
1) HATM Diesel (C10-C24)	7.55	52140210	10181.528 ppb
2) HBTM Motor Oil (C24-C36)	11.99	147144343	48184.980 ppb

Quantitation Report

Data File: G:\APOLLO\DATA\150127\127076.D
Sample : AZ09552S11 5/50.90G DF5







TPH-d Water EPA 8015C

Element Environmental
98-030 Hekaha St., Unit 9
Aiea, HI 96701

APPL Inc.
908 North Temperance Avenue
Clovis, CA 93611

Attn: Steve Spengler
Project: MCBH UST KB-100 SI / 130034
Sample ID: EKB100009
Sample Collection Date: 1/13/2015

ARF: 75351
APPL ID: AZ09553
QCG: #DROWC-150115A-193933

Method	Analyte	Result	LOQ	LOD	DL	Units	Extraction Date	Analysis Date
EPA 8015C-	TPH-DRO (C10-C24)	50.0 U	150	50.0	40.4	ug/L	1/15/2015	1/23/2015
EPA 8015C-	TPH-LRO (C24-C36)	500.0 U	500	500.0	106.0	ug/L	1/15/2015	1/23/2015
EPA 8015C-	SURROGATE: OCTACOSANE (S)	87.4	28-142			%	1/15/2015	1/23/2015
EPA 8015C-	SURROGATE: ORTHO-TERPHENYL (S	66.4	57-132			%	1/15/2015	1/23/2015

Quant Method: CTO121.M
Run #: 121083
Instrument: Apollo
Sequence: 150121
Dilution Factor: 1
Initials: LA

Printed: 1/30/2015 1:42:31 PM
APPL-F1-SC-MCRes/MCPQL-REG MDLs

Quantitation Report (QT Reviewed)

Data File : G:\APOLLO\DATA\150121\121083.D Vial: 83
Acq On : 1-23-15 12:54:05 Operator: lac
Sample : AZ09553W06 5/950 Inst : Apollo
Misc : Water Multiplr: 5.26
IntFile : events.e
Quant Time: Jan 30 13:24 2015 Quant Results File: CTO121.RES

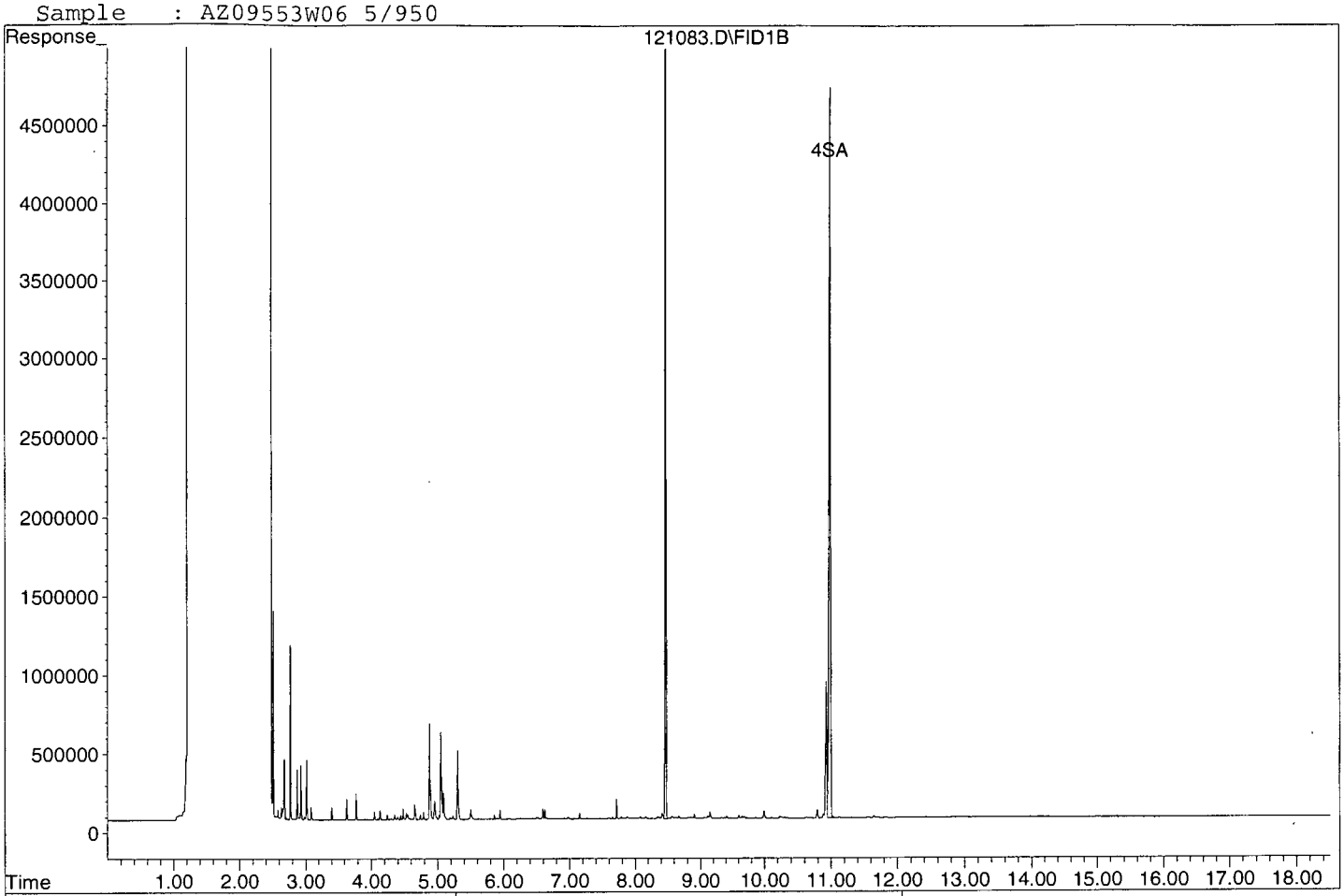
Method : G:\APOLLO\DATA\150121\CTO121.M (Chemstation Integrator)
Title : 8015 B&C
Last Update : Mon Jan 26 09:50:19 2015
Response via : Multiple Level Calibration

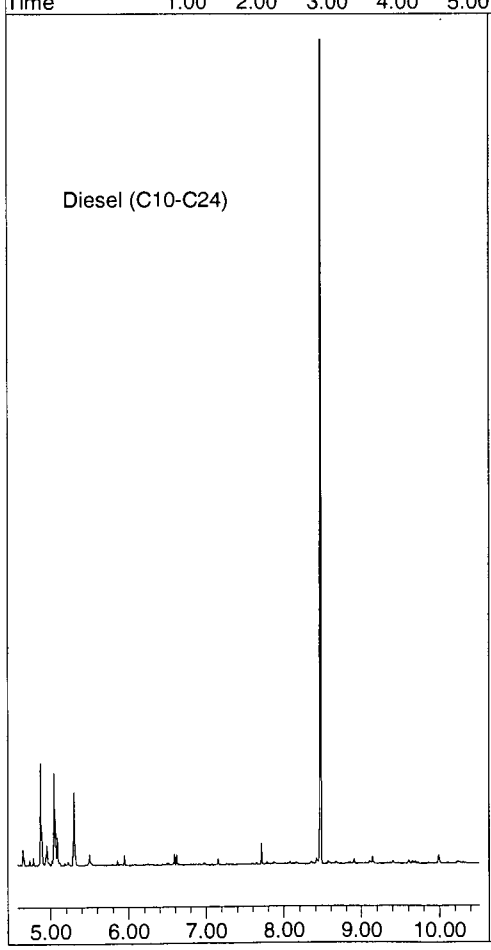
Volume Inj. : 2UL
Signal Phase : DB-5
Signal Info : FID02A

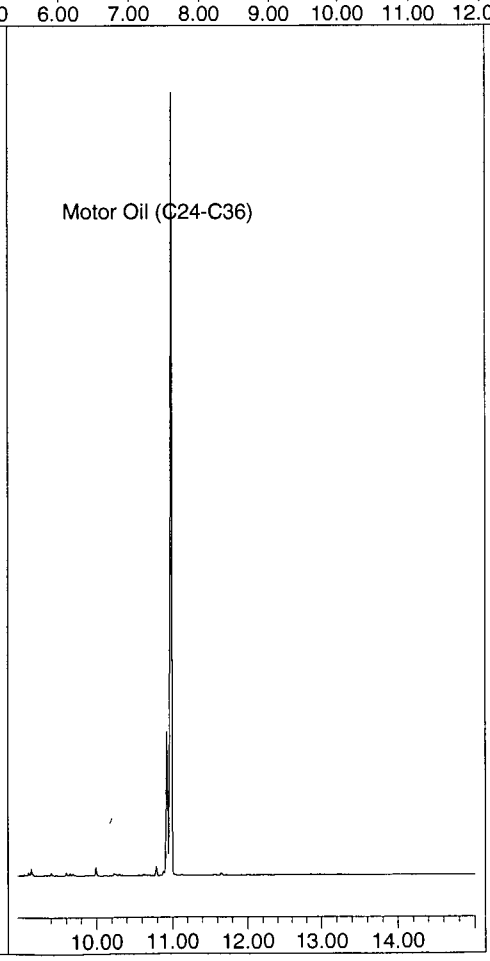
Compound	R.T.	Response	Conc Units
System Monitoring Compounds			
3) SA Ortho-Terphenyl(S)	8.47	74200350	104.804 ppb
Surrogate Spike 157.895		Recovery =	66.38%
4) SA Octacosane(S)	10.99	70733337	137.928 ppb
Surrogate Spike 157.895		Recovery =	87.35%
Target Compounds			

Quantitation Report

Data File: G:\APOLLO\DATA\150121\121083.D
Sample : AZ09553W06 5/950







TPH-d Water EPA 8015C

Element Environmental
98-030 Hekaha St., Unit 9
Aiea, HI 96701

APPL Inc.
908 North Temperance Avenue
Clovis, CA 93611

Attn: Steve Spengler
Project: MCBH UST KB-100 SI / 130034
Sample ID: EKB100010
Sample Collection Date: 1/13/2015

ARF: 75351
APPL ID: AZ09554
QCG: #DROWC-150115A-193933

Method	Analyte	Result	LOQ	LOD	DL	Units	Extraction Date	Analysis Date
EPA 8015C-	TPH-DRO (C10-C24)	50.0 U	150	50.0	40.4	ug/L	1/15/2015	1/23/2015
EPA 8015C-	TPH-LRO (C24-C36)	500.0 U	500	500.0	106.0	ug/L	1/15/2015	1/23/2015
EPA 8015C-	SURROGATE: OCTACOSANE (S)	89.3	28-142			%	1/15/2015	1/23/2015
EPA 8015C-	SURROGATE: ORTHO-TERPHENYL (S	67.6	57-132			%	1/15/2015	1/23/2015

Quant Method: CTO121.M
Run #: 121084
Instrument: Apollo
Sequence: 150121
Dilution Factor: 1
Initials: LA

Printed: 1/30/2015 1:42:31 PM
APPL-F1-SC-MCRes/MCPQL-REG MDLs

Quantitation Report (QT Reviewed)

Data File : G:\APOLLO\DATA\150121\121084.D Vial: 84
Acq On : 1-23-15 13:18:17 Operator: lac
Sample : AZ09554W07 5/1070 Inst : Apollo
Misc : Water Multiplr: 4.67
IntFile : events.e
Quant Time: Jan 30 13:24 2015 Quant Results File: CTO121.RES

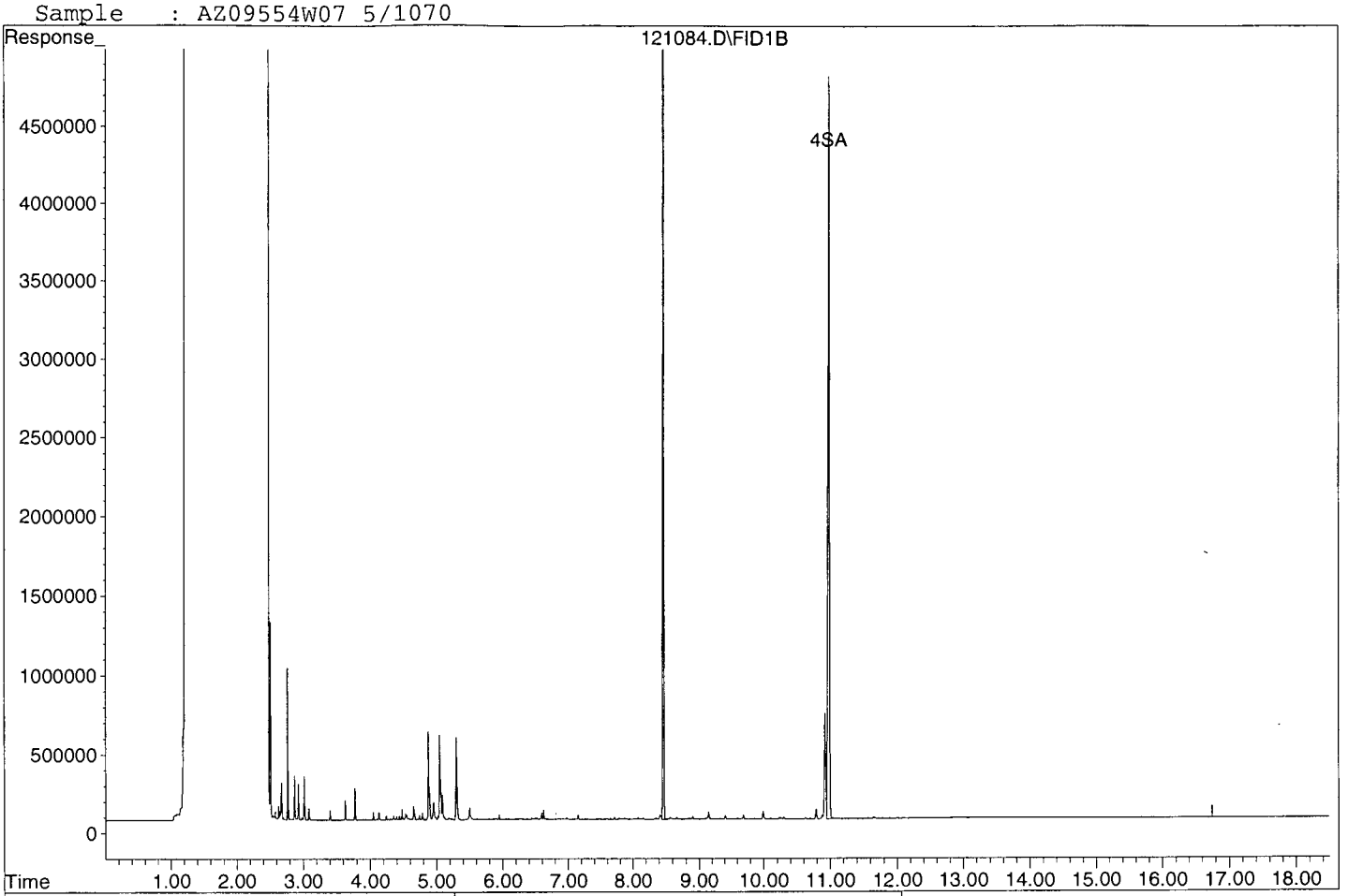
Method : G:\APOLLO\DATA\150121\CTO121.M (Chemstation Integrator)
Title : 8015 B&C
Last Update : Mon Jan 26 09:50:19 2015
Response via : Multiple Level Calibration

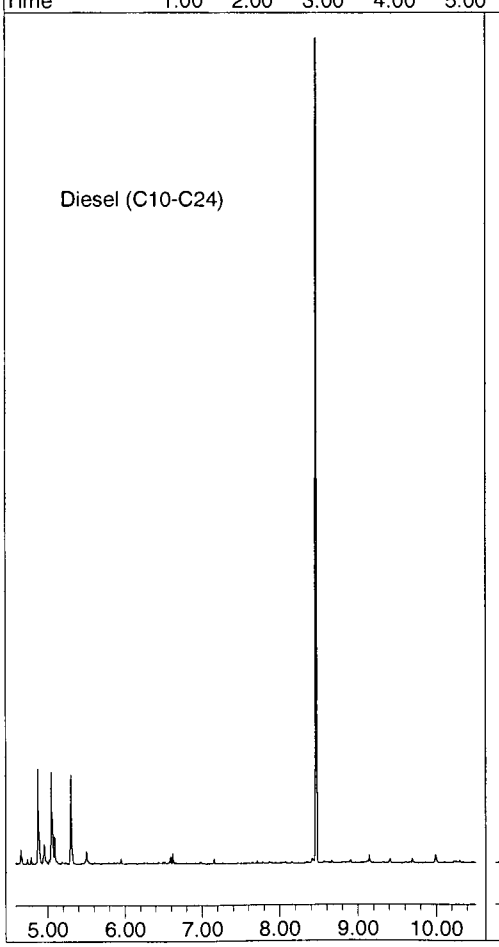
Volume Inj. : 2UL
Signal Phase : DB-5
Signal Info : FID02A

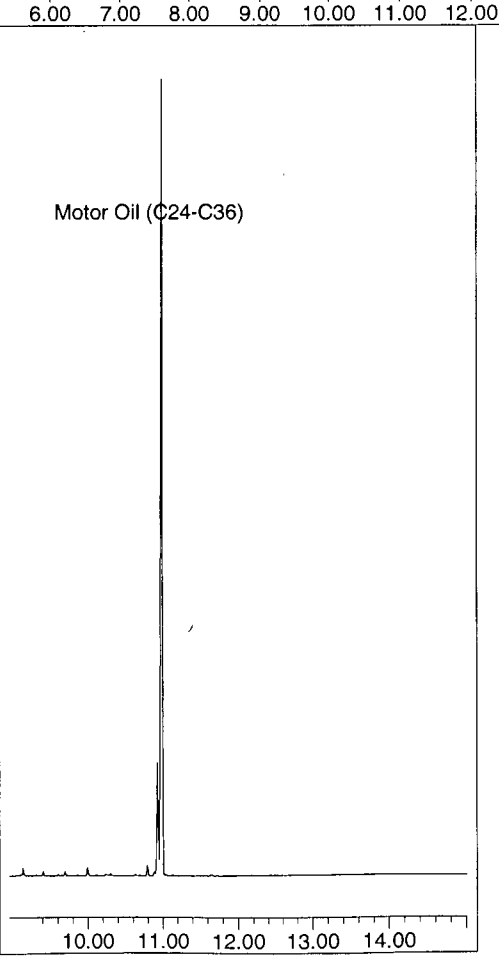
Compound	R.T.	Response	Conc Units
System Monitoring Compounds			
3) SA Ortho-Terphenyl(S)	8.47	75547542	94.740 ppb
Surrogate Spike 140.187		Recovery =	67.58%
4) SA Octacosane(S)	10.99	72287648	125.150 ppb
Surrogate Spike 140.187		Recovery =	89.27%
Target Compounds			

Quantitation Report

Data File: G:\APOLLO\DATA\150121\121084.D
Sample : AZ09554W07 5/1070







EPA 8015 Modified
Total Petroleum Hydrocarbons

Calibration Data

APPL, INC.

TPH Extractables
CTO121

Form 6
Initial Calibration

Lab Name: APPL, Inc.
Case No:
Matrix:

SDG No: 75351
Initial Cal. Date: 1/21/2015
Instrument: Apollo

Initials: LAC

121003 D 121004.D 121005.D 121006.D 121007.D 121008.D
121010.D 121011.D 121012.D 121013.D 121014 D 121015 D

		Compound	1	2	3	4	5	6					Avg	%RSD		
1	HATM	Diesel (C10-C24)	1205025	1328453	1223803	1270966	1275197	1242320					1257627	3.5	HATM	
2	HBTM	Motor Oil (C24-C36)	722970	734449	743939	791262	758160	748835					749936	3.1	HBTM	
3	SA	Ortho-Terphenyl(S)		1961830	1784177	1858966	1875849	1834821					1863129	3.5	SA	
4	SA	Octacosane(S)		1426796	1298584	1337601	1355729	1329039					1349549	3.5	SA	
5																
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0.390815

Quantitation Report (Not Reviewed)

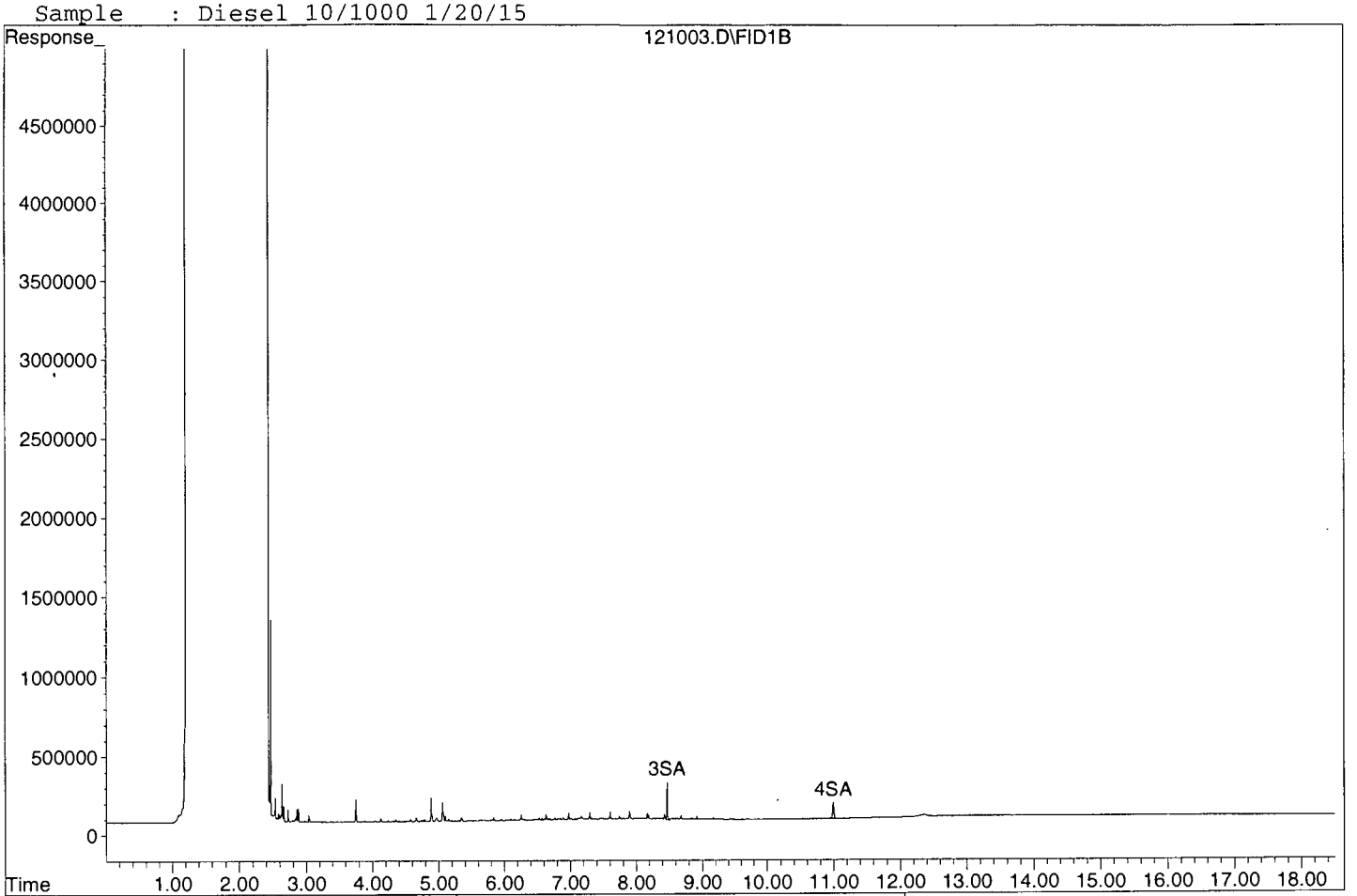
Data File : G:\APOLLO\DATA\150121\121003.D Vial: 3
Acq On : 1-21-15 16:13:54 Operator: lac
Sample : Diesel 10/1000 1/20/15 Inst : Apollo
Misc : Mix(A) Multiplr: 1.00
IntFile : events.e
Quant Time: Jan 23 9:31 2015 Quant Results File: CTO121.RES

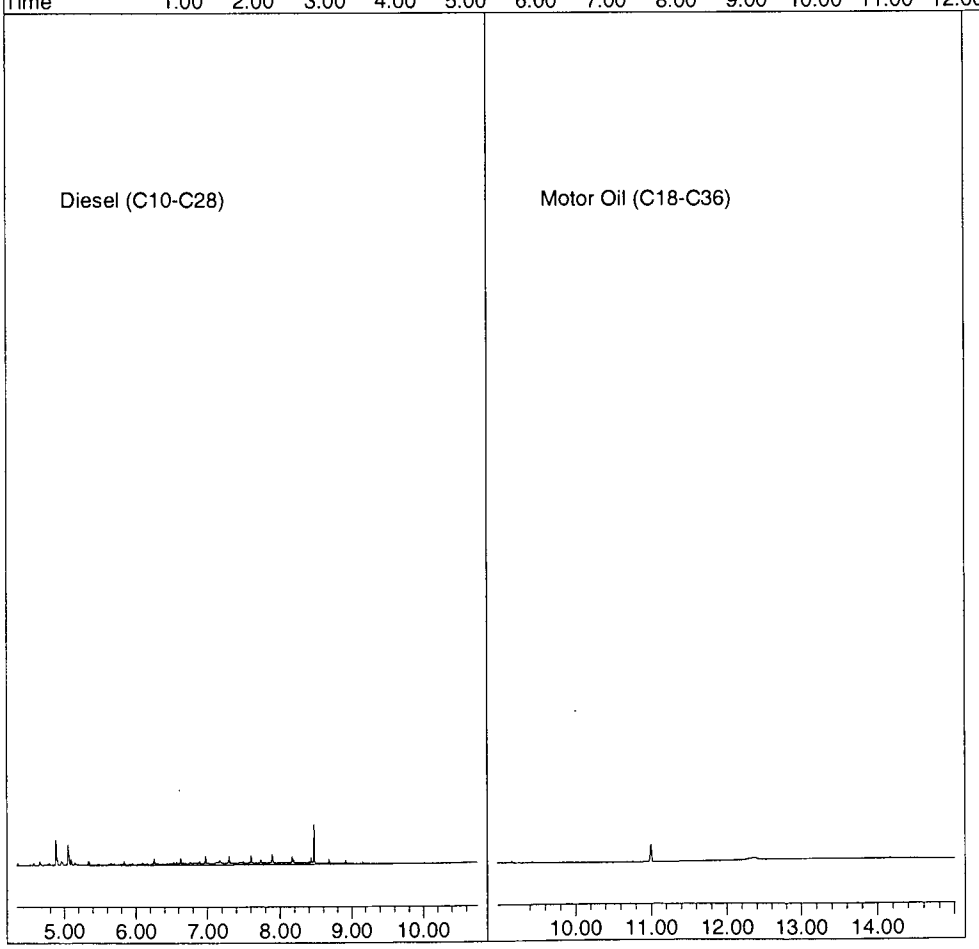
Method : G:\APOLLO\DATA\150127\CTO121.M (Chemstation Integrator)
Title : 8015 B&C
Last Update : Mon Jan 26 09:50:19 2015
Response via : Multiple Level Calibration

Volume Inj. : 2UL
Signal Phase : DB-5
Signal Info : FID02A

Compound	R.T.	Response	Conc Units
System Monitoring Compounds			
3) SA Ortho-Terphenyl(S)	8.47	1805261	0.484 ppb
Surrogate Spike 30.000		Recovery =	1.61%
4) SA Octacosane(S)	11.00	1403605	0.520 ppb
Surrogate Spike 30.000		Recovery =	1.73%
Target Compounds			
1) HATM Diesel (C10-C28)	7.55	24100509	9.179 ppb

Data File: G:\APOLLO\DATA\150121\121003.D
Sample : Diesel 10/1000 1/20/15





Quantitation Report (Not Reviewed)

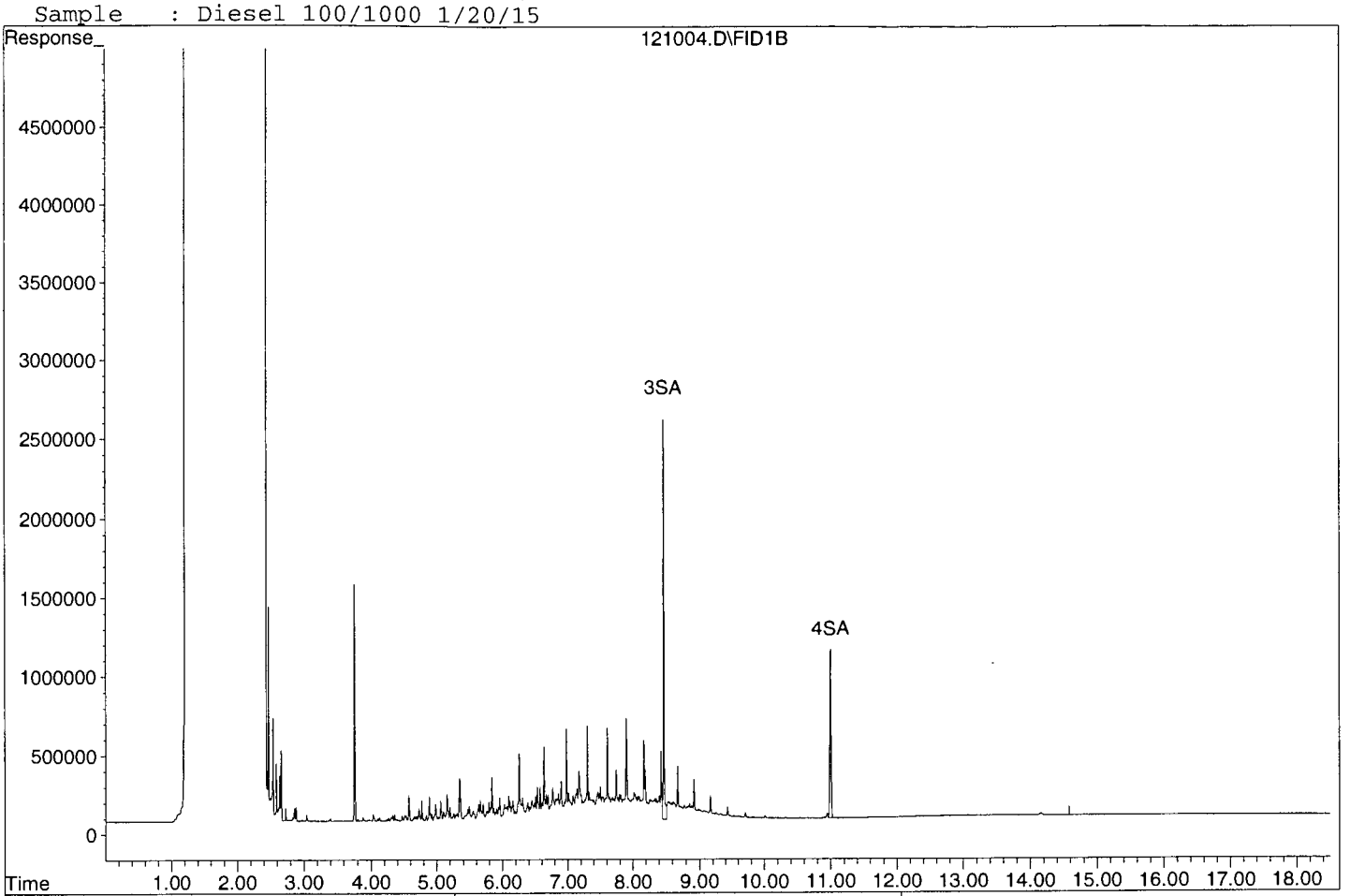
Data File : G:\APOLLO\DATA\150121\121004.D Vial: 4
Acq On : 1-21-15 16:38:00 Operator: lac
Sample : Diesel 100/1000 1/20/15 Inst : Apollo
Misc : Mix(A) Multiplr: 1.00
IntFile : events.e
Quant Time: Jan 23 9:31 2015 Quant Results File: CTO121.RES

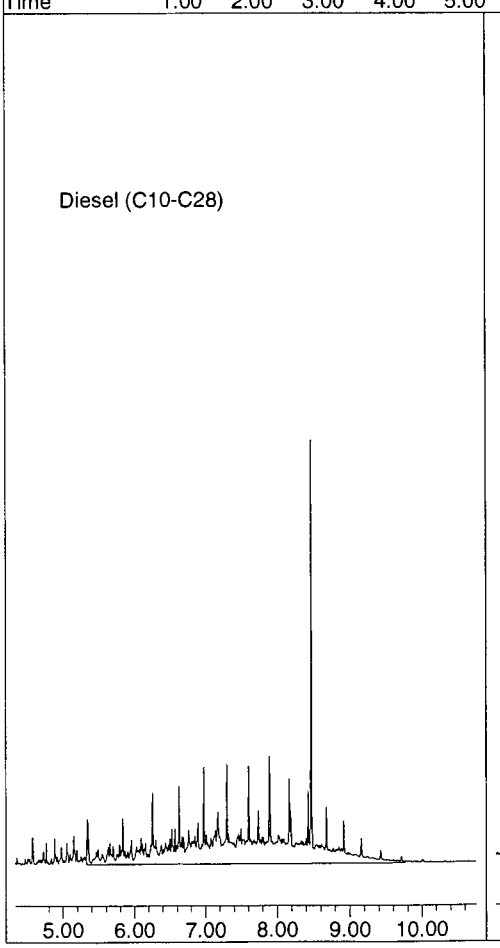
Method : G:\APOLLO\DATA\150127\CTO121.M (Chemstation Integrator)
Title : 8015 B&C
Last Update : Mon Jan 26 09:50:19 2015
Response via : Multiple Level Calibration

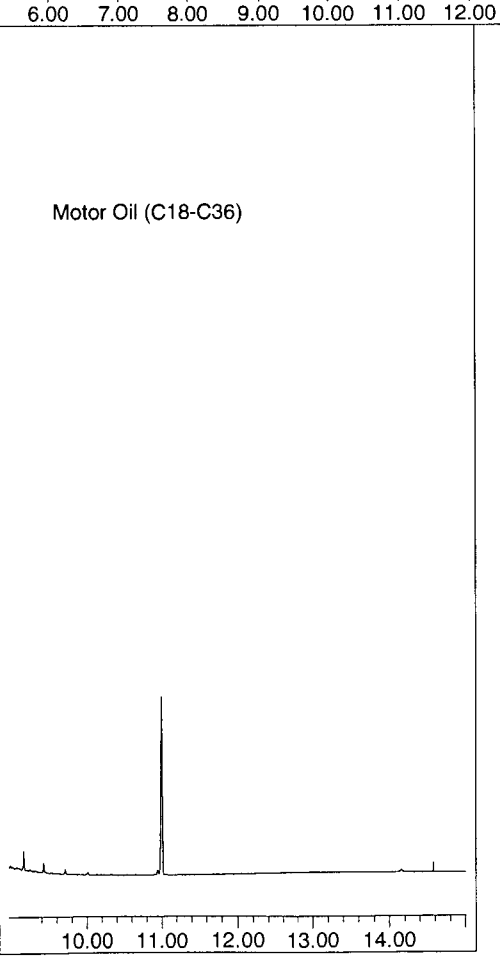
Volume Inj. : 2UL
Signal Phase : DB-5
Signal Info : FID02A

Compound	R.T.	Response	Conc Units
System Monitoring Compounds			
3) SA Ortho-Terphenyl(S)	8.47	19618300	5.265 ppb
Surrogate Spike 30.000		Recovery =	17.55%
4) SA Octacosane(S)	11.00	14267956	5.286 ppb
Surrogate Spike 30.000		Recovery =	17.62%
Target Compounds			
1) HATM Diesel (C10-C28)	7.55	265690622	101.196 ppb

Data File: G:\APOLLO\DATA\150121\121004.D
Sample : Diesel 100/1000 1/20/15







Quantitation Report (Not Reviewed)

Data File : G:\APOLLO\DATA\150121\121005.D Vial: 5
Acq On : 1-21-15 17:02:08 Operator: lac
Sample : Diesel 400/1000 1/20/15 Inst : Apollo
Misc : Mix(A) Multiplr: 1.00
IntFile : events.e
Quant Time: Jan 23 9:31 2015 Quant Results File: CTO121.RES

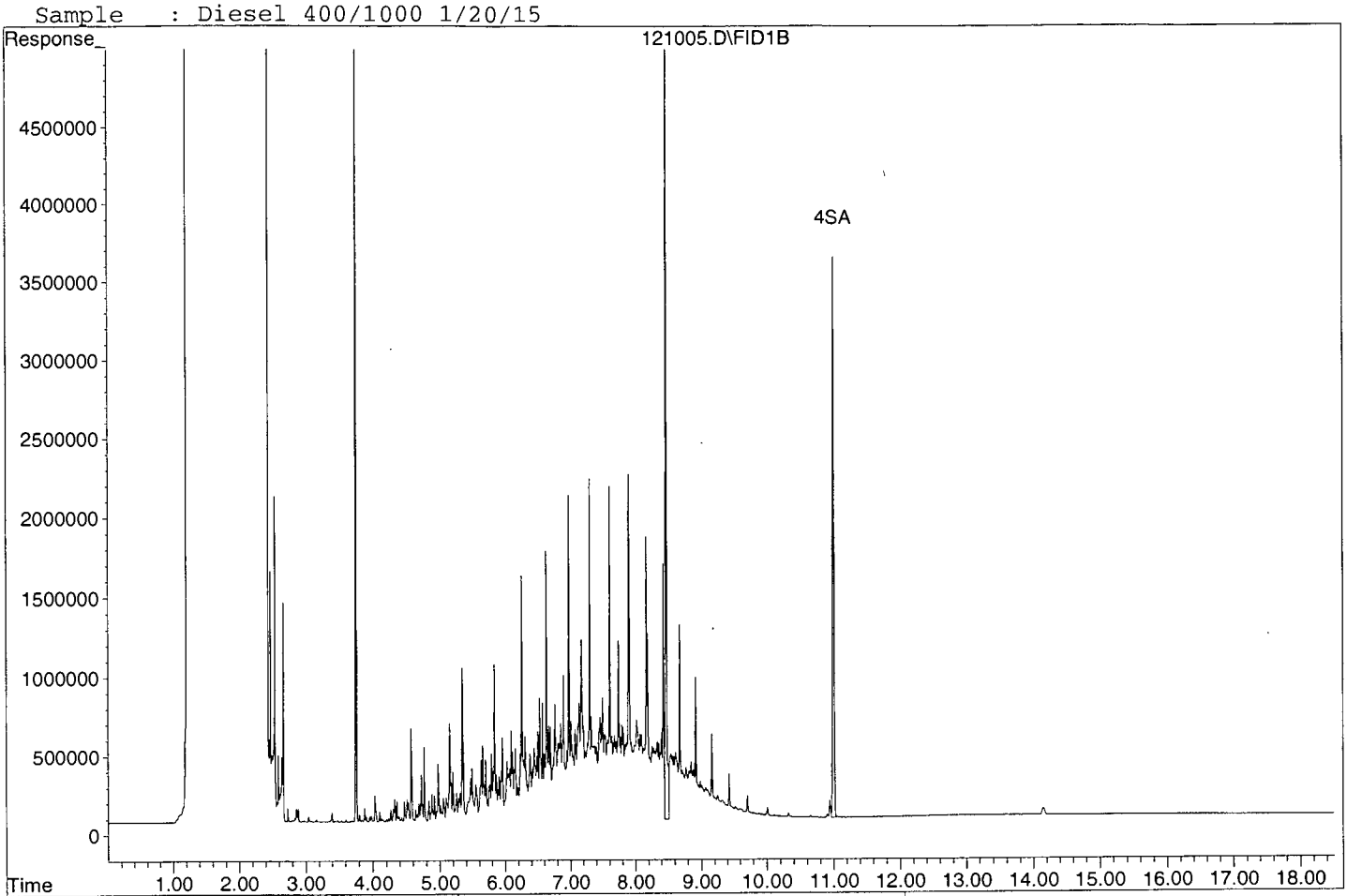
Method : G:\APOLLO\DATA\150127\CTO121.M (Chemstation Integrator)
Title : 8015 B&C
Last Update : Mon Jan 26 09:50:19 2015
Response via : Multiple Level Calibration

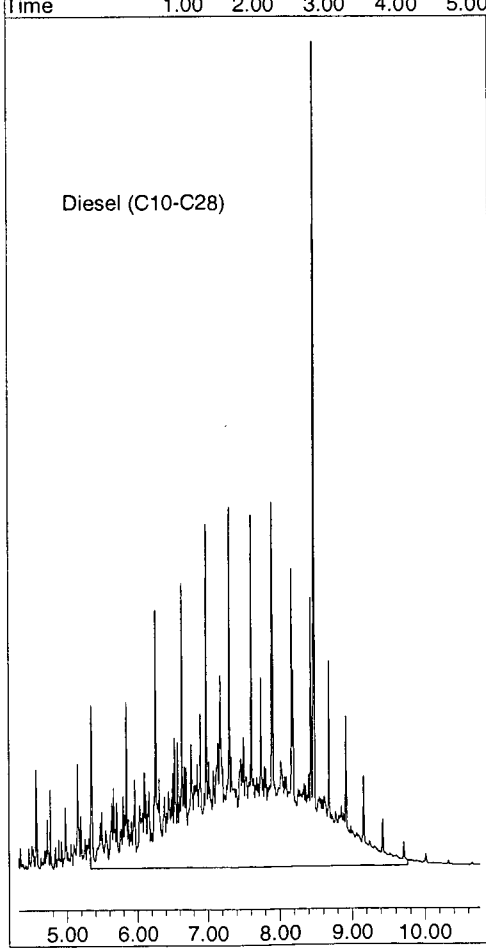
Volume Inj. : 2UL
Signal Phase : DB-5
Signal Info : FID02A

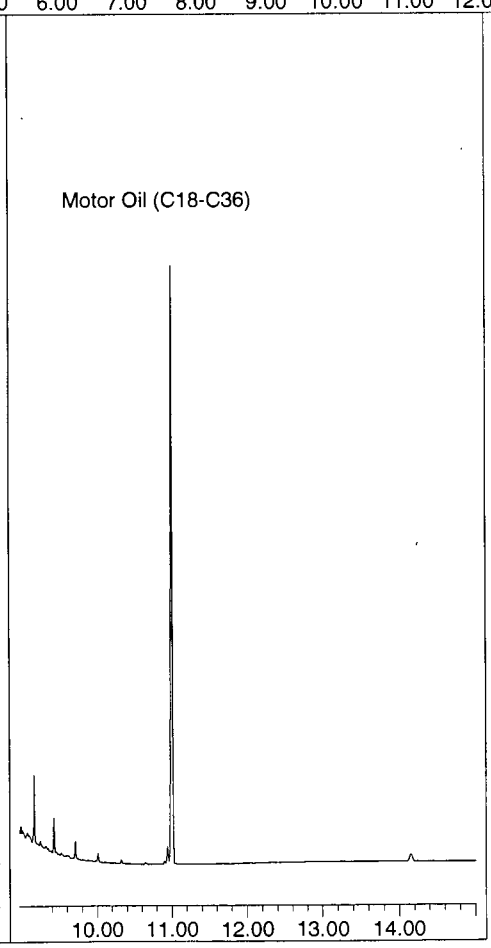
Compound	R.T.	Response	Conc Units
System Monitoring Compounds			
3) SA Ortho-Terphenyl(S)	8.48	71367095	19.152 ppb
Surrogate Spike 30.000		Recovery =	63.84%
4) SA Octacosane(S)	11.01	51943340	19.245 ppb
Surrogate Spike 30.000		Recovery =	64.15%
Target Compounds			
1) HATM Diesel (C10-C28)	7.55	979042605	372.896 ppb

Quantitation Report

Data File: G:\APOLLO\DATA\150121\121005.D
Sample : Diesel 400/1000 1/20/15







Quantitation Report (Not Reviewed)

Data File : G:\APOLLO\DATA\150121\121006.D Vial: 6
Acq On : 1-21-15 17:26:19 Operator: lac
Sample : Diesel 600/1000 1/20/15 Inst : Apollo
Misc : Mix(A) Multiplr: 1.00
IntFile : events.e
Quant Time: Jan 23 9:31 2015 Quant Results File: CTO121.RES

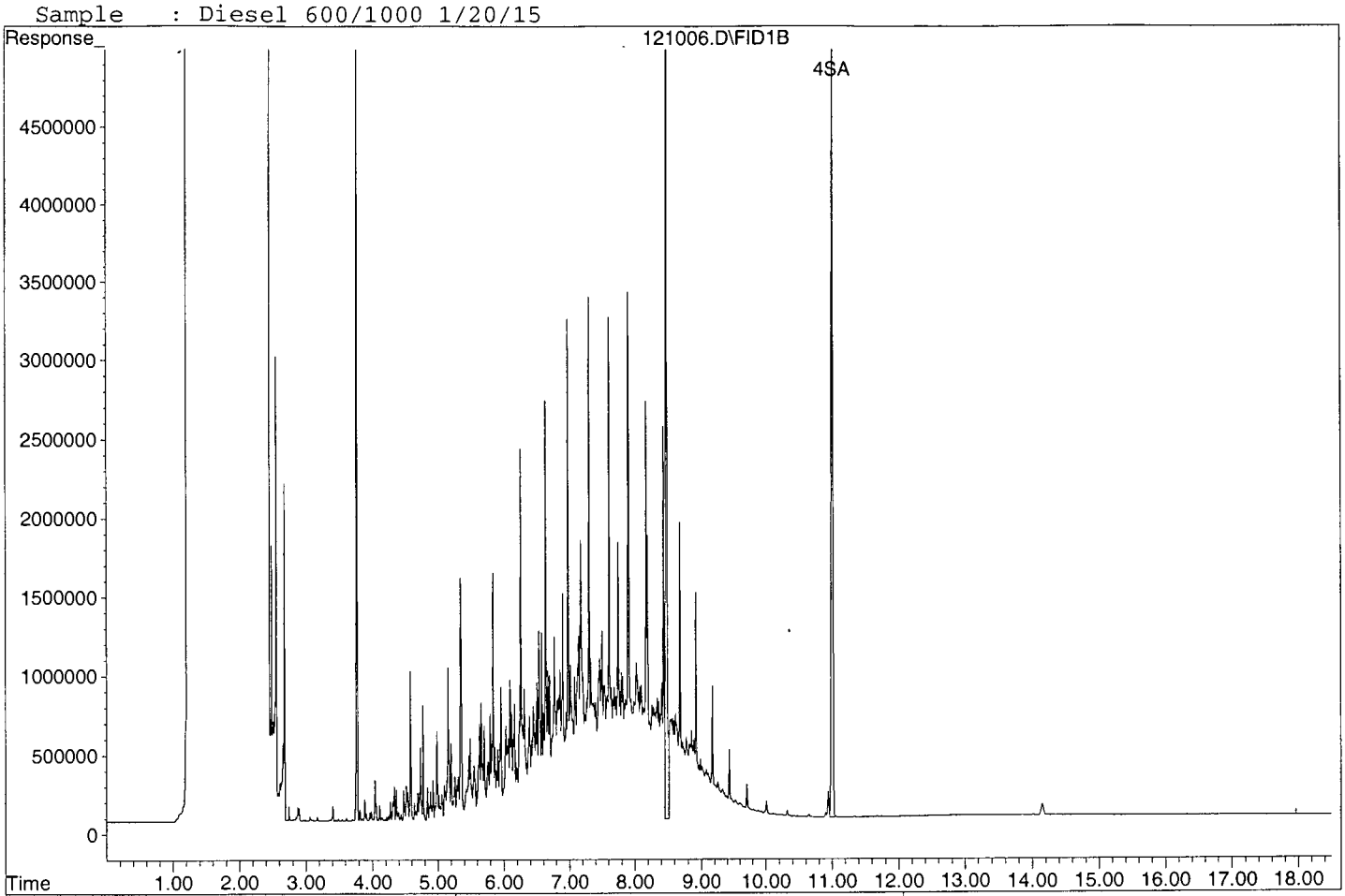
Method : G:\APOLLO\DATA\150127\CTO121.M (Chemstation Integrator)
Title : 8015 B&C
Last Update : Mon Jan 26 09:50:19 2015
Response via : Multiple Level Calibration

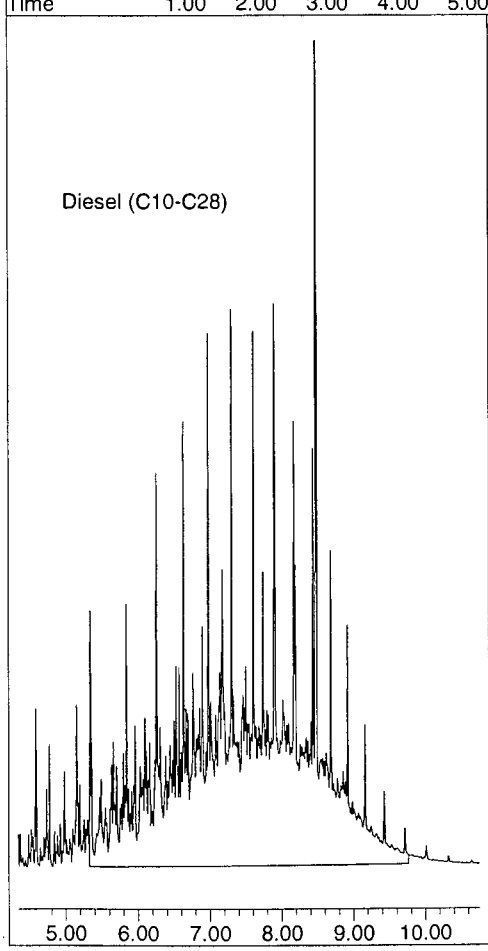
Volume Inj. : 2UL
Signal Phase : DB-5
Signal Info : FID02A

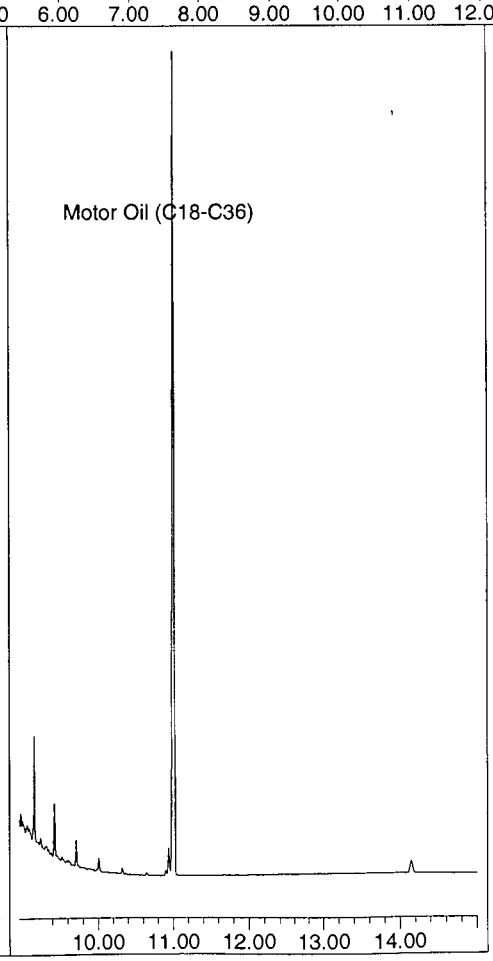
Compound	R.T.	Response	Conc Units
System Monitoring Compounds			
3) SA Ortho-Terphenyl(S)	8.48	111537945	29.933 ppb
Surrogate Spike 30.000		Recovery =	99.78%
4) SA Octacosane(S)	11.01	80256063	29.734 ppb
Surrogate Spike 30.000		Recovery =	99.11%
Target Compounds			
1) HATM Diesel (C10-C28)	7.55	1525158657	580.900 ppb

Quantitation Report

Data File: G:\APOLLO\DATA\150121\121006.D
Sample : Diesel 600/1000 1/20/15







Quantitation Report (Not Reviewed)

Data File : G:\APOLLO\DATA\150121\121007.D Vial: 7
Acq On : 1-21-15 17:50:18 Operator: lac
Sample : Diesel 800/1000 1/20/15 Inst : Apollo
Misc : Mix(A) Multiplr: 1.00
IntFile : events.e
Quant Time: Jan 23 9:31 2015 Quant Results File: CTO121.RES

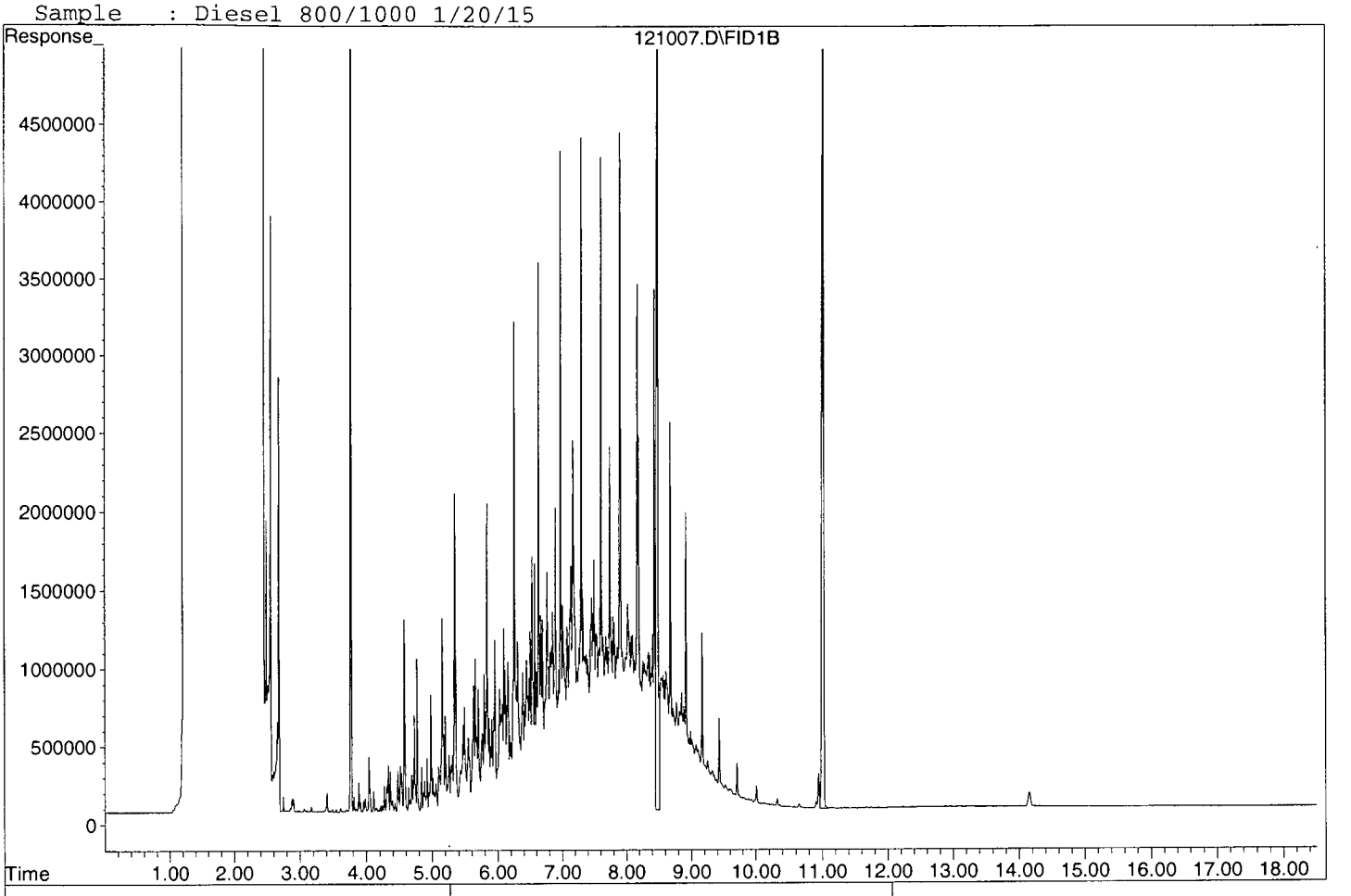
Method : G:\APOLLO\DATA\150127\CTO121.M (Chemstation Integrator)
Title : 8015 B&C
Last Update : Mon Jan 26 09:50:19 2015
Response via : Multiple Level Calibration

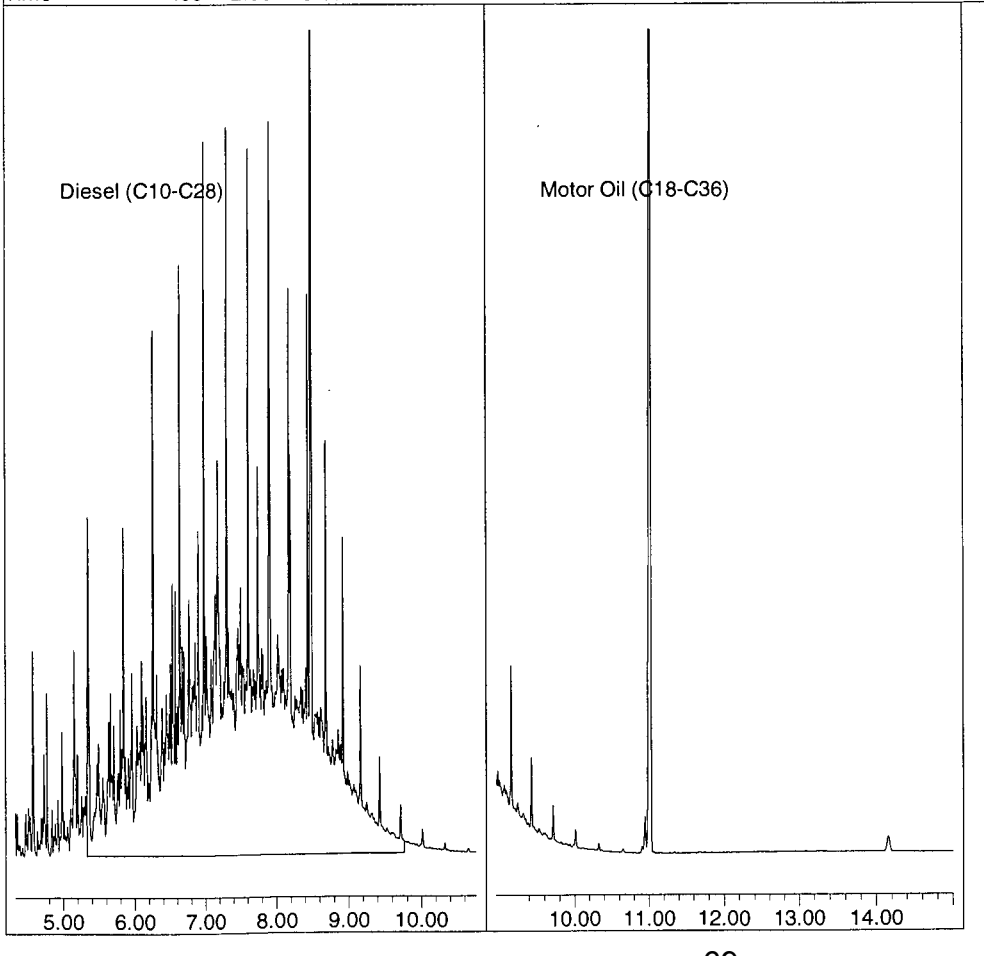
Volume Inj. : 2UL
Signal Phase : DB-5
Signal Info : FID02A

Compound	R.T.	Response	Conc Units
System Monitoring Compounds			
3) SA Ortho-Terphenyl(S)	8.49	150067953	40.273 ppb
Surrogate Spike 30.000		Recovery =	134.24%
4) SA Octacosane(S)	11.02	108458298	40.183 ppb
Surrogate Spike 30.000		Recovery =	133.94%
Target Compounds			
1) HATM Diesel (C10-C28)	7.55	2040314538	777.111 ppb

Quantitation Report

Data File: G:\APOLLO\DATA\150121\121007.D
Sample : Diesel 800/1000 1/20/15





Quantitation Report (Not Reviewed)

Data File : G:\APOLLO\DATA\150121\121008.D Vial: 8
Acq On : 1-21-15 18:14:25 Operator: lac
Sample : Diesel 1000/1000 1/20/15 Inst : Apollo
Misc : Mix(A) Multiplr: 1.00
IntFile : events.e
Quant Time: Jan 23 9:31 2015 Quant Results File: CTO121.RES

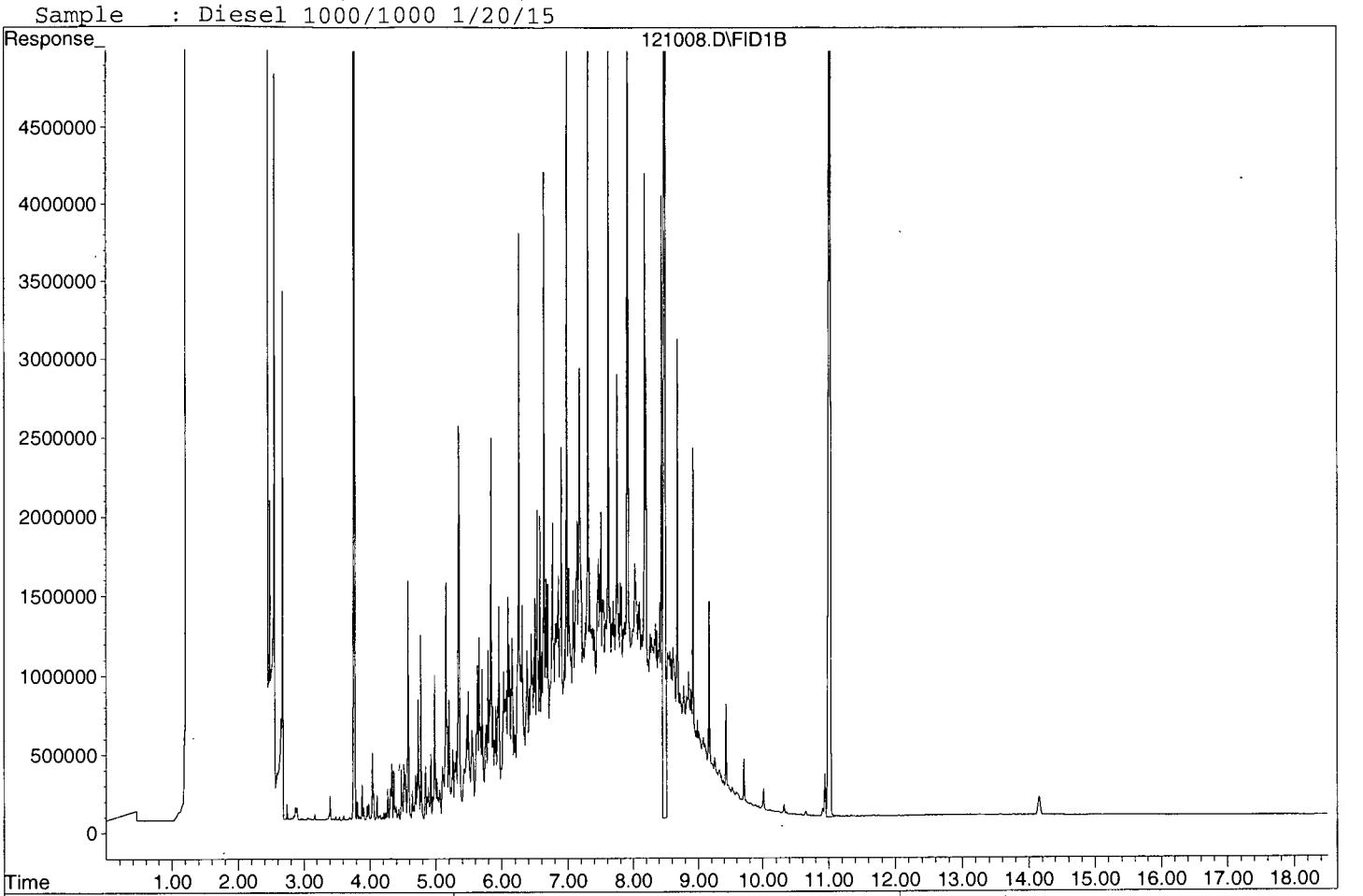
Method : G:\APOLLO\DATA\150127\CTO121.M (Chemstation Integrator)
Title : 8015 B&C
Last Update : Mon Jan 26 09:50:19 2015
Response via : Multiple Level Calibration

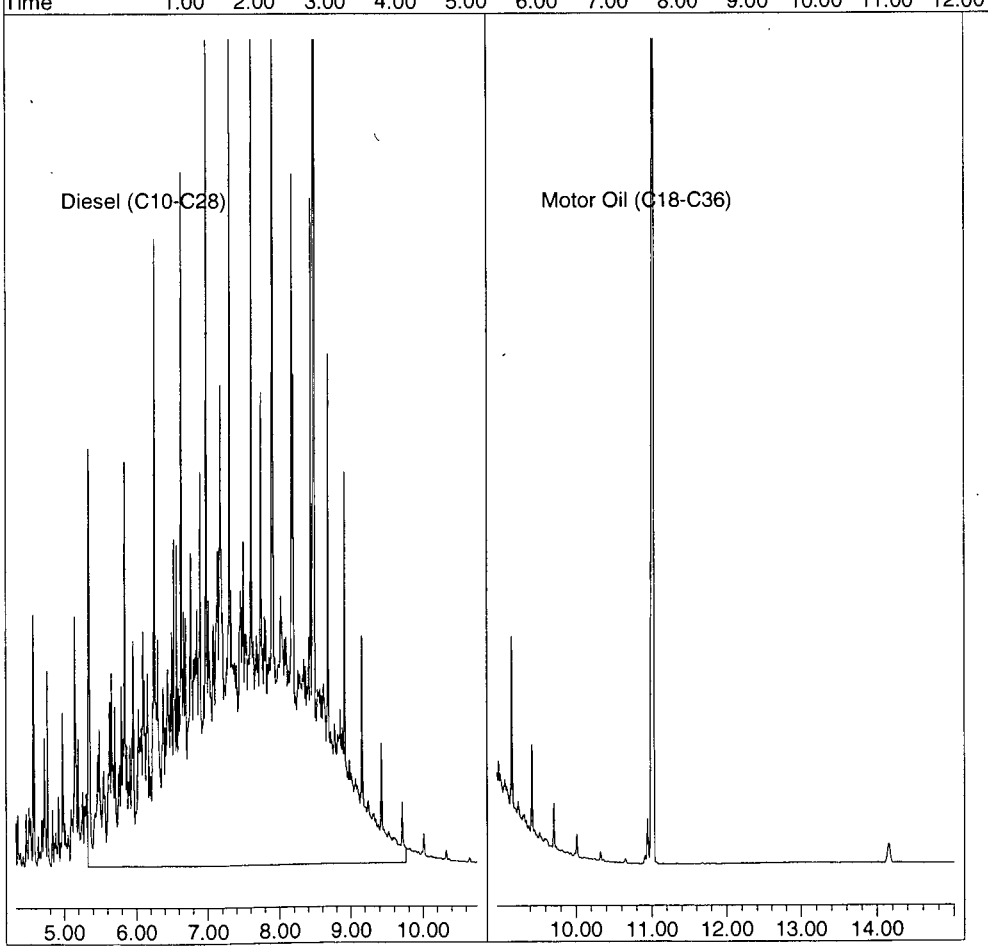
Volume Inj. : 2UL
Signal Phase : DB-5
Signal Info : FID02A

Compound	R.T.	Response	Conc Units
System Monitoring Compounds			
3) SA Ortho-Terphenyl(S)	8.49	183482132	49.240 ppb
Surrogate Spike 30.000		Recovery =	164.13%
4) SA Octacosane(S)	11.02	132903858	49.240 ppb
Surrogate Spike 30.000		Recovery =	164.13%
Target Compounds			
1) HATM Diesel (C10-C28)	7.55	2484639135	946.345 ppb

Quantitation Report

Data File: G:\APOLLO\DATA\150121\121008.D
Sample : Diesel 1000/1000 1/20/15





Quantitation Report (Not Reviewed)

Data File : G:\APOLLO\DATA\150121\121010.D Vial: 10
Acq On : 1-21-15 19:02:25 Operator: lac
Sample : MO 25/1000 1/20/15 Inst : Apollo
Misc : Mix(B) Multiplr: 1.00
IntFile : events.e
Quant Time: Jan 23 9:31 2015 Quant Results File: CTO121.RES

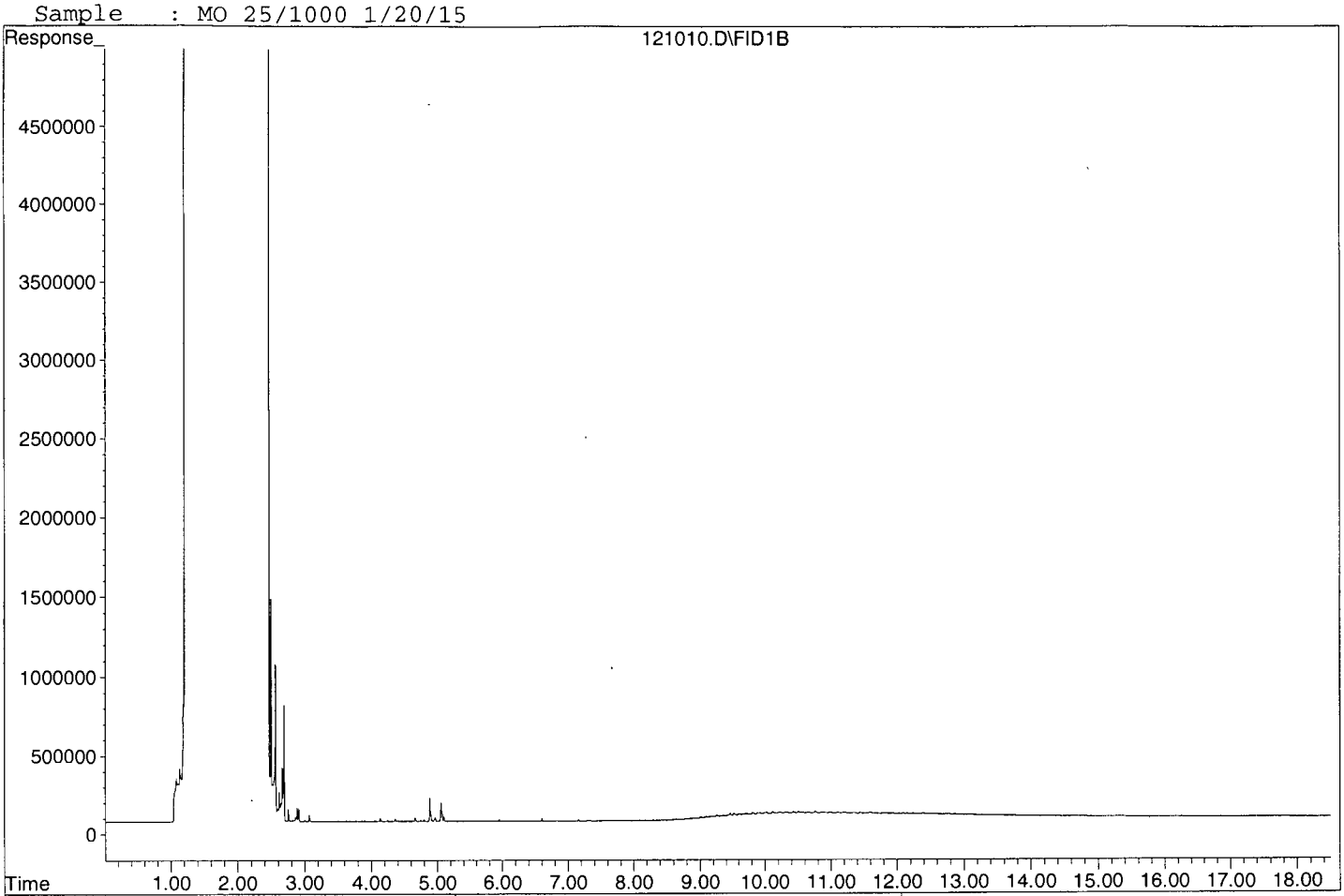
Method : G:\APOLLO\DATA\150127\CTO121.M (Chemstation Integrator)
Title : 8015 B&C
Last Update : Mon Jan 26 09:50:19 2015
Response via : Multiple Level Calibration

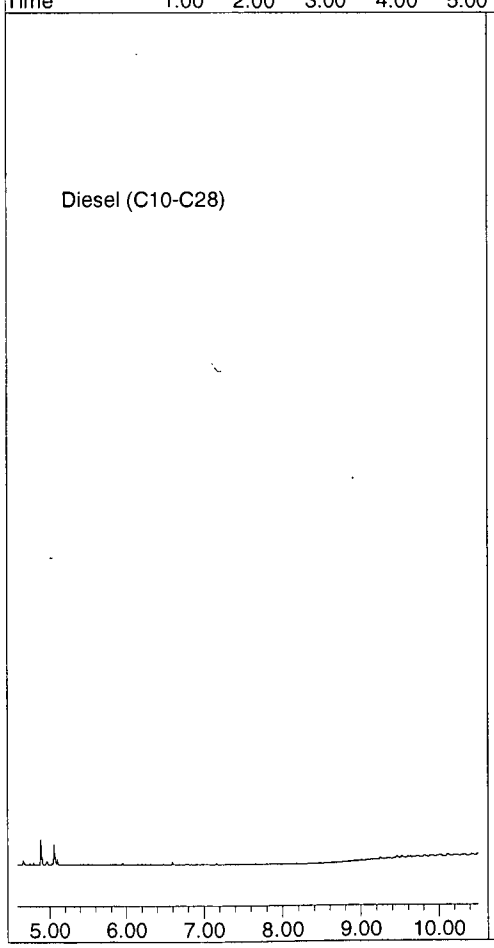
Volume Inj. : 2UL
Signal Phase : DB-5
Signal Info : FID02A

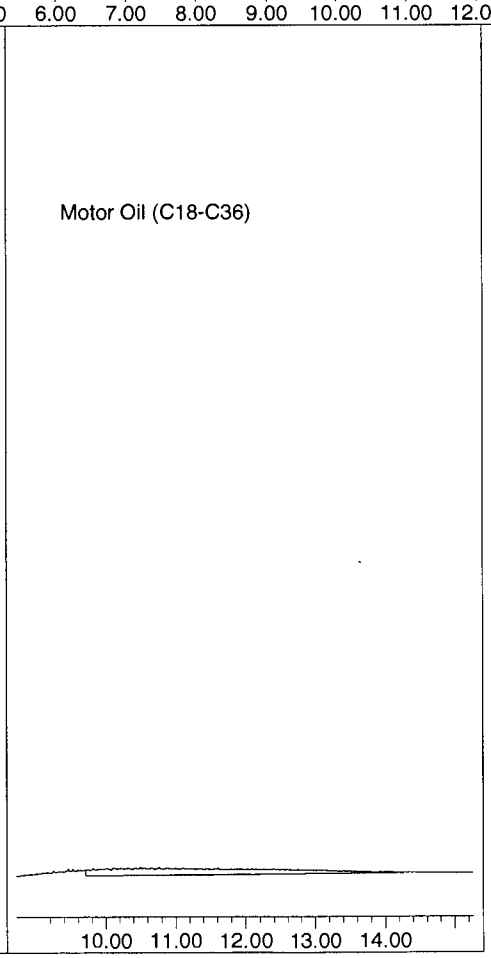
Compound	R.T.	Response	Conc Units
System Monitoring Compounds			
Target Compounds			
2) HBTM Motor Oil (C18-C36)	11.99	72296993	36.827 ppb

Quantitation Report

Data File: G:\APOLLO\DATA\150121\121010.D
Sample : MO 25/1000 1/20/15







Quantitation Report (Not Reviewed)

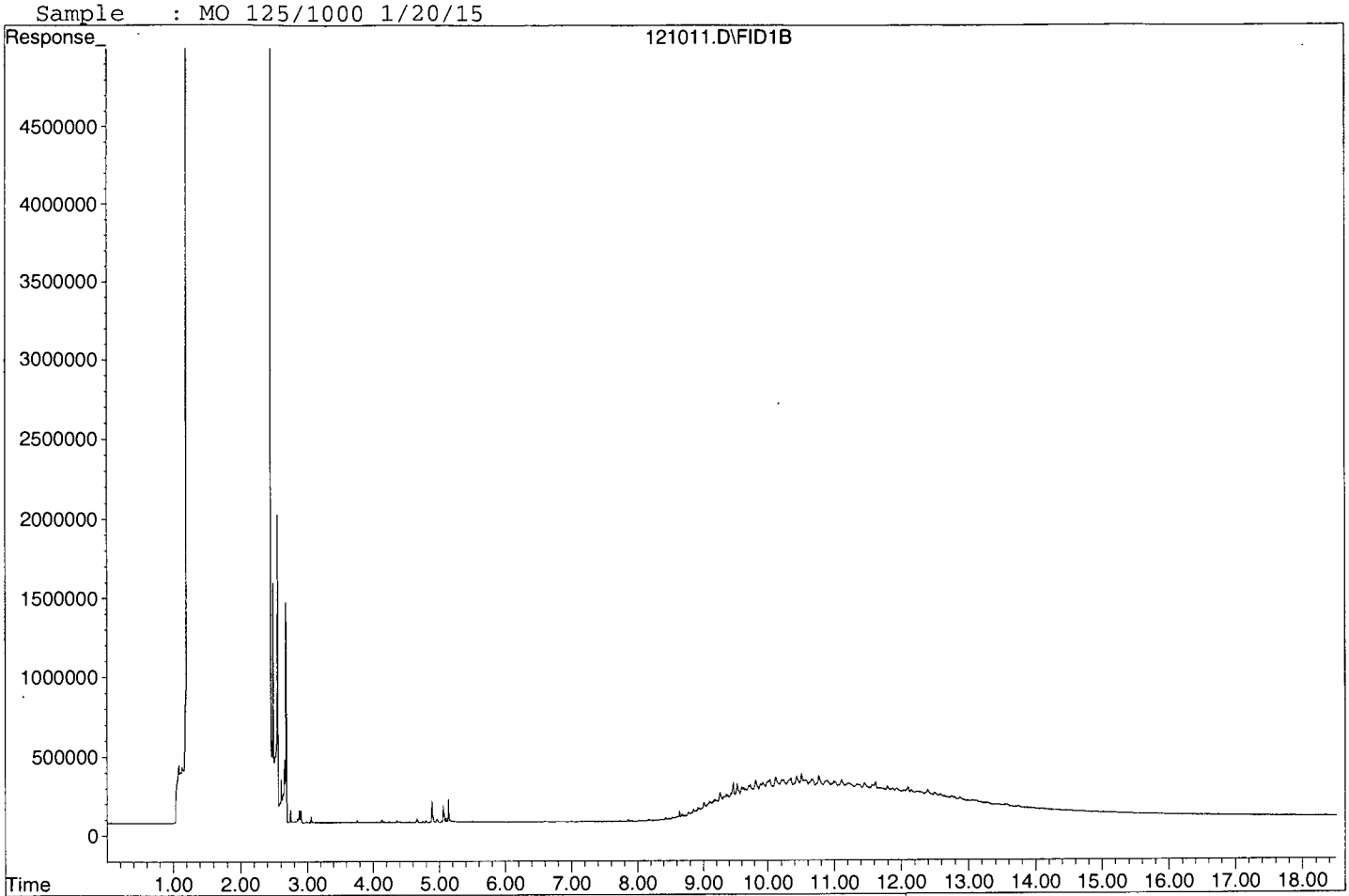
Data File : G:\APOLLO\DATA\150121\121011.D Vial: 11
Acq On : 1-21-15 19:26:22 Operator: lac
Sample : MO 125/1000 1/20/15 Inst : Apollo
Misc : Mix(B) Multiplr: 1.00
IntFile : events.e
Quant Time: Jan 23 9:31 2015 Quant Results File: CTO121.RES

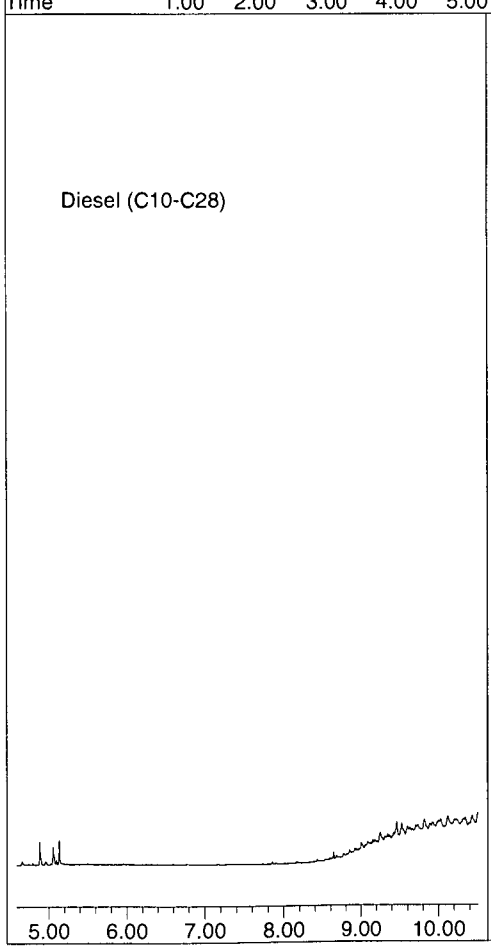
Method : G:\APOLLO\DATA\150127\CTO121.M (Chemstation Integrator)
Title : 8015 B&C
Last Update : Mon Jan 26 09:50:19 2015
Response via : Multiple Level Calibration

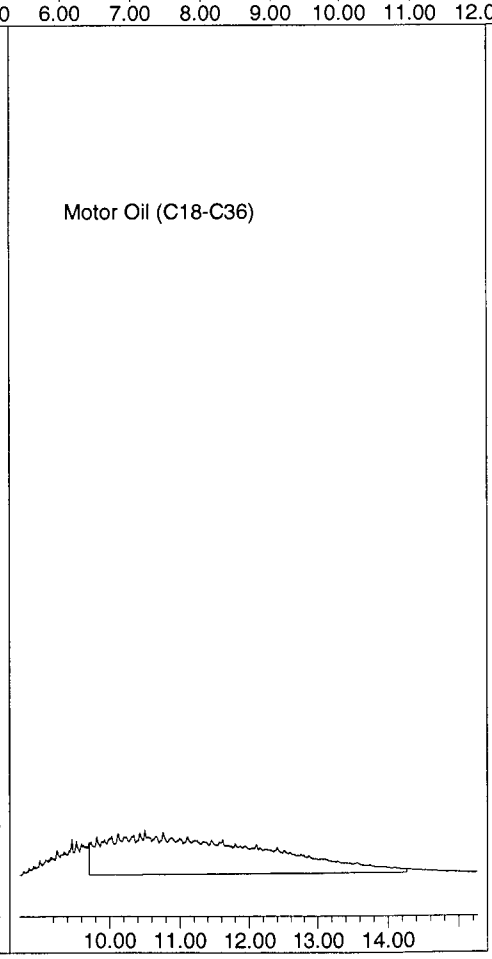
Volume Inj. : 2UL
Signal Phase : DB-5
Signal Info : FID02A

Compound	R.T.	Response	Conc Units
System Monitoring Compounds			
Target Compounds			
2) HBTM Motor Oil (C18-C36)	11.99	367224705	187.059 ppb

Data File: G:\APOLLO\DATA\150121\121011.D
Sample : MO 125/1000 1/20/15







Quantitation Report (Not Reviewed)

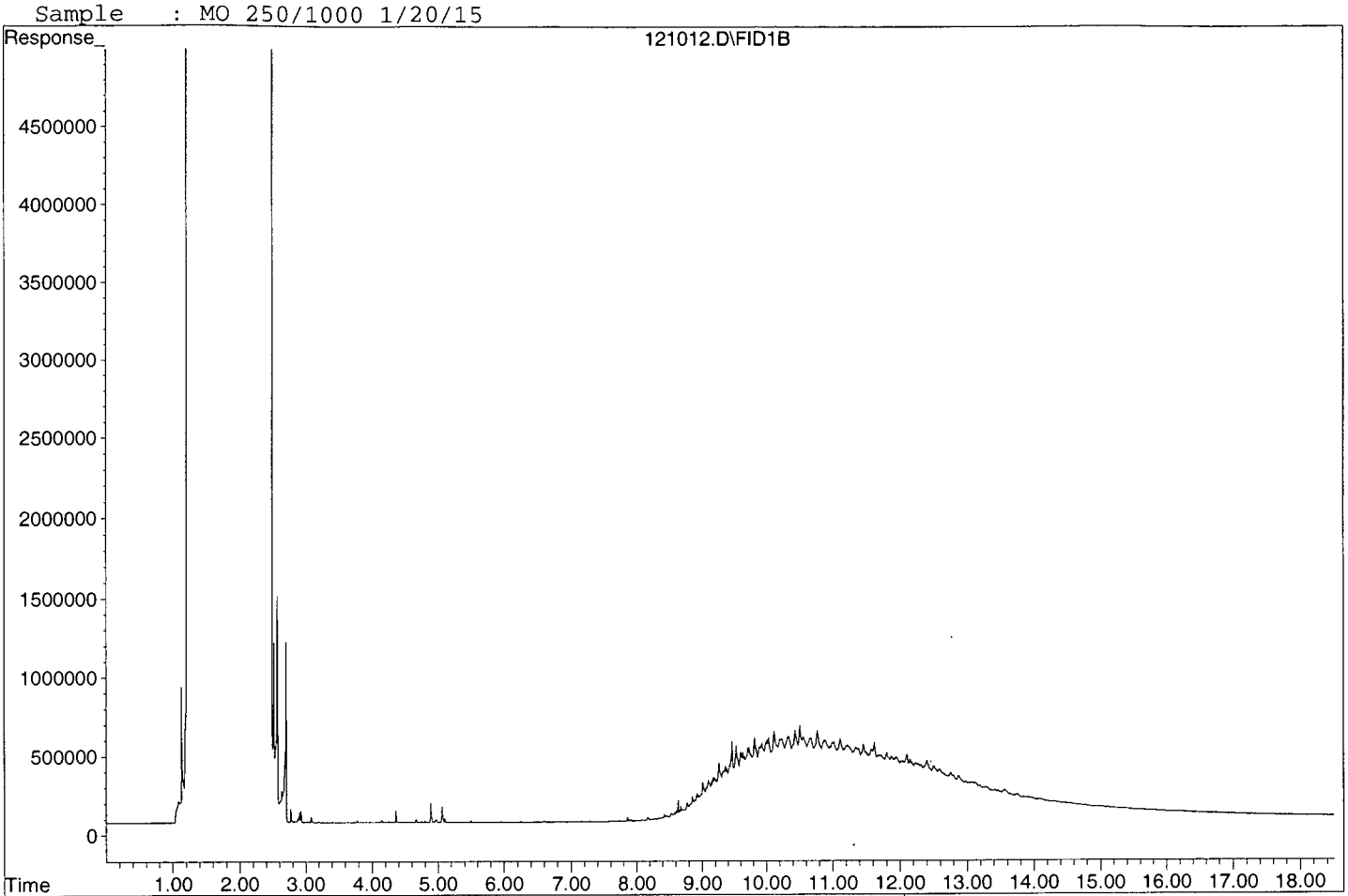
Data File : G:\APOLLO\DATA\150121\121012.D Vial: 12
Acq On : 1-21-15 19:50:20 Operator: lac
Sample : MO 250/1000 1/20/15 Inst : Apollo
Misc : Mix(B) Multiplr: 1.00
IntFile : events.e
Quant Time: Jan 23 9:31 2015 Quant Results File: CTO121.RES

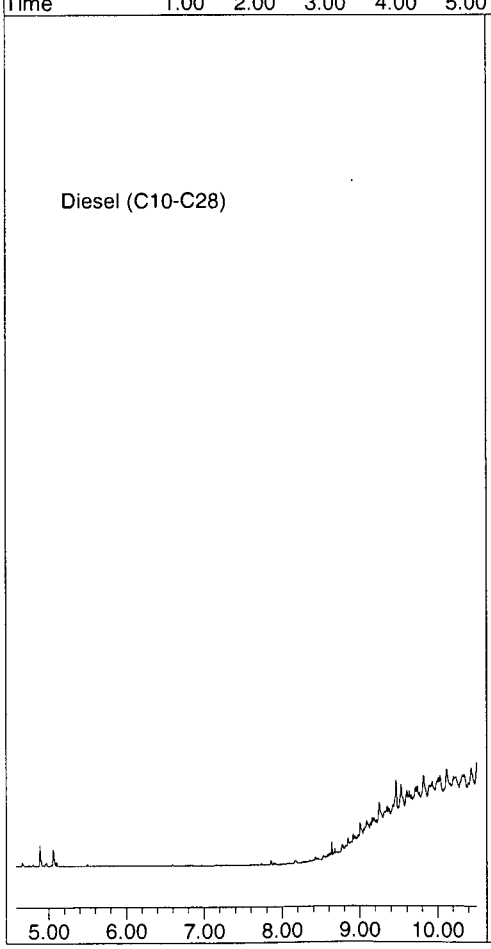
Method : G:\APOLLO\DATA\150127\CTO121.M (Chemstation Integrator)
Title : 8015 B&C
Last Update : Mon Jan 26 09:50:19 2015
Response via : Multiple Level Calibration

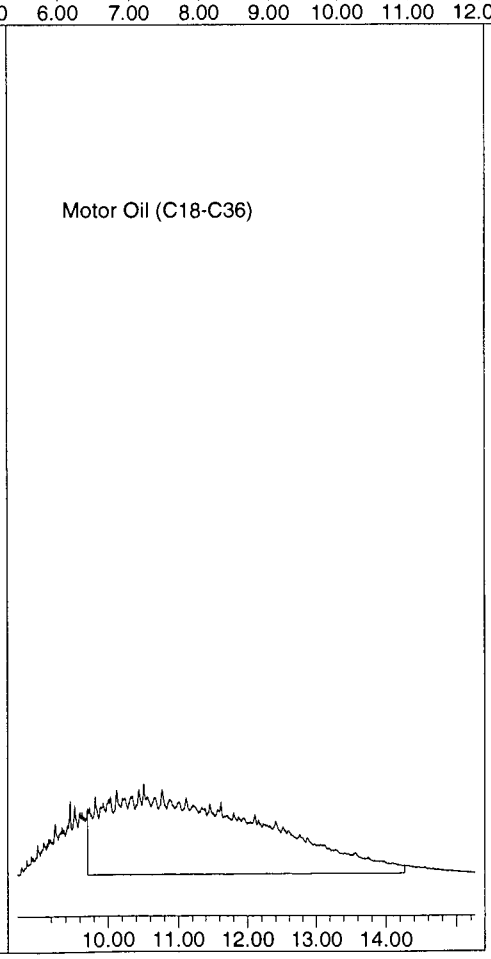
Volume Inj. : 2UL
Signal Phase : DB-5
Signal Info : FID02A

Compound	R.T.	Response	Conc Units
System Monitoring Compounds			
Target Compounds			
2) HBTM Motor Oil (C18-C36)	11.99	743938507	378.952 ppb

Data File: G:\APOLLO\DATA\150121\121012.D
Sample : MO 250/1000 1/20/15







Quantitation Report (Not Reviewed)

Data File : G:\APOLLO\DATA\150121\121013.D Vial: 13
Acq On : 1-21-15 20:14:20 Operator: lac
Sample : MO 100/200 1/20/15 Inst : Apollo
Misc : Mix(B) Multiplr: 1.00
IntFile : events.e
Quant Time: Jan 23 9:31 2015 Quant Results File: CTO121.RES

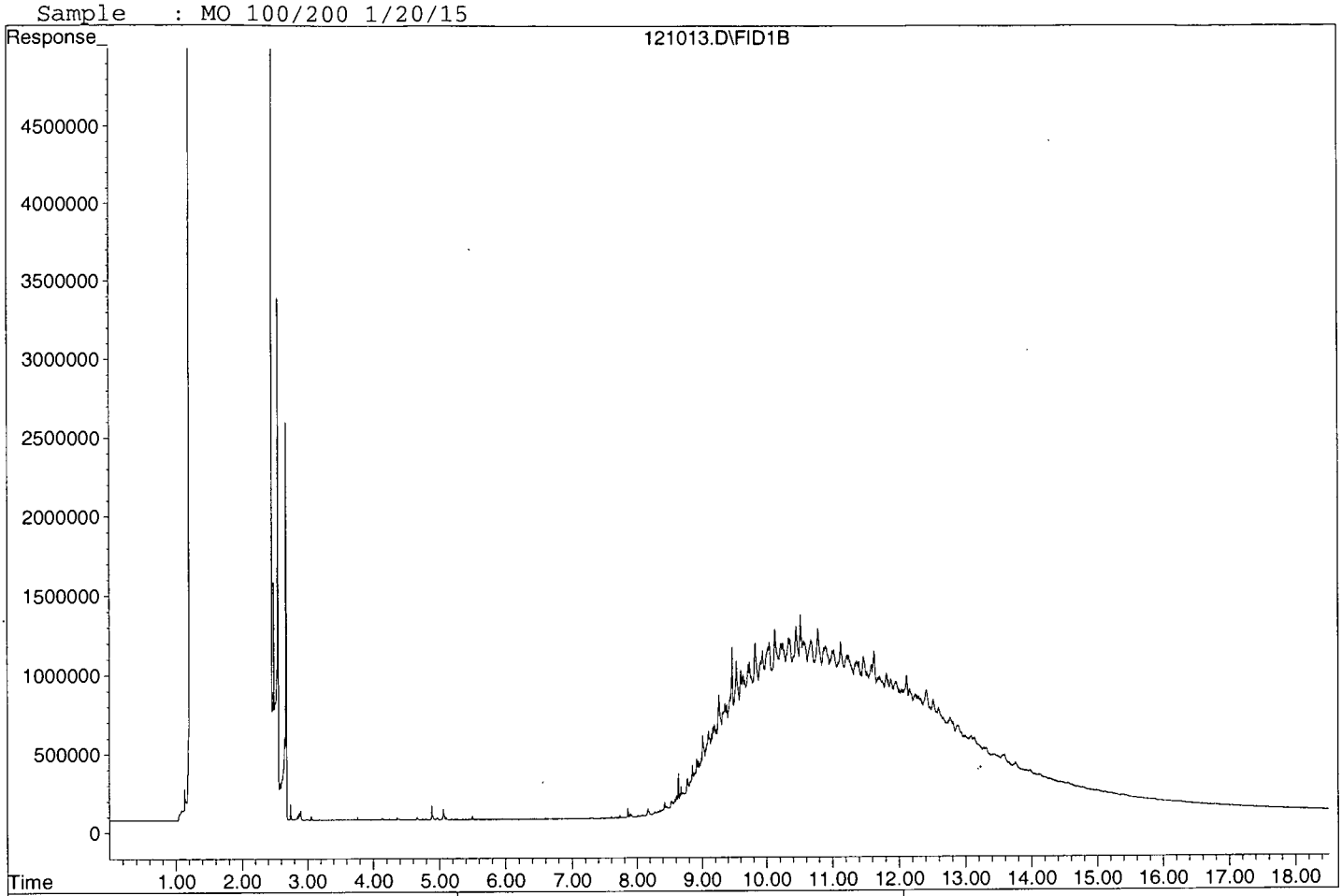
Method : G:\APOLLO\DATA\150127\CTO121.M (Chemstation Integrator)
Title : 8015 B&C
Last Update : Mon Jan 26 09:50:19 2015
Response via : Multiple Level Calibration

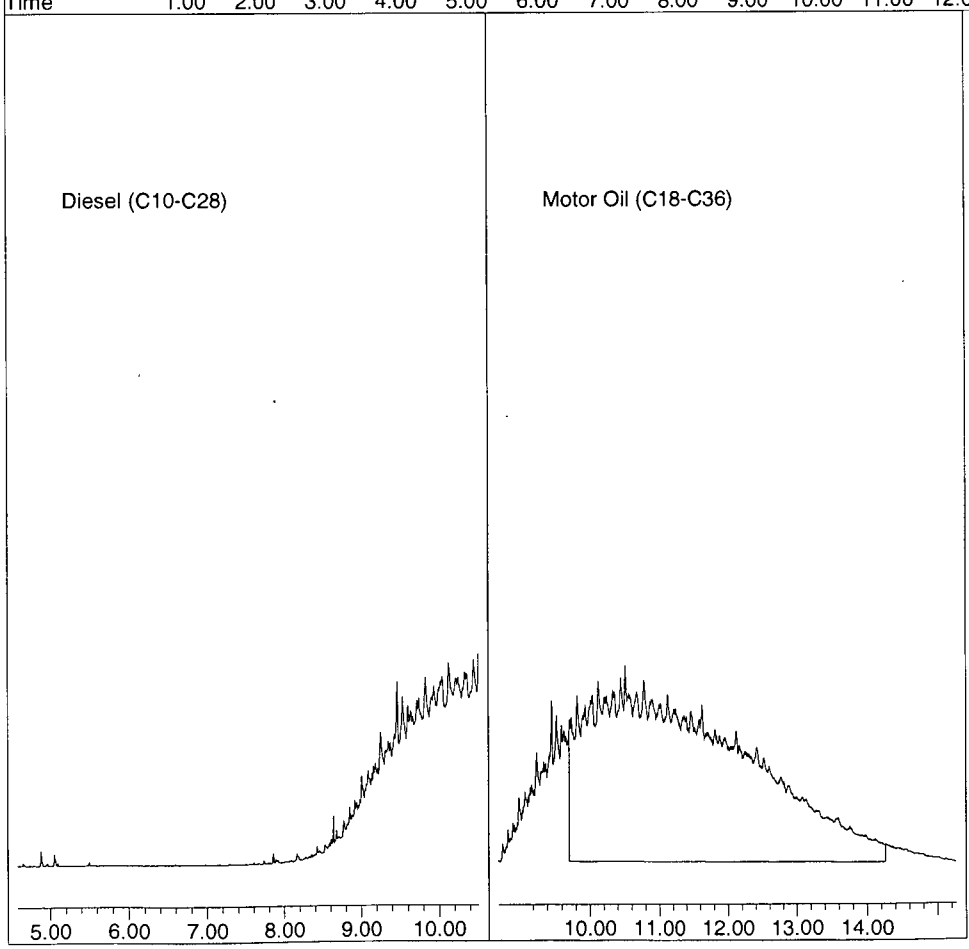
Volume Inj. : 2UL
Signal Phase : DB-5
Signal Info : FID02A

Compound	R.T.	Response	Conc Units
System Monitoring Compounds			
Target Compounds			
2) HBTM Motor Oil (C18-C36)	11.99	1582523323	806.116 ppb

Quantitation Report

Data File: G:\APOLLO\DATA\150121\121013.D
Sample : MO 100/200 1/20/15





Quantitation Report (Not Reviewed)

Data File : G:\APOLLO\DATA\150121\121014.D Vial: 14
Acq On : 1-21-15 20:38:12 Operator: lac
Sample : MO 75/100 1/20/15 Inst : Apollo
Misc : Mix(B) Multiplr: 1.00
IntFile : events.e
Quant Time: Jan 23 9:31 2015 Quant Results File: CTO121.RES

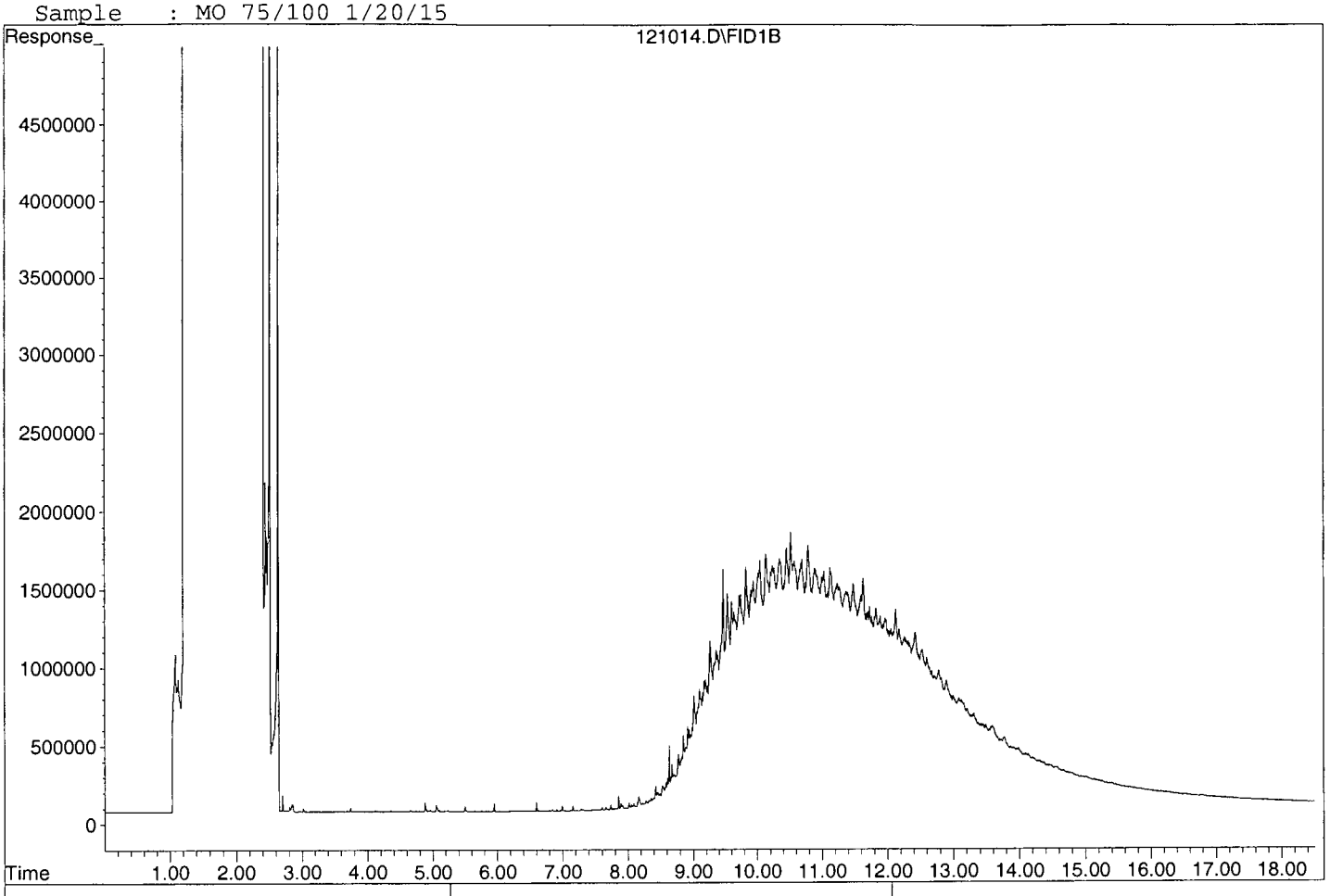
Method : G:\APOLLO\DATA\150127\CTO121.M (Chemstation Integrator)
Title : 8015 B&C
Last Update : Mon Jan 26 09:50:19 2015
Response via : Multiple Level Calibration

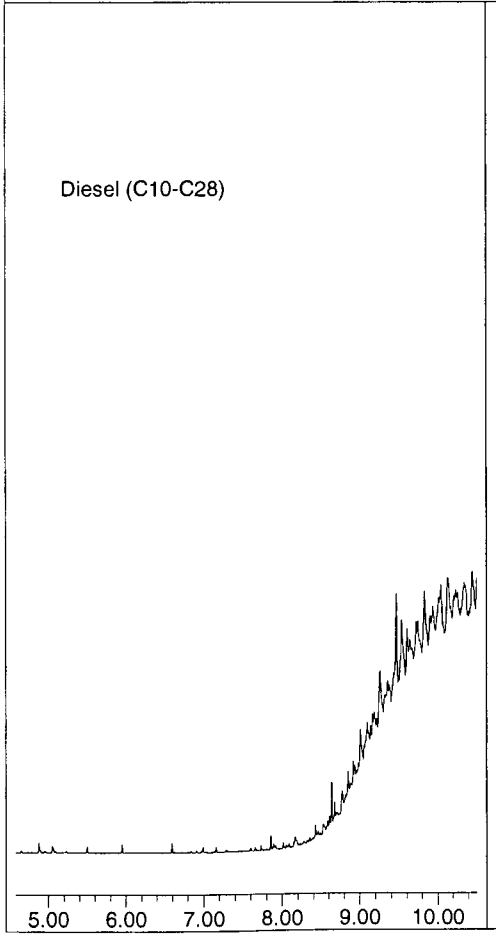
Volume Inj. : 2UL
Signal Phase : DB-5
Signal Info : FID02A

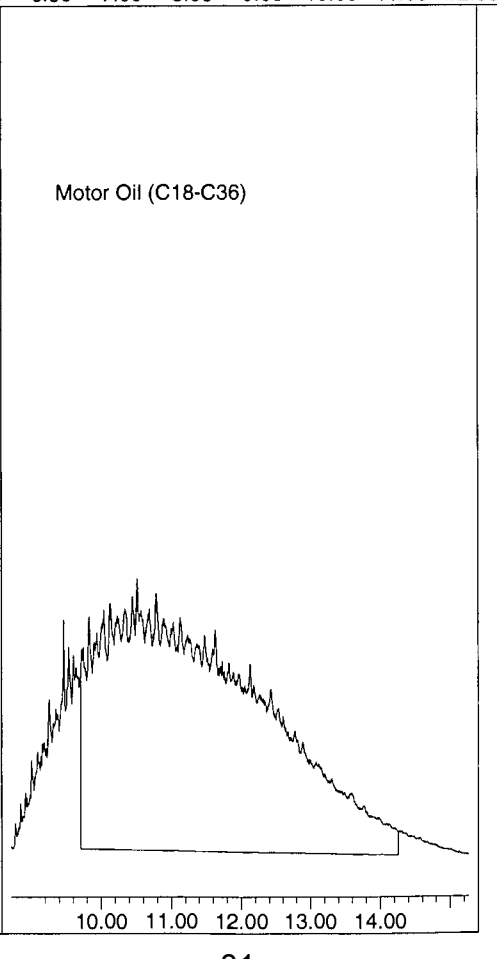
Compound	R.T.	Response	Conc Units
System Monitoring Compounds			
Target Compounds			
2) HBTM Motor Oil (C18-C36)	11.99	2274478670	1158.589 ppb

Quantitation Report

Data File: G:\APOLLO\DATA\150121\121014.D
Sample : MO 75/100 1/20/15







Quantitation Report (Not Reviewed)

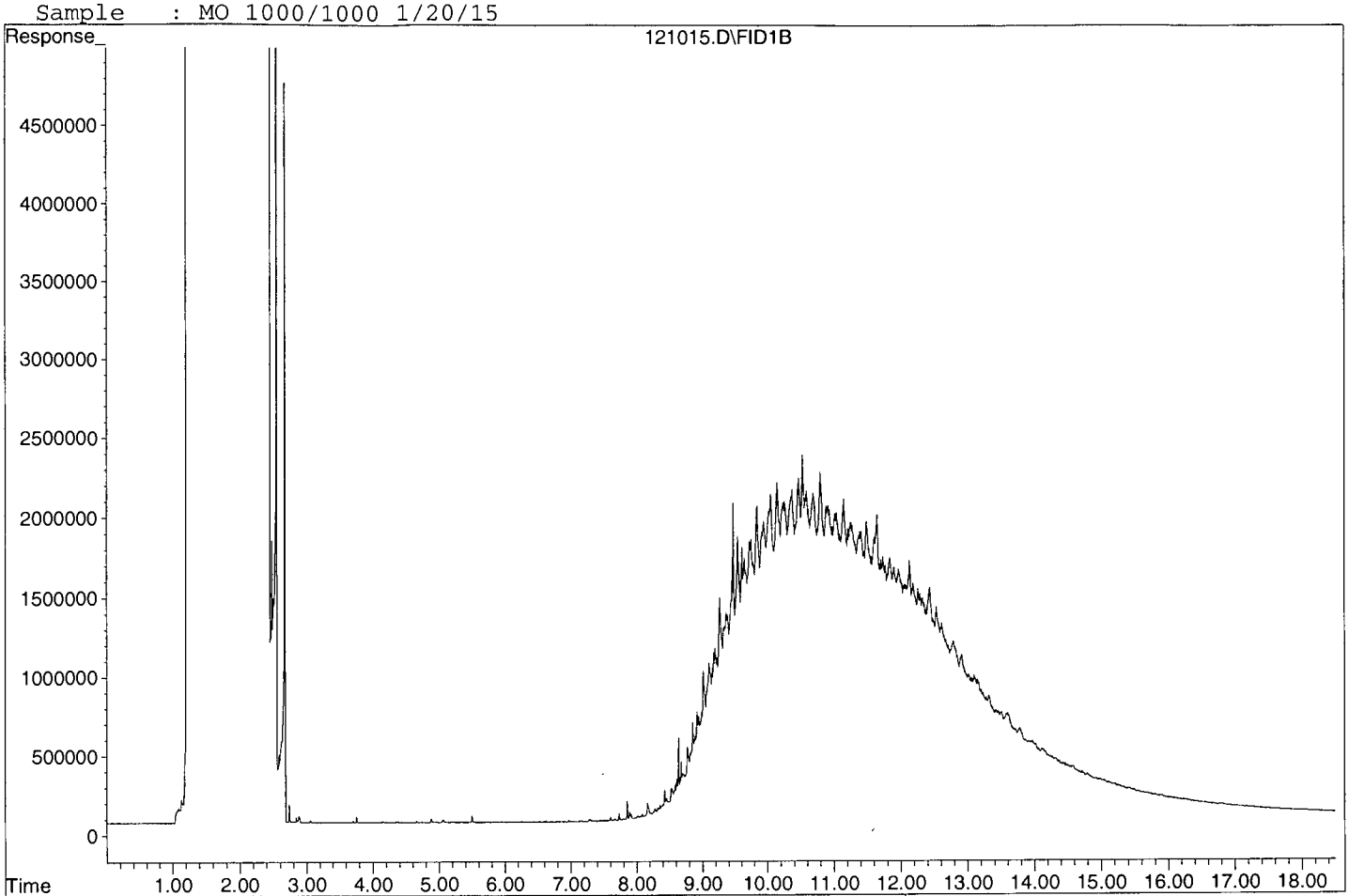
Data File : G:\APOLLO\DATA\150121\121015.D Vial: 15
Acq On : 1-21-15 21:02:11 Operator: lac
Sample : MO 1000/1000 1/20/15 Inst : Apollo
Misc : Mix(B) Multiplr: 1.00
IntFile : events.e
Quant Time: Jan 23 9:31 2015 Quant Results File: CTO121.RES

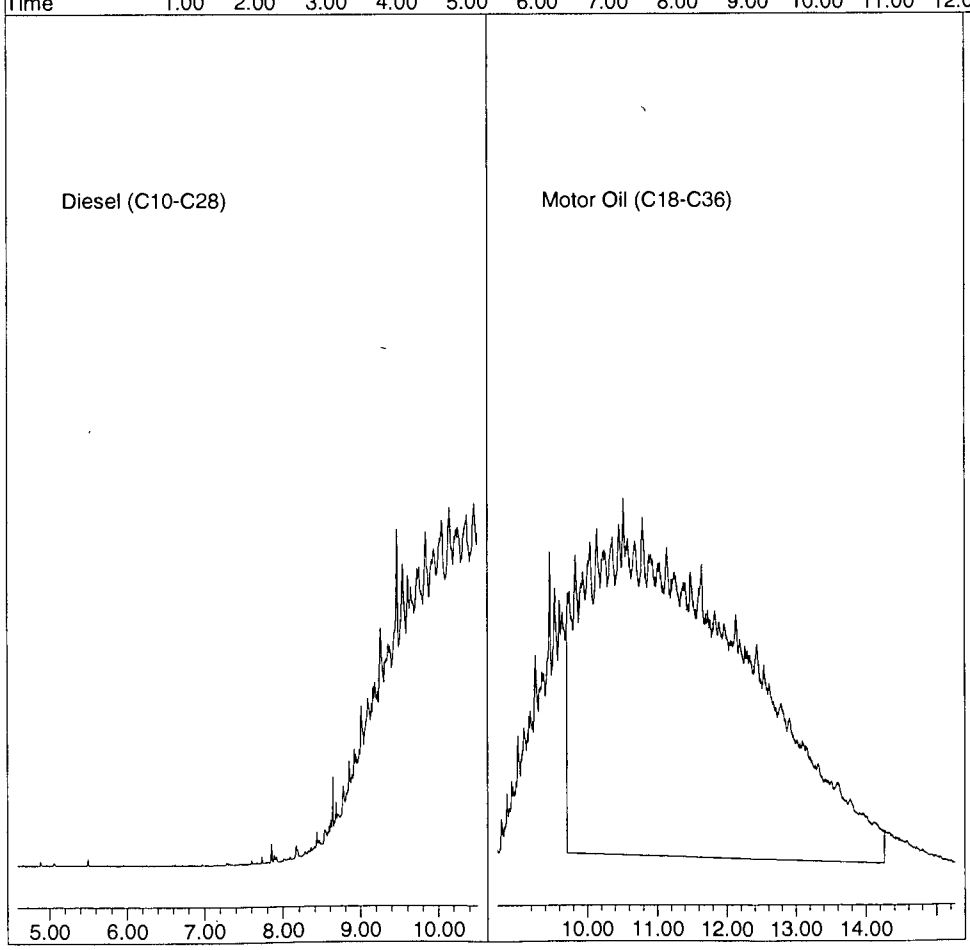
Method : G:\APOLLO\DATA\150127\CTO121.M (Chemstation Integrator)
Title : 8015 B&C
Last Update : Mon Jan 26 09:50:19 2015
Response via : Multiple Level Calibration

Volume Inj. : 2UL
Signal Phase : DB-5
Signal Info : FID02A

Compound	R.T.	Response	Conc Units
System Monitoring Compounds			
Target Compounds			
2) HBTM Motor Oil (C18-C36)	11.99	2995339368	1525.786 ppb

Data File: G:\APOLLO\DATA\150121\121015.D
Sample : MO 1000/1000 1/20/15





TPH Extractables
CTO121

Form 7

Continuing Calibration

Lab Name: APPL, Inc.
Case No:
Matrix:

SDG No: 75351
Date Analyzed: 1/21/2015
Instrument: Apollo
Initial Cal. Date: 1/21/2015
Data File: 121016,17.D

		Compound	MEAN	CCRF	%D	%Drift	
1	HATM	Diesel (C10-C24)	1257630	1327680	5.6	HATM	
2	HBTM	Motor Oil (C24-C36)	749936	765734	2.1	HBTM	
3							
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39							
40							
		Average			3.9		

Quantitation Report (QT Reviewed)

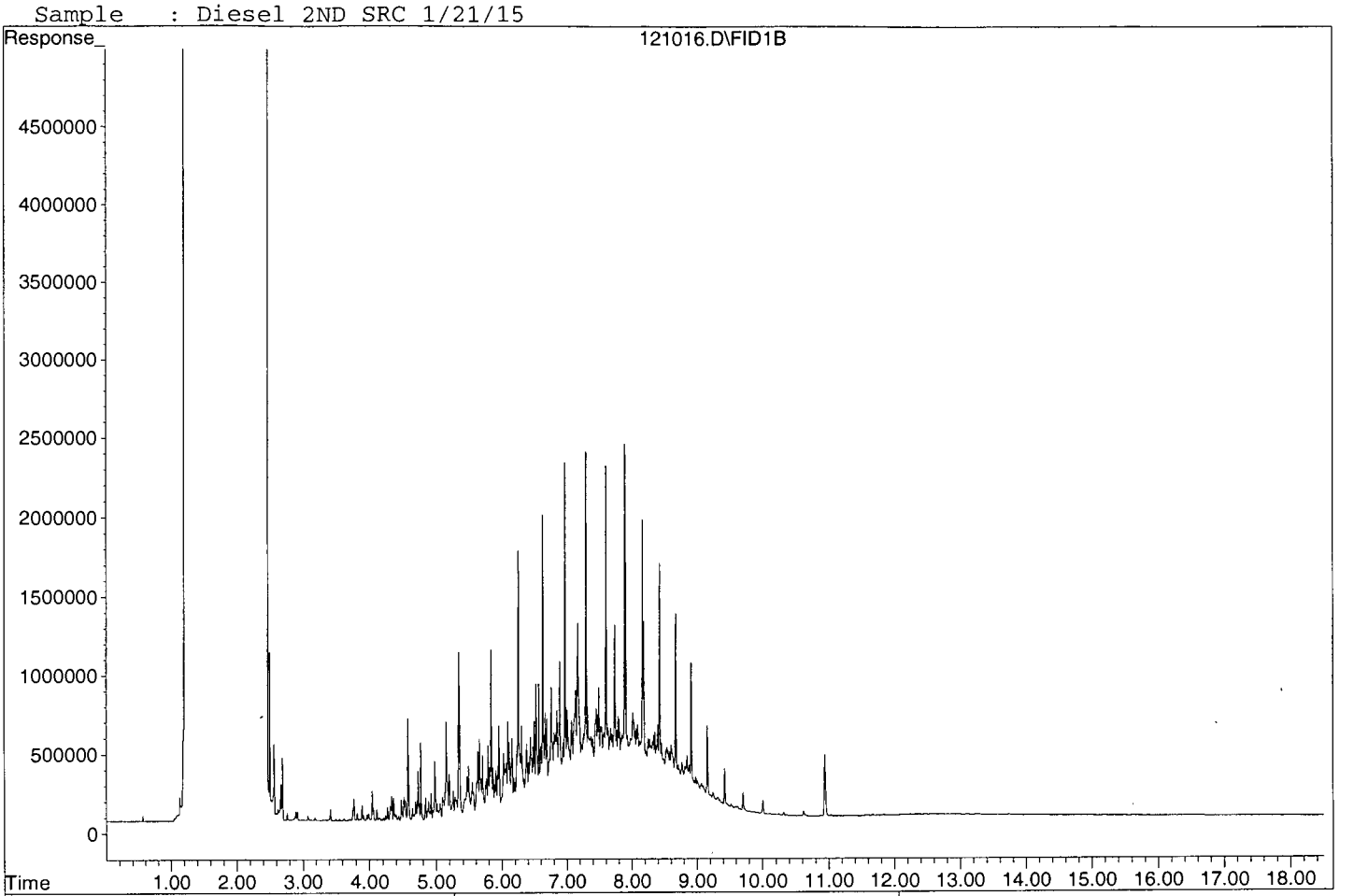
Data File : G:\APOLLO\DATA\150121\121016.D Vial: 16
Acq On : 1-21-15 21:25:59 Operator: lac
Sample : Diesel 2ND SRC 1/21/15 Inst : Apollo
Misc : Mix(A) Multiplr: 1.00
IntFile : events.e
Quant Time: Jan 30 13:01 2015 Quant Results File: CTO121.RES

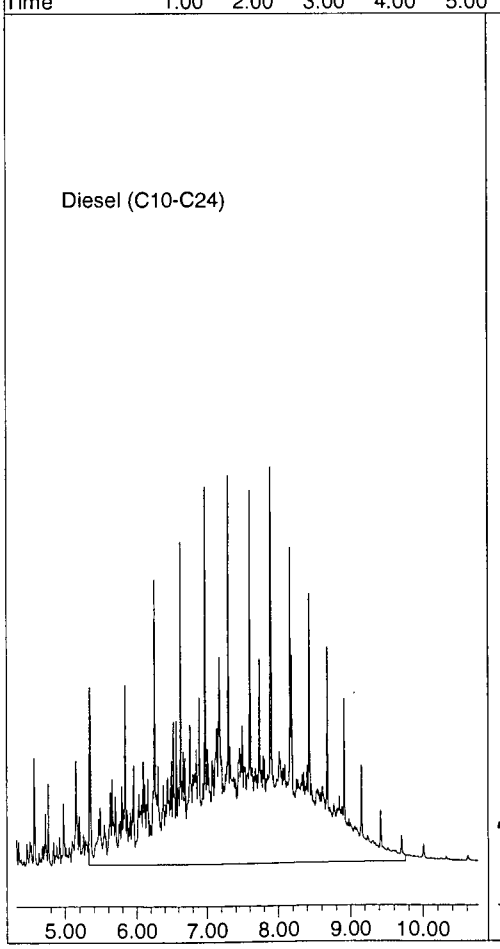
Method : G:\APOLLO\DATA\150127\CTO121.M (Chemstation Integrator)
Title : 8015 B&C
Last Update : Mon Jan 26 09:50:19 2015
Response via : Multiple Level Calibration

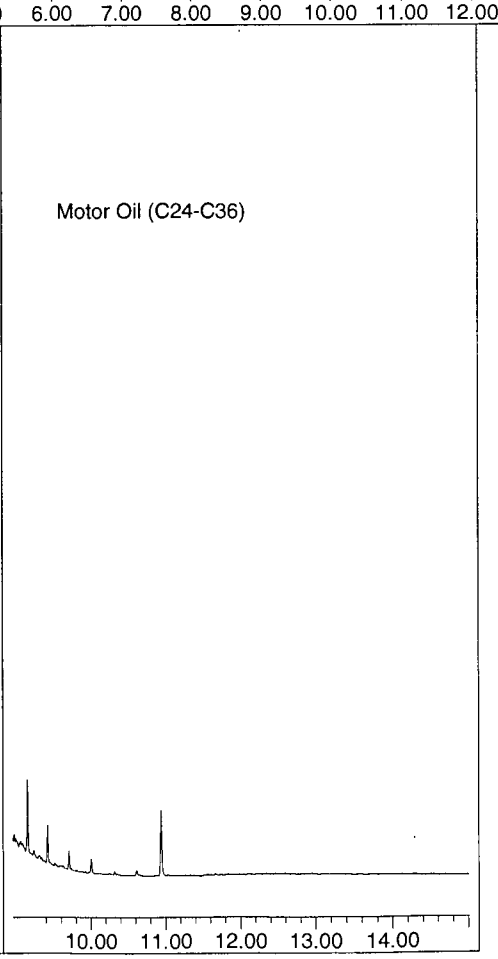
Volume Inj. : 2UL
Signal Phase : DB-5
Signal Info : FID02A

Compound	R.T.	Response	Conc Units
System Monitoring Compounds			
Target Compounds			
1) HATM Diesel (C10-C24)	7.55	1062146922	422.282 ppb

Data File: G:\APOLLO\DATA\150121\121016.D
Sample : Diesel 2ND SRC 1/21/15







Quantitation Report (Not Reviewed)

Data File : G:\APOLLO\DATA\150121\121017.D Vial: 17
Acq On : 1-21-15 21:49:54 Operator: lac
Sample : MO 2ND SRC 12/10/14 Inst : Apollo
Misc : Mix(B) Multiplr: 1.00
IntFile : events.e
Quant Time: Jan 23 9:42 2015 Quant Results File: CTO121.RES

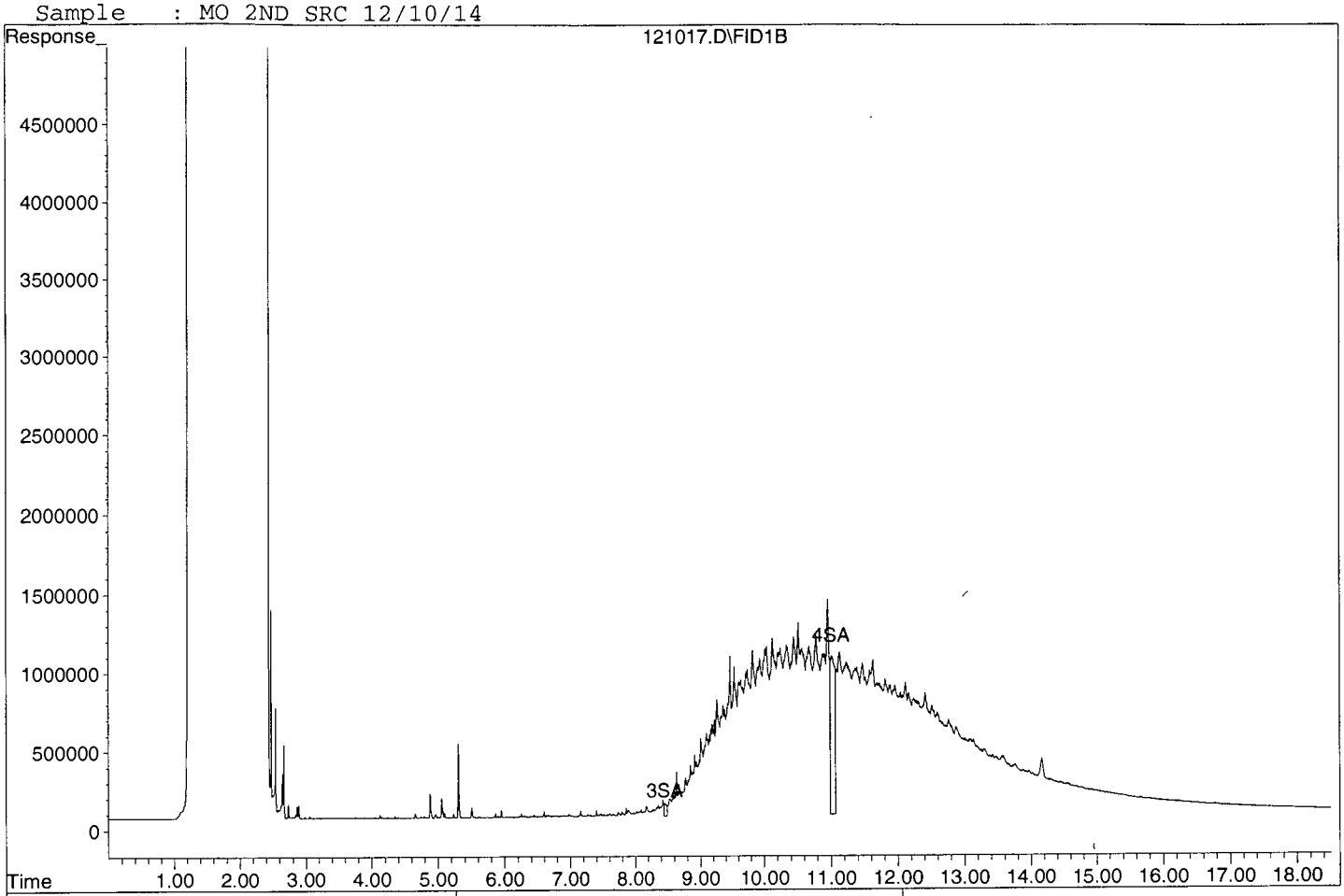
Method : G:\APOLLO\DATA\150127\CTO121.M (Chemstation Integrator)
Title : 8015 B&C
Last Update : Mon Jan 26 09:50:19 2015
Response via : Multiple Level Calibration

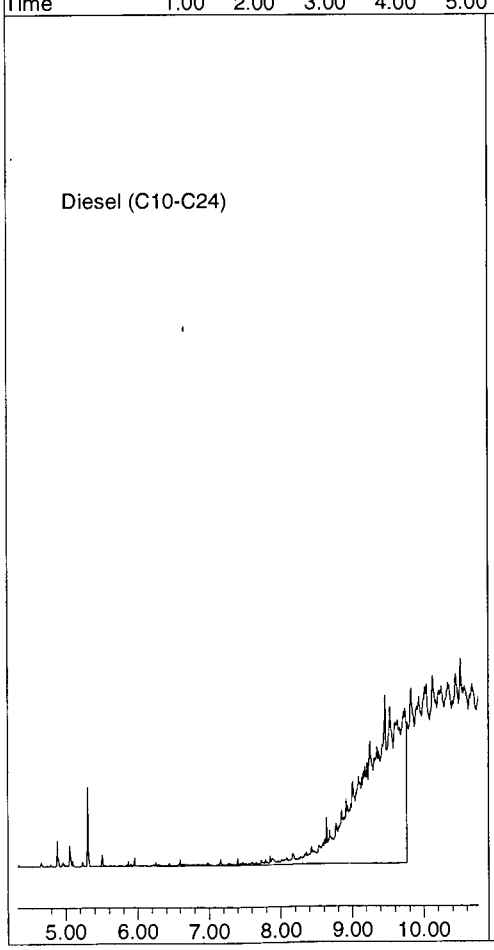
Volume Inj. : 2UL
Signal Phase : DB-5
Signal Info : FID02A

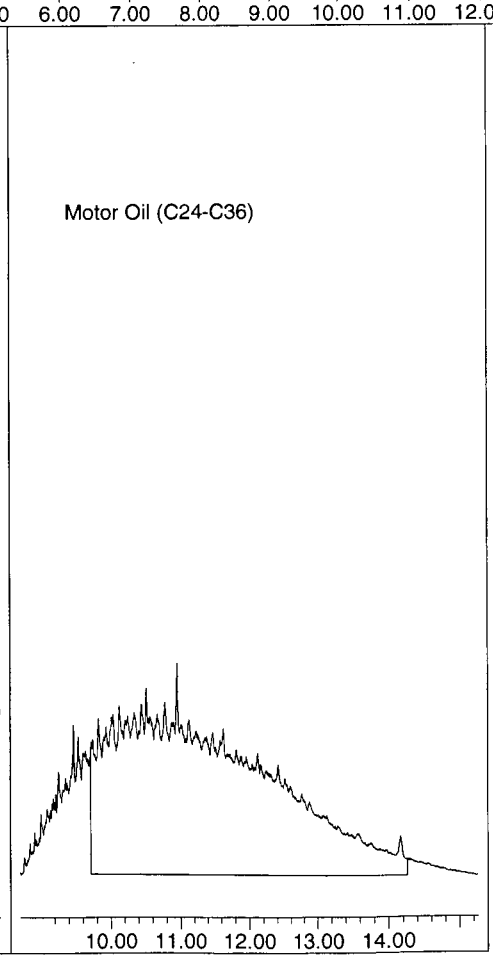
Compound	R.T.	Response	Conc Units
System Monitoring Compounds			
3) SA Ortho-Terphenyl(S)	8.46	2218619	0.595 ppb
Surrogate Spike 30.000		Recovery =	1.98%
4) SA Octacosane(S)	11.01	44533073	16.499 ppb
Surrogate Spike 30.000		Recovery =	55.00%
Target Compounds			
1) HATM Diesel (C10-C24)	7.55	390048035	155.073 ppb
2) HBTM Motor Oil (C24-C36)	11.99	1531468834	1021.067 ppb

Quantitation Report

Data File: G:\APOLLO\DATA\150121\121017.D
Sample : MO 2ND SRC 12/10/14







TPH Extractables
CTO121

Form 7

Continuing Calibration

Lab Name: APPL, Inc.
Case No:
Matrix:

SDG No: 75351
Date Analyzed: 1/22/2015
Instrument: Apollo
Initial Cal. Date: 1/21/2015
Data File: 121050,51.D

		Compound	MEAN	CCRF	%D	%Drift	
1	HATM	Diesel (C10-C24)	1257630	1310110	4.2	HATM	
2	HBTM	Motor Oil (C24-C36)	749936	779465	3.9	HBTM	
3							
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39							
40							
		Average			4.1		

Quantitation Report (QT Reviewed)

Data File : G:\APOLLO\DATA\150121\121050.D Vial: 50
Acq On : 1-22-15 23:46:59 Operator: lac
Sample : Diesel 400ppm 1/12/15 Inst : Apollo
Misc : Mix(A) Multiplr: 1.00
IntFile : events.e
Quant Time: Jan 23 10:05 2015 Quant Results File: CTO121.RES

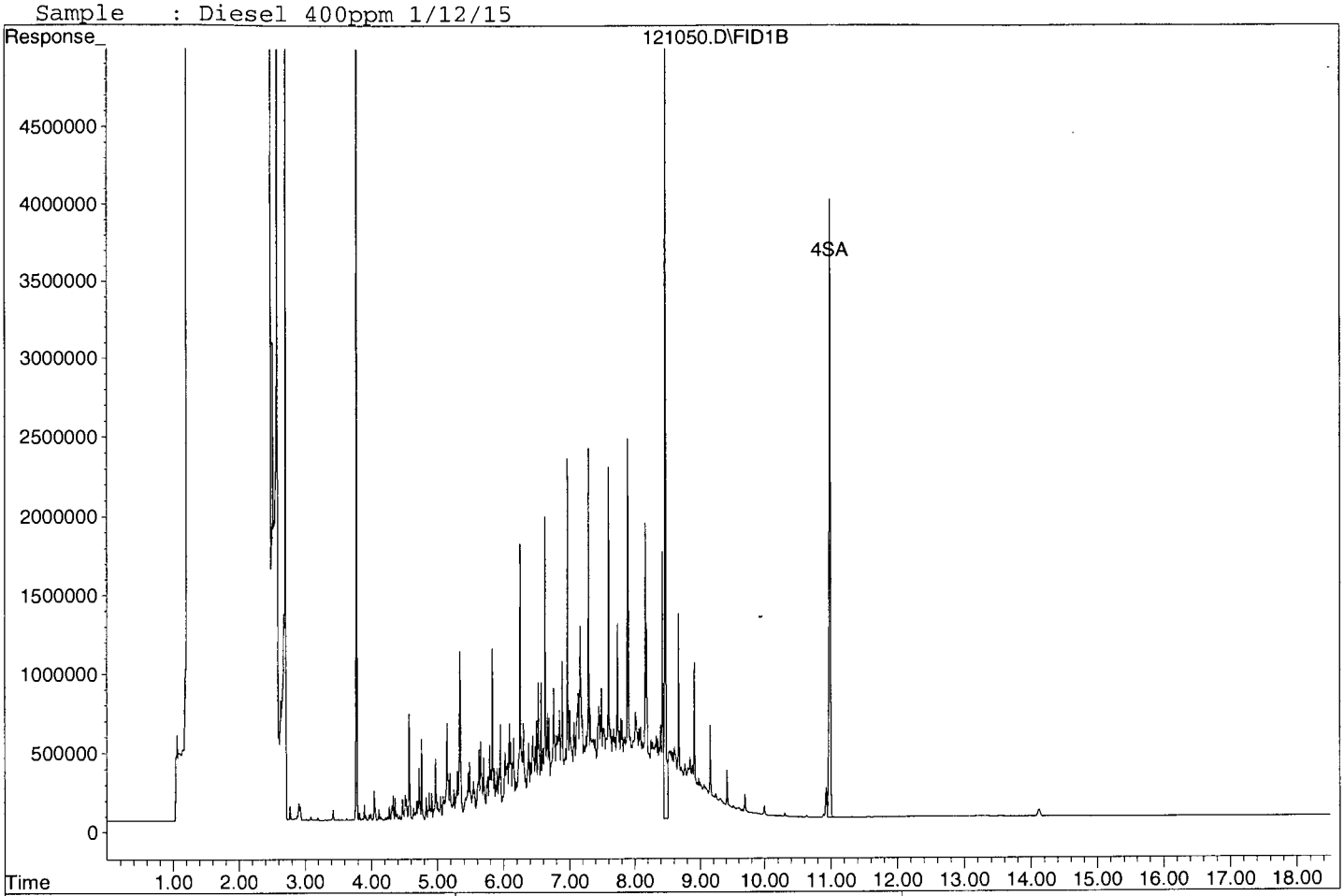
Method : G:\APOLLO\DATA\150121\CTO121.M (Chemstation Integrator)
Title : 8015 B&C
Last Update : Mon Jan 26 09:50:19 2015
Response via : Multiple Level Calibration

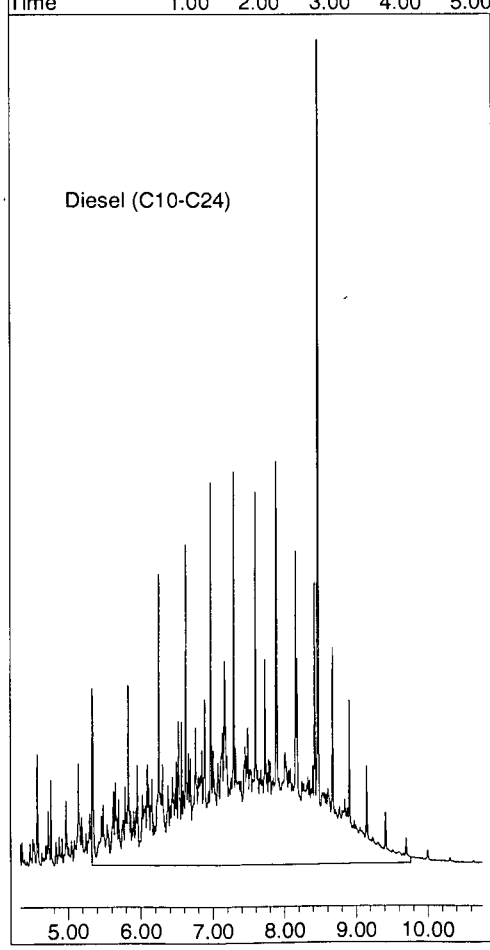
Volume Inj. : 2UL
Signal Phase : DB-5
Signal Info : FID02A

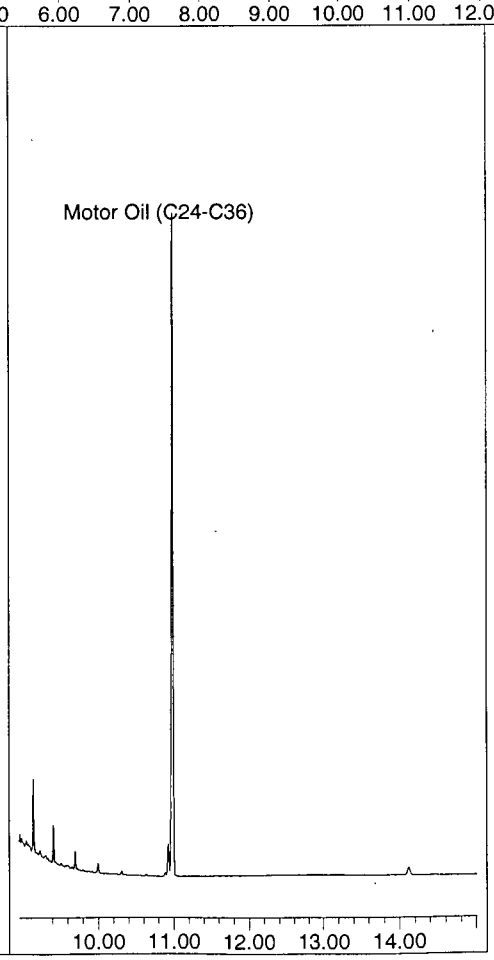
Compound	R.T.	Response	Conc Units
System Monitoring Compounds			
3) SA Ortho-Terphenyl(S)	8.47	75634540	20.298 ppb
Surrogate Spike 30.000		Recovery =	67.66%
4) SA Octacosane(S)	10.99	55993325	20.745 ppb
Surrogate Spike 30.000		Recovery =	69.15%
Target Compounds			
1) HATM Diesel (C10-C24)	7.55	1048084309	416.691 ppb

Quantitation Report

Data File: G:\APOLLO\DATA\150121\121050.D
Sample : Diesel 400ppm 1/12/15







Quantitation Report (Not Reviewed)

Data File : G:\APOLLO\DATA\150121\121051.D Vial: 51
Acq On : 1-23-15 0:10:36 Operator: lac
Sample : MO 1000ppm 12/30/14 Inst : Apollo
Misc : Mix(B) Multiplr: 1.00
IntFile : events.e
Quant Time: Jan 30 13:18 2015 Quant Results File: CTO121.RES

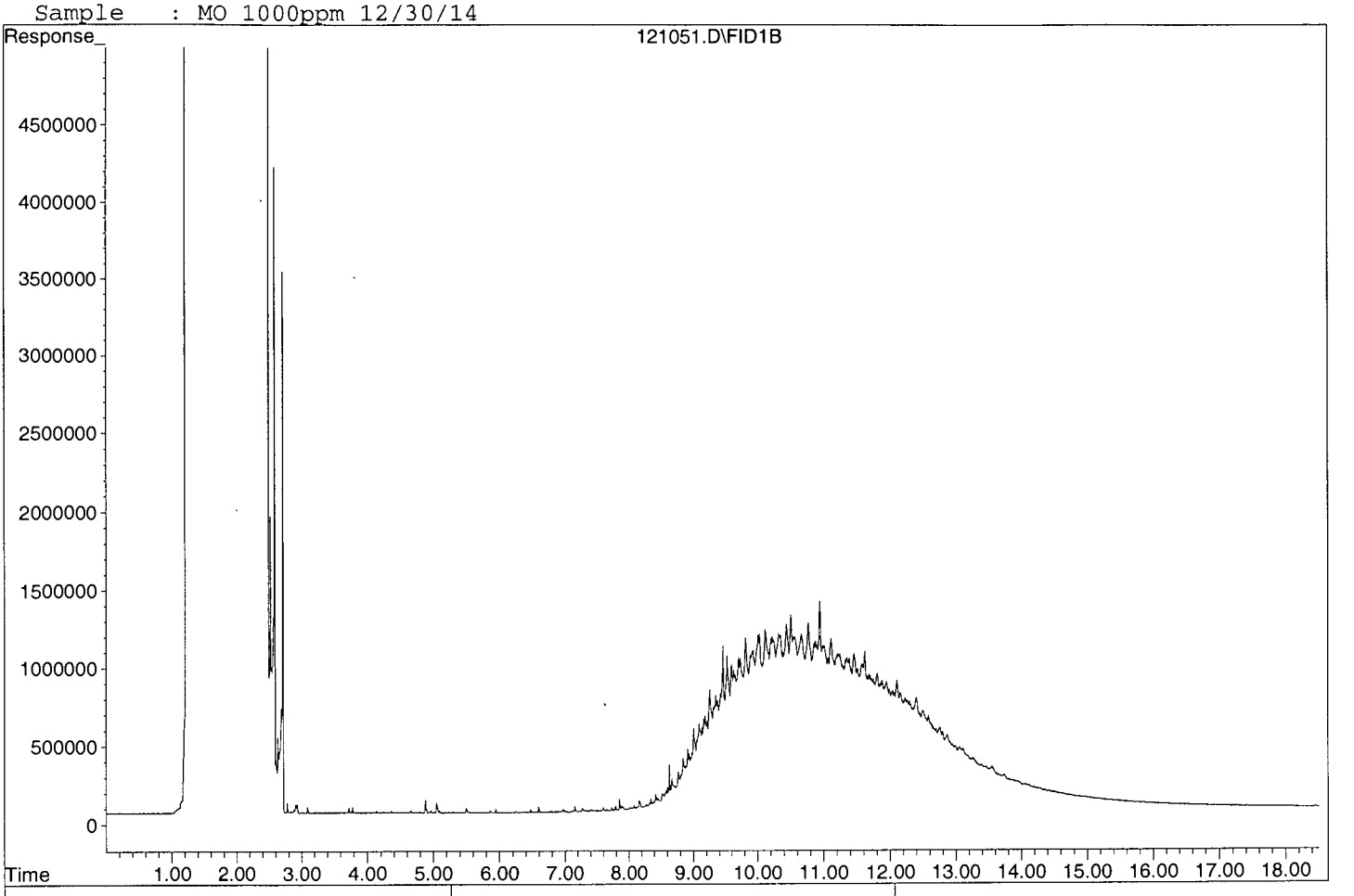
Method : G:\APOLLO\DATA\150121\CTO121.M (Chemstation Integrator)
Title : 8015 B&C
Last Update : Mon Jan 26 09:50:19 2015
Response via : Multiple Level Calibration

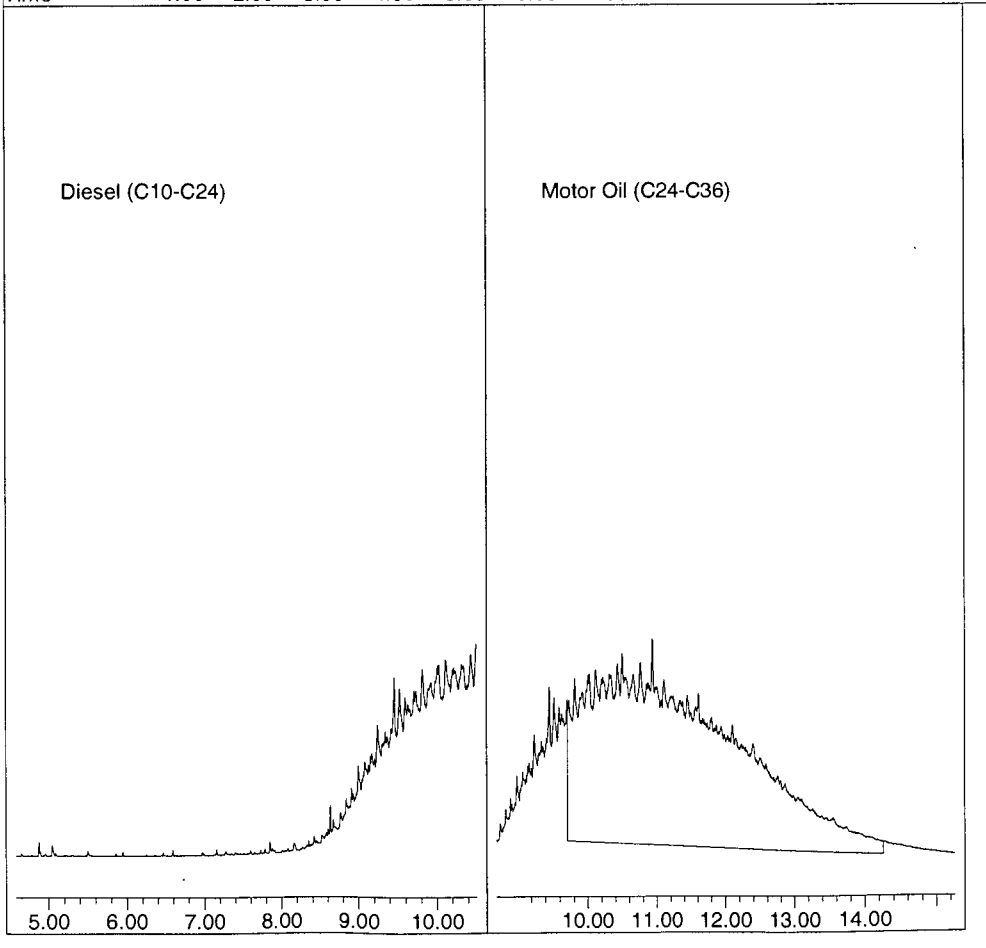
Volume Inj. : 2UL
Signal Phase : DB-5
Signal Info : FID02A

Compound	R.T.	Response	Conc Units
System Monitoring Compounds			
Target Compounds			
2) HBTM Motor Oil (C24-C36)	11.99	1558929855	1039.376 ppb

Quantitation Report

Data File: G:\APOLLO\DATA\150121\121051.D
Sample : MO 1000ppm 12/30/14





TPH Extractables
CTO121

Form 7

Continuing Calibration

Lab Name: APPL, Inc.
Case No:
Matrix:

SDG No: 75351
Date Analyzed: 1/23/2015
Instrument: Apollo
Initial Cal. Date: 1/21/2015
Data File: 121065,66.D

		Compound	MEAN	CCRF	%D		%Drift
1	HATM	Diesel (C10-C24)	1257630	1447150	15	HATM	
2	HBTM	Motor Oil (C24-C36)	749936	844452	13	HBTM	
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40							
		Average			14.0		

Quantitation Report (Not Reviewed)

Data File : G:\APOLLO\DATA\150121\121065.D Vial: 65
Acq On : 1-23-15 5:41:25 Operator: lac
Sample : Diesel 400ppm 1/12/15 Inst : Apollo
Misc : Mix(A) Multiplr: 1.00
IntFile : events.e
Quant Time: Jan 30 13:20 2015 Quant Results File: CTO121.RES

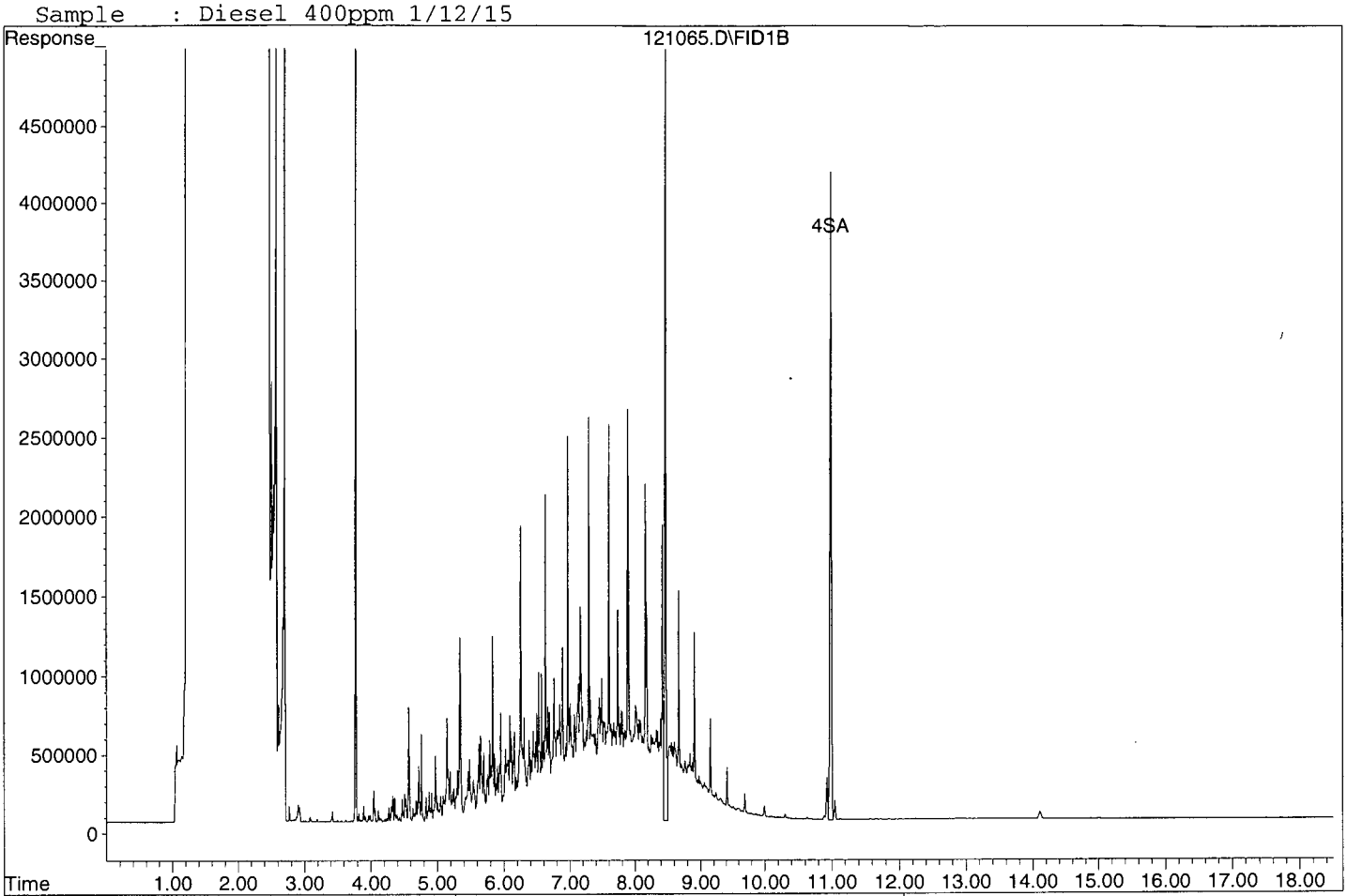
Method : G:\APOLLO\DATA\150121\CTO121.M (Chemstation Integrator)
Title : 8015 B&C
Last Update : Mon Jan 26 09:50:19 2015
Response via : Multiple Level Calibration

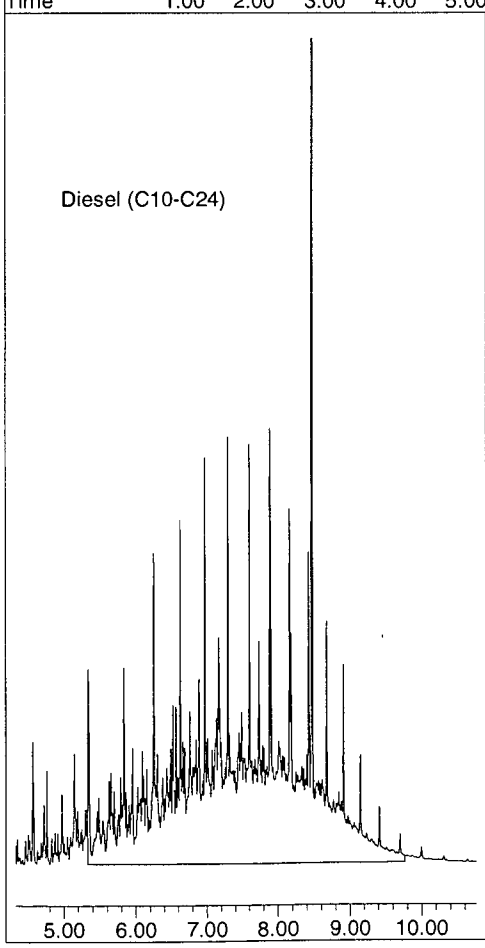
Volume Inj. : 2UL
Signal Phase : DB-5
Signal Info : FID02A

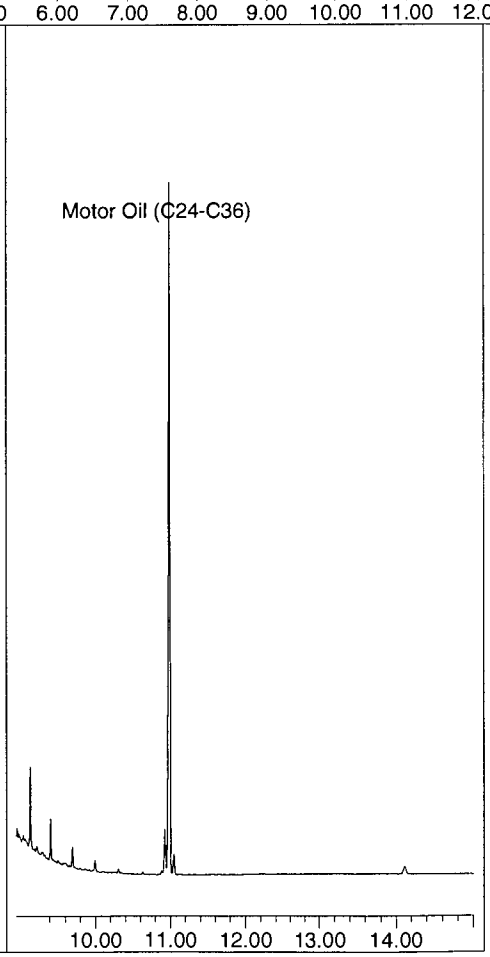
Compound	R.T.	Response	Conc Units
System Monitoring Compounds			
3) SA Ortho-Terphenyl(S)	8.47	83600021	22.435 ppb
Surrogate Spike 30.000		Recovery =	74.78%
4) SA Octacosane(S)	10.99	61349066	22.729 ppb
Surrogate Spike 30.000		Recovery =	75.76%
Target Compounds			
1) HATM Diesel (C10-C24)	7.55	1157720316	460.280 ppb

Quantitation Report

Data File: G:\APOLLO\DATA\150121\121065.D
Sample : Diesel 400ppm 1/12/15







Quantitation Report (Not Reviewed)

Data File : G:\APOLLO\DATA\150121\121066.D Vial: 66
Acq On : 1-23-15 6:05:04 Operator: lac
Sample : MO 1000ppm 12/30/14 Inst : Apollo
Misc : Mix(B) Multiplr: 1.00
IntFile : events.e
Quant Time: Jan 30 13:21 2015 Quant Results File: CTO121.RES

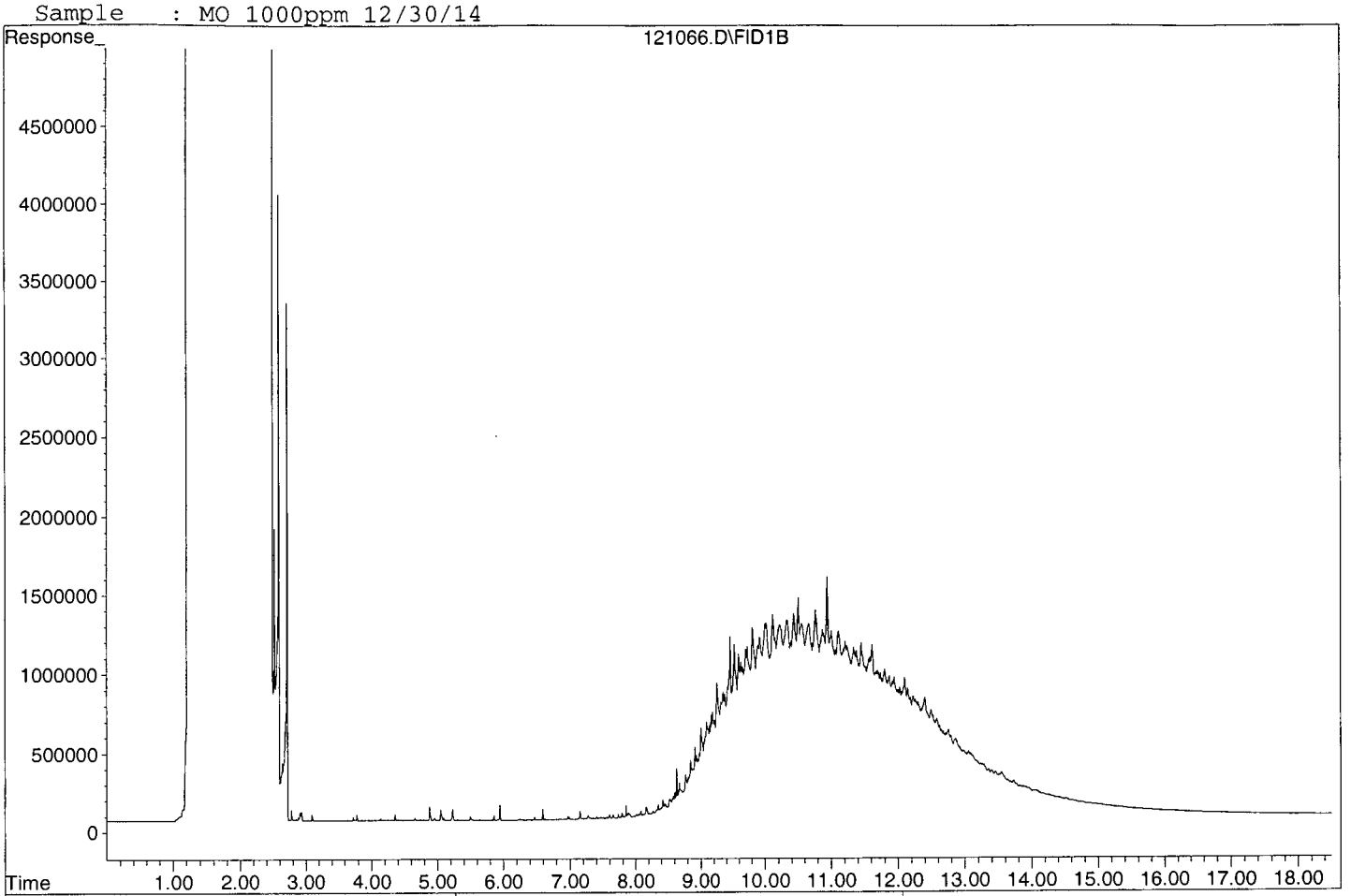
Method : G:\APOLLO\DATA\150121\CTO121.M (Chemstation Integrator)
Title : 8015 B&C
Last Update : Mon Jan 26 09:50:19 2015
Response via : Multiple Level Calibration

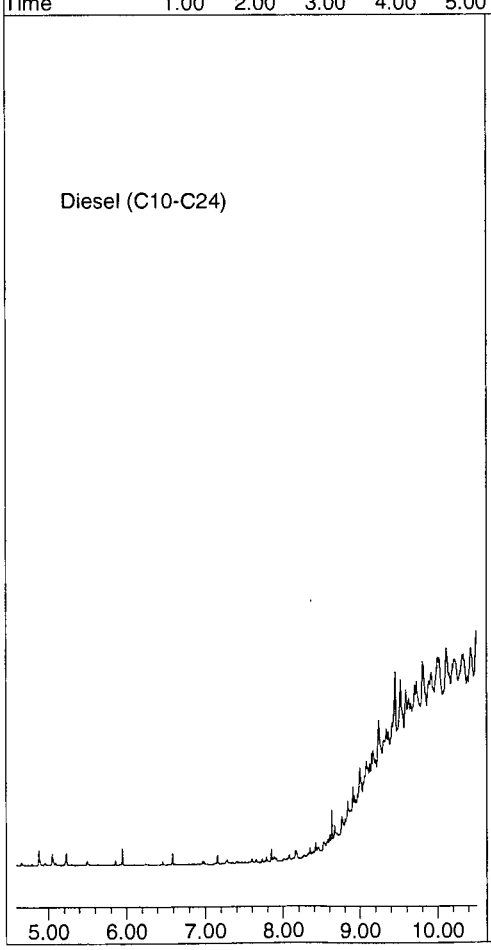
Volume Inj. : 2UL
Signal Phase : DB-5
Signal Info : FID02A

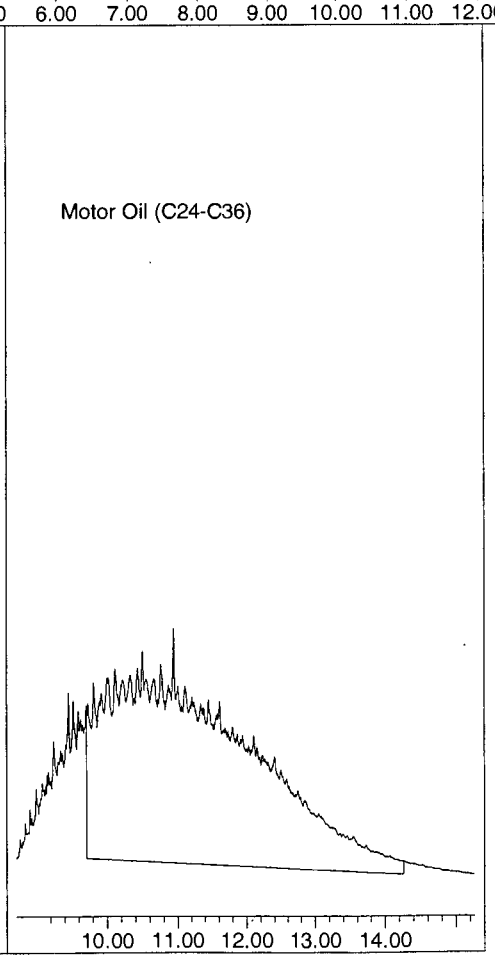
Compound	R.T.	Response	Conc	Units
System Monitoring Compounds				
Target Compounds				
2) HBTM Motor Oil (C24-C36)	11.99	1688904246	1126.033	ppb

Quantitation Report

Data File: G:\APOLLO\DATA\150121\121066.D
Sample : MO 1000ppm 12/30/14







TPH Extractables
CTO121

Form 7

Continuing Calibration

Lab Name: APPL, Inc.
Case No:
Matrix:

SDG No: 75351
Date Analyzed: 1/23/2015
Instrument: Apollo
Initial Cal. Date: 1/21/2015
Data File: 121077,78.D

		Compound	MEAN	CCRF	%D		%Drift
1	HATM	Diesel (C10-C24)	1257630	1405240	12	HATM	
2	HBTM	Motor Oil (C24-C36)	749936	772606	3.0	HBTM	
3							
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39							
40							
		Average			7.5		

Quantitation Report (Not Reviewed)

Data File : G:\APOLLO\DATA\150121\121077.D Vial: 77
Acq On : 1-23-15 10:29:23 Operator: lac
Sample : Diesel 400ppm 1/12/15 Inst : Apollo
Misc : Mix(A) Multiplr: 1.00
IntFile : events.e
Quant Time: Jan 30 13:23 2015 Quant Results File: CTO121.RES

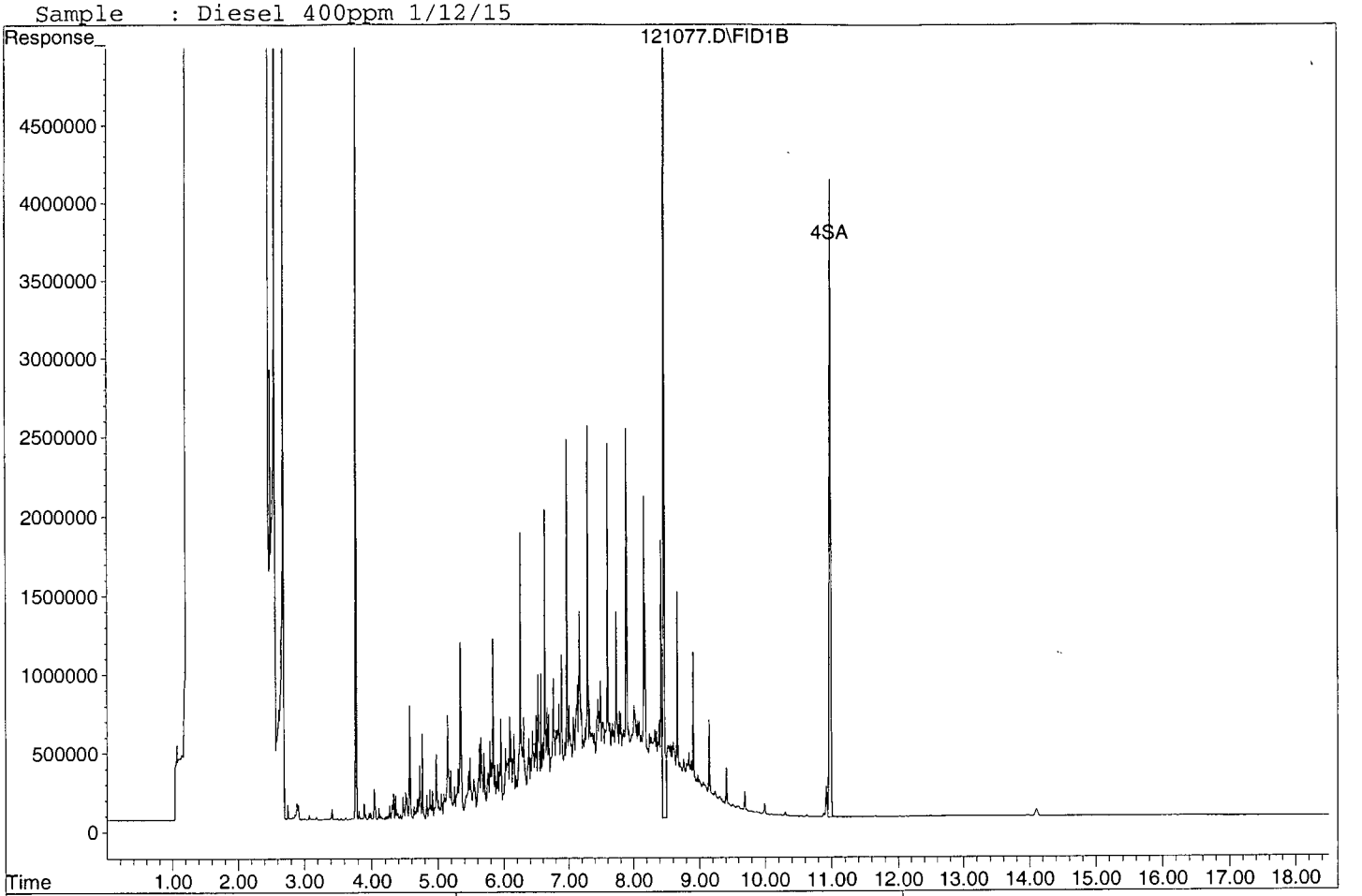
Method : G:\APOLLO\DATA\150121\CTO121.M (Chemstation Integrator)
Title : 8015 B&C
Last Update : Mon Jan 26 09:50:19 2015
Response via : Multiple Level Calibration

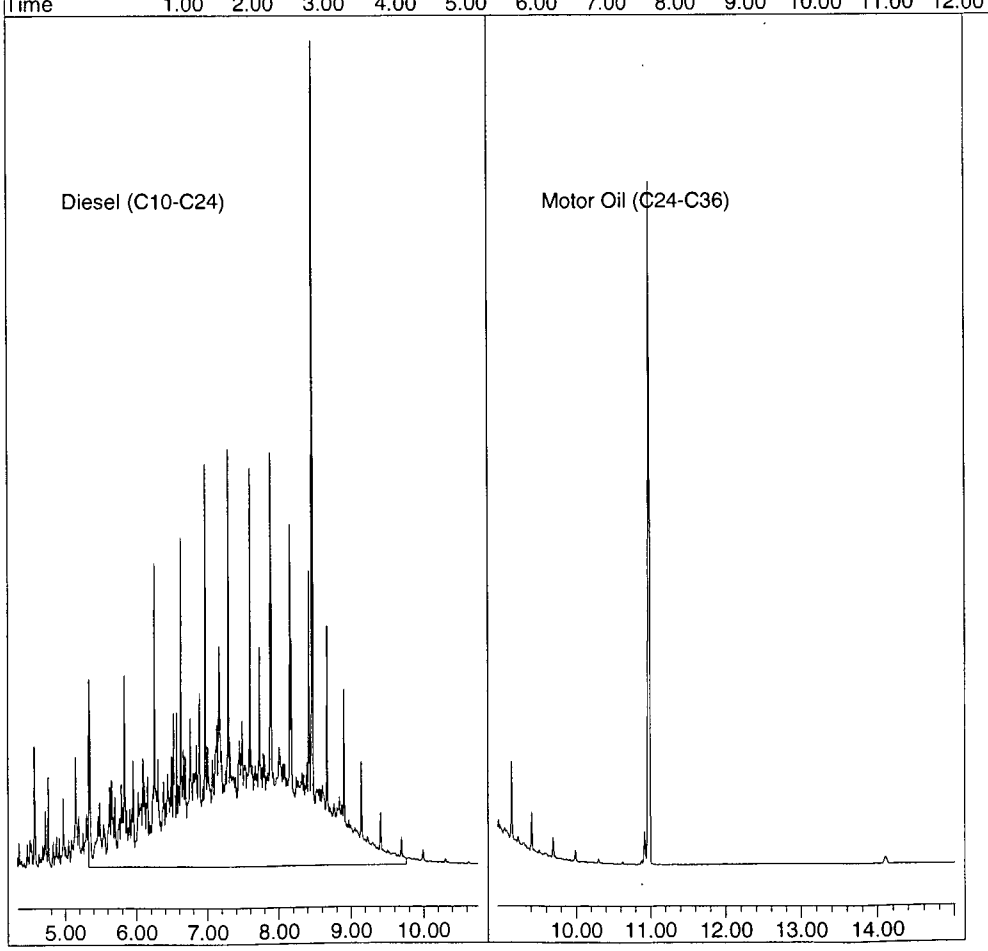
Volume Inj. : 2UL
Signal Phase : DB-5
Signal Info : FID02A

Compound	R.T.	Response	Conc Units
System Monitoring Compounds			
3) SA Ortho-Terphenyl(S)	8.47	80369629	21.568 ppb
Surrogate Spike 30.000		Recovery =	71.89%
4) SA Octacosane(S)	10.98	59316766	21.977 ppb
Surrogate Spike 30.000		Recovery =	73.26%
Target Compounds			
1) HATM Diesel (C10-C24)	7.55	1124194692	446.951 ppb

Quantitation Report

Data File: G:\APOLLO\DATA\150121\121077.D
Sample : Diesel 400ppm 1/12/15





Quantitation Report (Not Reviewed)

Data File : G:\APOLLO\DATA\150121\121078.D Vial: 78
Acq On : 1-23-15 10:53:32 Operator: lac
Sample : MO 1000ppm 12/30/14 Inst : Apollo
Misc : Mix(B) Multiplr: 1.00
IntFile : events.e
Quant Time: Jan 30 13:23 2015 Quant Results File: CTO121.RES

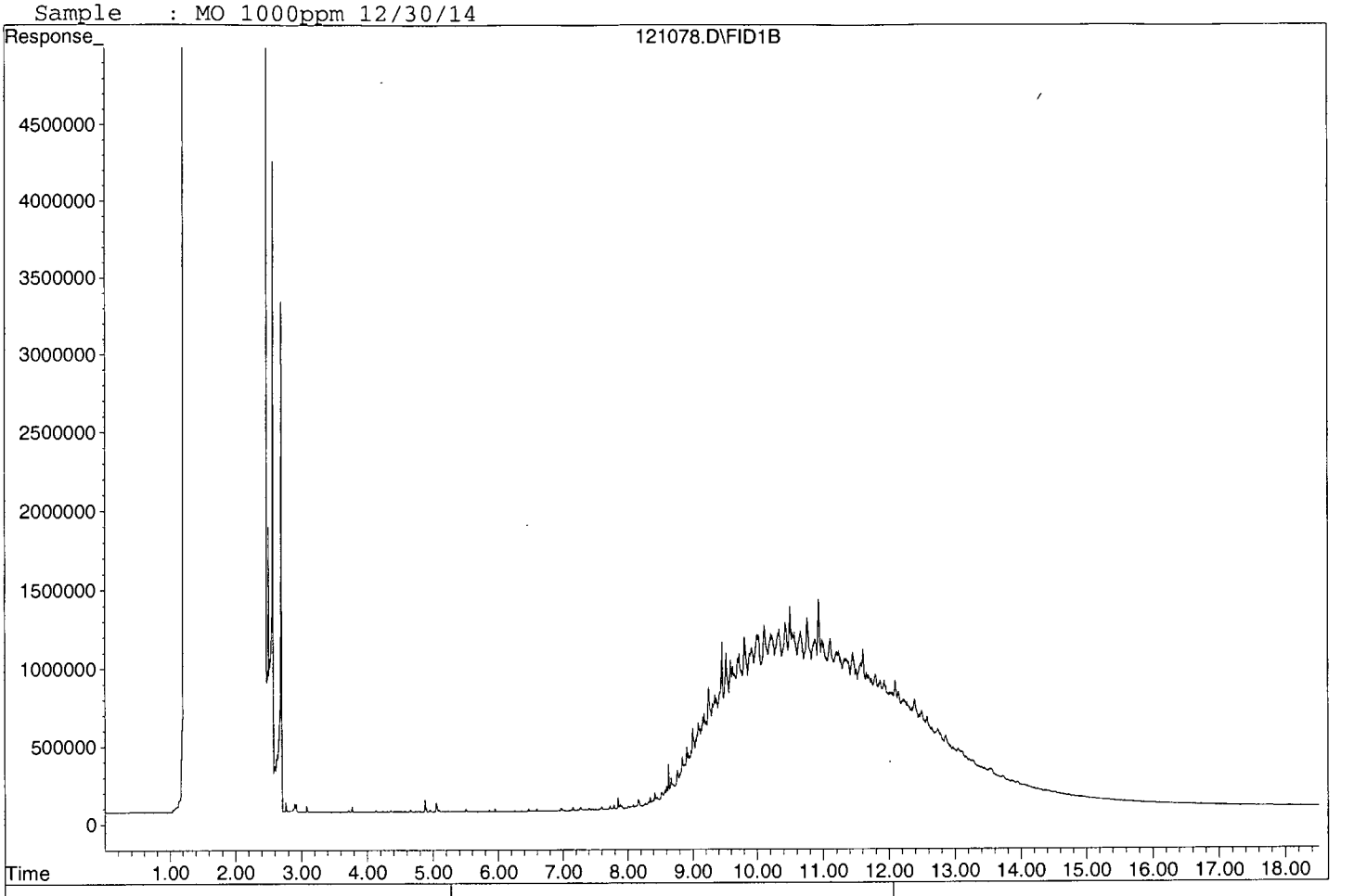
Method : G:\APOLLO\DATA\150121\CTO121.M (Chemstation Integrator)
Title : 8015 B&C
Last Update : Mon Jan 26 09:50:19 2015
Response via : Multiple Level Calibration

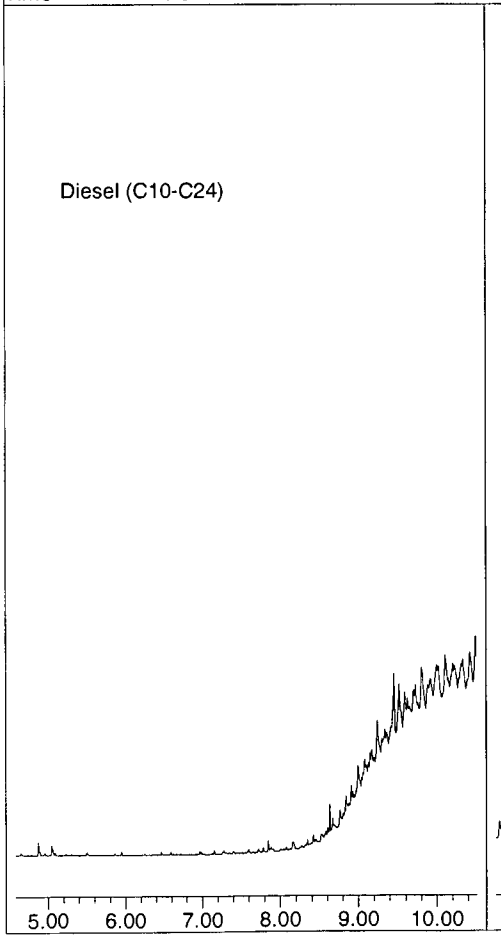
Volume Inj. : 2UL
Signal Phase : DB-5
Signal Info : FID02A

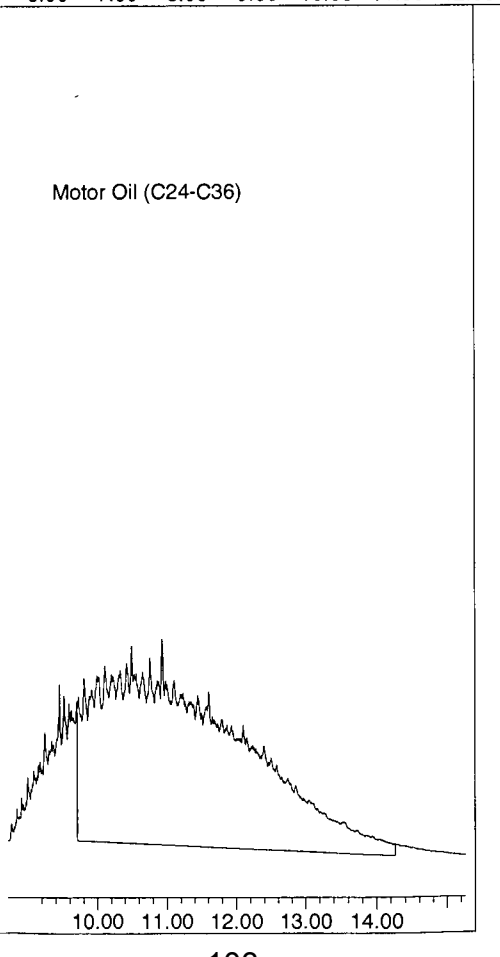
Compound	R.T.	Response	Conc Units
System Monitoring Compounds			
Target Compounds			
2) HBTM Motor Oil (C24-C36)	11.99	1545212159	1030.230 ppb

Quantitation Report

Data File: G:\APOLLO\DATA\150121\121078.D
Sample : MO 1000ppm 12/30/14







TPH Extractables
CTO121

Form 7

Continuing Calibration

Lab Name: APPL, Inc.
Case No:
Matrix:

SDG No: 75351
Date Analyzed: 1/23/2015
Instrument: Apollo
Initial Cal. Date: 1/21/2015
Data File: 121092,93.D

		Compound	MEAN	CCRF	%D		%Drift
1	HATM	Diesel (C10-C24)	1257630	1351370	7.5	HATM	
2	HBTM	Motor Oil (C24-C36)	749936	825882	10	HBTM	
3							
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		Average			8.8		

Quantitation Report (Not Reviewed)

Data File : G:\APOLLO\DATA\150121\121092.D Vial: 92
Acq On : 1-23-15 16:31:12 Operator: lac
Sample : Diesel 400ppm 1/12/15 Inst : Apollo
Misc : Mix(A) Multiplr: 1.00
IntFile : events.e
Quant Time: Jan 30 13:24 2015 Quant Results File: CTO121.RES

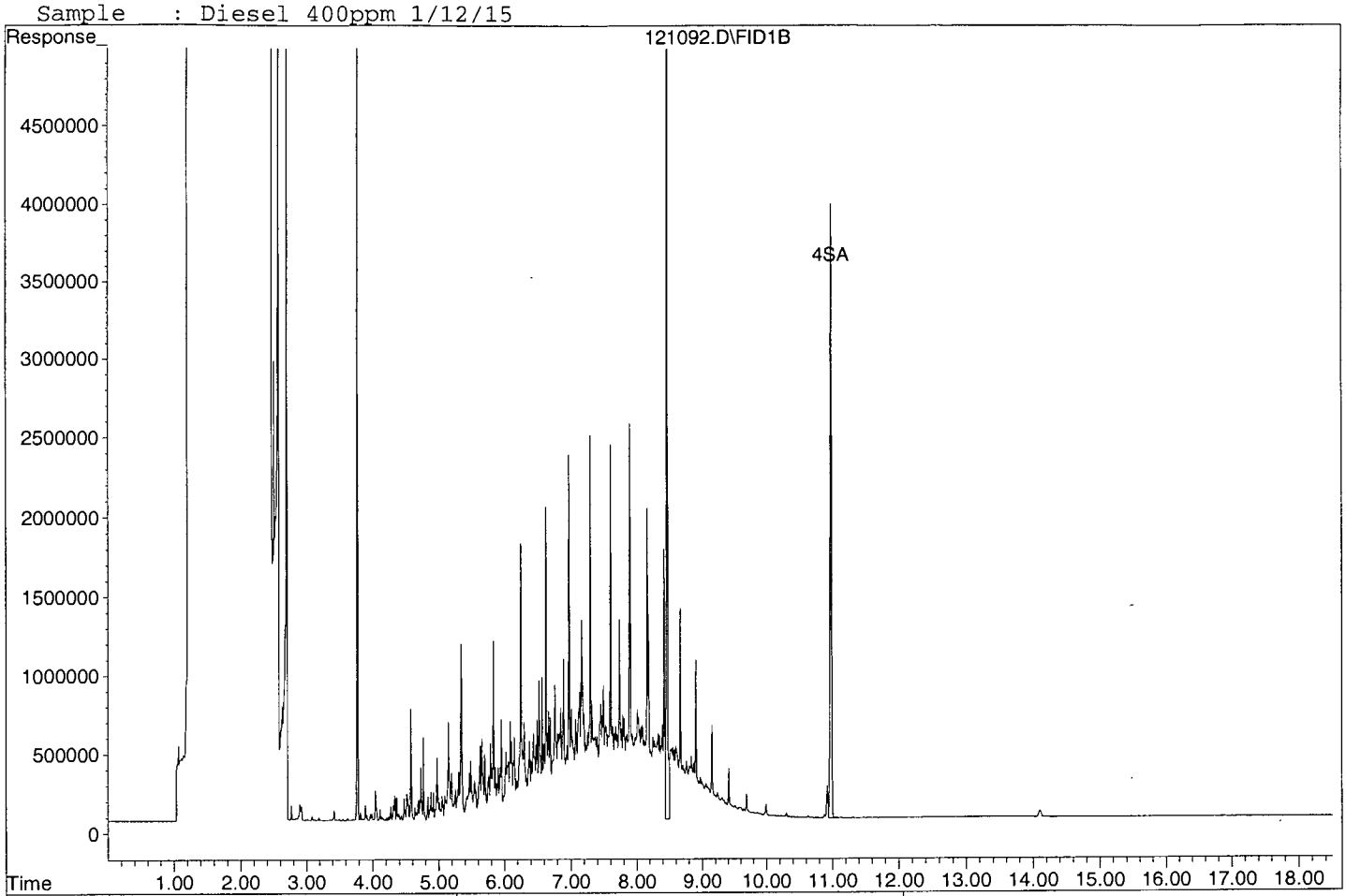
Method : G:\APOLLO\DATA\150121\CTO121.M (Chemstation Integrator)
Title : 8015 B&C
Last Update : Mon Jan 26 09:50:19 2015
Response via : Multiple Level Calibration

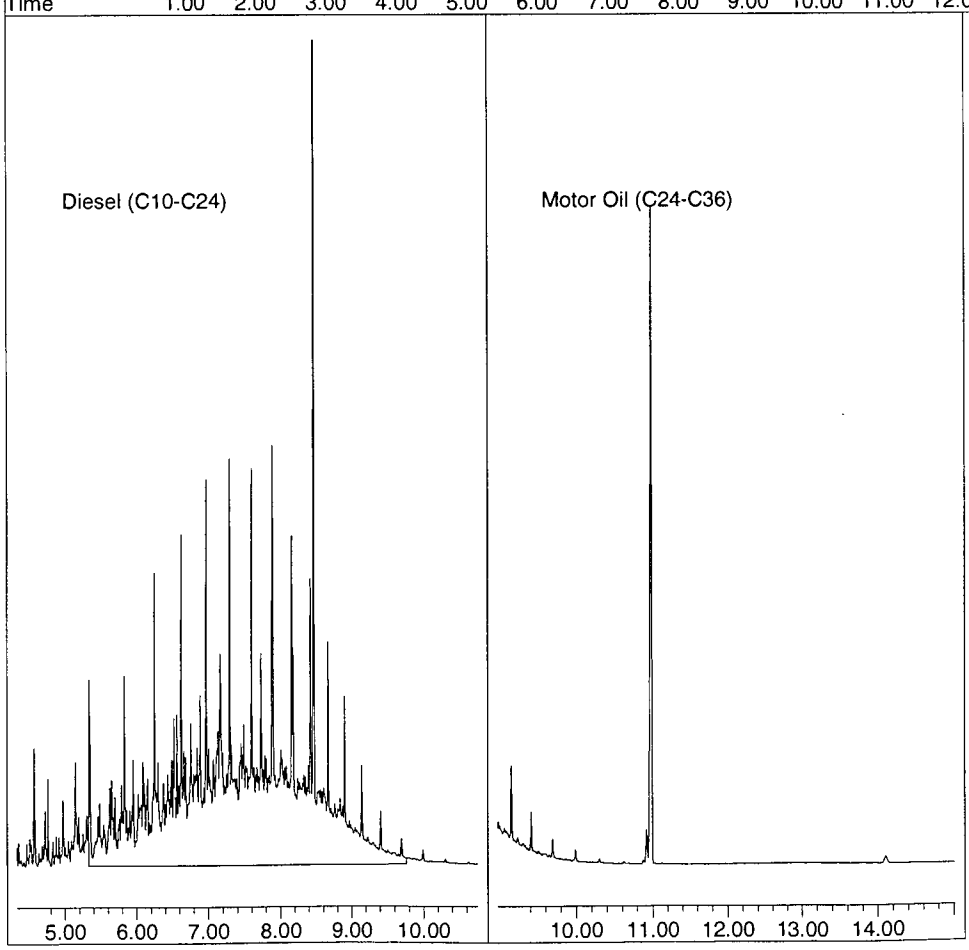
Volume Inj. : 2UL
Signal Phase : DB-5
Signal Info : FID02A

Compound	R.T.	Response	Conc Units
System Monitoring Compounds			
3) SA Ortho-Terphenyl(S)	8.47	78046044	20.945 ppb
Surrogate Spike 30.000		Recovery =	69.82%
4) SA Octacosane(S)	10.98	57555859	21.324 ppb
Surrogate Spike 30.000		Recovery =	71.08%
Target Compounds			
1) HATM Diesel (C10-C24)	7.55	1081099900	429.817 ppb

Quantitation Report

Data File: G:\APOLLO\DATA\150121\121092.D
Sample : Diesel 400ppm 1/12/15





Quantitation Report (Not Reviewed)

Data File : G:\APOLLO\DATA\150121\121093.D Vial: 93
Acq On : 1-23-15 16:55:13 Operator: lac
Sample : MO 1000ppm 12/30/14 Inst : Apollo
Misc : Mix(B) Multiplr: 1.00
IntFile : events.e
Quant Time: Jan 30 13:25 2015 Quant Results File: CTO121.RES

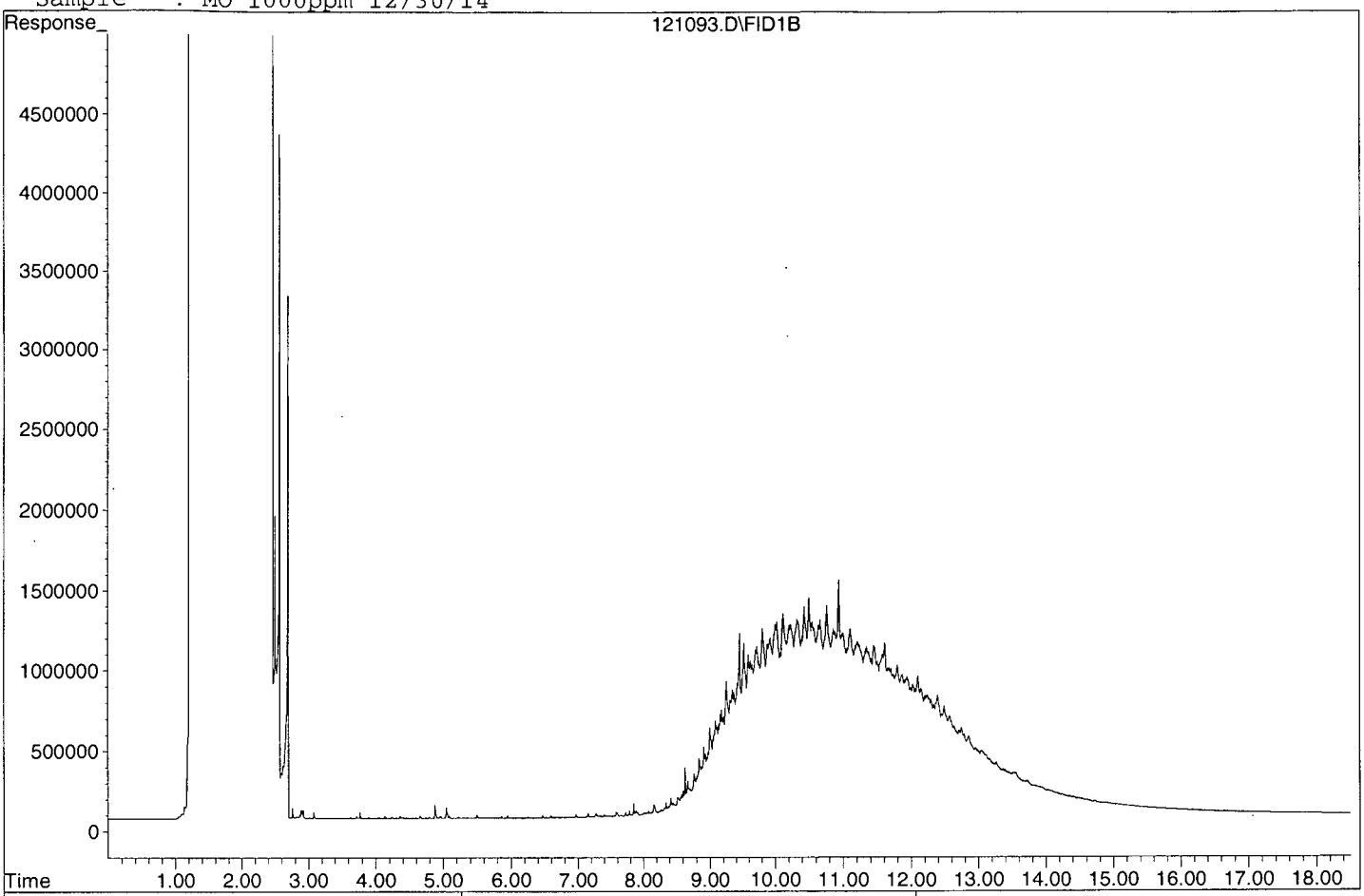
Method : G:\APOLLO\DATA\150121\CTO121.M (Chemstation Integrator)
Title : 8015 B&C
Last Update : Mon Jan 26 09:50:19 2015
Response via : Multiple Level Calibration

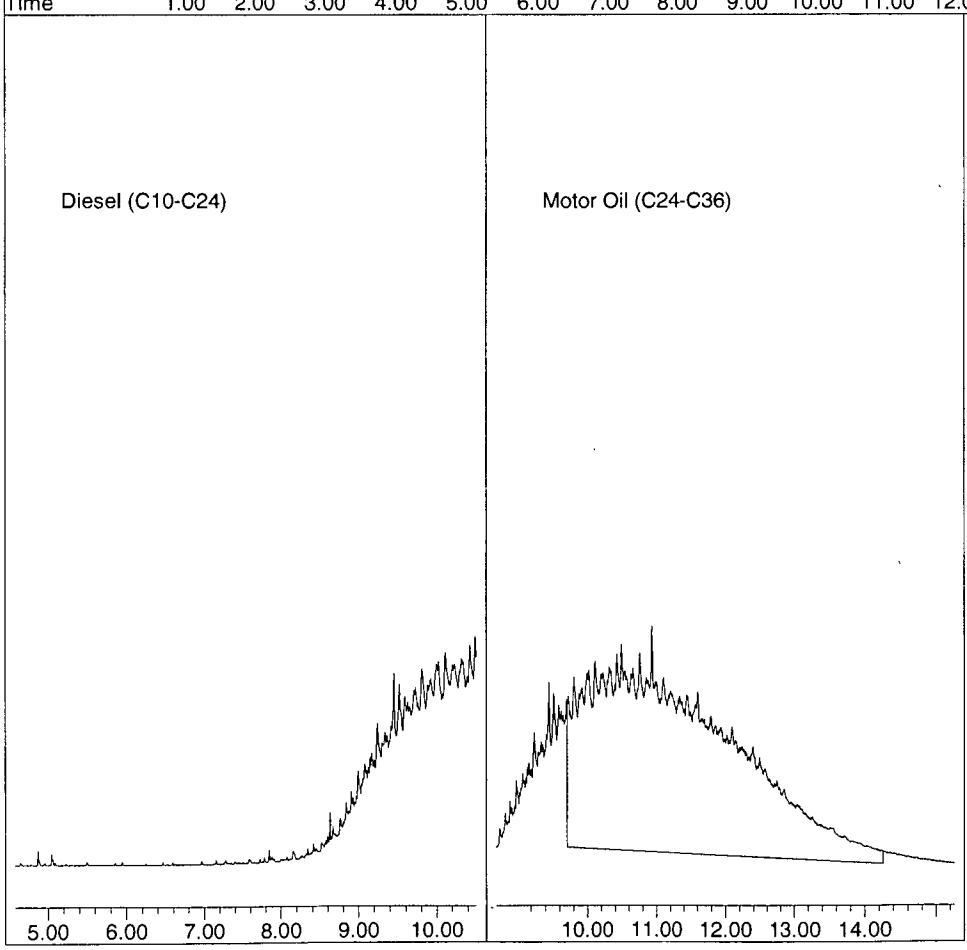
Volume Inj. : 2UL
Signal Phase : DB-5
Signal Info : FID02A

Compound	R.T.	Response	Conc	Units
System Monitoring Compounds				
Target Compounds				
2) HBTM Motor Oil (C24-C36)	11.99	1651764510	1101.271	ppb

Quantitation Report

Data File: G:\APOLLO\DATA\150121\121093.D
Sample : MO 1000ppm 12/30/14





TPH Extractables
CTO121

Form 7

Continuing Calibration

Lab Name: APPL, Inc.
Case No:
Matrix:

SDG No: 75351
Date Analyzed: 1/27/2015
Instrument: Apollo
Initial Cal. Date: 1/21/2015
Data File: 127032,33.D

		Compound	MEAN	CCRF	%D		%Drift
1	HATM	Diesel (C10-C24)	1257630	1326550	5.5	HATM	
2	HBTM	Motor Oil (C24-C36)	749936	697169	7.0	HBTM	
3							
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39							
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		Average			6.3		

Quantitation Report (Not Reviewed)

Data File : G:\APOLLO\DATA\150127\127032.D Vial: 32
Acq On : 1-27-15 23:29:34 Operator: lac
Sample : Diesel 400ppm 1/27/15 Inst : Apollo
Misc : Mix(A) Multiplr: 1.00
IntFile : events.e
Quant Time: Jan 30 10:45 2015 Quant Results File: CTO121.RES

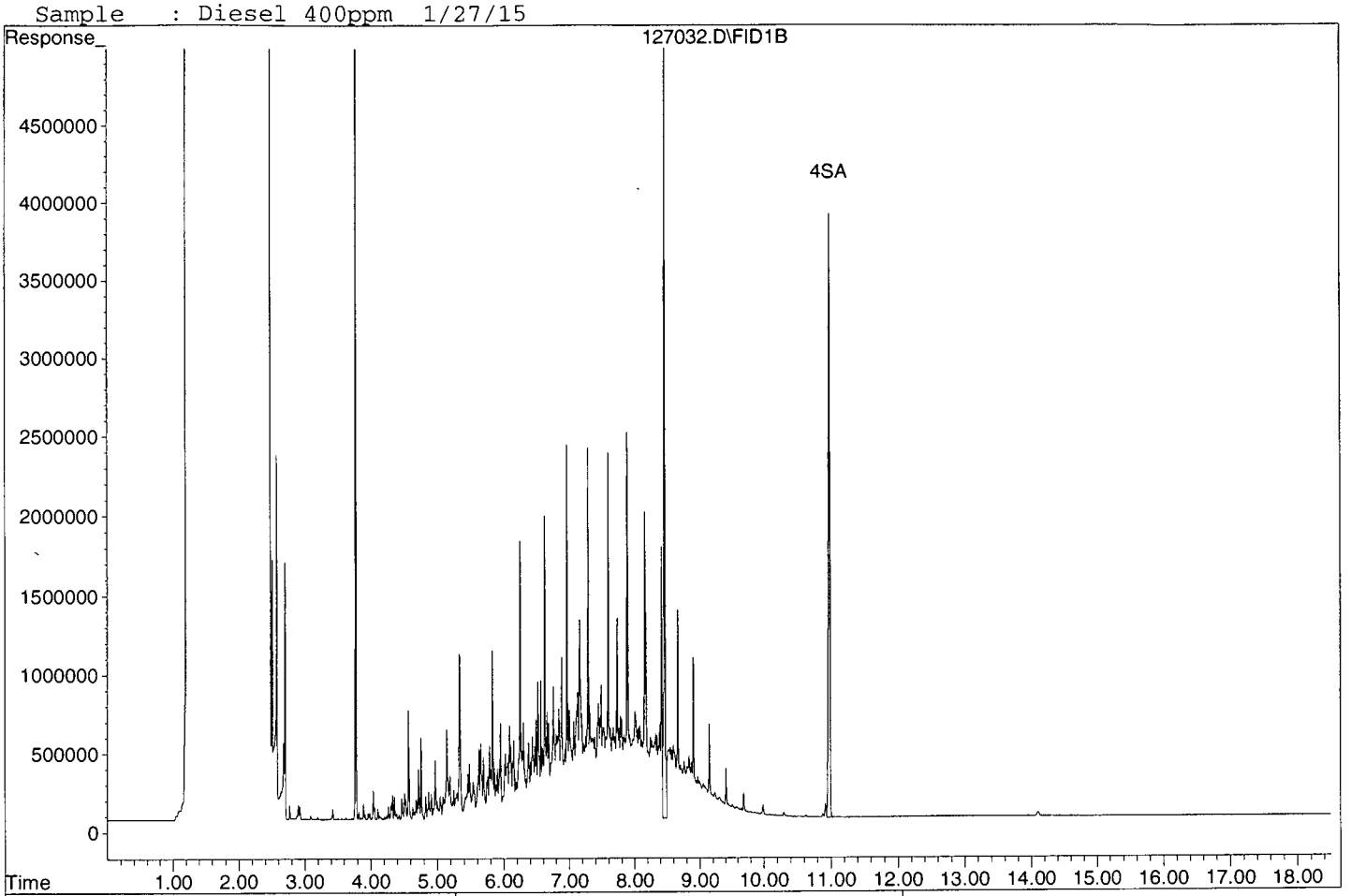
Method : G:\APOLLO\DATA\150121\CTO121.M (Chemstation Integrator)
Title : 8015 B&C
Last Update : Mon Jan 26 09:50:19 2015
Response via : Multiple Level Calibration

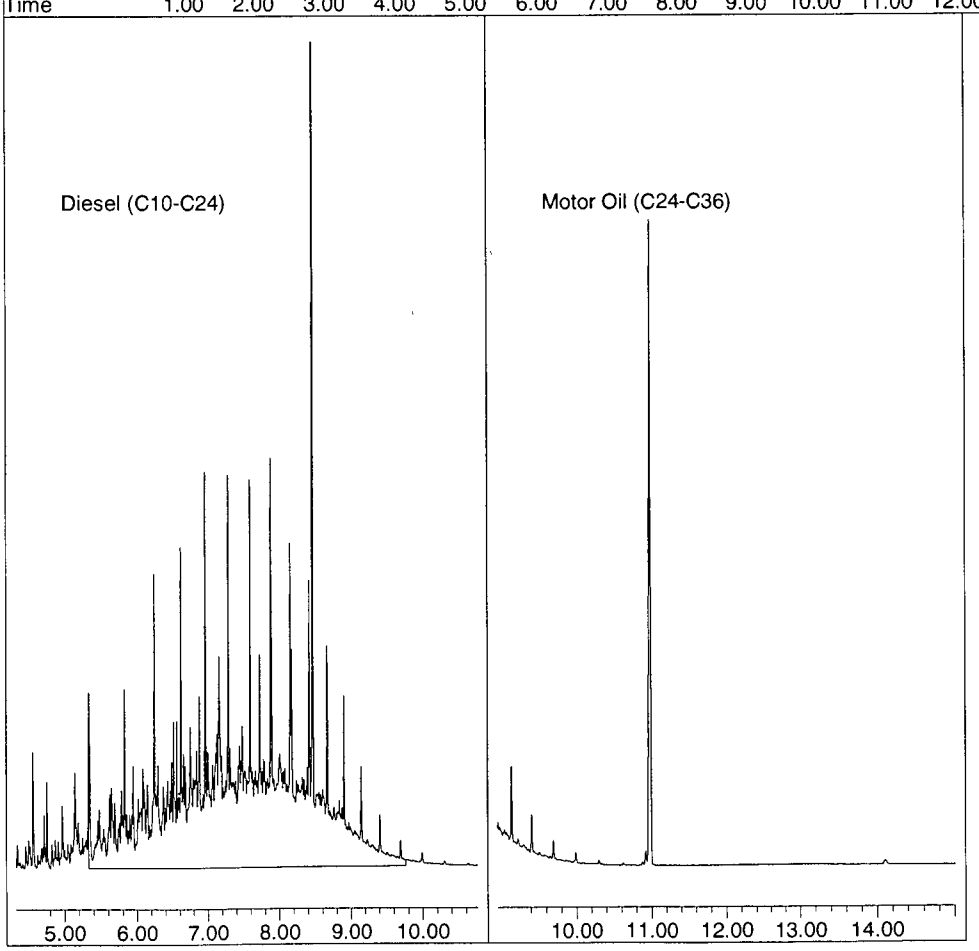
Volume Inj. : 2UL
Signal Phase : DB-5
Signal Info : FID02A

Compound	R.T.	Response	Conc Units
System Monitoring Compounds			
3) SA Ortho-Terphenyl(S)	8.47	77200026	20.718 ppb
Surrogate Spike 30.000		Recovery =	69.06%
4) SA Octacosane(S)	10.98	55801916	20.674 ppb
Surrogate Spike 30.000		Recovery =	68.91%
Target Compounds			
1) HATM Diesel (C10-C24)	7.55	1061242931	421.923 ppb

Quantitation Report

Data File: G:\APOLLO\DATA\150127\127032.D
Sample : Diesel 400ppm 1/27/15





Quantitation Report (Not Reviewed)

Data File : G:\APOLLO\DATA\150127\127033.D Vial: 33
Acq On : 1-27-15 23:53:35 Operator: lac
Sample : MO 1000ppm 1/27/15 Inst : Apollo
Misc : Mix(B) Multiplr: 1.00
IntFile : events.e
Quant Time: Jan 30 10:45 2015 Quant Results File: CTO121.RES

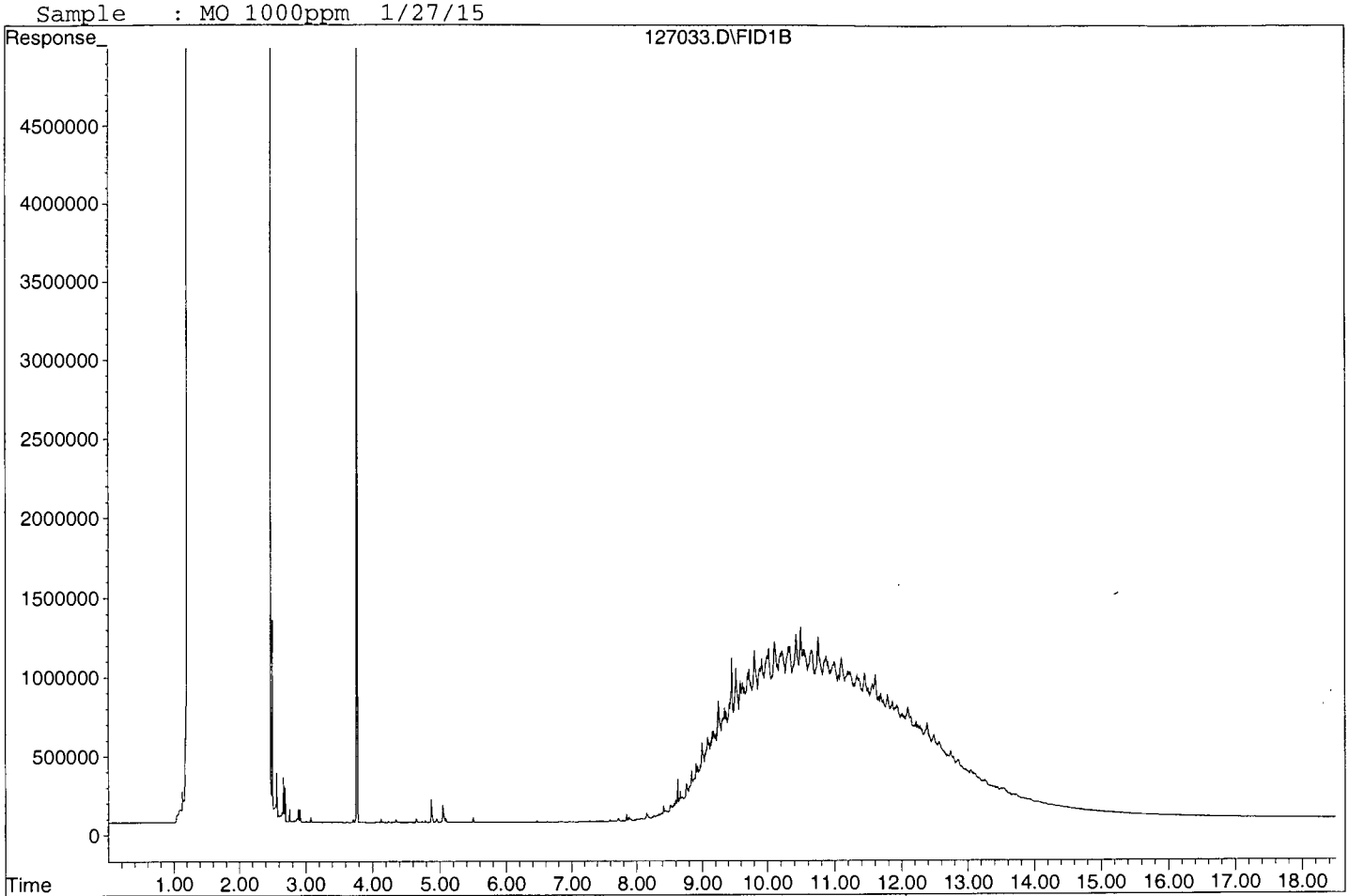
Method : G:\APOLLO\DATA\150121\CTO121.M (Chemstation Integrator)
Title : 8015 B&C
Last Update : Mon Jan 26 09:50:19 2015
Response via : Multiple Level Calibration

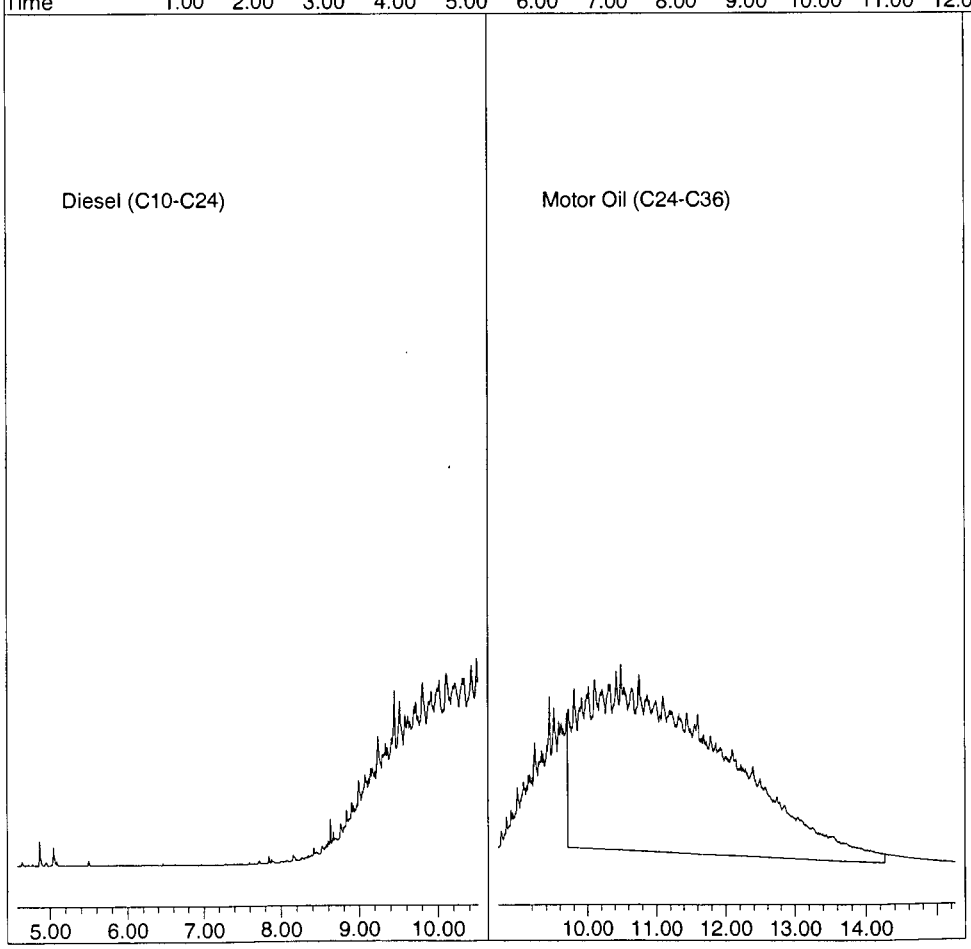
Volume Inj. : 2UL
Signal Phase : DB-5
Signal Info : FID02A

Compound	R.T.	Response	Conc Units
System Monitoring Compounds			
Target Compounds			
2) HBTM Motor Oil (C24-C36)	11.99	1394338416	929.639 ppb

Quantitation Report

Data File: G:\APOLLO\DATA\150127\127033.D
Sample : MO 1000ppm 1/27/15





TPH Extractables
CTO121

Form 7

Continuing Calibration

Lab Name: APPL, Inc.
Case No:
Matrix:

SDG No: 75351
Date Analyzed: 1/28/2015
Instrument: Apollo
Initial Cal. Date: 1/21/2015
Data File: 127058,59.D

		Compound	MEAN	CCRF	%D	%Drift	
1	HATM	Diesel (C10-C24)	1257630	1318210	4.8	HATM	
2	HBTM	Motor Oil (C24-C36)	749936	712500	5.0	HBTM	
3							
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39							
40							
		Average			4.9		

Quantitation Report (Not Reviewed)

Data File : G:\APOLLO\DATA\150127\127058.D Vial: 58
Acq On : 1-28-15 9:53:22 Operator: lac
Sample : Diesel 400ppm 1/27/15 Inst : Apollo
Misc : Mix(A) Multiplr: 1.00
IntFile : events.e
Quant Time: Jan 30 10:47 2015 Quant Results File: CTO121.RES

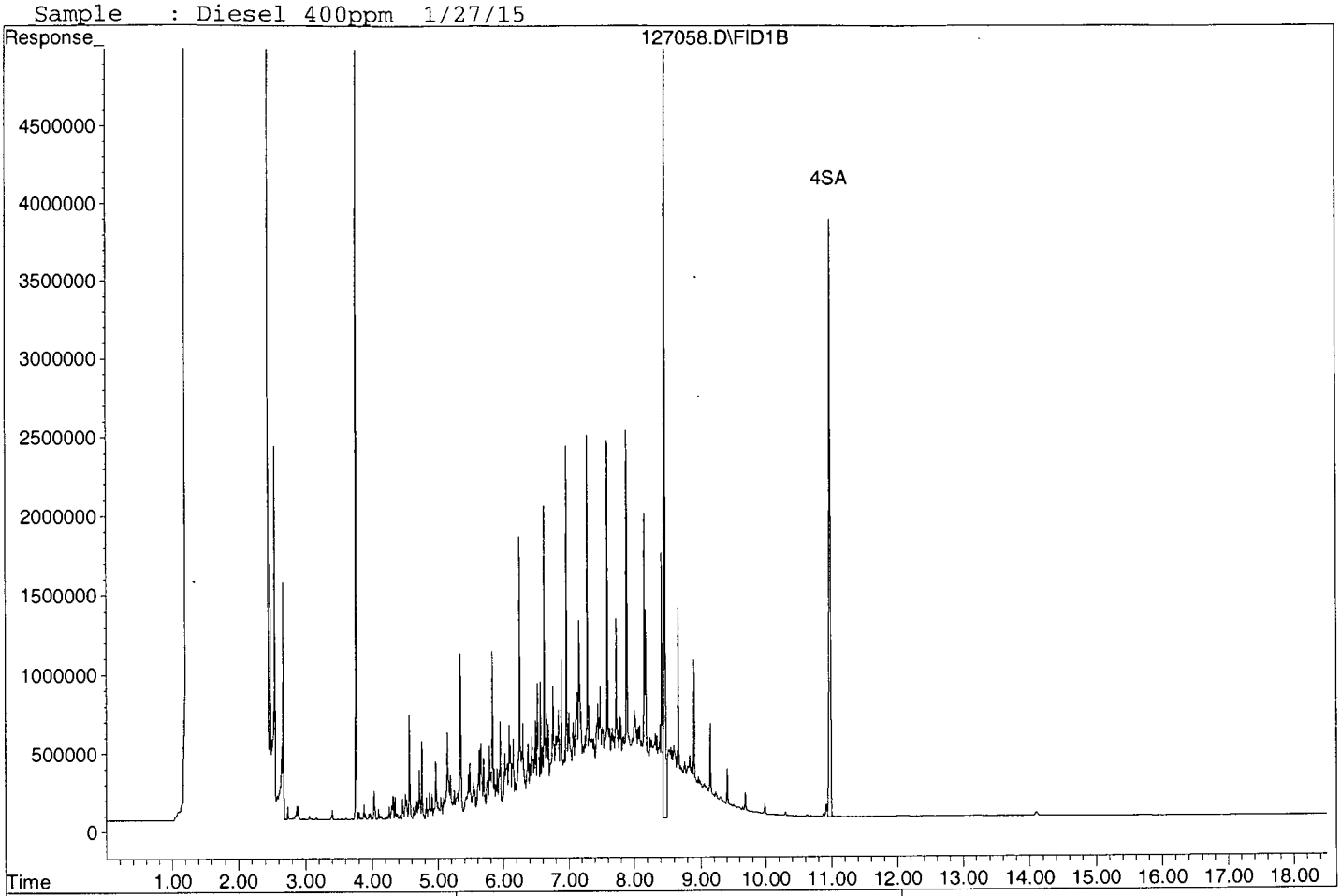
Method : G:\APOLLO\DATA\150121\CTO121.M (Chemstation Integrator)
Title : 8015 B&C
Last Update : Mon Jan 26 09:50:19 2015
Response via : Multiple Level Calibration

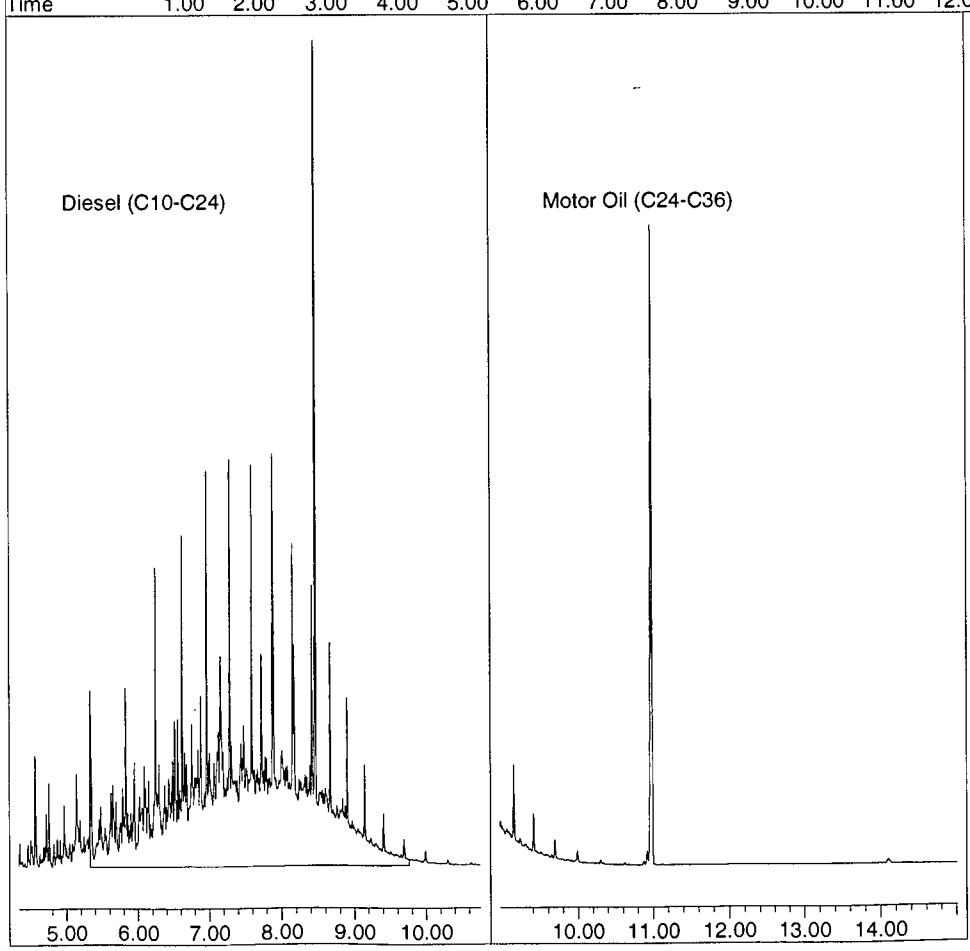
Volume Inj. : 2UL
Signal Phase : DB-5
Signal Info : FID02A

Compound	R.T.	Response	Conc Units
System Monitoring Compounds			
3) SA Ortho-Terphenyl(S)	8.47	77155204	20.706 ppb
Surrogate Spike 30.000		Recovery =	69.02%
4) SA Octacosane(S)	10.98	55498041	20.562 ppb
Surrogate Spike 30.000		Recovery =	68.54%
Target Compounds			
1) HATM Diesel (C10-C24)	7.55	1054564902	419.268 ppb

Quantitation Report

Data File: G:\APOLLO\DATA\150127\127058.D
Sample : Diesel 400ppm 1/27/15





Quantitation Report (Not Reviewed)

Data File : G:\APOLLO\DATA\150127\127059.D Vial: 59
Acq On : 1-28-15 10:17:31 Operator: lac
Sample : MO 1000ppm 1/27/15 Inst : Apollo
Misc : Mix(B) Multiplr: 1.00
IntFile : events.e
Quant Time: Jan 30 10:47 2015 Quant Results File: CTO121.RES

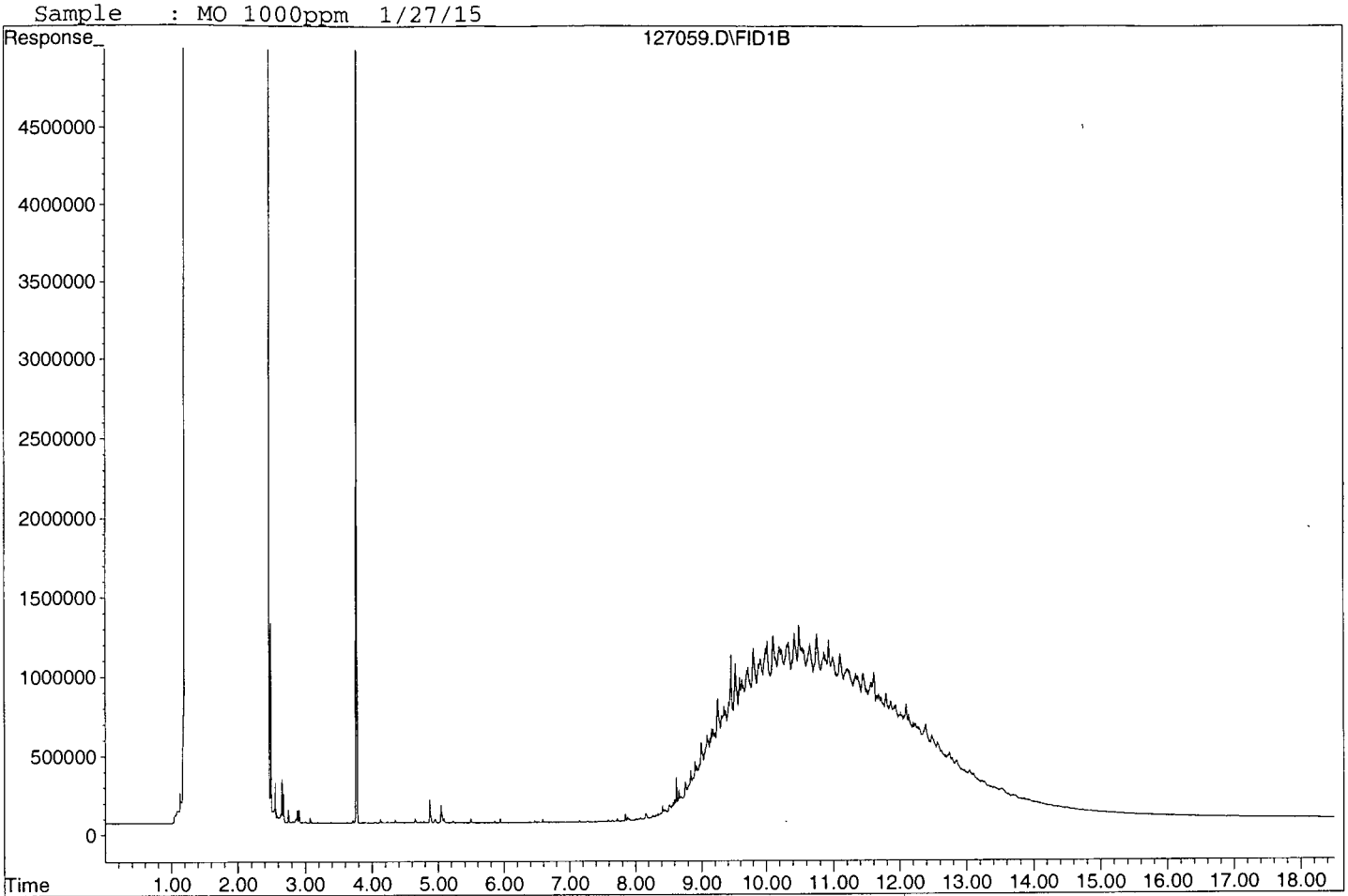
Method : G:\APOLLO\DATA\150121\CTO121.M (Chemstation Integrator)
Title : 8015 B&C
Last Update : Mon Jan 26 09:50:19 2015
Response via : Multiple Level Calibration

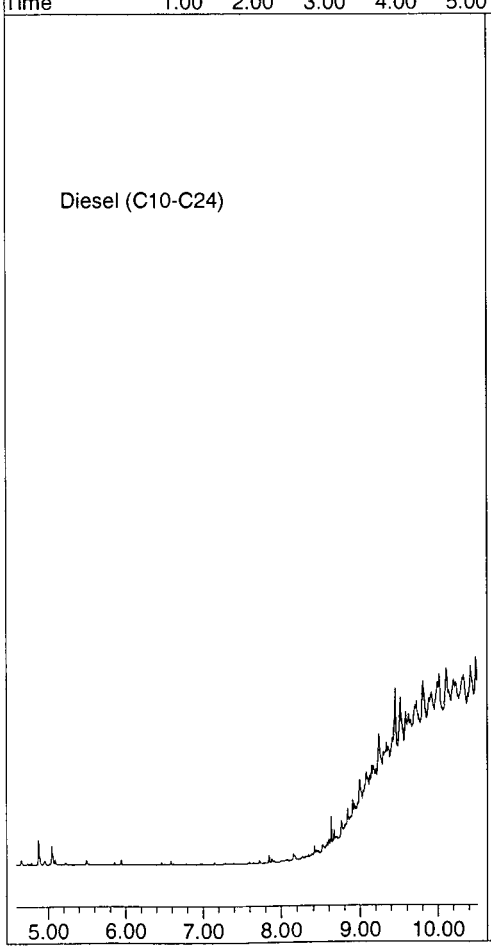
Volume Inj. : 2UL
Signal Phase : DB-5
Signal Info : FID02A

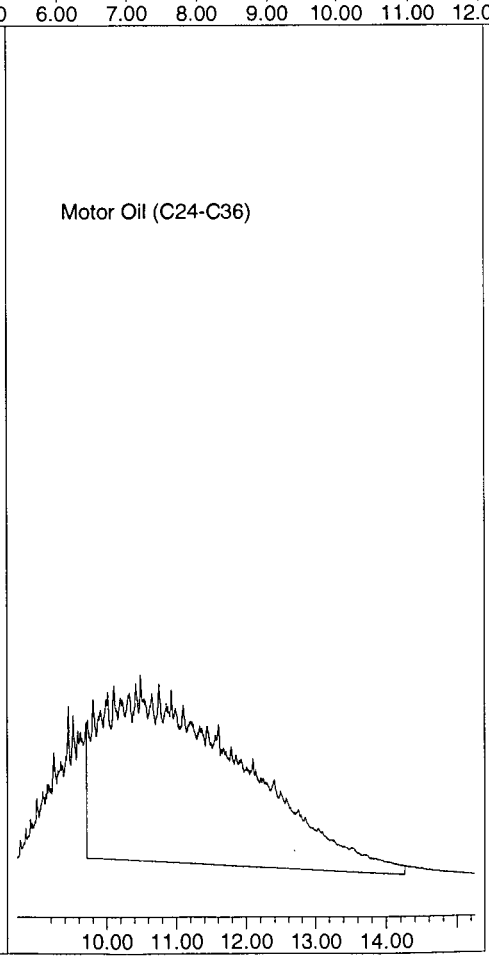
Compound	R.T.	Response	Conc Units
System Monitoring Compounds			
Target Compounds			
2) HBTM Motor Oil (C24-C36)	11.99	1425000783	950.082 ppb

Quantitation Report

Data File: G:\APOLLO\DATA\150127\127059.D
Sample : MO 1000ppm 1/27/15







TPH Extractables
CTO121

Form 7

Continuing Calibration

Lab Name: APPL, Inc.
Case No:
Matrix:

SDG No: 75351
Date Analyzed: 1/28/2015
Instrument: Apollo
Initial Cal. Date: 1/21/2015
Data File: 127073,74.D

		Compound	MEAN	CCRF	%D		%Drift
1	HATM	Diesel (C10-C24)	1257630	1315420	4.6	HATM	
2	HBTM	Motor Oil (C24-C36)	749936	677075	9.7	HBTM	
3							
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39							
40							
		Average			7.2		

Quantitation Report (Not Reviewed)

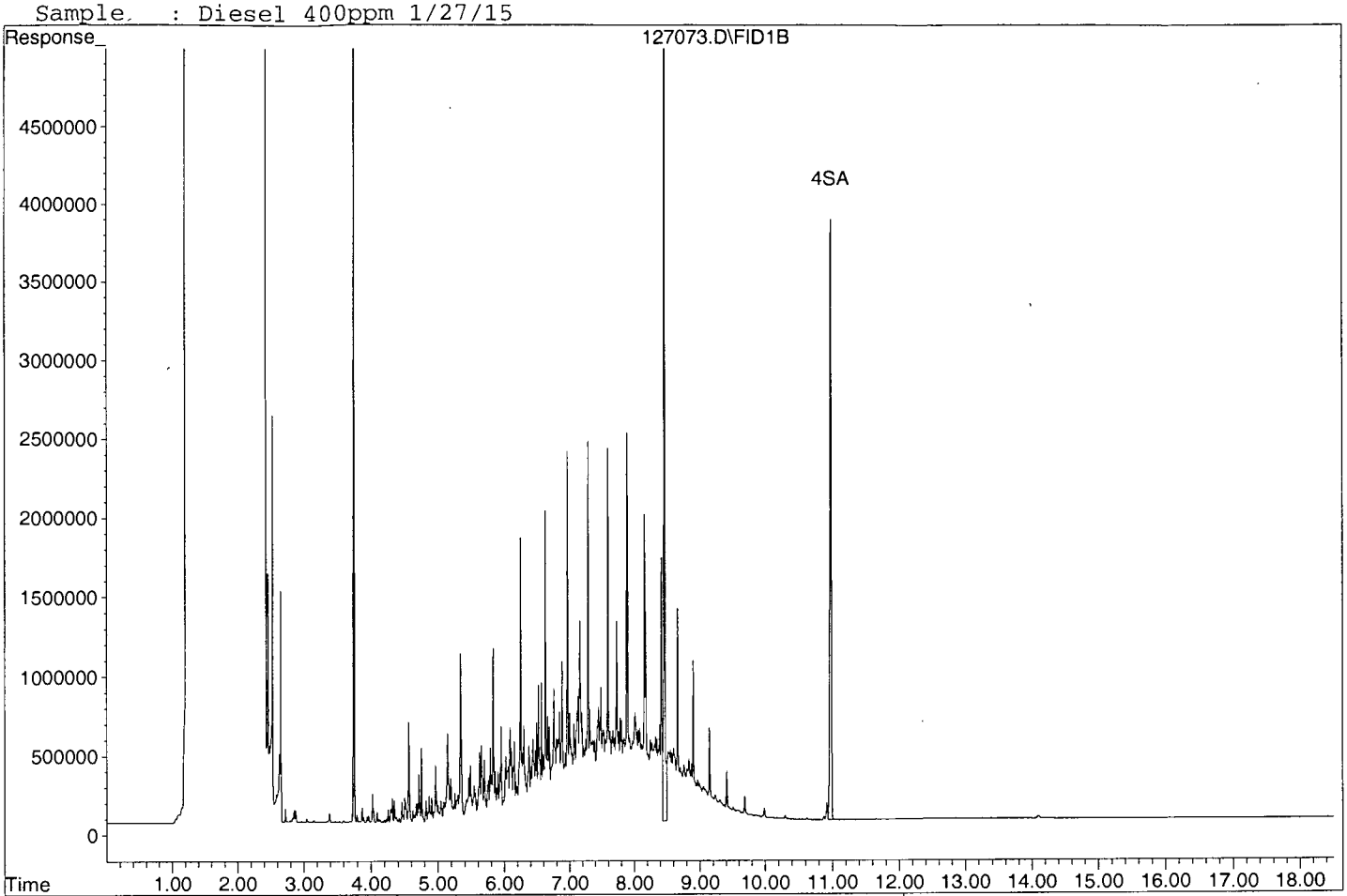
Data File : G:\APOLLO\DATA\150127\127073.D Vial: 73
Acq On : 1-28-15 16:01:57 Operator: lac
Sample : Diesel 400ppm 1/27/15 Inst : Apollo
Misc : Mix(A) Multiplr: 1.00
IntFile : events.e
Quant Time: Jan 30 10:49 2015 Quant Results File: CTO121.RES

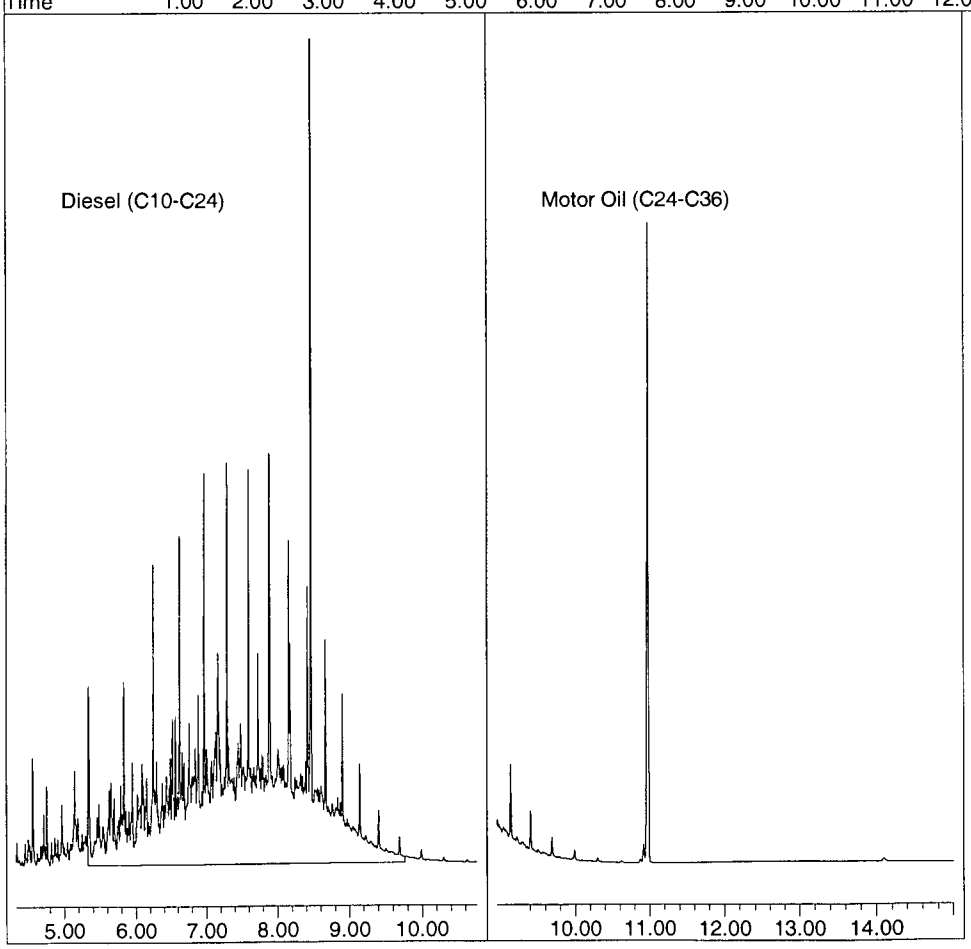
Method : G:\APOLLO\DATA\150121\CTO121.M (Chemstation Integrator)
Title : 8015 B&C
Last Update : Mon Jan 26 09:50:19 2015
Response via : Multiple Level Calibration

Volume Inj. : 2UL
Signal Phase : DB-5
Signal Info : FID02A

Compound	R.T.	Response	Conc Units
System Monitoring Compounds			
3) SA Ortho-Terphenyl(S)	8.47	77231966	20.726 ppb
Surrogate Spike 30.000		Recovery =	69.09%
4) SA Octacosane(S)	10.98	53584547	19.853 ppb
Surrogate Spike 30.000		Recovery =	66.18%
Target Compounds			
1) HATM Diesel (C10-C24)	7.55	1052332358	418.380 ppb

Data File: G:\APOLLO\DATA\150127\127073.D
Sample : Diesel 400ppm 1/27/15





Quantitation Report (Not Reviewed)

Data File : G:\APOLLO\DATA\150127\127074.D Vial: 74
Acq On : 1-28-15 16:26:43 Operator: lac
Sample : MO 1000ppm 1/27/15 Inst : Apollo
Misc : Mix(B) Multiplr: 1.00
IntFile : events.e
Quant Time: Jan 30 10:49 2015 Quant Results File: CTO121.RES

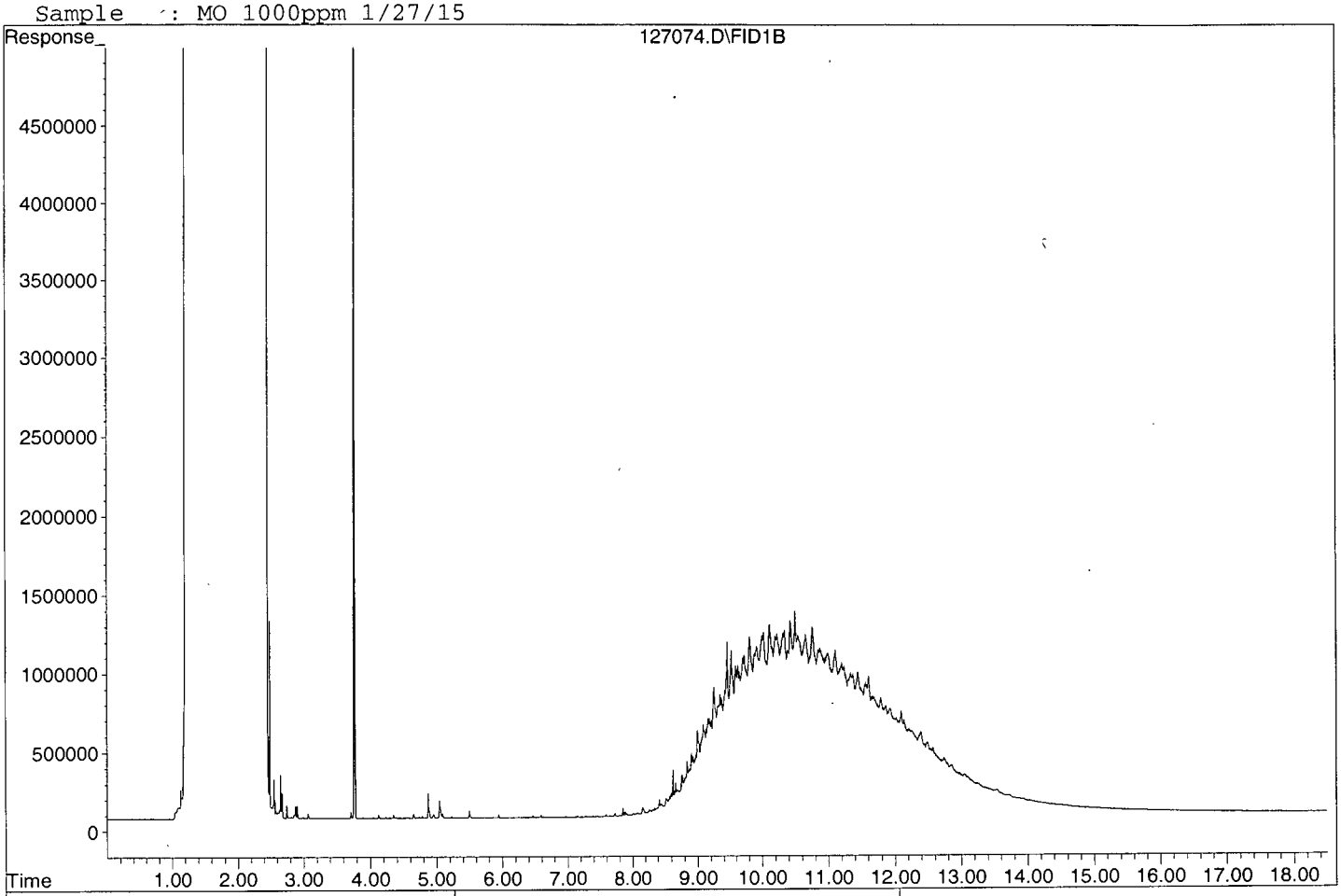
Method : G:\APOLLO\DATA\150121\CTO121.M (Chemstation Integrator)
Title : 8015 B&C
Last Update : Mon Jan 26 09:50:19 2015
Response via : Multiple Level Calibration

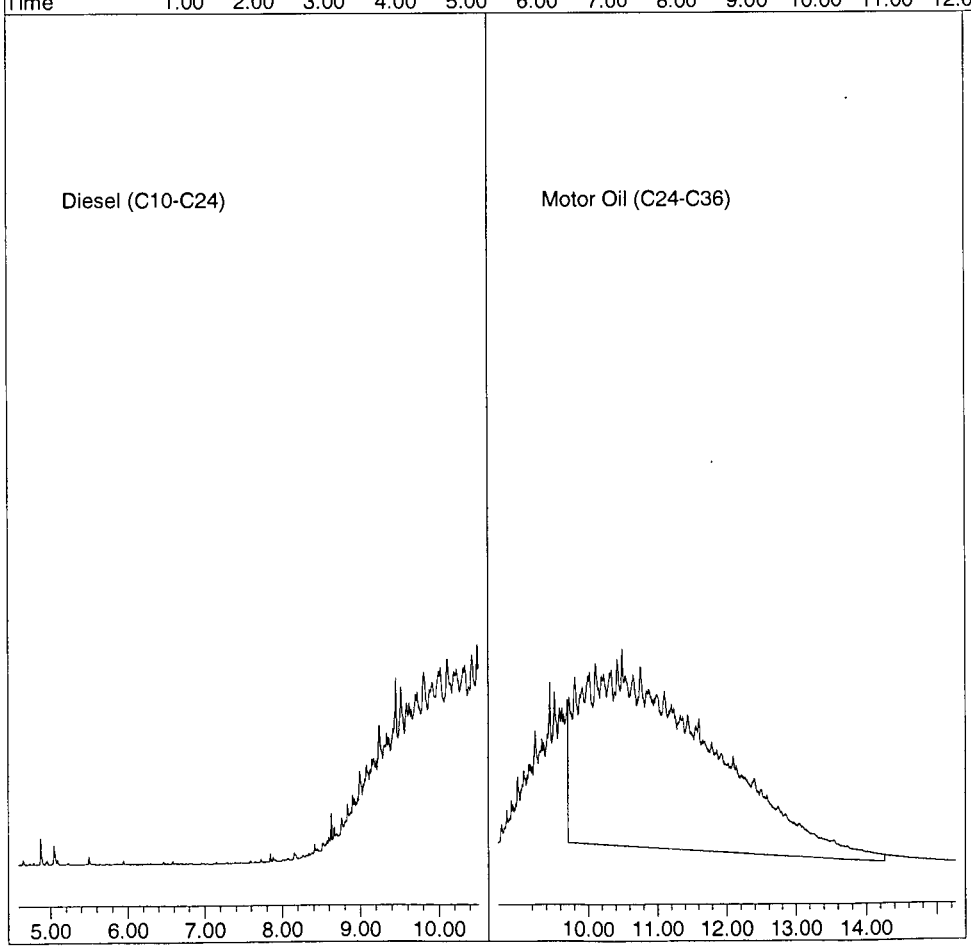
Volume Inj. : 2UL
Signal Phase : DB-5
Signal Info : FID02A

Compound	R.T.	Response	Conc Units
System Monitoring Compounds			
Target Compounds			
2) HBTM Motor Oil (C24-C36)	11.99	1354150201	902.844 ppb

Quantitation Report

Data File: G:\APOLLO\DATA\150127\127074.D
Sample : MO 1000ppm 1/27/15





TPH Extractables
CTO121

Form 7

Continuing Calibration

Lab Name: APPL, Inc.
Case No:
Matrix:

SDG No: 75351
Date Analyzed: 1/28/2015
Instrument: Apollo
Initial Cal. Date: 1/21/2015
Data File: 127088,89.D

		Compound	MEAN	CCRF	%D		%Drift
1	HATM	Diesel (C10-C24)	1257630	1333560	6.0	HATM	
2	HBTM	Motor Oil (C24-C36)	749936	611079	19	HBTM	
3							
4							
5							
6							
7							
8							
9							
10							
11							
12							
13							
14							
15							
16							
17							
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28							
29							
30							
31							
32							
33							
34							
35							
36							
37							
38							
39							
40							
		Average			12.5		

Quantitation Report (Not Reviewed)

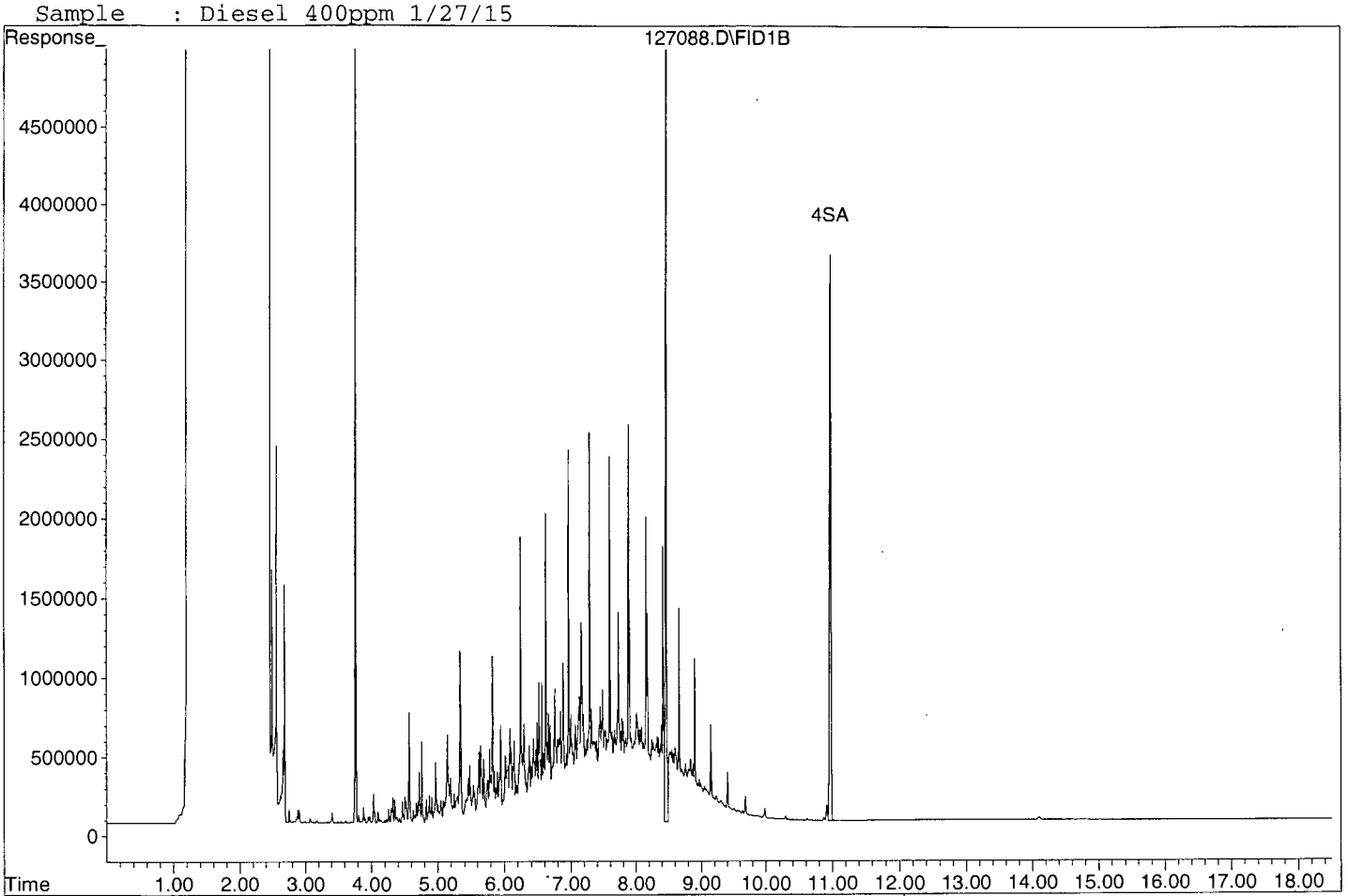
Data File : G:\APOLLO\DATA\150127\127088.D Vial: 88
Acq On : 1-28-15 22:08:07 Operator: lac
Sample : Diesel 400ppm 1/27/15 Inst : Apollo
Misc : Mix(A) Multiplr: 1.00
IntFile : events.e
Quant Time: Jan 30 10:51 2015 Quant Results File: CTO121.RES

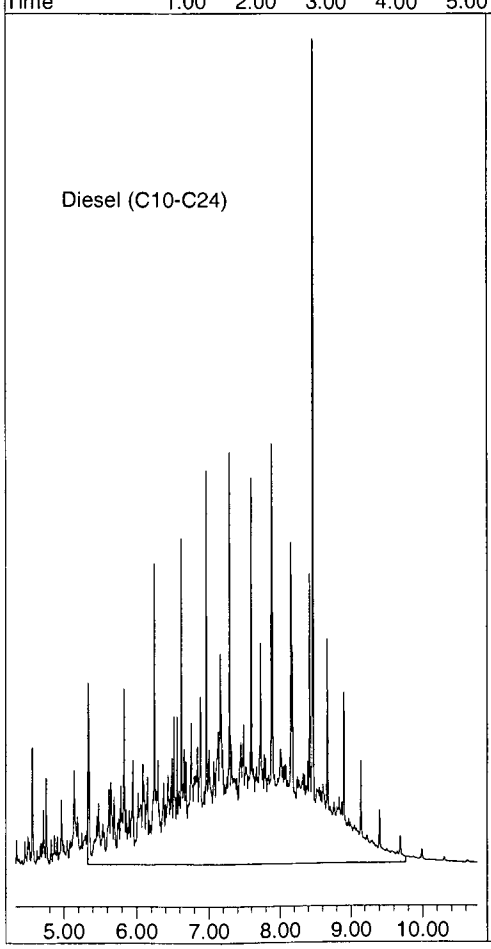
Method : G:\APOLLO\DATA\150121\CTO121.M (Chemstation Integrator)
Title : 8015 B&C
Last Update : Mon Jan 26 09:50:19 2015
Response via : Multiple Level Calibration

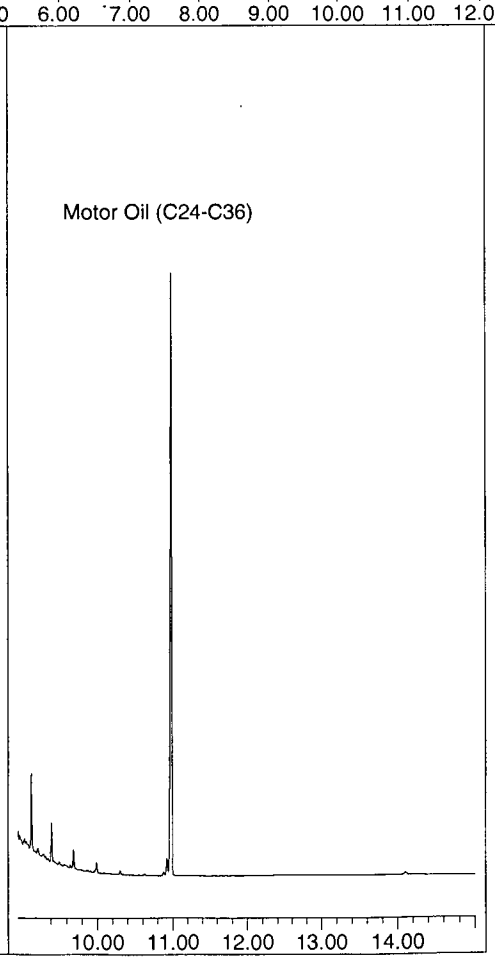
Volume Inj. : 2UL
Signal Phase : DB-5
Signal Info : FID02A

Compound	R.T.	Response	Conc Units
System Monitoring Compounds			
3) SA Ortho-Terphenyl(S)	8.47	78017774	20.937 ppb
Surrogate Spike 30.000		Recovery =	69.79%
4) SA Octacosane(S)	10.98	52525722	19.460 ppb
Surrogate Spike 30.000		Recovery =	64.87%
Target Compounds			
1) HATM Diesel (C10-C24)	7.55	1066849614	424.152 ppb

Data File: G:\APOLLO\DATA\150127\127088.D
Sample : Diesel 400ppm 1/27/15







Quantitation Report (Not Reviewed)

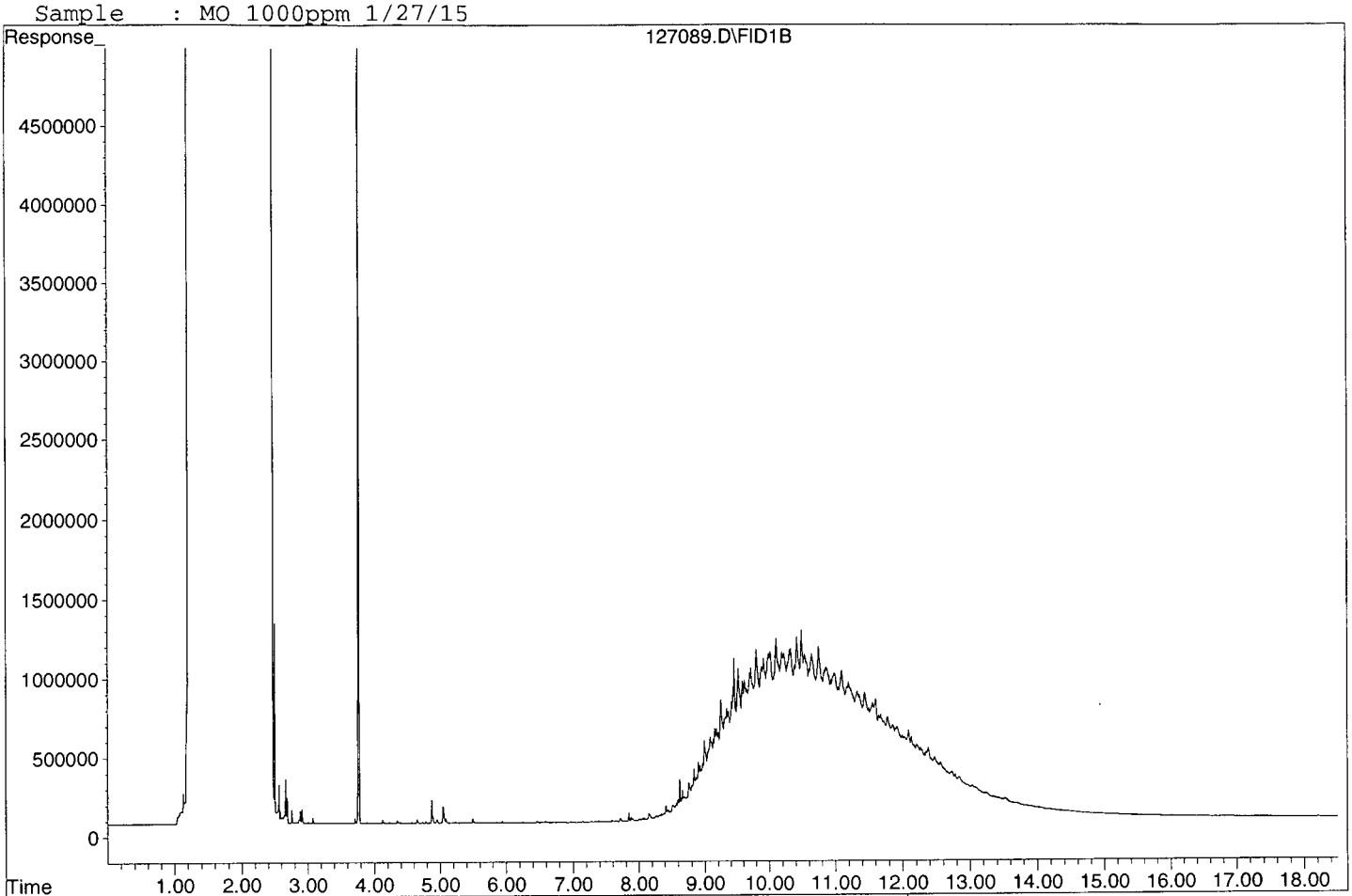
Data File : G:\APOLLO\DATA\150127\127089.D Vial: 89
Acq On : 1-28-15 22:32:16 Operator: lac
Sample : MO 1000ppm 1/27/15 Inst : Apollo
Misc : Mix(B) Multiplr: 1.00
IntFile : events.e
Quant Time: Jan 30 10:51 2015 Quant Results File: CTO121.RES

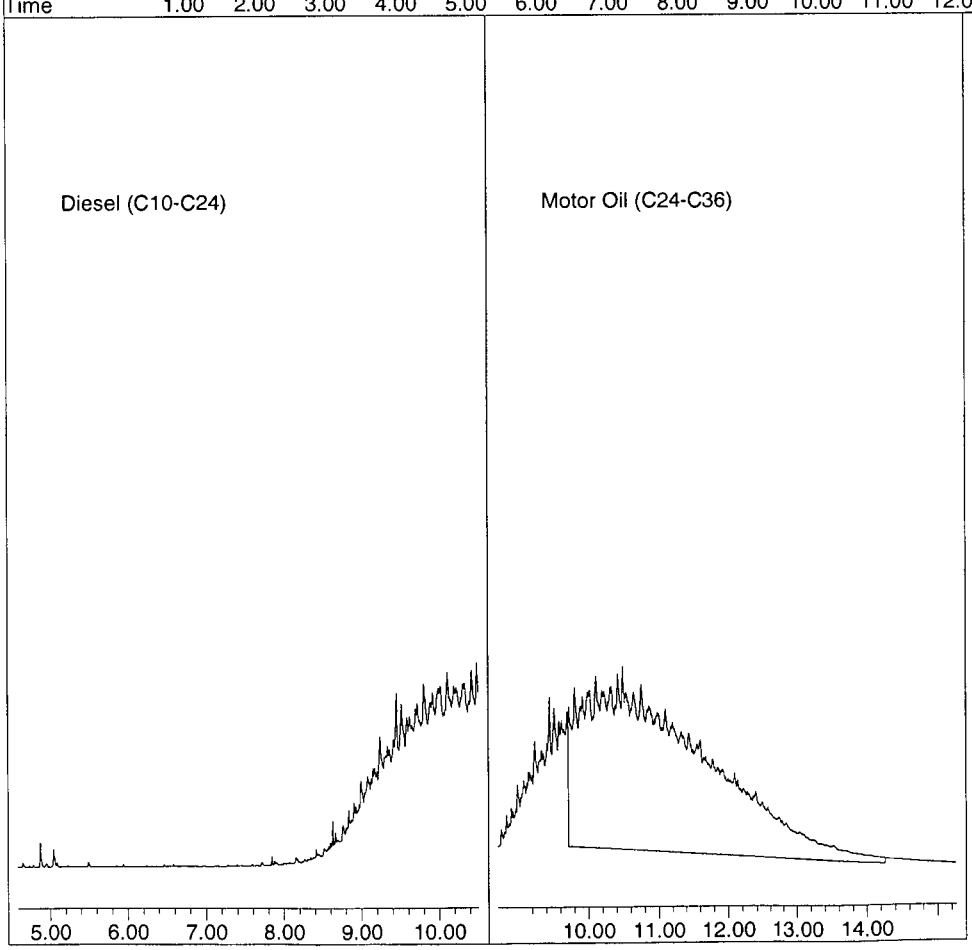
Method : G:\APOLLO\DATA\150121\CTO121.M (Chemstation Integrator)
Title : 8015 B&C
Last Update : Mon Jan 26 09:50:19 2015
Response via : Multiple Level Calibration

Volume Inj. : 2UL
Signal Phase : DB-5
Signal Info : FID02A

Compound	R.T.	Response	Conc Units
System Monitoring Compounds			
Target Compounds			
2) HBTM Motor Oil (C24-C36)	11.99	1222158354	814.842 ppb

Data File: G:\APOLLO\DATA\150127\127089.D
Sample : MO 1000ppm 1/27/15





TPH Extractables
CTO121

Form 7

Continuing Calibration

Lab Name: APPL, Inc.
Case No:
Matrix:

SDG No: 75351
Date Analyzed: 1/30/2015
Instrument: Apollo
Initial Cal. Date: 1/21/2015
Data File: 127172.D

		Compound	MEAN	CCRF	%D		%Drift
1	HATM	Diesel (C10-C24)	1257630	1360000	8.1	HATM	
2							
3							
4							
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32							
33							
34							
35							
36							
37							
38							
39							
40							
		Average			8.1		

Quantitation Report (Not Reviewed)

Data File : G:\APOLLO\DATA\150127\127172.D Vial: 72
Acq On : 1-30-15 8:08:25 Operator: lac
Sample : Diesel 400ppm 1/27/15 Inst : Apollo
Misc : Mix(A) Multiplr: 1.00
IntFile : events.e
Quant Time: Jan 30 13:58 2015 Quant Results File: CTO121.RES

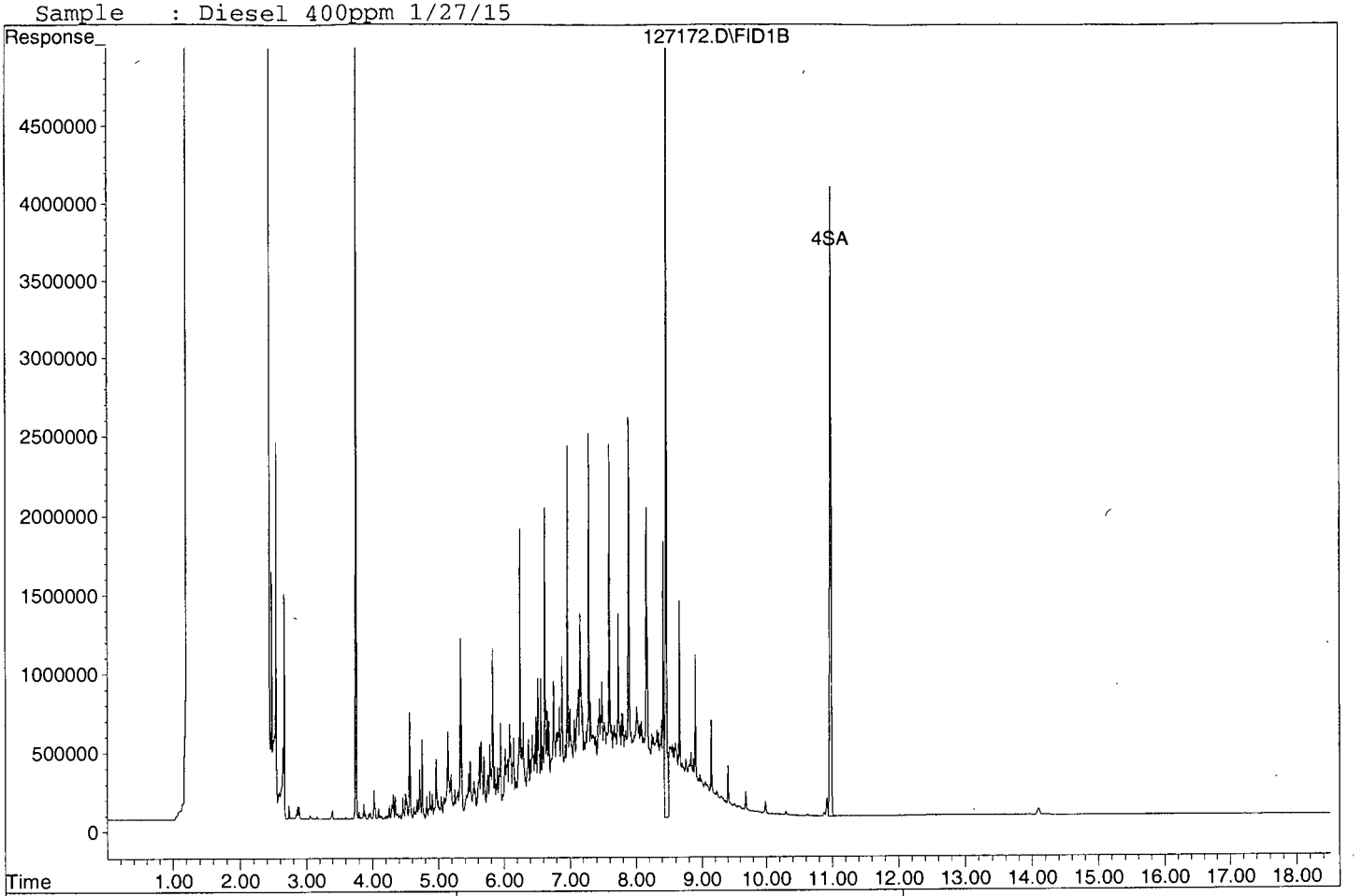
Method : G:\APOLLO\DATA\150121\CTO121.M (Chemstation Integrator)
Title : 8015 B&C
Last Update : Mon Jan 26 09:50:19 2015
Response via : Multiple Level Calibration

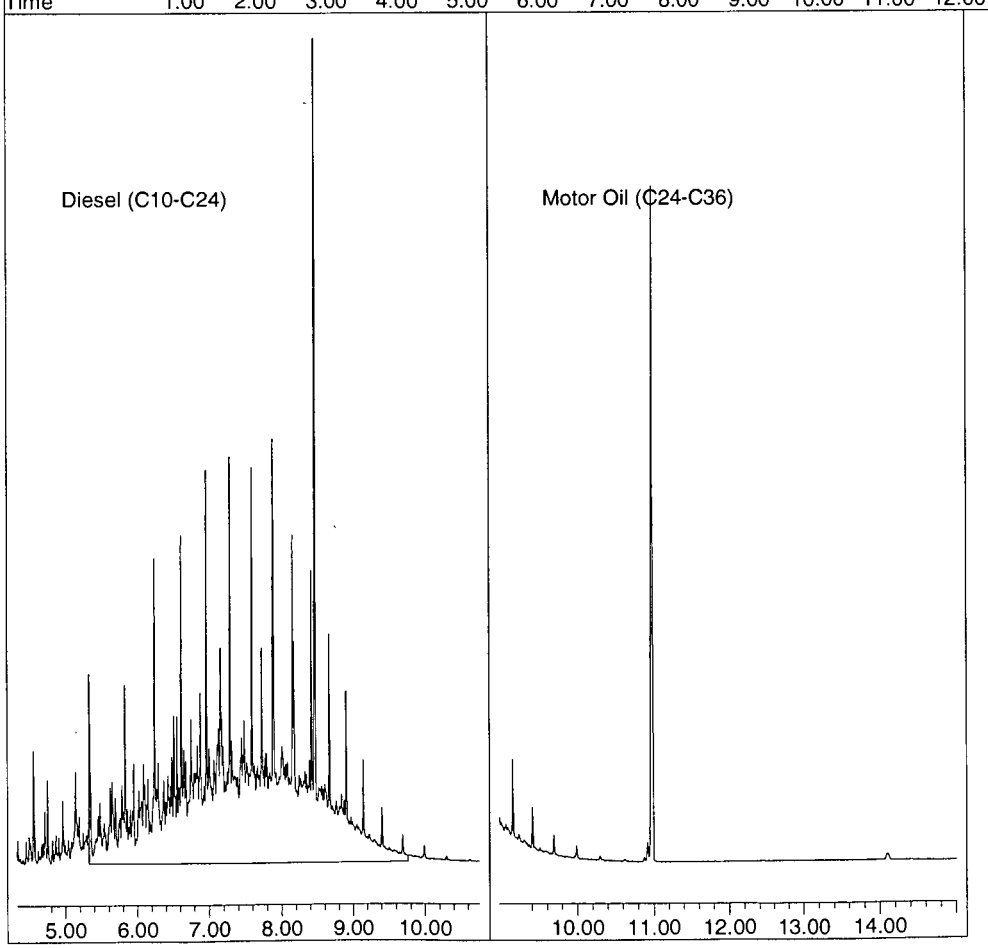
Volume Inj. : 2UL
Signal Phase : DB-5
Signal Info : FID02A

Compound	R.T.	Response	Conc Units
System Monitoring Compounds			
3) SA Ortho-Terphenyl(S)	8.47	79352543	21.296 ppb
Surrogate Spike 30.000		Recovery =	70.99%
4) SA Octacosane(S)	10.98	58740391	21.763 ppb
Surrogate Spike 30.000		Recovery =	72.54%
Target Compounds			
1) HATM Diesel (C10-C24)	7.55	1087996352	432.559 ppb

Quantitation Report

Data File: G:\APOLLO\DATA\150127\127172.D
Sample : Diesel 400ppm 1/27/15





TPH Extractables
CTO121

Form 7

Continuing Calibration

Lab Name: APPL, Inc.
Case No:
Matrix:

SDG No: 75351
Date Analyzed: 1/30/2015
Instrument: Apollo
Initial Cal. Date: 1/21/2015
Data File: 127181.D

		Compound	MEAN	CCRF	%D		%Drift
1	HATM	Diesel (C10-C24)	1257630	1341280	6.7	HATM	
2							
3							
4							
5							
6							
7							
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34							
35							
36							
37							
38							
39							
40							
		Average			6.7		

Quantitation Report (Not Reviewed)

Data File : G:\APOLLO\DATA\150127\127181.D Vial: 81
Acq On : 1-30-15 11:46:56 Operator: lac
Sample : Diesel 400ppm 1/27/15 Inst : Apollo
Misc : Mix(A) Multiplr: 1.00
IntFile : events.e
Quant Time: Jan 30 12:18 2015 Quant Results File: CTO121.RES

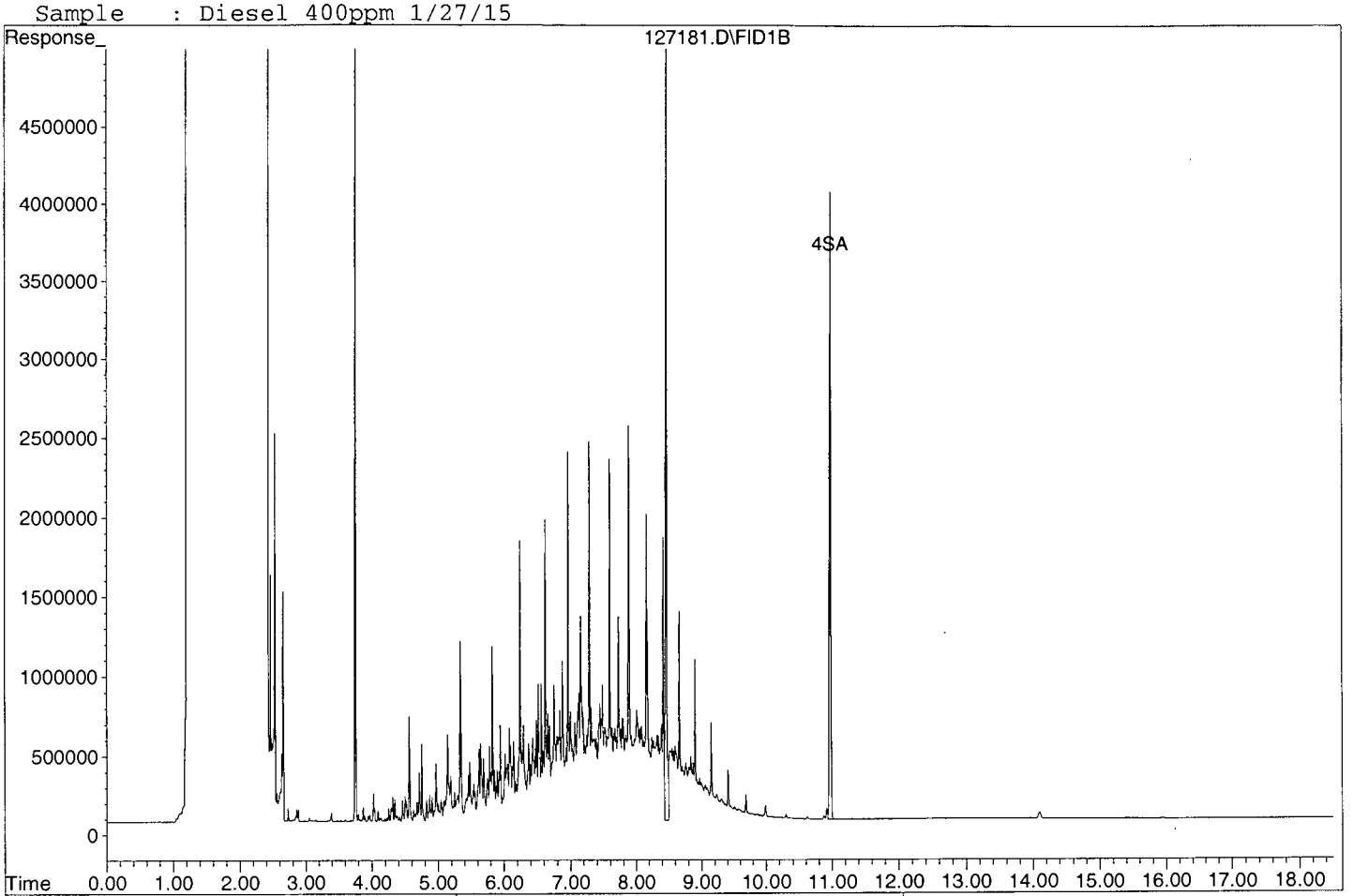
Method : G:\APOLLO\DATA\150121\CTO121.M (Chemstation Integrator)
Title : 8015 B&C
Last Update : Mon Jan 26 09:50:19 2015
Response via : Multiple Level Calibration

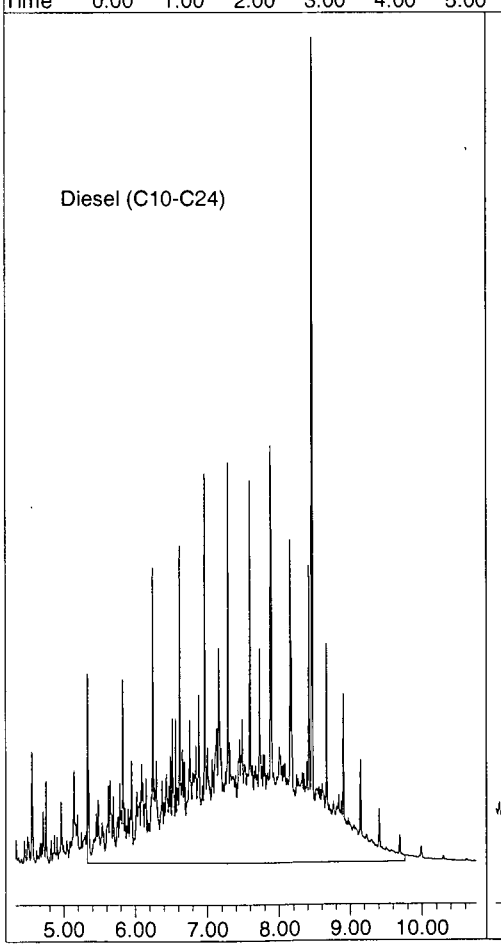
Volume Inj. : 2UL
Signal Phase : DB-5
Signal Info : FID02A

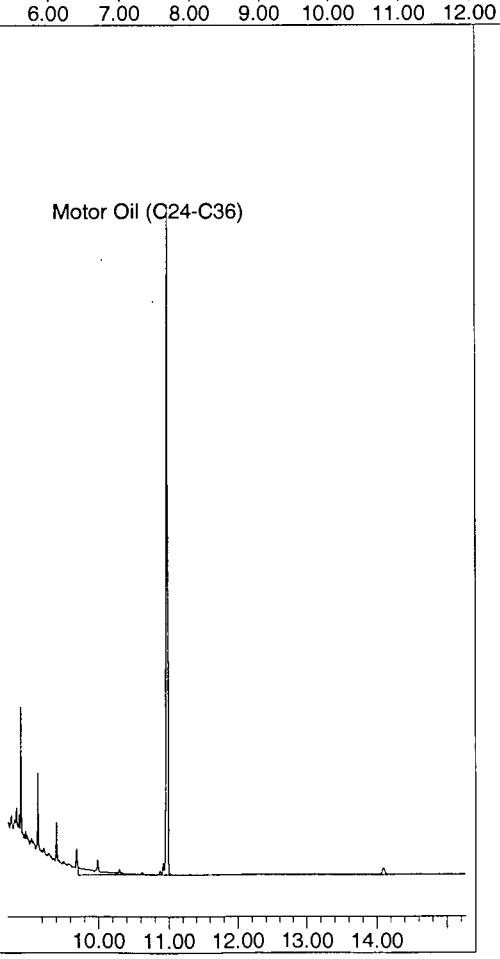
Compound	R.T.	Response	Conc Units
System Monitoring Compounds			
3) SA Ortho-Terphenyl(S)	8.47	78253540	21.001 ppb
Surrogate Spike 30.000		Recovery =	70.00%
4) SA Octacosane(S)	10.98	57558886	21.325 ppb
Surrogate Spike 30.000		Recovery =	71.08%
Target Compounds			
1) HATM Diesel (C10-C24)	7.55	1073022926	426.606 ppb
2) HBTM Motor Oil (C24-C36)	11.99	18017259	12.013 ppb

Quantitation Report

Data File: G:\APOLLO\DATA\150127\127181.D
Sample : Diesel 400ppm 1/27/15







EPA 8015 Modified
Total Petroleum Hydrocarbons
Raw Data

APPL, INC.

Method Blank
TPH-d Water EPA 8015C

APPL Inc.
908 North Temperance Avenu
Clovis, CA 93611

Blank Name/QCG: **150115W-09553 - 193933**
Batch ID: #DROWC-150115A

Sample Type	Analyte	Result	LOQ	LOD	DL	Units	Extraction Date	Analysis Date
BLANK	TPH-DRO (C10-C24)	50.0 U	150	50.0	40.4	ug/L	1/15/2015	1/23/2015
BLANK	TPH-LRO (C24-C36)	500.0 U	500	500.0	106.0	ug/L	1/15/2015	1/23/2015
BLANK	SURROGATE: OCTACOSANE (S)	92.3	28-142			%	1/15/2015	1/23/2015
BLANK	SURROGATE: ORTHO-TERPHEN	68.8	57-132			%	1/15/2015	1/23/2015

Quant Method:CTO121.M
Run #:121061
Instrument:Apollo
Sequence:150121
Initials:LA

GC SC-Blank-REG MDLs
Printed: 1/30/2015 1:42:34 PM

Quantitation Report (QT Reviewed)

Data File : G:\APOLLO\DATA\150121\121061.D Vial: 61
Acq On : 1-23-15 4:06:58 Operator: lac
Sample : 150115A BLK 5/1000 Inst : Apollo
Misc : Water Multiplr: 5.00
IntFile : events.e
Quant Time: Jan 30 13:22 2015 Quant Results File: CTO121.RES

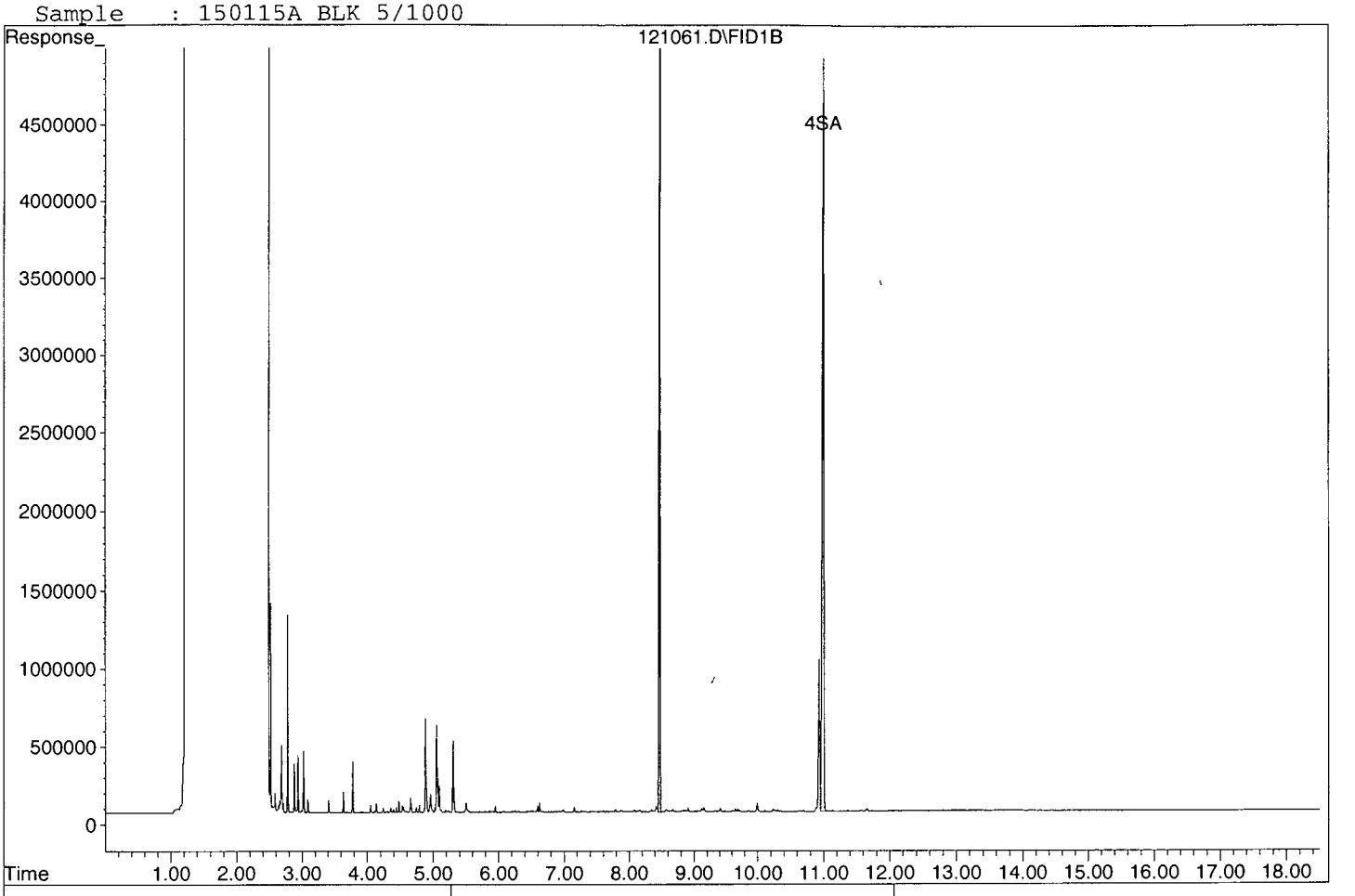
Method : G:\APOLLO\DATA\150121\CTO121.M (Chemstation Integrator)
Title : 8015 B&C
Last Update : Mon Jan 26 09:50:19 2015
Response via : Multiple Level Calibration

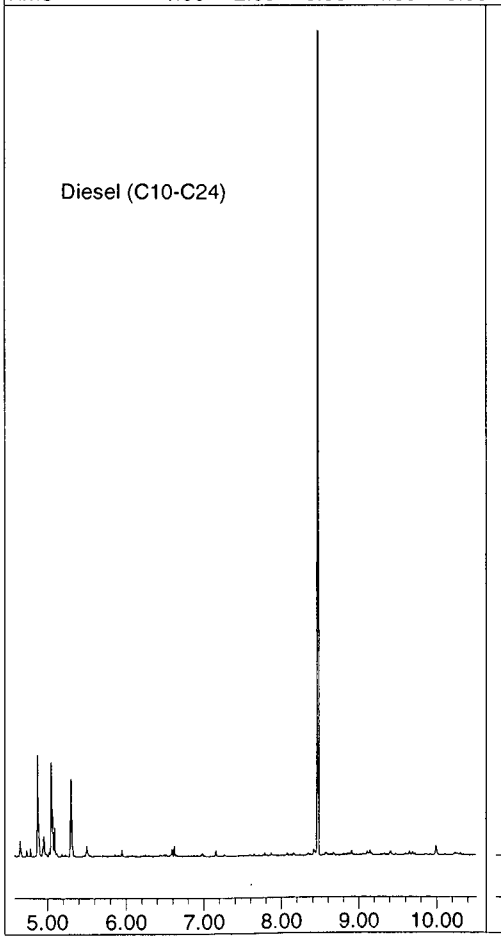
Volume Inj. : 2UL
Signal Phase : DB-5
Signal Info : FID02A

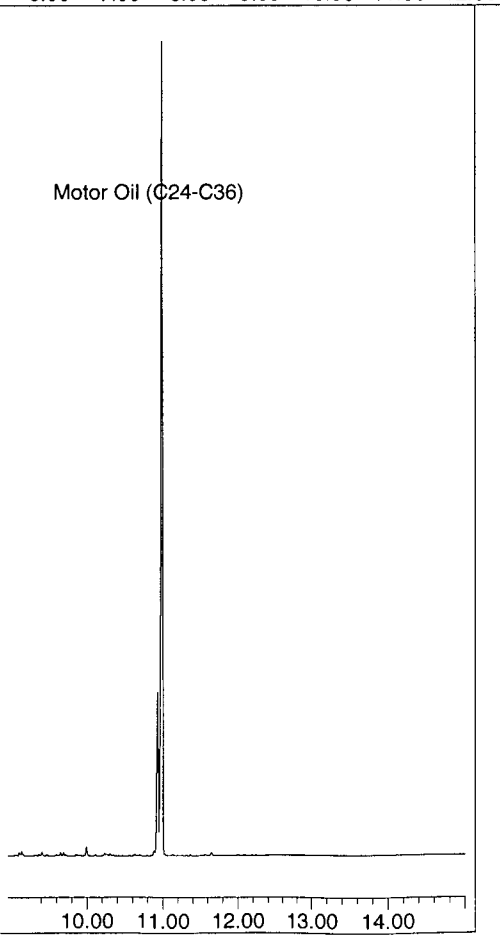
Compound	R.T.	Response	Conc Units
System Monitoring Compounds			
3) SA Ortho-Terphenyl(S)	8.47	76891376	103.175 ppb
Surrogate Spike 150.000		Recovery =	68.78%
4) SA Octacosane(S)	10.99	74736619	138.447 ppb
Surrogate Spike 150.000		Recovery =	92.30%
Target Compounds			

Quantitation Report

Data File: G:\APOLLO\DATA\150121\121061.D
Sample : 150115A BLK 5/1000







Method Blank
TPHe Soil EPA 8015C

APPL Inc.
908 North Temperance Avenu
Clovis, CA 93611

Blank Name/QCG: **150115S-09552 - 193919**
Batch ID: #DROCT-150115B

Sample Type	Analyte	Result	LOQ	LOD	DL	Units	Extraction Date	Analysis Date
BLANK	TPH-DRO (C10-C24)	1.00 U	5.0	1.00	0.65	mg/kg	1/15/2015	1/28/2015
BLANK	TPH-LRO (C24-C36)	10.0 U	50	10.0	3.5	mg/kg	1/15/2015	1/28/2015
BLANK	SURROGATE: OCTACOSANE (S)	120	47-140			%	1/15/2015	1/28/2015
BLANK	SURROGATE: ORTHO-TERPHEN	91.7	58-128			%	1/15/2015	1/28/2015

Quant Method: CTO121.M
Run #: 127053
Instrument: Apollo
Sequence: 150127
Initials: LA

GC SC-Blank-REG MDLs
Printed: 1/30/2015 1:42:34 PM

Quantitation Report (QT Reviewed)

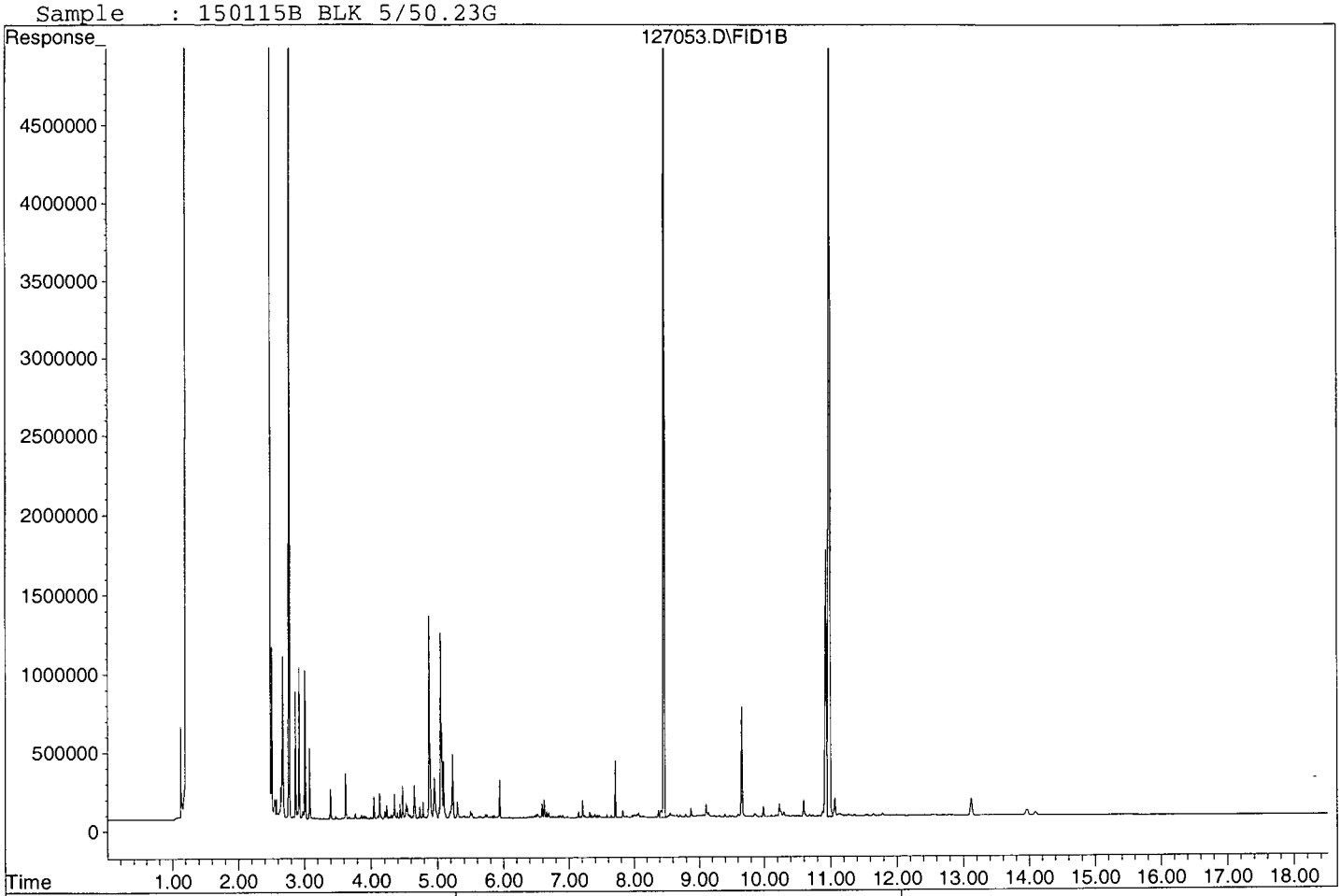
Data File : G:\APOLLO\DATA\150127\127053.D Vial: 53
Acq On : 1-28-15 7:52:04 Operator: lac
Sample : 150115B BLK 5/50.23G Inst : Apollo
Misc : Soil Multiplr: 99.54
IntFile : events.e
Quant Time: Jan 30 10:46 2015 Quant Results File: CTO121.RES

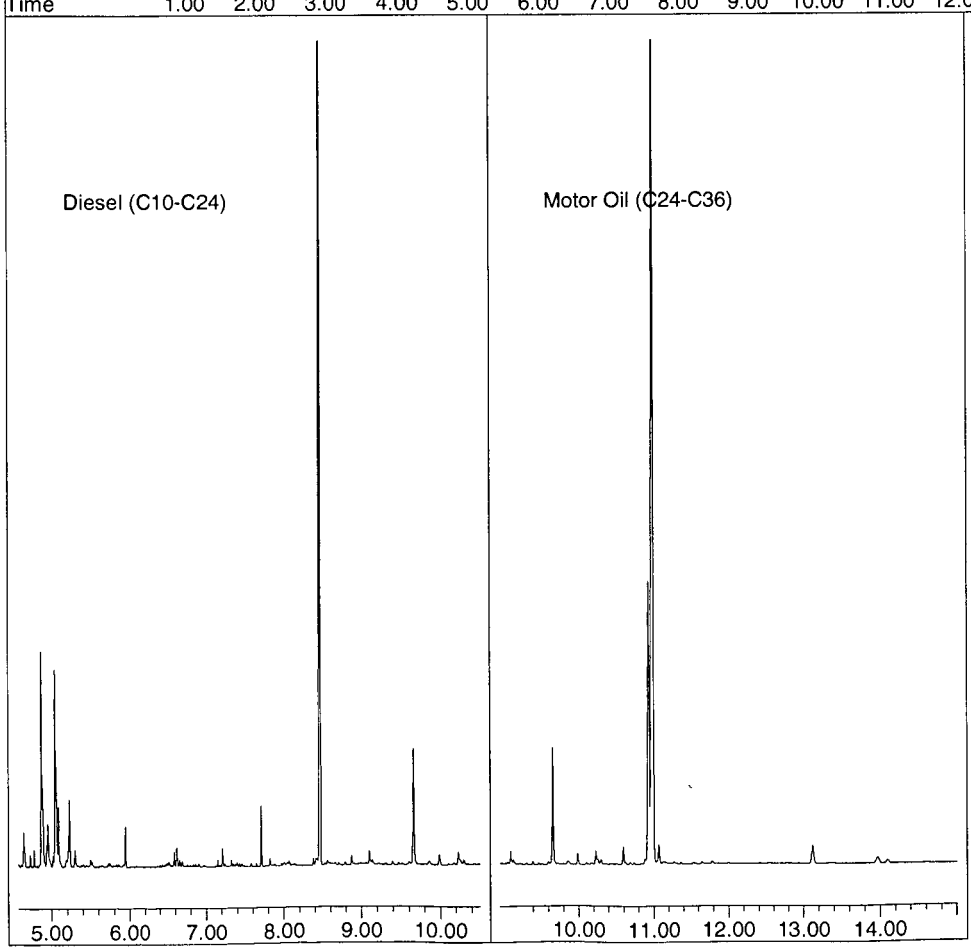
Method : G:\APOLLO\DATA\150121\CTO121.M (Chemstation Integrator)
Title : 8015 B&C
Last Update : Mon Jan 26 09:50:19 2015
Response via : Multiple Level Calibration

Volume Inj. : 2UL
Signal Phase : DB-5
Signal Info : FID02A

Compound	R.T.	Response	Conc Units
System Monitoring Compounds			
3) SA Ortho-Terphenyl(S)	8.47	102482446	2737.685 ppb
Surrogate Spike 2986.263		Recovery	= 91.68%
4) SA Octacosane(S)	10.99	96863929	3572.318 ppb
Surrogate Spike 2986.263		Recovery	= 119.63%
Target Compounds			

Data File: G:\APOLLO\DATA\150127\127053.D
Sample : 150115B BLK 5/50.23G





Laboratory Control Spike Recovery
TPH-d Water EPA 8015C

APPL ID: **150115W-09553 LCS - 193933**
Batch ID: #DROWC-150115A

APPL Inc.
908 North Temperance Avenue
Clovis, CA 93611

Compound Name	Spike Level ug/L	SPK Result ug/L	SPK % Recovery	Recovery Limits
TPH-DRO (C10-C24)	2000	1890	94.5	61-143
TPH-LRO (C24-C36)	2000	1790	89.5	61-143
SURROGATE: OCTACOSANE (S)	150	134	89.3	28-142
SURROGATE: ORTHO-TERPHENYL (S)	150	122	81.3	57-132

Comments: _____

Primary	SPK
Quant Method :	CTO121.M
Extraction Date :	1/15/2015
Analysis Date :	1/23/2015
Instrument :	Apollo
Run :	121062
Initials :	LA

Printed: 1/30/2015 1:42:28 PM
APPL Standard LCS

Quantitation Report (QT Reviewed)

Data File : G:\APOLLO\DATA\150121\121062.D Vial: 62
Acq On : 1-23-15 4:30:31 Operator: lac
Sample : 150115A LCS-1 5/1000 Inst : Apollo
Misc : Water Multiplr: 5.00
IntFile : events.e
Quant Time: Jan 30 13:22 2015 Quant Results File: CTO121.RES

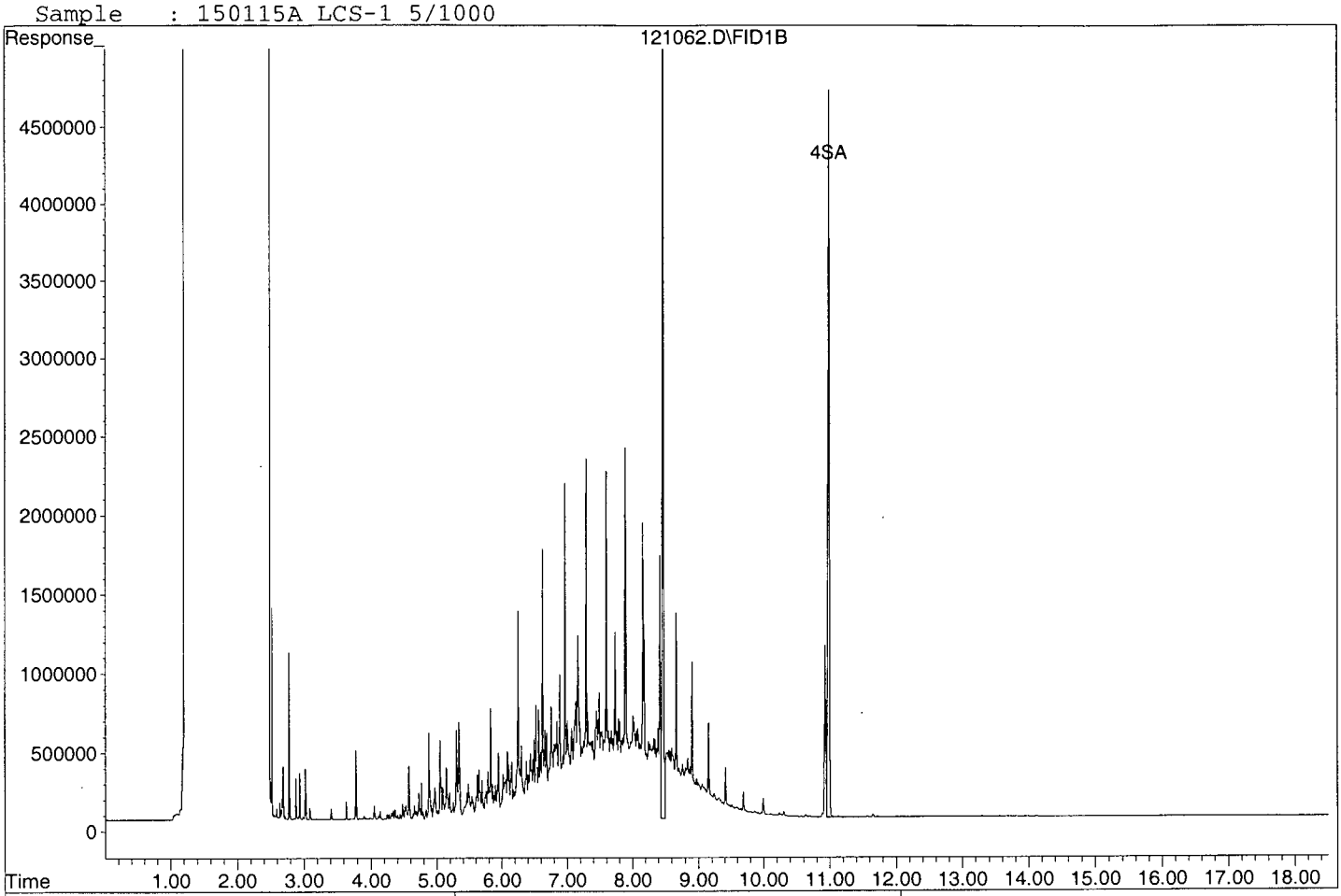
Method : G:\APOLLO\DATA\150121\CTO121.M (Chemstation Integrator)
Title : 8015 B&C
Last Update : Mon Jan 26 09:50:19 2015
Response via : Multiple Level Calibration

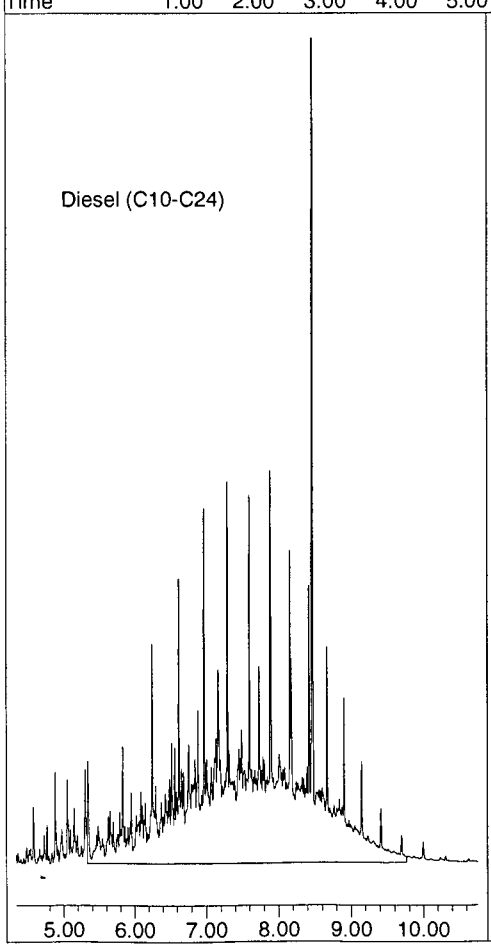
Volume Inj. : 2UL
Signal Phase : DB-5
Signal Info : FID02A

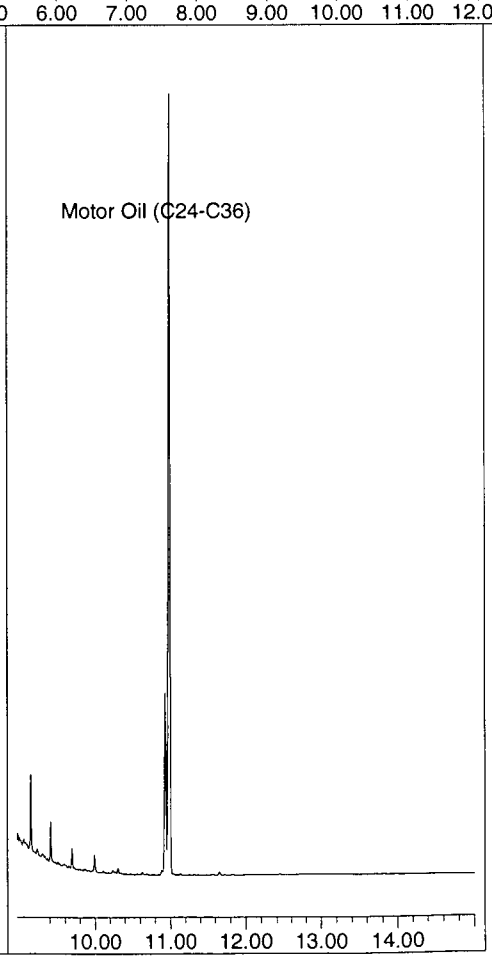
Compound	R.T.	Response	Conc Units
System Monitoring Compounds			
3) SA Ortho-Terphenyl(S)	8.47	90802151	121.841 ppb
Surrogate Spike 150.000		Recovery =	81.23%
4) SA Octacosane(S)	10.99	72489033	134.284 ppb
Surrogate Spike 150.000		Recovery =	89.52%
Target Compounds			
1) HATM Diesel (C10-C24)	7.55	949422373	1887.329 ppb

Quantitation Report

Data File: G:\APOLLO\DATA\150121\121062.D
Sample : 150115A LCS-1 5/1000







Quantitation Report (QT Reviewed)

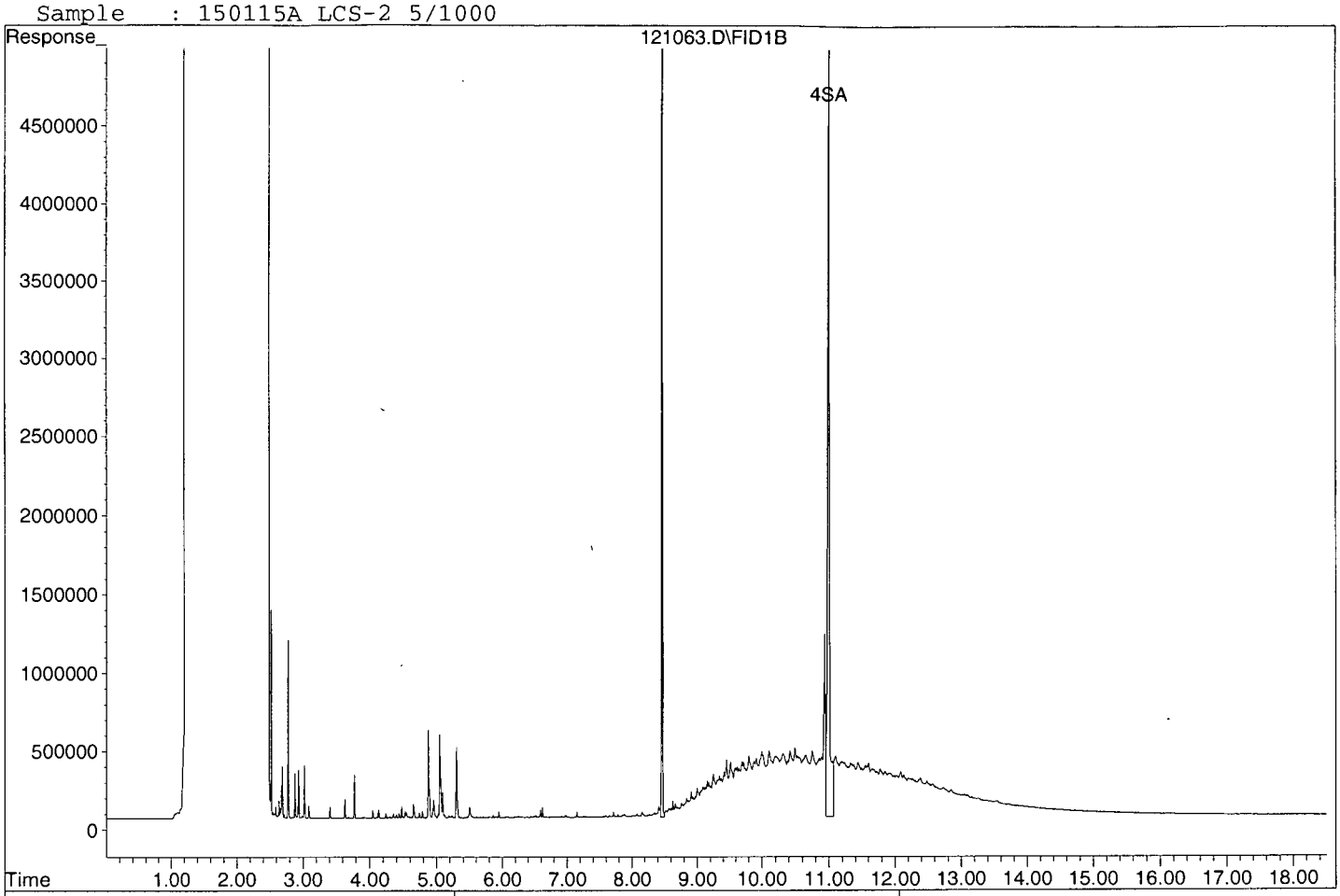
Data File : G:\APOLLO\DATA\150121\121063.D Vial: 63
Acq On : 1-23-15 4:54:10 Operator: lac
Sample : 150115A LCS-2 5/1000 Inst : Apollo
Misc : Water Multiplr: 5.00
IntFile : events.e
Quant Time: Jan 30 13:22 2015 Quant Results File: CTO121.RES

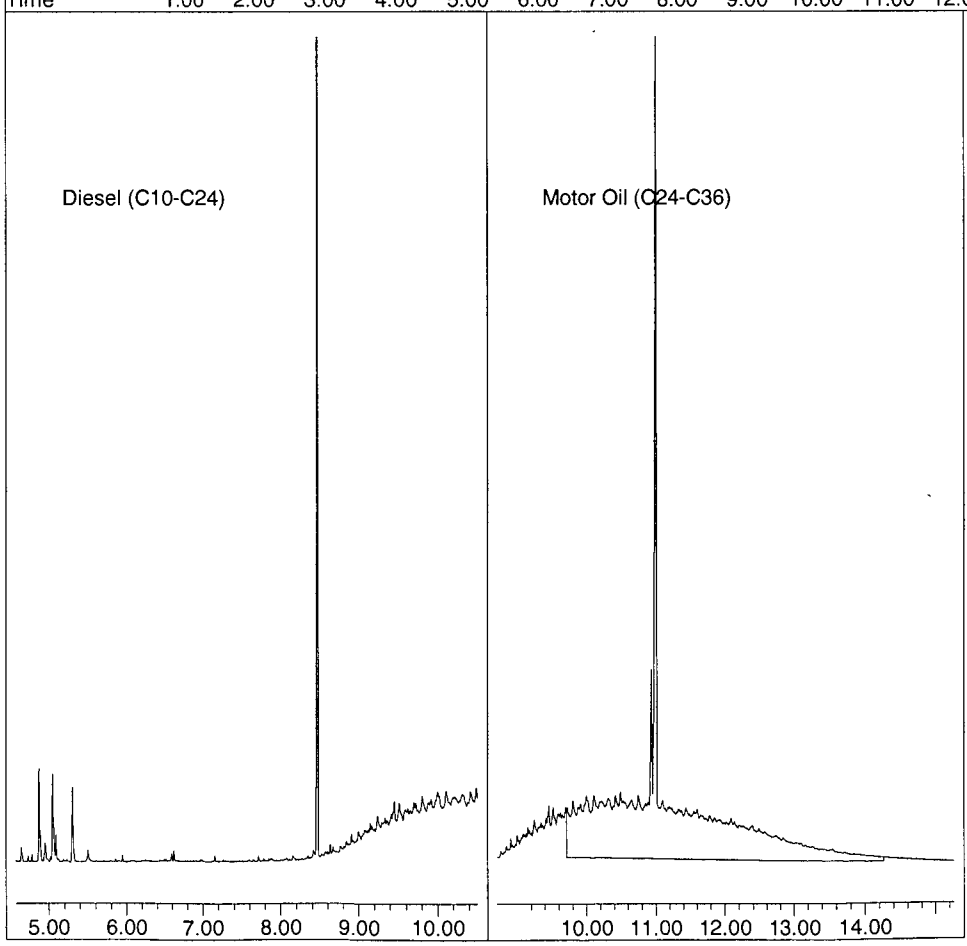
Method : G:\APOLLO\DATA\150121\CTO121.M (Chemstation Integrator)
Title : 8015 B&C
Last Update : Mon Jan 26 09:50:19 2015
Response via : Multiple Level Calibration

Volume Inj. : 2UL
Signal Phase : DB-5
Signal Info : FID02A

Compound	R.T.	Response	Conc Units
System Monitoring Compounds			
3) SA Ortho-Terphenyl(S)	8.47	78814746	105.756 ppb
Surrogate Spike 150.000		Recovery =	70.50%
4) SA Octacosane(S)	11.00	95958296	177.760 ppb
Surrogate Spike 150.000		Recovery =	118.51%
Target Compounds			
2) HBTM Motor Oil (C24-C36)	11.99	538247922	1794.314 ppb

Data File: G:\APOLLO\DATA\150121\121063.D
Sample : 150115A LCS-2 5/1000





Laboratory Control Spike Recovery
TPHe Soil EPA 8015C

APPL ID: **150115S-09552 LCS - 193919**
Batch ID: #DROCT-150115B

APPL Inc.
908 North Temperance Avenue
Clovis, CA 93611

Compound Name	Spike Level mg/kg	SPK Result mg/kg	SPK % Recovery	Recovery Limits
TPH-DRO (C10-C24)	39.7	36.9	92.9	64-122
TPH-LRO (C24-C36)	39.8	33.3	83.7	50-150
SURROGATE: OCTACOSANE (S)	2.98	2.70	90.6	47-140
SURROGATE: ORTHO-TERPHENYL (S)	2.98	2.39	80.2	58-128

Comments: _____

Primary	SPK
Quant Method :	CTO121.M
Extraction Date :	1/15/2015
Analysis Date :	1/30/2015
Instrument :	Apollo
Run :	127180
Initials :	LA

Printed: 1/30/2015 1:42:28 PM
APPL Standard LCS

Quantitation Report (QT Reviewed)

Data File : G:\APOLLO\DATA\150127\127180.D Vial: 80
Acq On : 1-30-15 11:22:26 Operator: lac
Sample : 150115B LCS-1 5/50.23G Inst : Apollo
Misc : Soil Multiplr: 99.54
IntFile : events.e
Quant Time: Jan 30 12:18 2015 Quant Results File: CTO121.RES

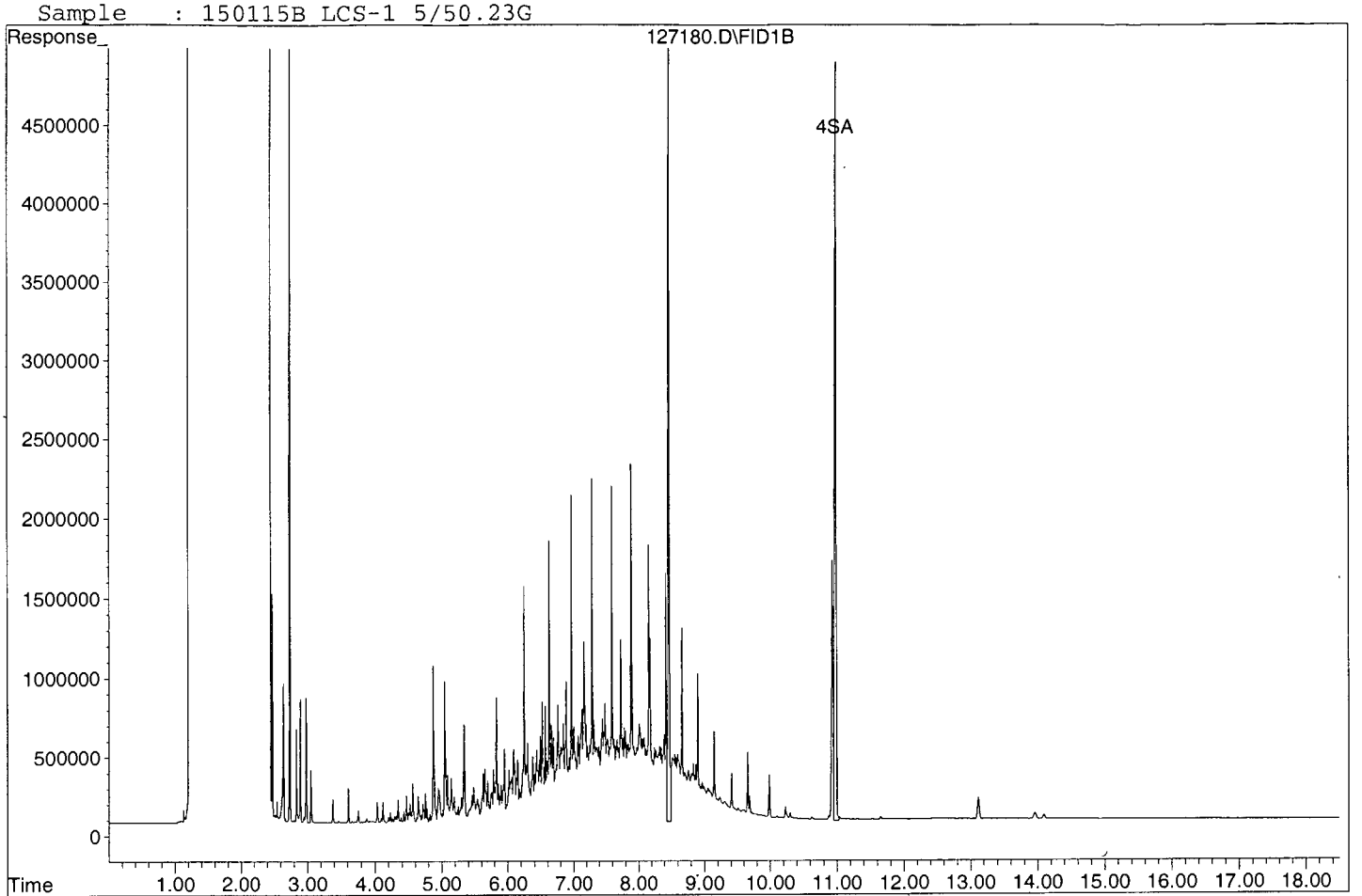
Method : G:\APOLLO\DATA\150121\CTO121.M (Chemstation Integrator)
Title : 8015 B&C
Last Update : Mon Jan 26 09:50:19 2015
Response via : Multiple Level Calibration

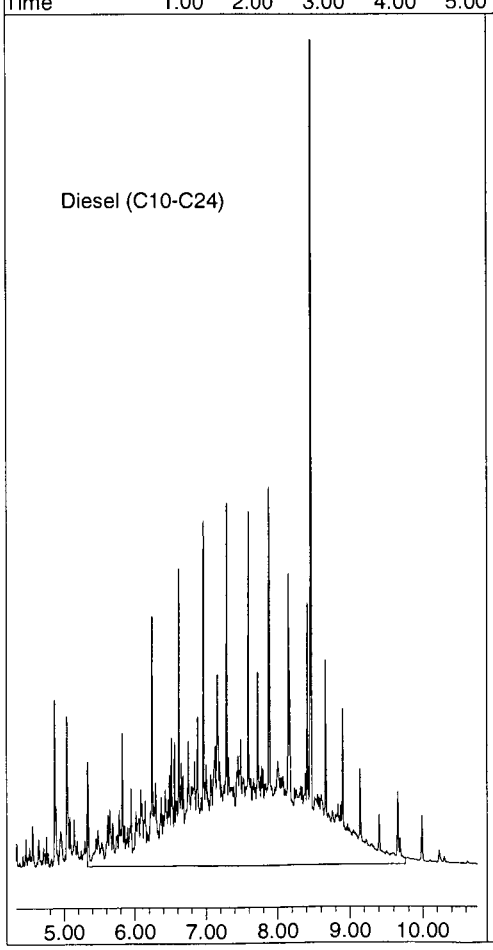
Volume Inj. : 2UL
Signal Phase : DB-5
Signal Info : FID02A

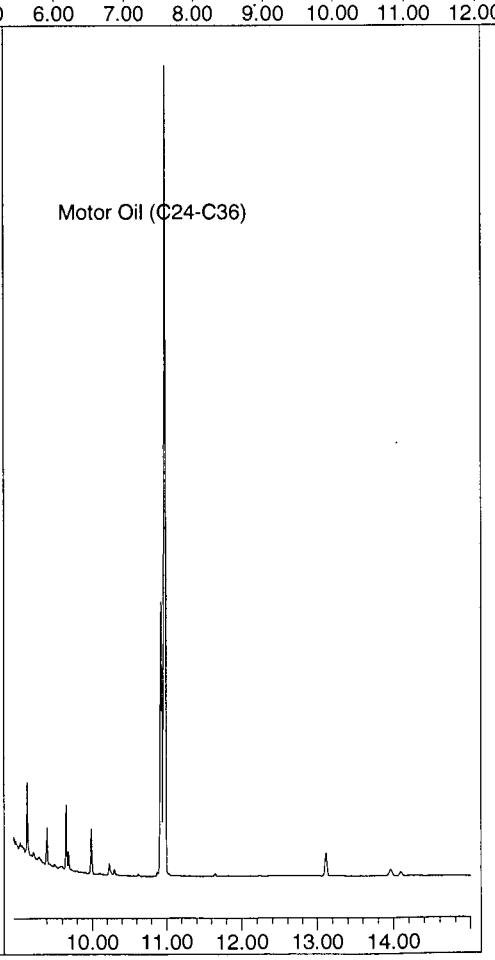
Compound	R.T.	Response	Conc Units
System Monitoring Compounds			
3) SA Ortho-Terphenyl(S)	8.47	89348314	2386.823 ppb
Surrogate Spike 2986.263		Recovery	= 79.93%
4) SA Octacosane(S)	10.98	73152977	2697.864 ppb
Surrogate Spike 2986.263		Recovery	= 90.34%
Target Compounds			
1) HATM Diesel (C10-C24)	7.55	931626173	36869.440 ppb

Quantitation Report

Data File: G:\APOLLO\DATA\150127\127180.D
Sample : 150115B LCS-1 5/50.23G







Quantitation Report (QT Reviewed)

Data File : G:\APOLLO\DATA\150127\127055.D Vial: 55
Acq On : 1-28-15 8:40:37 Operator: lac
Sample : 150115B LCS-2 5/50.39G Inst : Apollo
Misc : Soil Multiplr: 99.23
IntFile : events.e
Quant Time: Jan 30 10:46 2015 Quant Results File: CTO121.RES

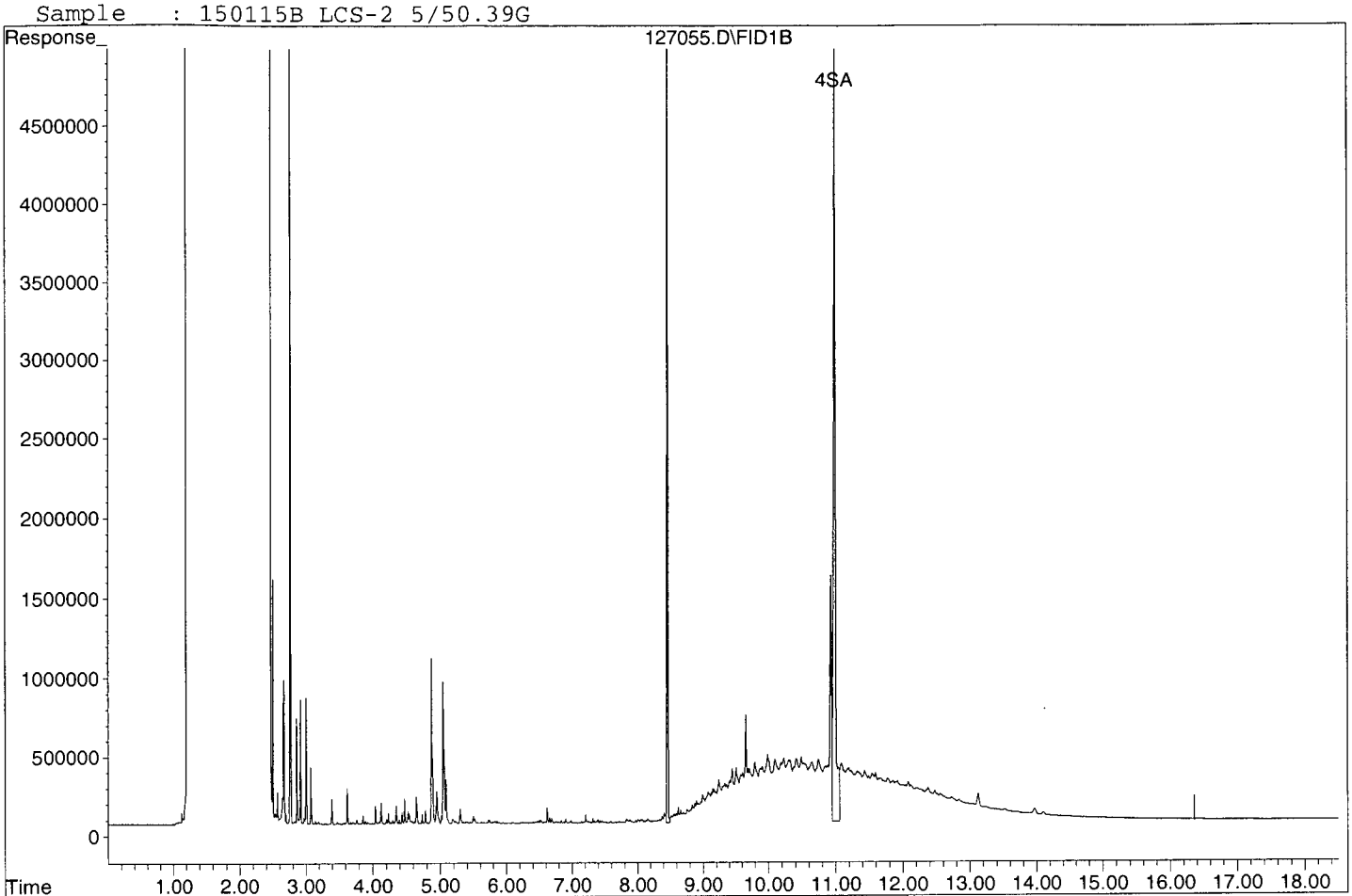
Method : G:\APOLLO\DATA\150121\CTO121.M (Chemstation Integrator)
Title : 8015 B&C
Last Update : Mon Jan 26 09:50:19 2015
Response via : Multiple Level Calibration

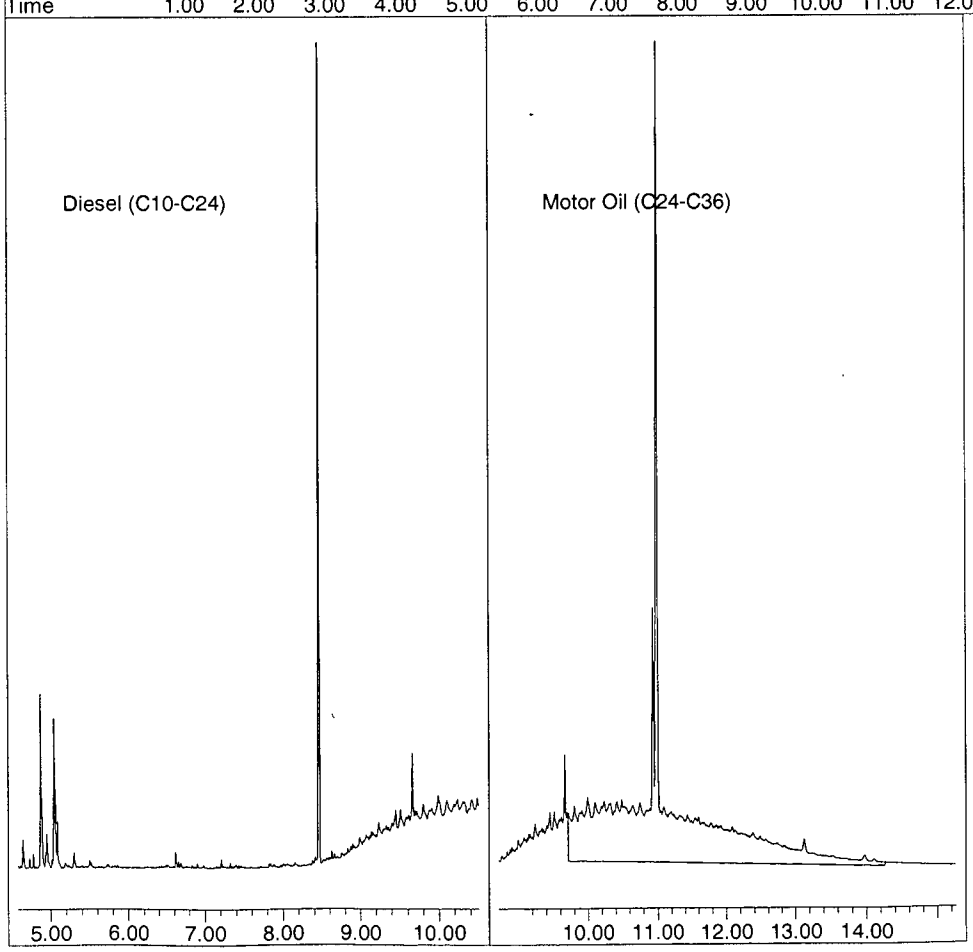
Volume Inj. : 2UL
Signal Phase : DB-5
Signal Info : FID02A

Compound	R.T.	Response	Conc Units
System Monitoring Compounds			
3) SA Ortho-Terphenyl(S)	8.47	79093390	2106.167 ppb
Surrogate Spike 2976.781		Recovery	= 70.75%
4) SA Octacosane(S)	10.99	95797820	3521.781 ppb
Surrogate Spike 2976.781		Recovery	= 118.31%
Target Compounds			
2) HBTM Motor Oil (C24-C36)	11.99	503651104	33319.715 ppb

Quantitation Report

Data File: G:\APOLLO\DATA\150127\127055.D
Sample : 150115B LCS-2 5/50.39G





Matrix Spike Recoveries

TPHe Soil EPA 8015C

APPL ID: **150115S-09552 MS - 193919**
Batch ID: #DROCT-150115B
Sample ID: AZ09552
Client ID: EKB100008

APPL Inc.
908 North Temperance Avenue
Clovis, CA 93611

Compound Name	Spike Lvl mg/kg	Matrix Result mg/kg	SPK Result mg/kg	DUP Result mg/kg	SPK % Recovery	DUP % Recovery	Recovery Limits	RPD %	RPD Limits
TPH-DRO (C10-C24)	39.9	10	41.3	35.1	78.4	62.9 #	64-122	16.2	30
TPH-LRO (C24-C36)	39.8	48	65.5	68.3	44.0 #	51.0	50-150	4.2	30
SURROGATE: OCTACOSANE (S)	3.00	NA	3.52	2.99	117	99.7	47-140		
SURROGATE: ORTHO-TERPHENYL (S)	3.00	NA	2.68	2.38	89.3	79.3	58-128		

= Recovery is outside QC limits.

Comments:

Primary	SPK	DUP
Quant Method :	CTO121.M	CTO121.M
Extraction Date :	1/15/2015	1/15/2015
Analysis Date :	1/28/2015	1/28/2015
Instrument :	Apollo	Apollo
Run :	127070	127071
Initials :	LA	

Printed: 1/30/2015 1:42:25 PM
APPL MSD SCII

Quantitation Report (QT Reviewed)

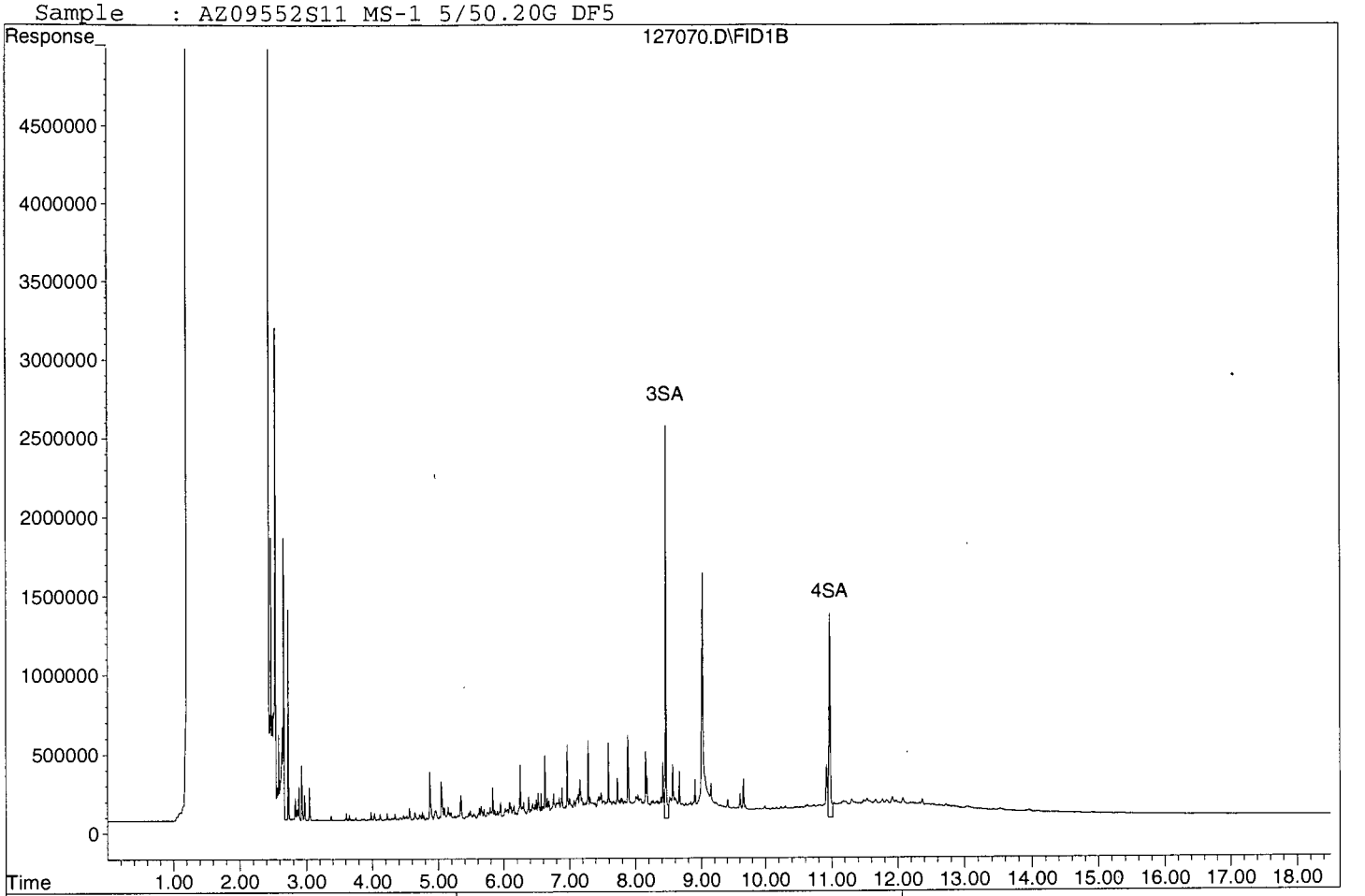
Data File : G:\APOLLO\DATA\150127\127070.D Vial: 70
Acq On : 1-28-15 14:47:48 Operator: lac
Sample : AZ09552S11 MS-1 5/50.20G DF5 Inst : Apollo
Misc : Soil Multiplr: 498.01
IntFile : events.e
Quant Time: Jan 30 10:49 2015 Quant Results File: CTO121.RES

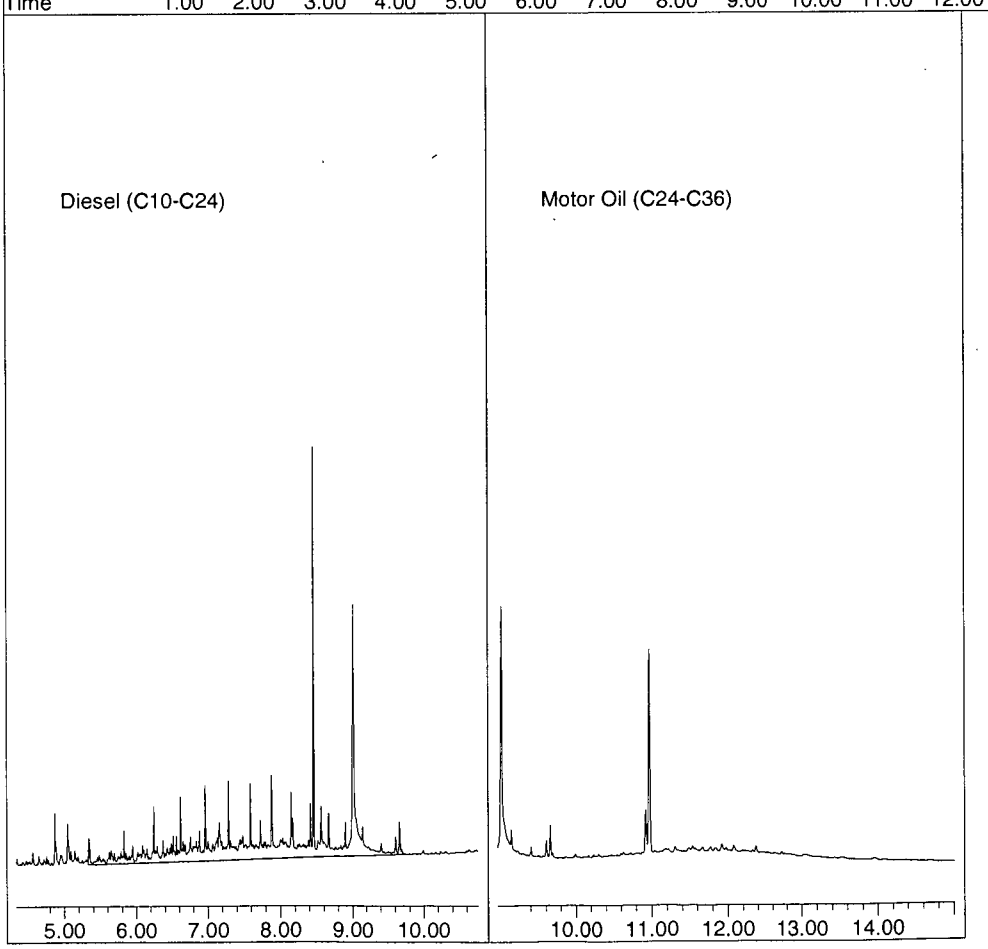
Method : G:\APOLLO\DATA\150121\CTO121.M (Chemstation Integrator)
Title : 8015 B&C
Last Update : Mon Jan 26 09:50:19 2015
Response via : Multiple Level Calibration

Volume Inj. : 2UL
Signal Phase : DB-5
Signal Info : FID02A

Compound	R.T.	Response	Conc Units
System Monitoring Compounds			
3) SA Ortho-Terphenyl(S)	8.46	20024307	2676.215 ppb
Surrogate Spike 2988.048		Recovery	= 89.56%
4) SA Octacosane(S)	10.97	19081082	3520.631 ppb
Surrogate Spike 2988.048		Recovery	= 117.82%
Target Compounds			
1) HATM Diesel (C10-C24)	7.55	208803618	41342.088 ppb

Data File: G:\APOLLO\DATA\150127\127070.D
Sample : AZ09552S11 MS-1 5/50.20G DF5





Quantitation Report (QT Reviewed)

Data File : G:\APOLLO\DATA\150127\127071.D Vial: 71
Acq On : 1-28-15 15:12:35 Operator: lac
Sample : AZ09552S12 MSD-1 5/50.56G DF5 Inst : Apollo
Misc : Soil Multiplr: 494.46
IntFile : events.e
Quant Time: Jan 30 10:49 2015 Quant Results File: CTO121.RES

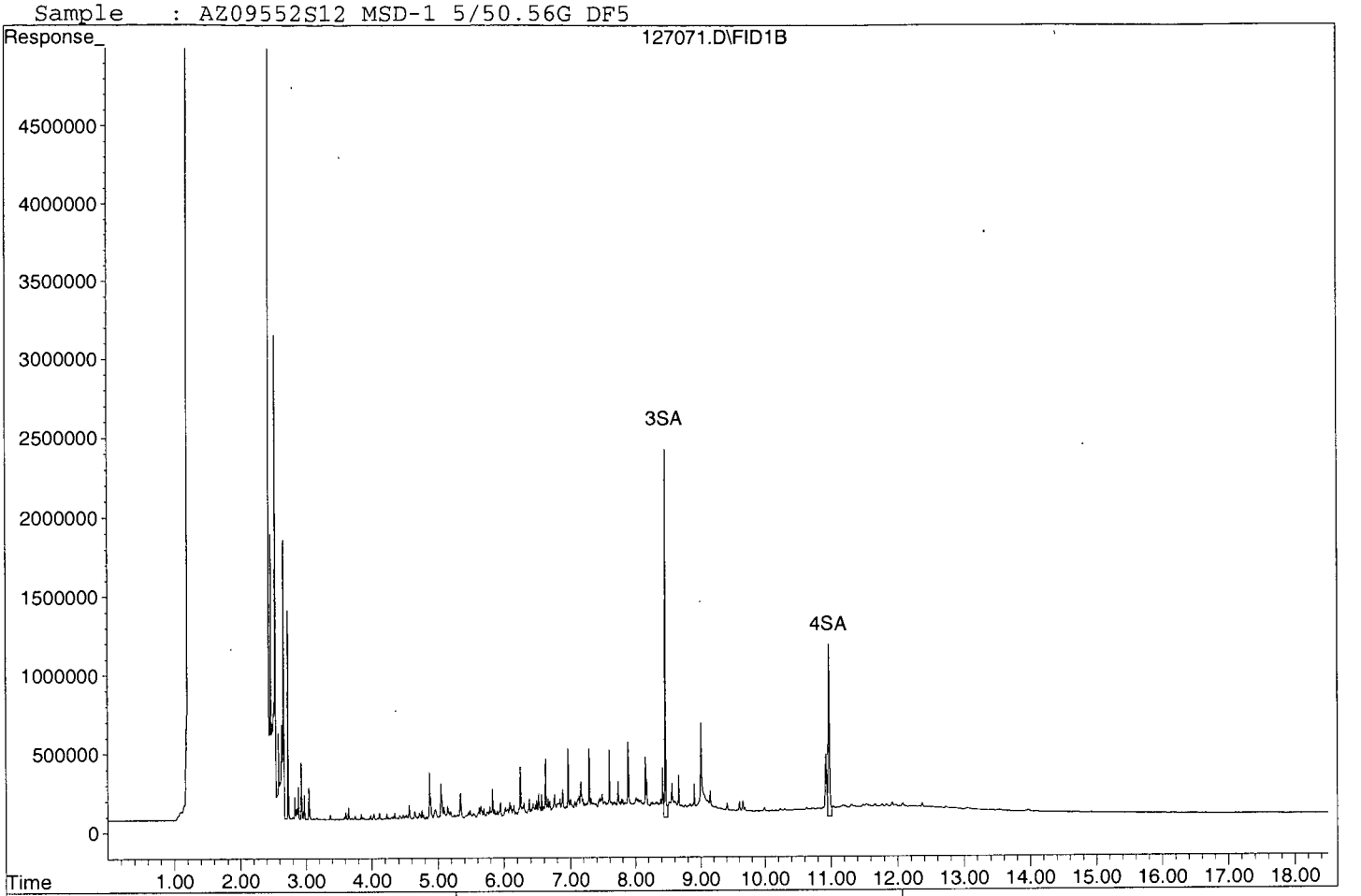
Method : G:\APOLLO\DATA\150121\CTO121.M (Chemstation Integrator)
Title : 8015 B&C
Last Update : Mon Jan 26 09:50:19 2015
Response via : Multiple Level Calibration

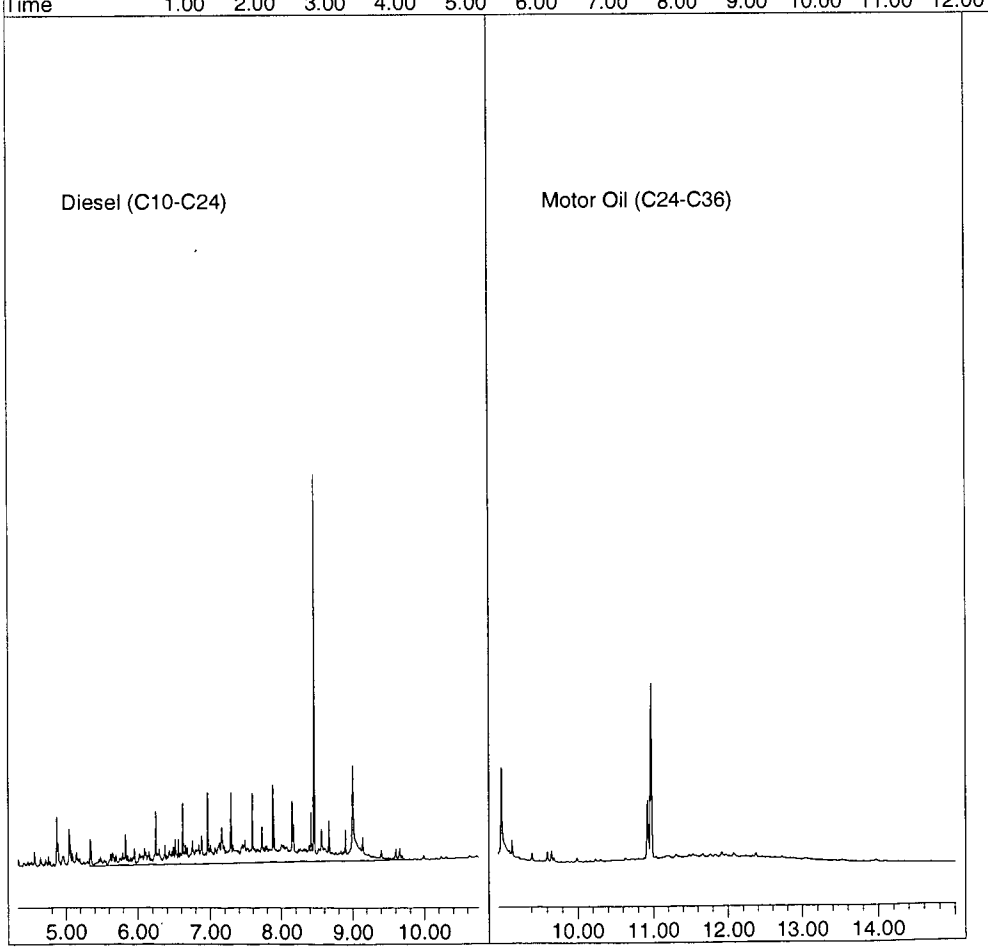
Volume Inj. : 2UL
Signal Phase : DB-5
Signal Info : FID02A

Compound	R.T.	Response	Conc Units
System Monitoring Compounds			
3) SA Ortho-Terphenyl(S)	8.46	17921872	2378.173 ppb
Surrogate Spike 2966.772		Recovery	= 80.16%
4) SA Octacosane(S)	10.97	16301452	2986.348 ppb
Surrogate Spike 2966.772		Recovery	= 100.66%
Target Compounds			
1) HATM Diesel (C10-C24)	7.55	178591138	35108.388 ppb

Quantitation Report

Data File: G:\APOLLO\DATA\150127\127071.D
Sample : AZ09552S12 MSD-1 5/50.56G DF5





Quantitation Report (QT Reviewed)

Data File : G:\APOLLO\DATA\150127\127072.D Vial: 72
Acq On : 1-28-15 15:37:12 Operator: lac
Sample : AZ09552S12 MS-2 5/50.50G DF5 Inst : Apollo
Misc : Soil Multiplr: 495.05
IntFile : events.e
Quant Time: Jan 30 10:49 2015 Quant Results File: CTO121.RES

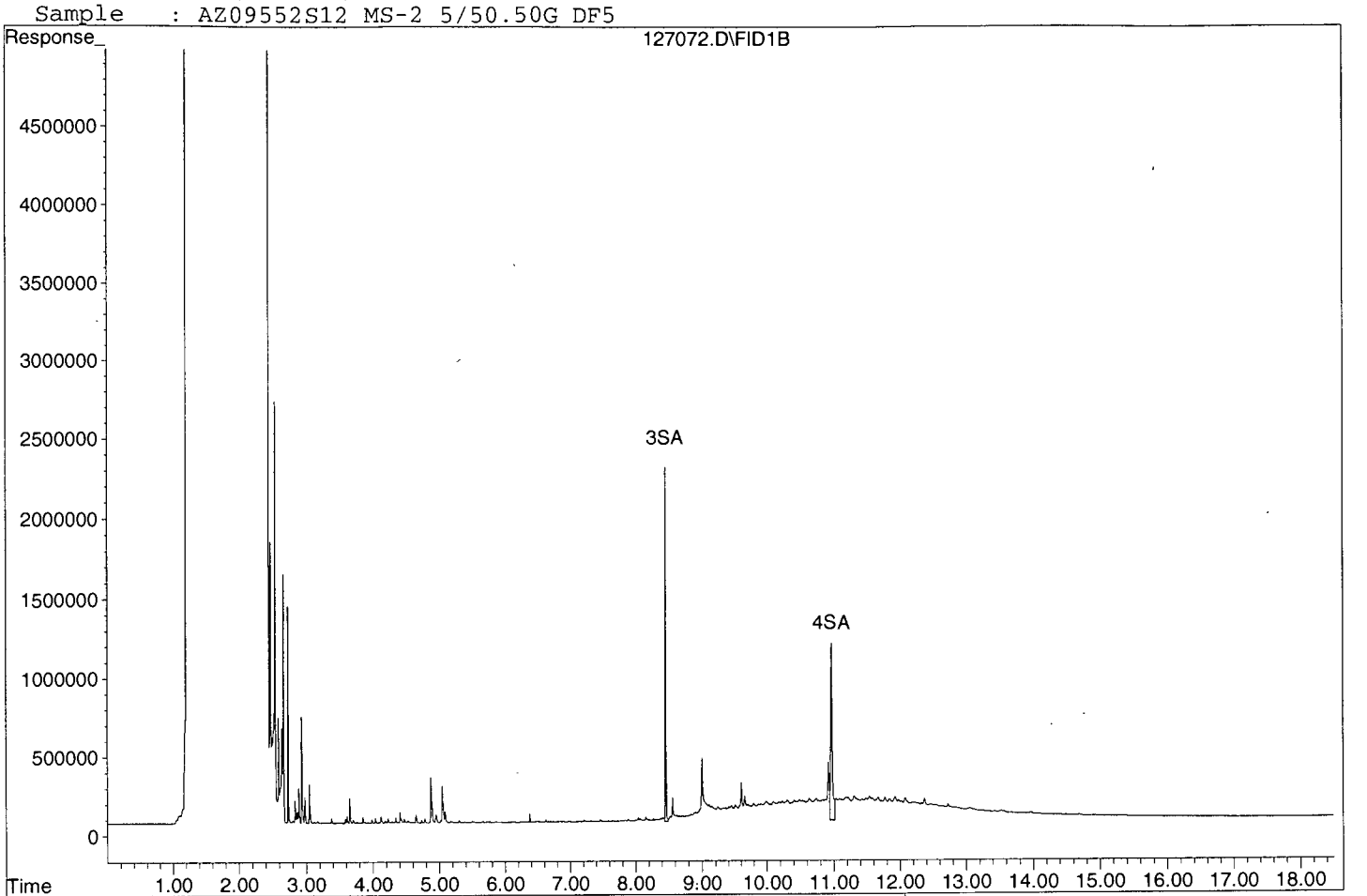
Method : G:\APOLLO\DATA\150121\CTO121.M (Chemstation Integrator)
Title : 8015 B&C
Last Update : Mon Jan 26 09:50:19 2015
Response via : Multiple Level Calibration

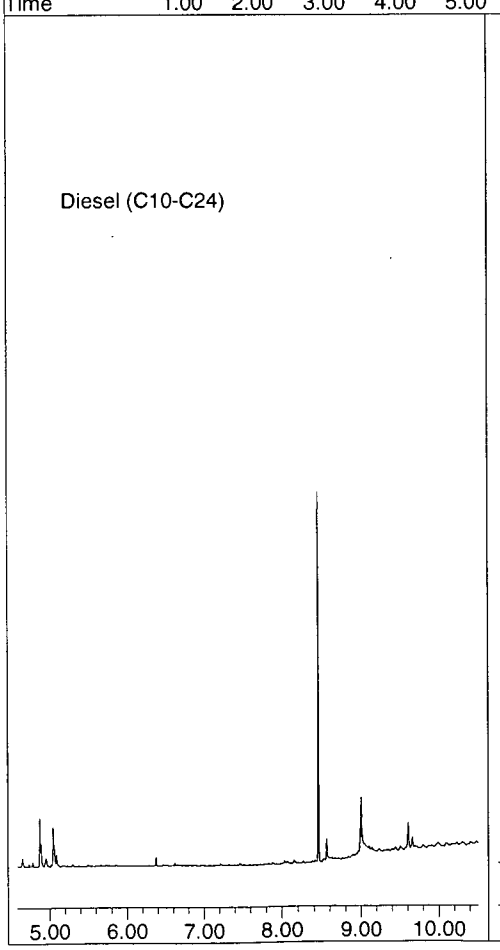
Volume Inj. : 2UL
Signal Phase : DB-5
Signal Info : FID02A

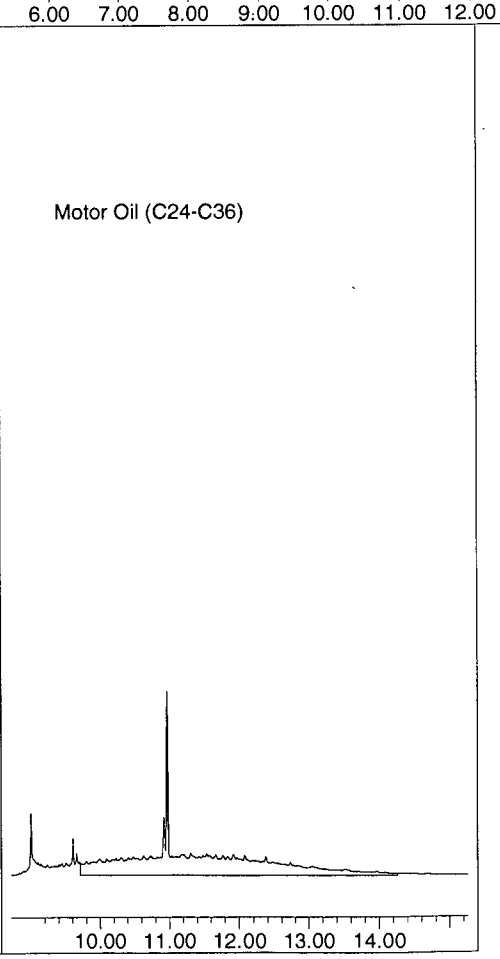
Compound	R.T.	Response	Conc Units
System Monitoring Compounds			
3) SA Ortho-Terphenyl(S)	8.46	15116342	2008.274 ppb
Surrogate Spike 2970.297		Recovery	= 67.61%
4) SA Octacosane(S)	10.97	19418435	3561.595 ppb
Surrogate Spike 2970.297		Recovery	= 119.91%
Target Compounds			
2) HBTM Motor Oil (C24-C36)	11.99	198474743	65508.902 ppb

Quantitation Report

Data File: G:\APOLLO\DATA\150127\127072.D
Sample : AZ09552S12 MS-2 5/50.50G DF5







Quantitation Report (QT Reviewed)

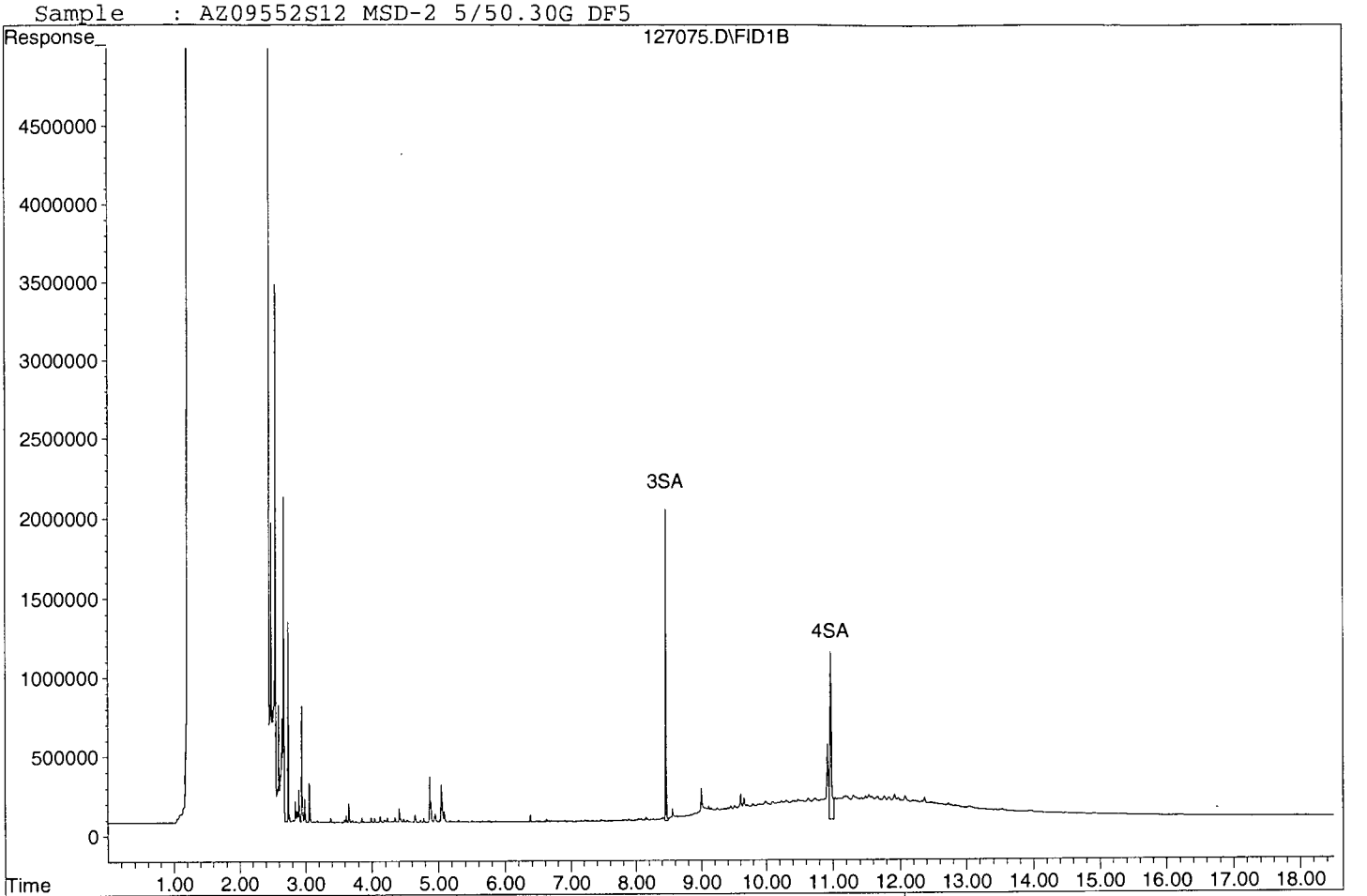
Data File : G:\APOLLO\DATA\150127\127075.D Vial: 75
Acq On : 1-28-15 16:51:29 Operator: lac
Sample : AZ09552S12 MSD-2 5/50.30G DF5 Inst : Apollo
Misc : Soil Multiplr: 497.02
IntFile : events.e
Quant Time: Jan 30 10:50 2015 Quant Results File: CTO121.RES

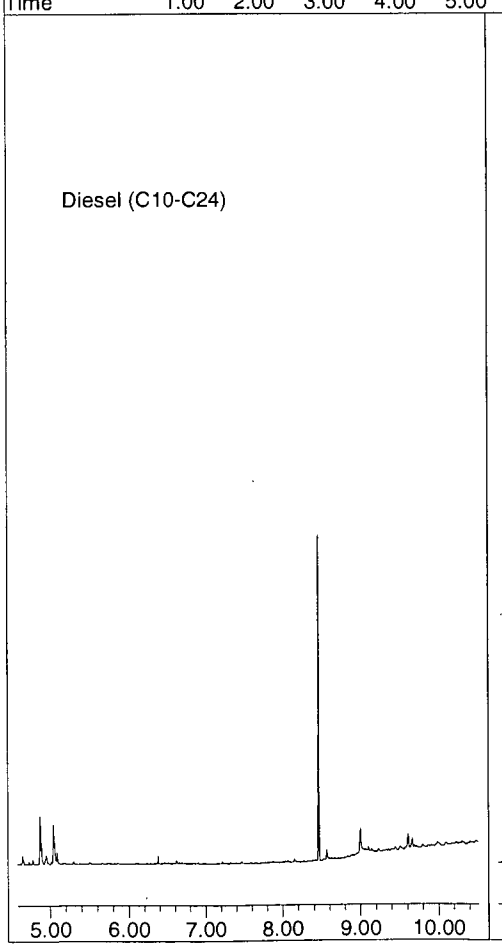
Method : G:\APOLLO\DATA\150121\CTO121.M (Chemstation Integrator)
Title : 8015 B&C
Last Update : Mon Jan 26 09:50:19 2015
Response via : Multiple Level Calibration

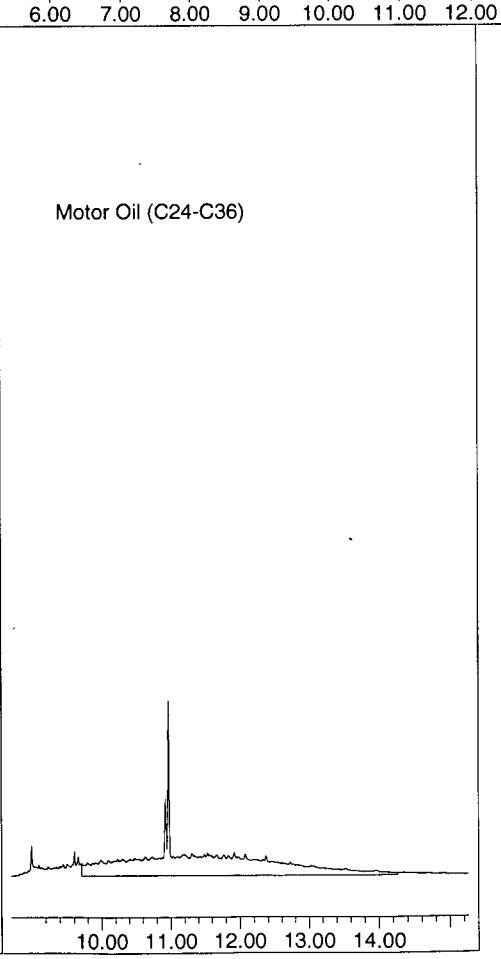
Volume Inj. : 2UL
Signal Phase : DB-5
Signal Info : FID02A

Compound	R.T.	Response	Conc Units
System Monitoring Compounds			
3) SA Ortho-Terphenyl(S)	8.46	13446441	1793.522 ppb
Surrogate Spike 2982.107		Recovery	= 60.14%
4) SA Octacosane(S)	10.97	17684047	3256.379 ppb
Surrogate Spike 2982.107		Recovery	= 109.20%
Target Compounds			
2) HBTM Motor Oil (C24-C36)	11.99	206211261	68333.002 ppb

Data File: G:\APOLLO\DATA\150127\127075.D
Sample : AZ09552S12 MSD-2 5/50.30G DF5







STANDARD	INITIAL CONC	SOURCE DATE	ALIQUOT	FINAL VOLUME	FINAL CONC	SOLVENT LOT#	DATE / INITIALS

GC STANDARD PREPARATION BOOK # 41 PAGE # 111

		5ES 2nd Src Stock				
Compound	Init. Conc.	Stock Src	Aliquot	Final Vol	Final Conc.	Solvent Lot#
alachlor	100/2000 ug/ml	O2SI	500 uL	10 mL	5/100 ug/ml	Hexane
benfluralin	CAT	130200-02-SS				080613A
captan	LOT	231047-33782				
carbophenothion	OPEN	10/03/14				
chlorothalonil	EXP	10/03/15				
chlorthal(dacthal)						
2,6 dichlorobenzonitrile(dicofol)						
kelthane						
nitrofen						
oxadiazon						
oxyfluorfen						
propachlor						
op DDD						
op DDE						
op DDT						
bis(2-ethylhexyl)phthalate						

GA 10/6/14

GA 10/3/14 10/3/15

		5ES 2ND SRC				
Compound	Init. Conc.	Stock Src	Aliquot	Final Vol	Final Conc.	Solvent Lot#
VARIOUS	5/100 ug/ml	508 2ND SRC STK	100 uL	10 mL	0.05/1 ug/ml	Hexane
		Prep:10/03/14				080613A
		Exp: 10/03/15				

GA 10/6/14

GA 10/3/14 4/3/15

		DIESEL SECOND SOURCE				
STANDARD	INITIAL CONC.	SOURCE DATE	ALIQUOT	FINAL VOL	FINAL CONC.	SOLVENT LOT#
DIESEL FUEL #2	50,000 ug/mL	O2SI CAT#011598-01-SS LOT#207749-32372 OP:5/5/14 EXP:5/5/15	200uL	10mL	1000ug/mL	MC #54024

GA 10/6/14

GA 10/6/14 5/5/15

Chloroneb Standard						
Compound	Initial Conc.	Stock Source	Aliquot	Final Volume	Final Conc.	Solvent
Chloroneb	1000ug/mL	Absolute	10uL	10mL	1ug/mL	Hexane
		Cat: 70082				080613A
		Lot: 091013-34074				
		Open: 10/06/14				
		Exp: 10/06/15				

GA 10/6/14

GA 10/6/14 10/6/15

Chloroneb Curve						
Compound	Initial Conc.	Stock Source	Aliquot	Final Volume	Final Conc.	Solvent
Chloroneb	1ug/mL	Prep: 10/06/14	5uL	1mL	0.005ug/mL	Hexane
		Exp: 10/06/15	50uL	1mL	0.050ug/mL	080613A
			100uL	1mL	0.100ug/mL	
			150uL	1mL	0.150ug/mL	
			200uL	1mL	0.200ug/mL	
			250uL	1mL	0.250ug/mL	

GA 10/14/14

GA 10/6/14 4/6/15

PAC ECO CURVE													
						1a	1b	1	2	3	4	5	6
	ID#	[ug/mL]	LOT #	DATE	EXP. DATE	µL	µL	µL	µL	µL	µL	µL	µL
	PAC ECO CAL STD	5		09/29/14	11/09/14	2	5	10	50	20	100	70	1000
						998	995	990	950	80	100	30	N/A
	Hexane		080613A		Final VOL.	1000	1000	1000	1000	100	200	100	1000

GA 10/6/14 11/9/14

GA

STANDARD
116

INITIAL CONC | SOURCE DATE | ALIQUOT | FINAL VOLUME | FINAL CONC | SOLVENT LOT# | BY

GC/MS STANDARD PREPARATION BOOK # 41 PAGE #

MOTOR OIL CAL STD						
STD.	INITIAL CONC.	SOURCE DATE	ALIQUOT	FINAL VOL	FINAL CONC.	SOLVENT /LOT#
MOTOR OIL	50,000 ug/mL	O2SI CAT#116390-02 LOT#1211942-33766 OP:10/13/14 EXP:10/13/15	1mL	25mL	2000ug/mL	MC LOT# 54128

LH 10/13/14 ex 10/13/15

MOTOR OIL CCV 1000ppm						
STANDARD	CONC.	DATE	ALIQUOT	VOL	CONC.	/LOT#
MO STD.	2000 µg/mL	MO Std.	3000µL	5mL	1000 µg/ml	MC
	PREP:	10/13/14				54128
	Exp:	10/13/15				

LH 10/13/14 ex. 1/13/15

DIESEL CCV 400ug/ml						
STANDARD	INITIAL CONC.	SOURCE DATE	ALIQUOT	FINAL VOL	FINAL CONC.	SOLVENT /LOT#
DIESEL STD.	1000 µg/mL	Diesel Std.	2000µL	5mL	400 µg/ml	MC
	PREP:	09/29/14				54128
	Exp:	09/22/15				

LH 10/13/14 ex 1/13/15

HERB-3

Various	10/09/14 ex. 10/09/15	1mL	10mL	Various	MTBE #50223	LH 10/14/14 ex. 4/14/15

507B STANDARD					
MEVINPHOS	5ug/ml	1000ug/ml	50ul	O2SI	10ml
MOLINATE	5	1000	Cat:	132087-01	MTBE
METOLACHLOR	5	1000	Lot:	201706-31876	LOT#
DEMETON	5	1000	Open:	02/06/14	50223
DIAZINON	5	1000	Exp:	01/04/15	
SIMETRYN	5	1000			
TERBUTRYN	5	1000			
BROMACIL	5	1000			
SIMAZINE	5	1000			
ALACHLOR	5	1000			
TBP	5	1000			
TPP	5	1000			

LH 10/14/14 EX 4/14/15

DOHS SURROGATE						
Compound	Initial Conc.	Stock Source	Aliquot	Final Vol.	Final Conc.	Solvent
1,3 Dibromopropane	100ug/mL	1,3 DBP Stock	625uL	10mL	6.25ug/mL	Methanol
		Prep: 02/17/14				#070913A
		Exp: 02/17/15				

LH 10/14/14 1/14/15 Ex 9/13/15

QC on 1/13/15. MK 1/13/15

STANDARD	INITIAL CONC	SOURCE DATE	ALIQUOT	FINAL VOLUME	FINAL CONC	SOLVENT LOT#	DATE INIT

GC/MS INSTRUMENT MAINTENANCE LOG # 42 PAGE # _____

MOTOR OIL CCV 1000ppm						
STANDARD	CONC.	DATE	ALIQUOT	VOL	CONC.	/LOT#
MO STD.	2000 µg/mL	MO Std.	2500µL	5mL	1000 µg/ml	MC
	PREP:	10/24/14				54024
	Exp:	10/24/15				

LH
12/2/14
3/2/15

DIESEL CCV 400ug/ml						
STANDARD	INITIAL CONC.	SOURCE DATE	ALIQUOT	FINAL VOL	FINAL CONC.	SOLVENT /LOT#
DIESEL STD.	1000 µg/mL	Diesel Std.	2000µL	5mL	400 µg/ml	MC
	PREP:	08/27/14				54024
	Exp:	07/30/15				

LH
12/2/14
3/2/15

		FIN PT CURVE			
COMPOUND	INITIAL CONC	FINAL CONC	ALIQUOT	STK SRCE	FINAL VOL.
FOLPET	5 ug/ml	VARIOUS	5 ul	FIN PT Std.	1 ml
IPRODIONE	25 ug/ml		50 ul	Prep: 12/2/14	Hexane
NORFLURAZON	5 ug/ml		100 ul	EXP: 12/2/15	Lot: 051914A
PERTHANE	50 ug/ml		150 ul		
TETRADIFON	5 ug/ml		250 ul		

LH
12/2/14
ex. 6/2/15

		FIN PT STD			
COMPOUND	INITIAL CONC	FINAL CONC	ALIQUOT	STK SRCE	FINAL VOL.
FOLPET	100 ug/ml	5 ug/ml	50µL	O2SI	1ml
IPRODIONE	500 ug/ml	25 ug/ml	CAT:	130828-05	HEXANE
NOFLURAZON	100 ug/ml	5 ug/ml	LOT:	230279	051914A
PERTHANE	1000 ug/ml	50 ug/ml		-33742	
TETRADITION	100 ug/ml	5 ug/ml	OP:	12/02/14	
			EXP:	12/02/15	

LH
12/2/14
ex. 12/2/15

5ES-3

5ES STOCK 10mL Hexane LH
prep. 9/22/14 051914A 12/5/14
ex. 9/22/15 6/5/15

DIESEL CAL STD.						
STD.	INITIAL CONC.	SOURCE DATE	ALIQUOT	FINAL VOL	FINAL CONC.	SOLVENT / LOT#
DIESEL FUEL #2	50,000 ug/mL	O2SI CAT#011598-03 LOT#237372-34153 OP:12/05/14 EXP:12/05/15	1mL	50mL	1000ug/mL	MC LOT# 54200
O-TERPHENYL OCTACOSANE	600 ug/mL	O2SI CAT#110316-05 LOT#229803.-34065 OP:11/24/14 EXP:11/24/15	4160 µL		50ug/mL	

GA
12/5/14
EXP 11/24/15

DIESEL CCV 400ug/ml						
STANDARD	INITIAL CONC.	SOURCE DATE	ALIQUOT	FINAL VOL	FINAL CONC.	SOLVENT /LOT#
DIESEL STD.	1000 µg/mL	Diesel Std.	2000µL	5mL	400 µg/ml	MC
	PREP:	12/05/14				54200
	Exp:	11/24/15				

GA
12/5/14
exp 3/5/15

OPC CURVE						1	2	3	4	5	6
SUPPLIER	ID#	(µg/mL)	LOT #	DATE	EXP. DATE	µL	µL	µL	µL	µL	µL
	OPC STD	5		09/20/14	07/09/15	10	50	20	100	70	1000
	Hexane		051914A			990	950	80	100	30	NA
					Final VOL.	1000	1000	100	200	100	1000

GA
12/5/14
exp 6/5/15

LH 12/1/14

LH 12/1/14

LH 12/1/14

STANDARD | INITIAL CONC | SOURCE DATE | ALIQUOT | FINAL VOLUME | FINAL CONC | SOLVENT LOT# | DATE INITIALS

017

INSTRUMENT MAINTENANCE LOG # 42 PAGE #

LAC 12/9/14

THC SURR CAL STD

STD.	INITIAL CONC.	SOURCE DATE	ALIQUOT	FINAL VOL	FINAL CONC.	SOLVENT LOT#
O-TERPHENYL OCTACOSANE	600 ug/mL	O2SI CAT#110316-05 LOT#229803-34065 OP:11/24/14 EXP:11/24/15	1000 µL	10mL	60ug/mL	MC LOT# 54200

LAC 12/9/14 exp 11/24/15

LAC 12/9/14

THC SURROGATE CURVE

STD	[µg/mL]	LOT #	DATE	EXP. DATE	µL	µL	µL	µL	µL	µL
THC SURR	60		12/9/2014	11/24/2015	50	100	400	600	800	1000
MC		54200		LAC	950	900	600	400	200	NA
				Final VOL.	1000	1000	1000	1000	1000	1000

LAC 12/9/14 exp 11/24/15

DIESEL CURVE

STD	[µg/mL]	LOT #	DATE	EXP. DATE	µL	µL	µL	µL	µL	µL
DIESEL	1000		12/5/2014	11/24/2015	10	100	400	600	800	1000
MC		54200			990	900	600	400	200	NA
				Final VOL.	1000	1000	1000	1000	1000	1000

LAC 12/9/14 exp 11/24/15

LAC 12/9/14

MOTOR OIL CURVE

STD	[µg/mL]	LOT #	DATE	EXP. DATE	µL	µL	µL	µL	µL	µL	µL
MOTOR OIL	2000		10/24/2014	10/24/2015	10	25	125	250	100	75	1000
MC		54200			990	975	875	750	100	25	NA
				Final VOL.	1000	1000	1000	1000	200	100	1000
				ppm	10	50	250	500	1000	1500	2000

LAC 12/9/14 exp ~~10/25/15~~

LAC 12/9/14

DIESEL 2ND SRC

STANDARD	INITIAL CONC.	SOURCE DATE	ALIQUOT	FINAL VOL	FINAL CONC.	SOLVENT /LOT#
DIESEL 2ND SRC	1000 µg/mL	D 2ND SRC	400µL	1mL	400 µg/ml	MC
	PREP:	10/6/2014				54200
	Exp:	5/5/2015				

LAC 12/9/14 exp 5/5/15

MOTOR OIL SECOND SOURCE

standard	initial conc.	SOURCE DATE	ALIQUOT	FINAL VOL.	FINAL CONC.	SOLVENT LOT
MOTOR OIL SECOND SOURCE	50,000 ug/mL	O2SI CAT#116390-02 LOT#239390-34438 OP:12/10/14 Exp 12/10/15	200uL	10mL	1000ug/mL	MC #47186

LH 12/10/14 ex 12/10/15

AR 1262 STD (1 ug/mL)

AR1262STK 20ug/mL AR262STK 500uL 10mL 1ug/mL Hexane LH

Prep: 5/15/14 #051914A 12/9/14

ex: 5/15/15 ex ~~6/9/15~~ 5/15/15

MA 12/9/14

STANDARD	INITIAL CONC	SOURCE DATE	ALIQUOT	FINAL VOLUME	FINAL CONC	SOLVENT LOT #	DATE INITIALS

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DIESEL CURVE										
STD	[µg/mL]	LOT #	DATE	EXP. DATE	µL	µL	µL	µL	µL	µL
DIESEL	1000		12/05/14	11/24/15	10	100	400	600	800	1000
MC		54200			990	900	600	400	200	NA
				Final VOL.	1000	1000	1000	1000	1000	1000

LH 1/20/15 ex. 7/20/15

MOTOR OIL CURVE											
STD	[µg/mL]	LOT #	DATE	EXP. DATE	µL	µL	µL	µL	µL	µL	µL
MOTOR OIL	2000		10/13/14	10/13/15	10	25	125	250	100	75	1000
MC		54200			990	975	875	750	100	25	NA
				Final VOL.	1000	1000	1000	1000	200	100	1000
				ppm	10	50	250	500	1000	1500	2000

LH 1/20/15 ex. 7/20/15

OP/F CURVE													
						IA	1B	1	2	3	4	5	6
SUPPLIER	ID#	[µg/mL]	LOT #	DATE	EXP. DATE	mL	mL	mL	mL	mL	mL	mL	mL
	OP/F STD	5		12/23/14	02/08/15	2	5	10	50	20	100	70	100
VWR	Hexane		051914A			998	995	990	950	80	100	30	NA
					Final VOL.	1000	1000	1000	1000	100	200	100	100

LH 1/21/15 ex. 2/3/15

DIESEL SPIKE

CAT # 011998-01-SS 1/21/15 MA
Lot # 207749-32375 Ex 1/21/16
Open 1/21/15
Ex 1/21/16

THC Surr
Lot # 240564-34471 1/22/15 IC
Cat# 116316-05 Ex 1/22/16
Open - 1/22/15
Exp - 1/22/16

DIESEL 2ND SRC						
STANDARD	INITIAL CONC.	SOURCE DATE	ALIQUOT	FINAL VOL	FINAL CONC.	SOLVENT /LOT#
DIESEL 2ND SRC	1000 µg/mL	D 2ND SRC	400µL	1mL	400 µg/ml	MC
	PREP:	10/6/2014				54200
	Exp:	5/5/2015				

LC 1/21/15 5/5/15

STANDARD	INITIAL CONC	SOURCE DATE	ALIQUOT	FINAL VOLUME	FINAL CONC	SOL. ID. LOT #	DATE INITIALS

GC/~~MS~~ INSTRUMENT MAINTENANCE LOG # 42 PAGE # _____

THC SURROGATE

KY
11-06-2014
Exp. 11-06-2015

CAT NO: 110316-05
LOT NO: 229803-34067

open DATE: 11-06-2014
EXPIRE DATE: 11-06-2015

3/14

MITC CURVE						1	2	3	4	5	6	7
SUPPLIER	ID#	ug/mL	LOT #	DATE	EXP.	mL	mL	mL	mL	mL	mL	mL
					Final Conc	0.02	0.125	0.25	1	2.5	3.5	5
	MITC STD	5		09/05/14	3/5/15	4	25	50	20	100	70	100
VWR	ETHYL ACETATE		~~45-07~~			998	975	950	80	200	30	N/A
			#043014		Final VOL.	1000	1000	1000	100	100	100	100

GA 11/7/14

GA
11/7/14
exp 11/7/14

OP/F CURVE						IA	1B	1	2	3	4	5	6
SUPPLIER	ID#	[µg/mL]	LOT #	DATE	EXP. DATE	mL	mL	mL	mL	mL	mL	mL	mL
	OP/F STD	5		09/24/14	12/08/14	2	5	10	50	20	100	70	100
VWR	Hexane		051914A			998	995	990	950	80	100	30	NA
					Final VOL.	1000	1000	1000	1000	100	200	100	100

exp 12/8/14

OP 2ND SRC		[µg/mL]				100
PREP:	10/10/14	5				100
EXP:	02/06/15	Hexane	051914A			200

GA
11/7/14
exp 2/6/15

MOTOR OIL CCV 1000ppm						
STANDARD	CONC.	DATE	ALIQUOT	VOL	CONC.	/LOT#
MO STD.	2000 µg/mL	MO Std.	2500µL	5mL	1000 µg/ml	MC
	PREP:	10/24/14				54128
	Exp:	10/24/15				

GA
11/8/14
exp 2/8/15

DIESEL Fuel #2 Composite

CAT NO: 011598-01-SS
LOT NO: 207839-32381

LH
11/10/14
11/10/15

OPEN-11/10/14
EX-11/10/15

Diesel Fuel #2 Composite
(Second Source), 50,000
mg/L, 2 x 5 ml
011598-01-SS
Lot # Storage Expiry
207749 ≤-10 Degrees C 4/27/16
Solvr. Methylene Chloride
Made in the USA
AD only, not licensee company.

Diesel Fuel #2 Composite (SS)
Lot #: 207749 - 32374
Rec: 4/25/13 MFR exp. 4/27/16

INITIAL CONC	SOURCE DATE	ALIQUOT	FINAL VOLUME	FINAL CONC	VOL. EN. LOT #	DATE / INITIALS

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OP/F CURVE													
						1A	1B	1	2	3	4	5	6
SUPPLIER	ID#	[µg/mL]	LOT #	DATE	EXP. DATE	mL	mL	mL	mL	mL	mL	mL	mL
	OP/F STD	5		09/24/14	12/08/14	2	5	10	50	20	100	70	100
VWR	Hexane		051914A			998	995	990	950	80	100	30	NA
					Final VOL.	1000	1000	1000	1000	100	200	100	100

LA 11/19/14 12/8/14 exp

OP 2ND SRC		[µg/mL]				100
PREP:	10/10/14	5				100
EXP:	02/06/15	Hexane	051914A			200

LA 11/19/14 exp 2/6/15

MOTOR OIL SPIKE

CAT# 116390-01
LOT# 228821-34292

OP: 11/20/14
Ex: 11/20/15

Motor Oil Composite, 50000 mg/L, 2 x 5 ml
116390-01
Lot # 228821 Storage ≤ 6 Degrees C Expiry 19/May/2019
Solv: Methylene Chloride
34292

LH
OP. 11/20/14
ex. 11/20/15

HERB SURROGATE

Part # 011025-03
Lot # 216680 - 283, 284, 285, 286, 287, 288

MA 11/20/14
Ex 11/20/15

2,4 Dichlorophenylacetic Acid (2,4-DCAA), 200 mg/L, 1 mL
011025-03
Lot # 216680 Storage ≤ -10 Degrees C Expiry 10/25/16
Solv: Methanol

2,4-Dichlorophenylacetic Acid
Lot #: 216680 - 34283
Rec: 11/12/14 MFR exp. 10/25/16

2,4 Dichlorophenylacetic Acid (2,4-DCAA), 200 mg/L, 1 mL
011025-03
Lot # 216680 Storage ≤ -10 Degrees C Expiry 10/25/16
Solv: Methanol

2,4-Dichlorophenylacetic Acid
Lot #: 216680 - 34285
Rec: 11/12/14 MFR exp. 10/25/16

2,4 Dichlorophenylacetic Acid (2,4-DCAA), 200 mg/L, 1 mL
011025-03
Lot # 216680 Storage ≤ -10 Degrees C Expiry 10/25/16
Solv: Methanol

2,4-Dichlorophenylacetic Acid
Lot #: 216680 - 34287
Rec: 11/12/14 MFR exp. 10/25/16

2,4 Dichlorophenylacetic Acid (2,4-DCAA), 200 mg/L, 1 mL
011025-03
Lot # 216680 Storage ≤ -10 Degrees C Expiry 10/25/16
Solv: Methanol

2,4-Dichlorophenylacetic Acid
Lot #: 216680 - 34284
Rec: 11/12/14 MFR exp. 10/25/16

2,4 Dichlorophenylacetic Acid (2,4-DCAA), 200 mg/L, 1 mL
011025-03
Lot # 216680 Storage ≤ -10 Degrees C Expiry 10/25/16
Solv: Methanol

2,4-Dichlorophenylacetic Acid
Lot #: 216680 - 34286
Rec: 11/12/14 MFR exp. 10/25/16

2,4 Dichlorophenylacetic Acid (2,4-DCAA), 200 mg/L, 1 mL
011025-03
Lot # 216680 Storage ≤ -10 Degrees C Expiry 10/25/16
Solv: Methanol

2,4-Dichlorophenylacetic Acid
Lot #: 216680 - 34288
Rec: 11/12/14 MFR exp. 10/25/16

STANDARD 028

INITIAL CONC	SOURCE DATE	ALIQUOT	FINAL VOLUME	FINAL CONC	SOLVENT LOT #	DATE INITIALS

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~~COA/INSTRUMENT MAINTENANCE~~

MOTOR OIL CCV 1000ppm						
STANDARD	CONC.	DATE	ALIQUOT	VOL	CONC.	/LOT#
MO STD.	2000 µg/mL	MO Std.	2500µL	5mL	1000 µg/ml	MC
	PREP:	10/24/14				54200
	Exp:	10/24/15				

LH 12/30/14 ex. 3/30/15

LH 1/5/15 TOX 1B & 1A

Toxaphene 1A-~~0.05ug/mL~~ 100ug/mL 5uL 10mL 0.05ug/mL Hexane LH
~~1B-0.025ug/mL~~ 100ug/mL ~~250uL~~ ~~10mL~~ ~~0.025ug/mL~~ #051914A 1/5/15
TOX Stock LH 1/6/15 ex. 7/5/15
Prep. 9/19/14
ex. 8/20/15

1B-bad prep LH 1/6/15

504/8011 SURROGATE						
Compound	Initial Conc.	Source	Aliquot	Final Vol.	Final Conc.	Solvent
1,3 DBP	100	1,3 DBP STOCK prep.12/23/14 exp. 12/23/15	35ul	10mL	0.35ug/mL	Methanol 070913A

LH 1/5/15 ex. 2/5/15

504/8011 HIGH M STD						
Compound	Initial Conc.	Source	Aliquot	Final Vol.	Final Conc.	Solvent
EDB TCP DBCP 1,3 DBP	20ug/mL	504/DOHS STOCK prep. 12/16/14 exp 12/16/15	500uL	25mL	0.4ug/mL	Methanol 070913A
	100ug/mL	1,3 DBP STOCK prep.12/23/14 exp. 12/23/15	100uL			

LH 1/5/15 ex. 2/5/15

504/8011 LOW M STD						
Compound	Initial Conc.	Source	Aliquot	Final Vol.	Final Conc.	Solvent
EDB TCP DBCP 1,3 DBP	0.4ug/mL	504/8011 HIGH M STD prep.01/05/15 exp: 02/05/15	750uL	10mL	0.03ug/mL	Methanol 070913A

LH 1/5/15 ex. 2/5/15

TOX 1B

Toxaphene 1ug/mL 250uL 10mL 0.025ug/mL Hexane LH
Level 5 TOX #051914A 1/6/15
prep. 9/19/14 ex. 3/19/15
ex. 3/19/15

PCB 2nd Src Stock						
STANDARD	INIT CONC.	SOURCE DATE	ALIQUOT	FINAL VOL.	FINAL CONC.	SOLVENT
AR1260	200 µg/mL	O2SI	500 µL	10 mL	10 µg/mL	Hexane
AR1016	CAT:	130011-01-SS				Lot#
	LOT	231044-33776				051914A
	OP:	01/06/15				
	EXP:	01/06/16				

LH 1/6/15 ex. 1/6/16

PCB 2nd Src						
STANDARD	INIT CONC.	SOURCE DATE	ALIQUOT	FINAL VOL.	FINAL CONC.	SOLVENT
AR1260	10 µg/mL	PCB 2nd SRC STK	500 µL	10 mL	0.5 µg/mL	Hexane
AR1016	Prep:	01/06/15				Lot#
	Exp:	01/06/16				051914A

LH 1/6/15 ex. 7/6/15

032

STANDARD	INITIAL CONC	SOURCE DATE	ALIQUOT	FINAL VOLUME	FINAL CONC	SOL'N. LOT #	DATE INITIALS

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HYDRAULIC OIL CURVE											
STD	[µg/mL]	LOT #	DATE	EXP. DATE	µL	µL	µL	µL	µL	µL	
HYDRAULIC OIL STD	2000		01/10/15	12/30/15	25	125	250	500	750	100	
MC		54200			975	875	750	500	250	NA	
				Final VOL.	1000	1000	1,000	1000	1000	100	

GA 1/10/15 exp 7/10/15

HYDRAULIC OIL 2ND SRC						
STANDARD	INITIAL CONC.	SOURCE DATE	ALIQUOT	FINAL VOL	FINAL CONC.	SOLVENT /LOT#
Hydraulic Oil 2ND SRC	2000 µg/mL		100µL	200µL	1000µg/ml	MC
	PREP:	01/10/15				54200
	Exp:	06/18/15				

GA 1/10/15 exp 6/18/15

MITC CURVE												
						1	2	3	4	5	6	7
SUPPLIER	ID#	ug/mL	LOT #	DATE	EXP.	mL	mL	mL	mL	mL	mL	mL
					Final Conc.	0.02	0.125	0.25	1	2.5	3.5	5
	MITC STD	5		09/05/14	03/05/15	4	25	50	20	50	70	100
VWR	ETHYL ACETATE		10176249			996	975	950	80	50	30	N/A
					Final VOL.	1000	1000	1000	100	100	100	100

LH 1/8/15 ex 3/5/15

DIESEL CCV 400ug/ml						
STANDARD	INITIAL CONC.	SOURCE DATE	ALIQUOT	FINAL VOL	FINAL CONC.	SOLVENT /LOT#
DIESEL STD.	1000 µg/mL	Diesel Std.	2000µL	5mL	400 µg/ml	MC
	PREP:	12/05/14				54200
	Exp:	11/24/15				

LH 1/12/15 ex 4/12/15

OP/F CURVE													
						IA	1B	1	2	3	4	5	6
SUPPLIER	ID#	[µg/mL]	LOT #	DATE	EXP. DATE	mL	mL	mL	mL	mL	mL	mL	mL
	OP/F STD	5		12/23/14	02/08/15	2	5	10	50	20	100	70	100
VWR	Hexane		051914A			998	995	990	950	80	100	30	NA
					Final VOL.	1000	1000	1000	1000	100	200	100	100

LH 1/13/15 ex 2/13/15

THC Surrogate

01-13-15

CAT: # 110316-05

KY

LOT: # 229803-34453

Open DATE: 01-13-15

Expire DATE 01-13-16

STANDARD	INITIAL CONC	SOURCE DATE	ALIQUOT	FINAL VOLUME	FINAL CONC	SOL. TEN. LOT #	DATE INITIALS

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PAC ECO CURVE						1a	1b	1	2	3	4	5	6
	ID#	(µg/mL)	LOT #	DATE	EXP. DATE	µL	µL	µL	µL	µL	µL	µL	µL
	PAC ECO CAL STD	5		12/11/14	11/19/15	2	5	10	50	20	100	70	1000
						998	995	990	950	80	100	30	N/A
	Hexane		051914A		Final VOL.	1000	1000	1000	1000	100	200	100	1000

LH 1/27/15 ex. 7/27/15

MOTOR OIL CAL STD						
STD.	INITIAL CONC.	SOURCE DATE	ALIQUOT	FINAL VOL	FINAL CONC.	SOLVENT / LOT#
MOTOR OIL	50,000 ug/mL	O2SI CAT#116390-02 LOT#234747-34294 OP:1/27/15 EXP:1/27/16	1mL	25mL	2000ug/mL	MC LOT# 54200

LH 1/27/15 ex. 1/27/16

DIESEL CCV 400ug/ml						
STANDARD	INITIAL CONC.	SOURCE DATE	ALIQUOT	FINAL VOL	FINAL CONC.	SOLVENT /LOT#
DIESEL STD.	1000 µg/mL	Diesel Std.	2000µL	5mL	400 µg/ml	MC
	PREP:	12/05/14				54200
	Exp:	11/24/15				

LH 1/27/15 ex. 4/27/15

MOTOR OIL CCV 1000ppm						
STANDARD	CONC.	DATE	ALIQUOT	VOL	CONC.	/LOT#
MO STD.	2000 µg/mL	MO Std.	2500µL	5mL	1000 µg/ml	MC
	PREP:	01/27/15				54200
	Exp:	01/27/16				

LH 1/27/15 ex. 4/27/15

Velpar/ Fenamiphos Standard					
ANALYTES	INIT. CONC	SOURCE	ALIQUOT	FIN CONC.	SOLVENT
Velpar	1000µg/ml	O2SI	100µL	10µg/ml	10 ml
	CAT	031176-01			Acetone
	LOT	210104-32536			LOT#
	OPEN	01/27/15			051314C
	EXP	06/07/15			
Fenamiphos	1000µg/ml	O2SI	100µL	10µg/ml	
	Cat:	031189-02			
	Lot:	210105-32538			
	Op:	01/27/15			
	Exp:	06/07/15			

LH 1/27/15 ex. 6/7/15

OP/F CURVE						IA	IB	1	2	3	4	5	6
SUPPLIER	ID#	(µg/mL)	LOT #	DATE	EXP. DATE	mL	mL	mL	mL	mL	mL	mL	mL
	OP/F STD	5		12/23/14	02/08/15	2	5	10	50	20	100	70	100
VWR	Hexane		051914A			998	995	990	950	80	100	30	NA
					Final VOL.	1000	1000	1000	1000	100	200	100	100

LH 1/28/15 ex. 2/8/15

TPH SURROGATE
CAT # 110316-05
LOT# 229803-34454
Op. 1/28/15
Ex. 1/28/16

_SON004

Organic Extraction Worksheet

Method	THC Sonication Extraction 3550B	Extraction Set	150115B	Extraction Method	SON004	Units	mL

Spiked ID 1	Diesel Ampule 11-10-14 EXP 11-10-15		Surrogate ID 1	THC Surrogate 1-14-15 EXP 1-14-15	
Spiked ID 2	Motor Oil Ampule 11-20-14 EXP 11-20-15		Surrogate ID 2		
Spiked ID 3			Surrogate ID 3		
Spiked ID 4			Surrogate ID 4		
Spiked ID 5			Surrogate ID 5		
Spiked ID 6			Sufficient Vol for Matrix QC:	YES	
Spiked ID 7			Ext. Start Time:	01/15/15 12:06	
Spiked ID 8			Ext. End Time:	01/21/15 12:15	
			GC Requires Extract By:	**01/28/15 0:00**	
			pH1		Water Bath Temp Criteria 78 °C
			pH2		
			pH3		

Spiked By: IC **Date** 01/15/15 **Witnessed By:** ER **Date** 01/15/15

	Sample	Sample Container	Spike Amount	Spike ID	Surrogate Amount	Surrogate ID	Extract Amount	Final Volume	pH	Extract Date/Time	Comments
1	150115B Blk				0.250	1 equip	50.23g E-S5 E-WB7	5	NA	01/15/15 12:06	
2	150115B LCS-1		0.040	1	0.250	1 equip	50.23g E-S4 E-WB7	5	NA	01/15/15 12:06	
3	150115B LCS-2		0.040	2	0.250	1 equip	50.39g E-S3.1 E-WB7	5	NA	01/15/15 12:06	
4	AZ09545	AZ09545S04			0.250	1 equip	50.29g E-S2 E-WB7	5	NA	01/15/15 12:06	75351 RUSH 14 DAYS
5	AZ09546	AZ09546S04			0.250	1 equip	50.08g E-S1.2 E-WB7	5	NA	01/15/15 12:06	75351 RUSH 14 DAYS
6	AZ09547	AZ09547S04			0.250	1 equip	50.62g E-S1.1 E-WB7	5	NA	01/15/15 12:06	75351 RUSH 14 DAYS
7	AZ09548	AZ09548S04			0.250	1 equip	50.50g E-S6 E-WB7	5	NA	01/15/15 12:06	75351 RUSH 14 DAYS
8	AZ09549	AZ09549S04			0.250	1 equip	50.20g E-S7 E-WB7	5	NA	01/15/15 12:06	75351 RUSH 14 DAYS
9	AZ09550	AZ09550S04			0.250	1 equip	50.70g E-S5 E-WB7	5	NA	01/15/15 12:06	75351 RUSH 14 DAYS
10	AZ09551	AZ09551S04			0.250	1 equip	50.80g E-S4 E-WB7	5	NA	01/15/15 12:06	75351 RUSH 14 DAYS
11	AZ09552 MS-1	AZ09552S11	0.040	1	0.250	1 equip	50.20g E-S3.1 E-WB7	5	NA	01/15/15 12:06	75351 RUSH 14 DAYS
12	AZ09552 MSD-1	AZ09552S12	0.040	1	0.250	1 equip	50.56g E-S2 E-WB7	5	NA	01/15/15 12:06	75351 RUSH 14 DAYS
13	AZ09552 MS-2	AZ09552S12	0.040	2	0.250	1 equip	50.50g E-S1.2 E-WB7	5	NA	01/15/15 12:06	75351 RUSH 14 DAYS
14	AZ09552 MSD-2	AZ09552S12	0.040	2	0.250	1 equip	50.30g E-S1.1 E-WB7	5	NA	01/15/15 12:06	75351 RUSH 14 DAYS
15	AZ09552	AZ09552S11			0.250	1 equip	50.90g E-S6 E-WB7	5	NA	01/15/15 12:06	75351 RUSH 14 DAYS

Ky 1/21/15

Solvent and Lot#	
MC	54299
Na2SO4	XC28D
Filter Paper	FC010442

Extraction COC Transfer	
Extraction lab employee Initials	KY
GC analyst's initials	LH
Date	1/21/15
Time	11:20
Refrigerator	Hobart

	Technician's Initials
Scanned By	KY
Sample Preparation	ER
Extraction	IC
Concentration	IC

Modified	01/21/15 12:19:25 PM

Reviewed By: Ky **Date** 1/21/15

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Ext_ID 46500

Organic Extraction Worksheet

Method	THC Separatory Funnel Extraction 3510C	Extraction Set	150115A	Extraction Method	SEP011	Units	mL

Spiked ID 1	Diesel Spike Ampule 11-10-14 exp 11-10-15		Surrogate ID 1	THC Surrogate 1-14-15 EXP 1-14-16	
Spiked ID 2	Motor Oil Spike Ampule 11-20-15 exp 11-20-15		Surrogate ID 2		
Spiked ID 3			Surrogate ID 3		
Spiked ID 4			Surrogate ID 4		
Spiked ID 5			Surrogate ID 5		
Spiked ID 6			Sufficient Vol for Matrix QC:	NO	
Spiked ID 7			Ext. Start Time:	01/15/15 11:05	
Spiked ID 8			Ext. End Time:	01/15/15 15:25	
			GC Requires Extract By:	**01/20/15 0:00**	
			pH1		Water Bath Temp Criteria 35,35,35,3
			pH2		
			pH3		

Spiked By: KY **Date** 01/15/15 **Witnessed By:** CFM **Date** 01/15/15

	Sample	Sample Container	Spike Amount	Spike ID	Surrogate Amount	Surrogate ID	Extract Amount	Final Volume	pH	Extract Date/Time	Comments
1	150115A Blk				0.250	1 equip	1000 e-wb1	5	7	01/15/15 11:05	
2	150115A LCS-1		0.040	1	0.250	1 equip	1000 E-WB2	5	7	01/15/15 11:05	
3	150115A LCS-2		0.040	2	0.250	1 equip	1000 E-WB3	5	7	01/15/15 11:05	
4	AZ09491	AZ09491W07			0.250	1 equip	1070 E-WB4	5	7	01/15/15 11:05	75346 RUSH 1 WEEK
5	AZ09492	AZ09492W08			0.250	1 equip	1070 E-WB1	5	7	01/15/15 11:05	75346 RUSH 1 WEEK
6	AZ09493	AZ09493W07			0.250	1 equip	1070 E-WB2	5	7	01/15/15 11:05	75346 RUSH 1 WEEK
7	AZ09494	AZ09494W07			0.250	1 equip	1070 E-WB3	5	7	01/15/15 11:05	75346 RUSH 1 WEEK
8	AZ09495	AZ09495W08			0.250	1 equip	1070 E-WB4	5	7	01/15/15 11:05	75346 RUSH 1 WEEK
9	AZ09496	AZ09496W07			0.250	1 equip	1070 E-WB1	5	7	01/15/15 11:05	75346 RUSH 1 WEEK
10	AZ09497	AZ09497W10			0.250	1 equip	1070 E-WB2	5	7	01/15/15 11:05	75347 RUSH 10 DAYS
11	AZ09498	AZ09498W10			0.250	1 equip	1070 E-WB3	5	7	01/15/15 11:05	75347 RUSH 10 DAYS
12	AZ09499	AZ09499W11			0.250	1 equip	1070 E-WB4	5	7	01/15/15 11:05	75347 RUSH 10 DAYS
13	AZ09500	AZ09500W10			0.250	1 equip	950 E-WB1	5	7	01/15/15 11:05	75347 RUSH 10 DAYS
14	AZ09501	AZ09501W10			0.250	1 equip	1000 E-WB2	5	7	01/15/15 11:05	75347 RUSH 10 DAYS
15	AZ09502	AZ09502W10			0.250	1 equip	1020 E-WB3	5	7	01/15/15 11:05	75347 RUSH 10 DAYS
16	AZ09553	AZ09553W06			0.250	1 equip	950 E-WB4	5	7	01/15/15 11:05	75351 RUSH 14 DAYS

Solvent and Lot#	
MC	54299
Na2SO4	WH22G
PH Strip	HC413032
Filter Paper	400083

Extraction COC Transfer	
Extraction lab employee Initials	KY
GC analyst's initials	HA
Date	1/16/15
Time	12:00
Refrigerator	Hobart

	Technician's Initials
Scanned By	KY
Sample Preparation	KY
Extraction	KY,CFM
Concentration	IC

Modified	01/15/15 4:32:42 PM

Reviewed By: Ky **Date** 1/15/15

Organic Extraction Worksheet

Method	THC Separatory Funnel Extraction 3510C	Extraction Set	150115A	Extraction Method	SEP011	Units	mL

Spiked ID 1	Diesel Spike Ampule 11-10-14 exp 11-10-15		Surrogate ID 1	THC Surrogate 1-14-15 EXP 1-14-16
Spiked ID 2	Motor Oil Spike Ampule 11-20-15 exp 11-20-15		Surrogate ID 2	
Spiked ID 3			Surrogate ID 3	
Spiked ID 4			Surrogate ID 4	
Spiked ID 5			Surrogate ID 5	
Spiked ID 6			Sufficient Vol for Matrix QC:	NO
Spiked ID 7			Ext. Start Time:	01/15/15 11:05
Spiked ID 8			Ext. End Time:	01/15/15 15:25
			GC Requires Extract By:	**01/20/15 0:00**
			pH1	
			pH2	
			pH3	

Water Bath Temp Criteria 35,35,35,3

Spiked By: KY **Date** 01/15/15 **Witnessed By:** CFM **Date** 01/15/15

	Sample	Sample Container	Spike Amount	Spike ID	Surrogate Amount	Surrogate ID	Extract Amount	Final Volume	pH	Extract Date/Time	Comments
17	AZ09554	AZ09554W07			0.250	1	1070	5	7	01/15/15 11:05	75351 RUSH 14 DAYS
						equip	E-WB1				

KY 1/15/15

Solvent and Lot#	
MC	54299
Na2SO4	WH22G
PH Strip	HC413032
Filter Paper	400083

Extraction COC Transfer	
Extraction lab employee Initials	KY
GC analyst's initials	
Date	
Time	
Refrigerator	

	Technician's Initials
Scanned By	KY
Sample Preparation	KY
Extraction	KY,CFM
Concentration	IC

Modified	01/15/15 4:32:42 PM

Reviewed By: KY **Date** 1/15/15

Injection Log

Directory: G:\APOLLO\DATA\150121\150127

Line	Vial	FileName	Multiplier	SampleName	Misc Info	Injected
1	3	121003.D	1	Diesel 10/1000 1/20/15	Mix(A)	1-21-15 16:13:54
2	4	121004.D	1	Diesel 100/1000 1/20/15	Mix(A)	1-21-15 16:38:00
3	5	121005.D	1	Diesel 400/1000 1/20/15	Mix(A)	1-21-15 17:02:08
4	6	121006.D	1	Diesel 600/1000 1/20/15	Mix(A)	1-21-15 17:26:19
5	7	121007.D	1	Diesel 800/1000 1/20/15	Mix(A)	1-21-15 17:50:18
6	8	121008.D	1	Diesel 1000/1000 1/20/15	Mix(A)	1-21-15 18:14:25
7	9	121009.D	1	MO 10/1000 1/20/15	Mix(B)	1-21-15 18:38:23
8	10	121010.D	1	MO 25/1000 1/20/15	Mix(B)	1-21-15 19:02:25
9	11	121011.D	1	MO 125/1000 1/20/15	Mix(B)	1-21-15 19:26:22
10	12	121012.D	1	MO 250/1000 1/20/15	Mix(B)	1-21-15 19:50:20
11	13	121013.D	1	MO 100/200 1/20/15	Mix(B)	1-21-15 20:14:20
12	14	121014.D	1	MO 75/100 1/20/15	Mix(B)	1-21-15 20:38:12
13	15	121015.D	1	MO 1000/1000 1/20/15	Mix(B)	1-21-15 21:02:11
14	16	121016.D	1	Diesel 2ND SRC 1/21/15	Mix(A)	1-21-15 21:25:59
15	17	121017.D	1	MO 2ND SRC 12/10/14	Mix(B)	1-21-15 21:49:54
16	50	121050.D	1	Diesel 400ppm 1/12/15	Mix(A)	1-22-15 23:46:59
17	51	121051.D	1	MO 1000ppm 12/30/14	Mix(B)	1-23-15 0:10:36
18	61	121061.D	5	150115A BLK 5/1000	Water	1-23-15 4:06:58
19	62	121062.D	5	150115A LCS-1 5/1000	Water	1-23-15 4:30:31
20	63	121063.D	5	150115A LCS-2 5/1000	Water	1-23-15 4:54:10
21	65	121065.D	1	Diesel 400ppm 1/12/15	Mix(A)	1-23-15 5:41:25
22	66	121066.D	1	MO 1000ppm 12/30/14	Mix(B)	1-23-15 6:05:04
23	77	121077.D	1	Diesel 400ppm 1/12/15	Mix(A)	1-23-15 10:29:23
24	78	121078.D	1	MO 1000ppm 12/30/14	Mix(B)	1-23-15 10:53:32
25	83	121083.D	5.26316	AZ09553W06 5/950	Water	1-23-15 12:54:05
26	84	121084.D	4.6729	AZ09554W07 5/1070	Water	1-23-15 13:18:17
27	92	121092.D	1	Diesel 400ppm 1/12/15	Mix(A)	1-23-15 16:31:12
28	93	121093.D	1	MO 1000ppm 12/30/14	Mix(B)	1-23-15 16:55:13
29	32	127032.D	1	Diesel 400ppm 1/27/15	Mix(A)	1-27-15 23:29:34
30	33	127033.D	1	MO 1000ppm 1/27/15	Mix(B)	1-27-15 23:53:35
31	53	127053.D	99.5421	150115B BLK 5/50.23G	Soil	1-28-15 7:52:04
32	55	127055.D	99.226	150115B LCS-2 5/50.39G	Soil	1-28-15 8:40:37
33	56	127056.D	99.4233	AZ09545S04 5/50.29G	Soil	1-28-15 9:04:55
34	58	127058.D	1	Diesel 400ppm 1/27/15	Mix(A)	1-28-15 9:53:22
35	59	127059.D	1	MO 1000ppm 1/27/15	Mix(B)	1-28-15 10:17:31
36	64	127064.D	99.8403	AZ09546S04 5/50.08G	Soil	1-28-15 12:19:32
37	65	127065.D	98.7752	AZ09547S04 5/50.62G	Soil	1-28-15 12:44:10
38	66	127066.D	99.0099	AZ09548S04 5/50.50G	Soil	1-28-15 13:08:57
39	67	127067.D	99.6016	AZ09549S04 5/50.20G	Soil	1-28-15 13:33:38
40	68	127068.D	493.097	AZ09550S04 5/50.70G DF5	Soil	1-28-15 13:58:19
41	69	127069.D	98.4252	AZ09551S04 5/50.80G	Soil	1-28-15 14:23:04
42	70	127070.D	498.008	AZ09552S11 MS-1 5/50.20G DF5	Soil	1-28-15 14:47:48
43	71	127071.D	494.462	AZ09552S12 MSD-1 5/50.56G DF5	Soil	1-28-15 15:12:35
44	72	127072.D	495.05	AZ09552S12 MS-2 5/50.50G DF5	Soil	1-28-15 15:37:12
45	73	127073.D	1	Diesel 400ppm 1/27/15	Mix(A)	1-28-15 16:01:57
46	74	127074.D	1	MO 1000ppm 1/27/15	Mix(B)	1-28-15 16:26:43
47	75	127075.D	497.018	AZ09552S12 MSD-2 5/50.30G DF5	Soil	1-28-15 16:51:29
48	76	127076.D	491.159	AZ09552S11 5/50.90G DF5	Soil	1-28-15 17:16:20
49	88	127088.D	1	Diesel 400ppm 1/27/15	Mix(A)	1-28-15 22:08:07
50	89	127089.D	1	MO 1000ppm 1/27/15	Mix(B)	1-28-15 22:32:16
51	72	127172.D	1	Diesel 400ppm 1/27/15	Mix(A)	1-30-15 8:08:25

52	80	127180.D	99.5421	150115B LCS-1 5/50.23G	Soil	1-30-15 11:22:26
53	81	127181.D	1	Diesel 400ppm 1/27/15	Mix(A)	1-30-15 11:46:56

EPA METHOD 8260B
Volatile Organic Compounds

APPL, INC.

EPA METHOD 8260B
Volatile Organic Compounds
QC Summary

APPL, INC.

Method Blank
EPA 8260B SOIL

APPL Inc.
908 North Temperance Avenu
Clovis, CA 93611

Blank Name/QCG: **150121S-09545 - 193770**
Batch ID: #86BKB-150121AL

Sample Type	Analyte	Result	LOQ	LOD	DL	Units	Extraction Date	Analysis Date
BLANK	1,1,1-TRICHLOROETHANE	0.00200 U	0.0050	0.00200	0.00040	mg/Kg	01/21/15	01/21/15
BLANK	1,1,2,2-TETRACHLOROETHANE	0.00200 U	0.0050	0.00200	0.00120	mg/Kg	01/21/15	01/21/15
BLANK	1,1,2-TRICHLOROETHANE	0.00200 U	0.0050	0.00200	0.00027	mg/Kg	01/21/15	01/21/15
BLANK	1,1-DICHLOROETHANE	0.00200 U	0.0050	0.00200	0.00034	mg/Kg	01/21/15	01/21/15
BLANK	1,1-DICHLOROETHENE	0.00200 U	0.0050	0.00200	0.00076	mg/Kg	01/21/15	01/21/15
BLANK	1,2,3-TRICHLOROPROPANE	0.00500 U	0.0200	0.00500	0.00124	mg/Kg	01/21/15	01/21/15
BLANK	1,2-DIBROMOETHANE	0.00200 U	0.0050	0.00200	0.00141	mg/Kg	01/21/15	01/21/15
BLANK	1,2-DICHLOROETHANE	0.00200 U	0.0050	0.00200	0.00077	mg/Kg	01/21/15	01/21/15
BLANK	1,2-DICHLOROPROPANE	0.00200 U	0.0050	0.00200	0.00072	mg/Kg	01/21/15	01/21/15
BLANK	2-BUTANONE	0.00300 U	0.0200	0.00300	0.00279	mg/Kg	01/21/15	01/21/15
BLANK	4-METHYL-2-PENTANONE	0.00200 U	0.0200	0.00200	0.00093	mg/Kg	01/21/15	01/21/15
BLANK	ACETONE	0.00500 U	0.0500	0.00500	0.00280	mg/Kg	01/21/15	01/21/15
BLANK	BENZENE	0.00200 U	0.0050	0.00200	0.00063	mg/Kg	01/21/15	01/21/15
BLANK	BROMODICHLOROMETHANE	0.00200 U	0.0050	0.00200	0.00069	mg/Kg	01/21/15	01/21/15
BLANK	BROMOFORM	0.00200 U	0.0050	0.00200	0.00080	mg/Kg	01/21/15	01/21/15
BLANK	BROMOMETHANE	0.00200 U	0.0050	0.00200	0.00160	mg/Kg	01/21/15	01/21/15
BLANK	CARBON TETRACHLORIDE	0.00200 U	0.0050	0.00200	0.00080	mg/Kg	01/21/15	01/21/15
BLANK	CHLOROBENZENE	0.00200 U	0.0050	0.00200	0.00049	mg/Kg	01/21/15	01/21/15
BLANK	CHLOROETHANE	0.00200 U	0.0050	0.00200	0.00155	mg/Kg	01/21/15	01/21/15
BLANK	CHLOROFORM	0.00200 U	0.0050	0.00200	0.00143	mg/Kg	01/21/15	01/21/15
BLANK	CHLOROMETHANE	0.00500 U	0.0050	0.00500	0.00182	mg/Kg	01/21/15	01/21/15
BLANK	CIS-1,2-DICHLOROETHYLENE	0.00200 U	0.0050	0.00200	0.00022	mg/Kg	01/21/15	01/21/15
BLANK	CIS-1,3-DICHLOROPROPENE	0.00200 U	0.0050	0.00200	0.00093	mg/Kg	01/21/15	01/21/15
BLANK	DIBROMOCHLOROMETHANE	0.00200 U	0.0050	0.00200	0.00085	mg/Kg	01/21/15	01/21/15
BLANK	ETHYLBENZENE	0.00200 U	0.0050	0.00200	0.00101	mg/Kg	01/21/15	01/21/15
BLANK	METHYLENE CHLORIDE	0.01000 U	0.0200	0.01000	0.00058	mg/Kg	01/21/15	01/21/15
BLANK	STYRENE	0.00200 U	0.0050	0.00200	0.00121	mg/Kg	01/21/15	01/21/15
BLANK	TETRACHLOROETHENE	0.00200 U	0.0050	0.00200	0.00054	mg/Kg	01/21/15	01/21/15
BLANK	TOLUENE	0.00200 U	0.0050	0.00200	0.00130	mg/Kg	01/21/15	01/21/15
BLANK	TRANS-1,2-DICHLOROETHYLEN	0.00200 U	0.0050	0.00200	0.00034	mg/Kg	01/21/15	01/21/15
BLANK	TRANS-1,3-DICHLOROPROPEN	0.00200 U	0.0050	0.00200	0.00078	mg/Kg	01/21/15	01/21/15
BLANK	TRICHLOROETHYLENE	0.00200 U	0.0050	0.00200	0.00094	mg/Kg	01/21/15	01/21/15
BLANK	VINYL CHLORIDE	0.00200 U	0.0050	0.00200	0.00150	mg/Kg	01/21/15	01/21/15
BLANK	XYLENES (TOTAL)	0.00200 U	0.0050	0.00200	0.00043	mg/Kg	01/21/15	01/21/15

Quant Method: LALLS.M
Run #: 0121L10
Instrument: Loki
Sequence: 150119
Initials: SV

GC SC-Blank-REG MDLs
Printed: 01/26/15 1:46:15 PM

Method Blank
EPA 8260B SOIL

APPL Inc.
908 North Temperance Avenu
Clovis, CA 93611

Blank Name/QCG: **150121S-09545 - 193770**
Batch ID: #86BKB-150121AL

Sample Type	Analyte	Result	LOQ	LOD	DL	Units	Extraction Date	Analysis Date
BLANK	SURROGATE: 1,2-DICHLOROET	98.1	54-154			%	01/21/15	01/21/15
BLANK	SURROGATE: 4-BROMOFLUOR	97.8	85-120			%	01/21/15	01/21/15
BLANK	SURROGATE: TOLUENE-D8 (S)	97.4	85-115			%	01/21/15	01/21/15

Quant Method: LALLS.M
Run #: 0121L10
Instrument: Loki
Sequence: 150119
Initials: SV

GC SC-Blank-REG MDLs
Printed: 01/26/15 1:46:15 PM

Method Blank
EPA 8260B SOIL

APPL Inc.
908 North Temperance Avenu
Clovis, CA 93611

Blank Name/QCG: **150122S-09552 - 193773**
Batch ID: #86BKB-150122AL

Sample Type	Analyte	Result	LOQ	LOD	DL	Units	Extraction Date	Analysis Date
BLANK	1,1,1-TRICHLOROETHANE	0.00200 U	0.0050	0.00200	0.00040	mg/Kg	01/22/15	01/22/15
BLANK	1,1,2,2-TETRACHLOROETHANE	0.00200 U	0.0050	0.00200	0.00120	mg/Kg	01/22/15	01/22/15
BLANK	1,1,2-TRICHLOROETHANE	0.00200 U	0.0050	0.00200	0.00027	mg/Kg	01/22/15	01/22/15
BLANK	1,1-DICHLOROETHANE	0.00200 U	0.0050	0.00200	0.00034	mg/Kg	01/22/15	01/22/15
BLANK	1,1-DICHLOROETHENE	0.00200 U	0.0050	0.00200	0.00076	mg/Kg	01/22/15	01/22/15
BLANK	1,2,3-TRICHLOROPROPANE	0.00500 U	0.0200	0.00500	0.00124	mg/Kg	01/22/15	01/22/15
BLANK	1,2-DIBROMOETHANE	0.00200 U	0.0050	0.00200	0.00141	mg/Kg	01/22/15	01/22/15
BLANK	1,2-DICHLOROETHANE	0.00200 U	0.0050	0.00200	0.00077	mg/Kg	01/22/15	01/22/15
BLANK	1,2-DICHLOROPROPANE	0.00200 U	0.0050	0.00200	0.00072	mg/Kg	01/22/15	01/22/15
BLANK	2-BUTANONE	0.00300 U	0.0200	0.00300	0.00279	mg/Kg	01/22/15	01/22/15
BLANK	4-METHYL-2-PENTANONE	0.00200 U	0.0200	0.00200	0.00093	mg/Kg	01/22/15	01/22/15
BLANK	ACETONE	0.00500 U	0.0500	0.00500	0.00280	mg/Kg	01/22/15	01/22/15
BLANK	BENZENE	0.00200 U	0.0050	0.00200	0.00063	mg/Kg	01/22/15	01/22/15
BLANK	BROMODICHLOROMETHANE	0.00200 U	0.0050	0.00200	0.00069	mg/Kg	01/22/15	01/22/15
BLANK	BROMOFORM	0.00200 U	0.0050	0.00200	0.00080	mg/Kg	01/22/15	01/22/15
BLANK	BROMOMETHANE	0.00200 U	0.0050	0.00200	0.00160	mg/Kg	01/22/15	01/22/15
BLANK	CARBON TETRACHLORIDE	0.00200 U	0.0050	0.00200	0.00080	mg/Kg	01/22/15	01/22/15
BLANK	CHLOROBENZENE	0.00200 U	0.0050	0.00200	0.00049	mg/Kg	01/22/15	01/22/15
BLANK	CHLOROETHANE	0.00200 U	0.0050	0.00200	0.00155	mg/Kg	01/22/15	01/22/15
BLANK	CHLOROFORM	0.00200 U	0.0050	0.00200	0.00143	mg/Kg	01/22/15	01/22/15
BLANK	CHLOROMETHANE	0.00500 U	0.0050	0.00500	0.00182	mg/Kg	01/22/15	01/22/15
BLANK	CIS-1,2-DICHLOROETHYLENE	0.00200 U	0.0050	0.00200	0.00022	mg/Kg	01/22/15	01/22/15
BLANK	CIS-1,3-DICHLOROPROPENE	0.00200 U	0.0050	0.00200	0.00093	mg/Kg	01/22/15	01/22/15
BLANK	DIBROMOCHLOROMETHANE	0.00200 U	0.0050	0.00200	0.00085	mg/Kg	01/22/15	01/22/15
BLANK	ETHYLBENZENE	0.00200 U	0.0050	0.00200	0.00101	mg/Kg	01/22/15	01/22/15
BLANK	METHYLENE CHLORIDE	0.01000 U	0.0200	0.01000	0.00058	mg/Kg	01/22/15	01/22/15
BLANK	STYRENE	0.00200 U	0.0050	0.00200	0.00121	mg/Kg	01/22/15	01/22/15
BLANK	TETRACHLOROETHENE	0.00200 U	0.0050	0.00200	0.00054	mg/Kg	01/22/15	01/22/15
BLANK	TOLUENE	0.00200 U	0.0050	0.00200	0.00130	mg/Kg	01/22/15	01/22/15
BLANK	TRANS-1,2-DICHLOROETHYLEN	0.00200 U	0.0050	0.00200	0.00034	mg/Kg	01/22/15	01/22/15
BLANK	TRANS-1,3-DICHLOROPROPEN	0.00200 U	0.0050	0.00200	0.00078	mg/Kg	01/22/15	01/22/15
BLANK	TRICHLOROETHYLENE	0.00200 U	0.0050	0.00200	0.00094	mg/Kg	01/22/15	01/22/15
BLANK	VINYL CHLORIDE	0.00200 U	0.0050	0.00200	0.00150	mg/Kg	01/22/15	01/22/15
BLANK	XYLENES (TOTAL)	0.00200 U	0.0050	0.00200	0.00043	mg/Kg	01/22/15	01/22/15

Quant Method: LALLS.M
Run #: 0122L08
Instrument: Loki
Sequence: 150119
Initials: SV

GC SC-Blank-REG MDLs
Printed: 01/26/15 1:46:15 PM

Method Blank
EPA 8260B SOIL

APPL Inc.
908 North Temperance Avenu
Clovis, CA 93611

Blank Name/QCG: **150122S-09552 - 193773**
Batch ID: #86BKB-150122AL

Sample Type	Analyte	Result	LOQ	LOD	DL	Units	Extraction Date	Analysis Date
BLANK	SURROGATE: 1,2-DICHLOROET	99.6	54-154			%	01/22/15	01/22/15
BLANK	SURROGATE: 4-BROMOFLUOR	96.1	85-120			%	01/22/15	01/22/15
BLANK	SURROGATE: TOLUENE-D8 (S)	97.0	85-115			%	01/22/15	01/22/15

Quant Method: LALLS.M
Run #: 0122L08
Instrument: Loki
Sequence: 150119
Initials: SV

GC SC-Blank-REG MDLs
Printed: 01/26/15 1:46:15 PM

Method Blank
EPA 8260B SOIL MEOH

APPL Inc.
908 North Temperance Avenu
Clovis, CA 93611

Blank Name/QCG: **150122S-09551 - 193821**
Batch ID: #86BKB-150122AT

Sample Type	Analyte	Result	LOQ	LOD	DL	Units	Extraction Date	Analysis Date
BLANK	CIS-1,2-DICHLOROETHYLENE	0.0150 U	0.050	0.0150	0.0080	mg/Kg	01/22/15	01/22/15
BLANK	TRICHLOROETHYLENE	0.0150 U	0.050	0.0150	0.0080	mg/Kg	01/22/15	01/22/15
BLANK	SURROGATE: 1,2-DICHLOROET	95.9	54-154			%	01/22/15	01/22/15
BLANK	SURROGATE: 4-BROMOFLUOR	103	85-120			%	01/22/15	01/22/15
BLANK	SURROGATE: TOLUENE-D8 (S)	103	85-115			%	01/22/15	01/22/15

Quant Method: TALLW.M
Run #: 0122T15
Instrument: Thor
Sequence: T150109
Initials: SV

GC SC-Blank-REG MDLs
Printed: 01/27/15 1:06:49 PM

Method Blank
EPA 8260B WATER

APPL Inc.
908 North Temperance Avenu
Clovis, CA 93611

Blank Name/QCG: **150116W-09553 - 193634**
Batch ID: #86BKB-150116AL

Sample Type	Analyte	Result	LOQ	LOD	DL	Units	Extraction Date	Analysis Date
BLANK	1,1,1-TRICHLOROETHANE	0.30 U	1.0	0.30	0.14	ug/L	01/16/15	01/16/15
BLANK	1,1,2,2-TETRACHLOROETHANE	0.30 U	1.0	0.30	0.10	ug/L	01/16/15	01/16/15
BLANK	1,1,2-TRICHLOROETHANE	0.50 U	1.0	0.50	0.20	ug/L	01/16/15	01/16/15
BLANK	1,1-DICHLOROETHANE	0.30 U	1.0	0.30	0.19	ug/L	01/16/15	01/16/15
BLANK	1,1-DICHLOROETHENE	0.50 U	1.0	0.50	0.30	ug/L	01/16/15	01/16/15
BLANK	1,2,3-TRICHLOROPROPANE	1.00 U	2.0	1.00	0.39	ug/L	01/16/15	01/16/15
BLANK	1,2-DIBROMOETHANE	0.50 U	1.0	0.50	0.20	ug/L	01/16/15	01/16/15
BLANK	1,2-DICHLOROETHANE	0.30 U	1.0	0.30	0.14	ug/L	01/16/15	01/16/15
BLANK	1,2-DICHLOROPROPANE	0.30 U	1.0	0.30	0.17	ug/L	01/16/15	01/16/15
BLANK	2-BUTANONE	2.00 U	10.0	2.00	0.60	ug/L	01/16/15	01/16/15
BLANK	4-METHYL-2-PENTANONE	5.00 U	10.0	5.00	1.90	ug/L	01/16/15	01/16/15
BLANK	ACETONE	2.00 U	10.0	2.00	0.95	ug/L	01/16/15	01/16/15
BLANK	BENZENE	0.30 U	1.0	0.30	0.16	ug/L	01/16/15	01/16/15
BLANK	BROMODICHLOROMETHANE	0.30 U	1.0	0.30	0.14	ug/L	01/16/15	01/16/15
BLANK	BROMOFORM	0.30 U	1.0	0.30	0.14	ug/L	01/16/15	01/16/15
BLANK	BROMOMETHANE	0.50 U	2.0	0.50	0.24	ug/L	01/16/15	01/16/15
BLANK	CARBON TETRACHLORIDE	0.30 U	1.0	0.30	0.10	ug/L	01/16/15	01/16/15
BLANK	CHLOROBENZENE	0.50 U	1.0	0.50	0.21	ug/L	01/16/15	01/16/15
BLANK	CHLOROETHANE	0.50 U	1.0	0.50	0.21	ug/L	01/16/15	01/16/15
BLANK	CHLOROFORM	0.30 U	1.0	0.30	0.07	ug/L	01/16/15	01/16/15
BLANK	CHLOROMETHANE	0.50 U	1.0	0.50	0.42	ug/L	01/16/15	01/16/15
BLANK	CIS-1,2-DICHLOROETHENE	0.30 U	1.0	0.30	0.16	ug/L	01/16/15	01/16/15
BLANK	CIS-1,3-DICHLOROPROPENE	0.30 U	1.0	0.30	0.15	ug/L	01/16/15	01/16/15
BLANK	DIBROMOCHLOROMETHANE	0.30 U	1.0	0.30	0.19	ug/L	01/16/15	01/16/15
BLANK	ETHYLBENZENE	0.50 U	1.0	0.50	0.23	ug/L	01/16/15	01/16/15
BLANK	METHYLENE CHLORIDE	1.00 U	5.0	1.00	0.35	ug/L	01/16/15	01/16/15
BLANK	STYRENE	0.50 U	1.0	0.50	0.25	ug/L	01/16/15	01/16/15
BLANK	TETRACHLOROETHENE	0.30 U	1.0	0.30	0.24	ug/L	01/16/15	01/16/15
BLANK	TOLUENE	0.30 U	1.0	0.30	0.17	ug/L	01/16/15	01/16/15
BLANK	TRANS-1,2-DICHLOROETHENE	0.30 U	1.0	0.30	0.19	ug/L	01/16/15	01/16/15
BLANK	TRANS-1,3-DICHLOROPROPEN	0.30 U	1.0	0.30	0.18	ug/L	01/16/15	01/16/15
BLANK	TRICHLOROETHENE	0.30 U	1.0	0.30	0.16	ug/L	01/16/15	01/16/15
BLANK	VINYL CHLORIDE	0.30 U	1.0	0.30	0.23	ug/L	01/16/15	01/16/15
BLANK	XYLENES (TOTAL)	0.30 U	2.0	0.30	0.19	ug/L	01/16/15	01/16/15

Quant Method: LALLW2.M
Run #: 0116L12
Instrument: Loki
Sequence: 150113
Initials: SV

GC SC-Blank-REG MDLs
Printed: 01/26/15 1:46:15 PM

Method Blank
EPA 8260B WATER

APPL Inc.
908 North Temperance Avenu
Clovis, CA 93611

Blank Name/QCG: **150116W-09553 - 193634**
Batch ID: #86BKB-150116AL

Sample Type	Analyte	Result	LOQ	LOD	DL	Units	Extraction Date	Analysis Date
BLANK	SURROGATE: 1,2-DICHLOROET	98.1	70-120			%	01/16/15	01/16/15
BLANK	SURROGATE: 4-BROMOFLUOR	98.9	75-120			%	01/16/15	01/16/15
BLANK	SURROGATE: DIBROMOFLUOR	99.6	85-115			%	01/16/15	01/16/15
BLANK	SURROGATE: TOLUENE-D8 (S)	100	85-120			%	01/16/15	01/16/15

Quant Method: LALLW2.M
Run #: 0116L12
Instrument: Loki
Sequence: 150113
Initials: SV

GC SC-Blank-REG MDLs
Printed: 01/26/15 1:46:15 PM

Form 2 & 8

Surrogate Recovery

Lab Name: APPL, Inc.
Case No: 75351
Matrix: SOIL

SDG No: 75351
Date Analyzed: 01/21/15
Instrument: Loki

APPL ID.	Client Sample No.	SURROGATE: 1,2-DICHLOROETHANE-D4 (S)			SURROGATE: 4-BROMOFLUOROBENZENE (S)		
		Limits	Result	Qualifier	Limits	Result	Qualifier
150121AL-LCS	Lab Control Spike	54-154	94.9		85-120	96.6	
150121AL-BLK	Blank	54-154	98.1		85-120	97.8	
AZ09545	EKB100001	54-154	94.3		85-120	102	
AZ09546	EKB100002	54-154	96.8		85-120	97.6	
AZ09547	EKB100003	54-154	98.2		85-120	95.0	
AZ09548	EKB100004	54-154	99.2		85-120	98.0	
AZ09550	EKB100006	54-154	103		85-120	96.2	
AZ09551	EKB100007	54-154	101		85-120	95.8	

Comments: Batch: #86BKB-150121AL

Form 2 & 8

Surrogate Recovery

Lab Name: APPL, Inc.
Case No: 75351
Matrix: SOIL

SDG No: 75351
Date Analyzed: 01/21/15
Instrument: Loki

APPL ID.	Client Sample No.	SURROGATE: TOLUENE-D8 (S)					
		Limits	Result	Qualifier	Limits	Result	Qualifier
150121AL-LCS	Lab Control Spike	85-115	95.5				
150121AL-BLK	Blank	85-115	97.4				
AZ09545	EKB100001	85-115	98.5				
AZ09546	EKB100002	85-115	98.5				
AZ09547	EKB100003	85-115	95.9				
AZ09548	EKB100004	85-115	97.1				
AZ09550	EKB100006	85-115	95.3				
AZ09551	EKB100007	85-115	95.9				

Comments: Batch: #86BKB-150121AL

Form 2 & 8

Surrogate Recovery

Lab Name: APPL, Inc.
Case No: 75351
Matrix: SOIL

SDG No: 75351
Date Analyzed: 01/21/15
Instrument: Loki

APPL ID.	Client Sample No.	SURROGATE: 1,2-DICHLOROETHANE-D4 (S)			SURROGATE: 4-BROMOFLUOROBENZENE (S)		
		Limits	Result	Qualifier	Limits	Result	Qualifier
AZ09552-MS	Matrix Spike	54-154	101		85-120	97.4	
AZ09552-MSD	Matrix SpikeD	54-154	98.8		85-120	96.1	
150122AL-LCS	Lab Control Spike	54-154	95.5		85-120	95.9	
150122AL-BLK	Blank	54-154	99.6		85-120	96.1	
AZ09549	EKB100005	54-154	101		85-120	97.5	
AZ09552	EKB100008	54-154	96.3		85-120	96.3	

Comments: Batch: #86BKB-150122AL

Form 2 & 8

Surrogate Recovery

Lab Name: APPL, Inc.
Case No: 75351
Matrix: SOIL

SDG No: 75351
Date Analyzed: 01/21/15
Instrument: Loki

APPL ID.	Client Sample No.	SURROGATE: TOLUENE-D8 (S)					
		Limits	Result	Qualifier	Limits	Result	Qualifier
AZ09552-MS	Matrix Spike	85-115	96.3				
AZ09552-MSD	Matrix SpikeD	85-115	97.3				
150122AL-LCS	Lab Control Spike	85-115	95.1				
150122AL-BLK	Blank	85-115	97.0				
AZ09549	EKB100005	85-115	100				
AZ09552	EKB100008	85-115	101				

Comments: Batch: #86BKB-150122AL

Form 2 & 8

Surrogate Recovery

Lab Name: APPL, Inc.
Case No: 75351
Matrix: SOIL

SDG No: 75351
Date Analyzed: 01/22/15
Instrument: Thor

APPL ID.	Client Sample No.	SURROGATE: 1,2-DICHLOROETHANE-D4 (S)			SURROGATE: 4-BROMOFLUOROBENZENE (S)		
		Limits	Result	Qualifier	Limits	Result	Qualifier
150122AT-LCS	Lab Control Spike	54-154	91.7		85-120	102	
150122AT-BLK	Blank	54-154	95.9		85-120	103	
AZ09551	EKB100007	54-154	88.6		85-120	102	

Comments: Batch: #86BKB-150122AT

Form 2 & 8

Surrogate Recovery

Lab Name: APPL, Inc.
Case No: 75351
Matrix: SOIL

SDG No: 75351
Date Analyzed: 01/22/15
Instrument: Thor

APPL ID.	Client Sample No.	SURROGATE: TOLUENE-D8 (S)					
		Limits	Result	Qualifier	Limits	Result	Qualifier
150122AT-LCS	Lab Control Spike	85-115	98.8				
150122AT-BLK	Blank	85-115	103				
AZ09551	EKB100007	85-115	96.1				

Comments: Batch: #86BKB-150122AT

Printed: 01/27/15 1:10:12 PM
Form 2 & 8, Surrogate Recovery Summary

Form 2 & 8

Surrogate Recovery

Lab Name: APPL, Inc.
Case No: 75351
Matrix: WATER

SDG No: 75351
Date Analyzed: 01/16/15
Instrument: Loki

APPL ID.	Client Sample No.	SURROGATE: 1,2-DICHLOROETHANE-D4 (S)			SURROGATE: 4-BROMOFLUOROBENZENE (S)		
		Limits	Result	Qualifier	Limits	Result	Qualifier
150116AL-LCS	Lab Control Spike	70-120	97.8		75-120	98.5	
150116AL-BLK	Blank	70-120	98.1		75-120	98.9	
AZ09555	TRIP BLANK-01	70-120	95.3		75-120	97.1	
AZ09553	EKB100009	70-120	97.3		75-120	96.9	
AZ09554	EKB100010	70-120	95.6		75-120	95.1	

Comments: Batch: #86BKB-150116AL

Form 2 & 8

Surrogate Recovery

Lab Name: APPL, Inc.
Case No: 75351
Matrix: WATER

SDG No: 75351
Date Analyzed: 01/16/15
Instrument: Loki

APPL ID.	Client Sample No.	SURROGATE: DIBROMOFLUOROMETHANE (S)			SURROGATE: TOLUENE-D8 (S)		
		Limits	Result	Qualifier	Limits	Result	Qualifier
150116AL-LCS	Lab Control Spike	85-115	99.6		85-120	99.0	
150116AL-BLK	Blank	85-115	99.6		85-120	100	
AZ09555	TRIP BLANK-01	85-115	98.4		85-120	98.6	
AZ09553	EKB100009	85-115	100		85-120	99.1	
AZ09554	EKB100010	85-115	97.3		85-120	97.9	

Comments: Batch: #86BKB-150116AL

Laboratory Control Spike Recovery
EPA 8260B SOIL

APPL ID: **150121S-09545 LCS - 193770**
Batch ID: #86BKB-150121AL

APPL Inc.
908 North Temperance Avenue
Clovis, CA 93611

Compound Name	Spike Level mg/Kg	SPK Result mg/Kg	SPK % Recovery	Recovery Limits
1,1,1-TRICHLOROETHANE	0.050	0.0537	107	70-135
1,1,2,2-TETRACHLOROETHANE	0.050	0.0478	95.6	55-130
1,1,2-TRICHLOROETHANE	0.050	0.0519	104	60-125
1,1-DICHLOROETHANE	0.050	0.053	106	75-125
1,1-DICHLOROETHENE	0.050	0.0483	96.6	65-135
1,2,3-TRICHLOROPROPANE	0.050	0.0499	99.8	65-130
1,2-DIBROMOETHANE	0.050	0.0535	107	70-125
1,2-DICHLOROETHANE	0.050	0.0521	104	70-135
1,2-DICHLOROPROPANE	0.050	0.0522	104	70-120
2-BUTANONE	0.050	0.0434	86.8	30-160
4-METHYL-2-PENTANONE	0.050	0.0478	95.6	45-145
ACETONE	0.050	0.040	80.0	20-160
BENZENE	0.050	0.056	112	75-125
BROMODICHLOROMETHANE	0.050	0.053	106	70-130
BROMOFORM	0.050	0.0517	103	55-135
BROMOMETHANE	0.050	0.0534	107	30-160
CARBON TETRACHLORIDE	0.050	0.0524	105	65-135
CHLOROBENZENE	0.050	0.0566	113	75-125
CHLOROETHANE	0.050	0.0467	93.4	40-155
CHLOROFORM	0.050	0.0551	110	70-125
CHLOROMETHANE	0.050	0.0421	84.2	50-130
CIS-1,2-DICHLOROETHYLENE	0.050	0.0562	112	65-125
CIS-1,3-DICHLOROPROPENE	0.050	0.0528	106	70-125
DIBROMOCHLOROMETHANE	0.050	0.0531	106	65-130
ETHYLBENZENE	0.050	0.0576	115	75-125
METHYLENE CHLORIDE	0.050	0.0452	90.4	55-140
STYRENE	0.050	0.0572	114	75-125
TETRACHLOROETHENE	0.050	0.0565	113	65-140
TOLUENE	0.050	0.0565	113	70-125
TRANS-1,2-DICHLOROETHYLENE	0.050	0.0549	110	65-135
TRANS-1,3-DICHLOROPROPENE	0.050	0.0508	102	65-125

Primary	SPK
Quant Method :	LALLS.M
Extraction Date :	01/21/15
Analysis Date :	01/21/15
Instrument :	Loki
Run :	0121L06
Initials :	SV

Comments: _____

Printed: 01/26/15 1:51:09 PM
APPL Standard LCS

Laboratory Control Spike Recovery
EPA 8260B SOIL

APPL ID: **150121S-09545 LCS - 193770**
Batch ID: #86BKB-150121AL

APPL Inc.
908 North Temperance Avenue
Clovis, CA 93611

Compound Name	Spike Level mg/Kg	SPK Result mg/Kg	SPK % Recovery	Recovery Limits
TRICHLOROETHYLENE	0.050	0.0564	113	75-125
VINYL CHLORIDE	0.050	0.0466	93.2	60-125
XYLENES (TOTAL)	0.150	0.173	115	75-125
SURROGATE: 1,2-DICHLOROETHANE-	0.0481	0.0456	94.9	54-154
SURROGATE: 4-BROMOFLUOROBENZ	0.0545	0.0527	96.6	85-120
SURROGATE: TOLUENE-D8 (S)	0.0612	0.0584	95.5	85-115

Comments: _____

Primary	SPK
Quant Method :	LALLS.M
Extraction Date :	01/21/15
Analysis Date :	01/21/15
Instrument :	Loki
Run :	0121L06
Initials :	SV

Printed: 01/26/15 1:51:10 PM
APPL Standard LCS

Laboratory Control Spike Recovery
EPA 8260B SOIL

APPL ID: **150122S-09552 LCS - 193773**
Batch ID: #86BKB-150122AL

APPL Inc.
908 North Temperance Avenue
Clovis, CA 93611

Compound Name	Spike Level mg/Kg	SPK Result mg/Kg	SPK % Recovery	Recovery Limits
1,1,1-TRICHLOROETHANE	0.050	0.0504	101	70-135
1,1,2,2-TETRACHLOROETHANE	0.050	0.0542	108	55-130
1,1,2-TRICHLOROETHANE	0.050	0.0555	111	60-125
1,1-DICHLOROETHANE	0.050	0.0508	102	75-125
1,1-DICHLOROETHENE	0.050	0.0437	87.4	65-135
1,2,3-TRICHLOROPROPANE	0.050	0.0542	108	65-130
1,2-DIBROMOETHANE	0.050	0.0548	110	70-125
1,2-DICHLOROETHANE	0.050	0.0523	105	70-135
1,2-DICHLOROPROPANE	0.050	0.0532	106	70-120
2-BUTANONE	0.050	0.0461	92.2	30-160
4-METHYL-2-PENTANONE	0.050	0.0503	101	45-145
ACETONE	0.050	0.0441	88.2	20-160
BENZENE	0.050	0.0535	107	75-125
BROMODICHLOROMETHANE	0.050	0.0525	105	70-130
BROMOFORM	0.050	0.0518	104	55-135
BROMOMETHANE	0.050	0.0514	103	30-160
CARBON TETRACHLORIDE	0.050	0.0488	97.6	65-135
CHLOROBENZENE	0.050	0.0555	111	75-125
CHLOROETHANE	0.050	0.0484	96.8	40-155
CHLOROFORM	0.050	0.0573	115	70-125
CHLOROMETHANE	0.050	0.0455	91.0	50-130
CIS-1,2-DICHLOROETHYLENE	0.050	0.0542	108	65-125
CIS-1,3-DICHLOROPROPENE	0.050	0.0538	108	70-125
DIBROMOCHLOROMETHANE	0.050	0.0538	108	65-130
ETHYLBENZENE	0.050	0.0556	111	75-125
METHYLENE CHLORIDE	0.050	0.0514	103	55-140
STYRENE	0.050	0.0564	113	75-125
TETRACHLOROETHENE	0.050	0.0528	106	65-140
TOLUENE	0.050	0.0548	110	70-125
TRANS-1,2-DICHLOROETHYLENE	0.050	0.0503	101	65-135
TRANS-1,3-DICHLOROPROPENE	0.050	0.052	104	65-125

Comments: _____

Primary	SPK
Quant Method :	LALLS.M
Extraction Date :	01/22/15
Analysis Date :	01/22/15
Instrument :	Loki
Run :	0122L04
Initials :	SV

Printed: 01/26/15 1:51:10 PM
APPL Standard LCS

Laboratory Control Spike Recovery
EPA 8260B SOIL

APPL ID: **150122S-09552 LCS - 193773**
Batch ID: #86BKB-150122AL

APPL Inc.
908 North Temperance Avenue
Clovis, CA 93611

Compound Name	Spike Level mg/Kg	SPK Result mg/Kg	SPK % Recovery	Recovery Limits
TRICHLOROETHYLENE	0.050	0.0524	105	75-125
VINYL CHLORIDE	0.050	0.0545	109	60-125
XYLENES (TOTAL)	0.150	0.167	111	75-125
SURROGATE: 1,2-DICHLOROETHANE-	0.0481	0.0459	95.5	54-154
SURROGATE: 4-BROMOFLUOROBENZ	0.0545	0.0523	95.9	85-120
SURROGATE: TOLUENE-D8 (S)	0.0612	0.0582	95.1	85-115

Comments: _____

Primary	SPK
Quant Method :	LALLS.M
Extraction Date :	01/22/15
Analysis Date :	01/22/15
Instrument :	Loki
Run :	0122L04
Initials :	SV

Printed: 01/26/15 1:51:10 PM
APPL Standard LCS

Laboratory Control Spike Recovery
EPA 8260B SOIL MEOH

APPL ID: **150122S-09551 LCS - 193821**
Batch ID: #86BKB-150122AT

APPL Inc.
908 North Temperance Avenue
Clovis, CA 93611

Compound Name	Spike Level mg/Kg	SPK Result mg/Kg	SPK % Recovery	Recovery Limits
CIS-1,2-DICHLOROETHYLENE	0.500	0.539	108	65-125
TRICHLOROETHYLENE	0.500	0.588	118	75-125
SURROGATE: 1,2-DICHLOROETHANE-	0.0294	0.027	91.7	54-154
SURROGATE: 4-BROMOFLUOROBENZ	0.0295	0.0302	102	85-120
SURROGATE: TOLUENE-D8 (S)	0.0318	0.0314	98.8	85-115

Comments: _____

Primary	SPK
Quant Method :	TALLW.M
Extraction Date :	01/22/15
Analysis Date :	01/22/15
Instrument :	Thor
Run :	0122T13
Initials :	SV

Printed: 01/27/15 1:10:17 PM
APPL Standard LCS

Laboratory Control Spike Recovery
EPA 8260B WATER

APPL ID: **150116W-09553 LCS - 193634**
Batch ID: #86BKB-150116AL

APPL Inc.
908 North Temperance Avenue
Clovis, CA 93611

Compound Name	Spike Level ug/L	SPK Result ug/L	SPK % Recovery	Recovery Limits
1,1,1-TRICHLOROETHANE	10.00	9.89	98.9	65-130
1,1,2,2-TETRACHLOROETHANE	10.00	10.7	107	65-130
1,1,2-TRICHLOROETHANE	10.00	9.36	93.6	75-125
1,1-DICHLOROETHANE	10.00	10.0	100	70-135
1,1-DICHLOROETHENE	10.00	9.68	96.8	70-130
1,2,3-TRICHLOROPROPANE	10.00	10.5	105	75-125
1,2-DIBROMOETHANE	10.00	10.0	100	70-130
1,2-DICHLOROETHANE	10.00	9.98	99.8	70-130
1,2-DICHLOROPROPANE	10.00	9.38	93.8	75-125
2-BUTANONE	10.00	8.89	88.9	30-150
4-METHYL-2-PENTANONE	10.00	9.00	90.0	60-135
ACETONE	10.00	10.0	100	40-140
BENZENE	10.00	9.58	95.8	80-120
BROMODICHLOROMETHANE	10.00	9.88	98.8	75-120
BROMOFORM	10.00	9.74	97.4	70-130
BROMOMETHANE	10.00	9.71	97.1	30-145
CARBON TETRACHLORIDE	10.00	10.0	100	65-140
CHLOROBENZENE	10.00	10.2	102	80-120
CHLOROETHANE	10.00	8.74	87.4	60-135
CHLOROFORM	10.00	10.2	102	65-135
CHLOROMETHANE	10.00	8.61	86.1	40-125
CIS-1,2-DICHLOROETHENE	10.00	10.1	101	70-125
CIS-1,3-DICHLOROPROPENE	10.00	9.78	97.8	70-130
DIBROMOCHLOROMETHANE	10.00	9.68	96.8	60-135
ETHYLBENZENE	10.00	10.4	104	75-125
METHYLENE CHLORIDE	10.00	9.33	93.3	55-140
STYRENE	10.00	10.2	102	65-135
TETRACHLOROETHENE	10.00	10.3	103	45-150
TOLUENE	10.00	9.85	98.5	75-120
TRANS-1,2-DICHLOROETHENE	10.00	9.73	97.3	60-140
TRANS-1,3-DICHLOROPROPENE	10.00	9.61	96.1	55-140

Comments: _____

Primary	SPK
Quant Method :	LALLW2.M
Extraction Date :	01/16/15
Analysis Date :	01/16/15
Instrument :	Loki
Run :	0116L05
Initials :	SV

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APPL Standard LCS

Laboratory Control Spike Recovery
EPA 8260B WATER

APPL ID: **150116W-09553 LCS - 193634**
Batch ID: #86BKB-150116AL

APPL Inc.
908 North Temperance Avenue
Clovis, CA 93611

Compound Name	Spike Level ug/L	SPK Result ug/L	SPK % Recovery	Recovery Limits
TRICHLOROETHENE	10.00	9.27	92.7	70-125
VINYL CHLORIDE	10.00	9.06	90.6	50-145
XYLENES (TOTAL)	30.0	31.4	105	75-130
SURROGATE: 1,2-DICHLOROETHANE-	23.4	22.9	97.8	70-120
SURROGATE: 4-BROMOFLUOROBENZ	24.7	24.3	98.5	75-120
SURROGATE: DIBROMOFLUOROMETH	23.4	23.3	99.6	85-115
SURROGATE: TOLUENE-D8 (S)	24.7	24.5	99.0	85-120

Comments: _____

Primary	SPK
Quant Method :	LALLW2.M
Extraction Date :	01/16/15
Analysis Date :	01/16/15
Instrument :	Loki
Run :	0116L05
Initials :	SV

Printed: 01/26/15 1:51:10 PM
APPL Standard LCS

Matrix Spike Recoveries

EPA 8260B SOIL

APPL ID: **150121S-09552 MS - 193773**
Batch ID: #86BKB-150122AL
Sample ID: AZ09552
Client ID: EKB100008

APPL Inc.
908 North Temperance Avenue
Clovis, CA 93611

Compound Name	SPK Lvl mg/Kg	DUP Lvl mg/Kg	Matrix Result mg/Kg	SPK Result mg/Kg	DUP Result mg/Kg	SPK % Recovery	DUP % Recovery	Recovery Limits	RPD %	RPD Limits
(Solid Concentrations and Limits have been adjusted to reflect 34.6 Percent Moisture.)										
1,1,1-TRICHLOROETHANE	0.0627	0.0581	ND	0.0673	0.062	107	107	70-135	0	30
1,1,2,2-TETRACHLOROETHANE	0.0627	0.0581	ND	0.0477	0.046	76.1	79.2	55-130	4	30
1,1,2-TRICHLOROETHANE	0.0627	0.0581	ND	0.0553	0.0498	88.2	85.7	60-125	2.9	30
1,1-DICHLOROETHANE	0.0627	0.0581	ND	0.060	0.0546	95.7	94.0	75-125	1.8	30
1,1-DICHLOROETHENE	0.0627	0.0581	ND	0.0665	0.0601	106	103	65-135	2.9	30
1,2,3-TRICHLOROPROPANE	0.0627	0.0581	ND	0.0522	0.0493	83.3	84.9	65-130	1.9	30
1,2-DIBROMOETHANE	0.0627	0.0581	ND	0.0555	0.0506	88.5	87.1	70-125	1.6	30
1,2-DICHLOROETHANE	0.0627	0.0581	ND	0.0553	0.049	88.2	84.3	70-135	4.5	30
1,2-DICHLOROPROPANE	0.0627	0.0581	ND	0.0567	0.0509	90.4	87.6	70-120	3.1	30
2-BUTANONE	0.0627	0.0581	0.0055	0.0488	0.0497	69.1	76.1	30-160	9.6	30
4-METHYL-2-PENTANONE	0.0627	0.0581	ND	0.0439	0.0443	70.0	76.2	45-145	8.5	30
ACETONE	0.0627	0.0581	0.016	0.0739	0.0711	92.3	94.8	20-160	2.7	30
BENZENE	0.0627	0.0581	ND	0.0634	0.0576	101	99.1	75-125	1.9	30
BROMODICHLOROMETHANE	0.0627	0.0581	ND	0.0521	0.0484	83.1	83.3	70-130	0.24	30
BROMOFORM	0.0627	0.0581	ND	0.0451	0.0451	71.9	77.6	55-135	7.6	30
BROMOMETHANE	0.0627	0.0581	ND	0.0452	0.0512	72.1	88.1	30-160	20	30
CARBON TETRACHLORIDE	0.0627	0.0581	ND	0.0524	0.0586	83.6	101	65-135	18.9	30
CHLOROBENZENE	0.0627	0.0581	ND	0.0573	0.0527	91.4	90.7	75-125	0.77	30
CHLOROETHANE	0.0627	0.0581	ND	0.0504	0.0563	80.4	96.9	40-155	18.6	30
CHLOROFORM	0.0627	0.0581	ND	0.0594	0.0522	94.7	89.8	70-125	5.3	30
CHLOROMETHANE	0.0627	0.0581	ND	0.0436	0.0516	69.5	88.8	50-130	24.4	30
CIS-1,2-DICHLOROETHYLENE	0.0627	0.0581	0.00038	0.0621	0.0561	98.4	95.9	65-125	2.6	30
CIS-1,3-DICHLOROPROPENE	0.0627	0.0581	ND	0.0463	0.0443	73.8	76.2	70-125	3.2	30
DIBROMOCHLOROMETHANE	0.0627	0.0581	ND	0.0499	0.0478	79.6	82.3	65-130	3.3	30

= Recovery is outside QC limits.

Comments:

Primary	SPK	DUP
Quant Method :	LALLS.M	LALLS.M
Extraction Date :	01/21/15	01/21/15
Analysis Date :	01/21/15	01/21/15
Instrument :	Loki	Loki
Run :	0121L28	0121L29
Initials :	SV	

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APPL MSD SCII

Matrix Spike Recoveries

EPA 8260B SOIL

APPL ID: **150121S-09552 MS - 193773**
Batch ID: #86BKB-150122AL
Sample ID: AZ09552
Client ID: EKB100008

APPL Inc.
908 North Temperance Avenue
Clovis, CA 93611

Compound Name	SPK Lvl mg/Kg	DUP Lvl mg/Kg	Matrix Result mg/Kg	SPK Result mg/Kg	DUP Result mg/Kg	SPK % Recovery	DUP % Recovery	Recovery Limits	RPD %	RPD Limits
ETHYLBENZENE	0.0627	0.0581	ND	0.0614	0.0577	97.9	99.3	75-125	1.4	30
METHYLENE CHLORIDE	0.0627	0.0581	ND	0.050	0.0439	79.7	75.6	55-140	5.3	30
STYRENE	0.0627	0.0581	ND	0.0464	0.0449	74.0 #	77.3	75-125	4.4	30
TETRACHLOROETHENE	0.0627	0.0581	ND	0.0737	0.0634	118	109	65-140	7.9	30
TOLUENE	0.0627	0.0581	0.0026	0.0631	0.0582	96.5	95.7	70-125	0.83	30
TRANS-1,2-DICHLOROETHYLENE	0.0627	0.0581	ND	0.0647	0.0581	103	100	65-135	3	30
TRANS-1,3-DICHLOROPROPENE	0.0627	0.0581	ND	0.0459	0.043	73.2	74.0	65-125	1.1	30
TRICHLOROETHYLENE	0.0627	0.0581	ND	0.0655	0.0608	104	105	75-125	0.96	30
VINYL CHLORIDE	0.0627	0.0581	ND	0.0594	0.0674	94.7	116	60-125	20.2	30
XYLENES (TOTAL)	0.191	0.176	0.0021	0.178	0.166	92.1	93.1	75-125	1.1	30
SURROGATE: 1,2-DICHLOROETHA	0.04807	0.04807	NA	0.0485	0.0475	101	98.8	54-154		
SURROGATE: 4-BROMOFLUOROBE	0.05454	0.05454	NA	0.0531	0.0524	97.4	96.1	85-120		
SURROGATE: TOLUENE-D8 (S)	0.06118	0.06118	NA	0.0589	0.0595	96.3	97.3	85-115		

= Recovery is outside QC limits.

Comments:

Primary	SPK	DUP
Quant Method :	LALLS.M	LALLS.M
Extraction Date :	01/21/15	01/21/15
Analysis Date :	01/21/15	01/21/15
Instrument :	Loki	Loki
Run :	0121L28	0121L29
Initials :	SV	

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APPL MSD SCII

EPA 8260B

Form 4

Blank Summary

Lab Name: APPL, Inc.
Case No: 75351
Matrix: SOIL
Blank ID: 150121AL-BLK

SDG No: 75351
Date Analyzed: 01/21/15
Instrument: Loki
Time Analyzed: 1243

APPL ID.	Client Sample No.	File ID.	Date Analyzed
150121AL-LCS	Lab Control Spike	0121L06	01/21/15 1117
150121AL-BLK	Blank	0121L10	01/21/15 1243
AZ09545	EKB100001	0121L20	01/21/15 1618
AZ09546	EKB100002	0121L21	01/21/15 1640
AZ09547	EKB100003	0121L22	01/21/15 1701
AZ09548	EKB100004	0121L23	01/21/15 1723
AZ09550	EKB100006	0121L25	01/21/15 1806
AZ09551	EKB100007	0121L26	01/21/15 1827

Comments: Batch: #86BKB-150121AL

Printed: 01/26/15 1:46:42 PM
Form 4, Blank Summary

EPA 8260B

Form 4

Blank Summary

Lab Name: APPL, Inc.
Case No: 75351
Matrix: SOIL
Blank ID: 150122AL-BLK

SDG No: 75351
Date Analyzed: 01/22/15
Instrument: Loki
Time Analyzed: 1032

APPL ID.	Client Sample No.	File ID.	Date Analyzed
150122AL-MS	Matrix Spike	0121L28	01/21/15 1910
150122AL-MSD	Matrix SpikeD	0121L29	01/21/15 1932
150122AL-LCS	Lab Control Spike	0122L04	01/22/15 0906
150122AL-BLK	Blank	0122L08	01/22/15 1032
AZ09549	EKB100005	0122L10	01/22/15 1116
AZ09552	EKB100008	0122L13	01/22/15 1220

Comments: Batch: #86BKB-150122AL

Printed: 01/26/15 1:46:42 PM
Form 4, Blank Summary

EPA 8260B-ME

Form 4

Blank Summary

Lab Name: APPL, Inc.
Case No: 75351
Matrix: SOIL
Blank ID: 150122AT-BLK

SDG No: 75351
Date Analyzed: 01/22/15
Instrument: Thor
Time Analyzed: 1525

APPL ID.	Client Sample No.	File ID.	Date Analyzed
150122AT-LCS	Lab Control Spike	0122T13	01/22/15 1430
150122AT-BLK	Blank	0122T15	01/22/15 1525
AZ09551	EKB100007	0122T27	01/22/15 2058

Comments: Batch: #86BKB-150122AT

EPA 8260B

Form 4

Blank Summary

Lab Name: APPL, Inc.
Case No: 75351
Matrix: WATER
Blank ID: 150116AL-BLK

SDG No: 75351
Date Analyzed: 01/16/15
Instrument: Loki
Time Analyzed: 1343

APPL ID.	Client Sample No.	File ID.	Date Analyzed
150116AL-LCS	Lab Control Spike	0116L05	01/16/15 1027
150116AL-BLK	Blank	0116L12	01/16/15 1343
AZ09555	TRIP BLANK-01	0116L13	01/16/15 1411
AZ09553	EKB100009	0116L20	01/16/15 1727
AZ09554	EKB100010	0116L21	01/16/15 1755

Comments: Batch: #86BKB-150116AL

Printed: 01/26/15 1:46:42 PM
Form 4, Blank Summary

Form 5
Tune Summary

Lab Name: APPL Inc.
Case No: 75351
Matrix: Water
ID: 25ug/mL BFB Std 01-09-15

SDG No: 75351
Date Analyzed: 01/13/15
Instrument: Loki
Time Analyzed: 12:31

	Client Sample No.	APPL ID.	File ID.	Date Analyzed
1		0.3ug/L Vol Std 01-1	0113L08.D	01/13/15 15:46
2		0.5ug/L Vol Std 01-1	0113L09.D	01/13/15 16:14
3		1.0ug/L Vol Std 01-1	0113L10.D	01/13/15 16:42
4		5.0ug/L Vol Std 01-1	0113L11.D	01/13/15 17:10
5		10ug/L Vol Std 01-13	0113L12.D	01/13/15 17:38
6		20ug/L Vol Std 01-13	0113L13.D	01/13/15 18:06
7		40ug/L Vol Std 01-13	0113L14.D	01/13/15 18:34
8		100ug/L Vol Std 01-1	0113L15.D	01/13/15 19:02
9		10ug/L Std 1-13-15(S	0113L20.D	01/13/15 21:22
10				
11				
12				
13				
14				
15				
16				
17				
18				
19				
20				
21				
22				

m/e		
50	15 - 40% of mass 95	15.0
75	30 - 60% of mass 95	45.3
95	100 - 100% of mass 95	100.0
96	5 - 9% of mass 95	6.6
173	0 - 2.09% of mass 174	0.5
174	50 - 100% of mass 95	91.4
175	5 - 9% of mass 174	7.3
176	94.9 - 101% of mass 174	97.2
177	5 - 9% of mass 176	6.4

Form 5
Tune Summary

Lab Name: APPL Inc.
Case No: 75351
Matrix: Soil
ID: 25ug/mL BFB Std 01-09-15

SDG No: 75351
Date Analyzed: 01/19/15
Instrument: Loki
Time Analyzed: 8:45

	Client Sample No.	APPL ID.	File ID.	Date Analyzed
1		2.0ug/kg Vol Std 01-	0119L07.D	01/19/15 10:12
2		5.0ug/kg Vol Std 01-	0119L08.D	01/19/15 10:33
3		10ug/kg Vol Std 01-1	0119L09.D	01/19/15 10:55
4		20ug/kg Vol Std 01-1	0119L10.D	01/19/15 11:16
5		50ug/kg Vol Std 01-1	0119L11.D	01/19/15 11:38
6		100ug/kg Vol Std 01-	0119L12.D	01/19/15 11:59
7		150ug/kg Vol Std 01-	0119L13.D	01/19/15 12:21
8		200ug/kg Vol Std 01-	0119L14.D	01/19/15 12:42
9		50ug/kg Std 1-19-15(	0119L19.D	01/19/15 14:30
10				
11				
12				
13				
14				
15				
16				
17				
18				
19				
20				
21				
22				

m/e		
50	15 - 40% of mass 95	15.7
75	30 - 60% of mass 95	46.0
95	100 - 100% of mass 95	100.0
96	5 - 9% of mass 95	6.6
173	0 - 2% of mass 174	0.5
174	50 - 100% of mass 95	89.9
175	5 - 9% of mass 174	6.9
176	95 - 100% of mass 174	97.0
177	5 - 9% of mass 176	6.6

Form 5
Tune Summary

Lab Name: APPL Inc.
Case No: 75351
Matrix: Water
ID: 5ng- BFB STD 1/9/15

SDG No: 75351
Date Analyzed: 01/09/15
Instrument: Thor
Time Analyzed: 10:31

	Client Sample No.	APPL ID.	File ID.	Date Analyzed
1		0.3ug/L VOC STD 1/9/	0109T08.D	01/09/15 12:44
2		0.5ug/L VOC STD 1/9/	0109T09.D	01/09/15 13:12
3		1.0ug/L VOC STD 1/9/	0109T10.D	01/09/15 13:39
4		5.0ug/L VOC STD 1/9/	0109T11.D	01/09/15 14:07
5		10ug/L VOC STD 1/9/1	0109T12.D	01/09/15 14:35
6		20ug/L VOC STD 1/9/1	0109T13.D	01/09/15 15:03
7		40ug/L VOC STD 1/9/1	0109T14.D	01/09/15 15:31
8		100ug/L VOC STD 1/9/	0109T15.D	01/09/15 15:59
9	Lab Control Spike	150109A LCS-1WT (SS)	0109T20.D	01/09/15 18:18
10				
11				
12				
13				
14				
15				
16				
17				
18				
19				
20				
21				
22				

m/e		
50	15 - 40% of mass 95	17.9
75	30 - 60% of mass 95	47.1
95	100 - 100% of mass 95	100.0
96	5 - 9% of mass 95	6.5
173	0 - 2% of mass 174	0.0
174	50 - 100.04% of mass 95	90.0
175	5 - 9% of mass 174	7.8
176	94.95 - 101% of mass 174	97.1
177	5 - 9% of mass 176	6.8

Form 5
Tune Summary

Lab Name: APPL Inc.
Case No: 75351
Matrix: Water
ID: 25ug/mL BFB Std 01-09-15

SDG No: 75351
Date Analyzed: 01/16/15
Instrument: Loki
Time Analyzed: 8:39

	Client Sample No.	APPL ID.	File ID.	Date Analyzed
1		10ug/L Vol Std 01-15	0116L04.D	01/16/15 9:59
2	Lab Control Spike	150116A LCS-1WL	0116L05.D	01/16/15 10:27
3	Blank	150116A BLK-1WL	0116L12.D	01/16/15 13:43
4	TRIP BLANK-01	AZ09555W01	0116L13.D	01/16/15 14:11
5	EKB100009	AZ09553W02	0116L20.D	01/16/15 17:27
6	EKB100010	AZ09554W02	0116L21.D	01/16/15 17:55
7				
8				
9				
10				
11				
12				
13				
14				
15				
16				
17				
18				
19				
20				
21				
22				

m/e		
50	15 - 40% of mass 95	15.9
75	30 - 60% of mass 95	46.5
95	100 - 100% of mass 95	100.0
96	5 - 9% of mass 95	6.5
173	0 - 2.09% of mass 174	0.8
174	50 - 100% of mass 95	87.9
175	5 - 9% of mass 174	7.3
176	94.9 - 101% of mass 174	96.2
177	5 - 9% of mass 176	6.9

Form 5
Tune Summary

Lab Name: APPL Inc.
Case No: 75351
Matrix: Soil
ID: 25ug/mL BFB Std 01-09-15

SDG No: 75351
Date Analyzed: 01/21/15
Instrument: Loki
Time Analyzed: 9:28

	Client Sample No.	APPL ID.	File ID.	Date Analyzed
1		50ug/kg Vol Std 01-2	0121L05.D	01/21/15 10:56
2	Lab Control Spike	150121A LCS-1SL	0121L06.D	01/21/15 11:17
3	Blank	150121A BLK-1SL	0121L10.D	01/21/15 12:43
4	EKB100001	AZ09545S01 6.323	0121L20.D	01/21/15 16:18
5	EKB100002	AZ09546S01 6.451	0121L21.D	01/21/15 16:40
6	EKB100003	AZ09547S01 6.871	0121L22.D	01/21/15 17:01
7	EKB100004	AZ09548S01 6.350	0121L23.D	01/21/15 17:23
8	EKB100006	AZ09550S01 7.370	0121L25.D	01/21/15 18:06
9	EKB100007	AZ09551S01 6.667	0121L26.D	01/21/15 18:27
10		AZ09552S02 MS-1SL 6.	0121L28.D	01/21/15 19:10
11		AZ09552S03 MSD-1SL 6	0121L29.D	01/21/15 19:32
12				
13				
14				
15				
16				
17				
18				
19				
20				
21				
22				

m/e		
50	15 - 40% of mass 95	15.1
75	30 - 60% of mass 95	45.7
95	100 - 100% of mass 95	100.0
96	5 - 9% of mass 95	6.6
173	0 - 2% of mass 174	0.0
174	50 - 100% of mass 95	94.4
175	5 - 9% of mass 174	6.8
176	95 - 100% of mass 174	98.1
177	5 - 9% of mass 176	6.5

Form 5
Tune Summary

Lab Name: APPL Inc.
Case No: 75351
Matrix: Soil
ID: 25ug/mL BFB Std 01-09-15

SDG No: 75351
Date Analyzed: 01/22/15
Instrument: Loki
Time Analyzed: 7:59

	Client Sample No.	APPL ID.	File ID.	Date Analyzed
1		50ug/kg Vol Std 01-2	0122L03.D	01/22/15 8:45
2	Lab Control Spike	150122A LCS-1SL	0122L04.D	01/22/15 9:06
3	Blank	150122A BLK-1SL	0122L08.D	01/22/15 10:32
4	EKB100005	AZ09549S02 7.398g	0122L10.D	01/22/15 11:16
5	EKB100008	AZ09552S04 6.271	0122L13.D	01/22/15 12:20
6				
7				
8				
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11				
12				
13				
14				
15				
16				
17				
18				
19				
20				
21				
22				

m/e		
50	15 - 40% of mass 95	15.1
75	30 - 60% of mass 95	45.3
95	100 - 100% of mass 95	100.0
96	5 - 9% of mass 95	6.8
173	0 - 2% of mass 174	0.2
174	50 - 100% of mass 95	90.0
175	5 - 9% of mass 174	7.3
176	95 - 100% of mass 174	98.4
177	5 - 9% of mass 176	6.6

Form 5
Tune Summary

Lab Name: APPL Inc.
Case No: 75351
Matrix: Water
ID: 5ng- BFB STD 01-09-15

SDG No: 75351
Date Analyzed: 01/22/15
Instrument: Thor
Time Analyzed: 11:06

	Client Sample No.	APPL ID.	File ID.	Date Analyzed
1		10ug/L Vol Std 01-22	0122T09.D	01/22/15 12:01
2	Lab Control Spike	150122A LCS-1WT MeOH	0122T13.D	01/22/15 14:30
3	Blank	150122A BLK-1WT MeOH	0122T15.D	01/22/15 15:25
4	EKB100007	AZ09551S03 6.895 DF5	0122T27.D	01/22/15 20:58
5				
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14				
15				
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17				
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19				
20				
21				
22				

m/e		
50	15 - 40% of mass 95	16.6
75	30 - 60% of mass 95	46.5
95	100 - 100% of mass 95	100.0
96	5 - 9% of mass 95	6.6
173	0 - 2% of mass 174	0.0
174	50 - 100.04% of mass 95	93.3
175	5 - 9% of mass 174	7.3
176	94.95 - 101% of mass 174	95.6
177	5 - 9% of mass 176	6.3

8A
INTERNAL STANDARD AREA AND RT SUMMARY

Lab Name: APPL Inc.
Contract: Review
Lab Code:
SDG No.: 75351
Lab File ID (Standard): 0113L12.D
Date Analyzed: 01/13/15
Instrument ID: Loki
Time Analyzed: 17:38
GC Column:
ID:
Heated Purge: (Y/N)

		Fluorobenzene (IS)		Chlorobenzene-D5 (IS)		1,4-Dichlorobenzene-D (IS)	
		AREA #	RT #	AREA #	RT #	AREA #	RT #
	12 HOUR STD	1335350	5.85	1319270	9.09	758912	11.42
	UPPER LIMIT	2670700	6.35	2638540	9.59	1517824	11.92
	LOWER LIMIT	667675	5.35	659635	8.59	379456	10.92
	SAMPLE NO.						
01	0.3ug/L Vol Std 01-13-15	1361670	5.85	1252860	9.09	684224	11.42
02	0.5ug/L Vol Std 01-13-15	1395330	5.85	1299970	9.09	704128	11.42
03	1.0ug/L Vol Std 01-13-15	1362710	5.85	1298830	9.09	714015	11.42
04	5.0ug/L Vol Std 01-13-15	1336400	5.85	1312260	9.09	734592	11.42
05	10ug/L Vol Std 01-13-15	1335350	5.85	1319270	9.09	758912	11.42
06	20ug/L Vol Std 01-13-15	1368710	5.85	1312770	9.09	763264	11.42
07	40ug/L Vol Std 01-13-15	1388830	5.85	1377280	9.09	812224	11.42
08	100ug/L Vol Std 01-13-1	1325300	5.85	1340420	9.09	845888	11.42
09	10ug/L Std 1-13-15(SS)	1360980	5.85	1297810	9.09	738624	11.42
10	10ug/L Vol Std 01-15-15	1217540	5.85	1163260	9.09	657536	11.41
11	150116A LCS-1WL	1239040	5.85	1143810	9.09	646848	11.41
12	150116A BLK-1WL	1206270	5.85	1112580	9.09	620864	11.41
13	AZ09555W01	1184770	5.85	1078780	9.09	599232	11.41
14	AZ09553W02	1171460	5.85	1094660	9.09	594112	11.41
15	AZ09554W02	1210370	5.85	1118720	9.09	623360	11.41
16							
17							
18							
19							
20							
21							
22							

AREA UPPER LIMIT = +100% of internal standard area.
AREA LOWER LIMIT = -50% of internal standard area.
RT UPPER LIMIT = +0.50 minutes of internal standard RT
RT LOWER LIMIT = -0.50 minutes of internal standard RT

Column used to flag values outside QC limits with an asterisk.
* Values outside of QC limits.

8A
INTERNAL STANDARD AREA AND RT SUMMARY

Lab Name: APPL Inc.
Contract: Review
Lab Code:
SDG No.: 75351
Lab File ID (Standard): 0119L11.D
Date Analyzed: 01/19/15
Instrument ID: Loki
Time Analyzed: 11:38
GC Column: ID:
Heated Purge: (Y/N)

		Fluorobenzene (IS)		Chlorobenzene-D5 (IS)		1,4-Dichlorobenzene-D (IS)	
		AREA #	RT #	AREA #	RT #	AREA #	RT #
	12 HOUR STD	950784	5.86	884160	9.09	481536	11.41
	UPPER LIMIT	1901568	6.36	1768320	9.59	963072	11.91
	LOWER LIMIT	475392	5.36	442080	8.59	240768	10.91
	SAMPLE NO.						
01	2.0ug/kg Vol Std 01-19-1	1014660	5.86	926976	9.09	501888	11.41
02	5.0ug/kg Vol Std 01-19-1	1026180	5.86	944576	9.09	501504	11.41
03	10ug/kg Vol Std 01-19-1	837504	5.86	760192	9.09	390976	11.41
04	20ug/kg Vol Std 01-19-1	919616	5.86	820608	9.09	450240	11.42
05	50ug/kg Vol Std 01-19-1	950784	5.86	884160	9.09	481536	11.41
06	100ug/kg Vol Std 01-19-	942464	5.86	893632	9.09	500864	11.41
07	150ug/kg Vol Std 01-19-	955339	5.86	898496	9.09	504064	11.42
08	200ug/kg Vol Std 01-19-	953742	5.86	955072	9.09	539200	11.42
09	50ug/kg Std 1-19-15(SS	928704	5.86	851520	9.09	483456	11.41
10	50ug/kg Vol Std 01-21-1	779904	5.86	724224	9.09	408832	11.41
11	150121A LCS-1SL	760768	5.86	708864	9.09	407552	11.41
12	150121A BLK-1SL	716160	5.86	662976	9.09	358592	11.41
13	AZ09546S01 6.451	763392	5.86	690304	9.09	382592	11.41
14	AZ09547S01 6.871	726592	5.86	679872	9.09	372416	11.41
15	AZ09548S01 6.350	797952	5.86	730944	9.09	409408	11.42
16	AZ09550S01 7.370	785216	5.86	734976	9.09	408704	11.41
17	AZ09551S01 6.667	770688	5.86	725184	9.09	383744	11.41
18	AZ09552S02 MS-1SL 6.	748864	5.86	692672	9.09	383104	11.42
19	AZ09552S03 MSD-1SL	728384	5.86	670656	9.09	368960	11.41
20	50ug/kg Vol Std 01-22-1	734016	5.86	663488	9.09	375232	11.41
21	150122A LCS-1SL	746112	5.86	706688	9.09	385216	11.41
22	150122A BLK-1SL	660736	5.86	624960	9.09	331648	11.42

AREA UPPER LIMIT = +100% of internal standard area.
AREA LOWER LIMIT = -50% of internal standard area.
RT UPPER LIMIT = +0.50 minutes of internal standard RT
RT LOWER LIMIT = -0.50 minutes of internal standard RT

Column used to flag values outside QC limits with an asterisk.
* Values outside of QC limits.

INTERNAL STANDARD AREA AND RT SUMMARY

Lab Name: APPL Inc.

Contract: Review

Lab Code:

SDG No.: 75351

Lab File ID (Standard): 0119L11.D

Date Analyzed: 01/19/15

Instrument ID: Loki

Time Analyzed: 11:38

GC Column:

ID:

Heated Purge: (Y/N)

		Fluorobenzene (IS)		Chlorobenzene-D5 (IS)		1,4-Dichlorobenzene-D (IS)	
		AREA #	RT #	AREA #	RT #	AREA #	RT #
	12 HOUR STD	950784	5.8562	884160	9.0908	481536	11.412
	UPPER LIMIT	1901568	6.3562	1768320	9.5908	963072	11.912
	LOWER LIMIT	475392	5.3562	442080	8.5908	240768	10.912
	SAMPLE NO.						
23	AZ09549S02 7.398g	509952	5.86	463872	9.09	248192	11.41
24	AZ09552S04 6.271	692352	5.86	604096	9.09	316864	11.41
25							
26							
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AREA UPPER LIMIT = +100% of internal standard area.
AREA LOWER LIMIT = -50% of internal standard area.
RT UPPER LIMIT = +0.50 minutes of internal standard RT
RT LOWER LIMIT = -0.50 minutes of internal standard RT

Column used to flag values outside QC limits with an asterisk.
* Values outside of QC limits.

8A
INTERNAL STANDARD AREA AND RT SUMMARY

Lab Name: APPL Inc.
Contract: Review
Lab Code:
SDG No.: 75351
Lab File ID (Standard): 0109T12.D
Date Analyzed: 9 Jan 15 14:35
Instrument ID: Thor
Time Analyzed: 9 Jan 15 14:35
GC Column:
ID:
Heated Purge: (Y/N)

		Fluorobenzene (IS)		Chlorobenzene-D5 (IS)		1,4-Dichlorobenzene-D (IS)	
		AREA #	RT #	AREA #	RT #	AREA #	RT #
	12 HOUR STD	865600	6.02	775552	9.22	427904	11.54
	UPPER LIMIT	1731200	6.52	1551104	9.72	855808	12.04
	LOWER LIMIT	432800	5.52	387776	8.72	213952	11.04
	SAMPLE NO.						
01	0.3ug/L VOC STD 1/9/15	801728	6.02	703424	9.22	367296	11.54
02	0.5ug/L VOC STD 1/9/15	832256	6.02	760576	9.22	379456	11.54
03	1.0ug/L VOC STD 1/9/15	822336	6.02	736960	9.22	383232	11.54
04	5.0ug/L VOC STD 1/9/15	849792	6.02	758272	9.22	406144	11.54
05	10ug/L VOC STD 1/9/15	865600	6.02	775552	9.22	427904	11.54
06	20ug/L VOC STD 1/9/15	869888	6.02	760832	9.22	437440	11.54
07	40ug/L VOC STD 1/9/15	909888	6.01	815488	9.22	434624	11.54
08	100ug/L VOC STD 1/9/1	889984	6.01	789056	9.22	467136	11.54
09	150109A LCS-1WT (SS	868288	6.02	763072	9.22	412672	11.54
10	10ug/L Vol Std 01-22-15	929216	6.02	813632	9.22	437824	11.54
11	150122A LCS-1WT MeC	930240	6.01	810880	9.22	425728	11.54
12	150122A BLK-1WT MeC	878400	6.02	762496	9.22	405632	11.54
13	AZ09551S03 6.895 DF5	881472	6.01	805952	9.22	445568	11.54
14							
15							
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AREA UPPER LIMIT = +100% of internal standard area.
AREA LOWER LIMIT = -50% of internal standard area.
RT UPPER LIMIT = +0.50 minutes of internal standard RT
RT LOWER LIMIT = -0.50 minutes of internal standard RT

Column used to flag values outside QC limits with an asterisk.
* Values outside of QC limits.

EPA METHOD 8260B
Volatile Organic Compounds
Sample Data

APPL, INC.

EPA 8260B SOIL

Element Environmental
98-030 Hekaha St., Unit 9
Aiea, HI 96701

APPL Inc.
908 North Temperance Avenue
Clovis, CA 93611

Attn: Steve Spengler
Project: MCBH UST KB-100 SI / 130034
Sample ID: EKB100001
Sample Collection Date: 01/13/15

ARF: 75351
APPL ID: AZ09545
QCG: #86BKB-150121AL-193770

Method	Analyte	Result	LOQ	LOD	DL	Units	Extraction Date	Analysis Date
(Solid Concentrations and Limits have been adjusted to reflect 29.7 Percent Moisture.)								
EPA 8260B	1,1,1-TRICHLOROETHANE	0.00280 U	0.0071	0.00280	0.00057	mg/Kg	01/21/15	01/21/15
EPA 8260B	1,1,2,2-TETRACHLOROETHANE	0.00280 U	0.0071	0.00280	0.00170	mg/Kg	01/21/15	01/21/15
EPA 8260B	1,1,2-TRICHLOROETHANE	0.00280 U	0.0071	0.00280	0.00038	mg/Kg	01/21/15	01/21/15
EPA 8260B	1,1-DICHLOROETHANE	0.00280 U	0.0071	0.00280	0.00048	mg/Kg	01/21/15	01/21/15
EPA 8260B	1,1-DICHLOROETHENE	0.00280 U	0.0071	0.00280	0.00110	mg/Kg	01/21/15	01/21/15
EPA 8260B	1,2,3-TRICHLOROPROPANE	0.00710 U	0.0280	0.00710	0.00180	mg/Kg	01/21/15	01/21/15
EPA 8260B	1,2-DIBROMOETHANE	0.00280 U	0.0071	0.00280	0.00200	mg/Kg	01/21/15	01/21/15
EPA 8260B	1,2-DICHLOROETHANE	0.00280 U	0.0071	0.00280	0.00110	mg/Kg	01/21/15	01/21/15
EPA 8260B	1,2-DICHLOROPROPANE	0.00280 U	0.0071	0.00280	0.00100	mg/Kg	01/21/15	01/21/15
EPA 8260B	2-BUTANONE	0.00430 U	0.0280	0.00430	0.00400	mg/Kg	01/21/15	01/21/15
EPA 8260B	4-METHYL-2-PENTANONE	0.00280 U	0.0280	0.00280	0.00130	mg/Kg	01/21/15	01/21/15
EPA 8260B	ACETONE	0.00710 U	0.0710	0.00710	0.00400	mg/Kg	01/21/15	01/21/15
EPA 8260B	BENZENE	0.00280 U	0.0071	0.00280	0.00090	mg/Kg	01/21/15	01/21/15
EPA 8260B	BROMODICHLOROMETHANE	0.00280 U	0.0071	0.00280	0.00098	mg/Kg	01/21/15	01/21/15
EPA 8260B	BROMOFORM	0.00280 U	0.0071	0.00280	0.00110	mg/Kg	01/21/15	01/21/15
EPA 8260B	BROMOMETHANE	0.00280 U	0.0071	0.00280	0.00230	mg/Kg	01/21/15	01/21/15
EPA 8260B	CARBON TETRACHLORIDE	0.00280 U	0.0071	0.00280	0.00110	mg/Kg	01/21/15	01/21/15
EPA 8260B	CHLOROBENZENE	0.00280 U	0.0071	0.00280	0.00070	mg/Kg	01/21/15	01/21/15
EPA 8260B	CHLOROETHANE	0.00280 U	0.0071	0.00280	0.00220	mg/Kg	01/21/15	01/21/15
EPA 8260B	CHLOROFORM	0.00280 U	0.0071	0.00280	0.00200	mg/Kg	01/21/15	01/21/15
EPA 8260B	CHLOROMETHANE	0.00710 U	0.0071	0.00710	0.00260	mg/Kg	01/21/15	01/21/15
EPA 8260B	CIS-1,2-DICHLOROETHYLENE	0.00280 U	0.0071	0.00280	0.00031	mg/Kg	01/21/15	01/21/15
EPA 8260B	CIS-1,3-DICHLOROPROPENE	0.00280 U	0.0071	0.00280	0.00130	mg/Kg	01/21/15	01/21/15
EPA 8260B	DIBROMOCHLOROMETHANE	0.00280 U	0.0071	0.00280	0.00120	mg/Kg	01/21/15	01/21/15
EPA 8260B	ETHYLBENZENE	0.0073	0.0071	0.00280	0.00140	mg/Kg	01/21/15	01/21/15
EPA 8260B	METHYLENE CHLORIDE	0.01400 U	0.0280	0.01400	0.00083	mg/Kg	01/21/15	01/21/15
EPA 8260B	STYRENE	0.00280 U	0.0071	0.00280	0.00170	mg/Kg	01/21/15	01/21/15
EPA 8260B	TETRACHLOROETHENE	0.00088 J	0.0071	0.00280	0.00077	mg/Kg	01/21/15	01/21/15
EPA 8260B	TOLUENE	0.00280 U	0.0071	0.00280	0.00180	mg/Kg	01/21/15	01/21/15
EPA 8260B	TRANS-1,2-DICHLOROETHYLENE	0.00280 U	0.0071	0.00280	0.00048	mg/Kg	01/21/15	01/21/15
EPA 8260B	TRANS-1,3-DICHLOROPROPENE	0.00280 U	0.0071	0.00280	0.00110	mg/Kg	01/21/15	01/21/15
EPA 8260B	TRICHLOROETHYLENE	0.00280 U	0.0071	0.00280	0.00130	mg/Kg	01/21/15	01/21/15
EPA 8260B	VINYL CHLORIDE	0.00280 U	0.0071	0.00280	0.00210	mg/Kg	01/21/15	01/21/15
EPA 8260B	XYLENES (TOTAL)	0.0028 J	0.0071	0.00280	0.00061	mg/Kg	01/21/15	01/21/15
EPA 8260B	SURROGATE: 1,2-DICHLOROETHANE	94.3	54-154			%	01/21/15	01/21/15

J = Estimated value.

Quant Method: LALLS.M
Run #: 0121L20
Instrument: Loki
Sequence: 150119
Dilution Factor: 1
Initials: SV

Printed: 01/26/15 1:46:46 PM
APPL-F1-SC-MCRes/MCPQL-REG MDLs

EPA 8260B SOIL

Element Environmental
98-030 Hekaha St., Unit 9
Aiea, HI 96701

APPL Inc.
908 North Temperance Avenue
Clovis, CA 93611

Attn: Steve Spengler
Project: MCBH UST KB-100 SI / 130034
Sample ID: EKB100001
Sample Collection Date: 01/13/15

ARF: 75351
APPL ID: AZ09545
QCG: #86BKB-150121AL-193770

Method	Analyte	Result	LOQ	LOD	DL	Units	Extraction Date	Analysis Date
EPA 8260B	SURROGATE: 4-BROMOFLUOROBEN	102	85-120			%	01/21/15	01/21/15
EPA 8260B	SURROGATE: TOLUENE-D8 (S)	98.5	85-115			%	01/21/15	01/21/15

J = Estimated value.

Quant Method:	LALLS.M
Run #:	0121L20
Instrument:	Loki
Sequence:	150119
Dilution Factor:	1
Initials:	SV

Printed: 01/26/15 1:46:46 PM
APPL-F1-SC-MCRes/MCPQL-REG MDLs

Quantitation Report (QT Reviewed)

Data File : M:\LOKI\DATA\150119\0121L20.D
Acq On : 21 Jan 15 16:18
Sample : AZ09545S01 6.323
Misc : 5mL w/5uL IS&S:01/14/15,10-06-14

Vial: 19
Operator: DG,SV,RS
Inst : Loki
Multiplr: 0.79

Quant Time: Jan 22 10:17 2015 Quant Results File: LALLS.RES

Quant Method : M:\LOKI\DATA\150119\LALLS.M (RTE Integrator)
Title : METHOD 8260B
Last Update : Tue Jan 20 09:48:55 2015
Response via : Initial Calibration
DataAcq Meth : 8260_BETA

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene (IS)	5.86	96	920768	50.00000 ppb	0.00
55) Chlorobenzene-D5 (IS)	9.09	117	848640	50.00000 ppb	0.00
70) 1,4-Dichlorobenzene-D (IS)	11.41	152	491136	50.00000 ppb	0.00
System Monitoring Compounds					
31) Dibromofluoromethane(S)	5.02	111	465216	56.28959 ppb	0.00
Spiked Amount 52.439			Recovery	= 107.343%	
36) 1,2-DCA-D4(S)	5.43	65	424976	45.32733 ppb	0.00
Spiked Amount 48.066			Recovery	= 94.302%	
56) Toluene-D8(S)	7.62	98	1620261	60.25237 ppb	0.00
Spiked Amount 61.175			Recovery	= 98.491%	
64) 4-Bromofluorobenzene(S)	10.27	95	627994	55.42453 ppb	0.00
Spiked Amount 54.538			Recovery	= 101.626%	

Target Compounds					Qvalue
51) Toluene	7.69	91	39360	1.01478 ppb	99
58) Tetrachloroethene	8.25	164	4749	0.61791 ppb	86
61) m&p-Xylene	9.37	91	36463	1.76073 ppb	99
62) o-Xylene	9.76	106	3763	0.22377 ppb	88
68) Ethylbenzene	9.25	91	214192	5.15090 ppb	97
71) Isopropylbenzene	10.14	105	21958	0.52252 ppb	91
76) n-Propylbenzene	10.54	91	126494	2.67382 ppb	96
77) 4-Ethyltoluene	10.66	105	66595	1.60468 ppb	95
94) Naphthalene	13.62	128	321811	7.18883 ppb	100

(#) = qualifier out of range (m) = manual integration

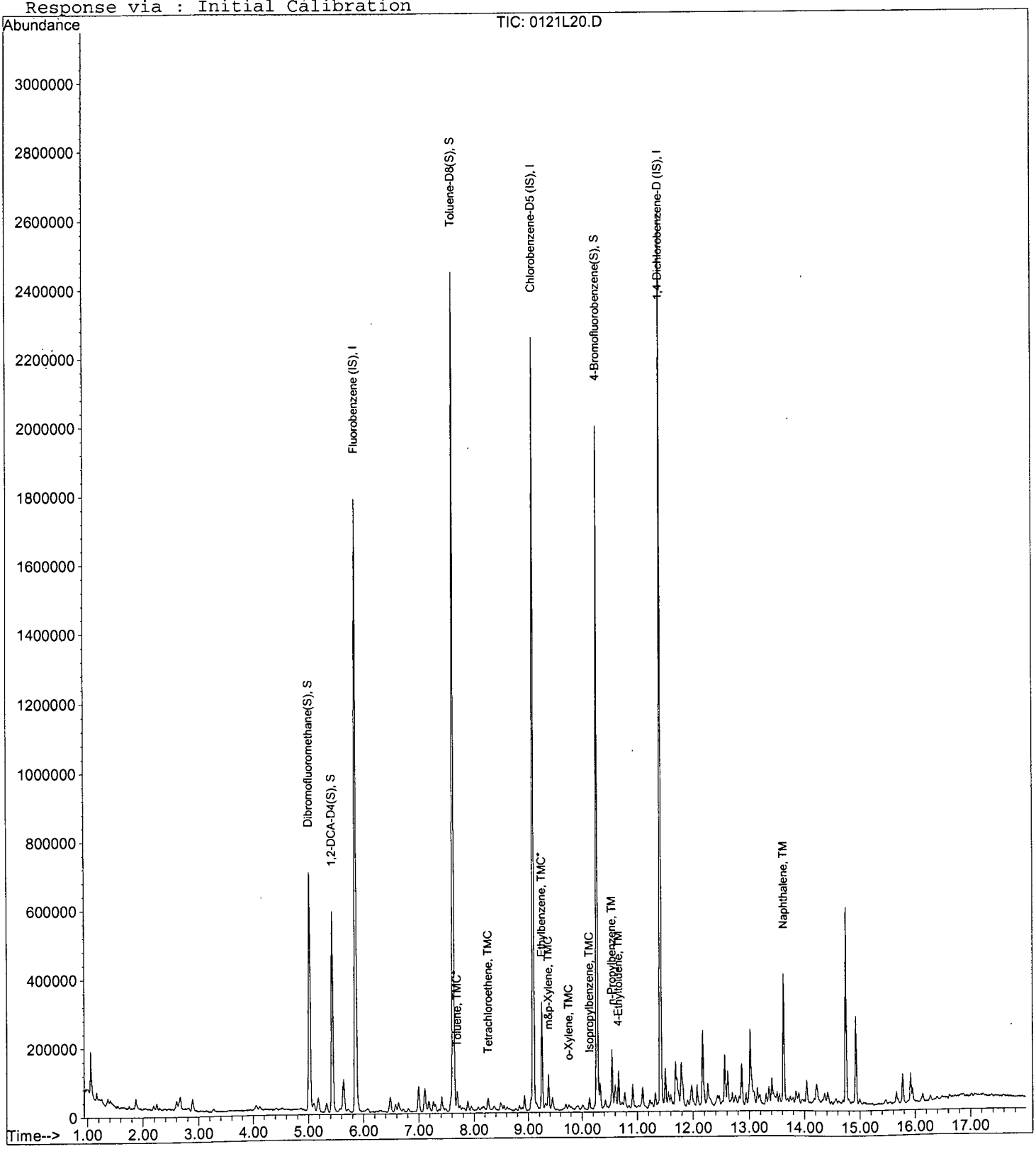
Quantitation Report

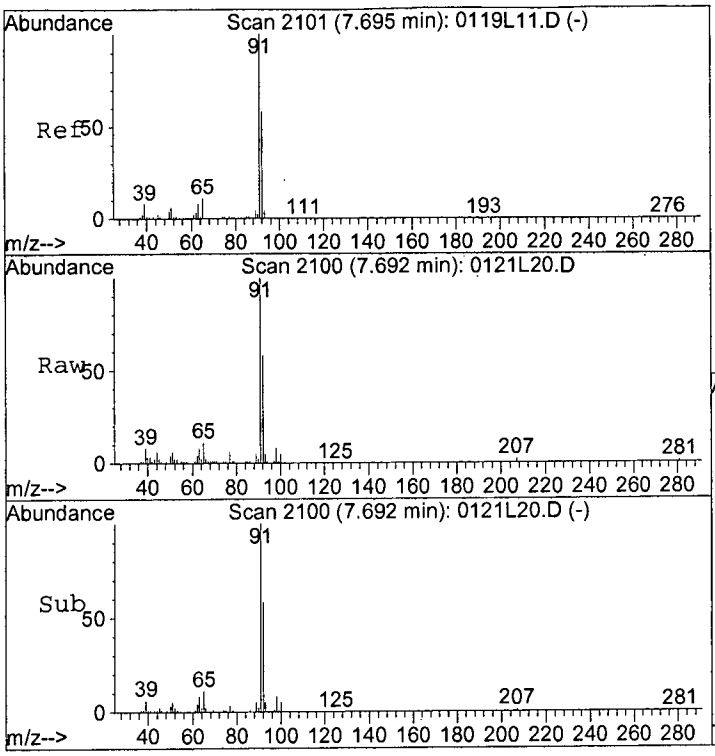
Data File : M:\LOKI\DATA\150119\0121L20.D
Acq On : 21 Jan 15 16:18
Sample : AZ09545S01 6.323
Misc : 5mL w/5uL IS&S:01/14/15,10-06-14

Vial: 19
Operator: DG,SV,RS
Inst : Loki
Multiplr: 0.79

Quant Time: Jan 22 10:17 2015 Quant Results File: LALLS.RES

Method : M:\LOKI\DATA\150119\LALLS.M (RTE Integrator)
Title : METHOD 8260B
Last Update : Tue Jan 20 09:48:55 2015
Response via : Initial Calibration

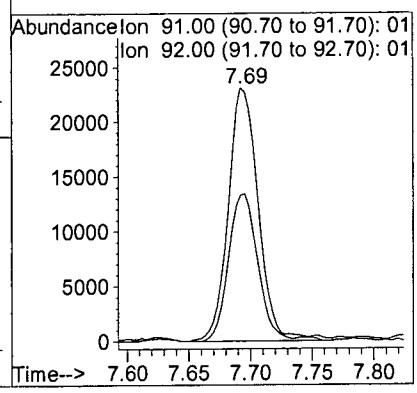


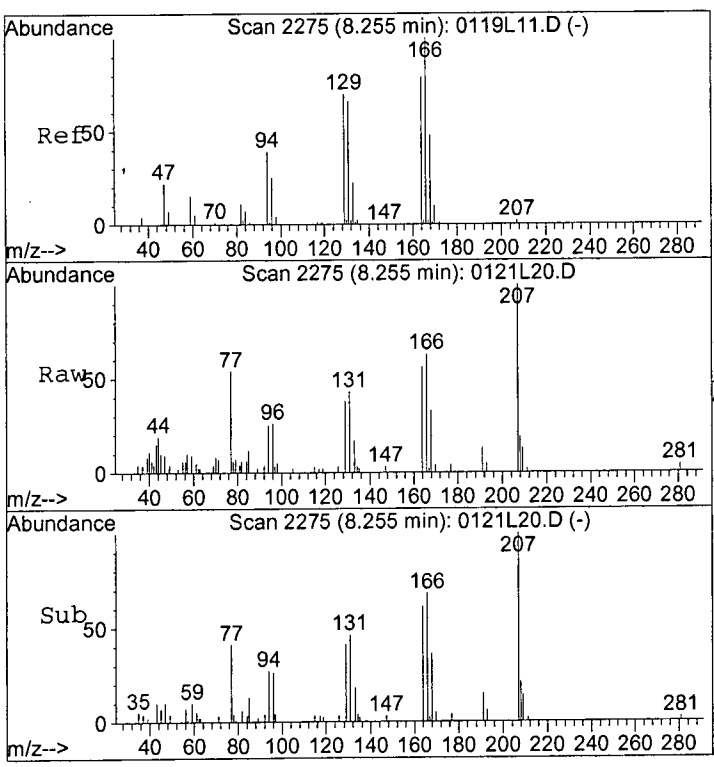


#51
Toluene
Concen: 1.01478 ppb
RT: 7.69 min Scan# 2100
Delta R.T. -0.00 min
Lab File: 0121L20.D
Acq: 21 Jan 15 16:18

Tgt Ion: 91 Resp: 39360

Ion	Ratio	Lower	Upper
91	100		
92	57.5	40.9	75.9

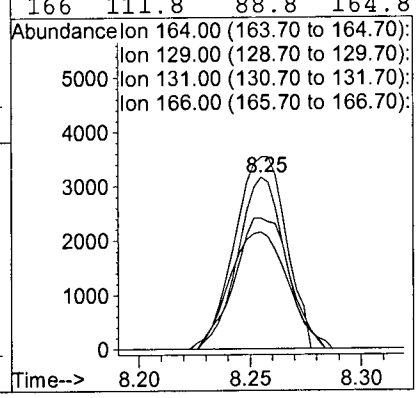


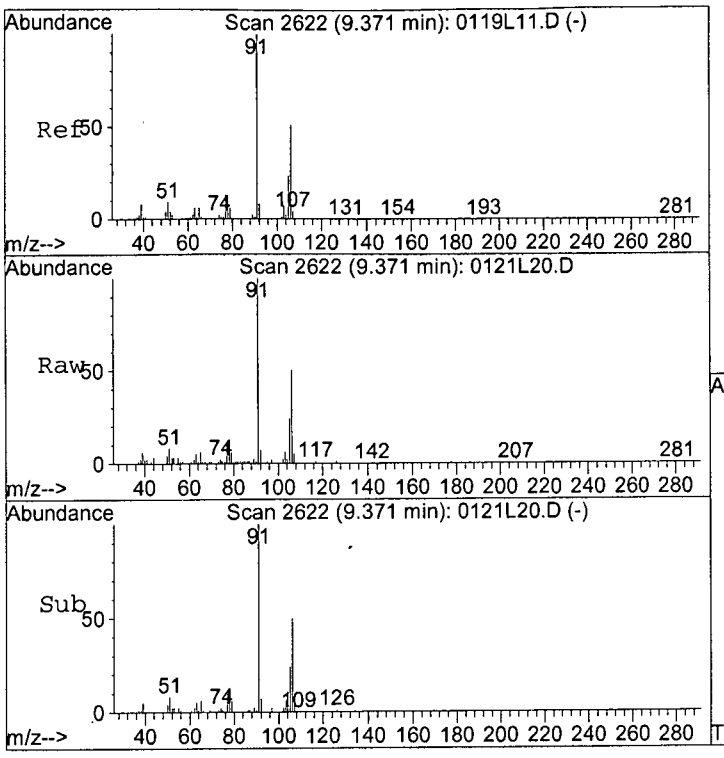


#58
Tetrachloroethene
Concen: 0.61791 ppb
RT: 8.25 min Scan# 2275
Delta R.T. 0.00 min
Lab File: 0121L20.D
Acq: 21 Jan 15 16:18

Tgt Ion:164 Resp: 4749

Ion	Ratio	Lower	Upper
164	100		
129	68.1	61.7	114.7
131	76.2	58.4	108.4
166	111.8	88.8	164.8

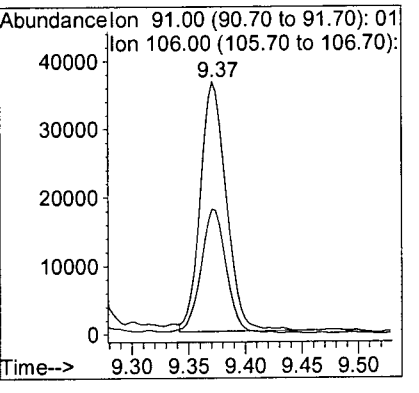


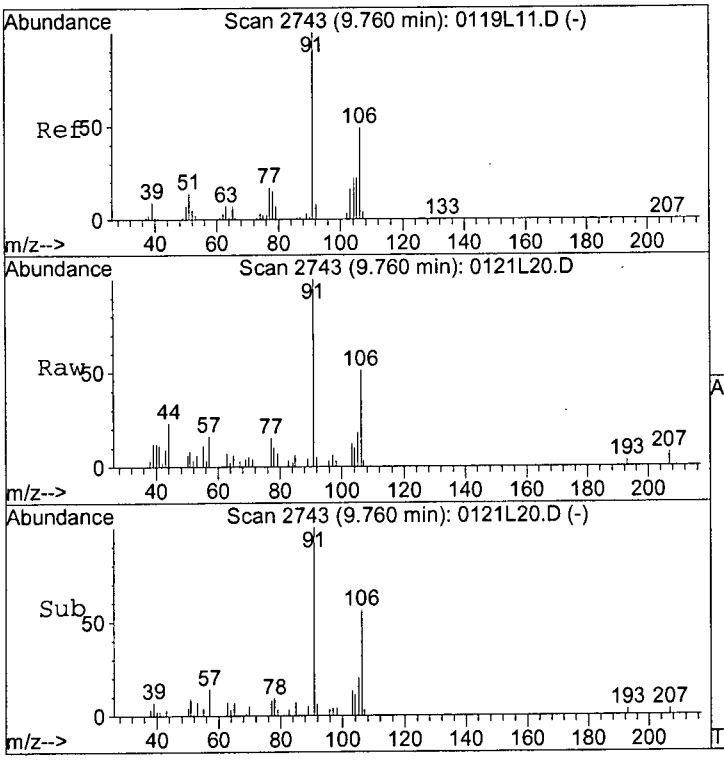


#61
m&p-Xylene
Concen: 1.76073 ppb
RT: 9.37 min Scan# 2622
Delta R.T. 0.00 min
Lab File: 0121L20.D
Acq: 21 Jan 15 16:18

Tgt Ion: 91 Resp: 36463

Ion	Ratio	Lower	Upper
91	100		
106	49.7	40.5	60.7

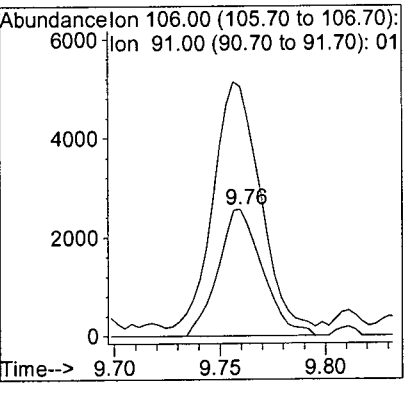


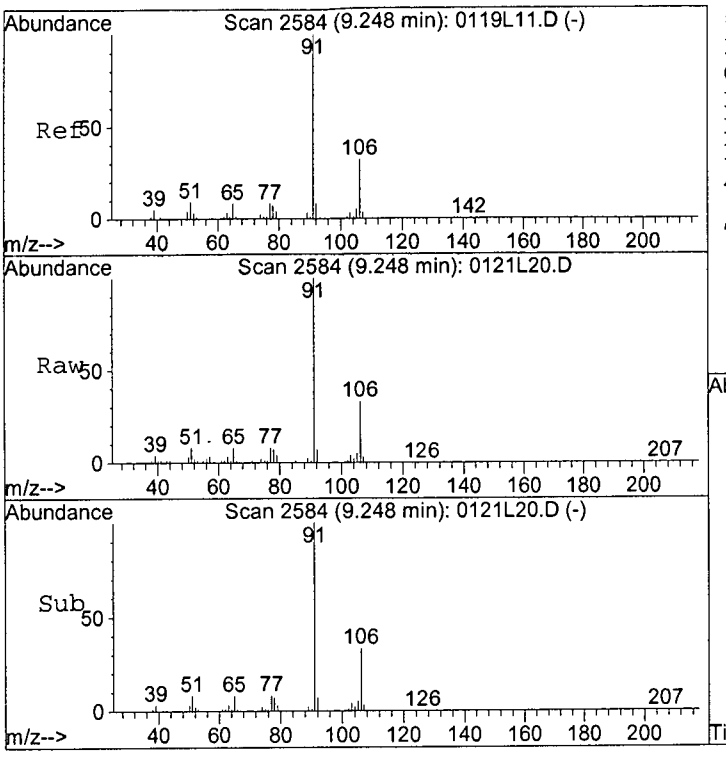


#62
o-Xylene
Concen: 0.22377 ppb
RT: 9.76 min Scan# 2743
Delta R.T. 0.00 min
Lab File: 0121L20.D
Acq: 21 Jan 15 16:18

Tgt Ion:106 Resp: 3763

Ion	Ratio	Lower	Upper
106	100		
91	186.0	142.9	265.5

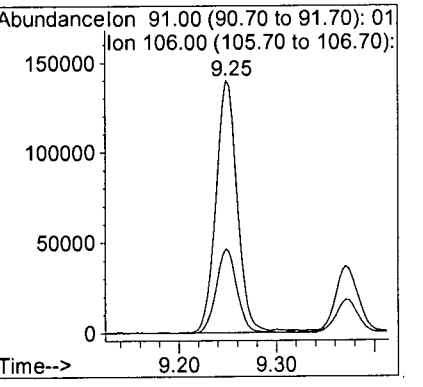


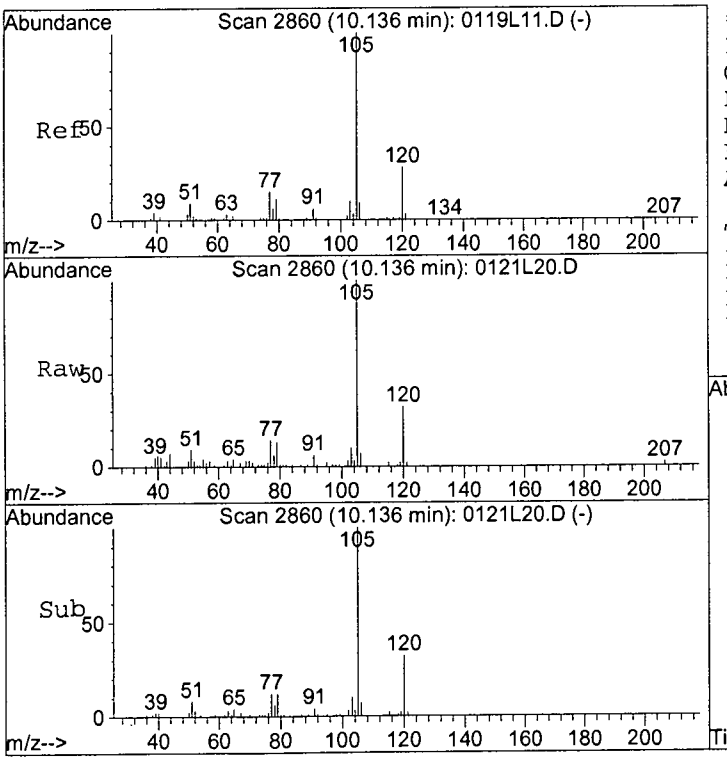


#68
Ethylbenzene
Concen: 5.15090 ppb
RT: 9.25 min Scan# 2584
Delta R.T. 0.00 min
Lab File: 0121L20.D
Acq: 21 Jan 15 16:18

Tgt Ion: 91 Resp: 214192

Ion	Ratio	Lower	Upper
91	100		
106	33.4	22.3	41.5

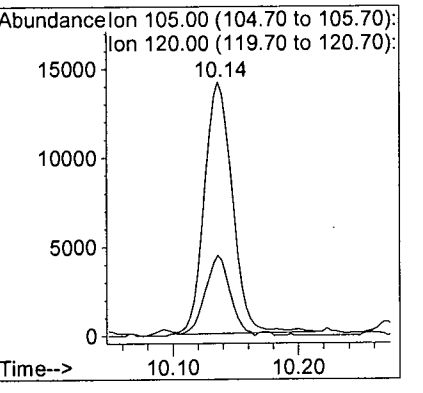


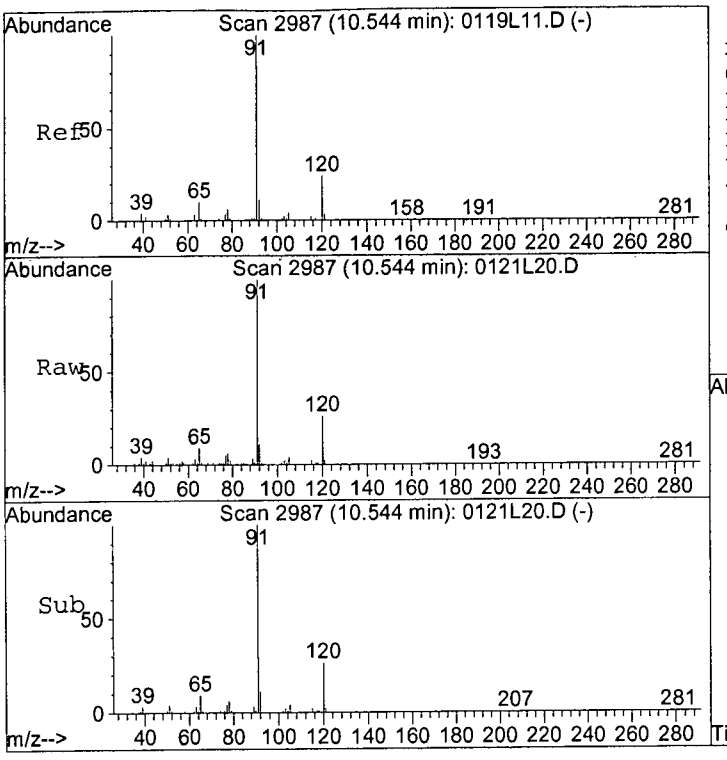


#71
Isopropylbenzene
Concen: 0.52252 ppb
RT: 10.14 min Scan# 2860
Delta R.T. 0.00 min
Lab File: 0121L20.D
Acq: 21 Jan 15 16:18

Tgt Ion:105 Resp: 21958

Ion	Ratio	Lower	Upper
105	100		
120	32.3	22.1	33.1

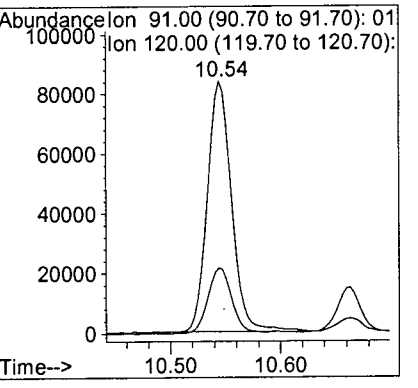


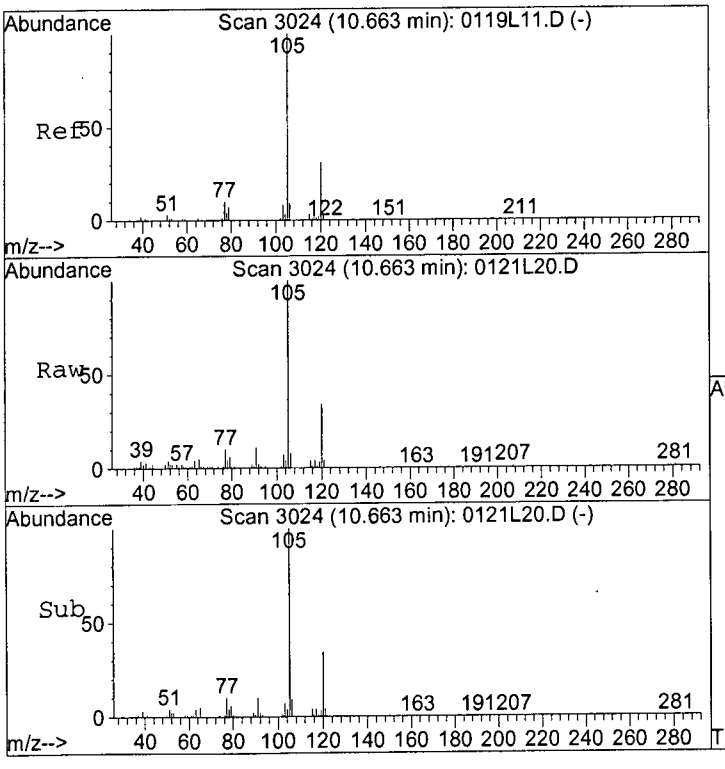


#76
n-Propylbenzene
Concen: 2.67382 ppb
RT: 10.54 min Scan# 2987
Delta R.T. 0.00 min
Lab File: 0121L20.D
Acq: 21 Jan 15 16:18

Tgt Ion: 91 Resp: 126494

Ion	Ratio	Lower	Upper
91	100		
120	25.9	16.9	31.3

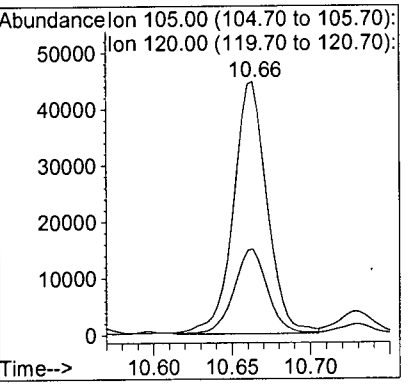


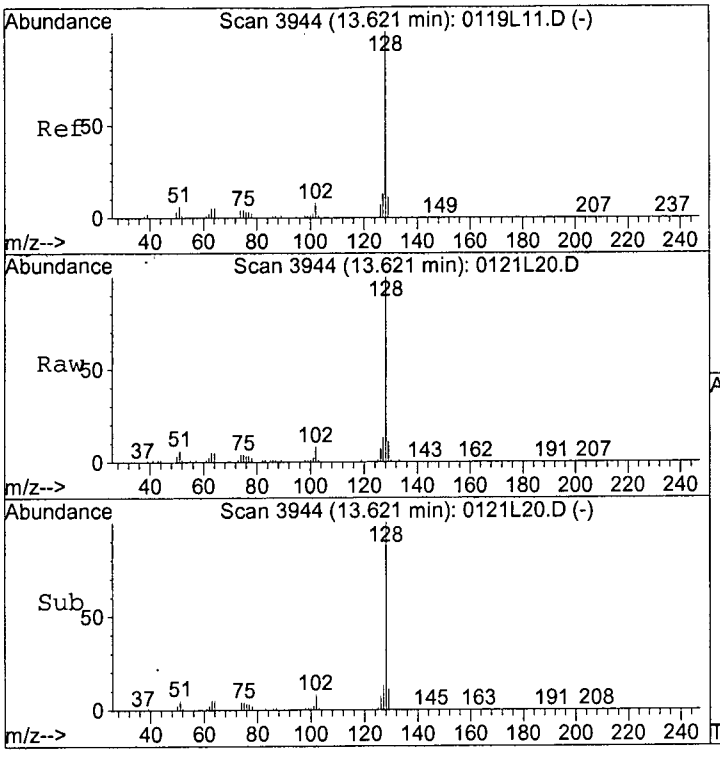


#77
4-Ethyltoluene
Concen: 1.60468 ppb
RT: 10.66 min Scan# 3024
Delta R.T. 0.00 min
Lab File: 0121L20.D
Acq: 21 Jan 15 16:18

Tgt Ion:105 Resp: 66595

Ion	Ratio	Lower	Upper
105	100		
120	33.4	21.5	39.9

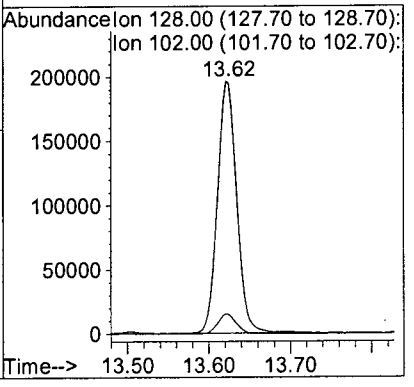




#94
Naphthalene
Concen: 7.18883 ppb
RT: 13.62 min Scan# 3944
Delta R.T. 0.00 min
Lab File: 0121L20.D
Acq: 21 Jan 15 16:18

Tgt Ion:128 Resp: 321811

Ion	Ratio	Lower	Upper
128	100		
102	8.0	5.7	10.5



EPA 8260B SOIL

Element Environmental
98-030 Hekaha St., Unit 9
Aiea, HI 96701

APPL Inc.
908 North Temperance Avenue
Clovis, CA 93611

Attn: Steve Spengler
Project: MCBH UST KB-100 SI / 130034
Sample ID: EKB100002
Sample Collection Date: 01/13/15

ARF: 75351
APPL ID: AZ09546
QCG: #86BKB-150121AL-193770

Method	Analyte	Result	LOQ	LOD	DL	Units	Extraction Date	Analysis Date
(Solid Concentrations and Limits have been adjusted to reflect 32.8 Percent Moisture.)								
EPA 8260B	1,1,1-TRICHLOROETHANE	0.00300 U	0.0074	0.00300	0.00060	mg/Kg	01/21/15	01/21/15
EPA 8260B	1,1,2,2-TETRACHLOROETHANE	0.00300 U	0.0074	0.00300	0.00180	mg/Kg	01/21/15	01/21/15
EPA 8260B	1,1,2-TRICHLOROETHANE	0.00300 U	0.0074	0.00300	0.00040	mg/Kg	01/21/15	01/21/15
EPA 8260B	1,1-DICHLOROETHANE	0.00300 U	0.0074	0.00300	0.00051	mg/Kg	01/21/15	01/21/15
EPA 8260B	1,1-DICHLOROETHENE	0.00300 U	0.0074	0.00300	0.00110	mg/Kg	01/21/15	01/21/15
EPA 8260B	1,2,3-TRICHLOROPROPANE	0.00740 U	0.0300	0.00740	0.00180	mg/Kg	01/21/15	01/21/15
EPA 8260B	1,2-DIBROMOETHANE	0.00300 U	0.0074	0.00300	0.00210	mg/Kg	01/21/15	01/21/15
EPA 8260B	1,2-DICHLOROETHANE	0.00300 U	0.0074	0.00300	0.00110	mg/Kg	01/21/15	01/21/15
EPA 8260B	1,2-DICHLOROPROPANE	0.00300 U	0.0074	0.00300	0.00110	mg/Kg	01/21/15	01/21/15
EPA 8260B	2-BUTANONE	0.00450 U	0.0300	0.00450	0.00420	mg/Kg	01/21/15	01/21/15
EPA 8260B	4-METHYL-2-PENTANONE	0.00300 U	0.0300	0.00300	0.00140	mg/Kg	01/21/15	01/21/15
EPA 8260B	ACETONE	0.00740 U	0.0740	0.00740	0.00420	mg/Kg	01/21/15	01/21/15
EPA 8260B	BENZENE	0.00300 U	0.0074	0.00300	0.00094	mg/Kg	01/21/15	01/21/15
EPA 8260B	BROMODICHLOROMETHANE	0.00300 U	0.0074	0.00300	0.00100	mg/Kg	01/21/15	01/21/15
EPA 8260B	BROMOFORM	0.00300 U	0.0074	0.00300	0.00120	mg/Kg	01/21/15	01/21/15
EPA 8260B	BROMOMETHANE	0.00300 U	0.0074	0.00300	0.00240	mg/Kg	01/21/15	01/21/15
EPA 8260B	CARBON TETRACHLORIDE	0.00300 U	0.0074	0.00300	0.00120	mg/Kg	01/21/15	01/21/15
EPA 8260B	CHLOROBENZENE	0.00300 U	0.0074	0.00300	0.00073	mg/Kg	01/21/15	01/21/15
EPA 8260B	CHLOROETHANE	0.00300 U	0.0074	0.00300	0.00230	mg/Kg	01/21/15	01/21/15
EPA 8260B	CHLOROFORM	0.00300 U	0.0074	0.00300	0.00210	mg/Kg	01/21/15	01/21/15
EPA 8260B	CHLOROMETHANE	0.00740 U	0.0074	0.00740	0.00270	mg/Kg	01/21/15	01/21/15
EPA 8260B	CIS-1,2-DICHLOROETHYLENE	0.00085 J	0.0074	0.00300	0.00033	mg/Kg	01/21/15	01/21/15
EPA 8260B	CIS-1,3-DICHLOROPROPENE	0.00300 U	0.0074	0.00300	0.00140	mg/Kg	01/21/15	01/21/15
EPA 8260B	DIBROMOCHLOROMETHANE	0.00300 U	0.0074	0.00300	0.00130	mg/Kg	01/21/15	01/21/15
EPA 8260B	ETHYLBENZENE	0.0045 J	0.0074	0.00300	0.00150	mg/Kg	01/21/15	01/21/15
EPA 8260B	METHYLENE CHLORIDE	0.01500 U	0.0300	0.01500	0.00086	mg/Kg	01/21/15	01/21/15
EPA 8260B	STYRENE	0.00300 U	0.0074	0.00300	0.00180	mg/Kg	01/21/15	01/21/15
EPA 8260B	TETRACHLOROETHENE	0.021	0.0074	0.00300	0.00080	mg/Kg	01/21/15	01/21/15
EPA 8260B	TOLUENE	0.00300 U	0.0074	0.00300	0.00190	mg/Kg	01/21/15	01/21/15
EPA 8260B	TRANS-1,2-DICHLOROETHYLENE	0.00300 U	0.0074	0.00300	0.00051	mg/Kg	01/21/15	01/21/15
EPA 8260B	TRANS-1,3-DICHLOROPROPENE	0.00300 U	0.0074	0.00300	0.00120	mg/Kg	01/21/15	01/21/15
EPA 8260B	TRICHLOROETHYLENE	0.0020 J	0.0074	0.00300	0.00140	mg/Kg	01/21/15	01/21/15
EPA 8260B	VINYL CHLORIDE	0.00300 U	0.0074	0.00300	0.00220	mg/Kg	01/21/15	01/21/15
EPA 8260B	XYLENES (TOTAL)	0.0022 J	0.0074	0.00300	0.00064	mg/Kg	01/21/15	01/21/15
EPA 8260B	SURROGATE: 1,2-DICHLOROETHANE	96.8	54-154			%	01/21/15	01/21/15

J = Estimated value.

Quant Method: LALLS.M
Run #: 0121L21
Instrument: Loki
Sequence: 150119
Dilution Factor: 1
Initials: SV

Printed: 01/26/15 1:46:46 PM
APPL-F1-SC-MCRes/MCPQL-REG MDLs

EPA 8260B SOIL

Element Environmental
98-030 Hekaha St., Unit 9
Aiea, HI 96701

APPL Inc.
908 North Temperance Avenue
Clovis, CA 93611

Attn: Steve Spengler
Project: MCBH UST KB-100 SI / 130034
Sample ID: EKB100002
Sample Collection Date: 01/13/15

ARF: 75351
APPL ID: AZ09546
QCG: #86BKB-150121AL-193770

Method	Analyte	Result	LOQ	LOD	DL	Units	Extraction Date	Analysis Date
EPA 8260B	SURROGATE: 4-BROMOFLUOROBEN	97.6	85-120			%	01/21/15	01/21/15
EPA 8260B	SURROGATE: TOLUENE-D8 (S)	98.5	85-115			%	01/21/15	01/21/15

J = Estimated value.

Quant Method: LALLS.M
Run #: 0121L21
Instrument: Loki
Sequence: 150119
Dilution Factor: 1
Initials: SV

Printed: 01/26/15 1:46:46 PM
APPL-F1-SC-MCRes/MCPQL-REG MDLs

Quantitation Report (QT Reviewed)

Data File : M:\LOKI\DATA\150119\0121L21.D
Acq On : 21 Jan 15 16:40
Sample : AZ09546S01 6.451
Misc : 5mL w/5uL IS&S:01/14/15,10-06-14

Vial: 20
Operator: DG,SV,RS
Inst : Loki
Multiplr: 0.78

Quant Time: Jan 22 10:20 2015 Quant Results File: LALLS.RES

Quant Method : M:\LOKI\DATA\150119\LALLS.M (RTE Integrator)
Title : METHOD 8260B
Last Update : Tue Jan 20 09:48:55 2015
Response via : Initial Calibration
DataAcq Meth : 8260_BETA

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene (IS)	5.86	96	763392	50.00000 ppb	0.00
55) Chlorobenzene-D5 (IS)	9.09	117	690304	50.00000 ppb	0.00
70) 1,4-Dichlorobenzene-D (IS)	11.41	152	382592	50.00000 ppb	0.00
System Monitoring Compounds					
31) Dibromofluoromethane(S)	5.02	111	361247	52.72059 ppb	0.00
Spiked Amount 52.439			Recovery	= 100.537%	
36) 1,2-DCA-D4(S)	5.43	65	361814	46.54615 ppb	0.00
Spiked Amount 48.066			Recovery	= 96.838%	
56) Toluene-D8(S)	7.62	98	1318435	60.27414 ppb	0.00
Spiked Amount 61.175			Recovery	= 98.527%	
64) 4-Bromofluorobenzene(S)	10.27	95	490592	53.22922 ppb	0.00
Spiked Amount 54.538			Recovery	= 97.600%	
Target Compounds					Qvalue
27) Cis-1,2-DCE	4.33	96	5408	0.56865 ppb	82
41) TCE	6.29	95	10050	1.35441 ppb	95
51) Toluene	7.69	91	33845	1.03159 ppb	98
58) Tetrachloroethene	8.25	164	88472	13.87088 ppb	98
61) m&p-Xylene	9.37	91	22253	1.29480 ppb	100
62) o-Xylene	9.76	106	2968	0.21267 ppb	96
68) Ethylbenzene	9.25	91	105336	3.05233 ppb	99
76) n-Propylbenzene	10.54	91	66245	1.76186 ppb	96
77) 4-Ethyltoluene	10.66	105	32255	0.97791 ppb	91
94) Naphthalene	13.62	128	151222	4.25039 ppb	100

(#) = qualifier out of range (m) = manual integration

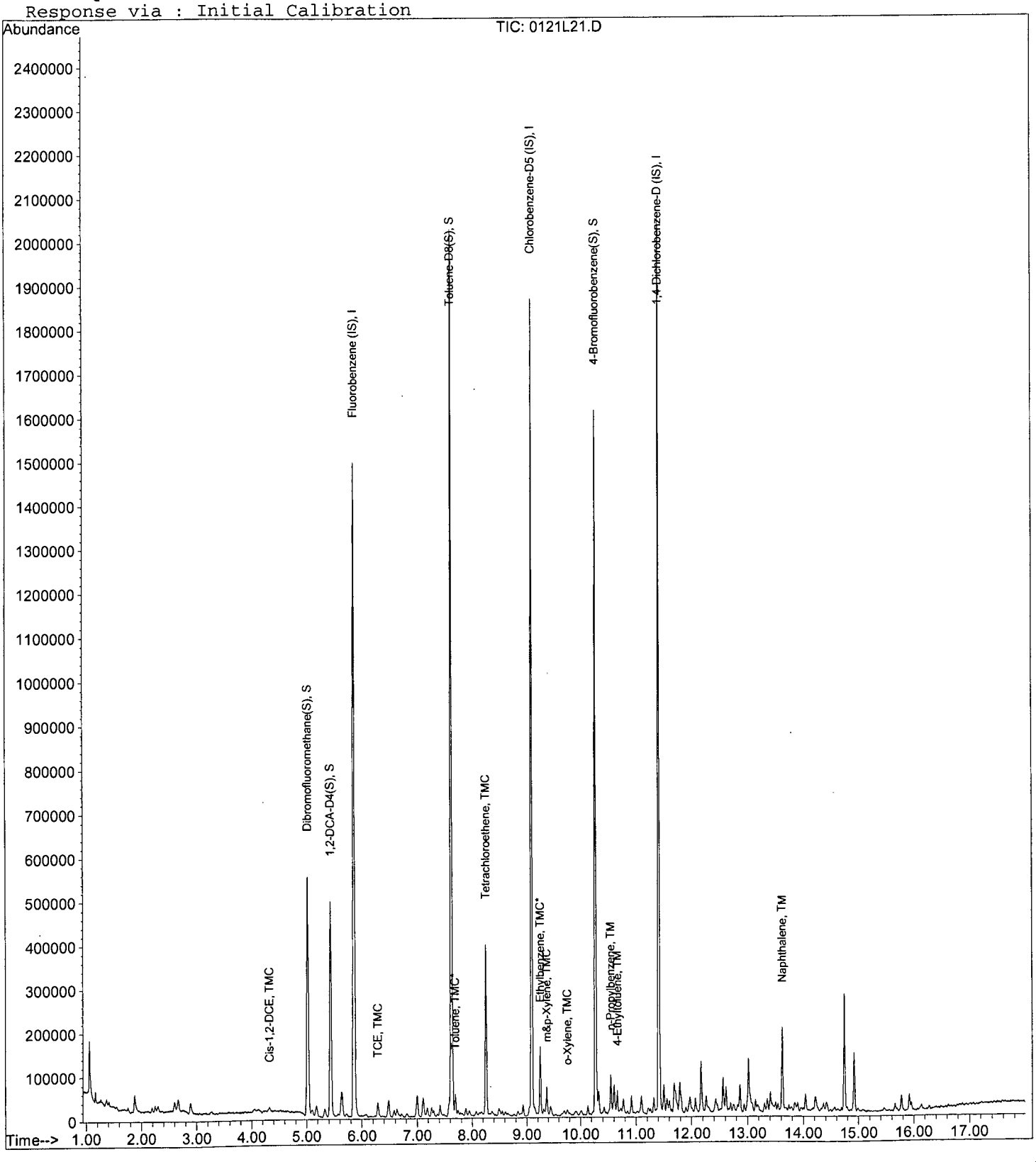
Quantitation Report

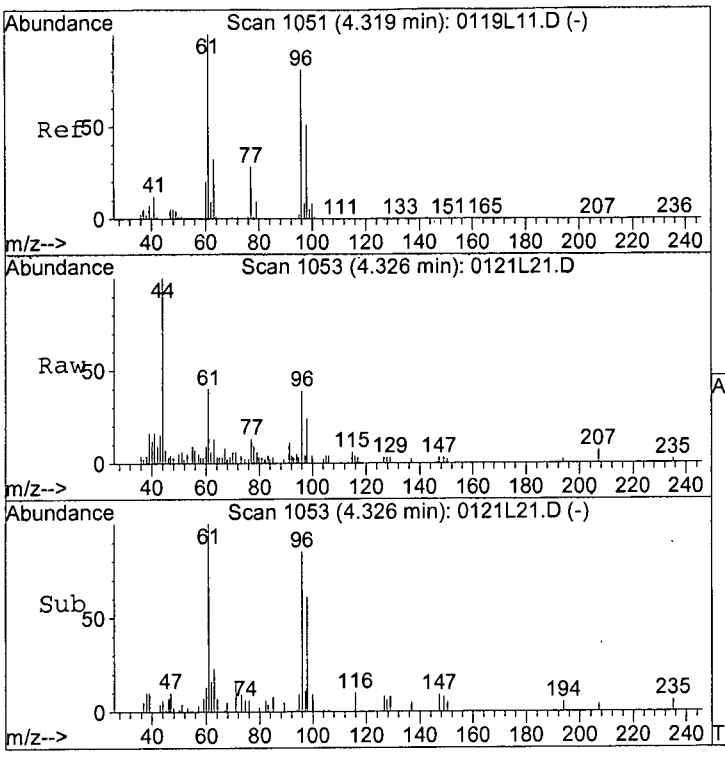
Data File : M:\LOKI\DATA\150119\0121L21.D
Acq On : 21 Jan 15 16:40
Sample : AZ09546S01 6.451
Misc : 5mL w/5uL IS&S:01/14/15,10-06-14

Vial: 20
Operator: DG,SV,RS
Inst : Loki
Multiplr: 0.78

Quant Time: Jan 22 10:20 2015 Quant Results File: LALLS.RES

Method : M:\LOKI\DATA\150119\LALLS.M (RTE Integrator)
Title : METHOD 8260B
Last Update : Tue Jan 20 09:48:55 2015
Response via : Initial Calibration

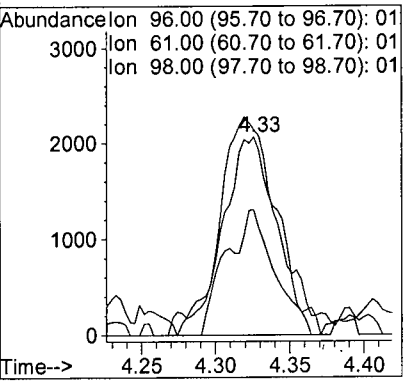


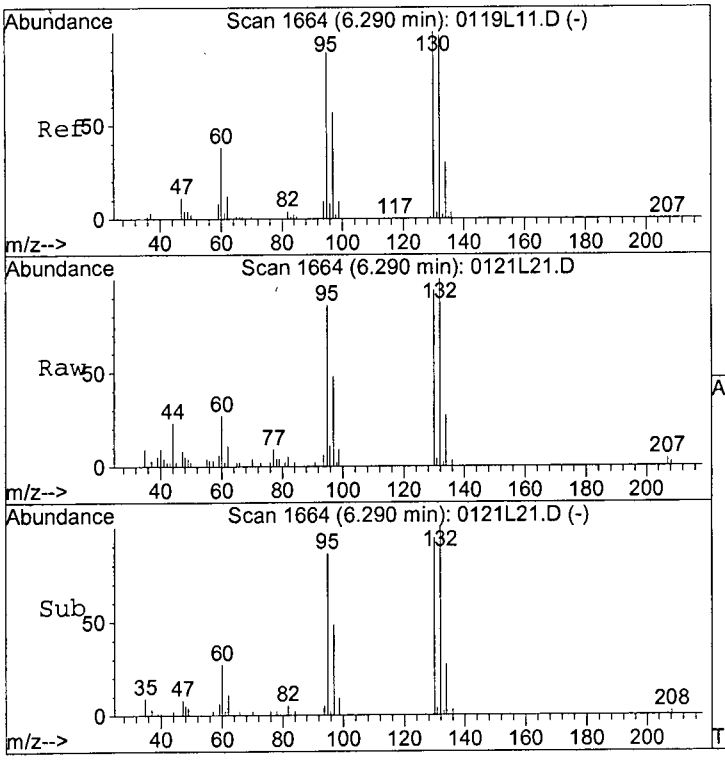


#27
Cis-1,2-DCE
Concen: 0.56865 ppb
RT: 4.33 min Scan# 1053
Delta R.T. 0.01 min
Lab File: 0121L21.D
Acq: 21 Jan 15 16:40

Tgt Ion: 96 Resp: 5408

Ion	Ratio	Lower	Upper
96	100		
61	92.7	86.9	161.3
98	63.2	44.3	82.3

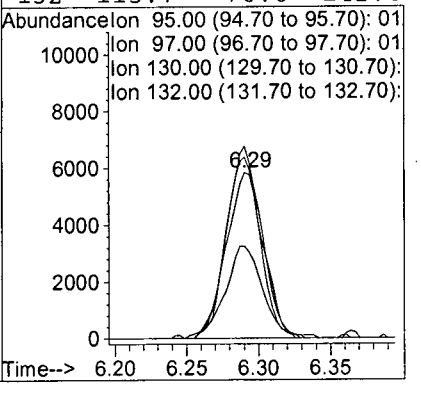


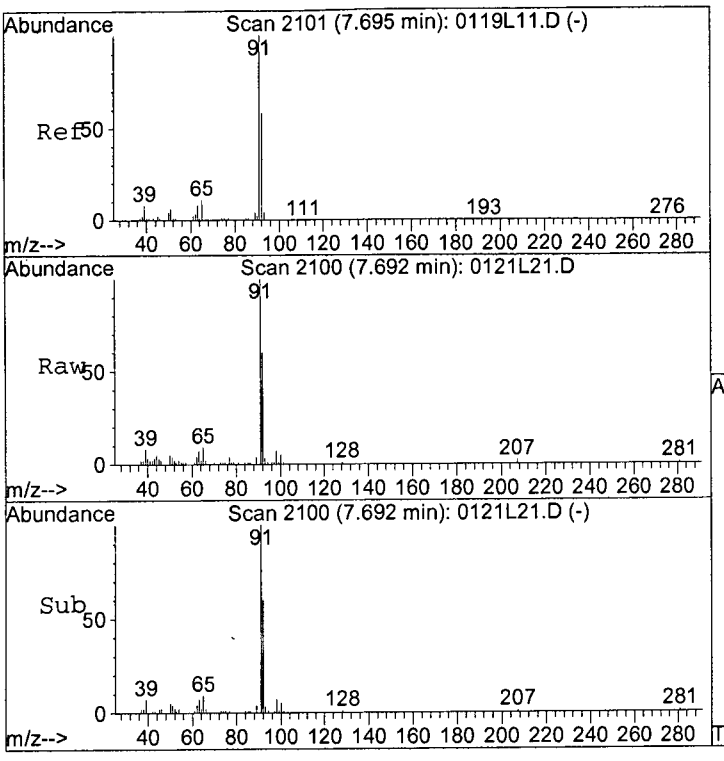


#41
TCE
Concen: 1.35441 ppb
RT: 6.29 min Scan# 1664
Delta R.T. 0.00 min
Lab File: 0121L21.D
Acq: 21 Jan 15 16:40

Tgt Ion: 95 Resp: 10050

Ion	Ratio	Lower	Upper
95	100		
97	55.6	44.7	83.1
130	113.4	78.8	146.3
132	115.7	76.8	142.6

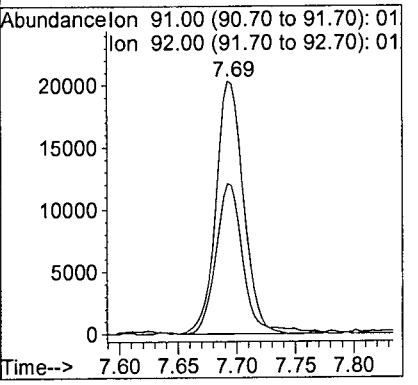


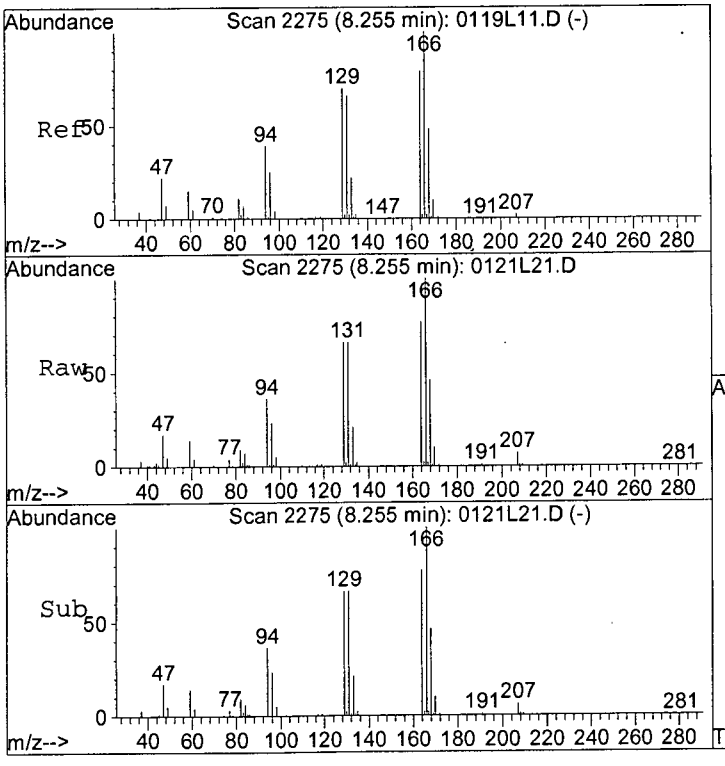


#51
Toluene
Concen: 1.03159 ppb
RT: 7.69 min Scan# 2100
Delta R.T. -0.00 min
Lab File: 0121L21.D
Acq: 21 Jan 15 16:40

Tgt Ion: 91 Resp: 33845

Ion	Ratio	Lower	Upper
91	100		
92	59.6	40.9	75.9

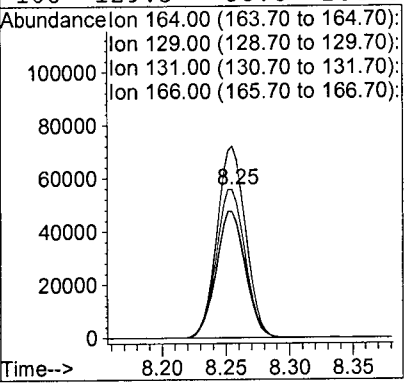


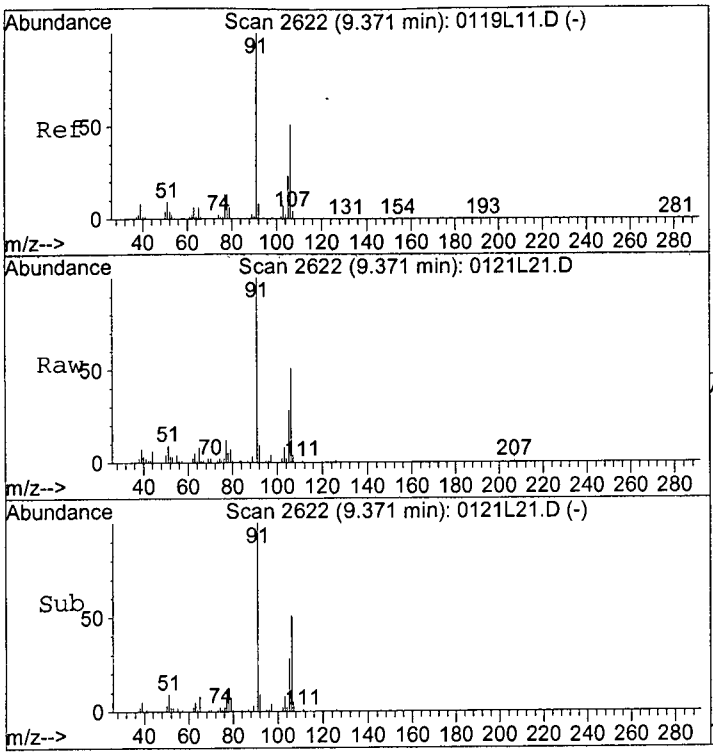


#58
Tetrachloroethene
Concen: 13.87088 ppb
RT: 8.25 min Scan# 2275
Delta R.T. 0.00 min
Lab File: 0121L21.D
Acq: 21 Jan 15 16:40

Tgt Ion:164 Resp: 88472

Ion	Ratio	Lower	Upper
164	100		
129	85.3	61.7	114.7
131	85.0	58.4	108.4
166	129.3	88.8	164.8

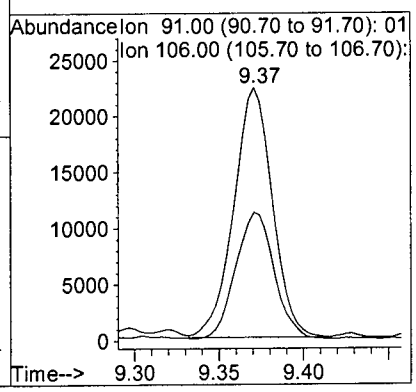


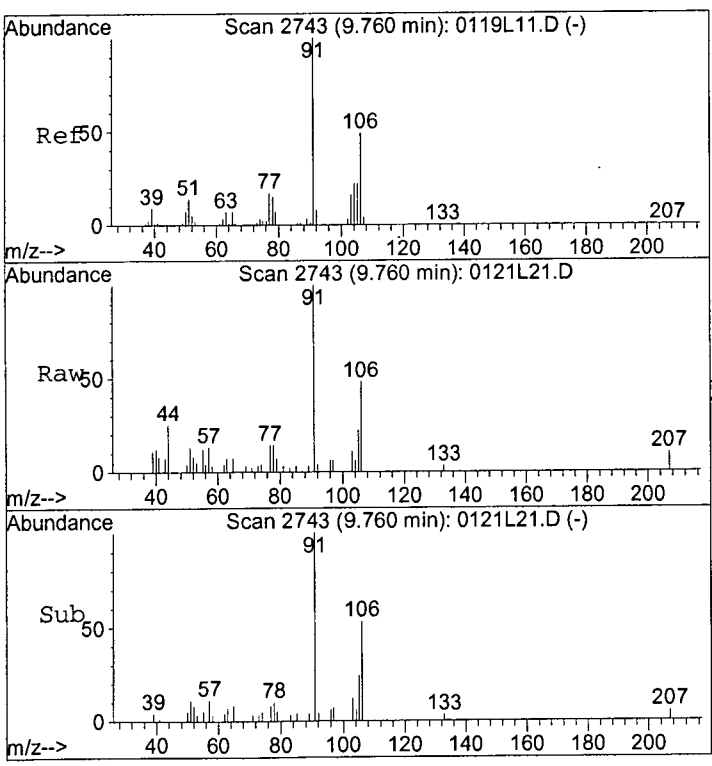


#61
m&p-Xylene
Concen: 1.29480 ppb
RT: 9.37 min Scan# 2622
Delta R.T. 0.00 min
Lab File: 0121L21.D
Acq: 21 Jan 15 16:40

Tgt Ion: 91 Resp: 22253

Ion	Ratio	Lower	Upper
91	100		
106	50.5	40.5	60.7

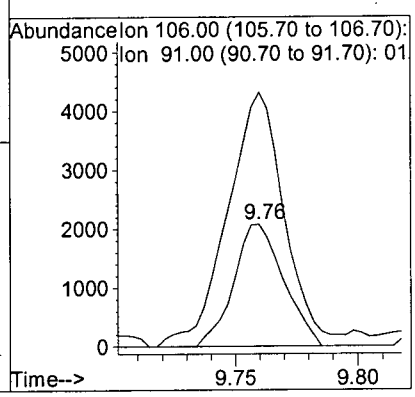


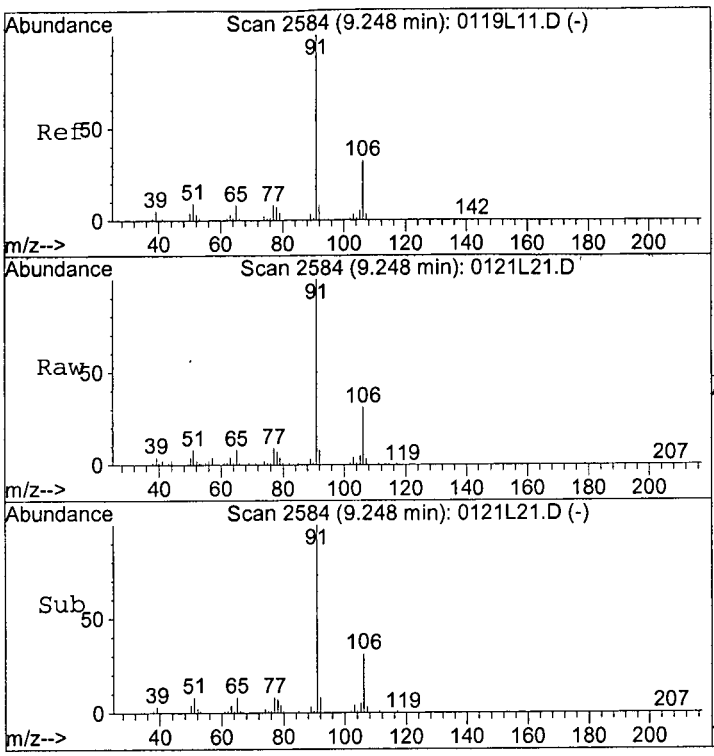


#62
o-Xylene
Concen: 0.21267 ppb
RT: 9.76 min Scan# 2743
Delta R.T. 0.00 min
Lab File: 0121L21.D
Acq: 21 Jan 15 16:40

Tgt Ion:106 Resp: 2968

Ion	Ratio	Lower	Upper
106	100		
91	198.1	142.9	265.5

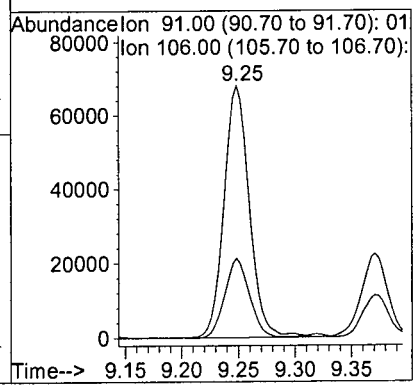


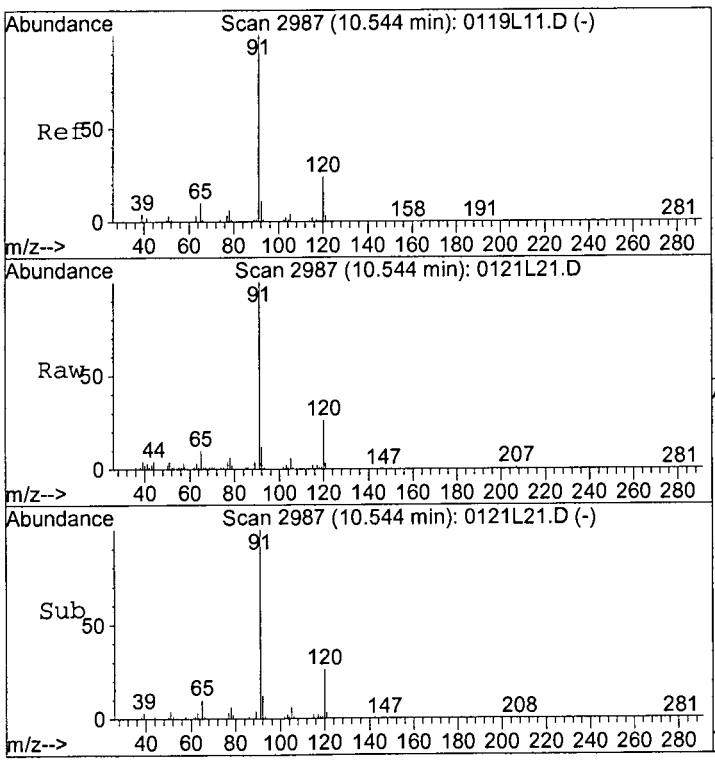


#68
Ethylbenzene
Concen: 3.05233 ppb
RT: 9.25 min Scan# 2584
Delta R.T. 0.00 min
Lab File: 0121L21.D
Acq: 21 Jan 15 16:40

Tgt Ion: 91 Resp: 105336

Ion	Ratio	Lower	Upper
91	100		
106	31.5	22.3	41.5

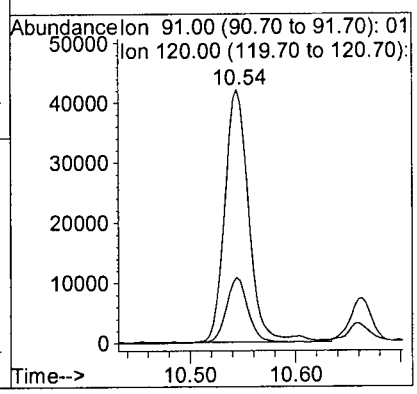


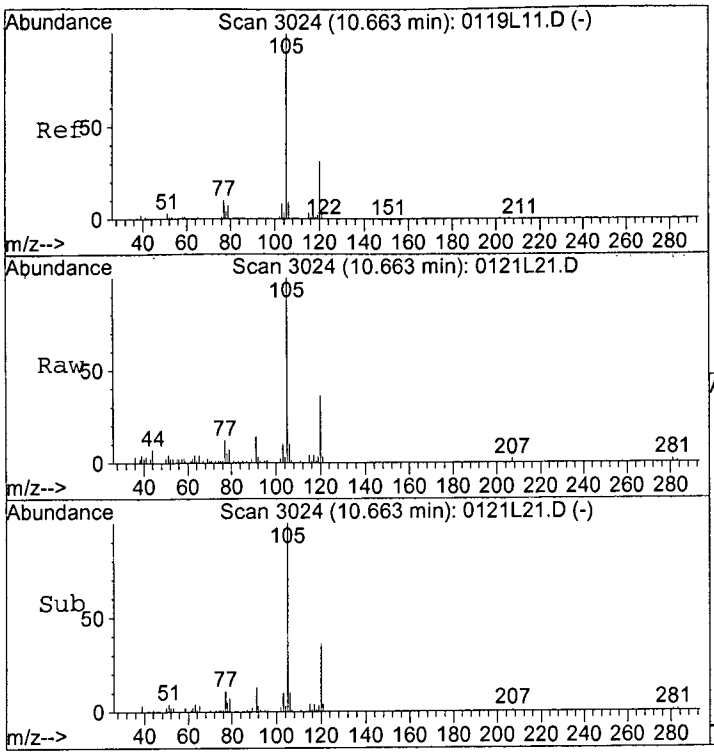


#76
n-Propylbenzene
Concen: 1.76186 ppb
RT: 10.54 min Scan# 2987
Delta R.T. 0.00 min
Lab File: 0121L21.D
Acq: 21 Jan 15 16:40

Tgt Ion: 91 Resp: 66245

Ion	Ratio	Lower	Upper
91	100		
120	26.0	16.9	31.3

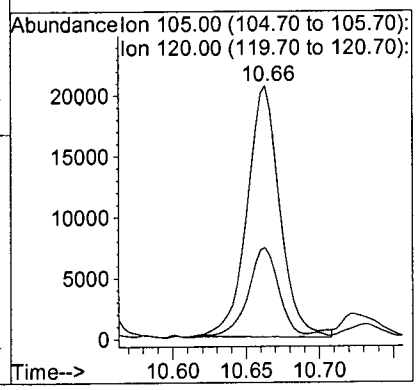


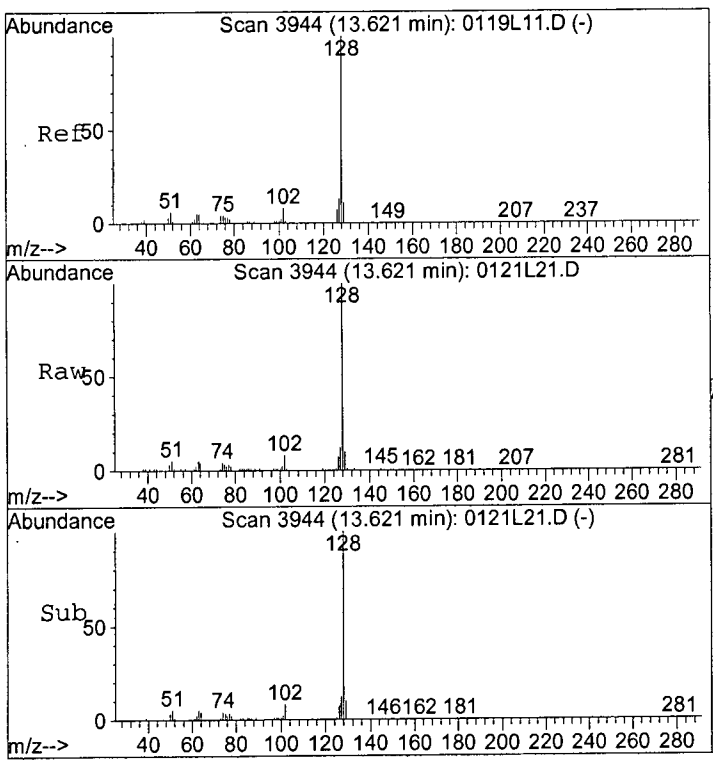


#77
4-Ethyltoluene
Concen: 0.97791 ppb
RT: 10.66 min Scan# 3024
Delta R.T. 0.00 min
Lab File: 0121L21.D
Acq: 21 Jan 15 16:40

Tgt Ion:105 Resp: 32255

Ion	Ratio	Lower	Upper
105	100		
120	35.7	21.5	39.9

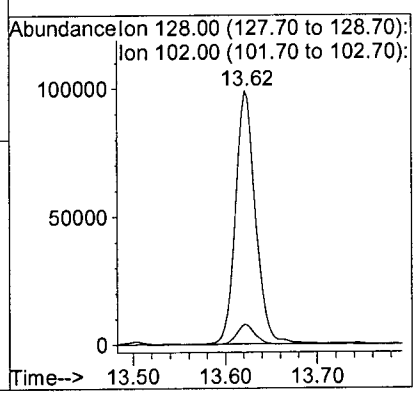




#94
Naphthalene
Concen: 4.25039 ppb
RT: 13.62 min Scan# 3944
Delta R.T. 0.00 min
Lab File: 0121L21.D
Acq: 21 Jan 15 16:40

Tgt Ion:128 Resp: 151222

Ion	Ratio	Lower	Upper
128	100		
102	8.1	5.7	10.5



EPA 8260B SOIL

Element Environmental
98-030 Hekaha St., Unit 9
Aiea, HI 96701

APPL Inc.
908 North Temperance Avenue
Clovis, CA 93611

Attn: Steve Spengler
Project: MCBH UST KB-100 SI / 130034
Sample ID: EKB100003
Sample Collection Date: 01/13/15

ARF: 75351
APPL ID: AZ09547
QCG: #86BKB-150121AL-193770

Method	Analyte	Result	LOQ	LOD	DL	Units	Extraction Date	Analysis Date
(Solid Concentrations and Limits have been adjusted to reflect 39.1 Percent Moisture.)								
EPA 8260B	1,1,1-TRICHLOROETHANE	0.00330 U	0.0082	0.00330	0.00066	mg/Kg	01/21/15	01/21/15
EPA 8260B	1,1,2,2-TETRACHLOROETHANE	0.00330 U	0.0082	0.00330	0.00200	mg/Kg	01/21/15	01/21/15
EPA 8260B	1,1,2-TRICHLOROETHANE	0.00330 U	0.0082	0.00330	0.00044	mg/Kg	01/21/15	01/21/15
EPA 8260B	1,1-DICHLOROETHANE	0.00330 U	0.0082	0.00330	0.00056	mg/Kg	01/21/15	01/21/15
EPA 8260B	1,1-DICHLOROETHENE	0.00330 U	0.0082	0.00330	0.00120	mg/Kg	01/21/15	01/21/15
EPA 8260B	1,2,3-TRICHLOROPROPANE	0.00820 U	0.0330	0.00820	0.00200	mg/Kg	01/21/15	01/21/15
EPA 8260B	1,2-DIBROMOETHANE	0.00330 U	0.0082	0.00330	0.00230	mg/Kg	01/21/15	01/21/15
EPA 8260B	1,2-DICHLOROETHANE	0.00330 U	0.0082	0.00330	0.00130	mg/Kg	01/21/15	01/21/15
EPA 8260B	1,2-DICHLOROPROPANE	0.00330 U	0.0082	0.00330	0.00120	mg/Kg	01/21/15	01/21/15
EPA 8260B	2-BUTANONE	0.00490 U	0.0330	0.00490	0.00460	mg/Kg	01/21/15	01/21/15
EPA 8260B	4-METHYL-2-PENTANONE	0.00330 U	0.0330	0.00330	0.00150	mg/Kg	01/21/15	01/21/15
EPA 8260B	ACETONE	0.00820 U	0.0820	0.00820	0.00460	mg/Kg	01/21/15	01/21/15
EPA 8260B	BENZENE	0.00330 U	0.0082	0.00330	0.00100	mg/Kg	01/21/15	01/21/15
EPA 8260B	BROMODICHLOROMETHANE	0.00330 U	0.0082	0.00330	0.00110	mg/Kg	01/21/15	01/21/15
EPA 8260B	BROMOFORM	0.00330 U	0.0082	0.00330	0.00130	mg/Kg	01/21/15	01/21/15
EPA 8260B	BROMOMETHANE	0.00330 U	0.0082	0.00330	0.00260	mg/Kg	01/21/15	01/21/15
EPA 8260B	CARBON TETRACHLORIDE	0.00330 U	0.0082	0.00330	0.00130	mg/Kg	01/21/15	01/21/15
EPA 8260B	CHLOROBENZENE	0.00330 U	0.0082	0.00330	0.00080	mg/Kg	01/21/15	01/21/15
EPA 8260B	CHLOROETHANE	0.00330 U	0.0082	0.00330	0.00250	mg/Kg	01/21/15	01/21/15
EPA 8260B	CHLOROFORM	0.00330 U	0.0082	0.00330	0.00230	mg/Kg	01/21/15	01/21/15
EPA 8260B	CHLOROMETHANE	0.00820 U	0.0082	0.00820	0.00300	mg/Kg	01/21/15	01/21/15
EPA 8260B	CIS-1,2-DICHLOROETHYLENE	0.00330 U	0.0082	0.00330	0.00036	mg/Kg	01/21/15	01/21/15
EPA 8260B	CIS-1,3-DICHLOROPROPENE	0.00330 U	0.0082	0.00330	0.00150	mg/Kg	01/21/15	01/21/15
EPA 8260B	DIBROMOCHLOROMETHANE	0.00330 U	0.0082	0.00330	0.00140	mg/Kg	01/21/15	01/21/15
EPA 8260B	ETHYLBENZENE	0.0030 J	0.0082	0.00330	0.00170	mg/Kg	01/21/15	01/21/15
EPA 8260B	METHYLENE CHLORIDE	0.01600 U	0.0330	0.01600	0.00095	mg/Kg	01/21/15	01/21/15
EPA 8260B	STYRENE	0.00330 U	0.0082	0.00330	0.00200	mg/Kg	01/21/15	01/21/15
EPA 8260B	TETRACHLOROETHENE	0.032	0.0082	0.00330	0.00089	mg/Kg	01/21/15	01/21/15
EPA 8260B	TOLUENE	0.00330 U	0.0082	0.00330	0.00210	mg/Kg	01/21/15	01/21/15
EPA 8260B	TRANS-1,2-DICHLOROETHYLENE	0.00330 U	0.0082	0.00330	0.00056	mg/Kg	01/21/15	01/21/15
EPA 8260B	TRANS-1,3-DICHLOROPROPENE	0.00330 U	0.0082	0.00330	0.00130	mg/Kg	01/21/15	01/21/15
EPA 8260B	TRICHLOROETHYLENE	0.0034 J	0.0082	0.00330	0.00150	mg/Kg	01/21/15	01/21/15
EPA 8260B	VINYL CHLORIDE	0.00330 U	0.0082	0.00330	0.00250	mg/Kg	01/21/15	01/21/15
EPA 8260B	XYLENES (TOTAL)	0.0016 J	0.0082	0.00330	0.00071	mg/Kg	01/21/15	01/21/15
EPA 8260B	SURROGATE: 1,2-DICHLOROETHANE	98.2	54-154			%	01/21/15	01/21/15

J = Estimated value.

Quant Method: LALLS.M
Run #: 0121L22
Instrument: Loki
Sequence: 150119
Dilution Factor: 1
Initials: SV

Printed: 01/26/15 1:46:46 PM
APPL-F1-SC-MCRes/MCPQL-REG MDLs

EPA 8260B SOIL

Element Environmental
98-030 Hekaha St., Unit 9
Aiea, HI 96701

APPL Inc.
908 North Temperance Avenue
Clovis, CA 93611

Attn: Steve Spengler
Project: MCBH UST KB-100 SI / 130034
Sample ID: EKB100003
Sample Collection Date: 01/13/15

ARF: 75351
APPL ID: AZ09547
QCG: #86BKB-150121AL-193770

Method	Analyte	Result	LOQ	LOD	DL	Units	Extraction Date	Analysis Date
EPA 8260B	SURROGATE: 4-BROMOFLUOROBEN	95.0	85-120			%	01/21/15	01/21/15
EPA 8260B	SURROGATE: TOLUENE-D8 (S)	95.9	85-115			%	01/21/15	01/21/15

J = Estimated value.

Quant Method:	LALLS.M
Run #:	0121L22
Instrument:	Loki
Sequence:	150119
Dilution Factor:	1
Initials:	SV

Printed: 01/26/15 1:46:46 PM
APPL-F1-SC-MCRes/MCPQL-REG MDLs

Quantitation Report (QT Reviewed)

Data File : M:\LOKI\DATA\150119\0121L22.D
Acq On : 21 Jan 15 17:01
Sample : AZ09547S01 6.871
Misc : 5mL w/5uL IS&S:01/14/15,10-06-14

Vial: 21
Operator: DG,SV,RS
Inst : Loki
Multiplr: 0.73

Quant Time: Jan 22 10:23 2015 Quant Results File: LALLS.RES

Quant Method : M:\LOKI\DATA\150119\LALLS.M (RTE Integrator)
Title : METHOD 8260B
Last Update : Tue Jan 20 09:48:55 2015
Response via : Initial Calibration
DataAcq Meth : 8260_BETA

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene (IS)	5.86	96	726592	50.00000 ppb	0.00
55) Chlorobenzene-D5 (IS)	9.09	117	679872	50.00000 ppb	0.00
70) 1,4-Dichlorobenzene-D (IS)	11.41	152	372416	50.00000 ppb	0.00
System Monitoring Compounds					
31) Dibromofluoromethane(S)	5.02	111	338969	51.97482 ppb	0.00
Spiked Amount 52.439			Recovery	= 99.115%	
36) 1,2-DCA-D4(S)	5.44	65	349151	47.19203 ppb	0.00
Spiked Amount 48.066			Recovery	= 98.182%	
56) Toluene-D8(S)	7.62	98	1263311	58.64025 ppb	0.00
Spiked Amount 61.175			Recovery	= 95.856%	
64) 4-Bromofluorobenzene(S)	10.27	95	470546	51.83761 ppb	0.00
Spiked Amount 54.538			Recovery	= 95.049%	

Target Compounds					Qvalue
41) TCE	6.29	95	15430	2.05117 ppb	87
58) Tetrachloroethene	8.25	164	130816	19.55090 ppb	97
61) m&p-Xylene	9.37	91	14612	0.81046 ppb	99
62) o-Xylene	9.76	106	2432	0.16612 ppb	70
68) Ethylbenzene	9.25	91	65374	1.80579 ppb	97
76) n-Propylbenzene	10.54	91	39814	1.02131 ppb	98
94) Naphthalene	13.62	128	86695	2.35023 ppb	97

(#) = qualifier out of range (m) = manual integration

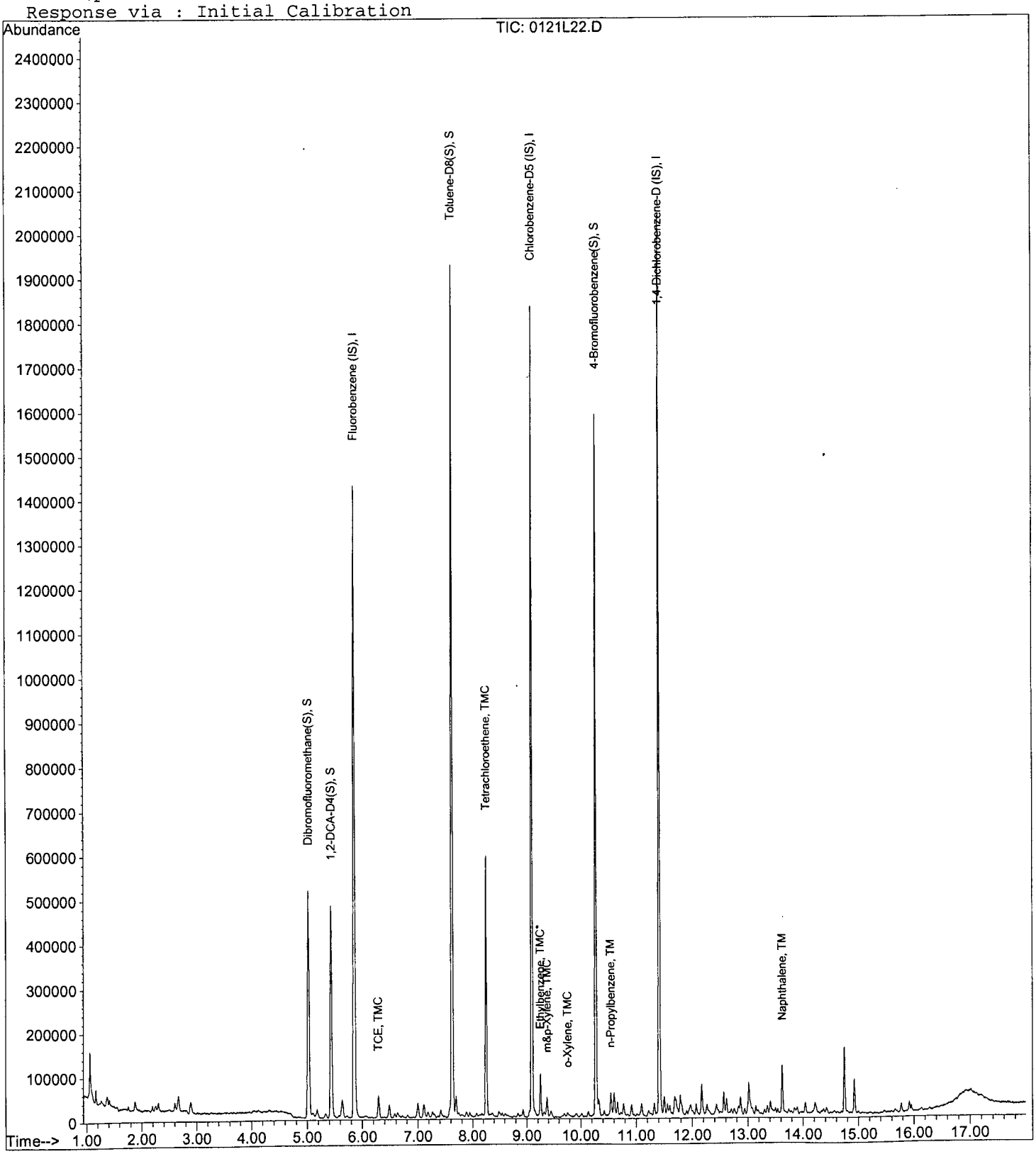
Quantitation Report

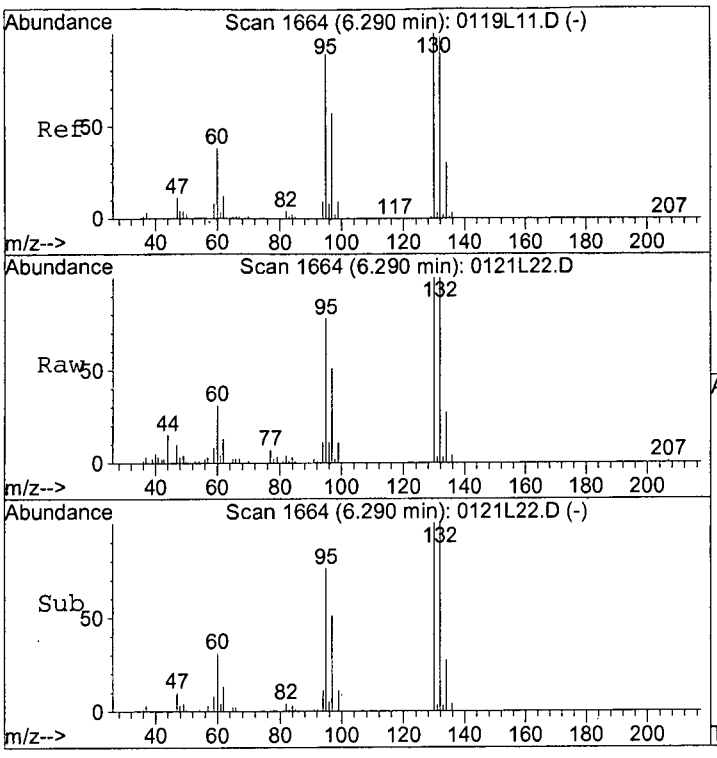
Data File : M:\LOKI\DATA\150119\0121L22.D
Acq On : 21 Jan 15 17:01
Sample : AZ09547S01 6.871
Misc : 5mL w/5uL IS&S:01/14/15,10-06-14

Vial: 21
Operator: DG,SV,RS
Inst : Loki
Multiplr: 0.73

Quant Time: Jan 22 10:23 2015 Quant Results File: LALLS.RES

Method : M:\LOKI\DATA\150119\LALLS.M (RTE Integrator)
Title : METHOD 8260B
Last Update : Tue Jan 20 09:48:55 2015
Response via : Initial Calibration

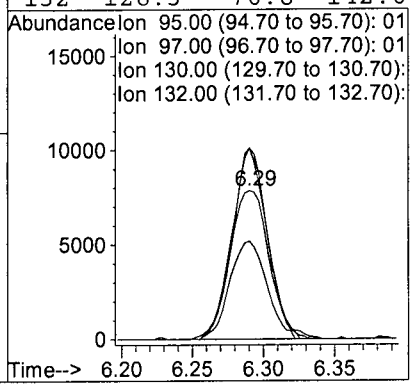


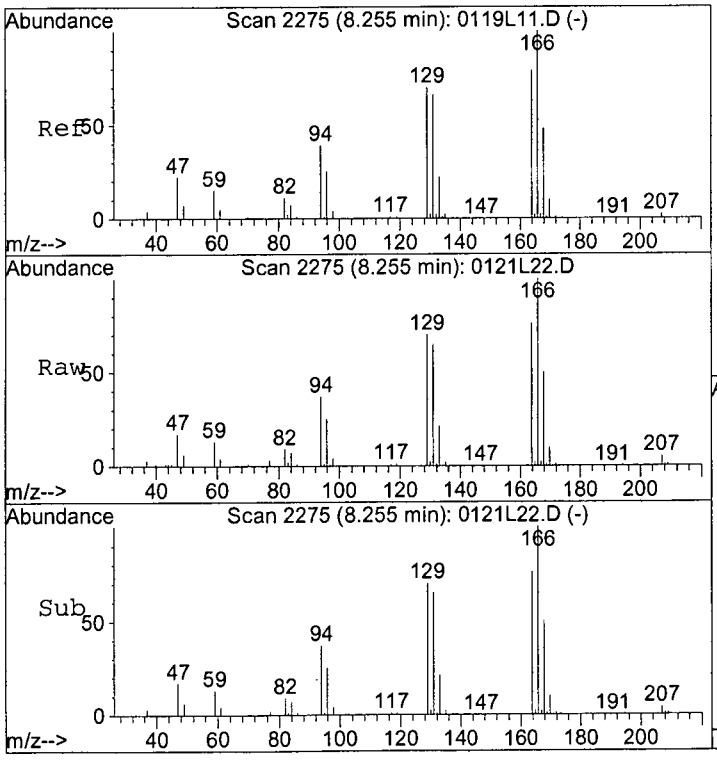


#41
TCE
Concen: 2.05117 ppb
RT: 6.29 min Scan# 1664
Delta R.T. 0.00 min
Lab File: 0121L22.D
Acq: 21 Jan 15 17:01

Tgt Ion: 95 Resp: 15430

Ion	Ratio	Lower	Upper
95	100		
97	66.1	44.7	83.1
130	128.8	78.8	146.3
132	128.3	76.8	142.6

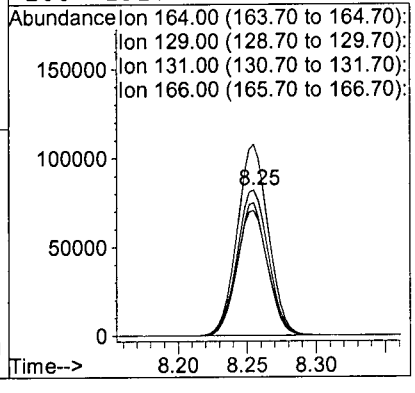


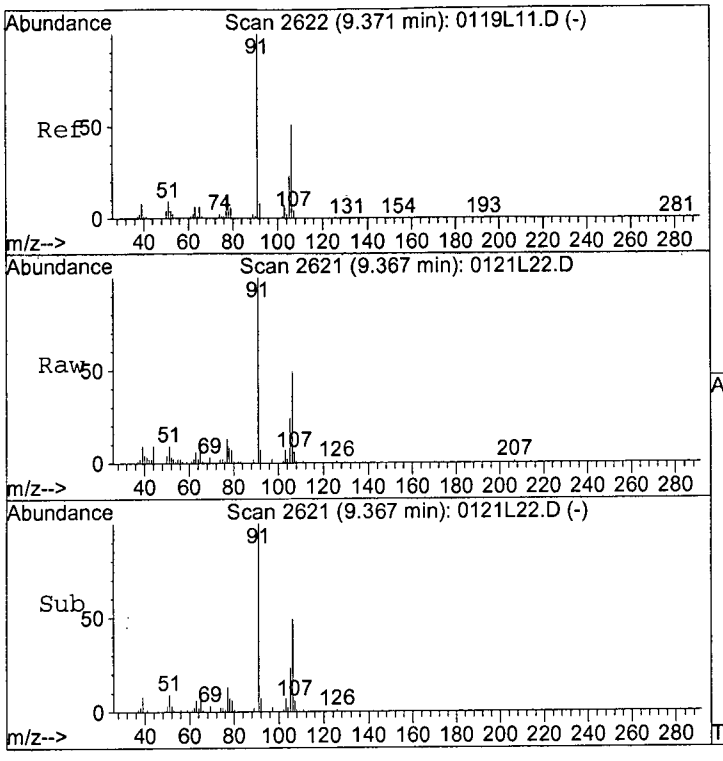


#58
Tetrachloroethene
Concen: 19.55090 ppb
RT: 8.25 min Scan# 2275
Delta R.T. 0.00 min
Lab File: 0121L22.D
Acq: 21 Jan 15 17:01

Tgt Ion:164 Resp: 130816

Ion	Ratio	Lower	Upper
164	100		
129	91.3	61.7	114.7
131	85.9	58.4	108.4
166	131.2	88.8	164.8

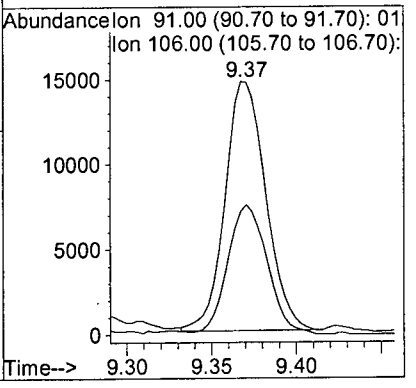


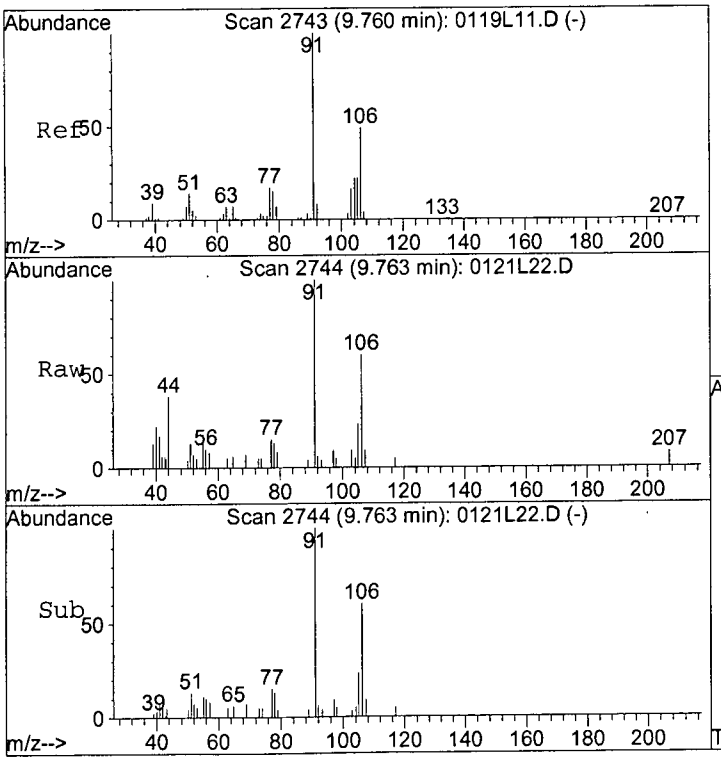


#61
m&p-Xylene
Concen: 0.81046 ppb
RT: 9.37 min Scan# 2621
Delta R.T. -0.00 min
Lab File: 0121L22.D
Acq: 21 Jan 15 17:01

Tgt Ion: 91 Resp: 14612

Ion	Ratio	Lower	Upper
91	100		
106	49.6	40.5	60.7

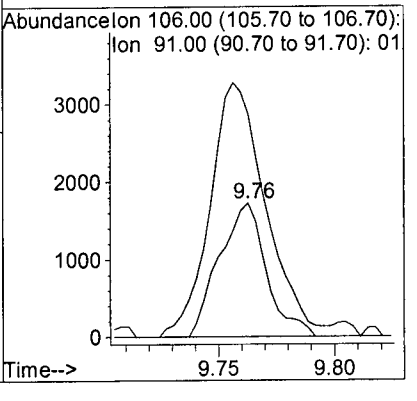


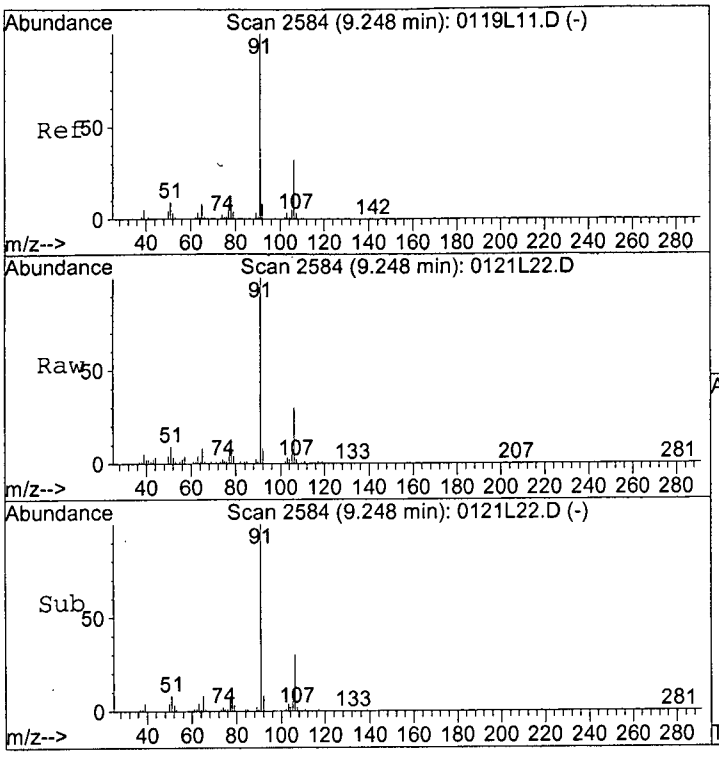


#62
o-Xylene
Concen: 0.16612 ppb
RT: 9.76 min Scan# 2744
Delta R.T. 0.00 min
Lab File: 0121L22.D
Acq: 21 Jan 15 17:01

Tgt Ion:106 Resp: 2432

Ion	Ratio	Lower	Upper
106	100		
91	158.9	142.9	265.5

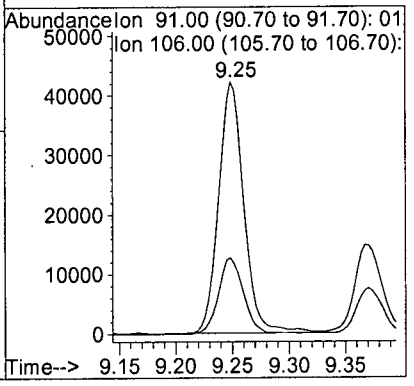


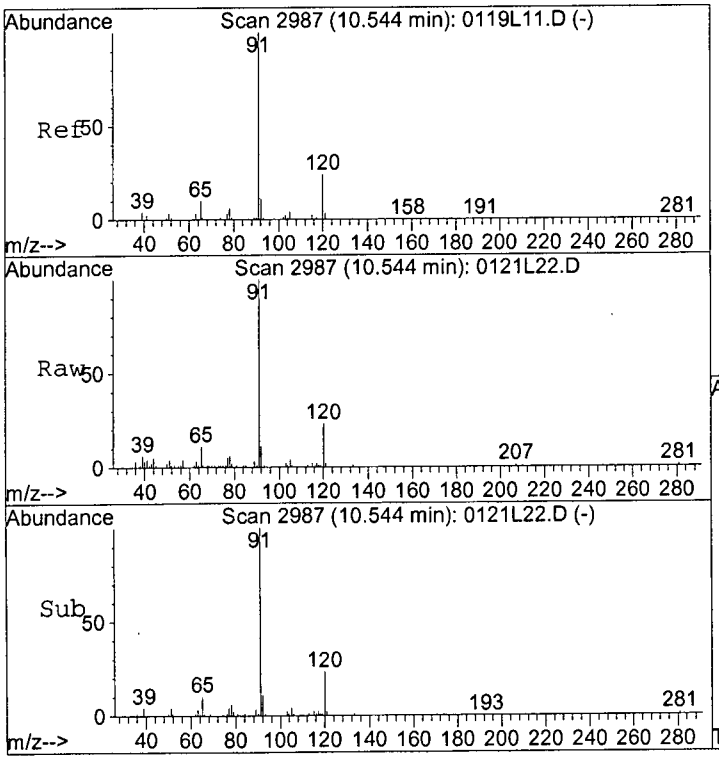


#68
Ethylbenzene
Concen: 1.80579 ppb
RT: 9.25 min Scan# 2584
Delta R.T. 0.00 min
Lab File: 0121L22.D
Acq: 21 Jan 15 17:01

Tgt Ion: 91 Resp: 65374

Ion	Ratio	Lower	Upper
91	100		
106	30.3	22.3	41.5

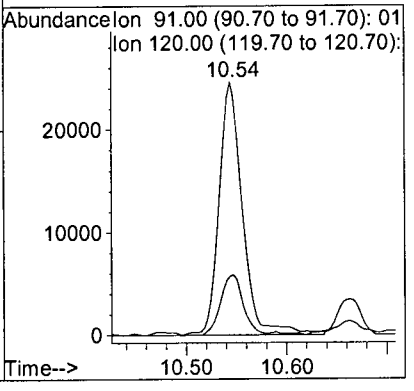


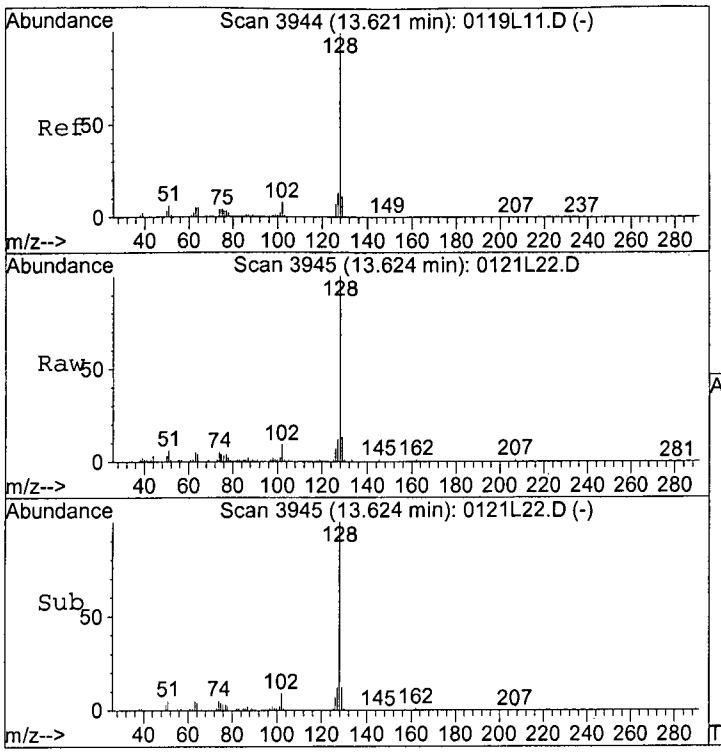


#76
n-Propylbenzene
Concen: 1.02131 ppb
RT: 10.54 min Scan# 2987
Delta R.T. 0.00 min
Lab File: 0121L22.D
Acq: 21 Jan 15 17:01

Tgt Ion: 91 Resp: 39814

Ion	Ratio	Lower	Upper
91	100		
120	23.2	16.9	31.3

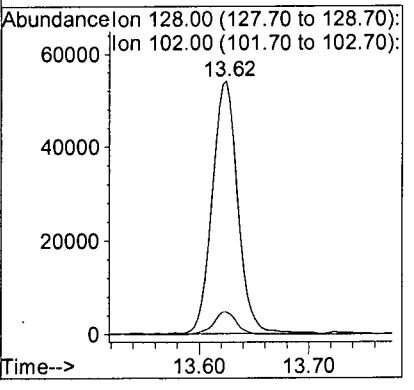




#94
Naphthalene
Concen: 2.35023 ppb
RT: 13.62 min Scan# 3945
Delta R.T. 0.00 min
Lab File: 0121L22.D
Acq: 21 Jan 15 17:01

Tgt Ion:128 Resp: 86695

Ion	Ratio	Lower	Upper
128	100		
102	9.0	5.7	10.5



EPA 8260B SOIL

Element Environmental
98-030 Hekaha St., Unit 9
Aiea, HI 96701

APPL Inc.
908 North Temperance Avenue
Clovis, CA 93611

Attn: Steve Spengler
Project: MCBH UST KB-100 SI / 130034
Sample ID: EKB100004
Sample Collection Date: 01/13/15

ARF: 75351
APPL ID: AZ09548
QCG: #86BKB-150121AL-193770

Method	Analyte	Result	LOQ	LOD	DL	Units	Extraction Date	Analysis Date
(Solid Concentrations and Limits have been adjusted to reflect 32.7 Percent Moisture.)								
EPA 8260B	1,1,1-TRICHLOROETHANE	0.00300 U	0.0074	0.00300	0.00059	mg/Kg	01/21/15	01/21/15
EPA 8260B	1,1,2,2-TETRACHLOROETHANE	0.00300 U	0.0074	0.00300	0.00180	mg/Kg	01/21/15	01/21/15
EPA 8260B	1,1,2-TRICHLOROETHANE	0.00300 U	0.0074	0.00300	0.00040	mg/Kg	01/21/15	01/21/15
EPA 8260B	1,1-DICHLOROETHANE	0.00300 U	0.0074	0.00300	0.00051	mg/Kg	01/21/15	01/21/15
EPA 8260B	1,1-DICHLOROETHENE	0.00300 U	0.0074	0.00300	0.00110	mg/Kg	01/21/15	01/21/15
EPA 8260B	1,2,3-TRICHLOROPROPANE	0.00740 U	0.0300	0.00740	0.00180	mg/Kg	01/21/15	01/21/15
EPA 8260B	1,2-DIBROMOETHANE	0.00300 U	0.0074	0.00300	0.00210	mg/Kg	01/21/15	01/21/15
EPA 8260B	1,2-DICHLOROETHANE	0.00300 U	0.0074	0.00300	0.00110	mg/Kg	01/21/15	01/21/15
EPA 8260B	1,2-DICHLOROPROPANE	0.00300 U	0.0074	0.00300	0.00110	mg/Kg	01/21/15	01/21/15
EPA 8260B	2-BUTANONE	0.00450 U	0.0300	0.00450	0.00410	mg/Kg	01/21/15	01/21/15
EPA 8260B	4-METHYL-2-PENTANONE	0.00300 U	0.0300	0.00300	0.00140	mg/Kg	01/21/15	01/21/15
EPA 8260B	ACETONE	0.00740 U	0.0740	0.00740	0.00420	mg/Kg	01/21/15	01/21/15
EPA 8260B	BENZENE	0.00300 U	0.0074	0.00300	0.00094	mg/Kg	01/21/15	01/21/15
EPA 8260B	BROMODICHLOROMETHANE	0.00300 U	0.0074	0.00300	0.00100	mg/Kg	01/21/15	01/21/15
EPA 8260B	BROMOFORM	0.00300 U	0.0074	0.00300	0.00120	mg/Kg	01/21/15	01/21/15
EPA 8260B	BROMOMETHANE	0.00300 U	0.0074	0.00300	0.00240	mg/Kg	01/21/15	01/21/15
EPA 8260B	CARBON TETRACHLORIDE	0.00300 U	0.0074	0.00300	0.00120	mg/Kg	01/21/15	01/21/15
EPA 8260B	CHLOROBENZENE	0.00300 U	0.0074	0.00300	0.00073	mg/Kg	01/21/15	01/21/15
EPA 8260B	CHLOROETHANE	0.00300 U	0.0074	0.00300	0.00230	mg/Kg	01/21/15	01/21/15
EPA 8260B	CHLOROFORM	0.00300 U	0.0074	0.00300	0.00210	mg/Kg	01/21/15	01/21/15
EPA 8260B	CHLOROMETHANE	0.00740 U	0.0074	0.00740	0.00270	mg/Kg	01/21/15	01/21/15
EPA 8260B	CIS-1,2-DICHLOROETHYLENE	0.00300 U	0.0074	0.00300	0.00033	mg/Kg	01/21/15	01/21/15
EPA 8260B	CIS-1,3-DICHLOROPROPENE	0.00300 U	0.0074	0.00300	0.00140	mg/Kg	01/21/15	01/21/15
EPA 8260B	DIBROMOCHLOROMETHANE	0.00300 U	0.0074	0.00300	0.00130	mg/Kg	01/21/15	01/21/15
EPA 8260B	ETHYLBENZENE	0.0019 J	0.0074	0.00300	0.00150	mg/Kg	01/21/15	01/21/15
EPA 8260B	METHYLENE CHLORIDE	0.01500 U	0.0300	0.01500	0.00086	mg/Kg	01/21/15	01/21/15
EPA 8260B	STYRENE	0.00300 U	0.0074	0.00300	0.00180	mg/Kg	01/21/15	01/21/15
EPA 8260B	TETRACHLOROETHENE	0.00300 U	0.0074	0.00300	0.00080	mg/Kg	01/21/15	01/21/15
EPA 8260B	TOLUENE	0.00300 U	0.0074	0.00300	0.00190	mg/Kg	01/21/15	01/21/15
EPA 8260B	TRANS-1,2-DICHLOROETHYLENE	0.00300 U	0.0074	0.00300	0.00051	mg/Kg	01/21/15	01/21/15
EPA 8260B	TRANS-1,3-DICHLOROPROPENE	0.00300 U	0.0074	0.00300	0.00120	mg/Kg	01/21/15	01/21/15
EPA 8260B	TRICHLOROETHYLENE	0.00300 U	0.0074	0.00300	0.00140	mg/Kg	01/21/15	01/21/15
EPA 8260B	VINYL CHLORIDE	0.00300 U	0.0074	0.00300	0.00220	mg/Kg	01/21/15	01/21/15
EPA 8260B	XYLENES (TOTAL)	0.0012 J	0.0074	0.00300	0.00064	mg/Kg	01/21/15	01/21/15
EPA 8260B	SURROGATE: 1,2-DICHLOROETHANE	99.2	54-154			%	01/21/15	01/21/15

J = Estimated value.

Quant Method: LALLS.M
Run #: 0121L23
Instrument: Loki
Sequence: 150119
Dilution Factor: 1
Initials: SV

Printed: 01/26/15 1:46:46 PM
APPL-F1-SC-MCRes/MCPQL-REG MDLs

EPA 8260B SOIL

Element Environmental
98-030 Hekaha St., Unit 9
Aiea, HI 96701

APPL Inc.
908 North Temperance Avenue
Clovis, CA 93611

Attn: Steve Spengler
Project: MCBH UST KB-100 SI / 130034
Sample ID: EKB100004
Sample Collection Date: 01/13/15

ARF: 75351
APPL ID: AZ09548
QCG: #86BKB-150121AL-193770

Method	Analyte	Result	LOQ	LOD	DL	Units	Extraction Date	Analysis Date
EPA 8260B	SURROGATE: 4-BROMOFLUOROBEN	98.0	85-120			%	01/21/15	01/21/15
EPA 8260B	SURROGATE: TOLUENE-D8 (S)	97.1	85-115			%	01/21/15	01/21/15

J = Estimated value.

Quant Method:	LALLS.M
Run #:	0121L23
Instrument:	Loki
Sequence:	150119
Dilution Factor:	1
Initials:	SV

Printed: 01/26/15 1:46:46 PM
APPL-F1-SC-MCRes/MCPQL-REG MDLs

Quantitation Report (QT Reviewed)

Data File : M:\LOKI\DATA\150119\0121L23.D
Acq On : 21 Jan 15 17:23
Sample : AZ09548S01 6.350
Misc : 5mL w/5uL IS&S:01/14/15,10-06-14

Vial: 22
Operator: DG,SV,RS
Inst : Loki
Multiplr: 0.79

Quant Time: Jan 22 10:24 2015 Quant Results File: LALLS.RES

Quant Method : M:\LOKI\DATA\150119\LALLS.M (RTE Integrator)
Title : METHOD 8260B
Last Update : Tue Jan 20 09:48:55 2015
Response via : Initial Calibration
DataAcq Meth : 8260_BETA

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene (IS)	5.86	96	797952	50.00000 ppb	0.00
55) Chlorobenzene-D5 (IS)	9.09	117	730944	50.00000 ppb	0.00
70) 1,4-Dichlorobenzene-D (IS)	11.42	152	409408	50.00000 ppb	0.00
System Monitoring Compounds					
31) Dibromofluoromethane(S)	5.02	111	371053	51.80633 ppb	0.00
Spiked Amount 52.439			Recovery	= 98.792%	
36) 1,2-DCA-D4(S)	5.43	65	387469	47.68768 ppb	0.00
Spiked Amount 48.066			Recovery	= 99.214%	
56) Toluene-D8(S)	7.62	98	1376436	59.42711 ppb	0.00
Spiked Amount 61.175			Recovery	= 97.143%	
64) 4-Bromofluorobenzene(S)	10.27	95	521580	53.44497 ppb	0.00
Spiked Amount 54.538			Recovery	= 97.996%	

Target Compounds					Qvalue
61) m&p-Xylene	9.37	91	12562	0.70124 ppb	95
62) o-Xylene	9.76	106	1983	0.13632 ppb	76
68) Ethylbenzene	9.25	91	45517	1.26538 ppb	97
94) Naphthalene	13.62	128	53091	1.41662 ppb	99

(#) = qualifier out of range (m) = manual integration

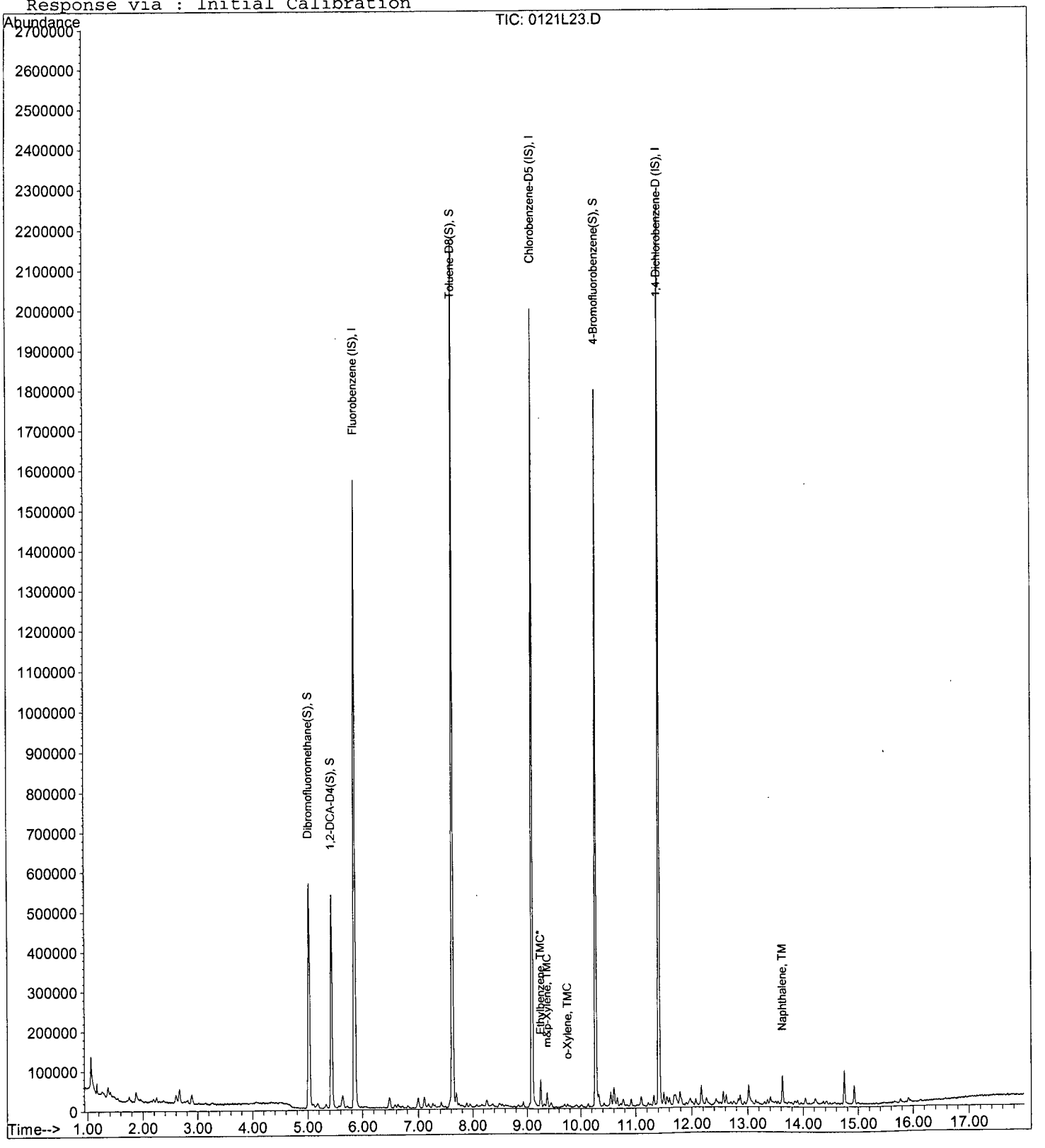
Quantitation Report

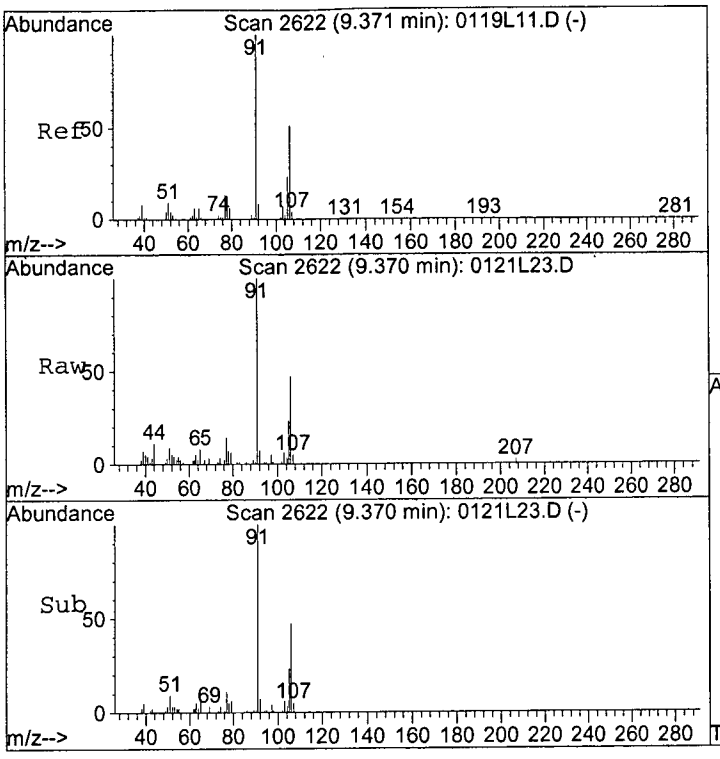
Data File : M:\LOKI\DATA\150119\0121L23.D
Acq On : 21 Jan 15 17:23
Sample : AZ09548S01 6.350
Misc : 5mL w/5uL IS&S:01/14/15,10-06-14

Vial: 22
Operator: DG,SV,RS
Inst : Loki
Multiplr: 0.79

Quant Time: Jan 22 10:24 2015 Quant Results File: LALLS.RES

Method : M:\LOKI\DATA\150119\LALLS.M (RTE Integrator)
Title : METHOD 8260B
Last Update : Tue Jan 20 09:48:55 2015
Response via : Initial Calibration

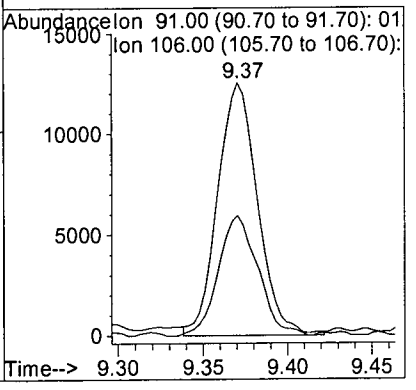


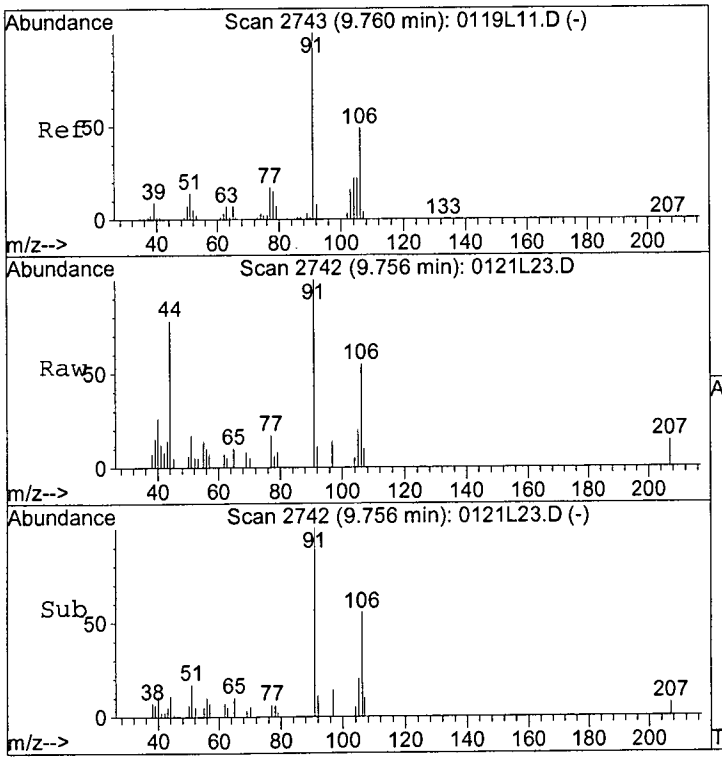


#61
m&p-Xylene
Concen: 0.70124 ppb
RT: 9.37 min Scan# 2622
Delta R.T. 0.00 min
Lab File: 0121L23.D
Acq: 21 Jan 15 17:23

Tgt Ion: 91 Resp: 12562

Ion	Ratio	Lower	Upper
91	100		
106	47.0	40.5	60.7

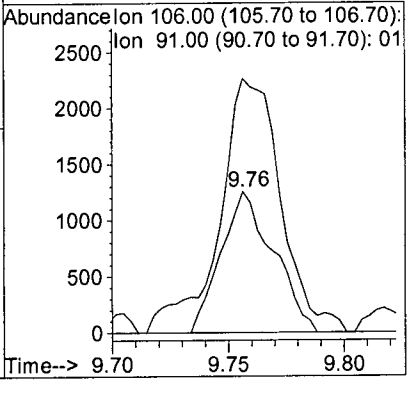


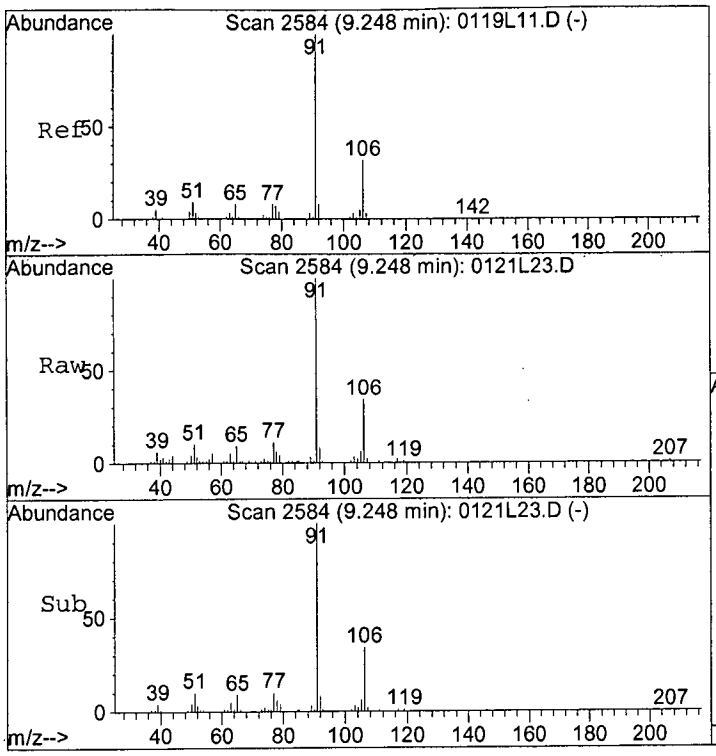


#62
o-Xylene
Concen: 0.13632 ppb
RT: 9.76 min Scan# 2742
Delta R.T. -0.00 min
Lab File: 0121L23.D
Acq: 21 Jan 15 17:23

Tgt Ion:106 Resp: 1983

Ion	Ratio	Lower	Upper
106	100		
91	166.8	142.9	265.5

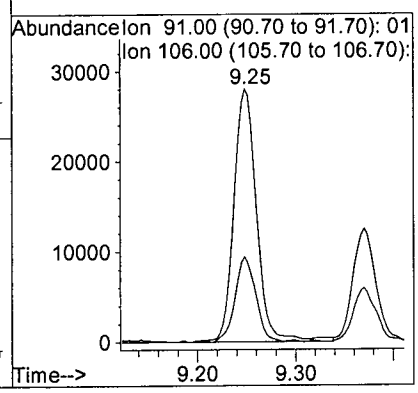


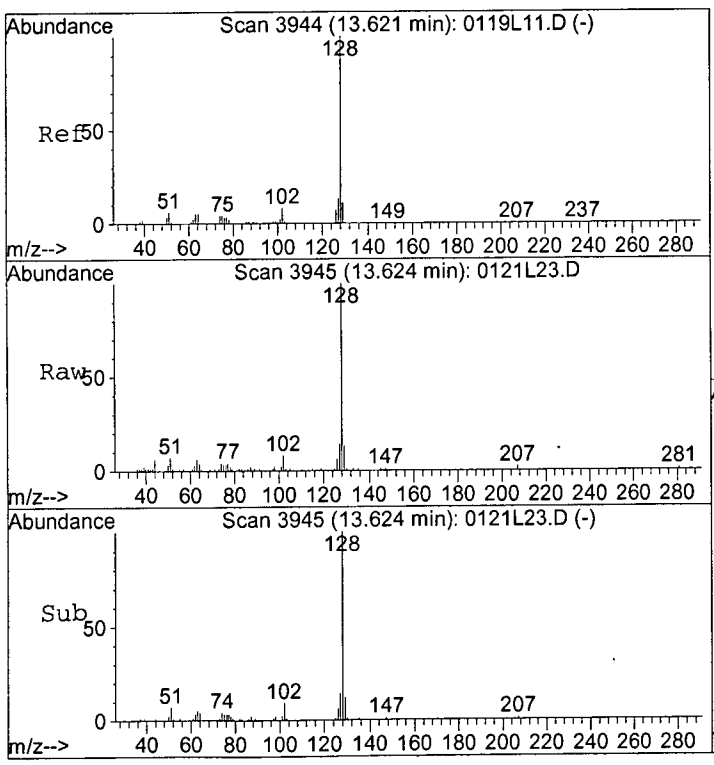


#68
Ethylbenzene
Concen: 1.26538 ppb
RT: 9.25 min Scan# 2584
Delta R.T. -0.00 min
Lab File: 0121L23.D
Acq: 21 Jan 15 17:23

Tgt Ion: 91 Resp: 45517

Ion	Ratio	Lower	Upper
91	100		
106	33.7	22.3	41.5

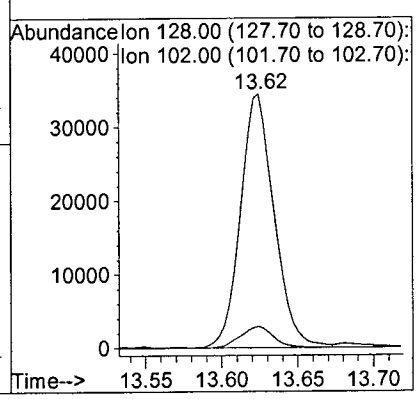




#94
Naphthalene
Concen: 1.41662 ppb
RT: 13.62 min Scan# 3945
Delta R.T. 0.00 min
Lab File: 0121L23.D
Acq: 21 Jan 15 17:23

Tgt Ion:128 Resp: 53091

Ion	Ratio	Lower	Upper
128	100		
102	8.5	5.7	10.5



EPA 8260B SOIL

Element Environmental
98-030 Hekaha St., Unit 9
Aiea, HI 96701

APPL Inc.
908 North Temperance Avenue
Clovis, CA 93611

Attn: Steve Spengler
Project: MCBH UST KB-100 SI / 130034
Sample ID: EKB100005
Sample Collection Date: 01/13/15

ARF: 75351
APPL ID: AZ09549
QCG: #86BKB-150122AL-193773

Method	Analyte	Result	LOQ	LOD	DL	Units	Extraction Date	Analysis Date
(Solid Concentrations and Limits have been adjusted to reflect 27.7 Percent Moisture.)								
EPA 8260B	1,1,1-TRICHLOROETHANE	0.00280 U	0.0069	0.00280	0.00055	mg/Kg	01/22/15	01/22/15
EPA 8260B	1,1,2,2-TETRACHLOROETHANE	0.00280 U	0.0069	0.00280	0.00170	mg/Kg	01/22/15	01/22/15
EPA 8260B	1,1,2-TRICHLOROETHANE	0.00280 U	0.0069	0.00280	0.00037	mg/Kg	01/22/15	01/22/15
EPA 8260B	1,1-DICHLOROETHANE	0.00280 U	0.0069	0.00280	0.00047	mg/Kg	01/22/15	01/22/15
EPA 8260B	1,1-DICHLOROETHENE	0.00280 U	0.0069	0.00280	0.00110	mg/Kg	01/22/15	01/22/15
EPA 8260B	1,2,3-TRICHLOROPROPANE	0.00690 U	0.0280	0.00690	0.00170	mg/Kg	01/22/15	01/22/15
EPA 8260B	1,2-DIBROMOETHANE	0.00280 U	0.0069	0.00280	0.00200	mg/Kg	01/22/15	01/22/15
EPA 8260B	1,2-DICHLOROETHANE	0.00280 U	0.0069	0.00280	0.00110	mg/Kg	01/22/15	01/22/15
EPA 8260B	1,2-DICHLOROPROPANE	0.00280 U	0.0069	0.00280	0.00100	mg/Kg	01/22/15	01/22/15
EPA 8260B	2-BUTANONE	0.00410 U	0.0280	0.00410	0.00390	mg/Kg	01/22/15	01/22/15
EPA 8260B	4-METHYL-2-PENTANONE	0.00280 U	0.0280	0.00280	0.00130	mg/Kg	01/22/15	01/22/15
EPA 8260B	ACETONE	0.0088 J	0.0690	0.00690	0.00390	mg/Kg	01/22/15	01/22/15
EPA 8260B	BENZENE	0.00280 U	0.0069	0.00280	0.00087	mg/Kg	01/22/15	01/22/15
EPA 8260B	BROMODICHLOROMETHANE	0.00280 U	0.0069	0.00280	0.00095	mg/Kg	01/22/15	01/22/15
EPA 8260B	BROMOFORM	0.00280 U	0.0069	0.00280	0.00110	mg/Kg	01/22/15	01/22/15
EPA 8260B	BROMOMETHANE	0.00280 U	0.0069	0.00280	0.00220	mg/Kg	01/22/15	01/22/15
EPA 8260B	CARBON TETRACHLORIDE	0.00280 U	0.0069	0.00280	0.00110	mg/Kg	01/22/15	01/22/15
EPA 8260B	CHLOROBENZENE	0.00280 U	0.0069	0.00280	0.00068	mg/Kg	01/22/15	01/22/15
EPA 8260B	CHLOROETHANE	0.00280 U	0.0069	0.00280	0.00210	mg/Kg	01/22/15	01/22/15
EPA 8260B	CHLOROFORM	0.00280 U	0.0069	0.00280	0.00200	mg/Kg	01/22/15	01/22/15
EPA 8260B	CHLOROMETHANE	0.00690 U	0.0069	0.00690	0.00250	mg/Kg	01/22/15	01/22/15
EPA 8260B	CIS-1,2-DICHLOROETHYLENE	0.00280 U	0.0069	0.00280	0.00030	mg/Kg	01/22/15	01/22/15
EPA 8260B	CIS-1,3-DICHLOROPROPENE	0.00280 U	0.0069	0.00280	0.00130	mg/Kg	01/22/15	01/22/15
EPA 8260B	DIBROMOCHLOROMETHANE	0.00280 U	0.0069	0.00280	0.00120	mg/Kg	01/22/15	01/22/15
EPA 8260B	ETHYLBENZENE	0.00280 U	0.0069	0.00280	0.00140	mg/Kg	01/22/15	01/22/15
EPA 8260B	METHYLENE CHLORIDE	0.01400 U	0.0280	0.01400	0.00080	mg/Kg	01/22/15	01/22/15
EPA 8260B	STYRENE	0.00280 U	0.0069	0.00280	0.00170	mg/Kg	01/22/15	01/22/15
EPA 8260B	TETRACHLOROETHENE	0.00280 U	0.0069	0.00280	0.00075	mg/Kg	01/22/15	01/22/15
EPA 8260B	TOLUENE	0.0026 J	0.0069	0.00280	0.00180	mg/Kg	01/22/15	01/22/15
EPA 8260B	TRANS-1,2-DICHLOROETHYLENE	0.00280 U	0.0069	0.00280	0.00047	mg/Kg	01/22/15	01/22/15
EPA 8260B	TRANS-1,3-DICHLOROPROPENE	0.00280 U	0.0069	0.00280	0.00110	mg/Kg	01/22/15	01/22/15
EPA 8260B	TRICHLOROETHYLENE	0.00280 U	0.0069	0.00280	0.00130	mg/Kg	01/22/15	01/22/15
EPA 8260B	VINYL CHLORIDE	0.00280 U	0.0069	0.00280	0.00210	mg/Kg	01/22/15	01/22/15
EPA 8260B	XYLENES (TOTAL)	0.0018 J	0.0069	0.00280	0.00059	mg/Kg	01/22/15	01/22/15
EPA 8260B	SURROGATE: 1,2-DICHLOROETHANE	101	54-154			%	01/22/15	01/22/15

J = Estimated value.

Quant Method: LALLS.M
Run #: 0122L10
Instrument: Loki
Sequence: 150119
Dilution Factor: 1
Initials: SV

Printed: 01/26/15 1:46:46 PM
APPL-F1-SC-MCRes/MCPQL-REG MDLs

EPA 8260B SOIL

Element Environmental
98-030 Hekaha St., Unit 9
Aiea, HI 96701

APPL Inc.
908 North Temperance Avenue
Clovis, CA 93611

Attn: Steve Spengler
Project: MCBH UST KB-100 SI / 130034
Sample ID: EKB100005
Sample Collection Date: 01/13/15

ARF: 75351
APPL ID: AZ09549
QCG: #86BKB-150122AL-193773

Method	Analyte	Result	LOQ	LOD	DL	Units	Extraction Date	Analysis Date
EPA 8260B	SURROGATE: 4-BROMOFLUOROBEN	97.5	85-120			%	01/22/15	01/22/15
EPA 8260B	SURROGATE: TOLUENE-D8 (S)	100	85-115			%	01/22/15	01/22/15

J = Estimated value.

Quant Method:	LALLS.M
Run #:	0122L10
Instrument:	Loki
Sequence:	150119
Dilution Factor:	1
Initials:	SV

Printed: 01/26/15 1:46:46 PM
APPL-F1-SC-MCRes/MCPQL-REG MDLs

Quantitation Report (QT Reviewed)

Data File : M:\LOKI\DATA\150119\0122L10.D
Acq On : 22 Jan 15 11:16
Sample : AZ09549S02 7.398g
Misc : 5mL w/5uL IS&S:01/14/15,10-06-14

Vial: 9
Operator: DG,SV,RS
Inst : Loki
Multiplr: 0.68

Quant Time: Jan 23 15:02 2015 Quant Results File: LALLS.RES

Quant Method : M:\LOKI\DATA\150119\LALLS.M (RTE Integrator)
Title : METHOD 8260B
Last Update : Tue Jan 20 09:48:55 2015
Response via : Initial Calibration
DataAcq Meth : 8260_BETA

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene (IS)	5.86	96	509952	50.00000 ppb	0.00
55) Chlorobenzene-D5 (IS)	9.09	117	463872	50.00000 ppb	0.00
70) 1,4-Dichlorobenzene-D (IS)	11.41	152	248192	50.00000 ppb	0.00
System Monitoring Compounds					
31) Dibromofluoromethane(S)	5.02	111	248137	54.21081 ppb	0.00
Spiked Amount 52.439			Recovery	= 103.379%	
36) 1,2-DCA-D4(S)	5.44	65	251928	48.51691 ppb	0.00
Spiked Amount 48.066			Recovery	= 100.939%	
56) Toluene-D8(S)	7.62	98	901037	61.29953 ppb	0.00
Spiked Amount 61.175			Recovery	= 100.204%	
64) 4-Bromofluorobenzene(S)	10.27	95	329261	53.16333 ppb	0.00
Spiked Amount 54.538			Recovery	= 97.479%	

Target Compounds					Qvalue
11) Acetone	2.19	43	24434	6.32741 ppb	98
19) Carbon disulfide	2.30	76	30120	1.84987 ppb	97
51) Toluene	7.70	91	47611	1.89379 ppb	91
61) m&p-Xylene	9.37	91	13786	1.04062 ppb #	85
62) o-Xylene	9.76	106	2915	0.27097 ppb	89

(#) = qualifier out of range (m) = manual integration

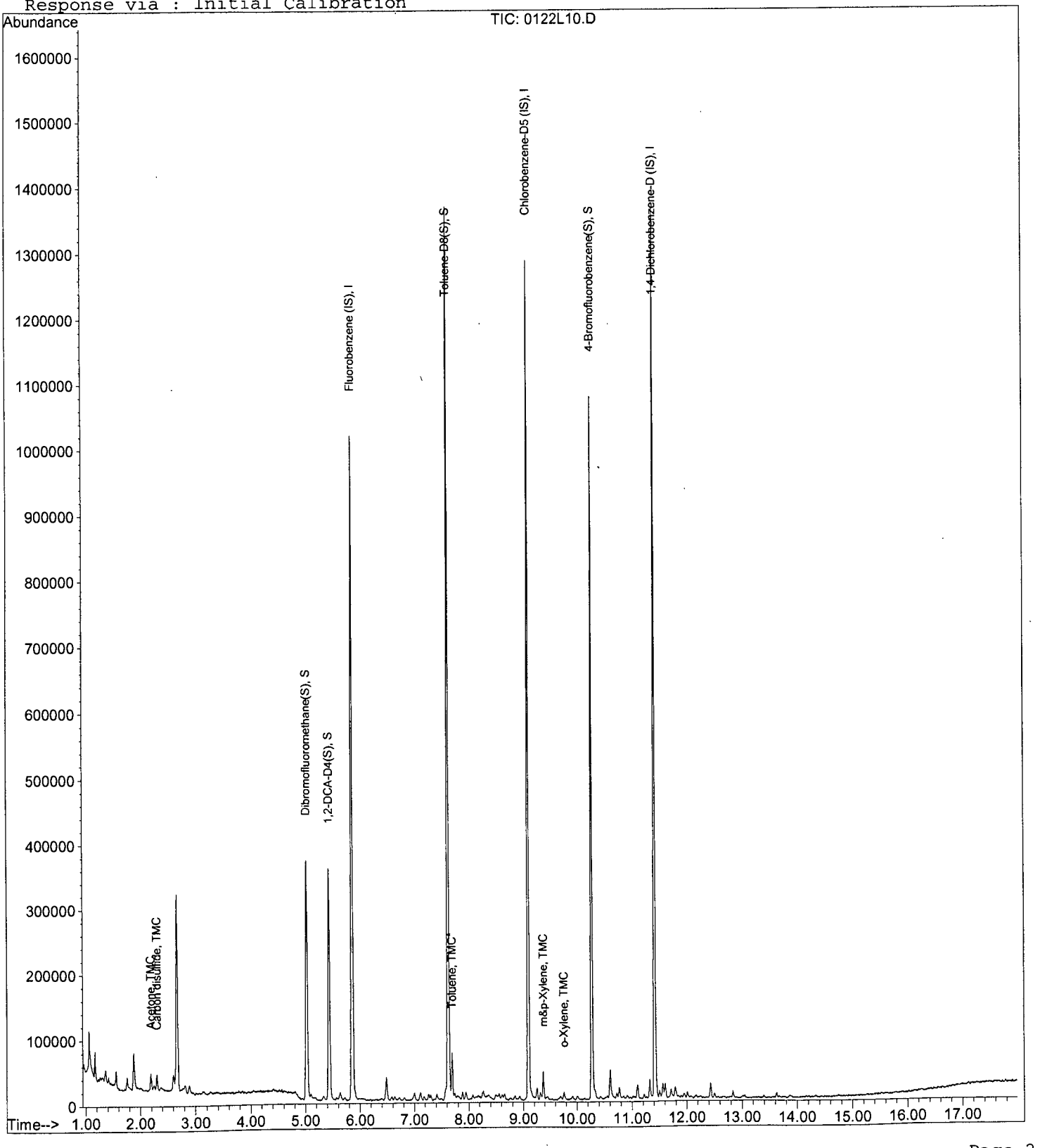
Quantitation Report

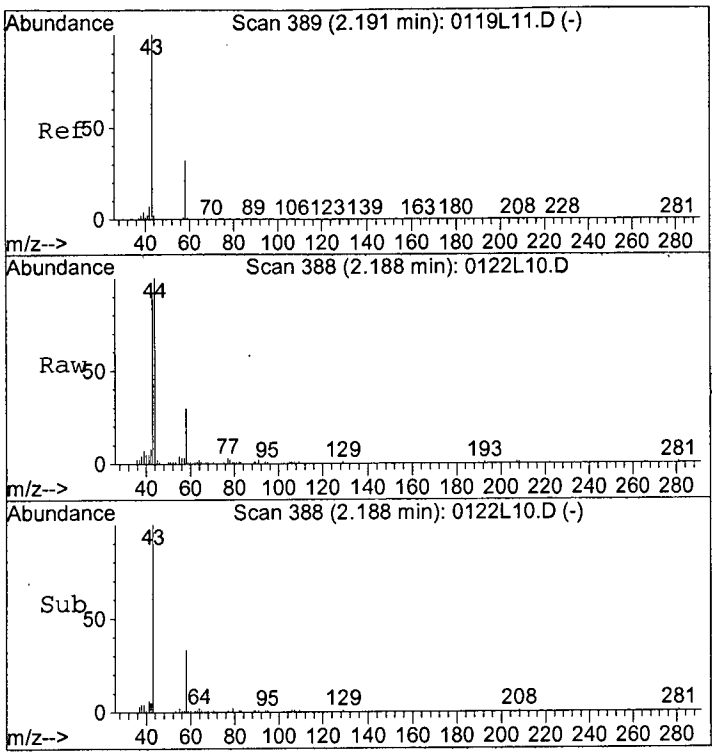
Data File : M:\LOKI\DATA\150119\0122L10.D
Acq On : 22 Jan 15 11:16
Sample : AZ09549S02 7.398g
Misc : 5mL w/5uL IS&S:01/14/15,10-06-14

Vial: 9
Operator: DG,SV,RS
Inst : Loki
Multiplr: 0.68

Quant Time: Jan 23 15:02 2015 Quant Results File: LALLS.RES

Method : M:\LOKI\DATA\150119\LALLS.M (RTE Integrator)
Title : METHOD 8260B
Last Update : Fri Jan 23 13:43:44 2015
Response via : Initial Calibration

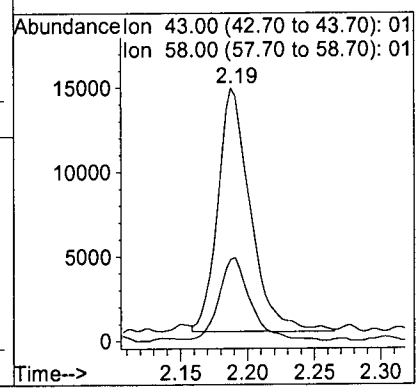


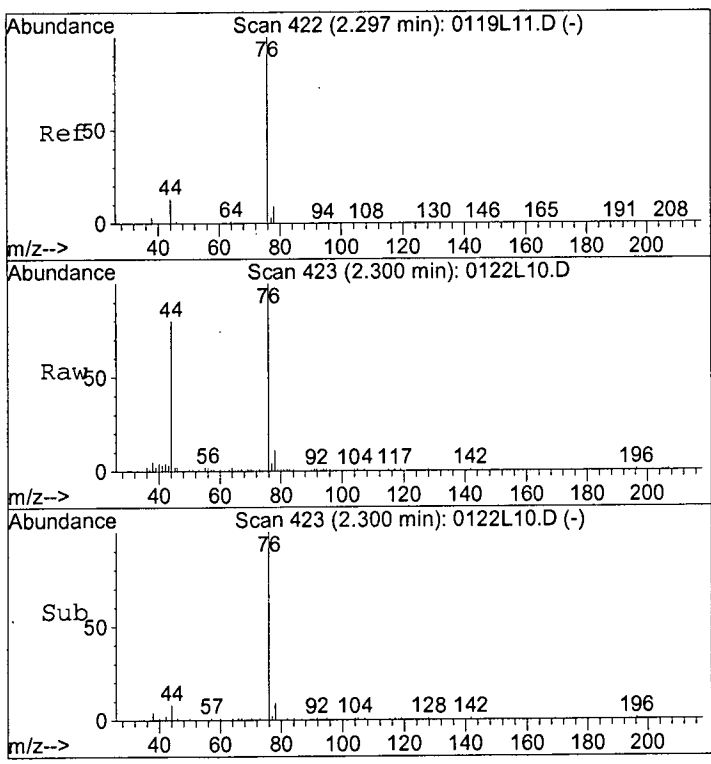


#11
Acetone
Concen: 6.32741 ppb
RT: 2.19 min Scan# 388
Delta R.T. -0.00 min
Lab File: 0122L10.D
Acq: 22 Jan 15 11:16

Tgt Ion: 43 Resp: 24434

Ion	Ratio	Lower	Upper
43	100		
58	33.0	22.2	41.2

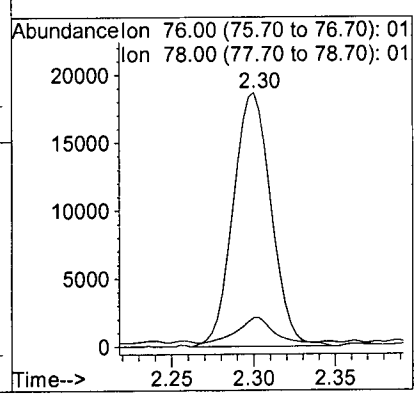


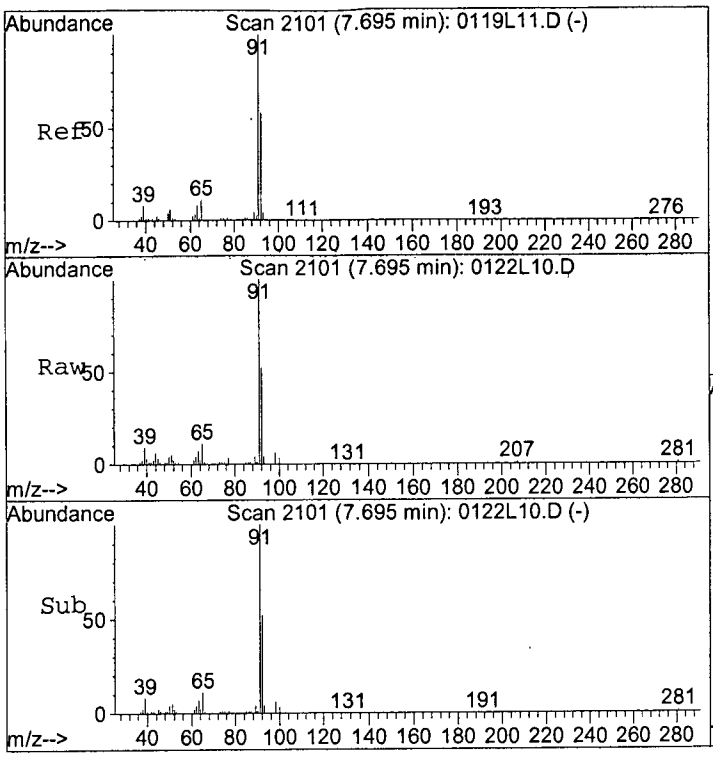


#19
Carbon disulfide
Concen: 1.84987 ppb
RT: 2.30 min Scan# 423
Delta R.T. 0.00 min
Lab File: 0122L10.D
Acq: 22 Jan 15 11:16

Tgt Ion: 76 Resp: 30120

Ion	Ratio	Lower	Upper
76	100		
78	9.5	6.0	11.2

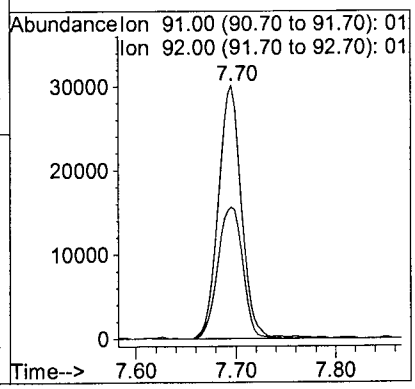


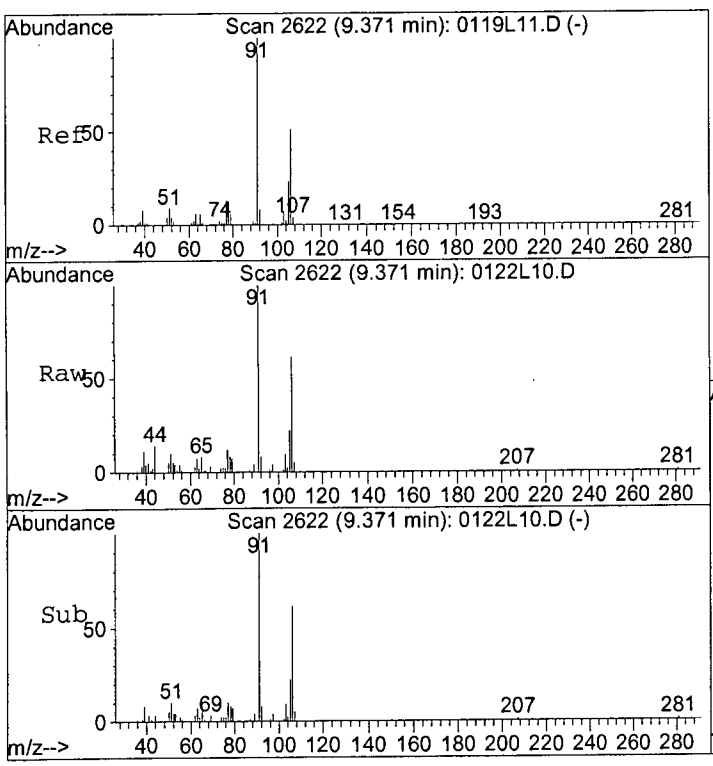


#51
Toluene
Concen: 1.89379 ppb
RT: 7.70 min Scan# 2101
Delta R.T. 0.00 min
Lab File: 0122L10.D
Acq: 22 Jan 15 11:16

Tgt Ion: 91 Resp: 47611

Ion	Ratio	Lower	Upper
91	100		
92	51.9	40.9	75.9

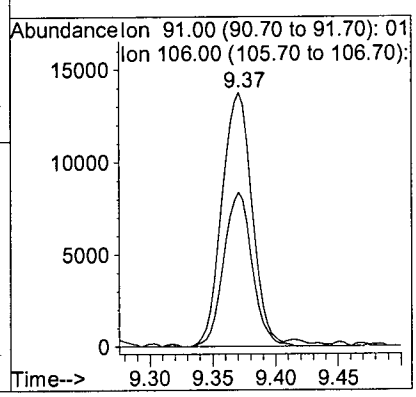


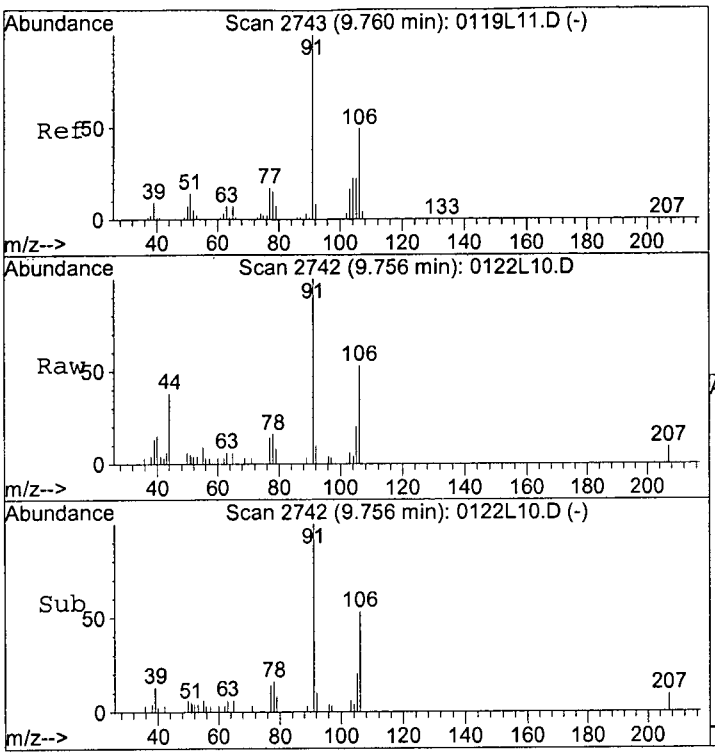


#61
m&p-Xylene
Concen: 1.04062 ppb
RT: 9.37 min Scan# 2622
Delta R.T. 0.00 min
Lab File: 0122L10.D
Acq: 22 Jan 15 11:16

Tgt Ion: 91 Resp: 13786

Ion	Ratio	Lower	Upper
91	100		
106	60.9	40.5	60.7#

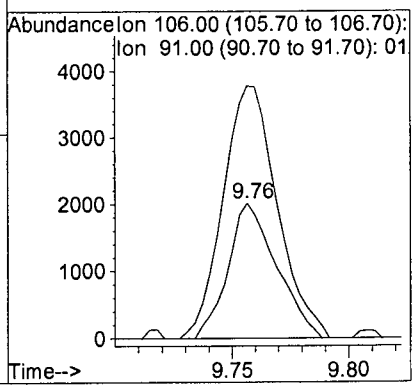




#62
o-Xylene
Concen: 0.27097 ppb
RT: 9.76 min Scan# 2742
Delta R.T. -0.00 min
Lab File: 0122L10.D
Acq: 22 Jan 15 11:16

Tgt Ion:106 Resp: 2915

Ion	Ratio	Lower	Upper
106	100		
91	187.5	142.9	265.5



EPA 8260B SOIL

Element Environmental
98-030 Hekaha St., Unit 9
Aiea, HI 96701

APPL Inc.
908 North Temperance Avenue
Clovis, CA 93611

Attn: Steve Spengler
Project: MCBH UST KB-100 SI / 130034
Sample ID: EKB100006
Sample Collection Date: 01/13/15

ARF: 75351
APPL ID: AZ09550
QCG: #86BKB-150121AL-193770

Method	Analyte	Result	LOQ	LOD	DL	Units	Extraction Date	Analysis Date
(Solid Concentrations and Limits have been adjusted to reflect 22.0 Percent Moisture.)								
EPA 8260B	1,1,1-TRICHLOROETHANE	0.00260 U	0.0064	0.00260	0.00051	mg/Kg	01/21/15	01/21/15
EPA 8260B	1,1,2,2-TETRACHLOROETHANE	0.00260 U	0.0064	0.00260	0.00150	mg/Kg	01/21/15	01/21/15
EPA 8260B	1,1,2-TRICHLOROETHANE	0.00260 U	0.0064	0.00260	0.00035	mg/Kg	01/21/15	01/21/15
EPA 8260B	1,1-DICHLOROETHANE	0.00260 U	0.0064	0.00260	0.00044	mg/Kg	01/21/15	01/21/15
EPA 8260B	1,1-DICHLOROETHENE	0.00260 U	0.0064	0.00260	0.00097	mg/Kg	01/21/15	01/21/15
EPA 8260B	1,2,3-TRICHLOROPROPANE	0.00640 U	0.0260	0.00640	0.00160	mg/Kg	01/21/15	01/21/15
EPA 8260B	1,2-DIBROMOETHANE	0.00260 U	0.0064	0.00260	0.00180	mg/Kg	01/21/15	01/21/15
EPA 8260B	1,2-DICHLOROETHANE	0.00260 U	0.0064	0.00260	0.00099	mg/Kg	01/21/15	01/21/15
EPA 8260B	1,2-DICHLOROPROPANE	0.00260 U	0.0064	0.00260	0.00092	mg/Kg	01/21/15	01/21/15
EPA 8260B	2-BUTANONE	0.0041 J	0.0260	0.00380	0.00360	mg/Kg	01/21/15	01/21/15
EPA 8260B	4-METHYL-2-PENTANONE	0.00260 U	0.0260	0.00260	0.00120	mg/Kg	01/21/15	01/21/15
EPA 8260B	ACETONE	0.011 J	0.0640	0.00640	0.00360	mg/Kg	01/21/15	01/21/15
EPA 8260B	BENZENE	0.00260 U	0.0064	0.00260	0.00081	mg/Kg	01/21/15	01/21/15
EPA 8260B	BROMODICHLOROMETHANE	0.00260 U	0.0064	0.00260	0.00088	mg/Kg	01/21/15	01/21/15
EPA 8260B	BROMOFORM	0.00260 U	0.0064	0.00260	0.00100	mg/Kg	01/21/15	01/21/15
EPA 8260B	BROMOMETHANE	0.00260 U	0.0064	0.00260	0.00210	mg/Kg	01/21/15	01/21/15
EPA 8260B	CARBON TETRACHLORIDE	0.00260 U	0.0064	0.00260	0.00100	mg/Kg	01/21/15	01/21/15
EPA 8260B	CHLOROBENZENE	0.00260 U	0.0064	0.00260	0.00063	mg/Kg	01/21/15	01/21/15
EPA 8260B	CHLOROETHANE	0.00260 U	0.0064	0.00260	0.00200	mg/Kg	01/21/15	01/21/15
EPA 8260B	CHLOROFORM	0.00260 U	0.0064	0.00260	0.00180	mg/Kg	01/21/15	01/21/15
EPA 8260B	CHLOROMETHANE	0.00640 U	0.0064	0.00640	0.00230	mg/Kg	01/21/15	01/21/15
EPA 8260B	CIS-1,2-DICHLOROETHYLENE	0.00260 U	0.0064	0.00260	0.00028	mg/Kg	01/21/15	01/21/15
EPA 8260B	CIS-1,3-DICHLOROPROPENE	0.00260 U	0.0064	0.00260	0.00120	mg/Kg	01/21/15	01/21/15
EPA 8260B	DIBROMOCHLOROMETHANE	0.00260 U	0.0064	0.00260	0.00110	mg/Kg	01/21/15	01/21/15
EPA 8260B	ETHYLBENZENE	0.00260 U	0.0064	0.00260	0.00130	mg/Kg	01/21/15	01/21/15
EPA 8260B	METHYLENE CHLORIDE	0.01300 U	0.0260	0.01300	0.00074	mg/Kg	01/21/15	01/21/15
EPA 8260B	STYRENE	0.00260 U	0.0064	0.00260	0.00160	mg/Kg	01/21/15	01/21/15
EPA 8260B	TETRACHLOROETHENE	0.00260 U	0.0064	0.00260	0.00069	mg/Kg	01/21/15	01/21/15
EPA 8260B	TOLUENE	0.00260 U	0.0064	0.00260	0.00170	mg/Kg	01/21/15	01/21/15
EPA 8260B	TRANS-1,2-DICHLOROETHYLENE	0.00260 U	0.0064	0.00260	0.00044	mg/Kg	01/21/15	01/21/15
EPA 8260B	TRANS-1,3-DICHLOROPROPENE	0.00260 U	0.0064	0.00260	0.00100	mg/Kg	01/21/15	01/21/15
EPA 8260B	TRICHLOROETHYLENE	0.00260 U	0.0064	0.00260	0.00120	mg/Kg	01/21/15	01/21/15
EPA 8260B	VINYL CHLORIDE	0.00260 U	0.0064	0.00260	0.00190	mg/Kg	01/21/15	01/21/15
EPA 8260B	XYLENES (TOTAL)	0.00057 J	0.0064	0.00260	0.00055	mg/Kg	01/21/15	01/21/15
EPA 8260B	SURROGATE: 1,2-DICHLOROETHANE	103	54-154			%	01/21/15	01/21/15

J = Estimated value.

Quant Method: LALLS.M
Run #: 0121L25
Instrument: Loki
Sequence: 150119
Dilution Factor: 1
Initials: SV

Printed: 01/26/15 1:46:46 PM
APPL-F1-SC-MCRes/MCPQL-REG MDLs

EPA 8260B SOIL

Element Environmental
98-030 Hekaha St., Unit 9
Aiea, HI 96701

APPL Inc.
908 North Temperance Avenue
Clovis, CA 93611

Attn: Steve Spengler
Project: MCBH UST KB-100 SI / 130034
Sample ID: EKB100006
Sample Collection Date: 01/13/15

ARF: 75351
APPL ID: AZ09550
QCG: #86BKB-150121AL-193770

Method	Analyte	Result	LOQ	LOD	DL	Units	Extraction Date	Analysis Date
EPA 8260B	SURROGATE: 4-BROMOFLUOROBEN	96.2	85-120			%	01/21/15	01/21/15
EPA 8260B	SURROGATE: TOLUENE-D8 (S)	95.3	85-115			%	01/21/15	01/21/15

J = Estimated value.

Quant Method:	LALLS.M
Run #:	0121L25
Instrument:	Loki
Sequence:	150119
Dilution Factor:	1
Initials:	SV

Printed: 01/26/15 1:46:46 PM
APPL-F1-SC-MCRes/MCPQL-REG MDLs

Quantitation Report (QT Reviewed)

Data File : M:\LOKI\DATA\150119\0121L25.D
Acq On : 21 Jan 15 18:06
Sample : AZ09550S01 7.370
Misc : 5mL w/5uL IS&S:01/14/15,10-06-14

Vial: 24
Operator: DG,SV,RS
Inst : Loki
Multiplr: 0.68

Quant Time: Jan 22 10:28 2015 Quant Results File: LALLS.RES

Quant Method : M:\LOKI\DATA\150119\LALLS.M (RTE Integrator)
Title : METHOD 8260B
Last Update : Tue Jan 20 09:48:55 2015
Response via : Initial Calibration
DataAcq Meth : 8260_BETA

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene (IS)	5.86	96	785216	50.00000 ppb	0.00
55) Chlorobenzene-D5 (IS)	9.09	117	734976	50.00000 ppb	0.00
70) 1,4-Dichlorobenzene-D (IS)	11.41	152	408704	50.00000 ppb	0.00
System Monitoring Compounds					
31) Dibromofluoromethane(S)	5.02	111	376906	53.47707 ppb	0.00
Spiked Amount 52.439			Recovery	= 101.979%	
36) 1,2-DCA-D4(S)	5.43	65	397689	49.73938 ppb	0.00
Spiked Amount 48.066			Recovery	= 103.481%	
56) Toluene-D8(S)	7.62	98	1357659	58.29485 ppb	0.00
Spiked Amount 61.175			Recovery	= 95.292%	
64) 4-Bromofluorobenzene(S)	10.27	95	514642	52.44476 ppb	0.00
Spiked Amount 54.538			Recovery	= 96.162%	
Target Compounds					Qvalue
11) Acetone	2.19	43	44917	8.56868 ppb	88
19) Carbon disulfide	2.30	76	132445	5.30387 ppb	99
26) MEK (2-Butanone)	4.41	43	16008	3.19121 ppb #	79
61) m&p-Xylene	9.37	91	9242	0.44205 ppb	91

(#) = qualifier out of range (m) = manual integration

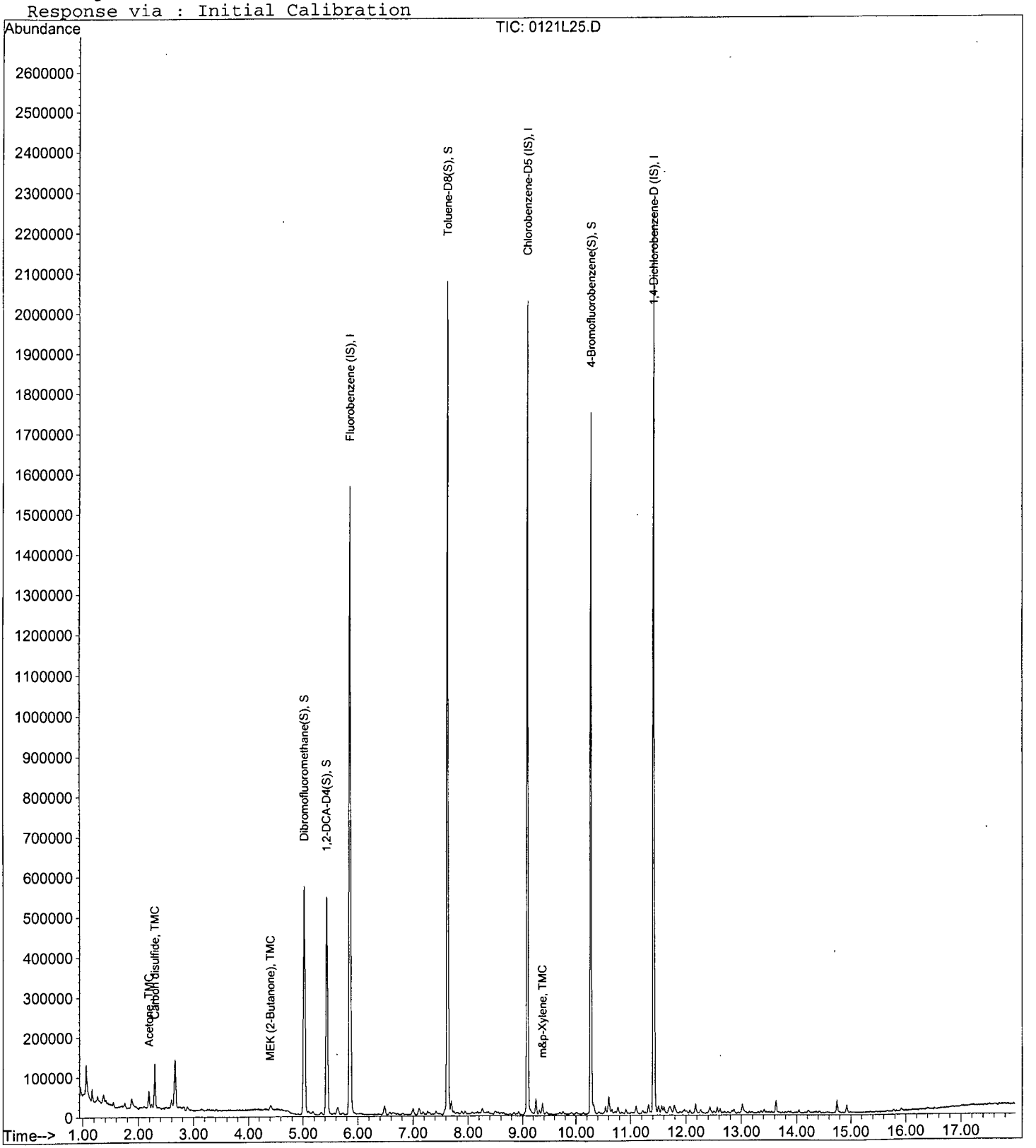
Quantitation Report

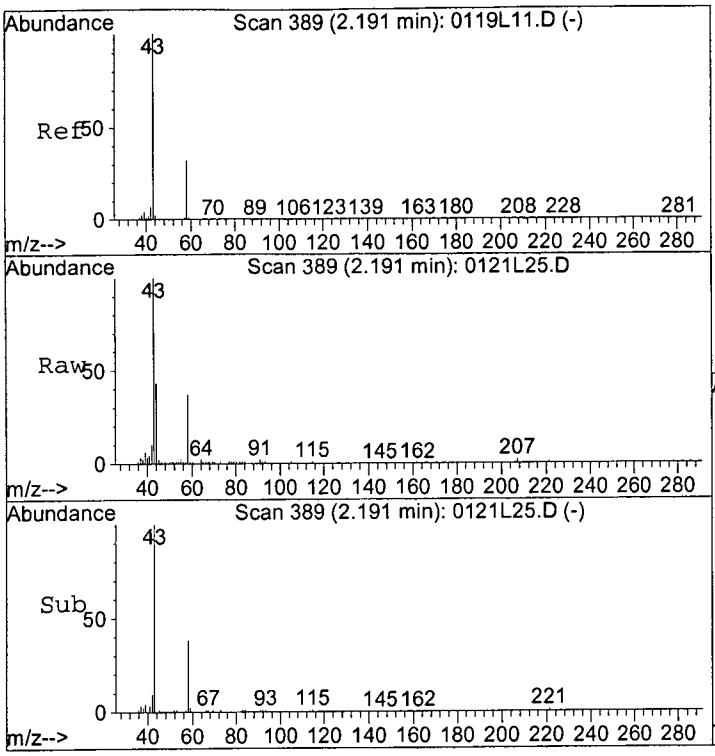
Data File : M:\LOKI\DATA\150119\0121L25.D
Acq On : 21 Jan 15 18:06
Sample : AZ09550S01 7.370
Misc : 5mL w/5uL IS&S:01/14/15,10-06-14

Vial: 24
Operator: DG,SV,RS
Inst : Loki
Multiplr: 0.68

Quant Time: Jan 22 10:28 2015 Quant Results File: LALLS.RES

Method : M:\LOKI\DATA\150119\LALLS.M (RTE Integrator)
Title : METHOD 8260B
Last Update : Tue Jan 20 09:48:55 2015
Response via : Initial Calibration

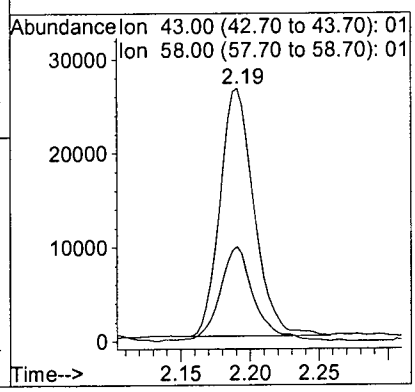


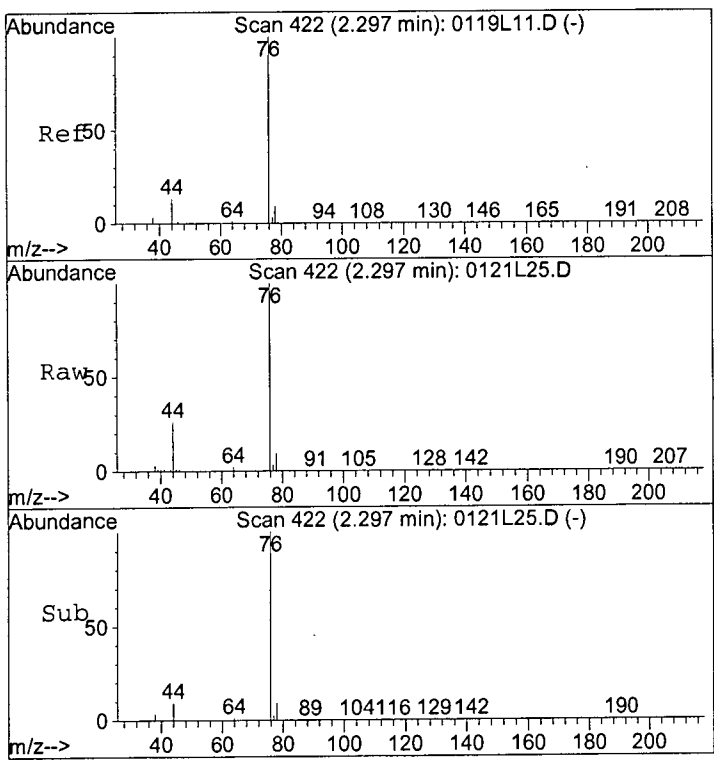


#11
Acetone
Concen: 8.56868 ppb
RT: 2.19 min Scan# 389
Delta R.T. 0.00 min
Lab File: 0121L25.D
Acq: 21 Jan 15 18:06

Tgt Ion: 43 Resp: 44917

Ion	Ratio	Lower	Upper
43	100		
58	38.2	22.2	41.2

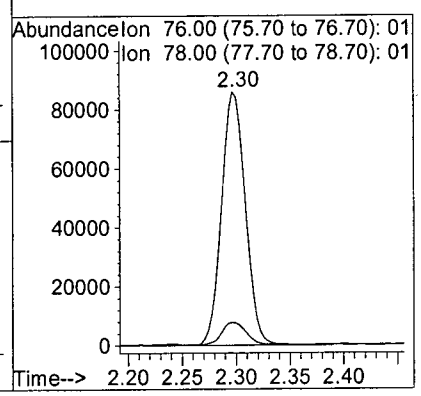


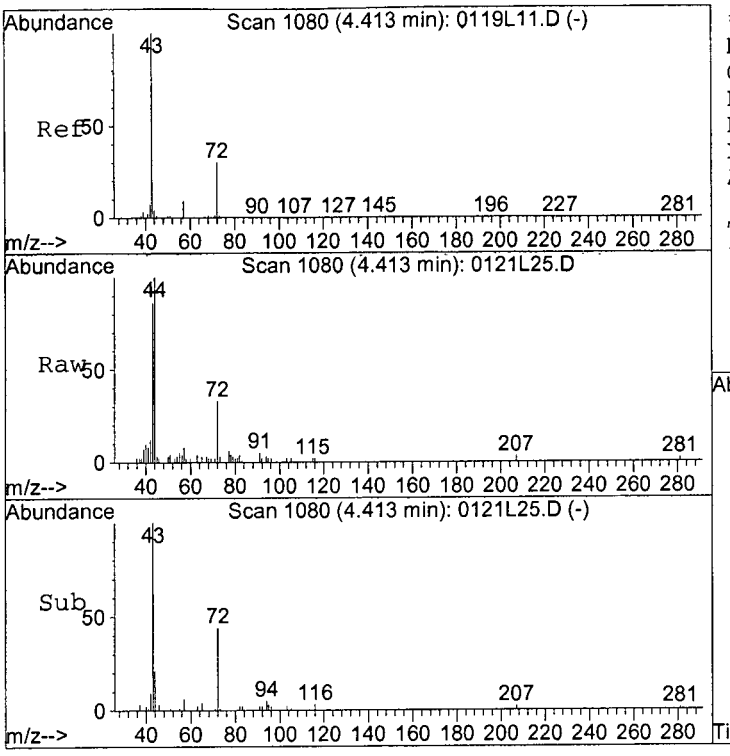


#19
Carbon disulfide
Concen: 5.30387 ppb
RT: 2.30 min Scan# 422
Delta R.T. 0.00 min
Lab File: 0121L25.D
Acq: 21 Jan 15 18:06

Tgt Ion: 76 Resp: 132445

Ion	Ratio	Lower	Upper
76	100		
78	8.8	6.0	11.2

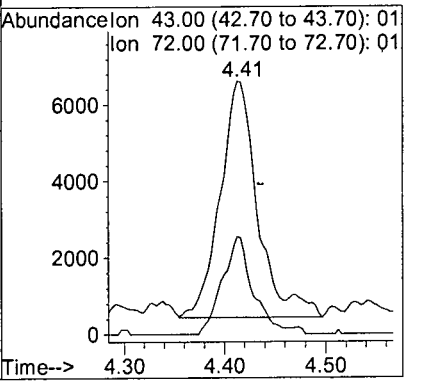


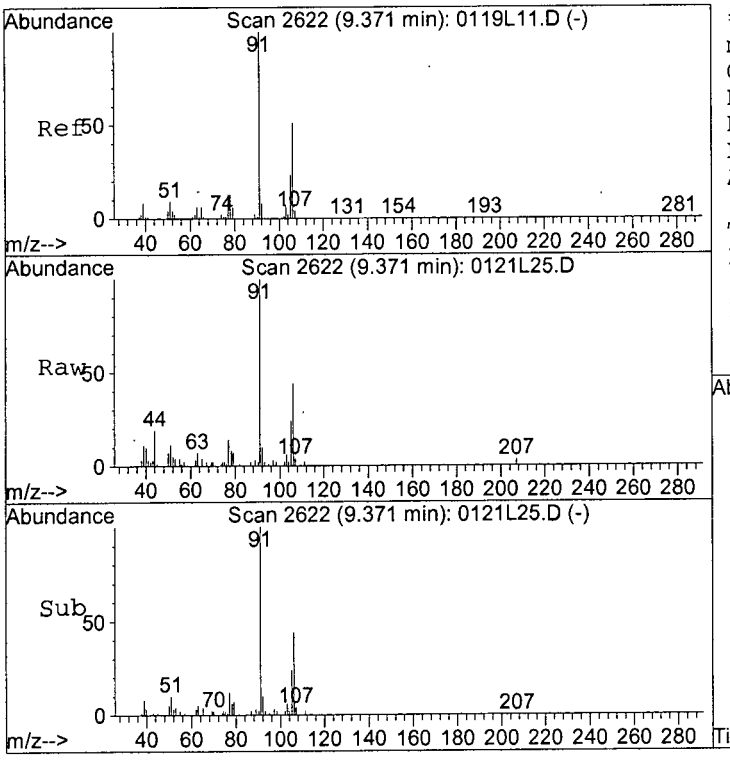


#26
MEK (2-Butanone)
Concen: 3.19121 ppb
RT: 4.41 min Scan# 1080
Delta R.T. 0.00 min
Lab File: 0121L25.D
Acq: 21 Jan 15 18:06

Tgt Ion: 43 Resp: 16008

Ion	Ratio	Lower	Upper
43	100		
72	41.3	20.9	38.9#

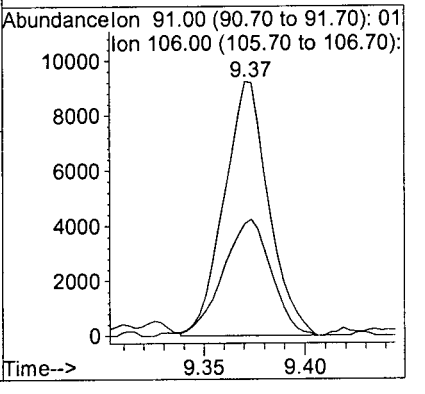




#61
m&p-Xylene
Concen: 0.44205 ppb
RT: 9.37 min Scan# 2622
Delta R.T. 0.00 min
Lab File: 0121L25.D
Acq: 21 Jan 15 18:06

Tgt Ion: 91 Resp: 9242

Ion	Ratio	Lower	Upper
91	100		
106	44.3	40.5	60.7



EPA 8260B SOIL

Element Environmental
98-030 Hekaha St., Unit 9
Aiea, HI 96701

APPL Inc.
908 North Temperance Avenue
Clovis, CA 93611

Attn: Steve Spengler
Project: MCBH UST KB-100 SI / 130034
Sample ID: EKB100007
Sample Collection Date: 01/13/15

ARF: 75351
APPL ID: AZ09551
QCG: #86BKB-150121AL-193770

Method	Analyte	Result	LOQ	LOD	DL	Units	Extraction Date	Analysis Date
(Solid Concentrations and Limits have been adjusted to reflect 33.6 Percent Moisture.)								
EPA 8260B	1,1,1-TRICHLOROETHANE	0.00300 U	0.0075	0.00300	0.00060	mg/Kg	01/21/15	01/21/15
EPA 8260B	1,1,2,2-TETRACHLOROETHANE	0.00300 U	0.0075	0.00300	0.00180	mg/Kg	01/21/15	01/21/15
EPA 8260B	1,1,2-TRICHLOROETHANE	0.00300 U	0.0075	0.00300	0.00041	mg/Kg	01/21/15	01/21/15
EPA 8260B	1,1-DICHLOROETHANE	0.00300 U	0.0075	0.00300	0.00051	mg/Kg	01/21/15	01/21/15
EPA 8260B	1,1-DICHLOROETHENE	0.0017 J	0.0075	0.00300	0.00110	mg/Kg	01/21/15	01/21/15
EPA 8260B	1,2,3-TRICHLOROPROPANE	0.00750 U	0.0300	0.00750	0.00190	mg/Kg	01/21/15	01/21/15
EPA 8260B	1,2-DIBROMOETHANE	0.00300 U	0.0075	0.00300	0.00210	mg/Kg	01/21/15	01/21/15
EPA 8260B	1,2-DICHLOROETHANE	0.00300 U	0.0075	0.00300	0.00120	mg/Kg	01/21/15	01/21/15
EPA 8260B	1,2-DICHLOROPROPANE	0.00300 U	0.0075	0.00300	0.00110	mg/Kg	01/21/15	01/21/15
EPA 8260B	2-BUTANONE	0.010 J	0.0300	0.00450	0.00420	mg/Kg	01/21/15	01/21/15
EPA 8260B	4-METHYL-2-PENTANONE	0.00300 U	0.0300	0.00300	0.00140	mg/Kg	01/21/15	01/21/15
EPA 8260B	ACETONE	0.043 J	0.0750	0.00750	0.00420	mg/Kg	01/21/15	01/21/15
EPA 8260B	BENZENE	0.00300 U	0.0075	0.00300	0.00095	mg/Kg	01/21/15	01/21/15
EPA 8260B	BROMODICHLOROMETHANE	0.00300 U	0.0075	0.00300	0.00100	mg/Kg	01/21/15	01/21/15
EPA 8260B	BROMOFORM	0.00300 U	0.0075	0.00300	0.00120	mg/Kg	01/21/15	01/21/15
EPA 8260B	BROMOMETHANE	0.00300 U	0.0075	0.00300	0.00240	mg/Kg	01/21/15	01/21/15
EPA 8260B	CARBON TETRACHLORIDE	0.00300 U	0.0075	0.00300	0.00120	mg/Kg	01/21/15	01/21/15
EPA 8260B	CHLOROBENZENE	0.00300 U	0.0075	0.00300	0.00074	mg/Kg	01/21/15	01/21/15
EPA 8260B	CHLOROETHANE	0.00300 U	0.0075	0.00300	0.00230	mg/Kg	01/21/15	01/21/15
EPA 8260B	CHLOROFORM	0.00300 U	0.0075	0.00300	0.00220	mg/Kg	01/21/15	01/21/15
EPA 8260B	CHLOROMETHANE	0.00750 U	0.0075	0.00750	0.00270	mg/Kg	01/21/15	01/21/15
EPA 8260B	CIS-1,2-DICHLOROETHYLENE	0.90 E	0.0075	0.00300	0.00033	mg/Kg	01/21/15	01/21/15
EPA 8260B	CIS-1,3-DICHLOROPROPENE	0.00300 U	0.0075	0.00300	0.00140	mg/Kg	01/21/15	01/21/15
EPA 8260B	DIBROMOCHLOROMETHANE	0.00300 U	0.0075	0.00300	0.00130	mg/Kg	01/21/15	01/21/15
EPA 8260B	ETHYLBENZENE	0.00300 U	0.0075	0.00300	0.00150	mg/Kg	01/21/15	01/21/15
EPA 8260B	METHYLENE CHLORIDE	0.01500 U	0.0300	0.01500	0.00087	mg/Kg	01/21/15	01/21/15
EPA 8260B	STYRENE	0.00300 U	0.0075	0.00300	0.00180	mg/Kg	01/21/15	01/21/15
EPA 8260B	TETRACHLOROETHENE	0.036	0.0075	0.00300	0.00081	mg/Kg	01/21/15	01/21/15
EPA 8260B	TOLUENE	0.00300 U	0.0075	0.00300	0.00200	mg/Kg	01/21/15	01/21/15
EPA 8260B	TRANS-1,2-DICHLOROETHYLENE	0.14	0.0075	0.00300	0.00051	mg/Kg	01/21/15	01/21/15
EPA 8260B	TRANS-1,3-DICHLOROPROPENE	0.00300 U	0.0075	0.00300	0.00120	mg/Kg	01/21/15	01/21/15
EPA 8260B	TRICHLOROETHYLENE	0.95 E	0.0075	0.00300	0.00140	mg/Kg	01/21/15	01/21/15
EPA 8260B	VINYL CHLORIDE	0.020	0.0075	0.00300	0.00230	mg/Kg	01/21/15	01/21/15
EPA 8260B	XYLENES (TOTAL)	0.00092 J	0.0075	0.00300	0.00065	mg/Kg	01/21/15	01/21/15
EPA 8260B	SURROGATE: 1,2-DICHLOROETHANE	101	54-154			%	01/21/15	01/21/15

J = Estimated value.
E = The reported value exceeds linear range.

Quant Method: LALLS.M
Run #: 0121L26
Instrument: Loki
Sequence: 150119
Dilution Factor: 1
Initials: SV

Printed: 01/26/15 1:46:46 PM
APPL-F1-SC-MCRes/MCPQL-REG MDLs

EPA 8260B SOIL

Element Environmental
98-030 Hekaha St., Unit 9
Aiea, HI 96701

APPL Inc.
908 North Temperance Avenue
Clovis, CA 93611

Attn: Steve Spengler
Project: MCBH UST KB-100 SI / 130034
Sample ID: EKB100007
Sample Collection Date: 01/13/15

ARF: 75351
APPL ID: AZ09551
QCG: #86BKB-150121AL-193770

Method	Analyte	Result	LOQ	LOD	DL	Units	Extraction Date	Analysis Date
EPA 8260B	SURROGATE: 4-BROMOFLUOROBEN	95.8	85-120			%	01/21/15	01/21/15
EPA 8260B	SURROGATE: TOLUENE-D8 (S)	95.9	85-115			%	01/21/15	01/21/15

J = Estimated value.
E = The reported value exceeds linear range.

Quant Method:	LALLS.M
Run #:	0121L26
Instrument:	Loki
Sequence:	150119
Dilution Factor:	1
Initials:	SV

Printed: 01/26/15 1:46:47 PM
APPL-F1-SC-MCRes/MCPQL-REG MDLs

Quantitation Report (QT Reviewed)

Data File : M:\LOKI\DATA\150119\0121L26.D
Acq On : 21 Jan 15 18:27
Sample : AZ09551S01 6.667
Misc : 5mL w/5uL IS&S:01/14/15,10-06-14

Vial: 25
Operator: DG,SV,RS
Inst : Loki
Multiplr: 0.75

Quant Time: Jan 22 10:31 2015 Quant Results File: LALLS.RES

Quant Method : M:\LOKI\DATA\150119\LALLS.M (RTE Integrator)
Title : METHOD 8260B
Last Update : Tue Jan 20 09:48:55 2015
Response via : Initial Calibration
DataAcq Meth : 8260_BETA

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene (IS)	5.86	96	770688	50.00000 ppb	0.00
55) Chlorobenzene-D5 (IS)	9.09	117	725184	50.00000 ppb	0.00
70) 1,4-Dichlorobenzene-D (IS)	11.41	152	383744	50.00000 ppb	0.00
System Monitoring Compounds					
31) Dibromofluoromethane(S)	5.02	111	371669	53.72809 ppb	0.00
Spiked Amount 52.439			Recovery	= 102.458%	
36) 1,2-DCA-D4(S)	5.43	65	381558	48.62145 ppb	0.00
Spiked Amount 48.066			Recovery	= 101.155%	
56) Toluene-D8(S)	7.62	98	1348359	58.67728 ppb	0.00
Spiked Amount 61.175			Recovery	= 95.917%	
64) 4-Bromofluorobenzene(S)	10.27	95	505656	52.22483 ppb	0.00
Spiked Amount 54.538			Recovery	= 95.759%	
Target Compounds					Qvalue
5) Vinyl chloride	1.18	62	101625	12.98268 ppb	97
11) Acetone	2.19	43	100701	28.84727 ppb	94
13) 1,1-DCE	2.12	61	11571	1.13749 ppb	94
19) Carbon disulfide	2.30	76	424917	19.16672 ppb	100
21) Trans-1,2-DCE	2.91	96	759505	91.28850 ppb	94
26) MEK (2-Butanone)	4.41	43	30170	6.77453 ppb	94
27) Cis-1,2-DCE	4.32	96	5,897,700 E	594.37608 ppb	92
41) TCE	6.29	95	4905284 E	633.60837 ppb	99
58) Tetrachloroethene	8.25	164	164958	23.82139 ppb	97
61) m&p-Xylene	9.37	91	9289	0.49783 ppb	100
62) o-Xylene	9.76	106	1727	0.11398 ppb	86

SV 1/22/15

(#) = qualifier out of range (m) = manual integration
0121L26.D LALLS.M Thu Jan 22 10:39:31 2015

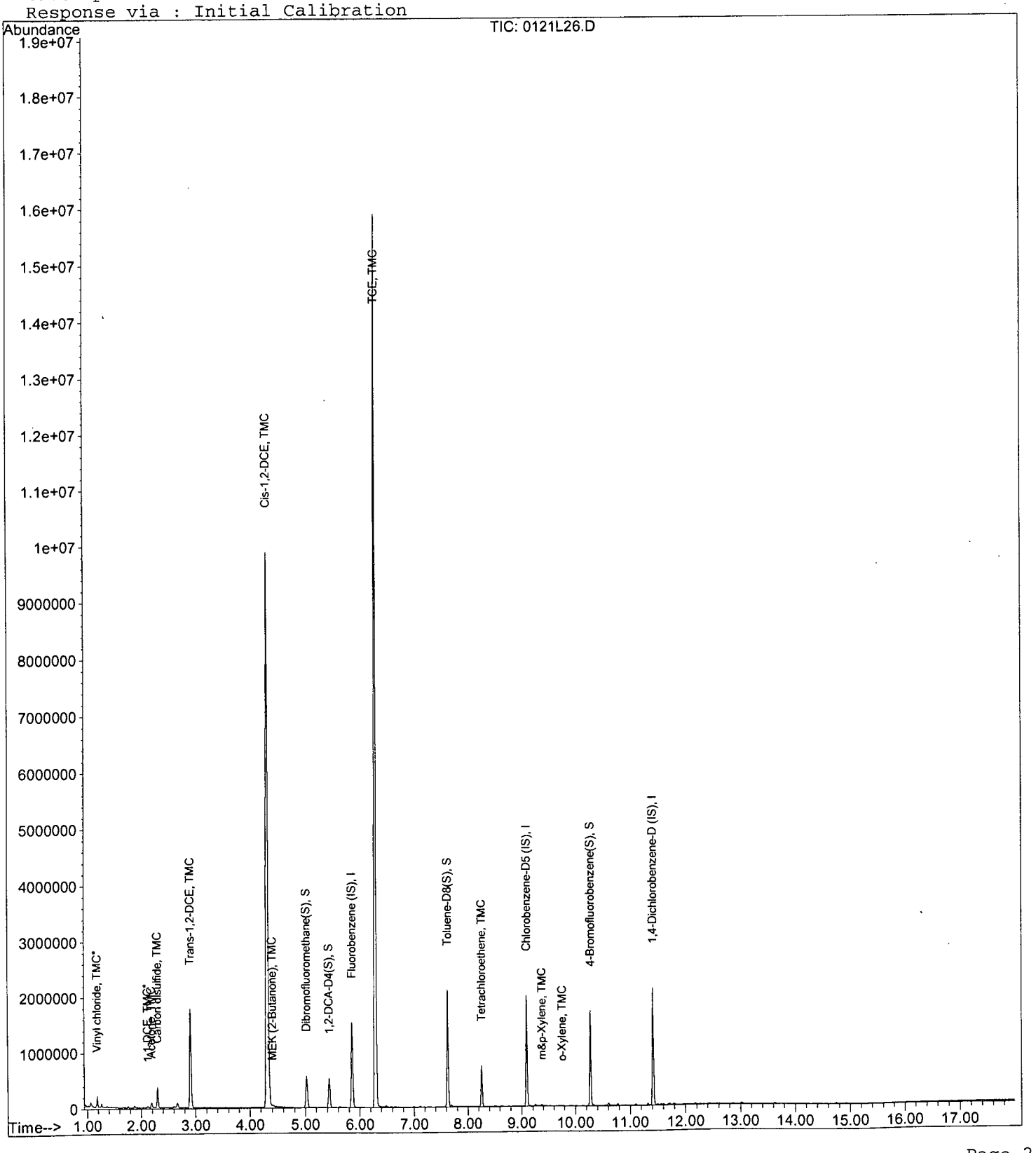
Quantitation Report

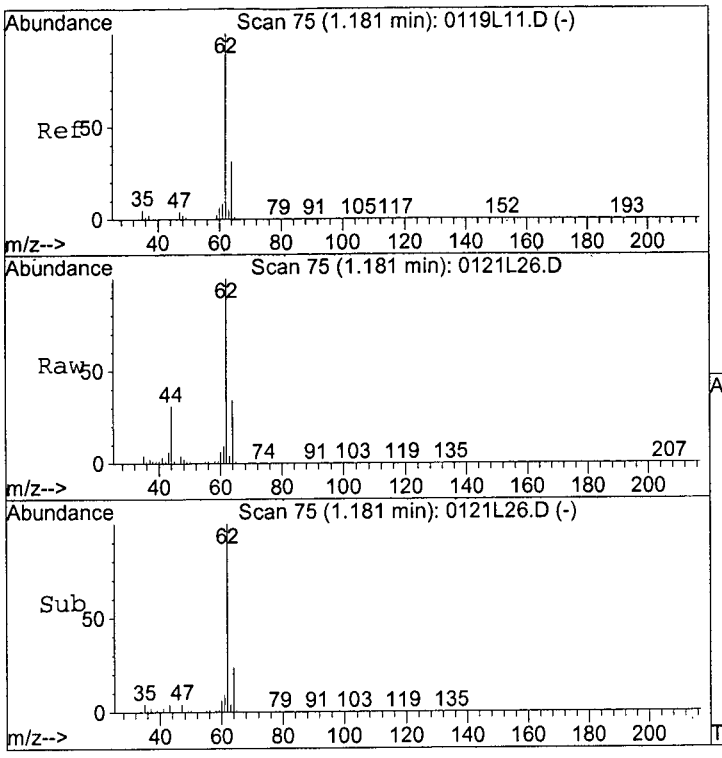
Data File : M:\LOKI\DATA\150119\0121L26.D
Acq On : 21 Jan 15 18:27
Sample : AZ09551S01 6.667
Misc : 5mL w/5uL IS&S:01/14/15,10-06-14

Vial: 25
Operator: DG,SV,RS
Inst : Loki
Multiplr: 0.75

Quant Time: Jan 22 10:31 2015 Quant Results File: LALLS.RES

Method : M:\LOKI\DATA\150119\LALLS.M (RTE Integrator)
Title : METHOD 8260B
Last Update : Tue Jan 20 09:48:55 2015
Response via : Initial Calibration

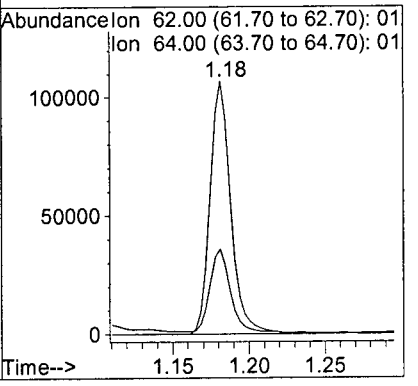


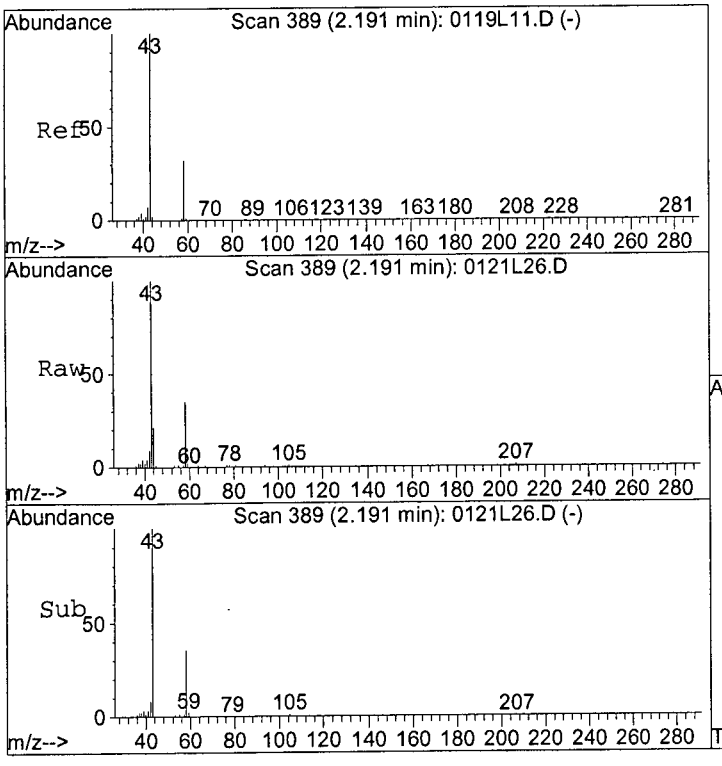


#5
Vinyl chloride
Concen: 12.98268 ppb
RT: 1.18 min Scan# 75
Delta R.T. 0.00 min
Lab File: 0121L26.D
Acq: 21 Jan 15 18:27

Tgt Ion: 62 Resp: 101625

Ion	Ratio	Lower	Upper
62	100		
64	33.2	25.2	37.8

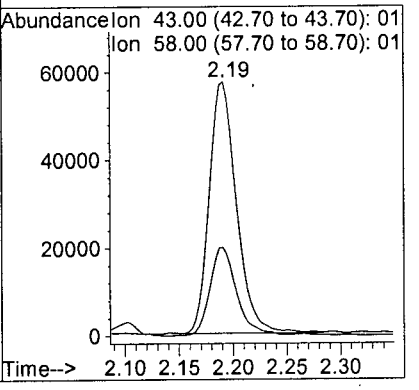


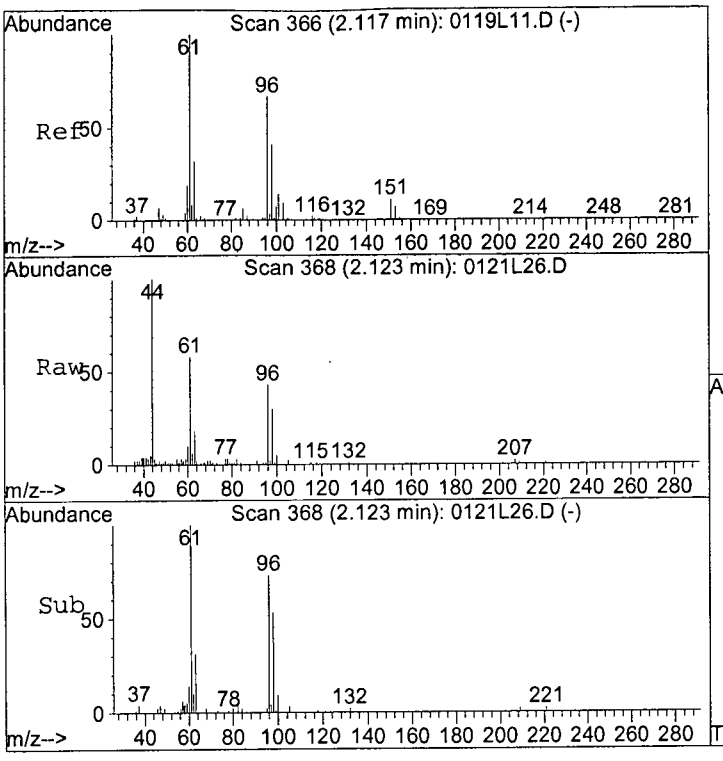


#11
Acetone
Concen: 28.84727 ppb
RT: 2.19 min Scan# 389
Delta R.T. 0.00 min
Lab File: 0121L26.D
Acq: 21 Jan 15 18:27

Tgt Ion: 43 Resp: 100701

Ion	Ratio	Lower	Upper
43	100		
58	35.2	22.2	41.2

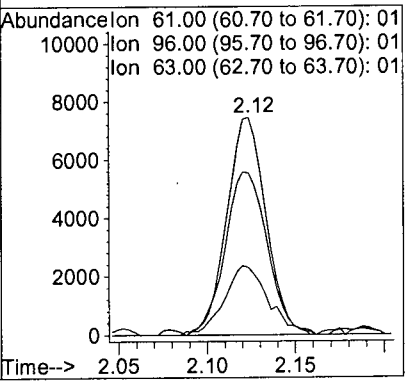


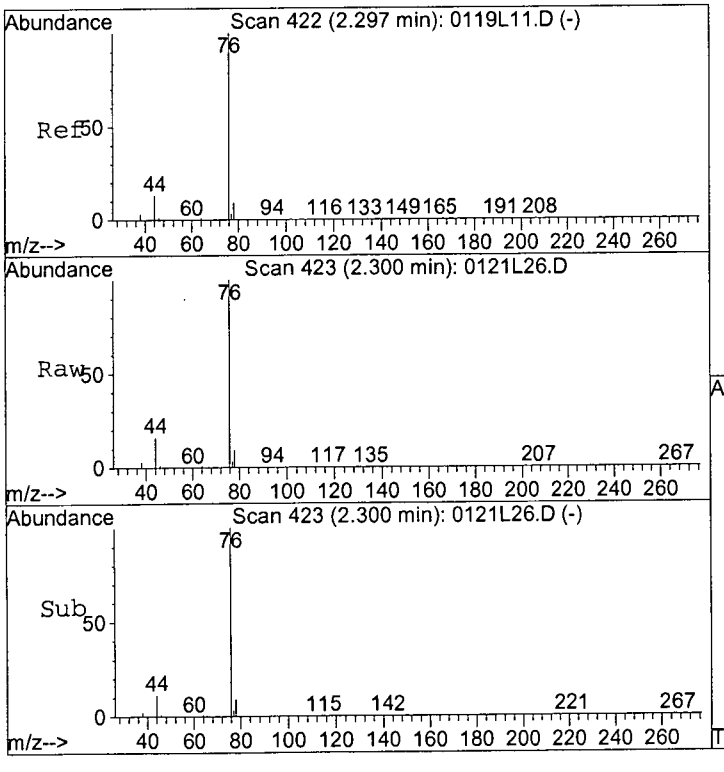


#13
1,1-DCE
Concen: 1.13749 ppb
RT: 2.12 min Scan# 368
Delta R.T. 0.01 min
Lab File: 0121L26.D
Acq: 21 Jan 15 18:27

Tgt Ion: 61 Resp: 11571

Ion	Ratio	Lower	Upper
61	100		
96	73.0	53.6	80.4
63	30.9	25.8	38.8

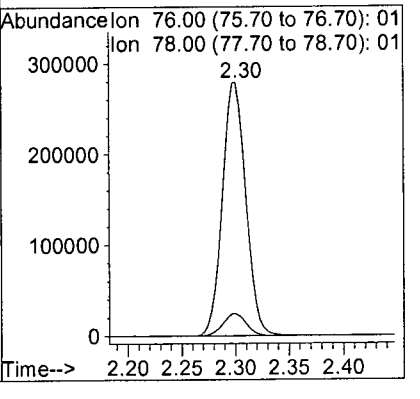


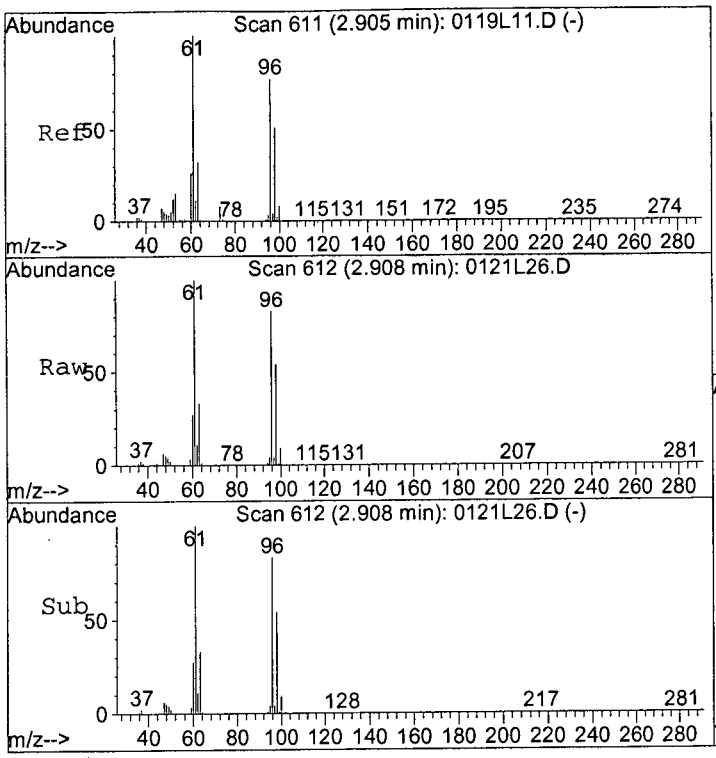


#19
Carbon disulfide
Concen: 19.16672 ppb
RT: 2.30 min Scan# 423
Delta R.T. 0.00 min
Lab File: 0121L26.D
Acq: 21 Jan 15 18:27

Tgt Ion: 76 Resp: 424917

Ion	Ratio	Lower	Upper
76	100		
78	8.6	6.0	11.2

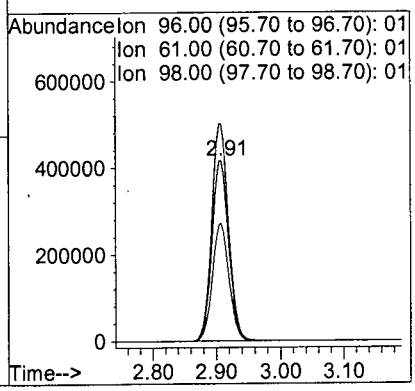


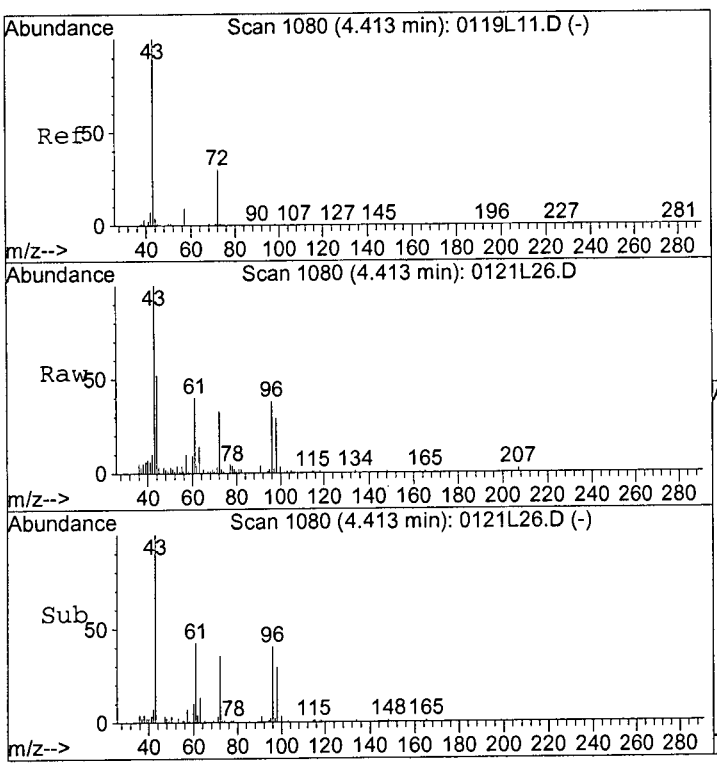


#21
Trans-1,2-DCE
Concen: 91.28850 ppb
RT: 2.91 min Scan# 612
Delta R.T. 0.00 min
Lab File: 0121L26.D
Acq: 21 Jan 15 18:27

Tgt Ion: 96 Resp: 759505

Ion	Ratio	Lower	Upper
96	100		
61	120.2	91.1	169.1
98	65.3	46.2	85.8

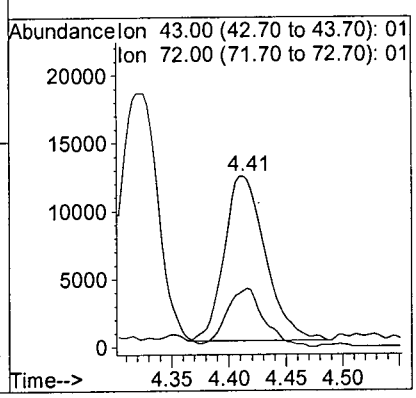


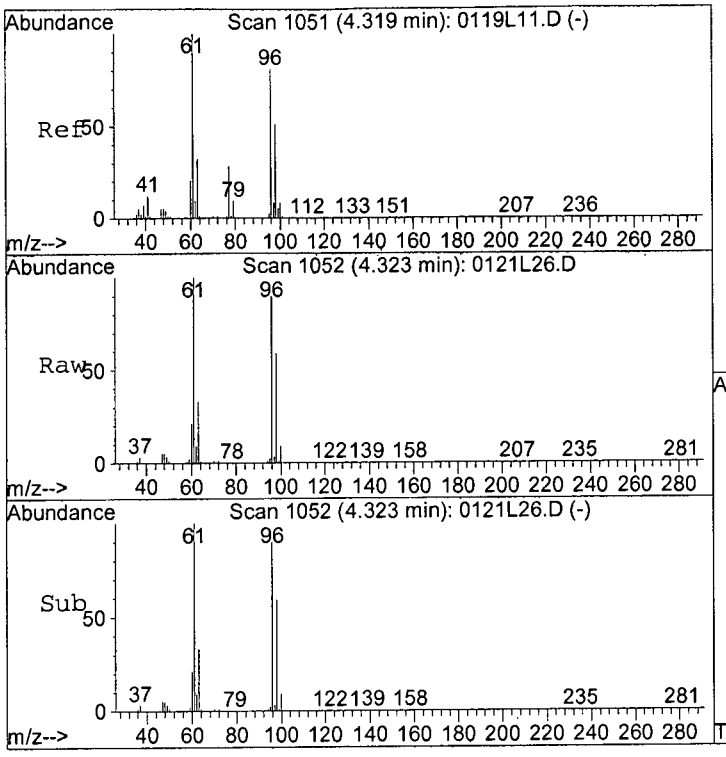


#26
MEK (2-Butanone)
Concen: 6.77453 ppb
RT: 4.41 min Scan# 1080
Delta R.T. 0.00 min
Lab File: 0121L26.D
Acq: 21 Jan 15 18:27

Tgt Ion: 43 Resp: 30170

Ion	Ratio	Lower	Upper
43	100		
72	32.9	20.9	38.9

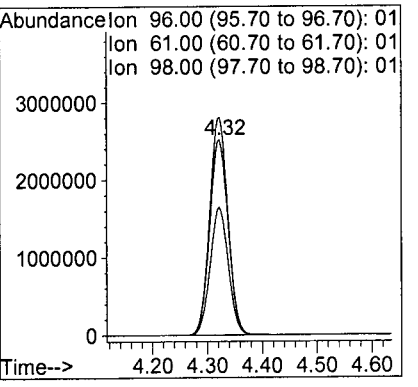


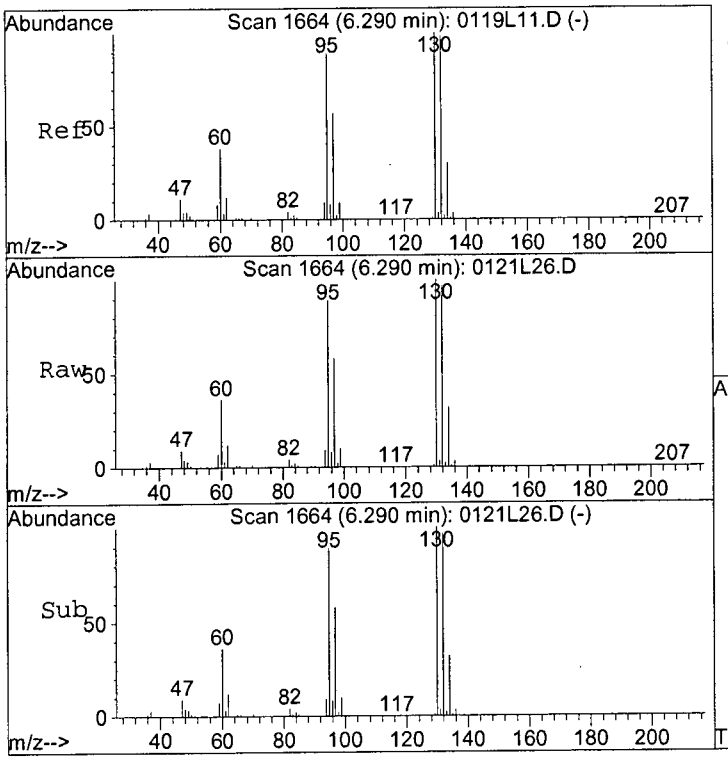


#27
Cis-1,2-DCE
Concen: 594.37608 ppb
RT: 4.32 min Scan# 1052
Delta R.T. 0.00 min
Lab File: 0121L26.D
Acq: 21 Jan 15 18:27

Tgt Ion: 96 Resp: 5897700

Ion	Ratio	Lower	Upper
96	100		
61	111.6	86.9	161.3
98	65.4	44.3	82.3

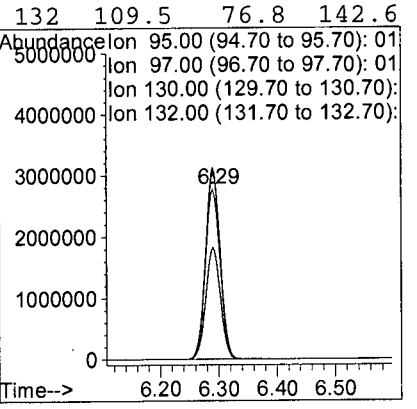


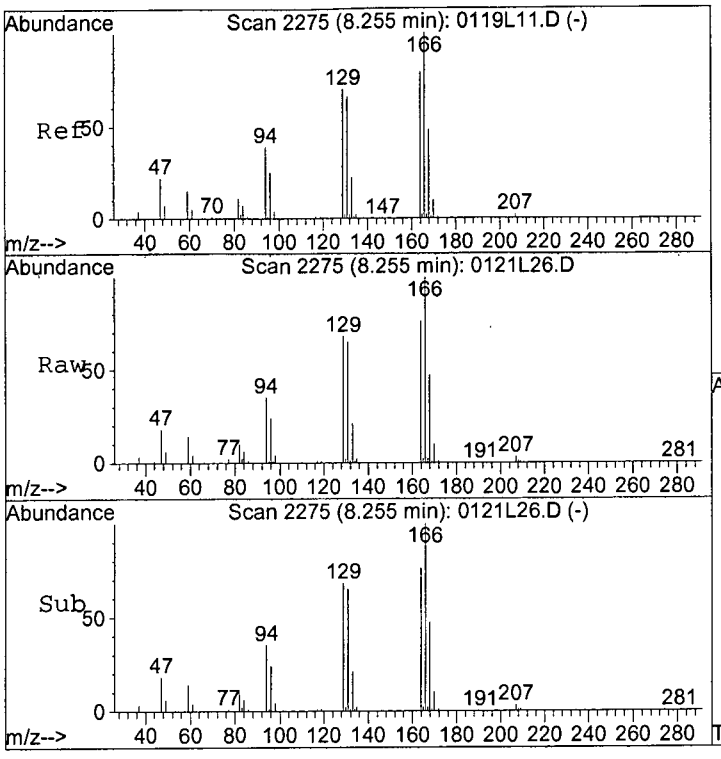


#41
TCE
Concen: 633.60837 ppb
RT: 6.29 min Scan# 1664
Delta R.T. 0.00 min
Lab File: 0121L26.D
Acq: 21 Jan 15 18:27

Tgt Ion: 95 Resp: 4905284

Ion	Ratio	Lower	Upper
95	100		
97	65.9	44.7	83.1
130	112.6	78.8	146.3
132	109.5	76.8	142.6

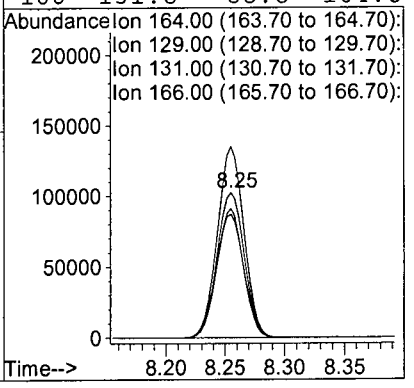


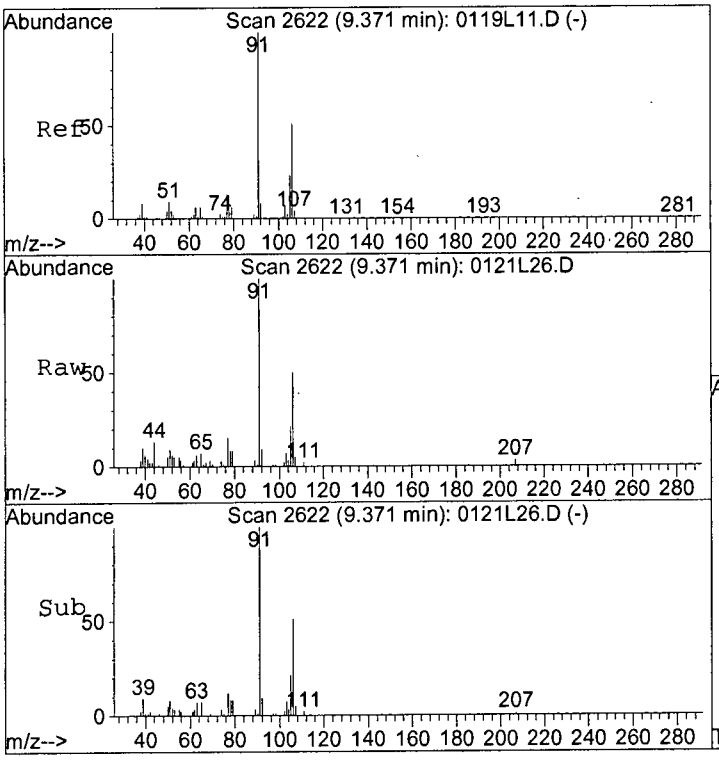


#58
Tetrachloroethene
Concen: 23.82139 ppb
RT: 8.25 min Scan# 2275
Delta R.T. 0.00 min
Lab File: 0121L26.D
Acq: 21 Jan 15 18:27

Tgt Ion:164 Resp: 164958

Ion	Ratio	Lower	Upper
164	100		
129	89.0	61.7	114.7
131	85.0	58.4	108.4
166	131.8	88.8	164.8

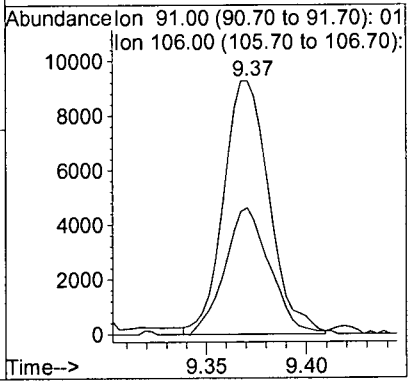


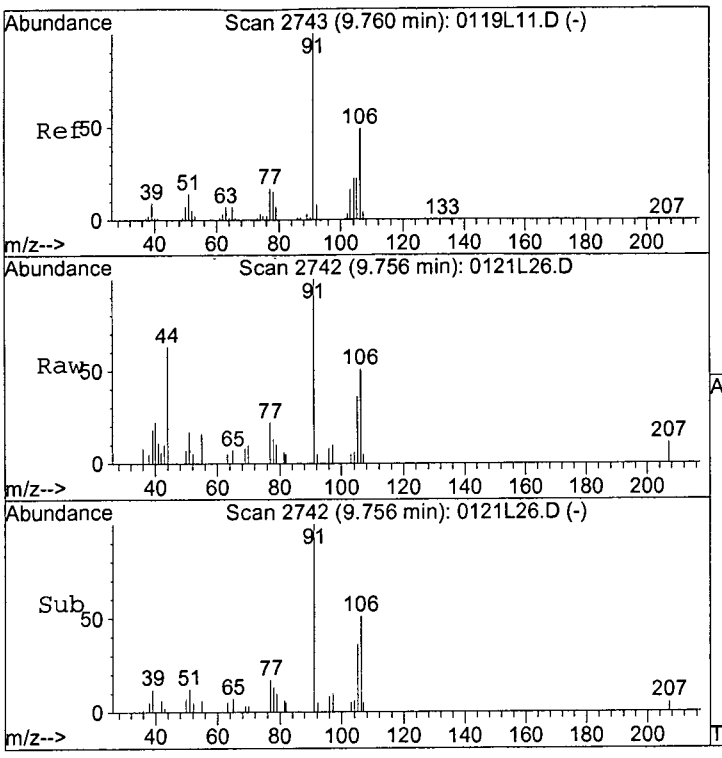


#61
m&p-Xylene
Concen: 0.49783 ppb
RT: 9.37 min Scan# 2622
Delta R.T. 0.00 min
Lab File: 0121L26.D
Acq: 21 Jan 15 18:27

Tgt Ion: 91 Resp: 9289

Ion	Ratio	Lower	Upper
91	100		
106	50.4	40.5	60.7

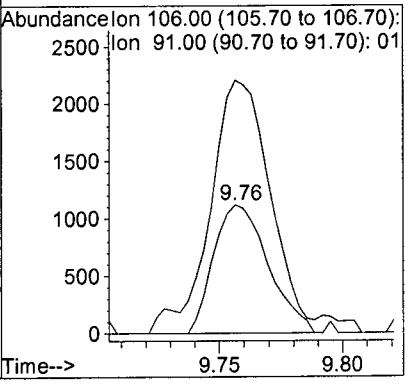




#62
o-Xylene
Concen: 0.11398 ppb
RT: 9.76 min Scan# 2742
Delta R.T. -0.00 min
Lab File: 0121L26.D
Acq: 21 Jan 15 18:27

Tgt Ion:106 Resp: 1727

Ion	Ratio	Lower	Upper
106	100		
91	183.1	142.9	265.5



EPA 8260B SOIL MEOH

Element Environmental
98-030 Hekaha St., Unit 9
Aiea, HI 96701

APPL Inc.
908 North Temperance Avenue
Clovis, CA 93611

Attn: Steve Spengler
Project: MCBH UST KB-100 SI / 130034
Sample ID: EKB100007
Sample Collection Date: 01/13/15

ARF: 75351
APPL ID: AZ09551
QCG: #86BKB-150122AT-193821

Method	Analyte	Result	LOQ	LOD	DL	Units	Extraction Date	Analysis Date
(Solid Concentrations and Limits have been adjusted to reflect 33.6 Percent Moisture.)								
EPA 8260B	CIS-1,2-DICHLOROETHYLENE	1.3	0.054	0.0160	0.0110	mg/Kg	01/22/15	01/22/15
EPA 8260B	TRICHLOROETHYLENE	0.87	0.054	0.0160	0.0110	mg/Kg	01/22/15	01/22/15
EPA 8260B	SURROGATE: 1,2-DICHLOROETHANE	88.6	54-154			%	01/22/15	01/22/15
EPA 8260B	SURROGATE: 4-BROMOFLUOROBEN	102	85-120			%	01/22/15	01/22/15
EPA 8260B	SURROGATE: TOLUENE-D8 (S)	96.1	85-115			%	01/22/15	01/22/15

Quant Method: TALLW.M
Run #: 0122T27
Instrument: Thor
Sequence: T150109
Dilution Factor: 36
Initials: SV

Printed: 01/27/15 1:07:20 PM
APPL-F1-SC-MCRes/MCPQL-REG MDLs

Quantitation Report (QT Reviewed)

Data File : M:\THOR\DATA\T150109\0122T27.D
Acq On : 22 Jan 15 20:58
Sample : AZ09551S03 6.895 DF50
Misc : 10ml w/IS&S 12/20,12/23/14

Vial: 26
Operator: DG, SV, RS
Inst : Thor
Multiplr: 36.26

Quant Time: Jan 27 7:37 2015 Quant Results File: TALLW.RES

Quant Method : M:\THOR\DATA\T150109\TALLW.M (RTE Integrator)
Title : METHOD 8260B
Last Update : Mon Jan 12 11:16:31 2015
Response via : Initial Calibration
DataAcq Meth : 8260_BETA

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene (IS)	6.01	96	881472	25.00000 ppb	0.00
56) Chlorobenzene-D5 (IS)	9.22	117	805952	25.00000 ppb	0.00
71) 1,4-Dichlorobenzene-D (IS)	11.54	152	445568	25.00000 ppb	0.00
System Monitoring Compounds					
32) Dibromofluoromethane(S)	5.19	111	446102	29.57348 ppb	0.00
Spiked Amount 31.085			Recovery	= 95.136%	
37) 1,2-DCA-D4(S)	5.59	65	414463	26.07398 ppb	0.00
Spiked Amount 29.432			Recovery	= 88.590%	
57) Toluene-D8(S)	7.76	98	1643861	30.53318 ppb	0.00
Spiked Amount 31.767			Recovery	= 96.114%	
65) 4-Bromofluorobenzene(S)	10.40	95	640938	30.02364 ppb	0.00
Spiked Amount 29.480			Recovery	= 101.847%	
Target Compounds					Qvalue
28) Cis-1,2-DCE	4.50	96	355746	834.88955 ppb	95
42) TCE	6.44	95	221415	574.51328 ppb	97

(#) = qualifier out of range (m) = manual integration

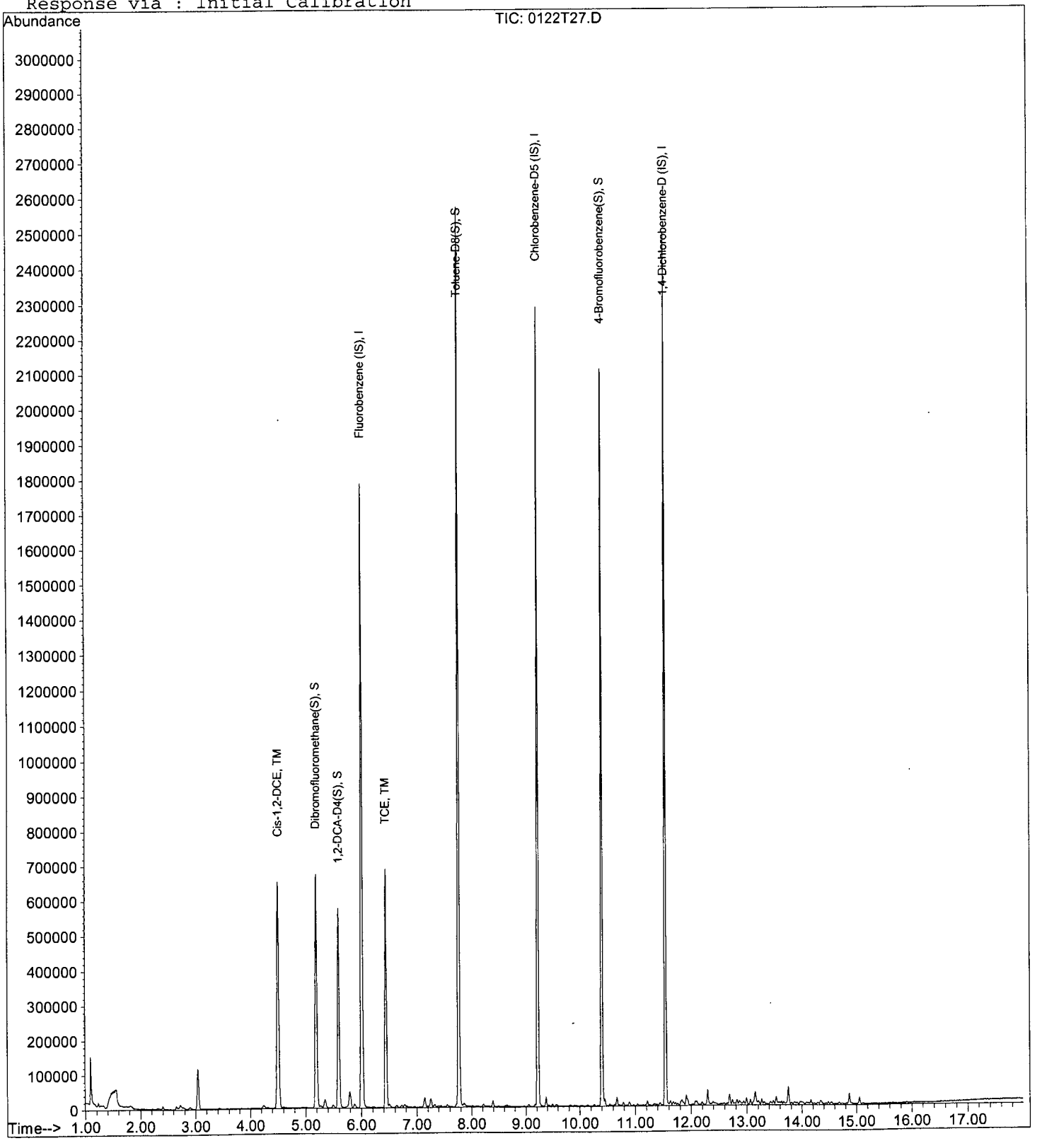
Quantitation Report

Data File : M:\THOR\DATA\T150109\0122T27.D
Acq On : 22 Jan 15 20:58
Sample : AZ09551S03 6.895 DF50
Misc : 10ml w/IS&S 12/20,12/23/14

Vial: 26
Operator: DG, SV, RS
Inst : Thor
Multiplr: 36.26

Quant Time: Jan 27 7:37 2015 Quant Results File: TALLW.RES

Method : M:\THOR\DATA\T150109\TALLW.M (RTE Integrator)
Title : METHOD 8260B
Last Update : Mon Jan 12 11:16:31 2015
Response via : Initial Calibration



EPA 8260B SOIL

Element Environmental
98-030 Hekaha St., Unit 9
Aiea, HI 96701

APPL Inc.
908 North Temperance Avenue
Clovis, CA 93611

Attn: Steve Spengler
Project: MCBH UST KB-100 SI / 130034
Sample ID: EKB100008
Sample Collection Date: 01/13/15

ARF: 75351
APPL ID: AZ09552
QCG: #86BKB-150122AL-193773

Method	Analyte	Result	LOQ	LOD	DL	Units	Extraction Date	Analysis Date
(Solid Concentrations and Limits have been adjusted to reflect 34.6 Percent Moisture.)								
EPA 8260B	1,1,1-TRICHLOROETHANE	0.00310 U	0.0076	0.00310	0.00061	mg/Kg	01/22/15	01/22/15
EPA 8260B	1,1,2,2-TETRACHLOROETHANE	0.00310 U	0.0076	0.00310	0.00180	mg/Kg	01/22/15	01/22/15
EPA 8260B	1,1,2-TRICHLOROETHANE	0.00310 U	0.0076	0.00310	0.00041	mg/Kg	01/22/15	01/22/15
EPA 8260B	1,1-DICHLOROETHANE	0.00310 U	0.0076	0.00310	0.00052	mg/Kg	01/22/15	01/22/15
EPA 8260B	1,1-DICHLOROETHENE	0.00310 U	0.0076	0.00310	0.00120	mg/Kg	01/22/15	01/22/15
EPA 8260B	1,2,3-TRICHLOROPROPANE	0.00760 U	0.0310	0.00760	0.00190	mg/Kg	01/22/15	01/22/15
EPA 8260B	1,2-DIBROMOETHANE	0.00310 U	0.0076	0.00310	0.00220	mg/Kg	01/22/15	01/22/15
EPA 8260B	1,2-DICHLOROETHANE	0.00310 U	0.0076	0.00310	0.00120	mg/Kg	01/22/15	01/22/15
EPA 8260B	1,2-DICHLOROPROPANE	0.00310 U	0.0076	0.00310	0.00110	mg/Kg	01/22/15	01/22/15
EPA 8260B	2-BUTANONE	0.0055 J	0.0310	0.00460	0.00430	mg/Kg	01/22/15	01/22/15
EPA 8260B	4-METHYL-2-PENTANONE	0.00310 U	0.0310	0.00310	0.00140	mg/Kg	01/22/15	01/22/15
EPA 8260B	ACETONE	0.016 J	0.0760	0.00760	0.00430	mg/Kg	01/22/15	01/22/15
EPA 8260B	BENZENE	0.00310 U	0.0076	0.00310	0.00096	mg/Kg	01/22/15	01/22/15
EPA 8260B	BROMODICHLOROMETHANE	0.00310 U	0.0076	0.00310	0.00110	mg/Kg	01/22/15	01/22/15
EPA 8260B	BROMOFORM	0.00310 U	0.0076	0.00310	0.00120	mg/Kg	01/22/15	01/22/15
EPA 8260B	BROMOMETHANE	0.00310 U	0.0076	0.00310	0.00240	mg/Kg	01/22/15	01/22/15
EPA 8260B	CARBON TETRACHLORIDE	0.00310 U	0.0076	0.00310	0.00120	mg/Kg	01/22/15	01/22/15
EPA 8260B	CHLOROBENZENE	0.00310 U	0.0076	0.00310	0.00075	mg/Kg	01/22/15	01/22/15
EPA 8260B	CHLOROETHANE	0.00310 U	0.0076	0.00310	0.00240	mg/Kg	01/22/15	01/22/15
EPA 8260B	CHLOROFORM	0.00310 U	0.0076	0.00310	0.00220	mg/Kg	01/22/15	01/22/15
EPA 8260B	CHLOROMETHANE	0.00760 U	0.0076	0.00760	0.00280	mg/Kg	01/22/15	01/22/15
EPA 8260B	CIS-1,2-DICHLOROETHYLENE	0.00038 J	0.0076	0.00310	0.00034	mg/Kg	01/22/15	01/22/15
EPA 8260B	CIS-1,3-DICHLOROPROPENE	0.00310 U	0.0076	0.00310	0.00140	mg/Kg	01/22/15	01/22/15
EPA 8260B	DIBROMOCHLOROMETHANE	0.00310 U	0.0076	0.00310	0.00130	mg/Kg	01/22/15	01/22/15
EPA 8260B	ETHYLBENZENE	0.00310 U	0.0076	0.00310	0.00150	mg/Kg	01/22/15	01/22/15
EPA 8260B	METHYLENE CHLORIDE	0.01500 U	0.0310	0.01500	0.00089	mg/Kg	01/22/15	01/22/15
EPA 8260B	STYRENE	0.00310 U	0.0076	0.00310	0.00190	mg/Kg	01/22/15	01/22/15
EPA 8260B	TETRACHLOROETHENE	0.00310 U	0.0076	0.00310	0.00083	mg/Kg	01/22/15	01/22/15
EPA 8260B	TOLUENE	0.0026 J	0.0076	0.00310	0.00200	mg/Kg	01/22/15	01/22/15
EPA 8260B	TRANS-1,2-DICHLOROETHYLENE	0.00310 U	0.0076	0.00310	0.00052	mg/Kg	01/22/15	01/22/15
EPA 8260B	TRANS-1,3-DICHLOROPROPENE	0.00310 U	0.0076	0.00310	0.00120	mg/Kg	01/22/15	01/22/15
EPA 8260B	TRICHLOROETHYLENE	0.00310 U	0.0076	0.00310	0.00140	mg/Kg	01/22/15	01/22/15
EPA 8260B	VINYL CHLORIDE	0.00310 U	0.0076	0.00310	0.00230	mg/Kg	01/22/15	01/22/15
EPA 8260B	XYLENES (TOTAL)	0.0021 J	0.0076	0.00310	0.00066	mg/Kg	01/22/15	01/22/15
EPA 8260B	SURROGATE: 1,2-DICHLOROETHANE	96.3	54-154			%	01/22/15	01/22/15

J = Estimated value.

Quant Method: LALLS.M
Run #: 0122L13
Instrument: Loki
Sequence: 150119
Dilution Factor: 1
Initials: SV

Printed: 01/26/15 1:46:47 PM
APPL-F1-SC-MCRes/MCPQL-REG MDLs

EPA 8260B SOIL

Element Environmental
98-030 Hekaha St., Unit 9
Aiea, HI 96701

APPL Inc.
908 North Temperance Avenue
Clovis, CA 93611

Attn: Steve Spengler
Project: MCBH UST KB-100 SI / 130034
Sample ID: EKB100008
Sample Collection Date: 01/13/15

ARF: 75351
APPL ID: AZ09552
QCG: #86BKB-150122AL-193773

Method	Analyte	Result	LOQ	LOD	DL	Units	Extraction Date	Analysis Date
EPA 8260B	SURROGATE: 4-BROMOFLUOROBEN	96.3	85-120			%	01/22/15	01/22/15
EPA 8260B	SURROGATE: TOLUENE-D8 (S)	101	85-115			%	01/22/15	01/22/15

J = Estimated value.

Quant Method:	LALLS.M
Run #:	0122L13
Instrument:	Loki
Sequence:	150119
Dilution Factor:	1
Initials:	SV

Printed: 01/26/15 1:46:47 PM
APPL-F1-SC-MCRes/MCPQL-REG MDLs

Quantitation Report (QT Reviewed)

Data File : M:\LOKI\DATA\150119\0122L13.D
Acq On : 22 Jan 15 12:20
Sample : AZ09552S04 6.271
Misc : 5mL w/5uL IS&S:01/14/15,10-06-14

Vial: 12
Operator: DG,SV,RS
Inst : Loki
Multiplr: 0.80

Quant Time: Jan 23 15:08 2015 Quant Results File: LALLS.RES

Quant Method : M:\LOKI\DATA\150119\LALLS.M (RTE Integrator)
Title : METHOD 8260B
Last Update : Tue Jan 20 09:48:55 2015
Response via : Initial Calibration
DataAcq Meth : 8260_BETA

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene (IS)	5.86	96	692352	50.00000 ppb	0.00
55) Chlorobenzene-D5 (IS)	9.09	117	604096	50.00000 ppb	0.00
70) 1,4-Dichlorobenzene-D (IS)	11.41	152	316864	50.00000 ppb	0.00
System Monitoring Compounds					
31) Dibromofluoromethane(S)	5.02	111	328810	52.91048 ppb	0.00
Spiked Amount 52.439			Recovery	= 100.898%	
36) 1,2-DCA-D4(S)	5.43	65	326361	46.29321 ppb	0.00
Spiked Amount 48.066			Recovery	= 96.312%	
56) Toluene-D8(S)	7.62	98	1183671	61.83548 ppb	0.00
Spiked Amount 61.175			Recovery	= 101.079%	
64) 4-Bromofluorobenzene(S)	10.27	95	423515	52.50890 ppb	0.00
Spiked Amount 54.538			Recovery	= 96.280%	

Target Compounds					Qvalue
11) Acetone	2.19	43	39828	10.16083 ppb	97
19) Carbon disulfide	2.30	76	241616	12.89679 ppb	100
26) MEK (2-Butanone)	4.41	43	13473	3.57998 ppb	90
27) Cis-1,2-DCE	4.32	96	2096	0.24997 ppb #	67
51) Toluene	7.70	91	49514	1.71168 ppb	96
61) m&p-Xylene	9.37	91	16888	1.15503 ppb	98
62) o-Xylene	9.76	106	2951	0.24855 ppb	84

(#) = qualifier out of range (m) = manual integration

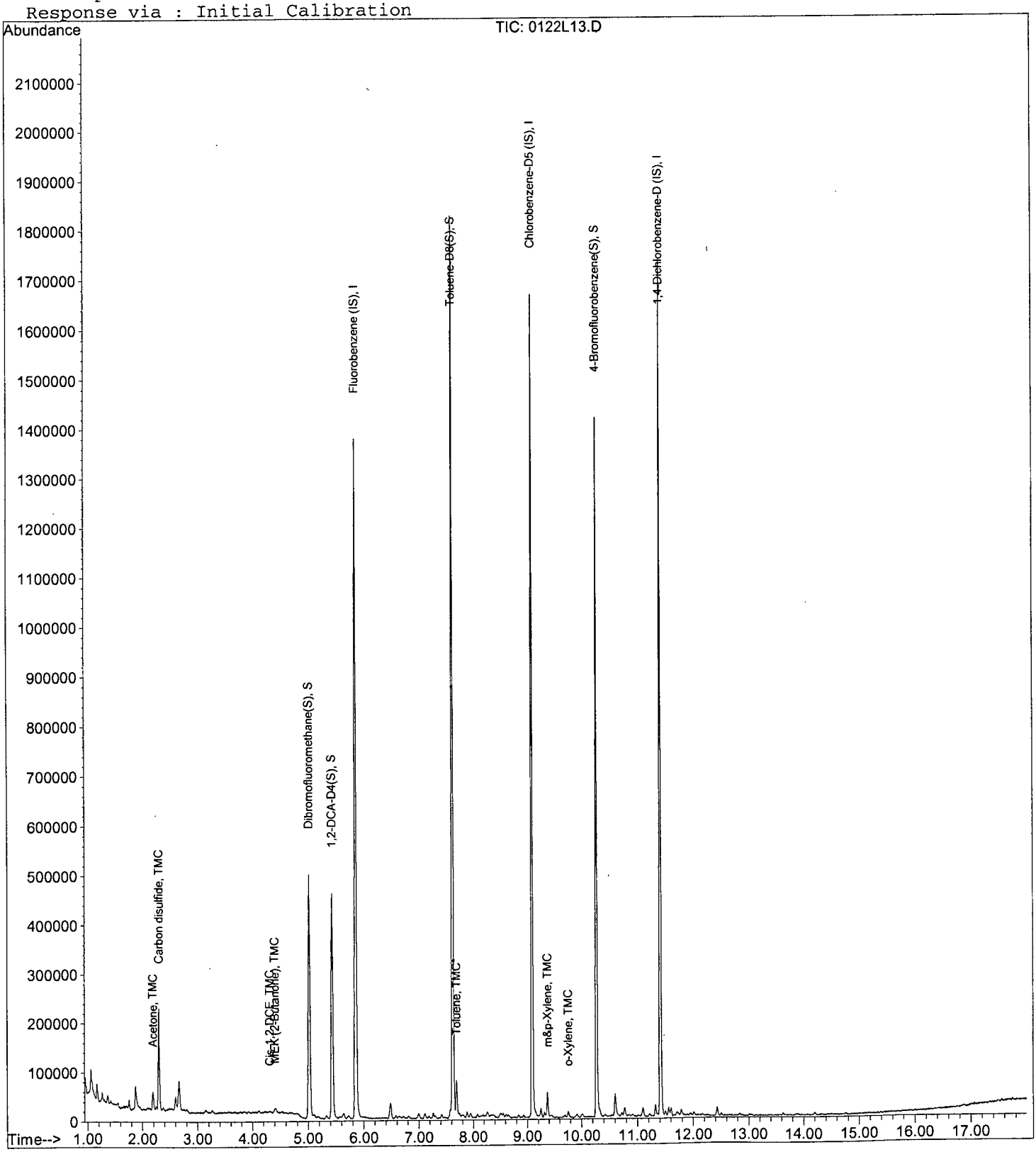
Quantitation Report

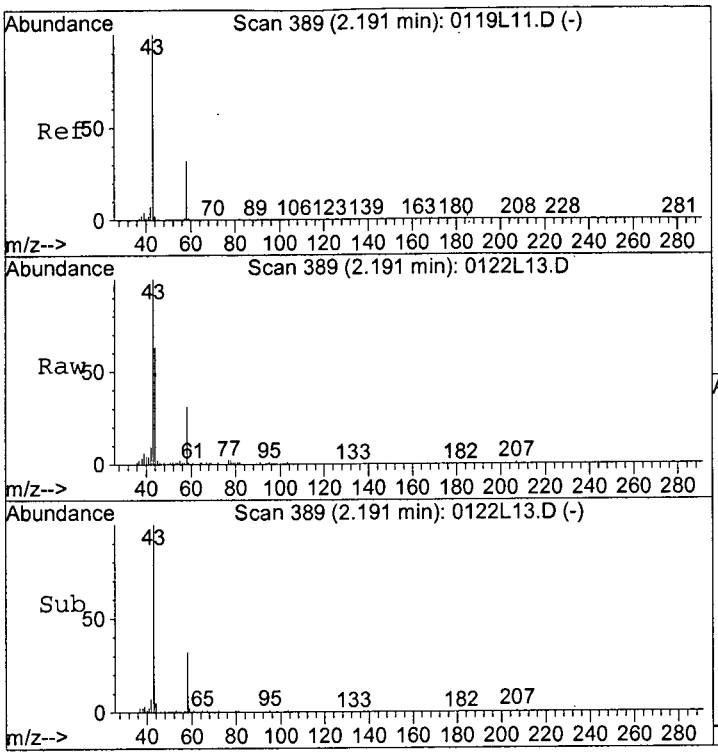
Data File : M:\LOKI\DATA\150119\0122L13.D
Acq On : 22 Jan 15 12:20
Sample : AZ09552S04 6.271
Misc : 5mL w/5uL IS&S:01/14/15,10-06-14

Vial: 12
Operator: DG,SV,RS
Inst : Loki
Multiplr: 0.80

Quant Time: Jan 23 15:08 2015 Quant Results File: LALLS.RES

Method : M:\LOKI\DATA\150119\LALLS.M (RTE Integrator)
Title : METHOD 8260B
Last Update : Fri Jan 23 13:43:44 2015
Response via : Initial Calibration

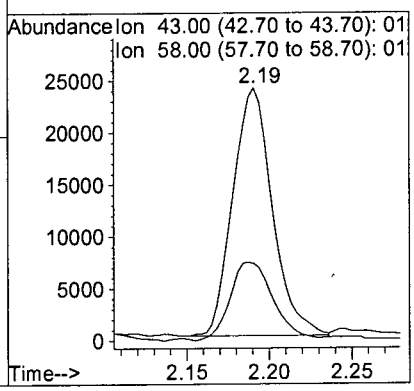


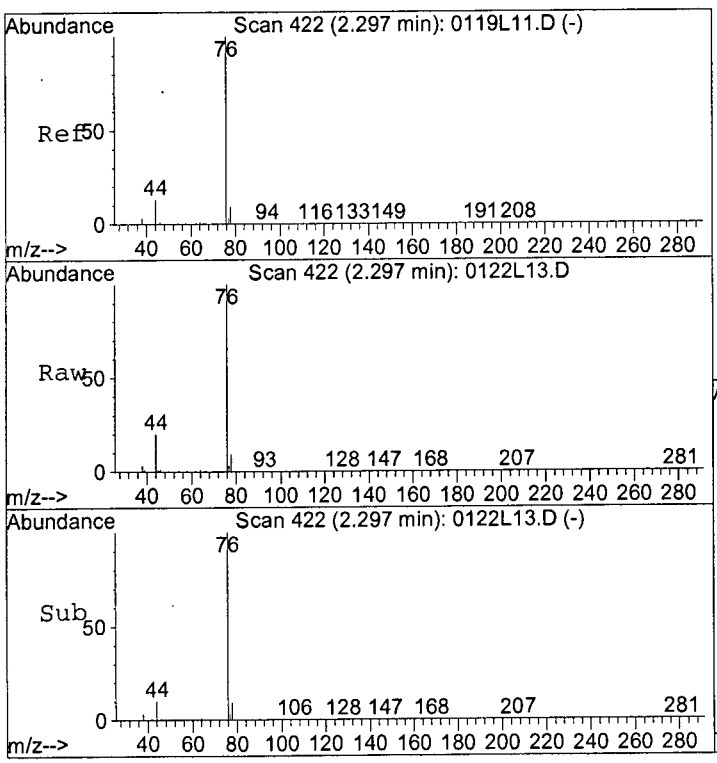


#11
Acetone
Concen: 10.16083 ppb
RT: 2.19 min Scan# 389
Delta R.T. 0.00 min
Lab File: 0122L13.D
Acq: 22 Jan 15 12:20

Tgt Ion: 43 Resp: 39828

Ion	Ratio	Lower	Upper
43	100		
58	30.2	22.2	41.2

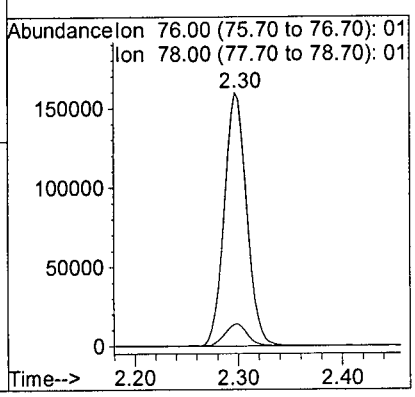


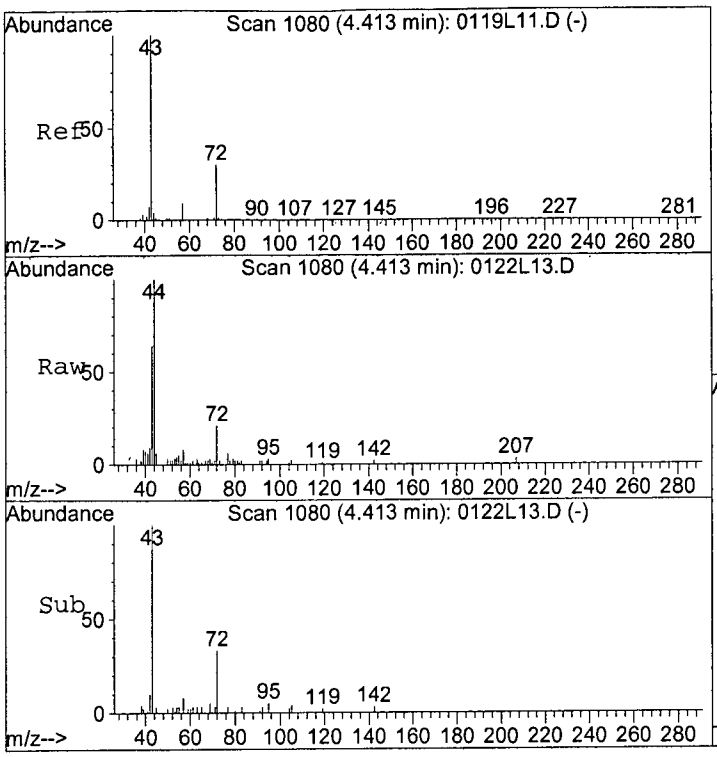


#19
Carbon disulfide
Concen: 12.89679 ppb
RT: 2.30 min Scan# 422
Delta R.T. 0.00 min
Lab File: 0122L13.D
Acq: 22 Jan 15 12:20

Tgt Ion: 76 Resp: 241616

Ion	Ratio	Lower	Upper
76	100		
78	8.6	6.0	11.2

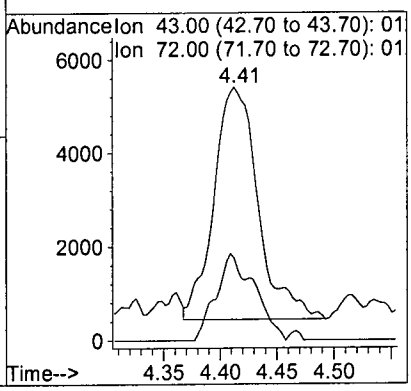


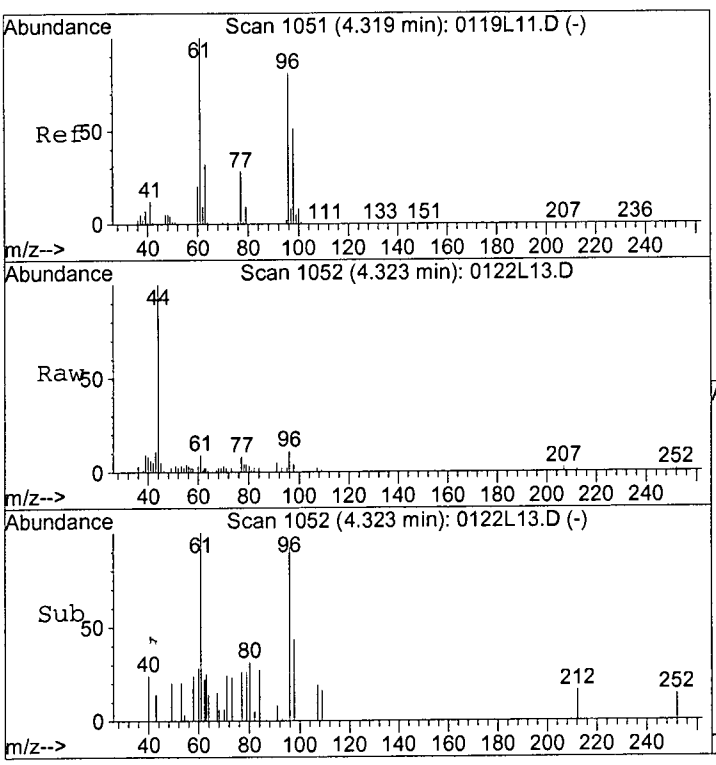


#26
MEK (2-Butanone)
Concen: 3.57998 ppb
RT: 4.41 min Scan# 1080
Delta R.T. 0.00 min
Lab File: 0122L13.D
Acq: 22 Jan 15 12:20

Tgt Ion: 43 Resp: 13473

Ion	Ratio	Lower	Upper
43	100		
72	35.5	20.9	38.9

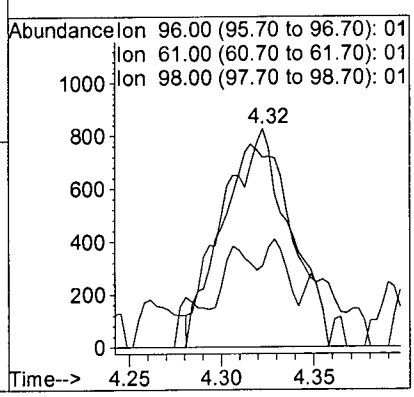


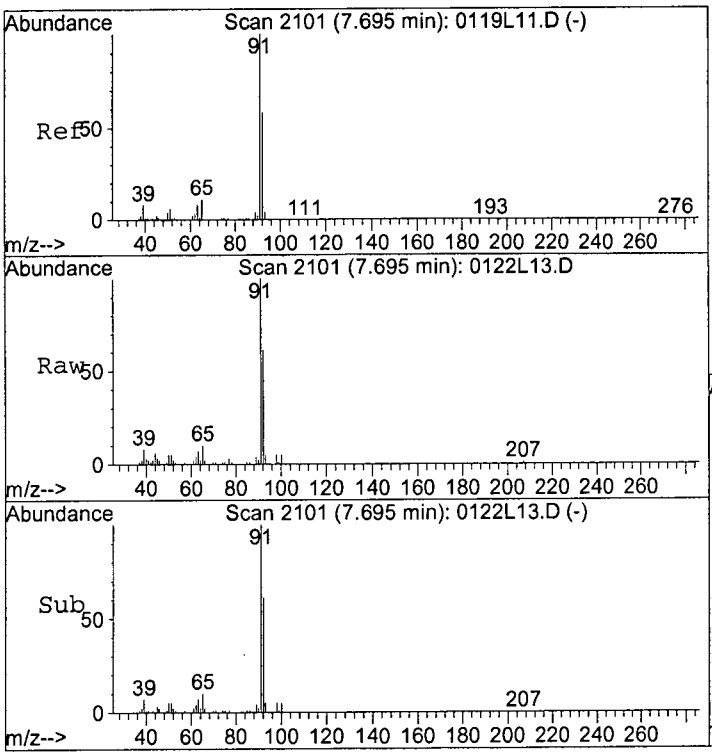


#27
Cis-1,2-DCE
Concen: 0.24997 ppb
RT: 4.32 min Scan# 1052
Delta R.T. 0.00 min
Lab File: 0122L13.D
Acq: 22 Jan 15 12:20

Tgt Ion: 96 Resp: 2096

Ion	Ratio	Lower	Upper
96	100		
61	86.9	86.9	161.3
98	37.4	44.3	82.3#

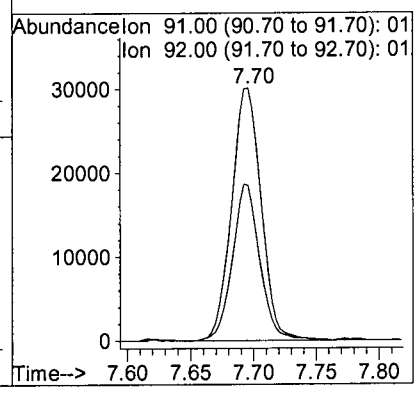


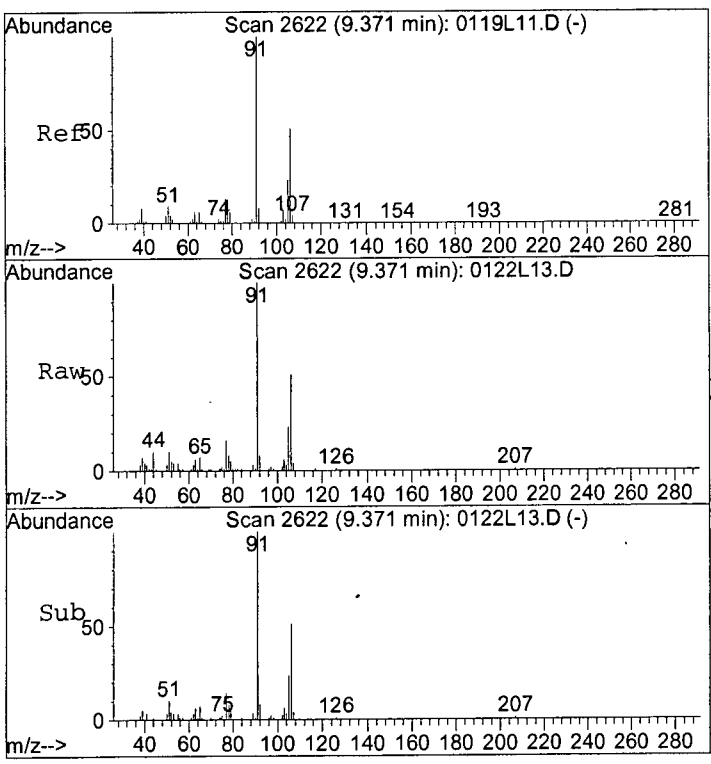


#51
Toluene
Concen: 1.71168 ppb
RT: 7.70 min Scan# 2101
Delta R.T. 0.00 min
Lab File: 0122L13.D
Acq: 22 Jan 15 12:20

Tgt Ion: 91 Resp: 49514

Ion	Ratio	Lower	Upper
91	100		
92	61.4	40.9	75.9

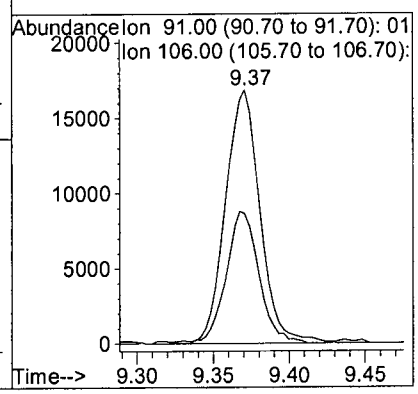


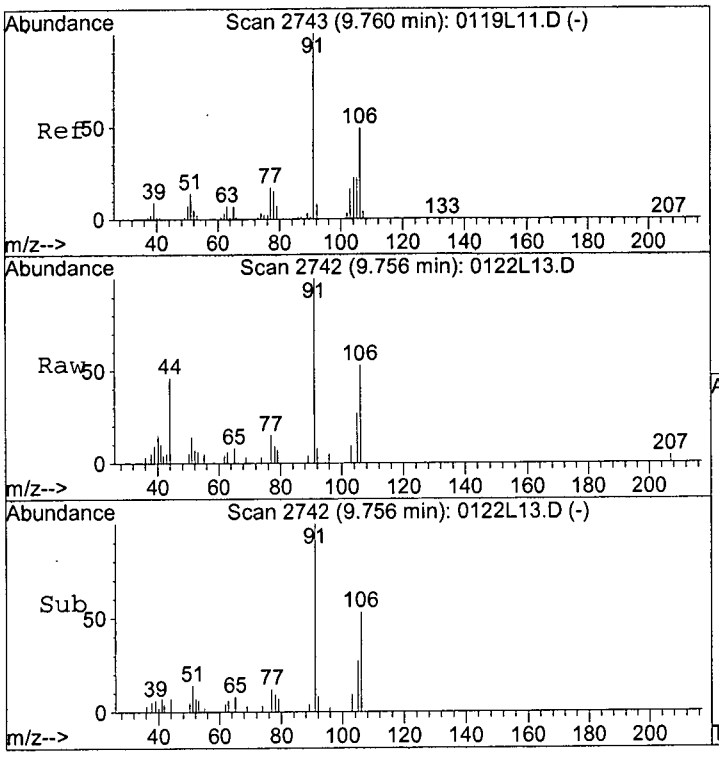


#61
m&p-Xylene
Concen: 1.15503 ppb
RT: 9.37 min Scan# 2622
Delta R.T. 0.00 min
Lab File: 0122L13.D
Acq: 22 Jan 15 12:20

Tgt Ion: 91 Resp: 16888

Ion	Ratio	Lower	Upper
91	100		
106	51.7	40.5	60.7

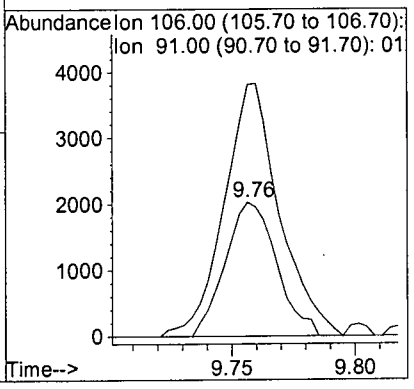




#62
o-Xylene
Concen: 0.24855 ppb
RT: 9.76 min Scan# 2742
Delta R.T. -0.00 min
Lab File: 0122L13.D
Acq: 22 Jan 15 12:20

Tgt Ion:106 Resp: 2951

Ion	Ratio	Lower	Upper
106	100		
91	179.2	142.9	265.5



EPA 8260B WATER

Element Environmental
98-030 Hekaha St., Unit 9
Aiea, HI 96701

APPL Inc.
908 North Temperance Avenue
Clovis, CA 93611

Attn: Steve Spengler
Project: MCBH UST KB-100 SI / 130034
Sample ID: EKB100009
Sample Collection Date: 01/13/15

ARF: 75351
APPL ID: AZ09553
QCG: #86BKB-150116AL-193634

Method	Analyte	Result	LOQ	LOD	DL	Units	Extraction Date	Analysis Date
EPA 8260B	1,1,1-TRICHLOROETHANE	0.30 U	1.0	0.30	0.14	ug/L	01/16/15	01/16/15
EPA 8260B	1,1,2,2-TETRACHLOROETHANE	0.30 U	1.0	0.30	0.10	ug/L	01/16/15	01/16/15
EPA 8260B	1,1,2-TRICHLOROETHANE	0.50 U	1.0	0.50	0.20	ug/L	01/16/15	01/16/15
EPA 8260B	1,1-DICHLOROETHANE	0.30 U	1.0	0.30	0.19	ug/L	01/16/15	01/16/15
EPA 8260B	1,1-DICHLOROETHENE	0.50 U	1.0	0.50	0.30	ug/L	01/16/15	01/16/15
EPA 8260B	1,2,3-TRICHLOROPROPANE	1.00 U	2.0	1.00	0.39	ug/L	01/16/15	01/16/15
EPA 8260B	1,2-DIBROMOETHANE	0.50 U	1.0	0.50	0.20	ug/L	01/16/15	01/16/15
EPA 8260B	1,2-DICHLOROETHANE	0.30 U	1.0	0.30	0.14	ug/L	01/16/15	01/16/15
EPA 8260B	1,2-DICHLOROPROPANE	0.30 U	1.0	0.30	0.17	ug/L	01/16/15	01/16/15
EPA 8260B	2-BUTANONE	2.00 U	10.0	2.00	0.60	ug/L	01/16/15	01/16/15
EPA 8260B	4-METHYL-2-PENTANONE	5.00 U	10.0	5.00	1.90	ug/L	01/16/15	01/16/15
EPA 8260B	ACETONE	2.00 U	10.0	2.00	0.95	ug/L	01/16/15	01/16/15
EPA 8260B	BENZENE	0.30 U	1.0	0.30	0.16	ug/L	01/16/15	01/16/15
EPA 8260B	BROMODICHLOROMETHANE	0.30 U	1.0	0.30	0.14	ug/L	01/16/15	01/16/15
EPA 8260B	BROMOFORM	0.30 U	1.0	0.30	0.14	ug/L	01/16/15	01/16/15
EPA 8260B	BROMOMETHANE	0.50 U	2.0	0.50	0.24	ug/L	01/16/15	01/16/15
EPA 8260B	CARBON TETRACHLORIDE	0.30 U	1.0	0.30	0.10	ug/L	01/16/15	01/16/15
EPA 8260B	CHLOROBENZENE	0.50 U	1.0	0.50	0.21	ug/L	01/16/15	01/16/15
EPA 8260B	CHLOROETHANE	0.50 U	1.0	0.50	0.21	ug/L	01/16/15	01/16/15
EPA 8260B	CHLOROFORM	0.30 U	1.0	0.30	0.07	ug/L	01/16/15	01/16/15
EPA 8260B	CHLOROMETHANE	0.50 U	1.0	0.50	0.42	ug/L	01/16/15	01/16/15
EPA 8260B	CIS-1,2-DICHLOROETHENE	0.30 U	1.0	0.30	0.16	ug/L	01/16/15	01/16/15
EPA 8260B	CIS-1,3-DICHLOROPROPENE	0.30 U	1.0	0.30	0.15	ug/L	01/16/15	01/16/15
EPA 8260B	DIBROMOCHLOROMETHANE	0.30 U	1.0	0.30	0.19	ug/L	01/16/15	01/16/15
EPA 8260B	ETHYLBENZENE	0.50 U	1.0	0.50	0.23	ug/L	01/16/15	01/16/15
EPA 8260B	METHYLENE CHLORIDE	1.00 U	5.0	1.00	0.35	ug/L	01/16/15	01/16/15
EPA 8260B	STYRENE	0.50 U	1.0	0.50	0.25	ug/L	01/16/15	01/16/15
EPA 8260B	TETRACHLOROETHENE	0.30 U	1.0	0.30	0.24	ug/L	01/16/15	01/16/15
EPA 8260B	TOLUENE	0.30 U	1.0	0.30	0.17	ug/L	01/16/15	01/16/15
EPA 8260B	TRANS-1,2-DICHLOROETHENE	0.30 U	1.0	0.30	0.19	ug/L	01/16/15	01/16/15
EPA 8260B	TRANS-1,3-DICHLOROPROPENE	0.30 U	1.0	0.30	0.18	ug/L	01/16/15	01/16/15
EPA 8260B	TRICHLOROETHENE	0.30 U	1.0	0.30	0.16	ug/L	01/16/15	01/16/15
EPA 8260B	VINYL CHLORIDE	0.30 U	1.0	0.30	0.23	ug/L	01/16/15	01/16/15
EPA 8260B	XYLENES (TOTAL)	0.30 U	2.0	0.30	0.19	ug/L	01/16/15	01/16/15
EPA 8260B	SURROGATE: 1,2-DICHLOROETHANE	97.3	70-120			%	01/16/15	01/16/15

Quant Method: LALLW2.M
Run #: 0116L20
Instrument: Loki
Sequence: 150113
Dilution Factor: 1
Initials: SV

Printed: 01/26/15 1:46:47 PM
APPL-F1-SC-MCRes/MCPQL-REG MDLs

EPA 8260B WATER

Element Environmental
98-030 Hekaha St., Unit 9
Aiea, HI 96701

APPL Inc.
908 North Temperance Avenue
Clovis, CA 93611

Attn: Steve Spengler
Project: MCBH UST KB-100 SI / 130034
Sample ID: EKB100009
Sample Collection Date: 01/13/15

ARF: 75351
APPL ID: AZ09553
QCG: #86BKB-150116AL-193634

Method	Analyte	Result	LOQ	LOD	DL	Units	Extraction Date	Analysis Date
EPA 8260B	SURROGATE: 4-BROMOFLUOROBEN	96.9	75-120			%	01/16/15	01/16/15
EPA 8260B	SURROGATE: DIBROMOFLUOROMET	100	85-115			%	01/16/15	01/16/15
EPA 8260B	SURROGATE: TOLUENE-D8 (S)	99.1	85-120			%	01/16/15	01/16/15

Quant Method: LALLW2.M
Run #: 0116L20
Instrument: Loki
Sequence: 150113
Dilution Factor: 1
Initials: SV

Printed: 01/26/15 1:46:47 PM
APPL-F1-SC-MCRes/MCPQL-REG MDLs

Quantitation Report (QT Reviewed)

Data File : M:\LOKI\DATA\150113\0116L20.D
Acq On : 16 Jan 15 17:27
Sample : AZ09553W02
Misc : 10mL w/5uL IS&S:01/14/15,10-06-14

Vial: 19
Operator: DG,SV,RS
Inst : Loki
Multiplr: 1.00

Quant Time: Jan 19 9:20 2015 Quant Results File: LALLW2.RES

Quant Method : M:\LOKI\DATA\150113\LALLW2.M (RTE Integrator)
Title : METHOD 8260B
Last Update : Mon Jan 19 08:51:54 2015
Response via : Initial Calibration
DataAcq Meth : 8260_BETA

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene (IS)	5.85	96	1171456	25.00000 ppb	0.00
57) Chlorobenzene-D5 (IS)	9.09	117	1094656	25.00000 ppb	0.00
72) 1,4-Dichlorobenzene-D (IS)	11.41	152	594112	25.00000 ppb	0.00
System Monitoring Compounds					
33) Dibromofluoromethane(S)	5.01	111	585104	23.45089 ppb	0.00
Spiked Amount 23.395			Recovery	= 100.239%	
38) 1,2-DCA-D4(S)	5.42	65	581582	22.79064 ppb	0.00
Spiked Amount 23.427			Recovery	= 97.287%	
58) Toluene-D8(S)	7.62	98	2135211	24.50264 ppb	0.00
Spiked Amount 24.736			Recovery	= 99.059%	
66) 4-Bromofluorobenzene(S)	10.27	95	794627	23.89523 ppb	0.00
Spiked Amount 24.661			Recovery	= 96.896%	

Target Compounds Qvalue

(#) = qualifier out of range (m) = manual integration

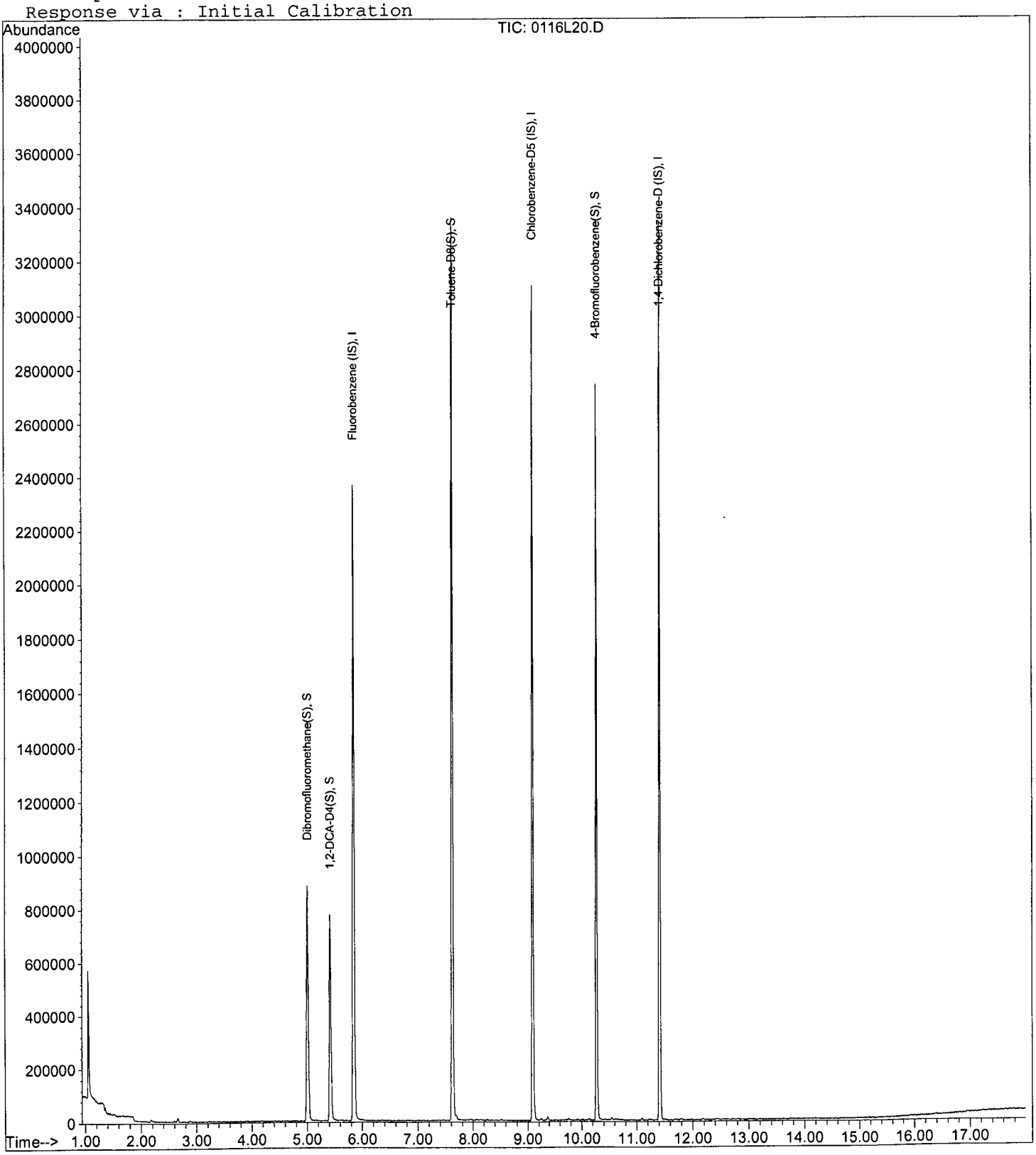
Quantitation Report

Data File : M:\LOKI\DATA\150113\0116L20.D
Acq On : 16 Jan 15 17:27
Sample : AZ09553W02
Misc : 10mL w/5uL IS&S:01/14/15,10-06-14

Vial: 19
Operator: DG,SV,RS
Inst : Loki
Multiplr: 1.00

Quant Time: Jan 19 9:20 2015 Quant Results File: LALLW2.RES

Method : M:\LOKI\DATA\150113\LALLW2.M (RTE Integrator)
Title : METHOD 8260B
Last Update : Mon Jan 19 08:51:54 2015
Response via : Initial Calibration



EPA 8260B WATER

Element Environmental
98-030 Hekaha St., Unit 9
Aiea, HI 96701

APPL Inc.
908 North Temperance Avenue
Clovis, CA 93611

Attn: Steve Spengler
Project: MCBH UST KB-100 SI / 130034
Sample ID: EKB100010
Sample Collection Date: 01/13/15

ARF: 75351
APPL ID: AZ09554
QCG: #86BKB-150116AL-193634

Method	Analyte	Result	LOQ	LOD	DL	Units	Extraction Date	Analysis Date
EPA 8260B	1,1,1-TRICHLOROETHANE	0.30 U	1.0	0.30	0.14	ug/L	01/16/15	01/16/15
EPA 8260B	1,1,2,2-TETRACHLOROETHANE	0.30 U	1.0	0.30	0.10	ug/L	01/16/15	01/16/15
EPA 8260B	1,1,2-TRICHLOROETHANE	0.50 U	1.0	0.50	0.20	ug/L	01/16/15	01/16/15
EPA 8260B	1,1-DICHLOROETHANE	0.30 U	1.0	0.30	0.19	ug/L	01/16/15	01/16/15
EPA 8260B	1,1-DICHLOROETHENE	0.50 U	1.0	0.50	0.30	ug/L	01/16/15	01/16/15
EPA 8260B	1,2,3-TRICHLOROPROPANE	1.00 U	2.0	1.00	0.39	ug/L	01/16/15	01/16/15
EPA 8260B	1,2-DIBROMOETHANE	0.50 U	1.0	0.50	0.20	ug/L	01/16/15	01/16/15
EPA 8260B	1,2-DICHLOROETHANE	0.30 U	1.0	0.30	0.14	ug/L	01/16/15	01/16/15
EPA 8260B	1,2-DICHLOROPROPANE	0.30 U	1.0	0.30	0.17	ug/L	01/16/15	01/16/15
EPA 8260B	2-BUTANONE	2.00 U	10.0	2.00	0.60	ug/L	01/16/15	01/16/15
EPA 8260B	4-METHYL-2-PENTANONE	5.00 U	10.0	5.00	1.90	ug/L	01/16/15	01/16/15
EPA 8260B	ACETONE	2.00 U	10.0	2.00	0.95	ug/L	01/16/15	01/16/15
EPA 8260B	BENZENE	0.30 U	1.0	0.30	0.16	ug/L	01/16/15	01/16/15
EPA 8260B	BROMODICHLOROMETHANE	0.30 U	1.0	0.30	0.14	ug/L	01/16/15	01/16/15
EPA 8260B	BROMOFORM	0.30 U	1.0	0.30	0.14	ug/L	01/16/15	01/16/15
EPA 8260B	BROMOMETHANE	0.50 U	2.0	0.50	0.24	ug/L	01/16/15	01/16/15
EPA 8260B	CARBON TETRACHLORIDE	0.30 U	1.0	0.30	0.10	ug/L	01/16/15	01/16/15
EPA 8260B	CHLOROBENZENE	0.50 U	1.0	0.50	0.21	ug/L	01/16/15	01/16/15
EPA 8260B	CHLOROETHANE	0.50 U	1.0	0.50	0.21	ug/L	01/16/15	01/16/15
EPA 8260B	CHLOROFORM	0.30 U	1.0	0.30	0.07	ug/L	01/16/15	01/16/15
EPA 8260B	CHLOROMETHANE	0.50 U	1.0	0.50	0.42	ug/L	01/16/15	01/16/15
EPA 8260B	CIS-1,2-DICHLOROETHENE	0.30 U	1.0	0.30	0.16	ug/L	01/16/15	01/16/15
EPA 8260B	CIS-1,3-DICHLOROPROPENE	0.30 U	1.0	0.30	0.15	ug/L	01/16/15	01/16/15
EPA 8260B	DIBROMOCHLOROMETHANE	0.30 U	1.0	0.30	0.19	ug/L	01/16/15	01/16/15
EPA 8260B	ETHYLBENZENE	0.50 U	1.0	0.50	0.23	ug/L	01/16/15	01/16/15
EPA 8260B	METHYLENE CHLORIDE	1.00 U	5.0	1.00	0.35	ug/L	01/16/15	01/16/15
EPA 8260B	STYRENE	0.50 U	1.0	0.50	0.25	ug/L	01/16/15	01/16/15
EPA 8260B	TETRACHLOROETHENE	0.30 U	1.0	0.30	0.24	ug/L	01/16/15	01/16/15
EPA 8260B	TOLUENE	0.30 U	1.0	0.30	0.17	ug/L	01/16/15	01/16/15
EPA 8260B	TRANS-1,2-DICHLOROETHENE	0.30 U	1.0	0.30	0.19	ug/L	01/16/15	01/16/15
EPA 8260B	TRANS-1,3-DICHLOROPROPENE	0.30 U	1.0	0.30	0.18	ug/L	01/16/15	01/16/15
EPA 8260B	TRICHLOROETHENE	0.30 U	1.0	0.30	0.16	ug/L	01/16/15	01/16/15
EPA 8260B	VINYL CHLORIDE	0.30 U	1.0	0.30	0.23	ug/L	01/16/15	01/16/15
EPA 8260B	XYLENES (TOTAL)	0.30 U	2.0	0.30	0.19	ug/L	01/16/15	01/16/15
EPA 8260B	SURROGATE: 1,2-DICHLOROETHANE	95.6	70-120			%	01/16/15	01/16/15

Quant Method: LALLW2.M
Run #: 0116L21
Instrument: Loki
Sequence: 150113
Dilution Factor: 1
Initials: SV

Printed: 01/26/15 1:46:47 PM
APPL-F1-SC-MCRes/MCPQL-REG MDLs

EPA 8260B WATER

Element Environmental
98-030 Hekaha St., Unit 9
Aiea, HI 96701

APPL Inc.
908 North Temperance Avenue
Clovis, CA 93611

Attn: Steve Spengler
Project: MCBH UST KB-100 SI / 130034
Sample ID: EKB100010
Sample Collection Date: 01/13/15

ARF: 75351
APPL ID: AZ09554
QCG: #86BKB-150116AL-193634

Method	Analyte	Result	LOQ	LOD	DL	Units	Extraction Date	Analysis Date
EPA 8260B	SURROGATE: 4-BROMOFLUOROBEN	95.1	75-120			%	01/16/15	01/16/15
EPA 8260B	SURROGATE: DIBROMOFLUOROMET	97.3	85-115			%	01/16/15	01/16/15
EPA 8260B	SURROGATE: TOLUENE-D8 (S)	97.9	85-120			%	01/16/15	01/16/15

Quant Method: LALLW2.M
Run #: 0116L21
Instrument: Loki
Sequence: 150113
Dilution Factor: 1
Initials: SV

Printed: 01/26/15 1:46:47 PM
APPL-F1-SC-MCRes/MCPQL-REG MDLs

Quantitation Report (QT Reviewed)

Data File : M:\LOKI\DATA\150113\0116L21.D
Acq On : 16 Jan 15 17:55
Sample : AZ09554W02
Misc : 10mL w/5uL IS&S:01/14/15,10-06-14

Vial: 20
Operator: DG,SV,RS
Inst : Loki
Multiplr: 1.00

Quant Time: Jan 19 9:21 2015 Quant Results File: LALLW2.RES

Quant Method : M:\LOKI\DATA\150113\LALLW2.M (RTE Integrator)
Title : METHOD 8260B
Last Update : Mon Jan 19 08:51:54 2015
Response via : Initial Calibration
DataAcq Meth : 8260_BETA

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene (IS)	5.85	96	1210368	25.00000 ppb	0.00
57) Chlorobenzene-D5 (IS)	9.09	117	1118720	25.00000 ppb	0.00
72) 1,4-Dichlorobenzene-D (IS)	11.41	152	623360	25.00000 ppb	0.00
System Monitoring Compounds					
33) Dibromofluoromethane(S)	5.01	111	586618	22.75570 ppb	0.00
Spiked Amount 23.395			Recovery	= 97.268%	
38) 1,2-DCA-D4(S)	5.42	65	590342	22.39020 ppb	0.00
Spiked Amount 23.427			Recovery	= 95.576%	
58) Toluene-D8(S)	7.62	98	2157400	24.22474 ppb	0.00
Spiked Amount 24.736			Recovery	= 97.935%	
66) 4-Bromofluorobenzene(S)	10.27	95	797308	23.46012 ppb	0.00
Spiked Amount 24.661			Recovery	= 95.132%	

Target Compounds Qvalue

(#) = qualifier out of range (m) = manual integration

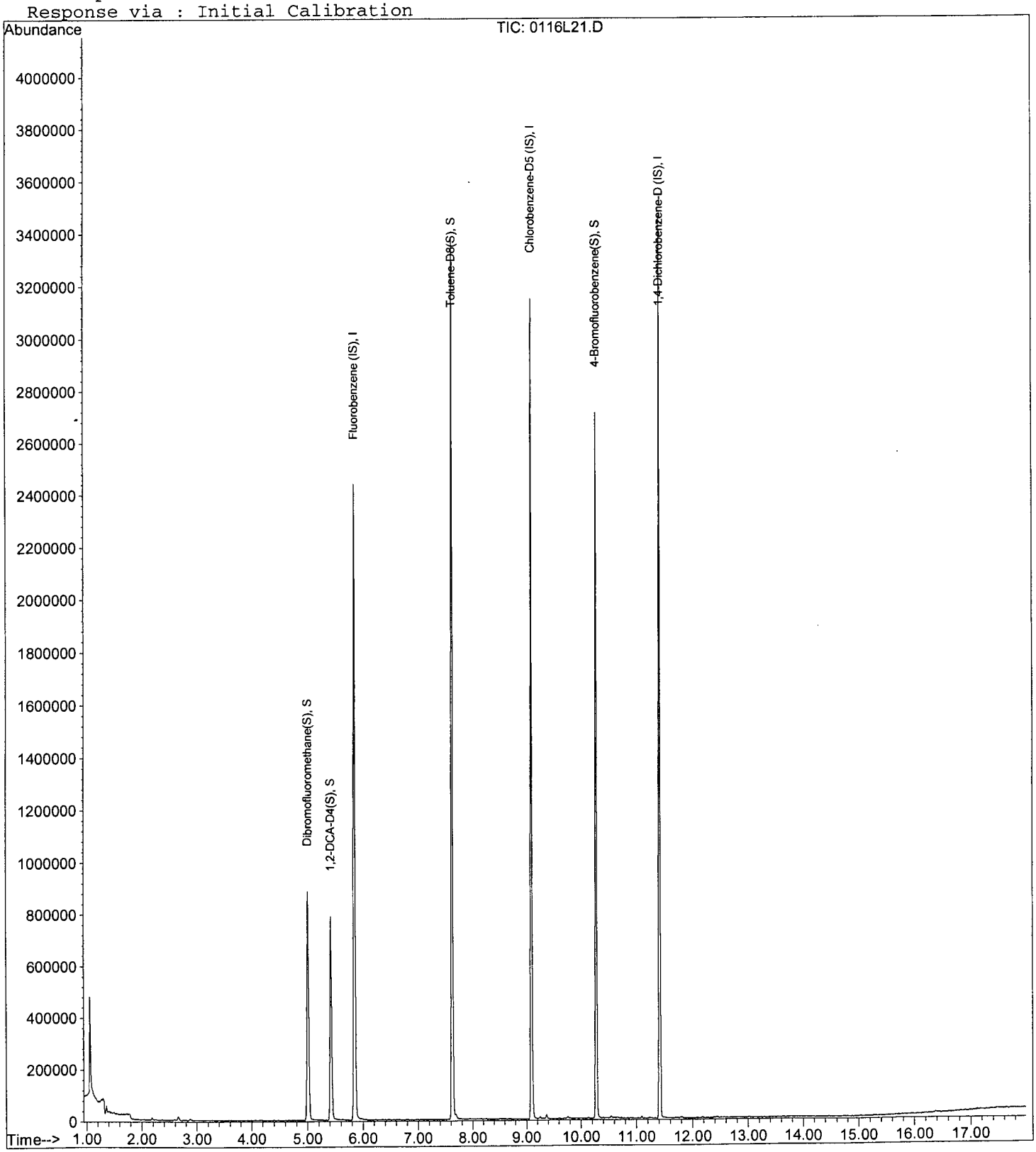
Quantitation Report

Data File : M:\LOKI\DATA\150113\0116L21.D
Acq On : 16 Jan 15 17:55
Sample : AZ09554W02
Misc : 10mL w/5uL IS&S:01/14/15,10-06-14

Vial: 20
Operator: DG,SV,RS
Inst : Loki
Multiplr: 1.00

Quant Time: Jan 19 9:21 2015 Quant Results File: LALLW2.RES

Method : M:\LOKI\DATA\150113\LALLW2.M (RTE Integrator)
Title : METHOD 8260B
Last Update : Mon Jan 19 08:51:54 2015
Response via : Initial Calibration



EPA 8260B WATER

Element Environmental
98-030 Hekaha St., Unit 9
Aiea, HI 96701

APPL Inc.
908 North Temperance Avenue
Clovis, CA 93611

Attn: Steve Spengler
Project: MCBH UST KB-100 SI / 130034
Sample ID: TRIP BLANK-01
Sample Collection Date: 01/13/15

ARF: 75351
APPL ID: AZ09555
QCG: #86BKB-150116AL-193634

Method	Analyte	Result	LOQ	LOD	DL	Units	Extraction Date	Analysis Date
EPA 8260B	1,1,1-TRICHLOROETHANE	0.30 U	1.0	0.30	0.14	ug/L	01/16/15	01/16/15
EPA 8260B	1,1,2,2-TETRACHLOROETHANE	0.30 U	1.0	0.30	0.10	ug/L	01/16/15	01/16/15
EPA 8260B	1,1,2-TRICHLOROETHANE	0.50 U	1.0	0.50	0.20	ug/L	01/16/15	01/16/15
EPA 8260B	1,1-DICHLOROETHANE	0.30 U	1.0	0.30	0.19	ug/L	01/16/15	01/16/15
EPA 8260B	1,1-DICHLOROETHENE	0.50 U	1.0	0.50	0.30	ug/L	01/16/15	01/16/15
EPA 8260B	1,2,3-TRICHLOROPROPANE	1.00 U	2.0	1.00	0.39	ug/L	01/16/15	01/16/15
EPA 8260B	1,2-DIBROMOETHANE	0.50 U	1.0	0.50	0.20	ug/L	01/16/15	01/16/15
EPA 8260B	1,2-DICHLOROETHANE	0.30 U	1.0	0.30	0.14	ug/L	01/16/15	01/16/15
EPA 8260B	1,2-DICHLOROPROPANE	0.30 U	1.0	0.30	0.17	ug/L	01/16/15	01/16/15
EPA 8260B	2-BUTANONE	2.00 U	10.0	2.00	0.60	ug/L	01/16/15	01/16/15
EPA 8260B	4-METHYL-2-PENTANONE	5.00 U	10.0	5.00	1.90	ug/L	01/16/15	01/16/15
EPA 8260B	ACETONE	2.00 U	10.0	2.00	0.95	ug/L	01/16/15	01/16/15
EPA 8260B	BENZENE	0.30 U	1.0	0.30	0.16	ug/L	01/16/15	01/16/15
EPA 8260B	BROMODICHLOROMETHANE	0.30 U	1.0	0.30	0.14	ug/L	01/16/15	01/16/15
EPA 8260B	BROMOFORM	0.30 U	1.0	0.30	0.14	ug/L	01/16/15	01/16/15
EPA 8260B	BROMOMETHANE	0.50 U	2.0	0.50	0.24	ug/L	01/16/15	01/16/15
EPA 8260B	CARBON TETRACHLORIDE	0.30 U	1.0	0.30	0.10	ug/L	01/16/15	01/16/15
EPA 8260B	CHLOROBENZENE	0.50 U	1.0	0.50	0.21	ug/L	01/16/15	01/16/15
EPA 8260B	CHLOROETHANE	0.50 U	1.0	0.50	0.21	ug/L	01/16/15	01/16/15
EPA 8260B	CHLOROFORM	0.30 U	1.0	0.30	0.07	ug/L	01/16/15	01/16/15
EPA 8260B	CHLOROMETHANE	0.50 U	1.0	0.50	0.42	ug/L	01/16/15	01/16/15
EPA 8260B	CIS-1,2-DICHLOROETHENE	0.30 U	1.0	0.30	0.16	ug/L	01/16/15	01/16/15
EPA 8260B	CIS-1,3-DICHLOROPROPENE	0.30 U	1.0	0.30	0.15	ug/L	01/16/15	01/16/15
EPA 8260B	DIBROMOCHLOROMETHANE	0.30 U	1.0	0.30	0.19	ug/L	01/16/15	01/16/15
EPA 8260B	ETHYLBENZENE	0.50 U	1.0	0.50	0.23	ug/L	01/16/15	01/16/15
EPA 8260B	METHYLENE CHLORIDE	1.00 U	5.0	1.00	0.35	ug/L	01/16/15	01/16/15
EPA 8260B	STYRENE	0.50 U	1.0	0.50	0.25	ug/L	01/16/15	01/16/15
EPA 8260B	TETRACHLOROETHENE	0.30 U	1.0	0.30	0.24	ug/L	01/16/15	01/16/15
EPA 8260B	TOLUENE	0.30 U	1.0	0.30	0.17	ug/L	01/16/15	01/16/15
EPA 8260B	TRANS-1,2-DICHLOROETHENE	0.30 U	1.0	0.30	0.19	ug/L	01/16/15	01/16/15
EPA 8260B	TRANS-1,3-DICHLOROPROPENE	0.30 U	1.0	0.30	0.18	ug/L	01/16/15	01/16/15
EPA 8260B	TRICHLOROETHENE	0.30 U	1.0	0.30	0.16	ug/L	01/16/15	01/16/15
EPA 8260B	VINYL CHLORIDE	0.30 U	1.0	0.30	0.23	ug/L	01/16/15	01/16/15
EPA 8260B	XYLENES (TOTAL)	0.30 U	2.0	0.30	0.19	ug/L	01/16/15	01/16/15
EPA 8260B	SURROGATE: 1,2-DICHLOROETHANE	95.3	70-120			%	01/16/15	01/16/15

Quant Method: LALLW2.M
Run #: 0116L13
Instrument: Loki
Sequence: 150113
Dilution Factor: 1
Initials: SV

Printed: 01/26/15 1:46:47 PM
APPL-F1-SC-MCRes/MCPQL-REG MDLs

EPA 8260B WATER

Element Environmental
98-030 Hekaha St., Unit 9
Aiea, HI 96701

APPL Inc.
908 North Temperance Avenue
Clovis, CA 93611

Attn: Steve Spengler
Project: MCBH UST KB-100 SI / 130034
Sample ID: TRIP BLANK-01
Sample Collection Date: 01/13/15

ARF: 75351
APPL ID: AZ09555
QCG: #86BKB-150116AL-193634

Method	Analyte	Result	LOQ	LOD	DL	Units	Extraction Date	Analysis Date
EPA 8260B	SURROGATE: 4-BROMOFLUOROBEN	97.1	75-120			%	01/16/15	01/16/15
EPA 8260B	SURROGATE: DIBROMOFLUOROMET	98.4	85-115			%	01/16/15	01/16/15
EPA 8260B	SURROGATE: TOLUENE-D8 (S)	98.6	85-120			%	01/16/15	01/16/15

Quant Method: LALLW2.M
Run #: 0116L13
Instrument: Loki
Sequence: 150113
Dilution Factor: 1
Initials: SV

Printed: 01/26/15 1:46:47 PM
APPL-F1-SC-MCRes/MCPQL-REG MDLs

Quantitation Report (QT Reviewed)

Data File : M:\LOKI\DATA\150113\0116L13.D
Acq On : 16 Jan 15 14:11
Sample : AZ09555W01
Misc : 10mL w/5uL IS&S:01/14/15,10-06-14

Vial: 12
Operator: DG,SV,RS
Inst : Loki
Multiplr: 1.00

Quant Time: Jan 19 8:58 2015 Quant Results File: LALLW2.RES

Quant Method : M:\LOKI\DATA\150113\LALLW2.M (RTE Integrator)
Title : METHOD 8260B
Last Update : Mon Jan 19 08:51:54 2015
Response via : Initial Calibration
DataAcq Meth : 8260_BETA

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene (IS)	5.85	96	1184768	25.00000 ppb	0.00
57) Chlorobenzene-D5 (IS)	9.09	117	1078784	25.00000 ppb	0.00
72) 1,4-Dichlorobenzene-D (IS)	11.41	152	599232	25.00000 ppb	0.00
System Monitoring Compounds					
33) Dibromofluoromethane(S)	5.01	111	580709	23.01323 ppb	0.00
Spiked Amount 23.395			Recovery	= 98.366%	
38) 1,2-DCA-D4(S)	5.42	65	576135	22.32352 ppb	0.00
Spiked Amount 23.427			Recovery	= 95.294%	
58) Toluene-D8(S)	7.62	98	2094639	24.39071 ppb	0.00
Spiked Amount 24.736			Recovery	= 98.606%	
66) 4-Bromofluorobenzene(S)	10.27	95	784694	23.94371 ppb	0.00
Spiked Amount 24.661			Recovery	= 97.095%	

Target Compounds Qvalue

(#) = qualifier out of range (m) = manual integration

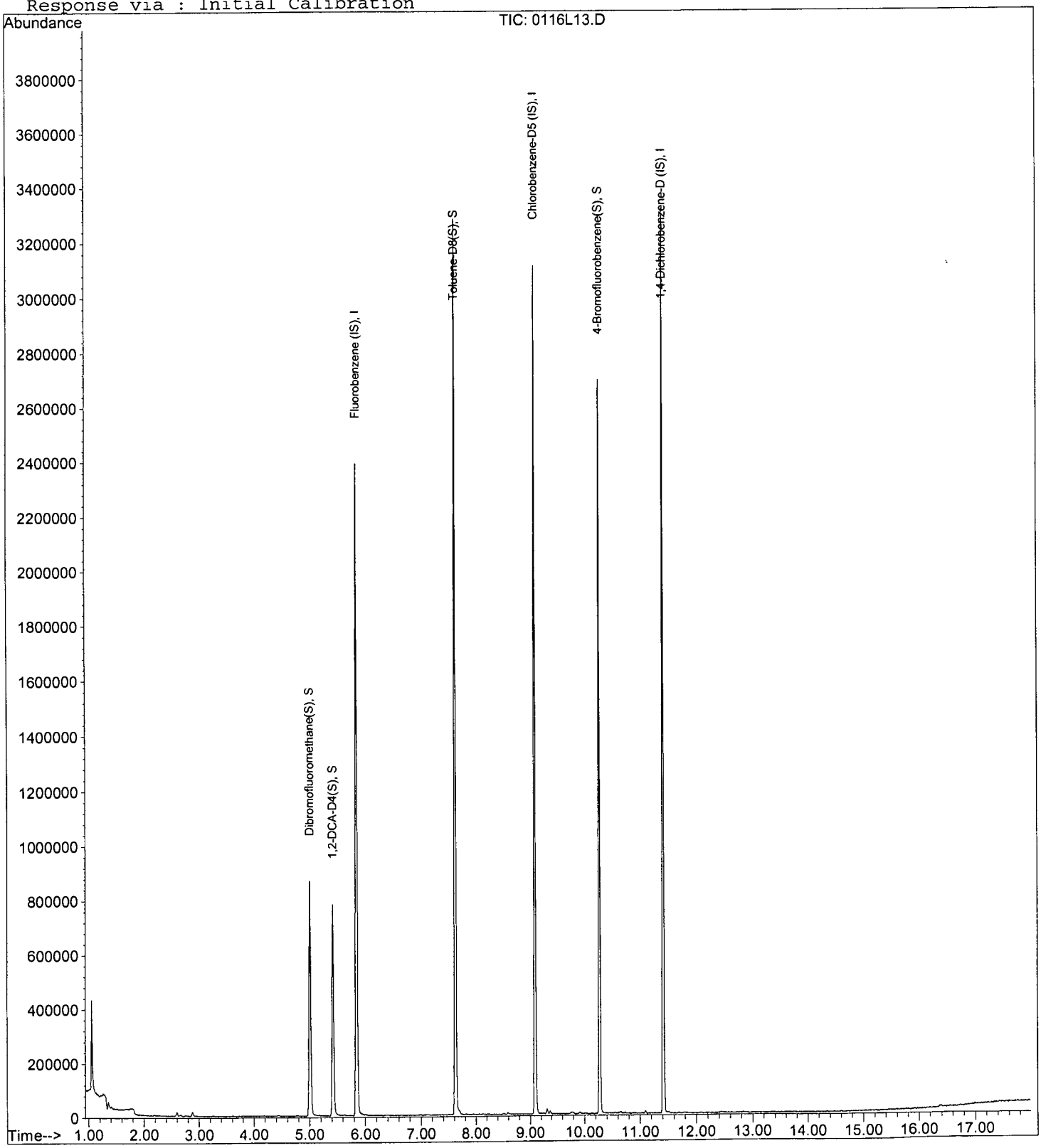
Quantitation Report

Data File : M:\LOKI\DATA\150113\0116L13.D
Acq On : 16 Jan 15 14:11
Sample : AZ09555W01
Misc : 10mL w/5uL IS&S:01/14/15,10-06-14

Vial: 12
Operator: DG,SV,RS
Inst : Loki
Multiplr: 1.00

Quant Time: Jan 19 8:58 2015 Quant Results File: LALLW2.RES

Method : M:\LOKI\DATA\150113\LALLW2.M (RTE Integrator)
Title : METHOD 8260B
Last Update : Mon Jan 19 08:51:54 2015
Response via : Initial Calibration



EPA METHOD 8260B
Volatile Organic Compounds
Calibration Data

APPL, INC.

VOLATILE ORGANIC ANALYSIS BY
EPA METHOD 8260B

Form 6
Initial Calibration

Lab Name: APPL, Inc.
Case No:
Matrix:

SDG No:
Initial Cal. Date: 01/13/15
Instrument: Loki

Initials:

		Compound	0.3	0.5	1	5	10	20	40	100			Avg	%RSD		
			0113L08.D	0113L09.D	0113L10.D	0113L11.D	0113L12.D	0113L13.D	0113L14.D	0113L15.D						
1	I	Fluorobenzene (IS)	ISTD													
2	TM	Dichlorodifluoromethane	0.2687	0.3094	0.2882	0.3104	0.3423	0.3661	0.3739	0.3955			0.33	13	TM	
3	TM	Freon 114	0.2020	0.2161	0.2561	0.2212	0.2541	0.2679	0.2857	0.3158			0.25	15	TM	
4	TM**L	Chloromethane	0.9928	0.5800	0.5021	0.4734	0.4707	0.4408	0.4400	0.4393			0.54	35	TM**L	1.00
5	TM*	Vinyl chloride	0.5231	0.4502	0.4654	0.4862	0.4995	0.4876	0.4728	0.4790			0.48	4.6	TM*	
6	TML	Bromomethane		0.4406	0.4383	0.3973	0.4174	0.3423	0.3023	0.2601			0.37	19	TML	0.993
7	TM	Chloroethane		0.3208	0.2786	0.2936	0.2710	0.2638	0.2512				0.28	8.8	TM	
8	TML	Dichlorofluoromethane	1.012	1.389	1.039	0.9078	0.9039	0.8461	0.8290	0.8381			0.97	19	TML	1.000
9	TM	Trichlorofluoromethane	0.6700	0.6632	0.6717	0.6907	0.7283	0.6998	0.6839	0.7114			0.69	3.2	TM	
10	TM	Acrolein	0.0191	0.0133	0.0165	0.0152	0.0170	0.0162	0.0140	0.0157			0.02	11	TM	
11	TML	Acetone	0.5845	0.4815	0.1881	0.1225	0.1012	0.0915	0.0850	0.0849			0.22	92	TML	1.000
12	TM	Freon-113	0.3157	0.3367	0.3538	0.3362	0.3522	0.3515	0.3578	0.3754			0.35	5.1	TM	
13	TM*	1,1-DCE	0.6420	0.5490	0.5334	0.5293	0.5698	0.5407	0.5434	0.5611			0.56	6.5	TM*	
14	TM	t-Butanol	0.0159	0.0147	0.0133	0.0135	0.0138	0.0129	0.0132	0.0132			0.01	7.2	TM	
15	TM	Acetonitrile		0.0411	0.0338	0.0342	0.0338	0.0322	0.0328	0.0337			0.03	8.6	TM	
16	TML	Methyl Acetate		0.3280	0.2914	0.2429	0.2306	0.2184	0.2090	0.2286			0.25	17	TML	0.999
17	TMQ	Iodomethane	0.1292	0.1488	0.1275	0.1440	0.1766	0.1921					0.15	17	TMQ	0.999
18	TML	Acrylonitrile		0.1841	0.1190	0.0975	0.0930	0.0847	0.0838				0.11	35	TML	1.000
19	TML	Methylene chloride		1.008	0.8567	0.5700	0.4844	0.4481	0.4295	0.4294			0.60	39	TML	1.000
20	TM	Carbon disulfide	1.266	1.148	1.099	1.007	1.102	1.058	1.047	1.076			1.1	7.2	TM	
21	TM	Methyl t-butyl ether (MtBE)	1.397	1.210	1.169	1.243	1.179	1.110	1.090	1.093			1.2	8.6	TM	
22	TM	Trans-1,2-DCE	0.5124	0.4637	0.4426	0.4314	0.4448	0.4251	0.4183	0.4324			0.45	6.7	TM	
23	TM	Diisopropyl Ether	1.441	1.354	1.241	1.321	1.310	1.240	1.237	1.251			1.3	5.6	TM	
24	TM**	1,1-DCA	0.8416	0.7777	0.7164	0.7278	0.7535	0.7081	0.6965	0.6937			0.74	6.8	TM**	
25	TM	Hexane	0.4544	0.3658	0.4229	0.3265	0.3665	0.3650	0.3747	0.4060			0.39	10	TM	
26	TM	Vinyl Acetate	0.3472	0.3388	0.2574	0.3016	0.2708	0.2524	0.2573	0.2373			0.28	15	TM	
27	TM	Ethyl tert Butyl Ether	1.489	1.368	1.243	1.380	1.338	1.259	1.233	1.259			1.3	6.8	TM	
28	TML	MEK (2-Butanone)		0.2508	0.1804	0.1537	0.1291	0.1281	0.1188	0.1176			0.15	31	TML	1.000
29	TM	Cis-1,2-DCE	0.6243	0.4998	0.5162	0.5148	0.5289	0.4917	0.4908	0.5048			0.52	8.4	TM	
30	TM	2,2-Dichloropropane	0.2356	0.2349	0.2173	0.2147	0.2290	0.2100	0.2106	0.2140			0.22	4.8	TM	
31	TM*	Chloroform	0.8778	0.7841	0.7209	0.7803	0.7976	0.7524	0.7550	0.7639			0.78	5.9	TM*	
32	TM	Bromochloromethane	0.3372	0.3239	0.3047	0.2597	0.2630	0.2383	0.2388	0.2375			0.28	15	TM	
33	S	Dibromofluoromethane(S)	0.6506	0.5856	0.5340	0.5240	0.4913	0.4905	0.4885	0.4953			0.53	11	S	
34	TM	1,1,1-TCA	0.7819	0.7041	0.6941	0.6953	0.7119	0.6822	0.6768	0.6913			0.70	4.7	TM	
35	TM	Cyclohexane	0.3622	0.3328	0.3504	0.2977	0.3164	0.3104	0.3154	0.3190			0.33	6.6	TM	

VOLATILE ORGANIC ANALYSIS BY
EPA METHOD 8260B

Form 6
Initial Calibration

Lab Name: APPL, Inc. SDG No:
Case No: Initial Cal. Date: 01/13/15
Matrix: Instrument: Loki Initials:

		Compound	0.3	0.5	1	5	10	20	40	100			Avg	%RSD		
36	TM	1,1-Dichloropropene	0.6444	0.5874	0.5751	0.5785	0.6011	0.5640	0.5676	0.5749			0.59	4.4	TM	
37	TM	2,2,4-Trimethylpentane	0.9663	1.003	1.053	0.9931	1.025	1.052	1.063	1.109			1.0	4.4	TM	
38	S	1,2-DCA-D4(S)		0.6908	0.5762	0.5546	0.5079	0.5006	0.4885	0.4937			0.54	13	S	
39	TM	Carbon Tetrachloride	0.6832	0.5846	0.5874	0.5988	0.6252	0.6059	0.6146	0.6282			0.62	5.1	TM	
40	TM	Tert Amyl Methyl Ether	1.353	1.252	1.209	1.318	1.280	1.178	1.165	1.159			1.2	5.9	TM	
41	TM	1,2-DCA	0.6960	0.5813	0.5496	0.5997	0.5979	0.5557	0.5409	0.5408			0.58	8.9	TM	
42	TM	Benzene	2.165	1.901	1.694	1.759	1.789	1.674	1.659	1.664			1.8	9.7	TM	
43	TM	TCE	0.6553	0.5406	0.4795	0.4721	0.5128	0.4781	0.4590	0.4933			0.51	12	TM	
44	TM	2-Pentanone	0.2757	0.2284	0.2333	0.2321	0.2327	0.2246	0.2150	0.2213			0.23	7.9	TM	
45	TM*	1,2-Dichloropropane	0.5854	0.5086	0.4746	0.4744	0.4668	0.4346	0.4307	0.4321			0.48	11	TM*	
46	TM	Bromodichloromethane	0.6938	0.6202	0.6155	0.6461	0.6395	0.6060	0.6007	0.6138			0.63	4.8	TM	
47	TM	Methyl Cyclohexane	0.6643	0.5780	0.6520	0.6235	0.6580	0.6596	0.6755	0.7050			0.65	5.8	TM	
48	TM	Dibromomethane		0.3144	0.3177	0.2997	0.2872	0.2612	0.2594	0.2598			0.29	9.1	TM	
49	TM	2-Chloroethyl vinyl ether			0.0161	0.0115	0.0144	0.0140	0.0142				0.01	12	TM	
50	TML	MIBK (methyl isobutyl ketone)		0.4267	0.3913	0.3478	0.3217	0.3043	0.2819	0.2891			0.34	16	TML	1.000
51	TM	1-Bromo-2-chloroethane	0.3791	0.3147	0.3213	0.3522	0.3487	0.3169	0.3163	0.3173			0.33	7.2	TM	
52	TM	Cis-1,3-Dichloropropene	0.8356	0.7984	0.7504	0.7962	0.7803	0.7363	0.7367	0.7503			0.77	4.6	TM	
53	TM*	Toluene	2.314	2.085	2.029	2.048	2.067	1.960	1.957	1.969			2.1	5.7	TM*	
54	TM	Trans-1,3-Dichloropropene	0.7261	0.6994	0.6455	0.6883	0.6687	0.6293	0.6353	0.6445			0.67	5.2	TM	
55	TM	1,1,2-TCA	0.4514	0.3472	0.3436	0.3406	0.3246	0.3083	0.3028	0.3062			0.34	14	TM	
56	TM	2-Hexanone		0.2653	0.2496	0.2342	0.2033	0.2000	0.1901	0.2021			0.22	13	TM	
57	I	Chlorobenzene-D5 (IS)	ISTD													
58	S	Toluene-D8(S)	2.553	2.250	1.982	1.876	1.811	1.860	1.793	1.798			2.0	14	S	
59	TM	1,2-EDB		0.4798	0.4328	0.4393	0.4232	0.4009	0.3911	0.3874			0.42	7.7	TM	
60	TM	Tetrachloroethene	0.6984	0.6509	0.6066	0.5882	0.6035	0.5789	0.5594	0.5631			0.61	7.8	TM	
61	TM	1-Chlorohexane	0.7728	0.6402	0.6152	0.6402	0.6451	0.6586	0.6387	0.6531			0.66	7.3	TM	
62	TM	1,1,1,2-Tetrachloroethane	0.6515	0.6109	0.5100	0.5693	0.5441	0.5410	0.5257	0.5266			0.56	8.7	TM	
63	TM	m&p-Xylene	1.074	0.9640	0.8948	0.9377	0.9298	0.9275	0.9005	0.8932			0.94	6.3	TM	
64	TM	o-Xylene	1.108	1.015	0.9278	0.9475	0.9399	0.9234	0.9032	0.9109			0.96	7.2	TM	
65	TM	Styrene	1.761	1.543	1.436	1.573	1.554	1.546	1.530	1.553			1.6	5.8	TM	
66	S	4-Bromofluorobenzene(S)	0.8718	0.8395	0.7193	0.7309	0.7075	0.7369	0.7221	0.7479			0.76	8.1	S	
67	TM	1,3-Dichloropropane	0.7978	0.7334	0.6636	0.7030	0.6667	0.6469	0.6260	0.6087			0.68	9.1	TM	
68	TM	Dibromochloromethane	0.6560	0.5959	0.5292	0.5268	0.5212	0.5091	0.4949	0.5015			0.54	10	TM	
69	TM**	Chlorobenzene	1.831	1.614	1.468	1.484	1.458	1.439	1.391	1.398			1.5	9.7	TM**	
70	TM*	Ethylbenzene	2.748	2.508	2.265	2.383	2.364	2.317	2.248	2.184			2.4	7.5	TM*	

VOLATILE ORGANIC ANALYSIS BY
EPA METHOD 8260B

Form 6
Initial Calibration

Lab Name: APPL, Inc.
Case No:
Matrix:

SDG No:
Initial Cal. Date: 01/13/15
Instrument: Loki

Initials:

		Compound	0.3	0.5	1	5	10	20	40	100			Avg	%RSD		
71	TM**	Bromoform	0.4129	0.3713	0.3347	0.3720	0.3591	0.3474	0.3457	0.3688			0.36	6.6	TM**	
72	I	1,4-Dichlorobenzene-D (IS)	ISTD													
73	TM	Isopropylbenzene	5.109	4.456	3.926	4.203	4.084	4.016	3.879	3.634			4.2	11	TM	
74	TM**	1,1,2,2-Tetrachloroethane		0.9638	0.7968	0.9300	0.7853	0.7559	0.7337	0.7154			0.81	12	TM**	
75	TML	1,2,3-Trichloropropane		0.3674	0.3213	0.2953	0.2796	0.2594	0.2369	0.2329			0.28	17	TML	1.000
76	TML	t-1,4-Dichloro-2-Butene		0.2837	0.2422	0.2126	0.1916	0.1842	0.1788				0.22	19	TML	1.000
77	TM	Bromobenzene	1.338	1.234	1.189	1.227	1.166	1.152	1.098	1.053			1.2	7.4	TM	
78	TM	n-Propylbenzene	5.189	4.843	4.576	4.733	4.606	4.544	4.364	3.898			4.6	8.1	TM	
79	TM	4-Ethyltoluene	4.658	4.079	3.877	4.095	4.057	3.990	3.858	3.606			4.0	7.5	TM	
80	TM	2-Chlorotoluene	3.402	3.176	2.902	2.952	2.863	2.785	2.629	2.460			2.9	10	TM	
81	TM	1,3,5-Trimethylbenzene	4.440	3.795	3.430	3.652	3.552	3.503	3.401	3.122			3.6	11	TM	
82	TM	4-Chlorotoluene	4.273	3.524	3.267	3.418	3.279	3.263	3.107	2.881			3.4	12	TM	
83	TM	Tert-Butylbenzene	3.666	3.367	3.091	3.220	3.081	3.082	2.970	2.797			3.2	8.4	TM	
84	TM	1,2,4-Trimethylbenzene	4.495	4.156	3.535	3.696	3.575	3.577	3.443	3.271			3.7	11	TM	
85	TM	Sec-Butylbenzene	5.122	4.603	4.183	4.355	4.342	4.317	4.176	3.881			4.4	8.4	TM	
86	TM	p-Isopropyltoluene	4.469	4.029	3.602	3.756	3.666	3.638	3.600	3.467			3.8	8.6	TM	
87	TM	Benzyl Chloride	1.530	1.176	1.280	1.209	1.182	1.133	1.062	1.122			1.2	12	TM	
88	TM	1,3-DCB	2.576	2.326	2.059	2.234	2.138	2.105	2.031	1.992			2.2	8.8	TM	
89	TM	1,4-DCB	2.744	2.471	2.052	2.237	2.154	2.122	2.020	2.015			2.2	12	TM	
90	TM	n-Butylbenzene	3.340	3.245	3.044	3.319	3.272	3.256	3.151	3.124			3.2	3.2	TM	
91	TM	1,2-DCB	2.307	2.150	1.956	2.092	2.044	1.998	1.877	1.957			2.0	6.6	TM	
92	TM	Hexachloroethane	0.8648	0.8251	0.6862	0.7573	0.7471	0.7258	0.6954	0.7071			0.75	8.5	TM	
93	TM	1,2-Dibromo-3-chloropropane	0.2505	0.2349	0.1852	0.2074	0.1862	0.1861	0.1762	0.1833			0.20	14	TM	
94	TML	1,2,4-Trichlorobenzene	0.9065	0.8670	0.9496	1.325	1.409	1.450	1.465	1.571			1.2	23	TML	0.999
95	TM	Hexachlorobutadiene	0.8647	0.8129	0.7178	0.8118	0.7917	0.7744	0.7295	0.7943			0.79	6.0	TM	
96	TMQ	Naphthalene		0.6913	0.6891	1.248	1.425	1.555	1.719				1.2	36	TMQ	1.000
97	TML	1,2,3-Trichlorobenzene		0.4836	0.5100	0.8287	0.8397	0.8596	0.8884	0.9287			0.76	24	TML	1.000
98																
99																
100																
101																
102																
103																
104																
105																

Quantitation Report (Not Reviewed)

Data File : M:\LOKI\DATA\150113\0113L08.D Vial: 7
Acq On : 13 Jan 15 15:46 Operator: DG,SV,RS
Sample : 0.3ug/L Vol Std 01-13-15 Inst : Loki
Misc : 10mL w/5uL IS:10-06-14 Multiplr: 1.00

Quant Time: Jan 19 8:35 2015 Quant Results File: LALLW2.RES

Quant Method : M:\LOKI\DATA\150113\LALLW2.M (RTE Integrator)
Title : METHOD 8260B
Last Update : Mon Jan 19 08:16:04 2015
Response via : Initial Calibration
DataAcq Meth : 8260_BETA

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene (IS)	5.85	96	1361669	25.00000 ppb	0.00
57) Chlorobenzene-D5 (IS)	9.09	117	1252864	25.00000 ppb	0.00
72) 1,4-Dichlorobenzene-D (IS)	11.42	152	684224	25.00000 ppb	0.00
System Monitoring Compounds					
33) Dibromofluoromethane(S)	5.01	111	21263	0.73317 ppb	0.00
Spiked Amount 23.395			Recovery	= 3.133%	
38) 1,2-DCA-D4(S)	5.42	65	23468	0.79118 ppb	0.00
Spiked Amount 23.427			Recovery	= 3.377%	
58) Toluene-D8(S)	7.62	98	76765	0.76968 ppb	0.00
Spiked Amount 24.736			Recovery	= 3.113%	
66) 4-Bromofluorobenzene(S)	10.27	95	26213	0.68871 ppb	0.00
Spiked Amount 24.661			Recovery	= 2.794%	

Target Compounds						Qvalue
2) Dichlorodifluoromethane	0.98	85	4390	0.24291 ppb		90
3) Freon 114	1.07	85	3301	0.24014 ppb		90
4) Chloromethane	1.10	50	16223	0.36248 ppb		99
5) Vinyl chloride	1.18	62	8548	0.32495 ppb		92
6) Bromomethane	1.41	94	7899	-3.05481 ppb		88
7) Chloroethane	1.49	64	6416	0.42094 ppb		90
9) Trichlorofluoromethane	1.69	101	10948	0.29136 ppb		94
10) Acrolein	2.03	56	10427	12.05770 ppb	#	73
11) Acetone	2.18	43	9551	0.20947 ppb		95
12) Freon-113	2.13	101	5158	0.27259 ppb		90
13) 1,1-DCE	2.12	61	10490	0.34479 ppb		92
14) t-Butanol	2.79	59	8653	11.49086 ppb	#	90
15) Acetonitrile	2.44	41	26297	13.99009 ppb		94
16) Methyl Acetate	2.52	43	8072	0.92946 ppb		89
17) Iodomethane	2.24	142	2111	0.39683 ppb	#	83
19) Methylene chloride	2.59	84	19526	-0.27152 ppb		97
20) Carbon disulfide	2.29	76	20691	0.34522 ppb		99
21) Methyl t-butyl ether (MtBE	2.92	73	22826	0.35322 ppb		95
22) Trans-1,2-DCE	2.90	96	8372	0.34438 ppb		86
23) Diisopropyl Ether	3.60	45	23542	0.33263 ppb		93
24) 1,1-DCA	3.42	63	13751	0.34144 ppb	#	90
25) Hexane	3.26	57	7425	0.35388 ppb	#	95
26) Vinyl Acetate	3.60	43	5673	0.36825 ppb	#	92
27) Ethyl tert Butyl Ether	4.16	59	24337	0.33820 ppb		90
28) MEK (2-Butanone)	4.40	43	4521	-0.37180 ppb		91
29) Cis-1,2-DCE	4.30	96	10201	0.35920 ppb		84
30) 2,2-Dichloropropane	4.29	77	3849	0.32010 ppb		93
31) Chloroform	4.80	83	14344	0.33806 ppb		87
32) Bromochloromethane	4.64	128	5510	0.36734 ppb		86
34) 1,1,1-TCA	5.00	97	12776	0.33286 ppb		97
35) Cyclohexane	5.04	41	5919	0.33381 ppb	#	37
36) 1,1-Dichloropropene	5.23	75	10530	0.32956 ppb		91
37) 2,2,4-Trimethylpentane	5.62	57	15789	0.28063 ppb	#	82
39) Carbon Tetrachloride	5.22	117	11163	0.33273 ppb		88
40) Tert Amyl Methyl Ether	5.70	73	22115	0.32761 ppb		97
41) 1,2-DCA	5.52	62	11372	0.35829 ppb		99
42) Benzene	5.48	78	35374	0.36320 ppb		96
43) TCE	6.28	95	10708	0.38448 ppb		90
44) 2-Pentanone	6.55	43	150191	11.83983 ppb		99

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : M:\LOKI\DATA\150113\0113L08.D
Acq On : 13 Jan 15 15:46
Sample : 0.3ug/L Vol Std 01-13-15
Misc : 10mL w/5uL IS:10-06-14

Vial: 7
Operator: DG,SV,RS
Inst : Loki
Multiplr: 1.00

Quant Time: Jan 19 8:35 2015 Quant Results File: LALLW2.RES

Quant Method : M:\LOKI\DATA\150113\LALLW2.M (RTE Integrator)
Title : METHOD 8260B
Last Update : Mon Jan 19 08:16:04 2015
Response via : Initial Calibration
DataAcq Meth : 8260_BETA

Compound	R.T.	QIon	Response	Conc Unit		Qvalue
45) 1,2-Dichloropropane	6.53	63	9566	0.36905 ppb	#	95
46) Bromodichloromethane	6.86	83	11337	0.33069 ppb	#	94
47) Methyl Cyclohexane	6.48	83	10855	0.30568 ppb		94
48) Dibromomethane	6.65	93	7143	0.45917 ppb		92
50) MIBK (methyl isobutyl ket	7.41	43	477	-0.61169 ppb		92
51) 1-Bromo-2-chloroethane	7.17	63	6195	0.34124 ppb		89
52) Cis-1,3-Dichloropropene	7.35	75	13654	0.32429 ppb		97
53) Toluene	7.69	91	37815	0.33806 ppb		98
54) Trans-1,3-Dichloropropene	7.95	75	11864	0.32650 ppb		91
55) 1,1,2-TCA	8.13	83	7376	0.39762 ppb		92
56) 2-Hexanone	8.42	43	5055	0.42055 ppb	#	78
60) Tetrachloroethene	8.25	166	10500	0.34567 ppb		97
61) 1-Chlorohexane	9.14	91	11619	0.35235 ppb		87
62) 1,1,1,2-Tetrachloroethane	9.21	131	9795	0.34909 ppb		94
63) m&p-Xylene	9.37	106	32283	0.68522 ppb		97
64) o-Xylene	9.76	106	16656	0.34640 ppb		98
65) Styrene	9.78	104	26482	0.33830 ppb	#	96
67) 1,3-Dichloropropane	8.29	76	11995	0.35158 ppb		99
68) Dibromochloromethane	8.52	129	9863	0.36324 ppb		91
69) Chlorobenzene	9.12	112	27532	0.36375 ppb		98
70) Ethylbenzene	9.25	91	41312	0.34679 ppb		99
71) Bromoform	9.94	173	6207	0.34027 ppb		97
73) Isopropylbenzene	10.14	105	41945	0.36811 ppb		96
74) 1,1,2,2-Tetrachloroethane	10.44	83	9167	0.41272 ppb		92
75) 1,2,3-Trichloropropane	10.47	110	3290	-0.73819 ppb		85
77) Bromobenzene	10.41	156	10982	0.33945 ppb		93
78) n-Propylbenzene	10.55	91	42603	0.33883 ppb		94
79) 4-Ethyltoluene	10.66	105	38243	0.34696 ppb		94
80) 2-Chlorotoluene	10.61	91	27934	0.35243 ppb		97
81) 1,3,5-Trimethylbenzene	10.73	105	36457	0.36880 ppb		91
82) 4-Chlorotoluene	10.72	91	35087	0.37966 ppb		94
83) Tert-Butylbenzene	11.05	119	30099	0.34811 ppb		98
84) 1,2,4-Trimethylbenzene	11.09	105	36911	0.36269 ppb		98
85) Sec-Butylbenzene	11.26	105	42056	0.35145 ppb		96
86) p-Isopropyltoluene	11.42	119	36692	0.35481 ppb		95
87) Benzyl Chloride	11.58	91	12563	0.37889 ppb		93
88) 1,3-DCB	11.35	146	21152	0.35406 ppb		95
89) 1,4-DCB	11.44	146	22532	0.36965 ppb		99
90) n-Butylbenzene	11.82	91	27422	0.31127 ppb		98
91) 1,2-DCB	11.80	146	18944	0.33803 ppb		95
92) Hexachloroethane	12.05	117	7101	0.34544 ppb	#	73
93) 1,2-Dibromo-3-chloropropan	12.57	157	2057	0.37349 ppb	#	83
94) 1,2,4-Trichlorobenzene	13.39	180	7443	1.01764 ppb		94
95) Hexachlorobutadiene	13.58	225	7100	0.32957 ppb		97
96) Naphthalene	13.63	128	5511	0.62625 ppb		98
97) 1,2,3-Trichlorobenzene	13.87	180	3674	0.99399 ppb		92

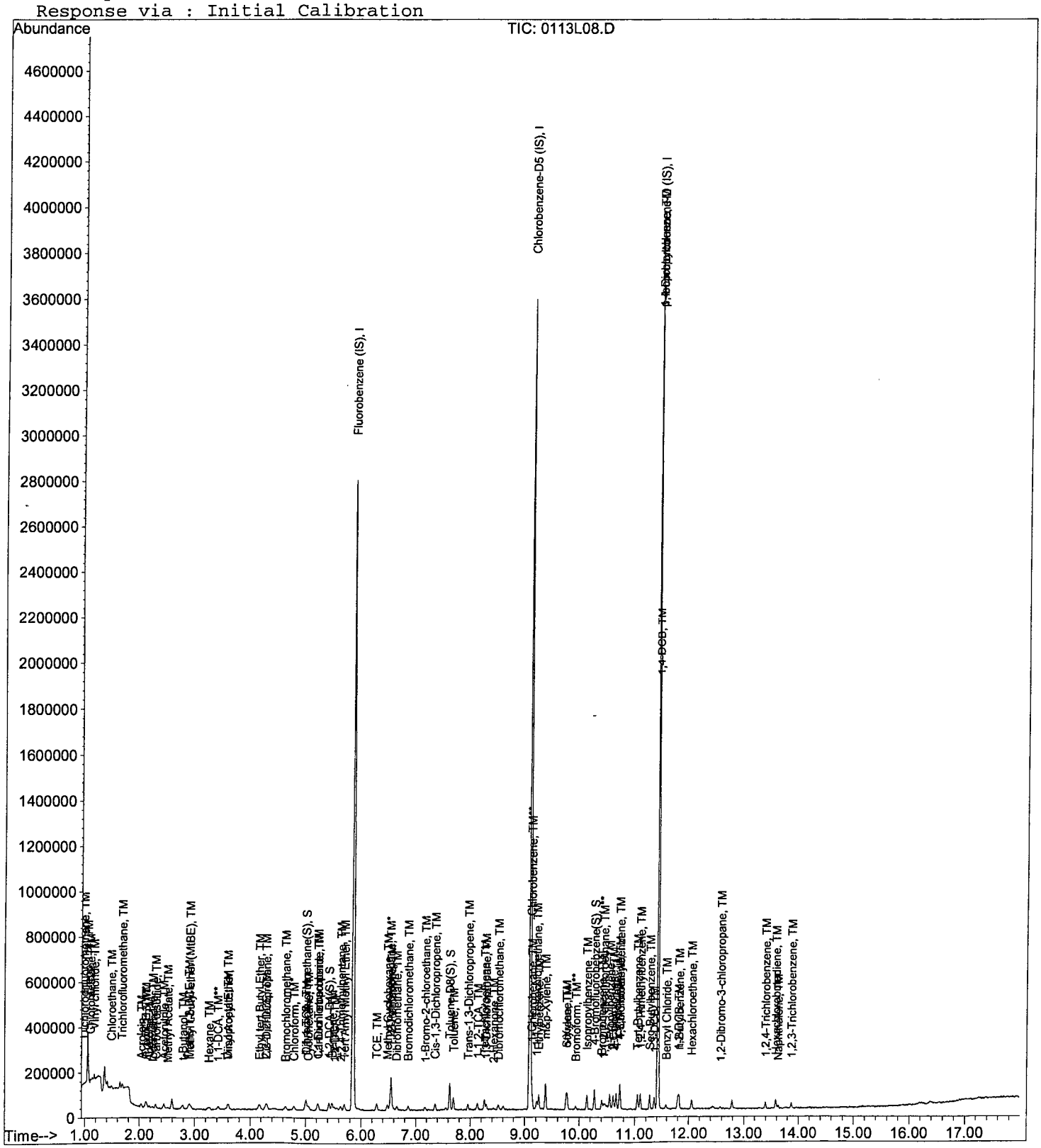
(#) = qualifier out of range (m) = manual integration

Quantitation Report

Data File : M:\LOKI\DATA\150113\0113L08.D Vial: 7
Acq On : 13 Jan 15 15:46 Operator: DG,SV,RS
Sample : 0.3ug/L Vol Std 01-13-15 Inst : Loki
Misc : 10mL w/5uL IS:10-06-14 Multiplr: 1.00

Quant Time: Jan 19 8:35 2015 Quant Results File: LALLW2.RES

Method : M:\LOKI\DATA\150113\LALLW2.M (RTE Integrator)
Title : METHOD 8260B
Last Update : Mon Jan 19 08:51:54 2015
Response via : Initial Calibration



Quantitation Report (Not Reviewed)

Data File : M:\LOKI\DATA\150113\0113L09.D
Acq On : 13 Jan 15 16:14
Sample : 0.5ug/L Vol Std 01-13-15
Misc : 10mL w/5uL IS:10-06-14

Vial: 8
Operator: DG,SV,RS
Inst : Loki
Multiplr: 1.00

Quant Time: Jan 19 8:35 2015 Quant Results File: LALLW2.RES

Quant Method : M:\LOKI\DATA\150113\LALLW2.M (RTE Integrator)
Title : METHOD 8260B
Last Update : Mon Jan 19 08:34:51 2015
Response via : Initial Calibration
DataAcq Meth : 8260_BETA

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene (IS)	5.85	96	1395332	25.00000 ppb	0.00
57) Chlorobenzene-D5 (IS)	9.09	117	1299968	25.00000 ppb	0.00
72) 1,4-Dichlorobenzene-D (IS)	11.42	152	704128	25.00000 ppb	0.00
System Monitoring Compounds					
33) Dibromofluoromethane(S)	5.01	111	32683	1.09976 ppb	0.00
Spiked Amount 23.395			Recovery	= 4.702%	
38) 1,2-DCA-D4(S)	5.42	65	38556	1.26849 ppb	0.00
Spiked Amount 23.427			Recovery	= 5.413%	
58) Toluene-D8(S)	7.62	98	116976	1.13035 ppb	0.00
Spiked Amount 24.736			Recovery	= 4.568%	
66) 4-Bromofluorobenzene(S)	10.28	95	43653	1.10537 ppb	0.00
Spiked Amount 24.661			Recovery	= 4.481%	

Target Compounds						Qvalue
2) Dichlorodifluoromethane	0.98	85	8634	0.46622 ppb		98
3) Freon 114	1.07	85	6031	0.42815 ppb		99
4) Chloromethane	1.10	50	16185	0.34451 ppb		95
5) Vinyl chloride	1.18	62	12563	0.46605 ppb		86
6) Bromomethane	1.41	94	12297	-2.76124 ppb		96
7) Chloroethane	1.49	64	8953	0.57322 ppb		87
8) Dichlorofluoromethane	1.64	67	38771	0.53022 ppb		94
9) Trichlorofluoromethane	1.69	101	18509	0.48070 ppb		97
10) Acrolein	2.04	56	18523	20.90308 ppb	#	98
11) Acetone	2.18	43	13436	0.99636 ppb		100
12) Freon-113	2.13	101	9395	0.48454 ppb		93
13) 1,1-DCE	2.11	61	15321	0.49143 ppb		92
14) t-Butanol	2.79	59	20552	26.63385 ppb		92
15) Acetonitrile	2.44	41	57325	29.76134 ppb		94
16) Methyl Acetate	2.51	43	9153	0.99915 ppb		92
17) Iodomethane	2.24	142	4152	0.62631 ppb		90
18) Acrylonitrile	2.88	52	5137	0.36026 ppb	#	57
19) Methylene chloride	2.59	84	28134	0.07191 ppb		99
20) Carbon disulfide	2.29	76	32049	0.52183 ppb		94
21) Methyl t-butyl ether (MtBE	2.93	73	33758	0.50979 ppb		97
22) Trans-1,2-DCE	2.89	96	12941	0.51949 ppb		93
23) Diisopropyl Ether	3.60	45	37793	0.52110 ppb		91
24) 1,1-DCA	3.42	63	21703	0.52589 ppb		94
25) Hexane	3.26	57	10207	0.47473 ppb	#	77
26) Vinyl Acetate	3.59	43	9455	0.59894 ppb	#	92
27) Ethyl tert Butyl Ether	4.17	59	38172	0.51767 ppb		93
29) Cis-1,2-DCE	4.31	96	13948	0.47929 ppb		94
30) 2,2-Dichloropropane	4.29	77	6554	0.53192 ppb	#	87
31) Chloroform	4.80	83	21882	0.50328 ppb		98
32) Bromochloromethane	4.64	128	9038	0.58801 ppb		88
34) 1,1,1-TCA	5.00	97	19649	0.49958 ppb		96
35) Cyclohexane	5.06	41	9286	0.51106 ppb	#	59
36) 1,1-Dichloropropene	5.23	75	16392	0.50065 ppb		99
37) 2,2,4-Trimethylpentane	5.63	57	27982	0.48535 ppb	#	62
39) Carbon Tetrachloride	5.22	117	16314	0.47453 ppb	#	90
40) Tert Amyl Methyl Ether	5.70	73	34952	0.50529 ppb	#	93
41) 1,2-DCA	5.52	62	16223	0.49880 ppb		100
42) Benzene	5.48	78	53063	0.53168 ppb		98
43) TCE	6.28	95	15087	0.52864 ppb		87

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : M:\LOKI\DATA\150113\0113L09.D Vial: 8
Acq On : 13 Jan 15 16:14 Operator: DG,SV,RS
Sample : 0.5ug/L Vol Std 01-13-15 Inst : Loki
Misc : 10mL w/5uL IS:10-06-14 Multiplr: 1.00

Quant Time: Jan 19 8:35 2015 Quant Results File: LALLW2.RES

Quant Method : M:\LOKI\DATA\150113\LALLW2.M (RTE Integrator)
Title : METHOD 8260B
Last Update : Mon Jan 19 08:34:51 2015
Response via : Initial Calibration
DataAcq Meth : 8260_BETA

Compound	R.T.	QIon	Response	Conc Unit		Qvalue
44) 2-Pentanone	6.55	43	318662	24.51465 ppb		100
45) 1,2-Dichloropropane	6.52	63	14194	0.53438 ppb		99
46) Bromodichloromethane	6.86	83	17307	0.49264 ppb	#	95
47) Methyl Cyclohexane	6.48	83	16130	0.44326 ppb		95
48) Dibromomethane	6.65	93	8773	0.55034 ppb		92
49) 2-Chloroethyl vinyl ether	7.24	106	1283	1.63744 ppb	#	53
50) MIBK (methyl isobutyl ket	7.55	43	11907	0.10265 ppb	#	89
51) 1-Bromo-2-chloroethane	7.17	63	8781	0.47202 ppb		95
52) Cis-1,3-Dichloropropene	7.36	75	22282	0.51644 ppb		97
53) Toluene	7.69	91	58190	0.50766 ppb		91
54) Trans-1,3-Dichloropropene	7.95	75	19518	0.52419 ppb		96
55) 1,1,2-TCA	8.13	83	9690	0.50977 ppb		86
56) 2-Hexanone	8.42	43	7404	0.60111 ppb		93
59) 1,2-EDB	8.61	107	12475	0.56842 ppb		98
60) Tetrachloroethene	8.25	166	16923	0.53693 ppb		96
61) 1-Chlorohexane	9.14	91	16646	0.48651 ppb		97
62) 1,1,1,2-Tetrachloroethane	9.22	131	15883	0.54556 ppb		83
63) m&p-Xylene	9.37	106	50125	1.02537 ppb		99
64) o-Xylene	9.76	106	26394	0.52903 ppb		91
65) Styrene	9.78	104	40122	0.49398 ppb	#	97
67) 1,3-Dichloropropane	8.29	76	19069	0.53867 ppb		100
68) Dibromochloromethane	8.51	129	15493	0.54991 ppb		85
69) Chlorobenzene	9.12	112	41951	0.53417 ppb		97
70) Ethylbenzene	9.25	91	65205	0.52753 ppb		95
71) Bromoform	9.93	173	9654	0.51006 ppb		91
73) Isopropylbenzene	10.14	105	62756	0.53518 ppb		99
74) 1,1,2,2-Tetrachloroethane	10.44	83	13573	0.59381 ppb		98
75) 1,2,3-Trichloropropane	10.47	110	5174	-0.46282 ppb		98
76) t-1,4-Dichloro-2-Butene	10.50	53	3995	0.16963 ppb		90
77) Bromobenzene	10.41	156	17375	0.52188 ppb		97
78) n-Propylbenzene	10.55	91	68198	0.52707 ppb		100
79) 4-Ethyltoluene	10.66	105	57441	0.50640 ppb		96
80) 2-Chlorotoluene	10.61	91	44726	0.54833 ppb		95
81) 1,3,5-Trimethylbenzene	10.73	105	53443	0.52534 ppb		98
82) 4-Chlorotoluene	10.72	91	49627	0.52181 ppb		100
83) Tert-Butylbenzene	11.05	119	47409	0.53281 ppb		98
84) 1,2,4-Trimethylbenzene	11.10	105	58529	0.55885 ppb		91
85) Sec-Butylbenzene	11.26	105	64824	0.52641 ppb		97
86) p-Isopropyltoluene	11.42	119	56742	0.53319 ppb		99
87) Benzyl Chloride	11.58	91	16555	0.48517 ppb	#	90
88) 1,3-DCB	11.35	146	32760	0.53287 ppb		94
89) 1,4-DCB	11.44	146	34804	0.55484 ppb		98
90) n-Butylbenzene	11.82	91	45695	0.50403 ppb		97
91) 1,2-DCB	11.80	146	30283	0.52508 ppb		97
92) Hexachloroethane	12.05	117	11619	0.54924 ppb		89
93) 1,2-Dibromo-3-chloropropan	12.57	157	3308	0.58365 ppb		93
94) 1,2,4-Trichlorobenzene	13.40	180	12209	1.12047 ppb		83
95) Hexachlorobutadiene	13.58	225	11448	0.51637 ppb		98
96) Naphthalene	13.63	128	9735	0.72696 ppb		100
97) 1,2,3-Trichlorobenzene	13.87	180	6810	1.10943 ppb		97

(#) = qualifier out of range (m) = manual integration

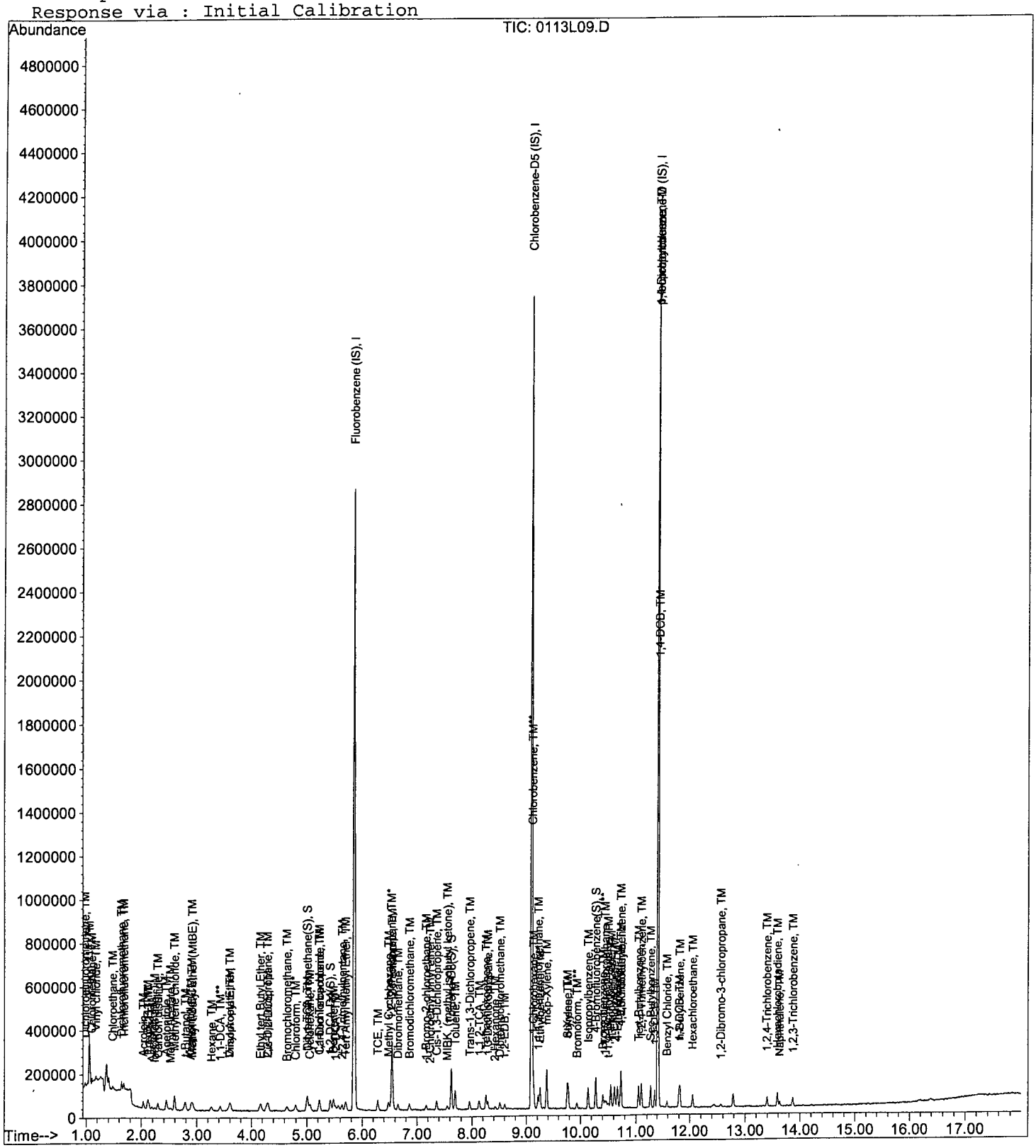
Quantitation Report

Data File : M:\LOKI\DATA\150113\0113L09.D
Acq On : 13 Jan 15 16:14
Sample : 0.5ug/L Vol Std 01-13-15
Misc : 10mL w/5uL IS:10-06-14

Vial: 8
Operator: DG,SV,RS
Inst : Loki
Multiplr: 1.00

Quant Time: Jan 19 8:35 2015 Quant Results File: LALLW2.RES

Method : M:\LOKI\DATA\150113\LALLW2.M (RTE Integrator)
Title : METHOD 8260B
Last Update : Mon Jan 19 08:51:54 2015
Response via : Initial Calibration



Quantitation Report (Not Reviewed)

Data File : M:\LOKI\DATA\150113\0113L10.D
Acq On : 13 Jan 15 16:42
Sample : 1.0ug/L Vol Std 01-13-15
Misc : 10mL w/5uL IS:10-06-14

Vial: 9
Operator: DG,SV,RS
Inst : Loki
Multiplr: 1.00

Quant Time: Jan 19 8:36 2015 Quant Results File: LALLW2.RES

Quant Method : M:\LOKI\DATA\150113\LALLW2.M (RTE Integrator)
Title : METHOD 8260B
Last Update : Mon Jan 19 08:34:51 2015
Response via : Initial Calibration
DataAcq Meth : 8260_BETA

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene (IS)	5.85	96	1362707	25.00000 ppb	0.00
57) Chlorobenzene-D5 (IS)	9.09	117	1298826	25.00000 ppb	0.00
72) 1,4-Dichlorobenzene-D (IS)	11.42	152	714015	25.00000 ppb	0.00
System Monitoring Compounds					
33) Dibromofluoromethane(S)	5.01	111	58211	2.00565 ppb	0.00
Spiked Amount 23.395			Recovery	= 8.574%	
38) 1,2-DCA-D4(S)	5.42	65	62812	2.11598 ppb	0.00
Spiked Amount 23.427			Recovery	= 9.033%	
58) Toluene-D8(S)	7.62	98	205923	1.99161 ppb	0.00
Spiked Amount 24.736			Recovery	= 8.053%	
66) 4-Bromofluorobenzene(S)	10.27	95	74743	1.89428 ppb	0.00
Spiked Amount 24.661			Recovery	= 7.680%	

Target Compounds					Qvalue
2) Dichlorodifluoromethane	0.98	85	15711	0.86867 ppb	89
3) Freon 114	1.07	85	13962	1.01492 ppb	91
4) Chloromethane	1.10	50	27368	0.82900 ppb	96
5) Vinyl chloride	1.18	62	25370	0.96369 ppb	100
6) Bromomethane	1.40	94	23891	-1.91140 ppb	96
7) Chloroethane	1.49	64	15188	0.99569 ppb	95
8) Dichlorofluoromethane	1.64	67	56629	0.94289 ppb	98
9) Trichlorofluoromethane	1.69	101	36615	0.97370 ppb	90
10) Acrolein	2.03	56	44897	51.87898 ppb #	99
11) Acetone	2.18	43	10255	0.36332 ppb	88
12) Freon-113	2.13	101	19285	1.01841 ppb	95
13) 1,1-DCE	2.11	61	29073	0.95486 ppb	92
14) t-Butanol	2.79	59	36320	48.19486 ppb	98
15) Acetonitrile	2.44	41	92153	48.98836 ppb	100
16) Methyl Acetate	2.52	43	15884	1.56141 ppb	96
17) Iodomethane	2.24	142	6949	0.96572 ppb	94
18) Acrylonitrile	2.88	52	6485	0.68726 ppb	98
19) Methylene chloride	2.59	84	46696	0.90371 ppb	97
20) Carbon disulfide	2.29	76	59878	0.99829 ppb	98
21) Methyl t-butyl ether (MtBE	2.92	73	63747	0.98571 ppb	97
22) Trans-1,2-DCE	2.90	96	24123	0.99155 ppb	97
23) Diisopropyl Ether	3.60	45	67670	0.95540 ppb	97
24) 1,1-DCA	3.43	63	39047	0.96881 ppb	99
25) Hexane	3.26	57	23050	1.09773 ppb	98
26) Vinyl Acetate	3.60	43	14030	0.91002 ppb #	98
27) Ethyl tert Butyl Ether	4.17	59	67729	0.94049 ppb	98
28) MEK (2-Butanone)	4.39	43	9834	0.46452 ppb	99
29) Cis-1,2-DCE	4.31	96	28137	0.99000 ppb	96
30) 2,2-Dichloropropane	4.29	77	11847	0.98451 ppb	95
31) Chloroform	4.80	83	39295	0.92541 ppb	99
32) Bromochloromethane	4.64	128	16611	1.10658 ppb	87
34) 1,1,1-TCA	4.99	97	37833	0.98494 ppb	98
35) Cyclohexane	5.05	41	19099	1.07629 ppb	76
36) 1,1-Dichloropropene	5.23	75	31349	0.98040 ppb	99
37) 2,2,4-Trimethylpentane	5.63	57	57394	1.01934 ppb #	65
39) Carbon Tetrachloride	5.21	117	32019	0.95364 ppb	96
40) Tert Amyl Methyl Ether	5.70	73	65884	0.97527 ppb	97
41) 1,2-DCA	5.52	62	29955	0.94306 ppb	97
42) Benzene	5.48	78	92317	0.94715 ppb	96

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : M:\LOKI\DATA\150113\0113L10.D Vial: 9
Acq On : 13 Jan 15 16:42 Operator: DG,SV,RS
Sample : 1.0ug/L Vol Std 01-13-15 Inst : Loki
Misc : 10mL w/5uL IS:10-06-14 Multiplr: 1.00

Quant Time: Jan 19 8:36 2015 Quant Results File: LALLW2.RES

Quant Method : M:\LOKI\DATA\150113\LALLW2.M (RTE Integrator)
Title : METHOD 8260B
Last Update : Mon Jan 19 08:34:51 2015
Response via : Initial Calibration
DataAcq Meth : 8260_BETA

Compound	R.T.	QIon	Response	Conc Unit		Qvalue
43) TCE	6.28	95	26135	0.93768 ppb		94
44) 2-Pentanone	6.54	43	635940	50.09411 ppb		97
45) 1,2-Dichloropropane	6.53	63	25869	0.99725 ppb		99
46) Bromodichloromethane	6.86	83	33550	0.97786 ppb		96
47) Methyl Cyclohexane	6.48	83	35537	0.99996 ppb		97
48) Dibromomethane	6.65	93	17317	1.11233 ppb		91
49) 2-Chloroethyl vinyl ether	7.24	106	876	1.14477 ppb		91
50) MIBK (methyl isobutyl ket	7.55	43	21329	0.72405 ppb		99
51) 1-Bromo-2-chloroethane	7.17	63	17512	0.96389 ppb		89
52) Cis-1,3-Dichloropropene	7.35	75	40902	0.97070 ppb		96
53) Toluene	7.69	91	110589	0.98790 ppb		97
54) Trans-1,3-Dichloropropene	7.95	75	35184	0.96755 ppb		90
55) 1,1,2-TCA	8.13	83	18728	1.00882 ppb		89
56) 2-Hexanone	8.42	43	13606	1.13108 ppb		95
59) 1,2-EDB	8.61	107	22483	1.02533 ppb		94
60) Tetrachloroethene	8.25	166	31515	1.00079 ppb		95
61) 1-Chlorohexane	9.14	91	31963	0.93500 ppb		99
62) 1,1,1,2-Tetrachloroethane	9.21	131	26495	0.91086 ppb		95
63) m&p-Xylene	9.37	106	92973	1.90355 ppb		100
64) o-Xylene	9.76	106	48202	0.96700 ppb		89
65) Styrene	9.78	104	74611	0.91941 ppb		99
67) 1,3-Dichloropropane	8.29	76	34478	0.97481 ppb		98
68) Dibromochloromethane	8.51	129	27491	0.97663 ppb		91
69) Chlorobenzene	9.12	112	76285	0.97221 ppb		97
70) Ethylbenzene	9.25	91	117667	0.95280 ppb		100
71) Bromoform	9.94	173	17388	0.91949 ppb		97
73) Isopropylbenzene	10.14	105	112118	0.94290 ppb		95
74) 1,1,2,2-Tetrachloroethane	10.44	83	22758	0.98187 ppb	#	96
75) 1,2,3-Trichloropropane	10.47	110	9176	0.13386 ppb		97
76) t-1,4-Dichloro-2-Butene	10.50	53	6916	0.73694 ppb		88
77) Bromobenzene	10.41	156	33948	1.00555 ppb		98
78) n-Propylbenzene	10.54	91	130684	0.99600 ppb		99
79) 4-Ethyltoluene	10.66	105	110720	0.96258 ppb		98
80) 2-Chlorotoluene	10.61	91	82870	1.00190 ppb		95
81) 1,3,5-Trimethylbenzene	10.73	105	97949	0.94950 ppb		100
82) 4-Chlorotoluene	10.72	91	93313	0.96758 ppb		100
83) Tert-Butylbenzene	11.05	119	88290	0.97852 ppb		98
84) 1,2,4-Trimethylbenzene	11.09	105	100953	0.95057 ppb		99
85) Sec-Butylbenzene	11.26	105	119463	0.95667 ppb		99
86) p-Isopropyltoluene	11.42	119	102880	0.95335 ppb		99
87) Benzyl Chloride	11.58	91	36547	1.05624 ppb		98
88) 1,3-DCB	11.35	146	58816	0.94344 ppb		98
89) 1,4-DCB	11.44	146	58620	0.92157 ppb		98
90) n-Butylbenzene	11.82	91	86934	0.94563 ppb		98
91) 1,2-DCB	11.80	146	55866	0.95525 ppb		99
92) Hexachloroethane	12.05	117	19597	0.91354 ppb		96
93) 1,2-Dibromo-3-chloropropan	12.57	157	5290	0.92043 ppb		95
94) 1,2,4-Trichlorobenzene	13.39	180	27122	1.44907 ppb		98
95) Hexachlorobutadiene	13.58	225	20502	0.91195 ppb		97
96) Naphthalene	13.63	128	19680	0.96622 ppb		97
97) 1,2,3-Trichlorobenzene	13.87	180	14567	1.39737 ppb		93

(#) = qualifier out of range (m) = manual integration

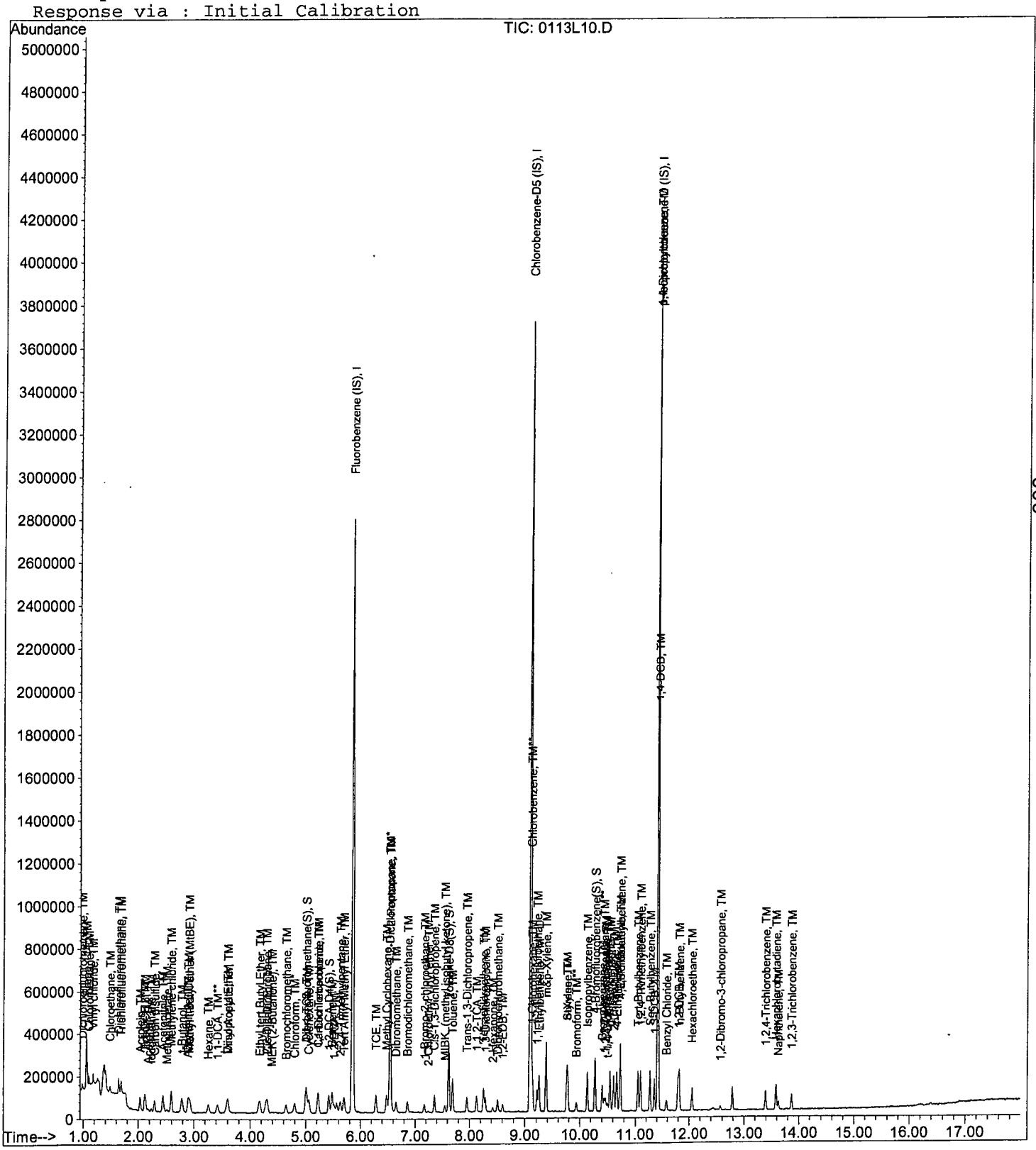
Quantitation Report

Data File : M:\LOKI\DATA\150113\0113L10.D
Acq On : 13 Jan 15 16:42
Sample : 1.0ug/L Vol Std 01-13-15
Misc : 10mL w/5uL IS:10-06-14

Vial: 9
Operator: DG,SV,RS
Inst : Loki
Multiplr: 1.00

Quant Time: Jan 19 8:36 2015 Quant Results File: LALLW2.RES

Method : M:\LOKI\DATA\150113\LALLW2.M (RTE Integrator)
Title : METHOD 8260B
Last Update : Mon Jan 19 08:51:54 2015
Response via : Initial Calibration



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Quantitation Report (Not Reviewed)

Data File : M:\LOKI\DATA\150113\0113L11.D Vial: 10
Acq On : 13 Jan 15 17:10 Operator: DG,SV,RS
Sample : 5.0ug/L Vol Std 01-13-15 Inst : Loki
Misc : 10mL w/5uL IS:10-06-14 Multiplr: 1.00

Quant Time: Jan 19 8:36 2015 Quant Results File: LALLW2.RES

Quant Method : M:\LOKI\DATA\150113\LALLW2.M (RTE Integrator)
Title : METHOD 8260B
Last Update : Mon Jan 19 08:34:51 2015
Response via : Initial Calibration
DataAcq Meth : 8260_BETA

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene (IS)	5.85	96	1336398	25.00000 ppb	0.00
57) Chlorobenzene-D5 (IS)	9.09	117	1312256	25.00000 ppb	0.00
72) 1,4-Dichlorobenzene-D (IS)	11.42	152	734592	25.00000 ppb	0.00
System Monitoring Compounds					
33) Dibromofluoromethane(S)	5.01	111	280093	9.84054 ppb	0.00
Spiked Amount 23.395			Recovery	= 42.064%	
38) 1,2-DCA-D4(S)	5.42	65	296452	10.18334 ppb	0.00
Spiked Amount 23.427			Recovery	= 43.468%	
58) Toluene-D8(S)	7.62	98	984565	9.42488 ppb	0.00
Spiked Amount 24.736			Recovery	= 38.103%	
66) 4-Bromofluorobenzene(S)	10.27	95	383670	9.62420 ppb	0.00
Spiked Amount 24.661			Recovery	= 39.026%	

Target Compounds					Qvalue
2) Dichlorodifluoromethane	0.98	85	82957	4.67705 ppb	98
3) Freon 114	1.07	85	59127	4.38266 ppb	96
4) Chloromethane	1.10	50	126534	5.08908 ppb	98
5) Vinyl chloride	1.18	62	129945	5.03316 ppb	99
6) Bromomethane	1.41	94	106203	4.12559 ppb	99
7) Chloroethane	1.49	64	78470	5.24560 ppb	93
8) Dichlorofluoromethane	1.64	67	242638	5.13857 ppb	100
9) Trichlorofluoromethane	1.69	101	184598	5.00563 ppb	97
10) Acrolein	2.03	56	81412	95.92442 ppb	97
11) Acetone	2.18	43	32734	5.46934 ppb	90
12) Freon-113	2.13	101	89854	4.83846 ppb	98
13) 1,1-DCE	2.11	61	141475	4.73800 ppb	98
14) t-Butanol	2.78	59	72328	97.86514 ppb	100
15) Acetonitrile	2.44	41	182733	99.05288 ppb	97
16) Methyl Acetate	2.52	43	64914	5.63423 ppb	96
17) Iodomethane	2.24	142	38480	4.56897 ppb	100
18) Acrylonitrile	2.87	52	26058	5.16111 ppb	99
19) Methylene chloride	2.59	84	152348	5.60596 ppb	98
20) Carbon disulfide	2.29	76	269142	4.57549 ppb	100
21) Methyl t-butyl ether (MtBE	2.92	73	332295	5.23939 ppb	98
22) Trans-1,2-DCE	2.90	96	115316	4.83325 ppb	99
23) Diisopropyl Ether	3.60	45	353075	5.08301 ppb	96
24) 1,1-DCA	3.42	63	194535	4.92170 ppb	98
25) Hexane	3.26	57	87265	4.23771 ppb	94
26) Vinyl Acetate	3.57	43	80599	5.33078 ppb #	77
27) Ethyl tert Butyl Ether	4.16	59	368751	5.22132 ppb	97
28) MEK (2-Butanone)	4.39	43	41074	5.51260 ppb	96
29) Cis-1,2-DCE	4.31	96	137590	4.93643 ppb	99
30) 2,2-Dichloropropane	4.28	77	57392	4.86328 ppb	97
31) Chloroform	4.80	83	208549	5.00806 ppb	98
32) Bromochloromethane	4.64	128	69414	4.71519 ppb	92
34) 1,1,1-TCA	5.00	97	185843	4.93345 ppb	99
35) Cyclohexane	5.05	41	79571	4.57236 ppb	90
36) 1,1-Dichloropropene	5.23	75	154619	4.93070 ppb	98
37) 2,2,4-Trimethylpentane	5.63	57	265430	4.80694 ppb	98
39) Carbon Tetrachloride	5.22	117	160039	4.86039 ppb	95
40) Tert Amyl Methyl Ether	5.70	73	352315	5.31791 ppb	98
41) 1,2-DCA	5.52	62	160288	5.14561 ppb	100
42) Benzene	5.48	78	470152	4.91858 ppb	99

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : M:\LOKI\DATA\150113\0113L11.D Vial: 10
Acq On : 13 Jan 15 17:10 Operator: DG,SV,RS
Sample : 5.0ug/L Vol Std 01-13-15 Inst : Loki
Misc : 10mL w/5uL IS:10-06-14 Multiplr: 1.00

Quant Time: Jan 19 8:36 2015 Quant Results File: LALLW2.RES

Quant Method : M:\LOKI\DATA\150113\LALLW2.M (RTE Integrator)
Title : METHOD 8260B
Last Update : Mon Jan 19 08:34:51 2015
Response via : Initial Calibration
DataAcq Meth : 8260_BETA

Compound	R.T.	QIon	Response	Conc	Unit		Qvalue
43) TCE	6.28	95	126181	4.61628	ppb		99
44) 2-Pentanone	6.54	43	1240827	99.66632	ppb		99
45) 1,2-Dichloropropane	6.52	63	126785	4.98378	ppb		100
46) Bromodichloromethane	6.86	83	172682	5.13215	ppb		98
47) Methyl Cyclohexane	6.48	83	166662	4.78195	ppb		96
48) Dibromomethane	6.65	93	80102	5.24651	ppb		96
49) 2-Chloroethyl vinyl ether	7.24	106	3075	4.09755	ppb	#	51
50) MIBK (methyl isobutyl ket	7.55	43	92963	5.43009	ppb		100
51) 1-Bromo-2-chloroethane	7.17	63	94144	5.28386	ppb		97
52) Cis-1,3-Dichloropropene	7.35	75	212811	5.14992	ppb		99
53) Toluene	7.69	91	547497	4.98711	ppb		100
54) Trans-1,3-Dichloropropene	7.95	75	183958	5.15837	ppb		98
55) 1,1,2-TCA	8.13	83	91041	5.00064	ppb		97
56) 2-Hexanone	8.42	43	62608	5.30712	ppb		97
59) 1,2-EDB	8.60	107	115300	5.20439	ppb		94
60) Tetrachloroethene	8.25	166	154377	4.85222	ppb		99
61) 1-Chlorohexane	9.14	91	168018	4.86466	ppb		97
62) 1,1,1,2-Tetrachloroethane	9.21	131	149401	5.08364	ppb		99
63) m&p-Xylene	9.37	106	492184	9.97394	ppb		99
64) o-Xylene	9.76	106	248669	4.93759	ppb		100
65) Styrene	9.78	104	412721	5.03381	ppb		99
67) 1,3-Dichloropropane	8.29	76	184503	5.16314	ppb		99
68) Dibromochloromethane	8.51	129	138260	4.86146	ppb		99
69) Chlorobenzene	9.12	112	389418	4.91214	ppb		99
70) Ethylbenzene	9.25	91	625541	5.01341	ppb		97
71) Bromoform	9.94	173	97644	5.11067	ppb		99
73) Isopropylbenzene	10.14	105	617488	5.04754	ppb		99
74) 1,1,2,2-Tetrachloroethane	10.44	83	136634	5.72979	ppb		97
75) 1,2,3-Trichloropropane	10.47	110	43380	5.14330	ppb		94
76) t-1,4-Dichloro-2-Butene	10.50	53	31230	5.37839	ppb		99
77) Bromobenzene	10.41	156	180295	5.19079	ppb		100
78) n-Propylbenzene	10.54	91	695360	5.15120	ppb		99
79) 4-Ethyltoluene	10.66	105	601617	5.08387	ppb		99
80) 2-Chlorotoluene	10.61	91	433644	5.09593	ppb		100
81) 1,3,5-Trimethylbenzene	10.73	105	536497	5.05505	ppb		99
82) 4-Chlorotoluene	10.72	91	502203	5.06154	ppb		97
83) Tert-Butylbenzene	11.05	119	473138	5.09692	ppb		98
84) 1,2,4-Trimethylbenzene	11.09	105	543018	4.96983	ppb		100
85) Sec-Butylbenzene	11.26	105	639803	4.98008	ppb		100
86) p-Isopropyltoluene	11.42	119	551842	4.97045	ppb		99
87) Benzyl Chloride	11.58	91	177555	4.98777	ppb		98
88) 1,3-DCB	11.35	146	328289	5.11843	ppb		98
89) 1,4-DCB	11.44	146	328727	5.02318	ppb		98
90) n-Butylbenzene	11.82	91	487690	5.15629	ppb		98
91) 1,2-DCB	11.80	146	307388	5.10878	ppb		97
92) Hexachloroethane	12.05	117	111263	5.04140	ppb		94
93) 1,2-Dibromo-3-chloropropan	12.57	157	30467	5.15257	ppb		93
94) 1,2,4-Trichlorobenzene	13.39	180	194658	5.06195	ppb		99
95) Hexachlorobutadiene	13.58	225	119268	5.15657	ppb		100
96) Naphthalene	13.62	128	183424	4.75150	ppb		97
97) 1,2,3-Trichlorobenzene	13.87	180	121752	5.29761	ppb		98

(#) = qualifier out of range (m) = manual integration

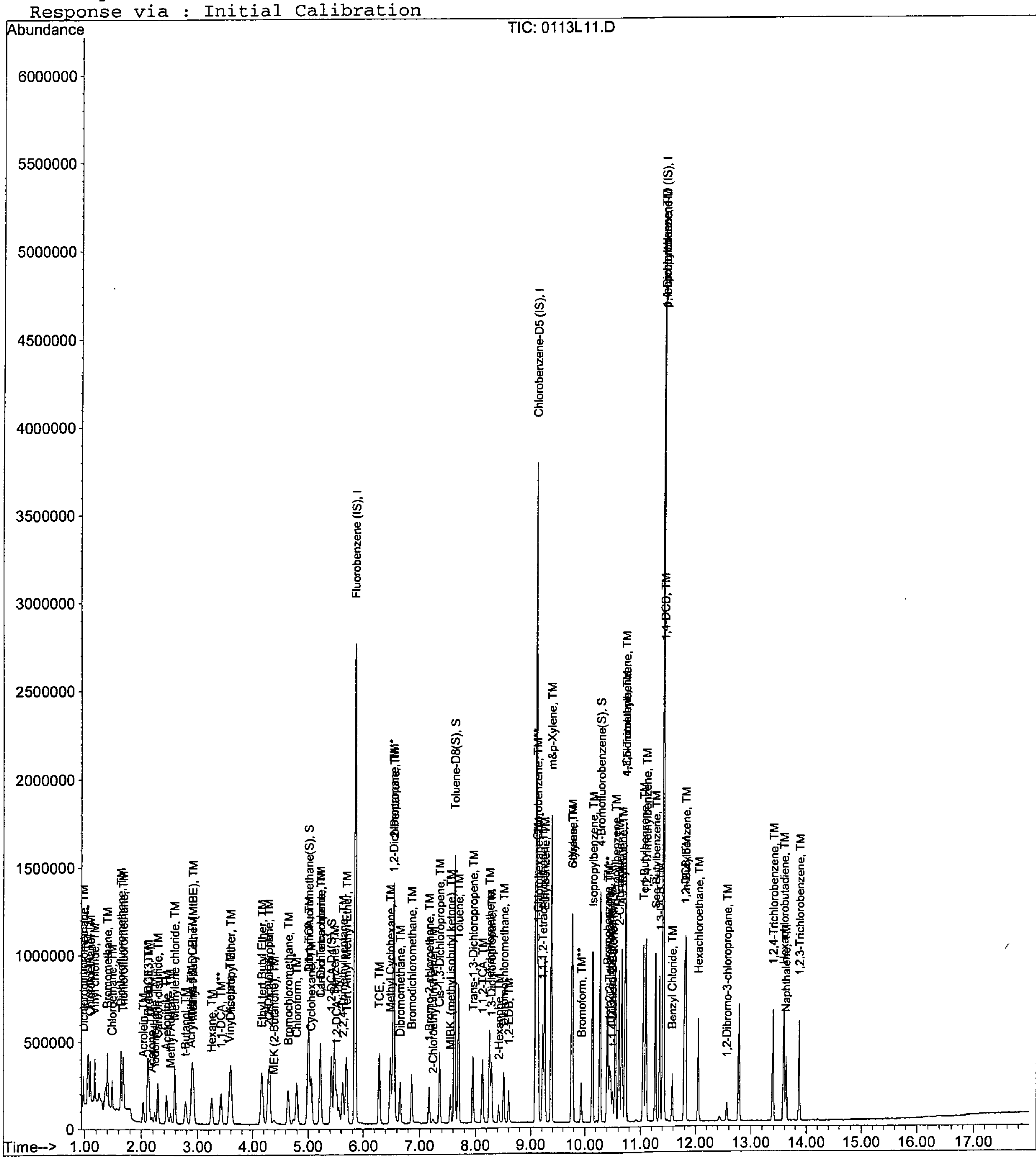
Quantitation Report

Data File : M:\LOKI\DATA\150113\0113L11.D
Acq On : 13 Jan 15 17:10
Sample : 5.0ug/L Vol Std 01-13-15
Misc : 10mL w/5uL IS:10-06-14

Vial: 10
Operator: DG,SV,RS
Inst : Loki
Multiplr: 1.00

Quant Time: Jan 19 8:36 2015
Quant Results File: LALLW2.RES

Method : M:\LOKI\DATA\150113\LALLW2.M (RTE Integrator)
Title : METHOD 8260B
Last Update : Mon Jan 19 08:51:54 2015
Response via : Initial Calibration



Quantitation Report (Not Reviewed)

Data File : M:\LOKI\DATA\150113\0113L12.D Vial: 11
Acq On : 13 Jan 15 17:38 Operator: DG,SV,RS
Sample : 10ug/L Vol Std 01-13-15 Inst : Loki
Misc : 10mL w/5uL IS:10-06-14 Multiplr: 1.00

Quant Time: Jan 19 8:36 2015 Quant Results File: LALLW2.RES

Quant Method : M:\LOKI\DATA\150113\LALLW2.M (RTE Integrator)
Title : METHOD 8260B
Last Update : Mon Jan 19 08:34:51 2015
Response via : Initial Calibration
DataAcq Meth : 8260_BETA

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene (IS)	5.85	96	1335350	25.00000 ppb	0.00
57) Chlorobenzene-D5 (IS)	9.09	117	1319270	25.00000 ppb	0.00
72) 1,4-Dichlorobenzene-D (IS)	11.42	152	758912	25.00000 ppb	0.00
System Monitoring Compounds					
33) Dibromofluoromethane(S)	5.01	111	656038	23.06674 ppb	0.00
Spiked Amount 23.395			Recovery	= 98.597%	
38) 1,2-DCA-D4(S)	5.42	65	678175	23.31408 ppb	0.00
Spiked Amount 23.427			Recovery	= 99.520%	
58) Toluene-D8(S)	7.62	98	2388815	22.74566 ppb	0.00
Spiked Amount 24.736			Recovery	= 91.956%	
66) 4-Bromofluorobenzene(S)	10.27	95	933360	23.28847 ppb	0.00
Spiked Amount 24.661			Recovery	= 94.434%	
Target Compounds					Qvalue
2) Dichlorodifluoromethane	0.98	85	182814	10.31499 ppb	100
3) Freon 114	1.07	85	135731	10.06865 ppb	100
4) Chloromethane	1.10	50	251415	10.43385 ppb	100
5) Vinyl chloride	1.18	62	266827	10.34313 ppb	100
6) Bromomethane	1.40	94	222926	12.65143 ppb	100
7) Chloroethane	1.48	64	144731	9.68264 ppb	100
8) Dichlorofluoromethane	1.64	67	482817	10.53297 ppb	100
9) Trichlorofluoromethane	1.69	101	389021	10.55711 ppb	100
10) Acrolein	2.03	56	113287	133.58618 ppb	100
11) Acetone	2.18	43	54073	10.28365 ppb	100
12) Freon-113	2.13	101	188140	10.13893 ppb	100
13) 1,1-DCE	2.11	61	304364	10.20116 ppb	100
14) t-Butanol	2.78	59	91824	124.34218 ppb	100
15) Acetonitrile	2.44	41	225672	122.42454 ppb	100
16) Methyl Acetate	2.52	43	123193	10.45325 ppb	100
17) Iodomethane	2.24	142	94320	10.27810 ppb	100
18) Acrylonitrile	2.87	52	49692	10.53772 ppb	100
19) Methylene chloride	2.59	84	258720	10.30916 ppb	100
20) Carbon disulfide	2.29	76	588439	10.01148 ppb	100
21) Methyl t-butyl ether (MtBE	2.92	73	629839	9.93865 ppb	100
22) Trans-1,2-DCE	2.89	96	237604	9.96653 ppb	100
23) Diisopropyl Ether	3.60	45	699816	10.08274 ppb	100
24) 1,1-DCA	3.42	63	402498	10.19111 ppb	100
25) Hexane	3.26	57	195762	9.51393 ppb	100
26) Vinyl Acetate	3.59	43	144645	9.57426 ppb	100
27) Ethyl tert Butyl Ether	4.16	59	714896	10.13050 ppb	100
28) MEK (2-Butanone)	4.38	43	68938	9.99664 ppb	100
29) Cis-1,2-DCE	4.30	96	282513	10.14391 ppb	100
30) 2,2-Dichloropropane	4.28	77	122318	10.37311 ppb	100
31) Chloroform	4.80	83	426039	10.23887 ppb	100
32) Bromochloromethane	4.64	128	140464	9.54900 ppb	100
34) 1,1,1-TCA	4.99	97	380234	10.10174 ppb	100
35) Cyclohexane	5.06	41	169025	9.72024 ppb	100
36) 1,1-Dichloropropene	5.23	75	321052	10.24618 ppb	100
37) 2,2,4-Trimethylpentane	5.63	57	547323	9.91981 ppb	100
39) Carbon Tetrachloride	5.21	117	333941	10.14977 ppb	100
40) Tert Amyl Methyl Ether	5.69	73	683584	10.32624 ppb	100
41) 1,2-DCA	5.52	62	319380	10.26088 ppb	100
42) Benzene	5.48	78	955688	10.00595 ppb	100

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : M:\LOKI\DATA\150113\0113L12.D
Acq On : 13 Jan 15 17:38
Sample : 10ug/L Vol Std 01-13-15
Misc : 10mL w/5uL IS:10-06-14

Vial: 11
Operator: DG,SV,RS
Inst : Loki
Multiplr: 1.00

Quant Time: Jan 19 8:36 2015 Quant Results File: LALLW2.RES

Quant Method : M:\LOKI\DATA\150113\LALLW2.M (RTE Integrator)
Title : METHOD 8260B
Last Update : Mon Jan 19 08:34:51 2015
Response via : Initial Calibration
DataAcq Meth : 8260_BETA

Compound	R.T.	QIon	Response	Conc	Unit	Qvalue
43) TCE	6.28	95	273922	10.02919	ppb	100
44) 2-Pentanone	6.54	43	1553697	124.89476	ppb	100
45) 1,2-Dichloropropane	6.52	63	249349	9.80932	ppb	100
46) Bromodichloromethane	6.86	83	341588	10.16004	ppb	100
47) Methyl Cyclohexane	6.48	83	351444	10.09173	ppb	100
48) Dibromomethane	6.65	93	153399	10.05518	ppb	100
49) 2-Chloroethyl vinyl ether	7.24	106	7670	10.22858	ppb	100
50) MIBK (methyl isobutyl ket	7.55	43	171840	10.59116	ppb	100
51) 1-Bromo-2-chloroethane	7.17	63	186240	10.46098	ppb	100
52) Cis-1,3-Dichloropropene	7.35	75	416784	10.09388	ppb	100
53) Toluene	7.69	91	1104046	10.06456	ppb	100
54) Trans-1,3-Dichloropropene	7.95	75	357184	10.02366	ppb	100
55) 1,1,2-TCA	8.13	83	173366	9.53001	ppb	100
56) 2-Hexanone	8.42	43	108597	9.21272	ppb	100
59) 1,2-EDB	8.60	107	223306	10.02596	ppb	100
60) Tetrachloroethene	8.25	166	318456	9.95617	ppb	100
61) 1-Chlorohexane	9.14	91	340427	9.80405	ppb	100
62) 1,1,1,2-Tetrachloroethane	9.21	131	287130	9.71818	ppb	100
63) m&p-Xylene	9.37	106	981273	19.77943	ppb	100
64) o-Xylene	9.76	106	496015	9.79654	ppb	100
65) Styrene	9.78	104	820027	9.94840	ppb	100
67) 1,3-Dichloropropane	8.29	76	351834	9.79338	ppb	100
68) Dibromochloromethane	8.51	129	275049	9.61978	ppb	100
69) Chlorobenzene	9.12	112	769304	9.65245	ppb	100
70) Ethylbenzene	9.25	91	1247376	9.94397	ppb	100
71) Bromoform	9.94	173	189502	9.86576	ppb	100
73) Isopropylbenzene	10.14	105	1239910	9.81061	ppb	100
74) 1,1,2,2-Tetrachloroethane	10.44	83	238389	9.67656	ppb	100
75) 1,2,3-Trichloropropane	10.46	110	84872	10.86604	ppb	100
76) t-1,4-Dichloro-2-Butene	10.50	53	58152	10.20149	ppb	100
77) Bromobenzene	10.41	156	354034	9.86620	ppb	100
78) n-Propylbenzene	10.54	91	1398189	10.02581	ppb	100
79) 4-Ethyltoluene	10.66	105	1231587	10.07381	ppb	100
80) 2-Chlorotoluene	10.61	91	869190	9.88688	ppb	100
81) 1,3,5-Trimethylbenzene	10.73	105	1078346	9.83493	ppb	100
82) 4-Chlorotoluene	10.72	91	995416	9.71098	ppb	100
83) Tert-Butylbenzene	11.04	119	935172	9.75138	ppb	100
84) 1,2,4-Trimethylbenzene	11.09	105	1085127	9.61308	ppb	100
85) Sec-Butylbenzene	11.26	105	1317980	9.93009	ppb	100
86) p-Isopropyltoluene	11.42	119	1112845	9.70220	ppb	100
87) Benzyl Chloride	11.58	91	358810	9.75647	ppb	100
88) 1,3-DCB	11.35	146	648905	9.79302	ppb	100
89) 1,4-DCB	11.44	146	653836	9.67090	ppb	100
90) n-Butylbenzene	11.82	91	993262	10.16511	ppb	100
91) 1,2-DCB	11.80	146	620520	9.98253	ppb	100
92) Hexachloroethane	12.05	117	226792	9.94680	ppb	100
93) 1,2-Dibromo-3-chloropropan	12.57	157	56538	9.25527	ppb	100
94) 1,2,4-Trichlorobenzene	13.39	180	427604	9.81206	ppb	100
95) Hexachlorobutadiene	13.58	225	240328	10.05765	ppb	100
96) Naphthalene	13.62	128	432704	9.96045	ppb	100
97) 1,2,3-Trichlorobenzene	13.87	180	254912	9.86365	ppb	100

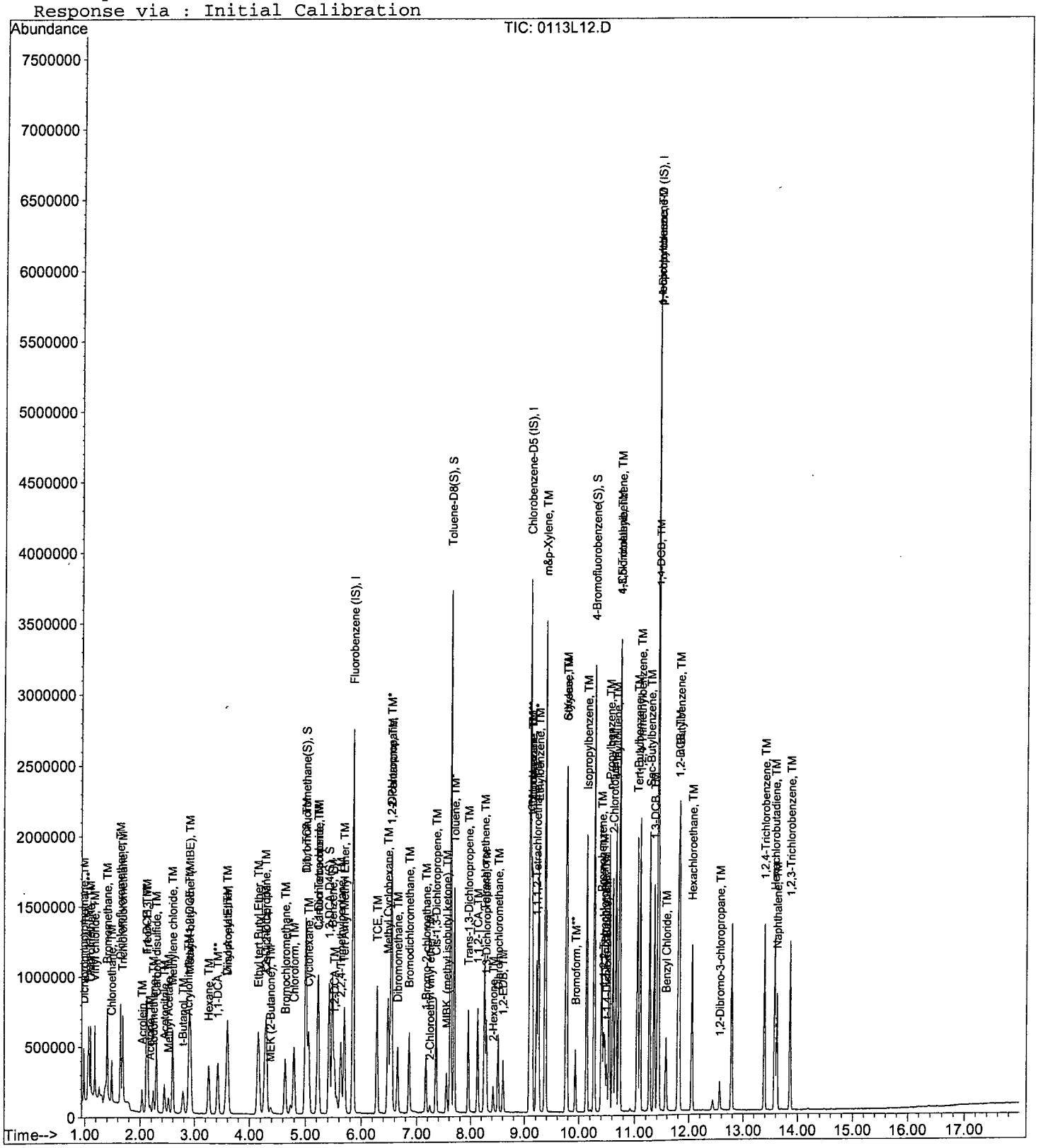
(#) = qualifier out of range (m) = manual integration

Quantitation Report

Data File : M:\LOKI\DATA\150113\0113L12.D Vial: 11
Acq On : 13 Jan 15 17:38 Operator: DG,SV,RS
Sample : 10ug/L Vol Std 01-13-15 Inst : Loki
Misc : 10mL w/5uL IS:10-06-14 Multiplr: 1.00

Quant Time: Jan 19 8:36 2015 Quant Results File: LALLW2.RES

Method : M:\LOKI\DATA\150113\LALLW2.M (RTE Integrator)
Title : METHOD 8260B
Last Update : Mon Jan 19 08:51:54 2015
Response via : Initial Calibration



Quantitation Report (Not Reviewed)

Data File : M:\LOKI\DATA\150113\0113L13.D Vial: 12
Acq On : 13 Jan 15 18:06 Operator: DG,SV,RS
Sample : 20ug/L Vol Std 01-13-15 Inst : Loki
Misc : 10mL w/5uL IS:10-06-14 Multiplr: 1.00

Quant Time: Jan 19 8:36 2015 Quant Results File: LALLW2.RES

Quant Method : M:\LOKI\DATA\150113\LALLW2.M (RTE Integrator)
Title : METHOD 8260B
Last Update : Mon Jan 19 08:34:51 2015
Response via : Initial Calibration
DataAcq Meth : 8260_BETA

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene (IS)	5.85	96	1368714	25.00000 ppb	0.00
57) Chlorobenzene-D5 (IS)	9.09	117	1312768	25.00000 ppb	0.00
72) 1,4-Dichlorobenzene-D (IS)	11.42	152	763264	25.00000 ppb	0.00
System Monitoring Compounds					
33) Dibromofluoromethane(S)	5.01	111	1074070	36.84446 ppb	0.00
Spiked Amount 23.395			Recovery	= 157.485%	
38) 1,2-DCA-D4(S)	5.42	65	1096235	36.76737 ppb	0.00
Spiked Amount 23.427			Recovery	= 156.946%	
58) Toluene-D8(S)	7.62	98	3907362	37.38914 ppb	0.00
Spiked Amount 24.736			Recovery	= 151.153%	
66) 4-Bromofluorobenzene(S)	10.27	95	1547786	38.81043 ppb	0.00
Spiked Amount 24.661			Recovery	= 157.377%	

Target Compounds					Qvalue
2) Dichlorodifluoromethane	0.98	85	400889	22.06816 ppb	99
3) Freon 114	1.07	85	293303	21.22713 ppb	97
4) Chloromethane	1.10	50	482686	19.82097 ppb	98
5) Vinyl chloride	1.18	62	533853	20.18953 ppb	99
6) Bromomethane	1.40	94	374760	23.06720 ppb	99
7) Chloroethane	1.48	64	288892	18.85602 ppb	98
8) Dichlorofluoromethane	1.64	67	926453	19.98229 ppb	98
9) Trichlorofluoromethane	1.68	101	766269	20.28784 ppb	98
10) Acrolein	2.03	56	132863	152.85087 ppb #	100
11) Acetone	2.18	43	100208	20.12926 ppb	95
12) Freon-113	2.13	101	384850	20.23414 ppb	99
13) 1,1-DCE	2.11	61	592030	19.35897 ppb	98
14) t-Butanol	2.79	59	106175	140.27069 ppb	98
15) Acetonitrile	2.44	41	264184	139.82336 ppb	98
16) Methyl Acetate	2.52	43	239148	19.55144 ppb	94
17) Iodomethane	2.24	142	210304	19.96215 ppb	100
18) Acrylonitrile	2.87	52	92689	19.79729 ppb	93
19) Methylene chloride	2.59	84	490647	20.02401 ppb	100
20) Carbon disulfide	2.29	76	1158164	19.22424 ppb	100
21) Methyl t-butyl ether (MtBE	2.92	73	1215479	18.71233 ppb	99
22) Trans-1,2-DCE	2.89	96	465440	19.04743 ppb	99
23) Diisopropyl Ether	3.60	45	1357609	19.08322 ppb	99
24) 1,1-DCA	3.42	63	775402	19.15434 ppb	99
25) Hexane	3.26	57	399718	18.95256 ppb	98
26) Vinyl Acetate	3.59	43	276339	17.84540 ppb	98
27) Ethyl tert Butyl Ether	4.16	59	1378980	19.06463 ppb	99
28) MEK (2-Butanone)	4.38	43	140215	20.90432 ppb	97
29) Cis-1,2-DCE	4.31	96	538450	18.86230 ppb	95
30) 2,2-Dichloropropane	4.28	77	229958	19.02609 ppb	96
31) Chloroform	4.80	83	823902	19.31793 ppb	99
32) Bromochloromethane	4.64	128	260934	17.30637 ppb	99
34) 1,1,1-TCA	4.99	97	746973	19.36122 ppb	98
35) Cyclohexane	5.05	41	339920	19.07151 ppb	95
36) 1,1-Dichloropropene	5.23	75	617587	19.22946 ppb	99
37) 2,2,4-Trimethylpentane	5.63	57	1152139	20.37263 ppb	99
39) Carbon Tetrachloride	5.21	117	663394	19.67163 ppb	99
40) Tert Amyl Methyl Ether	5.69	73	1290054	19.01256 ppb	99
41) 1,2-DCA	5.52	62	608426	19.07072 ppb	99
42) Benzene	5.48	78	1832783	18.72129 ppb	99

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : M:\LOKI\DATA\150113\0113L13.D Vial: 12
Acq On : 13 Jan 15 18:06 Operator: DG,SV,RS
Sample : 20ug/L Vol Std 01-13-15 Inst : Loki
Misc : 10mL w/5uL IS:10-06-14 Multiplr: 1.00

Quant Time: Jan 19 8:36 2015 Quant Results File: LALLW2.RES

Quant Method : M:\LOKI\DATA\150113\LALLW2.M (RTE Integrator)
Title : METHOD 8260B
Last Update : Mon Jan 19 08:34:51 2015
Response via : Initial Calibration
DataAcq Meth : 8260_BETA

Compound	R.T.	QIon	Response	Conc Unit		Qvalue
43) TCE	6.28	95	523460	18.69841	ppb	98
44) 2-Pentanone	6.54	43	1844344	144.64459	ppb	100
45) 1,2-Dichloropropane	6.53	63	475841	18.26315	ppb	100
46) Bromodichloromethane	6.86	83	663511	19.25411	ppb	99
47) Methyl Cyclohexane	6.48	83	722195	20.23235	ppb	96
48) Dibromomethane	6.65	93	286017	18.29118	ppb	93
49) 2-Chloroethyl vinyl ether	7.24	106	15363	19.98842	ppb	95
50) MIBK (methyl isobutyl ket	7.55	43	333198	20.60842	ppb	99
51) 1-Bromo-2-chloroethane	7.17	63	346991	19.01516	ppb	99
52) Cis-1,3-Dichloropropene	7.35	75	806173	19.04836	ppb	99
53) Toluene	7.69	91	2146032	19.08650	ppb	99
54) Trans-1,3-Dichloropropene	7.95	75	689111	18.86713	ppb	100
55) 1,1,2-TCA	8.13	83	337568	18.10393	ppb	97
56) 2-Hexanone	8.42	43	219048	18.12974	ppb	97
59) 1,2-EDB	8.60	107	421066	18.99860	ppb	96
60) Tetrachloroethene	8.25	166	608018	19.10315	ppb	98
61) 1-Chlorohexane	9.14	91	691622	20.01686	ppb	98
62) 1,1,1,2-Tetrachloroethane	9.21	131	568170	19.32548	ppb	97
63) m&p-Xylene	9.37	106	1948071	39.46158	ppb	97
64) o-Xylene	9.76	106	969765	19.24820	ppb	98
65) Styrene	9.78	104	1623829	19.79753	ppb	100
67) 1,3-Dichloropropane	8.29	76	679434	19.00588	ppb	98
68) Dibromochloromethane	8.51	129	534630	18.79118	ppb	94
69) Chlorobenzene	9.12	112	1511323	19.05648	ppb	98
70) Ethylbenzene	9.25	91	2433062	19.49222	ppb	99
71) Bromoform	9.94	173	364828	19.08757	ppb	100
73) Isopropylbenzene	10.14	105	2452129	19.29150	ppb	99
74) 1,1,2,2-Tetrachloroethane	10.44	83	461531	18.62740	ppb	99
75) 1,2,3-Trichloropropane	10.46	110	158410	21.24330	ppb	98
76) t-1,4-Dichloro-2-Butene	10.50	53	112466	20.20102	ppb	92
77) Bromobenzene	10.41	156	703166	19.48406	ppb	99
78) n-Propylbenzene	10.54	91	2774465	19.78106	ppb	100
79) 4-Ethyltoluene	10.66	105	2436114	19.81267	ppb	98
80) 2-Chlorotoluene	10.61	91	1700799	19.23598	ppb	100
81) 1,3,5-Trimethylbenzene	10.73	105	2139136	19.39850	ppb	100
82) 4-Chlorotoluene	10.72	91	1992596	19.32833	ppb	98
83) Tert-Butylbenzene	11.05	119	1882172	19.51420	ppb	99
84) 1,2,4-Trimethylbenzene	11.09	105	2184132	19.23878	ppb	100
85) Sec-Butylbenzene	11.26	105	2635910	19.74657	ppb	100
86) p-Isopropyltoluene	11.42	119	2221233	19.25513	ppb	100
87) Benzyl Chloride	11.58	91	691590	18.69792	ppb	99
88) 1,3-DCB	11.35	146	1285334	19.28715	ppb	99
89) 1,4-DCB	11.44	146	1296002	19.05990	ppb	98
90) n-Butylbenzene	11.82	91	1987951	20.22883	ppb	100
91) 1,2-DCB	11.80	146	1219716	19.51013	ppb	98
92) Hexachloroethane	12.05	117	443163	19.32572	ppb	98
93) 1,2-Dibromo-3-chloropropan	12.57	157	113616	18.49289	ppb	97
94) 1,2,4-Trichlorobenzene	13.39	180	885240	19.30357	ppb	98
95) Hexachlorobutadiene	13.58	225	472875	19.67683	ppb	97
96) Naphthalene	13.62	128	949568	20.11418	ppb	99
97) 1,2,3-Trichlorobenzene	13.87	180	524864	19.30341	ppb	100

(#) = qualifier out of range (m) = manual integration

Quantitation Report

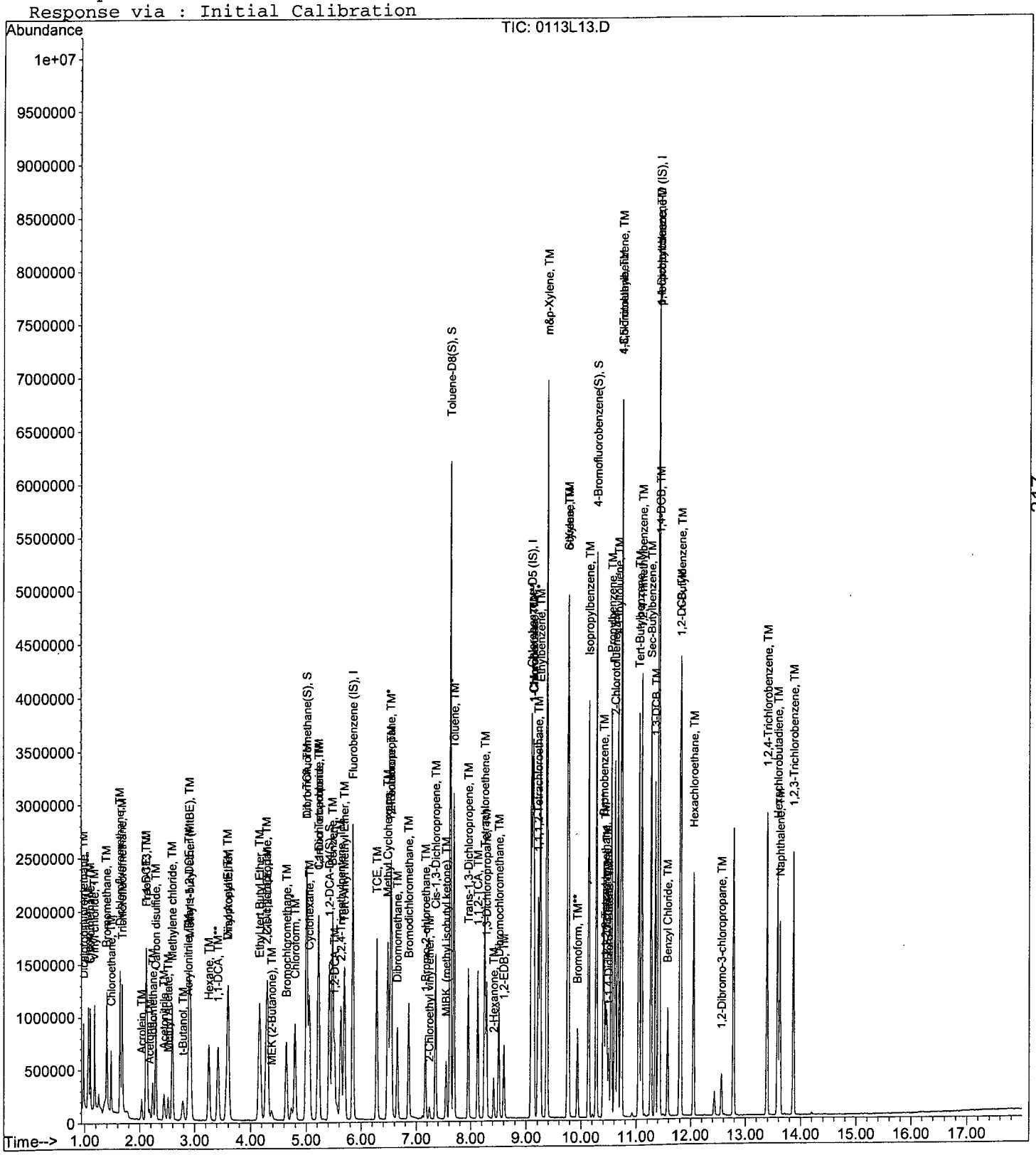
Data File : M:\LOKI\DATA\150113\0113L13.D
Acq On : 13 Jan 15 18:06
Sample : 20ug/L Vol Std 01-13-15
Misc : 10mL w/5uL IS:10-06-14

Vial: 12
Operator: DG,SV,RS
Inst : Loki
Multiplr: 1.00

Quant Time: Jan 19 8:36 2015

Quant Results File: LALLW2.RES

Method : M:\LOKI\DATA\150113\LALLW2.M (RTE Integrator)
Title : METHOD 8260B
Last Update : Mon Jan 19 08:51:54 2015
Response via : Initial Calibration



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Quantitation Report (Not Reviewed)

Data File : M:\LOKI\DATA\150113\0113L14.D
Acq On : 13 Jan 15 18:34
Sample : 40ug/L Vol Std 01-13-15
Misc : 10mL w/5uL IS:10-06-14

Vial: 13
Operator: DG,SV,RS
Inst : Loki
Multiplr: 1.00

Quant Time: Jan 19 8:36 2015 Quant Results File: LALLW2.RES

Quant Method : M:\LOKI\DATA\150113\LALLW2.M (RTE Integrator)
Title : METHOD 8260B
Last Update : Mon Jan 19 08:34:51 2015
Response via : Initial Calibration
DataAcq Meth : 8260_BETA

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene (IS)	5.85	96	1388828	25.00000 ppb	0.00
57) Chlorobenzene-D5 (IS)	9.09	117	1377280	25.00000 ppb	0.00
72) 1,4-Dichlorobenzene-D (IS)	11.42	152	812224	25.00000 ppb	0.00
System Monitoring Compounds					
33) Dibromofluoromethane(S)	5.00	111	2171185	73.40078 ppb	0.00
Spiked Amount 23.395			Recovery	= 313.744%	
38) 1,2-DCA-D4(S)	5.42	65	2170865	71.75563 ppb	0.00
Spiked Amount 23.427			Recovery	= 306.303%	
58) Toluene-D8(S)	7.62	98	7900595	72.05885 ppb	0.00
Spiked Amount 24.736			Recovery	= 291.315%	
66) 4-Bromofluorobenzene(S)	10.27	95	3182286	76.05758 ppb	0.00
Spiked Amount 24.661			Recovery	= 308.420%	
Target Compounds					Qvalue
2) Dichlorodifluoromethane	0.98	85	830911	45.07759 ppb	99
3) Freon 114	1.07	85	634913	45.28488 ppb	96
4) Chloromethane	1.10	50	977692	39.88307 ppb	100
5) Vinyl chloride	1.18	62	1050585	39.15615 ppb	98
6) Bromomethane	1.40	94	671837	43.52977 ppb	100
7) Chloroethane	1.47	64	558224	35.90767 ppb	100
8) Dichlorofluoromethane	1.64	67	1842054	39.44534 ppb	99
9) Trichlorofluoromethane	1.68	101	1519708	39.65327 ppb	97
10) Acrolein	2.03	56	136206	154.42740 ppb	96
11) Acetone	2.18	43	188948	39.03687 ppb	95
12) Freon-113	2.13	101	795100	41.19830 ppb	97
13) 1,1-DCE	2.11	61	1207415	38.90984 ppb	99
14) t-Butanol	2.79	59	128664	167.51973 ppb	98
15) Acetonitrile	2.44	41	318981	166.38044 ppb	98
16) Methyl Acetate	2.51	43	464333	37.15992 ppb	96
17) Iodomethane	2.24	142	490816	38.38253 ppb	99
18) Acrylonitrile	2.87	52	186293	39.95635 ppb	95
19) Methylene chloride	2.59	84	954465	39.41360 ppb	100
20) Carbon disulfide	2.29	76	2327329	38.07160 ppb	99
21) Methyl t-butyl ether (MtBE	2.92	73	2421374	36.73723 ppb	99
22) Trans-1,2-DCE	2.90	96	929464	37.48603 ppb	99
23) Diisopropyl Ether	3.60	45	2749399	38.08719 ppb	99
24) 1,1-DCA	3.42	63	1547681	37.67784 ppb	99
25) Hexane	3.26	57	832660	38.90864 ppb	99
26) Vinyl Acetate	3.56	43	571858	36.39457 ppb #	75
27) Ethyl tert Butyl Ether	4.16	59	2740455	37.33854 ppb	99
28) MEK (2-Butanone)	4.38	43	263975	39.71305 ppb	96
29) Cis-1,2-DCE	4.31	96	1090525	37.64863 ppb	95
30) 2,2-Dichloropropane	4.28	77	468023	38.16211 ppb	97
31) Chloroform	4.79	83	1677705	38.76723 ppb	96
32) Bromochloromethane	4.64	128	530736	34.69111 ppb	99
34) 1,1,1-TCA	4.99	97	1503870	38.41513 ppb	100
35) Cyclohexane	5.05	41	700954	38.75807 ppb	94
36) 1,1-Dichloropropene	5.23	75	1261234	38.70159 ppb	100
37) 2,2,4-Trimethylpentane	5.63	57	2361137	41.14600 ppb	98
39) Carbon Tetrachloride	5.21	117	1365706	39.91078 ppb	99
40) Tert Amyl Methyl Ether	5.69	73	2589354	37.60871 ppb	98
41) 1,2-DCA	5.52	62	1201968	37.12928 ppb	100
42) Benzene	5.48	78	3687488	37.12099 ppb	100

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : M:\LOKI\DATA\150113\0113L14.D
Acq On : 13 Jan 15 18:34
Sample : 40ug/L Vol Std 01-13-15
Misc : 10mL w/5uL IS:10-06-14

Vial: 13
Operator: DG,SV,RS
Inst : Loki
Multiplr: 1.00

Quant Time: Jan 19 8:36 2015 Quant Results File: LALLW2.RES

Quant Method : M:\LOKI\DATA\150113\LALLW2.M (RTE Integrator)
Title : METHOD 8260B
Last Update : Mon Jan 19 08:34:51 2015
Response via : Initial Calibration
DataAcq Meth : 8260_BETA

Compound	R.T.	QIon	Response	Conc Unit		Qvalue
43) TCE	6.28	95	1019877	35.90321	ppb	99
44) 2-Pentanone	6.54	43	2090482	161.57381	ppb	99
45) 1,2-Dichloropropane	6.52	63	956964	36.19709	ppb	100
46) Bromodichloromethane	6.86	83	1334793	38.17275	ppb	98
47) Methyl Cyclohexane	6.48	83	1501085	41.44396	ppb	96
48) Dibromomethane	6.65	93	576378	36.32633	ppb	95
49) 2-Chloroethyl vinyl ether	7.24	106	31615	40.53777	ppb	82
50) MIBK (methyl isobutyl ket	7.55	43	626490	38.73530	ppb	99
51) 1-Bromo-2-chloroethane	7.16	63	702924	37.96247	ppb	98
52) Cis-1,3-Dichloropropene	7.35	75	1637135	38.12221	ppb	99
53) Toluene	7.69	91	4348591	38.11562	ppb	99
54) Trans-1,3-Dichloropropene	7.95	75	1411756	38.09260	ppb	99
55) 1,1,2-TCA	8.13	83	672780	35.55895	ppb	99
56) 2-Hexanone	8.42	43	422492	34.46156	ppb	97
59) 1,2-EDB	8.60	107	861857	37.06571	ppb	96
60) Tetrachloroethene	8.25	166	1232749	36.91722	ppb	97
61) 1-Chlorohexane	9.14	91	1407533	38.82857	ppb	98
62) 1,1,1,2-Tetrachloroethane	9.21	131	1158439	37.55701	ppb	98
63) m&p-Xylene	9.37	106	3968720	76.62772	ppb	96
64) o-Xylene	9.76	106	1990295	37.65363	ppb	98
65) Styrene	9.78	104	3371535	39.17996	ppb	99
67) 1,3-Dichloropropane	8.29	76	1379546	36.78262	ppb	98
68) Dibromochloromethane	8.51	129	1090575	36.53608	ppb	95
69) Chlorobenzene	9.12	112	3064444	36.83010	ppb	99
70) Ethylbenzene	9.25	91	4953522	37.82579	ppb	100
71) Bromoform	9.94	173	761813	37.99064	ppb	100
73) Isopropylbenzene	10.14	105	5041293	37.27035	ppb	100
74) 1,1,2,2-Tetrachloroethane	10.44	83	953437	36.16115	ppb	99
75) 1,2,3-Trichloropropane	10.46	110	307897	39.84211	ppb	96
76) t-1,4-Dichloro-2-Butene	10.50	53	232340	39.81252	ppb	94
77) Bromobenzene	10.41	156	1427263	37.16417	ppb	98
78) n-Propylbenzene	10.55	91	5671628	37.99943	ppb	98
79) 4-Ethyltoluene	10.66	105	5013413	38.31579	ppb	98
80) 2-Chlorotoluene	10.61	91	3416247	36.30860	ppb	99
81) 1,3,5-Trimethylbenzene	10.73	105	4420209	37.66791	ppb	100
82) 4-Chlorotoluene	10.72	91	4037974	36.80760	ppb	99
83) Tert-Butylbenzene	11.05	119	3859062	37.59864	ppb	98
84) 1,2,4-Trimethylbenzene	11.09	105	4474418	37.03687	ppb	100
85) Sec-Butylbenzene	11.26	105	5426926	38.20445	ppb	100
86) p-Isopropyltoluene	11.42	119	4678691	38.11322	ppb	99
87) Benzyl Chloride	11.58	91	1379800	35.05579	ppb	98
88) 1,3-DCB	11.35	146	2639779	37.22362	ppb	100
89) 1,4-DCB	11.44	146	2625623	36.28659	ppb	99
90) n-Butylbenzene	11.82	91	4094630	39.15423	ppb	99
91) 1,2-DCB	11.80	146	2438977	36.66132	ppb	98
92) Hexachloroethane	12.05	117	903667	37.03220	ppb	98
93) 1,2-Dibromo-3-chloropropan	12.57	157	228986	35.02460	ppb	96
94) 1,2,4-Trichlorobenzene	13.39	180	1903817	38.15001	ppb	98
95) Hexachlorobutadiene	13.58	225	948028	37.07053	ppb	98
96) Naphthalene	13.62	128	2234368	39.98056	ppb	99
97) 1,2,3-Trichlorobenzene	13.87	180	1154560	38.99579	ppb	98

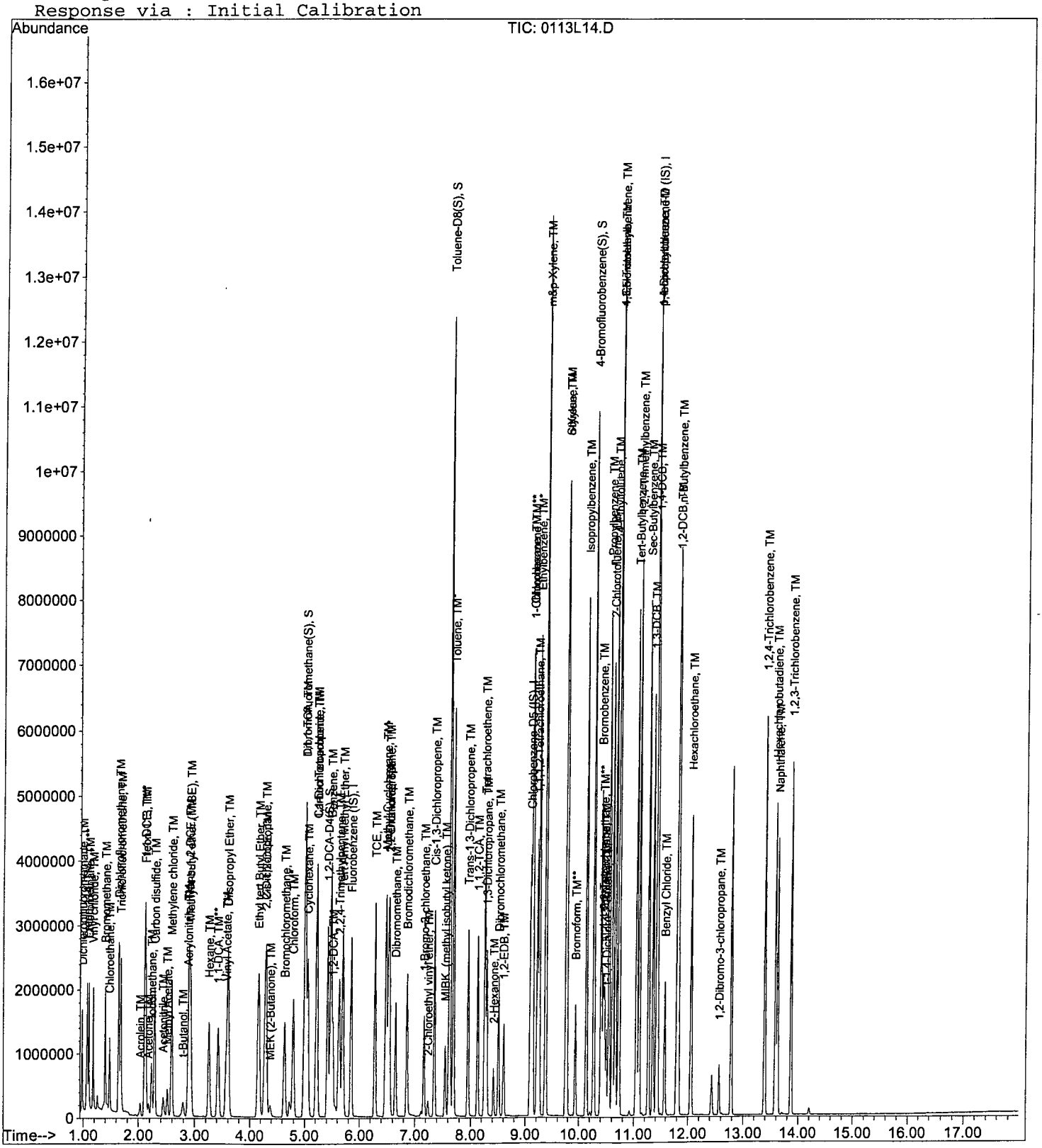
(#) = qualifier out of range (m) = manual integration

Quantitation Report

Data File : M:\LOKI\DATA\150113\0113L14.D Vial: 13
Acq On : 13 Jan 15 18:34 Operator: DG,SV,RS
Sample : 40ug/L Vol Std 01-13-15 Inst : Loki
Misc : 10mL w/5uL IS:10-06-14 Multiplr: 1.00

Quant Time: Jan 19 8:36 2015 Quant Results File: LALLW2.RES

Method : M:\LOKI\DATA\150113\LALLW2.M (RTE Integrator)
Title : METHOD 8260B
Last Update : Mon Jan 19 08:51:54 2015
Response via : Initial Calibration



Quantitation Report (Not Reviewed)

Data File : M:\LOKI\DATA\150113\0113L15.D Vial: 14
Acq On : 13 Jan 15 19:02 Operator: DG,SV,RS
Sample : 100ug/L Vol Std 01-13-15 Inst : Loki
Misc : 10mL w/5uL IS:10-06-14 Multiplr: 1.00

Quant Time: Jan 19 8:36 2015 Quant Results File: LALLW2.RES

Quant Method : M:\LOKI\DATA\150113\LALLW2.M (RTE Integrator)
Title : METHOD 8260B
Last Update : Mon Jan 19 08:34:51 2015
Response via : Initial Calibration
DataAcq Meth : 8260_BETA

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene (IS)	5.85	96	1325301	25.00000 ppb	0.00
57) Chlorobenzene-D5 (IS)	9.09	117	1340416	25.00000 ppb	0.00
72) 1,4-Dichlorobenzene-D (IS)	11.42	152	845888	25.00000 ppb	0.00
System Monitoring Compounds					
33) Dibromofluoromethane(S)	5.01	111	2625442	93.01226 ppb	0.00
Spiked Amount 23.395			Recovery	= 397.569%	
38) 1,2-DCA-D4(S)	5.42	65	2617029	90.64955 ppb	0.00
Spiked Amount 23.427			Recovery	= 386.955%	
58) Toluene-D8(S)	7.62	98	9638445	90.32691 ppb	0.00
Spiked Amount 24.736			Recovery	= 365.167%	
66) 4-Bromofluorobenzene(S)	10.27	95	4009735	98.46947 ppb	0.00
Spiked Amount 24.661			Recovery	= 399.298%	

Target Compounds					Qvalue
2) Dichlorodifluoromethane	0.98	85	2096578	119.19310 ppb	99
3) Freon 114	1.07	85	1674308	125.14350 ppb	96
4) Chloromethane	1.10	50	2329005	100.03704 ppb	100
5) Vinyl chloride	1.18	62	2539180	99.17364 ppb	98
6) Bromomethane	1.40	94	1379009	97.79865 ppb	99
7) Chloroethane	1.47	64	632761	42.65327 ppb	99
8) Dichlorofluoromethane	1.64	67	4443103	100.16632 ppb	99
9) Trichlorofluoromethane	1.67	101	3771089	103.11445 ppb	97
10) Acrolein	2.04	56	166842	198.22911 ppb	98
11) Acetone	2.19	43	450181	100.31172 ppb	97
12) Freon-113	2.12	101	1990136	108.06230 ppb	98
13) 1,1-DCE	2.11	61	2974708	100.45721 ppb	99
14) t-Butanol	2.81	59	140117	191.17613 ppb	100
15) Acetonitrile	2.44	41	357464	195.39062 ppb	98
16) Methyl Acetate	2.52	43	1211695	101.14060 ppb	97
17) Iodomethane	2.23	142	1267712	77.34121 ppb	99
18) Acrylonitrile	2.87	52	448398	101.93557 ppb	98
19) Methylene chloride	2.59	84	2276158	100.17165 ppb	100
20) Carbon disulfide	2.28	76	5705402	97.80555 ppb	100
21) Methyl t-butyl ether (MtBE	2.92	73	5795832	92.14978 ppb	98
22) Trans-1,2-DCE	2.89	96	2292026	96.87025 ppb	99
23) Diisopropyl Ether	3.60	45	6629610	96.24165 ppb	98
24) 1,1-DCA	3.42	63	3677376	93.81592 ppb	100
25) Hexane	3.25	57	2152309	105.39424 ppb	99
26) Vinyl Acetate	3.60	43	1257850	83.89019 ppb #	96
27) Ethyl tert Butyl Ether	4.17	59	6673309	95.28177 ppb	98
28) MEK (2-Butanone)	4.38	43	623621	99.91651 ppb	100
29) Cis-1,2-DCE	4.31	96	2675881	96.80868 ppb	95
30) 2,2-Dichloropropane	4.28	77	1134412	96.93262 ppb	96
31) Chloroform	4.80	83	4049526	98.05897 ppb	98
32) Bromochloromethane	4.64	128	1259038	86.24073 ppb	100
34) 1,1,1-TCA	4.99	97	3664976	98.10634 ppb	99
35) Cyclohexane	5.05	41	1691074	97.98715 ppb	90
36) 1,1-Dichloropropene	5.23	75	3047554	97.99829 ppb	100
37) 2,2,4-Trimethylpentane	5.63	57	5880432	107.38648 ppb	98
39) Carbon Tetrachloride	5.21	117	3329999	101.97906 ppb	100
40) Tert Amyl Methyl Ether	5.70	73	6143413	93.50625 ppb	99
41) 1,2-DCA	5.52	62	2866927	92.80560 ppb	100
42) Benzene	5.48	78	8819677	93.04125 ppb	100

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : M:\LOKI\DATA\150113\0113L15.D Vial: 14
Acq On : 13 Jan 15 19:02 Operator: DG,SV,RS
Sample : 100ug/L Vol Std 01-13-15 Inst : Loki
Misc : 10mL w/5uL IS:10-06-14 Multiplr: 1.00

Quant Time: Jan 19 8:36 2015 Quant Results File: LALLW2.RES

Quant Method : M:\LOKI\DATA\150113\LALLW2.M (RTE Integrator)
Title : METHOD 8260B
Last Update : Mon Jan 19 08:34:51 2015
Response via : Initial Calibration
DataAcq Meth : 8260_BETA

Compound	R.T.	QIon	Response	Conc	Unit		Qvalue
43) TCE	6.28	95	2615216	96.47770	ppb		99
44) 2-Pentanone	6.54	43	2346197	190.03034	ppb		99
45) 1,2-Dichloropropane	6.52	63	2290837	90.80425	ppb		100
46) Bromodichloromethane	6.86	83	3253720	97.51100	ppb		100
47) Methyl Cyclohexane	6.48	83	3737325	108.13114	ppb		97
48) Dibromomethane	6.65	93	1376990	90.94501	ppb		97
49) 2-Chloroethyl vinyl ether	7.24	106	102343	137.51776	ppb		85
50) MIBK (methyl isobutyl ket	7.55	43	1532640	100.30832	ppb		97
51) 1-Bromo-2-chloroethane	7.17	63	1681944	95.19004	ppb		97
52) Cis-1,3-Dichloropropene	7.35	75	3977614	97.06220	ppb		98
53) Toluene	7.69	91	10438701	95.88150	ppb		98
54) Trans-1,3-Dichloropropene	7.95	75	3416412	96.60178	ppb		100
55) 1,1,2-TCA	8.13	83	1622999	89.89345	ppb		98
56) 2-Hexanone	8.42	43	1071607	91.59799	ppb		96
59) 1,2-EDB	8.60	107	2076938	91.77900	ppb		96
60) Tetrachloroethene	8.25	166	3018971	92.89577	ppb		98
61) 1-Chlorohexane	9.14	91	3501754	99.25699	ppb		95
62) 1,1,1,2-Tetrachloroethane	9.21	131	2823717	94.06360	ppb		97
63) m&p-Xylene	9.37	106	9577947	190.01615	ppb	#	58
64) o-Xylene	9.76	106	4883721	94.93423	ppb		96
65) Styrene	9.78	104	8324487	99.39773	ppb		99
67) 1,3-Dichloropropane	8.29	76	3263554	89.40872	ppb		98
68) Dibromochloromethane	8.51	129	2688674	92.55230	ppb		97
69) Chlorobenzene	9.12	112	7495926	92.56762	ppb		99
70) Ethylbenzene	9.25	91	11710756	91.88434	ppb		99
71) Bromoform	9.94	173	1977504	101.32772	ppb		100
73) Isopropylbenzene	10.14	105	12295006	87.27970	ppb		99
74) 1,1,2,2-Tetrachloroethane	10.44	83	2420503	88.14929	ppb		98
75) 1,2,3-Trichloropropane	10.47	110	787912	99.73420	ppb		96
76) t-1,4-Dichloro-2-Butene	10.50	53	616302	102.38193	ppb		92
77) Bromobenzene	10.41	156	3564038	89.10986	ppb		99
78) n-Propylbenzene	10.54	91	13190129	84.85576	ppb		91
79) 4-Ethyltoluene	10.66	105	12201706	89.54221	ppb		96
80) 2-Chlorotoluene	10.61	91	8322005	84.92806	ppb		98
81) 1,3,5-Trimethylbenzene	10.73	105	10563353	86.43577	ppb		98
82) 4-Chlorotoluene	10.72	91	9748427	85.32406	ppb		99
83) Tert-Butylbenzene	11.05	119	9462933	88.52768	ppb		98
84) 1,2,4-Trimethylbenzene	11.09	105	11067415	87.96438	ppb		98
85) Sec-Butylbenzene	11.26	105	13130163	88.75506	ppb		97
86) p-Isopropyltoluene	11.42	119	11731994	91.76690	ppb		99
87) Benzyl Chloride	11.58	91	3795597	92.59482	ppb		98
88) 1,3-DCB	11.35	146	6740684	91.26788	ppb		99
89) 1,4-DCB	11.44	146	6817526	90.46979	ppb		100
90) n-Butylbenzene	11.82	91	10571632	97.06643	ppb		98
91) 1,2-DCB	11.80	146	6622195	95.57962	ppb		98
92) Hexachloroethane	12.05	117	2392600	94.14650	ppb		99
93) 1,2-Dibromo-3-chloropropan	12.57	157	620293	91.10121	ppb		97
94) 1,2,4-Trichlorobenzene	13.39	180	5316995	100.88523	ppb		98
95) Hexachlorobutadiene	13.58	225	2687501	100.90653	ppb		98
96) Naphthalene	13.62	128	5952000	84.53523	ppb		99
97) 1,2,3-Trichlorobenzene	13.87	180	3142144	100.53273	ppb		99

(#) = qualifier out of range (m) = manual integration

Quantitation Report

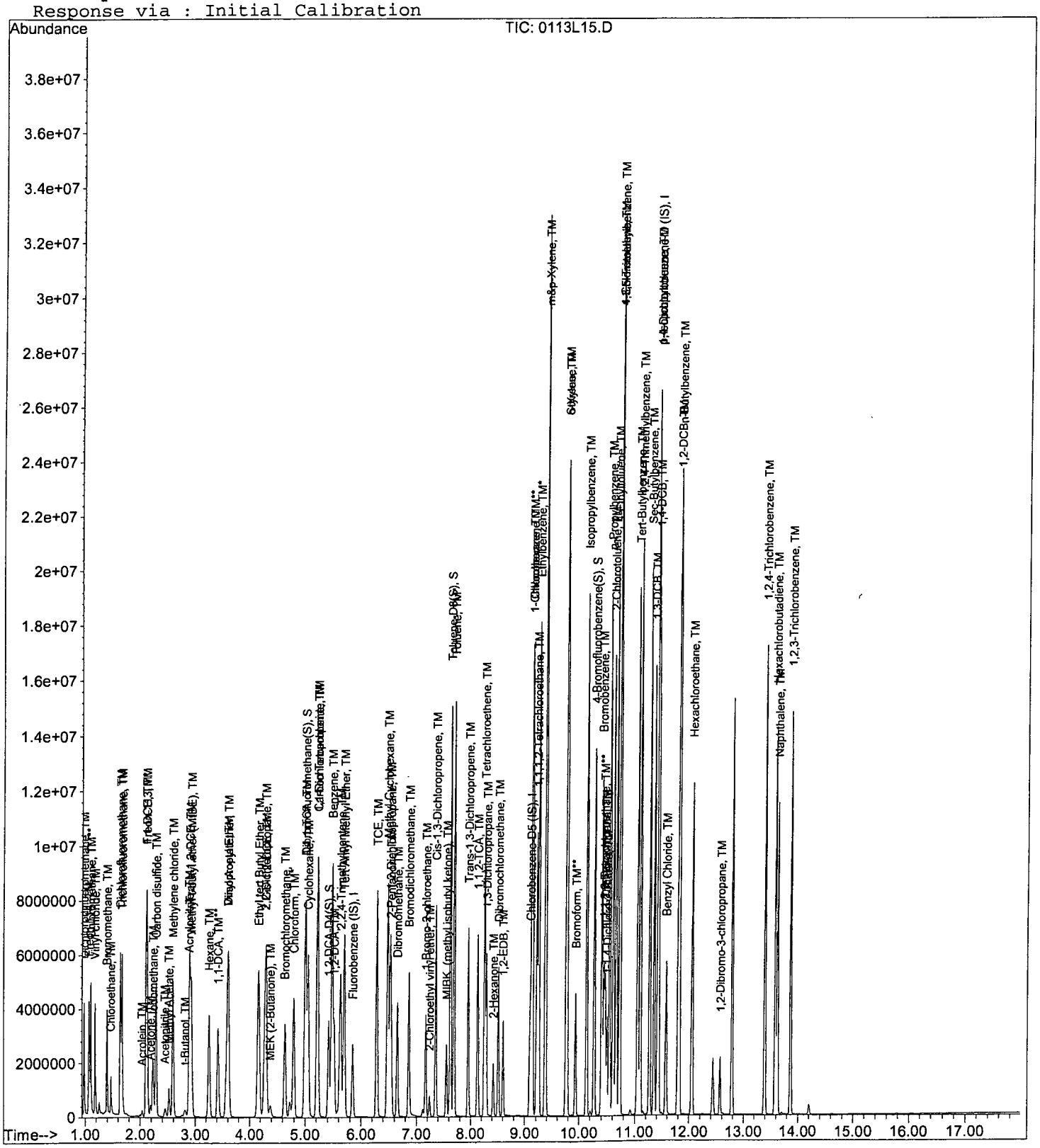
Data File : M:\LOKI\DATA\150113\0113L15.D
Acq On : 13 Jan 15 19:02
Sample : 100ug/L Vol Std 01-13-15
Misc : 10mL w/5uL IS:10-06-14

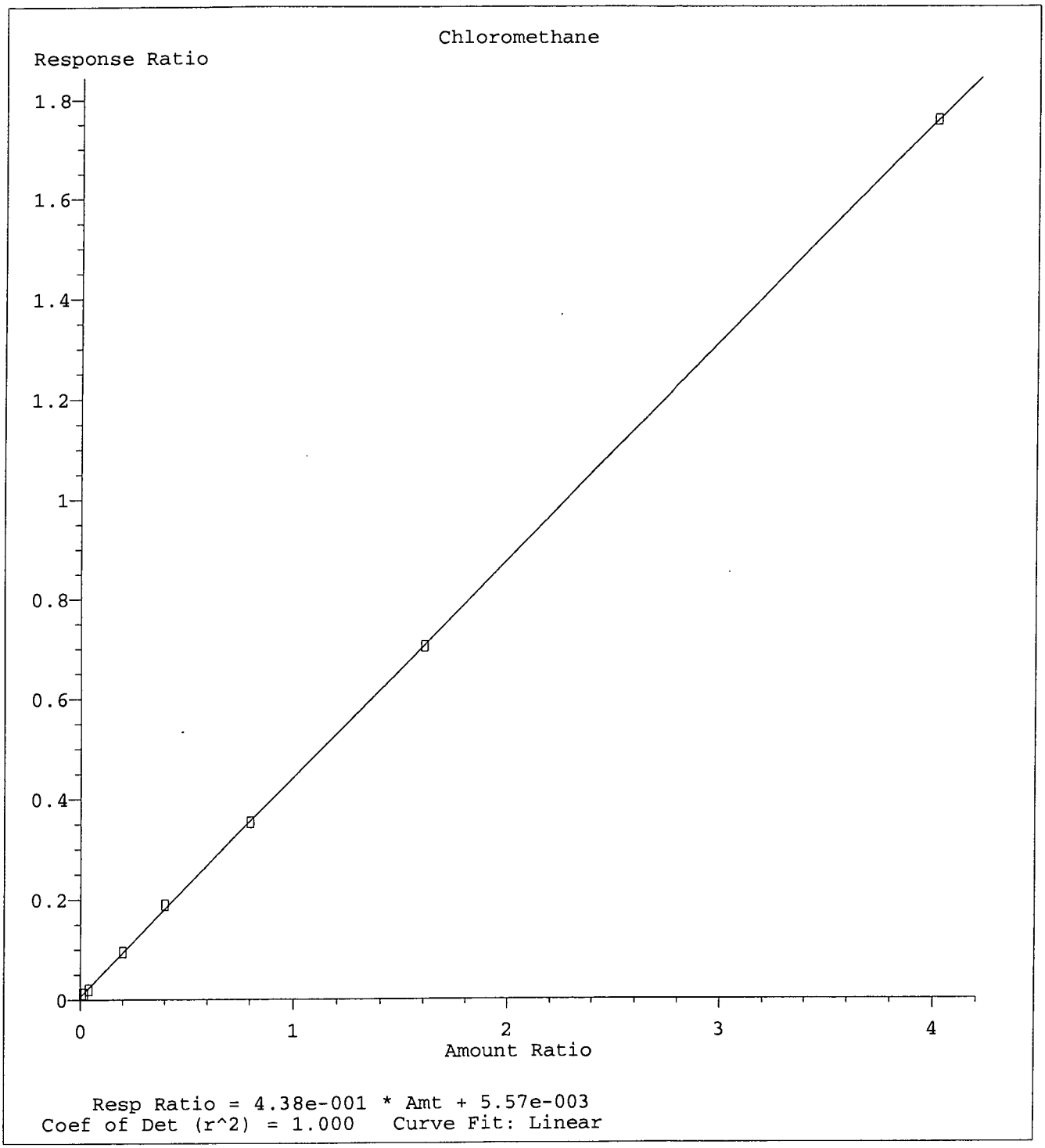
Vial: 14
Operator: DG,SV,RS
Inst : Loki
Multiplr: 1.00

Quant Time: Jan 19 8:36 2015

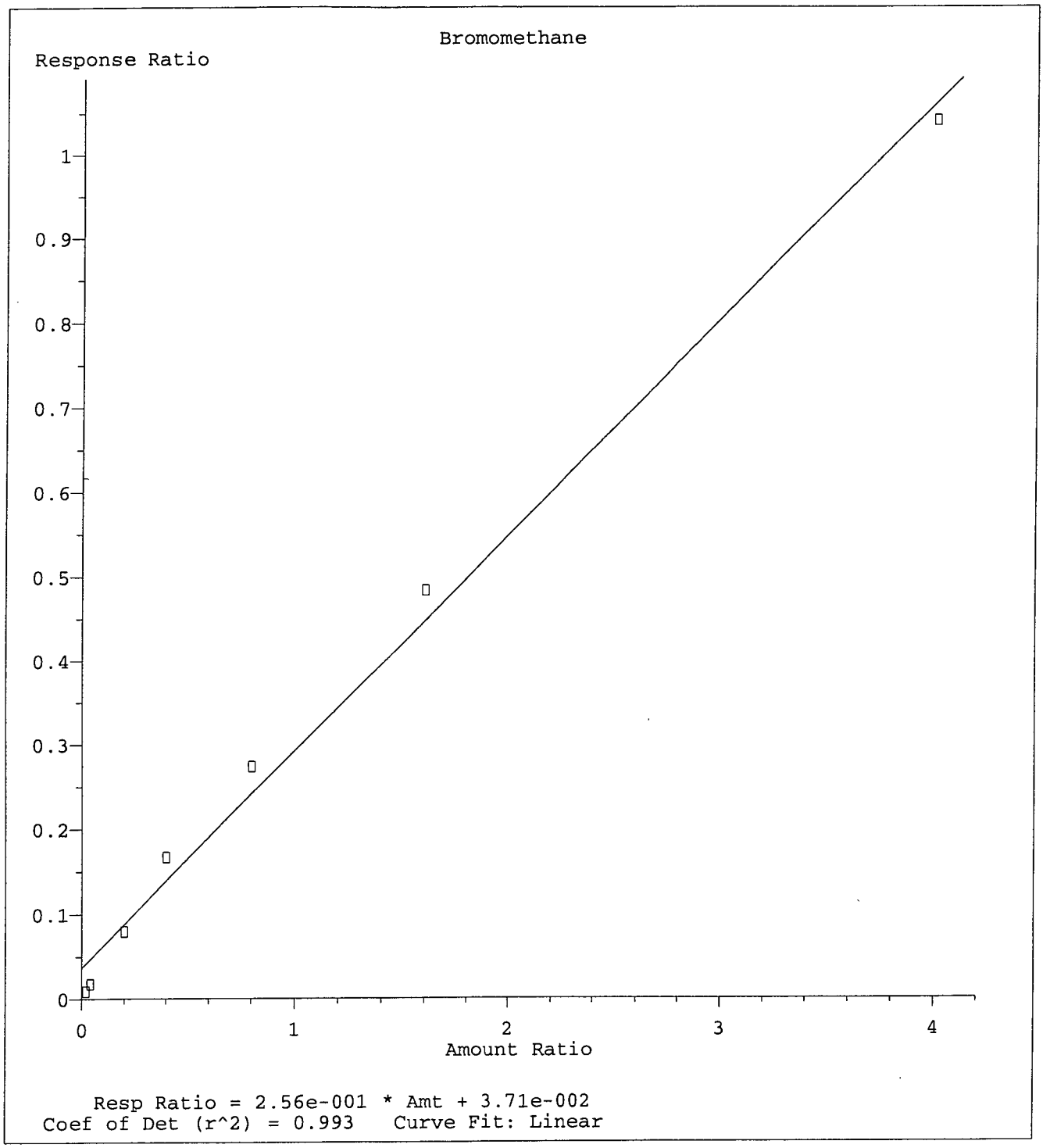
Quant Results File: LALLW2.RES

Method : M:\LOKI\DATA\150113\LALLW2.M (RTE Integrator)
Title : METHOD 8260B
Last Update : Mon Jan 19 08:51:54 2015
Response via : Initial Calibration

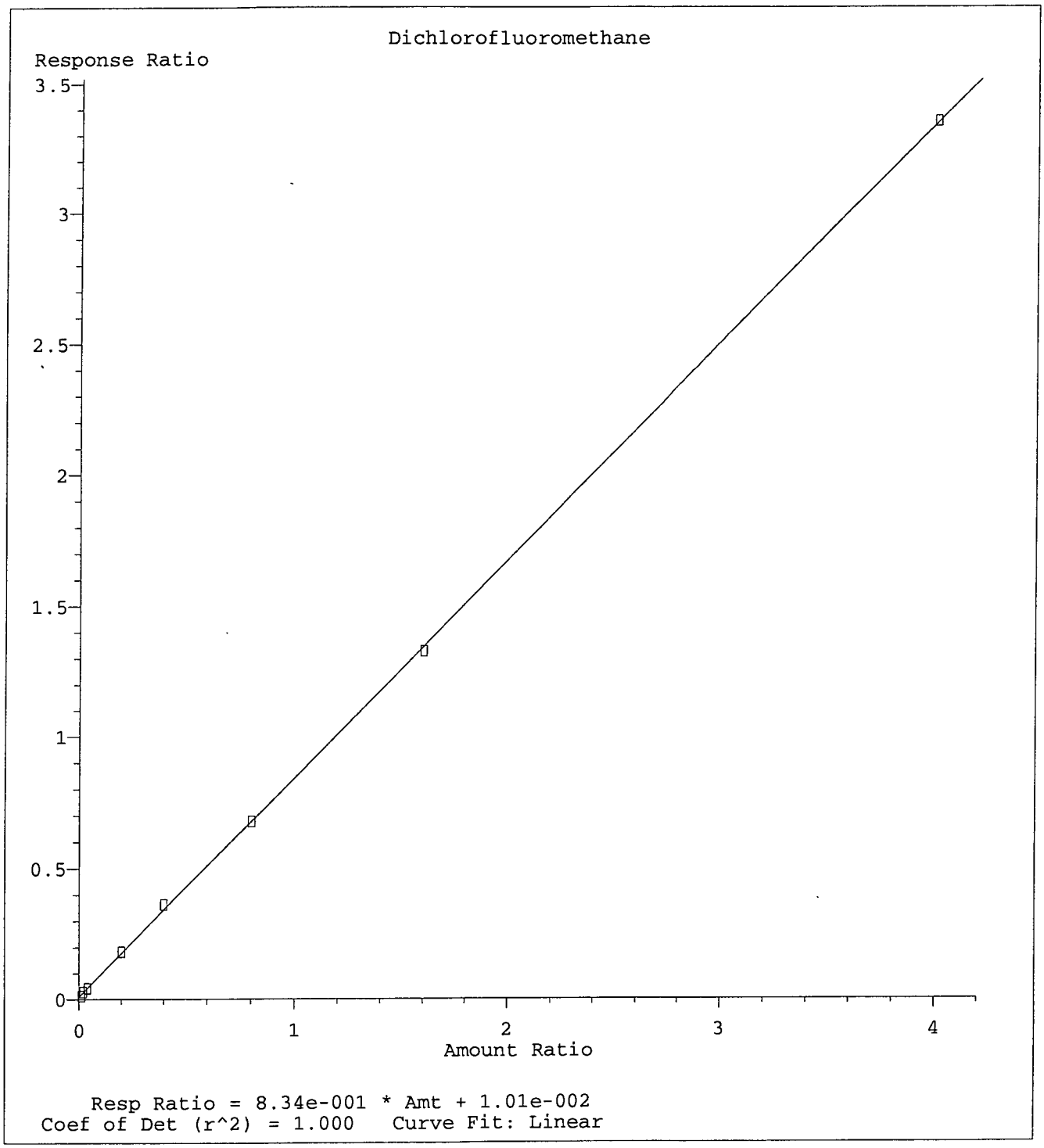




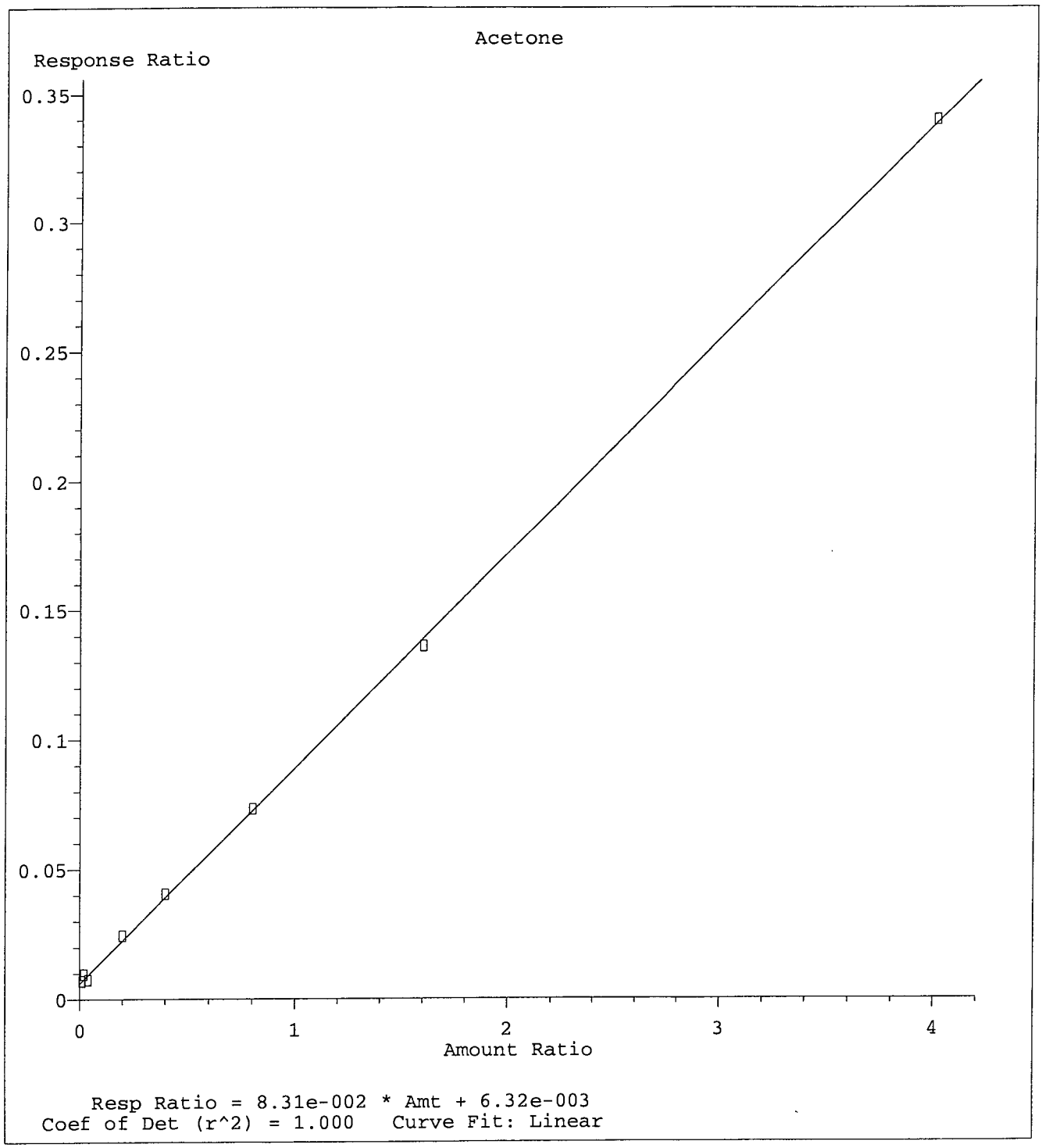
Method Name: M:\LOKI\DATA\150113\LALLW2.M
Calibration Table Last Updated: Mon Jan 19 08:51:54 2015



Method Name: M:\LOKI\DATA\150113\LALLW2.M
Calibration Table Last Updated: Mon Jan 19 08:51:54 2015



Method Name: M:\LOKI\DATA\150113\LALLW2.M
Calibration Table Last Updated: Mon Jan 19 08:51:54 2015



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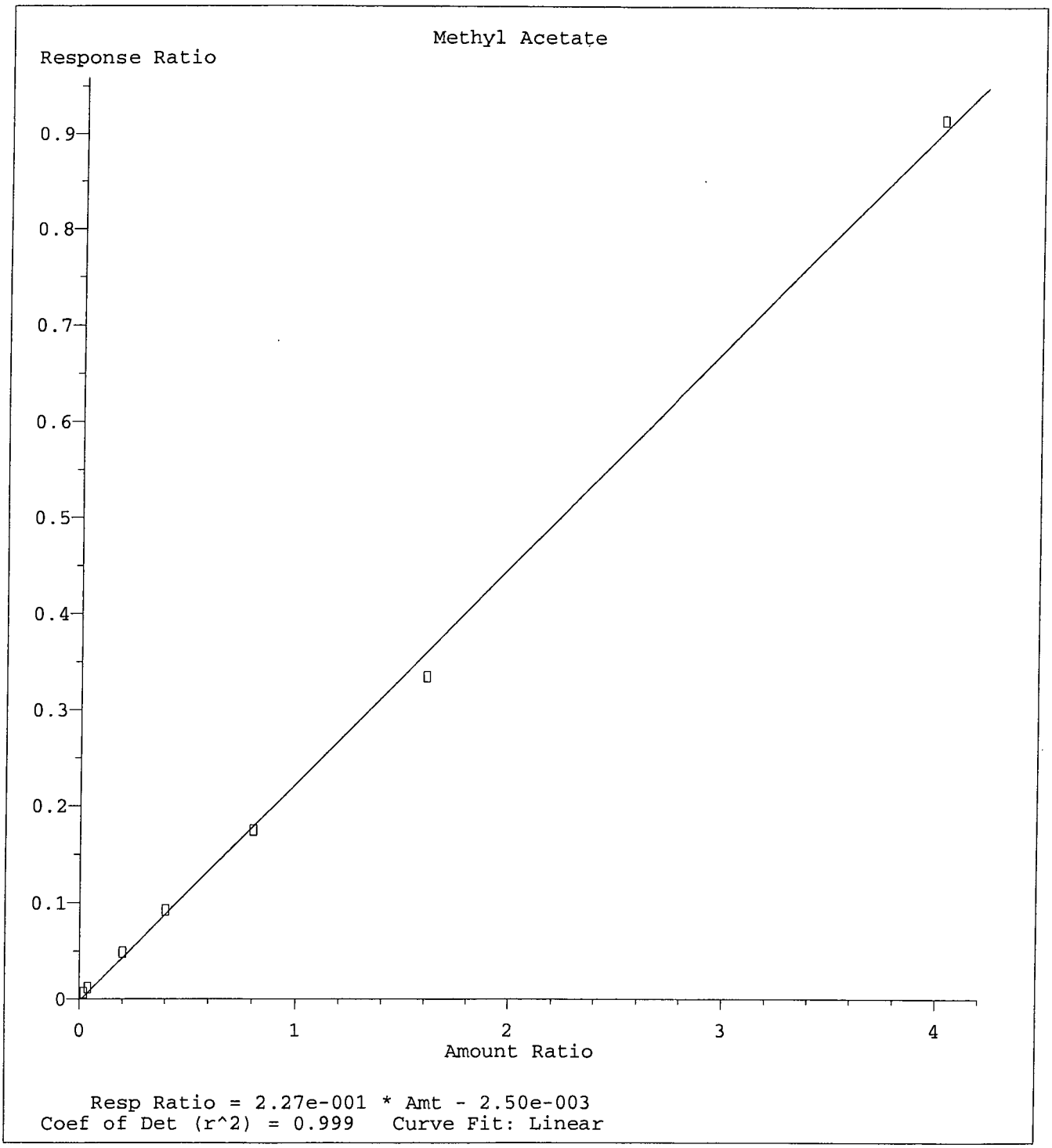
Calibration Table Last Updated: Mon Jan 19 08:51:54 2015



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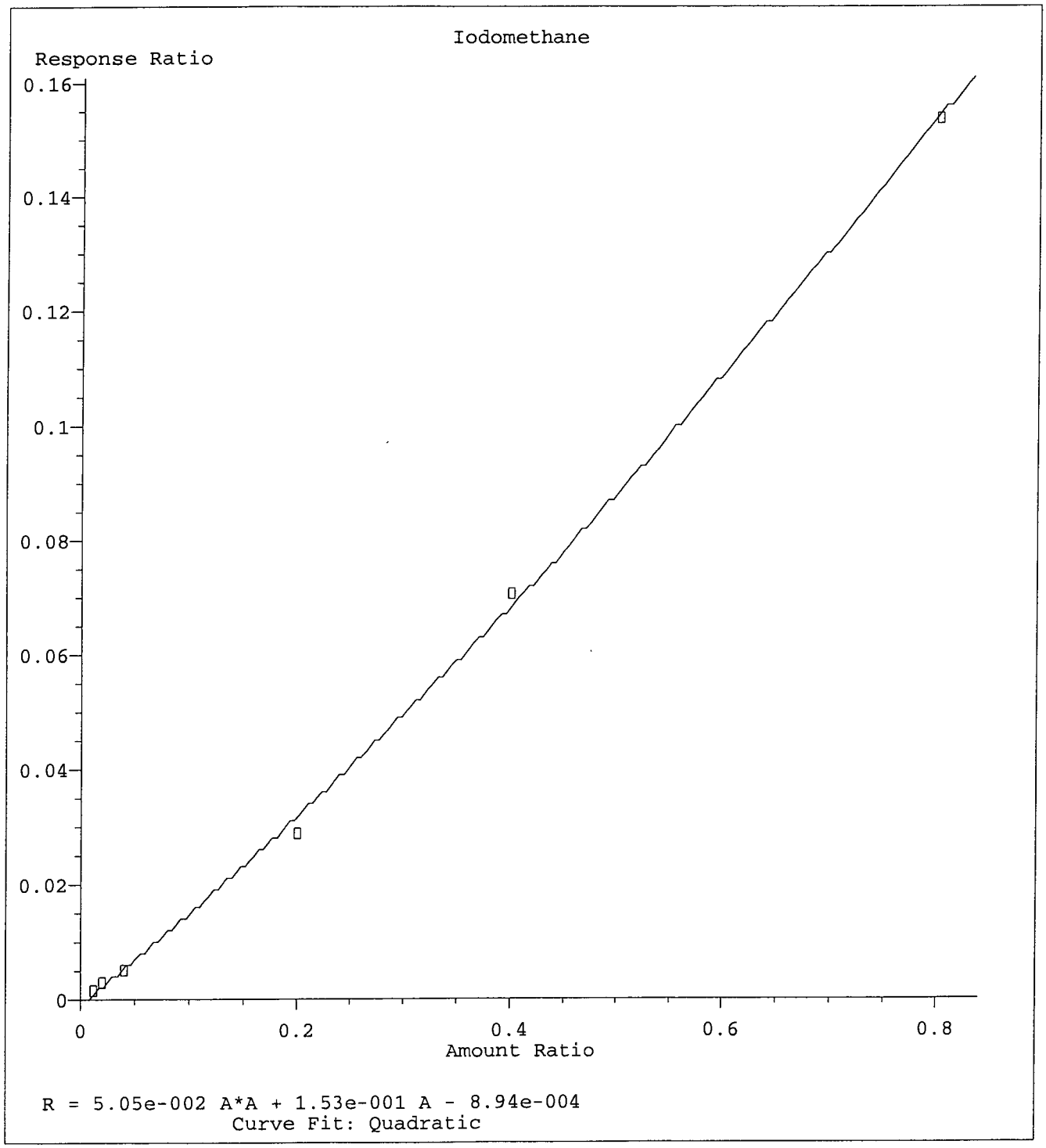
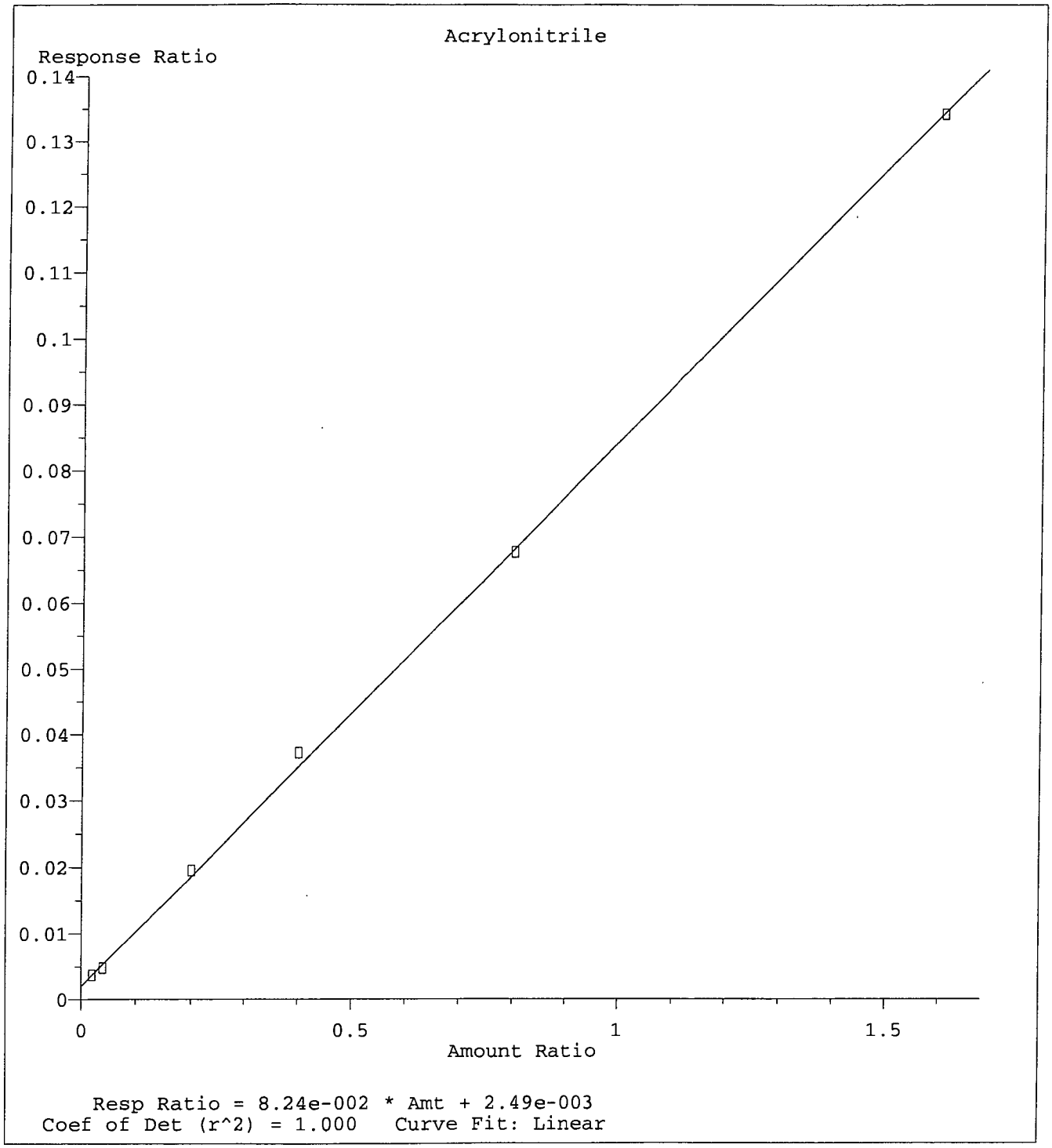
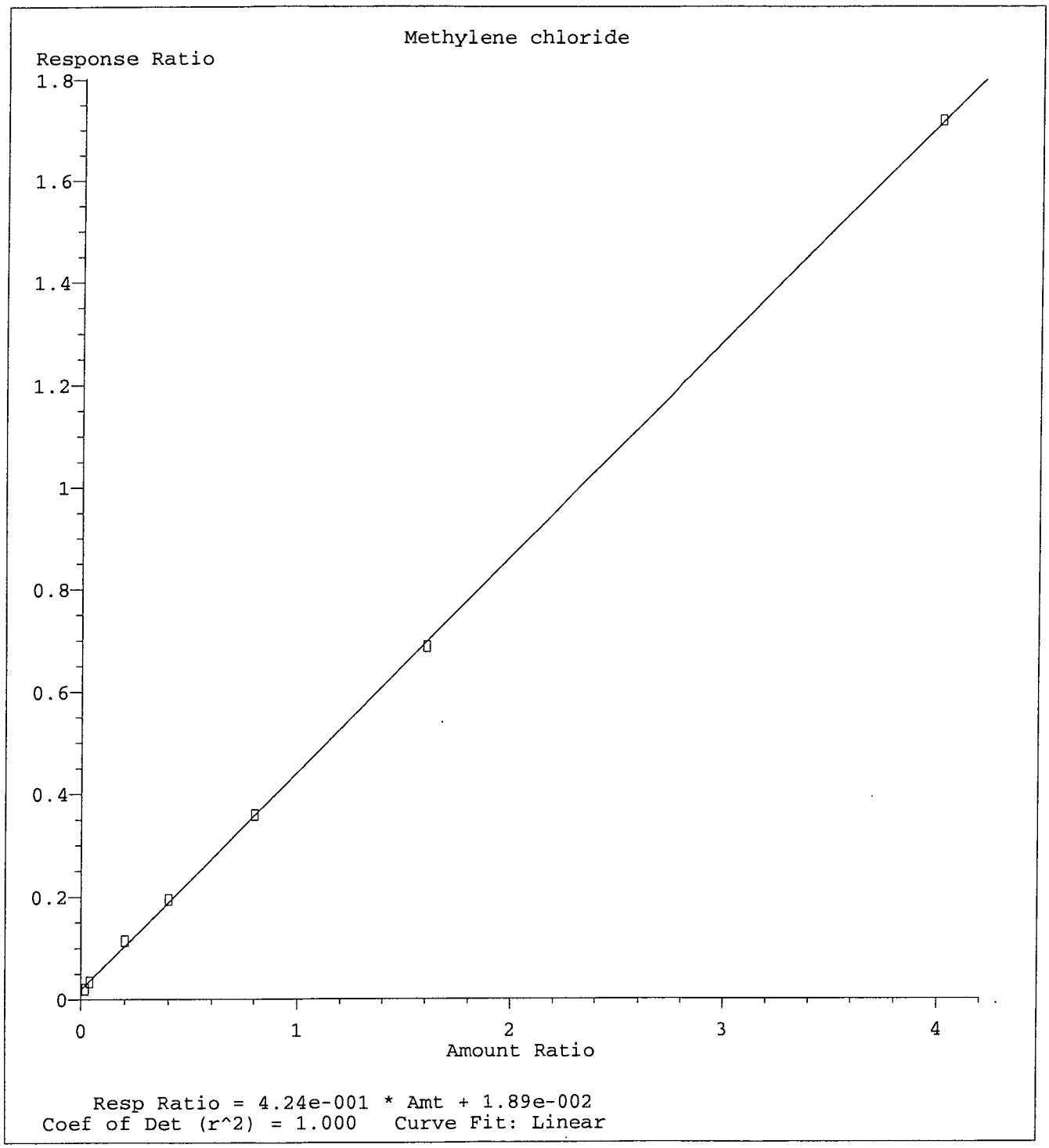
Calibration Table Last Updated: Mon Jan 19 08:51:54 2015



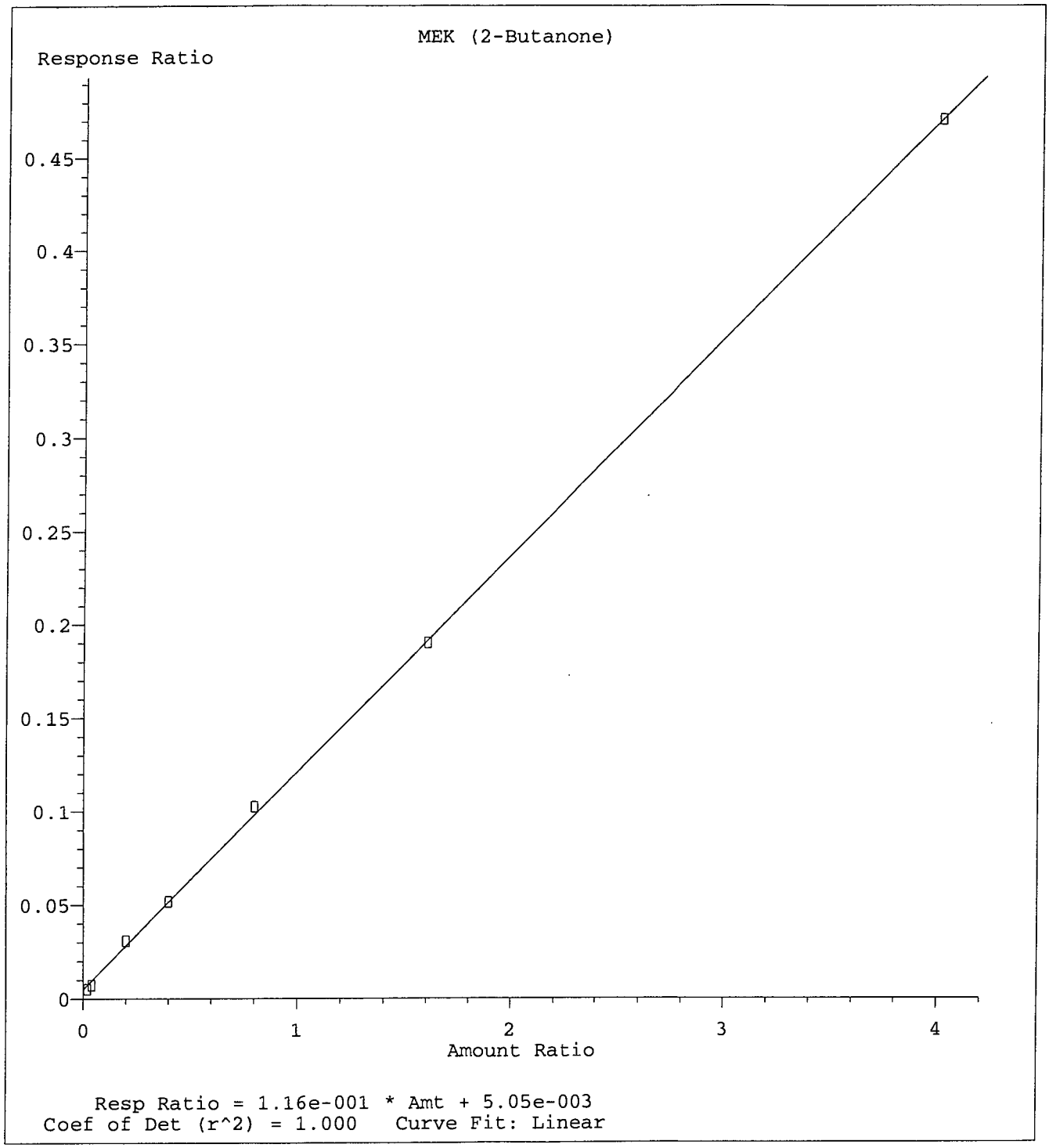
Method Name: M:\LOKI\DATA\150113\LALLW2.M
Calibration Table Last Updated: Mon Jan 19 08:51:54 2015



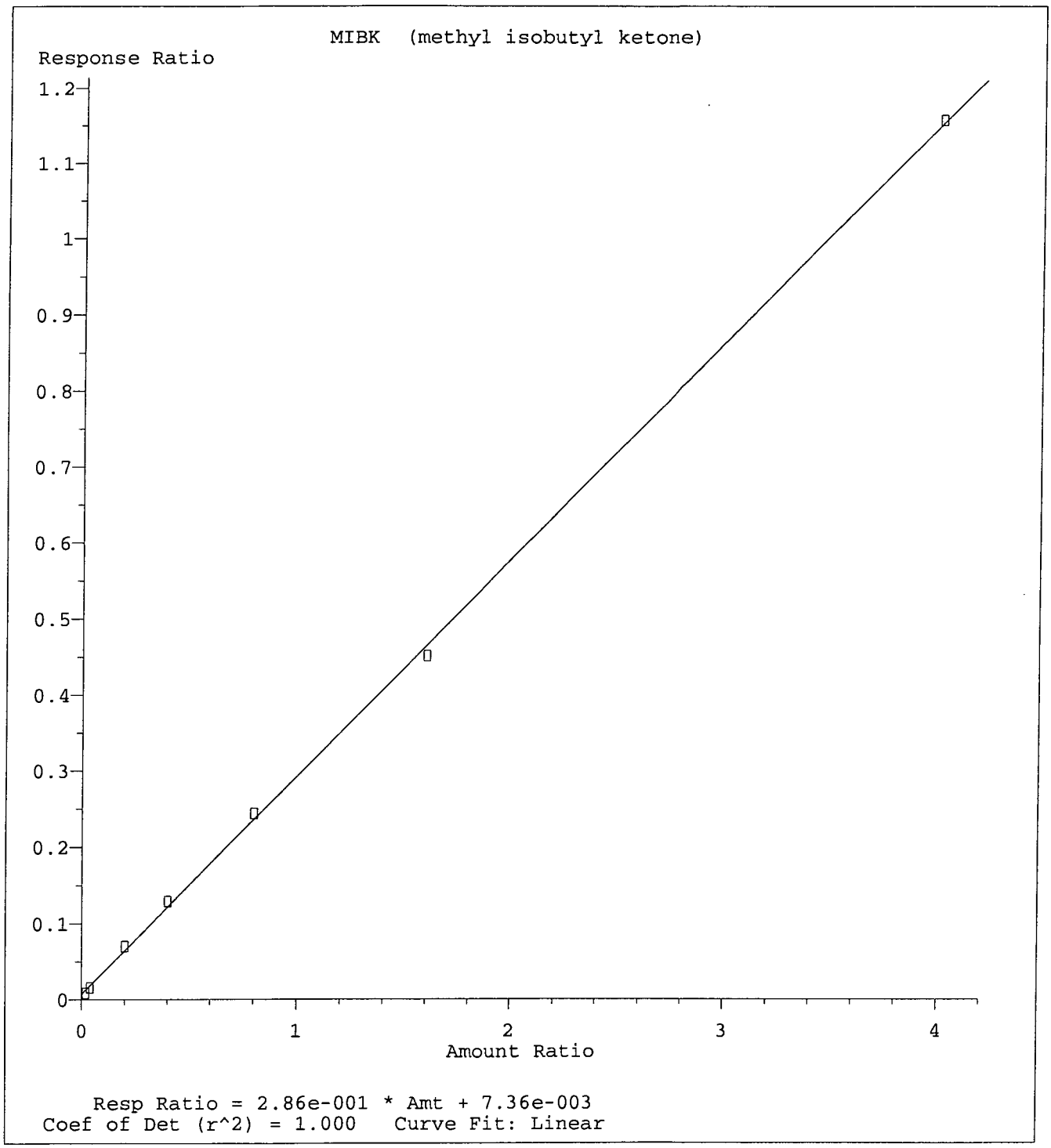
Method Name: M:\LOKI\DATA\150113\LALLW2.M
Calibration Table Last Updated: Mon Jan 19 08:51:54 2015



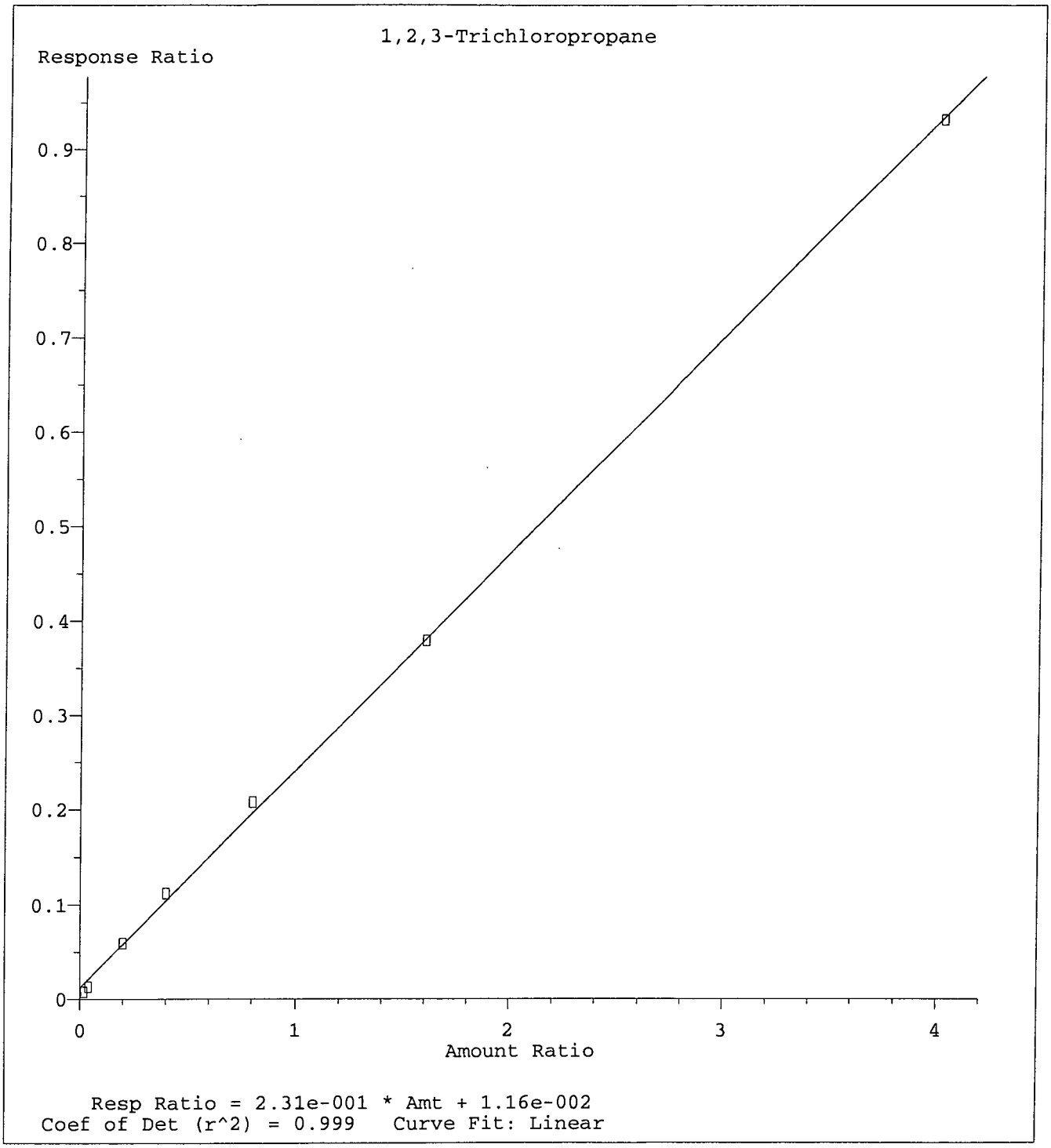
Method Name: M:\LOKI\DATA\150113\LALLW2.M
Calibration Table Last Updated: Mon Jan 19 08:51:54 2015



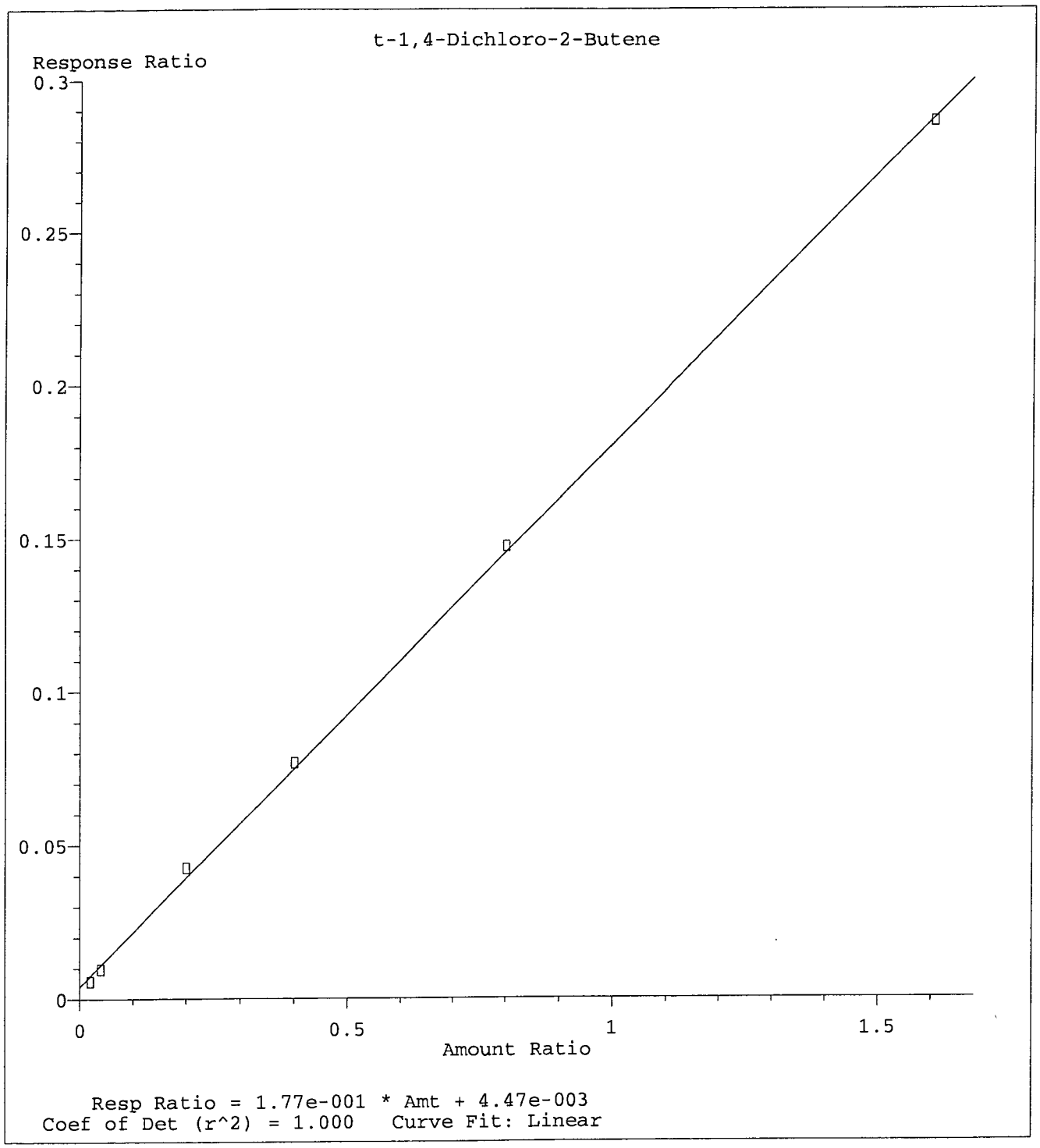
Method Name: M:\LOKI\DATA\150113\LALLW2.M
Calibration Table Last Updated: Mon Jan 19 08:51:54 2015



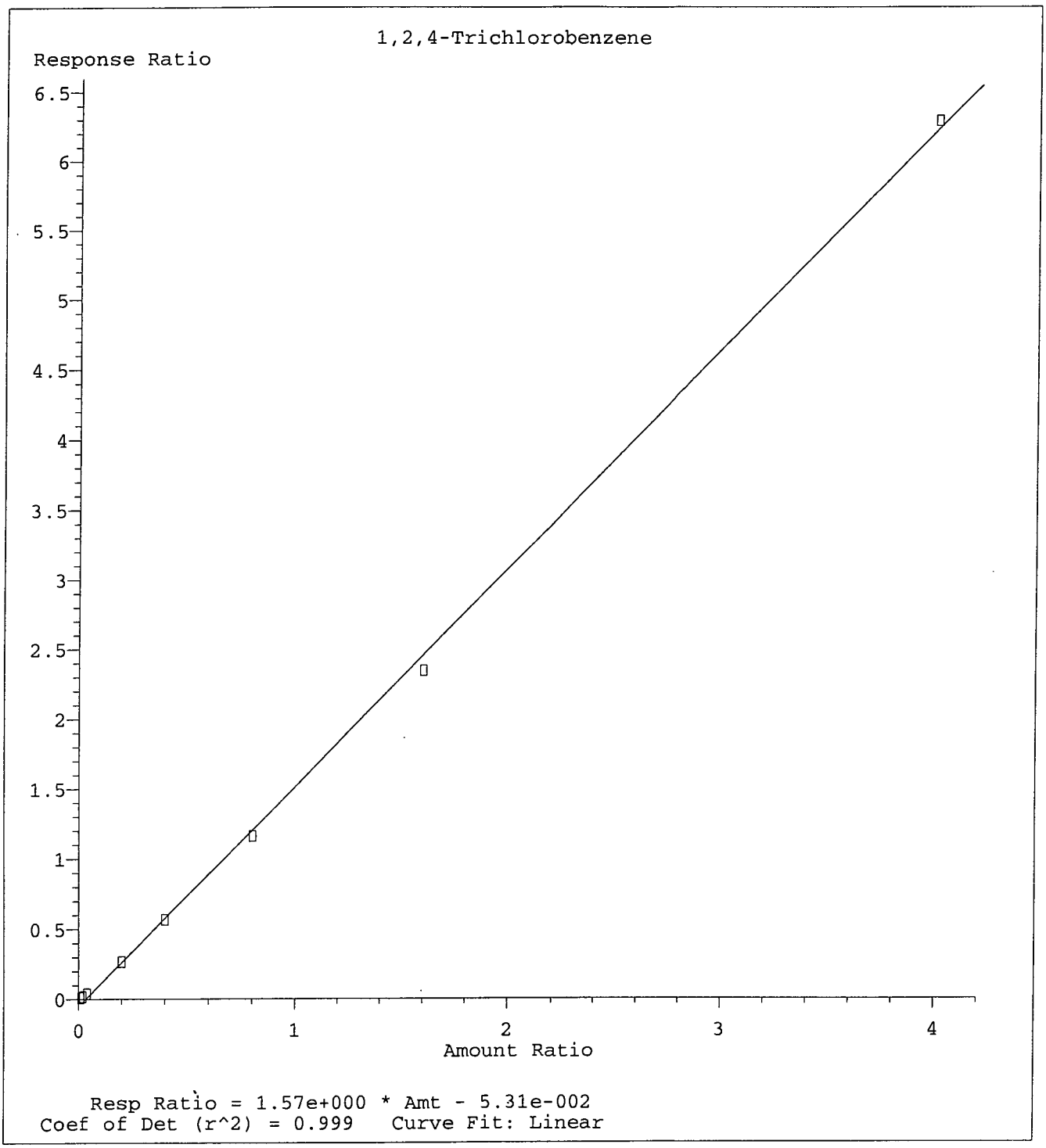
Method Name: M:\LOKI\DATA\150113\LALLW2.M
Calibration Table Last Updated: Mon Jan 19 08:51:54 2015



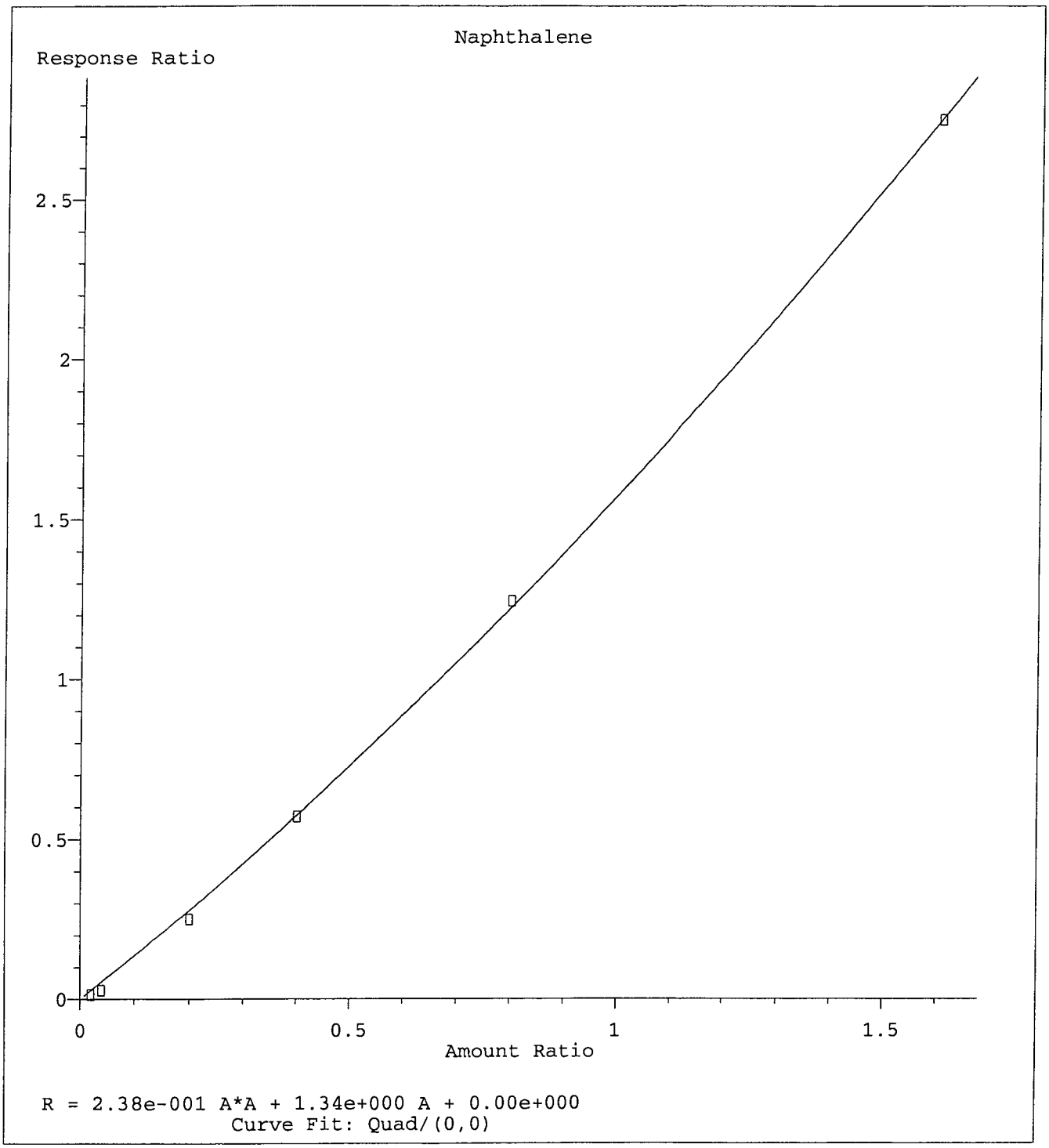
Method Name: M:\LOKI\DATA\150113\LALLW2.M
Calibration Table Last Updated: Mon Jan 19 08:51:54 2015



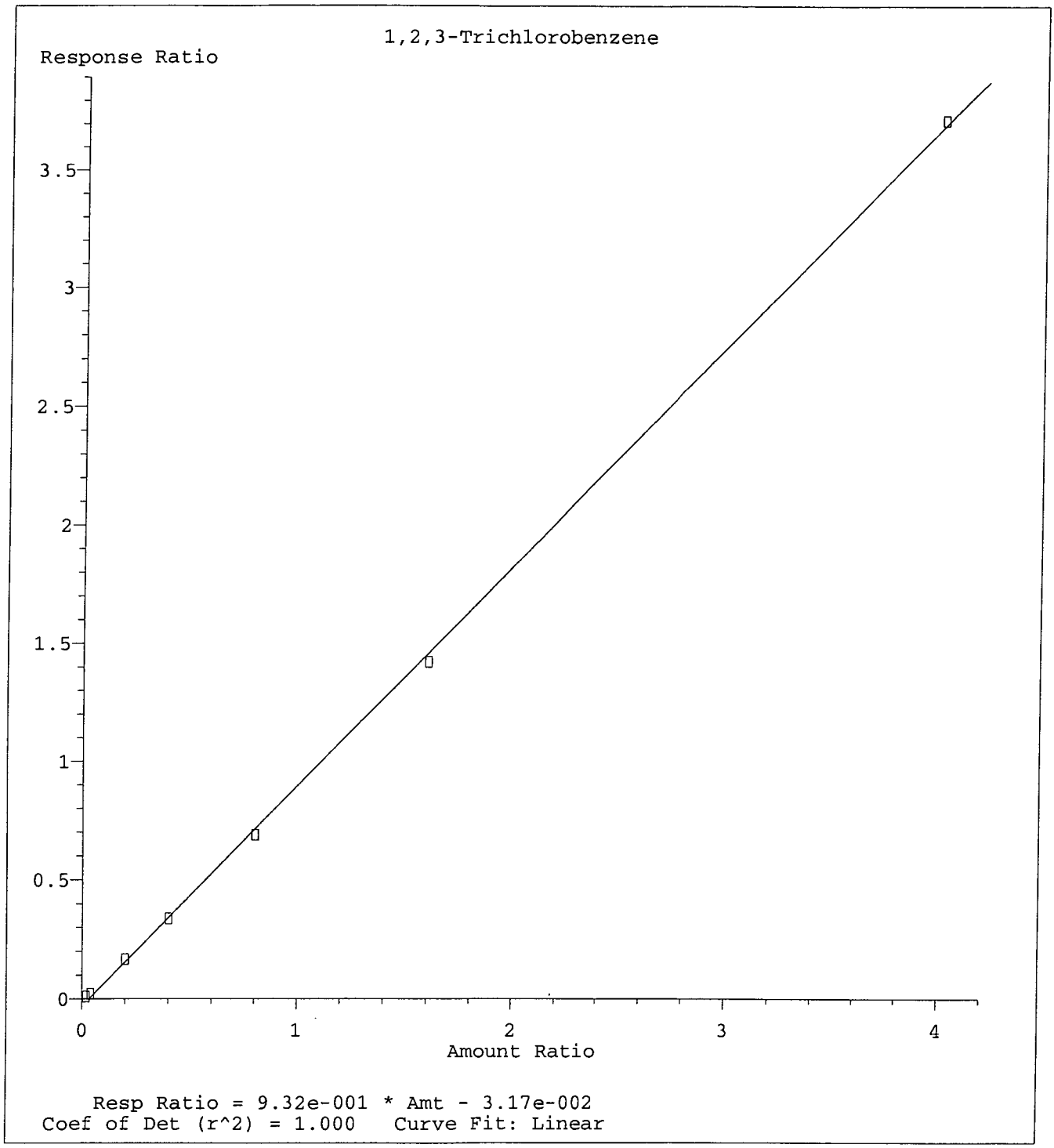
Method Name: M:\LOKI\DATA\150113\LALLW2.M
Calibration Table Last Updated: Mon Jan 19 08:51:54 2015



Method Name: M:\LOKI\DATA\150113\LALLW2.M
Calibration Table Last Updated: Mon Jan 19 08:51:54 2015



Method Name: M:\LOKI\DATA\150113\LALLW2.M
Calibration Table Last Updated: Mon Jan 19 08:51:54 2015



Method Name: M:\LOKI\DATA\150113\LALLW2.M
Calibration Table Last Updated: Mon Jan 19 08:51:54 2015

VOLATILE ORGANIC ANALYSIS BY
EPA METHOD 8260B

Form 7

Second Source Calibration

Lab Name: APPL, Inc.
Case No:
Matrix:

SDG No:
Date Analyzed: 01/13/15
Instrument: Loki
Initial Cal. Date: 01/13/15
Data File: 0113L20.D

		Compound	MEAN	CCRF	%D		%Drift
1	I	Fluorobenzene (IS)	ISTD			I	
2	TM	Dichlorodifluoromethane	0.3318	0.3818	15	TM	
3	TM	Freon 114	0.2524	0.2950	17	TM	
4	TM**L	Chloromethane	0.5424	0.4404	19	TM**L	2.6
5	TM*	Vinyl chloride	0.4830	0.4947	2.4	TM*	
6	TML	Bromomethane	0.3712	0.3718	0.17	TML	8.8
7	TM	Chloroethane	0.2798	0.2619	6.4	TM	
8	TML	Dichlorofluoromethane	0.9706	0.8305	14	TML	3.5
9	TM	Trichlorofluoromethane	0.6899	0.7214	4.6	TM	
10	TM	Acrolein	0.0159	0.0140	12	TM	
11	TML	Acetone	0.2174	0.0936	57	TML	6.4
12	TM	Freon-113	0.3474	0.3641	4.8	TM	
13	TM*	1,1-DCE	0.5586	0.5414	3.1	TM*	
14	TM	t-Butanol	0.0138	0.0116	16	TM	
15	TM	Acetonitrile	0.0345	0.0309	11	TM	
16	TML	Methyl Acetate	0.2498	0.2008	20	TML	8.6
17	TMQ	Iodomethane	0.1530	0.1563	2.2	TMQ	7.7
18	TML	Acrylonitrile	0.1103	0.0861	22	TML	3.0
19	TML	Methylene chloride	0.6037	0.4509	25	TML	4.8
20	TM	Carbon disulfide	1.100	1.067	3.0	TM	
21	TM	Methyl t-butyl ether (MtBE)	1.186	1.051	11	TM	
22	TM	Trans-1,2-DCE	0.4463	0.4173	6.5	TM	
23	TM	Diisopropyl Ether	1.299	1.196	8.0	TM	
24	TM**	1,1-DCA	0.7394	0.6997	5.4	TM**	
25	TM	Hexane	0.3852	0.3645	5.4	TM	
26	TM	Vinyl Acetate	0.2828	0.2479	12	TM	
27	TM	Ethyl tert Butyl Ether	1.321	1.188	10	TM	
28	TML	MEK (2-Butanone)	0.1541	0.1162	25	TML	11
29	TM	Cis-1,2-DCE	0.5214	0.4881	6.4	TM	
30	TM	2,2-Dichloropropane	0.2208	0.1983	10	TM	
31	TM*	Chloroform	0.7790	0.7372	5.4	TM*	
32	TM	Bromochloromethane	0.2754	0.2353	15	TM	
33	S	Dibromofluoromethane(S)	0.5325	0.4906	7.9	S	
34	TM	1,1,1-TCA	0.7047	0.6796	3.6	TM	
35	TM	Cyclohexane	0.3256	0.3173	2.5	TM	
36	TM	1,1-Dichloropropene	0.5866	0.5784	1.4	TM	
37	TM	2,2,4-Trimethylpentane	1.033	1.071	3.7	TM	
38	S	1,2-DCA-D4(S)	0.5446	0.5004	8.1	S	
39	TM	Carbon Tetrachloride	0.6160	0.6035	2.0	TM	
40	TM	Tert Amyl Methyl Ether	1.239	1.126	9.2	TM	
		Average			10.6		

VOLATILE ORGANIC ANALYSIS BY
EPA METHOD 8260B

Form 7

Second Source Calibration

Lab Name: APPL, Inc.
Case No:
Matrix: 0

SDG No:
Date Analyzed: 01/13/15
Instrument: Loki
Cal. Date: 01/13/15
Data File: 0113L20.D

		Compound	MEAN	CCRF	%D		%Drift
41	TM	1,2-DCA	0.5827	0.5313	8.8	TM	
42	TM	Benzene	1.788	1.653	7.6	TM	
43	TM	TCE	0.5113	0.4655	9.0	TM	
44	TM	2-Pentanone	0.2329	0.2024	13	TM	
45	TM*	1,2-Dichloropropane	0.4759	0.4236	11	TM*	
46	TM	Bromodichloromethane	0.6294	0.5662	10	TM	
47	TM	Methyl Cyclohexane	0.6520	0.6919	6.1	TM	
48	TM	Dibromomethane	0.2856	0.2463	14	TM	
49	TM	2-Chloroethyl vinyl ether	0.0140	0.0123	12	TM	
50	TML	MIBK (methyl isobutyl ketone)	0.3375	0.2723	19	TML	11
51	TM	1-Bromo-2-chloroethane	0.3333	0.2976	11	TM	
52	TM	Cis-1,3-Dichloropropene	0.7730	0.6898	11	TM	
53	TM*	Toluene	2.054	1.926	6.2	TM*	
54	TM	Trans-1,3-Dichloropropene	0.6671	0.5789	13	TM	
55	TM	1,1,2-TCA	0.3406	0.2893	15	TM	
56	TM	2-Hexanone	0.2207	0.1796	19	TM	
57	I	Chlorobenzene-D5 (IS)	ISTD			I	
58	S	Toluene-D8(S)	1.990	1.921	3.5	S	
59	TM	1,2-EDB	0.4221	0.3838	9.1	TM	
60	TM	Tetrachloroethene	0.6061	0.5744	5.2	TM	
61	TM	1-Chlorohexane	0.6580	0.6384	3.0	TM	
62	TM	1,1,1,2-Tetrachloroethane	0.5599	0.5194	7.2	TM	
63	TM	m&p-Xylene	0.9401	0.8986	4.4	TM	
64	TM	o-Xylene	0.9595	0.8871	7.5	TM	
65	TM	Styrene	1.562	1.461	6.5	TM	
66	S	4-Bromofluorobenzene(S)	0.7595	0.7371	2.9	S	
67	TM	1,3-Dichloropropane	0.6808	0.6231	8.5	TM	
68	TM	Dibromochloromethane	0.5418	0.4750	12	TM	
69	TM**	Chlorobenzene	1.510	1.396	7.6	TM**	
70	TM*	Ethylbenzene	2.377	2.278	4.2	TM*	
71	TM**	Bromoform	0.3640	0.3224	11	TM**	
72	I	1,4-Dichlorobenzene-D (IS)	ISTD			I	
73	TM	Isopropylbenzene	4.163	4.003	3.9	TM	
74	TM**	1,1,2,2-Tetrachloroethane	0.8115	0.7474	7.9	TM**	
75	TML	1,2,3-Trichloropropane	0.2847	0.2382	16	TML	9.3
76	TML	t-1,4-Dichloro-2-Butene	0.2155	0.1818	16	TML	3.5
77	TM	Bromobenzene	1.182	1.093	7.5	TM	
78	TM	n-Propylbenzene	4.594	4.514	1.7	TM	
79	TM	4-Ethyltoluene	4.027	3.904	3.1	TM	
80	TM	2-Chlorotoluene	2.896	2.717	6.2	TM	
		Average			9.0		

VOLATILE ORGANIC ANALYSIS BY
EPA METHOD 8260B

Form 7

Second Source Calibration

Lab Name: APPL, Inc.
Case No:
Matrix: 0

SDG No:
Date Analyzed: 01/13/15
Instrument: Loki
Cal. Date: 01/13/15
Data File: 0113L20.D

		Compound	MEAN	CCRF	%D		%Drift	
81	TM	1,3,5-Trimethylbenzene	3.612	3.444	4.7	TM		
82	TM	4-Chlorotoluene	3.377	3.146	6.8	TM		
83	TM	Tert-Butylbenzene	3.159	3.048	3.5	TM		
84	TM	1,2,4-Trimethylbenzene	3.718	3.486	6.3	TM		
85	TM	Sec-Butylbenzene	4.372	4.267	2.4	TM		
86	TM	p-Isopropyltoluene	3.778	3.575	5.4	TM		
87	TM	Benzyl Chloride	1.211	0.9155	24	TM		nt
88	TM	1,3-DCB	2.183	1.997	8.5	TM		
89	TM	1,4-DCB	2.227	2.066	7.2	TM		
90	TM	n-Butylbenzene	3.219	3.156	1.9	TM		
91	TM	1,2-DCB	2.048	1.889	7.8	TM		
92	TM	Hexachloroethane	0.7511	0.6899	8.1	TM		
93	TM	1,2-Dibromo-3-chloropropane	0.2012	0.1679	17	TM		
94	TML	1,2,4-Trichlorobenzene	1.243	1.295	4.2	TML	9.1	
95	TM	Hexachlorobutadiene	0.7871	0.7588	3.6	TM		
96	TMQ	Naphthalene	1.221	1.198	1.9	TMQ	15	
97	TML	1,2,3-Trichlorobenzene	0.7627	0.7577	0.65	TML	10	
98								
99								
100								
101								
102								
103								
104								
105								
106								
107								
108								
109								
110								
111								
112								
113								
114								
115								
116								
117								
118								
119								
120								
		Average			6.7			

Quantitation Report (Not Reviewed)

Data File : M:\LOKI\DATA\150113\0113L20.D
Acq On : 13 Jan 15 21:22
Sample : 10ug/L Std 1-13-15(SS)
Misc : 10mL w/5uL IS&S:10-06-14

Vial: 19
Operator: DG,SV,RS
Inst : Loki
Multiplr: 1.00

Quant Time: Jan 19 8:36 2015 Quant Results File: LALLW2.RES

Quant Method : M:\LOKI\DATA\150113\LALLW2.M (RTE Integrator)
Title : METHOD 8260B
Last Update : Mon Jan 19 08:34:51 2015
Response via : Initial Calibration
DataAcq Meth : 8260_BETA

$\frac{269317 \times 25}{1360976 \times 0.4830} = 10.24$

SW 1/28/15

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene (IS)	5.85	96	1360976	25.00000 ppb	0.00
57) Chlorobenzene-D5 (IS)	9.09	117	1297810	25.00000 ppb	0.00
72) 1,4-Dichlorobenzene-D (IS)	11.42	152	738624	25.00000 ppb	0.00
System Monitoring Compounds					
33) Dibromofluoromethane(S)	5.01	111	667695	23.03456 ppb	0.00
Spiked Amount 23.395			Recovery = 98.460%		
38) 1,2-DCA-D4(S)	5.42	65	681059	22.97238 ppb	0.00
Spiked Amount 23.427			Recovery = 98.060%		
58) Toluene-D8(S)	7.62	98	2493230	24.13243 ppb	0.00
Spiked Amount 24.736			Recovery = 97.559%		
66) 4-Bromofluorobenzene(S)	10.27	95	956670	24.26479 ppb	0.00
Spiked Amount 24.661			Recovery = 98.396%		

Target Compounds						Qvalue
2) Dichlorodifluoromethane	0.98	85	207871	11.50795 ppb		97
3) Freon 114	1.07	85	160615	11.69023 ppb		97
4) Chloromethane	1.10	50	239770	9.74279 ppb		98
5) Vinyl chloride	1.18	62	269317	10.24308 ppb		99
6) Bromomethane	1.40	94	202423	10.87669 ppb		99
7) Chloroethane	1.49	64	142602	9.36057 ppb		98
8) Dichlorofluoromethane	1.64	67	452106	9.65270 ppb		100
9) Trichlorofluoromethane	1.69	101	392733	10.45717 ppb		98
10) Acrolein	2.03	56	95074	109.99878 ppb	#	99
11) Acetone	2.18	43	50938	9.36108 ppb		98
12) Freon-113	2.13	101	198204	10.48016 ppb		96
13) 1,1-DCE	2.11	61	294726	9.69213 ppb		99
14) t-Butanol	2.78	59	78872	104.79239 ppb		99
15) Acetonitrile	2.44	41	210154	111.85956 ppb		98
16) Methyl Acetate	2.52	43	109295	9.13503 ppb		99
17) Iodomethane	2.24	142	85096	9.22585 ppb		99
18) Acrylonitrile	2.88	52	46898	9.70193 ppb		93
19) Methylene chloride	2.59	84	245451	9.51902 ppb		99
20) Carbon disulfide	2.29	76	580989	9.69860 ppb		99
21) Methyl t-butyl ether (MtBE	2.92	73	571920	8.85478 ppb		98
22) Trans-1,2-DCE	2.90	96	227178	9.34978 ppb		99
23) Diisopropyl Ether	3.60	45	650926	9.20176 ppb		98
24) 1,1-DCA	3.42	63	380928	9.46336 ppb		99
25) Hexane	3.26	57	198434	9.46221 ppb		98
26) Vinyl Acetate	3.59	43	134977	8.76609 ppb	#	94
27) Ethyl tert Butyl Ether	4.17	59	646512	8.98896 ppb		98
28) MEK (2-Butanone)	4.38	43	63242	8.88966 ppb		91
29) Cis-1,2-DCE	4.31	96	265705	9.36076 ppb		95
30) 2,2-Dichloropropane	4.28	77	107957	8.98285 ppb		96
31) Chloroform	4.79	83	401329	9.46341 ppb		96
32) Bromochloromethane	4.64	128	128086	8.54357 ppb		98
34) 1,1,1-TCA	4.99	97	369978	9.64419 ppb		99
35) Cyclohexane	5.06	41	172718	9.74559 ppb		93
36) 1,1-Dichloropropene	5.23	75	314849	9.85901 ppb		100
37) 2,2,4-Trimethylpentane	5.63	57	582864	10.36506 ppb	#	88
39) Carbon Tetrachloride	5.21	117	328558	9.79813 ppb		99
40) Tert Amyl Methyl Ether	5.69	73	612791	9.08254 ppb		98
41) 1,2-DCA	5.52	62	289241	9.11762 ppb		100
42) Benzene	5.48	78	899801	9.24344 ppb		100

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : M:\LOKI\DATA\150113\0113L20.D
Acq On : 13 Jan 15 21:22
Sample : 10ug/L Std 1-13-15(SS)
Misc : 10mL w/5uL IS&S:10-06-14

Vial: 19
Operator: DG,SV,RS
Inst : Loki
Multiplr: 1.00

Quant Time: Jan 19 8:36 2015 Quant Results File: LALLW2.RES

Quant Method : M:\LOKI\DATA\150113\LALLW2.M (RTE Integrator)
Title : METHOD 8260B
Last Update : Mon Jan 19 08:34:51 2015
Response via : Initial Calibration
DataAcq Meth : 8260_BETA

Compound	R.T.	QIon	Response	Conc Unit		Qvalue
43) TCE	6.28	95	253403	9.10322 ppb		97
44) 2-Pentanone	6.54	43	1377237	108.62535 ppb		99
45) 1,2-Dichloropropane	6.53	63	230613	8.90143 ppb		98
46) Bromodichloromethane	6.86	83	308227	8.99515 ppb		100
47) Methyl Cyclohexane	6.48	83	376651	10.61190 ppb		97
48) Dibromomethane	6.65	93	134084	8.62361 ppb		94
49) 2-Chloroethyl vinyl ether	7.24	106	6712	8.78247 ppb	#	72
50) MIBK (methyl isobutyl ket	7.55	43	148226	8.86503 ppb		97
51) 1-Bromo-2-chloroethane	7.17	63	161984	8.92722 ppb		97
52) Cis-1,3-Dichloropropene	7.35	75	375538	8.92371 ppb		98
53) Toluene	7.69	91	1048610	9.37921 ppb		98
54) Trans-1,3-Dichloropropene	7.95	75	315171	8.67811 ppb		100
55) 1,1,2-TCA	8.13	83	157511	8.49542 ppb		98
56) 2-Hexanone	8.42	43	97792	8.13988 ppb		98
59) 1,2-EDB	8.60	107	199263	9.09442 ppb		99
60) Tetrachloroethene	8.25	166	298209	9.47733 ppb		98
61) 1-Chlorohexane	9.14	91	331430	9.70277 ppb		97
62) 1,1,1,2-Tetrachloroethane	9.21	131	269653	9.27757 ppb		98
63) m&p-Xylene	9.37	106	932951	19.11637 ppb		97
64) o-Xylene	9.76	106	460537	9.24624 ppb		99
65) Styrene	9.78	104	758428	9.35323 ppb		100
67) 1,3-Dichloropropane	8.29	76	323443	9.15199 ppb		97
68) Dibromochloromethane	8.51	129	246586	8.76690 ppb		95
69) Chlorobenzene	9.12	112	724810	9.24456 ppb		99
70) Ethylbenzene	9.25	91	1182490	9.58258 ppb		99
71) Bromoform	9.94	173	167386	8.85847 ppb		100
73) Isopropylbenzene	10.14	105	1182597	9.61415 ppb		99
74) 1,1,2,2-Tetrachloroethane	10.44	83	220811	9.20923 ppb		98
75) 1,2,3-Trichloropropane	10.46	110	70377	9.07133 ppb		98
76) t-1,4-Dichloro-2-Butene	10.50	53	53703	9.64743 ppb		94
77) Bromobenzene	10.41	156	323035	9.24959 ppb		98
78) n-Propylbenzene	10.54	91	1333574	9.82514 ppb		98
79) 4-Ethyltoluene	10.66	105	1153289	9.69248 ppb		99
80) 2-Chlorotoluene	10.61	91	802697	9.38133 ppb		99
81) 1,3,5-Trimethylbenzene	10.73	105	1017456	9.53448 ppb		99
82) 4-Chlorotoluene	10.72	91	929418	9.31617 ppb		100
83) Tert-Butylbenzene	11.05	119	900527	9.64805 ppb		98
84) 1,2,4-Trimethylbenzene	11.09	105	1029929	9.37470 ppb		100
85) Sec-Butylbenzene	11.26	105	1260775	9.76001 ppb		99
86) p-Isopropyltoluene	11.42	119	1056292	9.46210 ppb		100
87) Benzyl Chloride	11.58	91	270471	7.55643 ppb		99
88) 1,3-DCB	11.35	146	590152	9.15097 ppb		99
89) 1,4-DCB	11.44	146	610371	9.27599 ppb		97
90) n-Butylbenzene	11.82	91	932583	9.80627 ppb		99
91) 1,2-DCB	11.80	146	558051	9.22416 ppb		97
92) Hexachloroethane	12.05	117	203833	9.18540 ppb		98
93) 1,2-Dibromo-3-chloropropan	12.56	157	49597	8.34204 ppb		95
94) 1,2,4-Trichlorobenzene	13.39	180	382515	9.08681 ppb		100
95) Hexachlorobutadiene	13.58	225	224179	9.63951 ppb		99
96) Naphthalene	13.62	128	353915	8.50915 ppb		99
97) 1,2,3-Trichlorobenzene	13.87	180	223872	8.98350 ppb		99

(#) = qualifier out of range (m) = manual integration

Quantitation Report

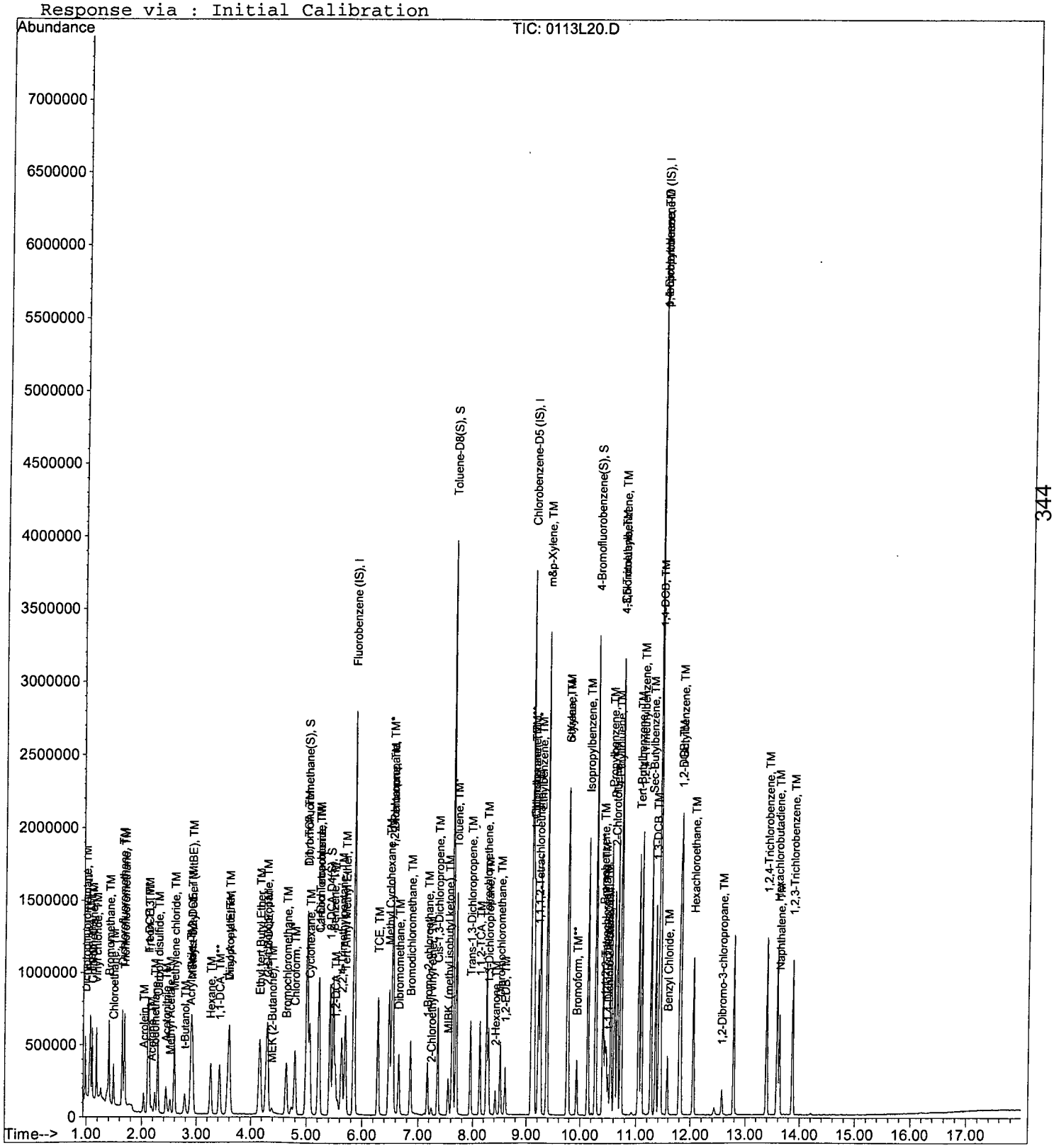
Data File : M:\LOKI\DATA\150113\0113L20.D
Acq On : 13 Jan 15 21:22
Sample : 10ug/L Std 1-13-15(SS)
Misc : 10mL w/5uL IS&S:10-06-14

Vial: 19
Operator: DG,SV,RS
Inst : Loki
Multiplr: 1.00

Quant Time: Jan 19 8:36 2015

Quant Results File: LALLW2.RES

Method : M:\LOKI\DATA\150113\LALLW2.M (RTE Integrator)
Title : METHOD 8260B
Last Update : Mon Jan 19 08:51:54 2015
Response via : Initial Calibration



VOLATILE ORGANIC ANALYSIS BY
EPA METHOD 8260B

Form 7

Continuing Calibration

Lab Name: APPL, Inc.
Case No:
Matrix:

SDG No:
Date Analyzed: 01/16/15
Instrument: Loki
Initial Cal. Date: 01/13/15
Data File: 0116L04.D

		Compound	MEAN	CCRF	%D		%Drift
1	I	Fluorobenzene (IS)	ISTD			I	
2	TM	Dichlorodifluoromethane	0.3318	0.3419	3.1	TM	
3	TM	Freon 114	0.2524	0.3048	21	TM	nt
4	TM**L	Chloromethane	0.5424	0.4044	25	TM**L	11
5	TM*	Vinyl chloride	0.4830	0.4608	4.6	TM*	
6	TML	Bromomethane	0.3712	0.3481	6.2	TML	0.48
7	TM	Chloroethane	0.2798	0.2446	13	TM	
8	TML	Dichlorofluoromethane	0.9706	0.9089	6.4	TML	5.9
9	TM	Trichlorofluoromethane	0.6899	0.6991	1.3	TM	
10	TM	Acrolein	0.0159	0.0142	11	TM	
11	TML	Acetone	0.2174	0.1018	53	TML	3.6
12	TM	Freon-113	0.3474	0.3931	13	TM	
13	TM*	1,1-DCE	0.5586	0.5519	1.2	TM*	
14	TM	t-Butanol	0.0138	0.0121	13	TM	
15	TM	Acetonitrile	0.0345	0.0317	8.2	TM	
16	TML	Methyl Acetate	0.2498	0.2043	18	TML	7.1
17	TMQ	Iodomethane	0.1530	0.1560	1.9	TMQ	7.9
18	TML	Acrylonitrile	0.1103	0.0799	28	TML	11
19	TML	Methylene chloride	0.6037	0.4498	26	TML	5.1
20	TM	Carbon disulfide	1.100	0.9784	11	TM	
21	TM	Methyl t-butyl ether (MtBE)	1.186	1.124	5.2	TM	
22	TM	Trans-1,2-DCE	0.4463	0.4487	0.53	TM	
23	TM	Diisopropyl Ether	1.299	1.283	1.2	TM	
24	TM**	1,1-DCA	0.7394	0.7470	1.0	TM**	
25	TM	Hexane	0.3852	0.3932	2.1	TM	
26	TM	Vinyl Acetate	0.2828	0.2776	1.8	TM	
27	TM	Ethyl tert Butyl Ether	1.321	1.272	3.7	TM	
28	TML	MEK (2-Butanone)	0.1541	0.1195	22	TML	8.2
29	TM	Cis-1,2-DCE	0.5214	0.5320	2.0	TM	
30	TM	2,2-Dichloropropane	0.2208	0.2466	12	TM	
31	TM*	Chloroform	0.7790	0.8089	3.8	TM*	
32	TM	Bromochloromethane	0.2754	0.2490	9.6	TM	
33	S	Dibromofluoromethane(S)	0.5325	0.5087	4.5	S	
34	TM	1,1,1-TCA	0.7047	0.7267	3.1	TM	
35	TM	Cyclohexane	0.3256	0.3132	3.8	TM	
36	TM	1,1-Dichloropropene	0.5866	0.5980	1.9	TM	
37	TM	2,2,4-Trimethylpentane	1.033	1.203	16	TM	
38	S	1,2-DCA-D4(S)	0.5446	0.5092	6.5	S	
39	TM	Carbon Tetrachloride	0.6160	0.6527	6.0	TM	
40	TM	Tert Amyl Methyl Ether	1.239	1.192	3.8	TM	
		Average			9.6		

VOLATILE ORGANIC ANALYSIS BY
EPA METHOD 8260B

Form 7

Continuing Calibration

Lab Name: APPL, Inc.
Case No:
Matrix: 0

SDG No:
Date Analyzed: 01/16/15
Instrument: Loki
Cal. Date: 01/13/15
Data File: 0116L04.D

		Compound	MEAN	CCRF	%D		%Drift
41	TM	1,2-DCA	0.5827	0.5723	1.8	TM	
42	TM	Benzene	1.788	1.744	2.5	TM	
43	TM	TCE	0.5113	0.4831	5.5	TM	
44	TM	2-Pentanone	0.2329	0.2233	4.1	TM	
45	TM*	1,2-Dichloropropane	0.4759	0.4467	6.1	TM*	
46	TM	Bromodichloromethane	0.6294	0.6247	0.75	TM	
47	TM	Methyl Cyclohexane	0.6520	0.6976	7.0	TM	
48	TM	Dibromomethane	0.2856	0.2730	4.4	TM	
49	TM	2-Chloroethyl vinyl ether	0.0140	0.0097	31	TM	nt
50	TML	MIBK (methyl isobutyl ketone)	0.3375	0.2710	20	TML	12
51	TM	1-Bromo-2-chloroethane	0.3333	0.3247	2.6	TM	
52	TM	Cis-1,3-Dichloropropene	0.7730	0.7650	1.0	TM	
53	TM*	Toluene	2.054	2.053	0.04	TM*	
54	TM	Trans-1,3-Dichloropropene	0.6671	0.6495	2.6	TM	
55	TM	1,1,2-TCA	0.3406	0.3232	5.1	TM	
56	TM	2-Hexanone	0.2207	0.1794	19	TM	
57	I	Chlorobenzene-D5 (IS)	ISTD			I	
58	S	Toluene-D8(S)	1.990	1.915	3.8	S	
59	TM	1,2-EDB	0.4221	0.4083	3.3	TM	
60	TM	Tetrachloroethene	0.6061	0.6193	2.2	TM	
61	TM	1-Chlorohexane	0.6580	0.6893	4.8	TM	
62	TM	1,1,1,2-Tetrachloroethane	0.5599	0.5494	1.9	TM	
63	TM	m&p-Xylene	0.9401	0.9531	1.4	TM	
64	TM	o-Xylene	0.9595	0.9565	0.31	TM	
65	TM	Styrene	1.562	1.562	0.02	TM	
66	S	4-Bromofluorobenzene(S)	0.7595	0.7296	3.9	S	
67	TM	1,3-Dichloropropane	0.6808	0.6757	0.75	TM	
68	TM	Dibromochloromethane	0.5418	0.5209	3.9	TM	
69	TM**	Chlorobenzene	1.510	1.504	0.41	TM**	
70	TM*	Ethylbenzene	2.377	2.476	4.2	TM*	
71	TM**	Bromoform	0.3640	0.3494	4.0	TM**	
72	I	1,4-Dichlorobenzene-D (IS)	ISTD			I	
73	TM	Isopropylbenzene	4.163	4.301	3.3	TM	
74	TM**	1,1,2,2-Tetrachloroethane	0.8115	0.8490	4.6	TM**	
75	TML	1,2,3-Trichloropropane	0.2847	0.2696	5.3	TML	4.3
76	TML	t-1,4-Dichloro-2-Butene	0.2155	0.2008	6.8	TML	7.2
77	TM	Bromobenzene	1.182	1.215	2.8	TM	
78	TM	n-Propylbenzene	4.594	4.965	8.1	TM	
79	TM	4-Ethyltoluene	4.027	4.304	6.9	TM	
80	TM	2-Chlorotoluene	2.896	2.989	3.2	TM	
		Average			5.0		

VOLATILE ORGANIC ANALYSIS BY
EPA METHOD 8260B

Form 7

Continuing Calibration

Lab Name: APPL, Inc.
Case No:
Matrix: 0

SDG No:
Date Analyzed: 01/16/15
Instrument: Loki
Cal. Date: 01/13/15
Data File: 0116L04.D

		Compound	MEAN	CCRF	%D		%Drift
81	TM	1,3,5-Trimethylbenzene	3.612	3.719	3.0	TM	
82	TM	4-Chlorotoluene	3.377	3.450	2.2	TM	
83	TM	Tert-Butylbenzene	3.159	3.293	4.2	TM	
84	TM	1,2,4-Trimethylbenzene	3.718	3.723	0.13	TM	
85	TM	Sec-Butylbenzene	4.372	4.643	6.2	TM	
86	TM	p-Isopropyltoluene	3.778	3.921	3.8	TM	
87	TM	Benzyl Chloride	1.211	1.338	10	TM	
88	TM	1,3-DCB	2.183	2.229	2.1	TM	
89	TM	1,4-DCB	2.227	2.241	0.64	TM	
90	TM	n-Butylbenzene	3.219	3.512	9.1	TM	
91	TM	1,2-DCB	2.048	2.107	2.9	TM	
92	TM	Hexachloroethane	0.7511	0.7293	2.9	TM	
93	TM	1,2-Dibromo-3-chloropropane	0.2012	0.1766	12	TM	
94	TML	1,2,4-Trichlorobenzene	1.243	1.454	17	TML	0.99
95	TM	Hexachlorobutadiene	0.7871	0.8536	8.4	TM	
96	TMQ	Naphthalene	1.221	1.356	11	TMQ	4.8
97	TML	1,2,3-Trichlorobenzene	0.7627	0.8709	14	TML	2.0
98							
99							
100							
101							
102							
103							
104							
105							
106							
107							
108							
109							
110							
111							
112							
113							
114							
115							
116							
117							
118							
119							
120							
		Average			6.4		

Quantitation Report (Not Reviewed)

Data File : M:\LOKI\DATA\150113\0116L04.D
Acq On : 16 Jan 15 9:59
Sample : 10ug/L Vol Std 01-15-15
Misc : 10mL w/5uL IS&S:01/14/15,10-06-14

Vial: 3
Operator: DG,SV,RS
Inst : Loki
Multiplr: 1.00

Quant Time: Jan 19 8:54 2015 Quant Results File: LALLW2.RES

Quant Method : M:\LOKI\DATA\150113\LALLW2.M (RTE Integrator)
Title : METHOD 8260B
Last Update : Mon Jan 19 08:51:54 2015
Response via : Initial Calibration
DataAcq Meth : 8260_BETA

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene (IS)	5.85	96	1217536	25.00000 ppb	0.00
57) Chlorobenzene-D5 (IS)	9.09	117	1163264	25.00000 ppb	0.00
72) 1,4-Dichlorobenzene-D (IS)	11.41	152	657536	25.00000 ppb	0.00
System Monitoring Compounds					
33) Dibromofluoromethane(S)	5.01	111	619342	23.88367 ppb	0.00
Spiked Amount 23.395			Recovery	= 102.089%	
38) 1,2-DCA-D4(S)	5.42	65	619972	23.37555 ppb	0.00
Spiked Amount 23.427			Recovery	= 99.784%	
58) Toluene-D8(S)	7.62	98	2228217	24.06185 ppb	0.00
Spiked Amount 24.736			Recovery	= 97.276%	
66) 4-Bromofluorobenzene(S)	10.27	95	848662	24.01497 ppb	0.00
Spiked Amount 24.661			Recovery	= 97.382%	

Target Compounds						Qvalue
2) Dichlorodifluoromethane	0.98	85	166529	10.30535 ppb		96
3) Freon 114	1.07	85	148419	12.07522 ppb		98
4) Chloromethane	1.10	50	196933	8.91887 ppb		99
5) Vinyl chloride	1.18	62	224393	9.53992 ppb		96
6) Bromomethane	1.41	94	169544	9.95249 ppb		99
7) Chloroethane	1.49	64	119140	8.74184 ppb		97
8) Dichlorofluoromethane	1.64	67	442650	10.59279 ppb		100
9) Trichlorofluoromethane	1.69	101	340493	10.13430 ppb		98
10) Acrolein	2.03	56	86359	111.68693 ppb	#	97
11) Acetone	2.18	43	49600	10.35722 ppb		93
12) Freon-113	2.13	101	191456	11.31601 ppb		98
13) 1,1-DCE	2.11	61	268795	9.88077 ppb		98
14) t-Butanol	2.78	59	73496	109.15390 ppb		98
15) Acetonitrile	2.44	41	192863	114.75009 ppb		98
16) Methyl Acetate	2.51	43	99513	9.29243 ppb		98
17) Iodomethane	2.24	142	75968	9.20868 ppb		100
18) Acrylonitrile	2.87	52	38911	8.94304 ppb		97
19) Methylene chloride	2.59	84	219038	9.49269 ppb		100
20) Carbon disulfide	2.29	76	476474	8.89097 ppb		99
21) Methyl t-butyl ether (MtBE	2.92	73	547546	9.47615 ppb		98
22) Trans-1,2-DCE	2.89	96	218527	10.05330 ppb		99
23) Diisopropyl Ether	3.60	45	624966	9.87562 ppb		98
24) 1,1-DCA	3.42	63	363799	10.10259 ppb		98
25) Hexane	3.26	57	191511	10.20795 ppb		100
26) Vinyl Acetate	3.57	43	135201	9.81510 ppb	#	76
27) Ethyl tert Butyl Ether	4.16	59	619608	9.62982 ppb		99
28) MEK (2-Butanone)	4.38	43	58218	9.17902 ppb		100
29) Cis-1,2-DCE	4.31	96	259072	10.20236 ppb		93
30) 2,2-Dichloropropane	4.28	77	120088	11.16944 ppb		94
31) Chloroform	4.80	83	393934	10.38339 ppb		98
32) Bromochloromethane	4.64	128	121256	9.04086 ppb		97
34) 1,1,1-TCA	4.99	97	353908	10.31215 ppb		97
35) Cyclohexane	5.05	41	152536	9.62081 ppb		88
36) 1,1-Dichloropropene	5.23	75	291229	10.19376 ppb		99
37) 2,2,4-Trimethylpentane	5.63	57	585966	11.64784 ppb		97
39) Carbon Tetrachloride	5.21	117	317874	10.59631 ppb		97
40) Tert Amyl Methyl Ether	5.69	73	580538	9.61821 ppb		98
41) 1,2-DCA	5.52	62	278719	9.82103 ppb		99
42) Benzene	5.48	78	849325	9.75280 ppb		100

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : M:\LOKI\DATA\150113\0116L04.D Vial: 3
Acq On : 16 Jan 15 9:59 Operator: DG,SV,RS
Sample : 10ug/L Vol Std 01-15-15 Inst : Loki
Misc : 10mL w/5uL IS&S:01/14/15,10-06-14 Multiplr: 1.00

Quant Time: Jan 19 8:54 2015 Quant Results File: LALLW2.RES

Quant Method : M:\LOKI\DATA\150113\LALLW2.M (RTE Integrator)
Title : METHOD 8260B
Last Update : Mon Jan 19 08:51:54 2015
Response via : Initial Calibration
DataAcq Meth : 8260_BETA

Compound	R.T.	QIon	Response	Conc Unit		Qvalue
43) TCE	6.28	95	235289	9.44830 ppb		98
44) 2-Pentanone	6.54	43	1359321	119.84315 ppb		98
45) 1,2-Dichloropropane	6.52	63	217547	9.38637 ppb		99
46) Bromodichloromethane	6.86	83	304242	9.92488 ppb		98
47) Methyl Cyclohexane	6.48	83	339727	10.69923 ppb		96
48) Dibromomethane	6.65	93	132944	9.55762 ppb		98
49) 2-Chloroethyl vinyl ether	7.17	106	4719	6.90213 ppb	#	1
50) MIBK (methyl isobutyl ket	7.55	43	131991	8.82110 ppb		98
51) 1-Bromo-2-chloroethane	7.16	63	158144	9.74239 ppb		97
52) Cis-1,3-Dichloropropene	7.35	75	372551	9.89569 ppb		98
53) Toluene	7.69	91	999831	9.99649 ppb		99
54) Trans-1,3-Dichloropropene	7.95	75	316334	9.73629 ppb		98
55) 1,1,2-TCA	8.13	83	157396	9.48934 ppb		95
56) 2-Hexanone	8.42	43	87383	8.13037 ppb		98
59) 1,2-EDB	8.60	107	189977	9.67347 ppb		96
60) Tetrachloroethene	8.25	166	288185	10.21809 ppb		98
61) 1-Chlorohexane	9.13	91	320751	10.47622 ppb		98
62) 1,1,1,2-Tetrachloroethane	9.21	131	255649	9.81309 ppb		98
63) m&p-Xylene	9.37	106	887010	20.27720 ppb		99
64) o-Xylene	9.76	106	445050	9.96878 ppb		99
65) Styrene	9.78	104	726971	10.00224 ppb		98
67) 1,3-Dichloropropane	8.29	76	314387	9.92464 ppb		96
68) Dibromochloromethane	8.51	129	242373	9.61379 ppb		96
69) Chlorobenzene	9.12	112	699886	9.95915 ppb		98
70) Ethylbenzene	9.25	91	1152023	10.41547 ppb		98
71) Bromoform	9.93	173	162585	9.59959 ppb		99
73) Isopropylbenzene	10.14	105	1131256	10.33091 ppb		99
74) 1,1,2,2-Tetrachloroethane	10.44	83	223290	10.46106 ppb		99
75) 1,2,3-Trichloropropane	10.46	110	70900	10.43159 ppb		99
76) t-1,4-Dichloro-2-Butene	10.50	53	52802	10.72142 ppb		99
77) Bromobenzene	10.40	156	319639	10.28103 ppb		99
78) n-Propylbenzene	10.54	91	1305744	10.80647 ppb		100
79) 4-Ethyltoluene	10.66	105	1131914	10.68597 ppb		99
80) 2-Chlorotoluene	10.61	91	786093	10.32026 ppb		100
81) 1,3,5-Trimethylbenzene	10.73	105	978081	10.29579 ppb		100
82) 4-Chlorotoluene	10.72	91	907502	10.21828 ppb		98
83) Tert-Butylbenzene	11.04	119	866130	10.42389 ppb		99
84) 1,2,4-Trimethylbenzene	11.09	105	979271	10.01283 ppb		99
85) Sec-Butylbenzene	11.26	105	1221067	10.61832 ppb		100
86) p-Isopropyltoluene	11.42	119	1031333	10.37783 ppb		100
87) Benzyl Chloride	11.58	91	351935	11.04492 ppb		99
88) 1,3-DCB	11.34	146	586382	10.21381 ppb		99
89) 1,4-DCB	11.44	146	589518	10.06392 ppb		100
90) n-Butylbenzene	11.82	91	923620	10.90972 ppb		99
91) 1,2-DCB	11.79	146	554045	10.28731 ppb		99
92) Hexachloroethane	12.05	117	191817	9.70989 ppb		100
93) 1,2-Dibromo-3-chloropropan	12.56	157	46454	8.77695 ppb		96
94) 1,2,4-Trichlorobenzene	13.39	180	382322	10.09859 ppb		97
95) Hexachlorobutadiene	13.58	225	224511	10.84430 ppb		97
96) Naphthalene	13.62	128	356544	9.47037 ppb		99
97) 1,2,3-Trichlorobenzene	13.86	180	229056	10.19812 ppb		99

(#) = qualifier out of range (m) = manual integration

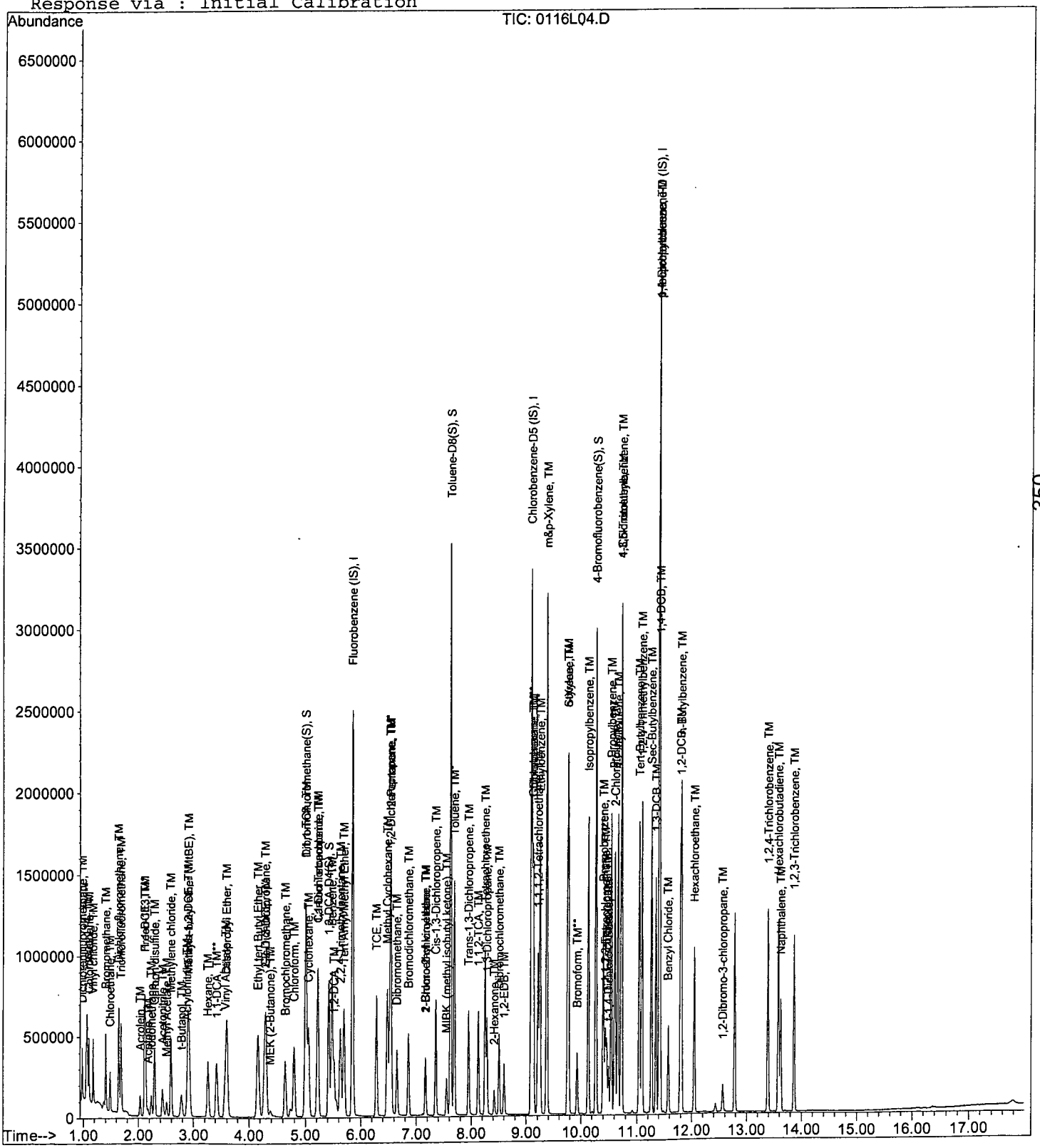
Quantitation Report

Data File : M:\LOKI\DATA\150113\0116L04.D
Acq On : 16 Jan 15 9:59
Sample : 10ug/L Vol Std 01-15-15
Misc : 10mL w/5uL IS&S:01/14/15,10-06-14

Vial: 3
Operator: DG,SV,RS
Inst : Loki
Multiplr: 1.00

Quant Time: Jan 19 8:54 2015 Quant Results File: LALLW2.RES

Method : M:\LOKI\DATA\150113\LALLW2.M (RTE Integrator)
Title : METHOD 8260B
Last Update : Mon Jan 19 08:51:54 2015
Response via : Initial Calibration



350

VOLATILE ORGANIC ANALYSIS BY
EPA METHOD 8260B

Form 6
Initial Calibration

Lab Name: APPL, Inc. SDG No:
Case No: Initial Cal. Date: 01/19/15
Matrix: Instrument: Loki Initials:

		Compound	2	5	10	20	50	100	150	200			Avg	%RSD		
			0119L07.D	0119L08.D	0119L09.D	0119L10.D	0119L11.D	0119L12.D	0119L13.D	0119L14.D						
1	I	Fluorobenzene (IS)														
2	TMCL	Dichlorodifluoromethane	0.2648	0.1901	0.3549	0.3527	0.1893	0.3151	0.3096	0.3265			0.29	23	TMCL	0.990
3	TML	Freon 114	0.2550	0.1908	0.3528	0.3622	0.2162	0.3114	0.3086	0.3429			0.29	22	TML	0.990
4	TMC**	Chloromethane		0.4306	0.4738	0.4527	0.3649	0.3808	0.4203				0.42	9.9	TMC**	
5	TMC*	Vinyl chloride	0.3595	0.3113	0.4318	0.4128	0.3257	0.3763	0.3973	0.4323			0.38	12	TMC*	
6	TMC	Bromomethane	0.3411	0.3328	0.3821	0.3239	0.3059	0.2864	0.2604	0.2602			0.31	13	TMC	
7	TMC	Chloroethane	0.3272	0.2413	0.2897	0.2838	0.2240						0.27	15	TMC	
8	TM	Dichlorofluoromethane	0.7423	0.6484	0.7683	0.7933	0.6886	0.7046	0.7098	0.7793			0.73	6.8	TM	
9	TMCL	Trichlorofluoromethane	0.4817	0.3834	0.5891	0.6116	0.4079	0.5321	0.5674	0.6065			0.52	17	TMCL	0.992
10	TML	Acrolein	0.0367	0.0580	0.0580	0.0698	0.0611	0.0631	0.0597	0.0615			0.06	16	TML	0.990
11	TMCL	Acetone	0.7781	0.3048	0.2568	0.1996	0.1666	0.1486	0.1486	0.1487			0.27	79	TMCL	1.000
12	TMCL	Freon-113	0.3134	0.2313	0.3864	0.3784	0.2684	0.3321	0.3270	0.3590			0.32	16	TMCL	0.994
13	TMC*	1,1-DCE	0.4983	0.4100	0.5454	0.5470	0.4437	0.4873	0.4929	0.5352			0.49	9.9	TMC*	
14	TM	t-Butanol		0.0570	0.0624	0.0533	0.0588	0.0669	0.0689				0.06	9.8	TM	
15	TMC	Methyl Acetate	0.3801	0.3380	0.3444	0.3443	0.3449	0.3369	0.3374	0.3613			0.35	4.3	TMC	
16	TMQ	Iodomethane	0.2201	0.2049	0.2341	0.2061	0.1905	0.2337	0.2707	0.3085			0.23	17	TMQ	1.000
17	TM	Acrylonitrile	0.2098	0.1841	0.1825	0.1726	0.1873	0.1861	0.1822	0.1945			0.19	5.8	TM	
18	TMCL	Methylene chloride	0.9921	0.7807	0.8069	0.7820	0.5715	0.4931	0.4733	0.4910			0.67	29	TMCL	0.997
19	TMC	Carbon disulfide	1.159	0.9257	1.178	1.154	0.9594	1.051	1.045	1.158			1.1	9.1	TMC	
20	TMC	Methyl t-butyl ether (MtBE)	1.421	1.227	1.188	1.288	1.281	1.273	1.273	1.371			1.3	5.8	TMC	
21	TMC	Trans-1,2-DCE	0.4377	0.3717	0.4389	0.4143	0.3736	0.3905	0.3866	0.4254			0.40	6.8	TMC	
22	TM	Diisopropyl Ether	1.280	1.208	1.191	1.245	1.242	1.219	1.224	1.320			1.2	3.4	TM	
23	TMC**	1,1-DCA	0.7596	0.6271	0.7329	0.7000	0.6503	0.6438	0.6278	0.6740			0.68	7.3	TMC**	
24	TM	Vinyl Acetate	1.377	1.336	1.304	1.372	1.409	1.382	1.360	1.442			1.4	3.1	TM	
25	TM	Ethyl tert Butyl Ether	1.340	1.180	1.172	1.149	1.251	1.242	1.230	1.263			1.2	5.0	TM	
26	TMC	MEK (2-Butanone)	0.2505	0.2238	0.2317	0.1978	0.2174	0.2019	0.2078	0.2027			0.22	8.3	TMC	
27	TMC	Cis-1,2-DCE	0.5072	0.4897	0.5083	0.4535	0.4774	0.4783	0.4689	0.4792			0.48	3.8	TMC	
28	TM	2,2-Dichloropropane	0.6411	0.5055	0.6183	0.5438	0.5050	0.5206	0.5036	0.5194			0.54	10.0	TM	
29	TMC*	Chloroform	0.8318	0.7228	0.7291	0.6873	0.6735	0.6692	0.6558	0.7109			0.71	7.9	TMC*	
30	TM	Bromochloromethane	0.2933	0.2574	0.2383	0.2355	0.2558	0.2368	0.2308	0.2472			0.25	8.1	TM	
31	S	Dibromofluoromethane(S)	0.4549	0.4389	0.4489	0.4472	0.4511	0.4342	0.4444	0.4709			0.45	2.5	S	
32	TMC	1,1,1-TCA	0.5425	0.4800	0.5883	0.5507	0.4882	0.5120	0.4896	0.5483			0.52	7.3	TMC	
33	TMC	Cyclohexane	0.2205	0.2022	0.2859	0.2742	0.2097	0.2497	0.2394	0.2634			0.24	13	TMC	
34	TM	1,1-Dichloropropene	0.4749	0.4056	0.5224	0.4625	0.4189	0.4497	0.4305	0.4820			0.46	8.3	TM	
35	TML	2,2,4-Trimethylpentane		0.6699	1.131	1.042	0.7434	0.9627	0.9305	1.048			0.93	18	TML	0.991

VOLATILE ORGANIC ANALYSIS BY
EPA METHOD 8260B

Form 6
Initial Calibration

Lab Name: APPL, Inc.
Case No:
Matrix:

SDG No:
Initial Cal. Date: 01/19/15
Instrument: Loki

Initials:

		Compound	2	5	10	20	50	100	150	200			Avg	%RSD		
36	S	1,2-DCA-D4(S)	0.5743	0.5037	0.4925	0.4938	0.5061	0.4826	0.4958	0.5240			0.51	5.7	S	
37	TMC	Carbon Tetrachloride	0.4043	0.4024	0.5112	0.4725	0.4269	0.4587	0.4449	0.4963			0.45	8.9	TMC	
38	TM	Tert Amyl Methyl Ether	1.196	1.128	1.078	1.143	1.150	1.139	1.130	1.238			1.2	4.2	TM	
39	TMC	1,2-DCA	0.6134	0.5688	0.5739	0.5673	0.5697	0.5679	0.5592	0.5968			0.58	3.2	TMC	
40	TMC	Benzene	1.555	1.393	1.541	1.469	1.431	1.446	1.406	1.541			1.5	4.4	TMC	
41	TMC	TCE	0.3914	0.3623	0.4030	0.3709	0.3581	0.3701	0.3621	0.3958			0.38	4.6	TMC	
42	TM	2-Pentanone		0.3160	0.3192	0.3637	0.3082	0.3223	0.3288	0.3552			0.33	6.3	TM	
43	TMC*	1,2-Dichloropropane	0.4289	0.3993	0.4182	0.3996	0.4010	0.4045	0.3930	0.4322			0.41	3.6	TMC*	
44	TMC	Bromodichloromethane	0.5805	0.5314	0.5371	0.5331	0.5602	0.5649	0.5566	0.6111			0.56	4.8	TMC	
45	TMC	Methyl Cyclohexane	0.5221	0.4173	0.6304	0.5673	0.4500	0.5562	0.5332	0.6019			0.53	13	TMC	
46	TM	Dibromomethane	0.3219	0.2897	0.2700	0.2769	0.2916	0.2881	0.2787	0.2925			0.29	5.4	TM	
47	TML	2-Chloroethyl vinyl ether													TML	
48	TMC	MIBK (methyl isobutyl ketone	0.2253	0.2239	0.2243	0.2198	0.2367	0.2352	0.2382	0.2509			0.23	4.5	TMC	
49	TM	1-Bromo-2-chloroethane	0.3445	0.3320	0.3162	0.3287	0.3547	0.3502	0.3453	0.3703			0.34	4.9	TM	
50	TMC	Cis-1,3-Dichloropropene	0.7322	0.6422	0.6621	0.6457	0.7104	0.7170	0.7176	0.7784			0.70	6.7	TMC	
51	TMC*	Toluene	1.778	1.604	1.736	1.542	1.631	1.658	1.609	1.768			1.7	5.2	TMC*	
52	TMC	Trans-1,3-Dichloropropene	0.6680	0.6081	0.5985	0.5806	0.6452	0.6566	0.6544	0.7187			0.64	6.9	TMC	
53	TMC	1,1,2-TCA	0.3545	0.3295	0.3126	0.3151	0.3356	0.3373	0.3303	0.3638			0.33	5.3	TMC	
54	TMC	2-Hexanone	0.1723	0.1632	0.1552	0.1632	0.1821	0.1835	0.1876	0.1995			0.18	8.5	TMC	
55	I	Chlorobenzene-D5 (IS)														
56	S	Toluene-D8(S)	1.883	1.475	1.684	1.511	1.523	1.505	1.542	1.553			1.6	8.6	S	
57	TMC	1,2-EDB	0.4752	0.4531	0.4436	0.4536	0.4836	0.4666	0.4662	0.4789			0.47	3.0	TMC	
58	TMC	Tetrachloroethene	0.3836	0.3432	0.4085	0.3336	0.3456	0.3543	0.3410	0.3549			0.36	7.1	TMC	
59	TM	1-Chlorohexane	0.5000	0.4457	0.5846	0.4507	0.4756	0.5096	0.4942	0.5191			0.50	8.9	TM	
60	TM	1,1,1,2-Tetrachloroethane	0.5188	0.4556	0.4930	0.4541	0.4961	0.4888	0.4864	0.5059			0.49	4.6	TM	
61	TMC	m&p-Xylene	1.031	0.9154	1.040	0.8297	0.9898	0.9857	0.9550	0.9722			0.96	7.0	TMC	
62	TMC	o-Xylene	0.7855	0.7772	0.8193	0.6718	0.8072	0.7951	0.7893	0.8226			0.78	6.1	TMC	
63	TMC	Styrene	1.412	1.263	1.370	1.126	1.397	1.393	1.402	1.451			1.4	7.9	TMC	
64	S	4-Bromofluorobenzene(S)	0.8226	0.6901	0.6706	0.5454	0.6560	0.6320	0.6550	0.6690			0.67	11	S	
65	TM	1,3-Dichloropropane	0.8208	0.7606	0.7159	0.7125	0.7417	0.7179	0.7082	0.7260			0.74	5.1	TM	
66	TMC	Dibromochloromethane	0.5438	0.4911	0.4799	0.4884	0.5298	0.5201	0.5233	0.5448			0.52	4.9	TMC	
67	TMC**	Chlorobenzene	1.462	1.274	1.381	1.147	1.305	1.287	1.272	1.316			1.3	7.0	TMC**	
68	TMC*	Ethylbenzene	2.040	1.868	2.134	1.720	1.956	1.932	1.900	1.950			1.9	6.3	TMC*	
69	TMC**	Bromoform	0.3936	0.3800	0.3486	0.3647	0.4038	0.4020	0.4090	0.4279			0.39	6.5	TMC**	
70	I	1,4-Dichlorobenzene-D (IS)														

VOLATILE ORGANIC ANALYSIS BY
EPA METHOD 8260B

Form 6
Initial Calibration

Lab Name: APPL, Inc.
Case No:
Matrix:

SDG No:
Initial Cal. Date: 01/19/15
Instrument: Loki

Initials:

		Compound	2	5	10	20	50	100	150	200			Avg	%RSD		
71	TMC	Isopropylbenzene	3.533	3.307	3.996	2.814	3.370	3.327	3.295	3.423			3.4	9.6	TMC	
72	TMC**	1,1,2,2-Tetrachloroethane	1.175	1.104	1.137	1.085	1.165	1.093	1.101	1.136			1.1	3.0	TMC**	
73	TM	1,2,3-Trichloropropane	0.4107	0.3522	0.3519	0.3389	0.3662	0.3442	0.3378	0.3441			0.36	6.7	TM	
74	TM	t-1,4-Dichloro-2-Butene	0.2710	0.2714	0.2609	0.2572	0.2797	0.2739	0.2765	0.2807			0.27	3.1	TM	
75	TM	Bromobenzene	1.207	1.113	1.200	0.9360	1.135	1.095	1.092	1.107			1.1	7.5	TM	
76	TM	n-Propylbenzene	3.999	3.780	4.490	2.983	3.844	3.785	3.747	3.842			3.8	11	TM	
77	TM	4-Ethyltoluene	3.575	3.333	3.824	2.569	3.405	3.323	3.302	3.396			3.3	11	TM	
78	TM	2-Chlorotoluene	2.728	2.525	2.832	1.994	2.553	2.436	2.419	2.466			2.5	10.0	TM	
79	TM	1,3,5-Trimethylbenzene	3.021	3.046	3.446	2.358	3.067	3.045	2.996	3.065			3.0	9.9	TM	
80	TM	4-Chlorotoluene	3.096	2.936	3.231	2.240	2.984	2.886	2.847	2.916			2.9	10	TM	
81	TM	Tert-Butylbenzene	2.654	2.542	2.974	2.029	2.520	2.517	2.489	2.587			2.5	10	TM	
82	TM	1,2,4-Trimethylbenzene	3.513	3.205	3.452	2.412	3.187	3.161	3.166	3.236			3.2	11	TM	
83	TM	Sec-Butylbenzene	3.558	3.524	4.273	2.724	3.544	3.587	3.549	3.663			3.6	12	TM	
84	TM	p-Isopropyltoluene	3.090	2.995	3.546	2.251	3.065	3.086	3.071	3.205			3.0	12	TM	
85	TM	Benzyl Chloride	1.555	1.474	1.465	1.377	1.641	1.622	1.739	1.778			1.6	8.8	TM	
86	TMC	1,3-DCB	2.181	2.040	2.107	1.514	1.978	1.895	1.900	1.950			1.9	10	TMC	
87	TMC	1,4-DCB	2.265	2.082	2.158	1.570	2.013	1.943	1.940	1.987			2.0	10	TMC	
88	TM	n-Butylbenzene	2.863	2.670	3.123	1.863	2.691	2.757	2.733	2.855			2.7	14	TM	
89	TMC	1,2-DCB	2.193	2.016	1.980	1.548	1.970	1.924	1.930	1.994			1.9	9.3	TMC	
90	TM	Hexachloroethane	0.5625	0.5926	0.6347	0.4329	0.6219	0.6184	0.6541	0.6818			0.60	13	TM	
91	TMC	1,2-Dibromo-3-chloropropane	0.2728	0.2656	0.2759	0.2495	0.2792	0.2882	0.3031	0.3063			0.28	6.7	TMC	
92	TMC	1,2,4-Trichlorobenzene	1.630	1.529	1.446	1.096	1.427	1.457	1.521	1.609			1.5	11	TMC	
93	TM	Hexachlorobutadiene	0.7824	0.7021	0.7784	0.4604	0.6455	0.6944	0.6884	0.7371			0.69	15	TM	
94	TM	Naphthalene	3.469	3.490	3.352	3.010	3.653	3.854	4.036	3.968			3.6	9.6	TM	
95	TM	1,2,3-Trichlorobenzene	1.574	1.473	1.408	1.137	1.419	1.481	1.565	1.604			1.5	10	TM	
96																
97																
98																
99																
100																
101																
102																
103																
104																
105																

Quantitation Report (Not Reviewed)

Data File : M:\LOKI\DATA\150119\0119L07.D
Acq On : 19 Jan 15 10:12
Sample : 2.0ug/kg Vol Std 01-19-15
Misc : 5mL w/5uL IS:01/14/15

Vial: 4
Operator: DG,SV,RS
Inst : Loki
Multiplr: 1.00

Quant Time: Jan 20 8:29 2015

Quant Results File: LALLS.RES

Quant Method : M:\LOKI\DATA\150119\LALLS.M (RTE Integrator)
Title : METHOD 8260B
Last Update : Tue Jan 20 08:21:46 2015
Response via : Initial Calibration
DataAcq Meth : 8260_BETA

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene (IS)	5.86	96	1014656	50.00000 ppb	0.00
55) Chlorobenzene-D5 (IS)	9.09	117	926976	50.00000 ppb	0.00
70) 1,4-Dichlorobenzene-D (IS)	11.41	152	501888	50.00000 ppb	0.00
System Monitoring Compounds					
31) Dibromofluoromethane(S)	5.02	111	18461	2.02703 ppb	0.00
Spiked Amount 52.439			Recovery	= 3.865%	
36) 1,2-DCA-D4(S)	5.43	65	23310	2.25616 ppb	0.00
Spiked Amount 48.066			Recovery	= 4.694%	
56) Toluene-D8(S)	7.63	98	69821	2.37701 ppb	0.00
Spiked Amount 61.175			Recovery	= 3.886%	
64) 4-Bromofluorobenzene(S)	10.27	95	30503	2.46459 ppb	0.00
Spiked Amount 54.538			Recovery	= 4.520%	

Target Compounds					Qvalue
2) Dichlorodifluoromethane	0.98	85	10747	1.67826 ppb	95
3) Freon 114	1.07	85	10350	5.21863 ppb	80
4) Chloromethane	1.10	50	22822	2.54309 ppb	99
5) Vinyl chloride	1.18	62	14592	1.88789 ppb	92
6) Bromomethane	1.41	94	13842	2.18916 ppb	94
7) Chloroethane	1.49	64	13279	2.39529 ppb	90
8) Dichlorofluoromethane	1.65	67	30128	2.03563 ppb	96
9) Trichlorofluoromethane	1.69	101	19550	5.46246 ppb	88
10) Acrolein	2.04	55	37215	36.73155 ppb	90
11) Acetone	2.19	43	31582	3.46056 ppb	98
12) Freon-113	2.14	101	12720	4.19227 ppb	95
13) 1,1-DCE	2.12	61	20224	2.01346 ppb	96
14) t-Butanol	2.82	59	36801	29.62893 ppb	97
15) Methyl Acetate	2.53	43	15428	2.18213 ppb	88
16) Iodomethane	2.25	142	8932	0.19726 ppb	85
17) Acrylonitrile	2.89	53	8514	2.23908 ppb	80
18) Methylene chloride	2.60	84	40266	-2.47372 ppb	93
19) Carbon disulfide	2.30	76	47034	2.14859 ppb	100
20) Methyl t-butyl ether (MtBE	2.94	73	57661	2.20224 ppb	97
21) Trans-1,2-DCE	2.90	96	17764	2.16234 ppb	87
22) Diisopropyl Ether	3.63	45	51937	2.06226 ppb	98
23) 1,1-DCA	3.43	63	30830	2.24424 ppb	98
24) Vinyl Acetate	3.58	43	55890	2.00613 ppb	99
25) Ethyl tert Butyl Ether	4.20	59	54393	2.18197 ppb	98
26) MEK (2-Butanone)	4.42	43	10165	2.31159 ppb	97
27) Cis-1,2-DCE	4.31	96	20584	2.10091 ppb	91
28) 2,2-Dichloropropane	4.29	77	26019	2.35406 ppb	98
29) Chloroform	4.81	83	33761	2.34301 ppb	96
30) Bromochloromethane	4.65	128	11904	2.35228 ppb	97
32) 1,1,1-TCA	5.01	97	22019	2.06695 ppb	97
33) Cyclohexane	5.05	41	8949	1.81397 ppb	92
34) 1,1-Dichloropropene	5.24	75	19274	2.08369 ppb	95
35) 2,2,4-Trimethylpentane	5.63	57	37810	5.59855 ppb #	85
37) Carbon Tetrachloride	5.22	117	16407	1.78819 ppb	98
38) Tert Amyl Methyl Ether	5.71	73	48557	2.07998 ppb #	98
39) 1,2-DCA	5.53	62	24895	2.12573 ppb	94
40) Benzene	5.49	78	63097	2.11133 ppb	97
41) TCE	6.29	95	15886	2.07812 ppb	93
42) 2-Pentanone	6.56	43	191037	28.48471 ppb	95

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : M:\LOKI\DATA\150119\0119L07.D
Acq On : 19 Jan 15 10:12
Sample : 2.0ug/kg Vol Std 01-19-15
Misc : 5mL w/5uL IS:01/14/15

Vial: 4
Operator: DG,SV,RS
Inst : Loki
Multiplr: 1.00

Quant Time: Jan 20 8:29 2015

Quant Results File: LALLS.RES

Quant Method : M:\LOKI\DATA\150119\LALLS.M (RTE Integrator)
Title : METHOD 8260B
Last Update : Tue Jan 20 08:21:46 2015
Response via : Initial Calibration
DataAcq Meth : 8260_BETA

	Compound	R.T.	QIon	Response	Conc Unit		Qvalue
43)	1,2-Dichloropropane	6.53	63	17409	2.09446 ppb		96
44)	Bromodichloromethane	6.87	83	23559	2.07546 ppb	#	89
45)	Methyl Cyclohexane	6.49	83	21191	1.95260 ppb		96
46)	Dibromomethane	6.66	93	13065	2.23017 ppb		98
48)	MIBK (methyl isobutyl ket	7.56	43	9146	1.94439 ppb		97
49)	1-Bromo-2-chloroethane	7.17	63	13981	2.01010 ppb		99
50)	Cis-1,3-Dichloropropene	7.36	75	29716	2.08980 ppb		98
51)	Toluene	7.70	91	72157	2.13482 ppb		90
52)	Trans-1,3-Dichloropropene	7.96	75	27111	2.08333 ppb		92
53)	1,1,2-TCA	8.13	83	14389	2.11764 ppb		98
54)	2-Hexanone	8.43	43	6994	1.96002 ppb		96
57)	1,2-EDB	8.60	107	17620	2.04343 ppb		97
58)	Tetrachloroethene	8.25	164	14223	2.14241 ppb		93
59)	1-Chlorohexane	9.13	91	18538	2.01009 ppb		97
60)	1,1,1,2-Tetrachloroethane	9.21	131	19236	2.12904 ppb		90
61)	m&p-Xylene	9.37	91	76478	4.27529 ppb		100
62)	o-Xylene	9.76	106	29127	2.00520 ppb		83
63)	Styrene	9.78	104	52363	2.08945 ppb		97
65)	1,3-Dichloropropane	8.29	76	30434	2.22450 ppb		98
66)	Dibromochloromethane	8.51	129	20163	2.11117 ppb		100
67)	Chlorobenzene	9.12	112	54207	2.23994 ppb		91
68)	Ethylbenzene	9.25	91	75649	2.10606 ppb		95
69)	Bromoform	9.93	173	14593	2.01214 ppb		93
71)	Isopropylbenzene	10.14	105	70926	2.08855 ppb		98
72)	1,1,2,2-Tetrachloroethane	10.44	83	23588	2.08975 ppb		94
73)	1,2,3-Trichloropropane	10.47	110	8246	2.30918 ppb		92
74)	t-1,4-Dichloro-2-Butene	10.50	53	5441	1.99721 ppb		89
75)	Bromobenzene	10.41	156	24227	2.17328 ppb		95
76)	n-Propylbenzene	10.54	91	80282	2.09994 ppb		100
77)	4-Ethyltoluene	10.66	105	71767	2.13993 ppb		99
78)	2-Chlorotoluene	10.61	91	54764	2.18759 ppb		95
79)	1,3,5-Trimethylbenzene	10.73	105	60658	2.01052 ppb		94
80)	4-Chlorotoluene	10.72	91	62144	2.14092 ppb		96
81)	Tert-Butylbenzene	11.04	119	53284	2.09076 ppb		99
82)	1,2,4-Trimethylbenzene	11.09	105	70522	2.21871 ppb		96
83)	Sec-Butylbenzene	11.26	105	71436	2.00317 ppb		100
84)	p-Isopropyltoluene	11.41	119	62026	2.03364 ppb		92
85)	Benzyl Chloride	11.58	91	31211	1.96629 ppb		93
86)	1,3-DCB	11.34	146	43791	2.24220 ppb		98
87)	1,4-DCB	11.44	146	45471	2.27086 ppb		97
88)	n-Butylbenzene	11.81	91	57471	2.12498 ppb		98
89)	1,2-DCB	11.79	146	44020	2.25548 ppb		93
90)	Hexachloroethane	12.05	117	11292	1.87538 ppb		94
91)	1,2-Dibromo-3-chloropropan	12.57	157	5476	1.94787 ppb		96
92)	1,2,4-Trichlorobenzene	13.39	180	32714	2.22577 ppb		97
93)	Hexachlorobutadiene	13.58	225	15707	2.28077 ppb		97
94)	Naphthalene	13.62	128	69637	1.92498 ppb		99
95)	1,2,3-Trichlorobenzene	13.86	180	31606	2.16011 ppb		95

(#) = qualifier out of range (m) = manual integration

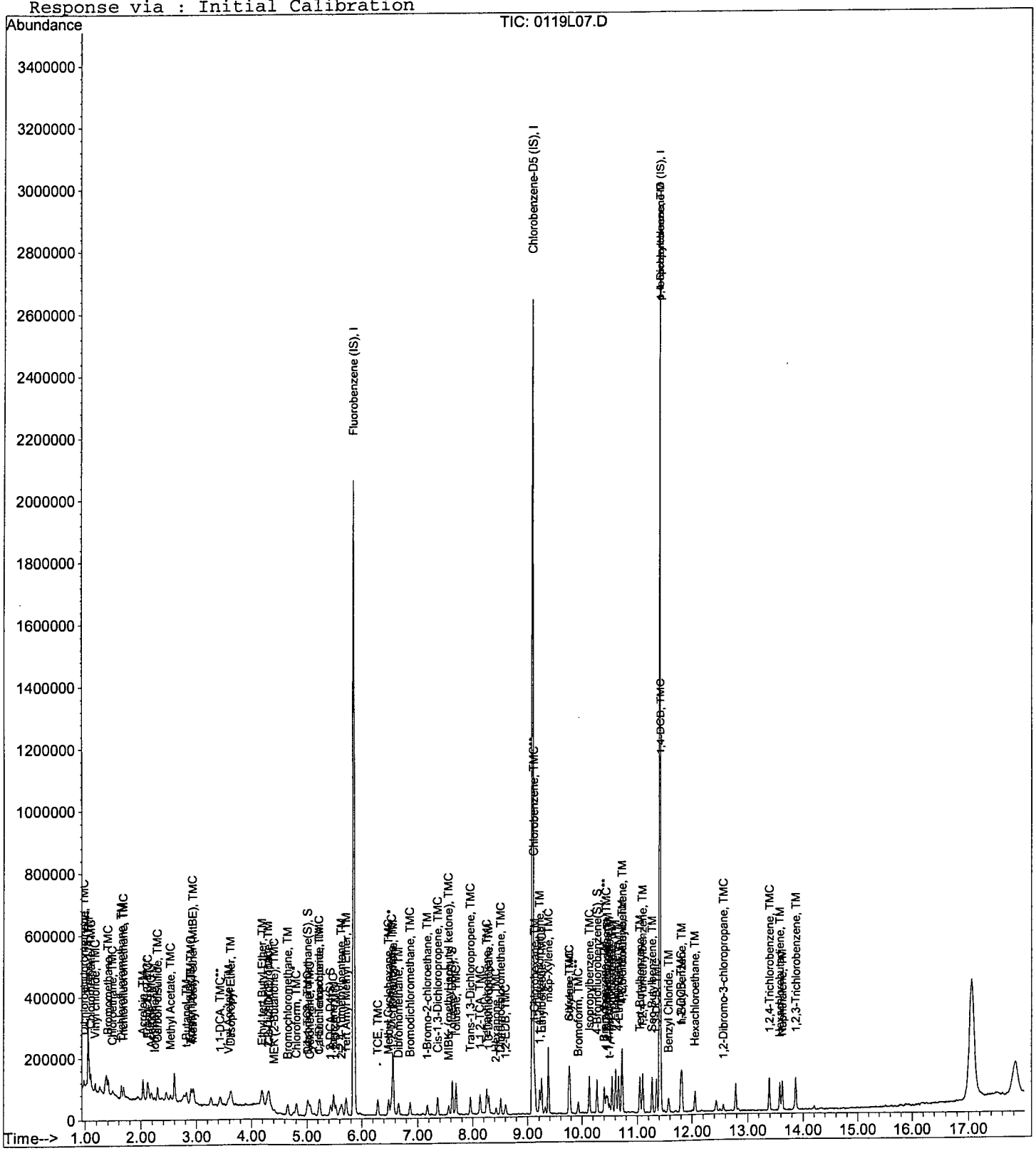
Quantitation Report

Data File : M:\LOKI\DATA\150119\0119L07.D
Acq On : 19 Jan 15 10:12
Sample : 2.0ug/kg Vol Std 01-19-15
Misc : 5mL w/5uL IS:01/14/15

Vial: 4
Operator: DG,SV,RS
Inst : Loki
Multiplr: 1.00

Quant Time: Jan 20 8:29 2015 Quant Results File: LALLS.RES

Method : M:\LOKI\DATA\150119\LALLS.M (RTE Integrator)
Title : METHOD 8260B
Last Update : Tue Jan 20 09:48:55 2015
Response via : Initial Calibration



Quantitation Report (Not Reviewed)

Data File : M:\LOKI\DATA\150119\0119L08.D
Acq On : 19 Jan 15 10:33
Sample : 5.0ug/kg Vol Std 01-19-15
Misc : 5mL w/5uL IS:01/14/15

Vial: 5
Operator: DG,SV,RS
Inst : Loki
Multiplr: 1.00

Quant Time: Jan 20 8:29 2015

Quant Results File: LALLS.RES

Quant Method : M:\LOKI\DATA\150119\LALLS.M (RTE Integrator)
Title : METHOD 8260B
Last Update : Tue Jan 20 08:28:10 2015
Response via : Initial Calibration
DataAcq Meth : 8260_BETA

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene (IS)	5.86	96	1026176	50.00000 ppb	0.00
55) Chlorobenzene-D5 (IS)	9.09	117	944576	50.00000 ppb	0.00
70) 1,4-Dichlorobenzene-D (IS)	11.41	152	501504	50.00000 ppb	0.00
System Monitoring Compounds					
31) Dibromofluoromethane(S)	5.02	111	45035	4.88936 ppb	0.00
Spiked Amount 52.439			Recovery	= 9.323%	
36) 1,2-DCA-D4(S)	5.43	65	51689	4.94678 ppb	0.00
Spiked Amount 48.066			Recovery	= 10.292%	
56) Toluene-D8(S)	7.63	98	139312	4.65441 ppb	0.00
Spiked Amount 61.175			Recovery	= 7.608%	
64) 4-Bromofluorobenzene(S)	10.27	95	65181	5.16838 ppb	0.00
Spiked Amount 54.538			Recovery	= 9.476%	

Target Compounds					Qvalue
2) Dichlorodifluoromethane	0.98	85	19512	3.01280 ppb	98
3) Freon 114	1.07	85	19579	6.55147 ppb	96
4) Chloromethane	1.10	50	44182	4.86800 ppb	100
5) Vinyl chloride	1.18	62	31945	4.08660 ppb	99
6) Bromomethane	1.40	94	34152	5.34063 ppb	88
7) Chloroethane	1.48	64	24758	4.41576 ppb	91
8) Dichlorofluoromethane	1.65	67	66541	4.44544 ppb	99
9) Trichlorofluoromethane	1.69	101	39348	7.06664 ppb	98
10) Acrolein	2.04	55	119027	99.51352 ppb	98
11) Acetone	2.19	43	31278	3.23351 ppb	99
12) Freon-113	2.14	101	23736	5.71033 ppb	94
13) 1,1-DCE	2.12	61	42069	4.14129 ppb	100
14) t-Butanol	2.82	59	117043	93.17486 ppb	96
15) Methyl Acetate	2.53	43	34682	4.85033 ppb	94
16) Iodomethane	2.24	142	21029	3.98412 ppb	99
17) Acrylonitrile	2.89	53	18894	4.91312 ppb	95
18) Methylene chloride	2.60	84	80111	1.62355 ppb	98
19) Carbon disulfide	2.29	76	94990	4.29059 ppb	96
20) Methyl t-butyl ether (MtBE	2.94	73	125919	4.75523 ppb	96
21) Trans-1,2-DCE	2.90	96	38138	4.59028 ppb	92
22) Diisopropyl Ether	3.63	45	123953	4.86654 ppb	98
23) 1,1-DCA	3.43	63	64355	4.63206 ppb	96
24) Vinyl Acetate	3.58	43	137137	4.86717 ppb	95
25) Ethyl tert Butyl Ether	4.20	59	121099	4.80334 ppb	98
26) MEK (2-Butanone)	4.42	43	22968	5.16443 ppb	96
27) Cis-1,2-DCE	4.32	96	50249	5.07109 ppb	94
28) 2,2-Dichloropropane	4.29	77	51875	4.64068 ppb	97
29) Chloroform	4.80	83	74172	5.08974 ppb	95
30) Bromochloromethane	4.65	128	26412	5.16053 ppb	89
32) 1,1,1-TCA	5.00	97	49260	4.57218 ppb	97
33) Cyclohexane	5.05	41	20745	4.15782 ppb	82
34) 1,1-Dichloropropene	5.23	75	41620	4.44897 ppb	96
35) 2,2,4-Trimethylpentane	5.63	57	68745	7.05791 ppb #	69
37) Carbon Tetrachloride	5.22	117	41298	4.45052 ppb	98
38) Tert Amyl Methyl Ether	5.71	73	115722	4.90141 ppb	98
39) 1,2-DCA	5.53	62	58366	4.92780 ppb	97
40) Benzene	5.49	78	142905	4.72816 ppb	98
41) TCE	6.29	95	37176	4.80856 ppb	96
42) 2-Pentanone	6.56	43	648588	95.62252 ppb	99

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : M:\LOKI\DATA\150119\0119L08.D
Acq On : 19 Jan 15 10:33
Sample : 5.0ug/kg Vol Std 01-19-15
Misc : 5mL w/5uL IS:01/14/15

Vial: 5
Operator: DG,SV,RS
Inst : Loki
Multiplr: 1.00

Quant Time: Jan 20 8:29 2015

Quant Results File: LALLS.RES

Quant Method : M:\LOKI\DATA\150119\LALLS.M (RTE Integrator)
Title : METHOD 8260B
Last Update : Tue Jan 20 08:28:10 2015
Response via : Initial Calibration
DataAcq Meth : 8260_BETA

Compound	R.T.	QIon	Response	Conc Unit	Qvalue
43) 1,2-Dichloropropane	6.53	63	40973	4.87408 ppb	98
44) Bromodichloromethane	6.87	83	54536	4.75048 ppb	95
45) Methyl Cyclohexane	6.48	83	42819	3.90118 ppb	99
46) Dibromomethane	6.66	93	29724	5.01687 ppb	97
48) MIBK (methyl isobutyl ket	7.56	43	22978	4.83017 ppb	95
49) 1-Bromo-2-chloroethane	7.17	63	34072	4.84365 ppb	94
50) Cis-1,3-Dichloropropene	7.36	75	65899	4.58236 ppb	96
51) Toluene	7.70	91	164561	4.81400 ppb	98
52) Trans-1,3-Dichloropropene	7.96	75	62403	4.74148 ppb	100
53) 1,1,2-TCA	8.13	83	33808	4.91970 ppb	98
54) 2-Hexanone	8.43	43	16750	4.64139 ppb	97
57) 1,2-EDB	8.61	107	42797	4.87078 ppb	93
58) Tetrachloroethene	8.25	164	32414	4.79155 ppb	95
59) 1-Chlorohexane	9.13	91	42104	4.48031 ppb	96
60) 1,1,1,2-Tetrachloroethane	9.21	131	43035	4.67436 ppb	95
61) m&p-Xylene	9.37	91	172932	9.48715 ppb	98
62) o-Xylene	9.76	106	73415	4.95995 ppb	94
63) Styrene	9.78	104	119256	4.67002 ppb	99
65) 1,3-Dichloropropane	8.29	76	71841	5.15321 ppb	99
66) Dibromochloromethane	8.51	129	46389	4.76666 ppb	97
67) Chlorobenzene	9.12	112	120317	4.87909 ppb	100
68) Ethylbenzene	9.25	91	176435	4.82042 ppb	97
69) Bromoform	9.94	173	35891	4.85658 ppb	98
71) Isopropylbenzene	10.14	105	165845	4.88737 ppb	100
72) 1,1,2,2-Tetrachloroethane	10.44	83	55381	4.91017 ppb	95
73) 1,2,3-Trichloropropane	10.46	110	17664	4.95036 ppb	97
74) t-1,4-Dichloro-2-Butene	10.50	53	13610	4.99959 ppb	86
75) Bromobenzene	10.40	156	55827	5.01178 ppb	98
76) n-Propylbenzene	10.54	91	189576	4.96256 ppb	100
77) 4-Ethyltoluene	10.66	105	167169	4.98842 ppb	98
78) 2-Chlorotoluene	10.61	91	126639	5.06256 ppb	98
79) 1,3,5-Trimethylbenzene	10.73	105	152760	5.06712 ppb	100
80) 4-Chlorotoluene	10.72	91	147237	5.07633 ppb	100
81) Tert-Butylbenzene	11.04	119	127490	5.00628 ppb	96
82) 1,2,4-Trimethylbenzene	11.09	105	160746	5.06115 ppb	96
83) Sec-Butylbenzene	11.26	105	176709	4.95897 ppb	98
84) p-Isopropyltoluene	11.41	119	150200	4.92835 ppb	99
85) Benzyl Chloride	11.58	91	73926	4.66091 ppb	98
86) 1,3-DCB	11.34	146	102329	5.24349 ppb	99
87) 1,4-DCB	11.43	146	104424	5.21903 ppb	98
88) n-Butylbenzene	11.81	91	133912	4.95515 ppb	98
89) 1,2-DCB	11.79	146	101097	5.18394 ppb	98
90) Hexachloroethane	12.05	117	29720	4.93969 ppb	98
91) 1,2-Dibromo-3-chloropropan	12.56	157	13319	4.74133 ppb	93
92) 1,2,4-Trichlorobenzene	13.39	180	76688	5.22163 ppb	97
93) Hexachlorobutadiene	13.58	225	35212	5.11694 ppb	95
94) Naphthalene	13.62	128	175036	4.84223 ppb	98
95) 1,2,3-Trichlorobenzene	13.87	180	73870	5.05251 ppb	98

(#) = qualifier out of range (m) = manual integration

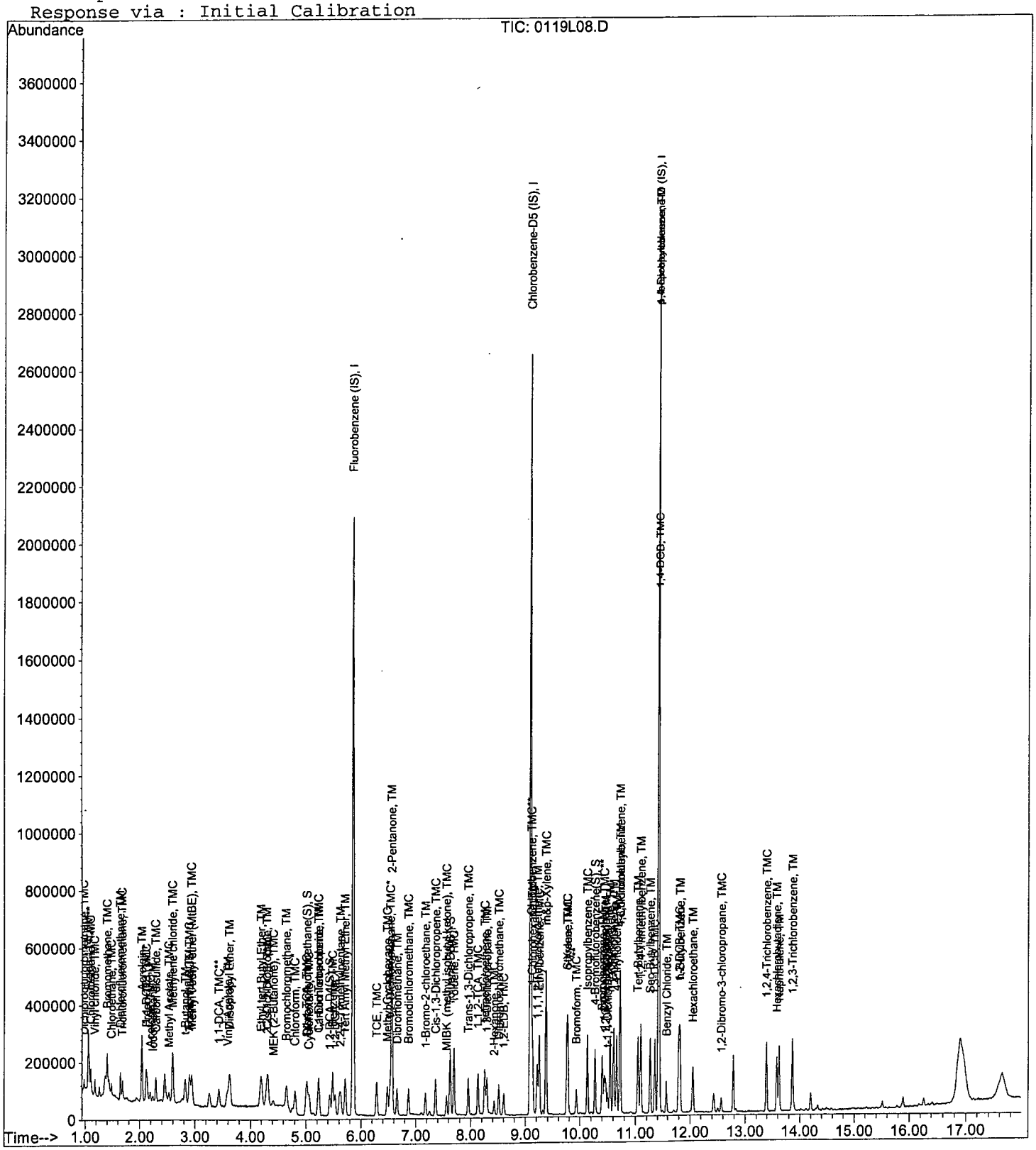
Quantitation Report

Data File : M:\LOKI\DATA\150119\0119L08.D
Acq On : 19 Jan 15 10:33
Sample : 5.0ug/kg Vol Std 01-19-15
Misc : 5mL w/5uL IS:01/14/15

Vial: 5
Operator: DG,SV,RS
Inst : Loki
Multiplr: 1.00

Quant Time: Jan 20 8:29 2015 Quant Results File: LALLS.RES

Method : M:\LOKI\DATA\150119\LALLS.M (RTE Integrator)
Title : METHOD 8260B
Last Update : Tue Jan 20 09:48:55 2015
Response via : Initial Calibration



Quantitation Report (Not Reviewed)

Data File : M:\LOKI\DATA\150119\0119L09.D
Acq On : 19 Jan 15 10:55
Sample : 10ug/kg Vol Std 01-19-15
Misc : 5mL w/5uL IS:01/14/15

Vial: 6
Operator: DG,SV,RS
Inst : Loki
Multiplr: 1.00

Quant Time: Jan 20 8:29 2015

Quant Results File: LALLS.RES

Quant Method : M:\LOKI\DATA\150119\LALLS.M (RTE Integrator)
Title : METHOD 8260B
Last Update : Tue Jan 20 08:28:10 2015
Response via : Initial Calibration
DataAcq Meth : 8260_BETA

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene (IS)	5.86	96	837504	50.00000 ppb	0.00
55) Chlorobenzene-D5 (IS)	9.09	117	760192	50.00000 ppb	0.00
70) 1,4-Dichlorobenzene-D (IS)	11.41	152	390976	50.00000 ppb	0.00
System Monitoring Compounds					
31) Dibromofluoromethane(S)	5.02	111	75195	10.00290 ppb	0.00
Spiked Amount 52.439			Recovery	= 19.075%	
36) 1,2-DCA-D4(S)	5.43	65	82500	9.67415 ppb	0.00
Spiked Amount 48.066			Recovery	= 20.127%	
56) Toluene-D8(S)	7.63	98	255963	10.62592 ppb	0.00
Spiked Amount 61.175			Recovery	= 17.370%	
64) 4-Bromofluorobenzene(S)	10.27	95	101953	10.04493 ppb	0.00
Spiked Amount 54.538			Recovery	= 18.418%	

Target Compounds					Qvalue
2) Dichlorodifluoromethane	0.98	85	59440	11.24560 ppb	97
3) Freon 114	1.07	85	59092	14.27880 ppb	97
4) Chloromethane	1.10	50	79367	10.71470 ppb	100
5) Vinyl chloride	1.18	62	72327	11.33691 ppb	100
6) Bromomethane	1.40	94	64006	12.26400 ppb	99
7) Chloroethane	1.48	64	48521	10.60363 ppb	99
8) Dichlorofluoromethane	1.65	67	128683	10.53372 ppb	98
9) Trichlorofluoromethane	1.68	101	98682	13.75057 ppb	96
10) Acrolein	2.04	55	145612	145.32430 ppb	97
11) Acetone	2.19	43	43018	10.57749 ppb	96
12) Freon-113	2.14	101	64729	13.47058 ppb	98
13) 1,1-DCE	2.12	61	91349	11.01825 ppb	98
14) t-Butanol	2.83	59	156664	152.81201 ppb	94
15) Methyl Acetate	2.53	43	57687	9.88507 ppb	98
16) Iodomethane	2.24	142	39206	12.03107 ppb	95
17) Acrylonitrile	2.89	53	30569	9.73980 ppb	87
18) Methylene chloride	2.60	84	135160	10.51735 ppb	99
19) Carbon disulfide	2.29	76	197275	10.91808 ppb	99
20) Methyl t-butyl ether (MtBE	2.94	73	199028	9.20935 ppb	99
21) Trans-1,2-DCE	2.90	96	73508	10.84053 ppb	93
22) Diisopropyl Ether	3.63	45	199489	9.59659 ppb	97
23) 1,1-DCA	3.44	63	122764	10.82674 ppb	98
24) Vinyl Acetate	3.58	43	218385	9.49685 ppb	99
25) Ethyl tert Butyl Ether	4.20	59	196322	9.54128 ppb	96
26) MEK (2-Butanone)	4.42	43	38811	10.69275 ppb	96
27) Cis-1,2-DCE	4.32	96	85142	10.52817 ppb	96
28) 2,2-Dichloropropane	4.29	77	103570	11.35252 ppb	96
29) Chloroform	4.81	83	122127	10.26840 ppb	98
30) Bromochloromethane	4.65	128	39912	9.55502 ppb	97
32) 1,1,1-TCA	5.00	97	98541	11.20679 ppb	94
33) Cyclohexane	5.05	41	47887	11.75992 ppb	95
34) 1,1-Dichloropropene	5.23	75	87507	11.46135 ppb	98
35) 2,2,4-Trimethylpentane	5.63	57	189512	14.87767 ppb	91
37) Carbon Tetrachloride	5.22	117	85618	11.30530 ppb	99
38) Tert Amyl Methyl Ether	5.71	73	180591	9.37208 ppb	99
39) 1,2-DCA	5.53	62	96122	9.94377 ppb	97
40) Benzene	5.48	78	258184	10.46669 ppb	98
41) TCE	6.29	95	67502	10.69803 ppb	96
42) 2-Pentanone	6.56	43	801890	144.85752 ppb	98

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : M:\LOKI\DATA\150119\0119L09.D
Acq On : 19 Jan 15 10:55
Sample : 10ug/kg Vol Std 01-19-15
Misc : 5mL w/5uL IS:01/14/15

Vial: 6
Operator: DG,SV,RS
Inst : Loki
Multiplr: 1.00

Quant Time: Jan 20 8:29 2015

Quant Results File: LALLS.RES

Quant Method : M:\LOKI\DATA\150119\LALLS.M (RTE Integrator)
Title : METHOD 8260B
Last Update : Tue Jan 20 08:28:10 2015
Response via : Initial Calibration
DataAcq Meth : 8260_BETA

Compound	R.T.	QIon	Response	Conc Unit	Qvalue
43) 1,2-Dichloropropane	6.53	63	70048	10.21001 ppb	98
44) Bromodichloromethane	6.87	83	89963	9.60182 ppb	99
45) Methyl Cyclohexane	6.48	83	105598	11.78827 ppb	99
46) Dibromomethane	6.66	93	45224	9.35254 ppb	99
48) MIBK (methyl isobutyl ket	7.56	43	37564	9.67513 ppb	97
49) 1-Bromo-2-chloroethane	7.17	63	52968	9.22622 ppb	98
50) Cis-1,3-Dichloropropene	7.36	75	110900	9.44881 ppb	99
51) Toluene	7.70	91	290717	10.42040 ppb	100
52) Trans-1,3-Dichloropropene	7.96	75	100244	9.33259 ppb	96
53) 1,1,2-TCA	8.13	83	52360	9.33584 ppb	95
54) 2-Hexanone	8.43	43	25988	8.82350 ppb	98
57) 1,2-EDB	8.61	107	67440	9.53711 ppb	96
58) Tetrachloroethene	8.25	164	62106	11.40751 ppb	97
59) 1-Chlorohexane	9.14	91	88887	11.75267 ppb	97
60) 1,1,1,2-Tetrachloroethane	9.21	131	74959	10.11667 ppb	96
61) m&p-Xylene	9.37	91	316209	21.55502 ppb	100
62) o-Xylene	9.76	106	124564	10.45680 ppb	98
63) Styrene	9.78	104	208243	10.13263 ppb	100
65) 1,3-Dichloropropane	8.29	76	108851	9.70178 ppb	99
66) Dibromochloromethane	8.51	129	72960	9.31531 ppb	96
67) Chlorobenzene	9.12	112	209917	10.57727 ppb	99
68) Ethylbenzene	9.25	91	324415	11.01323 ppb	99
69) Bromoform	9.93	173	52993	8.90998 ppb	95
71) Isopropylbenzene	10.14	105	312453	11.81086 ppb	98
72) 1,1,2,2-Tetrachloroethane	10.44	83	88871	10.10694 ppb	97
73) 1,2,3-Trichloropropane	10.46	110	27516	9.89139 ppb	91
74) t-1,4-Dichloro-2-Butene	10.50	53	20400	9.61238 ppb	93
75) Bromobenzene	10.41	156	93812	10.80266 ppb	95
76) n-Propylbenzene	10.54	91	351115	11.78951 ppb	100
77) 4-Ethyltoluene	10.66	105	299034	11.44596 ppb	98
78) 2-Chlorotoluene	10.61	91	221426	11.35417 ppb	96
79) 1,3,5-Trimethylbenzene	10.73	105	269431	11.46367 ppb	100
80) 4-Chlorotoluene	10.72	91	252652	11.17327 ppb	100
81) Tert-Butylbenzene	11.04	119	232565	11.71406 ppb	95
82) 1,2,4-Trimethylbenzene	11.09	105	269899	10.90020 ppb	94
83) Sec-Butylbenzene	11.26	105	334117	12.02695 ppb	100
84) p-Isopropyltoluene	11.41	119	277246	11.66868 ppb	100
85) Benzyl Chloride	11.58	91	114550	9.26387 ppb	98
86) 1,3-DCB	11.34	146	164783	10.83076 ppb	98
87) 1,4-DCB	11.43	146	168781	10.82024 ppb	99
88) n-Butylbenzene	11.81	91	244198	11.59055 ppb	100
89) 1,2-DCB	11.80	146	154821	10.18299 ppb	98
90) Hexachloroethane	12.05	117	49630	10.58083 ppb	95
91) 1,2-Dibromo-3-chloropropan	12.56	157	21576	9.85199 ppb	97
92) 1,2,4-Trichlorobenzene	13.39	180	113061	9.87451 ppb	99
93) Hexachlorobutadiene	13.58	225	60867	11.34556 ppb	96
94) Naphthalene	13.62	128	262072	9.29957 ppb	99
95) 1,2,3-Trichlorobenzene	13.87	180	110085	9.65809 ppb	99

(#) = qualifier out of range (m) = manual integration

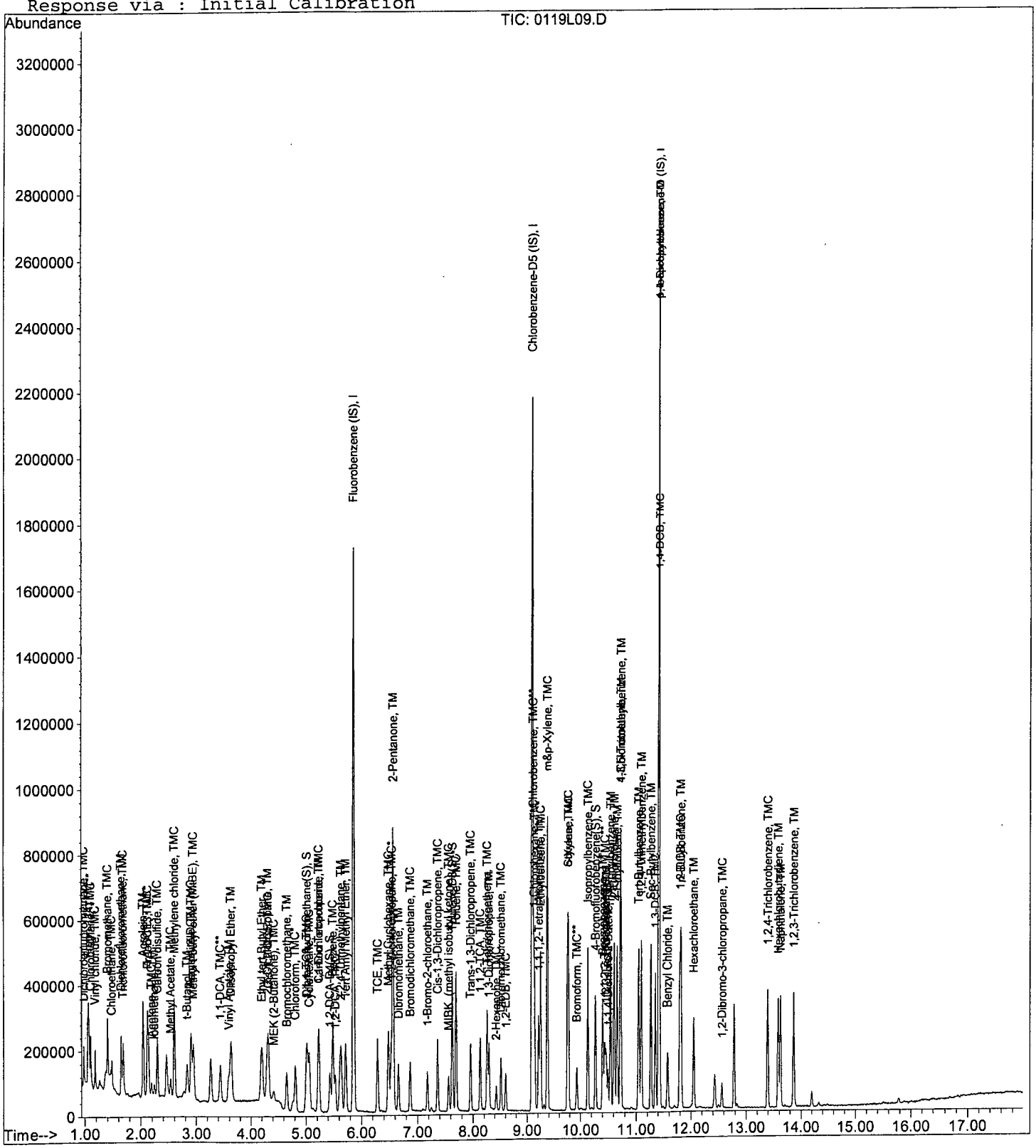
Quantitation Report

Data File : M:\LOKI\DATA\150119\0119L09.D
Acq On : 19 Jan 15 10:55
Sample : 10ug/kg Vol Std 01-19-15
Misc : 5mL w/5uL IS:01/14/15

Vial: 6
Operator: DG,SV,RS
Inst : Loki
Multiplr: 1.00

Quant Time: Jan 20 8:29 2015 Quant Results File: LALLS.RES

Method : M:\LOKI\DATA\150119\LALLS.M (RTE Integrator)
Title : METHOD 8260B
Last Update : Tue Jan 20 09:48:55 2015
Response via : Initial Calibration



Quantitation Report (Not Reviewed)

Data File : M:\LOKI\DATA\150119\0119L10.D
Acq On : 19 Jan 15 11:16
Sample : 20ug/kg Vol Std 01-19-15
Misc : 5mL w/5uL IS:01/14/15

Vial: 7
Operator: DG,SV,RS
Inst : Loki
Multiplr: 1.00

Quant Time: Jan 20 8:29 2015

Quant Results File: LALLS.RES

Quant Method : M:\LOKI\DATA\150119\LALLS.M (RTE Integrator)
Title : METHOD 8260B
Last Update : Tue Jan 20 08:28:10 2015
Response via : Initial Calibration
DataAcq Meth : 8260_BETA

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene (IS)	5.86	96	919616	50.00000 ppb	0.00
55) Chlorobenzene-D5 (IS)	9.09	117	820608	50.00000 ppb	0.00
70) 1,4-Dichlorobenzene-D (IS)	11.42	152	450240	50.00000 ppb	0.00
System Monitoring Compounds					
31) Dibromofluoromethane(S)	5.02	111	164485	19.92707 ppb	0.00
Spiked Amount 52.439			Recovery = 38.000%		
36) 1,2-DCA-D4(S)	5.43	65	181636	19.39730 ppb	0.00
Spiked Amount 48.066			Recovery = 40.355%		
56) Toluene-D8(S)	7.63	98	495953	19.07293 ppb	0.00
Spiked Amount 61.175			Recovery = 31.178%		
64) 4-Bromofluorobenzene(S)	10.27	95	179015	16.33893 ppb	0.00
Spiked Amount 54.538			Recovery = 29.959%		
Target Compounds					Qvalue
2) Dichlorodifluoromethane	0.98	85	129752	22.35621 ppb	98
3) Freon 114	1.07	85	133227	25.43426 ppb	96
4) Chloromethane	1.10	50	166539	20.47560 ppb	99
5) Vinyl chloride	1.18	62	151857	21.67751 ppb	98
6) Bromomethane	1.40	94	119127	20.78749 ppb	97
7) Chloroethane	1.48	64	104403	20.77869 ppb	97
8) Dichlorofluoromethane	1.65	67	291813	21.75432 ppb	98
9) Trichlorofluoromethane	1.68	101	224983	24.41503 ppb	99
10) Acrolein	2.04	55	224792	201.19076 ppb	98
11) Acetone	2.19	43	73427	20.59273 ppb	95
12) Freon-113	2.14	101	139185	24.08315 ppb	98
13) 1,1-DCE	2.12	61	201208	22.10215 ppb	99
14) t-Butanol	2.85	59	196039	174.14505 ppb	94
15) Methyl Acetate	2.53	43	126633	19.76192 ppb	99
16) Iodomethane	2.24	142	75809	22.06043 ppb	93
17) Acrylonitrile	2.89	53	63477	18.41898 ppb	94
18) Methylene chloride	2.60	84	287651	26.67992 ppb	100
19) Carbon disulfide	2.29	76	424413	21.39159 ppb	98
20) Methyl t-butyl ether (MtBE	2.95	73	473706	19.96201 ppb	99
21) Trans-1,2-DCE	2.90	96	152386	20.46639 ppb	96
22) Diisopropyl Ether	3.63	45	458006	20.06548 ppb	100
23) 1,1-DCA	3.43	63	257494	20.68113 ppb	98
24) Vinyl Acetate	3.59	43	504763	19.99055 ppb	100
25) Ethyl tert Butyl Ether	4.20	59	422580	18.70368 ppb	97
26) MEK (2-Butanone)	4.42	43	72773	18.25935 ppb	99
27) Cis-1,2-DCE	4.32	96	166813	18.78535 ppb	97
28) 2,2-Dichloropropane	4.29	77	200027	19.96766 ppb	98
29) Chloroform	4.81	83	252815	19.35861 ppb	98
30) Bromochloromethane	4.65	128	86638	18.88934 ppb	97
32) 1,1,1-TCA	5.00	97	202572	20.98089 ppb	95
33) Cyclohexane	5.06	41	100852	22.55546 ppb	97
34) 1,1-Dichloropropene	5.23	75	170141	20.29468 ppb	98
35) 2,2,4-Trimethylpentane	5.63	57	383427	24.23743 ppb	96
37) Carbon Tetrachloride	5.22	117	173810	20.90124 ppb	99
38) Tert Amyl Methyl Ether	5.71	73	420594	19.87849 ppb	98
39) 1,2-DCA	5.53	62	208672	19.65952 ppb	97
40) Benzene	5.49	78	540324	19.94870 ppb	99
41) TCE	6.29	95	136436	19.69230 ppb	97
42) 2-Pentanone	6.56	43	1170731	192.60331 ppb	99

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : M:\LOKI\DATA\150119\0119L10.D
Acq On : 19 Jan 15 11:16
Sample : 20ug/kg Vol Std 01-19-15
Misc : 5mL w/5uL IS:01/14/15

Vial: 7
Operator: DG,SV,RS
Inst : Loki
Multiplr: 1.00

Quant Time: Jan 20 8:29 2015

Quant Results File: LALLS.RES

Quant Method : M:\LOKI\DATA\150119\LALLS.M (RTE Integrator)
Title : METHOD 8260B
Last Update : Tue Jan 20 08:28:10 2015
Response via : Initial Calibration
DataAcq Meth : 8260_BETA

	Compound	R.T.	QIon	Response	Conc	Unit	Qvalue
43)	1,2-Dichloropropane	6.53	63	147008	19.51424	ppb	99
44)	Bromodichloromethane	6.87	83	196106	19.06166	ppb	100
45)	Methyl Cyclohexane	6.48	83	208669	21.21450	ppb	97
46)	Dibromomethane	6.66	93	101869	19.18594	ppb	96
48)	MIBK (methyl isobutyl ket	7.56	43	80846	18.96373	ppb	98
49)	1-Bromo-2-chloroethane	7.17	63	120912	19.18051	ppb	98
50)	Cis-1,3-Dichloropropene	7.36	75	237532	18.43096	ppb	99
51)	Toluene	7.70	91	567303	18.51866	ppb	100
52)	Trans-1,3-Dichloropropene	7.96	75	213576	18.10826	ppb	98
53)	1,1,2-TCA	8.13	83	115914	18.82219	ppb	96
54)	2-Hexanone	8.43	43	60027	18.56072	ppb	96
57)	1,2-EDB	8.61	107	148880	19.50397	ppb	96
58)	Tetrachloroethene	8.25	164	109509	18.63352	ppb	99
59)	1-Chlorohexane	9.14	91	147948	18.12153	ppb	98
60)	1,1,1,2-Tetrachloroethane	9.21	131	149049	18.63505	ppb	96
61)	m&p-Xylene	9.37	91	544710	34.39752	ppb	99
62)	o-Xylene	9.76	106	220506	17.14804	ppb	99
63)	Styrene	9.78	104	369730	16.66572	ppb	99
65)	1,3-Dichloropropane	8.29	76	233862	19.30929	ppb	98
66)	Dibromochloromethane	8.51	129	160327	18.96299	ppb	94
67)	Chlorobenzene	9.12	112	376445	17.57174	ppb	99
68)	Ethylbenzene	9.25	91	564534	17.75380	ppb	99
69)	Bromoform	9.94	173	119723	18.64762	ppb	98
71)	Isopropylbenzene	10.14	105	506869	16.63791	ppb	100
72)	1,1,2,2-Tetrachloroethane	10.44	83	195349	19.29199	ppb	96
73)	1,2,3-Trichloropropane	10.46	110	61043	19.05522	ppb	99
74)	t-1,4-Dichloro-2-Butene	10.50	53	46312	18.94962	ppb	97
75)	Bromobenzene	10.40	156	168577	16.85685	ppb	97
76)	n-Propylbenzene	10.54	91	537294	15.66623	ppb	98
77)	4-Ethyltoluene	10.66	105	462742	15.38072	ppb	98
78)	2-Chlorotoluene	10.61	91	359130	15.99133	ppb	100
79)	1,3,5-Trimethylbenzene	10.73	105	424746	15.69320	ppb	100
80)	4-Chlorotoluene	10.72	91	403340	15.48941	ppb	100
81)	Tert-Butylbenzene	11.04	119	365408	15.98259	ppb	98
82)	1,2,4-Trimethylbenzene	11.09	105	434444	15.23607	ppb	98
83)	Sec-Butylbenzene	11.26	105	490606	15.33543	ppb	99
84)	p-Isopropyltoluene	11.41	119	405350	14.81469	ppb	100
85)	Benzyl Chloride	11.58	91	248002	17.41641	ppb	99
86)	1,3-DCB	11.34	146	272615	15.55974	ppb	99
87)	1,4-DCB	11.44	146	282696	15.73762	ppb	97
88)	n-Butylbenzene	11.82	91	335490	13.82763	ppb	100
89)	1,2-DCB	11.80	146	278865	15.92743	ppb	99
90)	Hexachloroethane	12.05	117	77957	14.43233	ppb	99
91)	1,2-Dibromo-3-chloropropan	12.56	157	44939	17.81897	ppb	95
92)	1,2,4-Trichlorobenzene	13.39	180	197299	14.96351	ppb	97
93)	Hexachlorobutadiene	13.58	225	82912	13.42047	ppb	95
94)	Naphthalene	13.62	128	542072	16.70341	ppb	99
95)	1,2,3-Trichlorobenzene	13.87	180	204828	15.60482	ppb	97

(#) = qualifier out of range (m) = manual integration

Quantitation Report

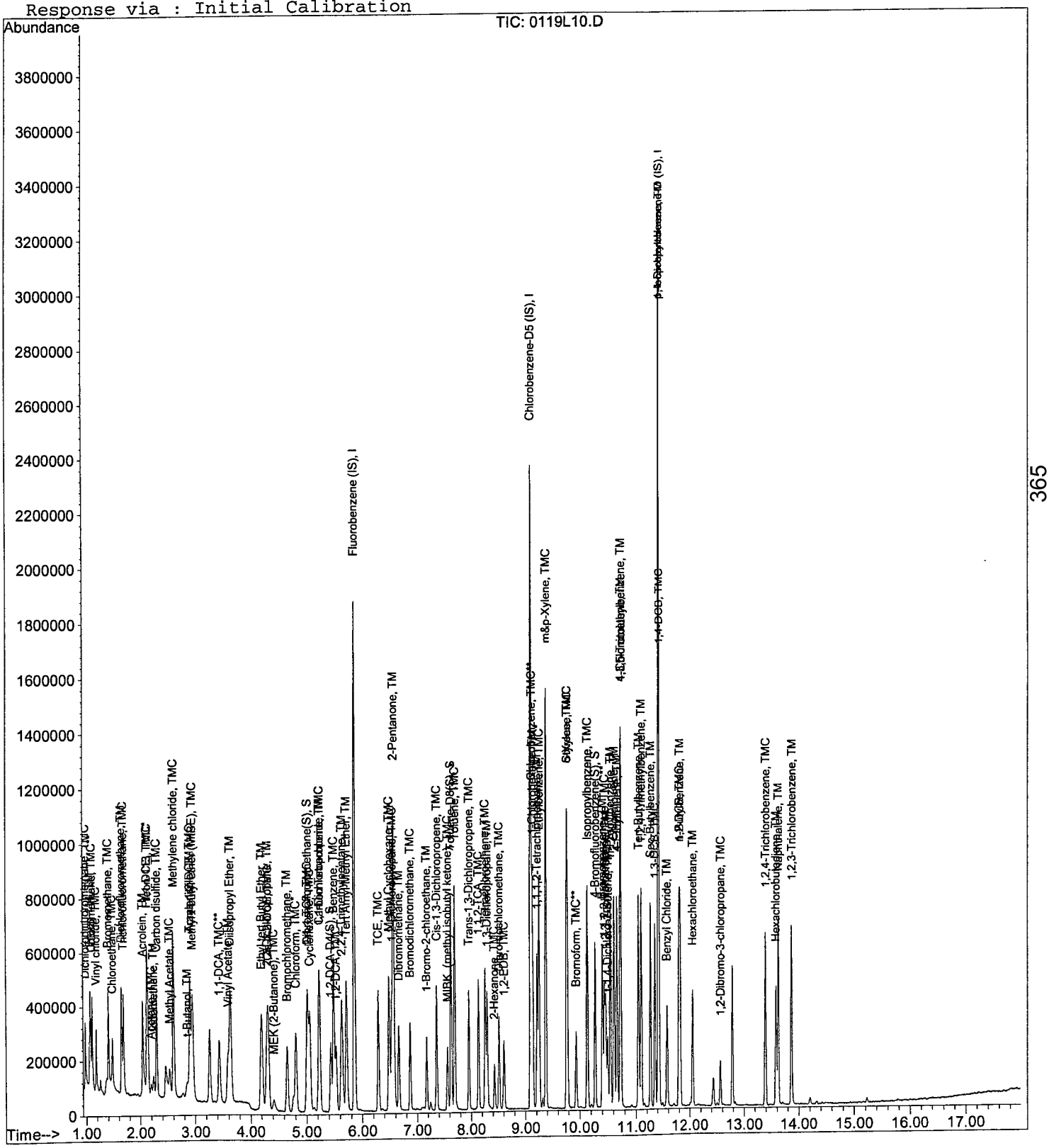
Data File : M:\LOKI\DATA\150119\0119L10.D
Acq On : 19 Jan 15 11:16
Sample : 20ug/kg Vol Std 01-19-15
Misc : 5mL w/5uL IS:01/14/15

Vial: 7
Operator: DG,SV,RS
Inst : Loki
Multiplr: 1.00

Quant Time: Jan 20 8:29 2015

Quant Results File: LALLS.RES

Method : M:\LOKI\DATA\150119\LALLS.M (RTE Integrator)
Title : METHOD 8260B
Last Update : Tue Jan 20 09:48:55 2015
Response via : Initial Calibration



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Quantitation Report (Not Reviewed)

Data File : M:\LOKI\DATA\150119\0119L11.D
Acq On : 19 Jan 15 11:38
Sample : 50ug/kg Vol Std 01-19-15
Misc : 5mL w/5uL IS:01/14/15

Vial: 8
Operator: DG,SV,RS
Inst : Loki
Multiplr: 1.00

Quant Time: Jan 20 8:29 2015

Quant Results File: LALLS.RES

Quant Method : M:\LOKI\DATA\150119\LALLS.M (RTE Integrator)
Title : METHOD 8260B
Last Update : Tue Jan 20 08:28:10 2015
Response via : Initial Calibration
DataAcq Meth : 8260_BETA

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene (IS)	5.86	96	950784	50.00000 ppb	0.00
55) Chlorobenzene-D5 (IS)	9.09	117	884160	50.00000 ppb	0.00
70) 1,4-Dichlorobenzene-D (IS)	11.41	152	481536	50.00000 ppb	0.00
System Monitoring Compounds					
31) Dibromofluoromethane(S)	5.02	111	428910	50.25832 ppb	0.00
Spiked Amount 52.439			Recovery	= 95.840%	
36) 1,2-DCA-D4(S)	5.43	65	481234	49.70733 ppb	0.00
Spiked Amount 48.066			Recovery	= 103.414%	
56) Toluene-D8(S)	7.63	98	1346817	48.07180 ppb	0.00
Spiked Amount 61.175			Recovery	= 78.581%	
64) 4-Bromofluorobenzene(S)	10.27	95	580016	49.13366 ppb	0.00
Spiked Amount 54.538			Recovery	= 90.091%	
Target Compounds					Qvalue
2) Dichlorodifluoromethane	0.98	85	179968	29.99190 ppb	100
3) Freon 114	1.07	85	205518	36.13470 ppb	100
4) Chloromethane	1.10	50	346918	41.25457 ppb	100
5) Vinyl chloride	1.18	62	309676	42.75695 ppb	100
6) Bromomethane	1.40	94	290817	49.08358 ppb	100
7) Chloroethane	1.48	64	212963	40.99529 ppb	100
8) Dichlorofluoromethane	1.65	67	654729	47.20925 ppb	100
9) Trichlorofluoromethane	1.69	101	387859	38.14603 ppb	100
10) Acrolein	2.04	55	290241	249.33694 ppb	100
11) Acetone	2.19	43	158437	51.11344 ppb	100
12) Freon-113	2.14	101	255222	40.85990 ppb	100
13) 1,1-DCE	2.12	61	421874	44.82255 ppb	100
14) t-Butanol	2.83	59	279397	240.05737 ppb	100
15) Methyl Acetate	2.53	43	327902	49.49383 ppb	100
16) Iodomethane	2.24	142	181141	48.31987 ppb	100
17) Acrylonitrile	2.89	53	178059	49.97327 ppb	100
18) Methylene chloride	2.60	84	543327	54.29071 ppb	100
19) Carbon disulfide	2.30	76	912221	44.47124 ppb	100
20) Methyl t-butyl ether (MtBE	2.94	73	1218345	49.65812 ppb	100
21) Trans-1,2-DCE	2.90	96	355230	46.14562 ppb	100
22) Diisopropyl Ether	3.63	45	1180895	50.03966 ppb	100
23) 1,1-DCA	3.44	63	618331	48.03446 ppb	100
24) Vinyl Acetate	3.59	43	1340035	51.33079 ppb	100
25) Ethyl tert Butyl Ether	4.20	59	1189464	50.92067 ppb	100
26) MEK (2-Butanone)	4.41	43	206685	50.15896 ppb	100
27) Cis-1,2-DCE	4.32	96	453950	49.44497 ppb	100
28) 2,2-Dichloropropane	4.29	77	480134	46.35811 ppb	100
29) Chloroform	4.81	83	640318	47.42329 ppb	100
30) Bromochloromethane	4.65	128	243190	51.28364 ppb	100
32) 1,1,1-TCA	5.00	97	464130	46.49528 ppb	100
33) Cyclohexane	5.06	41	199367	43.12658 ppb	100
34) 1,1-Dichloropropene	5.23	75	398279	45.94997 ppb	100
35) 2,2,4-Trimethylpentane	5.63	57	706845	40.26528 ppb	100
37) Carbon Tetrachloride	5.22	117	405843	47.20413 ppb	100
38) Tert Amyl Methyl Ether	5.71	73	1093419	49.98405 ppb	100
39) 1,2-DCA	5.53	62	541680	49.36013 ppb	100
40) Benzene	5.49	78	1360541	48.58437 ppb	100
41) TCE	6.29	95	340467	47.52994 ppb	100
42) 2-Pentanone	6.56	43	1465072	233.12575 ppb	100

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : M:\LOKI\DATA\150119\0119L11.D
Acq On : 19 Jan 15 11:38
Sample : 50ug/kg Vol Std 01-19-15
Misc : 5mL w/5uL IS:01/14/15

Vial: 8
Operator: DG,SV,RS
Inst : Loki
Multiplr: 1.00

Quant Time: Jan 20 8:29 2015

Quant Results File: LALLS.RES

Quant Method : M:\LOKI\DATA\150119\LALLS.M (RTE Integrator)
Title : METHOD 8260B
Last Update : Tue Jan 20 08:28:10 2015
Response via : Initial Calibration
DataAcq Meth : 8260_BETA

Compound	R.T.	QIon	Response	Conc Unit	Qvalue
43) 1,2-Dichloropropane	6.53	63	381255	48.94979 ppb	100
44) Bromodichloromethane	6.87	83	532586	50.07076 ppb	100
45) Methyl Cyclohexane	6.48	83	427861	42.07287 ppb	100
46) Dibromomethane	6.66	93	277264	50.50788 ppb	100
48) MIBK (methyl isobutyl ket	7.56	43	225026	51.05315 ppb	100
49) 1-Bromo-2-chloroethane	7.17	63	337287	51.75055 ppb	100
50) Cis-1,3-Dichloropropene	7.36	75	675472	50.69415 ppb	100
51) Toluene	7.70	91	1550459	48.95301 ppb	100
52) Trans-1,3-Dichloropropene	7.96	75	613436	50.30580 ppb	100
53) 1,1,2-TCA	8.13	83	319064	50.11143 ppb	100
54) 2-Hexanone	8.43	43	173166	51.78876 ppb	100
57) 1,2-EDB	8.61	107	427621	51.99368 ppb	100
58) Tetrachloroethene	8.25	164	305572	48.25735 ppb	100
59) 1-Chlorohexane	9.14	91	420493	47.80237 ppb	100
60) 1,1,1,2-Tetrachloroethane	9.21	131	438604	50.89545 ppb	100
61) m&p-Xylene	9.37	91	1750197	102.57785 ppb	100
62) o-Xylene	9.76	106	713663	51.51006 ppb	100
63) Styrene	9.78	104	1235235	51.67660 ppb	100
65) 1,3-Dichloropropane	8.29	76	655824	50.25726 ppb	100
66) Dibromochloromethane	8.51	129	468442	51.42342 ppb	100
67) Chlorobenzene	9.12	112	1153413	49.96928 ppb	100
68) Ethylbenzene	9.25	91	1729280	50.47442 ppb	100
69) Bromoform	9.94	173	356991	51.60692 ppb	100
71) Isopropylbenzene	10.14	105	1622662	49.80195 ppb	100
72) 1,1,2,2-Tetrachloroethane	10.44	83	561117	51.81249 ppb	100
73) 1,2,3-Trichloropropane	10.46	110	176324	51.46414 ppb	100
74) t-1,4-Dichloro-2-Butene	10.50	53	134680	51.52588 ppb	100
75) Bromobenzene	10.40	156	546405	51.08673 ppb	100
76) n-Propylbenzene	10.54	91	1850834	50.45861 ppb	100
77) 4-Ethyltoluene	10.66	105	1639859	50.96354 ppb	100
78) 2-Chlorotoluene	10.61	91	1229226	51.17761 ppb	100
79) 1,3,5-Trimethylbenzene	10.73	105	1477026	51.02531 ppb	100
80) 4-Chlorotoluene	10.72	91	1436723	51.58838 ppb	100
81) Tert-Butylbenzene	11.04	119	1213590	49.63138 ppb	100
82) 1,2,4-Trimethylbenzene	11.09	105	1534724	50.32513 ppb	100
83) Sec-Butylbenzene	11.26	105	1706555	49.87680 ppb	100
84) p-Isopropyltoluene	11.42	119	1476116	50.44267 ppb	100
85) Benzyl Chloride	11.58	91	790359	51.89711 ppb	100
86) 1,3-DCB	11.34	146	952507	50.83185 ppb	100
87) 1,4-DCB	11.44	146	969388	50.45827 ppb	100
88) n-Butylbenzene	11.82	91	1295948	49.94258 ppb	100
89) 1,2-DCB	11.79	146	948823	50.67015 ppb	100
90) Hexachloroethane	12.05	117	299456	51.83580 ppb	100
91) 1,2-Dibromo-3-chloropropan	12.56	157	134424	49.83692 ppb	100
92) 1,2,4-Trichlorobenzene	13.39	180	687066	48.72170 ppb	100
93) Hexachlorobutadiene	13.58	225	310846	47.04471 ppb	100
94) Naphthalene	13.62	128	1759195	50.68478 ppb	100
95) 1,2,3-Trichlorobenzene	13.87	180	683422	48.68258 ppb	100

(#) = qualifier out of range (m) = manual integration

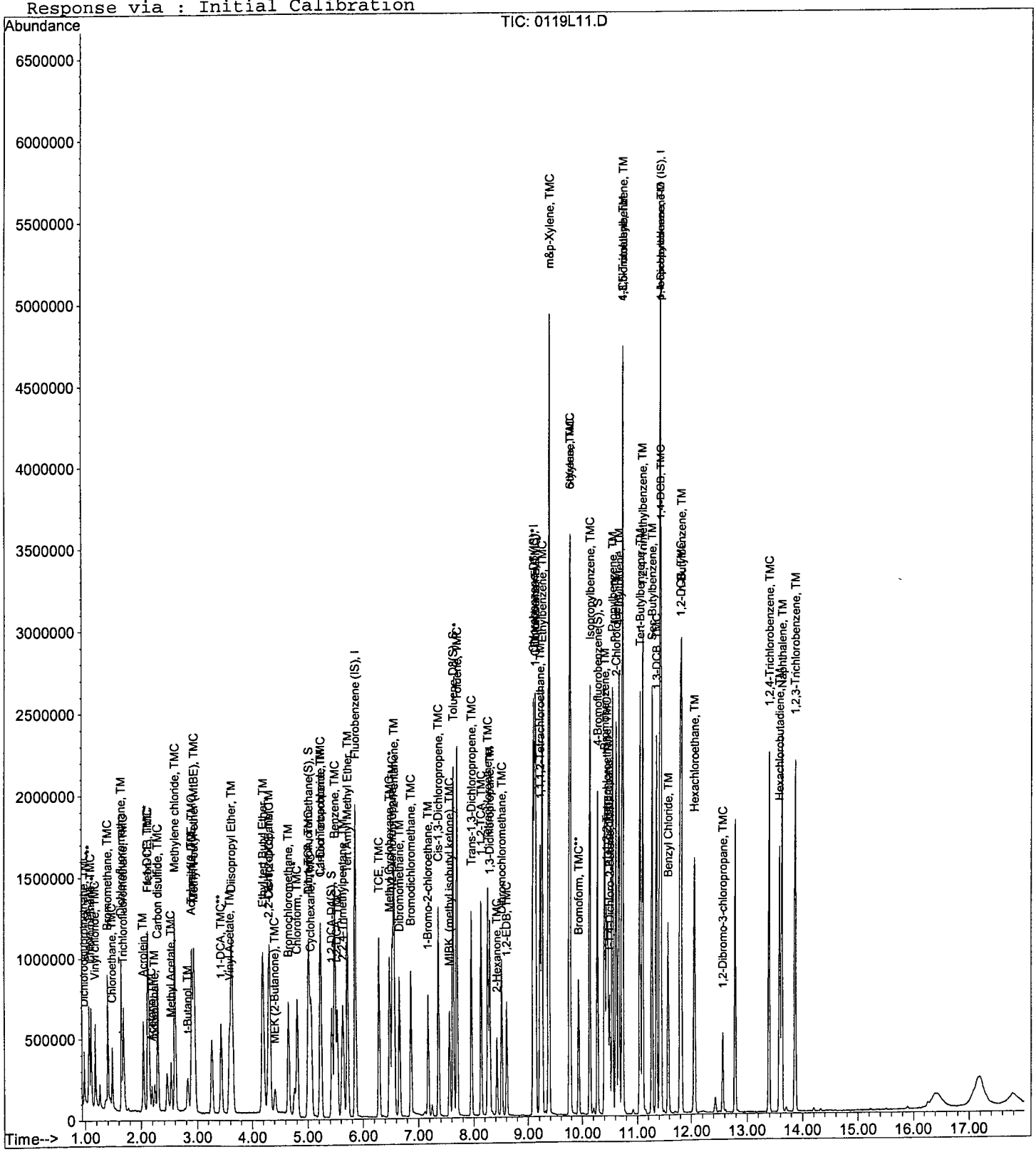
Quantitation Report

Data File : M:\LOKI\DATA\150119\0119L11.D
Acq On : 19 Jan 15 11:38
Sample : 50ug/kg Vol Std 01-19-15
Misc : 5mL w/5uL IS:01/14/15

Vial: 8
Operator: DG,SV,RS
Inst : Loki
Multiplr: 1.00

Quant Time: Jan 20 8:29 2015 Quant Results File: LALLS.RES

Method : M:\LOKI\DATA\150119\LALLS.M (RTE Integrator)
Title : METHOD 8260B
Last Update : Tue Jan 20 09:48:55 2015
Response via : Initial Calibration



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Quantitation Report (Not Reviewed)

Data File : M:\LOKI\DATA\150119\0119L12.D
Acq On : 19 Jan 15 11:59
Sample : 100ug/kg Vol Std 01-19-15
Misc : 5mL w/5uL IS:01/14/15

Vial: 9
Operator: DG,SV,RS
Inst : Loki
Multiplr: 1.00

Quant Time: Jan 20 8:29 2015

Quant Results File: LALLS.RES

Quant Method : M:\LOKI\DATA\150119\LALLS.M (RTE Integrator)
Title : METHOD 8260B
Last Update : Tue Jan 20 08:28:10 2015
Response via : Initial Calibration
DataAcq Meth : 8260_BETA

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene (IS)	5.86	96	942464	50.00000 ppb	0.00
55) Chlorobenzene-D5 (IS)	9.09	117	893632	50.00000 ppb	0.00
70) 1,4-Dichlorobenzene-D (IS)	11.41	152	500864	50.00000 ppb	0.00
System Monitoring Compounds					
31) Dibromofluoromethane(S)	5.02	111	818433	96.74800 ppb	0.00
Spiked Amount 52.439			Recovery	= 184.495%	
36) 1,2-DCA-D4(S)	5.43	65	909666	94.79014 ppb	0.00
Spiked Amount 48.066			Recovery	= 197.209%	
56) Toluene-D8(S)	7.62	98	2689599	94.98204 ppb	0.00
Spiked Amount 61.175			Recovery	= 155.263%	
64) 4-Bromofluorobenzene(S)	10.27	95	1129504	94.66711 ppb	0.00
Spiked Amount 54.538			Recovery	= 173.580%	
Target Compounds					Qvalue
2) Dichlorodifluoromethane	0.98	85	593984	99.86206 ppb	100
3) Freon 114	1.07	85	586878	97.16195 ppb	91
4) Chloromethane	1.10	50	717720	86.10282 ppb	99
5) Vinyl chloride	1.18	62	709219	98.78629 ppb	98
6) Bromomethane	1.40	94	539759	91.90380 ppb	97
7) Chloroethane	1.48	64	274597	53.32645 ppb	96
8) Dichlorofluoromethane	1.65	67	1328194	96.61491 ppb	99
9) Trichlorofluoromethane	1.68	101	1002974	93.33235 ppb	99
10) Acrolein	2.04	55	356945	307.49430 ppb	99
11) Acetone	2.20	43	280191	97.05924 ppb	99
12) Freon-113	2.13	101	625902	97.55701 ppb	98
13) 1,1-DCE	2.12	61	918488	98.44744 ppb	99
14) t-Butanol	2.83	59	378345	327.94303 ppb	98
15) Methyl Acetate	2.53	43	635044	96.70032 ppb	97
16) Iodomethane	2.24	142	440537	100.25904 ppb	99
17) Acrylonitrile	2.89	53	350812	99.32656 ppb	96
18) Methylene chloride	2.60	84	929520	98.57079 ppb	100
19) Carbon disulfide	2.29	76	1980567	97.40601 ppb	99
20) Methyl t-butyl ether (MtBE	2.94	73	2399114	98.64793 ppb	99
21) Trans-1,2-DCE	2.90	96	736113	96.46782 ppb	99
22) Diisopropyl Ether	3.63	45	2296874	98.18776 ppb	100
23) 1,1-DCA	3.44	63	1213548	95.10556 ppb	99
24) Vinyl Acetate	3.58	43	2604956	100.66519 ppb	99
25) Ethyl tert Butyl Ether	4.20	59	2340905	101.09826 ppb	100
26) MEK (2-Butanone)	4.42	43	380514	93.15953 ppb	100
27) Cis-1,2-DCE	4.32	96	901536	99.06364 ppb	99
28) 2,2-Dichloropropane	4.30	77	981219	95.57544 ppb	98
29) Chloroform	4.81	83	1261394	94.24619 ppb	99
30) Bromochloromethane	4.65	128	446264	94.93844 ppb	99
32) 1,1,1-TCA	5.00	97	965019	97.52639 ppb	99
33) Cyclohexane	5.06	41	470685	102.71626 ppb	97
34) 1,1-Dichloropropene	5.23	75	847632	98.65573 ppb	98
35) 2,2,4-Trimethylpentane	5.63	57	1814660	98.29149 ppb	95
37) Carbon Tetrachloride	5.22	117	864570	101.44700 ppb	99
38) Tert Amyl Methyl Ether	5.71	73	2146803	99.00432 ppb	100
39) 1,2-DCA	5.53	62	1070408	98.40109 ppb	100
40) Benzene	5.49	78	2725019	98.16837 ppb	98
41) TCE	6.29	95	697580	98.24339 ppb	98
42) 2-Pentanone	6.56	43	1822412	292.54653 ppb	98

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : M:\LOKI\DATA\150119\0119L12.D
Acq On : 19 Jan 15 11:59
Sample : 100ug/kg Vol Std 01-19-15
Misc : 5mL w/5uL IS:01/14/15

Vial: 9
Operator: DG,SV,RS
Inst : Loki
Multiplr: 1.00

Quant Time: Jan 20 8:29 2015

Quant Results File: LALLS.RES

Quant Method : M:\LOKI\DATA\150119\LALLS.M (RTE Integrator)
Title : METHOD 8260B
Last Update : Tue Jan 20 08:28:10 2015
Response via : Initial Calibration
DataAcq Meth : 8260_BETA

Compound	R.T.	QIon	Response	Conc Unit	Qvalue
43) 1,2-Dichloropropane	6.53	63	762369	98.74557 ppb	100
44) Bromodichloromethane	6.87	83	1064791	100.98943 ppb	99
45) Methyl Cyclohexane	6.48	83	1048314	103.99392 ppb	98
46) Dibromomethane	6.66	93	543134	99.81361 ppb	97
48) MIBK (methyl isobutyl ket	7.56	43	443324	101.46779 ppb	100
49) 1-Bromo-2-chloroethane	7.17	63	660058	102.16791 ppb	100
50) Cis-1,3-Dichloropropene	7.36	75	1351576	102.33120 ppb	100
51) Toluene	7.69	91	3125197	99.54366 ppb	100
52) Trans-1,3-Dichloropropene	7.96	75	1237634	102.39015 ppb	99
53) 1,1,2-TCA	8.13	83	635716	100.72546 ppb	99
54) 2-Hexanone	8.43	43	345920	104.36758 ppb	100
57) 1,2-EDB	8.61	107	833989	100.32843 ppb	98
58) Tetrachloroethene	8.25	164	633182	98.93515 ppb	99
59) 1-Chlorohexane	9.14	91	910780	102.44159 ppb	98
60) 1,1,1,2-Tetrachloroethane	9.21	131	873670	100.30577 ppb	98
61) m&p-Xylene	9.37	91	3523522	204.32231 ppb	99
62) o-Xylene	9.76	106	1421112	101.48441 ppb	100
63) Styrene	9.78	104	2489926	103.06304 ppb	99
65) 1,3-Dichloropropane	8.29	76	1283110	97.28537 ppb	98
66) Dibromochloromethane	8.51	129	929582	100.96364 ppb	97
67) Chlorobenzene	9.12	112	2299997	98.58654 ppb	100
68) Ethylbenzene	9.25	91	3453174	99.72330 ppb	100
69) Bromoform	9.93	173	718488	102.76431 ppb	100
71) Isopropylbenzene	10.14	105	3333237	98.35432 ppb	99
72) 1,1,2,2-Tetrachloroethane	10.44	83	1095066	97.21433 ppb	98
73) 1,2,3-Trichloropropane	10.46	110	344803	96.75498 ppb	99
74) t-1,4-Dichloro-2-Butene	10.50	53	274343	100.90789 ppb	97
75) Bromobenzene	10.40	156	1096741	98.58401 ppb	98
76) n-Propylbenzene	10.54	91	3791334	99.37308 ppb	99
77) 4-Ethyltoluene	10.66	105	3328355	99.44699 ppb	100
78) 2-Chlorotoluene	10.61	91	2440143	97.67255 ppb	99
79) 1,3,5-Trimethylbenzene	10.73	105	3050623	101.31995 ppb	99
80) 4-Chlorotoluene	10.72	91	2890636	99.78867 ppb	99
81) Tert-Butylbenzene	11.04	119	2520850	99.11522 ppb	99
82) 1,2,4-Trimethylbenzene	11.09	105	3166408	99.82295 ppb	98
83) Sec-Butylbenzene	11.26	105	3593660	100.97742 ppb	100
84) p-Isopropyltoluene	11.41	119	3091189	101.55753 ppb	99
85) Benzyl Chloride	11.58	91	1624667	102.56333 ppb	99
86) 1,3-DCB	11.34	146	1898658	97.41447 ppb	98
87) 1,4-DCB	11.43	146	1946634	97.41548 ppb	99
88) n-Butylbenzene	11.82	91	2761753	102.32391 ppb	100
89) 1,2-DCB	11.80	146	1927234	98.94876 ppb	99
90) Hexachloroethane	12.05	117	619440	103.08725 ppb	98
91) 1,2-Dibromo-3-chloropropan	12.56	157	288705	102.90528 ppb	97
92) 1,2,4-Trichlorobenzene	13.39	180	1459783	99.52249 ppb	97
93) Hexachlorobutadiene	13.58	225	695550	101.20520 ppb	97
94) Naphthalene	13.62	128	3861109	106.95093 ppb	99
95) 1,2,3-Trichlorobenzene	13.87	180	1483583	101.60275 ppb	99

(#) = qualifier out of range (m) = manual integration

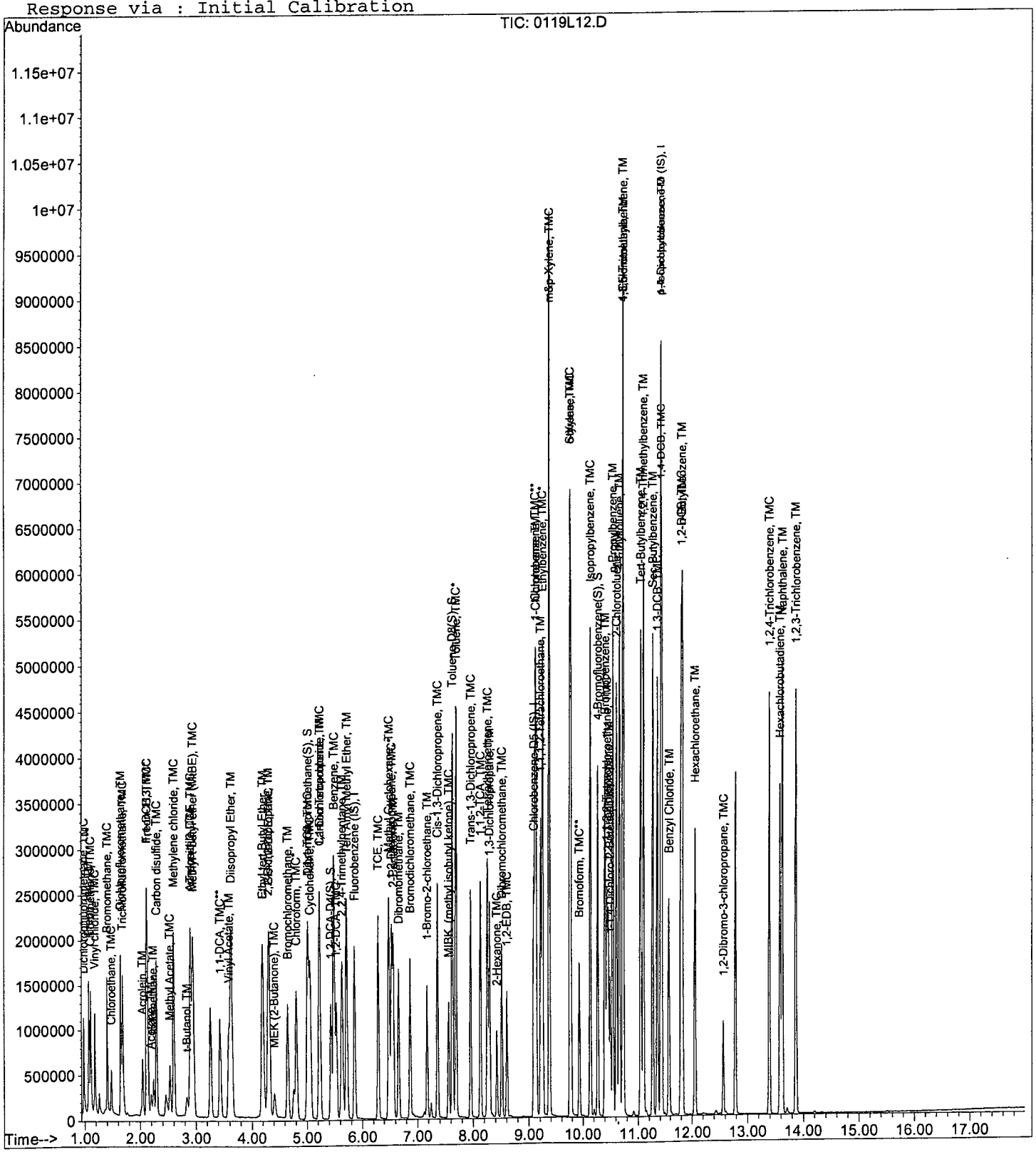
Quantitation Report

Data File : M:\LOKI\DATA\150119\0119L12.D
Acq On : 19 Jan 15 11:59
Sample : 100ug/kg Vol Std 01-19-15
Misc : 5mL w/5uL IS:01/14/15

Vial: 9
Operator: DG,SV,RS
Inst : Loki
Multiplr: 1.00

Quant Time: Jan 20 8:29 2015 Quant Results File: LALLS.RES

Method : M:\LOKI\DATA\150119\LALLS.M (RTE Integrator)
Title : METHOD 8260B
Last Update : Tue Jan 20 09:48:55 2015
Response via : Initial Calibration



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Quantitation Report (Not Reviewed)

Data File : M:\LOKI\DATA\150119\0119L13.D
Acq On : 19 Jan 15 12:21
Sample : 150ug/kg Vol Std 01-19-15
Misc : 5mL w/5uL IS:01/14/15

Vial: 10
Operator: DG,SV,RS
Inst : Loki
Multiplr: 1.00

Quant Time: Jan 20 8:29 2015

Quant Results File: LALLS.RES

Quant Method : M:\LOKI\DATA\150119\LALLS.M (RTE Integrator)
Title : METHOD 8260B
Last Update : Tue Jan 20 08:28:10 2015
Response via : Initial Calibration
DataAcq Meth : 8260_BETA

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene (IS)	5.86	96	955339	50.00000 ppb	0.00
55) Chlorobenzene-D5 (IS)	9.09	117	898496	50.00000 ppb	0.00
70) 1,4-Dichlorobenzene-D (IS)	11.42	152	504064	50.00000 ppb	0.00
System Monitoring Compounds					
31) Dibromofluoromethane(S)	5.02	111	1273522	148.51578 ppb	0.00
Spiked Amount 52.439			Recovery	= 283.215%	
36) 1,2-DCA-D4(S)	5.43	65	1421113	146.08885 ppb	0.00
Spiked Amount 48.066			Recovery	= 303.935%	
56) Toluene-D8(S)	7.62	98	4155110	145.94158 ppb	0.00
Spiked Amount 61.175			Recovery	= 238.565%	
64) 4-Bromofluorobenzene(S)	10.27	95	1765418	147.16395 ppb	0.00
Spiked Amount 54.538			Recovery	= 269.838%	
Target Compounds					Qvalue
2) Dichlorodifluoromethane	0.98	85	887296	147.16400 ppb	99
3) Freon 114	1.07	85	884410	142.65272 ppb	95
4) Chloromethane	1.10	50	1204606	142.56556 ppb	99
5) Vinyl chloride	1.18	62	1138791	156.48315 ppb	99
6) Bromomethane	1.40	94	746328	125.36334 ppb	96
7) Chloroethane	1.47	64	330049	63.23137 ppb	98
8) Dichlorofluoromethane	1.64	67	2034234	145.97914 ppb	100
9) Trichlorofluoromethane	1.68	101	1626150	146.97969 ppb	97
10) Acrolein	2.04	55	399023	338.31871 ppb	96
11) Acetone	2.20	43	425993	149.31837 ppb	97
12) Freon-113	2.13	101	937208	142.96709 ppb	99
13) 1,1-DCE	2.11	61	1412734	149.38211 ppb	99
14) t-Butanol	2.85	59	460638	393.89225 ppb	99
15) Methyl Acetate	2.53	43	967073	145.27490 ppb	98
16) Iodomethane	2.24	142	775843	150.11294 ppb	98
17) Acrylonitrile	2.89	53	522166	145.85013 ppb	99
18) Methylene chloride	2.60	84	1356458	144.85672 ppb	99
19) Carbon disulfide	2.29	76	2995683	145.34475 ppb	98
20) Methyl t-butyl ether (MtBE	2.95	73	3648816	148.01179 ppb	99
21) Trans-1,2-DCE	2.90	96	1107910	143.23519 ppb	99
22) Diisopropyl Ether	3.63	45	3507647	147.92560 ppb	100
23) 1,1-DCA	3.43	63	1799221	139.10435 ppb	99
24) Vinyl Acetate	3.58	43	3896655	148.55188 ppb	100
25) Ethyl tert Butyl Ether	4.20	59	3524508	150.16395 ppb	100
26) MEK (2-Butanone)	4.42	43	595556	143.84227 ppb	99
27) Cis-1,2-DCE	4.32	96	1343926	145.68466 ppb	98
28) 2,2-Dichloropropane	4.29	77	1443375	138.69691 ppb	99
29) Chloroform	4.81	83	1879633	138.54580 ppb	100
30) Bromochloromethane	4.65	128	661495	138.83023 ppb	98
32) 1,1,1-TCA	5.00	97	1403341	139.91258 ppb	96
33) Cyclohexane	5.05	41	686074	147.70224 ppb	98
34) 1,1-Dichloropropene	5.23	75	1233839	141.67092 ppb	100
35) 2,2,4-Trimethylpentane	5.63	57	2666792	140.80541 ppb	94
37) Carbon Tetrachloride	5.22	117	1274961	147.58534 ppb	99
38) Tert Amyl Methyl Ether	5.71	73	3238992	147.35983 ppb	99
39) 1,2-DCA	5.53	62	1602639	145.34281 ppb	100
40) Benzene	5.48	78	4029369	143.20110 ppb	99
41) TCE	6.29	95	1037727	144.17823 ppb	97
42) 2-Pentanone	6.56	43	2198911	348.22768 ppb	98

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : M:\LOKI\DATA\150119\0119L13.D
Acq On : 19 Jan 15 12:21
Sample : 150ug/kg Vol Std 01-19-15
Misc : 5mL w/5uL IS:01/14/15

Vial: 10
Operator: DG,SV,RS
Inst : Loki
Multiplr: 1.00

Quant Time: Jan 20 8:29 2015

Quant Results File: LALLS.RES

Quant Method : M:\LOKI\DATA\150119\LALLS.M (RTE Integrator)
Title : METHOD 8260B
Last Update : Tue Jan 20 08:28:10 2015
Response via : Initial Calibration
DataAcq Meth : 8260_BETA

Compound	R.T.	QIon	Response	Conc Unit	Qvalue
43) 1,2-Dichloropropane	6.53	63	1126402	143.93057 ppb	100
44) Bromodichloromethane	6.87	83	1595288	149.26497 ppb	99
45) Methyl Cyclohexane	6.48	83	1528241	149.56008 ppb	99
46) Dibromomethane	6.66	93	798861	144.83090 ppb	98
48) MIBK (methyl isobutyl ket	7.56	43	682806	154.17414 ppb	99
49) 1-Bromo-2-chloroethane	7.17	63	989685	151.12513 ppb	100
50) Cis-1,3-Dichloropropene	7.36	75	2056641	153.61491 ppb	98
51) Toluene	7.70	91	4610865	144.88581 ppb	100
52) Trans-1,3-Dichloropropene	7.96	75	1875639	153.08141 ppb	99
53) 1,1,2-TCA	8.13	83	946743	147.98424 ppb	97
54) 2-Hexanone	8.43	43	537748	160.05749 ppb	98
57) 1,2-EDB	8.61	107	1256655	150.35654 ppb	98
58) Tetrachloroethene	8.25	164	919232	142.85312 ppb	99
59) 1-Chlorohexane	9.14	91	1332190	149.02926 ppb	100
60) 1,1,1,2-Tetrachloroethane	9.21	131	1311174	149.72054 ppb	98
61) m&p-Xylene	9.37	91	5148572	296.93962 ppb	98
62) o-Xylene	9.76	106	2127503	151.10672 ppb	99
63) Styrene	9.78	104	3778544	155.55486 ppb	100
65) 1,3-Dichloropropane	8.29	76	1908952	143.95317 ppb	99
66) Dibromochloromethane	8.51	129	1410446	152.36187 ppb	99
67) Chlorobenzene	9.12	112	3429083	146.18773 ppb	99
68) Ethylbenzene	9.25	91	5121488	147.10143 ppb	99
69) Bromoform	9.93	173	1102522	156.83848 ppb	99
71) Isopropylbenzene	10.14	105	4981919	146.06900 ppb	100
72) 1,1,2,2-Tetrachloroethane	10.44	83	1664703	146.84559 ppb	99
73) 1,2,3-Trichloropropane	10.46	110	510765	142.41559 ppb	100
74) t-1,4-Dichloro-2-Butene	10.50	53	418186	152.83924 ppb	98
75) Bromobenzene	10.40	156	1651396	147.49856 ppb	98
76) n-Propylbenzene	10.54	91	5665655	147.55740 ppb	99
77) 4-Ethyltoluene	10.66	105	4993938	148.26522 ppb	100
78) 2-Chlorotoluene	10.61	91	3657598	145.47466 ppb	99
79) 1,3,5-Trimethylbenzene	10.73	105	4530688	149.52188 ppb	100
80) 4-Chlorotoluene	10.72	91	4304700	147.66067 ppb	99
81) Tert-Butylbenzene	11.04	119	3763409	147.03100 ppb	98
82) 1,2,4-Trimethylbenzene	11.09	105	4788210	149.99295 ppb	98
83) Sec-Butylbenzene	11.26	105	5366551	149.83617 ppb	100
84) p-Isopropyltoluene	11.42	119	4644544	151.62254 ppb	100
85) Benzyl Chloride	11.58	91	2628963	164.90975 ppb	99
86) 1,3-DCB	11.34	146	2872577	146.44769 ppb	100
87) 1,4-DCB	11.44	146	2933667	145.87760 ppb	99
88) n-Butylbenzene	11.82	91	4133291	152.16768 ppb	99
89) 1,2-DCB	11.79	146	2918178	148.87502 ppb	99
90) Hexachloroethane	12.05	117	989133	163.56657 ppb	98
91) 1,2-Dibromo-3-chloropropan	12.56	157	458353	162.33702 ppb	96
92) 1,2,4-Trichlorobenzene	13.39	180	2299831	155.79839 ppb	99
93) Hexachlorobutadiene	13.58	225	1040971	150.50372 ppb	96
94) Naphthalene	13.62	128	6102793	167.97138 ppb	100
95) 1,2,3-Trichlorobenzene	13.87	180	2366130	161.01500 ppb	99

(#) = qualifier out of range (m) = manual integration

Quantitation Report

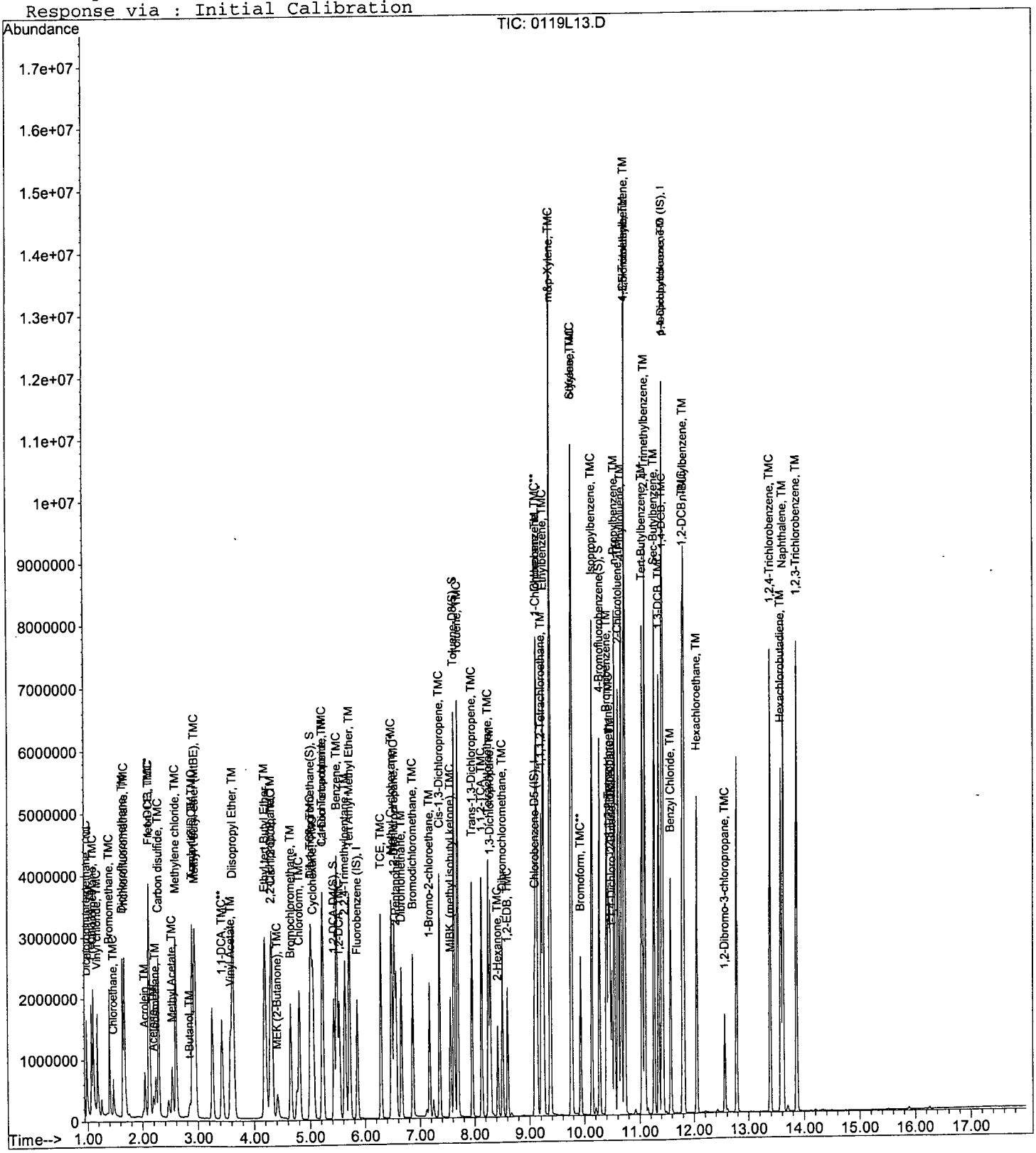
Data File : M:\LOKI\DATA\150119\0119L13.D
Acq On : 19 Jan 15 12:21
Sample : 150ug/kg Vol Std 01-19-15
Misc : 5mL w/5uL IS:01/14/15

Vial: 10
Operator: DG,SV,RS
Inst : Loki
Multiplr: 1.00

Quant Time: Jan 20 8:29 2015

Quant Results File: LALLS.RES

Method : M:\LOKI\DATA\150119\LALLS.M (RTE Integrator)
Title : METHOD 8260B
Last Update : Tue Jan 20 09:48:55 2015
Response via : Initial Calibration



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Quantitation Report (Not Reviewed)

Data File : M:\LOKI\DATA\150119\0119L14.D
Acq On : 19 Jan 15 12:42
Sample : 200ug/kg Vol Std 01-19-15
Misc : 5mL w/5uL IS&S:01/14/15,10-06-14

Vial: 11
Operator: DG,SV,RS
Inst : Loki
Multiplr: 1.00

Quant Time: Jan 20 8:29 2015

Quant Results File: LALLS.RES

Quant Method : M:\LOKI\DATA\150119\LALLS.M (RTE Integrator)
Title : METHOD 8260B
Last Update : Tue Jan 20 08:28:10 2015
Response via : Initial Calibration
DataAcq Meth : 8260_BETA

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene (IS)	5.86	96	953742	50.00000 ppb	0.00
55) Chlorobenzene-D5 (IS)	9.09	117	955072	50.00000 ppb	0.00
70) 1,4-Dichlorobenzene-D (IS)	11.42	152	539200	50.00000 ppb	0.00
System Monitoring Compounds					
31) Dibromofluoromethane(S)	5.02	111	1796401	209.84375 ppb	0.00
Spiked Amount 52.439			Recovery	= 400.166%	
36) 1,2-DCA-D4(S)	5.43	65	1999226	205.86236 ppb	0.00
Spiked Amount 48.066			Recovery	= 428.292%	
56) Toluene-D8(S)	7.62	98	5932776	196.03540 ppb	0.00
Spiked Amount 61.175			Recovery	= 320.450%	
64) 4-Bromofluorobenzene(S)	10.27	95	2555823	200.43091 ppb	0.00
Spiked Amount 54.538			Recovery	= 367.507%	
Target Compounds					Qvalue
2) Dichlorodifluoromethane	0.98	85	1245696	206.95299 ppb	100
3) Freon 114	1.07	85	1308082	209.56747 ppb	96
4) Chloromethane	1.10	50	1725955	204.60944 ppb	98
5) Vinyl chloride	1.18	62	1649129	226.98899 ppb	99
6) Bromomethane	1.40	94	992604	167.01037 ppb	97
7) Chloroethane	1.47	64	410260	78.72994 ppb	99
8) Dichlorofluoromethane	1.64	67	2972899	213.69612 ppb	99
9) Trichlorofluoromethane	1.67	101	2313777	207.84723 ppb	98
10) Acrolein	2.05	55	469168	397.08992 ppb	99
11) Acetone	2.20	43	567200	201.64465 ppb	96
12) Freon-113	2.13	101	1369563	208.15968 ppb	99
13) 1,1-DCE	2.11	61	2041736	216.25412 ppb	99
14) t-Butanol	2.77	59	6153	5.27025 ppb	97
15) Methyl Acetate	2.53	43	1378175	207.37782 ppb	96
16) Iodomethane	2.24	142	1176796	199.94609 ppb	99
17) Acrylonitrile	2.89	53	741882	207.56764 ppb	99
18) Methylene chloride	2.60	84	1873095	202.93468 ppb	99
19) Carbon disulfide	2.29	76	4418781	214.74970 ppb	99
20) Methyl t-butyl ether (MtBE	2.95	73	5229395	212.48212 ppb	99
21) Trans-1,2-DCE	2.90	96	1623017	210.18171 ppb	97
22) Diisopropyl Ether	3.63	45	5036528	212.75771 ppb	97
23) 1,1-DCA	3.43	63	2571261	199.12646 ppb	99
24) Vinyl Acetate	3.59	43	5502824	210.13501 ppb	99
25) Ethyl tert Butyl Ether	4.20	59	4820140	205.70906 ppb	99
26) MEK (2-Butanone)	4.42	43	773243	187.07102 ppb	98
27) Cis-1,2-DCE	4.32	96	1828037	198.49522 ppb	98
28) 2,2-Dichloropropane	4.29	77	1981525	190.72770 ppb	100
29) Chloroform	4.81	83	2712114	200.24185 ppb	100
30) Bromochloromethane	4.65	128	942983	198.23847 ppb	99
32) 1,1,1-TCA	5.00	97	2091682	208.88911 ppb	98
33) Cyclohexane	5.06	41	1004711	216.66256 ppb	93
34) 1,1-Dichloropropene	5.23	75	1838850	211.49257 ppb	98
35) 2,2,4-Trimethylpentane	5.63	57	3996246	209.46480 ppb	93
37) Carbon Tetrachloride	5.22	117	1893484	219.55056 ppb	97
38) Tert Amyl Methyl Ether	5.71	73	4724293	215.29436 ppb	99
39) 1,2-DCA	5.53	62	2276610	206.81073 ppb	100
40) Benzene	5.48	78	5879698	209.31046 ppb	99
41) TCE	6.29	95	1509804	210.11824 ppb	97
42) 2-Pentanone	6.57	43	2710410	429.94929 ppb	99

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : M:\LOKI\DATA\150119\0119L14.D
Acq On : 19 Jan 15 12:42
Sample : 200ug/kg Vol Std 01-19-15
Misc : 5mL w/5uL IS&S:01/14/15,10-06-14

Vial: 11
Operator: DG,SV,RS
Inst : Loki
Multiplr: 1.00

Quant Time: Jan 20 8:29 2015

Quant Results File: LALLS.RES

Quant Method : M:\LOKI\DATA\150119\LALLS.M (RTE Integrator)
Title : METHOD 8260B
Last Update : Tue Jan 20 08:28:10 2015
Response via : Initial Calibration
DataAcq Meth : 8260_BETA

	Compound	R.T.	QIon	Response	Conc	Unit	Qvalue
43)	1,2-Dichloropropane	6.53	63	1648921	211.05036	ppb	100
44)	Bromodichloromethane	6.87	83	2331342	218.49997	ppb	99
45)	Methyl Cyclohexane	6.48	83	2296172	225.08930	ppb	100
46)	Dibromomethane	6.66	93	1115809	202.63128	ppb	99
48)	MIBK (methyl isobutyl ket	7.56	43	957234	216.50051	ppb	99
49)	1-Bromo-2-chloroethane	7.17	63	1412673	216.07670	ppb	100
50)	Cis-1,3-Dichloropropene	7.36	75	2969655	222.18128	ppb	99
51)	Toluene	7.70	91	6744437	212.28327	ppb	100
52)	Trans-1,3-Dichloropropene	7.96	75	2741961	224.16152	ppb	99
53)	1,1,2-TCA	8.13	83	1387873	217.29999	ppb	98
54)	2-Hexanone	8.43	43	761263	226.96481	ppb	100
57)	1,2-EDB	8.61	107	1829564	205.93678	ppb	99
58)	Tetrachloroethene	8.25	164	1355962	198.24040	ppb	99
59)	1-Chlorohexane	9.14	91	1983174	208.71143	ppb	99
60)	1,1,1,2-Tetrachloroethane	9.21	131	1932690	207.61718	ppb	97
61)	m&p-Xylene	9.37	91	7428139	403.03375	ppb	97
62)	o-Xylene	9.76	106	3142580	209.98099	ppb	99
63)	Styrene	9.78	104	5543761	214.70572	ppb	100
65)	1,3-Dichloropropane	8.29	76	2773452	196.75551	ppb	98
66)	Dibromochloromethane	8.52	129	2081288	211.51056	ppb	99
67)	Chlorobenzene	9.12	112	5026951	201.61257	ppb	100
68)	Ethylbenzene	9.25	91	7449583	201.29488	ppb	98
69)	Bromoform	9.94	173	1634740	218.77319	ppb	100
71)	Isopropylbenzene	10.14	105	7383579	202.37838	ppb	100
72)	1,1,2,2-Tetrachloroethane	10.44	83	2450634	202.08700	ppb	98
73)	1,2,3-Trichloropropane	10.47	110	742094	193.43325	ppb	99
74)	t-1,4-Dichloro-2-Butene	10.50	53	605407	206.84671	ppb	97
75)	Bromobenzene	10.41	156	2388098	199.39970	ppb	98
76)	n-Propylbenzene	10.54	91	8285471	201.72692	ppb	99
77)	4-Ethyltoluene	10.66	105	7325268	203.30847	ppb	99
78)	2-Chlorotoluene	10.61	91	5317703	197.72030	ppb	99
79)	1,3,5-Trimethylbenzene	10.73	105	6610840	203.95438	ppb	99
80)	4-Chlorotoluene	10.72	91	6289452	201.68359	ppb	100
81)	Tert-Butylbenzene	11.04	119	5579238	203.76902	ppb	98
82)	1,2,4-Trimethylbenzene	11.09	105	6979222	204.38098	ppb	100
83)	Sec-Butylbenzene	11.26	105	7899602	206.18754	ppb	100
84)	p-Isopropyltoluene	11.42	119	6911740	210.93268	ppb	100
85)	Benzyl Chloride	11.58	91	3835200	224.89805	ppb	99
86)	1,3-DCB	11.35	146	4205016	200.40765	ppb	100
87)	1,4-DCB	11.44	146	4285333	199.20405	ppb	100
88)	n-Butylbenzene	11.82	91	6157009	211.90052	ppb	100
89)	1,2-DCB	11.80	146	4300137	205.08228	ppb	100
90)	Hexachloroethane	12.05	117	1470540	227.32777	ppb	99
91)	1,2-Dibromo-3-chloropropan	12.56	157	660603	218.72269	ppb	95
92)	1,2,4-Trichlorobenzene	13.39	180	3470290	219.77010	ppb	99
93)	Hexachlorobutadiene	13.58	225	1589751	214.86888	ppb	95
94)	Naphthalene	13.62	128	8557460	220.18479	ppb	99
95)	1,2,3-Trichlorobenzene	13.86	180	3459151	220.05592	ppb	99

(#) = qualifier out of range (m) = manual integration

Quantitation Report

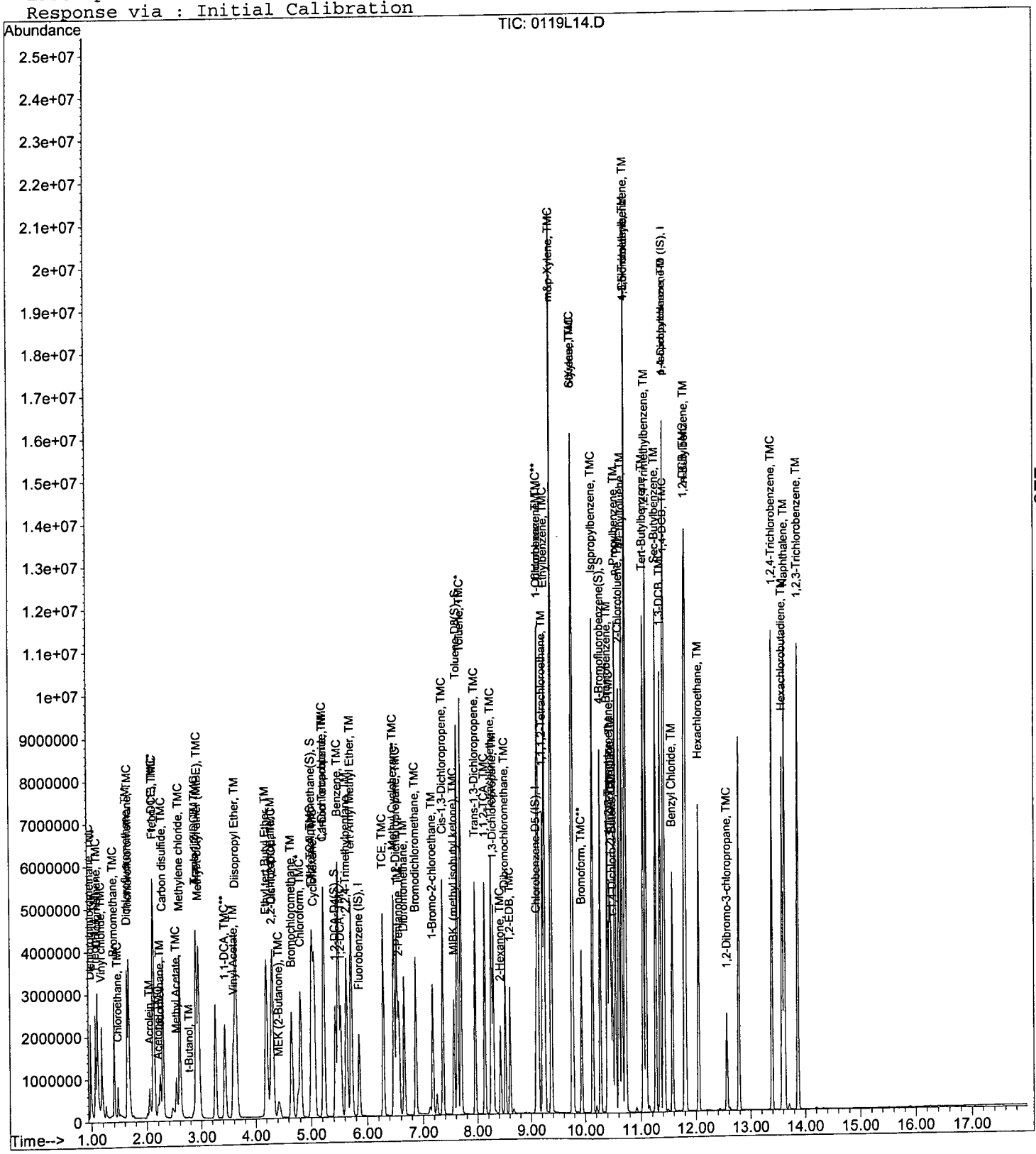
Data File : M:\LOKI\DATA\150119\0119L14.D
Acq On : 19 Jan 15 12:42
Sample : 200ug/kg Vol Std 01-19-15
Misc : 5mL w/5uL IS&S:01/14/15,10-06-14

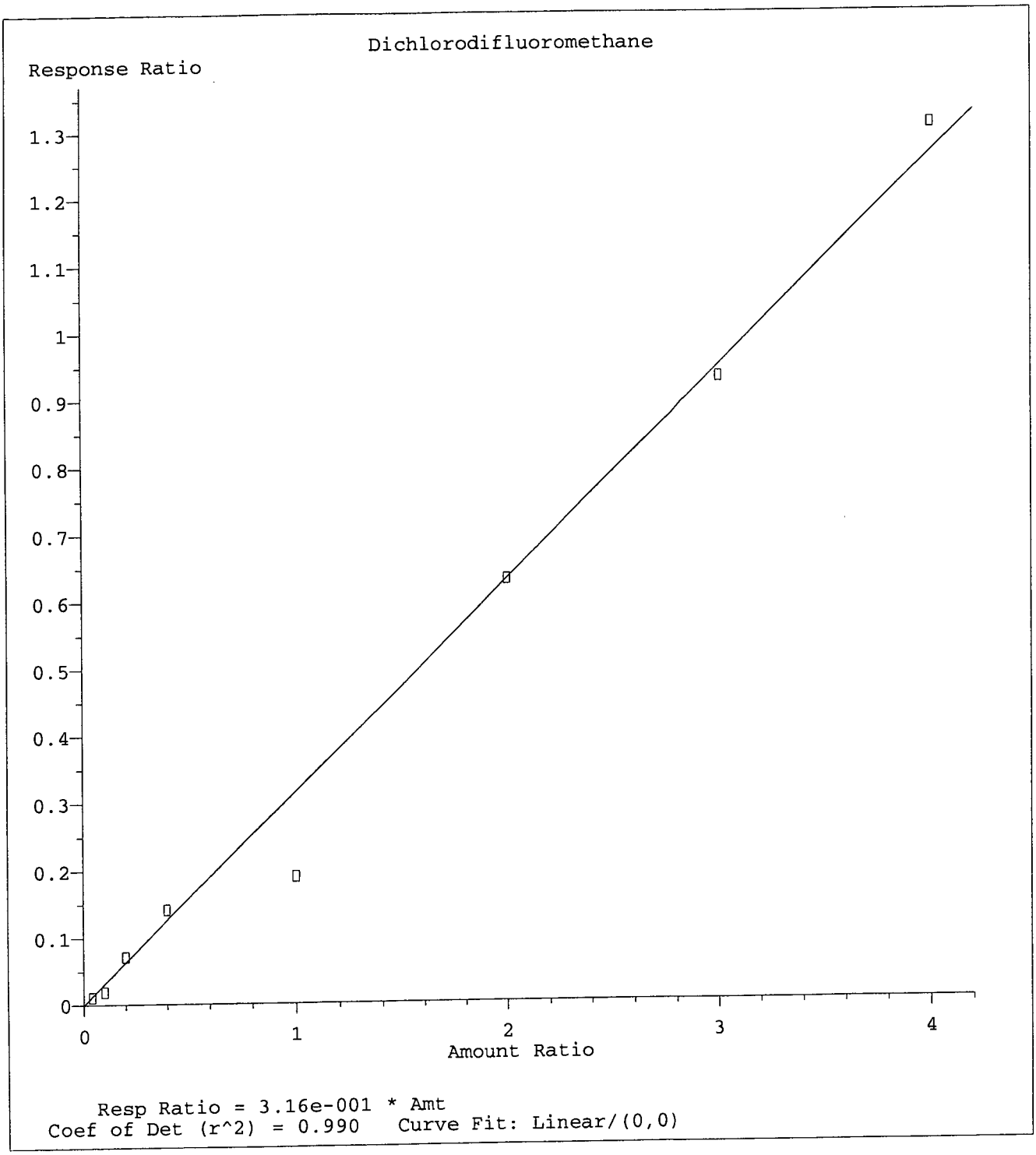
Vial: 11
Operator: DG,SV,RS
Inst : Loki
Multiplr: 1.00

Quant Time: Jan 20 8:29 2015

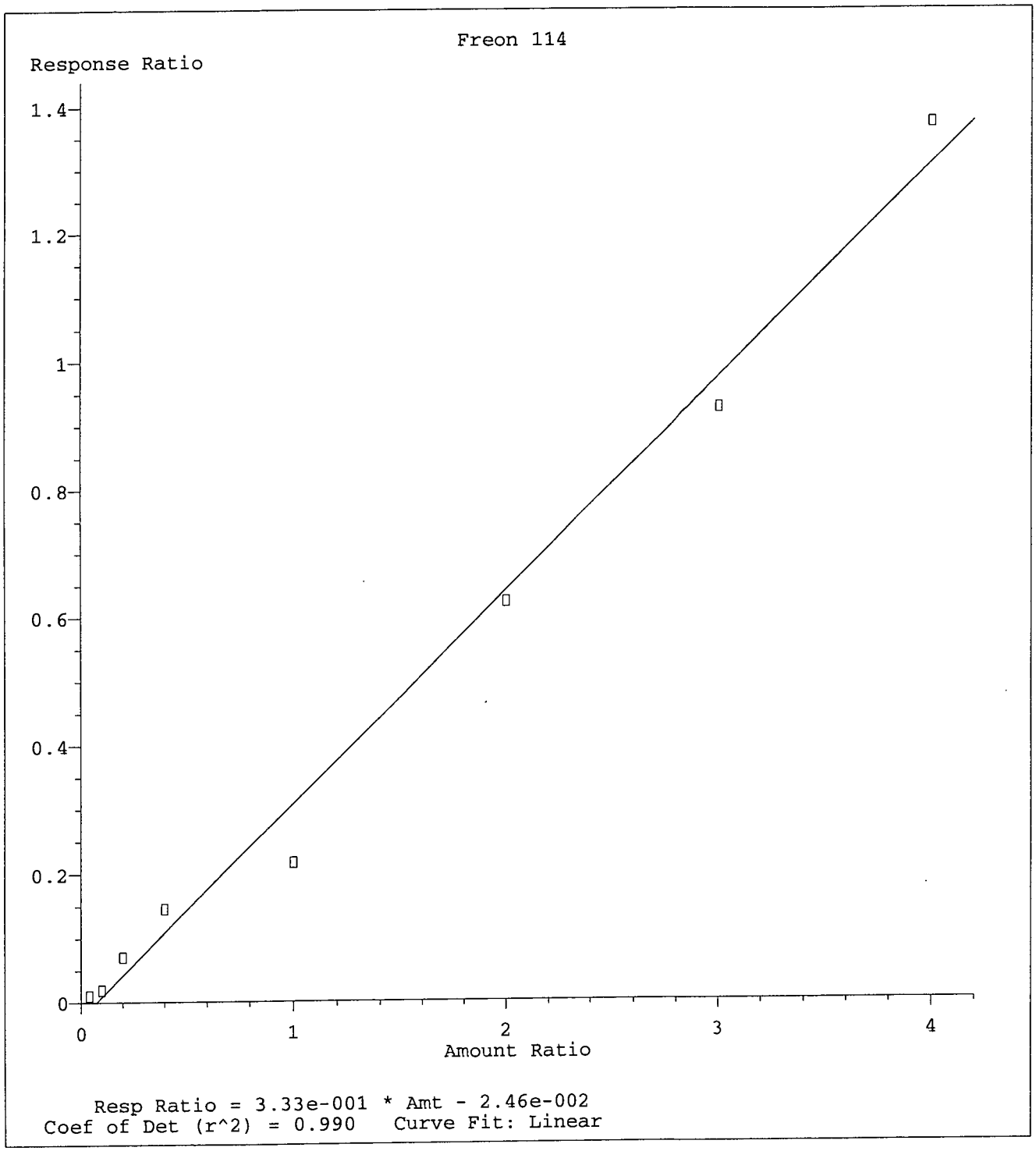
Quant Results File: LALLS.RES

Method : M:\LOKI\DATA\150119\LALLS.M (RTE Integrator)
Title : METHOD 8260B
Last Update : Tue Jan 20 09:48:55 2015
Response via : Initial Calibration

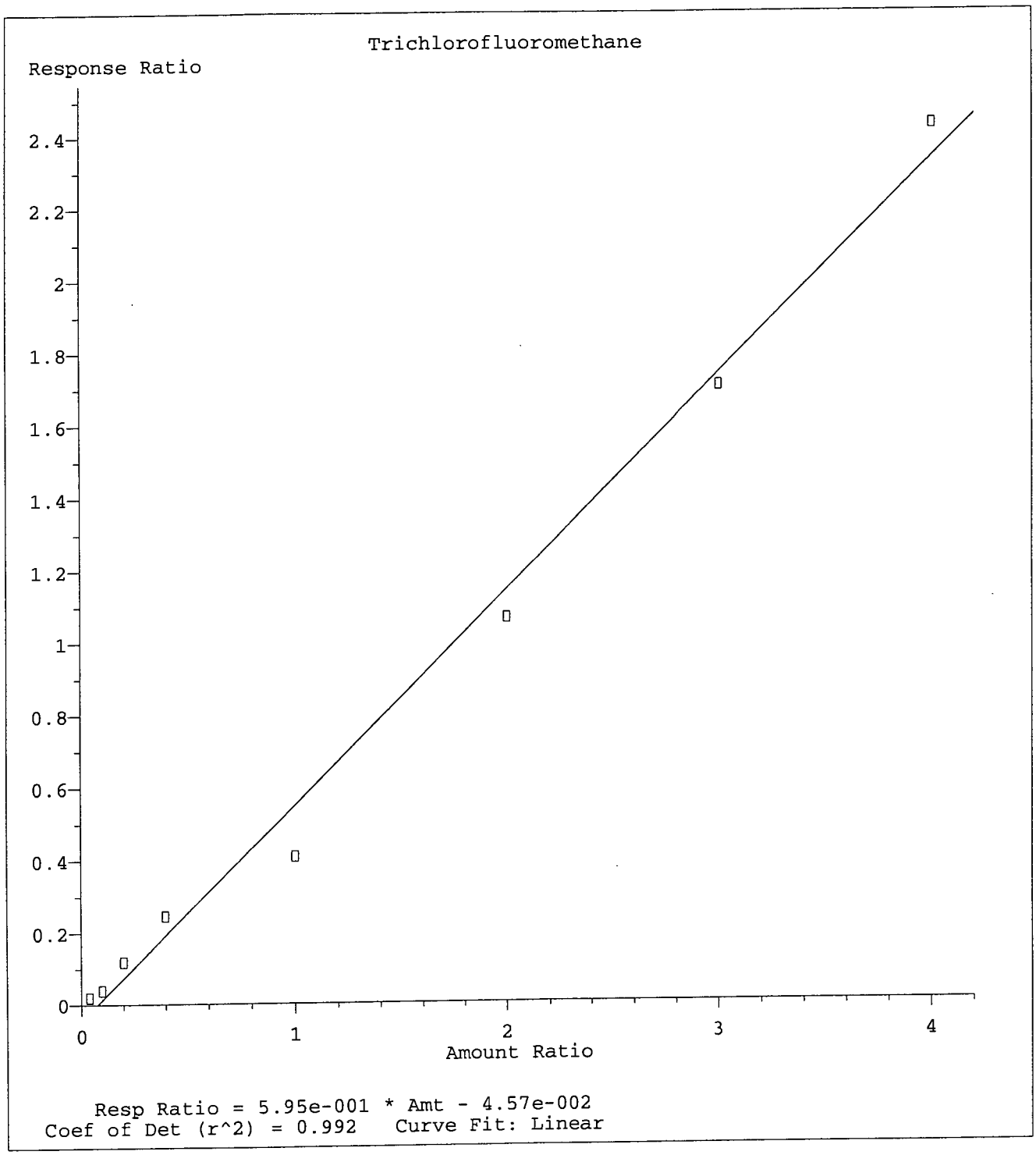




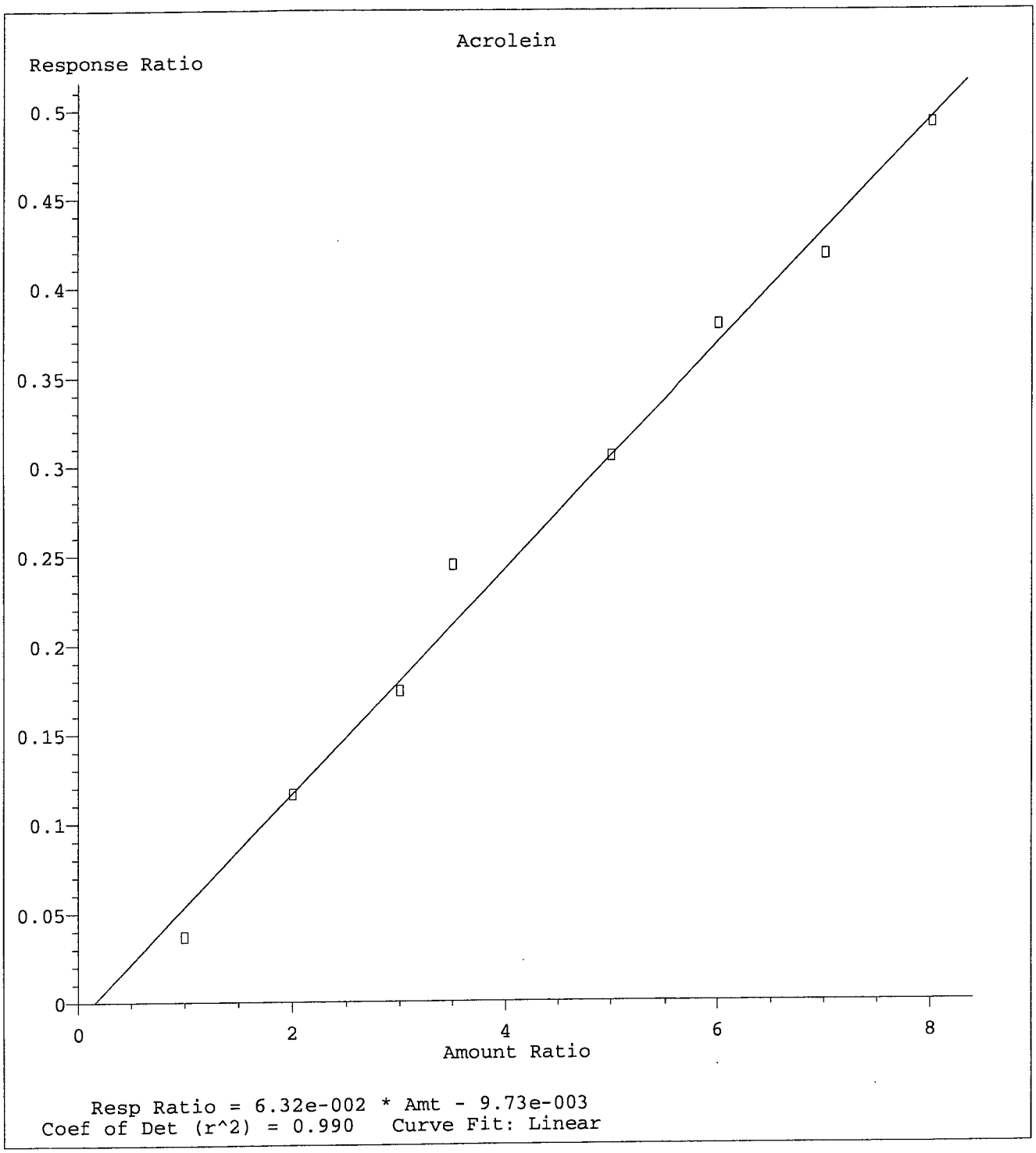
Method Name: M:\LOKI\DATA\150119\LALLS.M
Calibration Table Last Updated: Tue Jan 20 09:48:55 2015



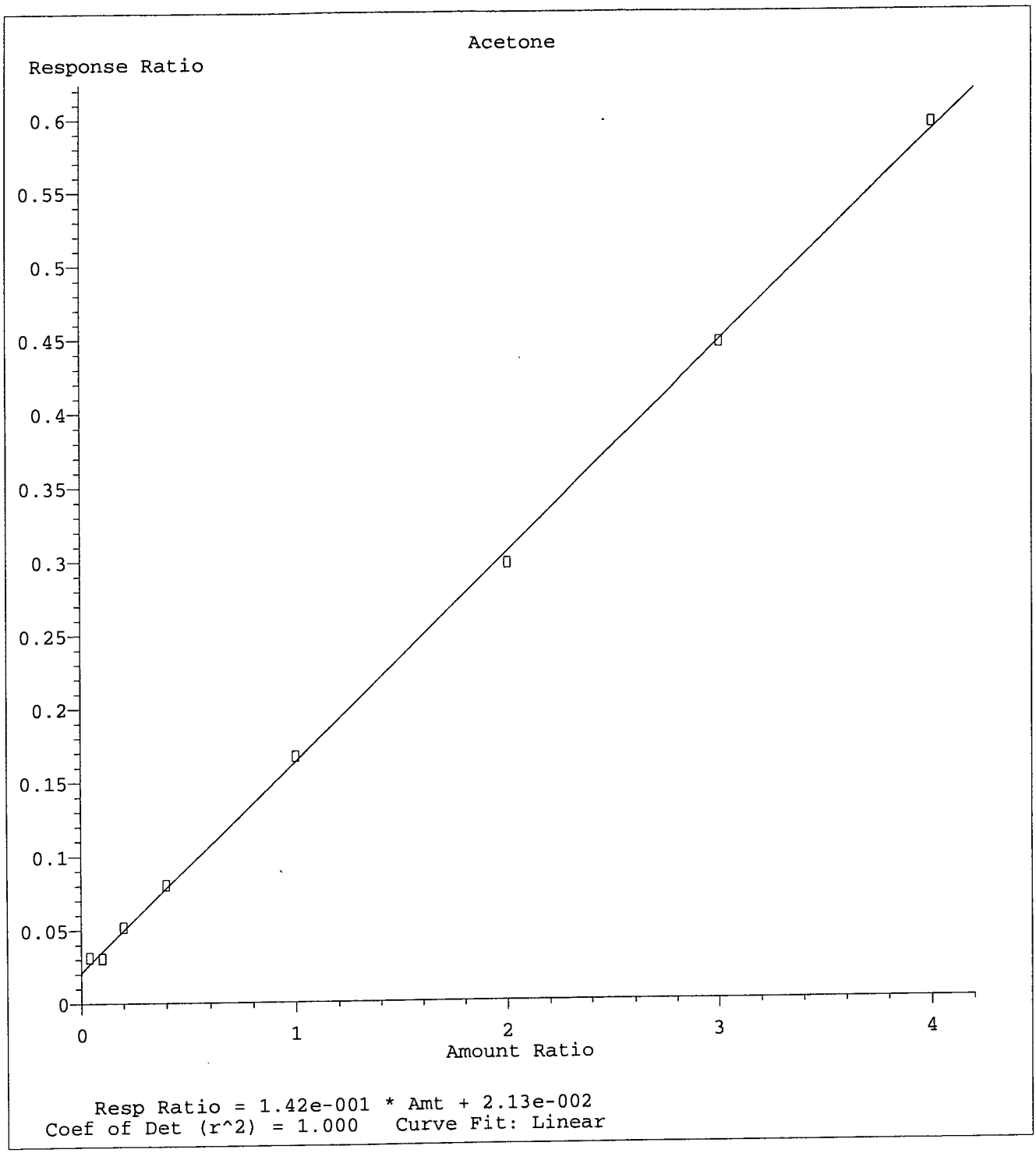
Method Name: M:\LOKI\DATA\150119\LALLS.M
Calibration Table Last Updated: Tue Jan 20 09:48:55 2015



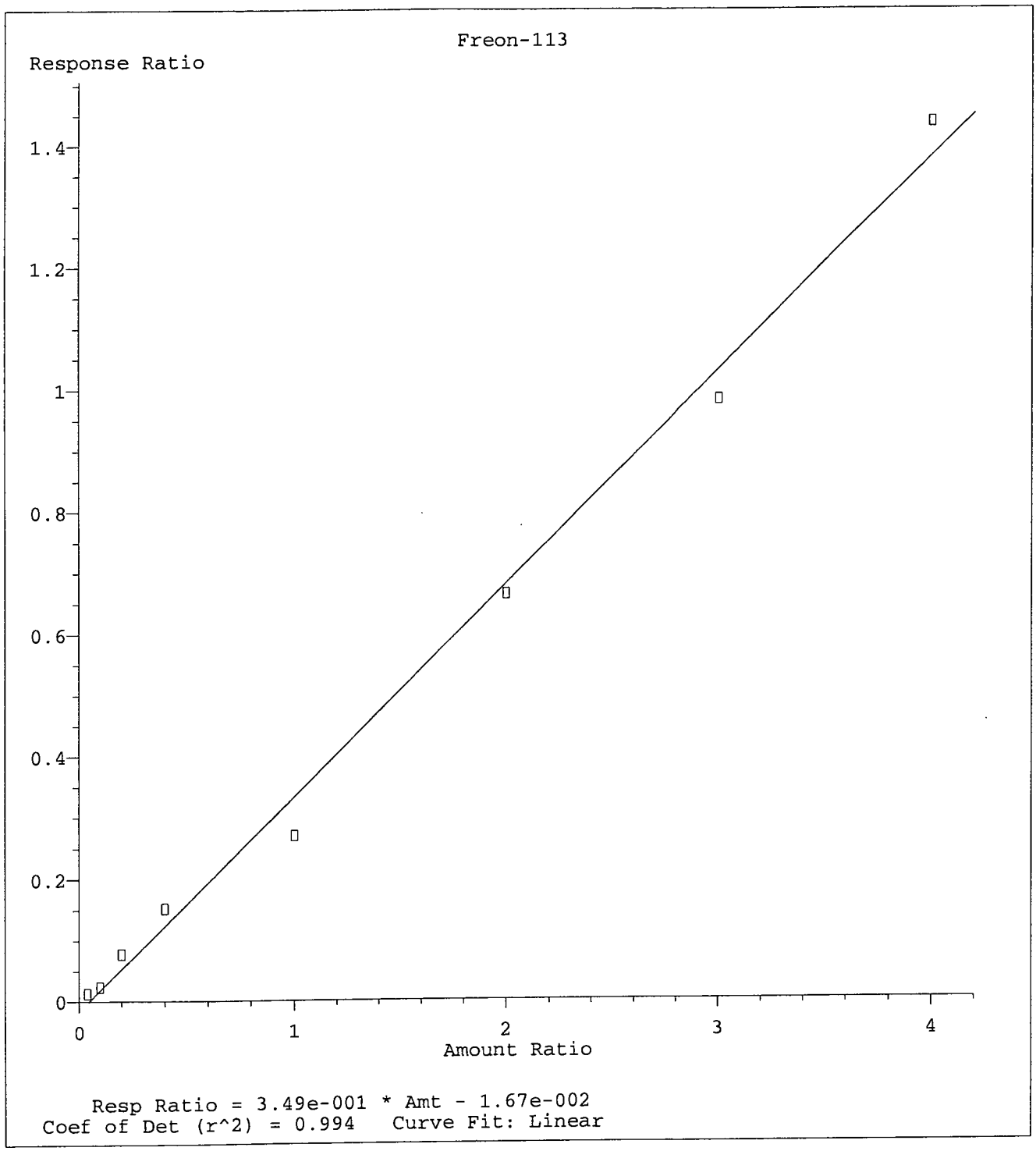
Method Name: M:\LOKI\DATA\150119\LALLS.M
Calibration Table Last Updated: Tue Jan 20 09:48:55 2015



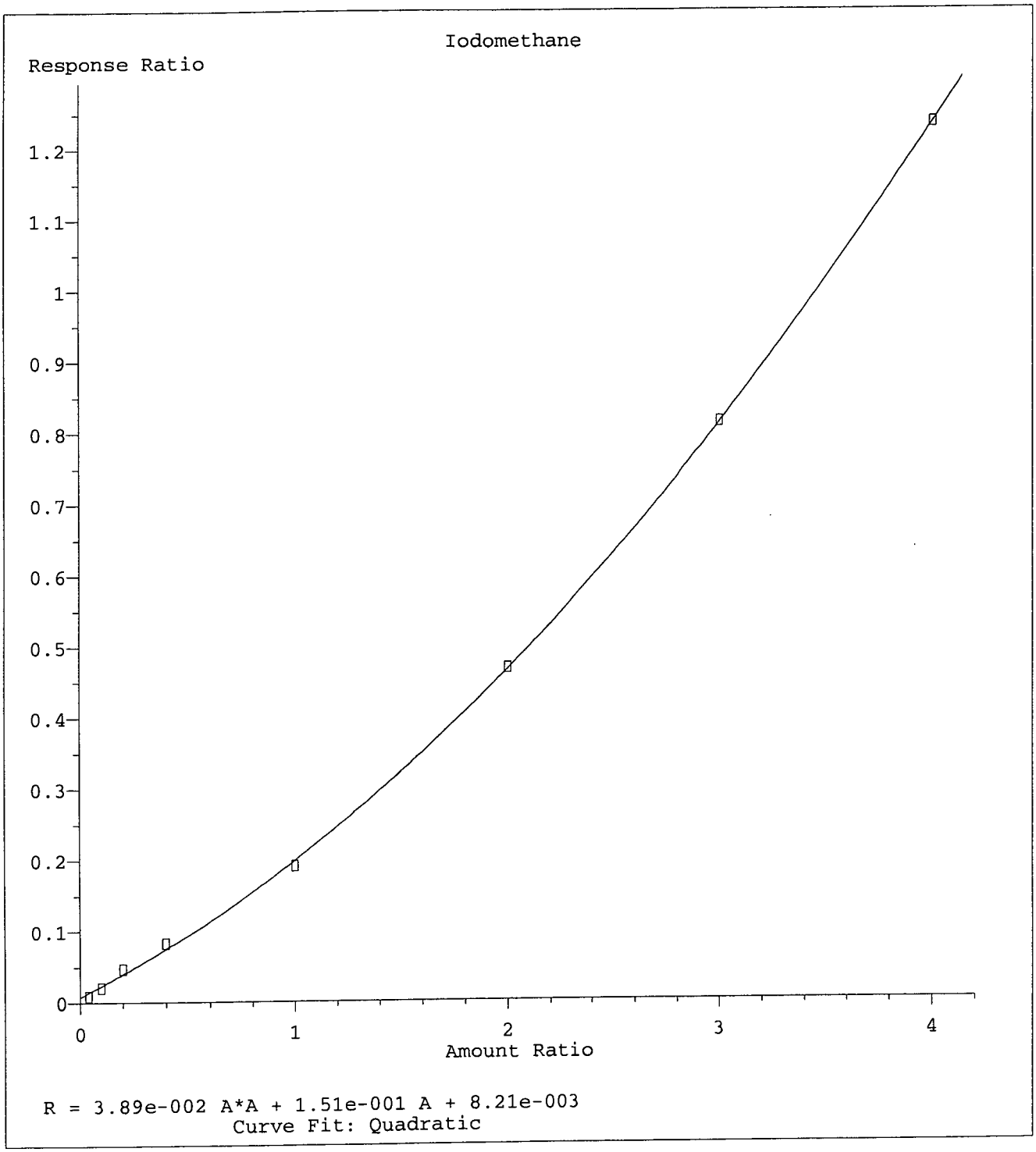
Method Name: M:\LOKI\DATA\150119\LALLS.M
Calibration Table Last Updated: Tue Jan 20 09:48:55 2015



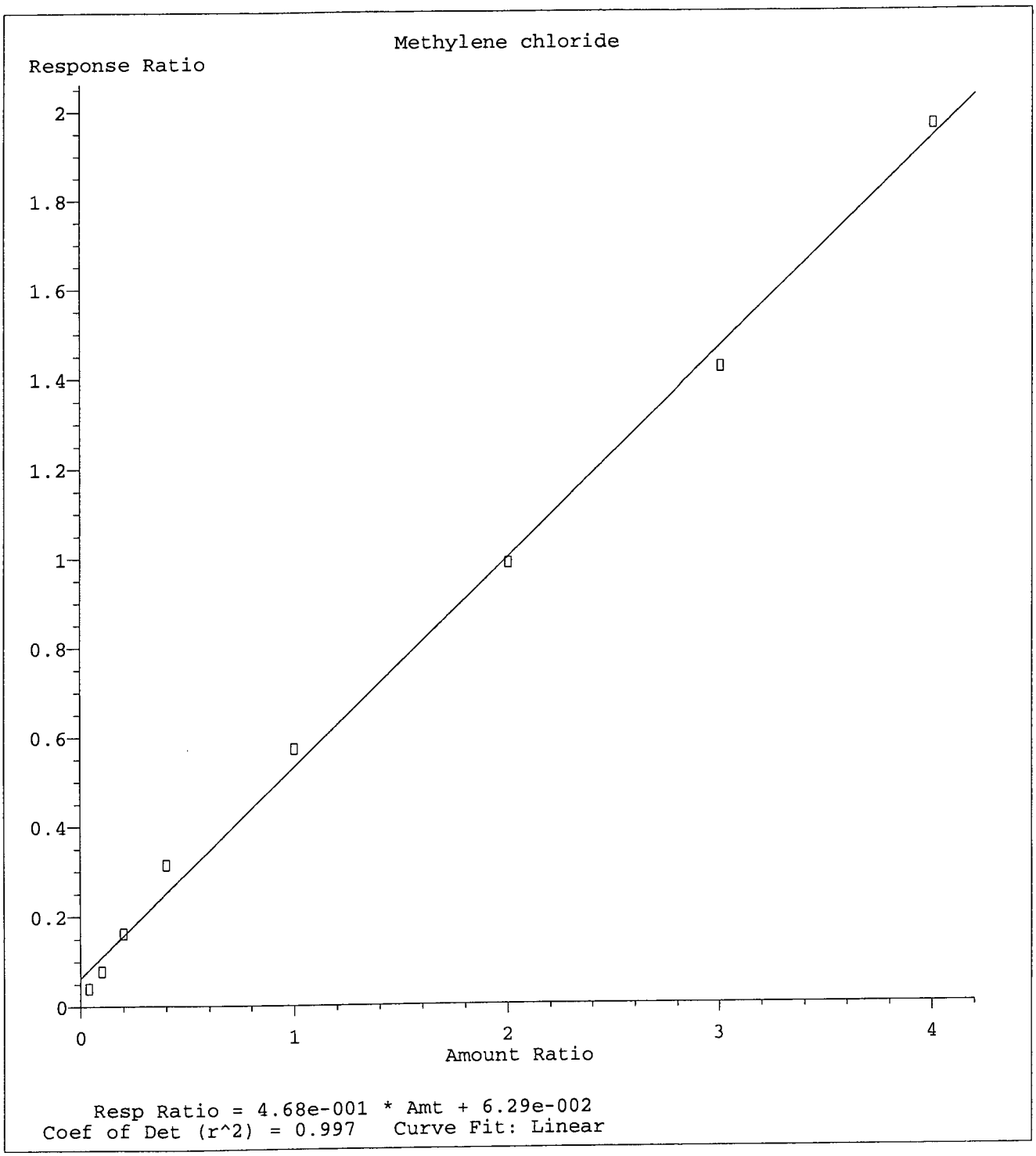
Method Name: M:\LOKI\DATA\150119\LALLS.M
Calibration Table Last Updated: Tue Jan 20 09:48:55 2015



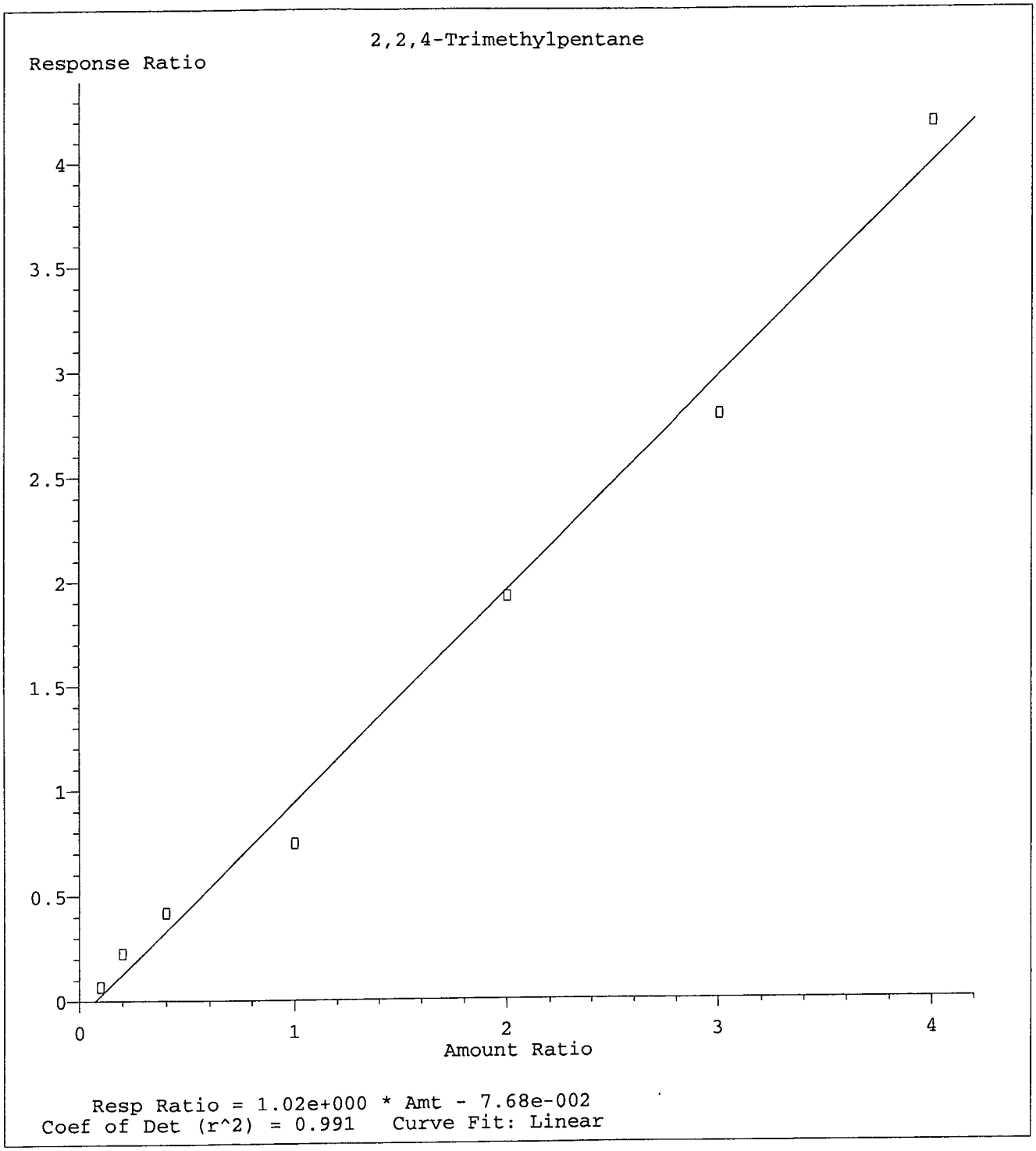
Method Name: M:\LOKI\DATA\150119\LALLS.M
Calibration Table Last Updated: Tue Jan 20 09:48:55 2015



Method Name: M:\LOKI\DATA\150119\LALLS.M
Calibration Table Last Updated: Tue Jan 20 09:48:55 2015



Method Name: M:\LOKI\DATA\150119\LALLS.M
Calibration Table Last Updated: Tue Jan 20 09:48:55 2015



Method Name: M:\LOKI\DATA\150119\LALLS.M
Calibration Table Last Updated: Tue Jan 20 09:48:55 2015

VOLATILE ORGANIC ANALYSIS BY
EPA METHOD 8260B

Form 7

Second Source Calibration

Lab Name: APPL, Inc.
Case No:
Matrix:

SDG No:
Date Analyzed: 01/19/15
Instrument: Loki
Initial Cal. Date: 01/19/15
Data File: 0119L19.D

		Compound	MEAN	CCRF	%D	%Drift	
1	I	Fluorobenzene (IS)	ISTD			I	
2	TMCL	Dichlorodifluoromethane	0.2879	0.3539	23	TMCL	12
3	TML	Freon 114	0.2925	0.2657	9.1	TML	13
4	TMC**	Chloromethane	0.4205	0.3883	7.7	TMC**	
5	TMC*	Vinyl chloride	0.3809	0.4361	14	TMC*	
6	TMC	Bromomethane	0.3116	0.3433	10	TMC	
7	TMC	Chloroethane	0.2732	0.2583	5.4	TMC	
8	TM	Dichlorofluoromethane	0.7293	0.6435	12	TM	
9	TMCL	Trichlorofluoromethane	0.5225	0.5895	13	TMCL	6.8
10	TML	Acrolein	0.0585	0.0721	23	TML	17
11	TMCL	Acetone	0.2690	0.1426	47	TMCL	15
12	TMCL	Freon-113	0.3245	0.2962	8.7	TMCL	10
13	TMC*	1,1-DCE	0.4950	0.4423	11	TMC*	
14	TM	t-Butanol	0.0612	0.0645	5.4	TM	
15	TMC	Methyl Acetate	0.3484	0.3315	4.8	TMC	
16	TMQ	Iodomethane	0.2336	0.2086	11	TMQ	4.5
17	TM	Acrylonitrile	0.1874	0.1629	13	TM	
18	TMCL	Methylene chloride	0.6738	0.4603	32	TMCL	15
19	TMC	Carbon disulfide	1.079	0.9011	16	TMC	
20	TMC	Methyl t-butyl ether (MtBE)	1.290	1.228	4.9	TMC	
21	TMC	Trans-1,2-DCE	0.4048	0.3620	11	TMC	
22	TM	Diisopropyl Ether	1.241	1.174	5.4	TM	
23	TMC**	1,1-DCA	0.6770	0.6439	4.9	TMC**	
24	TM	Vinyl Acetate	1.373	1.312	4.4	TM	
25	TM	Ethyl tert Butyl Ether	1.228	1.201	2.2	TM	
26	TMC	MEK (2-Butanone)	0.2167	0.1914	12	TMC	
27	TMC	Cis-1,2-DCE	0.4828	0.4614	4.4	TMC	
28	TM	2,2-Dichloropropane	0.5447	0.4937	9.4	TM	
29	TMC*	Chloroform	0.7101	0.6625	6.7	TMC*	
30	TM	Bromochloromethane	0.2494	0.2390	4.2	TM	
31	S	Dibromofluoromethane(S)	0.4488	0.4762	6.1	S	
32	TMC	1,1,1-TCA	0.5250	0.4625	12	TMC	
33	TMC	Cyclohexane	0.2431	0.2097	14	TMC	
34	TM	1,1-Dichloropropene	0.4558	0.3992	12	TM	
35	TML	2,2,4-Trimethylpentane	0.9325	0.9161	1.8	TML	2.5
36	S	1,2-DCA-D4(S)	0.5091	0.4810	5.5	S	
37	TMC	Carbon Tetrachloride	0.4521	0.4157	8.1	TMC	
38	TM	Tert Amyl Methyl Ether	1.150	1.100	4.3	TM	
39	TMC	1,2-DCA	0.5771	0.5596	3.0	TMC	
40	TMC	Benzene	1.473	1.396	5.2	TMC	
		Average			10.5		

VOLATILE ORGANIC ANALYSIS BY
EPA METHOD 8260B

Form 7

Second Source Calibration

Lab Name: APPL, Inc.
Case No:
Matrix: 0

SDG No:
Date Analyzed: 01/19/15
Instrument: Loki
Cal. Date: 01/19/15
Data File: 0119L19.D

		Compound	MEAN	CCRF	%D		%Drift
41	TMC	TCE	0.3767	0.3496	7.2	TMC	
42	TM	2-Pentanone	0.3305	0.3461	4.7	TM	
43	TMC*	1,2-Dichloropropane	0.4096	0.3846	6.1	TMC*	
44	TMC	Bromodichloromethane	0.5594	0.5506	1.6	TMC	
45	TMC	Methyl Cyclohexane	0.5348	0.4699	12	TMC	
46	TM	Dibromomethane	0.2887	0.2809	2.7	TM	
47	TML	2-Chloroethyl vinyl ether	0.0000	0.0072	0.00	TML	
48	TMC	MIBK (methyl isobutyl ketone)	0.2318	0.2226	4.0	TMC	
49	TM	1-Bromo-2-chloroethane	0.3427	0.3172	7.5	TM	
50	TMC	Cis-1,3-Dichloropropene	0.7007	0.6690	4.5	TMC	
51	TMC*	Toluene	1.666	1.557	6.5	TMC*	
52	TMC	Trans-1,3-Dichloropropene	0.6413	0.6177	3.7	TMC	
53	TMC	1,1,2-TCA	0.3348	0.3287	1.8	TMC	
54	TMC	2-Hexanone	0.1758	0.1532	13	TMC	
55	I	Chlorobenzene-D5 (IS)	ISTD			I	
56	S	Toluene-D8(S)	1.584	1.906	20	S	
57	TMC	1,2-EDB	0.4651	0.4685	0.73	TMC	
58	TMC	Tetrachloroethene	0.3581	0.3368	6.0	TMC	
59	TM	1-Chlorohexane	0.4974	0.4562	8.3	TM	
60	TM	1,1,1,2-Tetrachloroethane	0.4873	0.4817	1.2	TM	
61	TMC	m&p-Xylene	0.9649	0.9423	2.3	TMC	
62	TMC	o-Xylene	0.7835	0.7651	2.4	TMC	
63	TMC	Styrene	1.352	1.379	2.0	TMC	
64	S	4-Bromofluorobenzene(S)	0.6676	0.7156	7.2	S	
65	TM	1,3-Dichloropropane	0.7380	0.7063	4.3	TM	
66	TMC	Dibromochloromethane	0.5152	0.4962	3.7	TMC	
67	TMC**	Chlorobenzene	1.305	1.261	3.4	TMC**	
68	TMC*	Ethylbenzene	1.937	1.859	4.1	TMC*	
69	TMC**	Bromoform	0.3912	0.3840	1.8	TMC**	
70	I	1,4-Dichlorobenzene-D (IS)	ISTD			I	
71	TMC	Isopropylbenzene	3.383	3.115	7.9	TMC	
72	TMC**	1,1,2,2-Tetrachloroethane	1.125	1.058	5.9	TMC**	
73	TM	1,2,3-Trichloropropane	0.3558	0.3251	8.6	TM	
74	TM	t-1,4-Dichloro-2-Butene	0.2714	0.2518	7.2	TM	
75	TM	Bromobenzene	1.111	1.044	6.0	TM	
76	TM	n-Propylbenzene	3.809	3.600	5.5	TM	
77	TM	4-Ethyltoluene	3.341	3.179	4.8	TM	
78	TM	2-Chlorotoluene	2.494	2.358	5.4	TM	
79	TM	1,3,5-Trimethylbenzene	3.006	2.794	7.0	TM	
80	TM	4-Chlorotoluene	2.892	2.806	3.0	TM	
		Average			5.4		

VOLATILE ORGANIC ANALYSIS BY
EPA METHOD 8260B

Form 7

Second Source Calibration

Lab Name: APPL, Inc.
Case No:
Matrix: 0

SDG No:
Date Analyzed: 01/19/15
Instrument: Loki
Cal. Date: 01/19/15
Data File: 0119L19.D

		Compound	MEAN	CCRF	%D		%Drift
81	TM	Tert-Butylbenzene	2.539	2.381	6.2	TM	
82	TM	1,2,4-Trimethylbenzene	3.167	2.977	6.0	TM	
83	TM	Sec-Butylbenzene	3.553	3.309	6.9	TM	
84	TM	p-Isopropyltoluene	3.039	2.906	4.4	TM	
85	TM	Benzyl Chloride	1.581	1.497	5.3	TM	
86	TMC	1,3-DCB	1.946	1.866	4.1	TMC	
87	TMC	1,4-DCB	1.995	1.932	3.1	TMC	
88	TM	n-Butylbenzene	2.694	2.519	6.5	TM	
89	TMC	1,2-DCB	1.944	1.896	2.5	TMC	
90	TM	Hexachloroethane	0.5999	0.5908	1.5	TM	
91	TMC	1,2-Dibromo-3-chloropropane	0.2801	0.2692	3.9	TMC	
92	TMC	1,2,4-Trichlorobenzene	1.464	1.412	3.5	TMC	
93	TM	Hexachlorobutadiene	0.6861	0.6431	6.3	TM	
94	TM	Naphthalene	3.604	3.606	0.06	TM	
95	TM	1,2,3-Trichlorobenzene	1.458	1.446	0.79	TM	
96							
97							
98							
99							
100							
101							
102							
103							
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108							
109							
110							
111							
112							
113							
114							
115							
116							
117							
118							
119							
120							
		Average			4.1		

Quantitation Report (Not Reviewed)

Data File : M:\LOKI\DATA\150119\0119L19.D
Acq On : 19 Jan 15 14:30
Sample : 50ug/kg Std 1-19-15(SS)
Misc : 5mL w/5uL IS&S:01/14/15,10-06-14

Vial: 16
Operator: DG,SV,RS
Inst : Loki
Multiplr: 1.00

Quant Time: Jan 20 10:26 2015 Quant Results File: LALLS.RES

Quant Method : M:\LOKI\DATA\150119\LALLS.M (RTE Integrator)
Title : METHOD 8260B
Last Update : Tue Jan 20 09:48:55 2015
Response via : Initial Calibration
DataAcq Meth : 8260_BETA

404981 x 50 / 928704 x 0.3809 = 57.24

SV 1/28/15

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene (IS)	5.86	96	928704	50.00000 ppb	0.00
55) Chlorobenzene-D5 (IS)	9.09	117	851520	50.00000 ppb	0.00
70) 1,4-Dichlorobenzene-D (IS)	11.41	152	483456	50.00000 ppb	0.00
System Monitoring Compounds					
31) Dibromofluoromethane(S)	5.02	111	442217	53.04956 ppb	0.00
Spiked Amount 52.439			Recovery	= 101.165%	
36) 1,2-DCA-D4(S)	5.43	65	446737	47.24116 ppb	0.00
Spiked Amount 48.066			Recovery	= 98.284%	
56) Toluene-D8(S)	7.63	98	1622576	60.13438 ppb	0.00
Spiked Amount 61.175			Recovery	= 98.298%	
64) 4-Bromofluorobenzene(S)	10.27	95	609354	53.59754 ppb	0.00
Spiked Amount 54.538			Recovery	= 98.276%	

Target Compounds					Qvalue
2) Dichlorodifluoromethane	0.98	85	328704	56.08132 ppb	100
3) Freon 114	1.07	85	246768	43.57354 ppb	97
4) Chloromethane	1.10	50	360575	46.16470 ppb	100
5) Vinyl chloride	1.18	62	404981	57.24511 ppb	100
6) Bromomethane	1.40	94	318870	55.09785 ppb	98
7) Chloroethane	1.48	64	239926	47.28372 ppb	98
8) Dichlorofluoromethane	1.65	67	597632	44.11679 ppb	99
9) Trichlorofluoromethane	1.69	101	547491	53.41576 ppb	95
10) Acrolein	2.04	55	334834	293.09016 ppb	99
11) Acetone	2.19	43	132475	42.67623 ppb	98
12) Freon-113	2.14	101	275059	44.83505 ppb	98
13) 1,1-DCE	2.12	61	410740	44.67714 ppb	99
14) t-Butanol	2.82	59	299678	263.60444 ppb	98
15) Methyl Acetate	2.53	43	307880	47.57656 ppb	98
16) Iodomethane	2.25	142	193770	52.27316 ppb	98
17) Acrylonitrile	2.89	53	151287	43.46904 ppb	97
18) Methylene chloride	2.60	84	427494	42.42696 ppb	98
19) Carbon disulfide	2.30	76	836812	41.76491 ppb	99
20) Methyl t-butyl ether (MtBE	2.94	73	1140063	47.57222 ppb	99
21) Trans-1,2-DCE	2.90	96	336190	44.71057 ppb	98
22) Diisopropyl Ether	3.63	45	1090650	47.31437 ppb	99
23) 1,1-DCA	3.44	63	597951	47.55564 ppb	99
24) Vinyl Acetate	3.59	43	1218320	47.77798 ppb	99
25) Ethyl tert Butyl Ether	4.19	59	1115779	48.90188 ppb	99
26) MEK (2-Butanone)	4.41	43	177762	44.16549 ppb	98
27) Cis-1,2-DCE	4.32	96	428482	47.78056 ppb	99
28) 2,2-Dichloropropane	4.30	77	458532	45.32496 ppb	98
29) Chloroform	4.81	83	615262	46.65096 ppb	99
30) Bromochloromethane	4.65	128	221947	47.91671 ppb	99
32) 1,1,1-TCA	5.00	97	429524	44.05155 ppb	99
33) Cyclohexane	5.06	41	194754	43.13032 ppb	94
34) 1,1-Dichloropropene	5.23	75	370715	43.78674 ppb	98
35) 2,2,4-Trimethylpentane	5.63	57	850816	48.74327 ppb	99
37) Carbon Tetrachloride	5.22	117	386077	45.97274 ppb	99
38) Tert Amyl Methyl Ether	5.71	73	1021895	47.82508 ppb	99
39) 1,2-DCA	5.53	62	519673	48.48062 ppb	99
40) Benzene	5.49	78	1296235	47.38853 ppb	99
41) TCE	6.29	95	324630	46.39652 ppb	99
42) 2-Pentanone	6.56	43	1606889	261.77111 ppb	98

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : M:\LOKI\DATA\150119\0119L19.D
Acq On : 19 Jan 15 14:30
Sample : 50ug/kg Std 1-19-15(SS)
Misc : 5mL w/5uL IS&S:01/14/15,10-06-14

Vial: 16
Operator: DG,SV,RS
Inst : Loki
Multiplr: 1.00

Quant Time: Jan 20 10:26 2015 Quant Results File: LALLS.RES

Quant Method : M:\LOKI\DATA\150119\LALLS.M (RTE Integrator)
Title : METHOD 8260B
Last Update : Tue Jan 20 09:48:55 2015
Response via : Initial Calibration
DataAcq Meth : 8260_BETA

Compound	R.T.	QIon	Response	Conc Unit	Qvalue
43) 1,2-Dichloropropane	6.53	63	357158	46.94618 ppb	100
44) Bromodichloromethane	6.87	83	511361	49.21830 ppb	99
45) Methyl Cyclohexane	6.48	83	436419	43.93470 ppb	99
46) Dibromomethane	6.66	93	260891	48.65521 ppb	95
48) MIBK (methyl isobutyl ket	7.56	43	206719	48.01476 ppb	99
49) 1-Bromo-2-chloroethane	7.17	63	294569	46.27079 ppb	99
50) Cis-1,3-Dichloropropene	7.36	75	621278	47.73545 ppb	98
51) Toluene	7.70	91	1446102	46.74365 ppb	99
52) Trans-1,3-Dichloropropene	7.96	75	573686	48.16456 ppb	99
53) 1,1,2-TCA	8.13	83	305271	49.08504 ppb	97
54) 2-Hexanone	8.43	43	142314	43.57376 ppb	99
57) 1,2-EDB	8.61	107	398949	50.36687 ppb	99
58) Tetrachloroethene	8.25	164	286752	47.02105 ppb	99
59) 1-Chlorohexane	9.14	91	388446	45.85190 ppb	99
60) 1,1,1,2-Tetrachloroethane	9.21	131	410164	49.41967 ppb	99
61) m&p-Xylene	9.37	91	1604783	97.66051 ppb	99
62) o-Xylene	9.76	106	651473	48.82377 ppb	97
63) Styrene	9.78	104	1174242	51.00796 ppb	99
65) 1,3-Dichloropropane	8.29	76	601408	47.85383 ppb	99
66) Dibromochloromethane	8.51	129	422531	48.16147 ppb	100
67) Chlorobenzene	9.12	112	1073441	48.28724 ppb	98
68) Ethylbenzene	9.25	91	1582585	47.96330 ppb	100
69) Bromoform	9.94	173	326994	49.08247 ppb	100
71) Isopropylbenzene	10.14	105	1505769	46.03079 ppb	100
72) 1,1,2,2-Tetrachloroethane	10.44	83	511411	47.03519 ppb	99
73) 1,2,3-Trichloropropane	10.46	110	157164	45.68969 ppb	97
74) t-1,4-Dichloro-2-Butene	10.50	53	121718	46.38194 ppb	97
75) Bromobenzene	10.40	156	504775	47.00706 ppb	98
76) n-Propylbenzene	10.54	91	1740545	47.26339 ppb	99
77) 4-Ethyltoluene	10.66	105	1537001	47.57722 ppb	99
78) 2-Chlorotoluene	10.61	91	1140207	47.28287 ppb	99
79) 1,3,5-Trimethylbenzene	10.73	105	1350965	46.48506 ppb	99
80) 4-Chlorotoluene	10.72	91	1356640	48.51939 ppb	99
81) Tert-Butylbenzene	11.04	119	1151091	46.88845 ppb	97
82) 1,2,4-Trimethylbenzene	11.09	105	1439304	47.00877 ppb	98
83) Sec-Butylbenzene	11.26	105	1599772	46.57021 ppb	100
84) p-Isopropyltoluene	11.41	119	1405029	47.82277 ppb	99
85) Benzyl Chloride	11.58	91	723725	47.33302 ppb	99
86) 1,3-DCB	11.34	146	902028	47.94680 ppb	99
87) 1,4-DCB	11.44	146	934056	48.42609 ppb	99
88) n-Butylbenzene	11.82	91	1218032	46.75347 ppb	100
89) 1,2-DCB	11.79	146	916561	48.75287 ppb	99
90) Hexachloroethane	12.05	117	285610	49.24271 ppb	99
91) 1,2-Dibromo-3-chloropropan	12.56	157	130145	48.05889 ppb	97
92) 1,2,4-Trichlorobenzene	13.39	180	682874	48.23212 ppb	99
93) Hexachlorobutadiene	13.58	225	310908	46.86722 ppb	93
94) Naphthalene	13.62	128	1743330	50.02821 ppb	100
95) 1,2,3-Trichlorobenzene	13.87	180	699166	49.60629 ppb	98

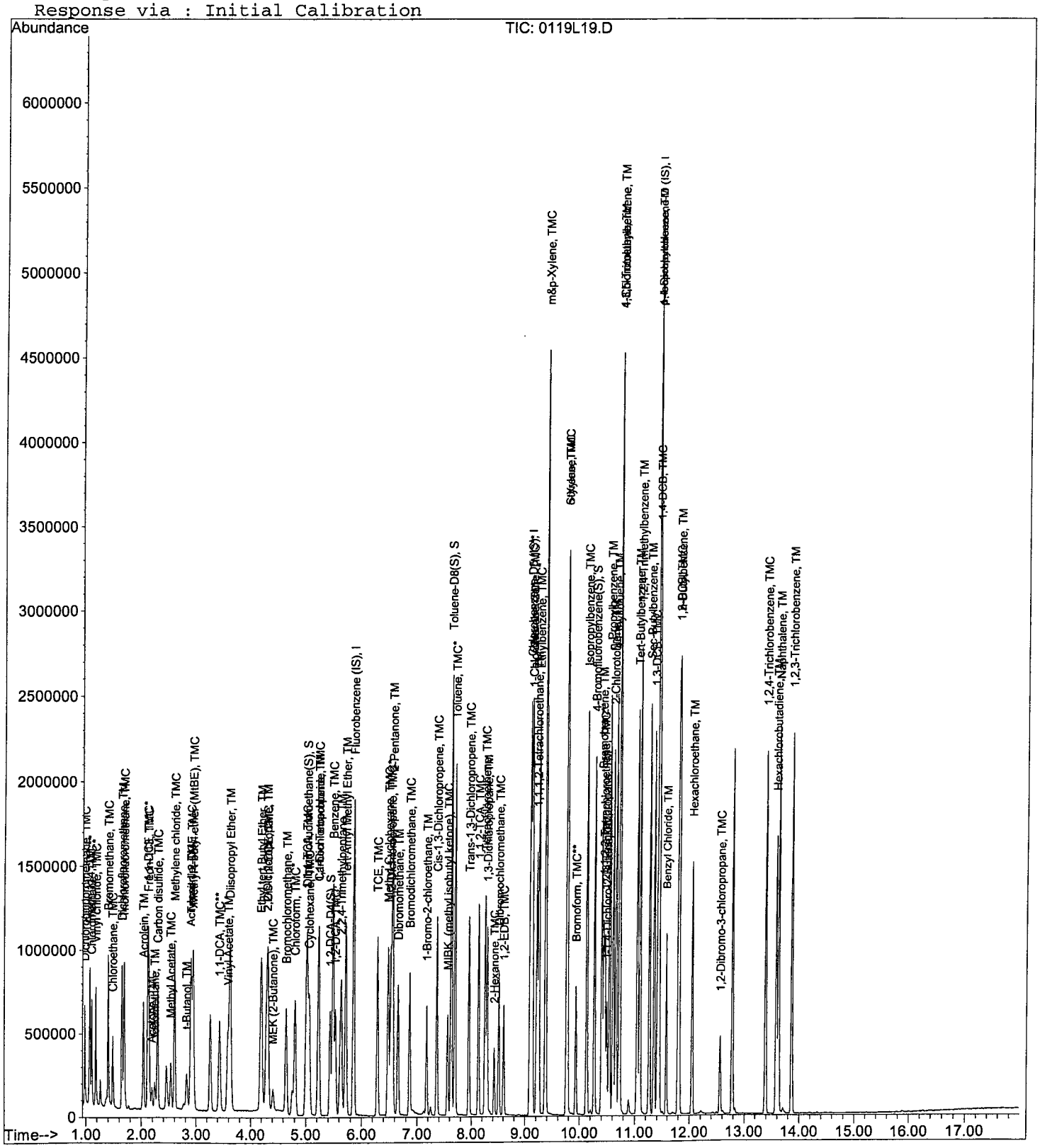
(#) = qualifier out of range (m) = manual integration

Quantitation Report

Data File : M:\LOKI\DATA\150119\0119L19.D Vial: 16
Acq On : 19 Jan 15 14:30 Operator: DG,SV,RS
Sample : 50ug/kg Std 1-19-15(SS) Inst : Loki
Misc : 5mL w/5uL IS&S:01/14/15,10-06-14 Multiplr: 1.00

Quant Time: Jan 20 10:26 2015 Quant Results File: LALLS.RES

Method : M:\LOKI\DATA\150119\LALLS.M (RTE Integrator)
Title : METHOD 8260B
Last Update : Tue Jan 20 09:48:55 2015
Response via : Initial Calibration



VOLATILE ORGANIC ANALYSIS BY
EPA METHOD 8260B

Form 7

Continuing Calibration

Lab Name: APPL, Inc.
Case No:
Matrix:

SDG No:
Date Analyzed: 01/21/15
Instrument: Loki
Initial Cal. Date: 01/19/15
Data File: 0121L05.D

		Compound	MEAN	CCRF	%D	%Drift	
1	I	Fluorobenzene (IS)	ISTD			I	
2	TMCL	Dichlorodifluoromethane	0.2879	0.2843	1.2	TMCL	9.9
3	TML	Freon 114	0.2925	0.2747	6.1	TML	10
4	TMC**	Chloromethane	0.4205	0.3613	14	TMC**	
5	TMC*	Vinyl chloride	0.3809	0.3688	3.2	TMC*	
6	TMC	Bromomethane	0.3116	0.3397	9.0	TMC	
7	TMC	Chloroethane	0.2732	0.2588	5.3	TMC	
8	TM	Dichlorofluoromethane	0.7293	0.7782	6.7	TM	
9	TMCL	Trichlorofluoromethane	0.5225	0.4813	7.9	TMCL	11
10	TML	Acrolein	0.0585	0.0553	5.4	TML	9.4
11	TMCL	Acetone	0.2690	0.1366	49	TMCL	19
12	TMCL	Freon-113	0.3245	0.3056	5.8	TMCL	7.6
13	TMC*	1,1-DCE	0.4950	0.4882	1.4	TMC*	
14	TM	t-Butanol	0.0612	0.0539	12	TM	
15	TMC	Methyl Acetate	0.3484	0.3011	14	TMC	
16	TMQ	Iodomethane	0.2336	0.3867	66	TMQ	73 nt
17	TM	Acrylonitrile	0.1874	0.1700	9.3	TM	
18	TMCL	Methylene chloride	0.6738	0.4919	27	TMCL	8.4
19	TMC	Carbon disulfide	1.079	1.078	0.11	TMC	
20	TMC	Methyl t-butyl ether (MtBE)	1.290	1.301	0.81	TMC	
21	TMC	Trans-1,2-DCE	0.4048	0.4486	11	TMC	
22	TM	Diisopropyl Ether	1.241	1.222	1.6	TM	
23	TMC**	1,1-DCA	0.6770	0.7267	7.3	TMC**	
24	TM	Vinyl Acetate	1.373	1.330	3.1	TM	
25	TM	Ethyl tert Butyl Ether	1.228	1.255	2.2	TM	
26	TMC	MEK (2-Butanone)	0.2167	0.1839	15	TMC	
27	TMC	Cis-1,2-DCE	0.4828	0.5516	14	TMC	
28	TM	2,2-Dichloropropane	0.5447	0.5705	4.7	TM	
29	TMC*	Chloroform	0.7101	0.7955	12	TMC*	
30	TM	Bromochloromethane	0.2494	0.2759	11	TM	
31	S	Dibromofluoromethane(S)	0.4488	0.4783	6.6	S	
32	TMC	1,1,1-TCA	0.5250	0.5793	10	TMC	
33	TMC	Cyclohexane	0.2431	0.2172	11	TMC	
34	TM	1,1-Dichloropropene	0.4558	0.4963	8.9	TM	
35	TML	2,2,4-Trimethylpentane	0.9325	0.9279	0.50	TML	1.4
36	S	1,2-DCA-D4(S)	0.5091	0.4685	8.0	S	
37	TMC	Carbon Tetrachloride	0.4521	0.4870	7.7	TMC	
38	TM	Tert Amyl Methyl Ether	1.150	1.210	5.2	TM	
39	TMC	1,2-DCA	0.5771	0.6017	4.3	TMC	
40	TMC	Benzene	1.473	1.680	14	TMC	
		Average			10.3		

VOLATILE ORGANIC ANALYSIS BY
EPA METHOD 8260B

Form 7

Continuing Calibration

Lab Name: APPL, Inc.
Case No:
Matrix: 0

SDG No:
Date Analyzed: 01/21/15
Instrument: Loki
Cal. Date: 01/19/15
Data File: 0121L05.D

		Compound	MEAN	CCRF	%D		%Drift
41	TMC	TCE	0.3767	0.4278	14	TMC	
42	TM	2-Pentanone	0.3305	0.3005	9.1	TM	
43	TMC*	1,2-Dichloropropane	0.4096	0.4364	6.6	TMC*	
44	TMC	Bromodichloromethane	0.5594	0.5956	6.5	TMC	
45	TMC	Methyl Cyclohexane	0.5348	0.5214	2.5	TMC	
46	TM	Dibromomethane	0.2887	0.3082	6.8	TM	
47	TML	2-Chloroethyl vinyl ether	0.0000	0.0105	0.00	TML	
48	TMC	MIBK (methyl isobutyl ketone)	0.2318	0.2136	7.8	TMC	
49	TM	1-Bromo-2-chloroethane	0.3427	0.3488	1.8	TM	
50	TMC	Cis-1,3-Dichloropropene	0.7007	0.7419	5.9	TMC	
51	TMC*	Toluene	1.666	1.930	16	TMC*	
52	TMC	Trans-1,3-Dichloropropene	0.6413	0.6575	2.5	TMC	
53	TMC	1,1,2-TCA	0.3348	0.3532	5.5	TMC	
54	TMC	2-Hexanone	0.1758	0.1643	6.6	TMC	
55	I	Chlorobenzene-D5 (IS)	ISTD			I	
56	S	Toluene-D8(S)	1.584	1.868	18	S	
57	TMC	1,2-EDB	0.4651	0.5012	7.8	TMC	
58	TMC	Tetrachloroethene	0.3581	0.4207	17	TMC	
59	TM	1-Chlorohexane	0.4974	0.5410	8.8	TM	
60	TM	1,1,1,2-Tetrachloroethane	0.4873	0.5514	13	TM	
61	TMC	m&p-Xylene	0.9649	1.161	20	TMC	
62	TMC	o-Xylene	0.7835	0.9250	18	TMC	
63	TMC	Styrene	1.352	1.577	17	TMC	
64	S	4-Bromofluorobenzene(S)	0.6676	0.7147	7.1	S	
65	TM	1,3-Dichloropropane	0.7380	0.7612	3.1	TM	
66	TMC	Dibromochloromethane	0.5152	0.5550	7.7	TMC	
67	TMC**	Chlorobenzene	1.305	1.512	16	TMC**	
68	TMC*	Ethylbenzene	1.937	2.304	19	TMC*	
69	TMC**	Bromoform	0.3912	0.4079	4.3	TMC**	
70	I	1,4-Dichlorobenzene-D (IS)	ISTD			I	
71	TMC	Isopropylbenzene	3.383	3.871	14	TMC	
72	TMC**	1,1,2,2-Tetrachloroethane	1.125	1.116	0.72	TMC**	
73	TM	1,2,3-Trichloropropane	0.3558	0.3631	2.1	TM	
74	TM	t-1,4-Dichloro-2-Butene	0.2714	0.2396	12	TM	
75	TM	Bromobenzene	1.111	1.241	12	TM	
76	TM	n-Propylbenzene	3.809	4.473	17	TM	
77	TM	4-Ethyltoluene	3.341	3.986	19	TM	
78	TM	2-Chlorotoluene	2.494	2.886	16	TM	
79	TM	1,3,5-Trimethylbenzene	3.006	3.601	20	TM	
80	TM	4-Chlorotoluene	2.892	3.388	17	TM	
		Average			10.5		

VOLATILE ORGANIC ANALYSIS BY
EPA METHOD 8260B

Form 7

Continuing Calibration

Lab Name: APPL, Inc.
Case No:
Matrix: 0

SDG No:
Date Analyzed: 01/21/15
Instrument: Loki
Cal. Date: 01/19/15
Data File: 0121L05.D

		Compound	MEAN	CCRF	%D		%Drift
81	TM	Tert-Butylbenzene	2.539	2.942	16	TM	
82	TM	1,2,4-Trimethylbenzene	3.167	3.746	18	TM	
83	TM	Sec-Butylbenzene	3.553	4.086	15	TM	
84	TM	p-Isopropyltoluene	3.039	3.608	19	TM	
85	TM	Benzyl Chloride	1.581	1.513	4.3	TM	
86	TMC	1,3-DCB	1.946	2.272	17	TMC	
87	TMC	1,4-DCB	1.995	2.310	16	TMC	
88	TM	n-Butylbenzene	2.694	3.214	19	TM	
89	TMC	1,2-DCB	1.944	2.200	13	TMC	
90	TM	Hexachloroethane	0.5999	0.6644	11	TM	
91	TMC	1,2-Dibromo-3-chloropropane	0.2801	0.2810	0.33	TMC	
92	TMC	1,2,4-Trichlorobenzene	1.464	1.707	17	TMC	
93	TM	Hexachlorobutadiene	0.6861	0.8057	17	TM	
94	TM	Naphthalene	3.604	3.938	9.3	TM	
95	TM	1,2,3-Trichlorobenzene	1.458	1.641	13	TM	
96							
97							
98							
99							
100							
101							
102							
103							
104							
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107							
108							
109							
110							
111							
112							
113							
114							
115							
116							
117							
118							
119							
120							
		Average			13.7		

Quantitation Report (QT Reviewed)

Data File : M:\LOKI\DATA\150119\0121L05.D
Acq On : 21 Jan 15 10:56
Sample : 50ug/kg Vol Std 01-21-15
Misc : 5mL w/5uL IS&S:01/14/15,10-06-14

Vial: 4
Operator: DG,SV,RS
Inst : Loki
Multiplr: 1.00

Quant Time: Jan 22 9:10 2015

Quant Results File: LALLS.RES

Quant Method : M:\LOKI\DATA\150119\LALLS.M (RTE Integrator)
Title : METHOD 8260B
Last Update : Tue Jan 20 09:48:55 2015
Response via : Initial Calibration
DataAcq Meth : 8260_BETA

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene (IS)	5.86	96	779904	50.00000 ppb	0.00
55) Chlorobenzene-D5 (IS)	9.09	117	724224	50.00000 ppb	0.00
70) 1,4-Dichlorobenzene-D (IS)	11.41	152	408832	50.00000 ppb	0.00
System Monitoring Compounds					
31) Dibromofluoromethane(S)	5.02	111	373008	53.28447 ppb	0.00
Spiked Amount 52.439			Recovery	= 101.611%	
36) 1,2-DCA-D4(S)	5.43	65	365367	46.00808 ppb	0.00
Spiked Amount 48.066			Recovery	= 95.719%	
56) Toluene-D8(S)	7.62	98	1353110	58.96209 ppb	0.00
Spiked Amount 61.175			Recovery	= 96.383%	
64) 4-Bromofluorobenzene(S)	10.27	95	517598	53.52907 ppb	0.00
Spiked Amount 54.538			Recovery	= 98.150%	
Target Compounds					Qvalue
2) Dichlorodifluoromethane	0.98	85	221760	45.05392 ppb	100
3) Freon 114	1.07	85	214271	44.92874 ppb	95
4) Chloromethane	1.10	50	281788	42.96087 ppb	99
5) Vinyl chloride	1.18	62	287592	48.40795 ppb	100
6) Bromomethane	1.40	94	264955	54.51667 ppb	97
7) Chloroethane	1.48	64	201865	47.37307 ppb	100
8) Dichlorofluoromethane	1.65	67	606931	53.35137 ppb	99
9) Trichlorofluoromethane	1.69	101	375359	44.31434 ppb	96
10) Acrolein	2.04	55	215656	226.58027 ppb	97
11) Acetone	2.19	43	106559m	40.56137 ppb	91
12) Freon-113	2.14	101	238355	46.18855 ppb	97
13) 1,1-DCE	2.12	61	380786	49.32142 ppb	97
14) t-Butanol	2.82	59	210067	220.03505 ppb	94
15) Methyl Acetate	2.53	43	234797	43.20562 ppb	91
16) Iodomethane	2.24	142	301614	86.64411 ppb	98
17) Acrylonitrile	2.89	53	132596	45.36752 ppb	98
18) Methylene chloride	2.60	84	383657	45.80188 ppb	99
19) Carbon disulfide	2.30	76	840376	49.94517 ppb	99
20) Methyl t-butyl ether (MtBE	2.94	73	1014380	50.40358 ppb	98
21) Trans-1,2-DCE	2.90	96	349859	55.40573 ppb	96
22) Diisopropyl Ether	3.62	45	952688	49.21466 ppb	97
23) 1,1-DCA	3.44	63	566738	53.67288 ppb	97
24) Vinyl Acetate	3.58	43	1037305	48.44055 ppb	98
25) Ethyl tert Butyl Ether	4.19	59	979151	51.10145 ppb	98
26) MEK (2-Butanone)	4.41	43	143419	42.43136 ppb	95
27) Cis-1,2-DCE	4.32	96	430177	57.12182 ppb	94
28) 2,2-Dichloropropane	4.29	77	444935	52.37217 ppb	95
29) Chloroform	4.81	83	620446	56.01969 ppb	100
30) Bromochloromethane	4.65	128	215138	55.30838 ppb	95
32) 1,1,1-TCA	5.00	97	451784	55.17480 ppb	96
33) Cyclohexane	5.06	41	169407	44.67493 ppb	89
34) 1,1-Dichloropropene	5.23	75	387070	54.44125 ppb	98
35) 2,2,4-Trimethylpentane	5.63	57	723644	49.31913 ppb	97
37) Carbon Tetrachloride	5.22	117	379798	53.85367 ppb	99
38) Tert Amyl Methyl Ether	5.71	73	943463	52.57877 ppb	98
39) 1,2-DCA	5.53	62	469305	52.13500 ppb	98
40) Benzene	5.49	78	1310588	57.05476 ppb	99
41) TCE	6.29	95	333646	56.78307 ppb	98
42) 2-Pentanone	6.56	43	1171920	227.33692 ppb	98

(#) = qualifier out of range (m) = manual integration

Quantitation Report (QT Reviewed)

Data File : M:\LOKI\DATA\150119\0121L05.D
Acq On : 21 Jan 15 10:56
Sample : 50ug/kg Vol Std 01-21-15
Misc : 5mL w/5uL IS&S:01/14/15,10-06-14

Vial: 4
Operator: DG,SV,RS
Inst : Loki
Multiplr: 1.00

Quant Time: Jan 22 9:10 2015

Quant Results File: LALLS.RES

Quant Method : M:\LOKI\DATA\150119\LALLS.M (RTE Integrator)
Title : METHOD 8260B
Last Update : Tue Jan 20 09:48:55 2015
Response via : Initial Calibration
DataAcq Meth : 8260_BETA

	Compound	R.T.	QIon	Response	Conc Unit		Qvalue
43)	1,2-Dichloropropane	6.53	63	340385	53.27782	ppb	99
44)	Bromodichloromethane	6.87	83	464533	53.24168	ppb	98
45)	Methyl Cyclohexane	6.48	83	406612	48.74391	ppb	95
46)	Dibromomethane	6.66	93	240377	53.38255	ppb	97
48)	MIBK (methyl isobutyl ket	7.56	43	166620	46.08480	ppb	97
49)	1-Bromo-2-chloroethane	7.17	63	272064	50.88938	ppb	99
50)	Cis-1,3-Dichloropropene	7.36	75	578646	52.94247	ppb	97
51)	Toluene	7.69	91	1504896	57.92504	ppb	98
52)	Trans-1,3-Dichloropropene	7.96	75	512764	51.26336	ppb	99
53)	1,1,2-TCA	8.13	83	275442	52.73876	ppb	99
54)	2-Hexanone	8.43	43	128141	46.71988	ppb	99
57)	1,2-EDB	8.61	107	362983	53.88102	ppb	97
58)	Tetrachloroethene	8.25	164	304653	58.73721	ppb	99
59)	1-Chlorohexane	9.14	91	391840	54.38228	ppb	97
60)	1,1,1,2-Tetrachloroethane	9.21	131	399319	56.56975	ppb	98
61)	m&p-Xylene	9.37	91	1681167	120.29164	ppb	98
62)	o-Xylene	9.76	106	669929	59.03174	ppb	99
63)	Styrene	9.78	104	1141782	58.31570	ppb	98
65)	1,3-Dichloropropane	8.29	76	551268	51.57417	ppb	98
66)	Dibromochloromethane	8.51	129	401955	53.86920	ppb	99
67)	Chlorobenzene	9.12	112	1095105	57.92045	ppb	99
68)	Ethylbenzene	9.25	91	1668629	59.45984	ppb	98
69)	Bromoform	9.93	173	295417	52.13677	ppb	99
71)	Isopropylbenzene	10.14	105	1582773	57.21644	ppb	99
72)	1,1,2,2-Tetrachloroethane	10.44	83	456442	49.64214	ppb	98
73)	1,2,3-Trichloropropane	10.46	110	148451	51.03409	ppb	95
74)	t-1,4-Dichloro-2-Butene	10.50	53	97974	44.14861	ppb	99
75)	Bromobenzene	10.40	156	507464	55.88337	ppb	98
76)	n-Propylbenzene	10.54	91	1828548	58.71621	ppb	98
77)	4-Ethyltoluene	10.66	105	1629576	59.65015	ppb	99
78)	2-Chlorotoluene	10.61	91	1180043	57.86687	ppb	98
79)	1,3,5-Trimethylbenzene	10.73	105	1472112	59.89937	ppb	99
80)	4-Chlorotoluene	10.72	91	1385055	58.57736	ppb	99
81)	Tert-Butylbenzene	11.04	119	1202724	57.93410	ppb	97
82)	1,2,4-Trimethylbenzene	11.09	105	1531341	59.14396	ppb	99
83)	Sec-Butylbenzene	11.26	105	1670473	57.50448	ppb	100
84)	p-Isopropyltoluene	11.42	119	1475169	59.37495	ppb	99
85)	Benzyl Chloride	11.58	91	618754	47.85427	ppb	99
86)	1,3-DCB	11.34	146	928839	58.38376	ppb	99
87)	1,4-DCB	11.43	146	944389	57.89879	ppb	100
88)	n-Butylbenzene	11.82	91	1314135	59.64956	ppb	99
89)	1,2-DCB	11.79	146	899599	56.58480	ppb	98
90)	Hexachloroethane	12.05	117	271608	55.37621	ppb	97
91)	1,2-Dibromo-3-chloropropan	12.56	157	114874	50.16260	ppb	94
92)	1,2,4-Trichlorobenzene	13.39	180	697812	58.28359	ppb	98
93)	Hexachlorobutadiene	13.58	225	329415	58.72091	ppb	96
94)	Naphthalene	13.62	128	1609960	54.63394	ppb	99
95)	1,2,3-Trichlorobenzene	13.87	180	670840	56.28433	ppb	100

(#) = qualifier out of range (m) = manual integration

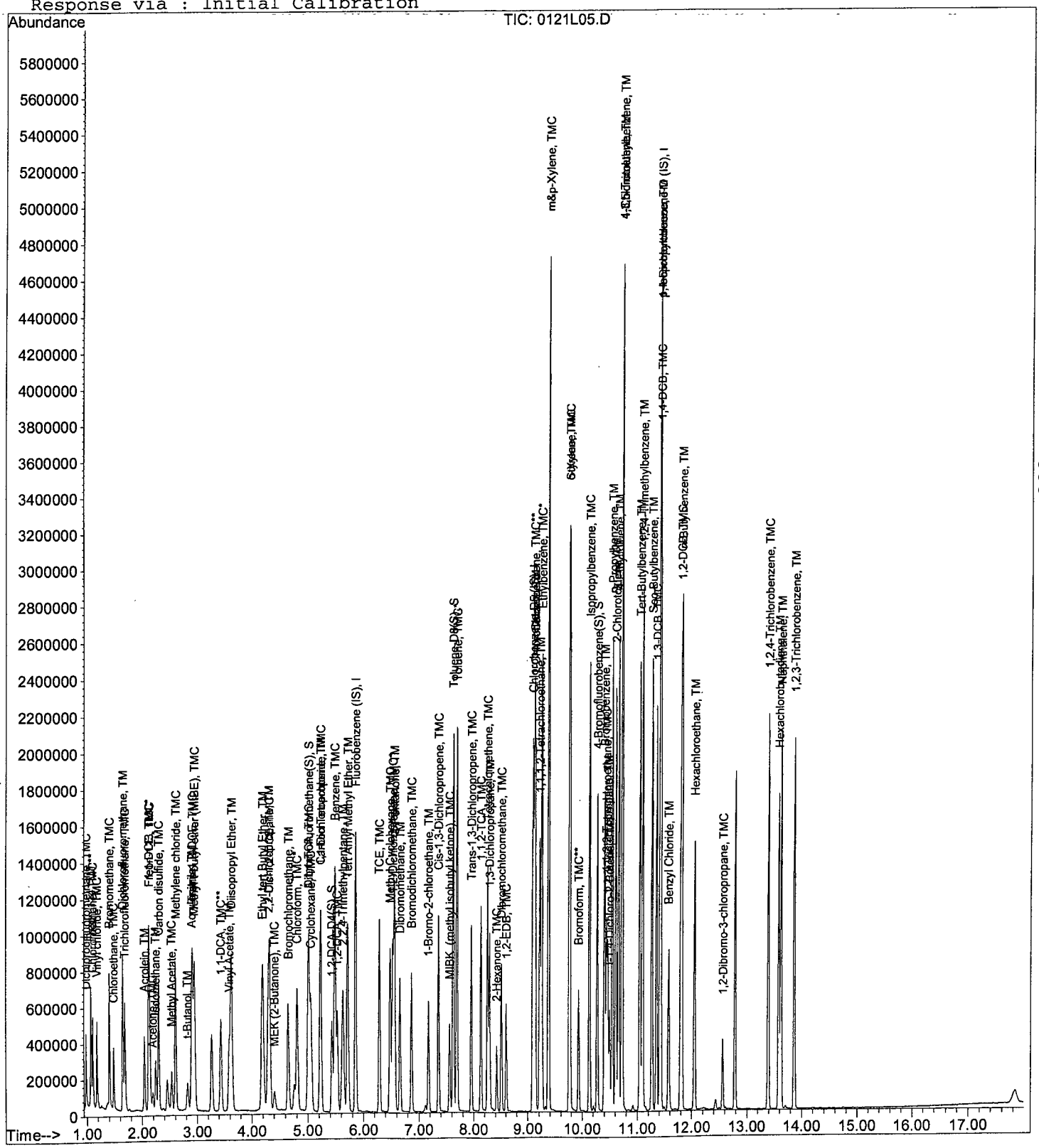
Quantitation Report

Data File : M:\LOKI\DATA\150119\0121L05.D
Acq On : 21 Jan 15 10:56
Sample : 50ug/kg Vol Std 01-21-15
Misc : 5mL w/5uL IS&S:01/14/15,10-06-14

Vial: 4
Operator: DG,SV,RS
Inst : Loki
Multiplr: 1.00

Quant Time: Jan 22 9:10 2015 Quant Results File: LALLS.RES

Method : M:\LOKI\DATA\150119\LALLS.M (RTE Integrator)
Title : METHOD 8260B
Last Update : Tue Jan 20 09:48:55 2015
Response via : Initial Calibration



VOLATILE ORGANIC ANALYSIS BY
EPA METHOD 8260B

Form 7

Continuing Calibration

Lab Name: APPL, Inc.
Case No:
Matrix:

SDG No:
Date Analyzed: 01/22/15
Instrument: Loki
Initial Cal. Date: 01/19/15
Data File: 0122L03.D

		Compound	MEAN	CCRF	%D	%Drift		
1	I	Fluorobenzene (IS)	ISTD			I		
2	TMCL	Dichlorodifluoromethane	0.2879	0.3672	28	TMCL	16	
3	TML	Freon 114	0.2925	0.2285	22	TML	24	nt
4	TMC**	Chloromethane	0.4205	0.3768	10	TMC**		
5	TMC*	Vinyl chloride	0.3809	0.4160	9.2	TMC*		
6	TMC	Bromomethane	0.3116	0.3144	0.92	TMC		
7	TMC	Chloroethane	0.2732	0.2619	4.1	TMC		
8	TM	Dichlorofluoromethane	0.7293	0.6932	4.9	TM		
9	TMCL	Trichlorofluoromethane	0.5225	0.5727	9.6	TMCL	4.0	
10	TML	Acrolein	0.0585	0.0566	3.1	TML	7.3	
11	TMCL	Acetone	0.2690	0.1429	47	TMCL	14	
12	TMCL	Freon-113	0.3245	0.2694	17	TMCL	18	
13	TMC*	1,1-DCE	0.4950	0.4312	13	TMC*		
14	TM	t-Butanol	0.0612	0.0513	16	TM		
15	TMC	Methyl Acetate	0.3484	0.3042	13	TMC		
16	TMQ	Iodomethane	0.2336	0.3596	54	TMQ	64	nt
17	TM	Acrylonitrile	0.1874	0.1726	7.9	TM		
18	TMCL	Methylene chloride	0.6738	0.5257	22	TMCL	1.2	
19	TMC	Carbon disulfide	1.079	0.9333	13	TMC		
20	TMC	Methyl t-butyl ether (MtBE)	1.290	1.233	4.5	TMC		
21	TMC	Trans-1,2-DCE	0.4048	0.4090	1.0	TMC		
22	TM	Diisopropyl Ether	1.241	1.190	4.1	TM		
23	TMC**	1,1-DCA	0.6770	0.6666	1.5	TMC**		
24	TM	Vinyl Acetate	1.373	1.276	7.1	TM		
25	TM	Ethyl tert Butyl Ether	1.228	1.220	0.65	TM		
26	TMC	MEK (2-Butanone)	0.2167	0.1927	11	TMC		
27	TMC	Cis-1,2-DCE	0.4828	0.5110	5.8	TMC		
28	TM	2,2-Dichloropropane	0.5447	0.5213	4.3	TM		
29	TMC*	Chloroform	0.7101	0.7983	12	TMC*		
30	TM	Bromochloromethane	0.2494	0.2666	6.9	TM		
31	S	Dibromofluoromethane(S)	0.4488	0.4685	4.4	S		
32	TMC	1,1,1-TCA	0.5250	0.5429	3.4	TMC		
33	TMC	Cyclohexane	0.2431	0.2067	15	TMC		
34	TM	1,1-Dichloropropene	0.4558	0.4713	3.4	TM		
35	TML	2,2,4-Trimethylpentane	0.9325	0.7823	16	TML	16	
36	S	1,2-DCA-D4(S)	0.5091	0.4685	8.0	S		
37	TMC	Carbon Tetrachloride	0.4521	0.4533	0.26	TMC		
38	TM	Tert Amyl Methyl Ether	1.150	1.159	0.72	TM		
39	TMC	1,2-DCA	0.5771	0.5763	0.14	TMC		
40	TMC	Benzene	1.473	1.570	6.6	TMC		
		Average			10.6			

VOLATILE ORGANIC ANALYSIS BY
EPA METHOD 8260B

Form 7

Continuing Calibration

Lab Name: APPL, Inc.
Case No:
Matrix: 0

SDG No:
Date Analyzed: 01/22/15
Instrument: Loki
Cal. Date: 01/19/15
Data File: 0122L03.D

		Compound	MEAN	CCRF	%D		%Drift
41	TMC	TCE	0.3767	0.4014	6.6	TMC	
42	TM	2-Pentanone	0.3305	0.3149	4.7	TM	
43	TMC*	1,2-Dichloropropane	0.4096	0.4272	4.3	TMC*	
44	TMC	Bromodichloromethane	0.5594	0.5756	2.9	TMC	
45	TMC	Methyl Cyclohexane	0.5348	0.4600	14	TMC	
46	TM	Dibromomethane	0.2887	0.3010	4.3	TM	
47	TML	2-Chloroethyl vinyl ether	0.0000	0.0129	0.00	TML	
48	TMC	MIBK (methyl isobutyl ketone)	0.2318	0.2183	5.8	TMC	
49	TM	1-Bromo-2-chloroethane	0.3427	0.3591	4.8	TM	
50	TMC	Cis-1,3-Dichloropropene	0.7007	0.7212	2.9	TMC	
51	TMC*	Toluene	1.666	1.811	8.7	TMC*	
52	TMC	Trans-1,3-Dichloropropene	0.6413	0.6371	0.65	TMC	
53	TMC	1,1,2-TCA	0.3348	0.3535	5.6	TMC	
54	TMC	2-Hexanone	0.1758	0.1622	7.7	TMC	
55	I	Chlorobenzene-D5 (IS)	ISTD			I	
56	S	Toluene-D8(S)	1.584	1.577	0.48	S	
57	TMC	1,2-EDB	0.4651	0.5040	8.4	TMC	
58	TMC	Tetrachloroethene	0.3581	0.4052	13	TMC	
59	TM	1-Chlorohexane	0.4974	0.5277	6.1	TM	
60	TM	1,1,1,2-Tetrachloroethane	0.4873	0.5470	12	TM	
61	TMC	m&p-Xylene	0.9649	1.111	15	TMC	
62	TMC	o-Xylene	0.7835	0.8983	15	TMC	
63	TMC	Styrene	1.352	1.544	14	TMC	
64	S	4-Bromofluorobenzene(S)	0.6676	0.6598	1.2	S	
65	TM	1,3-Dichloropropane	0.7380	0.7905	7.1	TM	
66	TMC	Dibromochloromethane	0.5152	0.5507	6.9	TMC	
67	TMC**	Chlorobenzene	1.305	1.495	15	TMC**	
68	TMC*	Ethylbenzene	1.937	2.231	15	TMC*	
69	TMC**	Bromoform	0.3912	0.4002	2.3	TMC**	
70	I	1,4-Dichlorobenzene-D (IS)	ISTD			I	
71	TMC	Isopropylbenzene	3.383	3.727	10	TMC	
72	TMC**	1,1,2,2-Tetrachloroethane	1.125	1.175	4.5	TMC**	
73	TM	1,2,3-Trichloropropane	0.3558	0.3671	3.2	TM	
74	TM	t-1,4-Dichloro-2-Butene	0.2714	0.2447	9.8	TM	
75	TM	Bromobenzene	1.111	1.221	9.9	TM	
76	TM	n-Propylbenzene	3.809	4.345	14	TM	
77	TM	4-Ethyltoluene	3.341	3.880	16	TM	
78	TM	2-Chlorotoluene	2.494	2.815	13	TM	
79	TM	1,3,5-Trimethylbenzene	3.006	3.461	15	TM	
80	TM	4-Chlorotoluene	2.892	3.334	15	TM	
		Average			8.3		

VOLATILE ORGANIC ANALYSIS BY
EPA METHOD 8260B

Form 7

Continuing Calibration

Lab Name: APPL, Inc.
Case No:
Matrix: 0

SDG No:
Date Analyzed: 01/22/15
Instrument: Loki
Cal. Date: 01/19/15
Data File: 0122L03.D

		Compound	MEAN	CCRF	%D		%Drift
81	TM	Tert-Butylbenzene	2.539	2.795	10	TM	
82	TM	1,2,4-Trimethylbenzene	3.167	3.621	14	TM	
83	TM	Sec-Butylbenzene	3.553	3.963	12	TM	
84	TM	p-Isopropyltoluene	3.039	3.501	15	TM	
85	TM	Benzyl Chloride	1.581	1.525	3.6	TM	
86	TMC	1,3-DCB	1.946	2.270	17	TMC	
87	TMC	1,4-DCB	1.995	2.322	16	TMC	
88	TM	n-Butylbenzene	2.694	3.133	16	TM	
89	TMC	1,2-DCB	1.944	2.186	12	TMC	
90	TM	Hexachloroethane	0.5999	0.6883	15	TM	
91	TMC	1,2-Dibromo-3-chloropropane	0.2801	0.2783	0.64	TMC	
92	TMC	1,2,4-Trichlorobenzene	1.464	1.686	15	TMC	
93	TM	Hexachlorobutadiene	0.6861	0.7774	13	TM	
94	TM	Naphthalene	3.604	3.854	6.9	TM	
95	TM	1,2,3-Trichlorobenzene	1.458	1.622	11	TM	
96							
97							
98							
99							
100							
101							
102							
103							
104							
105							
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108							
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110							
111							
112							
113							
114							
115							
116							
117							
118							
119							
120							
		Average			11.8		

Quantitation Report (Not Reviewed)

Data File : M:\LOKI\DATA\150119\0122L03.D
Acq On : 22 Jan 15 8:45
Sample : 50ug/kg Vol Std 01-22-15
Misc : 5mL w/5uL IS&S:01/14/15,10-06-14

Vial: 2
Operator: DG,SV,RS
Inst : Loki
Multiplr: 1.00

Quant Time: Jan 23 7:42 2015 Quant Results File: LALLS.RES

Quant Method : M:\LOKI\DATA\150119\LALLS.M (RTE Integrator)
Title : METHOD 8260B
Last Update : Tue Jan 20 09:48:55 2015
Response via : Initial Calibration
DataAcq Meth : 8260_BETA

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene (IS)	5.86	96	734016	50.00000 ppb	0.00
55) Chlorobenzene-D5 (IS)	9.09	117	663488	50.00000 ppb	0.00
70) 1,4-Dichlorobenzene-D (IS)	11.41	152	375232	50.00000 ppb	0.00
System Monitoring Compounds					
31) Dibromofluoromethane(S)	5.02	111	360698	54.74719 ppb	0.00
Spiked Amount 52.439			Recovery	= 104.401%	
36) 1,2-DCA-D4(S)	5.43	65	330564	44.22787 ppb	0.00
Spiked Amount 48.066			Recovery	= 92.016%	
56) Toluene-D8(S)	7.62	98	1280019	60.88299 ppb	0.00
Spiked Amount 61.175			Recovery	= 99.523%	
64) 4-Bromofluorobenzene(S)	10.27	95	477521	53.90505 ppb	0.00
Spiked Amount 54.538			Recovery	= 98.839%	
Target Compounds					Qvalue
2) Dichlorodifluoromethane	0.98	85	269504	58.17686 ppb	99
3) Freon 114	1.07	85	167752	37.99361 ppb	99
4) Chloromethane	1.10	50	276598	44.80590 ppb	99
5) Vinyl chloride	1.18	62	305348	54.60981 ppb	98
6) Bromomethane	1.40	94	230806	50.45915 ppb	96
7) Chloroethane	1.48	64	192238	47.93419 ppb	96
8) Dichlorofluoromethane	1.65	67	508849	47.52595 ppb	100
9) Trichlorofluoromethane	1.69	101	420406	52.00523 ppb	99
10) Acrolein	2.04	55	207861	231.85775 ppb	100
11) Acetone	2.19	43	104878	42.75972 ppb	97
12) Freon-113	2.14	101	197745	40.99864 ppb	98
13) 1,1-DCE	2.12	61	316499	43.55746 ppb	96
14) t-Butanol	2.81	59	188333	209.60231 ppb	99
15) Methyl Acetate	2.53	43	223285	43.65589 ppb	93
16) Iodomethane	2.25	142	263934	81.82969 ppb	97
17) Acrylonitrile	2.89	53	126691	46.05703 ppb	100
18) Methylene chloride	2.60	84	385893	49.40990 ppb	100
19) Carbon disulfide	2.30	76	685064	43.26001 ppb	99
20) Methyl t-butyl ether (MtBE	2.94	73	904752	47.76677 ppb	97
21) Trans-1,2-DCE	2.90	96	300190	50.51187 ppb	93
22) Diisopropyl Ether	3.62	45	873152	47.92579 ppb	99
23) 1,1-DCA	3.43	63	489268	49.23285 ppb	98
24) Vinyl Acetate	3.58	43	936287	46.45657 ppb	97
25) Ethyl tert Butyl Ether	4.19	59	895851	49.67695 ppb	100
26) MEK (2-Butanone)	4.41	43	141468	44.47072 ppb	98
27) Cis-1,2-DCE	4.32	96	375081	52.91947 ppb	96
28) 2,2-Dichloropropane	4.29	77	382642	47.85554 ppb	98
29) Chloroform	4.81	83	585957	56.21317 ppb	99
30) Bromochloromethane	4.65	128	195661	53.44582 ppb	97
32) 1,1,1-TCA	5.00	97	398500	51.70992 ppb	93
33) Cyclohexane	5.06	41	151685	42.50213 ppb	86
34) 1,1-Dichloropropene	5.23	75	345933	51.69710 ppb	97
35) 2,2,4-Trimethylpentane	5.63	57	574230	42.17389 ppb	98
37) Carbon Tetrachloride	5.22	117	332726	50.12854 ppb	99
38) Tert Amyl Methyl Ether	5.71	73	850499	50.36108 ppb	97
39) 1,2-DCA	5.53	62	423023	49.93141 ppb	97
40) Benzene	5.49	78	1152612	53.31439 ppb	100
41) TCE	6.29	95	294626	53.27698 ppb	98
42) 2-Pentanone	6.56	43	1155718	238.20973 ppb	97

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : M:\LOKI\DATA\150119\0122L03.D
Acq On : 22 Jan 15 8:45
Sample : 50ug/kg Vol Std 01-22-15
Misc : 5mL w/5uL IS&S:01/14/15,10-06-14

Vial: 2
Operator: DG,SV,RS
Inst : Loki
Multiplr: 1.00

Quant Time: Jan 23 7:42 2015 Quant Results File: LALLS.RES

Quant Method : M:\LOKI\DATA\150119\LALLS.M (RTE Integrator)
Title : METHOD 8260B
Last Update : Tue Jan 20 09:48:55 2015
Response via : Initial Calibration
DataAcq Meth : 8260_BETA

Compound	R.T.	QIon	Response	Conc Unit		Qvalue
43) 1,2-Dichloropropane	6.53	63	313592	52.15268	ppb	100
44) Bromodichloromethane	6.87	83	422506	51.45217	ppb	97
45) Methyl Cyclohexane	6.48	83	337643	43.00645	ppb	98
46) Dibromomethane	6.66	93	220970	52.14052	ppb	97
48) MIBK (methyl isobutyl ket	7.56	43	160257	47.09591	ppb	99
49) 1-Bromo-2-chloroethane	7.17	63	263616	52.39181	ppb	99
50) Cis-1,3-Dichloropropene	7.36	75	529405	51.46534	ppb	95
51) Toluene	7.69	91	1329493	54.37277	ppb	100
52) Trans-1,3-Dichloropropene	7.96	75	467648	49.67573	ppb	100
53) 1,1,2-TCA	8.13	83	259443	52.78096	ppb	97
54) 2-Hexanone	8.42	43	119084	46.13203	ppb	97
57) 1,2-EDB	8.60	107	334394	54.18110	ppb	96
58) Tetrachloroethene	8.25	164	268864	56.58227	ppb	99
59) 1-Chlorohexane	9.14	91	350112	53.03902	ppb	97
60) 1,1,1,2-Tetrachloroethane	9.21	131	362909	56.11796	ppb	98
61) m&p-Xylene	9.37	91	1473771	115.10507	ppb	98
62) o-Xylene	9.76	106	595986	57.32350	ppb	99
63) Styrene	9.78	104	1024608	57.12154	ppb	98
65) 1,3-Dichloropropane	8.29	76	524500	53.56175	ppb	97
66) Dibromochloromethane	8.51	129	365407	53.45395	ppb	99
67) Chlorobenzene	9.12	112	992106	57.27618	ppb	99
68) Ethylbenzene	9.25	91	1480005	57.56612	ppb	99
69) Bromoform	9.93	173	265506	51.14731	ppb	99
71) Isopropylbenzene	10.14	105	1398311	55.07455	ppb	100
72) 1,1,2,2-Tetrachloroethane	10.44	83	441030	52.26104	ppb	99
73) 1,2,3-Trichloropropane	10.46	110	137744	51.59349	ppb	97
74) t-1,4-Dichloro-2-Butene	10.50	53	91809	45.07507	ppb	98
75) Bromobenzene	10.40	156	458019	54.95483	ppb	98
76) n-Propylbenzene	10.54	91	1630378	57.04072	ppb	98
77) 4-Ethyltoluene	10.66	105	1455866	58.06352	ppb	100
78) 2-Chlorotoluene	10.61	91	1056268	56.43536	ppb	98
79) 1,3,5-Trimethylbenzene	10.73	105	1298564	57.56914	ppb	100
80) 4-Chlorotoluene	10.72	91	1251040	57.64730	ppb	100
81) Tert-Butylbenzene	11.04	119	1048757	55.04123	ppb	98
82) 1,2,4-Trimethylbenzene	11.09	105	1358795	57.17911	ppb	98
83) Sec-Butylbenzene	11.26	105	1486928	55.76955	ppb	100
84) p-Isopropyltoluene	11.42	119	1313837	57.61665	ppb	99
85) Benzyl Chloride	11.58	91	572295	48.22449	ppb	99
86) 1,3-DCB	11.34	146	851632	58.32418	ppb	98
87) 1,4-DCB	11.43	146	871431	58.20987	ppb	100
88) n-Butylbenzene	11.82	91	1175556	58.13740	ppb	99
89) 1,2-DCB	11.79	146	820441	56.22678	ppb	100
90) Hexachloroethane	12.05	117	258259	57.36951	ppb	97
91) 1,2-Dibromo-3-chloropropan	12.56	157	104422	49.68157	ppb	95
92) 1,2,4-Trichlorobenzene	13.39	180	632481	57.55729	ppb	99
93) Hexachlorobutadiene	13.58	225	291704	56.65481	ppb	97
94) Naphthalene	13.62	128	1446265	53.47371	ppb	100
95) 1,2,3-Trichlorobenzene	13.86	180	608526	55.62790	ppb	100

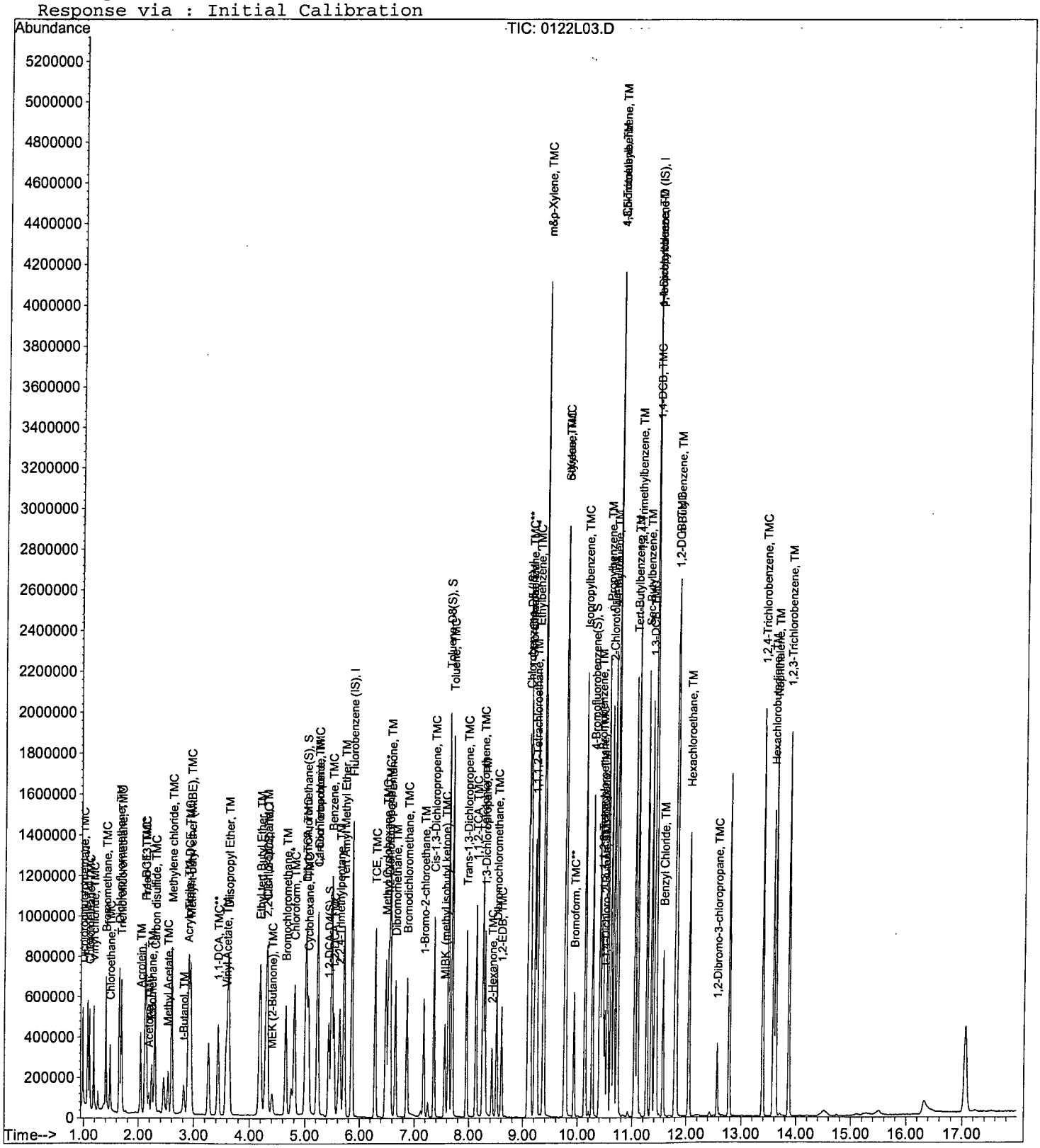
(#) = qualifier out of range (m) = manual integration

Quantitation Report

Data File : M:\LOKI\DATA\150119\0122L03.D Vial: 2
Acq On : 22 Jan 15 8:45 Operator: DG,SV,RS
Sample : 50ug/kg Vol Std 01-22-15 Inst : Loki
Misc : 5mL w/5uL IS&S:01/14/15,10-06-14 Multiplr: 1.00

Quant Time: Jan 23 7:42 2015 Quant Results File: LALLS.RES

Method : M:\LOKI\DATA\150119\LALLS.M (RTE Integrator)
Title : METHOD 8260B
Last Update : Fri Jan 23 13:43:44 2015
Response via : Initial Calibration



VOLATILE ORGANIC ANALYSIS BY
EPA METHOD 8260B

Form 6
Initial Calibration

Lab Name: APPL, Inc.
Case No:
Matrix:

SDG No:
Initial Cal. Date: 01/09/15
Instrument: Thor

Initials:

		Compound	0109T08.D	0109T09.D	0109T10.D	0109T11.D	0109T12.D	0109T13 D	0109T14.D	0109T15.D			Avg	%RSD		
			0.3	0.5	1	5	10	20	40	100						
1	I	Fluorobenzene (IS)	ISTD													
2	TM	Dichlorodifluoromethane	0.3572	0.3433	0.3390	0.3715	0.4207	0.4202	0.3781	0.4031			0.38	8.6	TM	
3	TM	Freon 114	0.2464	0.2249	0.2219	0.2232	0.2466	0.2460	0.2391	0.2449			0.24	4.8	TM	
4	TM**	Chloromethane	0.5404	0.5186	0.4693	0.4261	0.4500	0.4380	0.4219	0.4267			0.46	9.8	TM**	
5	TM*	Vinyl chloride	0.4718	0.5042	0.4958	0.4543	0.5077	0.4968	0.4749	0.4750			0.49	3.9	TM*	
6	TM	Bromomethane	0.3449	0.3663	0.3648	0.2715	0.2950	0.2884	0.2829	0.2729			0.31	13	TM	
7	TMQ	Chloroethane		0.5425	0.4648	0.3044	0.3215	0.3039	0.2894	0.1910			0.35	34	TMQ	1.000
8	TM	Dichlorofluoromethane	1.034	0.8404	0.8773	0.7801	0.8220	0.7994	0.8002	0.7930			0.84	9.8	TM	
9	TM	Trichlorofluoromethane	0.6462	0.5289	0.6289	0.5478	0.6200	0.6185	0.5786	0.6102			0.60	6.9	TM	
10	TM	Acrolein	0.0199	0.0202	0.0221	0.0211	0.0223	0.0225	0.0228	0.0217			0.02	5.0	TM	
11	TML	Acetone		0.2561	0.2037	0.1203	0.1002	0.0925	0.0915	0.0894			0.14	49	TML	1.000
12	TM	Freon-113	0.3657	0.2980	0.3396	0.3211	0.3338	0.3449	0.3297	0.3338			0.33	5.8	TM	
13	TM*	1,1-DCE	0.4948	0.5016	0.5247	0.4992	0.5346	0.5366	0.5357	0.5312			0.52	3.5	TM*	
14	TM	t-Butanol	0.0309	0.0271	0.0304	0.0285	0.0322	0.0365	0.0390				0.03	13	TM	
15	TM	Methyl Acetate	0.3149	0.2846	0.2874	0.2523	0.2467	0.2444	0.2432	0.2508			0.27	10	TM	
16	TML	Iodomethane	0.1575	0.1598	0.1908	0.2623	0.3601	0.4165	0.4617	0.4731			0.31	43	TML	0.999
17	TM	Acrylonitrile	0.0729	0.0938	0.0923	0.0904	0.0962	0.0963	0.0936	0.0925			0.09	8.3	TM	
18	TM	Methylene chloride		0.5202	0.5285	0.4060	0.4123	0.4063	0.4021	0.3939			0.44	13	TM	
19	TM	Carbon disulfide	1.182	1.049	1.119	1.016	1.047	1.059	1.068	1.080			1.1	4.8	TM	
20	TM	Methyl t-butyl ether (MtBE)	0.8208	0.7734	0.8831	0.8360	0.8826	0.9021	0.9016	0.9339			0.87	6.1	TM	
21	TM	Trans-1,2-DCE	0.4283	0.3600	0.3875	0.3548	0.3779	0.3799	0.3772	0.3753			0.38	5.8	TM	
22	TM	Hexane	0.4154	0.3817	0.4088	0.3609	0.3795	0.4038	0.4019	0.4124			0.40	4.9	TM	
23	TM	Diisopropyl Ether	1.284	1.306	1.272	1.228	1.300	1.306	1.312	1.327			1.3	2.4	TM	
24	TM**	1,1-DCA	0.7491	0.6922	0.7254	0.6517	0.6865	0.6889	0.6801	0.6741			0.69	4.4	TM**	
25	TM	Vinyl Acetate	0.3002	0.3242	0.3487	0.3317	0.3467	0.3534	0.3475	0.3498			0.34	5.4	TM	
26	TM	Ethyl tert Butyl Ether	0.6083	0.6430	0.6592	0.6453	0.6941	0.7190	0.7963	0.8861			0.71	13	TM	
27	TML	MEK (2-Butanone)	0.2075	0.1784	0.1601	0.1443	0.1276	0.1319	0.1299	0.1299			0.15	19	TML	1.00
28	TM	Cis-1,2-DCE	0.4506	0.4363	0.4500	0.4176	0.4375	0.4421	0.4347	0.4368			0.44	2.4	TM	
29	TM	2,2-Dichloropropane	0.5668	0.5150	0.5698	0.5234	0.5187	0.5131	0.5063	0.5063			0.53	4.9	TM	
30	TM*	Chloroform	0.6822	0.7122	0.6982	0.6448	0.6837	0.6822	0.6779	0.6711			0.68	2.9	TM*	
31	TM	Bromochloromethane	0.1534	0.2129	0.2184	0.1990	0.2127	0.2120	0.2075	0.1990			0.20	10	TM	
32	S	Dibromofluoromethane(S)	0.4571	0.4108	0.4281	0.4136	0.4272	0.4282	0.4274	0.4301			0.43	3.3	S	
33	TM	1,1,1-TCA	0.5175	0.5572	0.5831	0.5431	0.5691	0.5715	0.5637	0.5731			0.56	3.7	TM	
34	TM	Cyclohexane	0.3121	0.3706	0.3565	0.2948	0.3124	0.3251	0.3175	0.3250			0.33	7.6	TM	
35	TM	1,1-Dichloropropene	0.4744	0.4845	0.5169	0.4771	0.5088	0.5243	0.5178	0.5215			0.50	4.2	TM	

VOLATILE ORGANIC ANALYSIS BY
EPA METHOD 8260B

Form 6
Initial Calibration

Lab Name: APPL, Inc.
Case No:
Matrix:

SDG No:
Initial Cal. Date: 01/09/15
Instrument: Thor

Initials:

		Compound	0.3	0.5	1	5	10	20	40	100			Avg	%RSD		
36	TM	2,2,4-Trimethylpentane	0.9958	0.9823	1.015	0.9487	1.015	1.048	1.076	1.101			1.0	4.9	TM	
37	S	1,2-DCA-D4(S)	0.4932	0.4910	0.4683	0.4171	0.4438	0.4328	0.4316	0.4288			0.45	6.5	S	
38	TM	Carbon Tetrachloride	0.4867	0.4557	0.4868	0.4713	0.4874	0.5030	0.5134	0.5203			0.49	4.3	TM	
39	TM	Tert Amyl Methyl Ether		0.5149	0.5429	0.5228	0.5463	0.5860	0.6574	0.7481			0.59	15	TM	
40	TM	1,2-DCA	0.5616	0.5317	0.5247	0.4923	0.4966	0.5013	0.4916	0.4922			0.51	5.0	TM	
41	TM	Benzene	1.557	1.500	1.596	1.496	1.559	1.557	1.561	1.551			1.5	2.2	TM	
42	TM	TCE	0.3868	0.3834	0.3872	0.3750	0.4094	0.4086	0.4096	0.4109			0.40	3.7	TM	
43	TM	2-Pentanone	0.2172	0.2307	0.2423	0.2397	0.2497	0.2535	0.2521	0.2530			0.24	5.3	TM	
44	TM*	1,2-Dichloropropane	0.4588	0.4357	0.4365	0.4081	0.4348	0.4351	0.4310	0.4348			0.43	3.1	TM*	
45	TM	Bromodichloromethane	0.5294	0.4487	0.4921	0.4813	0.4970	0.5230	0.5199	0.5313			0.50	5.7	TM	
46	TM	Methyl Cyclohexane	0.5506	0.4979	0.5793	0.5361	0.5612	0.5933	0.5938	0.6072			0.56	6.4	TM	
47	TM	Dibromomethane	0.2362	0.2483	0.2431	0.2327	0.2468	0.2439	0.2432	0.2440			0.24	2.2	TM	
48	TM	MIBK (methyl isobutyl ketone	0.3409	0.3567	0.3022	0.3158	0.2915	0.2975	0.2933	0.2994			0.31	7.7	TM	
49	TM	1-Bromo-2-chloroethane	0.4641	0.5070	0.5375	0.5025	0.5252	0.5363	0.5317	0.5346			0.52	4.9	TM	
50	TM	2-Chloroethyl vinyl ether													TM	
51	TM	Cis-1,3-Dichloropropene	0.6047	0.5596	0.5861	0.5843	0.6248	0.6356	0.6506	0.6747			0.62	6.2	TM	
52	TM*	Toluene	1.644	1.688	1.754	1.644	1.721	1.731	1.748	1.755			1.7	2.7	TM*	
53	TM	Trans-1,3-Dichloropropene	0.4722	0.4932	0.4630	0.4856	0.5158	0.5355	0.5494	0.5664			0.51	7.4	TM	
54	TM	1,1,2-TCA	0.3005	0.2940	0.2985	0.2755	0.2879	0.2883	0.2923	0.2874			0.29	2.7	TM	
55	TM	2-Hexanone				0.1893	0.1863	0.1955	0.1906	0.2059			0.19	4.0	TM	
56	I	Chlorobenzene-D5 (IS)	ISTD													
57	S	Toluene-D8(S)	1.785	1.678	1.622	1.557	1.632	1.687	1.690	1.710			1.7	4.0	S	
58	TM	1,2-EDB	0.3611	0.3115	0.3433	0.3574	0.3728	0.3895	0.3910	0.3919			0.36	7.7	TM	
59	TM	Tetrachloroethene	0.5549	0.5578	0.5404	0.5027	0.5290	0.5474	0.5310	0.5432			0.54	3.3	TM	
60	TM	1-Chlorohexane	0.5325	0.4341	0.5199	0.5086	0.5488	0.5702	0.5796	0.6032			0.54	9.7	TM	
61	TM	1,1,1,2-Tetrachloroethane	0.4185	0.4447	0.4551	0.4261	0.4587	0.4773	0.4701	0.4752			0.45	4.9	TM	
62	TM	m&p-Xylene	0.7352	0.6778	0.7774	0.7460	0.7864	0.8307	0.8248	0.8349			0.78	7.1	TM	
63	TM	o-Xylene	0.7209	0.6940	0.7253	0.7210	0.7826	0.8160	0.8085	0.8102			0.76	6.5	TM	
64	TM	Styrene	1.080	1.003	1.102	1.135	1.248	1.346	1.364	1.399			1.2	12	TM	
65	S	4-Bromofluorobenzene(S)	0.7443	0.6749	0.6659	0.6045	0.6311	0.6653	0.6484	0.6632			0.66	6.1	S	
66	TM	1,3-Dichloropropane	0.6227	0.6064	0.6636	0.6082	0.6396	0.6586	0.6393	0.6433			0.64	3.4	TM	
67	TM	Dibromochloromethane	0.4095	0.3949	0.3962	0.4070	0.4266	0.4570	0.4574	0.4723			0.43	7.2	TM	
68	TM**	Chlorobenzene	1.398	1.260	1.346	1.214	1.281	1.298	1.286	1.279			1.3	4.3	TM**	
69	TM*	Ethylbenzene	2.074	1.928	2.118	2.008	2.117	2.209	2.199	2.234			2.1	5.0	TM*	
70	TM**	Bromoform	0.2516	0.2697	0.2731	0.2671	0.2900	0.3095	0.3056	0.3398			0.29	10.0	TM**	

VOLATILE ORGANIC ANALYSIS BY
EPA METHOD 8260B

Form 6
Initial Calibration

Lab Name: APPL, Inc.
Case No:
Matrix:

SDG No:
Initial Cal. Date: 01/09/15
Instrument: Thor

Initials:

		Compound	0.3	0.5	1	5	10	20	40	100			Avg	%RSD		
71	I	1,4-Dichlorobenzene-D (IS)	ISTD													
72	TM	Isopropylbenzene	3.180	3.231	3.579	3.393	3.544	3.611	3.864	3.534			3.5	6.3	TM	
73	TM**	1,1,2,2-Tetrachloroethane	0.8436	0.8313	0.8411	0.8239	0.8464	0.8446	0.8204	0.8003			0.83	1.9	TM**	
74	TM	1,2,3-Trichloropropane	0.2378	0.2427	0.2465	0.2471	0.2421	0.2430	0.2384	0.2276			0.24	2.6	TM	
75	TM	t-1,4-Dichloro-2-Butene	0.1668	0.1223	0.1617	0.1544	0.1601	0.1648	0.1659	0.1690			0.16	9.6	TM	
76	TM	Bromobenzene	1.014	1.055	1.047	1.051	1.047	1.052	1.092	1.003			1.0	2.6	TM	
77	TM	n-Propylbenzene	3.688	3.868	4.024	4.012	4.235	4.311	4.605	4.235			4.1	6.9	TM	
78	TM	4-Ethyltoluene	3.059	3.063	3.134	3.398	3.539	3.624	3.894	3.609			3.4	9.0	TM	
79	TM	2-Chlorotoluene	2.505	2.394	2.588	2.527	2.620	2.642	2.734	2.519			2.6	4.0	TM	
80	TM	1,3,5-Trimethylbenzene	2.711	2.501	2.774	2.894	3.161	3.192	3.366	3.174			3.0	10.0	TM	
81	TM	4-Chlorotoluene	2.803	2.913	2.998	2.940	3.019	3.047	3.185	3.002			3.0	3.7	TM	
82	TM	Tert-Butylbenzene	2.254	2.385	2.618	2.494	2.593	2.640	2.764	2.618			2.5	6.4	TM	
83	TM	1,2,4-Trimethylbenzene	2.719	2.688	2.727	2.875	3.078	3.178	3.380	3.239			3.0	9.0	TM	
84	TM	Sec-Butylbenzene	3.035	3.020	3.549	3.497	3.768	3.836	4.045	3.854			3.6	11	TM	
85	TM	p-Isopropyltoluene	2.467	2.599	2.739	2.899	3.016	3.166	3.356	3.285			2.9	11	TM	
86	TM	Benzyl Chloride	0.6666	0.6704	0.6982	0.6594	0.7228	0.7402	0.8147	0.8801			0.73	11	TM	
87	TM	1,3-DCB	1.754	1.842	1.926	1.863	1.881	1.888	1.919	1.873			1.9	2.9	TM	
88	TM	1,4-DCB	1.887	1.998	2.039	1.903	1.892	1.905	1.964	1.914			1.9	2.9	TM	
89	TM	n-Butylbenzene	2.573	2.353	2.615	2.472	2.700	2.871	3.078	3.123			2.7	10	TM	
90	TM	1,2-DCB	1.824	1.777	1.886	1.749	1.782	1.779	1.802	1.788			1.8	2.3	TM	
91	TM	Hexachloroethane	0.5976	0.5483	0.5113	0.4857	0.5404	0.5470	0.5852	0.5896			0.55	7.1	TM	
92	TM	1,2-Dibromo-3-chloropropane	0.1493	0.1227	0.1650	0.1369	0.1472	0.1506	0.1644	0.1630			0.15	9.8	TM	
93	TM	1,2,4-Trichlorobenzene	1.057	0.9035	1.012	1.061	1.097	1.172	1.309	1.327			1.1	13	TM	
94	TM	Hexachlorobutadiene	0.6718	0.6210	0.6335	0.5880	0.6014	0.6378	0.6883	0.6808			0.64	5.8	TM	
95	TML	Naphthalene		1.445	1.483	1.726	1.896	2.138	2.386	2.382			1.9	21	TML	0.999
96	TM	1,2,3-Trichlorobenzene	0.8390	0.9308	0.9265	0.9465	1.002	1.097	1.208	1.195			1.0	13	TM	
97																
98																
99																
100																
101																
102																
103																
104																
105																

Quantitation Report (Not Reviewed)

Data File : M:\THOR\DATA\T150109\0109T08.D
Acq On : 9 Jan 15 12:44
Sample : 0.3ug/L VOC STD 1/9/15
Misc : 10ml w/IS 12/20/14

Vial: 5
Operator: DG, SV, RS
Inst : Thor
Multiplr: 1.00

Quant Time: Jan 12 11:19 2015 Quant Results File: TALLW.RES

Quant Method : M:\THOR\DATA\T150109\TALLW.M (RTE Integrator)
Title : METHOD 8260B
Last Update : Mon Jan 12 11:16:31 2015
Response via : Initial Calibration
DataAcq Meth : 8260_BETA

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene (IS)	6.02	96	801728	25.00000 ppb	0.00
56) Chlorobenzene-D5 (IS)	9.22	117	703424	25.00000 ppb	0.00
71) 1,4-Dichlorobenzene-D (IS)	11.54	152	367296	25.00000 ppb	0.00
System Monitoring Compounds					
32) Dibromofluoromethane(S)	5.19	111	8796	0.64111 ppb	0.00
Spiked Amount 31.085			Recovery	= 2.062%	
37) 1,2-DCA-D4(S)	5.59	65	9489	0.65633 ppb	0.00
Spiked Amount 29.432			Recovery	= 2.229%	
57) Toluene-D8(S)	7.76	98	30134	0.64129 ppb	0.00
Spiked Amount 31.767			Recovery	= 2.018%	
65) 4-Bromofluorobenzene(S)	10.40	95	12566	0.67443 ppb	0.00
Spiked Amount 29.480			Recovery	= 2.286%	

Target Compounds						Qvalue
2) Dichlorodifluoromethane	1.02	85	3437	0.28268 ppb	#	78
3) Freon 114	1.11	135	2371	0.31244 ppb		83
4) Chloromethane	1.14	50	5199	0.35138 ppb		95
5) Vinyl chloride	1.22	62	4539	0.29179 ppb		99
6) Bromomethane	1.47	94	3318	0.33285 ppb		100
7) Chloroethane	1.55	64	7833	0.78481 ppb	#	80
8) Dichlorofluoromethane	1.72	67	9944	0.36772 ppb		93
9) Trichlorofluoromethane	1.76	101	6217	0.32451 ppb		95
10) Acrolein	2.13	56	6395	9.23687 ppb		87
11) Acetone	2.29	43	4028	0.12303 ppb		91
12) Freon-113	2.23	101	3518	0.32911 ppb	#	70
13) 1,1-DCE	2.22	61	4760	0.28555 ppb		85
14) t-Butanol	2.93	59	9898	9.62130 ppb	#	92
15) Methyl Acetate	2.65	43	3030	0.35581 ppb	#	80
16) Iodomethane	2.35	142	1515	1.43566 ppb	#	81
17) Acrylonitrile	3.03	52	701	0.24020 ppb	#	65
18) Methylene chloride	2.73	84	6168	0.43865 ppb		97
19) Carbon disulfide	2.40	76	11373	0.32915 ppb		98
20) Methyl t-butyl ether (MtBE	3.07	73	7897	0.28412 ppb		95
21) Trans-1,2-DCE	3.05	96	4121	0.33806 ppb		76
22) Hexane	3.43	57	3996	0.31502 ppb	#	92
23) Diisopropyl Ether	3.79	45	12353	0.29817 ppb	#	85
24) 1,1-DCA	3.61	63	7207	0.32405 ppb		94
25) Vinyl Acetate	3.80	87	2888	0.26661 ppb	#	67
26) Ethyl tert Butyl Ether	4.36	59	5852	0.25832 ppb		97
27) MEK (2-Butanone)	4.60	43	1996	0.26522 ppb		97
28) Cis-1,2-DCE	4.50	96	4335	0.30848 ppb		89
29) 2,2-Dichloropropane	4.47	77	5453	0.32240 ppb	#	86
30) Chloroform	4.98	83	6563	0.30028 ppb		98
31) Bromochloromethane	4.83	128	1476	0.22801 ppb		76
33) 1,1,1-TCA	5.18	97	4979	0.27735 ppb		98
34) Cyclohexane	5.23	41	3003	0.28659 ppb		71
35) 1,1-Dichloropropene	5.40	75	4564	0.28285 ppb	#	88
36) 2,2,4-Trimethylpentane	5.80	57	9580	0.29210 ppb	#	88
38) Carbon Tetrachloride	5.40	117	4682	0.29761 ppb		82
39) Tert Amyl Methyl Ether	5.86	73	4291	0.22743 ppb	#	90
40) 1,2-DCA	5.69	62	5403	0.32939 ppb		96
41) Benzene	5.65	78	14979	0.30189 ppb		96
42) TCE	6.44	95	3721	0.29276 ppb		94

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : M:\THOR\DATA\T150109\0109T08.D
Acq On : 9 Jan 15 12:44
Sample : 0.3ug/L VOC STD 1/9/15
Misc : 10ml w/IS 12/20/14

Vial: 5
Operator: DG, SV, RS
Inst : Thor
Multiplr: 1.00

Quant Time: Jan 12 11:19 2015

Quant Results File: TALLW.RES

Quant Method : M:\THOR\DATA\T150109\TALLW.M (RTE Integrator)
Title : METHOD 8260B
Last Update : Mon Jan 12 11:16:31 2015
Response via : Initial Calibration
DataAcq Meth : 8260_BETA

Compound	R.T.	QIon	Response	Conc Unit		Qvalue
43) 2-Pentanone	6.70	43	69663	8.96625 ppb		98
44) 1,2-Dichloropropane	6.68	63	4414	0.31688 ppb		98
45) Bromodichloromethane	7.01	83	5093	0.31583 ppb	#	91
46) Methyl Cyclohexane	6.64	83	5297	0.29238 ppb		98
47) Dibromomethane	6.81	93	2272	0.29244 ppb		85
48) MIBK (methyl isobutyl ket	7.69	43	3280	0.32765 ppb	#	92
49) 1-Bromo-2-chloroethane	7.32	63	4465	0.26911 ppb		95
51) Cis-1,3-Dichloropropene	7.49	75	5818	0.29497 ppb		92
52) Toluene	7.83	91	15817	0.28832 ppb	#	83
53) Trans-1,3-Dichloropropene	8.09	75	4543	0.27769 ppb		84
54) 1,1,2-TCA	8.26	83	2891	0.31028 ppb		81
55) 2-Hexanone	8.55	43	2637	0.42493 ppb	#	74
58) 1,2-EDB	8.74	107	3048	0.29694 ppb		98
59) Tetrachloroethene	8.39	166	4684	0.30925 ppb		90
60) 1-Chlorohexane	9.26	91	4495	0.29743 ppb		94
61) 1,1,1,2-Tetrachloroethane	9.34	131	3533	0.27704 ppb		87
62) m&p-Xylene	9.50	106	12411	0.56795 ppb		98
63) o-Xylene	9.88	106	6085	0.28462 ppb		80
64) Styrene	9.90	104	9119	0.26790 ppb	#	79
66) 1,3-Dichloropropane	8.42	76	5256	0.29408 ppb		87
67) Dibromochloromethane	8.65	129	3457	0.28733 ppb		89
68) Chlorobenzene	9.25	112	11797	0.32369 ppb	#	92
69) Ethylbenzene	9.38	91	17506	0.29475 ppb		90
70) Bromoform	10.06	173	2124	0.26185 ppb		92
72) Isopropylbenzene	10.26	105	14018	0.27323 ppb		100
73) 1,1,2,2-Tetrachloroethane	10.56	83	3718	0.30437 ppb		94
74) 1,2,3-Trichloropropane	10.59	110	1048	0.29642 ppb		77
75) t-1,4-Dichloro-2-Butene	10.61	53	735	0.31643 ppb		94
76) Bromobenzene	10.53	156	4469	0.29104 ppb		84
77) n-Propylbenzene	10.67	91	16255	0.26840 ppb		98
78) 4-Ethyltoluene	10.79	105	13482	0.26872 ppb		93
79) 2-Chlorotoluene	10.74	91	11043	0.29292 ppb		91
80) 1,3,5-Trimethylbenzene	10.85	105	11947	0.27366 ppb		96
81) 4-Chlorotoluene	10.84	91	12355	0.28140 ppb		96
82) Tert-Butylbenzene	11.17	119	9934	0.26561 ppb		95
83) 1,2,4-Trimethylbenzene	11.21	105	11984	0.27323 ppb		97
84) Sec-Butylbenzene	11.39	105	13376	0.25464 ppb		98
85) p-Isopropyltoluene	11.54	119	10875	0.25169 ppb	#	81
86) Benzyl Chloride	11.70	91	2938	0.27336 ppb		93
87) 1,3-DCB	11.48	146	7730	0.28162 ppb		93
88) 1,4-DCB	11.56	146	8318	0.29216 ppb		92
89) n-Butylbenzene	11.94	91	11341	0.28346 ppb		97
90) 1,2-DCB	11.93	146	8039	0.30427 ppb		95
91) Hexachloroethane	12.18	117	2634	0.32559 ppb		97
92) 1,2-Dibromo-3-chloropropan	12.69	157	658	0.29882 ppb	#	75
93) 1,2,4-Trichlorobenzene	13.52	180	4657	0.28372 ppb		87
94) Hexachlorobutadiene	13.71	225	2961	0.31475 ppb		87
95) Naphthalene	13.75	128	7055	1.31909 ppb		91
96) 1,2,3-Trichlorobenzene	13.99	180	3698	0.24724 ppb		93

(#) = qualifier out of range (m) = manual integration

Quantitation Report

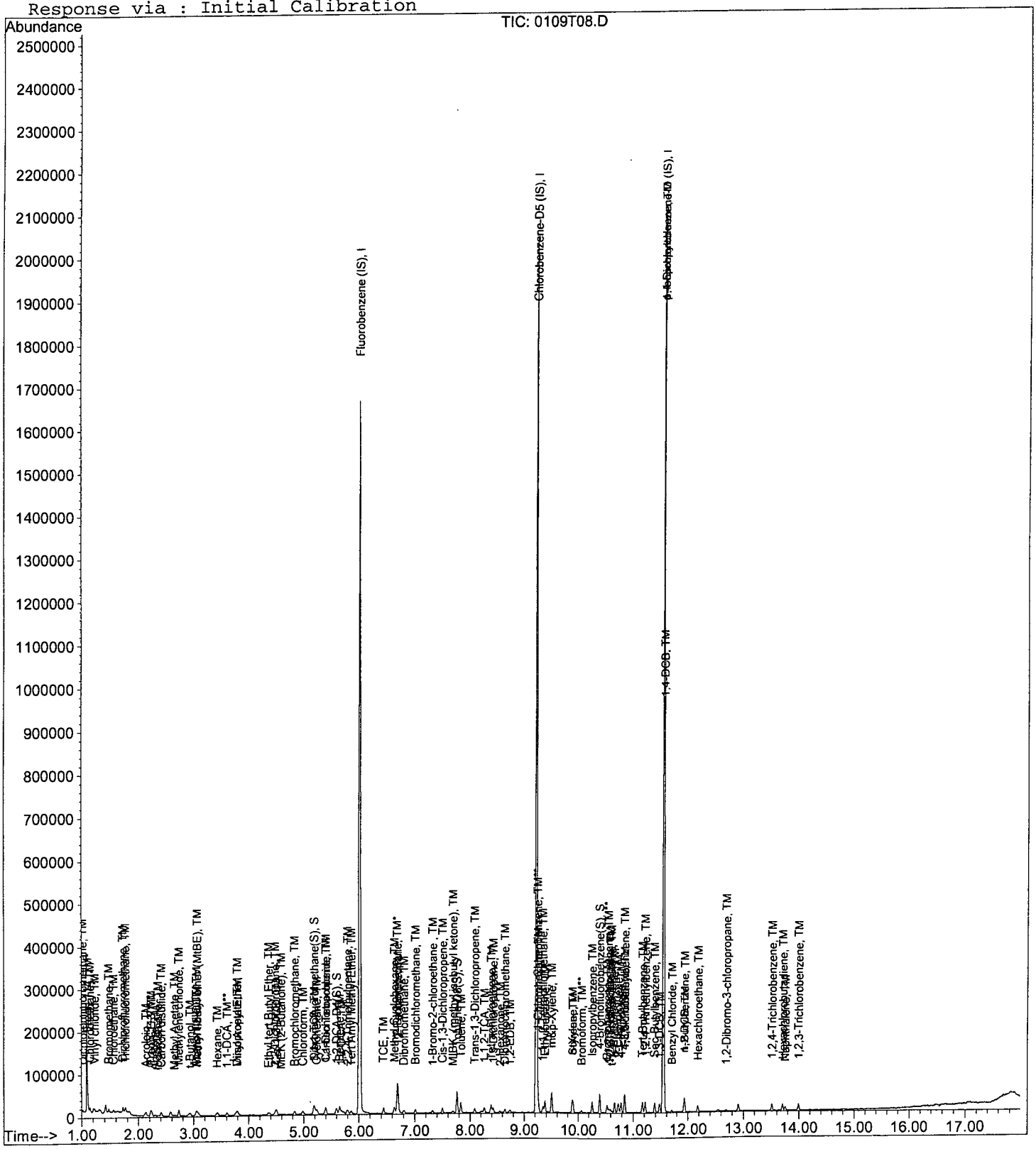
Data File : M:\THOR\DATA\T150109\0109T08.D
Acq On : 9 Jan 15 12:44
Sample : 0.3ug/L VOC STD 1/9/15
Misc : 10ml w/IS 12/20/14

Vial: 5
Operator: DG, SV, RS
Inst : Thor
Multiplr: 1.00

Quant Time: Jan 12 11:19 2015

Quant Results File: TALLW.RES

Method : M:\THOR\DATA\T150109\TALLW.M (RTE Integrator)
Title : METHOD 8260B
Last Update : Mon Jan 12 11:16:31 2015
Response via : Initial Calibration



Quantitation Report (Not Reviewed)

Data File : M:\THOR\DATA\T150109\0109T09.D
Acq On : 9 Jan 15 13:12
Sample : 0.5ug/L VOC STD 1/9/15
Misc : 10ml w/IS 12/20/14

Vial: 6
Operator: DG, SV, RS
Inst : Thor
Multiplr: 1.00

Quant Time: Jan 12 11:19 2015 Quant Results File: TALLW.RES

Quant Method : M:\THOR\DATA\T150109\TALLW.M (RTE Integrator)
Title : METHOD 8260B
Last Update : Mon Jan 12 11:16:31 2015
Response via : Initial Calibration
DataAcq Meth : 8260_BETA

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene (IS)	6.02	96	832256	25.00000 ppb	0.00
56) Chlorobenzene-D5 (IS)	9.22	117	760576	25.00000 ppb	0.00
71) 1,4-Dichlorobenzene-D (IS)	11.54	152	379456	25.00000 ppb	0.00
System Monitoring Compounds					
32) Dibromofluoromethane(S)	5.19	111	13677	0.96031 ppb	0.00
Spiked Amount 31.085			Recovery	= 3.088%	
37) 1,2-DCA-D4(S)	5.59	65	16345	1.08908 ppb	0.00
Spiked Amount 29.432			Recovery	= 3.700%	
57) Toluene-D8(S)	7.76	98	51056	1.00489 ppb	0.00
Spiked Amount 31.767			Recovery	= 3.164%	
65) 4-Bromofluorobenzene(S)	10.40	95	20531	1.01912 ppb	0.00
Spiked Amount 29.480			Recovery	= 3.457%	

Target Compounds						Qvalue
2) Dichlorodifluoromethane	1.02	85	5714	0.45271 ppb		95
3) Freon 114	1.11	135	3744	0.47526 ppb		83
4) Chloromethane	1.14	50	8632	0.56201 ppb		95
5) Vinyl chloride	1.22	62	8392	0.51970 ppb		97
6) Bromomethane	1.47	94	6097	0.58919 ppb		91
7) Chloroethane	1.55	64	9030	0.86308 ppb		90
8) Dichlorofluoromethane	1.72	67	13988	0.49828 ppb		95
9) Trichlorofluoromethane	1.76	101	8804	0.44269 ppb		97
10) Acrolein	2.13	56	16848	23.44244 ppb		91
11) Acetone	2.30	43	4262	0.15046 ppb		90
12) Freon-113	2.24	101	4961	0.44708 ppb	#	85
13) 1,1-DCE	2.22	61	8350	0.48255 ppb		95
14) t-Butanol	2.93	59	22570	21.13431 ppb		97
15) Methyl Acetate	2.65	43	4738	0.53596 ppb	#	83
16) Iodomethane	2.35	142	2660	1.50405 ppb	#	50
17) Acrylonitrile	3.03	52	1562	0.51560 ppb		84
18) Methylene chloride	2.73	84	8658	0.59315 ppb		93
19) Carbon disulfide	2.41	76	17465	0.48693 ppb		93
20) Methyl t-butyl ether (MtBE	3.08	73	12874	0.44619 ppb	#	84
21) Trans-1,2-DCE	3.05	96	5992	0.47351 ppb		83
22) Hexane	3.43	57	6353	0.48246 ppb	#	98
23) Diisopropyl Ether	3.78	45	21733	0.50534 ppb		92
24) 1,1-DCA	3.60	63	11521	0.49902 ppb		95
25) Vinyl Acetate	3.79	87	5396	0.47987 ppb	#	71
26) Ethyl tert Butyl Ether	4.36	59	10702	0.45508 ppb		97
27) MEK (2-Butanone)	4.58	43	2970	0.47336 ppb	#	59
28) Cis-1,2-DCE	4.51	96	7263	0.49788 ppb		92
29) 2,2-Dichloropropane	4.48	77	8573	0.48827 ppb	#	87
30) Chloroform	4.99	83	11854	0.52247 ppb		97
31) Bromochloromethane	4.83	128	3543	0.52725 ppb		87
33) 1,1,1-TCA	5.18	97	9275	0.49771 ppb		90
34) Cyclohexane	5.24	41	6168	0.56705 ppb		87
35) 1,1-Dichloropropene	5.40	75	8065	0.48149 ppb		90
36) 2,2,4-Trimethylpentane	5.80	57	16350	0.48023 ppb	#	67
38) Carbon Tetrachloride	5.39	117	7586	0.46451 ppb		95
39) Tert Amyl Methyl Ether	5.85	73	8570	0.43756 ppb		96
40) 1,2-DCA	5.69	62	8851	0.51980 ppb		99
41) Benzene	5.65	78	24975	0.48489 ppb		96
42) TCE	6.44	95	6381	0.48362 ppb		90

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : M:\THOR\DATA\T150109\0109T09.D
Acq On : 9 Jan 15 13:12
Sample : 0.5ug/L VOC STD 1/9/15
Misc : 10ml w/IS 12/20/14

Vial: 6
Operator: DG, SV, RS
Inst : Thor
Multiplr: 1.00

Quant Time: Jan 12 11:19 2015 Quant Results File: TALLW.RES

Quant Method : M:\THOR\DATA\T150109\TALLW.M (RTE Integrator)
Title : METHOD 8260B
Last Update : Mon Jan 12 11:16:31 2015
Response via : Initial Calibration
DataAcq Meth : 8260_BETA

Compound	R.T.	QIon	Response	Conc	Unit		Qvalue
43) 2-Pentanone	6.70	43	191996	23.80515	ppb		98
44) 1,2-Dichloropropane	6.67	63	7253	0.50159	ppb	#	89
45) Bromodichloromethane	7.01	83	7468	0.44612	ppb	#	95
46) Methyl Cyclohexane	6.64	83	8288	0.44070	ppb		98
47) Dibromomethane	6.81	93	4133	0.51246	ppb		94
48) MIBK (methyl isobutyl ket	7.69	43	5937	0.57131	ppb	#	94
49) 1-Bromo-2-chloroethane	7.32	63	8439	0.48998	ppb		87
51) Cis-1,3-Dichloropropene	7.50	75	9314	0.45490	ppb		96
52) Toluene	7.83	91	28092	0.49329	ppb		95
53) Trans-1,3-Dichloropropene	8.09	75	8210	0.48343	ppb		98
54) 1,1,2-TCA	8.26	83	4894	0.50598	ppb		87
55) 2-Hexanone	8.55	43	3464	0.53772	ppb	#	93
58) 1,2-EDB	8.74	107	4738	0.42690	ppb		96
59) Tetrachloroethene	8.39	166	8485	0.51811	ppb		97
60) 1-Chlorohexane	9.26	91	6604	0.40415	ppb		92
61) 1,1,1,2-Tetrachloroethane	9.34	131	6765	0.49062	ppb		94
62) m&p-Xylene	9.49	106	20620	0.87270	ppb		97
63) o-Xylene	9.89	106	10557	0.45669	ppb		99
64) Styrene	9.90	104	15263	0.41470	ppb		92
66) 1,3-Dichloropropane	8.42	76	9224	0.47731	ppb		97
67) Dibromochloromethane	8.65	129	6007	0.46175	ppb		96
68) Chlorobenzene	9.25	112	19169	0.48644	ppb		93
69) Ethylbenzene	9.38	91	29326	0.45666	ppb		99
70) Bromoform	10.06	173	4102	0.46769	ppb		94
72) Isopropylbenzene	10.26	105	24518	0.46258	ppb		99
73) 1,1,2,2-Tetrachloroethane	10.57	83	6309	0.49993	ppb		91
74) 1,2,3-Trichloropropane	10.58	110	1842	0.50431	ppb		90
75) t-1,4-Dichloro-2-Butene	10.62	53	928	0.38672	ppb		89
76) Bromobenzene	10.53	156	8008	0.50480	ppb		87
77) n-Propylbenzene	10.67	91	29355	0.46917	ppb		95
78) 4-Ethyltoluene	10.78	105	23242	0.44841	ppb		98
79) 2-Chlorotoluene	10.74	91	18170	0.46652	ppb		95
80) 1,3,5-Trimethylbenzene	10.85	105	18980	0.42083	ppb		90
81) 4-Chlorotoluene	10.85	91	22109	0.48743	ppb		94
82) Tert-Butylbenzene	11.17	119	18097	0.46836	ppb		94
83) 1,2,4-Trimethylbenzene	11.21	105	20397	0.45014	ppb		99
84) Sec-Butylbenzene	11.38	105	22916	0.42227	ppb		98
85) p-Isopropyltoluene	11.54	119	19724	0.44185	ppb		92
86) Benzyl Chloride	11.70	91	5088	0.45823	ppb		90
87) 1,3-DCB	11.47	146	13982	0.49307	ppb		96
88) 1,4-DCB	11.57	146	15165	0.51558	ppb		97
89) n-Butylbenzene	11.94	91	17856	0.43200	ppb		96
90) 1,2-DCB	11.93	146	13486	0.49408	ppb		99
91) Hexachloroethane	12.18	117	4161	0.49786	ppb		99
92) 1,2-Dibromo-3-chloropropan	12.69	157	931	0.40925	ppb	#	82
93) 1,2,4-Trichlorobenzene	13.51	180	6857	0.40437	ppb		96
94) Hexachlorobutadiene	13.71	225	4713	0.48493	ppb		92
95) Naphthalene	13.75	128	10969	1.41977	ppb		94
96) 1,2,3-Trichlorobenzene	13.99	180	7064	0.45714	ppb		95

(#) = qualifier out of range (m) = manual integration

Quantitation Report

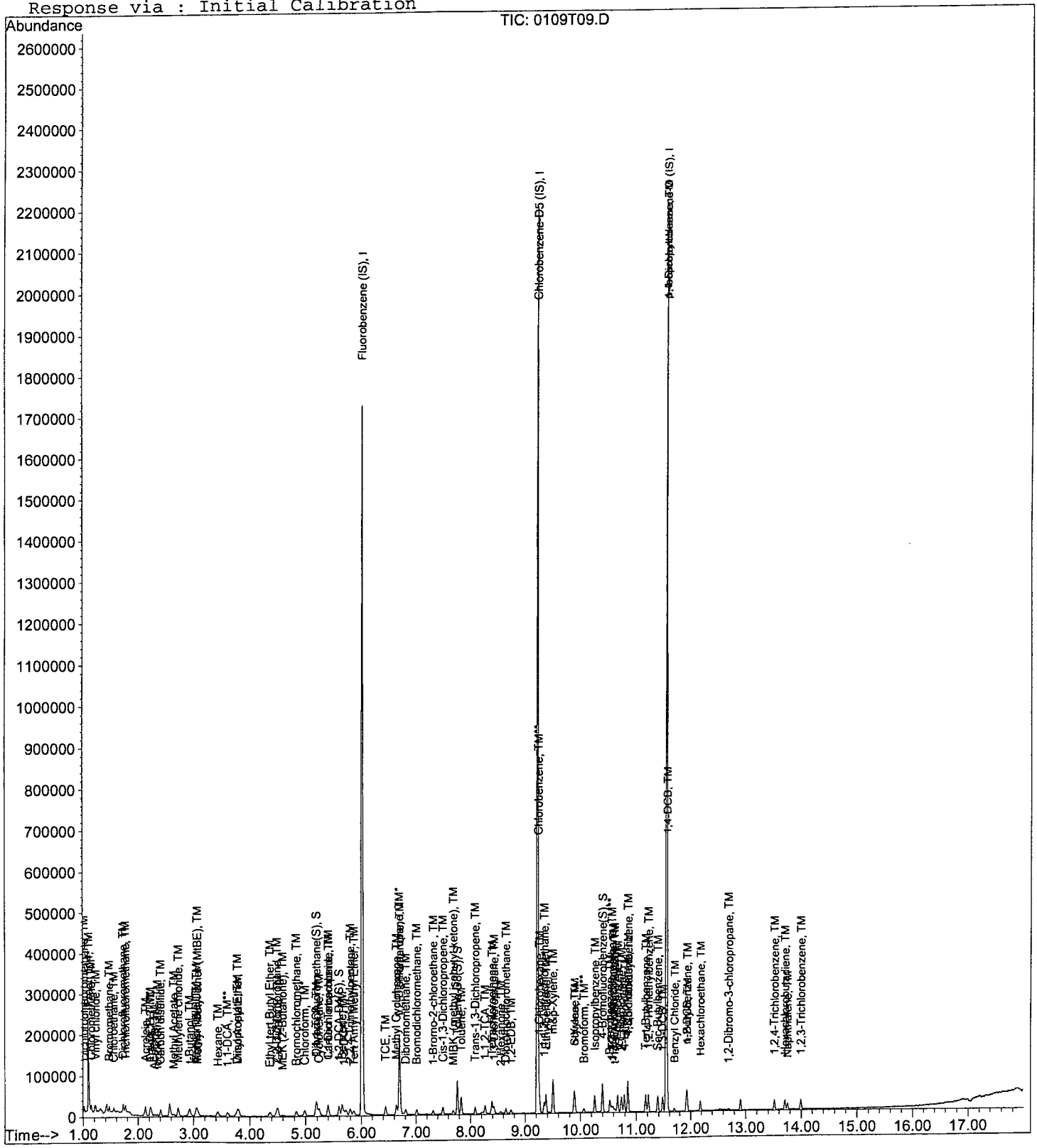
Data File : M:\THOR\DATA\T150109\0109T09.D
Acq On : 9 Jan 15 13:12
Sample : 0.5ug/L VOC STD 1/9/15
Misc : 10ml w/IS 12/20/14

Vial: 6
Operator: DG, SV, RS
Inst : Thor
Multiplr: 1.00

Quant Time: Jan 12 11:19 2015

Quant Results File: TALLW.RES

Method : M:\THOR\DATA\T150109\TALLW.M (RTE Integrator)
Title : METHOD 8260B
Last Update : Mon Jan 12 11:16:31 2015
Response via : Initial Calibration



Quantitation Report (Not Reviewed)

Data File : M:\THOR\DATA\T150109\0109T10.D
Acq On : 9 Jan 15 13:39
Sample : 1.0ug/L VOC STD 1/9/15
Misc : 10ml w/IS 12/20/14

Vial: 7
Operator: DG, SV, RS
Inst : Thor
Multiplr: 1.00

Quant Time: Jan 12 11:19 2015 Quant Results File: TALLW.RES

Quant Method : M:\THOR\DATA\T150109\TALLW.M (RTE Integrator)
Title : METHOD 8260B
Last Update : Mon Jan 12 11:16:31 2015
Response via : Initial Calibration
DataAcq Meth : 8260_BETA

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene (IS)	6.02	96	822336	25.00000 ppb	0.00
56) Chlorobenzene-D5 (IS)	9.22	117	736960	25.00000 ppb	0.00
71) 1,4-Dichlorobenzene-D (IS)	11.54	152	383232	25.00000 ppb	0.00
System Monitoring Compounds					
32) Dibromofluoromethane(S)	5.19	111	28164	2.00134 ppb	0.00
Spiked Amount 31.085			Recovery	= 6.437%	
37) 1,2-DCA-D4(S)	5.59	65	30811	2.07772 ppb	0.00
Spiked Amount 29.432			Recovery	= 7.060%	
57) Toluene-D8(S)	7.76	98	95617	1.94226 ppb	0.00
Spiked Amount 31.767			Recovery	= 6.113%	
65) 4-Bromofluorobenzene(S)	10.40	95	39257	2.01108 ppb	0.00
Spiked Amount 29.480			Recovery	= 6.822%	

Target Compounds					Qvalue
2) Dichlorodifluoromethane	1.02	85	11150	0.89406 ppb	100
3) Freon 114	1.11	135	7300	0.93784 ppb	97
4) Chloromethane	1.14	50	15438	1.01725 ppb	96
5) Vinyl chloride	1.22	62	16308	1.02210 ppb	93
6) Bromomethane	1.47	94	12000	1.17362 ppb	86
7) Chloroethane	1.55	64	15290	1.42592 ppb	95
8) Dichlorofluoromethane	1.72	67	28859	1.04042 ppb	98
9) Trichlorofluoromethane	1.76	101	20688	1.05281 ppb	93
10) Acrolein	2.13	56	36377	51.22582 ppb	87
11) Acetone	2.29	43	6701	1.00771 ppb #	86
12) Freon-113	2.23	101	11172	1.01895 ppb	93
13) 1,1-DCE	2.22	61	17260	1.00949 ppb	93
14) t-Butanol	2.93	59	49985	47.37005 ppb	99
15) Methyl Acetate	2.65	43	9453	1.08222 ppb	100
16) Iodomethane	2.35	142	6277	1.73630 ppb	98
17) Acrylonitrile	3.03	52	3035	1.01390 ppb	73
18) Methylene chloride	2.73	84	17384	1.20533 ppb	98
19) Carbon disulfide	2.40	76	36798	1.03831 ppb	99
20) Methyl t-butyl ether (MtBE	3.08	73	29049	1.01894 ppb	98
21) Trans-1,2-DCE	3.05	96	12745	1.01930 ppb	98
22) Hexane	3.43	57	13448	1.03359 ppb	93
23) Diisopropyl Ether	3.79	45	41851	0.98487 ppb	94
24) 1,1-DCA	3.60	63	23862	1.04603 ppb	99
25) Vinyl Acetate	3.80	87	11471	1.03242 ppb	87
26) Ethyl tert Butyl Ether	4.37	59	21684	0.93320 ppb	94
27) MEK (2-Butanone)	4.58	43	5265	1.02002 ppb	95
28) Cis-1,2-DCE	4.51	96	14801	1.02686 ppb	94
29) 2,2-Dichloropropane	4.49	77	18744	1.08043 ppb	96
30) Chloroform	4.98	83	22967	1.02449 ppb	97
31) Bromochloromethane	4.83	128	7183	1.08183 ppb	92
33) 1,1,1-TCA	5.18	97	19180	1.04163 ppb	98
34) Cyclohexane	5.23	41	11725	1.09093 ppb	74
35) 1,1-Dichloropropene	5.41	75	17003	1.02734 ppb	90
36) 2,2,4-Trimethylpentane	5.80	57	33382	0.99232 ppb #	67
38) Carbon Tetrachloride	5.39	117	16012	0.99228 ppb	94
39) Tert Amyl Methyl Ether	5.86	73	17858	0.92279 ppb #	93
40) 1,2-DCA	5.69	62	17258	1.02575 ppb #	91
41) Benzene	5.65	78	52482	1.03124 ppb	97
42) TCE	6.44	95	12736	0.97692 ppb	81

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : M:\THOR\DATA\T150109\0109T10.D
Acq On : 9 Jan 15 13:39
Sample : 1.0ug/L VOC STD 1/9/15
Misc : 10ml w/IS 12/20/14

Vial: 7
Operator: DG, SV, RS
Inst : Thor
Multiplr: 1.00

Quant Time: Jan 12 11:19 2015

Quant Results File: TALLW.RES

Quant Method : M:\THOR\DATA\T150109\TALLW.M (RTE Integrator)
Title : METHOD 8260B
Last Update : Mon Jan 12 11:16:31 2015
Response via : Initial Calibration
DataAcq Meth : 8260_BETA

Compound	R.T.	QIon	Response	Conc Unit		Qvalue
43) 2-Pentanone	6.69	43	398567	50.01355 ppb		100
44) 1,2-Dichloropropane	6.68	63	14359	1.00500 ppb	#	89
45) Bromodichloromethane	7.01	83	16188	0.97870 ppb		95
46) Methyl Cyclohexane	6.64	83	19054	1.02538 ppb		93
47) Dibromomethane	6.81	93	7996	1.00340 ppb		92
48) MIBK (methyl isobutyl ket	7.69	43	9940	0.96805 ppb		93
49) 1-Bromo-2-chloroethane	7.31	63	17681	1.03896 ppb		90
51) Cis-1,3-Dichloropropene	7.49	75	19278	0.95290 ppb		92
52) Toluene	7.83	91	57709	1.02558 ppb		98
53) Trans-1,3-Dichloropropene	8.09	75	15230	0.90760 ppb		95
54) 1,1,2-TCA	8.26	83	9818	1.02731 ppb		96
55) 2-Hexanone	8.55	43	7095	1.11465 ppb		90
58) 1,2-EDB	8.74	107	10119	0.94095 ppb		99
59) Tetrachloroethene	8.39	166	15931	1.00396 ppb		96
60) 1-Chlorohexane	9.26	91	15325	0.96790 ppb		92
61) 1,1,1,2-Tetrachloroethane	9.34	131	13416	1.00415 ppb		98
62) m&p-Xylene	9.50	106	45833	2.00195 ppb		96
63) o-Xylene	9.88	106	21382	0.95461 ppb		88
64) Styrene	9.90	104	32482	0.91082 ppb		97
66) 1,3-Dichloropropane	8.42	76	19561	1.04465 ppb		97
67) Dibromochloromethane	8.65	129	11678	0.92644 ppb		93
68) Chlorobenzene	9.25	112	39689	1.03945 ppb		97
69) Ethylbenzene	9.38	91	62446	1.00356 ppb		99
70) Bromoform	10.06	173	8051	0.94736 ppb		99
72) Isopropylbenzene	10.26	105	54869	1.02501 ppb		97
73) 1,1,2,2-Tetrachloroethane	10.56	83	12893	1.01157 ppb		90
74) 1,2,3-Trichloropropane	10.59	110	3778	1.02416 ppb		85
75) t-1,4-Dichloro-2-Butene	10.62	53	2478	1.02246 ppb		93
76) Bromobenzene	10.53	156	16049	1.00170 ppb		88
77) n-Propylbenzene	10.67	91	61679	0.97609 ppb		98
78) 4-Ethyltoluene	10.79	105	48038	0.91768 ppb		100
79) 2-Chlorotoluene	10.74	91	39669	1.00848 ppb		97
80) 1,3,5-Trimethylbenzene	10.85	105	42521	0.93351 ppb		94
81) 4-Chlorotoluene	10.85	91	45955	1.00316 ppb		98
82) Tert-Butylbenzene	11.17	119	40125	1.02823 ppb		98
83) 1,2,4-Trimethylbenzene	11.21	105	41805	0.91350 ppb		99
84) Sec-Butylbenzene	11.39	105	54396	0.99248 ppb		97
85) p-Isopropyltoluene	11.54	119	41994	0.93147 ppb		94
86) Benzyl Chloride	11.70	91	10703	0.95443 ppb		92
87) 1,3-DCB	11.47	146	29528	1.03103 ppb		98
88) 1,4-DCB	11.56	146	31261	1.05234 ppb		95
89) n-Butylbenzene	11.94	91	40081	0.96015 ppb		98
90) 1,2-DCB	11.92	146	28910	1.04874 ppb		98
91) Hexachloroethane	12.18	117	7838	0.92857 ppb		94
92) 1,2-Dibromo-3-chloropropan	12.69	157	2529	1.10073 ppb		84
93) 1,2,4-Trichlorobenzene	13.51	180	15512	0.90576 ppb		99
94) Hexachlorobutadiene	13.71	225	9711	0.98935 ppb		93
95) Naphthalene	13.75	128	22730	1.73536 ppb		94
96) 1,2,3-Trichlorobenzene	13.99	180	14202	0.91001 ppb		95

(#) = qualifier out of range (m) = manual integration

Quantitation Report

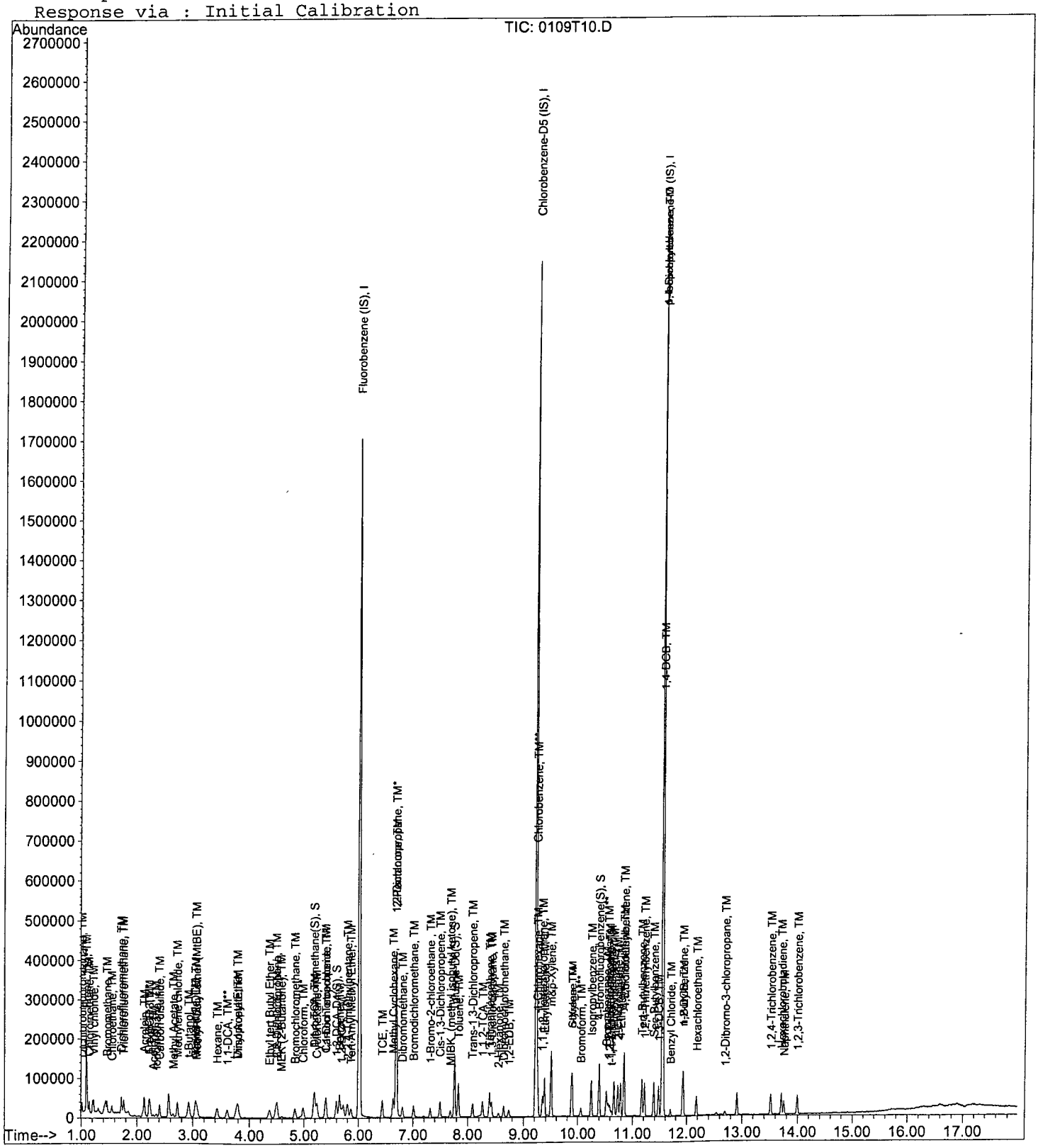
Data File : M:\THOR\DATA\T150109\0109T10.D
Acq On : 9 Jan 15 13:39
Sample : 1.0ug/L VOC STD 1/9/15
Misc : 10ml w/IS 12/20/14

Vial: 7
Operator: DG, SV, RS
Inst : Thor
Multiplr: 1.00

Quant Time: Jan 12 11:19 2015

Quant Results File: TALLW.RES

Method : M:\THOR\DATA\T150109\TALLW.M (RTE Integrator)
Title : METHOD 8260B
Last Update : Mon Jan 12 11:16:31 2015
Response via : Initial Calibration



Quantitation Report (Not Reviewed)

Data File : M:\THOR\DATA\T150109\0109T11.D
Acq On : 9 Jan 15 14:07
Sample : 5.0ug/L VOC STD 1/9/15
Misc : 10ml w/IS 12/20/14

Vial: 8
Operator: DG, SV, RS
Inst : Thor
Multiplr: 1.00

Quant Time: Jan 12 11:19 2015 Quant Results File: TALLW.RES

Quant Method : M:\THOR\DATA\T150109\TALLW.M (RTE Integrator)
Title : METHOD 8260B
Last Update : Mon Jan 12 11:16:31 2015
Response via : Initial Calibration
DataAcq Meth : 8260_BETA

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene (IS)	6.02	96	849792	25.00000 ppb	0.00
56) Chlorobenzene-D5 (IS)	9.22	117	758272	25.00000 ppb	0.00
71) 1,4-Dichlorobenzene-D (IS)	11.54	152	406144	25.00000 ppb	0.00
System Monitoring Compounds					
32) Dibromofluoromethane(S)	5.19	111	140583	9.66712 ppb	0.00
Spiked Amount 31.085			Recovery	= 31.099%	
37) 1,2-DCA-D4(S)	5.59	65	141777	9.25173 ppb	0.00
Spiked Amount 29.432			Recovery	= 31.435%	
57) Toluene-D8(S)	7.76	98	472370	9.32553 ppb	0.00
Spiked Amount 31.767			Recovery	= 29.357%	
65) 4-Bromofluorobenzene(S)	10.40	95	183352	9.12887 ppb	0.00
Spiked Amount 29.480			Recovery	= 30.967%	
Target Compounds					Qvalue
2) Dichlorodifluoromethane	1.02	85	63142	4.89944 ppb	100
3) Freon 114	1.11	135	37928	4.71523 ppb	93
4) Chloromethane	1.14	50	72417	4.61759 ppb	98
5) Vinyl chloride	1.22	62	77214	4.68303 ppb	99
6) Bromomethane	1.47	94	46146	4.36735 ppb	99
7) Chloroethane	1.55	64	51728	4.55123 ppb	99
8) Dichlorofluoromethane	1.72	67	132588	4.62562 ppb	99
9) Trichlorofluoromethane	1.76	101	93111	4.58529 ppb	100
10) Acrolein	2.13	56	71627	97.60576 ppb	97
11) Acetone	2.29	43	20454	5.51538 ppb	96
12) Freon-113	2.24	101	54567	4.81600 ppb	95
13) 1,1-DCE	2.22	61	84842	4.80184 ppb	98
14) t-Butanol	2.93	59	96867	88.83348 ppb	96
15) Methyl Acetate	2.64	43	42884	4.75094 ppb	91
16) Iodomethane	2.35	142	44588	4.08317 ppb	97
17) Acrylonitrile	3.03	52	15362	4.96615 ppb	93
18) Methylene chloride	2.73	84	69004	4.62984 ppb	100
19) Carbon disulfide	2.40	76	172647	4.71408 ppb	100
20) Methyl t-butyl ether (MtBE	3.07	73	142083	4.82277 ppb	99
21) Trans-1,2-DCE	3.05	96	60305	4.66717 ppb	99
22) Hexane	3.43	57	61333	4.56165 ppb	99
23) Diisopropyl Ether	3.79	45	208665	4.75182 ppb	98
24) 1,1-DCA	3.61	63	110770	4.69890 ppb	96
25) Vinyl Acetate	3.79	87	56373	4.90980 ppb	100
26) Ethyl tert Butyl Ether	4.36	59	109678	4.56763 ppb	96
27) MEK (2-Butanone)	4.58	43	24521	5.35122 ppb	94
28) Cis-1,2-DCE	4.51	96	70968	4.76453 ppb	98
29) 2,2-Dichloropropane	4.49	77	88950	4.96153 ppb	99
30) Chloroform	4.98	83	109596	4.73080 ppb	96
31) Bromochloromethane	4.83	128	33821	4.92920 ppb	100
33) 1,1,1-TCA	5.18	97	92304	4.85092 ppb	98
34) Cyclohexane	5.24	41	50104	4.51122 ppb	91
35) 1,1-Dichloropropene	5.40	75	81090	4.74124 ppb	99
36) 2,2,4-Trimethylpentane	5.80	57	161244	4.63832 ppb	97
38) Carbon Tetrachloride	5.39	117	80096	4.80325 ppb	99
39) Tert Amyl Methyl Ether	5.86	73	88853	4.44301 ppb	98
40) 1,2-DCA	5.69	62	83666	4.81211 ppb	99
41) Benzene	5.65	78	254175	4.83302 ppb	98
42) TCE	6.44	95	63734	4.73077 ppb	97

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : M:\THOR\DATA\T150109\0109T11.D
Acq On : 9 Jan 15 14:07
Sample : 5.0ug/L VOC STD 1/9/15
Misc : 10ml w/IS 12/20/14

Vial: 8
Operator: DG, SV, RS
Inst : Thor
Multiplr: 1.00

Quant Time: Jan 12 11:19 2015

Quant Results File: TALLW.RES

Quant Method : M:\THOR\DATA\T150109\TALLW.M (RTE Integrator)
Title : METHOD 8260B
Last Update : Mon Jan 12 11:16:31 2015
Response via : Initial Calibration
DataAcq Meth : 8260_BETA

Compound	R.T.	QIon	Response	Conc Unit		Qvalue
43) 2-Pentanone	6.69	43	814708	98.92932 ppb		98
44) 1,2-Dichloropropane	6.68	63	69357	4.69753 ppb	#	96
45) Bromodichloromethane	7.01	83	81801	4.78575 ppb		99
46) Methyl Cyclohexane	6.64	83	91122	4.74523 ppb		95
47) Dibromomethane	6.81	93	39545	4.80209 ppb		92
48) MIBK (methyl isobutyl ket	7.68	43	53673	5.05830 ppb		97
49) 1-Bromo-2-chloroethane	7.31	63	85405	4.85636 ppb		95
51) Cis-1,3-Dichloropropene	7.50	75	99306	4.75003 ppb		97
52) Toluene	7.83	91	279378	4.80457 ppb		100
53) Trans-1,3-Dichloropropene	8.09	75	82534	4.75955 ppb		100
54) 1,1,2-TCA	8.26	83	46819	4.74063 ppb		96
55) 2-Hexanone	8.55	43	32167	4.89028 ppb		96
58) 1,2-EDB	8.74	107	54204	4.89868 ppb		99
59) Tetrachloroethene	8.39	166	76233	4.66911 ppb		96
60) 1-Chlorohexane	9.26	91	77130	4.73450 ppb		100
61) 1,1,1,2-Tetrachloroethane	9.34	131	64623	4.70090 ppb		97
62) m&p-Xylene	9.50	106	226276	9.60576 ppb		100
63) o-Xylene	9.88	106	109349	4.74474 ppb		95
64) Styrene	9.90	104	172138	4.69123 ppb		99
66) 1,3-Dichloropropane	8.42	76	92234	4.78730 ppb		96
67) Dibromochloromethane	8.65	129	61717	4.75855 ppb		99
68) Chlorobenzene	9.25	112	184089	4.68574 ppb		98
69) Ethylbenzene	9.38	91	304474	4.75562 ppb		99
70) Bromoform	10.06	173	40502	4.63190 ppb		99
72) Isopropylbenzene	10.26	105	275601	4.85808 ppb		99
73) 1,1,2,2-Tetrachloroethane	10.56	83	66927	4.95481 ppb		96
74) 1,2,3-Trichloropropane	10.59	110	20072	5.13428 ppb		98
75) t-1,4-Dichloro-2-Butene	10.62	53	12542	4.88309 ppb		97
76) Bromobenzene	10.53	156	85393	5.02916 ppb		96
77) n-Propylbenzene	10.67	91	325898	4.86647 ppb		99
78) 4-Ethyltoluene	10.79	105	275993	4.97489 ppb		97
79) 2-Chlorotoluene	10.74	91	205251	4.92359 ppb		98
80) 1,3,5-Trimethylbenzene	10.85	105	235061	4.86941 ppb		99
81) 4-Chlorotoluene	10.85	91	238789	4.91852 ppb		100
82) Tert-Butylbenzene	11.17	119	202580	4.89839 ppb		99
83) 1,2,4-Trimethylbenzene	11.21	105	233545	4.81542 ppb		100
84) Sec-Butylbenzene	11.38	105	284037	4.89002 ppb		97
85) p-Isopropyltoluene	11.54	119	235457	4.92807 ppb		99
86) Benzyl Chloride	11.70	91	53560	4.50671 ppb		98
87) 1,3-DCB	11.47	146	151307	4.98514 ppb		99
88) 1,4-DCB	11.56	146	154612	4.91110 ppb		99
89) n-Butylbenzene	11.94	91	200782	4.53844 ppb		98
90) 1,2-DCB	11.93	146	142041	4.86198 ppb		98
91) Hexachloroethane	12.18	117	39455	4.41058 ppb		96
92) 1,2-Dibromo-3-chloropropan	12.69	157	11124	4.56853 ppb		93
93) 1,2,4-Trichlorobenzene	13.51	180	86153	4.74675 ppb		94
94) Hexachlorobutadiene	13.70	225	47762	4.59144 ppb		99
95) Naphthalene	13.75	128	140165	4.70201 ppb		99
96) 1,2,3-Trichlorobenzene	13.99	180	76886	4.64866 ppb		99

(#) = qualifier out of range (m) = manual integration

Quantitation Report

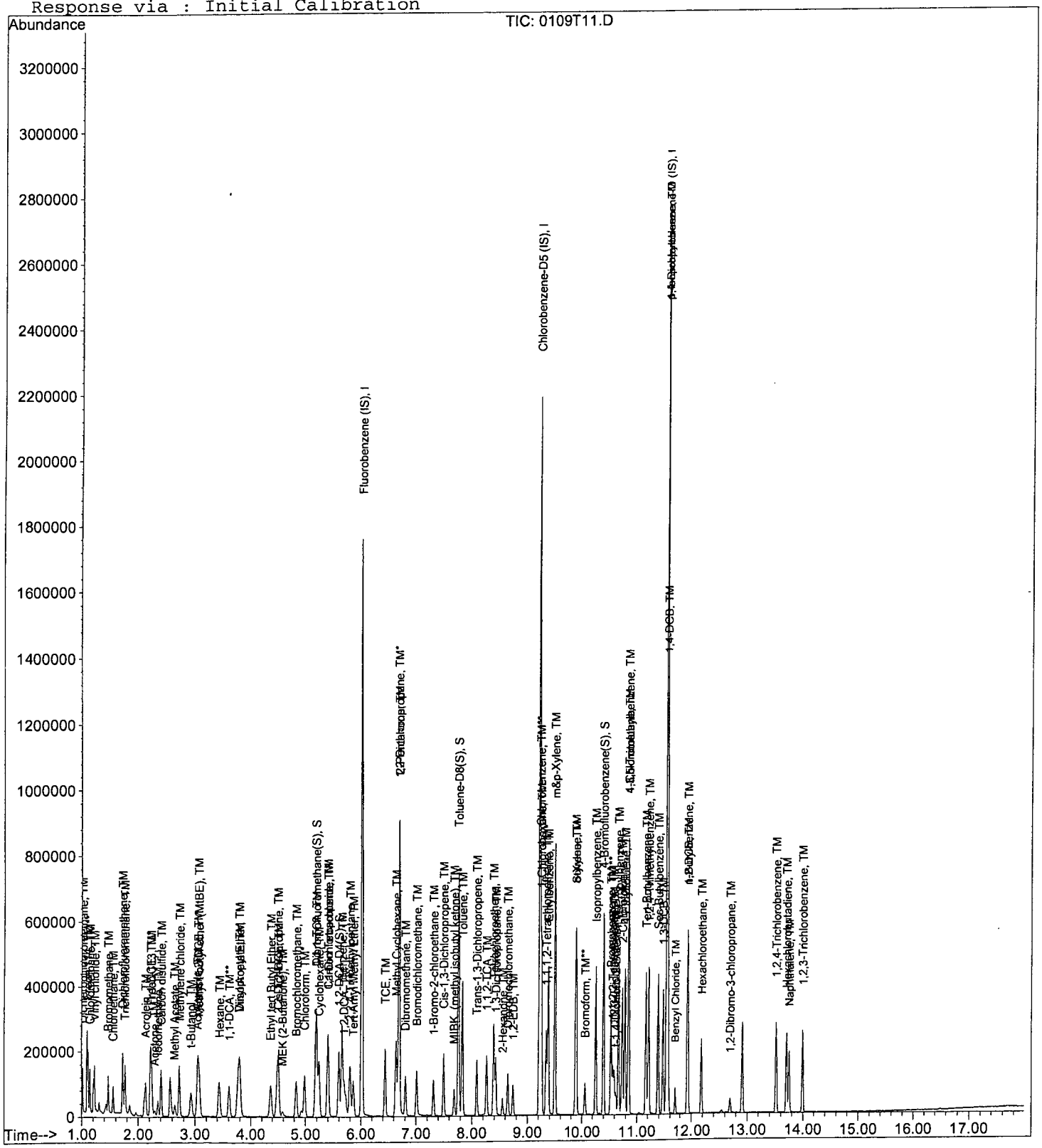
Data File : M:\THOR\DATA\T150109\0109T11.D
Acq On : 9 Jan 15 14:07
Sample : 5.0ug/L VOC STD 1/9/15
Misc : 10ml w/IS 12/20/14

Vial: 8
Operator: DG, SV, RS
Inst : Thor
Multiplr: 1.00

Quant Time: Jan 12 11:19 2015

Quant Results File: TALLW.RES

Method : M:\THOR\DATA\T150109\TALLW.M (RTE Integrator)
Title : METHOD 8260B
Last Update : Mon Jan 12 11:16:31 2015
Response via : Initial Calibration



419

Quantitation Report (Not Reviewed)

Data File : M:\THOR\DATA\T150109\0109T12.D
Acq On : 9 Jan 15 14:35
Sample : 10ug/L VOC STD 1/9/15
Misc : 10ml w/IS 12/20/14

Vial: 9
Operator: DG, SV, RS
Inst : Thor
Multiplr: 1.00

Quant Time: Jan 12 11:19 2015 Quant Results File: TALLW.RES

Quant Method : M:\THOR\DATA\T150109\TALLW.M (RTE Integrator)
Title : METHOD 8260B
Last Update : Mon Jan 12 11:16:31 2015
Response via : Initial Calibration
DataAcq Meth : 8260_BETA

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene (IS)	6.02	96	865600	25.00000 ppb	0.00
56) Chlorobenzene-D5 (IS)	9.22	117	775552	25.00000 ppb	0.00
71) 1,4-Dichlorobenzene-D (IS)	11.54	152	427904	25.00000 ppb	0.00
System Monitoring Compounds					
32) Dibromofluoromethane(S)	5.19	111	369783	24.96356 ppb	0.00
Spiked Amount 31.085			Recovery = 80.309%		
37) 1,2-DCA-D4(S)	5.59	65	384123	24.60838 ppb	0.00
Spiked Amount 29.432			Recovery = 83.609%		
57) Toluene-D8(S)	7.76	98	1265453	24.42594 ppb	0.00
Spiked Amount 31.767			Recovery = 76.890%		
65) 4-Bromofluorobenzene(S)	10.40	95	489480	23.82761 ppb	0.00
Spiked Amount 29.480			Recovery = 80.829%		
Target Compounds					Qvalue
2) Dichlorodifluoromethane	1.02	85	145674	11.09700 ppb	100
3) Freon 114	1.11	135	85376	10.42015 ppb	100
4) Chloromethane	1.14	50	155820	9.75424 ppb	100
5) Vinyl chloride	1.22	62	175780	10.46635 ppb	100
6) Bromomethane	1.46	94	102142	9.49039 ppb	100
7) Chloroethane	1.55	64	111299	9.75650 ppb	100
8) Dichlorofluoromethane	1.72	67	284609	9.74788 ppb	100
9) Trichlorofluoromethane	1.76	101	214664	10.37817 ppb	100
10) Acrolein	2.13	56	96489	129.08384 ppb	100
11) Acetone	2.29	43	34696	10.04941 ppb	100
12) Freon-113	2.24	101	115580	10.01462 ppb	100
13) 1,1-DCE	2.22	61	185095	10.28458 ppb	100
14) t-Butanol	2.93	59	139286	125.40177 ppb	100
15) Methyl Acetate	2.64	43	85416	9.29007 ppb	100
16) Iodomethane	2.35	142	124695	8.87713 ppb	100
17) Acrylonitrile	3.02	52	33323	10.57576 ppb	100
18) Methylene chloride	2.73	84	142740	9.40227 ppb	100
19) Carbon disulfide	2.40	76	362654	9.72133 ppb	100
20) Methyl t-butyl ether (MtBE	3.07	73	305600	10.18364 ppb	100
21) Trans-1,2-DCE	3.05	96	130856	9.94235 ppb	100
22) Hexane	3.43	57	131390	9.59369 ppb	100
23) Diisopropyl Ether	3.79	45	449951	10.05938 ppb	100
24) 1,1-DCA	3.61	63	237697	9.89904 ppb	100
25) Vinyl Acetate	3.79	87	120054	10.26514 ppb	100
26) Ethyl tert Butyl Ether	4.36	59	240322	9.82562 ppb	100
27) MEK (2-Butanone)	4.58	43	44187	9.63221 ppb	100
28) Cis-1,2-DCE	4.51	96	151483	9.98427 ppb	100
29) 2,2-Dichloropropane	4.49	77	179578	9.83373 ppb	100
30) Chloroform	4.98	83	236715	10.03138 ppb	100
31) Bromochloromethane	4.83	128	73639	10.53642 ppb	100
33) 1,1,1-TCA	5.18	97	197041	10.16612 ppb	100
34) Cyclohexane	5.23	41	108148	9.55951 ppb	100
35) 1,1-Dichloropropene	5.40	75	176155	10.11149 ppb	100
36) 2,2,4-Trimethylpentane	5.80	57	351296	9.92079 ppb	100
38) Carbon Tetrachloride	5.39	117	168765	9.93579 ppb	100
39) Tert Amyl Methyl Ether	5.86	73	189135	9.28481 ppb	100
40) 1,2-DCA	5.69	62	171935	9.70836 ppb	100
41) Benzene	5.65	78	539898	10.07844 ppb	100
42) TCE	6.44	95	141742	10.32892 ppb	100

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : M:\THOR\DATA\T150109\0109T12.D
Acq On : 9 Jan 15 14:35
Sample : 10ug/L VOC STD 1/9/15
Misc : 10ml w/IS 12/20/14

Vial: 9
Operator: DG, SV, RS
Inst : Thor
Multiplr: 1.00

Quant Time: Jan 12 11:19 2015

Quant Results File: TALLW.RES

Quant Method : M:\THOR\DATA\T150109\TALLW.M (RTE Integrator)
Title : METHOD 8260B
Last Update : Mon Jan 12 11:16:31 2015
Response via : Initial Calibration
DataAcq Meth : 8260_BETA

Compound	R.T.	QIon	Response	Conc Unit		Qvalue
43) 2-Pentanone	6.69	43	1080757	128.83875	ppb	100
44) 1,2-Dichloropropane	6.68	63	150532	10.00928	ppb	100
45) Bromodichloromethane	7.01	83	172092	9.88433	ppb	100
46) Methyl Cyclohexane	6.64	83	194310	9.93402	ppb	100
47) Dibromomethane	6.81	93	85446	10.18652	ppb	100
48) MIBK (methyl isobutyl ket	7.68	43	100939	9.33905	ppb	100
49) 1-Bromo-2-chloroethane	7.31	63	181860	10.15221	ppb	100
51) Cis-1,3-Dichloropropene	7.50	75	216341	10.15910	ppb	100
52) Toluene	7.83	91	595823	10.05946	ppb	100
53) Trans-1,3-Dichloropropene	8.09	75	178599	10.11130	ppb	100
54) 1,1,2-TCA	8.26	83	99680	9.90872	ppb	100
55) 2-Hexanone	8.55	43	64514	9.62881	ppb	100
58) 1,2-EDB	8.74	107	115647	10.21870	ppb	100
59) Tetrachloroethene	8.39	166	164118	9.82791	ppb	100
60) 1-Chlorohexane	9.26	91	170234	10.21671	ppb	100
61) 1,1,1,2-Tetrachloroethane	9.34	131	142304	10.12104	ppb	100
62) m&p-Xylene	9.50	106	487912	20.25112	ppb	100
63) o-Xylene	9.88	106	242776	10.29954	ppb	100
64) Styrene	9.90	104	387281	10.31931	ppb	100
66) 1,3-Dichloropropane	8.42	76	198417	10.06915	ppb	100
67) Dibromochloromethane	8.65	129	132331	9.97575	ppb	100
68) Chlorobenzene	9.25	112	397316	9.88782	ppb	100
69) Ethylbenzene	9.38	91	656650	10.02779	ppb	100
70) Bromoform	10.06	173	89960	10.05880	ppb	100
72) Isopropylbenzene	10.26	105	606530	10.14775	ppb	100
73) 1,1,2,2-Tetrachloroethane	10.56	83	144874	10.18005	ppb	100
74) 1,2,3-Trichloropropane	10.59	110	41441	10.06128	ppb	100
75) t-1,4-Dichloro-2-Butene	10.62	53	27399	10.12502	ppb	100
76) Bromobenzene	10.53	156	179183	10.01621	ppb	100
77) n-Propylbenzene	10.67	91	724807	10.27279	ppb	100
78) 4-Ethyltoluene	10.79	105	605708	10.36294	ppb	100
79) 2-Chlorotoluene	10.74	91	448426	10.20989	ppb	100
80) 1,3,5-Trimethylbenzene	10.85	105	541022	10.63762	ppb	100
81) 4-Chlorotoluene	10.85	91	516671	10.10109	ppb	100
82) Tert-Butylbenzene	11.17	119	443866	10.18691	ppb	100
83) 1,2,4-Trimethylbenzene	11.21	105	526766	10.30896	ppb	100
84) Sec-Butylbenzene	11.39	105	644953	10.53895	ppb	100
85) p-Isopropyltoluene	11.54	119	516218	10.25492	ppb	100
86) Benzyl Chloride	11.70	91	123719	9.88074	ppb	100
87) 1,3-DCB	11.47	146	321994	10.06931	ppb	100
88) 1,4-DCB	11.56	146	323827	9.76298	ppb	100
89) n-Butylbenzene	11.94	91	462214	9.91651	ppb	100
90) 1,2-DCB	11.93	146	305042	9.91045	ppb	100
91) Hexachloroethane	12.18	117	92496	9.81409	ppb	100
92) 1,2-Dibromo-3-chloropropan	12.69	157	25195	9.82118	ppb	100
93) 1,2,4-Trichlorobenzene	13.52	180	187819	9.82199	ppb	100
94) Hexachlorobutadiene	13.70	225	102929	9.39155	ppb	100
95) Naphthalene	13.75	128	324588	8.99359	ppb	100
96) 1,2,3-Trichlorobenzene	13.99	180	171484	9.84096	ppb	100

(#) = qualifier out of range (m) = manual integration

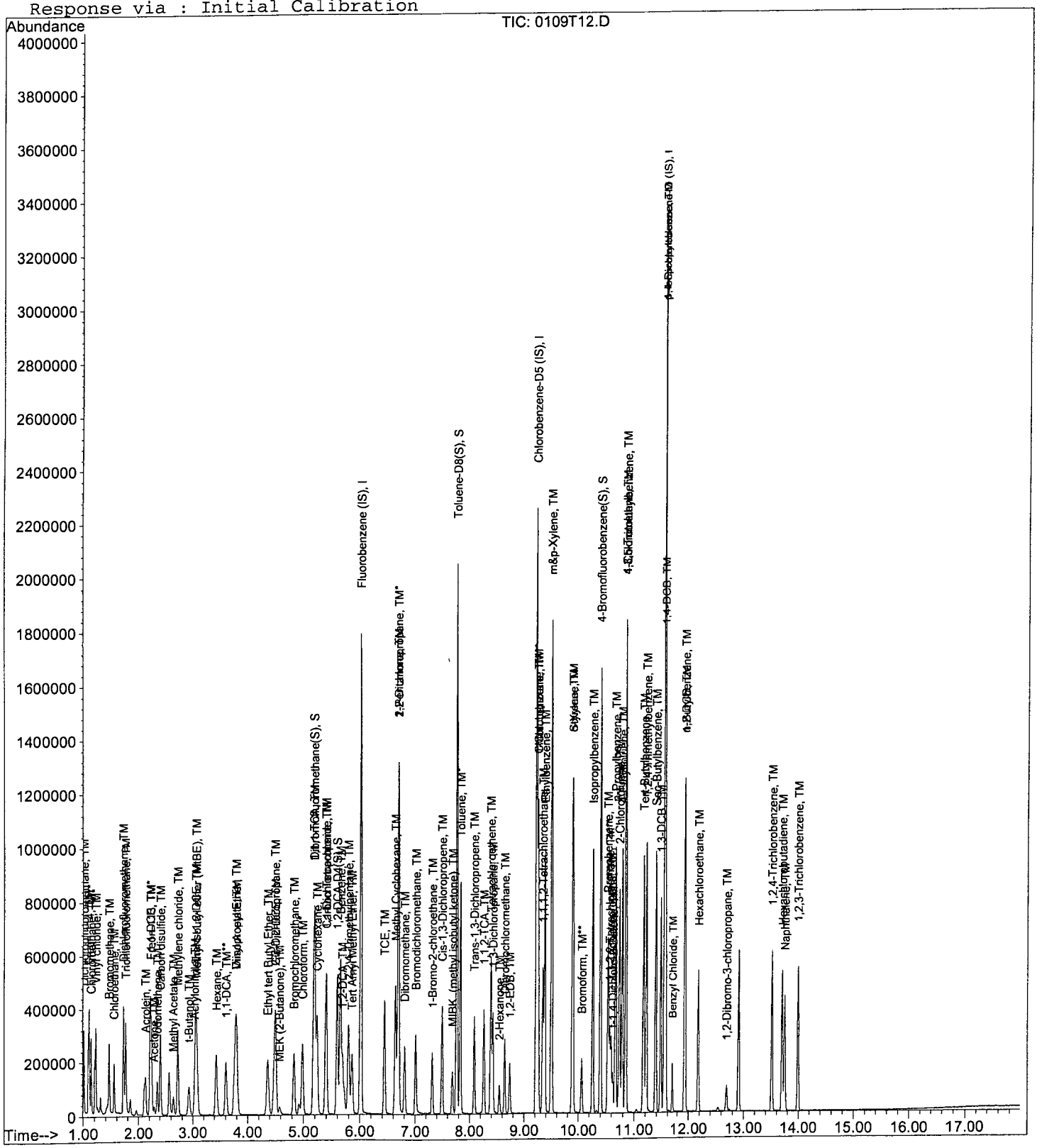
Quantitation Report

Data File : M:\THOR\DATA\T150109\0109T12.D
Acq On : 9 Jan 15 14:35
Sample : 10ug/L VOC STD 1/9/15
Misc : 10ml w/IS 12/20/14

Vial: 9
Operator: DG, SV, RS
Inst : Thor
Multiplr: 1.00

Quant Time: Jan 12 11:19 2015 Quant Results File: TALLW.RES

Method : M:\THOR\DATA\T150109\TALLW.M (RTE Integrator)
Title : METHOD 8260B
Last Update : Mon Jan 12 11:16:31 2015
Response via : Initial Calibration



422

Quantitation Report (Not Reviewed)

Data File : M:\THOR\DATA\T150109\0109T13.D
Acq On : 9 Jan 15 15:03
Sample : 20ug/L VOC STD 1/9/15
Misc : 10ml w/IS 12/20/14

Vial: 10
Operator: DG, SV, RS
Inst : Thor
Multiplr: 1.00

Quant Time: Jan 12 11:19 2015 Quant Results File: TALLW.RES

Quant Method : M:\THOR\DATA\T150109\TALLW.M (RTE Integrator)
Title : METHOD 8260B
Last Update : Mon Jan 12 11:16:31 2015
Response via : Initial Calibration
DataAcq Meth : 8260_BETA

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene (IS)	6.02	96	869888	25.00000 ppb	0.00
56) Chlorobenzene-D5 (IS)	9.22	117	760832	25.00000 ppb	0.00
71) 1,4-Dichlorobenzene-D (IS)	11.54	152	437440	25.00000 ppb	0.00
System Monitoring Compounds					
32) Dibromofluoromethane(S)	5.19	111	596000	40.03684 ppb	0.00
Spiked Amount 31.085			Recovery	= 128.799%	
37) 1,2-DCA-D4(S)	5.59	65	602423	38.40327 ppb	0.00
Spiked Amount 29.432			Recovery	= 130.479%	
57) Toluene-D8(S)	7.76	98	2053200	40.39788 ppb	0.00
Spiked Amount 31.767			Recovery	= 127.168%	
65) 4-Bromofluorobenzene(S)	10.40	95	809866	40.18656 ppb	0.00
Spiked Amount 29.480			Recovery	= 136.322%	
Target Compounds					Qvalue
2) Dichlorodifluoromethane	1.02	85	292408	22.16495 ppb	99
3) Freon 114	1.11	135	171179	20.78944 ppb	93
4) Chloromethane	1.14	50	304818	18.98737 ppb	98
5) Vinyl chloride	1.22	62	345737	20.48452 ppb	99
6) Bromomethane	1.46	94	200714	18.55714 ppb	99
7) Chloroethane	1.55	64	211478	19.22813 ppb	99
8) Dichlorofluoromethane	1.72	67	556297	18.95929 ppb	100
9) Trichlorofluoromethane	1.76	101	430425	20.70680 ppb	99
10) Acrolein	2.13	56	117586	156.53217 ppb	100
11) Acetone	2.29	43	64382	19.65574 ppb	97
12) Freon-113	2.24	101	240043	20.69640 ppb	98
13) 1,1-DCE	2.22	61	373415	20.64608 ppb	99
14) t-Butanol	2.93	59	190418	170.59178 ppb	100
15) Methyl Acetate	2.64	43	170074	18.40651 ppb	98
16) Iodomethane	2.35	142	289830	18.77654 ppb	98
17) Acrylonitrile	3.02	52	67048	21.17421 ppb	96
18) Methylene chloride	2.72	84	282778	18.53475 ppb	97
19) Carbon disulfide	2.40	76	736676	19.65005 ppb	99
20) Methyl t-butyl ether (MtBE	3.07	73	627814	20.81778 ppb	99
21) Trans-1,2-DCE	3.05	96	264385	19.98877 ppb	99
22) Hexane	3.43	57	281043	20.41972 ppb	99
23) Diisopropyl Ether	3.79	45	908922	20.22025 ppb	98
24) 1,1-DCA	3.60	63	479412	19.86699 ppb	98
25) Vinyl Acetate	3.79	87	245909	20.92265 ppb	97
26) Ethyl tert Butyl Ether	4.37	59	500327	20.35515 ppb	100
27) MEK (2-Butanone)	4.58	43	91808	20.14389 ppb	96
28) Cis-1,2-DCE	4.51	96	307683	20.17948 ppb	95
29) 2,2-Dichloropropane	4.49	77	357077	19.45723 ppb	96
30) Chloroform	4.98	83	474783	20.02092 ppb	97
31) Bromochloromethane	4.84	128	147542	21.00654 ppb	99
33) 1,1,1-TCA	5.18	97	397721	20.41884 ppb	99
34) Cyclohexane	5.24	41	226271	19.90214 ppb	97
35) 1,1-Dichloropropene	5.40	75	364852	20.83966 ppb	98
36) 2,2,4-Trimethylpentane	5.80	57	729202	20.49154 ppb	98
38) Carbon Tetrachloride	5.39	117	350050	20.50710 ppb	100
39) Tert Amyl Methyl Ether	5.86	73	407778	19.91951 ppb	98
40) 1,2-DCA	5.69	62	348831	19.59976 ppb	97
41) Benzene	5.65	78	1083700	20.13003 ppb	100
42) TCE	6.44	95	284314	20.61620 ppb	98

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : M:\THOR\DATA\T150109\0109T13.D
Acq On : 9 Jan 15 15:03
Sample : 20ug/L VOC STD 1/9/15
Misc : 10ml w/IS 12/20/14

Vial: 10
Operator: DG, SV, RS
Inst : Thor
Multiplr: 1.00

Quant Time: Jan 12 11:19 2015 Quant Results File: TALLW.RES

Quant Method : M:\THOR\DATA\T150109\TALLW.M (RTE Integrator)
Title : METHOD 8260B
Last Update : Mon Jan 12 11:16:31 2015
Response via : Initial Calibration
DataAcq Meth : 8260_BETA

Compound	R.T.	QIon	Response	Conc Unit	Qvalue
43) 2-Pentanone	6.69	43	1323069	156.94766 ppb	100
44) 1,2-Dichloropropane	6.68	63	302767	20.03257 ppb	100
45) Bromodichloromethane	7.01	83	363979	20.80255 ppb	94
46) Methyl Cyclohexane	6.64	83	412862	21.00335 ppb	97
47) Dibromomethane	6.81	93	169725	20.13417 ppb	98
48) MIBK (methyl isobutyl ket	7.69	43	207007	19.05824 ppb	98
49) 1-Bromo-2-chloroethane	7.31	63	373244	20.73338 ppb	100
51) Cis-1,3-Dichloropropene	7.50	75	442306	20.66775 ppb	99
52) Toluene	7.83	91	1204879	20.24206 ppb	98
53) Trans-1,3-Dichloropropene	8.09	75	372694	20.99589 ppb	99
54) 1,1,2-TCA	8.26	83	200636	19.84597 ppb	98
55) 2-Hexanone	8.55	43	136023	20.20155 ppb	99
58) 1,2-EDB	8.74	107	237080	21.35396 ppb	99
59) Tetrachloroethene	8.39	166	333179	20.33784 ppb	99
60) 1-Chlorohexane	9.26	91	347060	21.23203 ppb	100
61) 1,1,1,2-Tetrachloroethane	9.34	131	290528	21.06291 ppb	99
62) m&p-Xylene	9.50	106	1011225	42.78362 ppb	99
63) o-Xylene	9.89	106	496690	21.47927 ppb	100
64) Styrene	9.90	104	819369	22.25493 ppb	99
66) 1,3-Dichloropropane	8.42	76	400885	20.73748 ppb	97
67) Dibromochloromethane	8.65	129	278154	21.37428 ppb	99
68) Chlorobenzene	9.25	112	790152	20.04460 ppb	98
69) Ethylbenzene	9.38	91	1344256	20.92548 ppb	99
70) Bromoform	10.06	173	188392	21.47244 ppb	95
72) Isopropylbenzene	10.26	105	1263549	20.67937 ppb	99
73) 1,1,2,2-Tetrachloroethane	10.56	83	295583	20.31734 ppb	100
74) 1,2,3-Trichloropropane	10.59	110	85030	20.19403 ppb	99
75) t-1,4-Dichloro-2-Butene	10.62	53	57677	20.84932 ppb	96
76) Bromobenzene	10.53	156	368049	20.12519 ppb	98
77) n-Propylbenzene	10.67	91	1508589	20.91534 ppb	99
78) 4-Ethyltoluene	10.79	105	1268320	21.22639 ppb	100
79) 2-Chlorotoluene	10.74	91	924478	20.58993 ppb	99
80) 1,3,5-Trimethylbenzene	10.85	105	1116987	21.48353 ppb	100
81) 4-Chlorotoluene	10.85	91	1066463	20.39518 ppb	100
82) Tert-Butylbenzene	11.17	119	923946	20.74269 ppb	99
83) 1,2,4-Trimethylbenzene	11.21	105	1112109	21.28984 ppb	100
84) Sec-Butylbenzene	11.39	105	1342548	21.45985 ppb	99
85) p-Isopropyltoluene	11.54	119	1107895	21.52909 ppb	99
86) Benzyl Chloride	11.70	91	259018	20.23535 ppb	98
87) 1,3-DCB	11.47	146	660751	20.21238 ppb	98
88) 1,4-DCB	11.56	146	666820	19.66553 ppb	99
89) n-Butylbenzene	11.94	91	1004814	21.08770 ppb	98
90) 1,2-DCB	11.93	146	622523	19.78412 ppb	99
91) Hexachloroethane	12.18	117	191436	19.86912 ppb	98
92) 1,2-Dibromo-3-chloropropan	12.69	157	52699	20.09461 ppb	98
93) 1,2,4-Trichlorobenzene	13.52	180	410019	20.97451 ppb	99
94) Hexachlorobutadiene	13.70	225	223207	19.92211 ppb	99
95) Naphthalene	13.75	128	748092	18.87139 ppb	99
96) 1,2,3-Trichlorobenzene	13.99	180	383916	21.55153 ppb	99

(#) = qualifier out of range (m) = manual integration

Quantitation Report

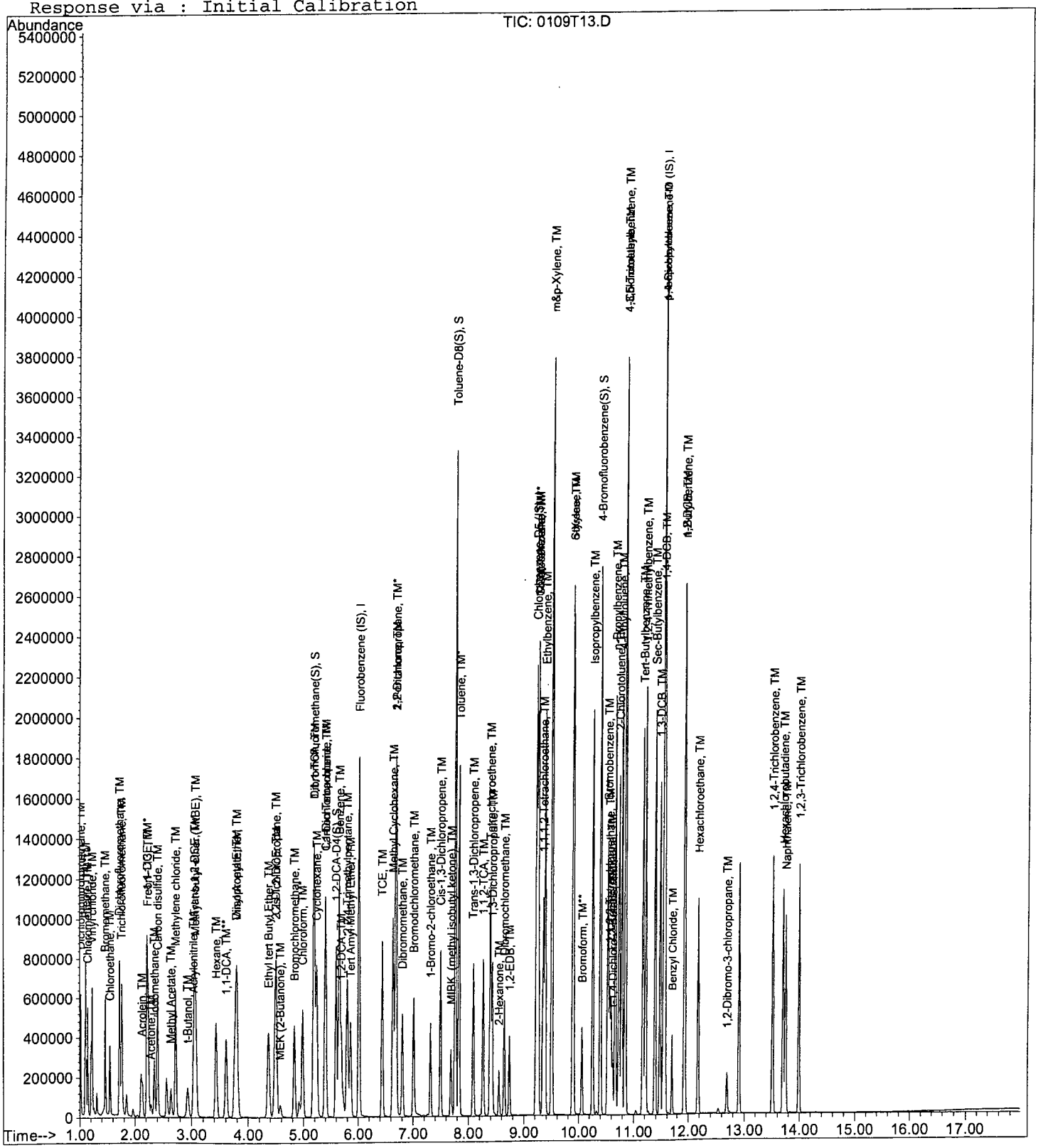
Data File : M:\THOR\DATA\T150109\0109T13.D
Acq On : 9 Jan 15 15:03
Sample : 20ug/L VOC STD 1/9/15
Misc : 10ml w/IS 12/20/14

Vial: 10
Operator: DG, SV, RS
Inst : Thor
Multiplr: 1.00

Quant Time: Jan 12 11:19 2015

Quant Results File: TALLW.RES

Method : M:\THOR\DATA\T150109\TALLW.M (RTE Integrator)
Title : METHOD 8260B
Last Update : Mon Jan 12 11:16:31 2015
Response via : Initial Calibration



Quantitation Report (Not Reviewed)

Data File : M:\THOR\DATA\T150109\0109T14.D
Acq On : 9 Jan 15 15:31
Sample : 40ug/L VOC STD 1/9/15
Misc : 10ml w/IS 12/20/14

Vial: 11
Operator: DG, SV, RS
Inst : Thor
Multiplr: 1.00

Quant Time: Jan 12 11:19 2015

Quant Results File: TALLW.RES

Quant Method : M:\THOR\DATA\T150109\TALLW.M (RTE Integrator)
Title : METHOD 8260B
Last Update : Mon Jan 12 11:16:31 2015
Response via : Initial Calibration
DataAcq Meth : 8260_BETA

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene (IS)	6.01	96	909888	25.00000 ppb	0.00
56) Chlorobenzene-D5 (IS)	9.22	117	815488	25.00000 ppb	0.00
71) 1,4-Dichlorobenzene-D (IS)	11.54	152	434624	25.00000 ppb	0.00
System Monitoring Compounds					
32) Dibromofluoromethane(S)	5.19	111	1244411	79.91950 ppb	0.00
Spiked Amount 31.085			Recovery	= 257.099%	
37) 1,2-DCA-D4(S)	5.59	65	1256784	76.59541 ppb	0.00
Spiked Amount 29.432			Recovery	= 260.241%	
57) Toluene-D8(S)	7.76	98	4409373	80.94227 ppb	0.00
Spiked Amount 31.767			Recovery	= 254.796%	
65) 4-Bromofluorobenzene(S)	10.40	95	1692015	78.33270 ppb	0.00
Spiked Amount 29.480			Recovery	= 265.720%	
Target Compounds					Qvalue
2) Dichlorodifluoromethane	1.01	85	550428	39.88903 ppb	99
3) Freon 114	1.11	135	348156	40.42421 ppb	96
4) Chloromethane	1.14	50	614159	36.57468 ppb	99
5) Vinyl chloride	1.22	62	691364	39.16174 ppb	99
6) Bromomethane	1.46	94	411900	36.40832 ppb	99
7) Chloroethane	1.54	64	421244	40.89082 ppb	99
8) Dichlorofluoromethane	1.72	67	1164965	37.95803 ppb	99
9) Trichlorofluoromethane	1.76	101	842267	38.73831 ppb	99
10) Acrolein	2.13	56	145447	185.10926 ppb	96
11) Acetone	2.29	43	133158	40.13581 ppb	100
12) Freon-113	2.23	101	479940	39.56108 ppb	97
13) 1,1-DCE	2.22	61	779823	41.22087 ppb	98
14) t-Butanol	2.94	59	248509	212.84705 ppb	100
15) Methyl Acetate	2.64	43	354124	36.64075 ppb	94
16) Iodomethane	2.35	142	671198	39.94889 ppb	99
17) Acrylonitrile	3.03	52	136073	41.08363 ppb	91
18) Methylene chloride	2.72	84	585359	36.68079 ppb	96
19) Carbon disulfide	2.40	76	1554870	39.65123 ppb	100
20) Methyl t-butyl ether (MtBE	3.07	73	1312591	41.61101 ppb	98
21) Trans-1,2-DCE	3.04	96	549144	39.69273 ppb	98
22) Hexane	3.43	57	585095	40.64236 ppb	99
23) Diisopropyl Ether	3.79	45	1910748	40.63859 ppb	97
24) 1,1-DCA	3.60	63	990170	39.22909 ppb	97
25) Vinyl Acetate	3.79	87	505940	41.15445 ppb	95
26) Ethyl tert Butyl Ether	4.37	59	1159317	45.09184 ppb	99
27) MEK (2-Butanone)	4.58	43	189087	39.87269 ppb	99
28) Cis-1,2-DCE	4.50	96	632780	39.67661 ppb	98
29) 2,2-Dichloropropane	4.48	77	737122	38.40025 ppb	97
30) Chloroform	4.98	83	986840	39.78424 ppb	98
31) Bromochloromethane	4.83	128	302049	41.11419 ppb	97
33) 1,1,1-TCA	5.18	97	820664	40.28036 ppb	98
34) Cyclohexane	5.24	41	462249	38.87069 ppb	96
35) 1,1-Dichloropropene	5.40	75	753813	41.16356 ppb	96
36) 2,2,4-Trimethylpentane	5.80	57	1567032	42.09980 ppb	99
38) Carbon Tetrachloride	5.39	117	747360	41.85808 ppb	98
39) Tert Amyl Methyl Ether	5.86	73	957061	44.69612 ppb	97
40) 1,2-DCA	5.69	62	716671	38.49735 ppb	96
41) Benzene	5.65	78	2272804	40.36201 ppb	99
42) TCE	6.44	95	596322	41.33964 ppb	98

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : M:\THOR\DATA\T150109\0109T14.D
Acq On : 9 Jan 15 15:31
Sample : 40ug/L VOC STD 1/9/15
Misc : 10ml w/IS 12/20/14

Vial: 11
Operator: DG, SV, RS
Inst : Thor
Multiplr: 1.00

Quant Time: Jan 12 11:19 2015

Quant Results File: TALLW.RES

Quant Method : M:\THOR\DATA\T150109\TALLW.M (RTE Integrator)
Title : METHOD 8260B
Last Update : Mon Jan 12 11:16:31 2015
Response via : Initial Calibration
DataAcq Meth : 8260_BETA

Compound	R.T.	QIon	Response	Conc Unit		Qvalue
43) 2-Pentanone	6.69	43	1605398	182.06668	ppb	98
44) 1,2-Dichloropropane	6.68	63	627516	39.69432	ppb	100
45) Bromodichloromethane	7.01	83	756944	41.35989	ppb	95
46) Methyl Cyclohexane	6.64	83	864467	42.04434	ppb	96
47) Dibromomethane	6.81	93	354087	40.15812	ppb	99
48) MIBK (methyl isobutyl ket	7.69	43	426994	37.58330	ppb	96
49) 1-Bromo-2-chloroethane	7.31	63	774024	41.10617	ppb	98
51) Cis-1,3-Dichloropropene	7.50	75	947099	42.30983	ppb	99
52) Toluene	7.83	91	2545201	40.87980	ppb	100
53) Trans-1,3-Dichloropropene	8.09	75	799767	43.07455	ppb	99
54) 1,1,2-TCA	8.26	83	425469	40.23525	ppb	99
55) 2-Hexanone	8.55	43	277529	39.40544	ppb	99
58) 1,2-EDB	8.74	107	510186	42.87294	ppb	97
59) Tetrachloroethene	8.39	166	692841	39.45772	ppb	99
60) 1-Chlorohexane	9.26	91	756311	43.16767	ppb	97
61) 1,1,1,2-Tetrachloroethane	9.34	131	613433	41.49241	ppb	100
62) m&p-Xylene	9.50	106	2152457	84.96409	ppb	98
63) o-Xylene	9.88	106	1054964	42.56404	ppb	98
64) Styrene	9.90	104	1779146	45.08473	ppb	100
66) 1,3-Dichloropropane	8.42	76	834194	40.26006	ppb	99
67) Dibromochloromethane	8.65	129	596862	42.79088	ppb	98
68) Chlorobenzene	9.25	112	1678140	39.71789	ppb	99
69) Ethylbenzene	9.38	91	2869670	41.67701	ppb	99
70) Bromoform	10.06	173	398686	42.39563	ppb	97
72) Isopropylbenzene	10.26	105	2687070	44.26178	ppb	100
73) 1,1,2,2-Tetrachloroethane	10.56	83	570473	39.46637	ppb	99
74) 1,2,3-Trichloropropane	10.59	110	165792	39.62955	ppb	99
75) t-1,4-Dichloro-2-Butene	10.62	53	115335	41.96190	ppb	89
76) Bromobenzene	10.53	156	759691	41.80962	ppb	99
77) n-Propylbenzene	10.67	91	3202372	44.68591	ppb	100
78) 4-Ethyltoluene	10.78	105	2708125	45.61638	ppb	99
79) 2-Chlorotoluene	10.74	91	1900910	42.61129	ppb	96
80) 1,3,5-Trimethylbenzene	10.85	105	2340589	45.30932	ppb	99
81) 4-Chlorotoluene	10.85	91	2215081	42.63598	ppb	99
82) Tert-Butylbenzene	11.17	119	1921817	43.42455	ppb	99
83) 1,2,4-Trimethylbenzene	11.21	105	2350373	45.28627	ppb	99
84) Sec-Butylbenzene	11.39	105	2812763	45.25170	ppb	98
85) p-Isopropyltoluene	11.54	119	2333944	45.64806	ppb	99
86) Benzyl Chloride	11.70	91	566541	44.54684	ppb	100
87) 1,3-DCB	11.47	146	1334230	41.07856	ppb	99
88) 1,4-DCB	11.56	146	1365551	40.53309	ppb	99
89) n-Butylbenzene	11.94	91	2140368	45.21024	ppb	99
90) 1,2-DCB	11.93	146	1253240	40.08671	ppb	98
91) Hexachloroethane	12.18	117	406940	42.50991	ppb	96
92) 1,2-Dibromo-3-chloropropan	12.69	157	114330	43.87752	ppb	97
93) 1,2,4-Trichlorobenzene	13.52	180	910577	46.88234	ppb	97
94) Hexachlorobutadiene	13.70	225	478615	42.99507	ppb	96
95) Naphthalene	13.75	128	1659250	40.74761	ppb	98
96) 1,2,3-Trichlorobenzene	13.99	180	839771	47.44687	ppb	98

(#) = qualifier out of range (m) = manual integration

Quantitation Report

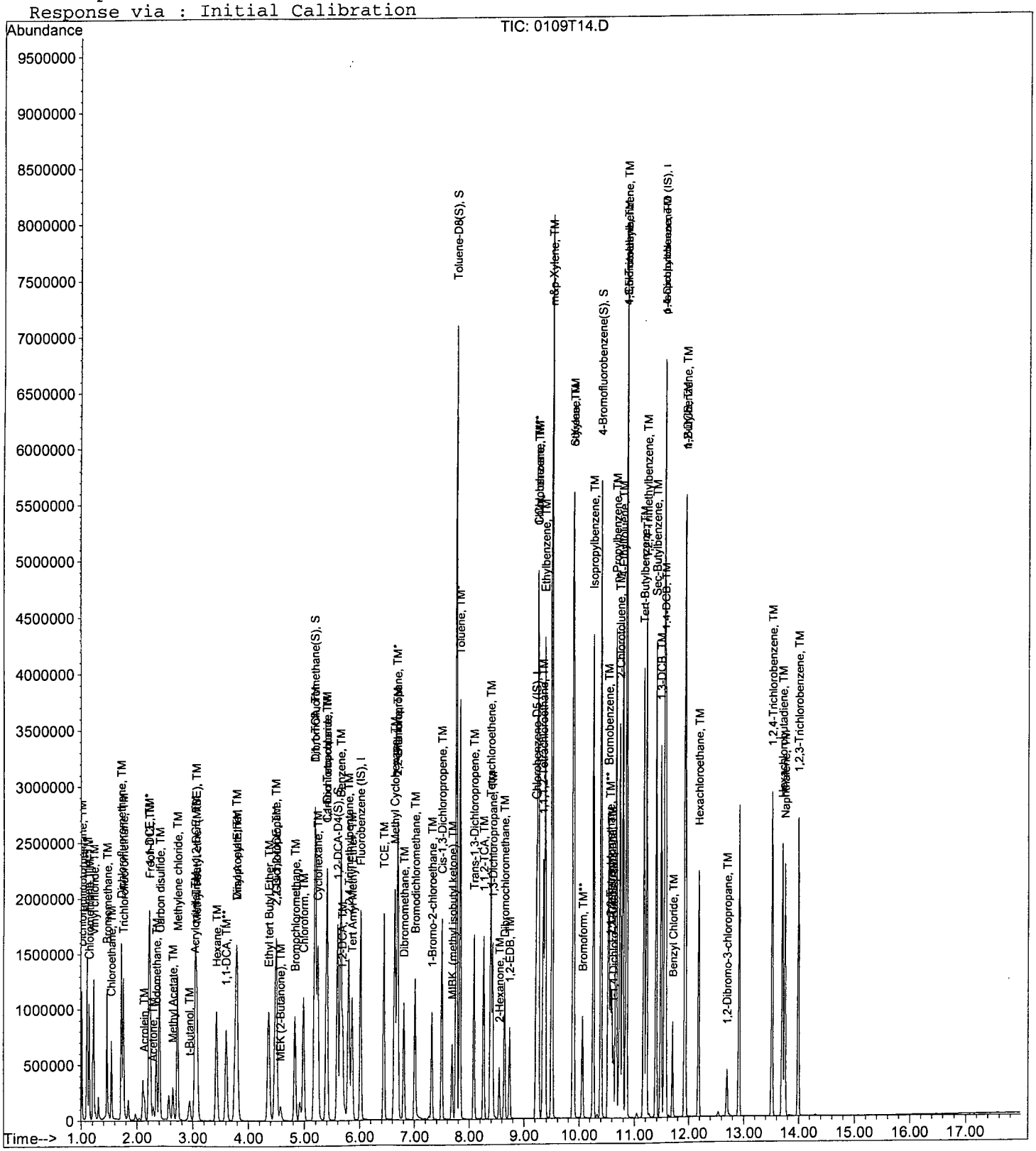
Data File : M:\THOR\DATA\T150109\0109T14.D
Acq On : 9 Jan 15 15:31
Sample : 40ug/L VOC STD 1/9/15
Misc : 10ml w/IS 12/20/14

Vial: 11
Operator: DG, SV, RS
Inst : Thor
Multiplr: 1.00

Quant Time: Jan 12 11:19 2015

Quant Results File: TALLW.RES

Method : M:\THOR\DATA\T150109\TALLW.M (RTE Integrator)
Title : METHOD 8260B
Last Update : Mon Jan 12 11:16:31 2015
Response via : Initial Calibration



Quantitation Report (Not Reviewed)

Data File : M:\THOR\DATA\T150109\0109T15.D
Acq On : 9 Jan 15 15:59
Sample : 100ug/L VOC STD 1/9/15
Misc : 10ml w/IS 12/20/14

Vial: 12
Operator: DG, SV, RS
Inst : Thor
Multiplr: 1.00

Quant Time: Jan 12 11:19 2015

Quant Results File: TALLW.RES

Quant Method : M:\THOR\DATA\T150109\TALLW.M (RTE Integrator)
Title : METHOD 8260B
Last Update : Mon Jan 12 11:16:31 2015
Response via : Initial Calibration
DataAcq Meth : 8260_BETA

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene (IS)	6.01	96	889984	25.00000 ppb	0.00
56) Chlorobenzene-D5 (IS)	9.22	117	789056	25.00000 ppb	0.00
71) 1,4-Dichlorobenzene-D (IS)	11.54	152	467136	25.00000 ppb	0.00
System Monitoring Compounds					
32) Dibromofluoromethane(S)	5.19	111	1531133	100.53275 ppb	0.00
Spiked Amount 31.085			Recovery	= 323.414%	
37) 1,2-DCA-D4(S)	5.59	65	1526509	95.11460 ppb	0.00
Spiked Amount 29.432			Recovery	= 323.165%	
57) Toluene-D8(S)	7.76	98	5396649	102.38408 ppb	0.00
Spiked Amount 31.767			Recovery	= 322.293%	
65) 4-Bromofluorobenzene(S)	10.40	95	2093117	100.14797 ppb	0.00
Spiked Amount 29.480			Recovery	= 339.721%	

Target Compounds					Qvalue
2) Dichlorodifluoromethane	1.01	85	1434997	106.31871 ppb	100
3) Freon 114	1.11	135	871936	103.50421 ppb	91
4) Chloromethane	1.14	50	1518908	92.47768 ppb	100
5) Vinyl chloride	1.22	62	1691117	97.93426 ppb	100
6) Bromomethane	1.46	94	971502	87.79268 ppb	99
7) Chloroethane	1.53	64	679996	99.40750 ppb	100
8) Dichlorofluoromethane	1.71	67	2823109	94.04249 ppb	100
9) Trichlorofluoromethane	1.75	101	2172253	102.14262 ppb	99
10) Acrolein	2.14	56	154333	200.81119 ppb	90
11) Acetone	2.30	43	318373	99.98549 ppb	99
12) Freon-113	2.23	101	1188247	100.13679 ppb	97
13) 1,1-DCE	2.21	61	1890998	102.19225 ppb	99
14) t-Butanol	2.97	59	424342	371.57567 ppb	98
15) Methyl Acetate	2.65	43	892672	94.42926 ppb	95
16) Iodomethane	2.34	142	1684133	100.38695 ppb	98
17) Acrylonitrile	3.03	52	329244	101.62965 ppb	94
18) Methylene chloride	2.72	84	1402352	89.84196 ppb	97
19) Carbon disulfide	2.40	76	3843003	100.19337 ppb	100
20) Methyl t-butyl ether (MtBE	3.08	73	3324627	107.75253 ppb	98
21) Trans-1,2-DCE	3.04	96	1336177	98.74031 ppb	100
22) Hexane	3.43	57	1468217	104.26739 ppb	98
23) Diisopropyl Ether	3.79	45	4724291	102.72534 ppb	96
24) 1,1-DCA	3.60	63	2399718	97.19959 ppb	98
25) Vinyl Acetate	3.79	87	1245375	103.56753 ppb	97
26) Ethyl tert Butyl Ether	4.37	59	3154582	125.44209 ppb	99
27) MEK (2-Butanone)	4.58	43	462548	100.04140 ppb	100
28) Cis-1,2-DCE	4.51	96	1555075	99.68708 ppb	96
29) 2,2-Dichloropropane	4.48	77	1802278	95.98915 ppb	95
30) Chloroform	4.98	83	2389069	98.46882 ppb	98
31) Bromochloromethane	4.83	128	708500	98.59614 ppb	95
33) 1,1,1-TCA	5.18	97	2040046	102.37022 ppb	98
34) Cyclohexane	5.23	41	1156896	99.45951 ppb	96
35) 1,1-Dichloropropene	5.40	75	1856379	103.63864 ppb	96
36) 2,2,4-Trimethylpentane	5.80	57	3920145	107.67380 ppb	98
38) Carbon Tetrachloride	5.39	117	1852319	106.06474 ppb	99
39) Tert Amyl Methyl Ether	5.86	73	2663313	127.16223 ppb	96
40) 1,2-DCA	5.69	62	1752232	96.22953 ppb	97
41) Benzene	5.65	78	5522503	100.26572 ppb	99
42) TCE	6.44	95	1462633	103.66375 ppb	99

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : M:\THOR\DATA\T150109\0109T15.D
Acq On : 9 Jan 15 15:59
Sample : 100ug/L VOC STD 1/9/15
Misc : 10ml w/IS 12/20/14

Vial: 12
Operator: DG, SV, RS
Inst : Thor
Multiplr: 1.00

Quant Time: Jan 12 11:19 2015 Quant Results File: TALLW.RES

Quant Method : M:\THOR\DATA\T150109\TALLW.M (RTE Integrator)
Title : METHOD 8260B
Last Update : Mon Jan 12 11:16:31 2015
Response via : Initial Calibration
DataAcq Meth : 8260_BETA

Compound	R.T.	QIon	Response	Conc Unit		Qvalue
43) 2-Pentanone	6.70	43	1801186	208.83921	ppb	99
44) 1,2-Dichloropropane	6.68	63	1548022	100.11206	ppb	100
45) Bromodichloromethane	7.01	83	1891427	105.66009	ppb	96
46) Methyl Cyclohexane	6.64	83	2161736	107.48986	ppb	96
47) Dibromomethane	6.81	93	868616	100.71565	ppb	99
48) MIBK (methyl isobutyl ket	7.69	43	1065834	95.91102	ppb	97
49) 1-Bromo-2-chloroethane	7.31	63	1902998	103.32293	ppb	98
51) Cis-1,3-Dichloropropene	7.50	75	2401940	109.70180	ppb	99
52) Toluene	7.83	91	6247164	102.58297	ppb	100
53) Trans-1,3-Dichloropropene	8.09	75	2016240	111.02102	ppb	99
54) 1,1,2-TCA	8.26	83	1023256	98.93018	ppb	98
55) 2-Hexanone	8.55	43	732870	106.38501	ppb	99
58) 1,2-EDB	8.74	107	1237003	107.43239	ppb	99
59) Tetrachloroethene	8.39	166	1714317	100.90190	ppb	99
60) 1-Chlorohexane	9.26	91	1903750	112.29950	ppb	97
61) 1,1,1,2-Tetrachloroethane	9.34	131	1499739	104.83998	ppb	99
62) m&p-Xylene	9.50	106	5270080	214.99475	ppb	98
63) o-Xylene	9.89	106	2557217	106.63077	ppb	96
64) Styrene	9.90	104	4416846	115.67510	ppb	98
66) 1,3-Dichloropropane	8.42	76	2030341	101.27123	ppb	98
67) Dibromochloromethane	8.65	129	1490687	110.45199	ppb	97
68) Chlorobenzene	9.25	112	4037470	98.75908	ppb	99
69) Ethylbenzene	9.38	91	7052230	105.85242	ppb	99
70) Bromoform	10.06	173	1072485	117.86669	ppb	99
72) Isopropylbenzene	10.26	105	6604249	101.21473	ppb	99
73) 1,1,2,2-Tetrachloroethane	10.57	83	1495367	96.25212	ppb	100
74) 1,2,3-Trichloropropane	10.59	110	425238	94.57100	ppb	98
75) t-1,4-Dichloro-2-Butene	10.62	53	315712	106.86992	ppb	89
76) Bromobenzene	10.53	156	1874110	95.96319	ppb	99
77) n-Propylbenzene	10.67	91	7913617	102.74110	ppb	100
78) 4-Ethyltoluene	10.79	105	6742988	105.67564	ppb	99
79) 2-Chlorotoluene	10.74	91	4706525	98.15984	ppb	97
80) 1,3,5-Trimethylbenzene	10.85	105	5930080	106.80542	ppb	100
81) 4-Chlorotoluene	10.85	91	5609148	100.45092	ppb	100
82) Tert-Butylbenzene	11.17	119	4892552	102.85588	ppb	98
83) 1,2,4-Trimethylbenzene	11.22	105	6051420	108.48193	ppb	99
84) Sec-Butylbenzene	11.39	105	7201871	107.79967	ppb	98
85) p-Isopropyltoluene	11.54	119	6138897	111.71014	ppb	98
86) Benzyl Chloride	11.70	91	1644484	120.30552	ppb	99
87) 1,3-DCB	11.48	146	3499923	100.25669	ppb	99
88) 1,4-DCB	11.57	146	3575787	98.75153	ppb	98
89) n-Butylbenzene	11.94	91	5836345	114.69900	ppb	99
90) 1,2-DCB	11.93	146	3340125	99.40295	ppb	99
91) Hexachloroethane	12.18	117	1101600	107.06661	ppb	96
92) 1,2-Dibromo-3-chloropropan	12.69	157	304486	108.72254	ppb	99
93) 1,2,4-Trichlorobenzene	13.52	180	2478801	118.74207	ppb	97
94) Hexachlorobutadiene	13.71	225	1272061	106.31895	ppb	98
95) Naphthalene	13.75	128	4451260	100.03026	ppb	98
96) 1,2,3-Trichlorobenzene	13.99	180	2233340	117.40102	ppb	99

(#) = qualifier out of range (m) = manual integration

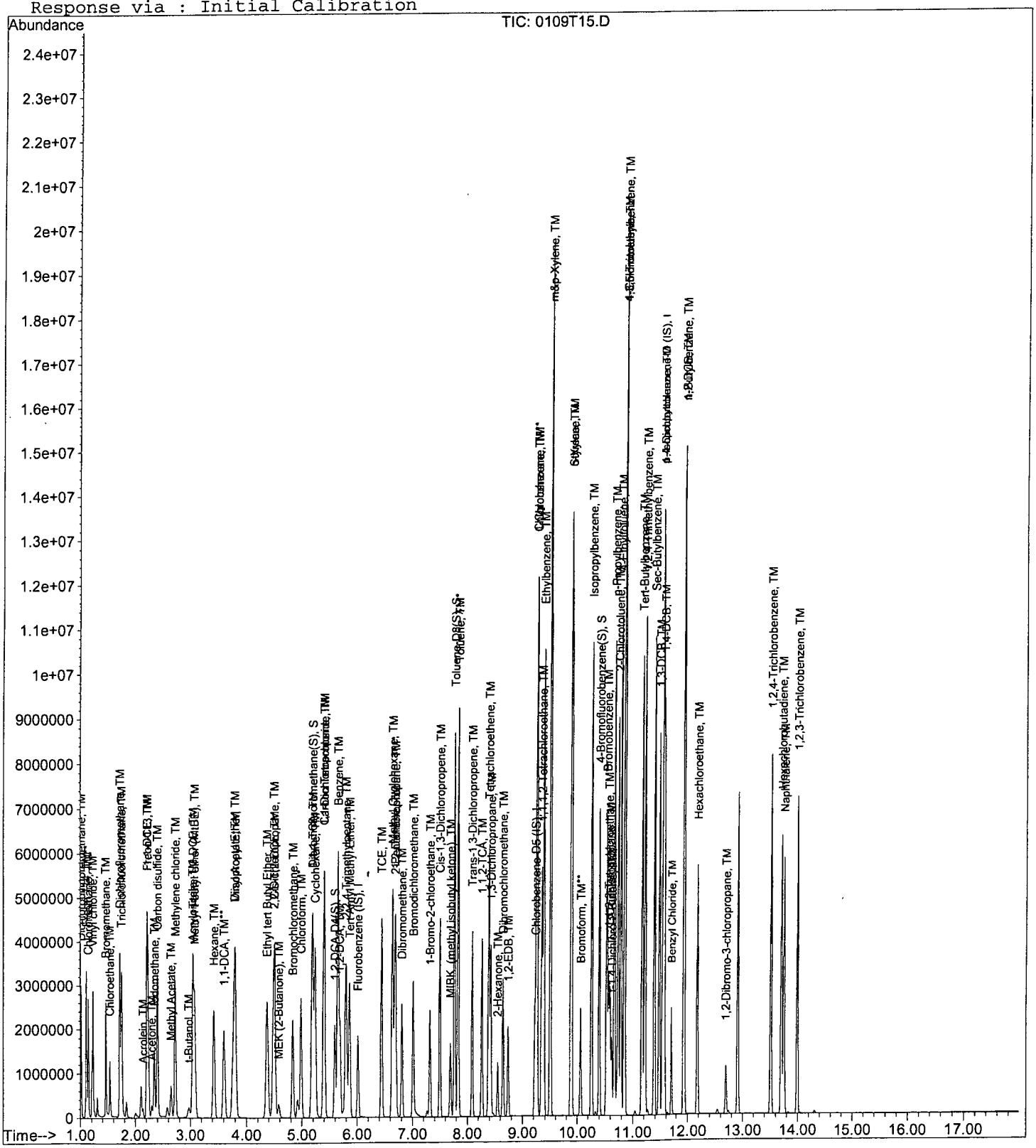
Quantitation Report

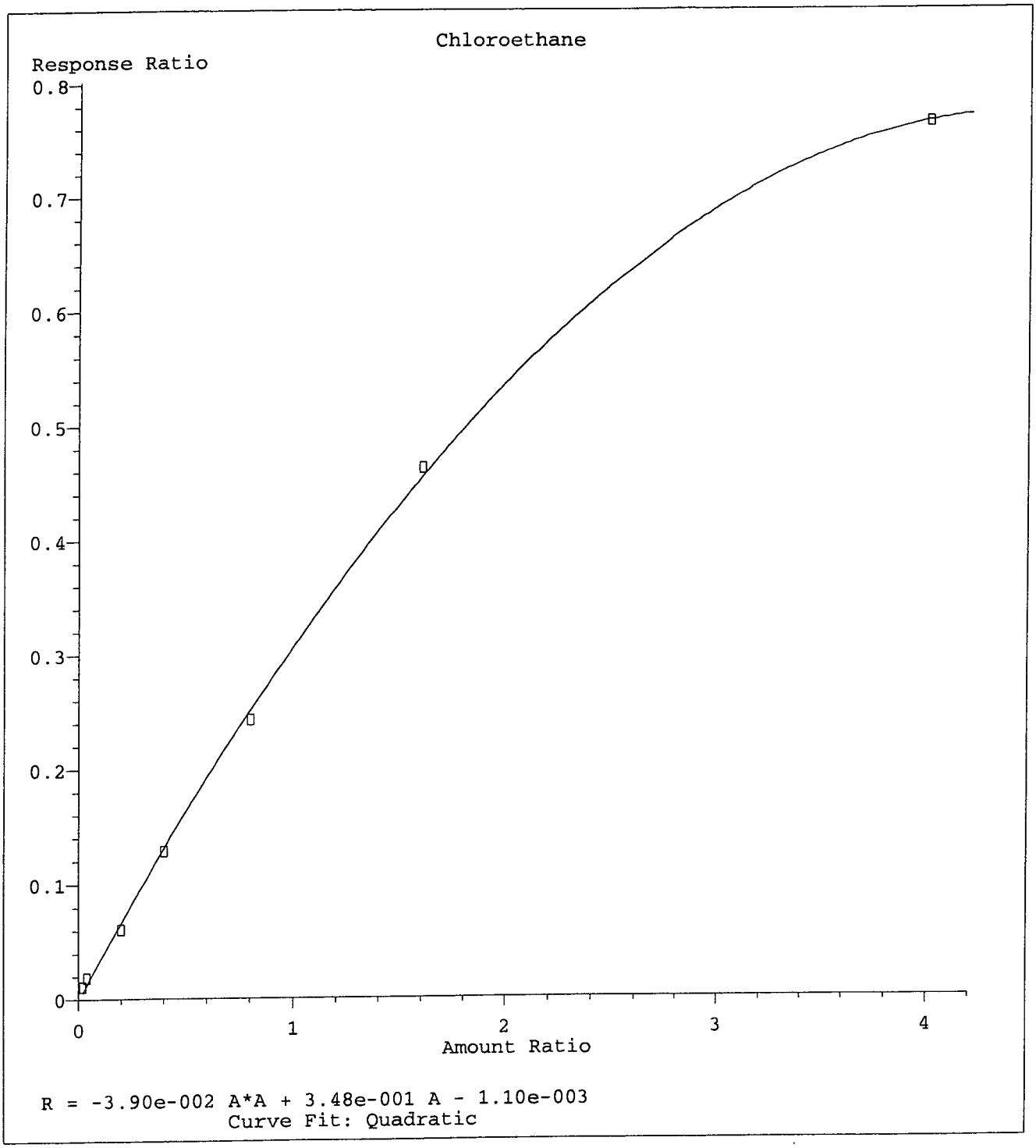
Data File : M:\THOR\DATA\T150109\0109T15.D
Acq On : 9 Jan 15 15:59
Sample : 100ug/L VOC STD 1/9/15
Misc : 10ml w/IS 12/20/14

Vial: 12
Operator: DG, SV, RS
Inst : Thor
Multiplr: 1.00

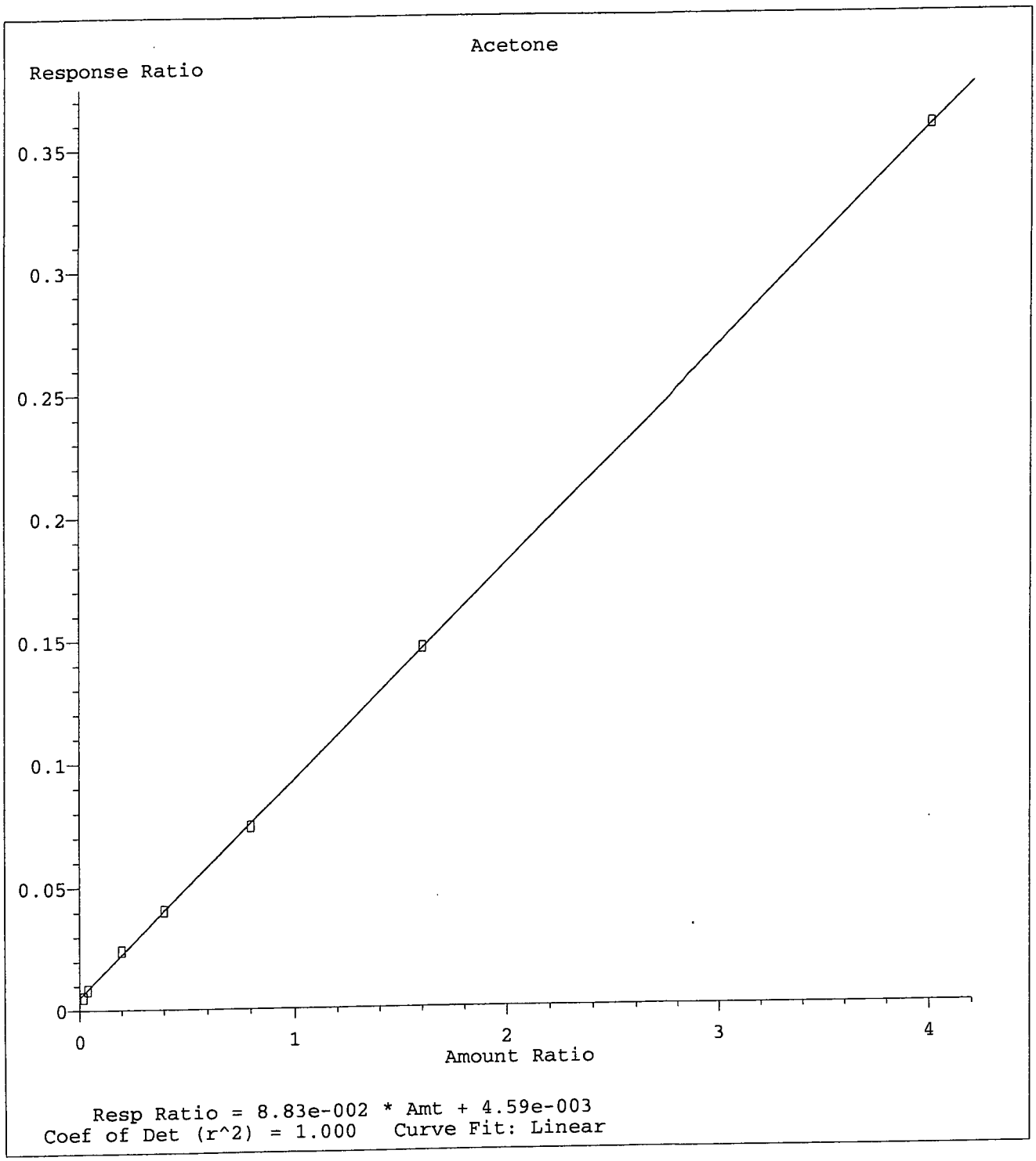
Quant Time: Jan 12 11:19 2015 Quant Results File: TALLW.RES

Method : M:\THOR\DATA\T150109\TALLW.M (RTE Integrator)
Title : METHOD 8260B
Last Update : Mon Jan 12 11:16:31 2015
Response via : Initial Calibration

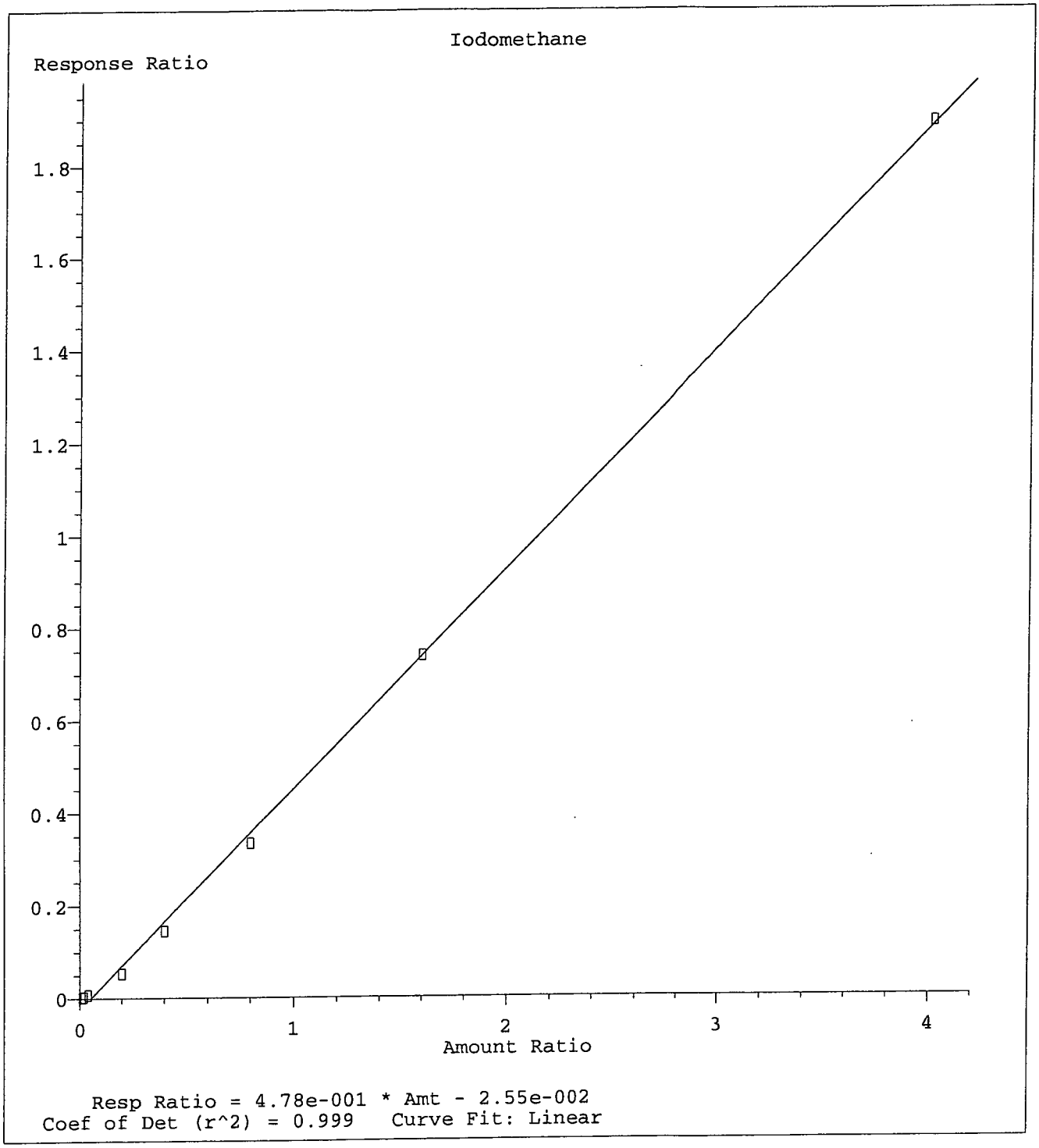




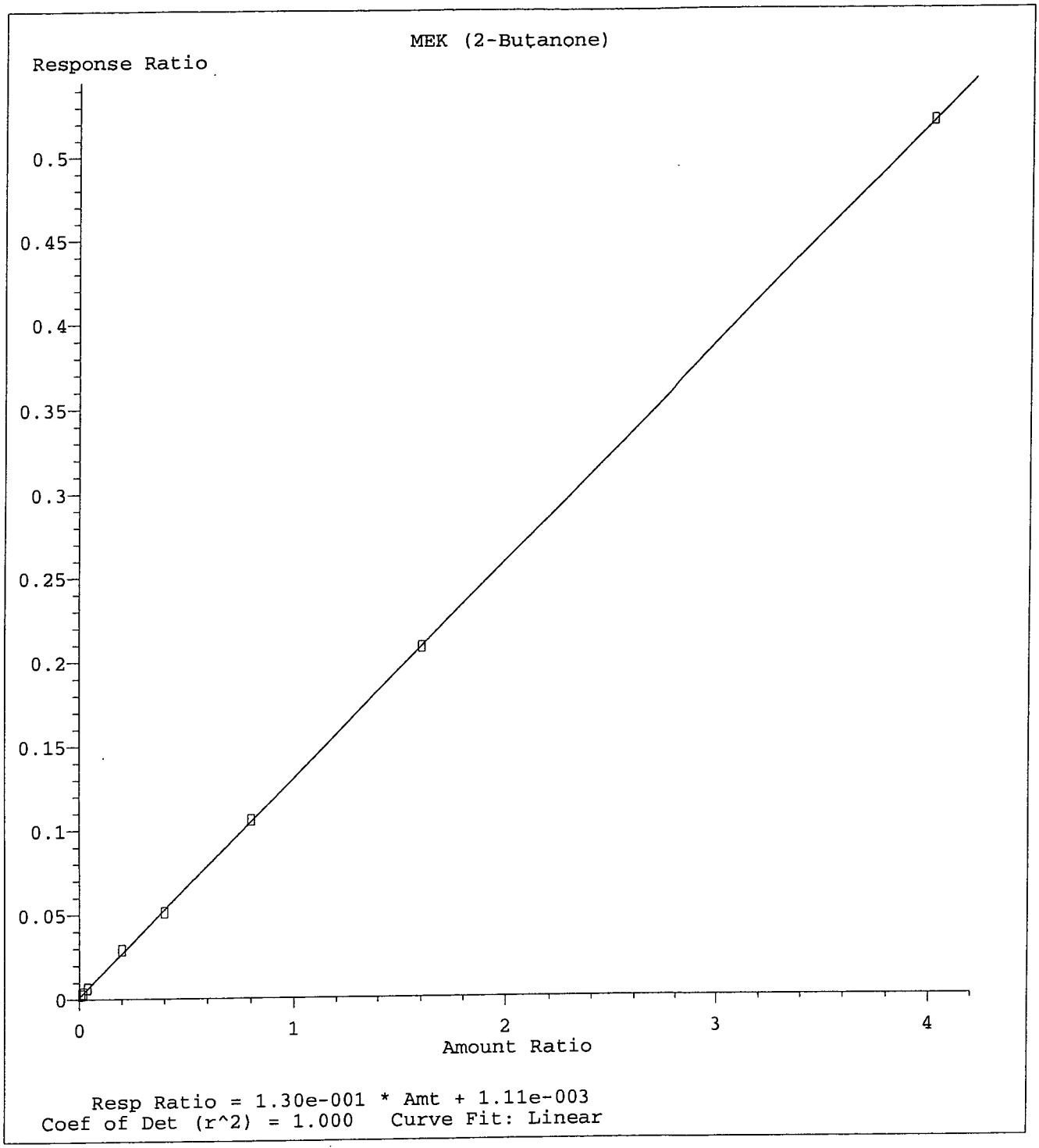
Method Name: M:\THOR\DATA\T150109\TALLW.M
Calibration Table Last Updated: Mon Jan 12 11:16:31 2015



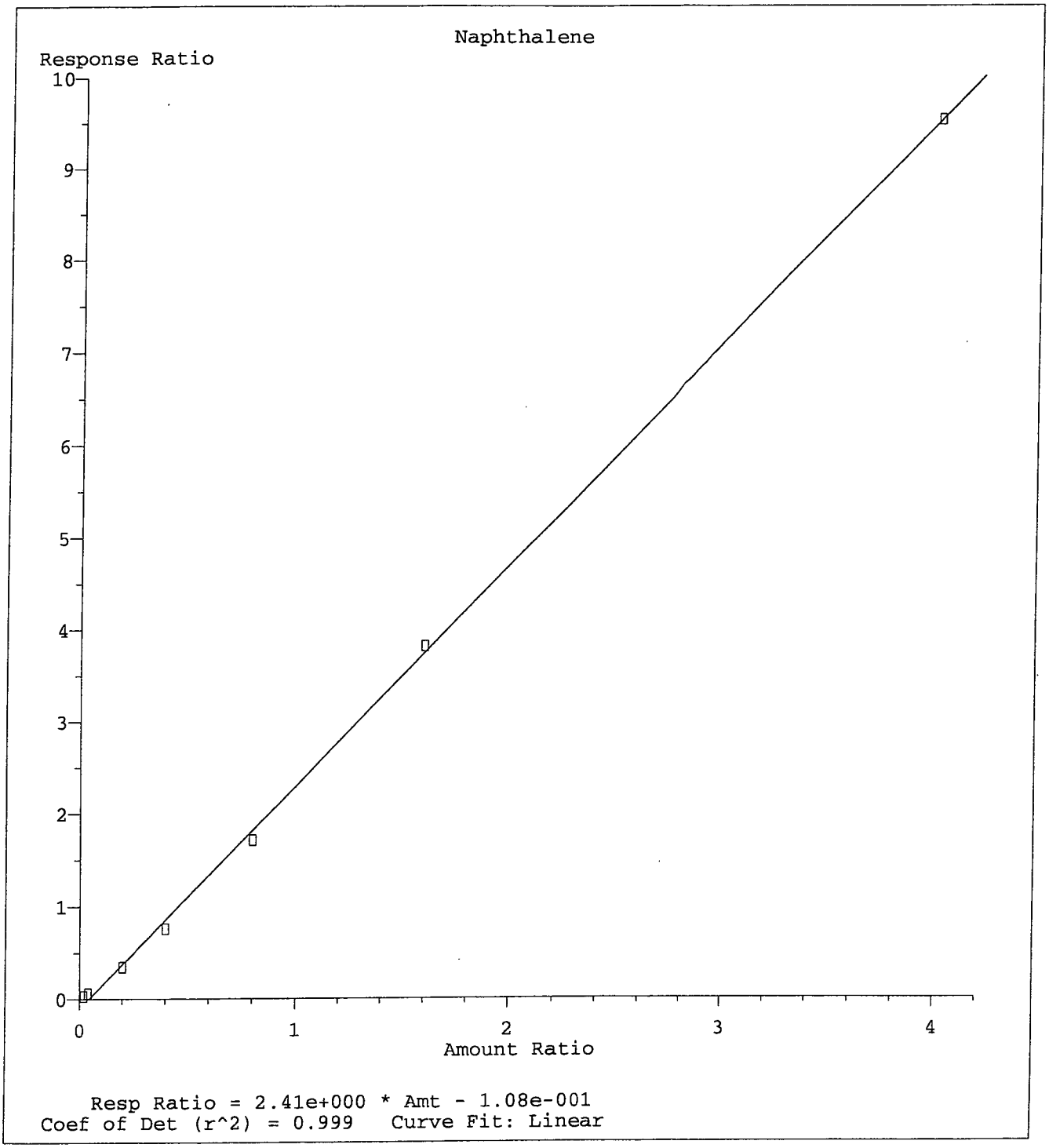
Method Name: M:\THOR\DATA\T150109\TALLW.M
Calibration Table Last Updated: Mon Jan 12 11:16:31 2015



Method Name: M:\THOR\DATA\T150109\TALLW.M
Calibration Table Last Updated: Mon Jan 12 11:16:31 2015



Method Name: M:\THOR\DATA\T150109\TALLW.M
Calibration Table Last Updated: Mon Jan 12 11:16:31 2015



Method Name: M:\THOR\DATA\T150109\TALLW.M
Calibration Table Last Updated: Mon Jan 12 11:16:31 2015

VOLATILE ORGANIC ANALYSIS BY
EPA METHOD 8260B

Form 7

Second Source Calibration

Lab Name: APPL, Inc.
Case No:
Matrix:

SDG No:
Date Analyzed: 9 Jan 15 18:18
Instrument: Thor
Initial Cal. Date: 01/09/15
Data File: 0109T20.D

		Compound	MEAN	CCRF	%D		%Drift
1	I	Fluorobenzene (IS)	ISTD			I	
2	TM	Dichlorodifluoromethane	0.3791	0.4053	6.9	TM	
3	TM	Freon 114	0.2366	0.2512	6.1	TM	
4	TM**	Chloromethane	0.4614	0.4503	2.4	TM**	
5	TM*	Vinyl chloride	0.4851	0.4941	1.9	TM*	
6	TM	Bromomethane	0.3108	0.3105	0.13	TM	
7	TMQ	Chloroethane	0.3453	0.3055	12	TMQ	7.5
8	TM	Dichlorofluoromethane	0.8433	0.8231	2.4	TM	
9	TM	Trichlorofluoromethane	0.5974	0.6012	0.64	TM	
10	TM	Acrolein	0.0216	0.0210	2.6	TM	
11	TML	Acetone	0.1362	0.0972	29	TML	2.9
12	TM	Freon-113	0.3333	0.3551	6.5	TM	
13	TM*	1,1-DCE	0.5198	0.5619	8.1	TM*	
14	TM	t-Butanol	0.0321	0.0300	6.6	TM	
15	TM	Methyl Acetate	0.2655	0.2385	10	TM	
16	TML	Iodomethane	0.3102	0.3115	0.40	TML	21 nt
17	TM	Acrylonitrile	0.0910	0.0921	1.2	TM	
18	TM	Methylene chloride	0.4385	0.4111	6.3	TM	
19	TM	Carbon disulfide	1.077	1.086	0.76	TM	
20	TM	Methyl t-butyl ether (MtBE)	0.8667	0.8496	2.0	TM	
21	TM	Trans-1,2-DCE	0.3801	0.3840	1.0	TM	
22	TM	Hexane	0.3955	0.4003	1.2	TM	
23	TM	Diisopropyl Ether	1.292	1.292	0.00	TM	
24	TM**	1,1-DCA	0.6935	0.6951	0.23	TM**	
25	TM	Vinyl Acetate	0.3378	0.3417	1.2	TM	
26	TM	Ethyl tert Butyl Ether	0.7064	0.6548	7.3	TM	
27	TML	MEK (2-Butanone)	0.1512	0.1193	21	TML	10
28	TM	Cis-1,2-DCE	0.4382	0.4401	0.43	TM	
29	TM	2,2-Dichloropropane	0.5274	0.4820	8.6	TM	
30	TM*	Chloroform	0.6815	0.6841	0.37	TM*	
31	TM	Bromochloromethane	0.2019	0.2061	2.1	TM	
32	S	Dibromofluoromethane(S)	0.4278	0.4193	2.0	S	
33	TM	1,1,1-TCA	0.5598	0.5732	2.4	TM	
34	TM	Cyclohexane	0.3267	0.3418	4.6	TM	
35	TM	1,1-Dichloropropene	0.5032	0.5247	4.3	TM	
36	TM	2,2,4-Trimethylpentane	1.023	1.042	1.9	TM	
37	S	1,2-DCA-D4(S)	0.4508	0.4489	0.43	S	
38	TM	Carbon Tetrachloride	0.4906	0.5174	5.5	TM	
39	TM	Tert Amyl Methyl Ether	0.5883	0.5032	14	TM	
40	TM	1,2-DCA	0.5115	0.4935	3.5	TM	
		Average			4.8		

VOLATILE ORGANIC ANALYSIS BY
EPA METHOD 8260B

Form 7

Second Source Calibration

Lab Name: APPL, Inc.
Case No:
Matrix: 0

SDG No:
Date Analyzed: 9 Jan 15 18:18
Instrument: Thor
Cal. Date: 01/09/15
Data File: 0109T20.D

		Compound	MEAN	CCRF	%D		%Drift
41	TM	Benzene	1.547	1.572	1.6	TM	
42	TM	TCE	0.3963	0.4224	6.6	TM	
43	TM	2-Pentanone	0.2423	0.2295	5.3	TM	
44	TM*	1,2-Dichloropropane	0.4344	0.4400	1.3	TM*	
45	TM	Bromodichloromethane	0.5028	0.5153	2.5	TM	
46	TM	Methyl Cyclohexane	0.5649	0.5878	4.1	TM	
47	TM	Dibromomethane	0.2423	0.2372	2.1	TM	
48	TM	MIBK (methyl isobutyl ketone)	0.3122	0.2729	13	TM	
49	TM	1-Bromo-2-chloroethane	0.5174	0.5223	0.95	TM	
50	TM	2-Chloroethyl vinyl ether	0.0000	0.0072	0.00	TM	
51	TM	Cis-1,3-Dichloropropene	0.6150	0.6116	0.56	TM	
52	TM*	Toluene	1.711	1.732	1.3	TM*	
53	TM	Trans-1,3-Dichloropropene	0.5101	0.5032	1.4	TM	
54	TM	1,1,2-TCA	0.2905	0.2783	4.2	TM	
55	TM	2-Hexanone	0.1935	0.1899	1.9	TM	
56	I	Chlorobenzene-D5 (IS)	ISTD			I	
57	S	Toluene-D8(S)	1.670	1.635	2.1	S	
58	TM	1,2-EDB	0.3648	0.3702	1.5	TM	
59	TM	Tetrachloroethene	0.5383	0.5445	1.2	TM	
60	TM	1-Chlorohexane	0.5371	0.5580	3.9	TM	
61	TM	1,1,1,2-Tetrachloroethane	0.4532	0.4602	1.5	TM	
62	TM	m&p-Xylene	0.7766	0.8047	3.6	TM	
63	TM	o-Xylene	0.7598	0.8024	5.6	TM	
64	TM	Styrene	1.210	1.288	6.5	TM	
65	S	4-Bromofluorobenzene(S)	0.6622	0.6835	3.2	S	
66	TM	1,3-Dichloropropane	0.6352	0.6379	0.42	TM	
67	TM	Dibromochloromethane	0.4276	0.4338	1.5	TM	
68	TM**	Chlorobenzene	1.295	1.284	0.87	TM**	
69	TM*	Ethylbenzene	2.111	2.174	3.0	TM*	
70	TM**	Bromoform	0.2883	0.2868	0.53	TM**	
71	I	1,4-Dichlorobenzene-D (IS)	ISTD			I	
72	TM	Isopropylbenzene	3.492	3.767	7.9	TM	
73	TM**	1,1,2,2-Tetrachloroethane	0.8314	0.8025	3.5	TM**	
74	TM	1,2,3-Trichloropropane	0.2406	0.2464	2.4	TM	
75	TM	t-1,4-Dichloro-2-Butene	0.1581	0.1520	3.9	TM	
76	TM	Bromobenzene	1.045	1.087	4.0	TM	
77	TM	n-Propylbenzene	4.122	4.493	9.0	TM	
78	TM	4-Ethyltoluene	3.415	3.745	9.7	TM	
79	TM	2-Chlorotoluene	2.566	2.790	8.7	TM	
80	TM	1,3,5-Trimethylbenzene	2.971	3.294	11	TM	
		Average			3.7		

VOLATILE ORGANIC ANALYSIS BY
EPA METHOD 8260B

Form 7

Second Source Calibration

Lab Name: APPL, Inc.
Case No:
Matrix: 0

SDG No:
Date Analyzed: 9 Jan 15 18:18
Instrument: Thor
Cal. Date: 01/09/15
Data File: 0109T20.D

		Compound	MEAN	CCRF	%D		%Drift
81	TM	4-Chlorotoluene	2.988	3.184	6.5	TM	
82	TM	Tert-Butylbenzene	2.546	2.762	8.5	TM	
83	TM	1,2,4-Trimethylbenzene	2.985	3.287	10	TM	
84	TM	Sec-Butylbenzene	3.575	3.956	11	TM	
85	TM	p-Isopropyltoluene	2.941	3.237	10	TM	
86	TM	Benzyl Chloride	0.7315	0.6144	16	TM	
87	TM	1,3-DCB	1.868	1.965	5.2	TM	
88	TM	1,4-DCB	1.938	1.996	3.0	TM	
89	TM	n-Butylbenzene	2.723	2.935	7.8	TM	
90	TM	1,2-DCB	1.798	1.814	0.88	TM	
91	TM	Hexachloroethane	0.5506	0.5646	2.5	TM	
92	TM	1,2-Dibromo-3-chloropropane	0.1499	0.1484	0.99	TM	
93	TM	1,2,4-Trichlorobenzene	1.117	1.183	5.9	TM	
94	TM	Hexachlorobutadiene	0.6403	0.6789	6.0	TM	
95	TML	Naphthalene	1.922	2.077	8.1	TML	2.6
96	TM	1,2,3-Trichlorobenzene	1.018	1.079	5.9	TM	
97							
98							
99							
100							
101							
102							
103							
104							
105							
106							
107							
108							
109							
110							
111							
112							
113							
114							
115							
116							
117							
118							
119							
120							
		Average			6.8		

Quantitation Report (Not Reviewed)

Data File : M:\THOR\DATA\T150109\0109T20.D
Acq On : 9 Jan 15 18:18
Sample : 150109A LCS-1WT (SS)
Misc : 10ml w/IS&S 12/20,12/23/14

Vial: 17
Operator: DG, SV, RS
Inst : Thor
Multiplr: 1.00

Quant Time: Jan 12 11:25 2015 Quant Results File: TALLW.RES

Quant Method : M:\THOR\DATA\T150109\TALLW.M (RTE Integrator)
Title : METHOD 8260B
Last Update : Mon Jan 12 11:16:31 2015
Response via : Initial Calibration
DataAcq Meth : 8260_BETA

$\frac{171598 \times 25}{868288 \times 0.4851} = 10.18$

SW 1/26/15

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene (IS)	6.02	96	868288	25.00000 ppb	0.00
56) Chlorobenzene-D5 (IS)	9.22	117	763072	25.00000 ppb	0.00
71) 1,4-Dichlorobenzene-D (IS)	11.54	152	412672	25.00000 ppb	0.00
System Monitoring Compounds					
32) Dibromofluoromethane(S)	5.19	111	452655	30.46354 ppb	0.00
Spiked Amount 31.085			Recovery = 98.003%		
37) 1,2-DCA-D4(S)	5.59	65	458854	29.30493 ppb	0.00
Spiked Amount 29.432			Recovery = 99.567%		
57) Toluene-D8(S)	7.76	98	1585070	31.09561 ppb	0.00
Spiked Amount 31.767			Recovery = 97.887%		
65) 4-Bromofluorobenzene(S)	10.40	95	614999	30.42744 ppb	0.00
Spiked Amount 29.480			Recovery = 103.214%		
Target Compounds					Qvalue
2) Dichlorodifluoromethane	1.02	85	140754	10.68902 ppb	100
3) Freon 114	1.11	135	87237	10.61433 ppb	89
4) Chloromethane	1.14	50	156406	9.76062 ppb	97
5) Vinyl chloride	1.22	62	171598	10.18572 ppb	99
6) Bromomethane	1.46	94	107826	9.98749 ppb	97
7) Chloroethane	1.55	64	106093	9.25362 ppb	97
8) Dichlorofluoromethane	1.72	67	285876	9.76096 ppb	98
9) Trichlorofluoromethane	1.76	101	208816	10.06419 ppb	100
10) Acrolein	2.13	56	91291	121.75183 ppb	94
11) Acetone	2.29	43	33748	9.70515 ppb	95
12) Freon-113	2.24	101	123322	10.65236 ppb	97
13) 1,1-DCE	2.22	61	195159	10.81020 ppb	98
14) t-Butanol	2.93	59	130117	116.78409 ppb	98
15) Methyl Acetate	2.64	43	82838	8.98179 ppb	100
16) Iodomethane	2.35	142	108172	7.85772 ppb	99
17) Acrylonitrile	3.03	52	31976	10.11685 ppb	97
18) Methylene chloride	2.72	84	142764	9.37474 ppb	95
19) Carbon disulfide	2.41	76	377070	10.07648 ppb	99
20) Methyl t-butyl ether (MtBE	3.07	73	295081	9.80267 ppb	98
21) Trans-1,2-DCE	3.05	96	133360	10.10123 ppb	99
22) Hexane	3.43	57	139030	10.12011 ppb	98
23) Diisopropyl Ether	3.79	45	448662	9.99951 ppb	99
24) 1,1-DCA	3.61	63	241409	10.02250 ppb	98
25) Vinyl Acetate	3.79	87	118671	10.11548 ppb	94
26) Ethyl tert Butyl Ether	4.36	59	227409	9.26889 ppb	100
27) MEK (2-Butanone)	4.58	43	41431	8.98944 ppb	97
28) Cis-1,2-DCE	4.51	96	152853	10.04338 ppb	95
29) 2,2-Dichloropropane	4.49	77	167400	9.13849 ppb	94
30) Chloroform	4.98	83	237592	10.03738 ppb	99
31) Bromochloromethane	4.83	128	71570	10.20868 ppb	93
33) 1,1,1-TCA	5.18	97	199074	10.23921 ppb	100
34) Cyclohexane	5.24	41	118719	10.46142 ppb	96
35) 1,1-Dichloropropene	5.40	75	182243	10.42856 ppb	95
36) 2,2,4-Trimethylpentane	5.80	57	362043	10.19263 ppb	98
38) Carbon Tetrachloride	5.40	117	179686	10.54600 ppb	99
39) Tert Amyl Methyl Ether	5.86	73	174783	8.55369 ppb	98
40) 1,2-DCA	5.69	62	171409	9.64870 ppb	96
41) Benzene	5.65	78	545874	10.15845 ppb	99
42) TCE	6.44	95	146715	10.65821 ppb	98

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : M:\THOR\DATA\T150109\0109T20.D
Acq On : 9 Jan 15 18:18
Sample : 150109A LCS-1WT (SS)
Misc : 10ml w/IS&S 12/20,12/23/14

Vial: 17
Operator: DG, SV, RS
Inst : Thor
Multiplr: 1.00

Quant Time: Jan 12 11:25 2015 Quant Results File: TALLW.RES

Quant Method : M:\THOR\DATA\T150109\TALLW.M (RTE Integrator)
Title : METHOD 8260B
Last Update : Mon Jan 12 11:16:31 2015
Response via : Initial Calibration
DataAcq Meth : 8260_BETA

Compound	R.T.	QIon	Response	Conc Unit	Qvalue
43) 2-Pentanone	6.69	43	996243	118.39604 ppb	100
44) 1,2-Dichloropropane	6.68	63	152803	10.12884 ppb	100
45) Bromodichloromethane	7.01	83	178976	10.24789 ppb	95
46) Methyl Cyclohexane	6.64	83	204159	10.40523 ppb	96
47) Dibromomethane	6.81	93	82379	9.79048 ppb	99
48) MIBK (methyl isobutyl ket	7.69	43	94796	8.74354 ppb	93
49) 1-Bromo-2-chloroethane	7.31	63	181402	10.09529 ppb	99
51) Cis-1,3-Dichloropropene	7.50	75	212415	9.94386 ppb	99
52) Toluene	7.83	91	601594	10.12545 ppb	100
53) Trans-1,3-Dichloropropene	8.09	75	174777	9.86429 ppb	99
54) 1,1,2-TCA	8.26	83	96648	9.57758 ppb	97
55) 2-Hexanone	8.55	43	65939	9.81102 ppb	94
58) 1,2-EDB	8.74	107	112981	10.14641 ppb	99
59) Tetrachloroethene	8.39	166	166201	10.11543 ppb	99
60) 1-Chlorohexane	9.26	91	170315	10.38875 ppb	99
61) 1,1,1,2-Tetrachloroethane	9.34	131	140472	10.15414 ppb	99
62) m&p-Xylene	9.50	106	491230	20.72229 ppb	95
63) o-Xylene	9.88	106	244927	10.56073 ppb	100
64) Styrene	9.90	104	393268	10.65022 ppb	100
66) 1,3-Dichloropropane	8.42	76	194706	10.04243 ppb	97
67) Dibromochloromethane	8.65	129	132423	10.14595 ppb	97
68) Chlorobenzene	9.25	112	391920	9.91305 ppb	99
69) Ethylbenzene	9.38	91	663599	10.29965 ppb	98
70) Bromoform	10.06	173	87526	9.94670 ppb	95
72) Isopropylbenzene	10.26	105	621742	10.78621 ppb	99
73) 1,1,2,2-Tetrachloroethane	10.56	83	132469	9.65195 ppb	98
74) 1,2,3-Trichloropropane	10.59	110	40671	10.23880 ppb	96
75) t-1,4-Dichloro-2-Butene	10.62	53	25089	9.61360 ppb	96
76) Bromobenzene	10.53	156	179351	10.39565 ppb	98
77) n-Propylbenzene	10.67	91	741697	10.90019 ppb	99
78) 4-Ethyltoluene	10.78	105	618135	10.96590 ppb	100
79) 2-Chlorotoluene	10.74	91	460553	10.87305 ppb	98
80) 1,3,5-Trimethylbenzene	10.85	105	543771	11.08631 ppb	100
81) 4-Chlorotoluene	10.84	91	525563	10.65418 ppb	99
82) Tert-Butylbenzene	11.17	119	455870	10.84858 ppb	98
83) 1,2,4-Trimethylbenzene	11.21	105	542592	11.01062 ppb	99
84) Sec-Butylbenzene	11.38	105	653001	11.06431 ppb	100
85) p-Isopropyltoluene	11.54	119	534378	11.00751 ppb	99
86) Benzyl Chloride	11.70	91	101423	8.39906 ppb	97
87) 1,3-DCB	11.47	146	324423	10.51974 ppb	98
88) 1,4-DCB	11.56	146	329447	10.29902 ppb	100
89) n-Butylbenzene	11.94	91	484544	10.77929 ppb	99
90) 1,2-DCB	11.92	146	299459	10.08817 ppb	97
91) Hexachloroethane	12.18	117	93200	10.25379 ppb	98
92) 1,2-Dibromo-3-chloropropan	12.69	157	24495	9.90075 ppb	97
93) 1,2,4-Trichlorobenzene	13.51	180	195222	10.58596 ppb	98
94) Hexachlorobutadiene	13.70	225	112059	10.60200 ppb	99
95) Naphthalene	13.75	128	342880	9.74433 ppb	98
96) 1,2,3-Trichlorobenzene	13.99	180	178034	10.59396 ppb	96

(#) = qualifier out of range (m) = manual integration

Quantitation Report

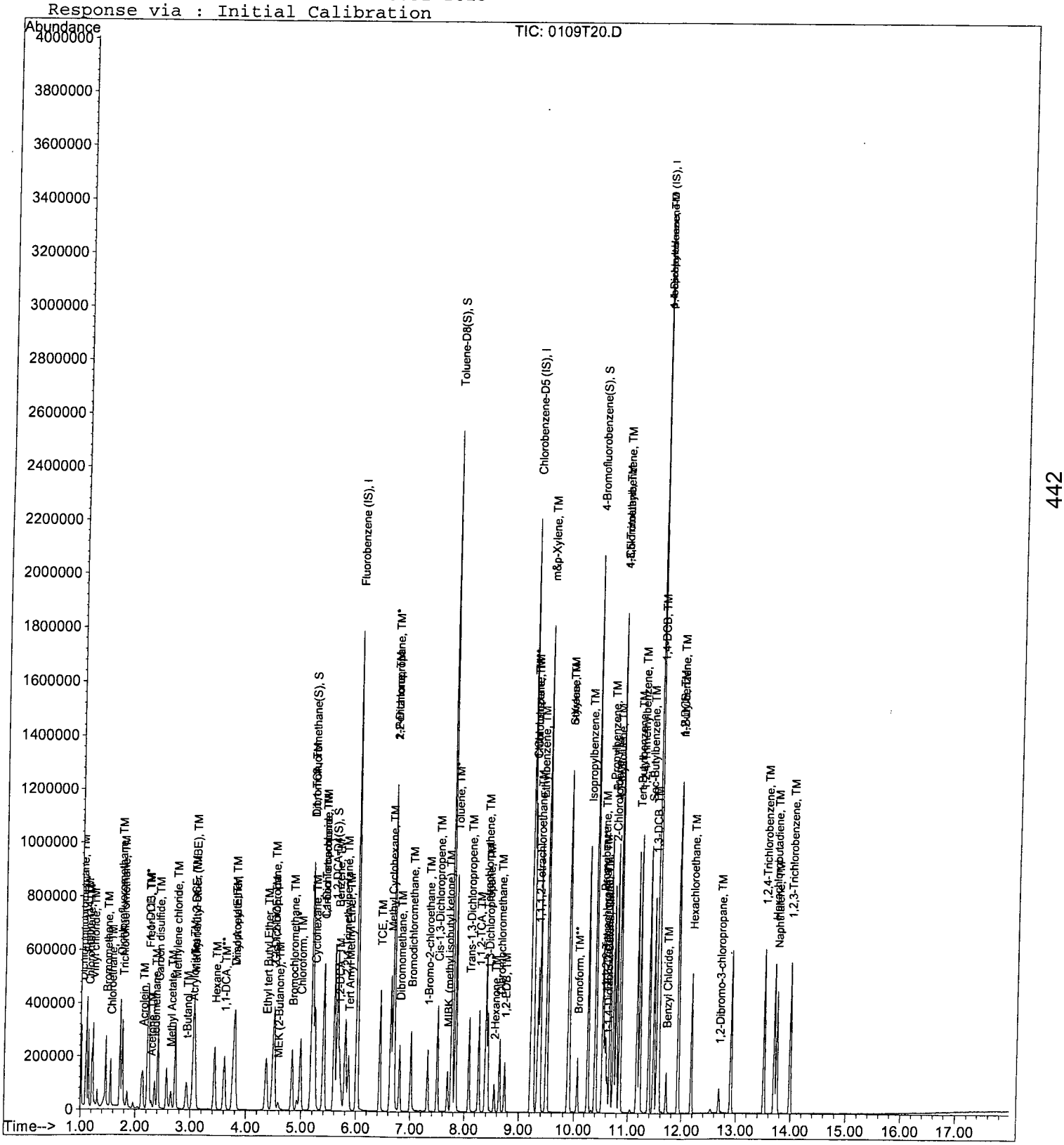
Data File : M:\THOR\DATA\T150109\0109T20.D
Acq On : 9 Jan 15 18:18
Sample : 150109A LCS-1WT (SS)
Misc : 10ml w/IS&S 12/20,12/23/14

Vial: 17
Operator: DG, SV, RS
Inst : Thor
Multiplr: 1.00

Quant Time: Jan 12 11:25 2015

Quant Results File: TALLW.RES

Method : M:\THOR\DATA\T150109\TALLW.M (RTE Integrator)
Title : METHOD 8260B
Last Update : Mon Jan 12 11:16:31 2015
Response via : Initial Calibration



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VOLATILE ORGANIC ANALYSIS BY
EPA METHOD 8260B

Form 7

Continuing Calibration

Lab Name: APPL, Inc.
Case No:
Matrix:

SDG No:
Date Analyzed: 01/22/15
Instrument: Thor
Initial Cal. Date: 01/09/15
Data File: 0122T09.D

		Compound	MEAN	CCRF	%D	%Drift	
1	I	Fluorobenzene (IS)	ISTD			I	
2	TM	Dichlorodifluoromethane	0.3791	0.3870	2.1	TM	
3	TM	Freon 114	0.2366	0.2881	22	TM	nt
4	TM**	Chloromethane	0.4614	0.4524	2.0	TM**	
5	TM*	Vinyl chloride	0.4851	0.5007	3.2	TM*	
6	TM	Bromomethane	0.3108	0.3347	7.7	TM	
7	TMQ	Chloroethane	0.3453	0.3101	10	TMQ	6.0
8	TM	Dichlorofluoromethane	0.8433	0.8241	2.3	TM	
9	TM	Trichlorofluoromethane	0.5974	0.6082	1.8	TM	
10	TM	Acrolein	0.0216	0.0457	112	TM	nt
11	TML	Acetone	0.1362	0.0919	33	TML	8.9
12	TM	Freon-113	0.3333	0.3580	7.4	TM	
13	TM*	1,1-DCE	0.5198	0.5629	8.3	TM*	
14	TM	t-Butanol	0.0321	0.0246	23	TM	nt
15	TM	Methyl Acetate	0.2655	0.2140	19	TM	
16	TML	Iodomethane	0.3102	0.4164	34	TML	0.56
17	TM	Acrylonitrile	0.0910	0.0801	12	TM	
18	TM	Methylene chloride	0.4385	0.4193	4.4	TM	
19	TM	Carbon disulfide	1.077	1.093	1.4	TM	
20	TM	Methyl t-butyl ether (MtBE)	0.8667	0.8409	3.0	TM	
21	TM	Trans-1,2-DCE	0.3801	0.4007	5.4	TM	
22	TM	Hexane	0.3955	0.4447	12	TM	
23	TM	Diisopropyl Ether	1.292	1.294	0.17	TM	
24	TM**	1,1-DCA	0.6935	0.7070	1.9	TM**	
25	TM	Vinyl Acetate	0.3378	0.3578	5.9	TM	
26	TM	Ethyl tert Butyl Ether	0.7064	0.7041	0.33	TM	
27	TML	MEK (2-Butanone)	0.1512	0.1302	14	TML	1.7
28	TM	Cis-1,2-DCE	0.4382	0.4647	6.1	TM	
29	TM	2,2-Dichloropropane	0.5274	0.5460	3.5	TM	
30	TM*	Chloroform	0.6815	0.7022	3.0	TM*	
31	TM	Bromochloromethane	0.2019	0.2180	8.0	TM	
32	S	Dibromofluoromethane(S)	0.4278	0.4201	1.8	S	
33	TM	1,1,1-TCA	0.5598	0.5792	3.5	TM	
34	TM	Cyclohexane	0.3267	0.3282	0.46	TM	
35	TM	1,1-Dichloropropene	0.5032	0.5358	6.5	TM	
36	TM	2,2,4-Trimethylpentane	1.023	1.146	12	TM	
37	S	1,2-DCA-D4(S)	0.4508	0.4224	6.3	S	
38	TM	Carbon Tetrachloride	0.4906	0.5269	7.4	TM	
39	TM	Tert Amyl Methyl Ether	0.5883	0.5416	7.9	TM	
40	TM	1,2-DCA	0.5115	0.4830	5.6	TM	
		Average			10.8		

VOLATILE ORGANIC ANALYSIS BY
EPA METHOD 8260B

Form 7

Continuing Calibration

Lab Name: APPL, Inc.
Case No:
Matrix: 0

SDG No:
Date Analyzed: 01/22/15
Instrument: Thor
Cal. Date: 01/09/15
Data File: 0122T09.D

		Compound	MEAN	CCRF	%D		%Drift
41	TM	Benzene	1.547	1.617	4.5	TM	
42	TM	TCE	0.3963	0.4229	6.7	TM	
43	TM	2-Pentanone	0.2423	0.2024	16	TM	
44	TM*	1,2-Dichloropropane	0.4344	0.4335	0.21	TM*	
45	TM	Bromodichloromethane	0.5028	0.5099	1.4	TM	
46	TM	Methyl Cyclohexane	0.5649	0.6147	8.8	TM	
47	TM	Dibromomethane	0.2423	0.2397	1.1	TM	
48	TM	MIBK (methyl isobutyl ketone)	0.3122	0.3068	1.7	TM	
49	TM	1-Bromo-2-chloroethane	0.5174	0.5049	2.4	TM	
50	TM	2-Chloroethyl vinyl ether	0.0000	0.0082	0.00	TM	
51	TM	Cis-1,3-Dichloropropene	0.6150	0.6347	3.2	TM	
52	TM*	Toluene	1.711	1.775	3.8	TM*	
53	TM	Trans-1,3-Dichloropropene	0.5101	0.5114	0.25	TM	
54	TM	1,1,2-TCA	0.2905	0.2777	4.4	TM	
55	TM	2-Hexanone	0.1935	0.1980	2.3	TM	
56	I	Chlorobenzene-D5 (IS)	ISTD			I	
57	S	Toluene-D8(S)	1.670	1.657	0.75	S	
58	TM	1,2-EDB	0.3648	0.3696	1.3	TM	
59	TM	Tetrachloroethene	0.5383	0.5655	5.1	TM	
60	TM	1-Chlorohexane	0.5371	0.5692	6.0	TM	
61	TM	1,1,1,2-Tetrachloroethane	0.4532	0.4789	5.7	TM	
62	TM	m&p-Xylene	0.7766	0.8377	7.9	TM	
63	TM	o-Xylene	0.7598	0.8226	8.3	TM	
64	TM	Styrene	1.210	1.324	9.5	TM	
65	S	4-Bromofluorobenzene(S)	0.6622	0.6774	2.3	S	
66	TM	1,3-Dichloropropane	0.6352	0.6270	1.3	TM	
67	TM	Dibromochloromethane	0.4276	0.4296	0.47	TM	
68	TM**	Chlorobenzene	1.295	1.329	2.6	TM**	
69	TM*	Ethylbenzene	2.111	2.262	7.1	TM*	
70	TM**	Bromoform	0.2883	0.2819	2.2	TM**	
71	I	1,4-Dichlorobenzene-D (IS)	ISTD			I	
72	TM	Isopropylbenzene	3.492	3.901	12	TM	
73	TM**	1,1,2,2-Tetrachloroethane	0.8314	0.7491	9.9	TM**	
74	TM	1,2,3-Trichloropropane	0.2406	0.2268	5.8	TM	
75	TM	t-1,4-Dichloro-2-Butene	0.1581	0.1682	6.4	TM	
76	TM	Bromobenzene	1.045	1.109	6.1	TM	
77	TM	n-Propylbenzene	4.122	4.650	13	TM	
78	TM	4-Ethyltoluene	3.415	3.834	12	TM	
79	TM	2-Chlorotoluene	2.566	2.810	9.5	TM	
80	TM	1,3,5-Trimethylbenzene	2.971	3.391	14	TM	
		Average			5.4		

VOLATILE ORGANIC ANALYSIS BY
EPA METHOD 8260B

Form 7

Continuing Calibration

Lab Name: APPL, Inc.
Case No:
Matrix: 0

SDG No:
Date Analyzed: 01/22/15
Instrument: Thor
Cal. Date: 01/09/15
Data File: 0122T09.D

		Compound	MEAN	CCRF	%D		%Drift
81	TM	4-Chlorotoluene	2.988	3.282	9.8	TM	
82	TM	Tert-Butylbenzene	2.546	2.879	13	TM	
83	TM	1,2,4-Trimethylbenzene	2.985	3.415	14	TM	
84	TM	Sec-Butylbenzene	3.575	4.113	15	TM	
85	TM	p-Isopropyltoluene	2.941	3.394	15	TM	
86	TM	Benzyl Chloride	0.7315	0.7520	2.8	TM	
87	TM	1,3-DCB	1.868	1.992	6.6	TM	
88	TM	1,4-DCB	1.938	2.042	5.4	TM	
89	TM	n-Butylbenzene	2.723	3.112	14	TM	
90	TM	1,2-DCB	1.798	1.853	3.0	TM	
91	TM	Hexachloroethane	0.5506	0.6053	9.9	TM	
92	TM	1,2-Dibromo-3-chloropropane	0.1499	0.1368	8.7	TM	
93	TM	1,2,4-Trichlorobenzene	1.117	1.254	12	TM	
94	TM	Hexachlorobutadiene	0.6403	0.6974	8.9	TM	
95	TML	Naphthalene	1.922	2.002	4.1	TML	5.7
96	TM	1,2,3-Trichlorobenzene	1.018	1.111	9.1	TM	
97							
98							
99							
100							
101							
102							
103							
104							
105							
106							
107							
108							
109							
110							
111							
112							
113							
114							
115							
116							
117							
118							
119							
120							
		Average			9.5		

Quantitation Report (Not Reviewed)

Data File : M:\THOR\DATA\T150109\0122T09.D
Vial: 8
Acq On : 22 Jan 15 12:01
Operator: DG, SV, RS
Sample : 10ug/L Vol Std 01-22-15
Inst : Thor
Misc : 10ml w/IS&S 12/20,12/23/14
Multiplr: 1.00

Quant Time: Jan 23 9:42 2015
Quant Results File: TALLW.RES

Quant Method : M:\THOR\DATA\T150109\TALLW.M (RTE Integrator)
Title : METHOD 8260B
Last Update : Mon Jan 12 11:16:31 2015
Response via : Initial Calibration
DataAcq Meth : 8260_BETA

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene (IS)	6.02	96	929216	25.00000 ppb	0.00
56) Chlorobenzene-D5 (IS)	9.22	117	813632	25.00000 ppb	0.00
71) 1,4-Dichlorobenzene-D (IS)	11.54	152	437824	25.00000 ppb	0.00
System Monitoring Compounds					
32) Dibromofluoromethane(S)	5.19	111	485394	30.52492 ppb	0.00
Spiked Amount 31.085			Recovery	= 98.199%	
37) 1,2-DCA-D4(S)	5.59	65	462089	27.57649 ppb	0.00
Spiked Amount 29.432			Recovery	= 93.693%	
57) Toluene-D8(S)	7.76	98	1713597	31.52803 ppb	0.00
Spiked Amount 31.767			Recovery	= 99.246%	
65) 4-Bromofluorobenzene(S)	10.40	95	649938	30.15785 ppb	0.00
Spiked Amount 29.480			Recovery	= 102.302%	
Target Compounds					Qvalue
2) Dichlorodifluoromethane	1.02	85	143850	10.20785 ppb	99
3) Freon 114	1.11	135	107073	12.17360 ppb	90
4) Chloromethane	1.14	50	168138	9.80476 ppb	98
5) Vinyl chloride	1.22	62	186086	10.32144 ppb	100
6) Bromomethane	1.47	94	124407	10.76775 ppb	100
7) Chloroethane	1.55	64	115253	9.39857 ppb	97
8) Dichlorofluoromethane	1.72	67	306291	9.77229 ppb	98
9) Trichlorofluoromethane	1.76	101	226043	10.18013 ppb	98
10) Acrolein	2.13	56	212309	264.58367 ppb	97
11) Acetone	2.29	43	34153	9.10699 ppb	99
12) Freon-113	2.24	101	133071	10.74078 ppb	100
13) 1,1-DCE	2.22	61	209223	10.82934 ppb	99
14) t-Butanol	2.92	59	114372	95.92162 ppb	99
15) Methyl Acetate	2.64	43	79553	8.06003 ppb	90
16) Iodomethane	2.35	142	154785	10.05589 ppb	96
17) Acrylonitrile	3.03	52	29772	8.80189 ppb	88
18) Methylene chloride	2.72	84	155866	9.56399 ppb	97
19) Carbon disulfide	2.41	76	406161	10.14220 ppb	99
20) Methyl t-butyl ether (MtBE	3.07	73	312551	9.70222 ppb	98
21) Trans-1,2-DCE	3.05	96	148929	10.54084 ppb	97
22) Hexane	3.43	57	165289	11.24262 ppb	99
23) Diisopropyl Ether	3.79	45	480983	10.01697 ppb	99
24) 1,1-DCA	3.61	63	262793	10.19491 ppb	98
25) Vinyl Acetate	3.79	87	133001	10.59361 ppb	94
26) Ethyl tert Butyl Ether	4.36	59	261686	9.96661 ppb	99
27) MEK (2-Butanone)	4.58	43	48392	9.83099 ppb	98
28) Cis-1,2-DCE	4.50	96	172738	10.60574 ppb	94
29) 2,2-Dichloropropane	4.48	77	202931	10.35176 ppb	89
30) Chloroform	4.98	83	260993	10.30302 ppb	100
31) Bromochloromethane	4.84	128	81035	10.80086 ppb	98
33) 1,1,1-TCA	5.18	97	215288	10.34711 ppb	97
34) Cyclohexane	5.24	41	122002	10.04580 ppb	94
35) 1,1-Dichloropropene	5.40	75	199160	10.64934 ppb	94
36) 2,2,4-Trimethylpentane	5.80	57	425770	11.20079 ppb	97
38) Carbon Tetrachloride	5.39	117	195836	10.74022 ppb	99
39) Tert Amyl Methyl Ether	5.86	73	201297	9.20532 ppb	98
40) 1,2-DCA	5.69	62	179512	9.44226 ppb	95
41) Benzene	5.65	78	600985	10.45071 ppb	99
42) TCE	6.44	95	157184	10.67002 ppb	98

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : M:\THOR\DATA\T150109\0122T09.D
Acq On : 22 Jan 15 12:01
Sample : 10ug/L Vol Std 01-22-15
Misc : 10ml w/IS&S 12/20,12/23/14

Vial: 8
Operator: DG, SV, RS
Inst : Thor
Multiplr: 1.00

Quant Time: Jan 23 9:42 2015 Quant Results File: TALLW.RES

Quant Method : M:\THOR\DATA\T150109\TALLW.M (RTE Integrator)
Title : METHOD 8260B
Last Update : Mon Jan 12 11:16:31 2015
Response via : Initial Calibration
DataAcq Meth : 8260_BETA

Compound	R.T.	QIon	Response	Conc Unit	Qvalue
43) 2-Pentanone	6.69	43	940209	104.41032 ppb	97
44) 1,2-Dichloropropane	6.68	63	161109	9.97917 ppb	99
45) Bromodichloromethane	7.01	83	189520	10.14009 ppb	97
46) Methyl Cyclohexane	6.64	83	228488	10.88163 ppb	96
47) Dibromomethane	6.81	93	89087	9.89348 ppb	98
48) MIBK (methyl isobutyl ket	7.68	43	114043	9.82908 ppb	92
49) 1-Bromo-2-chloroethane	7.31	63	187654	9.75847 ppb	99
51) Cis-1,3-Dichloropropene	7.50	75	235897	10.31905 ppb	98
52) Toluene	7.83	91	659734	10.37592 ppb	99
53) Trans-1,3-Dichloropropene	8.09	75	190096	10.02540 ppb	100
54) 1,1,2-TCA	8.26	83	103219	9.55806 ppb	99
55) 2-Hexanone	8.55	43	73577	10.22966 ppb	99
58) 1,2-EDB	8.74	107	120298	10.13218 ppb	97
59) Tetrachloroethene	8.39	166	184055	10.50596 ppb	99
60) 1-Chlorohexane	9.26	91	185257	10.59796 ppb	99
61) 1,1,1,2-Tetrachloroethane	9.34	131	155849	10.56562 ppb	99
62) m&p-Xylene	9.50	106	545289	21.57333 ppb	97
63) o-Xylene	9.89	106	267705	10.82558 ppb	100
64) Styrene	9.90	104	431038	10.94770 ppb	99
66) 1,3-Dichloropropane	8.42	76	204075	9.87158 ppb	99
67) Dibromochloromethane	8.65	129	139826	10.04743 ppb	96
68) Chlorobenzene	9.25	112	432558	10.26105 ppb	99
69) Ethylbenzene	9.38	91	736058	10.71436 ppb	99
70) Bromoform	10.06	173	91733	9.77699 ppb	98
72) Isopropylbenzene	10.26	105	683177	11.17113 ppb	100
73) 1,1,2,2-Tetrachloroethane	10.56	83	131197	9.01011 ppb	98
74) 1,2,3-Trichloropropane	10.59	110	39711	9.42281 ppb	99
75) t-1,4-Dichloro-2-Butene	10.62	53	29454	10.63781 ppb	93
76) Bromobenzene	10.53	156	194281	10.61411 ppb	100
77) n-Propylbenzene	10.67	91	814408	11.28119 ppb	99
78) 4-Ethyltoluene	10.79	105	671448	11.22739 ppb	100
79) 2-Chlorotoluene	10.74	91	492044	10.94917 ppb	98
80) 1,3,5-Trimethylbenzene	10.85	105	593861	11.41199 ppb	98
81) 4-Chlorotoluene	10.85	91	574782	10.98257 ppb	99
82) Tert-Butylbenzene	11.17	119	504179	11.30895 ppb	98
83) 1,2,4-Trimethylbenzene	11.21	105	598022	11.43829 ppb	99
84) Sec-Butylbenzene	11.39	105	720321	11.50382 ppb	100
85) p-Isopropyltoluene	11.54	119	594442	11.54132 ppb	99
86) Benzyl Chloride	11.70	91	131697	10.27958 ppb	99
87) 1,3-DCB	11.47	146	348796	10.66032 ppb	97
88) 1,4-DCB	11.56	146	357599	10.53689 ppb	98
89) n-Butylbenzene	11.94	91	544926	11.42615 ppb	99
90) 1,2-DCB	11.93	146	324531	10.30473 ppb	96
91) Hexachloroethane	12.18	117	105999	10.99197 ppb	98
92) 1,2-Dibromo-3-chloropropan	12.69	157	23962	9.12891 ppb	99
93) 1,2,4-Trichlorobenzene	13.52	180	219568	11.22214 ppb	96
94) Hexachlorobutadiene	13.70	225	122143	10.89219 ppb	98
95) Naphthalene	13.75	128	350575	9.43130 ppb	99
96) 1,2,3-Trichlorobenzene	13.99	180	194589	10.91388 ppb	97

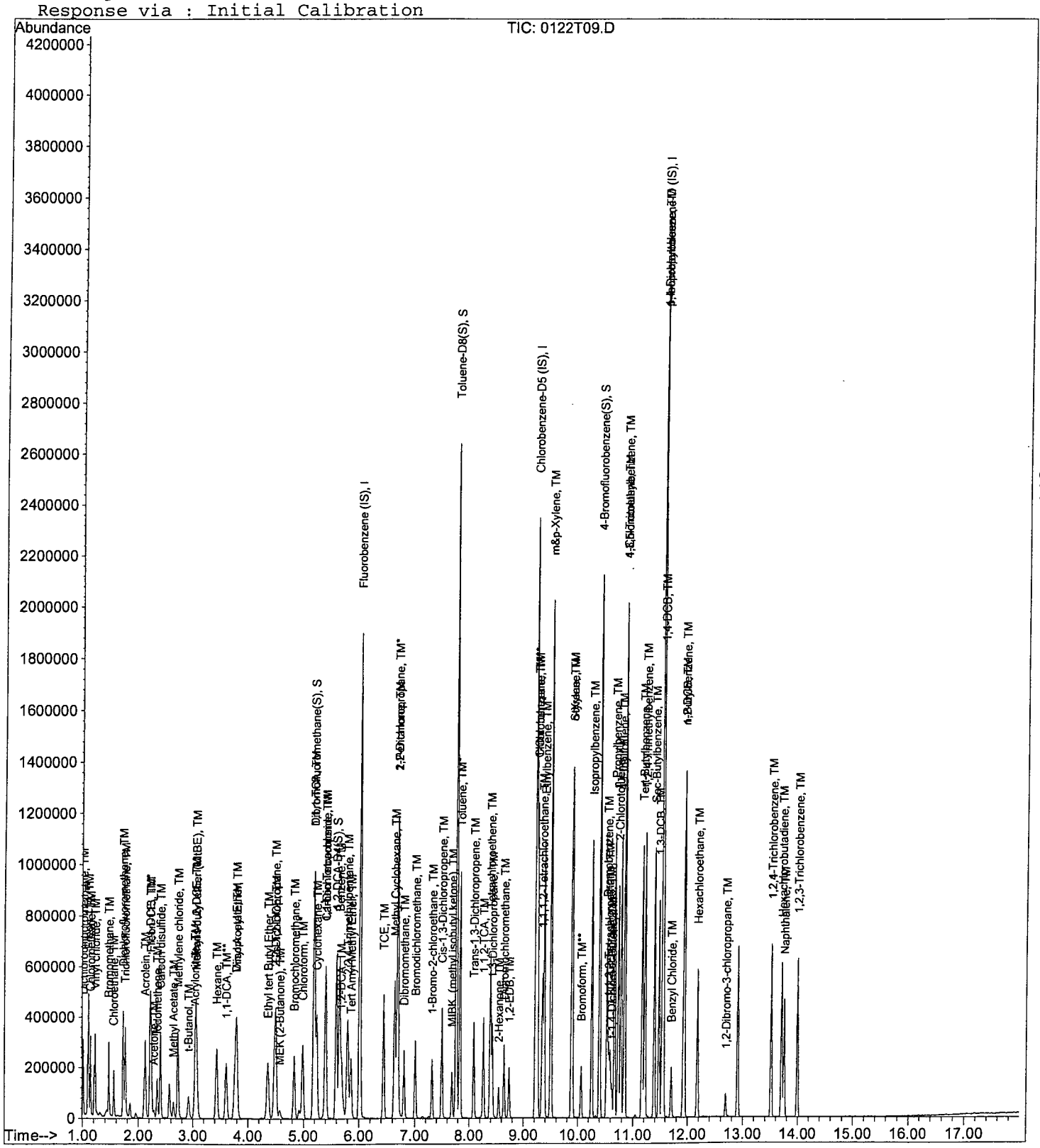
(#) = qualifier out of range (m) = manual integration

Quantitation Report

Data File : M:\THOR\DATA\T150109\0122T09.D Vial: 8
Acq On : 22 Jan 15 12:01 Operator: DG, SV, RS
Sample : 10ug/L Vol Std 01-22-15 Inst : Thor
Misc : 10ml w/IS&S 12/20,12/23/14 Multiplr: 1.00

Quant Time: Jan 23 9:42 2015 Quant Results File: TALLW.RES

Method : M:\THOR\DATA\T150109\TALLW.M (RTE Integrator)
Title : METHOD 8260B
Last Update : Mon Jan 12 11:16:31 2015
Response via : Initial Calibration



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EPA METHOD 8260B
Volatile Organic Compounds
Raw Data

APPL, INC.

Method Blank
EPA 8260B WATER

APPL Inc.
908 North Temperance Avenu
Clovis, CA 93611

Blank Name/QCG: **150116W-09553 - 193634**
Batch ID: #86BKB-150116AL

Sample Type	Analyte	Result	LOQ	LOD	DL	Units	Extraction Date	Analysis Date
BLANK	1,1,1-TRICHLOROETHANE	0.30 U	1.0	0.30	0.14	ug/L	01/16/15	01/16/15
BLANK	1,1,2,2-TETRACHLOROETHANE	0.30 U	1.0	0.30	0.10	ug/L	01/16/15	01/16/15
BLANK	1,1,2-TRICHLOROETHANE	0.50 U	1.0	0.50	0.20	ug/L	01/16/15	01/16/15
BLANK	1,1-DICHLOROETHANE	0.30 U	1.0	0.30	0.19	ug/L	01/16/15	01/16/15
BLANK	1,1-DICHLOROETHENE	0.50 U	1.0	0.50	0.30	ug/L	01/16/15	01/16/15
BLANK	1,2,3-TRICHLOROPROPANE	1.00 U	2.0	1.00	0.39	ug/L	01/16/15	01/16/15
BLANK	1,2-DIBROMOETHANE	0.50 U	1.0	0.50	0.20	ug/L	01/16/15	01/16/15
BLANK	1,2-DICHLOROETHANE	0.30 U	1.0	0.30	0.14	ug/L	01/16/15	01/16/15
BLANK	1,2-DICHLOROPROPANE	0.30 U	1.0	0.30	0.17	ug/L	01/16/15	01/16/15
BLANK	2-BUTANONE	2.00 U	10.0	2.00	0.60	ug/L	01/16/15	01/16/15
BLANK	4-METHYL-2-PENTANONE	5.00 U	10.0	5.00	1.90	ug/L	01/16/15	01/16/15
BLANK	ACETONE	2.00 U	10.0	2.00	0.95	ug/L	01/16/15	01/16/15
BLANK	BENZENE	0.30 U	1.0	0.30	0.16	ug/L	01/16/15	01/16/15
BLANK	BROMODICHLOROMETHANE	0.30 U	1.0	0.30	0.14	ug/L	01/16/15	01/16/15
BLANK	BROMOFORM	0.30 U	1.0	0.30	0.14	ug/L	01/16/15	01/16/15
BLANK	BROMOMETHANE	0.50 U	2.0	0.50	0.24	ug/L	01/16/15	01/16/15
BLANK	CARBON TETRACHLORIDE	0.30 U	1.0	0.30	0.10	ug/L	01/16/15	01/16/15
BLANK	CHLOROBENZENE	0.50 U	1.0	0.50	0.21	ug/L	01/16/15	01/16/15
BLANK	CHLOROETHANE	0.50 U	1.0	0.50	0.21	ug/L	01/16/15	01/16/15
BLANK	CHLOROFORM	0.30 U	1.0	0.30	0.07	ug/L	01/16/15	01/16/15
BLANK	CHLOROMETHANE	0.50 U	1.0	0.50	0.42	ug/L	01/16/15	01/16/15
BLANK	CIS-1,2-DICHLOROETHENE	0.30 U	1.0	0.30	0.16	ug/L	01/16/15	01/16/15
BLANK	CIS-1,3-DICHLOROPROPENE	0.30 U	1.0	0.30	0.15	ug/L	01/16/15	01/16/15
BLANK	DIBROMOCHLOROMETHANE	0.30 U	1.0	0.30	0.19	ug/L	01/16/15	01/16/15
BLANK	ETHYLBENZENE	0.50 U	1.0	0.50	0.23	ug/L	01/16/15	01/16/15
BLANK	METHYLENE CHLORIDE	1.00 U	5.0	1.00	0.35	ug/L	01/16/15	01/16/15
BLANK	STYRENE	0.50 U	1.0	0.50	0.25	ug/L	01/16/15	01/16/15
BLANK	TETRACHLOROETHENE	0.30 U	1.0	0.30	0.24	ug/L	01/16/15	01/16/15
BLANK	TOLUENE	0.30 U	1.0	0.30	0.17	ug/L	01/16/15	01/16/15
BLANK	TRANS-1,2-DICHLOROETHENE	0.30 U	1.0	0.30	0.19	ug/L	01/16/15	01/16/15
BLANK	TRANS-1,3-DICHLOROPROPEN	0.30 U	1.0	0.30	0.18	ug/L	01/16/15	01/16/15
BLANK	TRICHLOROETHENE	0.30 U	1.0	0.30	0.16	ug/L	01/16/15	01/16/15
BLANK	VINYL CHLORIDE	0.30 U	1.0	0.30	0.23	ug/L	01/16/15	01/16/15
BLANK	XYLENES (TOTAL)	0.30 U	2.0	0.30	0.19	ug/L	01/16/15	01/16/15

Quant Method: LALLW2.M
Run #: 0116L12
Instrument: Loki
Sequence: 150113
Initials: SV

GC SC-Blank-REG MDLs
Printed: 01/26/15 1:46:50 PM

Method Blank
EPA 8260B WATER

APPL Inc.
908 North Temperance Avenu
Clovis, CA 93611

Blank Name/QCG: **150116W-09553 - 193634**
Batch ID: #86BKB-150116AL

Sample Type	Analyte	Result	LOQ	LOD	DL	Units	Extraction Date	Analysis Date
BLANK	SURROGATE: 1,2-DICHLOROET	98.1	70-120			%	01/16/15	01/16/15
BLANK	SURROGATE: 4-BROMOFLUOR	98.9	75-120			%	01/16/15	01/16/15
BLANK	SURROGATE: DIBROMOFLUOR	99.6	85-115			%	01/16/15	01/16/15
BLANK	SURROGATE: TOLUENE-D8 (S)	100	85-120			%	01/16/15	01/16/15

Quant Method: LALLW2.M
Run #: 0116L12
Instrument: Loki
Sequence: 150113
Initials: SV

GC SC-Blank-REG MDLs
Printed: 01/26/15 1:46:51 PM

Quantitation Report (QT Reviewed)

Data File : M:\LOKI\DATA\150113\0116L12.D
Acq On : 16 Jan 15 13:43
Sample : 150116A BLK-1WL
Misc : 10mL w/5uL IS&S:01/14/15,10-06-14

Vial: 11
Operator: DG,SV,RS
Inst : Loki
Multiplr: 1.00

Quant Time: Jan 19 8:53 2015 Quant Results File: LALLW2.RES

Quant Method : M:\LOKI\DATA\150113\LALLW2.M (RTE Integrator)
Title : METHOD 8260B
Last Update : Mon Jan 19 08:51:54 2015
Response via : Initial Calibration
DataAcq Meth : 8260_BETA

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene (IS)	5.85	96	1206272	25.00000 ppb	0.00
57) Chlorobenzene-D5 (IS)	9.09	117	1112576	25.00000 ppb	0.00
72) 1,4-Dichlorobenzene-D (IS)	11.41	152	620864	25.00000 ppb	0.00
System Monitoring Compounds					
33) Dibromofluoromethane(S)	5.01	111	598377	23.29067 ppb	0.00
Spiked Amount 23.395			Recovery	= 99.555%	
38) 1,2-DCA-D4(S)	5.42	65	603864	22.98082 ppb	0.00
Spiked Amount 23.427			Recovery	= 98.098%	
58) Toluene-D8(S)	7.62	98	2200431	24.84436 ppb	0.00
Spiked Amount 24.736			Recovery	= 100.437%	
66) 4-Bromofluorobenzene(S)	10.27	95	824009	24.37967 ppb	0.00
Spiked Amount 24.661			Recovery	= 98.863%	

Target Compounds Qvalue

(#) = qualifier out of range (m) = manual integration

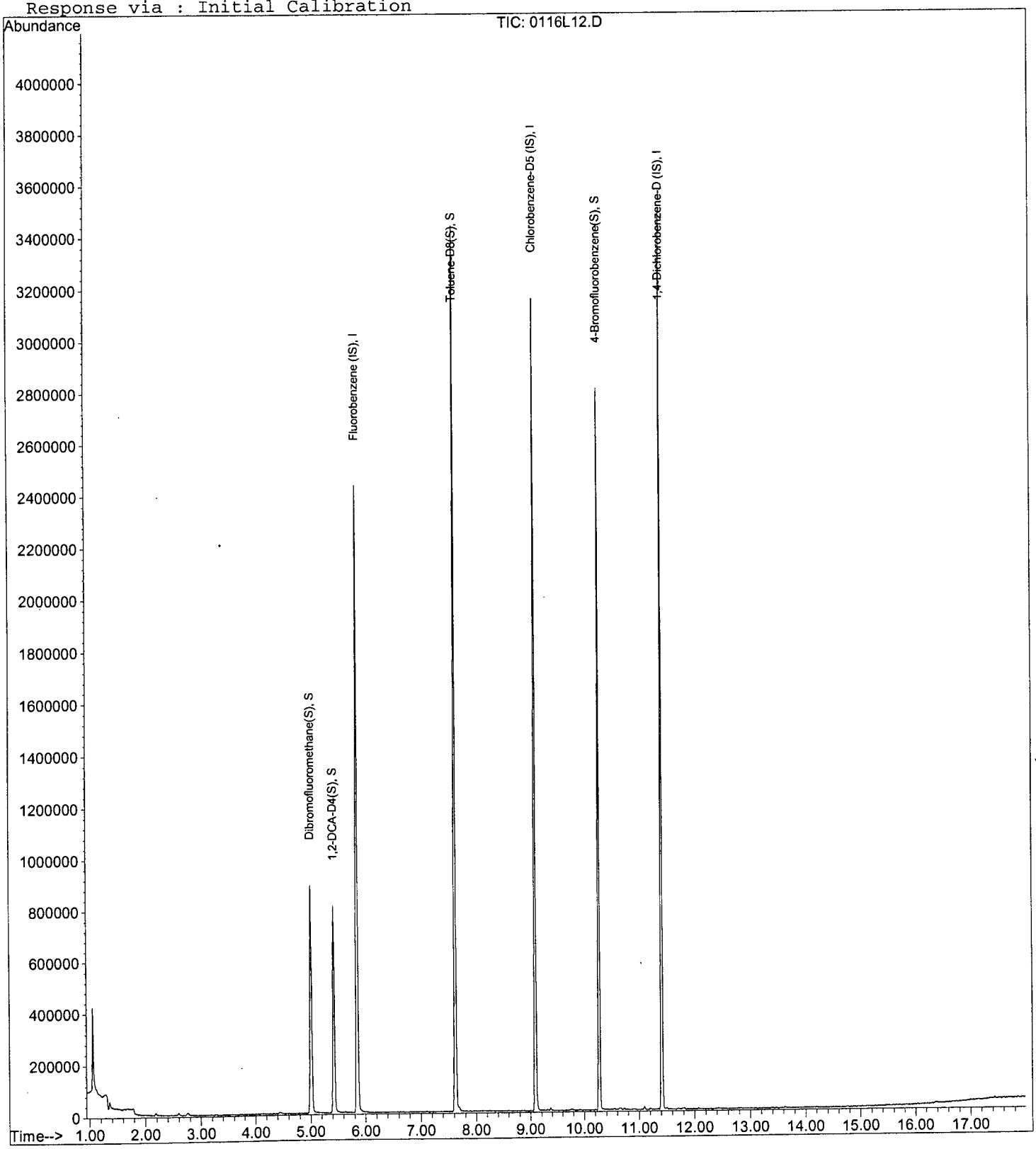
Quantitation Report

Data File : M:\LOKI\DATA\150113\0116L12.D
Acq On : 16 Jan 15 13:43
Sample : 150116A BLK-1WL
Misc : 10mL w/5uL IS&S:01/14/15,10-06-14

Vial: 11
Operator: DG,SV,RS
Inst : Loki
Multiplr: 1.00

Quant Time: Jan 19 8:53 2015 Quant Results File: LALLW2.RES

Method : M:\LOKI\DATA\150113\LALLW2.M (RTE Integrator)
Title : METHOD 8260B
Last Update : Mon Jan 19 08:34:51 2015
Response via : Initial Calibration



Method Blank
EPA 8260B SOIL

APPL Inc.
908 North Temperance Avenu
Clovis, CA 93611

Blank Name/QCG: **150121S-09545 - 193770**
Batch ID: #86BKB-150121AL

Sample Type	Analyte	Result	LOQ	LOD	DL	Units	Extraction Date	Analysis Date
BLANK	1,1,1-TRICHLOROETHANE	0.00200 U	0.0050	0.00200	0.00040	mg/Kg	01/21/15	01/21/15
BLANK	1,1,2,2-TETRACHLOROETHANE	0.00200 U	0.0050	0.00200	0.00120	mg/Kg	01/21/15	01/21/15
BLANK	1,1,2-TRICHLOROETHANE	0.00200 U	0.0050	0.00200	0.00027	mg/Kg	01/21/15	01/21/15
BLANK	1,1-DICHLOROETHANE	0.00200 U	0.0050	0.00200	0.00034	mg/Kg	01/21/15	01/21/15
BLANK	1,1-DICHLOROETHENE	0.00200 U	0.0050	0.00200	0.00076	mg/Kg	01/21/15	01/21/15
BLANK	1,2,3-TRICHLOROPROPANE	0.00500 U	0.0200	0.00500	0.00124	mg/Kg	01/21/15	01/21/15
BLANK	1,2-DIBROMOETHANE	0.00200 U	0.0050	0.00200	0.00141	mg/Kg	01/21/15	01/21/15
BLANK	1,2-DICHLOROETHANE	0.00200 U	0.0050	0.00200	0.00077	mg/Kg	01/21/15	01/21/15
BLANK	1,2-DICHLOROPROPANE	0.00200 U	0.0050	0.00200	0.00072	mg/Kg	01/21/15	01/21/15
BLANK	2-BUTANONE	0.00300 U	0.0200	0.00300	0.00279	mg/Kg	01/21/15	01/21/15
BLANK	4-METHYL-2-PENTANONE	0.00200 U	0.0200	0.00200	0.00093	mg/Kg	01/21/15	01/21/15
BLANK	ACETONE	0.00500 U	0.0500	0.00500	0.00280	mg/Kg	01/21/15	01/21/15
BLANK	BENZENE	0.00200 U	0.0050	0.00200	0.00063	mg/Kg	01/21/15	01/21/15
BLANK	BROMODICHLOROMETHANE	0.00200 U	0.0050	0.00200	0.00069	mg/Kg	01/21/15	01/21/15
BLANK	BROMOFORM	0.00200 U	0.0050	0.00200	0.00080	mg/Kg	01/21/15	01/21/15
BLANK	BROMOMETHANE	0.00200 U	0.0050	0.00200	0.00160	mg/Kg	01/21/15	01/21/15
BLANK	CARBON TETRACHLORIDE	0.00200 U	0.0050	0.00200	0.00080	mg/Kg	01/21/15	01/21/15
BLANK	CHLOROBENZENE	0.00200 U	0.0050	0.00200	0.00049	mg/Kg	01/21/15	01/21/15
BLANK	CHLOROETHANE	0.00200 U	0.0050	0.00200	0.00155	mg/Kg	01/21/15	01/21/15
BLANK	CHLOROFORM	0.00200 U	0.0050	0.00200	0.00143	mg/Kg	01/21/15	01/21/15
BLANK	CHLOROMETHANE	0.00500 U	0.0050	0.00500	0.00182	mg/Kg	01/21/15	01/21/15
BLANK	CIS-1,2-DICHLOROETHYLENE	0.00200 U	0.0050	0.00200	0.00022	mg/Kg	01/21/15	01/21/15
BLANK	CIS-1,3-DICHLOROPROPENE	0.00200 U	0.0050	0.00200	0.00093	mg/Kg	01/21/15	01/21/15
BLANK	DIBROMOCHLOROMETHANE	0.00200 U	0.0050	0.00200	0.00085	mg/Kg	01/21/15	01/21/15
BLANK	ETHYLBENZENE	0.00200 U	0.0050	0.00200	0.00101	mg/Kg	01/21/15	01/21/15
BLANK	METHYLENE CHLORIDE	0.01000 U	0.0200	0.01000	0.00058	mg/Kg	01/21/15	01/21/15
BLANK	STYRENE	0.00200 U	0.0050	0.00200	0.00121	mg/Kg	01/21/15	01/21/15
BLANK	TETRACHLOROETHENE	0.00200 U	0.0050	0.00200	0.00054	mg/Kg	01/21/15	01/21/15
BLANK	TOLUENE	0.00200 U	0.0050	0.00200	0.00130	mg/Kg	01/21/15	01/21/15
BLANK	TRANS-1,2-DICHLOROETHYLEN	0.00200 U	0.0050	0.00200	0.00034	mg/Kg	01/21/15	01/21/15
BLANK	TRANS-1,3-DICHLOROPROPEN	0.00200 U	0.0050	0.00200	0.00078	mg/Kg	01/21/15	01/21/15
BLANK	TRICHLOROETHYLENE	0.00200 U	0.0050	0.00200	0.00094	mg/Kg	01/21/15	01/21/15
BLANK	VINYL CHLORIDE	0.00200 U	0.0050	0.00200	0.00150	mg/Kg	01/21/15	01/21/15
BLANK	XYLENES (TOTAL)	0.00200 U	0.0050	0.00200	0.00043	mg/Kg	01/21/15	01/21/15

Quant Method: LALLS.M
Run #: 0121L10
Instrument: Loki
Sequence: 150119
Initials: SV

GC SC-Blank-REG MDLs
Printed: 01/26/15 1:46:51 PM

Method Blank
EPA 8260B SOIL

APPL Inc.
908 North Temperance Avenu
Clovis, CA 93611

Blank Name/QCG: **150121S-09545 - 193770**
Batch ID: #86BKB-150121AL

Sample Type	Analyte	Result	LOQ	LOD	DL	Units	Extraction Date	Analysis Date
BLANK	SURROGATE: 1,2-DICHLOROET	98.1	54-154			%	01/21/15	01/21/15
BLANK	SURROGATE: 4-BROMOFLUOR	97.8	85-120			%	01/21/15	01/21/15
BLANK	SURROGATE: TOLUENE-D8 (S)	97.4	85-115			%	01/21/15	01/21/15

Quant Method: LALLS.M
Run #: 0121L10
Instrument: Loki
Sequence: 150119
Initials: SV

GC SC-Blank-REG MDLs
Printed: 01/26/15 1:46:51 PM

Quantitation Report (QT Reviewed)

Data File : M:\LOKI\DATA\150119\0121L10.D
Acq On : 21 Jan 15 12:43
Sample : 150121A BLK-1SL
Misc : 5mL w/5uL IS&S:01/14/15,10-06-14

Vial: 9
Operator: DG,SV,RS
Inst : Loki
Multiplr: 1.00

Quant Time: Jan 22 9:17 2015

Quant Results File: LALLS.RES

Quant Method : M:\LOKI\DATA\150119\LALLS.M (RTE Integrator)
Title : METHOD 8260B
Last Update : Tue Jan 20 09:48:55 2015
Response via : Initial Calibration
DataAcq Meth : 8260_BETA

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene (IS)	5.86	96	716160	50.00000 ppb	0.00
55) Chlorobenzene-D5 (IS)	9.09	117	662976	50.00000 ppb	0.00
70) 1,4-Dichlorobenzene-D (IS)	11.41	152	358592	50.00000 ppb	0.00
System Monitoring Compounds					
31) Dibromofluoromethane(S)	5.02	111	341886	53.18570 ppb	0.00
Spiked Amount 52.439			Recovery	= 101.424%	
36) 1,2-DCA-D4(S)	5.43	65	343936	47.16432 ppb	0.00
Spiked Amount 48.066			Recovery	= 98.124%	
56) Toluene-D8(S)	7.62	98	1251246	59.56039 ppb	0.00
Spiked Amount 61.175			Recovery	= 97.360%	
64) 4-Bromofluorobenzene(S)	10.27	95	471925	53.31449 ppb	0.00
Spiked Amount 54.538			Recovery	= 97.756%	

Target Compounds Qvalue

(#) = qualifier out of range (m) = manual integration

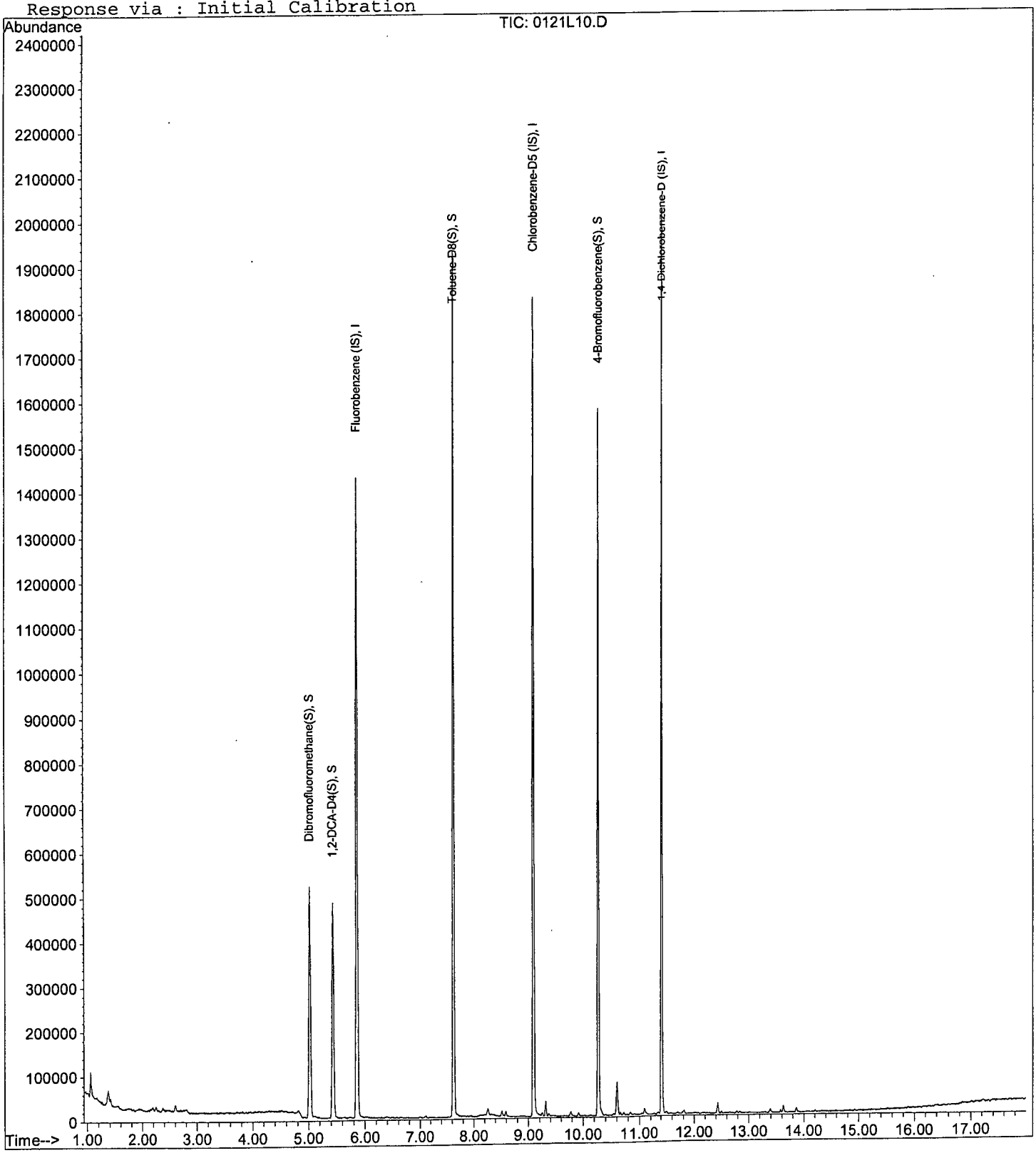
Quantitation Report

Data File : M:\LOKI\DATA\150119\0121L10.D
Acq On : 21 Jan 15 12:43
Sample : 150121A BLK-1SL
Misc : 5mL w/5uL IS&S:01/14/15,10-06-14

Vial: 9
Operator: DG,SV,RS
Inst : Loki
Multiplr: 1.00

Quant Time: Jan 22 9:17 2015 Quant Results File: LALLS.RES

Method : M:\LOKI\DATA\150119\LALLS.M (RTE Integrator)
Title : METHOD 8260B
Last Update : Tue Jan 20 09:48:55 2015
Response via : Initial Calibration



Method Blank
EPA 8260B SOIL

APPL Inc.
908 North Temperance Avenu
Clovis, CA 93611

Blank Name/QCG: **150122S-09552 - 193773**
Batch ID: #86BKB-150122AL

Sample Type	Analyte	Result	LOQ	LOD	DL	Units	Extraction Date	Analysis Date
BLANK	1,1,1-TRICHLOROETHANE	0.00200 U	0.0050	0.00200	0.00040	mg/Kg	01/22/15	01/22/15
BLANK	1,1,2,2-TETRACHLOROETHANE	0.00200 U	0.0050	0.00200	0.00120	mg/Kg	01/22/15	01/22/15
BLANK	1,1,2-TRICHLOROETHANE	0.00200 U	0.0050	0.00200	0.00027	mg/Kg	01/22/15	01/22/15
BLANK	1,1-DICHLOROETHANE	0.00200 U	0.0050	0.00200	0.00034	mg/Kg	01/22/15	01/22/15
BLANK	1,1-DICHLOROETHENE	0.00200 U	0.0050	0.00200	0.00076	mg/Kg	01/22/15	01/22/15
BLANK	1,2,3-TRICHLOROPROPANE	0.00500 U	0.0200	0.00500	0.00124	mg/Kg	01/22/15	01/22/15
BLANK	1,2-DIBROMOETHANE	0.00200 U	0.0050	0.00200	0.00141	mg/Kg	01/22/15	01/22/15
BLANK	1,2-DICHLOROETHANE	0.00200 U	0.0050	0.00200	0.00077	mg/Kg	01/22/15	01/22/15
BLANK	1,2-DICHLOROPROPANE	0.00200 U	0.0050	0.00200	0.00072	mg/Kg	01/22/15	01/22/15
BLANK	2-BUTANONE	0.00300 U	0.0200	0.00300	0.00279	mg/Kg	01/22/15	01/22/15
BLANK	4-METHYL-2-PENTANONE	0.00200 U	0.0200	0.00200	0.00093	mg/Kg	01/22/15	01/22/15
BLANK	ACETONE	0.00500 U	0.0500	0.00500	0.00280	mg/Kg	01/22/15	01/22/15
BLANK	BENZENE	0.00200 U	0.0050	0.00200	0.00063	mg/Kg	01/22/15	01/22/15
BLANK	BROMODICHLOROMETHANE	0.00200 U	0.0050	0.00200	0.00069	mg/Kg	01/22/15	01/22/15
BLANK	BROMOFORM	0.00200 U	0.0050	0.00200	0.00080	mg/Kg	01/22/15	01/22/15
BLANK	BROMOMETHANE	0.00200 U	0.0050	0.00200	0.00160	mg/Kg	01/22/15	01/22/15
BLANK	CARBON TETRACHLORIDE	0.00200 U	0.0050	0.00200	0.00080	mg/Kg	01/22/15	01/22/15
BLANK	CHLOROBENZENE	0.00200 U	0.0050	0.00200	0.00049	mg/Kg	01/22/15	01/22/15
BLANK	CHLOROETHANE	0.00200 U	0.0050	0.00200	0.00155	mg/Kg	01/22/15	01/22/15
BLANK	CHLOROFORM	0.00200 U	0.0050	0.00200	0.00143	mg/Kg	01/22/15	01/22/15
BLANK	CHLOROMETHANE	0.00500 U	0.0050	0.00500	0.00182	mg/Kg	01/22/15	01/22/15
BLANK	CIS-1,2-DICHLOROETHYLENE	0.00200 U	0.0050	0.00200	0.00022	mg/Kg	01/22/15	01/22/15
BLANK	CIS-1,3-DICHLOROPROPENE	0.00200 U	0.0050	0.00200	0.00093	mg/Kg	01/22/15	01/22/15
BLANK	DIBROMOCHLOROMETHANE	0.00200 U	0.0050	0.00200	0.00085	mg/Kg	01/22/15	01/22/15
BLANK	ETHYLBENZENE	0.00200 U	0.0050	0.00200	0.00101	mg/Kg	01/22/15	01/22/15
BLANK	METHYLENE CHLORIDE	0.01000 U	0.0200	0.01000	0.00058	mg/Kg	01/22/15	01/22/15
BLANK	STYRENE	0.00200 U	0.0050	0.00200	0.00121	mg/Kg	01/22/15	01/22/15
BLANK	TETRACHLOROETHENE	0.00200 U	0.0050	0.00200	0.00054	mg/Kg	01/22/15	01/22/15
BLANK	TOLUENE	0.00200 U	0.0050	0.00200	0.00130	mg/Kg	01/22/15	01/22/15
BLANK	TRANS-1,2-DICHLOROETHYLEN	0.00200 U	0.0050	0.00200	0.00034	mg/Kg	01/22/15	01/22/15
BLANK	TRANS-1,3-DICHLOROPROPEN	0.00200 U	0.0050	0.00200	0.00078	mg/Kg	01/22/15	01/22/15
BLANK	TRICHLOROETHYLENE	0.00200 U	0.0050	0.00200	0.00094	mg/Kg	01/22/15	01/22/15
BLANK	VINYL CHLORIDE	0.00200 U	0.0050	0.00200	0.00150	mg/Kg	01/22/15	01/22/15
BLANK	XYLENES (TOTAL)	0.00200 U	0.0050	0.00200	0.00043	mg/Kg	01/22/15	01/22/15

Quant Method: LALLS.M
Run #: 0122L08
Instrument: Loki
Sequence: 150119
Initials: SV

GC SC-Blank-REG MDLs
Printed: 01/26/15 1:46:51 PM

Method Blank
EPA 8260B SOIL

APPL Inc.
908 North Temperance Avenu
Clovis, CA 93611

Blank Name/QCG: **150122S-09552 - 193773**
Batch ID: #86BKB-150122AL

Sample Type	Analyte	Result	LOQ	LOD	DL	Units	Extraction Date	Analysis Date
BLANK	SURROGATE: 1,2-DICHLOROET	99.6	54-154			%	01/22/15	01/22/15
BLANK	SURROGATE: 4-BROMOFLUOR	96.1	85-120			%	01/22/15	01/22/15
BLANK	SURROGATE: TOLUENE-D8 (S)	97.0	85-115			%	01/22/15	01/22/15

Quant Method: LALLS.M
Run #: 0122L08
Instrument: Loki
Sequence: 150119
Initials: SV

GC SC-Blank-REG MDLs
Printed: 01/26/15 1:46:51 PM

Quantitation Report (QT Reviewed)

Data File : M:\LOKI\DATA\150119\0122L08.D
Acq On : 22 Jan 15 10:32
Sample : 150122A BLK-1SL
Misc : 5mL w/5uL IS&S:01/14/15,10-06-14

Vial: 7
Operator: DG,SV,RS
Inst : Loki
Multiplr: 1.00

Quant Time: Jan 23 11:28 2015 Quant Results File: LALLS.RES

Quant Method : M:\LOKI\DATA\150119\LALLS.M (RTE Integrator)
Title : METHOD 8260B
Last Update : Tue Jan 20 09:48:55 2015
Response via : Initial Calibration
DataAcq Meth : 8260_BETA

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene (IS)	5.86	96	660736	50.00000 ppb	0.00
55) Chlorobenzene-D5 (IS)	9.09	117	624960	50.00000 ppb	0.00
70) 1,4-Dichlorobenzene-D (IS)	11.42	152	331648	50.00000 ppb	0.00
System Monitoring Compounds					
31) Dibromofluoromethane(S)	5.02	111	318297	53.66958 ppb	0.00
Spiked Amount 52.439			Recovery	= 102.347%	
36) 1,2-DCA-D4(S)	5.44	65	321999	47.85998 ppb	0.00
Spiked Amount 48.066			Recovery	= 99.572%	
56) Toluene-D8(S)	7.62	98	1175630	59.36509 ppb	0.00
Spiked Amount 61.175			Recovery	= 97.041%	
64) 4-Bromofluorobenzene(S)	10.27	95	437193	52.39514 ppb	0.00
Spiked Amount 54.538			Recovery	= 96.071%	

Target Compounds Qvalue

(#) = qualifier out of range (m) = manual integration

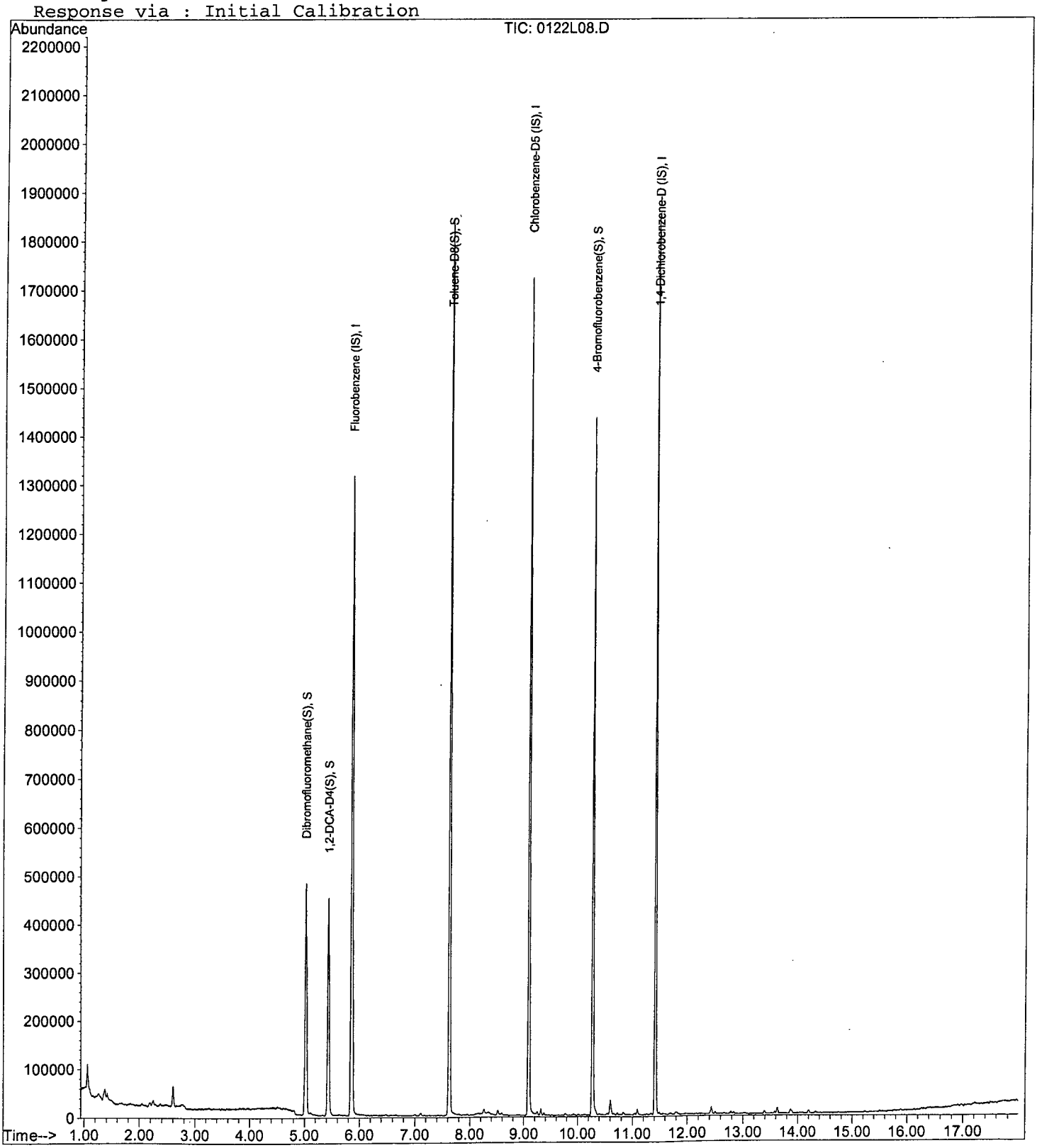
Quantitation Report

Data File : M:\LOKI\DATA\150119\0122L08.D
Acq On : 22 Jan 15 10:32
Sample : 150122A BLK-1SL
Misc : 5mL w/5µL IS&S:01/14/15,10-06-14

Vial: 7
Operator: DG,SV,RS
Inst : Loki
Multiplr: 1.00

Quant Time: Jan 23 11:28 2015 Quant Results File: LALLS.RES

Method : M:\LOKI\DATA\150119\LALLS.M (RTE Integrator)
Title : METHOD 8260B
Last Update : Fri Jan 23 13:43:44 2015
Response via : Initial Calibration



Method Blank
EPA 8260B SOIL MEOH

APPL Inc.
908 North Temperance Avenu
Clovis, CA 93611

Blank Name/QCG: **150122S-09551 - 193821**
Batch ID: #86BKB-150122AT

Sample Type	Analyte	Result	LOQ	LOD	DL	Units	Extraction Date	Analysis Date
BLANK	CIS-1,2-DICHLOROETHYLENE	0.0150 U	0.050	0.0150	0.0080	mg/Kg	01/22/15	01/22/15
BLANK	TRICHLOROETHYLENE	0.0150 U	0.050	0.0150	0.0080	mg/Kg	01/22/15	01/22/15
BLANK	SURROGATE: 1,2-DICHLOROET	95.9	54-154			%	01/22/15	01/22/15
BLANK	SURROGATE: 4-BROMOFLUOR	103	85-120			%	01/22/15	01/22/15
BLANK	SURROGATE: TOLUENE-D8 (S)	103	85-115			%	01/22/15	01/22/15

Quant Method: TALLW.M
Run #: 0122T15
Instrument: Thor
Sequence: T150109
Initials: SV

GC SC-Blank-REG MDLs
Printed: 01/27/15 1:07:24 PM

Quantitation Report (QT Reviewed)

Data File : M:\THOR\DATA\T150109\0122T15.D Vial: 14
Acq On : 22 Jan 15 15:25 Operator: DG, SV, RS
Sample : 150122A BLK-1WT MeOH Inst : Thor
Misc : 10ml w/IS&S 12/20,12/23/14 Multiplr: 50.00

Quant Time: Jan 23 9:59 2015 Quant Results File: TALLW.RES

Quant Method : M:\THOR\DATA\T150109\TALLW.M (RTE Integrator)
Title : METHOD 8260B
Last Update : Mon Jan 12 11:16:31 2015
Response via : Initial Calibration
DataAcq Meth : 8260_BETA

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene (IS)	6.02	96	878400	25.00000 ppb	0.00
56) Chlorobenzene-D5 (IS)	9.22	117	762496	25.00000 ppb	0.00
71) 1,4-Dichlorobenzene-D (IS)	11.54	152	405632	25.00000 ppb	0.00
System Monitoring Compounds					
32) Dibromofluoromethane(S)	5.19	111	467382	31.09256 ppb	0.00
Spiked Amount 31.085			Recovery	= 100.026%	
37) 1,2-DCA-D4(S)	5.59	65	446936	28.21519 ppb	0.00
Spiked Amount 29.432			Recovery	= 95.864%	
57) Toluene-D8(S)	7.76	98	1668657	32.76013 ppb	0.00
Spiked Amount 31.767			Recovery	= 103.125%	
65) 4-Bromofluorobenzene(S)	10.40	95	611459	30.27514 ppb	0.00
Spiked Amount 29.480			Recovery	= 102.698%	

Target Compounds Qvalue

(#) = qualifier out of range (m) = manual integration

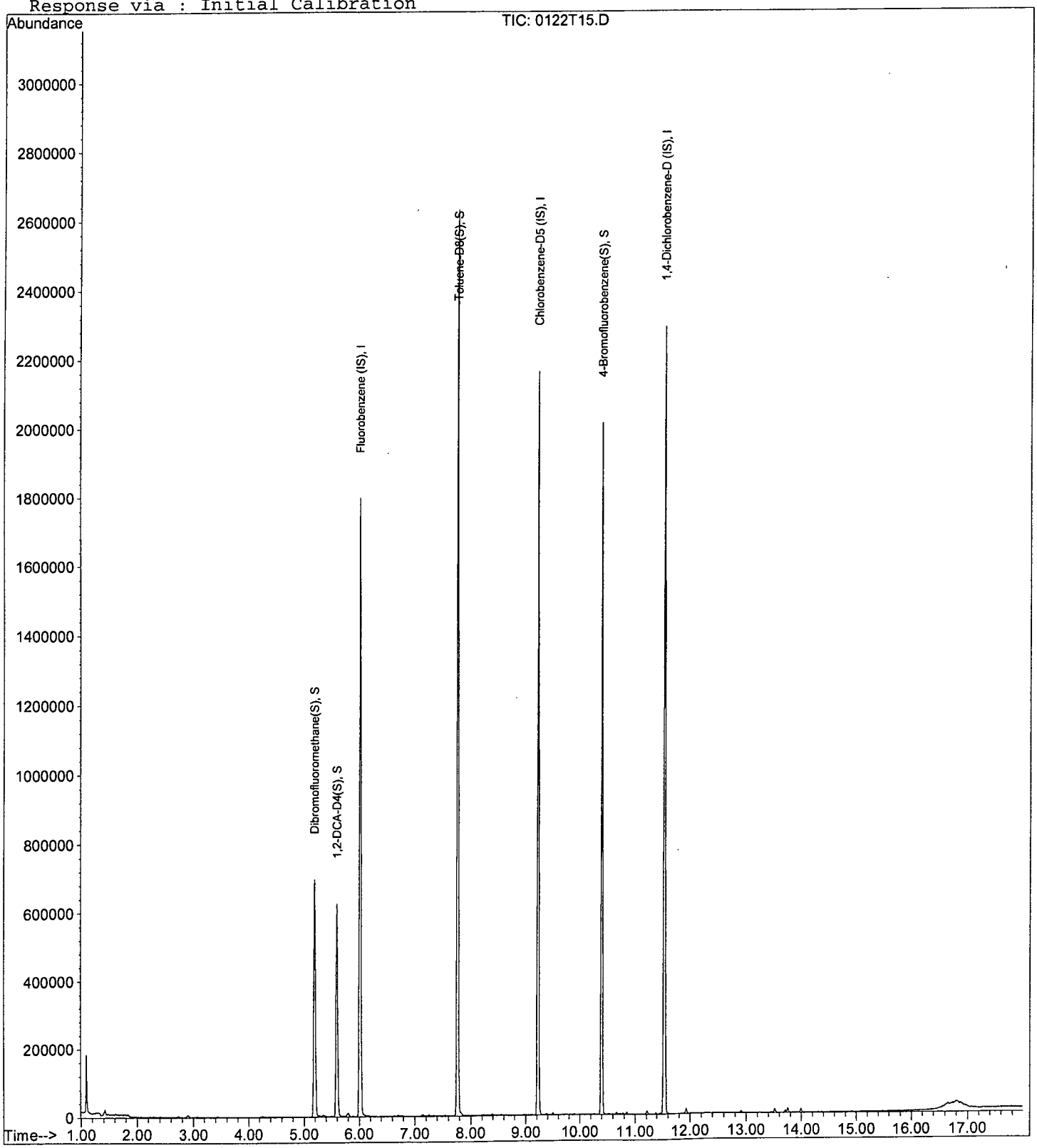
Quantitation Report

Data File : M:\THOR\DATA\T150109\0122T15.D
Acq On : 22 Jan 15 15:25
Sample : 150122A BLK-1WT MeOH
Misc : 10ml w/IS&S 12/20,12/23/14

Vial: 14
Operator: DG, SV, RS
Inst : Thor
Multiplr: 50.00

Quant Time: Jan 23 9:59 2015 Quant Results File: TALLW.RES

Method : M:\THOR\DATA\T150109\TALLW.M (RTE Integrator)
Title : METHOD 8260B
Last Update : Mon Jan 12 11:16:31 2015
Response via : Initial Calibration



Laboratory Control Spike Recovery
EPA 8260B WATER

APPL ID: **150116W-09553 LCS - 193634**
Batch ID: #86BKB-150116AL

APPL Inc.
908 North Temperance Avenue
Clovis, CA 93611

Compound Name	Spike Level ug/L	SPK Result ug/L	SPK % Recovery	Recovery Limits
1,1,1-TRICHLOROETHANE	10.00	9.89	98.9	65-130
1,1,2,2-TETRACHLOROETHANE	10.00	10.7	107	65-130
1,1,2-TRICHLOROETHANE	10.00	9.36	93.6	75-125
1,1-DICHLOROETHANE	10.00	10.0	100	70-135
1,1-DICHLOROETHENE	10.00	9.68	96.8	70-130
1,2,3-TRICHLOROPROPANE	10.00	10.5	105	75-125
1,2-DIBROMOETHANE	10.00	10.0	100	70-130
1,2-DICHLOROETHANE	10.00	9.98	99.8	70-130
1,2-DICHLOROPROPANE	10.00	9.38	93.8	75-125
2-BUTANONE	10.00	8.89	88.9	30-150
4-METHYL-2-PENTANONE	10.00	9.00	90.0	60-135
ACETONE	10.00	10.0	100	40-140
BENZENE	10.00	9.58	95.8	80-120
BROMODICHLOROMETHANE	10.00	9.88	98.8	75-120
BROMOFORM	10.00	9.74	97.4	70-130
BROMOMETHANE	10.00	9.71	97.1	30-145
CARBON TETRACHLORIDE	10.00	10.0	100	65-140
CHLOROBENZENE	10.00	10.2	102	80-120
CHLOROETHANE	10.00	8.74	87.4	60-135
CHLOROFORM	10.00	10.2	102	65-135
CHLOROMETHANE	10.00	8.61	86.1	40-125
CIS-1,2-DICHLOROETHENE	10.00	10.1	101	70-125
CIS-1,3-DICHLOROPROPENE	10.00	9.78	97.8	70-130
DIBROMOCHLOROMETHANE	10.00	9.68	96.8	60-135
ETHYLBENZENE	10.00	10.4	104	75-125
METHYLENE CHLORIDE	10.00	9.33	93.3	55-140
STYRENE	10.00	10.2	102	65-135
TETRACHLOROETHENE	10.00	10.3	103	45-150
TOLUENE	10.00	9.85	98.5	75-120
TRANS-1,2-DICHLOROETHENE	10.00	9.73	97.3	60-140
TRANS-1,3-DICHLOROPROPENE	10.00	9.61	96.1	55-140

Comments:

Primary	SPK
Quant Method :	LALLW2.M
Extraction Date :	01/16/15
Analysis Date :	01/16/15
Instrument :	Loki
Run :	0116L05
Initials :	SV

Printed: 01/26/15 1:51:10 PM
APPL Standard LCS

Laboratory Control Spike Recovery
EPA 8260B WATER

APPL ID: **150116W-09553 LCS - 193634**
Batch ID: #86BKB-150116AL

APPL Inc.
908 North Temperance Avenue
Clovis, CA 93611

Compound Name	Spike Level ug/L	SPK Result ug/L	SPK % Recovery	Recovery Limits
TRICHLOROETHENE	10.00	9.27	92.7	70-125
VINYL CHLORIDE	10.00	9.06	90.6	50-145
XYLENES (TOTAL)	30.0	31.4	105	75-130
SURROGATE: 1,2-DICHLOROETHANE-	23.4	22.9	97.8	70-120
SURROGATE: 4-BROMOFLUOROBENZ	24.7	24.3	98.5	75-120
SURROGATE: DIBROMOFLUOROMETH	23.4	23.3	99.6	85-115
SURROGATE: TOLUENE-D8 (S)	24.7	24.5	99.0	85-120

Comments:

Primary	SPK
Quant Method :	LALLW2.M
Extraction Date :	01/16/15
Analysis Date :	01/16/15
Instrument :	Loki
Run :	0116L05
Initials :	SV

Printed: 01/26/15 1:51:10 PM
APPL Standard LCS

Quantitation Report (Not Reviewed)

Data File : M:\LOKI\DATA\150113\0116L05.D Vial: 4
Acq On : 16 Jan 15 10:27 Operator: DG,SV,RS
Sample : 150116A LCS-1WL Inst : Loki
Misc : 10mL w/5uL IS&S:01/14/15,10-06-14 Multiplr: 1.00

Quant Time: Jan 19 8:54 2015 Quant Results File: LALLW2.RES

Quant Method : M:\LOKI\DATA\150113\LALLW2.M (RTE Integrator)
Title : METHOD 8260B
Last Update : Mon Jan 19 08:51:54 2015
Response via : Initial Calibration
DataAcq Meth : 8260_BETA

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene (IS)	5.85	96	1239040	25.00000 ppb	0.00
57) Chlorobenzene-D5 (IS)	9.09	117	1143808	25.00000 ppb	0.00
72) 1,4-Dichlorobenzene-D (IS)	11.41	152	646848	25.00000 ppb	0.00
System Monitoring Compounds					
33) Dibromofluoromethane(S)	5.01	111	615160	23.31069 ppb	0.00
Spiked Amount 23.395			Recovery = 99.640%		
38) 1,2-DCA-D4(S)	5.42	65	617381	22.87387 ppb	0.00
Spiked Amount 23.427			Recovery = 97.642%		
58) Toluene-D8(S)	7.62	98	2228394	24.47308 ppb	0.00
Spiked Amount 24.736			Recovery = 98.938%		
66) 4-Bromofluorobenzene(S)	10.27	95	843535	24.27591 ppb	0.00
Spiked Amount 24.661			Recovery = 98.441%		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	0.98	85	165979	10.09305 ppb	100
3) Freon 114	1.07	85	143689	11.48750 ppb	98
4) Chloromethane	1.10	50	193704	8.60974 ppb	100
5) Vinyl chloride	1.18	62	216963	9.06395 ppb	98
6) Bromomethane	1.40	94	169421	9.70725 ppb	100
7) Chloroethane	1.49	64	121219	8.74002 ppb	100
8) Dichlorofluoromethane	1.64	67	437158	10.27087 ppb	99
9) Trichlorofluoromethane	1.69	101	337981	9.88494 ppb	97
10) Acrolein	2.03	56	88421	112.36904 ppb #	99
11) Acetone	2.18	43	49032	10.00653 ppb	94
12) Freon-113	2.13	101	188972	10.97534 ppb	96
13) 1,1-DCE	2.11	61	267985	9.68002 ppb	98
14) t-Butanol	2.78	59	78360	114.35798 ppb	98
15) Acetonitrile	2.44	41	203508	118.98222 ppb	99
16) Methyl Acetate	2.52	43	100912	9.26050 ppb	99
17) Iodomethane	2.24	142	78624	9.34773 ppb	99
18) Acrylonitrile	2.87	52	42925	9.75798 ppb	99
19) Methylene chloride	2.59	84	219400	9.32578 ppb	99
20) Carbon disulfide	2.29	76	479725	8.79628 ppb	100
21) Methyl t-butyl ether (MtBE	2.92	73	554210	9.42502 ppb	99
22) Trans-1,2-DCE	2.89	96	215158	9.72652 ppb	97
23) Diisopropyl Ether	3.60	45	621601	9.65197 ppb	97
24) 1,1-DCA	3.42	63	367495	10.02811 ppb	99
25) Hexane	3.26	57	187794	9.83611 ppb	98
26) Vinyl Acetate	3.57	43	135519	9.66744 ppb #	80
27) Ethyl tert Butyl Ether	4.16	59	639648	9.76875 ppb	96
28) MEK (2-Butanone)	4.38	43	57592	8.89245 ppb	98
29) Cis-1,2-DCE	4.31	96	260648	10.08628 ppb	93
30) 2,2-Dichloropropane	4.28	77	118084	10.79243 ppb	96
31) Chloroform	4.80	83	392799	10.17379 ppb	99
32) Bromochloromethane	4.64	128	124674	9.13437 ppb	98
34) 1,1,1-TCA	4.99	97	345475	9.89172 ppb	97
35) Cyclohexane	5.05	41	153875	9.53682 ppb	93
36) 1,1-Dichloropropene	5.23	75	289888	9.97072 ppb	99
37) 2,2,4-Trimethylpentane	5.63	57	576859	11.26780 ppb	97
39) Carbon Tetrachloride	5.21	117	305233	9.99833 ppb	99
40) Tert Amyl Methyl Ether	5.69	73	588682	9.58387 ppb	97
41) 1,2-DCA	5.52	62	288175	9.97799 ppb	99
42) Benzene	5.48	78	849255	9.58275 ppb	99

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : M:\LOKI\DATA\150113\0116L05.D Vial: 4
Acq On : 16 Jan 15 10:27 Operator: DG,SV,RS
Sample : 150116A LCS-1WL Inst : Loki
Misc : 10mL w/5uL IS&S:01/14/15,10-06-14 Multiplr: 1.00

Quant Time: Jan 19 8:54 2015 Quant Results File: LALLW2.RES

Quant Method : M:\LOKI\DATA\150113\LALLW2.M (RTE Integrator)
Title : METHOD 8260B
Last Update : Mon Jan 19 08:51:54 2015
Response via : Initial Calibration
DataAcq Meth : 8260_BETA

Compound	R.T.	QIon	Response	Conc	Unit	Qvalue
43) TCE	6.28	95	234860	9.26739	ppb	98
44) 2-Pentanone	6.54	43	1368837	118.58763	ppb	98
45) 1,2-Dichloropropane	6.52	63	221321	9.38348	ppb	100
46) Bromodichloromethane	6.86	83	308252	9.88117	ppb	99
47) Methyl Cyclohexane	6.48	83	340603	10.54066	ppb	96
48) Dibromomethane	6.65	93	136575	9.64825	ppb	98
49) 2-Chloroethyl vinyl ether	7.23	106	156	0.22421	ppb	87
50) MIBK (methyl isobutyl ket	7.55	43	136830	8.99778	ppb	98
51) 1-Bromo-2-chloroethane	7.17	63	158016	9.56556	ppb	99
52) Cis-1,3-Dichloropropene	7.35	75	374581	9.77693	ppb	97
53) Toluene	7.69	91	1002772	9.85189	ppb	99
54) Trans-1,3-Dichloropropene	7.95	75	317816	9.61213	ppb	100
55) 1,1,2-TCA	8.13	83	158029	9.36215	ppb	97
56) 2-Hexanone	8.42	43	89504	8.18318	ppb	97
59) 1,2-EDB	8.60	107	193546	10.02283	ppb	96
60) Tetrachloroethene	8.25	166	284343	10.25335	ppb	97
61) 1-Chlorohexane	9.13	91	315268	10.47229	ppb	99
62) 1,1,1,2-Tetrachloroethane	9.21	131	260785	10.18051	ppb	96
63) m&p-Xylene	9.37	106	903344	21.00186	ppb	96
64) o-Xylene	9.76	106	454567	10.35515	ppb	96
65) Styrene	9.78	104	730780	10.22568	ppb	97
67) 1,3-Dichloropropane	8.29	76	320923	10.30330	ppb	98
68) Dibromochloromethane	8.51	129	239914	9.67812	ppb	97
69) Chlorobenzene	9.12	112	707665	10.24113	ppb	98
70) Ethylbenzene	9.25	91	1129239	10.38315	ppb	100
71) Bromoform	9.93	173	162183	9.73874	ppb	99
73) Isopropylbenzene	10.14	105	1133978	10.52688	ppb	100
74) 1,1,2,2-Tetrachloroethane	10.44	83	224293	10.68168	ppb	98
75) 1,2,3-Trichloropropane	10.46	110	70014	10.47625	ppb	99
76) t-1,4-Dichloro-2-Butene	10.50	53	59594	12.39364	ppb	94
77) Bromobenzene	10.40	156	323149	10.56567	ppb	98
78) n-Propylbenzene	10.54	91	1289320	10.84685	ppb	99
79) 4-Ethyltoluene	10.66	105	1132757	10.87063	ppb	100
80) 2-Chlorotoluene	10.61	91	787308	10.50699	ppb	98
81) 1,3,5-Trimethylbenzene	10.73	105	993784	10.63394	ppb	99
82) 4-Chlorotoluene	10.72	91	910469	10.42108	ppb	98
83) Tert-Butylbenzene	11.04	119	850218	10.40146	ppb	99
84) 1,2,4-Trimethylbenzene	11.09	105	996120	10.35340	ppb	100
85) Sec-Butylbenzene	11.26	105	1216274	10.75140	ppb	98
86) p-Isopropyltoluene	11.41	119	1032778	10.56408	ppb	99
87) Benzyl Chloride	11.58	91	343466	10.95724	ppb	100
88) 1,3-DCB	11.34	146	587812	10.40790	ppb	99
89) 1,4-DCB	11.44	146	591373	10.26240	ppb	98
90) n-Butylbenzene	11.81	91	918982	11.03430	ppb	100
91) 1,2-DCB	11.79	146	553945	10.45540	ppb	98
92) Hexachloroethane	12.05	117	189135	9.73233	ppb	100
93) 1,2-Dibromo-3-chloropropan	12.56	157	45133	8.66826	ppb	94
94) 1,2,4-Trichlorobenzene	13.39	180	385058	10.31881	ppb	99
95) Hexachlorobutadiene	13.58	225	218973	10.75157	ppb	96
96) Naphthalene	13.62	128	364672	9.82328	ppb	99
97) 1,2,3-Trichlorobenzene	13.86	180	224384	10.15876	ppb	96

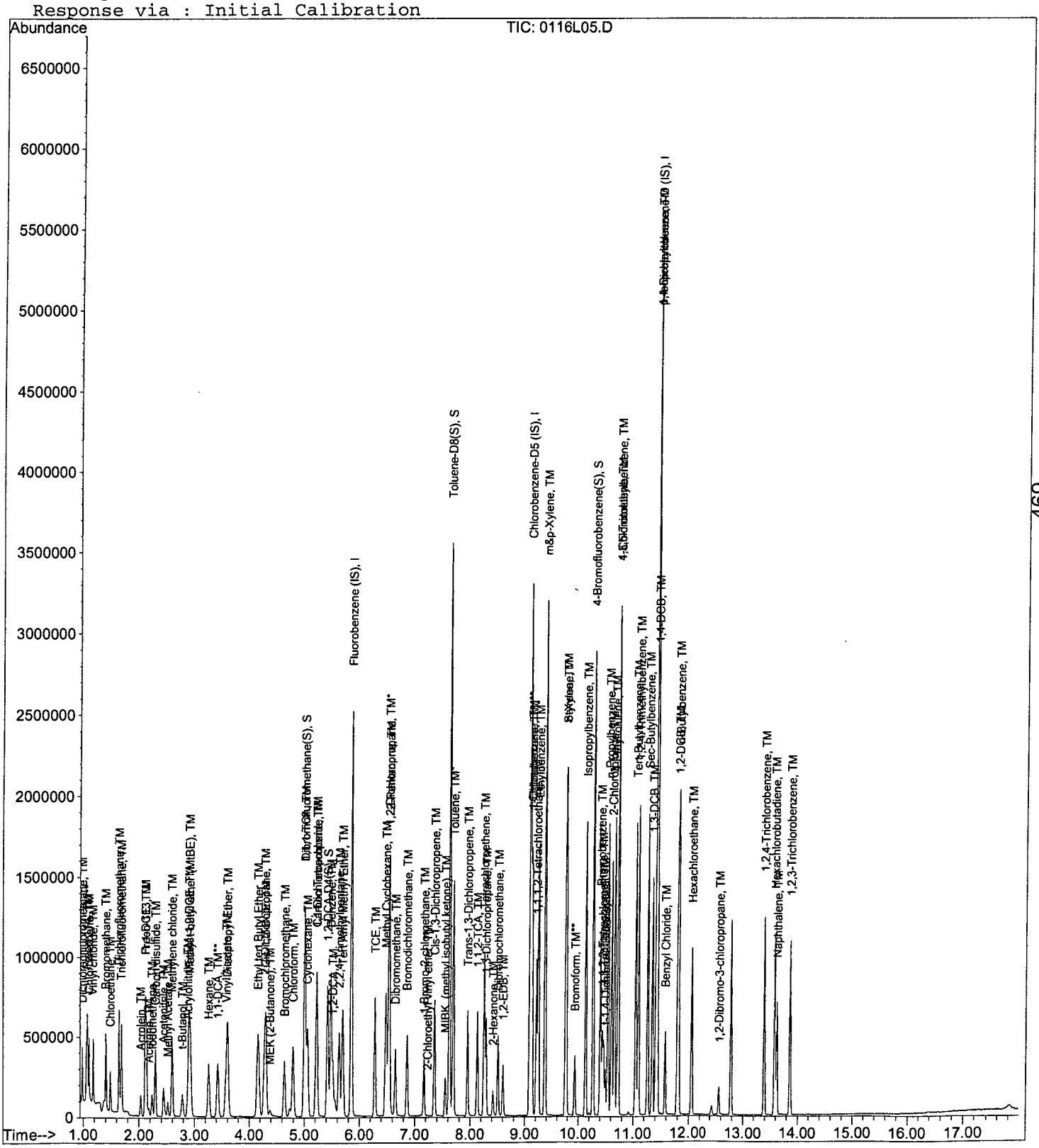
(#) = qualifier out of range (m) = manual integration

Quantitation Report

Data File : M:\LOKI\DATA\150113\0116L05.D Vial: 4
Acq On : 16 Jan 15 10:27 Operator: DG,SV,RS
Sample : 150116A LCS-1WL Inst : Loki
Misc : 10mL w/5uL IS&S:01/14/15,10-06-14 Multiplr: 1.00

Quant Time: Jan 19 8:54 2015 Quant Results File: LALLW2.RES

Method : M:\LOKI\DATA\150113\LALLW2.M (RTE Integrator)
Title : METHOD 8260B
Last Update : Mon Jan 19 08:51:54 2015
Response via : Initial Calibration



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Laboratory Control Spike Recovery
EPA 8260B SOIL

APPL ID: **150121S-09545 LCS - 193770**
Batch ID: #86BKB-150121AL

APPL Inc.
908 North Temperance Avenue
Clovis, CA 93611

Compound Name	Spike Level mg/Kg	SPK Result mg/Kg	SPK % Recovery	Recovery Limits
1,1,1-TRICHLOROETHANE	0.050	0.0537	107	70-135
1,1,2,2-TETRACHLOROETHANE	0.050	0.0478	95.6	55-130
1,1,2-TRICHLOROETHANE	0.050	0.0519	104	60-125
1,1-DICHLOROETHANE	0.050	0.053	106	75-125
1,1-DICHLOROETHENE	0.050	0.0483	96.6	65-135
1,2,3-TRICHLOROPROPANE	0.050	0.0499	99.8	65-130
1,2-DIBROMOETHANE	0.050	0.0535	107	70-125
1,2-DICHLOROETHANE	0.050	0.0521	104	70-135
1,2-DICHLOROPROPANE	0.050	0.0522	104	70-120
2-BUTANONE	0.050	0.0434	86.8	30-160
4-METHYL-2-PENTANONE	0.050	0.0478	95.6	45-145
ACETONE	0.050	0.040	80.0	20-160
BENZENE	0.050	0.056	112	75-125
BROMODICHLOROMETHANE	0.050	0.053	106	70-130
BROMOFORM	0.050	0.0517	103	55-135
BROMOMETHANE	0.050	0.0534	107	30-160
CARBON TETRACHLORIDE	0.050	0.0524	105	65-135
CHLOROBENZENE	0.050	0.0566	113	75-125
CHLOROETHANE	0.050	0.0467	93.4	40-155
CHLOROFORM	0.050	0.0551	110	70-125
CHLOROMETHANE	0.050	0.0421	84.2	50-130
CIS-1,2-DICHLOROETHYLENE	0.050	0.0562	112	65-125
CIS-1,3-DICHLOROPROPENE	0.050	0.0528	106	70-125
DIBROMOCHLOROMETHANE	0.050	0.0531	106	65-130
ETHYLBENZENE	0.050	0.0576	115	75-125
METHYLENE CHLORIDE	0.050	0.0452	90.4	55-140
STYRENE	0.050	0.0572	114	75-125
TETRACHLOROETHENE	0.050	0.0565	113	65-140
TOLUENE	0.050	0.0565	113	70-125
TRANS-1,2-DICHLOROETHYLENE	0.050	0.0549	110	65-135
TRANS-1,3-DICHLOROPROPENE	0.050	0.0508	102	65-125

Comments: _____

Primary	SPK
Quant Method :	LALLS.M
Extraction Date :	01/21/15
Analysis Date :	01/21/15
Instrument :	Loki
Run :	0121L06
Initials :	SV

Printed: 01/26/15 1:51:09 PM
APPL Standard LCS

Laboratory Control Spike Recovery
EPA 8260B SOIL

APPL ID: **150121S-09545 LCS - 193770**
Batch ID: #86BKB-150121AL

APPL Inc.
908 North Temperance Avenue
Clovis, CA 93611

Compound Name	Spike Level mg/Kg	SPK Result mg/Kg	SPK % Recovery	Recovery Limits
TRICHLOROETHYLENE	0.050	0.0564	113	75-125
VINYL CHLORIDE	0.050	0.0466	93.2	60-125
XYLENES (TOTAL)	0.150	0.173	115	75-125
SURROGATE: 1,2-DICHLOROETHANE-	0.0481	0.0456	94.9	54-154
SURROGATE: 4-BROMOFLUOROBENZ	0.0545	0.0527	96.6	85-120
SURROGATE: TOLUENE-D8 (S)	0.0612	0.0584	95.5	85-115

Comments:

Primary	SPK
Quant Method :	LALLS.M
Extraction Date :	01/21/15
Analysis Date :	01/21/15
Instrument :	Loki
Run :	0121L06
Initials :	SV

Printed: 01/26/15 1:51:10 PM
APPL Standard LCS

Quantitation Report (Not Reviewed)

Data File : M:\LOKI\DATA\150119\0121L06.D
Acq On : 21 Jan 15 11:17
Sample : 150121A LCS-1SL
Misc : 5mL w/5uL IS&S:01/14/15,10-06-14

Vial: 5
Operator: DG,SV,RS
Inst : Loki
Multiplr: 1.00

Quant Time: Jan 22 8:55 2015 Quant Results File: LALLS.RES

Quant Method : M:\LOKI\DATA\150119\LALLS.M (RTE Integrator)
Title : METHOD 8260B
Last Update : Tue Jan 20 09:48:55 2015
Response via : Initial Calibration
DataAcq Meth : 8260_BETA

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene (IS)	5.86	96	760768	50.00000 ppb	0.00
55) Chlorobenzene-D5 (IS)	9.09	117	708864	50.00000 ppb	0.00
70) 1,4-Dichlorobenzene-D (IS)	11.41	152	407552	50.00000 ppb	0.00
System Monitoring Compounds					
31) Dibromofluoromethane(S)	5.02	111	360740	52.82819 ppb	0.00
Spiked Amount 52.439			Recovery	= 100.741%	
36) 1,2-DCA-D4(S)	5.43	65	353067	45.57754 ppb	0.00
Spiked Amount 48.066			Recovery	= 94.824%	
56) Toluene-D8(S)	7.62	98	1310958	58.36312 ppb	0.00
Spiked Amount 61.175			Recovery	= 95.403%	
64) 4-Bromofluorobenzene(S)	10.27	95	498614	52.68313 ppb	0.00
Spiked Amount 54.538			Recovery	= 96.599%	
Target Compounds					Qvalue
2) Dichlorodifluoromethane	0.98	85	213056	44.37436 ppb	99
3) Freon 114	1.07	85	204456	44.02947 ppb	99
4) Chloromethane	1.10	50	269181	42.07110 ppb	99
5) Vinyl chloride	1.18	62	270180	46.62105 ppb	98
6) Bromomethane	1.40	94	253056	53.37805 ppb	95
7) Chloroethane	1.48	64	194261	46.73530 ppb	99
8) Dichlorofluoromethane	1.65	67	576309	51.93385 ppb	98
9) Trichlorofluoromethane	1.69	101	362104	43.86722 ppb	96
10) Acrolein	2.04	55	212652	228.96029 ppb	100
11) Acetone	2.19	43	102800	40.03238 ppb	98
12) Freon-113	2.14	101	231176	45.93793 ppb	98
13) 1,1-DCE	2.12	61	363987	48.33140 ppb	97
14) t-Butanol	2.82	59	211225	226.81317 ppb	99
15) Methyl Acetate	2.53	43	230130	43.41201 ppb	89
16) Iodomethane	2.25	142	292302	86.20398 ppb	97
17) Acrylonitrile	2.89	53	131371	46.07900 ppb	99
18) Methylene chloride	2.60	84	369893	45.19144 ppb	99
19) Carbon disulfide	2.30	76	795255	48.45239 ppb	99
20) Methyl t-butyl ether (MtBE	2.94	73	991402	50.50093 ppb	98
21) Trans-1,2-DCE	2.90	96	337874	54.85362 ppb	91
22) Diisopropyl Ether	3.62	45	920397	48.74251 ppb	97
23) 1,1-DCA	3.44	63	546243	53.03314 ppb	98
24) Vinyl Acetate	3.59	43	971051	46.48721 ppb	98
25) Ethyl tert Butyl Ether	4.19	59	957191	51.21192 ppb	99
26) MEK (2-Butanone)	4.41	43	143009	43.37431 ppb	97
27) Cis-1,2-DCE	4.32	96	412974	56.21684 ppb	95
28) 2,2-Dichloropropane	4.30	77	426337	51.44533 ppb	96
29) Chloroform	4.81	83	594792	55.05423 ppb	99
30) Bromochloromethane	4.65	128	203999	53.76390 ppb	97
32) 1,1,1-TCA	5.00	97	429233	53.73929 ppb	94
33) Cyclohexane	5.06	41	161772	43.73456 ppb	88
34) 1,1-Dichloropropene	5.24	75	361854	52.17481 ppb	97
35) 2,2,4-Trimethylpentane	5.63	57	685533	48.00562 ppb	98
37) Carbon Tetrachloride	5.22	117	360584	52.41529 ppb	98
38) Tert Amyl Methyl Ether	5.71	73	912111	52.11013 ppb	99
39) 1,2-DCA	5.53	62	457576	52.11063 ppb	97
40) Benzene	5.49	78	1255400	56.02691 ppb	100
41) TCE	6.29	95	323075	56.36704 ppb	99
42) 2-Pentanone	6.56	43	1226956	244.00004 ppb	95

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : M:\LOKI\DATA\150119\0121L06.D
Acq On : 21 Jan 15 11:17
Sample : 150121A LCS-1SL
Misc : 5mL w/5uL IS&S:01/14/15,10-06-14

Vial: 5
Operator: DG,SV,RS
Inst : Loki
Multiplr: 1.00

Quant Time: Jan 22 8:55 2015

Quant Results File: LALLS.RES

Quant Method : M:\LOKI\DATA\150119\LALLS.M (RTE Integrator)
Title : METHOD 8260B
Last Update : Tue Jan 20 09:48:55 2015
Response via : Initial Calibration
DataAcq Meth : 8260_BETA

	Compound	R.T.	QIon	Response	Conc	Unit	Qvalue
43)	1,2-Dichloropropane	6.53	63	325036	52.15505	ppb	100
44)	Bromodichloromethane	6.87	83	450750	52.96144	ppb	98
45)	Methyl Cyclohexane	6.48	83	380628	46.77673	ppb	100
46)	Dibromomethane	6.66	93	231201	52.63626	ppb	95
48)	MIBK (methyl isobutyl ket	7.56	43	168602	47.80598	ppb	97
49)	1-Bromo-2-chloroethane	7.17	63	270912	51.94852	ppb	99
50)	Cis-1,3-Dichloropropene	7.36	75	562809	52.78872	ppb	96
51)	Toluene	7.70	91	1431422	56.48283	ppb	99
52)	Trans-1,3-Dichloropropene	7.96	75	495310	50.76397	ppb	99
53)	1,1,2-TCA	8.13	83	264430	51.90383	ppb	99
54)	2-Hexanone	8.43	43	125605	46.94717	ppb	98
57)	1,2-EDB	8.61	107	352942	53.52576	ppb	95
58)	Tetrachloroethene	8.25	164	286613	56.45647	ppb	99
59)	1-Chlorohexane	9.14	91	362375	51.38269	ppb	95
60)	1,1,1,2-Tetrachloroethane	9.21	131	382068	55.29870	ppb	97
61)	m&p-Xylene	9.37	91	1576583	115.25279	ppb	98
62)	o-Xylene	9.76	106	644883	58.05609	ppb	100
63)	Styrene	9.78	104	1095742	57.17690	ppb	97
65)	1,3-Dichloropropane	8.29	76	539598	51.57625	ppb	100
66)	Dibromochloromethane	8.51	129	388015	53.12777	ppb	99
67)	Chlorobenzene	9.12	112	1047753	56.61677	ppb	98
68)	Ethylbenzene	9.25	91	1582731	57.62104	ppb	99
69)	Bromoform	9.93	173	286551	51.66787	ppb	97
71)	Isopropylbenzene	10.14	105	1509807	54.75017	ppb	100
72)	1,1,2,2-Tetrachloroethane	10.44	83	438456	47.83577	ppb	99
73)	1,2,3-Trichloropropane	10.46	110	144580	49.85943	ppb	97
74)	t-1,4-Dichloro-2-Butene	10.50	53	96701	43.71183	ppb	99
75)	Bromobenzene	10.40	156	491536	54.29934	ppb	97
76)	n-Propylbenzene	10.54	91	1713226	55.18590	ppb	99
77)	4-Ethyltoluene	10.66	105	1539052	56.51349	ppb	99
78)	2-Chlorotoluene	10.61	91	1125074	55.34458	ppb	98
79)	1,3,5-Trimethylbenzene	10.73	105	1384923	56.52868	ppb	99
80)	4-Chlorotoluene	10.72	91	1314404	55.76394	ppb	100
81)	Tert-Butylbenzene	11.04	119	1137490	54.96392	ppb	97
82)	1,2,4-Trimethylbenzene	11.09	105	1460444	56.58290	ppb	98
83)	Sec-Butylbenzene	11.26	105	1575988	54.42231	ppb	100
84)	p-Isopropyltoluene	11.41	119	1406870	56.80379	ppb	100
85)	Benzyl Chloride	11.58	91	589611	45.74357	ppb	99
86)	1,3-DCB	11.34	146	883692	55.72043	ppb	99
87)	1,4-DCB	11.43	146	903636	55.57430	ppb	100
88)	n-Butylbenzene	11.82	91	1241141	56.51324	ppb	100
89)	1,2-DCB	11.80	146	864200	54.52893	ppb	99
90)	Hexachloroethane	12.05	117	263802	53.95362	ppb	98
91)	1,2-Dibromo-3-chloropropan	12.56	157	110784	48.52854	ppb	95
92)	1,2,4-Trichlorobenzene	13.39	180	676609	56.69013	ppb	97
93)	Hexachlorobutadiene	13.58	225	317554	56.78437	ppb	97
94)	Naphthalene	13.62	128	1608514	54.75631	ppb	99
95)	1,2,3-Trichlorobenzene	13.87	180	659256	55.48614	ppb	100

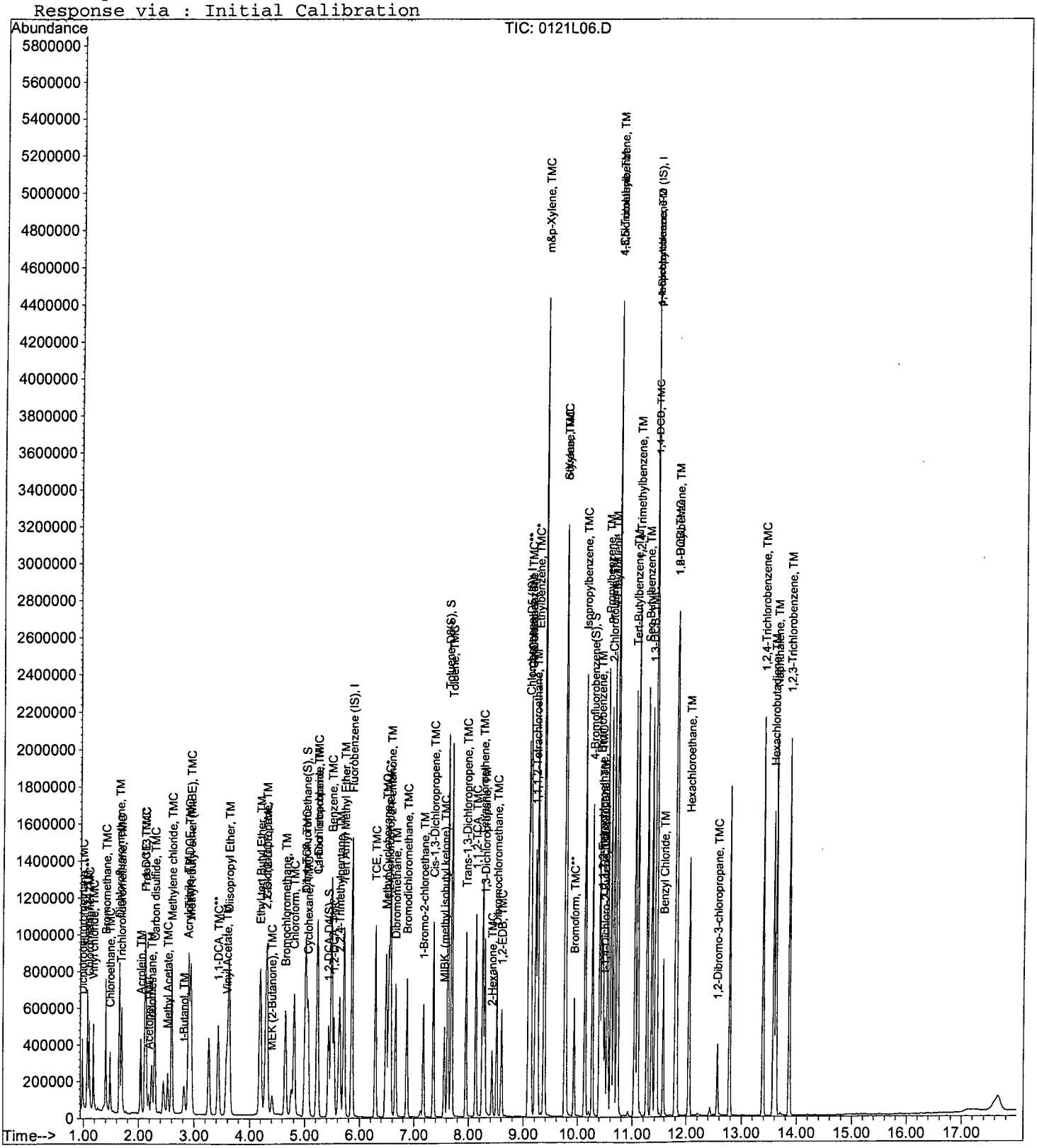
(#) = qualifier out of range (m) = manual integration

Quantitation Report

Data File : M:\LOKI\DATA\150119\0121L06.D Vial: 5
Acq On : 21 Jan 15 11:17 Operator: DG,SV,RS
Sample : 150121A LCS-1SL Inst : Loki
Misc : 5mL w/5uL IS&S:01/14/15,10-06-14 Multiplr: 1.00

Quant Time: Jan 22 8:55 2015 Quant Results File: LALLS.RES

Method : M:\LOKI\DATA\150119\LALLS.M (RTE Integrator)
Title : METHOD 8260B
Last Update : Tue Jan 20 09:48:55 2015
Response via : Initial Calibration



Laboratory Control Spike Recovery
EPA 8260B SOIL

APPL ID: **150122S-09552 LCS - 193773**
Batch ID: #86BKB-150122AL

APPL Inc.
908 North Temperance Avenue
Clovis, CA 93611

Compound Name	Spike Level mg/Kg	SPK Result mg/Kg	SPK % Recovery	Recovery Limits
1,1,1-TRICHLOROETHANE	0.050	0.0504	101	70-135
1,1,2,2-TETRACHLOROETHANE	0.050	0.0542	108	55-130
1,1,2-TRICHLOROETHANE	0.050	0.0555	111	60-125
1,1-DICHLOROETHANE	0.050	0.0508	102	75-125
1,1-DICHLOROETHENE	0.050	0.0437	87.4	65-135
1,2,3-TRICHLOROPROPANE	0.050	0.0542	108	65-130
1,2-DIBROMOETHANE	0.050	0.0548	110	70-125
1,2-DICHLOROETHANE	0.050	0.0523	105	70-135
1,2-DICHLOROPROPANE	0.050	0.0532	106	70-120
2-BUTANONE	0.050	0.0461	92.2	30-160
4-METHYL-2-PENTANONE	0.050	0.0503	101	45-145
ACETONE	0.050	0.0441	88.2	20-160
BENZENE	0.050	0.0535	107	75-125
BROMODICHLOROMETHANE	0.050	0.0525	105	70-130
BROMOFORM	0.050	0.0518	104	55-135
BROMOMETHANE	0.050	0.0514	103	30-160
CARBON TETRACHLORIDE	0.050	0.0488	97.6	65-135
CHLOROBENZENE	0.050	0.0555	111	75-125
CHLOROETHANE	0.050	0.0484	96.8	40-155
CHLOROFORM	0.050	0.0573	115	70-125
CHLOROMETHANE	0.050	0.0455	91.0	50-130
CIS-1,2-DICHLOROETHYLENE	0.050	0.0542	108	65-125
CIS-1,3-DICHLOROPROPENE	0.050	0.0538	108	70-125
DIBROMOCHLOROMETHANE	0.050	0.0538	108	65-130
ETHYLBENZENE	0.050	0.0556	111	75-125
METHYLENE CHLORIDE	0.050	0.0514	103	55-140
STYRENE	0.050	0.0564	113	75-125
TETRACHLOROETHENE	0.050	0.0528	106	65-140
TOLUENE	0.050	0.0548	110	70-125
TRANS-1,2-DICHLOROETHYLENE	0.050	0.0503	101	65-135
TRANS-1,3-DICHLOROPROPENE	0.050	0.052	104	65-125

Primary	SPK
Quant Method :	LALLS.M
Extraction Date :	01/22/15
Analysis Date :	01/22/15
Instrument :	Loki
Run :	0122L04
Initials :	SV

Comments:

Printed: 01/26/15 1:51:10 PM
APPL Standard LCS

Laboratory Control Spike Recovery
EPA 8260B SOIL

APPL ID: **150122S-09552 LCS - 193773**
Batch ID: #86BKB-150122AL

APPL Inc.
908 North Temperance Avenue
Clovis, CA 93611

Compound Name	Spike Level mg/Kg	SPK Result mg/Kg	SPK % Recovery	Recovery Limits
TRICHLOROETHYLENE	0.050	0.0524	105	75-125
VINYL CHLORIDE	0.050	0.0545	109	60-125
XYLENES (TOTAL)	0.150	0.167	111	75-125
SURROGATE: 1,2-DICHLOROETHANE-	0.0481	0.0459	95.5	54-154
SURROGATE: 4-BROMOFLUOROBENZ	0.0545	0.0523	95.9	85-120
SURROGATE: TOLUENE-D8 (S)	0.0612	0.0582	95.1	85-115

Comments: _____

Primary	SPK
Quant Method :	LALLS.M
Extraction Date :	01/22/15
Analysis Date :	01/22/15
Instrument :	Loki
Run :	0122L04
Initials :	SV

Printed: 01/26/15 1:51:10 PM
APPL Standard LCS

Quantitation Report (Not Reviewed)

Data File : M:\LOKI\DATA\150119\0122L04.D Vial: 3
Acq On : 22 Jan 15 9:06 Operator: DG,SV,RS
Sample : 150122A LCS-1SL Inst : Loki
Misc : 5mL w/5uL IS&S:01/14/15,10-06-14 Multiplr: 1.00

Quant Time: Jan 23 7:42 2015 Quant Results File: LALLS.RES

Quant Method : M:\LOKI\DATA\150119\LALLS.M (RTE Integrator)
Title : METHOD 8260B
Last Update : Tue Jan 20 09:48:55 2015
Response via : Initial Calibration
DataAcq Meth : 8260_BETA

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene (IS)	5.86	96	746112	50.00000 ppb	0.00
55) Chlorobenzene-D5 (IS)	9.09	117	706688	50.00000 ppb	0.00
70) 1,4-Dichlorobenzene-D (IS)	11.41	152	385216	50.00000 ppb	0.00
System Monitoring Compounds					
31) Dibromofluoromethane(S)	5.02	111	356466	53.22771 ppb	0.00
Spiked Amount 52.439			Recovery	= 101.504%	
36) 1,2-DCA-D4(S)	5.43	65	348883	45.92210 ppb	0.00
Spiked Amount 48.066			Recovery	= 95.540%	
56) Toluene-D8(S)	7.62	98	1303525	58.21090 ppb	0.00
Spiked Amount 61.175			Recovery	= 95.155%	
64) 4-Bromofluorobenzene(S)	10.27	95	493548	52.30843 ppb	0.00
Spiked Amount 54.538			Recovery	= 95.911%	
Target Compounds					Qvalue
2) Dichlorodifluoromethane	0.98	85	255360	54.22997 ppb	100
3) Freon 114	1.07	85	171103	38.11163 ppb	97
4) Chloromethane	1.10	50	285571	45.50947 ppb	99
5) Vinyl chloride	1.18	62	309755	54.49986 ppb	99
6) Bromomethane	1.40	94	239200	51.44646 ppb	97
7) Chloroethane	1.48	64	197269	48.39121 ppb	100
8) Dichlorofluoromethane	1.65	67	525805	48.31345 ppb	99
9) Trichlorofluoromethane	1.69	101	430153	52.32296 ppb	98
10) Acrolein	2.04	55	220011	241.11391 ppb	97
11) Acetone	2.19	43	109520	44.13297 ppb	95
12) Freon-113	2.14	101	206692	42.09108 ppb	97
13) 1,1-DCE	2.12	61	322889	43.71645 ppb	99
14) t-Butanol	2.82	59	210954	230.97178 ppb	98
15) Methyl Acetate	2.52	43	244926	47.11072 ppb	94
16) Iodomethane	2.24	142	287694	86.44432 ppb	99
17) Acrylonitrile	2.89	53	135569	48.48552 ppb	99
18) Methylene chloride	2.60	84	406250	51.41257 ppb	98
19) Carbon disulfide	2.29	76	691927	42.98503 ppb	99
20) Methyl t-butyl ether (MtBE	2.94	73	991059	51.47512 ppb	97
21) Trans-1,2-DCE	2.90	96	304035	50.32946 ppb	93
22) Diisopropyl Ether	3.62	45	939461	50.72940 ppb	99
23) 1,1-DCA	3.43	63	512954	50.77946 ppb	98
24) Vinyl Acetate	3.58	43	1009971	49.30019 ppb	98
25) Ethyl tert Butyl Ether	4.19	59	968358	52.82708 ppb	99
26) MEK (2-Butanone)	4.41	43	149108	46.11247 ppb	96
27) Cis-1,2-DCE	4.32	96	390288	54.17228 ppb	96
28) 2,2-Dichloropropane	4.29	77	388256	47.77044 ppb	99
29) Chloroform	4.81	83	606853	57.27397 ppb	100
30) Bromochloromethane	4.65	128	201669	54.19386 ppb	97
32) 1,1,1-TCA	5.00	97	394641	50.37896 ppb	94
33) Cyclohexane	5.06	41	151920	41.87787 ppb	89
34) 1,1-Dichloropropene	5.23	75	339346	49.89057 ppb	97
35) 2,2,4-Trimethylpentane	5.63	57	572672	41.44876 ppb	98
37) Carbon Tetrachloride	5.22	117	329580	48.84956 ppb	99
38) Tert Amyl Methyl Ether	5.71	73	928014	54.06015 ppb	98
39) 1,2-DCA	5.53	62	450728	52.33905 ppb	99
40) Benzene	5.48	78	1175850	53.50751 ppb	99
41) TCE	6.29	95	294503	52.39137 ppb	98
42) 2-Pentanone	6.56	43	1245701	252.59395 ppb	96

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : M:\LOKI\DATA\150119\0122L04.D Vial: 3
Acq On : 22 Jan 15 9:06 Operator: DG,SV,RS
Sample : 150122A LCS-1SL Inst : Loki
Misc : 5mL w/5uL IS&S:01/14/15,10-06-14 Multiplr: 1.00

Quant Time: Jan 23 7:42 2015 Quant Results File: LALLS.RES

Quant Method : M:\LOKI\DATA\150119\LALLS.M (RTE Integrator)
Title : METHOD 8260B
Last Update : Tue Jan 20 09:48:55 2015
Response via : Initial Calibration
DataAcq Meth : 8260_BETA

Compound	R.T.	QIon	Response	Conc Unit		Qvalue
43) 1,2-Dichloropropane	6.53	63	325128	53.19459	ppb	99
44) Bromodichloromethane	6.87	83	438295	52.50961	ppb	99
45) Methyl Cyclohexane	6.48	83	347640	43.56192	ppb	99
46) Dibromomethane	6.66	93	233814	54.27677	ppb	99
48) MIBK (methyl isobutyl ket	7.56	43	174147	50.34817	ppb	98
49) 1-Bromo-2-chloroethane	7.17	63	282432	55.22136	ppb	99
50) Cis-1,3-Dichloropropene	7.36	75	562802	53.82499	ppb	94
51) Toluene	7.69	91	1360967	54.75762	ppb	100
52) Trans-1,3-Dichloropropene	7.95	75	497456	51.98540	ppb	100
53) 1,1,2-TCA	8.13	83	277320	55.50320	ppb	98
54) 2-Hexanone	8.43	43	133150	50.74484	ppb	98
57) 1,2-EDB	8.61	107	360310	54.81142	ppb	98
58) Tetrachloroethene	8.25	164	267339	52.82206	ppb	100
59) 1-Chlorohexane	9.14	91	357353	50.82662	ppb	95
60) 1,1,1,2-Tetrachloroethane	9.21	131	379839	55.14537	ppb	99
61) m&p-Xylene	9.37	91	1516675	111.21473	ppb	98
62) o-Xylene	9.76	106	622044	56.17242	ppb	100
63) Styrene	9.78	104	1078483	56.44959	ppb	98
65) 1,3-Dichloropropane	8.29	76	553839	53.10045	ppb	99
66) Dibromochloromethane	8.51	129	391472	53.76615	ppb	98
67) Chlorobenzene	9.12	112	1024072	55.50752	ppb	99
68) Ethylbenzene	9.25	91	1523468	55.63428	ppb	99
69) Bromoform	9.93	173	286293	51.78030	ppb	99
71) Isopropylbenzene	10.14	105	1452572	55.72889	ppb	99
72) 1,1,2,2-Tetrachloroethane	10.44	83	469885	54.23718	ppb	99
73) 1,2,3-Trichloropropane	10.46	110	148496	54.17919	ppb	99
74) t-1,4-Dichloro-2-Butene	10.50	53	100780	48.19712	ppb	99
75) Bromobenzene	10.40	156	487702	56.99969	ppb	96
76) n-Propylbenzene	10.54	91	1662429	56.65462	ppb	99
77) 4-Ethyltoluene	10.66	105	1495569	58.10105	ppb	99
78) 2-Chlorotoluene	10.61	91	1097287	57.10748	ppb	98
79) 1,3,5-Trimethylbenzene	10.73	105	1332193	57.52930	ppb	98
80) 4-Chlorotoluene	10.72	91	1288490	57.83415	ppb	99
81) Tert-Butylbenzene	11.04	119	1087816	55.61146	ppb	97
82) 1,2,4-Trimethylbenzene	11.09	105	1402860	57.50338	ppb	99
83) Sec-Butylbenzene	11.26	105	1521010	55.56929	ppb	99
84) p-Isopropyltoluene	11.41	119	1348533	57.60546	ppb	99
85) Benzyl Chloride	11.58	91	627117	51.47446	ppb	99
86) 1,3-DCB	11.34	146	884468	59.00303	ppb	100
87) 1,4-DCB	11.43	146	904254	58.83687	ppb	99
88) n-Butylbenzene	11.82	91	1191863	57.41616	ppb	99
89) 1,2-DCB	11.79	146	872532	58.24689	ppb	99
90) Hexachloroethane	12.05	117	265118	57.36677	ppb	98
91) 1,2-Dibromo-3-chloropropan	12.56	157	111047	51.46425	ppb	93
92) 1,2,4-Trichlorobenzene	13.39	180	661348	58.62441	ppb	100
93) Hexachlorobutadiene	13.58	225	293710	55.56594	ppb	100
94) Naphthalene	13.62	128	1554752	55.99499	ppb	99
95) 1,2,3-Trichlorobenzene	13.87	180	650512	57.92478	ppb	99

(#) = qualifier out of range (m) = manual integration

Quantitation Report

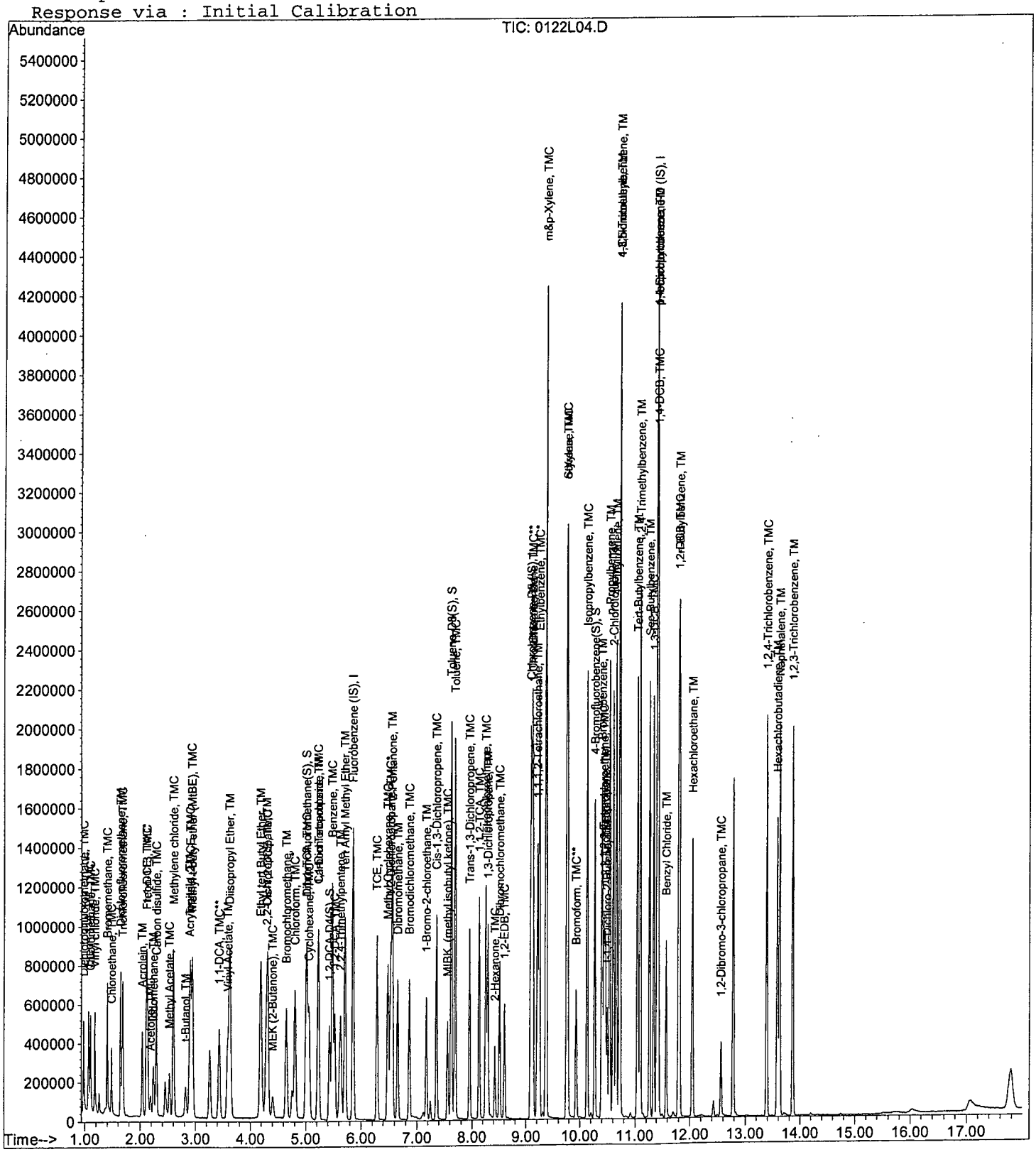
Data File : M:\LOKI\DATA\150119\0122L04.D
Acq On : 22 Jan 15 9:06
Sample : 150122A LCS-1SL
Misc : 5mL w/5uL IS&S:01/14/15,10-06-14

Vial: 3
Operator: DG,SV,RS
Inst : Loki
Multiplr: 1.00

Quant Time: Jan 23 7:42 2015

Quant Results File: LALLS.RES

Method : M:\LOKI\DATA\150119\LALLS.M (RTE Integrator)
Title : METHOD 8260B
Last Update : Fri Jan 23 13:43:44 2015
Response via : Initial Calibration



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Laboratory Control Spike Recovery
EPA 8260B SOIL MEOH

APPL ID: **150122S-09551 LCS - 193821**
Batch ID: #86BKB-150122AT

APPL Inc.
908 North Temperance Avenue
Clovis, CA 93611

Compound Name	Spike Level mg/Kg	SPK Result mg/Kg	SPK % Recovery	Recovery Limits
CIS-1,2-DICHLOROETHYLENE	0.500	0.539	108	65-125
TRICHLOROETHYLENE	0.500	0.588	118	75-125
SURROGATE: 1,2-DICHLOROETHANE-	0.0294	0.027	91.7	54-154
SURROGATE: 4-BROMOFLUOROBENZ	0.0295	0.0302	102	85-120
SURROGATE: TOLUENE-D8 (S)	0.0318	0.0314	98.8	85-115

Comments: _____

Primary	SPK
Quant Method :	TALLW.M
Extraction Date :	01/22/15
Analysis Date :	01/22/15
Instrument :	Thor
Run :	0122T13
Initials :	SV

Printed: 01/27/15 1:10:17 PM
APPL Standard LCS

Quantitation Report (Not Reviewed)

Data File : M:\THOR\DATA\T150109\0122T13.D
Acq On : 22 Jan 15 14:30
Sample : 150122A LCS-1WT MeOH
Misc : 10ml w/IS&S 12/20,12/23/14

Vial: 12
Operator: DG, SV, RS
Inst : Thor
Multiplr: 50.00

Quant Time: Jan 23 9:44 2015 Quant Results File: TALLW.RES

Quant Method : M:\THOR\DATA\T150109\TALLW.M (RTE Integrator)
Title : METHOD 8260B
Last Update : Mon Jan 12 11:16:31 2015
Response via : Initial Calibration
DataAcq Meth : 8260_BETA

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene (IS)	6.01	96	930240	25.00000 ppb	0.00
56) Chlorobenzene-D5 (IS)	9.22	117	810880	25.00000 ppb	0.00
71) 1,4-Dichlorobenzene-D (IS)	11.54	152	425728	25.00000 ppb	0.00
System Monitoring Compounds					
32) Dibromofluoromethane(S)	5.19	111	483977	30.40231 ppb	0.00
Spiked Amount 31.085			Recovery = 97.803%		
37) 1,2-DCA-D4(S)	5.59	65	453145	27.01296 ppb	0.00
Spiked Amount 29.432			Recovery = 91.780%		
57) Toluene-D8(S)	7.76	98	1703116	31.44154 ppb	0.00
Spiked Amount 31.767			Recovery = 98.976%		
65) 4-Bromofluorobenzene(S)	10.40	95	647604	30.15153 ppb	0.00
Spiked Amount 29.480			Recovery = 102.281%		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	1.02	85	142660	505.61285 ppb	99
3) Freon 114	1.11	135	110794	629.13935 ppb	94
4) Chloromethane	1.14	50	171354	499.06474 ppb	98
5) Vinyl chloride	1.22	62	190630	528.09183 ppb	99
6) Bromomethane	1.47	94	126938	548.73598 ppb	100
7) Chloroethane	1.55	64	117660	479.56612 ppb	99
8) Dichlorofluoromethane	1.72	67	322236	513.48496 ppb	98
9) Trichlorofluoromethane	1.76	101	228362	513.66220 ppb	99
10) Acrolein	2.13	56	191693	11931.43189 ppb	95
11) Acetone	2.29	43	28255	365.01931 ppb	96
12) Freon-113	2.24	101	138970	560.22849 ppb	97
13) 1,1-DCE	2.22	61	218065	563.72857 ppb	99
14) t-Butanol	2.92	59	104664	4384.15374 ppb	99
15) Methyl Acetate	2.64	43	76909	389.17868 ppb	100
16) Iodomethane	2.35	142	164461	529.53718 ppb	98
17) Acrylonitrile	3.02	52	29229	431.59234 ppb	100
18) Methylene chloride	2.72	84	160386	491.52523 ppb	99
19) Carbon disulfide	2.41	76	432165	538.98298 ppb	99
20) Methyl t-butyl ether (MtBE	3.07	73	310197	480.92718 ppb	98
21) Trans-1,2-DCE	3.04	96	157018	555.05639 ppb	99
22) Hexane	3.43	57	163551	555.60820 ppb	96
23) Diisopropyl Ether	3.79	45	485091	504.56993 ppb	97
24) 1,1-DCA	3.60	63	276379	535.50859 ppb	97
25) Vinyl Acetate	3.79	87	130941	520.90238 ppb	98
26) Ethyl tert Butyl Ether	4.36	59	261698	497.80478 ppb	99
27) MEK (2-Butanone)	4.58	43	44066	446.14300 ppb	97
28) Cis-1,2-DCE	4.50	96	175831	539.18793 ppb	95
29) 2,2-Dichloropropane	4.48	77	196238	499.96624 ppb	95
30) Chloroform	4.98	83	268200	528.79338 ppb	99
31) Bromochloromethane	4.83	128	80982	539.09556 ppb	99
33) 1,1,1-TCA	5.18	97	226994	544.88548 ppb	99
34) Cyclohexane	5.23	41	128126	526.92217 ppb	94
35) 1,1-Dichloropropene	5.40	75	212725	568.10782 ppb	96
36) 2,2,4-Trimethylpentane	5.80	57	415878	546.42560 ppb	97
38) Carbon Tetrachloride	5.39	117	204860	561.13789 ppb	99
39) Tert Amyl Methyl Ether	5.86	73	198691	453.80714 ppb	97
40) 1,2-DCA	5.69	62	182026	478.19758 ppb	97
41) Benzene	5.65	78	623970	541.92281 ppb	98
42) TCE	6.44	95	173342	587.69575 ppb	99

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : M:\THOR\DATA\T150109\0122T13.D
Acq On : 22 Jan 15 14:30
Sample : 150122A LCS-1WT MeOH
Misc : 10ml w/IS&S 12/20,12/23/14

Vial: 12
Operator: DG, SV, RS
Inst : Thor
Multiplr: 50.00

Quant Time: Jan 23 9:44 2015 Quant Results File: TALLW.RES

Quant Method : M:\THOR\DATA\T150109\TALLW.M (RTE Integrator)
Title : METHOD 8260B
Last Update : Mon Jan 12 11:16:31 2015
Response via : Initial Calibration
DataAcq Meth : 8260_BETA

Compound	R.T.	QIon	Response	Conc Unit	Qvalue
43) 2-Pentanone	6.69	43	914160	5070.29109 ppb	99
44) 1,2-Dichloropropane	6.68	63	168929	522.60151 ppb	99
45) Bromodichloromethane	7.01	83	194383	519.44176 ppb	97
46) Methyl Cyclohexane	6.64	83	235553	560.28719 ppb	95
47) Dibromomethane	6.80	93	87964	487.90054 ppb	99
48) MIBK (methyl isobutyl ket	7.68	43	97141	418.15634 ppb	97
49) 1-Bromo-2-chloroethane	7.31	63	187207	486.22541 ppb	97
51) Cis-1,3-Dichloropropene	7.49	75	239218	522.64002 ppb	99
52) Toluene	7.83	91	682154	535.83614 ppb	100
53) Trans-1,3-Dichloropropene	8.09	75	189899	500.19906 ppb	98
54) 1,1,2-TCA	8.26	83	102784	475.36501 ppb	96
55) 2-Hexanone	8.55	43	63986	444.31980 ppb	98
58) 1,2-EDB	8.74	107	120720	510.11131 ppb	97
59) Tetrachloroethene	8.39	166	191425	548.18621 ppb	96
60) 1-Chlorohexane	9.26	91	196871	565.02921 ppb	95
61) 1,1,1,2-Tetrachloroethane	9.34	131	159185	541.42042 ppb	100
62) m&p-Xylene	9.50	106	569848	1131.07376 ppb	100
63) o-Xylene	9.88	106	281663	571.43391 ppb	100
64) Styrene	9.90	104	443063	564.56551 ppb	100
66) 1,3-Dichloropropane	8.42	76	206630	501.45470 ppb	98
67) Dibromochloromethane	8.65	129	138739	500.15760 ppb	98
68) Chlorobenzene	9.25	112	448461	533.72023 ppb	99
69) Ethylbenzene	9.38	91	760868	555.65458 ppb	99
70) Bromoform	10.06	173	89658	479.41336 ppb	99
72) Isopropylbenzene	10.26	105	718159	603.84019 ppb	99
73) 1,1,2,2-Tetrachloroethane	10.56	83	119547	422.16508 ppb	98
74) 1,2,3-Trichloropropane	10.59	110	37413	456.48820 ppb	99
75) t-1,4-Dichloro-2-Butene	10.62	53	24186	449.16877 ppb	94
76) Bromobenzene	10.53	156	199598	560.72113 ppb	97
77) n-Propylbenzene	10.67	91	838644	597.34874 ppb	99
78) 4-Ethyltoluene	10.79	105	699620	601.54184 ppb	98
79) 2-Chlorotoluene	10.74	91	510273	583.87140 ppb	97
80) 1,3,5-Trimethylbenzene	10.85	105	621623	614.24403 ppb	98
81) 4-Chlorotoluene	10.85	91	587386	577.11414 ppb	99
82) Tert-Butylbenzene	11.17	119	523832	604.18069 ppb	98
83) 1,2,4-Trimethylbenzene	11.21	105	624045	613.75799 ppb	99
84) Sec-Butylbenzene	11.39	105	741405	608.84780 ppb	100
85) p-Isopropyltoluene	11.54	119	615414	614.39933 ppb	99
86) Benzyl Chloride	11.70	91	110825	444.81024 ppb	96
87) 1,3-DCB	11.47	146	360051	565.84831 ppb	98
88) 1,4-DCB	11.56	146	361362	547.51472 ppb	100
89) n-Butylbenzene	11.94	91	563050	607.08120 ppb	98
90) 1,2-DCB	11.93	146	333614	544.70576 ppb	97
91) Hexachloroethane	12.18	117	108226	577.08909 ppb	99
92) 1,2-Dibromo-3-chloropropan	12.69	157	23798	466.20170 ppb	98
93) 1,2,4-Trichlorobenzene	13.51	180	218488	574.21123 ppb	99
94) Hexachlorobutadiene	13.70	225	122806	563.12322 ppb	100
95) Naphthalene	13.75	128	351826	484.89781 ppb	100
96) 1,2,3-Trichlorobenzene	13.99	180	193585	558.30287 ppb	99

(#) = qualifier out of range (m) = manual integration

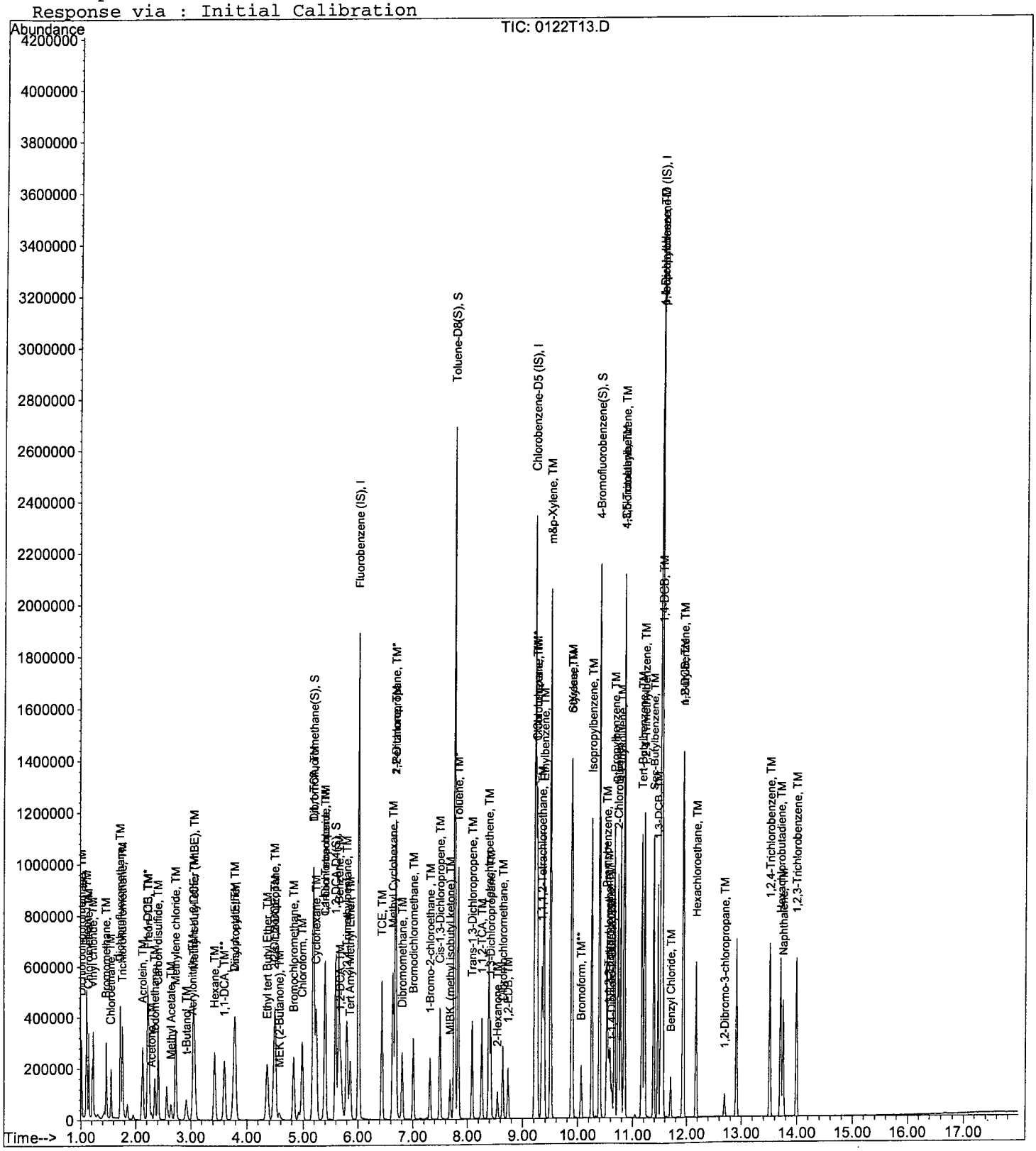
Quantitation Report

Data File : M:\THOR\DATA\T150109\0122T13.D
Acq On : 22 Jan 15 14:30
Sample : 150122A LCS-1WT MeOH
Misc : 10ml w/IS&S 12/20,12/23/14

Vial: 12
Operator: DG, SV, RS
Inst : Thor
Multiplr: 50.00

Quant Time: Jan 23 9:44 2015 Quant Results File: TALLW.RES

Method : M:\THOR\DATA\T150109\TALLW.M (RTE Integrator)
Title : METHOD 8260B
Last Update : Mon Jan 12 11:16:31 2015
Response via : Initial Calibration



Matrix Spike Recoveries

EPA 8260B SOIL

APPL ID: **150121S-09552 MS - 193773**
Batch ID: #86BKB-150122AL
Sample ID: AZ09552
Client ID: EKB100008

APPL Inc.
908 North Temperance Avenue
Clovis, CA 93611

Compound Name	SPK Lvl mg/Kg	DUP Lvl mg/Kg	Matrix Result mg/Kg	SPK Result mg/Kg	DUP Result mg/Kg	SPK % Recovery	DUP % Recovery	Recovery Limits	RPD %	RPD Limits
(Solid Concentrations and Limits have been adjusted to reflect 34.6 Percent Moisture.)										
1,1,1-TRICHLOROETHANE	0.0627	0.0581	ND	0.0673	0.062	107	107	70-135	0	30
1,1,2,2-TETRACHLOROETHANE	0.0627	0.0581	ND	0.0477	0.046	76.1	79.2	55-130	4	30
1,1,2-TRICHLOROETHANE	0.0627	0.0581	ND	0.0553	0.0498	88.2	85.7	60-125	2.9	30
1,1-DICHLOROETHANE	0.0627	0.0581	ND	0.060	0.0546	95.7	94.0	75-125	1.8	30
1,1-DICHLOROETHENE	0.0627	0.0581	ND	0.0665	0.0601	106	103	65-135	2.9	30
1,2,3-TRICHLOROPROPANE	0.0627	0.0581	ND	0.0522	0.0493	83.3	84.9	65-130	1.9	30
1,2-DIBROMOETHANE	0.0627	0.0581	ND	0.0555	0.0506	88.5	87.1	70-125	1.6	30
1,2-DICHLOROETHANE	0.0627	0.0581	ND	0.0553	0.049	88.2	84.3	70-135	4.5	30
1,2-DICHLOROPROPANE	0.0627	0.0581	ND	0.0567	0.0509	90.4	87.6	70-120	3.1	30
2-BUTANONE	0.0627	0.0581	0.0055	0.0488	0.0497	69.1	76.1	30-160	9.6	30
4-METHYL-2-PENTANONE	0.0627	0.0581	ND	0.0439	0.0443	70.0	76.2	45-145	8.5	30
ACETONE	0.0627	0.0581	0.016	0.0739	0.0711	92.3	94.8	20-160	2.7	30
BENZENE	0.0627	0.0581	ND	0.0634	0.0576	101	99.1	75-125	1.9	30
BROMODICHLOROMETHANE	0.0627	0.0581	ND	0.0521	0.0484	83.1	83.3	70-130	0.24	30
BROMOFORM	0.0627	0.0581	ND	0.0451	0.0451	71.9	77.6	55-135	7.6	30
BROMOMETHANE	0.0627	0.0581	ND	0.0452	0.0512	72.1	88.1	30-160	20	30
CARBON TETRACHLORIDE	0.0627	0.0581	ND	0.0524	0.0586	83.6	101	65-135	18.9	30
CHLOROBENZENE	0.0627	0.0581	ND	0.0573	0.0527	91.4	90.7	75-125	0.77	30
CHLOROETHANE	0.0627	0.0581	ND	0.0504	0.0563	80.4	96.9	40-155	18.6	30
CHLOROFORM	0.0627	0.0581	ND	0.0594	0.0522	94.7	89.8	70-125	5.3	30
CHLOROMETHANE	0.0627	0.0581	ND	0.0436	0.0516	69.5	88.8	50-130	24.4	30
CIS-1,2-DICHLOROETHYLENE	0.0627	0.0581	0.00038	0.0621	0.0561	98.4	95.9	65-125	2.6	30
CIS-1,3-DICHLOROPROPENE	0.0627	0.0581	ND	0.0463	0.0443	73.8	76.2	70-125	3.2	30
DIBROMOCHLOROMETHANE	0.0627	0.0581	ND	0.0499	0.0478	79.6	82.3	65-130	3.3	30

= Recovery is outside QC limits.

Comments:

Primary	SPK	DUP
Quant Method :	LALLS.M	LALLS.M
Extraction Date :	01/21/15	01/21/15
Analysis Date :	01/21/15	01/21/15
Instrument :	Loki	Loki
Run :	0121L28	0121L29
Initials :	SV	

Printed: 01/26/15 1:47:00 PM
APPL MSD SCII

Matrix Spike Recoveries

EPA 8260B SOIL

APPL ID: **150121S-09552 MS - 193773**
Batch ID: #86BKB-150122AL
Sample ID: AZ09552
Client ID: EKB100008

APPL Inc.
908 North Temperance Avenue
Clovis, CA 93611

Compound Name	SPK Lvl mg/Kg	DUP Lvl mg/Kg	Matrix Result mg/Kg	SPK Result mg/Kg	DUP Result mg/Kg	SPK % Recovery	DUP % Recovery	Recovery Limits	RPD %	RPD Limits
ETHYLBENZENE	0.0627	0.0581	ND	0.0614	0.0577	97.9	99.3	75-125	1.4	30
METHYLENE CHLORIDE	0.0627	0.0581	ND	0.050	0.0439	79.7	75.6	55-140	5.3	30
STYRENE	0.0627	0.0581	ND	0.0464	0.0449	74.0 #	77.3	75-125	4.4	30
TETRACHLOROETHENE	0.0627	0.0581	ND	0.0737	0.0634	118	109	65-140	7.9	30
TOLUENE	0.0627	0.0581	0.0026	0.0631	0.0582	96.5	95.7	70-125	0.83	30
TRANS-1,2-DICHLOROETHYLENE	0.0627	0.0581	ND	0.0647	0.0581	103	100	65-135	3	30
TRANS-1,3-DICHLOROPROPENE	0.0627	0.0581	ND	0.0459	0.043	73.2	74.0	65-125	1.1	30
TRICHLOROETHYLENE	0.0627	0.0581	ND	0.0655	0.0608	104	105	75-125	0.96	30
VINYL CHLORIDE	0.0627	0.0581	ND	0.0594	0.0674	94.7	116	60-125	20.2	30
XYLENES (TOTAL)	0.191	0.176	0.0021	0.178	0.166	92.1	93.1	75-125	1.1	30
SURROGATE: 1,2-DICHLOROETHA	0.04807	0.04807	NA	0.0485	0.0475	101	98.8	54-154		
SURROGATE: 4-BROMOFLUOROBE	0.05454	0.05454	NA	0.0531	0.0524	97.4	96.1	85-120		
SURROGATE: TOLUENE-D8 (S)	0.06118	0.06118	NA	0.0589	0.0595	96.3	97.3	85-115		

= Recovery is outside QC limits.

Comments:

Primary	SPK	DUP
Quant Method :	LALLS.M	LALLS.M
Extraction Date :	01/21/15	01/21/15
Analysis Date :	01/21/15	01/21/15
Instrument :	Loki	Loki
Run :	0121L28	0121L29
Initials :	SV	

Printed: 01/26/15 1:47:00 PM
APPL MSD SCII

Quantitation Report (Not Reviewed)

Data File : M:\LOKI\DATA\150119\0121L28.D
Acq On : 21 Jan 15 19:10
Sample : AZ09552S02 MS-1SL 6.031
Misc : 5mL w/5uL IS&S:01/14/15,10-06-14

Vial: 27
Operator: DG,SV,RS
Inst : Loki
Multiplr: 0.83

Quant Time: Jan 22 8:56 2015 Quant Results File: LALLS.RES

Quant Method : M:\LOKI\DATA\150119\LALLS.M (RTE Integrator)
Title : METHOD 8260B
Last Update : Tue Jan 20 09:48:55 2015
Response via : Initial Calibration
DataAcq Meth : 8260_BETA

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene (IS)	5.86	96	748864	50.00000 ppb	0.00
55) Chlorobenzene-D5 (IS)	9.09	117	692672	50.00000 ppb	0.00
70) 1,4-Dichlorobenzene-D (IS)	11.42	152	383104	50.00000 ppb	0.00
System Monitoring Compounds					
31) Dibromofluoromethane(S)	5.02	111	360704	53.66259 ppb	0.00
Spiked Amount 52.439			Recovery	= 102.334%	
36) 1,2-DCA-D4(S)	5.43	65	370121	48.53854 ppb	0.00
Spiked Amount 48.066			Recovery	= 100.984%	
56) Toluene-D8(S)	7.62	98	1292423	58.88297 ppb	0.00
Spiked Amount 61.175			Recovery	= 96.253%	
64) 4-Bromofluorobenzene(S)	10.27	95	491048	53.09656 ppb	0.00
Spiked Amount 54.538			Recovery	= 97.358%	

Target Compounds					Qvalue
2) Dichlorodifluoromethane	0.98	85	257600	45.18434 ppb	100
3) Freon 114	1.07	85	298491	52.65817 ppb	95
4) Chloromethane	1.10	50	216585	28.50832 ppb	100
5) Vinyl chloride	1.18	62	267489	38.87215 ppb	99
6) Bromomethane	1.40	94	166319	29.54553 ppb	97
7) Chloroethane	1.48	64	162626	32.94983 ppb	95
8) Dichlorofluoromethane	1.65	67	555372	42.14858 ppb	100
9) Trichlorofluoromethane	1.69	101	383398	38.87562 ppb	97
10) Acrolein	2.02	55	13821	18.49332 ppb #	1
11) Acetone	2.19	43	140033	48.30706 ppb	96
12) Freon-113	2.14	101	290211	48.02071 ppb	98
13) 1,1-DCE	2.12	61	388886	43.48802 ppb	99
14) t-Butanol	2.82	59	192198	173.81034 ppb	97
15) Methyl Acetate	2.53	43	198758	31.57658 ppb	90
16) Iodomethane	2.24	142	209491	55.42799 ppb	95
17) Acrylonitrile	2.89	53	99823	29.48750 ppb	99
18) Methylene chloride	2.60	84	323623	32.67994 ppb	99
19) Carbon disulfide	2.30	76	1034433	53.07805 ppb	99
20) Methyl t-butyl ether (MtBE	2.94	73	842557	36.14537 ppb	97
21) Trans-1,2-DCE	2.90	96	309467	42.31250 ppb	92
22) Diisopropyl Ether	3.62	45	787166	35.10774 ppb	98
23) 1,1-DCA	3.44	63	480300	39.27154 ppb	98
24) Vinyl Acetate	3.62	43	647076	26.08859 ppb #	71
25) Ethyl tert Butyl Ether	4.19	59	826668	37.24838 ppb	99
26) MEK (2-Butanone)	4.41	43	124978	31.92321 ppb	100
27) Cis-1,2-DCE	4.32	96	354160	40.60197 ppb	94
28) 2,2-Dichloropropane	4.30	77	398460	40.49314 ppb	97
29) Chloroform	4.81	83	497950	38.81639 ppb	98
30) Bromochloromethane	4.65	128	169441	37.60842 ppb	95
32) 1,1,1-TCA	5.00	97	417501	44.02102 ppb	97
33) Cyclohexane	5.06	41	181961	41.42891 ppb	84
34) 1,1-Dichloropropene	5.23	75	371801	45.14835 ppb	97
35) 2,2,4-Trimethylpentane	5.63	57	488900	29.69369 ppb	99
37) Carbon Tetrachloride	5.22	117	279879	34.26303 ppb	99
38) Tert Amyl Methyl Ether	5.71	73	784331	37.73790 ppb	98
39) 1,2-DCA	5.53	62	376813	36.14039 ppb	98
40) Benzene	5.49	78	1103300	41.46790 ppb	99
41) TCE	6.29	95	291407	42.81793 ppb	98
42) 2-Pentanone	6.56	43	1108092	185.58401 ppb	94

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : M:\LOKI\DATA\150119\0121L28.D
Acq On : 21 Jan 15 19:10
Sample : AZ09552S02 MS-1SL 6.031
Misc : 5mL w/5uL IS&S:01/14/15,10-06-14

Vial: 27
Operator: DG,SV,RS
Inst : Loki
Multiplr: 0.83

Quant Time: Jan 22 8:56 2015 Quant Results File: LALLS.RES

Quant Method : M:\LOKI\DATA\150119\LALLS.M (RTE Integrator)
Title : METHOD 8260B
Last Update : Tue Jan 20 09:48:55 2015
Response via : Initial Calibration
DataAcq Meth : 8260_BETA

Compound	R.T.	QIon	Response	Conc Unit	Qvalue
43) 1,2-Dichloropropane	6.53	63	274555	37.10207 ppb	98
44) Bromodichloromethane	6.87	83	344088	34.04846 ppb	98
45) Methyl Cyclohexane	6.48	83	377968	39.11902 ppb	99
46) Dibromomethane	6.66	93	190247	36.47682 ppb	99
48) MIBK (methyl isobutyl ket	7.56	43	120264	28.71831 ppb	96
49) 1-Bromo-2-chloroethane	7.17	63	224384	36.23603 ppb	100
50) Cis-1,3-Dichloropropene	7.36	75	383047	30.25771 ppb	96
51) Toluene	7.69	91	1241094	41.24366 ppb	100
52) Trans-1,3-Dichloropropene	7.96	75	347421	29.98737 ppb	100
53) 1,1,2-TCA	8.13	83	218741	36.15952 ppb	99
54) 2-Hexanone	8.43	43	87558	27.56145 ppb	99
57) 1,2-EDB	8.61	107	281962	36.27771 ppb	97
58) Tetrachloroethene	8.25	164	288433	48.20062 ppb	98
59) 1-Chlorohexane	9.14	91	319639	38.45105 ppb	96
60) 1,1,1,2-Tetrachloroethane	9.21	131	277142	34.03035 ppb	98
61) m&p-Xylene	9.37	91	1277207	79.21104 ppb	99
62) o-Xylene	9.76	106	490872	37.49082 ppb	97
63) Styrene	9.78	104	685287	30.33714 ppb	98
65) 1,3-Dichloropropane	8.29	76	441987	35.84089 ppb	100
66) Dibromochloromethane	8.51	129	280765	32.61413 ppb	100
67) Chlorobenzene	9.12	112	818119	37.50528 ppb	99
68) Ethylbenzene	9.25	91	1299263	40.12923 ppb	98
69) Bromoform	9.94	173	192905	29.50882 ppb	99
71) Isopropylbenzene	10.14	105	1152114	36.84515 ppb	100
72) 1,1,2,2-Tetrachloroethane	10.44	83	323945	31.16872 ppb	100
73) 1,2,3-Trichloropropane	10.46	110	112280	34.14777 ppb	95
74) t-1,4-Dichloro-2-Butene	10.50	53	49064	19.55923 ppb	95
75) Bromobenzene	10.40	156	339583	33.08309 ppb	97
76) n-Propylbenzene	10.54	91	1247966	35.45171 ppb	99
77) 4-Ethyltoluene	10.66	105	1090164	35.30299 ppb	100
78) 2-Chlorotoluene	10.61	91	753875	32.70501 ppb	99
79) 1,3,5-Trimethylbenzene	10.73	105	925352	33.30973 ppb	98
80) 4-Chlorotoluene	10.72	91	879190	32.89487 ppb	99
81) Tert-Butylbenzene	11.04	119	764912	32.59586 ppb	98
82) 1,2,4-Trimethylbenzene	11.09	105	928031	31.70908 ppb	98
83) Sec-Butylbenzene	11.26	105	1012185	30.82512 ppb	99
84) p-Isopropyltoluene	11.42	119	861144	30.66338 ppb	99
85) Benzyl Chloride	11.58	91	244756	16.74630 ppb	99
86) 1,3-DCB	11.34	146	512076	28.47533 ppb	99
87) 1,4-DCB	11.43	146	529033	28.69354 ppb	99
88) n-Butylbenzene	11.81	91	689305	27.67970 ppb	99
89) 1,2-DCB	11.79	146	464680	25.85756 ppb	99
90) Hexachloroethane	12.05	117	87350	15.75529 ppb	100
91) 1,2-Dibromo-3-chloropropan	12.56	157	67886	26.22535 ppb	96
92) 1,2,4-Trichlorobenzene	13.39	180	217427	16.06586 ppb	99
93) Hexachlorobutadiene	13.58	225	104508	16.48093 ppb	95
94) Naphthalene	13.62	128	583467	17.51647 ppb	99
95) 1,2,3-Trichlorobenzene	13.87	180	174993	12.98889 ppb	100

(#) = qualifier out of range (m) = manual integration

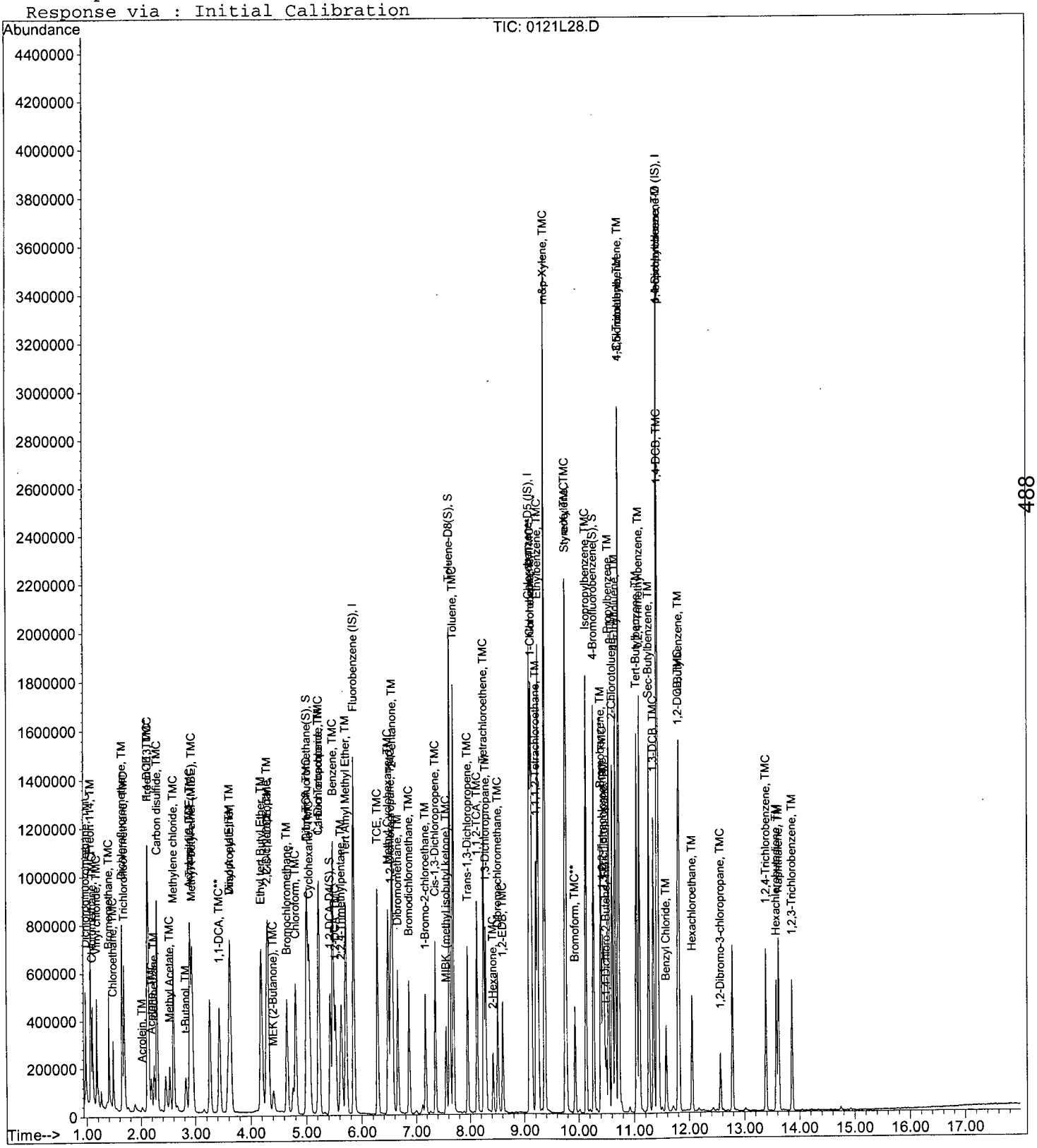
Quantitation Report

Data File : M:\LOKI\DATA\150119\0121L28.D
Acq On : 21 Jan 15 19:10
Sample : AZ09552S02 MS-1SL 6.031
Misc : 5mL w/5uL IS&S:01/14/15,10-06-14

Vial: 27
Operator: DG,SV,RS
Inst : Loki
Multiplr: 0.83

Quant Time: Jan 22 8:56 2015 Quant Results File: LALLS.RES

Method : M:\LOKI\DATA\150119\LALLS.M (RTE Integrator)
Title : METHOD 8260B
Last Update : Tue Jan 20 09:48:55 2015
Response via : Initial Calibration



488

Quantitation Report (Not Reviewed)

Data File : M:\LOKI\DATA\150119\0121L29.D
Acq On : 21 Jan 15 19:32
Sample : AZ09552S03 MSD-1SL 6.457
Misc : 5mL w/5uL IS&S:01/14/15,10-06-14

Vial: 28
Operator: DG,SV,RS
Inst : Loki
Multiplr: 0.77

Quant Time: Jan 22 8:56 2015 Quant Results File: LALLS.RES

Quant Method : M:\LOKI\DATA\150119\LALLS.M (RTE Integrator)
Title : METHOD 8260B
Last Update : Tue Jan 20 09:48:55 2015
Response via : Initial Calibration
DataAcq Meth : 8260_BETA

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene (IS)	5.86	96	728384	50.00000 ppb	0.00
55) Chlorobenzene-D5 (IS)	9.09	117	670656	50.00000 ppb	0.00
70) 1,4-Dichlorobenzene-D (IS)	11.41	152	368960	50.00000 ppb	0.00
System Monitoring Compounds					
31) Dibromofluoromethane(S)	5.02	111	353830	54.12002 ppb	0.00
Spiked Amount 52.439			Recovery	= 103.205%	
36) 1,2-DCA-D4(S)	5.43	65	352572	47.53718 ppb	0.00
Spiked Amount 48.066			Recovery	= 98.900%	
56) Toluene-D8(S)	7.62	98	1263670	59.46296 ppb	0.00
Spiked Amount 61.175			Recovery	= 97.201%	
64) 4-Bromofluorobenzene(S)	10.27	95	469645	52.44933 ppb	0.00
Spiked Amount 54.538			Recovery	= 96.170%	

Target Compounds					Qvalue
2) Dichlorodifluoromethane	0.98	85	307200	51.75076 ppb	100
3) Freon 114	1.07	85	287539	48.74490 ppb	96
4) Chloromethane	1.10	50	266891	33.73888 ppb	99
5) Vinyl chloride	1.18	62	315874	44.08592 ppb	99
6) Bromomethane	1.40	94	196294	33.48963 ppb	98
7) Chloroethane	1.48	64	189334	36.84217 ppb	100
8) Dichlorofluoromethane	1.65	67	519334	37.85289 ppb	99
9) Trichlorofluoromethane	1.69	101	461210	44.20927 ppb	98
10) Acrolein	2.02	55	9565	14.01165 ppb #	1
11) Acetone	2.19	43	139861	46.49290 ppb	95
12) Freon-113	2.14	101	278394	44.26681 ppb	98
13) 1,1-DCE	2.12	61	366186	39.32805 ppb	97
14) t-Butanol	2.82	59	89706	77.91151 ppb	98
15) Methyl Acetate	2.53	43	221688	33.82486 ppb	93
16) Iodomethane	2.24	142	240939	59.30375 ppb	98
17) Acrylonitrile	2.89	53	99349	28.18540 ppb	97
18) Methylene chloride	2.60	84	298983	28.73560 ppb	99
19) Carbon disulfide	2.29	76	784983	38.68354 ppb	99
20) Methyl t-butyl ether (MtBE	2.94	73	781857	32.21322 ppb	97
21) Trans-1,2-DCE	2.90	96	289511	38.01656 ppb	92
22) Diisopropyl Ether	3.62	45	726237	31.10773 ppb	96
23) 1,1-DCA	3.44	63	454551	35.69450 ppb	98
24) Vinyl Acetate	3.62	43	487967	18.89466 ppb #	70
25) Ethyl tert Butyl Ether	4.19	59	767400	33.20867 ppb	100
26) MEK (2-Butanone)	4.41	43	132448	32.49165 ppb	94
27) Cis-1,2-DCE	4.32	96	333194	36.68581 ppb	92
28) 2,2-Dichloropropane	4.29	77	376258	36.72280 ppb	100
29) Chloroform	4.81	83	455720	34.11779 ppb	99
30) Bromochloromethane	4.65	128	161809	34.49234 ppb	93
32) 1,1,1-TCA	5.00	97	400739	40.58052 ppb	94
33) Cyclohexane	5.06	41	182041	39.80593 ppb	90
34) 1,1-Dichloropropene	5.23	75	351516	40.99489 ppb	97
35) 2,2,4-Trimethylpentane	5.63	57	520064	30.06236 ppb	94
37) Carbon Tetrachloride	5.22	117	326096	38.34019 ppb	98
38) Tert Amyl Methyl Ether	5.71	73	725108	33.50691 ppb	98
39) 1,2-DCA	5.53	62	348169	32.07084 ppb	98
40) Benzene	5.48	78	1043310	37.66042 ppb	99
41) TCE	6.29	95	281622	39.74162 ppb	99
42) 2-Pentanone	6.56	43	549422	88.37392 ppb	95

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : M:\LOKI\DATA\150119\0121L29.D
Acq On : 21 Jan 15 19:32
Sample : AZ09552S03 MSD-1SL 6.457
Misc : 5mL w/5uL IS&S:01/14/15,10-06-14

Vial: 28
Operator: DG,SV,RS
Inst : Loki
Multiplr: 0.77

Quant Time: Jan 22 8:56 2015 Quant Results File: LALLS.RES

Quant Method : M:\LOKI\DATA\150119\LALLS.M (RTE Integrator)
Title : METHOD 8260B
Last Update : Tue Jan 20 09:48:55 2015
Response via : Initial Calibration
DataAcq Meth : 8260_BETA

Compound	R.T.	QIon	Response	Conc Unit	Qvalue
43) 1,2-Dichloropropane	6.53	63	256715	33.31757 ppb	99
44) Bromodichloromethane	6.87	83	333167	31.66236 ppb	98
45) Methyl Cyclohexane	6.48	83	385075	38.27645 ppb	97
46) Dibromomethane	6.66	93	179523	33.05770 ppb	98
48) MIBK (methyl isobutyl ket	7.56	43	126289	28.96291 ppb	96
49) 1-Bromo-2-chloroethane	7.17	63	202112	31.34687 ppb	95
50) Cis-1,3-Dichloropropene	7.36	75	382188	28.99442 ppb	96
51) Toluene	7.69	91	1191663	38.03289 ppb	99
52) Trans-1,3-Dichloropropene	7.96	75	338971	28.09947 ppb	100
53) 1,1,2-TCA	8.13	83	205274	32.58966 ppb	98
54) 2-Hexanone	8.43	43	96420	29.14921 ppb	100
57) 1,2-EDB	8.60	107	266469	33.07765 ppb	97
58) Tetrachloroethene	8.25	164	257024	41.44002 ppb	98
59) 1-Chlorohexane	9.13	91	320688	37.21943 ppb	95
60) 1,1,1,2-Tetrachloroethane	9.21	131	281464	33.34461 ppb	96
61) m&p-Xylene	9.37	91	1230539	73.63061 ppb	96
62) o-Xylene	9.76	106	472851	34.84332 ppb	100
63) Styrene	9.78	104	687312	29.35585 ppb	98
65) 1,3-Dichloropropane	8.29	76	412354	32.26102 ppb	100
66) Dibromochloromethane	8.51	129	278958	31.26370 ppb	98
67) Chlorobenzene	9.12	112	778760	34.44437 ppb	98
68) Ethylbenzene	9.25	91	1267155	37.76001 ppb	99
69) Bromoform	9.93	173	199777	29.48442 ppb	99
71) Isopropylbenzene	10.14	105	1130405	35.06446 ppb	100
72) 1,1,2,2-Tetrachloroethane	10.44	83	322554	30.10220 ppb	99
73) 1,2,3-Trichloropropane	10.46	110	109359	32.25987 ppb	100
74) t-1,4-Dichloro-2-Butene	10.50	53	53922	20.84986 ppb	93
75) Bromobenzene	10.40	156	334879	31.64435 ppb	96
76) n-Propylbenzene	10.54	91	1250684	34.46118 ppb	98
77) 4-Ethyltoluene	10.66	105	1081254	33.96218 ppb	100
78) 2-Chlorotoluene	10.61	91	750064	31.56178 ppb	98
79) 1,3,5-Trimethylbenzene	10.73	105	926592	32.35198 ppb	99
80) 4-Chlorotoluene	10.72	91	868509	31.51868 ppb	100
81) Tert-Butylbenzene	11.04	119	755276	31.21799 ppb	98
82) 1,2,4-Trimethylbenzene	11.09	105	924392	30.63554 ppb	99
83) Sec-Butylbenzene	11.26	105	1017224	30.04760 ppb	99
84) p-Isopropyltoluene	11.41	119	857546	29.61760 ppb	100
85) Benzyl Chloride	11.58	91	337773	22.41602 ppb	99
86) 1,3-DCB	11.34	146	516477	27.85695 ppb	100
87) 1,4-DCB	11.44	146	538268	28.31706 ppb	99
88) n-Butylbenzene	11.81	91	699122	27.23022 ppb	99
89) 1,2-DCB	11.80	146	478479	25.82526 ppb	99
90) Hexachloroethane	12.05	117	138221	24.18163 ppb	97
91) 1,2-Dibromo-3-chloropropan	12.56	157	74158	27.78736 ppb	89
92) 1,2,4-Trichlorobenzene	13.39	180	229506	16.44875 ppb	99
93) Hexachlorobutadiene	13.58	225	106604	16.30624 ppb	98
94) Naphthalene	13.62	128	666823	19.41731 ppb	99
95) 1,2,3-Trichlorobenzene	13.87	180	188599	13.57810 ppb	98

(#) = qualifier out of range (m) = manual integration

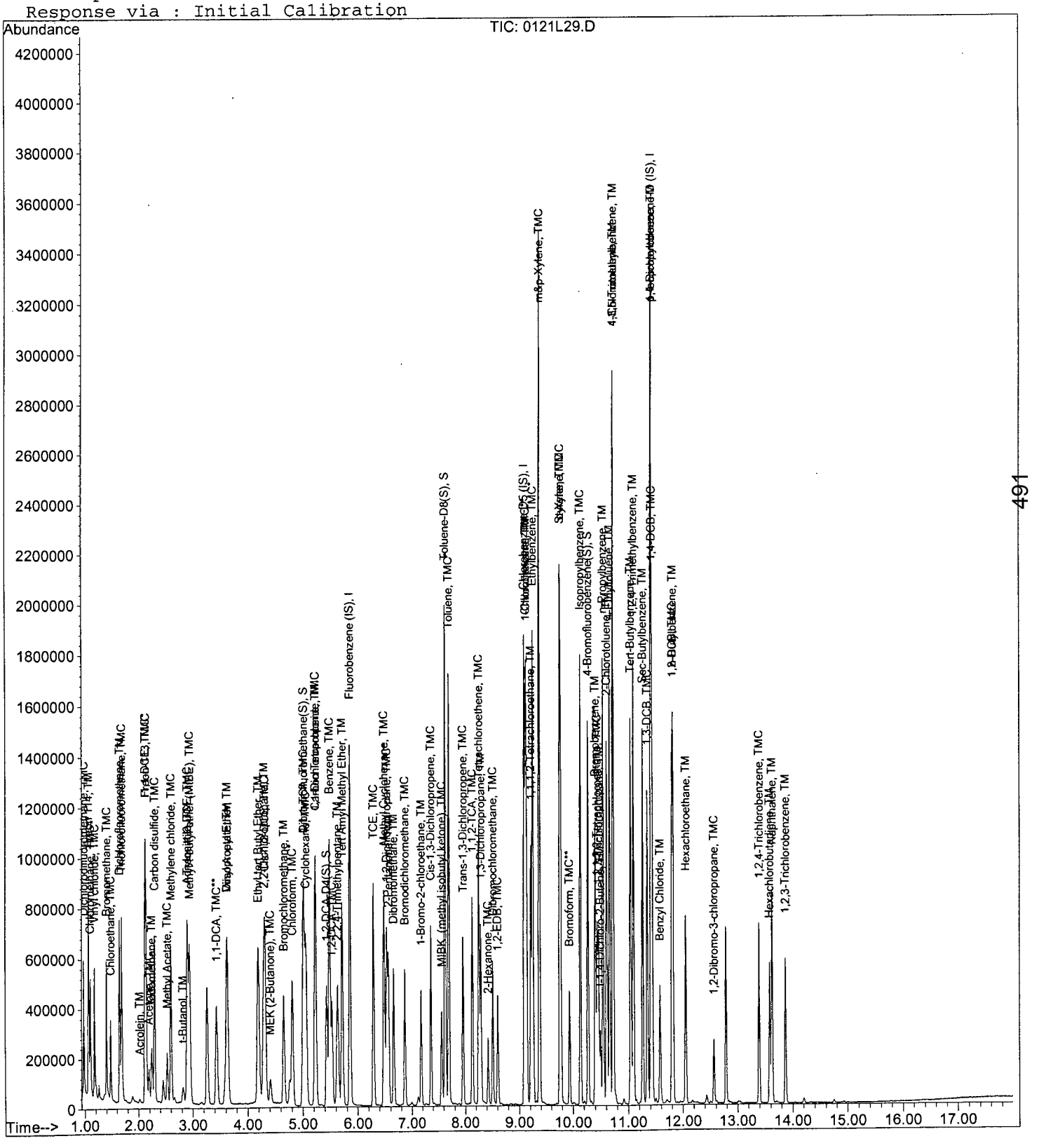
Quantitation Report

Data File : M:\LOKI\DATA\150119\0121L29.D
Acq On : 21 Jan 15 19:32
Sample : AZ09552S03 MSD-1SL 6.457
Misc : 5mL w/5uL IS&S:01/14/15,10-06-14

Vial: 28
Operator: DG,SV,RS
Inst : Loki
Multiplr: 0.77

Quant Time: Jan 22 8:56 2015 Quant Results File: LALLS.RES

Method : M:\LOKI\DATA\150119\LALLS.M (RTE Integrator)
Title : METHOD 8260B
Last Update : Tue Jan 20 09:48:55 2015
Response via : Initial Calibration

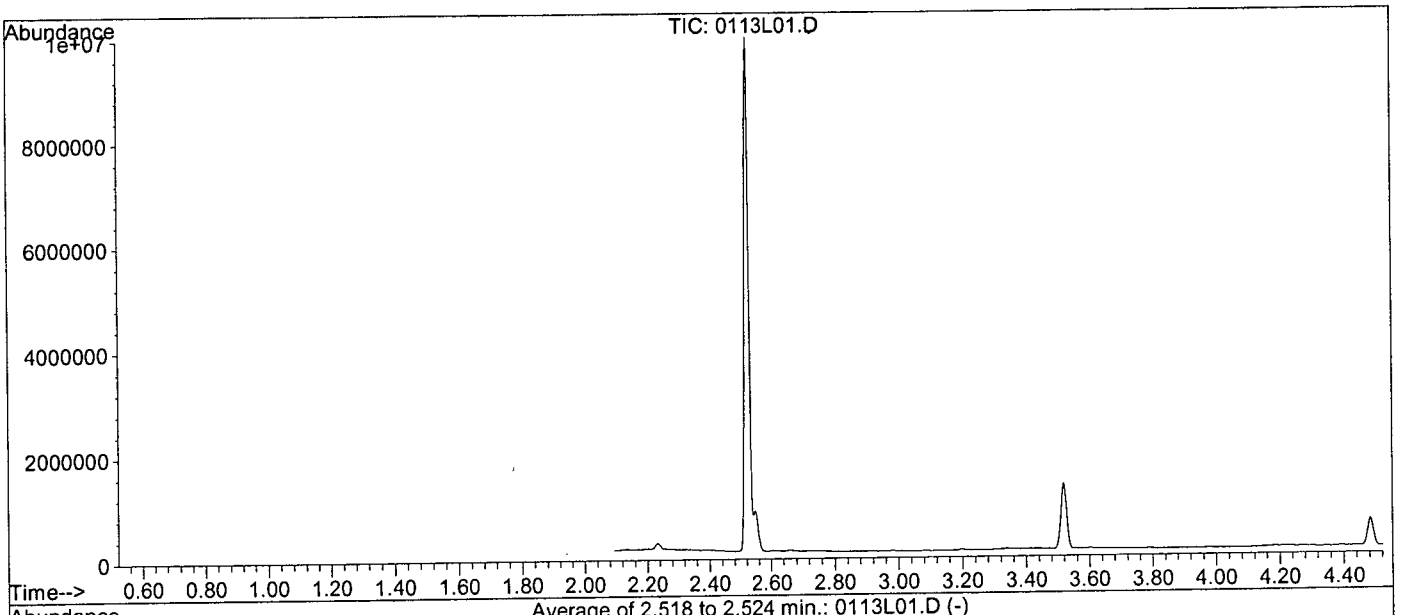


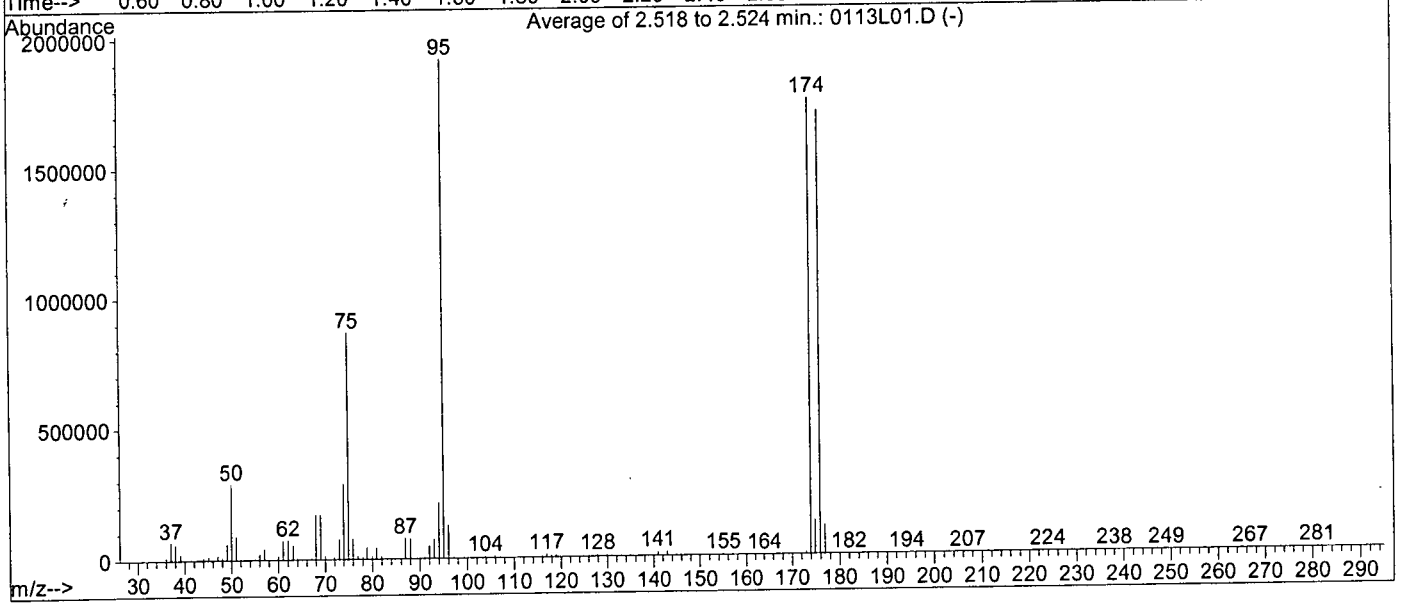
BFB

Data File : M:\LOKI\DATA\150113\0113L01.D
Acq On : 13 Jan 15 12:31
Sample : 25ug/mL BFB Std 01-09-15
Misc : 2uL

Vial: 1
Operator: DG,SV,RS
Inst : Loki
Multiplr: 1.00

Method : M:\LOKI\DATA\150113\LALLW2.M (RTE Integrator)
Title : METHOD 8260B





AutoFind: Scans 133, 134, 135; Background Corrected with Scan 122

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50	95	15	40	15.0	288547	PASS
75	95	30	60	45.3	869518	PASS
95	95	100	100	100.0	1920264	PASS
96	95	5	9	6.6	126363	PASS
173	174	0.00	2	0.5	8483	PASS
174	95	50	100	91.4	1755307	PASS
175	174	5	9	7.3	128179	PASS
176	174	95	101	97.2	1706865	PASS
177	176	5	9	6.4	109882	PASS

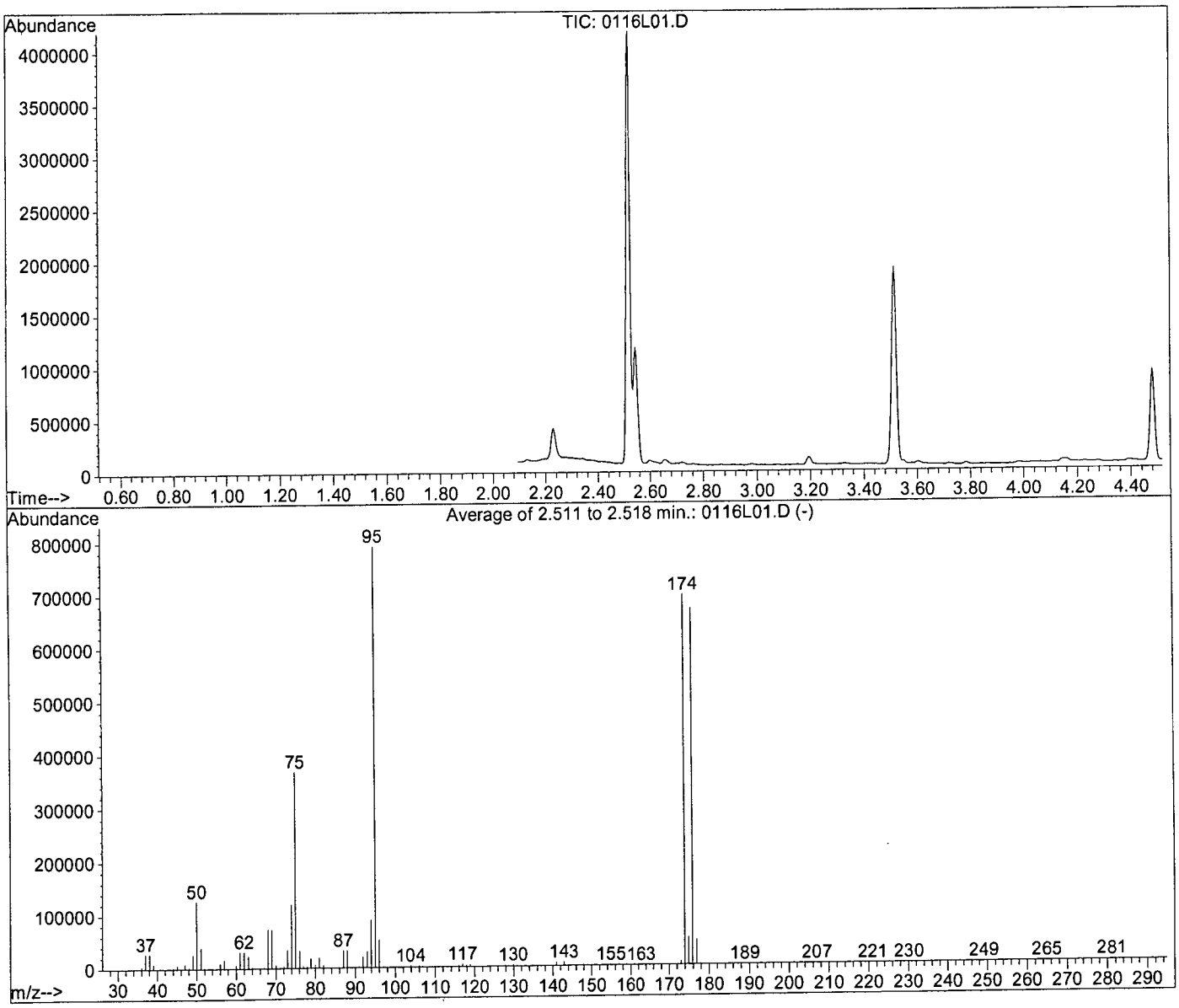
0113L01.D LALLW2.M Wed Jan 28 12:53:50 2015

BFB

Data File : M:\LOKI\DATA\150113\0116L01.D
Acq On : 16 Jan 15 8:39
Sample : 25ug/mL BFB Std 01-09-15
Misc : 2uL

Vial: 1
Operator: DG,SV,RS
Inst : Loki
Multiplr: 1.00

Method : M:\LOKI\DATA\150113\LALLW2.M (RTE Integrator)
Title : METHOD 8260B



AutoFind: Scans 131, 132, 133; Background Corrected with Scan 121

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50	95	15	40	15.9	125871	PASS
75	95	30	60	46.5	368430	PASS
95	95	100	100	100.0	792956	PASS
96	95	5	9	6.5	51352	PASS
173	174	0.00	2	0.8	5486	PASS
174	95	50	100	87.9	696851	PASS
175	174	5	9	7.3	50712	PASS
176	174	95	101	96.2	670699	PASS
177	176	5	9	6.9	46247	PASS

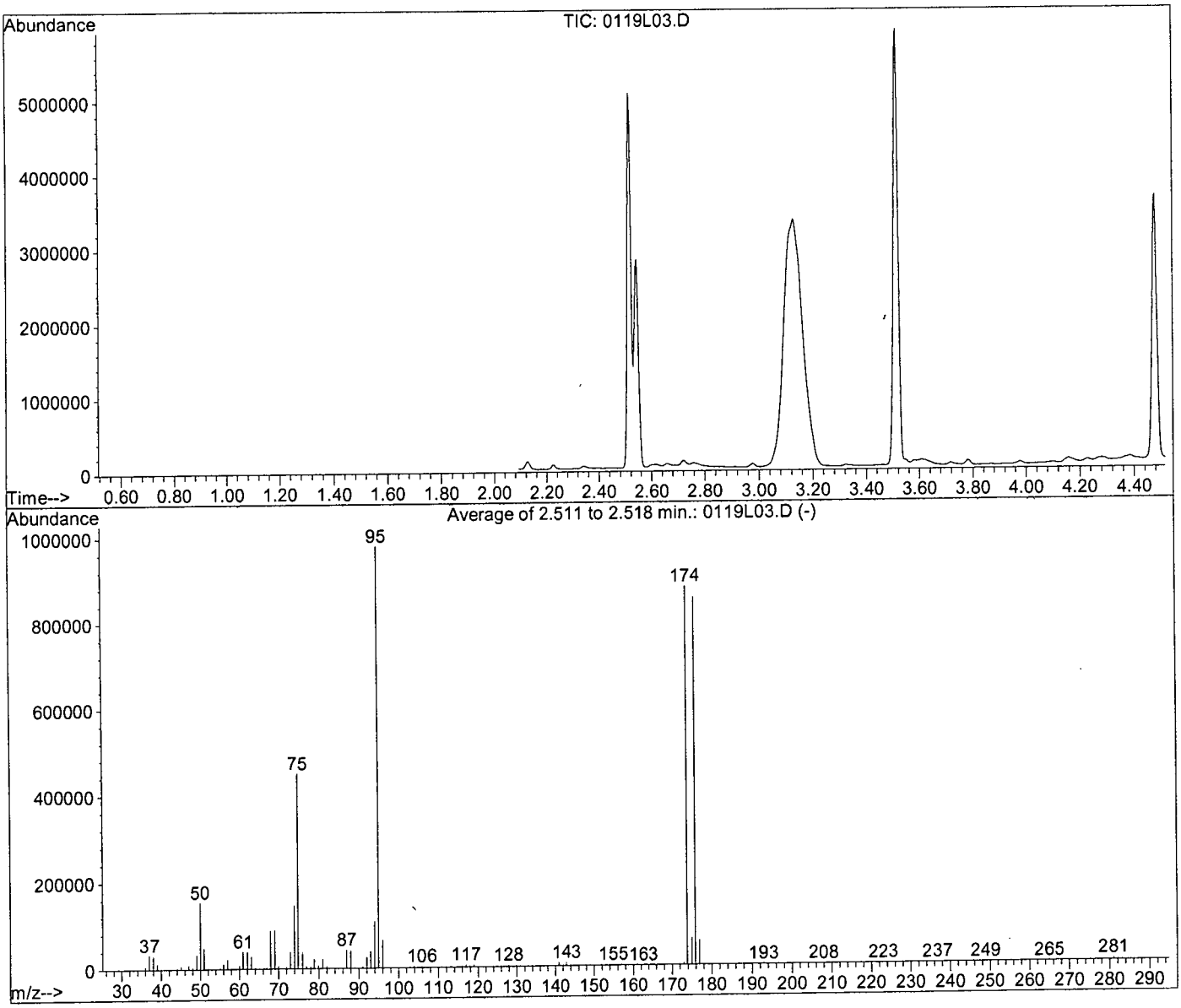
0116L01.D LALLW2.M Wed Jan 28 12:54:42 2015

BFB

Data File : M:\LOKI\DATA\150119\0119L03.D
Acq On : 19 Jan 15 8:45
Sample : 25ug/mL BFB Std 01-09-15
Misc : 2uL

Vial: 1
Operator: DG,SV,RS
Inst : Loki
Multiplr: 1.00

Method : M:\LOKI\DATA\150119\LALLS.M (RTE Integrator)
Title : METHOD 8260B



AutoFind: Scans 131, 132, 133; Background Corrected with Scan 121

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50	95	15	40	15.7	153472	PASS
75	95	30	60	46.0	450329	PASS
95	95	100	100	100.0	979520	PASS
96	95	5	9	6.6	64206	PASS
173	174	0.00	2	0.5	4254	PASS
174	95	50	100	89.9	880326	PASS
175	174	5	9	6.9	60963	PASS
176	174	95	100	97.0	854336	PASS
177	176	5	9	6.6	56153	PASS

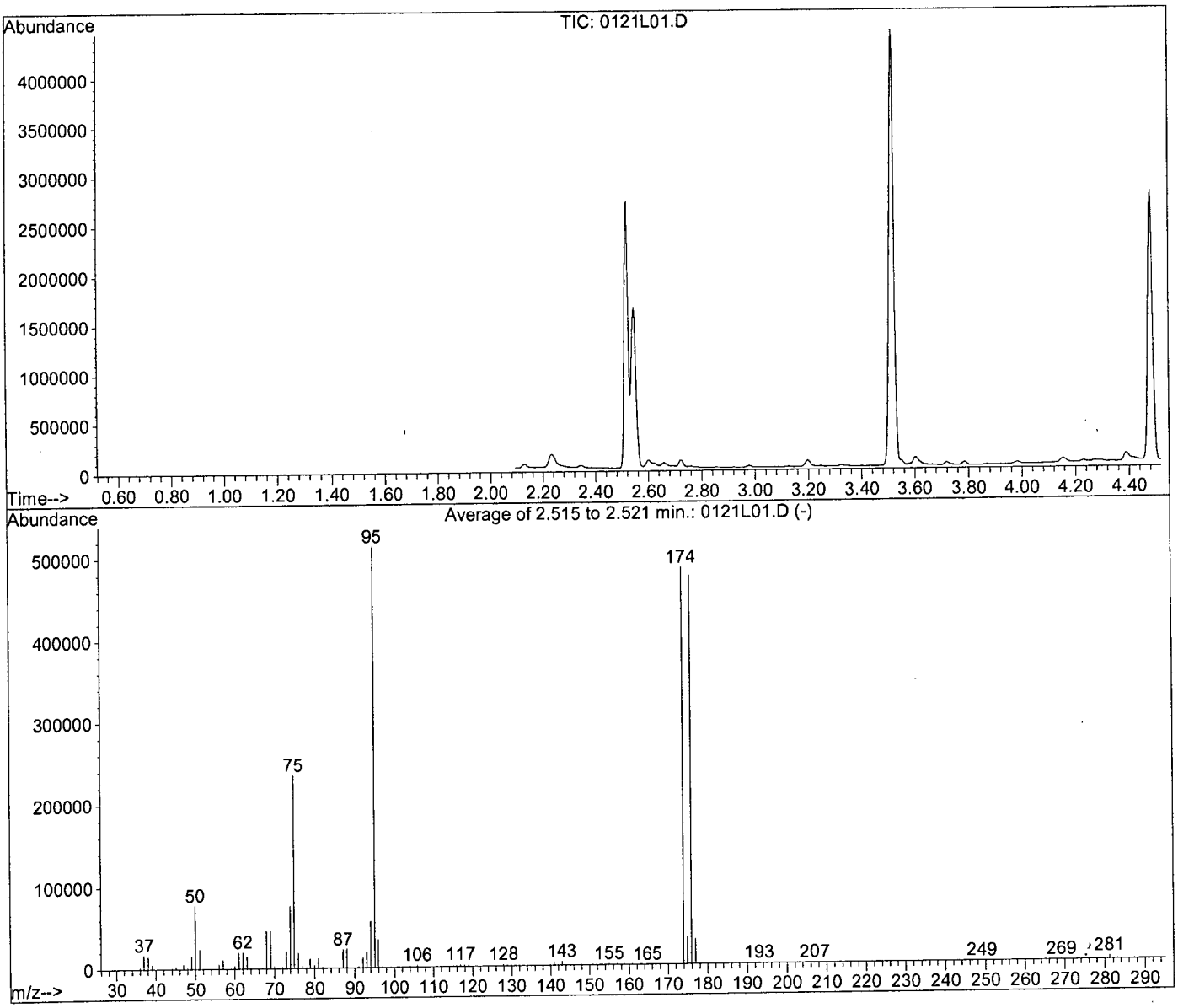
0119L03.D LALLS.M Wed Jan 28 13:00:08 2015

BFB

Data File : M:\LOKI\DATA\150119\0121L01.D
Acq On : 21 Jan 15 9:28
Sample : 25ug/mL BFB Std 01-09-15
Misc : 2uL

Vial: 1
Operator: DG,SV,RS
Inst : Loki
Multiplr: 1.00

Method : M:\LOKI\DATA\150119\LALLS.M (RTE Integrator)
Title : METHOD 8260B



AutoFind: Scans 132, 133, 134; Background Corrected with Scan 117

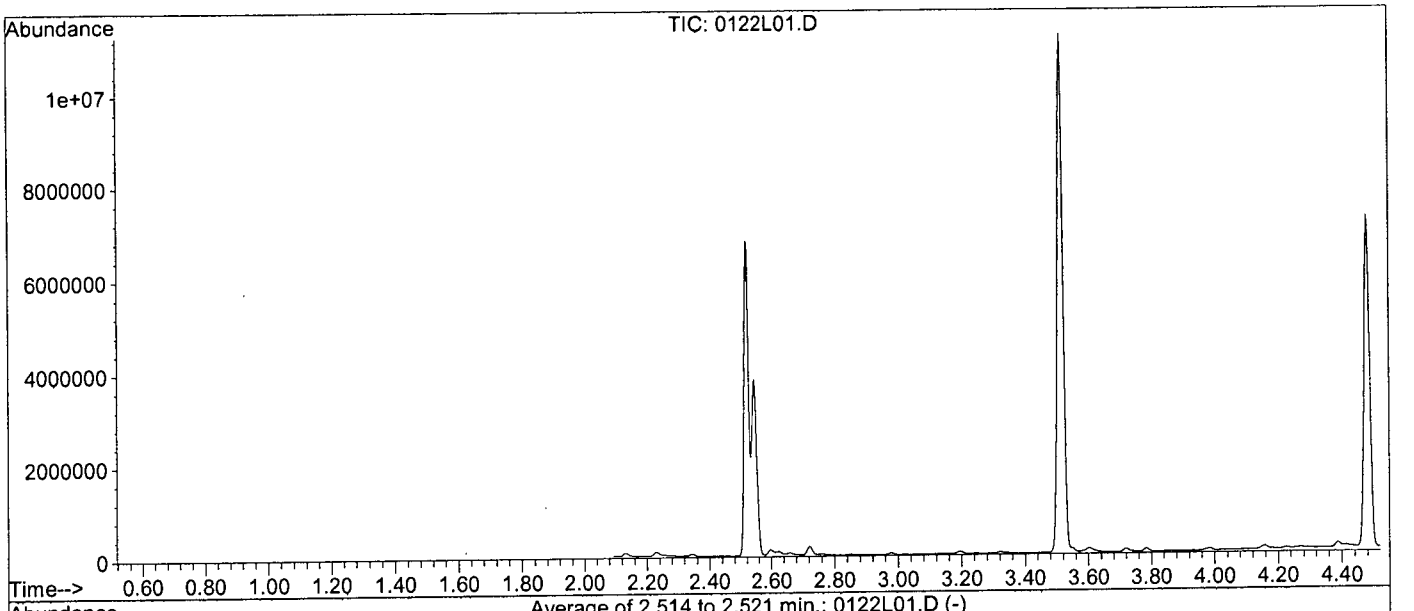
Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50	95	15	40	15.1	77403	PASS
75	95	30	60	45.7	234870	PASS
95	95	100	100	100.0	514070	PASS
96	95	5	9	6.6	33876	PASS
173	174	0.00	2	0.0	0	PASS
174	95	50	100	94.4	485035	PASS
175	174	5	9	6.8	32803	PASS
176	174	95	100	98.1	475819	PASS
177	176	5	9	6.5	30842	PASS

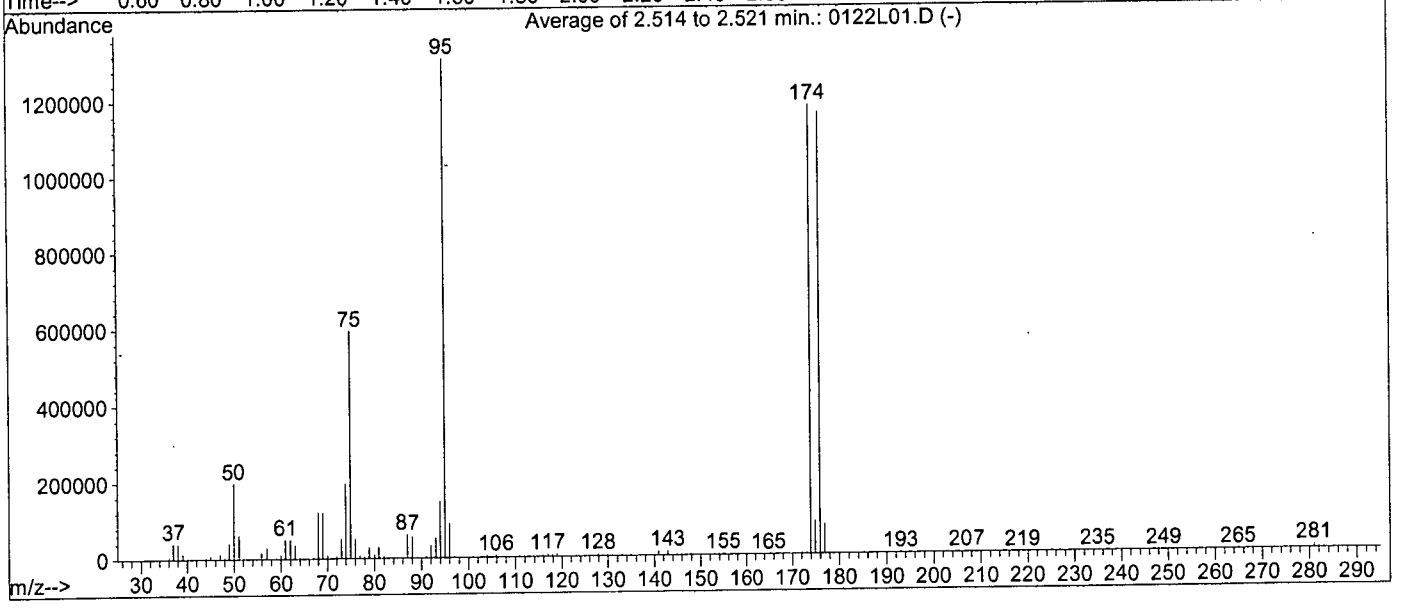
BFB

Data File : M:\LOKI\DATA\150119\0122L01.D
Acq On : 22 Jan 15 7:59
Sample : 25ug/mL BFB Std 01-09-15
Misc : 2uL

Vial: 1
Operator: DG,SV,RS
Inst : Loki
Multiplr: 1.00

Method : M:\LOKI\DATA\150119\LALLS.M (RTE Integrator)
Title : METHOD 8260B





AutoFind: Scans 132, 133, 134; Background Corrected with Scan 123

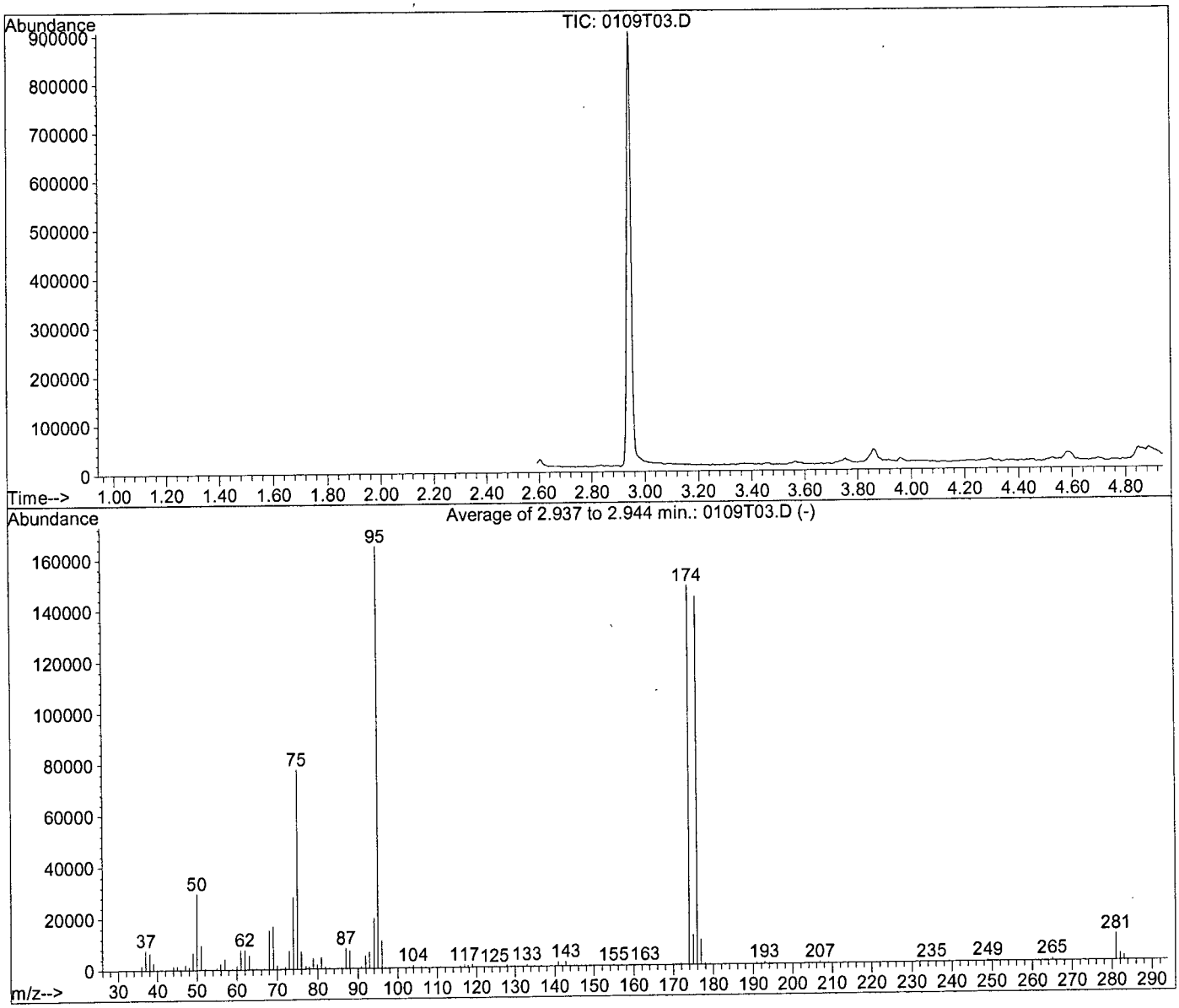
Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50	95	15	40	15.1	197946	PASS
75	95	30	60	45.3	594561	PASS
95	95	100	100	100.0	1312597	PASS
96	95	5	9	6.8	89065	PASS
173	174	0.00	2	0.2	2875	PASS
174	95	50	100	90.0	1181355	PASS
175	174	5	9	7.3	86008	PASS
176	174	95	100	98.4	1162987	PASS
177	176	5	9	6.6	77102	PASS

BFB

Data File : M:\THOR\DATA\T150109\0109T03.D
Acq On : 9 Jan 15 10:31
Sample : 5ng- BFB STD 1/9/15
Misc : 2ul

Vial: 1
Operator: DG, SV, RS
Inst : Thor
Multiplr: 1.00

Method : M:\THOR\DATA\T150109\TALLW.M (RTE Integrator)
Title : METHOD 8260B



AutoFind: Scans 108, 109, 110; Background Corrected with Scan 98

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50	95	15	40	17.9	29483	PASS
75	95	30	60	47.1	77654	PASS
95	95	100	100	100.0	164843	PASS
96	95	5	9	6.5	10772	PASS
173	174	0.00	2	0.0	0	PASS
174	95	50	100	90.0	148288	PASS
175	174	5	9	7.8	11544	PASS
176	174	95	101	97.1	143936	PASS
177	176	5	9	6.8	9771	PASS

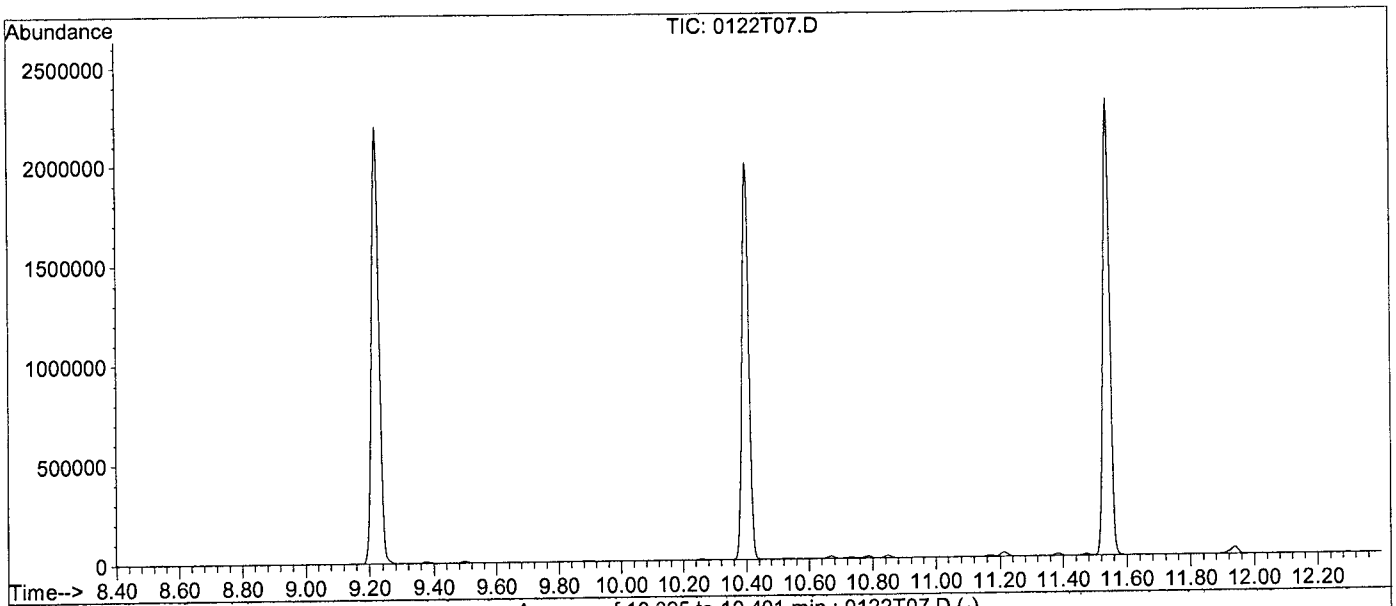
0109T03.D TALLW.M Wed Jan 28 13:20:08 2015

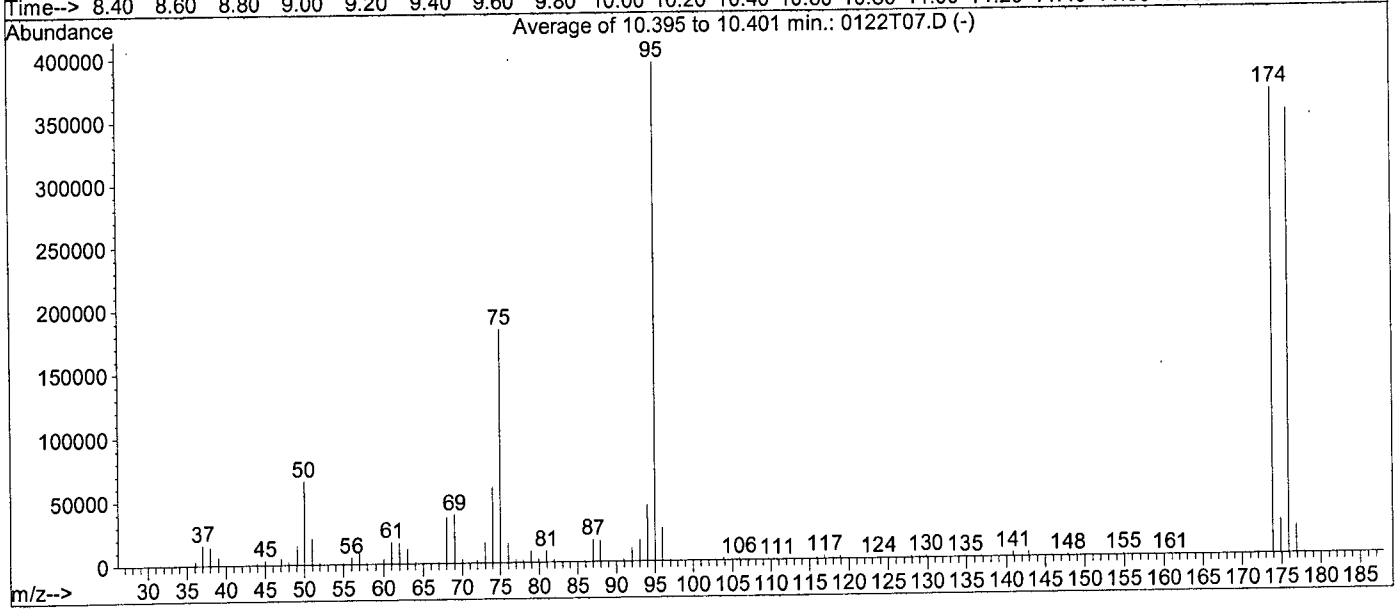
BFB

Data File : M:\THOR\DATA\T150109\0122T07.D
Acq On : 22 Jan 15 11:06
Sample : 5ng- BFB STD 01-09-15
Misc : 10ml w/IS&S 12/20,12/23/14

Vial: 6
Operator: DG, SV, RS
Inst : Thor
Multiplr: 1.00

Method : M:\THOR\DATA\T150109\TALLW.M (RTE Integrator)
Title : METHOD 8260B





AutoFind: Scans 2925, 2926, 2927; Background Corrected with Scan 2910

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50	95	15	40	16.6	65648	PASS
75	95	30	60	46.5	183573	PASS
95	95	100	100	100.0	395029	PASS
96	95	5	9	6.6	25904	PASS
173	174	0.00	2	0.0	0	PASS
174	95	50	100	93.3	368725	PASS
175	174	5	9	7.3	26824	PASS
176	174	95	101	95.6	352405	PASS
177	176	5	9	6.3	22069	PASS

0122T07.D TALLW.M Wed Jan 28 13:21:12 2015

12/23/14 RS

Volatile Standard Curve Preparation for 10mL Purge (8260 water)-THOR												
Exp: Date:	12/24/14	5µg/mL	5µg/mL	5µg/mL	5µg/mL	50µg/mL	50µg/mL	50µg/mL	50µg/mL	50µg/mL	250µg/mL	
		Vol Std #9	Vol Std #10	Vol Std #12	Surrogate	Vol Std #7	Vol Std #8	Vol Std #1	Vol Std #2	Surrogate	TBA	Final Vol
	Conc.	12-22-14G	12-22-14H	12-22-14I	12-22-14K	12-22-14C	12-22-14E	12-22-14D	12-22-14F	12-22-14J	12-22-14L	w/P&T H2O
Date/code	µg/L	Exp:01-22-15	Exp:01-22-15	Exp:01-22-15	Exp:01-22-15	Exp:01-22-15	Exp:01-22-15	Exp:01-22-15	Exp:01-22-15	Exp:01-22-15	Exp:01-22-15	mL
12-23-14J	0.3	3	3	3	6	n/a	n/a	n/a	n/a	n/a	2	50
12-23-14K	0.5	5	5	5	10	n/a	n/a	n/a	n/a	n/a	5	50
12-23-14L	1	10	10	10	20	n/a	n/a	n/a	n/a	n/a	10	50
12-23-14M	5	n/a	n/a	n/a	n/a	5	5	5	5	10	20	50
12-23-14N	10	n/a	n/a	n/a	n/a	10	10	10	10	25	25	50
12-23-14O	20	n/a	n/a	n/a	n/a	20	20	20	20	40	30	50
12-23-14P	40	n/a	n/a	n/a	n/a	40	40	40	40	80	35	50
12-23-14Q	100	n/a	n/a	n/a	n/a	100	100	100	100	100	40	50

12/26/14 RS

Volatile Standard Curve Preparation for 5mL Purge (8260 soil)-THOR												
Exp Date:	12/27/14	5µg/mL	5µg/mL	5µg/mL	5µg/mL	50µg/mL	50µg/mL	50µg/mL	50µg/mL	50µg/mL	250µg/mL	
		Vol Std #9	Vol Std #10	Vol Std #12	Surrogate	Vol Std #7	Vol Std #8	Vol Std #1	Vol Std #2	Surrogate	TBA	Final Vol
	Conc.	12-22-14G	12-22-14H	12-22-14I	12-22-14K	12-22-14C	12-22-14E	12-22-14D	12-22-14F	12-22-14J	12-22-14L	w/P&T H2O
Date/code	µg/L	Exp 01-22-15	Exp 01-22-15	Exp 01-22-15	Exp 01-22-15	Exp 01-22-15	Exp 01-22-15	Exp 01-22-15	Exp 01-22-15	Exp 01-22-15	Exp 01-22-15	mL
12-26-14A	2	2	2	2	2	n/a	n/a	n/a	n/a	n/a	1	5
12-26-14B	5	5	5	5	5	n/a	n/a	n/a	n/a	n/a	2	5
12-26-14C	10	10	10	10	10	n/a	n/a	n/a	n/a	n/a	3	5
12-26-14D	20	20	20	20	20	n/a	n/a	n/a	n/a	n/a	4	5
12-26-14E	50	n/a	n/a	n/a	n/a	5	5	5	5	5	5	5
12-26-14F	100	n/a	n/a	n/a	n/a	10	10	10	10	10	6	5
12-26-14G	150	n/a	n/a	n/a	n/a	15	15	15	15	15	7	5
12-26-14H	200	n/a	n/a	n/a	n/a	20	20	20	20	20	8	5

12/29/14 RS

Volatile Standard Curve Preparation for 10mL Purge (524 water)-THOR								
Exp Date.	12/30/14	5µg/mL	5µg/mL	50µg/mL	50µg/mL	50µg/mL	250µg/mL	
		Vol Std #9	Vol Std #12	Vol Std #7	Vol Std #8	Vol Std #2	TBA	Final Vol
	Conc	12-22-14G	12-22-14I	12-22-14C	12-22-14E	12-22-14F	12-22-14L	w/P&T H2O
Date/code	µg/L	Exp 12-22-14	Exp.12-22-14	Exp 12-22-14	Exp 12-22-14	Exp 12-22-14	Exp 12-22-14	mL
12-29-14A	0 2	2	2	n/a	n/a	n/a	2	50
12-29-14B	0.5	5	5	n/a	n/a	n/a	5	50
12-29-14C	1	10	10	n/a	n/a	n/a	10	50
12-29-14D	2	20	20	n/a	n/a	n/a	15	50
12-29-14E	5	n/a	n/a	5	5	5	20	50
12-29-14F	10	n/a	n/a	10	10	10	25	50
12-29-14G	40	n/a	n/a	40	40	40	35	50
12-29-14H	100	n/a	n/a	100	100	100	40	50

12/30/14 RS

Volatile Standard Curve Preparation for 10mL Purge (8260 water)-THOR												
Exp: Date:	12/31/14	5µg/mL	5µg/mL	5µg/mL	5µg/mL	50µg/mL	50µg/mL	50µg/mL	50µg/mL	50µg/mL	250µg/mL	
		Vol Std #9	Vol Std #10	Vol Std #12	Surrogate	Vol Std #7	Vol Std #8	Vol Std #1	Vol Std #2	Surrogate	TBA	Final Vol
	Conc.	12-22-14G	12-22-14H	12-22-14I	12-22-14K	12-22-14C	12-22-14E	12-22-14D	12-22-14F	12-22-14J	12-22-14L	w/P&T H2O
Date/code	µg/L	Exp 01-22-15	Exp 01-22-15	Exp 01-22-15	Exp 01-22-15	Exp 01-22-15	Exp 01-22-15	Exp 01-22-15	Exp 01-22-15	Exp 01-22-15	Exp 01-22-15	mL
12-30-14A	0 3	3	3	3	6	n/a	n/a	n/a	n/a	n/a	2	50
12-30-14B	0.5	5	5	5	10	n/a	n/a	n/a	n/a	n/a	5	50
12-30-14C	1	10	10	10	20	n/a	n/a	n/a	n/a	n/a	10	50
12-30-14D	5	n/a	n/a	n/a	n/a	5	5	5	5	10	20	50
12-30-14E	10	n/a	n/a	n/a	n/a	10	10	10	10	25	25	50
12-30-14F	20	n/a	n/a	n/a	n/a	20	20	20	20	40	30	50
12-30-14G	40	n/a	n/a	n/a	n/a	40	40	40	40	80	35	50
12-30-14H	100	n/a	n/a	n/a	n/a	100	100	100	100	100	40	50

1/05/15 RS A -

Method 8260 Gases, 2000 mg/L, 2 x 0.6 ml
120016-03
Lot # 231710 Storage ≤ -10°C Expiry 6/Jul/2017
Solv: P/T Methanol

Method 8260 Gases
Lot #: 231710 - 33819
Rec: 7/15/14 MFR exp. 7/6/17

RS

1/05/15 RS B -

Hexachloroethane Solution, 1000 mg/L, 1 mL
020049-02
Lot # 234821 Storage ≤ -10 Degrees Expiry 24/Aug/2016
Solv: P/T Methanol

Hexachloroethane
Lot #: 234821 - 33993
Rec: 8/27/14 MFR exp. 8/24/16

RS

1/05/15 C-
RS

Benzyl Chloride Solution, 1000 mg/L, 1 mL
020228-02
Lot # Storage Expiry
227320 ≤-10 Degrees C 28/Apr/2016
Solv: P/T Methanol
Benzyl Chloride
Lot #: 227320 - 33832
Rec: 7/15/14 MFR exp. 4/28/16

RS

RS

01/05/15D							
50ug/ml Vol Work Std #7							
Exp:02/05/15							
			Conc.		Date	Exp.	
Supplier	ID #	ID	ug/ml	Lot #	Code	Date	ul
02SI	120016-03	Gas Mix	2000	231710-33819	01/05/15A	07/06/17	100
02SI	020049-02	HEXACHLOROETHANE	1000	234821-33993	01/05/15B	08/24/16	200
02SI	020228-02	Benzyl Chloride	1000	227320-33832	01/05/15C	04/28/16	200
J&T Brand		Purge & Trap MeOH		62345-00776	12/29/14	07/09/18	3500
01/05/15E							
50ug/ml Vol Work Std #1							
Exp:02/05/15							
					Date	Exp.	
Supplier	ID #	ID	ug/ml	Lot #	Code	Date	ul
02SI	020145-02-02	2-CEVE	2000	229586-33692	12/03/14D	06/03/17	50
J&T Brand		Purge & Trap MeOH		62345-00776	12/29/14	07/09/18	1950
01/05/15F							
50ug/ml Vol Work Std #8							
Exp:02/05/15							
			Conc.		Date	Exp.	
Supplier	ID #	ID	ug/ml	Lot. #	Code	Date	ul
02SI	122039-02	Volatile Mix, 20-29	2000	212173-32729	12/03/14E	07/22/15	100
02SI	120023-03	VOC'S-54 COMP	2000	216122-32914	12/03/14F	10/11/15	100
02SI	020232-02	Vinyl Acetate	2000	240463-34360	12/03/14G	02/18/15	100
02SI	020620-02	n-Hexane	1000	195505-33676	12/03/13H	09/09/17	200
J&T Brand		Purge & Trap MeOH		62345-00776	12/29/14	07/09/18	3500
01/05/15G							
50ug/ml Vol Work Std #2							
Exp:02/05/15							
Supplier	ID #	ID	ug/ml				
02SI	121020-05	HSL'S-Ketone Solution	2000	232379-33873	12/03/14I	07/14/15	100
J&T Brand		Purge & Trap MeOH		62345-00776	12/29/14	07/09/18	3900
		01/05/15H					
		5ug/ml Vol Work Std #9					
		SOURCES	Lot	APPL Code	APPL Exp Date	ul	
		50ug/ml Vol Work Std #7		01/05/15D	02/05/15	200	
		50ug/ml Vol Work Std #8		01/05/15F	02/05/15	200	
		J&T Brand		12/29/14	07/09/18	1600	
		01/05/15I					
		5ug/ml Vol Work Std #10					
		SOURCES	Lot	APPL Code	APPL Exp Date	ul	
		50ug/ml Vol Work Std #1		01/05/15E	02/05/15	200	
		J&T Brand		12/29/14	07/09/18	1800	
		01/05/15J.					
		5ug/ml Vol Work Std #12					
		SOURCES	Lot	APPL Code	APPL Exp Date	ul	
		50ug/ml Vol Work Std #2		01/05/15G	02/05/15	200	
		J&T Brand .		12/29/14	07/09/18	1800	
01/05/15K							
50ug/ml 8260 Surrogate			Conc.		Date	Exp.	
Exp:02/05/15			ug/ml	Lot #	Code	Date	uL
02SI	120002-01	8260B Surr Solution	2000	185763-33558	12/03/14J	02/19/15	100
J&T Brand		Purge & Trap MeOH		62345-00776	12/29/14	07/09/18	3900
01/05/15L							
5.0ug/ml 8260 Surrogate			Lot	APPL Code	APPL Exp Date	ul	
		50ug/ml 8260 Surrogate		01/05/15K	02/05/15	200	
J&T Brand		Purge & Trap MeOH		12/29/14	07/09/18	1800	
01/05/15M							
250ug/ml TBA/IBA/Acetonitrile/Cyclohexanone/Acrolein/2-P							
Exp:02/05/15			Conc.		Date	Exp.	
Supplier	ID #		ug/ml	Lot #	Code	Date	uL
02SI	120166-01	Volatile Mix 4-3	2000	229587-33998	12/22/14B	05/29/16	500
02SI	020229-09	Acrolein	10000	241349-34485	12/15/14A	01/17/15	100
J&T Brand		Purge & Trap MeOH		62345-00776	12/29/14	07/09/18	3400

1/05/15
RS

RS

01/05/15N							
50ug/ml VOC Std#5							
Exp:02/05/15							
			Conc.		Date	Exp.	
Supplier	ID #	ID	ug/ml	Lot #	Code	Date	ul
O2SI	120016-03-SS	8260 Gases(SS)	2000	220940-33549	12/03/14M	04/15/17	50
O2SI	020145-02-02-	2-CEVE	2000	219465-33220	12/03/14N	12/16/15	50
J&T Brand		Purge & Trap MeOH		62345-00776	12/29/14	07/09/18	1900
01/05/15O							
50ug/ml VOC Std#6							
Exp:02/05/15							
	ID #	ID	ug/ml	Lot #	Code	Date	ul
O2SI	120023-03-SS	VOC'S 54 COMP.	2000	208329-32738	12/03/14P	05/02/15	50
O2SI	120296-01-SS	Custom 8260 Solution	2000	212199-32961	12/03/14O	01/23/15	50
O2SI	020232-02-SS	Vinyl Acetate(SS)	2000	240484-34393	12/03/14Q	02/18/15	50
O2SI	020620-02-SS	n-Hexane	1000	205230-33679	12/03/14R	03/12/15	100
O2SI	020049-02-SS	HEXACHLOROETHANE	1000	226063-33536	12/03/14S	04/07/16	100
J&T Brand		Purge & Trap MeOH		62345-00776	12/29/14	07/09/18	1650
01/05/15P							
250ug/ml TBA/IBA/Acetonitrile/Cyclohexanone/Acrolein/2-P							
Exp:02/05/15			Conc.		Date	Exp.	
Supplier	ID #		ug/ml	Lot #	Code	Date	uL
O2SI	120166-01-SS	VOC Mix 4-3 (SS)	2000	189667-33306	12/03/14T	05/18/15	250
O2SI	020229-09-SS	Acrolein SOLUTION (SS)	10000	241350-34487	12/15/14B	01/17/15	50
J&T Brand		Purge & Trap MeOH		62345-00776	12/29/14	07/09/18	1700

1/05/15
RS

Volatile Standard Curve Preparation for 10mL Purge (8260 water)-LOKI												
Exp Date:	01/06/15	5µg/mL	5µg/mL	5µg/mL	5µg/mL	50µg/mL	50µg/mL	50µg/mL	50µg/mL	50µg/mL	250µg/mL	
		Vol Std #9	Vol Std #10	Vol Std #12	Surrogate	Vol Std #7	Vol Std #8	Vol Std #1	Vol Std #2	Surrogate	TBA	Final Vol
	Conc.	01-05-15H	01-05-15I	01-05-15J	01-0515L	01-05-15D	01-05-15F	01-05-15E	01-05-15G	01-05-15K	01-05-15M	w/P&T H2O
Date/code	µg/L	Exp 02-05-15	Exp 02-05-15	Exp 02-05-15	Exp.02-05-15	Exp 02-05-15	Exp.02-05-15	Exp 02-05-15	Exp 02-05-15	Exp 02-05-15	Exp 02-05-15	mL
01-05-15Q	0.3	3	3	3	6	n/a	n/a	n/a	n/a	n/a	2	50
01-05-15R	0.5	5	5	5	10	n/a	n/a	n/a	n/a	n/a	5	50
01-05-15S	1	10	10	10	20	n/a	n/a	n/a	n/a	n/a	10	50
01-05-15T	5	n/a	n/a	n/a	n/a	5	5	5	5	10	20	50
01-05-15U	10	n/a	n/a	n/a	n/a	10	10	10	10	25	25	50
01-05-15V	20	n/a	n/a	n/a	n/a	20	20	20	20	40	30	50
01-05-15W	40	n/a	n/a	n/a	n/a	40	40	40	40	80	35	50
01-05-15X	100	n/a	n/a	n/a	n/a	100	100	100	100	100	40	50

1/05/15
RS

Fluka

Gasoline in Water - AK Method
Lot:LRAA4910 Cat # PE1817-2ML
Exp 12/31/2016
Storage Store at 4°C

RTC RT Corp.com
sigma aldrich.com
2001 Sutter Springs Road Lizzie WI 53070 877 743 3452
SIGMA-ALDRICH CHEMIE GmbH Industrie Straße 3 D-82515 Steinheim #0 7329 970

Product of USA

Safety data sheet available For R&D only Not for drug household or other uses

AZ08998W01

26

75259
AZ08998 W01
VOA_Frig

Gas in Water LRAA4910

YL

AZ08999S01

26

75259
AZ08999 S01
VOA_Frig

Gas in Soil LRAA5428

YL

GC/MS STANDARD PREPARATION BOOK # 64 PAGE

1/07/15
RS

RS

Volatile Standard Curve Preparation for 10mL Purge (8260 water)-THOR												
Exp: Date:	01/08/15	5µg/mL	5µg/mL	5µg/mL	5µg/mL	50µg/mL	50µg/mL	50µg/mL	50µg/mL	50µg/mL	250µg/mL	
		Vol Std #9	Vol Std #10	Vol Std #12	Surrogate	Vol Std #7	Vol Std #8	Vol Std #1	Vol Std #2	Surrogate	TBA	Final V
	Conc.	01-05-15H	01-05-15I	01-05-15J	01-0515L	01-05-15D	01-05-15F	01-05-15E	01-05-15G	01-05-15K	01-05-15M	w/P&T H
Date/code	µg/L	Exp.02-05-15	Exp 02-05-15	Exp.02-05-15	Exp 02-05-15	Exp.02-05-15	Exp.02-05-15	Exp 02-05-15	Exp 02-05-15	Exp.02-05-15	Exp:02-05-15	mL
01-07-15A	0.1	1	1	1	2	n/a	n/a	n/a	n/a	n/a	1	50
01-07-15B	0.3	3	3	3	6	n/a	n/a	n/a	n/a	n/a	2	50
01-07-15C	0.5	5	5	5	10	n/a	n/a	n/a	n/a	n/a	5	50
01-07-15D	1	10	10	10	20	n/a	n/a	n/a	n/a	n/a	10	50
01-07-15E	5	n/a	n/a	n/a	n/a	5	5	5	5	10	20	50
01-07-15F	10	n/a	n/a	n/a	n/a	10	10	10	10	25	25	50
01-07-15G	20	n/a	n/a	n/a	n/a	20	20	20	20	40	30	50
01-07-15H	40	n/a	n/a	n/a	n/a	40	40	40	40	80	35	50
01-07-15I	100	n/a	n/a	n/a	n/a	100	100	100	100	100	40	50

1/07/15
RS

RS

Volatile Standard Curve Preparation for 10mL Purge (8260 water)-MAX												
Exp: Date:	01/08/15	5µg/mL	5µg/mL	5µg/mL	5µg/mL	50µg/mL	50µg/mL	50µg/mL	50µg/mL	50µg/mL	250µg/mL	
		Vol Std #9	Vol Std #10	Vol Std #12	Surrogate	Vol Std #7	Vol Std #8	Vol Std #1	Vol Std #2	Surrogate	TBA	Final V
	Conc.	01-05-15H	01-05-15I	01-05-15J	01-0515L	01-05-15D	01-05-15F	01-05-15E	01-05-15G	01-05-15K	01-05-15M	w/P&T H
Date/code	µg/L	Exp:02-05-15	Exp:02-05-15	Exp 02-05-15	Exp 02-05-15	Exp 02-05-15	Exp:02-05-15	Exp 02-05-15	Exp 02-05-15	Exp 02-05-15	Exp.02-05-15	mL
01-07-15J	0.3	3	3	3	6	n/a	n/a	n/a	n/a	n/a	2	50
01-07-15K	0.5	5	5	5	10	n/a	n/a	n/a	n/a	n/a	5	50
01-07-15L	1	10	10	10	20	n/a	n/a	n/a	n/a	n/a	10	50
01-07-15M	5	n/a	n/a	n/a	n/a	5	5	5	5	10	20	50
01-07-15N	10	n/a	n/a	n/a	n/a	10	10	10	10	25	25	50
01-07-15O	20	n/a	n/a	n/a	n/a	20	20	20	20	40	30	50
01-07-15P	40	n/a	n/a	n/a	n/a	40	40	40	40	80	35	50
01-07-15Q	100	n/a	n/a	n/a	n/a	100	100	100	100	100	40	50

1/08/15
RS

Gasoline Curve Preparation for 100mL Purge (water)- MAX			
Exp Date:	01/09/15	2000ug/ml	
		Gasoline	Final Vol
	Conc.	12-15-14Q	w/P&T H2O
Date/code	µg/L	Exp.01-15-15	mL
01-08-15A	20	1	100
01-08-15B	50	2.5	100
01-08-15C	100	5	100
01-08-15D	300	15	100
01-08-15E	600	30	100
01-08-15F	800	40	100
01-08-15G	1000	50	100

RS

1/09/15
RS

RS

01/09/15A							
25ug/ml BFB STD			Conc.		Date	EXP:	
EXP:02/09/15			ug/ml	Lot#	CODE	Date	ul
02SI	020135-03	4-Bromofluorobenzene	2500	195506-31423	04-28-14A	09/15/15	20
J&T Baker		Purge & Trap MeOH		62345-00776	12/29/14	07/09/18	1980

1/09/15
RS

RS

Volatile Standard Curve Preparation for 10mL Purge (8260 water)-THOR												
Exp: Date:	01/10/15	5µg/mL	5µg/mL	5µg/mL	5µg/mL	50µg/mL	50µg/mL	50µg/mL	50µg/mL	50µg/mL	250µg/mL	
		Vol Std #9	Vol Std #10	Vol Std #12	Surrogate	Vol Std #7	Vol Std #8	Vol Std #1	Vol Std #2	Surrogate	TBA	Final V
	Conc.	01-05-15H	01-05-15I	01-05-15J	01-0515L	01-05-15D	01-05-15F	01-05-15E	01-05-15G	01-05-15K	01-05-15M	w/P&T H
Date/code	µg/L	Exp.02-05-15	Exp:02-05-15	Exp 02-05-15	Exp 02-05-15	Exp 02-05-15	Exp.02-05-15	Exp 02-05-15	Exp.02-05-15	Exp.02-05-15	Exp 02-05-15	mL
01-09-15A	0.3	3	3	3	6	n/a	n/a	n/a	n/a	n/a	2	50
01-09-15B	0.5	5	5	5	10	n/a	n/a	n/a	n/a	n/a	5	50
01-09-15C	1	10	10	10	20	n/a	n/a	n/a	n/a	n/a	10	50
01-09-15D	5	n/a	n/a	n/a	n/a	5	5	5	5	10	20	50
01-09-15E	10	n/a	n/a	n/a	n/a	10	10	10	10	25	25	50
01-09-15F	20	n/a	n/a	n/a	n/a	20	20	20	20	40	30	50
01-09-15G	40	n/a	n/a	n/a	n/a	40	40	40	40	80	35	50
01-09-15H	100	n/a	n/a	n/a	n/a	100	100	100	100	100	40	50

1/13/15
RS

RS

Volatile Standard Curve Preparation for 10mL Purge (8260 water)-LOKI												
Exp: Date:	01/14/15	5µg/mL	5µg/mL	5µg/mL	5µg/mL	50µg/mL	50µg/mL	50µg/mL	50µg/mL	50µg/mL	250µg/mL	
		Vol Std #9	Vol Std #10	Vol Std #12	Surrogate	Vol Std #7	Vol Std #8	Vol Std #1	Vol Std #2	Surrogate	TBA	Final
	Conc.	01-05-15H	01-05-15I	01-05-15J	01-0515L	01-05-15D	01-05-15F	01-05-15E	01-05-15G	01-05-15K	01-05-15M	w/P&T
Date/code	µg/L	Exp:02-05-15	Exp 02-05-15	Exp.02-05-15	Exp 02-05-15	Exp.02-05-15	Exp 02-05-15	Exp 02-05-15	Exp 02-05-15	Exp:02-05-15	Exp 02-05-15	mL
01-13-15A	0.3	3	3	3	6	n/a	n/a	n/a	n/a	n/a	2	50
01-13-15B	0 5	5	5	5	10	n/a	n/a	n/a	n/a	n/a	5	50
01-13-15C	1	10	10	10	20	n/a	n/a	n/a	n/a	n/a	10	50
01-13-15D	5	n/a	n/a	n/a	n/a	5	5	5	5	10	20	50
01-13-15E	10	n/a	n/a	n/a	n/a	10	10	10	10	25	25	50
01-13-15F	20	n/a	n/a	n/a	n/a	20	20	20	20	40	30	50
01-13-15G	40	n/a	n/a	n/a	n/a	40	40	40	40	80	35	50
01-13-15H	100	n/a	n/a	n/a	n/a	100	100	100	100	100	40	50

1/14/15 RS

LOKI							RS
01-14-15A							
50ug/ml 8260 Internal Standard			Conc.		Date	Exp.	
Supplier	ID #		ug/ml	Lot #	Code	Date	uL
O2SI	120004-02	Internal Standard Mix	2000	195507-31436	10-06-14A	09/10/15	375
J.T Baker		Purge & Trap MeOH		62345-00777	01/12/15	02/19/18	14625

1/15/15 RS

A-

Method 8260B Surrogate Solution, 2,000 mg/L, 1 ml
120002-01
Lot # 229269 Storage ≤ -10 Degrees Expiry 26/May/2017
Solv: P/T Methanol

Method 8260B Surrogate
Lot #: 229269 - 33847
Rec: 7/15/14 MFR exp. 5/26/17

RS

1/15/15 RS

01-15-15B							RS
50ug/ml 8260B Surrogate-LOKI			Conc.		Date	Exp.	
Supplier	ID #		ug/ml	Lot #	Code	Date	uL
O2SI	120002-01	Surrogate Standards	2000	229269-33847	01-15-15A	05/26/17	375
J.T Baker		Purge & Trap MeOH		62345-00777	01/12/15	02/19/18	14625

1/17/15 RS

A-

Method 8260 Gases, 2000 mg/L, 2 x 0.6 ml
120016-03
Lot # 231710 Storage ≤ -10 °C Expiry 6/Jul/2017
Solv: P/T Methanol

Method 8260 Gases
Lot #: 231710 - 33820
Rec: 7/15/14 MFR exp. 7/6/17

RS

1/17/15 RS

B-

2-Chloroethyl Vinyl Ether Solution, 2,000 mg/L, 2 x 0.6 mL
028145-02-02
Lot # 229586 Storage ≤ -10 Degrees Expiry 3/Jun/2017
Solv: P/T Methanol

2-Chloroethyl vinyl ether
Lot #: 229586 - 33693
Rec: 6/3/14 MFR exp. 6/3/17

RS

1/17/15 RS

C-

Volatile Mix, 20-29, 2,000 mg/L, 1 ml
122039-02
Lot # 212173 Storage ≤ -10 Degrees C Expiry 7/22/15

Volatile Mix, 20-29
Lot #: 212173 - 32730
Rec: 7/25/13 MFR exp. 7/22/15

RS

1/17/15 RS

D-

Method 8260 VOC Liquids, 54 Compounds, 2,000 mg/L, 1 ml
120823-03
Lot # 216122 Storage ≤-10 Degrees C Expiry 10/11/15
Solv: P/T Methanol

8260 VOC Liquids, 54 Comp.
Lot #: 216122 - 32915
Rec: 10/15/13 MFR exp. 10/11/15

RS

1/17/15 RS

E-

Vinyl Acetate Solution, 2000 mg/L, 1 mL
020232-02
Lot # 240463 Storage ≤-10 °C Expiry 18/Feb/2015
Solv: P/T Methanol

Vinyl Acetate
Lot #: 240463 - 34361
Rec: 11/25/14 MFR exp. 2/18/15

RS

1/17/15 RS

G-

n-Hexane Solution, 1,000 mg/L, 1 mL
020620-02
Lot # 236597 Storage ≤-10 Degrees Expiry 17/Sep/2019
Solv: P/T Methanol

n-Hexane, 1000mg/L
Lot #: 236597 - 34363
Rec: 11/25/14 MFR exp. 9/17/19

RS

1/17/15 RS

H-

Ketones Solution, 2,000 mg/L, 1 ml
121020-05
Lot # 232379 Storage ≤-10 °C Expiry 14/Jul/2015
Solv: P/T MeOH:Water 9:1

Ketones
Lot #: 232379 - 33870
Rec: 7/17/14 MFR exp. 7/14/15

RS

1/17/15 RS

I-

VOC Mix 4-3, 2,000 mg/L, 1 mL
120166-01
Lot # 229587 Storage ≤6 Degrees C Expiry 29/May/2016
Solv: P/T Methanol

VOC Mix 4-3, 2000mg/L
Lot #: 229587 - 33999
Rec: 8/27/14 MFR exp. 5/29/16

RS

1/17/15 RS

J-

Acrolein Solution, 10,000 mg/L, 2 x 0.6 mL
020229-09-02
Lot # 242699 Storage ≤6 °C Expiry 17/Feb/2015
Solv: Water, HPLC Grade

Acrolein solution
Lot #: 242699 - 34577
Rec: 1/14/15 MFR exp. 2/17/15

RS

1/17/15 K-
RS

Method 8260 Gases (Second Source), 2,000 mg/L, 2 X 0.6 ml
120016-03-SS

Lot #	Storage	Expiry
239850	≤ -10 °C	14/Nov/2017

Solv: P/T Methanol

Method 8260 Gases (SS)
Lot #: 239850 - 34549
Rec: 12/19/14 MFR exp. 11/14/17

RS

1/17/15 L-
RS

Custom 8260 Solution, Second Source, 2,000 mg/L, 1 mL
120296-01-SS

Lot #	Storage	Expiry
240496	≤ -10 Degrees	24/May/2016

Solv: P/T Methanol

Custom 8260 Solution, 2000mg/L (SS)
Lot #: 240496 - 34383
Rec: 11/25/14 MFR exp. 5/24/16

RS

1/17/15 M-
RS

Acrolein Solution (Second Source), 10,000 mg/L, 2 x 0.6 mL
020229-09-02-SS

Lot #	Storage	Expiry
242700	≤ 6 °C	17/Feb/2015

Solv: Water, HPLC Grade

Acrolein Solution SS
Lot #: 242700 - 34579
Rec: 1/14/15 MFR exp. 2/17/15

RS

1/17/15
RS

01/17/15N							
50ug/ml Vol Work Std #7							
Exp:02/17/15							
			Conc.		Date	Exp.	
Supplier	ID #	ID	ug/ml	Lot #	Code	Date	ul
02SI	120016-03	Gas Mix	2000	231710-33820	01/17/15A	07/06/17	100
02SI	020049-02	HEXACHLOROETHANE	1000	234821-33993	01/05/15B	08/24/16	200
02SI	020228-02	Benzyl Chloride	1000	227320-33832	01/05/15C	04/28/16	200
J&T Brand		Purge & Trap MeOH		62345-00779	01/12/15	07/09/18	3500
01/17/15O							
50ug/ml Vol Work Std #1							
Exp:02/17/15					Date	Exp.	
Supplier	ID #	ID	ug/ml	Lot #	Code	Date	ul
02SI	020145-02-02	2-CEVE	2000	229586-33693	01/17/15B	06/03/17	50
J&T Brand		Purge & Trap MeOH		62345-00779	01/12/15	07/09/18	1950
01/17/15P							
50ug/ml Vol Work Std #8							
Exp:02/17/15							
			Conc.		Date	Exp.	
Supplier	ID #	ID	ug/ml	Lot #	Code	Date	ul
02SI	122039-02	Volatile Mix, 20-29	2000	212173-32730	01/17/15C	07/22/15	100
02SI	120023-03	VOC'S-54 COMP	2000	216122-32915	01/17/15D	10/11/15	100
02SI	020232-02	Vinyl Acetate	2000	240463-34361	01/17/15E	02/18/15	100
02SI	020620-02	n-Hexane	1000	236597-34363	01/17/15G	09/09/17	200
J&T Brand		Purge & Trap MeOH		62345-00779	01/12/15	07/09/18	3500
01/17/15Q							
50ug/ml Vol Work Std #2							
Exp:02/17/15							
Supplier	ID #	ID	ug/ml				
02SI	121020-05	HSL'S-Ketone Solution	2000	232379-33873	01/17/15H	07/14/15	100
J&T Brand		Purge & Trap MeOH		62345-00779	01/12/15	07/09/18	3900

1/17/15
RS

		01/17/15R					
		5ug/ml Vol Work Std #9					
		SOURCES	Lot	APPL Code	APPL Exp Date	ul	
		50ug/ml Vol Work Std #7		01/17/15N	02/17/15	200	
		50ug/ml Vol Work Std #8		01/17/15P	02/17/15	200	
		J&T Brand		01/12/15	07/09/18	1600	
		01/17/15S					
		5ug/ml Vol Work Std #10					
		SOURCES	Lot	APPL Code	APPL Exp Date	ul	
		50ug/ml Vol Work Std #1		01/17/15O	02/17/15	200	
		J&T Brand		01/12/15	07/09/18	1800	
		01/17/15T					
		5ug/ml Vol Work Std #12					
		SOURCES	Lot	APPL Code	APPL Exp Date	ul	
		50ug/ml Vol Work Std #2		01/17/15Q	02/17/15	200	
		J&T Brand		01/12/15	07/09/18	1800	
01/17/15U							
50ug/ml 8260 Surrogate			Conc.		Date	Exp.	
Exp:02/17/15			ug/ml	Lot #	Code	Date	uL
O2SI	120002-01	8260B Surr Solution	2000	229269-33847	01/15/15A	05/26/17	10
J&T Brand		Purge & Trap MeOH		62345-00779	01/12/15	07/09/18	390
01/17/15V							
5.0ug/ml 8260 Surrogate			Lot	APPL Code	APPL Exp Date	ul	
		50ug/ml 8260 Surrogate		01/17/15U	02/17/15	200	
J&T Brand		Purge & Trap MeOH		01/12/15	07/09/18	1800	
01/17/15W							
250ug/ml TBA/IBA/Acetonitrile/Cyclohexanone/Acrolein/2-P							
Exp:02/17/15			Conc.		Date	Exp.	
Supplier	ID #		ug/ml	Lot #	Code	Date	uL
O2SI	120166-01	Volatile Mix 4-3	2000	229587-33999	01/17/15I	05/29/16	50
O2SI	020229-09	Acrolein	10000	242699-34577	01/17/15J	02/17/15	10
J&T Brand		Purge & Trap MeOH		62345-00779	01/12/15	07/09/18	340

1/17/15
RS

01/17/15X							
50ug/ml VOC Std#5							
Exp:02/17/15							
			Conc.		Date	Exp.	
Supplier	ID #	ID	ug/ml	Lot #	Code	Date	u
O2SI	120016-03-SS	8260 Gases(SS)	2000	239850-34549	01/17/15K	11/14/17	5
O2SI	020145-02-02-S	2-CEVE	2000	219465-33220	12/03/14N	12/16/15	5
J&T Brand		Purge & Trap MeOH		62345-00779	01/12/15	07/09/18	19
01/17/15Y							
50ug/ml VOC Std#6							
Exp:02/17/15							
	ID #	ID	ug/ml	Lot #	Code	Date	u
O2SI	120023-03-SS	VOC'S 54 COMP.	2000	208329-32738	12/03/14P	05/02/15	5
O2SI	120296-01-SS	Custom 8260 Solution	2000	240496-34383	01/17/15L	05/24/16	5
O2SI	020232-02-SS	Vinyl Acetate(SS)	2000	240484-34393	12/03/14Q	02/18/15	5
O2SI	020620-02-SS	n-Hexane	1000	205230-33679	12/03/14R	03/12/15	10
O2SI	020049-02-SS	HEXACHLOROETHANE	1000	226063-33536	12/03/14S	04/07/16	10
J&T Brand		Purge & Trap MeOH		62345-00779	01/12/15	07/09/18	165
01/17/15Z							
250ug/ml TBA/IBA/Acetonitrile/Acrolein/2-P							
Exp:02/17/15			Conc.		Date	Exp.	
Supplier	ID #		ug/ml	Lot #	Code	Date	uL
O2SI	120166-01-SS	VOC Mix 4-3 (SS)	2000	189667-33306	12/03/14T	05/18/15	25
O2SI	020229-09-SS	Acrolein SOLUTION (SS)	10000	242700-34579	01/17/15M	02/17/15	50
J&T Brand		Purge & Trap MeOH		62345-00779	01/12/15	07/09/18	170

1/19/15
RS

Volatile Standard Curve Preparation for 5mL Purge (8260 soil)-LOKI												
Exp: Date:	01/20/15	5µg/mL	5µg/mL	5µg/mL	5µg/mL	50µg/mL	50µg/mL	50µg/mL	50µg/mL	50µg/mL	250µg/mL	
		Vol Std #9	Vol Std #10	Vol Std #12	Surrogate	Vol Std #7	Vol Std #8	Vol Std #1	Vol Std #2	Surrogate	TBA	Final Vol
	Conc.	01-19-15R	01-19-15S	01-19-15T	01-19-15V	01-19-15N	01-19-15P	01-19-15O	01-19-15Q	01-19-15U	01-19-15W	w/P&T H2O
Date/code	µg/L	Exp:02-19-15	Exp:02-19-15	Exp:02-19-15	Exp:02-19-15	Exp:02-19-15	Exp:02-19-15	Exp:02-19-15	Exp:02-19-15	Exp:02-19-15	Exp:02-19-15	mL
01-19-15A	2	2	2	2	2	n/a	n/a	n/a	n/a	n/a	1	5
01-19-15B	5	5	5	5	5	n/a	n/a	n/a	n/a	n/a	2	5
01-19-15C	10	10	10	10	10	n/a	n/a	n/a	n/a	n/a	3	5
01-19-15D	20	20	20	20	20	n/a	n/a	n/a	n/a	n/a	4	5
01-19-15E	50	n/a	n/a	n/a	n/a	5	5	5	5	5	5	5
01-19-15F	100	n/a	n/a	n/a	n/a	10	10	10	10	10	6	5
01-19-15G	150	n/a	n/a	n/a	n/a	15	15	15	15	15	7	5
01-19-15H	200	n/a	n/a	n/a	n/a	20	20	20	20	20	8	5

1/19/15 RS

Volatile Standard Curve Preparation for 10mL Purge (8260 water)-LOKI												
Exp: Date:	01/20/15	5µg/mL	5µg/mL	5µg/mL	5µg/mL	50µg/mL	50µg/mL	50µg/mL	50µg/mL	50µg/mL	250µg/mL	
		Vol Std #9	Vol Std #10	Vol Std #12	Surrogate	Vol Std #7	Vol Std #8	Vol Std #1	Vol Std #2	Surrogate	TBA	Final Vol
	Conc.	01-19-15R	01-19-15S	01-19-15T	01-19-15V	01-19-15N	01-19-15P	01-19-15O	01-19-15Q	01-19-15U	01-19-15W	w/P&T H2O
Date/code	µg/L	Exp:02-19-15	Exp:02-19-15	Exp:02-19-15	Exp:02-19-15	Exp:02-19-15	Exp:02-19-15	Exp:02-19-15	Exp:02-19-15	Exp:02-19-15	Exp:02-19-15	mL
01-19-15I	0.3	3	3	3	6	n/a	n/a	n/a	n/a	n/a	2	50
01-19-15J	0.5	5	5	5	10	n/a	n/a	n/a	n/a	n/a	5	50
01-19-15K	1	10	10	10	20	n/a	n/a	n/a	n/a	n/a	10	50
01-19-15L	5	n/a	n/a	n/a	n/a	5	5	5	5	10	20	50
01-19-15M	10	n/a	n/a	n/a	n/a	10	10	10	10	25	25	50
01-19-15N	20	n/a	n/a	n/a	n/a	20	20	20	20	40	30	50
01-19-15O	40	n/a	n/a	n/a	n/a	40	40	40	40	80	35	50
01-13-15P	100	n/a	n/a	n/a	n/a	100	100	100	100	100	40	50

1/23/15 RS

A-

Gasoline
Lot #: LC01901 - 34327
Rec: 11/25/14 MFR exp. 7/31/16

Gasoline **47516-U**
Lot: LC01901 EXP: JUL/2016 STORAGE: ROOM TEMP. 1 x 1ml

DATE RECEIVED:

SUPELCO
Solutions within.
595 North Harrison Road • Bellefonte, PA
16823-0048 USA • Phone 814-359-3441

RS

STANDARD TRANSFER LABEL

Date of Preparation: **Exp. Date:** EXP: JUL/2016
Reference Number: **Storage:** ROOM TEMP.
Description:

1/23/15 RS

RS

01-23-15B					
2000ug/ml Gasoline					
Supplier	ID #		ug/ml	Lot #	uL
Supelco	47516-U	Gasoline	20,000	LC01901-34327	200
J&T Brand		Purge & Trap MeOH		62345-00777	1800

1/23/15 RS

Gasoline Curve Preparation for 100mL Purge (water)-THOR			
Exp Date:	01/24/15	2000ug/ml	
		Gasoline	Final Vol
	Conc	01-23-15B	w/P&T H2O
Date/code	µg/L	Exp.02-23-15	mL
01-23-15C	20	1	100
01-23-15D	50	2.5	100
01-23-15E	100	5	100
01-23-15F	300	15	100
01-23-15G	600	30	100
01-23-15H	800	40	100
01-23-15I	1000	50	100

1/20/15 RS

A-

VOC Mix 4-3, 2,000 mg/L, 1 mL
120166-01
Lot # 229587 Storage ≤ 6 Degrees C Expiry 29/May/2016
Solv: P/T Methanol

VOC Mix 4-3, 2000mg/L
Lot #: 229587 - 33662
Rec: 6/3/14 MFR exp. 5/29/16

RS

Sample 01/21/15	wt before soils	wt after soils	wt of soil	initial	time	Balance	Multiplier
AZ09685S04	31.952	39.766	7.814	DC/DG	10:35	V-Balance	0.6399
AZ09686S02	31.071	39.299	8.228	DC/DG	10:37	V-Balance	0.6077
AZ09688S02	32.273	39.638	7.365	DC/DG	10:40	V-Balance	0.6789
AZ09545S01	31.253	37.576	6.323	DC/DG	10:41	V-Balance	0.7908
AZ09546S01	31.217	37.668	6.451	DC/DG	10:42	V-Balance	0.7751
AZ09547S01	31.263	38.134	6.871	DC/DG	10:43	V-Balance	0.7277
AZ09548S01	31.186	37.536	6.350	DC/DG	10:44	V-Balance	0.7874
AZ09549S01	31.055	37.889	6.834	DC/DG	10:45	V-Balance	0.7316
AZ09550S01	31.048	38.418	7.370	DC/DG	10:46	V-Balance	0.6784
AZ09551S01	31.079	37.746	6.667	DC/DG	10:47	V-Balance	0.7500
AZ09552S01	31.269	37.412	6.143	DC/DG	10:48	V-Balance	0.8139
AZ09552S02	31.236	37.267	6.031	DC/DG	10:48	V-Balance	0.8290
AZ09631S02	31.542	39.276	7.734	DC/DG	12:26	V-Balance	0.6465
AZ09685S05	31.839	39.818	7.979	DC/DG	12:26	V-Balance	0.6266
AZ09685S06	32.235	40.134	7.899	DC/DG	12:27	V-Balance	0.6330
AZ09686S03	28.453	36.519	8.066	DC/DG	12:28	V-Balance	0.6199
AZ09622S03	29.54	37.371	7.831	DC/DG	12:28	V-Balance	0.6385

Sample 01/22/15		wt before soils	wt after soils	wt of soil	initial	time	Balance	Multiplier
AZ09738	S01	31.292	36.808	5.516	RS	9:15	V-Balance	0.9065
AZ09739	S01	31.257	36.457	5.200	RS	9:16	V-Balance	0.9615
AZ09740	S01	31.164	37.562	6.398	RS	9:17	V-Balance	0.7815
AZ09741	S01	31.287	36.017	4.730	RS	9:18	V-Balance	1.0571
AZ09742	S01	31.318	35.783	4.465	RS	9:19	V-Balance	1.1198
AZ09743	S01	31.375	37.328	5.953	RS	9:20	V-Balance	0.8399
AZ09744	S01	31.135	37.120	5.985	RS	9:21	V-Balance	0.8354
AZ09745	S01	30.964	35.932	4.968	RS	9:22	V-Balance	1.0064
AZ09746	S01	31.231	37.302	6.071	RS	9:23	V-Balance	0.8236
AZ09747	S01	31.437	36.239	4.802	RS	9:24	V-Balance	1.0412
AZ09748	S01	30.925	34.326	3.401	RS	9:25	V-Balance	1.4702
AZ09749	S01	31.064	37.176	6.112	RS	9:26	V-Balance	0.8181
AZ09750	S01	31.520	36.456	4.936	RS	9:27	V-Balance	1.0130
AZ09751	S01	31.541	35.632	4.091	RS	9:28	V-Balance	1.2222
AZ09752	S01	31.034	36.735	5.701	RS	9:29	V-Balance	0.8770
AZ09753	S01	31.213	37.012	5.799	RS	9:30	V-Balance	0.8622
AZ09754	S01	31.323	37.886	6.563	RS	9:31	V-Balance	0.7618
AZ09755	S01	31.382	37.710	6.328	RS	9:32	V-Balance	0.7901
AZ09756	S01	31.148	38.528	7.380	RS	9:33	V-Balance	0.6775
AZ09757	S01	31.160	36.695	5.535	RS	9:34	V-Balance	0.9033
AZ09758	S01	31.237	38.110	6.873	RS	9:35	V-Balance	0.7275
AZ09759	S01	31.214	36.273	5.059	RS	9:36	V-Balance	0.9883
AZ09760	S01	31.110	37.726	6.616	RS	9:37	V-Balance	0.7557
AZ09761	S01	31.094	37.887	6.793	RS	9:38	V-Balance	0.7361
AZ09762	S01	30.851	35.897	5.046	RS	9:39	V-Balance	0.9909
AZ09763	S01	30.844	35.594	4.750	RS	9:40	V-Balance	1.0526
AZ09764	S01	31.308	37.327	6.019	RS	9:41	V-Balance	0.8307
AZ09765	S01	30.987	36.711	5.724	RS	9:42	V-Balance	0.8735
AZ09766	S01	30.959	35.281	4.322	RS	9:43	V-Balance	1.1569
AZ09767	S01	31.069	37.347	6.278	RS	9:44	V-Balance	0.7964
AZ09768	S01	31.205	35.893	4.688	RS	9:45	V-Balance	1.0666
AZ09769	S01	31.133	36.394	5.261	RS	9:46	V-Balance	0.9504
AZ09770	S01	30.977	37.086	6.109	RS	9:47	V-Balance	0.8185
AZ09771	S01	31.187	38.259	7.072	RS	9:48	V-Balance	0.7070
AZ09772	S01	31.173	37.587	6.414	RS	9:49	V-Balance	0.7795
AZ09773	S01	31.225	36.593	5.368	RS	9:50	V-Balance	0.9314
AZ09774	S01	31.149	37.308	6.159	RS	9:51	V-Balance	0.8118
AZ09775	S01	30.981	36.363	5.382	RS	9:52	V-Balance	0.9290
AZ09549	S02	31.131	38.529	7.398	RS	9:53	V-Balance	0.6759
AZ09687	S02	31.702	39.272	7.570	DG	11:28	V-Balance	0.6605
AZ09552	S04	31.424	37.695	6.271	DG	11:29	V-Balance	0.7973
AZ09551	S03	29.739	36.634	6.895	DG	11:30	V-Balance	0.7252
AZ09688	S03	28.348	34.991	6.643	DG	11:31	V-Balance	0.7527

Injection Log

Directory: M:\THOR\DATA\T150109\

Line	Vial	FileName	Multiplier	SampleName	Misc Info	Injected
1	1	0109T03.D	1	5ng- BFB STD 1/9/15	2ul	9 Jan 15 10:31
2	5	0109T08.D	1	0.3ug/L VOC STD 1/9/15	10ml w/IS 12/20/14	9 Jan 15 12:44
3	6	0109T09.D	1	0.5ug/L VOC STD 1/9/15	10ml w/IS 12/20/14	9 Jan 15 13:12
4	7	0109T10.D	1	1.0ug/L VOC STD 1/9/15	10ml w/IS 12/20/14	9 Jan 15 13:39
5	8	0109T11.D	1	5.0ug/L VOC STD 1/9/15	10ml w/IS 12/20/14	9 Jan 15 14:07
6	9	0109T12.D	1	10ug/L VOC STD 1/9/15	10ml w/IS 12/20/14	9 Jan 15 14:35
7	10	0109T13.D	1	20ug/L VOC STD 1/9/15	10ml w/IS 12/20/14	9 Jan 15 15:03
8	11	0109T14.D	1	40ug/L VOC STD 1/9/15	10ml w/IS 12/20/14	9 Jan 15 15:31
9	12	0109T15.D	1	100ug/L VOC STD 1/9/15	10ml w/IS 12/20/14	9 Jan 15 15:59
10	17	0109T20.D	1	150109A LCS-1WT (SS)	10ml w/IS&S 12/20,12/23/14	9 Jan 15 18:18
11	6	0122T07.D	1	5ng- BFB STD 01-09-15	2ul	22 Jan 15 11:06
12	8	0122T09.D	1	10ug/L Vol Std 01-22-15	10ml w/IS&S 12/20,12/23/14	22 Jan 15 12:01
13	12	0122T13.D	50	150122A LCS-1WT MeOH	10ml w/IS&S 12/20,12/23/14	22 Jan 15 14:30
14	14	0122T15.D	50	150122A BLK-1WT MeOH	10ml w/IS&S 12/20,12/23/14	22 Jan 15 15:25
15	26	0122T27.D	36.26	AZ09551S03 6.895 DF50	10ml w/IS&S 12/20,12/23/14	22 Jan 15 20:58

Injection Log

Directory: M:\LOKI\DATA\150119\

Line	Vial	FileName	Multiplier	SampleName	Misc Info	Injected
1	1	0119L03.D	1	25ug/mL BFB Std 01-09-15	2uL	19 Jan 15 8:45
2	4	0119L07.D	1	2.0ug/kg Vol Std 01-19-15	5mL w/5uL IS:01/14/15	19 Jan 15 10:12
3	5	0119L08.D	1	5.0ug/kg Vol Std 01-19-15	5mL w/5uL IS:01/14/15	19 Jan 15 10:33
4	6	0119L09.D	1	10ug/kg Vol Std 01-19-15	5mL w/5uL IS:01/14/15	19 Jan 15 10:55
5	7	0119L10.D	1	20ug/kg Vol Std 01-19-15	5mL w/5uL IS:01/14/15	19 Jan 15 11:16
6	8	0119L11.D	1	50ug/kg Vol Std 01-19-15	5mL w/5uL IS:01/14/15	19 Jan 15 11:38
7	9	0119L12.D	1	100ug/kg Vol Std 01-19-15	5mL w/5uL IS:01/14/15	19 Jan 15 11:59
8	10	0119L13.D	1	150ug/kg Vol Std 01-19-15	5mL w/5uL IS:01/14/15	19 Jan 15 12:21
9	11	0119L14.D	1	200ug/kg Vol Std 01-19-15	5mL w/5uL IS&S:01/14/15,1(	19 Jan 15 12:42
10	16	0119L19.D	1	50ug/kg Std 1-19-15(SS)	5mL w/5uL IS&S:01/14/15,1(	19 Jan 15 14:30
11	1	0121L01.D	1	25ug/mL BFB Std 01-09-15	2uL	21 Jan 15 9:28
12	4	0121L05.D	1	50ug/kg Vol Std 01-21-15	5mL w/5uL IS&S:01/14/15,1(	21 Jan 15 10:56
13	5	0121L06.D	1	150121A LCS-1SL	5mL w/5uL IS&S:01/14/15,1(	21 Jan 15 11:17
14	9	0121L10.D	1	150121A BLK-1SL	5mL w/5uL IS&S:01/14/15,1(	21 Jan 15 12:43
15	19	0121L20.D	0.7908	AZ09545S01 6.323	5mL w/5uL IS&S:01/14/15,1(	21 Jan 15 16:18
16	20	0121L21.D	0.7751	AZ09546S01 6.451	5mL w/5uL IS&S:01/14/15,1(	21 Jan 15 16:40
17	21	0121L22.D	0.7277	AZ09547S01 6.871	5mL w/5uL IS&S:01/14/15,1(	21 Jan 15 17:01
18	22	0121L23.D	0.7874	AZ09548S01 6.350	5mL w/5uL IS&S:01/14/15,1(	21 Jan 15 17:23
19	24	0121L25.D	0.6784	AZ09550S01 7.370	5mL w/5uL IS&S:01/14/15,1(	21 Jan 15 18:06
20	25	0121L26.D	0.75	AZ09551S01 6.667	5mL w/5uL IS&S:01/14/15,1(	21 Jan 15 18:27
21	27	0121L28.D	0.829	AZ09552S02 MS-1SL 6.031	5mL w/5uL IS&S:01/14/15,1(	21 Jan 15 19:10
22	28	0121L29.D	0.7744	AZ09552S03 MSD-1SL 6.457	5mL w/5uL IS&S:01/14/15,1(	21 Jan 15 19:32
23	1	0122L01.D	1	25ug/mL BFB Std 01-09-15	2uL	22 Jan 15 7:59
24	2	0122L03.D	1	50ug/kg Vol Std 01-22-15	5mL w/5uL IS&S:01/14/15,1(	22 Jan 15 8:45
25	3	0122L04.D	1	150122A LCS-1SL	5mL w/5uL IS&S:01/14/15,1(	22 Jan 15 9:06
26	7	0122L08.D	1	150122A BLK-1SL	5mL w/5uL IS&S:01/14/15,1(	22 Jan 15 10:32
27	9	0122L10.D	0.6757	AZ09549S02 7.398g	5mL w/5uL IS&S:01/14/15,1(	22 Jan 15 11:16
28	12	0122L13.D	0.7973	AZ09552S04 6.271	5mL w/5uL IS&S:01/14/15,1(	22 Jan 15 12:20

Injection Log

Directory: M:\LOKI\DATA\150113\

Line	Vial	FileName	Multiplier	SampleName	Misc Info	Injected
1	1	0113L01.D	1	25ug/mL BFB Std 01-09-15	2uL	13 Jan 15 12:31
2	7	0113L08.D	1	0.3ug/L Vol Std 01-13-15	10mL w/5uL IS:10-06-14	13 Jan 15 15:46
3	8	0113L09.D	1	0.5ug/L Vol Std 01-13-15	10mL w/5uL IS:10-06-14	13 Jan 15 16:14
4	9	0113L10.D	1	1.0ug/L Vol Std 01-13-15	10mL w/5uL IS:10-06-14	13 Jan 15 16:42
5	10	0113L11.D	1	5.0ug/L Vol Std 01-13-15	10mL w/5uL IS:10-06-14	13 Jan 15 17:10
6	11	0113L12.D	1	10ug/L Vol Std 01-13-15	10mL w/5uL IS:10-06-14	13 Jan 15 17:38
7	12	0113L13.D	1	20ug/L Vol Std 01-13-15	10mL w/5uL IS:10-06-14	13 Jan 15 18:06
8	13	0113L14.D	1	40ug/L Vol Std 01-13-15	10mL w/5uL IS:10-06-14	13 Jan 15 18:34
9	14	0113L15.D	1	100ug/L Vol Std 01-13-15	10mL w/5uL IS:10-06-14	13 Jan 15 19:02
10	19	0113L20.D	1	10ug/L Std 1-13-15(SS)	10mL w/5uL IS&S:10-06-14	13 Jan 15 21:22
11	1	0116L01.D	1	25ug/mL BFB Std 01-09-15	2uL	16 Jan 15 8:39
12	3	0116L04.D	1	10ug/L Vol Std 01-15-15	10mL w/5uL IS&S:01/14/15,	16 Jan 15 9:59
13	4	0116L05.D	1	150116A LCS-1WL	10mL w/5uL IS&S:01/14/15,	16 Jan 15 10:27
14	11	0116L12.D	1	150116A BLK-1WL	10mL w/5uL IS&S:01/14/15,	16 Jan 15 13:43
15	12	0116L13.D	1	AZ09555W01	10mL w/5uL IS&S:01/14/15,	16 Jan 15 14:11
16	19	0116L20.D	1	AZ09553W02	10mL w/5uL IS&S:01/14/15,	16 Jan 15 17:27
17	20	0116L21.D	1	AZ09554W02	10mL w/5uL IS&S:01/14/15,	16 Jan 15 17:55

METALS

APPL, INC.

METALS

QC Summary

APPL, INC.

METALS BLANK

APPL Inc.
908 North Temperance Avenue
Clovis, CA 93611

Method	Analyte	Result	LOQ	LOD	DL	Units	Prep Date	Analysis Date	QC Group
6020A	LEAD (PB)	0.05 U	0.1	0.05	0.02	mg/Kg	01/19/15	01/23/15	#62A14-150119A-AZ09552
6020A	LEAD (PB)	0.40 U	3.0	0.40	0.19	ug/L	01/21/15	01/23/15	#62A14-150121A-AZ09554

Metals SC-Blank-REG MDLs
Printed: 01/28/15 12:51:01 PM

Laboratory Control Spike Recovery

METALS

APPL Inc.
908 North Temperance Avenue
Clovis, CA 93611

Method	Compound Name	Spike Level mg/Kg	SPK Result mg/Kg	SPK % Recovery	Recovery Limits	Extract Date	Analysis Date	QC Group
EPA 6020A	LEAD (PB)	25.0	22.0	88.0	80-120	01/19/15	01/23/15	#62A14-150119A-AZ09552

Comments: _____

Laboratory Control Spike Recovery

METALS

APPL Inc.
908 North Temperance Avenue
Clovis, CA 93611

Method	Compound Name	Spike Level ug/L	SPK Result ug/L	SPK % Recovery	Recovery Limits	Extract Date	Analysis Date	QC Group
EPA 6020A	LEAD (PB)	50.0	46.9	93.8	80-120	01/21/15	01/23/15	#62A14-150121A-AZ09554

Comments:

Matrix Spike Recoveries

METALS

APPL ID: **150119S-09552 MS - 193784**

Sample ID: AZ09552

Client ID: EKB100008

APPL Inc.
908 North Temperance Avenue
Clovis, CA 93611

Method	Compound Name	Spike Lvl mg/Kg	Matrix Res mg/Kg	SPK Res mg/Kg	DUP Res mg/Kg	SPK % Recovery	DUP % Recovery	RPD	RPD Max	Recovery Limits	Extract Date-Spk	Analysis Date-Spk	Extract Date-Dup	Analysis Date-Dup	QC Group	QC Sample
EPA 6020A	LEAD (PB)	50.0	0.24	44.2	42.6	87.9	84.7	3.7	20	80-120	01/19/15	01/24/15	01/19/15	01/24/15	193784	AZ09552

Comments: _____

Matrix Spike Recoveries

METALS

APPL ID: **150121W-09554 MS - 193781**

Sample ID: AZ09554

Client ID: EKB100010

APPL Inc.
908 North Temperance Avenue
Clovis, CA 93611

Method	Compound Name	Spike Lvl ug/L	Matrix Res ug/L	SPK Res ug/L	DUP Res ug/L	SPK % Recovery	DUP % Recovery	RPD	RPD Max	Recovery Limits	Extract Date-Spk	Analysis Date-Spk	Extract Date-Dup	Analysis Date-Dup	QC Group	QC Sample
EPA 6020A	LEAD (PB)	50.0	ND	48.6	48.3	97.2	96.6	0.6	20	80-120	01/21/15	01/23/15	01/21/15	01/23/15	193781	AZ09554

Comments: _____

METALS

Sample Data

APPL, INC.

Metals Analysis

Element Environmental
98-030 Hekaha St., Unit 9
Aiea, HI 96701

APPL Inc.
908 North Temperance Avenue
Clovis, CA 93611

Attn: Steve Spengler
Project: MCBH UST KB-100 SI / 130034
Sample ID: EKB100001
Sample Collection Date: 01/13/15

ARF: 75351
APPL ID: AZ09545

Method	Analyte	Result	LOQ	LOD	DL	Units	DF	Prep Date	Analysis Date
(Solid Concentrations and Limits have been adjusted to reflect 29.7 Percent Moisture.)									
6020A/3050B	LEAD (PB)	0.13	0.1	0.07	0.03	mg/Kg	1	01/19/15	01/23/15

Printed: 01/28/15 12:51:08 PM
PL-F1-SC-MCRes/MCPQL-REG MDLs

Sample Report

Sample Table

Sample Name	AZ09545S04 1/10
Data File Name	107SMPL.d
Data Path Name	K:\ICP-MS Megatron\Data\150123D.b
Acq Date Time	2015-01-23T23:13:46-08:00
Sample Type	Sample
Dilution	0.961538462
Comment	
ISTD Ref FileName	001CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	ISTD Mass	Tune Mode	Conc	FinalConc	Conc %RSD	CPS	%RSD	LDR	QC Flag
Be	9	45	NoGas	0.032	0.031	25.73	207	20.14	10000	
B	11	45	NoGas	36.280	34.884	4.10	158444	2.35	10000	
Na	23	45	He	2561.580	2463.058	1.75	3402963	1.26	1000000	
Mg	24	45	He	4897.718	4709.344	1.78	3393947	1.51	1000000	
Al	27	45	He	1113.758	1070.921	0.90	323612	0.99	1000000	
K	39	45	He	101.029	97.143	3.90	130625	1.00	500000	
Ca	44	45	He	249455.056	239860.631	0.92	8108435	1.39	500000	
Ti	47	45	He	130.675	125.649	1.17	27522	2.45	10000	
V	51	45	He	4.412	4.242	1.44	31730	1.12	10000	
Cr	52	45	He	6.064	5.831	1.71	54058	1.23	10000	
Mn	55	45	He	60.512	58.184	2.33	301904	2.01	50000	
Fe	56	45	He	1724.246	1657.928	2.33	13201807	1.42	1000000	
Co	59	45	He	0.745	0.717	1.65	11067	0.37	10000	
Ni	60	45	He	3.889	3.740	2.21	15040	1.53	10000	
Cu	63	45	He	2.032	1.953	2.27	25800	0.59	10000	
Zn	66	115	He	2.192	2.108	1.10	4505	0.93	50000	
As	75	115	He	2.298	2.209	1.26	2734	0.71	2000	
Se	78	72	H2	0.157	0.151	16.40	57	12.19	10000	
Se	78	115	He	0.351	0.338	52.15	85	15.07	10000	
Sr	88	115	NoGas	4385.532	4216.857	0.73	230423750	2.12	50000	
Mo	95	115	NoGas	0.314	0.302	9.65	3911	7.57	10000	
Ag	107	115	NoGas	0.009	0.009	7.13	307	6.79	5000	
Cd	111	115	He	0.032	0.030	17.80	85	16.63	10000	
Sn	118	115	He	0.326	0.314	5.70	2254	3.88	10000	
Sn	118	115	NoGas	0.291	0.279	3.17	6341	1.10	10000	
Sb	121	115	NoGas	0.769	0.739	4.21	17206	3.96	10000	
Ba	137	165	NoGas	5.343	5.137	1.46	43216	1.79	50000	
Tl	205	165	NoGas	0.033	0.031	8.70	1740	8.05	5000	
Pb	208	165	NoGas	0.092	0.088	6.60	9528	4.33	50000	

QC ISTD Table

Name	Mass	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li	6	NoGas	189070	0.74	220533	85.73	70	120	
Sc	45	H2	307008	2.82	326687	93.98	70	120	
Sc	45	He	99477	1.37	104972	94.77	70	120	
Sc	45	NoGas	1705897	1.44	1736910	98.21	70	120	
Ge	72	H2	75674	3.19	85628	88.38	70	120	
Ge	72	He	66959	0.76	70468	95.02	70	120	
Ge	72	NoGas	382584	1.29	393798	97.15	70	120	
In	115	H2	1812765	1.80	1929299	93.96	70	120	
In	115	He	610520	0.52	657120	92.91	70	120	
In	115	NoGas	2418402	1.41	2471241	97.86	70	120	
Tb	159	H2	3477397	1.75	3605350	96.45	70	120	
Tb	159	He	1994015	0.63	2090834	95.37	70	120	
Tb	159	NoGas	3325565	1.23	3296947	100.87	70	120	
Ho	165	H2	3368688	1.08	3502263	96.19	70	120	
Ho	165	He	2049665	1.47	2044408	100.26	70	120	
Ho	165	NoGas	3247232	0.43	3179403	102.13	70	120	

Metals Analysis

Element Environmental
98-030 Hekaha St., Unit 9
Aiea, HI 96701

APPL Inc.
908 North Temperance Avenue
Clovis, CA 93611

Attn: Steve Spengler
Project: MCBH UST KB-100 SI / 130034
Sample ID: EKB100002
Sample Collection Date: 01/13/15

ARF: 75351
APPL ID: AZ09546

Method	Analyte	Result	LOQ	LOD	DL	Units	DF	Prep Date	Analysis Date
(Solid Concentrations and Limits have been adjusted to reflect 32.8 Percent Moisture.)									
6020A/3050B	LEAD (PB)	0.27	0.1	0.07	0.03	mg/Kg	1	01/19/15	01/23/15

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Sample Report

Sample Table

Sample Name	AZ09546S04 1/10
Data File Name	108SMPL.d
Data Path Name	K:\ICP-MS Megatron\Data\150123D.b
Acq Date Time	2015-01-23T23:19:48-08:00
Sample Type	Sample
Dilution	0.952380952
Comment	
ISTD Ref FileName	001CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	ISTD Mass	Tune Mode	Conc	FinalConc	Conc %RSD	CPS	%RSD	LDR	QC Flag
Be	9	45	NoGas	0.045	0.043	31.33	280	28.35	10000	
B	11	45	NoGas	32.235	30.700	1.39	143114	0.12	10000	
Na	23	45	He	2261.484	2153.795	0.58	2995735	0.66	1000000	
Mg	24	45	He	5532.680	5269.219	1.00	3809389	0.33	1000000	
Al	27	45	He	2500.482	2381.412	1.40	721071	0.80	1000000	
K	39	45	He	195.920	186.590	0.38	183824	1.25	500000	
Ca	44	45	He	231140.172	220133.497	1.70	7465299	2.03	500000	
Ti	47	45	He	328.647	312.997	1.65	68751	1.04	10000	
V	51	45	He	15.316	14.587	2.75	106819	1.97	10000	
Cr	52	45	He	13.477	12.836	1.12	117538	0.30	10000	
Mn	55	45	He	86.429	82.314	0.98	428239	0.53	50000	
Fe	56	45	He	4687.730	4464.505	1.59	35609886	0.53	1000000	
Co	59	45	He	2.343	2.231	1.39	33502	0.20	10000	
Ni	60	45	He	10.928	10.408	0.34	41633	1.42	10000	
Cu	63	45	He	4.029	3.837	2.52	46718	1.24	10000	
Zn	66	115	He	5.893	5.612	1.60	11063	1.82	50000	
As	75	115	He	5.201	4.953	1.08	6042	0.53	2000	
Se	78	72	H2	0.441	0.420	7.29	147	7.78	10000	
Se	78	115	He	0.458	0.436	37.04	92	13.88	10000	
Sr	88	115	NoGas	3853.846	3670.330	2.13	201419517	0.87	50000	
Mo	95	115	NoGas	1.310	1.247	4.57	13763	2.10	10000	
Ag	107	115	NoGas	0.010	0.010	9.57	330	8.02	5000	
Cd	111	115	He	0.031	0.029	19.44	83	17.50	10000	
Sn	118	115	He	0.242	0.231	9.96	1802	6.22	10000	
Sn	118	115	NoGas	0.236	0.224	2.82	5443	2.25	10000	
Sb	121	115	NoGas	1.385	1.320	2.53	29332	1.66	10000	
Ba	137	165	NoGas	7.678	7.312	1.26	61347	0.97	50000	
Tl	205	165	NoGas	0.031	0.029	18.87	1633	16.86	5000	
Pb	208	165	NoGas	0.190	0.181	0.78	15830	0.44	50000	

QC ISTD Table

Name	Mass	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li	6	NoGas	190023	1.48	220533	86.17	70	120	
Sc	45	H2	299562	1.21	326687	91.70	70	120	
Sc	45	He	98842	1.20	104972	94.16	70	120	
Sc	45	NoGas	1710897	1.30	1736910	98.50	70	120	
Ge	72	H2	72528	0.69	85628	84.70	70	120	
Ge	72	He	65951	1.19	70468	93.59	70	120	
Ge	72	NoGas	373500	0.55	393798	94.85	70	120	
In	115	H2	1726530	0.64	1929299	89.49	70	120	
In	115	He	602817	0.62	657120	91.74	70	120	
In	115	NoGas	2406489	2.19	2471241	97.38	70	120	
Tb	159	H2	3406130	1.72	3605350	94.47	70	120	
Tb	159	He	2012420	2.98	2090834	96.25	70	120	
Tb	159	NoGas	3309149	1.77	3296947	100.37	70	120	
Ho	165	H2	3312942	3.23	3502263	94.59	70	120	
Ho	165	He	2034578	2.78	2044408	99.52	70	120	
Ho	165	NoGas	3210415	0.29	3179403	100.98	70	120	

Metals Analysis

Element Environmental
98-030 Hekaha St., Unit 9
Aiea, HI 96701

APPL Inc.
908 North Temperance Avenue
Clovis, CA 93611

Attn: Steve Spengler
Project: MCBH UST KB-100 SI / 130034
Sample ID: EKB100003
Sample Collection Date: 01/13/15

ARF: 75351
APPL ID: AZ09547

Method	Analyte	Result	LOQ	LOD	DL	Units	DF	Prep Date	Analysis Date
(Solid Concentrations and Limits have been adjusted to reflect 39.1 Percent Moisture.)									
6020A/3050B	LEAD (PB)	0.46	0.2	0.08	0.03	mg/Kg	1	01/19/15	01/23/15

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Sample Report

Sample Table

Sample Name	AZ09547S04 1/10
Data File Name	109SMPL.d
Data Path Name	K:\ICP-MS Megatron\Data\150123D.b
Acq Date Time	2015-01-23T23:25:50-08:00
Sample Type	Sample
Dilution	0.99009901
Comment	
ISTD Ref FileName	001CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	ISTD Mass	Tune Mode	Conc	FinalConc	Conc %RSD	CPS	%RSD	LDR	QC Flag
Be	9	45	NoGas	0.086	0.085	4.51	503	4.14	10000	
B	11	45	NoGas	24.976	24.729	0.91	115936	1.62	10000	
Na	23	45	He	1410.834	1396.865	0.43	1891982	0.40	1000000	
Mg	24	45	He	7711.248	7634.899	1.15	5279960	0.96	1000000	
Al	27	45	He	4727.688	4680.879	0.54	1355353	0.57	1000000	
K	39	45	He	251.515	249.025	0.46	214279	0.47	500000	
Ca	44	45	He	164107.669	162482.841	0.71	5271174	0.99	500000	
Ti	47	45	He	506.467	501.453	1.12	105368	0.82	10000	
V	51	45	He	16.877	16.710	0.22	116963	0.50	10000	
Cr	52	45	He	20.666	20.461	0.37	178453	0.64	10000	
Mn	55	45	He	132.571	131.258	0.51	652988	0.79	50000	
Fe	56	45	He	6244.514	6182.687	0.53	47168399	0.24	1000000	
Co	59	45	He	2.483	2.458	0.91	35282	1.18	10000	
Ni	60	45	He	13.241	13.110	0.80	50122	0.65	10000	
Cu	63	45	He	5.570	5.515	0.95	62652	0.71	10000	
Zn	66	115	He	8.122	8.042	1.98	14719	1.95	50000	
As	75	115	He	3.963	3.924	3.86	4515	3.32	2000	
Se	78	72	H2	0.674	0.668	8.84	218	7.96	10000	
Se	78	115	He	0.628	0.622	42.25	102	18.93	10000	
Sr	88	115	NoGas	2273.576	2251.066	1.15	118211298	0.83	50000	
Mo	95	115	NoGas	2.134	2.113	3.70	21834	3.47	10000	
Ag	107	115	NoGas	0.014	0.014	11.51	433	11.84	5000	
Cd	111	115	He	0.032	0.031	19.03	83	17.16	10000	
Sn	118	115	He	0.242	0.240	2.65	1763	1.24	10000	
Sn	118	115	NoGas	0.227	0.225	5.27	5284	2.67	10000	
Sb	121	115	NoGas	0.405	0.401	3.08	9857	2.94	10000	
Ba	137	165	NoGas	6.676	6.610	1.62	53880	1.53	50000	
Tl	205	165	NoGas	0.035	0.035	9.64	1870	8.90	5000	
Pb	208	165	NoGas	0.283	0.280	5.93	22137	4.71	50000	

QC ISTD Table

Name	Mass	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li	6	NoGas	190073	2.05	220533	86.19	70	120	
Sc	45	H2	296842	0.36	326687	90.86	70	120	
Sc	45	He	98295	0.30	104972	93.64	70	120	
Sc	45	NoGas	1729050	0.86	1736910	99.55	70	120	
Ge	72	H2	71186	0.74	85628	83.13	70	120	
Ge	72	He	64073	0.86	70468	90.93	70	120	
Ge	72	NoGas	371939	1.74	393798	94.45	70	120	
In	115	H2	1737673	0.65	1929299	90.07	70	120	
In	115	He	589631	0.62	657120	89.73	70	120	
In	115	NoGas	2393631	1.81	2471241	96.86	70	120	
Tb	159	H2	3410123	0.75	3605350	94.59	70	120	
Tb	159	He	2006793	0.75	2090834	95.98	70	120	
Tb	159	NoGas	3308568	1.47	3296947	100.35	70	120	
Ho	165	H2	3353420	0.67	3502263	95.75	70	120	
Ho	165	He	2010999	1.83	2044408	98.37	70	120	
Ho	165	NoGas	3241545	0.29	3179403	101.95	70	120	

Metals Analysis

Element Environmental
98-030 Hekaha St., Unit 9
Aiea, HI 96701

APPL Inc.
908 North Temperance Avenue
Clovis, CA 93611

Attn: Steve Spengler
Project: MCBH UST KB-100 SI / 130034
Sample ID: EKB100004
Sample Collection Date: 01/13/15

ARF: 75351
APPL ID: AZ09548

Method	Analyte	Result	LOQ	LOD	DL	Units	DF	Prep Date	Analysis Date
(Solid Concentrations and Limits have been adjusted to reflect 32.7 Percent Moisture.)									
6020A/3050B	LEAD (PB)	3.6	0.1	0.07	0.03	mg/Kg	1	01/19/15	01/23/15

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Sample Report

Sample Table

Sample Name	AZ09548S04 1/10
Data File Name	110SMPL.d
Data Path Name	K:\ICP-MS Megatron\Data\150123D.b
Acq Date Time	2015-01-23T23:31:52-08:00
Sample Type	Sample
Dilution	0.961538462
Comment	
ISTD Ref FileName	001CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	ISTD Mass	Tune Mode	Conc	FinalConc	Conc %RSD	CPS	%RSD	LDR	QC Flag
Be	9	45	NoGas	0.110	0.106	9.23	633	7.79	10000	
B	11	45	NoGas	27.439	26.384	2.04	125074	0.79	10000	
Na	23	45	He	1680.545	1615.909	2.22	2224397	0.62	1000000	
Mg	24	45	He	8265.541	7947.636	2.89	5627868	1.38	1000000	
Al	27	45	He	4763.620	4580.404	2.25	1358222	1.77	1000000	
K	39	45	He	282.962	272.079	2.52	230813	0.68	500000	
Ca	44	45	He	195381.484	187866.812	1.39	6241459	0.44	500000	
Ti	47	45	He	578.834	556.571	0.61	119781	1.06	10000	
V	51	45	He	15.130	14.548	2.45	104389	1.22	10000	
Cr	52	45	He	23.707	22.795	1.33	203384	0.39	10000	
Mn	55	45	He	154.220	148.288	1.07	755423	0.61	50000	
Fe	56	45	He	7183.174	6906.898	1.31	53960039	0.52	1000000	
Co	59	45	He	3.297	3.170	1.90	46427	0.84	10000	
Ni	60	45	He	16.471	15.837	1.94	61960	0.61	10000	
Cu	63	45	He	6.518	6.268	1.15	72217	0.64	10000	
Zn	66	115	He	13.455	12.938	1.00	24024	0.75	50000	
As	75	115	He	4.663	4.483	2.37	5299	1.96	2000	
Se	78	72	H2	0.375	0.360	10.12	122	10.02	10000	
Se	78	115	He	0.654	0.629	28.63	104	13.17	10000	
Sr	88	115	NoGas	2794.093	2686.628	1.21	143415281	0.34	50000	
Mo	95	115	NoGas	1.453	1.397	7.80	14914	6.93	10000	
Ag	107	115	NoGas	0.018	0.017	29.40	523	27.31	5000	
Cd	111	115	He	0.045	0.043	3.23	115	3.63	10000	
Sn	118	115	He	0.348	0.335	6.71	2282	5.54	10000	
Sn	118	115	NoGas	0.333	0.320	1.79	6847	1.02	10000	
Sb	121	115	NoGas	0.408	0.392	7.32	9780	4.97	10000	
Ba	137	165	NoGas	8.959	8.615	0.93	72170	1.43	50000	
Tl	205	165	NoGas	0.030	0.028	8.85	1587	7.39	5000	
Pb	208	165	NoGas	2.449	2.355	1.28	164839	0.85	50000	

QC ISTD Table

Name	Mass	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li	6	NoGas	191873	1.01	220533	87.00	70	120	
Sc	45	H2	296833	1.37	326687	90.86	70	120	
Sc	45	He	97775	1.64	104972	93.14	70	120	
Sc	45	NoGas	1721025	1.07	1736910	99.09	70	120	
Ge	72	H2	70709	2.65	85628	82.58	70	120	
Ge	72	He	64503	1.09	70468	91.54	70	120	
Ge	72	NoGas	371420	0.99	393798	94.32	70	120	
In	115	H2	1731740	1.20	1929299	89.76	70	120	
In	115	He	589123	0.75	657120	89.65	70	120	
In	115	NoGas	2362881	1.05	2471241	95.62	70	120	
Tb	159	H2	3427598	0.88	3605350	95.07	70	120	
Tb	159	He	2045464	2.24	2090834	97.83	70	120	
Tb	159	NoGas	3296449	2.08	3296947	99.98	70	120	
Ho	165	H2	3346166	1.00	3502263	95.54	70	120	
Ho	165	He	2001121	0.90	2044408	97.88	70	120	
Ho	165	NoGas	3237068	0.51	3179403	101.81	70	120	

Metals Analysis

Element Environmental
98-030 Hekaha St., Unit 9
Aiea, HI 96701

APPL Inc.
908 North Temperance Avenue
Clovis, CA 93611

Attn: Steve Spengler
Project: MCBH UST KB-100 SI / 130034
Sample ID: EKB100005
Sample Collection Date: 01/13/15

ARF: 75351
APPL ID: AZ09549

Method	Analyte	Result	LOQ	LOD	DL	Units	DF	Prep Date	Analysis Date
(Solid Concentrations and Limits have been adjusted to reflect 27.7 Percent Moisture.)									
6020A/3050B	LEAD (PB)	12.2	0.1	0.07	0.03	mg/Kg	1	01/19/15	01/23/15

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PL-F1-SC-MCRes/MCPQL-REG MDLs

Sample Report

Sample Table

Sample Name	AZ09549S04 1/10
Data File Name	111SMPL.d
Data Path Name	K:\ICP-MS Megatron\Data\150123D.b
Acq Date Time	2015-01-23T23:37:53-08:00
Sample Type	Sample
Dilution	1
Comment	
ISTD Ref FileName	001CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	ISTD Mass	Tune Mode	Conc	FinalConc	Conc %RSD	CPS	%RSD	LDR	QC Flag
Be	9	45	NoGas	0.093	0.093	24.21	533	21.89	10000	
B	11	45	NoGas	28.333	28.333	1.83	127611	1.44	10000	
Na	23	45	He	1976.163	1976.163	2.62	2558748	1.06	1000000	
Mg	24	45	He	7590.919	7590.919	2.91	5086419	1.36	1000000	
Al	27	45	He	4713.741	4713.741	3.19	1322780	3.38	1000000	
K	39	45	He	254.006	254.006	1.80	211110	0.38	500000	
Ca	44	45	He	207741.742	207741.742	2.42	6530482	1.66	500000	
Ti	47	45	He	757.355	757.355	2.16	154205	0.86	10000	
V	51	45	He	18.087	18.087	1.62	122609	0.83	10000	
Cr	52	45	He	24.229	24.229	1.82	204513	0.53	10000	
Mn	55	45	He	138.756	138.756	1.32	668906	0.40	50000	
Fe	56	45	He	8228.436	8228.436	1.45	60825009	0.84	1000000	
Co	59	45	He	4.009	4.009	2.01	55456	0.94	10000	
Ni	60	45	He	20.581	20.581	1.00	76153	1.39	10000	
Cu	63	45	He	10.860	10.860	2.15	115681	0.53	10000	
Zn	66	115	He	17.781	17.781	1.17	31181	0.40	50000	
As	75	115	He	3.755	3.755	3.57	4224	3.80	2000	
Se	78	72	H2	0.436	0.436	7.16	141	7.24	10000	
Se	78	115	He	0.596	0.596	16.19	98	7.50	10000	
Sr	88	115	NoGas	3167.408	3167.408	0.57	162123981	1.44	50000	
Mo	95	115	NoGas	2.019	2.019	2.13	20372	2.32	10000	
Ag	107	115	NoGas	0.018	0.018	7.91	523	7.96	5000	
Cd	111	115	He	0.123	0.123	6.71	300	5.78	10000	
Sn	118	115	He	0.402	0.402	5.10	2517	4.71	10000	
Sn	118	115	NoGas	0.409	0.409	5.34	8003	2.79	10000	
Sb	121	115	NoGas	0.745	0.745	3.11	16305	3.63	10000	
Ba	137	165	NoGas	18.689	18.689	2.14	147559	2.50	50000	
Tl	205	165	NoGas	0.026	0.026	13.77	1387	11.50	5000	
Pb	208	165	NoGas	8.815	8.815	2.67	573157	1.78	50000	

QC ISTD Table

Name	Mass	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li	6	NoGas	192575	0.92	220533	87.32	70	120	
Sc	45	H2	291280	0.92	326687	89.16	70	120	
Sc	45	He	96220	1.55	104972	91.66	70	120	
Sc	45	NoGas	1707690	0.76	1736910	98.32	70	120	
Ge	72	H2	70489	1.31	85628	82.32	70	120	
Ge	72	He	62980	0.32	70468	89.37	70	120	
Ge	72	NoGas	369268	1.26	393798	93.77	70	120	
In	115	H2	1694754	1.15	1929299	87.84	70	120	
In	115	He	581654	0.79	657120	88.52	70	120	
In	115	NoGas	2356278	1.98	2471241	95.35	70	120	
Tb	159	H2	3396683	0.95	3605350	94.21	70	120	
Tb	159	He	1997263	0.29	2090834	95.52	70	120	
Tb	159	NoGas	3269347	1.30	3296947	99.16	70	120	
Ho	165	H2	3342423	1.12	3502263	95.44	70	120	
Ho	165	He	1982942	1.36	2044408	96.99	70	120	
Ho	165	NoGas	3175443	1.24	3179403	99.88	70	120	

Metals Analysis

Element Environmental
98-030 Hekaha St., Unit 9
Aiea, HI 96701

APPL Inc.
908 North Temperance Avenue
Clovis, CA 93611

Attn: Steve Spengler
Project: MCBH UST KB-100 SI / 130034
Sample ID: EKB100006
Sample Collection Date: 01/13/15

ARF: 75351
APPL ID: AZ09550

Method	Analyte	Result	LOQ	LOD	DL	Units	DF	Prep Date	Analysis Date
(Solid Concentrations and Limits have been adjusted to reflect 22.0 Percent Moisture.)									
6020A/3050B	LEAD (PB)	17.7	0.1	0.06	0.03	mg/Kg	1	01/19/15	01/23/15

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Sample Report

Sample Table

Sample Name	AZ09550S04 1/10
Data File Name	112SMPL.d
Data Path Name	K:\ICP-MS Megatron\Data\150123D.b
Acq Date Time	2015-01-23T23:43:55-08:00
Sample Type	Sample
Dilution	1.041666667
Comment	
ISTD Ref FileName	001CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	ISTD Mass	Tune Mode	Conc	FinalConc	Conc %RSD	CPS	%RSD	LDR	QC Flag
Be	9	45	NoGas	0.092	0.096	31.13	520	29.10	10000	
B	11	45	NoGas	31.681	33.001	4.07	137756	2.94	10000	
Na	23	45	He	2081.598	2168.331	0.85	2690682	0.77	1000000	
Mg	24	45	He	6444.433	6712.951	2.11	4318436	1.79	1000000	
Al	27	45	He	3852.593	4013.118	0.90	1080999	0.44	1000000	
K	39	45	He	210.768	219.550	0.93	187131	0.42	500000	
Ca	44	45	He	212642.557	221502.663	0.75	6684129	0.52	500000	
Ti	47	45	He	690.604	719.379	0.81	140610	0.60	10000	
V	51	45	He	16.192	16.867	0.30	109871	1.16	10000	
Cr	52	45	He	21.429	22.322	0.44	181047	1.18	10000	
Mn	55	45	He	121.896	126.975	0.51	587646	0.94	50000	
Fe	56	45	He	7842.938	8169.727	0.67	57971889	1.09	1000000	
Co	59	45	He	3.645	3.797	0.54	50467	1.27	10000	
Ni	60	45	He	18.302	19.065	1.69	67738	2.48	10000	
Cu	63	45	He	15.301	15.938	0.68	161318	1.45	10000	
Zn	66	115	He	21.176	22.058	2.10	37216	2.44	50000	
As	75	115	He	3.723	3.878	2.14	4208	2.42	2000	
Se	78	72	H2	0.224	0.233	17.77	75	18.59	10000	
Se	78	115	He	0.345	0.360	51.32	81	15.37	10000	
Sr	88	115	NoGas	3558.188	3706.446	2.07	184172457	1.74	50000	
Mo	95	115	NoGas	0.965	1.005	6.26	10247	4.93	10000	
Ag	107	115	NoGas	0.016	0.017	7.59	487	5.93	5000	
Cd	111	115	He	0.203	0.212	3.64	494	3.90	10000	
Sn	118	115	He	0.648	0.675	4.84	3725	3.91	10000	
Sn	118	115	NoGas	0.623	0.649	3.75	11437	4.03	10000	
Sb	121	115	NoGas	0.873	0.909	6.52	18988	5.88	10000	
Ba	137	165	NoGas	19.105	19.901	0.82	151074	0.62	50000	
Tl	205	165	NoGas	0.021	0.022	6.76	1163	5.18	5000	
Pb	208	165	NoGas	13.233	13.785	1.87	860189	0.80	50000	

QC ISTD Table

Name	Mass	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li	6	NoGas	188483	0.97	220533	85.47	70	120	
Sc	45	H2	291713	1.26	326687	89.29	70	120	
Sc	45	He	96200	0.88	104972	91.64	70	120	
Sc	45	NoGas	1672495	2.05	1736910	96.29	70	120	
Ge	72	H2	70673	1.82	85628	82.54	70	120	
Ge	72	He	63892	1.66	70468	90.67	70	120	
Ge	72	NoGas	366454	0.76	393798	93.06	70	120	
In	115	H2	1712897	1.73	1929299	88.78	70	120	
In	115	He	584415	0.42	657120	88.94	70	120	
In	115	NoGas	2382738	0.86	2471241	96.42	70	120	
Tb	159	H2	3408864	0.72	3605350	94.55	70	120	
Tb	159	He	1982067	1.16	2090834	94.80	70	120	
Tb	159	NoGas	3272045	1.37	3296947	99.24	70	120	
Ho	165	H2	3336948	2.05	3502263	95.28	70	120	
Ho	165	He	1979938	0.87	2044408	96.85	70	120	
Ho	165	NoGas	3180577	1.24	3179403	100.04	70	120	

Metals Analysis

Element Environmental
98-030 Hekaha St., Unit 9
Aiea, HI 96701

APPL Inc.
908 North Temperance Avenue
Clovis, CA 93611

Attn: Steve Spengler
Project: MCBH UST KB-100 SI / 130034
Sample ID: EKB100007
Sample Collection Date: 01/13/15

ARF: 75351
APPL ID: AZ09551

Method	Analyte	Result	LOQ	LOD	DL	Units	DF	Prep Date	Analysis Date
(Solid Concentrations and Limits have been adjusted to reflect 33.6 Percent Moisture.)									
6020A/3050B	LEAD (PB)	0.33	0.1	0.07	0.03	mg/Kg	1	01/19/15	01/23/15

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Sample Report

Sample Table

Sample Name	AZ09551S04 1/10
Data File Name	113SMPL.d
Data Path Name	K:\ICP-MS Megatron\Data\150123D.b
Acq Date Time	2015-01-23T23:49:57-08:00
Sample Type	Sample
Dilution	0.970873786
Comment	
ISTD Ref FileName	001CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	ISTD Mass	Tune Mode	Conc	FinalConc	Conc %RSD	CPS	%RSD	LDR	QC Flag
Be	9	45	NoGas	0.080	0.077	19.43	453	16.70	10000	
B	11	45	NoGas	28.545	27.714	3.71	125488	2.08	10000	
Na	23	45	He	1813.788	1760.959	1.71	2312519	0.98	1000000	
Mg	24	45	He	6614.236	6421.588	0.64	4351446	0.72	1000000	
Al	27	45	He	3373.134	3274.887	1.14	929238	0.21	1000000	
K	39	45	He	191.051	185.487	2.19	172982	0.52	500000	
Ca	44	45	He	196623.843	190896.935	0.67	6067727	0.29	500000	
Ti	47	45	He	394.388	382.901	1.51	78841	2.00	10000	
V	51	45	He	11.636	11.297	0.56	77797	0.52	10000	
Cr	52	45	He	16.329	15.854	1.94	135769	1.20	10000	
Mn	55	45	He	102.926	99.929	1.49	487173	0.56	50000	
Fe	56	45	He	5545.288	5383.774	1.88	40244395	0.96	1000000	
Co	59	45	He	2.198	2.134	1.90	30055	1.06	10000	
Ni	60	45	He	11.312	10.983	1.87	41170	1.50	10000	
Cu	63	45	He	4.433	4.304	0.76	48728	0.56	10000	
Zn	66	115	He	6.525	6.335	4.25	11858	3.90	50000	
As	75	115	He	3.603	3.498	1.47	4087	1.81	2000	
Se	78	72	H2	0.322	0.313	7.50	107	6.61	10000	
Se	78	115	He	0.647	0.628	32.61	103	14.65	10000	
Sr	88	115	NoGas	2987.792	2900.769	1.81	155845118	1.26	50000	
Mo	95	115	NoGas	1.606	1.559	3.40	16672	2.46	10000	
Ag	107	115	NoGas	0.010	0.010	2.77	320	3.12	5000	
Cd	111	115	He	0.024	0.023	37.43	63	33.47	10000	
Sn	118	115	He	0.127	0.124	20.78	1191	11.30	10000	
Sn	118	115	NoGas	0.133	0.129	5.81	3827	3.69	10000	
Sb	121	115	NoGas	0.274	0.266	4.54	7295	3.84	10000	
Ba	137	165	NoGas	7.213	7.002	1.96	58143	2.41	50000	
Tl	205	165	NoGas	0.030	0.029	3.95	1597	3.45	5000	
Pb	208	165	NoGas	0.227	0.220	1.66	18385	0.38	50000	

QC ISTD Table

Name	Mass	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li	6	NoGas	196507	0.90	220533	89.11	70	120	
Sc	45	H2	289249	0.84	326687	88.54	70	120	
Sc	45	He	94443	0.93	104972	89.97	70	120	
Sc	45	NoGas	1668821	1.15	1736910	96.08	70	120	
Ge	72	H2	71514	0.72	85628	83.52	70	120	
Ge	72	He	63269	2.28	70468	89.78	70	120	
Ge	72	NoGas	366492	0.77	393798	93.07	70	120	
In	115	H2	1708336	1.39	1929299	88.55	70	120	
In	115	He	586294	0.46	657120	89.22	70	120	
In	115	NoGas	2401206	0.84	2471241	97.17	70	120	
Tb	159	H2	3414137	0.95	3605350	94.70	70	120	
Tb	159	He	1996274	1.62	2090834	95.48	70	120	
Tb	159	NoGas	3299132	0.91	3296947	100.07	70	120	
Ho	165	H2	3308516	1.03	3502263	94.47	70	120	
Ho	165	He	2007971	1.38	2044408	98.22	70	120	
Ho	165	NoGas	3238319	1.03	3179403	101.85	70	120	

Metals Analysis

Element Environmental
98-030 Hekaha St., Unit 9
Aiea, HI 96701

APPL Inc.
908 North Temperance Avenue
Clovis, CA 93611

Attn: Steve Spengler
Project: MCBH UST KB-100 SI / 130034
Sample ID: EKB100008
Sample Collection Date: 01/13/15

ARF: 75351
APPL ID: AZ09552

Method	Analyte	Result	LOQ	LOD	DL	Units	DF	Prep Date	Analysis Date
(Solid Concentrations and Limits have been adjusted to reflect 34.6 Percent Moisture.)									
6020A/3050B	LEAD (PB)	0.37	0.1	0.08	0.03	mg/Kg	1	01/19/15	01/23/15

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PL-F1-SC-MCRes/MCPQL-REG MDLs

Sample Report

Sample Table

Sample Name	AZ09552S11 1/10
Data File Name	114SMPL.d
Data Path Name	K:\ICP-MS Megatron\Data\150123D.b
Acq Date Time	2015-01-23T23:55:59-08:00
Sample Type	Sample
Dilution	1
Comment	
ISTD Ref FileName	001CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	ISTD Mass	Tune Mode	Conc	FinalConc	Conc %RSD	CPS	%RSD	LDR	QC Flag
Be	9	45	NoGas	0.079	0.079	24.23	457	22.04	10000	
B	11	45	NoGas	24.936	24.936	1.74	113724	1.11	10000	
Na	23	45	He	1494.137	1494.137	0.51	1932320	0.44	1000000	
Mg	24	45	He	7192.822	7192.822	1.15	4762109	1.10	1000000	
Al	27	45	He	4208.733	4208.733	1.04	1166717	1.10	1000000	
K	39	45	He	187.640	187.640	0.56	172225	0.40	500000	
Ca	44	45	He	163331.361	163331.361	1.48	5072570	1.55	500000	
Ti	47	45	He	477.632	477.632	1.26	96082	1.18	10000	
V	51	45	He	13.705	13.705	1.15	92030	1.07	10000	
Cr	52	45	He	18.554	18.554	0.98	155060	0.94	10000	
Mn	55	45	He	123.065	123.065	0.95	586138	0.92	50000	
Fe	56	45	He	6144.307	6144.307	1.22	44876155	1.17	1000000	
Co	59	45	He	2.545	2.545	2.27	34959	2.25	10000	
Ni	60	45	He	11.778	11.778	1.23	43130	1.30	10000	
Cu	63	45	He	6.356	6.356	1.30	68558	1.19	10000	
Zn	66	115	He	7.754	7.754	0.65	13981	1.27	50000	
As	75	115	He	3.311	3.311	2.21	3756	2.03	2000	
Se	78	72	H2	0.322	0.322	5.98	107	5.24	10000	
Se	78	115	He	0.577	0.577	42.09	98	17.42	10000	
Sr	88	115	NoGas	2403.405	2403.405	0.98	124052688	1.62	50000	
Mo	95	115	NoGas	1.872	1.872	1.77	19108	2.25	10000	
Ag	107	115	NoGas	0.009	0.009	63.72	287	50.59	5000	
Cd	111	115	He	0.036	0.036	14.88	92	13.58	10000	
Sn	118	115	He	0.138	0.138	11.00	1242	5.98	10000	
Sn	118	115	NoGas	0.133	0.133	1.69	3777	1.53	10000	
Sb	121	115	NoGas	0.251	0.251	10.12	6758	6.30	10000	
Ba	137	165	NoGas	5.566	5.566	1.41	45251	0.49	50000	
Tl	205	165	NoGas	0.022	0.022	28.77	1240	25.87	5000	
Pb	208	165	NoGas	0.244	0.244	4.29	19687	2.18	50000	

QC ISTD Table

Name	Mass	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li	6	NoGas	200653	0.77	220533	90.99	70	120	
Sc	45	H2	291190	0.91	326687	89.13	70	120	
Sc	45	He	95042	0.07	104972	90.54	70	120	
Sc	45	NoGas	1698531	0.38	1736910	97.79	70	120	
Ge	72	H2	71427	0.96	85628	83.42	70	120	
Ge	72	He	63227	0.79	70468	89.72	70	120	
Ge	72	NoGas	369863	0.96	393798	93.92	70	120	
In	115	H2	1736043	0.67	1929299	89.98	70	120	
In	115	He	585625	0.72	657120	89.12	70	120	
In	115	NoGas	2375947	1.45	2471241	96.14	70	120	
Tb	159	H2	3404028	1.27	3605350	94.42	70	120	
Tb	159	He	2000176	1.58	2090834	95.66	70	120	
Tb	159	NoGas	3338219	0.67	3296947	101.25	70	120	
Ho	165	H2	3339491	0.60	3502263	95.35	70	120	
Ho	165	He	2031102	1.05	2044408	99.35	70	120	
Ho	165	NoGas	3264605	1.34	3179403	102.68	70	120	

Metals Analysis

Element Environmental
98-030 Hekaha St., Unit 9
Aiea, HI 96701

APPL Inc.
908 North Temperance Avenue
Clovis, CA 93611

Attn: Steve Spengler
Project: MCBH UST KB-100 SI / 130034
Sample ID: EKB100009
Sample Collection Date: 01/13/15

ARF: 75351
APPL ID: AZ09553

Method	Analyte	Result	LOQ	LOD	DL	Units	DF	Prep Date	Analysis Date
6020A/3015^	LEAD (PB)	0.40 U	3.0	0.40	0.19	ug/L	1	01/21/15	01/23/15

Printed: 01/28/15 12:51:09 PM
PL-F1-SC-MCRes/MCPQL-REG MDLs

Sample Report

Sample Table

Sample Name	AZ09553W08
Data File Name	075SMPL.d
Data Path Name	K:\ICP-MS Megatron\Data\150123D.b
Acq Date Time	2015-01-23T20:01:05-08:00
Sample Type	Sample
Dilution	1.111111111
Comment	
ISTD Ref FileName	001CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Fail

QC Analyte Table

Name	Mass	ISTD Mass	Tune Mode	Conc	FinalConc	Conc %RSD	CPS	%RSD	LDR	QC Flag
Be	9	45	NoGas	-0.004	-0.005	-61.14	13	114.56	10000	
B	11	45	NoGas	20.495	22.772	0.24	104295	0.68	10000	
Na	23	45	He	130.839	145.376	2.58	302133	0.64	1000000	
Mg	24	45	He	37.125	41.250	2.68	31213	1.53	1000000	
Al	27	45	He	22.009	24.455	4.79	8202	4.31	1000000	
K	39	45	He	-3.125	-3.472	-95.13	82817	2.49	500000	
Ca	44	45	He	72.451	80.501	6.71	3006	4.74	500000	
Ti	47	45	He	0.353	0.392	43.76	96	40.73	10000	
V	51	45	He	-0.044	-0.049	-25.87	887	9.03	10000	
Cr	52	45	He	0.208	0.231	5.81	3863	4.11	10000	
Mn	55	45	He	0.045	0.050	28.32	908	6.82	50000	
Fe	56	45	He	6.269	6.965	1.56	93275	0.50	1000000	
Co	59	45	He	-0.021	-0.023	-8.48	244	11.02	10000	
Ni	60	45	He	0.223	0.248	3.28	1226	2.20	10000	
Cu	63	45	He	-0.071	-0.079	-26.43	4037	7.08	10000	
Zn	66	115	He	0.791	0.879	3.35	2321	3.35	50000	
As	75	115	He	0.003	0.004	377.58	68	24.50	2000	
Se	78	72	H2	0.008	0.009	55.56	9	20.38	10000	
Se	78	115	He	-0.158	-0.175	-10.27	57	3.04	10000	
Sr	88	115	NoGas	0.363	0.404	2.05	20967	2.18	50000	
Mo	95	115	NoGas	0.124	0.138	15.25	2150	8.06	10000	
Ag	107	115	NoGas	0.000	0.000	487.55	67	52.68	5000	
Cd	111	115	He	0.001	0.001	405.55	9	89.21	10000	
Sn	118	115	He	0.050	0.055	38.05	994	11.81	10000	
Sn	118	115	NoGas	0.068	0.075	6.04	3011	3.27	10000	
Sb	121	115	NoGas	0.210	0.233	8.71	6481	4.95	10000	
Ba	137	165	NoGas	0.172	0.192	12.70	1537	11.46	50000	
Tl	205	165	NoGas	0.007	0.007	10.23	507	7.98	5000	
Pb	208	165	NoGas	0.005	0.005	37.67	3874	4.49	50000	

QC ISTD Table

Name	Mass	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li	6	NoGas	272663	1.81	220533	123.64	70	120	ISTD Failed
Sc	45	H2	359373	1.35	326687	110.01	70	120	
Sc	45	He	116083	1.34	104972	110.59	70	120	
Sc	45	NoGas	1836299	0.49	1736910	105.72	70	120	
Ge	72	H2	93425	1.12	85628	109.11	70	120	
Ge	72	He	77148	1.31	70468	109.48	70	120	
Ge	72	NoGas	398257	1.71	393798	101.13	70	120	
In	115	H2	2043329	1.05	1929299	105.91	70	120	
In	115	He	720035	1.09	657120	109.57	70	120	
In	115	NoGas	2583119	1.41	2471241	104.53	70	120	
Tb	159	H2	3760003	0.41	3605350	104.29	70	120	
Tb	159	He	2258462	2.97	2090834	108.02	70	120	
Tb	159	NoGas	3474668	0.70	3296947	105.39	70	120	
Ho	165	H2	3574306	2.07	3502263	102.06	70	120	
Ho	165	He	2234247	0.96	2044408	109.29	70	120	
Ho	165	NoGas	3319529	1.71	3179403	104.41	70	120	

Metals Analysis

Element Environmental
98-030 Hekaha St., Unit 9
Aiea, HI 96701

APPL Inc.
908 North Temperance Avenue
Clovis, CA 93611

Attn: Steve Spengler
Project: MCBH UST KB-100 SI / 130034
Sample ID: EKB100010
Sample Collection Date: 01/13/15

ARF: 75351
APPL ID: AZ09554

Method	Analyte	Result	LOQ	LOD	DL	Units	DF	Prep Date	Analysis Date
6020A/3015^	LEAD (PB)	0.40 U	3.0	0.40	0.19	ug/L	1	01/21/15	01/23/15

Printed: 01/28/15 12:51:09 PM
PL-F1-SC-MCRes/MCPQL-REG MDLs

Sample Report

Sample Table

Sample Name	AZ09554W08
Data File Name	076SMPL.d
Data Path Name	K:\ICP-MS Megatron\Data\150123D.b
Acq Date Time	2015-01-23T20:07:07-08:00
Sample Type	Sample
Dilution	1.111111111
Comment	
ISTD Ref FileName	001CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Fail

QC Analyte Table

Name	Mass	ISTD Mass	Tune Mode	Conc	FinalConc	Conc %RSD	CPS	%RSD	LDR	QC Flag
Be	9	45	NoGas	0.001	0.001	88.47	43	13.32	10000	
B	11	45	NoGas	22.477	24.974	5.53	111382	1.87	10000	
Na	23	45	He	124.077	137.863	1.40	289327	0.93	1000000	
Mg	24	45	He	37.501	41.668	1.78	31240	2.23	1000000	
Al	27	45	He	26.690	29.655	2.31	9697	1.38	1000000	
K	39	45	He	-0.409	-0.454	-356.69	83874	1.53	500000	
Ca	44	45	He	69.563	77.293	5.10	2871	4.24	500000	
Ti	47	45	He	0.494	0.549	30.24	129	28.49	10000	
V	51	45	He	-0.029	-0.032	-35.41	1004	8.53	10000	
Cr	52	45	He	0.234	0.260	8.64	4089	4.26	10000	
Mn	55	45	He	0.039	0.044	53.95	867	14.08	50000	
Fe	56	45	He	3.587	3.985	1.71	68750	0.88	1000000	
Co	59	45	He	-0.019	-0.021	-7.55	263	8.86	10000	
Ni	60	45	He	0.218	0.242	13.16	1193	10.68	10000	
Cu	63	45	He	-0.084	-0.093	-17.59	3843	4.84	10000	
Zn	66	115	He	0.310	0.344	12.52	1267	6.27	50000	
As	75	115	He	0.003	0.003	121.34	66	6.28	2000	
Se	78	72	H2	0.009	0.010	126.39	9	48.74	10000	
Se	78	115	He	-0.005	-0.006	-2144.91	69	13.21	10000	
Sr	88	115	NoGas	0.464	0.516	2.44	26788	1.56	50000	
Mo	95	115	NoGas	0.086	0.096	21.06	1760	9.91	10000	
Ag	107	115	NoGas	0.001	0.002	47.37	100	20.00	5000	
Cd	111	115	He	0.001	0.001	188.06	9	44.61	10000	
Sn	118	115	He	0.042	0.047	19.30	930	5.21	10000	
Sn	118	115	NoGas	0.073	0.081	15.32	3108	6.11	10000	
Sb	121	115	NoGas	0.101	0.112	11.26	4181	6.10	10000	
Ba	137	165	NoGas	0.206	0.229	12.06	1817	10.74	50000	
Tl	205	165	NoGas	0.005	0.006	26.28	437	16.09	5000	
Pb	208	165	NoGas	0.002	0.002	311.89	3684	11.57	50000	

QC ISTD Table

Name	Mass	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li	6	NoGas	269169	1.79	220533	122.05	70	120	ISTD Failed
Sc	45	H2	349847	1.05	326687	107.09	70	120	
Sc	45	He	115035	0.77	104972	109.59	70	120	
Sc	45	NoGas	1817905	3.37	1736910	104.66	70	120	
Ge	72	H2	91027	1.92	85628	106.31	70	120	
Ge	72	He	76145	1.19	70468	108.06	70	120	
Ge	72	NoGas	396169	1.04	393798	100.60	70	120	
In	115	H2	2002628	1.31	1929299	103.80	70	120	
In	115	He	705661	0.52	657120	107.39	70	120	
In	115	NoGas	2597574	1.72	2471241	105.11	70	120	
Tb	159	H2	3699447	0.57	3605350	102.61	70	120	
Tb	159	He	2227697	0.27	2090834	106.55	70	120	
Tb	159	NoGas	3432332	0.87	3296947	104.11	70	120	
Ho	165	H2	3534040	0.75	3502263	100.91	70	120	
Ho	165	He	2228556	0.89	2044408	109.01	70	120	
Ho	165	NoGas	3326085	0.57	3179403	104.61	70	120	

METALS

Calibration Data

APPL, INC.

A.P.P.L. INC.
2A
INITIAL AND CONTINUING CALIBRATION VERIFICATION

Lab Name: A.P.P.L. INC. Contract: Element Environmental
ARF No: 75351 SDG: 75351
Initial Calibration Source: CPI
Continuing Calibration Source: Environmental Express
Analysis Date: 01/23/15 Concentration Units: ug/L

Analyte	Initial Calibration			Continuing Calibration						M
	True	Found 13:05	%R(1)	True CCV1	Found 13:47	%R(1)	True CCV1	Found 19:25	%R(1)	
Lead (Pb)	100	96.6610	96.7	50	48.3560	96.7	50	50.6097	101	P

(1) Control Limits: Metals 90-110

ILM02.0

A.P.P.L. INC.
2A
INITIAL AND CONTINUING CALIBRATION VERIFICATION

Lab Name: A.P.P.L. INC. Contract: Element Environmental
ARF No: 75351 SDG: 75351
Initial Calibration Source: CPI
Continuing Calibration Source: Environmental Express
Analysis Date: 01/23/15 Concentration Units: ug/L

Analyte	Initial Calibration			Continuing Calibration						M
	True	Found 13:05	%R(1)	True CCV1	Found 21:43	%R(1)	True CCV1	Found 0:26	%R(1)	
Lead (Pb)	100	96.6610	96.7	50	50.4423	101	50	50.1674	100	P

(1) Control Limits: Metals 90-110

ILM02.0

A.P.P.L. INC.
3
BLANKS

Lab Name: A.P.P.L. INC. Contract: Element Environmental

ARF No.: 75351 SDG: 75351

Preparation Blank Matrix (soil/water): water

Preparation Blank Concentration Units (ug/L or mg/kg): ug/L

Analysis Date: 01/23/15

Analyte	Initial Calibration Blank (ug/L)		Continuing Calibration Blank (ug/L)						Preparation Blank		M
		C	1	C	2	C	3	C		C	
	13:23		13:59		19:37		21:55		19:43		
Lead (Pb)	3.00	U	3.00	U	3.00	U	3.00	U	3.00	U	P

A.P.P.L. INC.
3
BLANKS

Lab Name: A.P.P.L. INC. Contract: Element Environmental

ARF No.: 75351 SDG: 75351

Preparation Blank Matrix (soil/water): soil

Preparation Blank Concentration Units (ug/L or mg/kg): mg/Kg

Analysis Date: 01/23/15

Analyte	Initial Calibration Blank (ug/L)		Continuing Calibration Blank (ug/L)								Preparation Blank		M
		C	1	C	2	C	3	C		C			
	13:23		13:59		21:55		00:38				22:25		
Lead (Pb)	.50	U	.50	U	.50	U	.50	U			.10	U	P

A.P.P.L. INC.
4
ICP INTERFERENCE CHECK SAMPLE

Lab Name: A.P.P.L. INC.
ARF No.: 75351
ICP ID Number: Megatron

Contract: Element Environmental
SDG: 75351
ICS Source: Environmental Express

Analysis Date: 01/23/15

Concentration Units: ug/L

Analyte	True		Initial Found		
	Sol A	Sol AB	Sol A 14:05	Sol AB 14:17	%R(1)
Lead (Pb)		100	0.043151	90.367513	90.4

(1) Control Limits: Metals 80-120

A.P.P.L. INC.
9
ICP SERIAL DILUTION

CLIENT SAMPLE NO.
EKB100010

Lab Name: A.P.P.L. INC.
Contract: Element Environmental
ARF No.: 75351
SDG: 75351
Matrix: water

Analysis Date: 01/23/15
Concentration Units: ug/L

Analyte	Initial Sample Result (I)	C	Serial Dilution Result (S)	C	%D	Q	M
Lead (Pb)	0.00228		-0.01026		NA		

Comments:

01/23/15 20:07 AZ09554W08

01/23/15 20:31 AZ09554W08 1/5

Sample Report

Sample Table

Sample Name	AZ09554W08 1/5
Data File Name	080SMPL.d
Data Path Name	K:\ICP-MS Megatron\Data\150123D.b
Acq Date Time	2015-01-23T20:31:13-08:00
Sample Type	Sample
Dilution	5.555555556
Comment	
ISTD Ref FileName	001CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	ISTD Mass	Tune Mode	Conc	FinalConc	Conc %RSD	CPS	%RSD	LDR	QC Flag
Be	9	45	NoGas	0.000	-0.001	-2507.03	37	78.73	10000	
B	11	45	NoGas	12.645	70.253	4.79	69990	3.50	10000	
Na	23	45	He	37.451	208.062	1.59	158927	0.33	1000000	
Mg	24	45	He	8.754	48.635	1.09	8165	0.19	1000000	
Al	27	45	He	4.714	26.187	5.59	2317	4.35	1000000	
K	39	45	He	-1.406	-7.812	-98.61	82790	1.79	500000	
Ca	44	45	He	14.139	78.548	8.18	784	5.66	500000	
Ti	47	45	He	0.121	0.673	43.82	38	33.41	10000	
V	51	45	He	0.008	0.045	132.37	1293	7.47	10000	
Cr	52	45	He	0.026	0.146	10.93	2000	2.08	10000	
Mn	55	45	He	-0.043	-0.237	-15.00	392	9.32	50000	
Fe	56	45	He	-2.004	-11.133	-2.59	19259	1.63	1000000	
Co	59	45	He	0.003	0.015	209.03	619	14.06	10000	
Ni	60	45	He	0.048	0.269	18.31	443	9.60	10000	
Cu	63	45	He	-0.163	-0.908	-11.75	2854	8.90	10000	
Zn	66	115	He	0.093	0.518	7.63	820	1.86	50000	
As	75	115	He	0.085	0.470	29.85	178	19.14	2000	
Se	78	72	H2	0.109	0.603	10.68	51	9.28	10000	
Se	78	115	He	0.173	0.963	60.23	84	10.63	10000	
Sr	88	115	NoGas	0.112	0.620	4.21	6865	3.62	50000	
Mo	95	115	NoGas	0.189	1.048	6.07	2850	4.05	10000	
Ag	107	115	NoGas	0.010	0.058	14.89	360	12.11	5000	
Cd	111	115	He	0.006	0.035	31.98	25	22.79	10000	
Sn	118	115	He	0.336	1.865	9.78	2679	7.13	10000	
Sn	118	115	NoGas	0.312	1.736	3.29	7167	2.23	10000	
Sb	121	115	NoGas	0.891	4.951	4.97	21044	4.39	10000	
Ba	137	165	NoGas	0.054	0.299	8.54	557	6.31	50000	
Tl	205	165	NoGas	0.031	0.175	12.51	1717	11.45	5000	
Pb	208	165	NoGas	-0.002	-0.010	-262.61	3397	9.24	50000	

QC ISTD Table

Name	Mass	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li	6	NoGas	252186	1.87	220533	114.35	70	120	
Sc	45	H2	351062	0.97	326687	107.46	70	120	
Sc	45	He	114447	0.78	104972	109.03	70	120	
Sc	45	NoGas	1802196	0.09	1736910	103.76	70	120	
Ge	72	H2	93211	0.59	85628	108.86	70	120	
Ge	72	He	76549	0.57	70468	108.63	70	120	
Ge	72	NoGas	399722	1.60	393798	101.50	70	120	
In	115	H2	2059733	0.59	1929299	106.76	70	120	
In	115	He	710771	0.16	657120	108.16	70	120	
In	115	NoGas	2591553	0.36	2471241	104.87	70	120	
Tb	159	H2	3754529	2.53	3605350	104.14	70	120	
Tb	159	He	2230872	0.33	2090834	106.70	70	120	
Tb	159	NoGas	3419185	0.89	3296947	103.71	70	120	
Ho	165	H2	3667583	1.48	3502263	104.72	70	120	
Ho	165	He	2213768	0.95	2044408	108.28	70	120	
Ho	165	NoGas	3304168	0.56	3179403	103.92	70	120	

A.P.P.L. INC.
5B
POST DIGEST SPIKE SAMPLE RECOVERY

CLIENT SAMPLE NO.
EKB100010

Lab Name: A.P.P.L. INC.
Contract: Element Environmental
ARF No.: 75351
SDG: 75351

Analysis Date: 01/23/15
Concentration Units: ug/L

Analyte	Control Limit %R	Spiked Sample Result (SSR)	C	Sample Result (SR)	C	Spike Added (SA)	%R	Q	M
Lead (Pb)	75-125	281.267825	U	0.00228		250.000	113		

Comments:
01/23/15 20:07 AZ09554W08
01/23/15 20:25 AZ09554W08-A

Sample Report

Sample Table

Sample Name	AZ09554W08-A
Data File Name	079SMPL.d
Data Path Name	K:\ICP-MS Megatron\Data\150123D.b
Acq Date Time	2015-01-23T20:25:12-08:00
Sample Type	Sample
Dilution	1.111111111
Comment	
ISTD Ref FileName	001CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	ISTD Mass	Tune Mode	Conc	FinalConc	Conc %RSD	CPS	%RSD	LDR	QC Flag
Be	9	45	NoGas	54.838	60.931	1.98	294797	1.36	10000	
B	11	45	NoGas	299.569	332.854	0.57	1186300	0.09	10000	
Na	23	45	He	25824.339	28693.710	1.51	36213107	1.86	1000000	
Mg	24	45	He	25370.539	28189.488	2.30	19000470	0.65	1000000	
Al	27	45	He	2101.733	2335.259	1.18	659591	0.72	1000000	
K	39	45	He	5279.855	5866.506	1.42	3348572	0.68	500000	
Ca	44	45	He	25388.146	28209.051	0.35	892451	1.52	500000	
Ti	47	45	He	267.893	297.659	1.87	60987	2.40	10000	
V	51	45	He	275.857	306.508	2.13	2073659	0.47	10000	
Cr	52	45	He	262.993	292.214	0.93	2465724	1.91	10000	
Mn	55	45	He	273.526	303.918	0.92	1473373	0.83	50000	
Fe	56	45	He	1044.121	1160.135	0.80	8657870	0.94	1000000	
Co	59	45	He	254.628	282.920	1.33	3903918	2.32	10000	
Ni	60	45	He	245.131	272.368	1.20	1011421	0.52	10000	
Cu	63	45	He	244.123	271.248	2.48	2808597	1.16	10000	
Zn	66	115	He	486.376	540.418	0.72	954400	0.75	50000	
As	75	115	He	252.377	280.419	0.41	318844	0.64	2000	
Se	78	72	H2	239.744	266.382	1.14	94142	1.99	10000	
Se	78	115	He	249.143	276.826	0.30	19699	0.46	10000	
Sr	88	115	NoGas	258.182	286.869	0.73	13686943	1.79	50000	
Mo	95	115	NoGas	271.105	301.228	0.96	2728794	1.85	10000	
Ag	107	115	NoGas	90.777	100.864	1.20	2471396	0.28	5000	
Cd	111	115	He	49.511	55.012	0.80	134670	1.03	10000	
Sn	118	115	He	272.271	302.524	1.76	1503754	1.56	10000	
Sn	118	115	NoGas	263.648	292.942	0.77	4210887	1.42	10000	
Sb	121	115	NoGas	294.700	327.445	1.90	5923949	1.11	10000	
Ba	137	165	NoGas	264.830	294.256	0.06	2119638	0.70	50000	
Tl	205	165	NoGas	251.840	279.822	1.37	12042127	0.79	5000	
Pb	208	165	NoGas	253.141	281.268	0.40	16605769	0.95	50000	

QC ISTD Table

Name	Mass	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li	6	NoGas	247214	1.11	220533	112.10	70	120	
Sc	45	H2	340361	0.90	326687	104.19	70	120	
Sc	45	He	107553	1.65	104972	102.46	70	120	
Sc	45	NoGas	1706206	0.62	1736910	98.23	70	120	
Ge	72	H2	88286	0.92	85628	103.10	70	120	
Ge	72	He	72752	1.02	70468	103.24	70	120	
Ge	72	NoGas	375443	1.87	393798	95.34	70	120	
In	115	H2	1925139	1.53	1929299	99.78	70	120	
In	115	He	661258	0.23	657120	100.63	70	120	
In	115	NoGas	2440025	1.06	2471241	98.74	70	120	
Tb	159	H2	3597285	2.32	3605350	99.78	70	120	
Tb	159	He	2179516	2.08	2090834	104.24	70	120	
Tb	159	NoGas	3304153	1.85	3296947	100.22	70	120	
Ho	165	H2	3495030	2.68	3502263	99.79	70	120	
Ho	165	He	2148328	0.93	2044408	105.08	70	120	
Ho	165	NoGas	3221303	0.64	3179403	101.32	70	120	

A.P.P.L. INC.
9
ICP SERIAL DILUTION

CLIENT SAMPLE NO.
EKB100008

Lab Name: A.P.P.L. INC.
Contract: Element Environmental
ARF No.: 75351
SDG: 75351
Matrix: soil

Analysis Date: 01/23/15
Concentration Units: mg/Kg

Analyte	Initial Sample Result (I)	C	Serial Dilution Result (S)	C	%D	Q	M
Lead (Pb)	0.243938		0.248117		NA		

Comments:

01/23/15 23:55 AZ09552S11 1/10

01/24/15 00:20 AZ09552S11 1/50

Sample Report

Sample Table

Sample Name	AZ09552S11 1/50
Data File Name	118SMPL.d
Data Path Name	K:\ICP-MS Megatron\Data\150123D.b
Acq Date Time	2015-01-24T00:20:04-08:00
Sample Type	Sample
Dilution	5
Comment	
ISTD Ref FileName	001CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	ISTD Mass	Tune Mode	Conc	FinalConc	Conc %RSD	CPS	%RSD	LDR	QC Flag
Be	9	45	NoGas	0.021	0.105	12.81	147	10.41	10000	
B	11	45	NoGas	11.820	59.098	1.86	62203	1.88	10000	
Na	23	45	He	311.942	1559.708	0.42	478034	0.26	1000000	
Mg	24	45	He	1519.683	7598.413	0.40	1021444	0.12	1000000	
Al	27	45	He	891.442	4457.208	1.70	251174	1.44	1000000	
K	39	45	He	34.786	173.932	3.42	89839	0.85	500000	
Ca	44	45	He	34286.595	171432.975	0.85	1080361	0.58	500000	
Ti	47	45	He	99.623	498.116	0.35	20336	0.27	10000	
V	51	45	He	2.798	13.990	1.78	19883	1.59	10000	
Cr	52	45	He	3.872	19.358	0.37	33983	0.44	10000	
Mn	55	45	He	25.923	129.615	0.21	125674	0.38	50000	
Fe	56	45	He	1305.544	6527.721	1.88	9697187	1.61	1000000	
Co	59	45	He	0.533	2.663	2.38	7803	2.02	10000	
Ni	60	45	He	2.499	12.497	4.04	9437	3.68	10000	
Cu	63	45	He	1.235	6.174	4.41	16802	3.11	10000	
Zn	66	115	He	1.738	8.688	6.22	3772	5.50	50000	
As	75	115	He	0.693	3.465	7.07	883	6.01	2000	
Se	78	72	H2	0.207	1.036	6.30	76	6.07	10000	
Se	78	115	He	0.073	0.367	305.36	67	24.43	10000	
Sr	88	115	NoGas	481.047	2405.237	3.64	25738974	3.10	50000	
Mo	95	115	NoGas	0.821	4.103	1.85	9129	1.49	10000	
Ag	107	115	NoGas	0.012	0.058	26.97	373	23.40	5000	
Cd	111	115	He	0.014	0.071	18.49	43	16.46	10000	
Sn	118	115	He	0.275	1.374	10.46	2039	6.98	10000	
Sn	118	115	NoGas	0.263	1.316	4.44	6017	3.06	10000	
Sb	121	115	NoGas	0.792	3.961	3.15	17993	2.69	10000	
Ba	137	165	NoGas	1.184	5.922	1.09	9783	2.75	50000	
Tl	205	165	NoGas	0.086	0.429	7.73	4354	5.74	5000	
Pb	208	165	NoGas	0.050	0.248	7.31	6821	3.22	50000	

QC ISTD Table

Name	Mass	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li	6	NoGas	231604	1.59	220533	105.02	70	120	
Sc	45	H2	293646	1.34	326687	89.89	70	120	
Sc	45	He	96415	0.28	104972	91.85	70	120	
Sc	45	NoGas	1683548	1.05	1736910	96.93	70	120	
Ge	72	H2	77243	0.18	85628	90.21	70	120	
Ge	72	He	66754	0.75	70468	94.73	70	120	
Ge	72	NoGas	376922	0.82	393798	95.71	70	120	
In	115	H2	1837504	1.01	1929299	95.24	70	120	
In	115	He	625400	0.78	657120	95.17	70	120	
In	115	NoGas	2463224	0.58	2471241	99.68	70	120	
Tb	159	H2	3572091	0.48	3605350	99.08	70	120	
Tb	159	He	2096062	0.68	2090834	100.25	70	120	
Tb	159	NoGas	3416908	1.47	3296947	103.64	70	120	
Ho	165	H2	3440287	0.91	3502263	98.23	70	120	
Ho	165	He	2083678	1.61	2044408	101.92	70	120	
Ho	165	NoGas	3285875	1.97	3179403	103.35	70	120	

A.P.P.L. INC.
5B
POST DIGEST SPIKE SAMPLE RECOVERY

CLIENT SAMPLE NO.
EKB100008

Lab Name: A.P.P.L. INC.
Contract: Element Environmental
ARF No.: 75351
SDG: 75351

Analysis Date: 01/23/15
Concentration Units: mg/Kg

Analyte	Control Limit %R	Spiked Sample Result (SSR)	C	Sample Result (SR)	C	Spike Added (SA)	%R	Q	M
Lead (Pb)	75-125	251.03143		0.243938		250.000	100		

Comments:
01/23/15 23:55 AZ09552S11 1/10
01/24/15 00:14 AZ09552S11-A 1/10

Sample Report

Sample Table

Sample Name	AZ09552S11-A 1/10
Data File Name	117SMPL.d
Data Path Name	K:\ICP-MS Megatron\Data\150123D.b
Acq Date Time	2015-01-24T00:14:04-08:00
Sample Type	Sample
Dilution	1
Comment	
ISTD Ref FileName	001CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	ISTD Mass	Tune Mode	Conc	FinalConc	Conc %RSD	CPS	%RSD	LDR	QC Flag
Be	9	45	NoGas	49.574	49.574	0.98	256903	0.66	10000	
B	11	45	NoGas	277.981	277.981	3.81	1061970	2.24	10000	
Na	23	45	He	26293.397	26293.397	0.62	31853565	1.10	1000000	
Mg	24	45	He	31152.555	31152.555	1.00	20160222	1.07	1000000	
Al	27	45	He	6203.386	6203.386	2.36	1680723	1.73	1000000	
K	39	45	He	5197.062	5197.062	0.74	2849113	1.62	500000	
Ca	44	45	He	184054.356	184054.356	0.16	5588255	0.83	500000	
Ti	47	45	He	733.247	733.247	0.91	144195	0.41	10000	
V	51	45	He	278.022	278.022	1.77	1805794	1.17	10000	
Cr	52	45	He	274.174	274.174	2.41	2220759	2.76	10000	
Mn	55	45	He	390.812	390.812	1.85	1818681	2.27	50000	
Fe	56	45	He	6939.023	6939.023	1.88	49541581	1.76	1000000	
Co	59	45	He	251.917	251.917	0.66	3336799	1.55	10000	
Ni	60	45	He	248.247	248.247	1.15	884976	1.11	10000	
Cu	63	45	He	249.573	249.573	1.09	2480990	0.78	10000	
Zn	66	115	He	510.383	510.383	0.49	853090	0.42	50000	
As	75	115	He	261.007	261.007	0.56	280884	0.36	2000	
Se	78	72	H2	263.348	263.348	1.66	80742	1.02	10000	
Se	78	115	He	256.526	256.526	1.66	17276	1.35	10000	
Sr	88	115	NoGas	2614.287	2614.287	1.86	130694558	1.30	50000	
Mo	95	115	NoGas	275.389	275.389	0.56	2614348	1.25	10000	
Ag	107	115	NoGas	76.743	76.743	1.00	1970686	0.47	5000	
Cd	111	115	He	51.825	51.825	0.68	120073	0.18	10000	
Sn	118	115	He	273.818	273.818	0.45	1288247	0.41	10000	
Sn	118	115	NoGas	266.950	266.950	1.55	4020950	0.58	10000	
Sb	121	115	NoGas	304.539	304.539	2.43	5774295	2.32	10000	
Ba	137	165	NoGas	263.546	263.546	2.89	2080840	1.58	50000	
Tl	205	165	NoGas	253.118	253.118	1.66	11942425	1.56	5000	
Pb	208	165	NoGas	251.031	251.031	1.72	16246282	0.53	50000	

QC ISTD Table

Name	Mass	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li	6	NoGas	185017	1.89	220533	83.90	70	120	
Sc	45	H2	286108	1.42	326687	87.58	70	120	
Sc	45	He	92917	0.90	104972	88.52	70	120	
Sc	45	NoGas	1644785	1.60	1736910	94.70	70	120	
Ge	72	H2	68942	0.65	85628	80.51	70	120	
Ge	72	He	61967	1.45	70468	87.94	70	120	
Ge	72	NoGas	359021	1.00	393798	91.17	70	120	
In	115	H2	1656889	0.56	1929299	85.88	70	120	
In	115	He	563294	0.85	657120	85.72	70	120	
In	115	NoGas	2301456	1.21	2471241	93.13	70	120	
Tb	159	H2	3341364	0.33	3605350	92.68	70	120	
Tb	159	He	2009758	1.67	2090834	96.12	70	120	
Tb	159	NoGas	3249652	1.19	3296947	98.57	70	120	
Ho	165	H2	3262723	0.62	3502263	93.16	70	120	
Ho	165	He	1985700	0.67	2044408	97.13	70	120	
Ho	165	NoGas	3178586	1.44	3179403	99.97	70	120	

Calibration Blank Report

Sample Table

Sample Name	Calibration Blank
Data File Name	001CALB.d
Data Path Name	K:\ICP-MS Megatron\Data\150123D.b
Acq Date Time	2015-01-23T12:35:29-08:00
Sample Type	CalBlk
Level	1
Dilution	1
Comment	

QC Analyte Table

Name	Mass	ISTD Mass	Tune Mode	CPS	%RSD
Be	9	45	NoGas	37	87.67
B	11	45	NoGas	17202	3.66
Na	23	45	He	94640	1.15
Mg	24	45	He	1089	4.77
Al	27	45	He	682	8.27
K	39	45	He	76771	0.92
Ca	44	45	He	234	5.74
Ti	47	45	He	8	89.21
V	51	45	He	1127	11.61
Cr	52	45	He	1592	21.45
Mn	55	45	He	579	113.79
Fe	56	45	He	33555	101.88
Co	59	45	He	528	11.13
Ni	60	45	He	211	2.41
Cu	63	45	He	4448	1.86
Zn	66	115	He	577	13.02
As	75	115	He	58	8.46
Se	78	72	H2	5	30.31
Se	78	115	He	64	9.99
Sr	88	115	NoGas	560	21.05
Mo	95	115	NoGas	797	14.71
Ag	107	115	NoGas	57	26.96
Cd	111	115	He	7	86.60
Sn	118	115	He	634	12.87
Sn	118	115	NoGas	1781	3.48
Sb	121	115	NoGas	1927	4.03
Ba	137	165	NoGas	110	24.05
Tl	205	165	NoGas	167	24.25
[Pb]	206	165	NoGas	903	7.20
[Pb]	207	165	NoGas	723	17.78
Pb	208	165	NoGas	3390	8.65

QC ISTD Table

Name	Mass	Tune Mode	CPS	%RSD
Li	6	NoGas	220533	0.71
Sc	45	H2	326687	1.50
Sc	45	He	104972	1.17
Sc	45	NoGas	1736910	1.11
Ge	72	H2	85628	1.09
Ge	72	He	70468	2.10
Ge	72	NoGas	393798	1.04
In	115	H2	1929299	1.23
In	115	He	657120	1.46
In	115	NoGas	2471241	1.93
Tb	159	H2	3605350	1.14
Tb	159	He	2090834	0.33
Tb	159	NoGas	3296947	0.47
Ho	165	H2	3502263	1.22
Ho	165	He	2044408	1.14
Ho	165	NoGas	3179403	0.71

Calibration Standard Report

Sample Table

Sample Name	Standard 1
Data File Name	002CALS.d
Data Path Name	K:\ICP-MS Megatron\Data\150123D.b
Acq Date Time	2015-01-23T12:41:30-08:00
Sample Type	CalStd
Level	2
Dilution	1
Comment	
ISTD Ref File Name	001CALB.d
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	ISTD Mass	Tune Mode	CPS	%RSD	Cal Coef
Be	9	45	NoGas	537	28.95	1.0000
B	11	45	NoGas	16494	1.64	1.0000
Na	23	45	He	97507	0.21	1.0000
Mg	24	45	He	4224	4.58	1.0000
Al	27	45	He	1060	4.09	0.9999
K	39	45	He	76894	1.53	1.0000
Ca	44	45	He	410	22.66	1.0000
Ti	47	45	He	38	35.67	1.0000
V	51	45	He	1852	5.67	1.0000
Cr	52	45	He	2290	0.81	1.0000
Mn	55	45	He	796	3.41	1.0000
Fe	56	45	He	24161	1.09	1.0000
Co	59	45	He	1729	6.67	1.0000
Ni	60	45	He	672	3.59	1.0000
Cu	63	45	He	5444	3.37	1.0000
Zn	66	115	He	836	7.05	1.0000
As	75	115	He	179	12.93	1.0000
Se	78	72	H2	43	17.49	1.0000
Se	78	115	He	64	17.37	1.0000
Sr	88	115	NoGas	6085	2.72	1.0000
Mo	95	115	NoGas	1623	3.71	0.9999
Ag	107	115	NoGas	1433	1.76	1.0000
Cd	111	115	He	297	9.54	1.0000
Sn	118	115	He	1031	2.10	1.0000
Sn	118	115	NoGas	2828	7.23	0.9999
Sb	121	115	NoGas	3034	2.50	0.9996
Ba	137	165	NoGas	1117	8.08	1.0000
Tl	205	165	NoGas	4918	4.67	1.0000
[Pb]	206	165	NoGas	1987	6.80	
[Pb]	207	165	NoGas	1693	1.49	
Pb	208	165	NoGas	7944	7.20	1.0000

QC ISTD Table

Name	Mass	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li	6	NoGas	219607	1.32	220533	99.58	70	120	
Sc	45	H2	314677	0.58	326687	96.32	70	120	
Sc	45	He	104045	1.20	104972	99.12	70	120	
Sc	45	NoGas	1742837	1.19	1736910	100.34	70	120	
Ge	72	H2	81351	0.84	85628	95.00	70	120	
Ge	72	He	69857	1.30	70468	99.13	70	120	
Ge	72	NoGas	386540	0.70	393798	98.16	70	120	
In	115	H2	1873704	0.76	1929299	97.12	70	120	
In	115	He	640819	1.03	657120	97.52	70	120	
In	115	NoGas	2431582	0.80	2471241	98.40	70	120	
Tb	159	H2	3545632	1.21	3605350	98.34	70	120	
Tb	159	He	2079282	1.67	2090834	99.45	70	120	
Tb	159	NoGas	3260224	1.29	3296947	98.89	70	120	
Ho	165	H2	3421006	1.45	3502263	97.68	70	120	
Ho	165	He	2020174	2.54	2044408	98.81	70	120	
Ho	165	NoGas	3146437	1.09	3179403	98.96	70	120	

Calibration Standard Report

Sample Table

Sample Name	Standard 2
Data File Name	003CALS.d
Data Path Name	K:\ICP-MS Megatron\Data\150123D.b
Acq Date Time	2015-01-23T12:47:30-08:00
Sample Type	CalStd
Level	3
Dilution	1
Comment	
ISTD Ref File Name	001CALB.d
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	ISTD Mass	Tune Mode	CPS	%RSD	Cal Coef
Be	9	45	NoGas	5498	1.73	1.0000
B	11	45	NoGas	18777	1.23	1.0000
Na	23	45	He	124517	0.96	1.0000
Mg	24	45	He	36951	0.83	1.0000
Al	27	45	He	6372	5.13	0.9999
K	39	45	He	86940	2.12	1.0000
Ca	44	45	He	2021	1.07	1.0000
Ti	47	45	He	209	28.78	1.0000
V	51	45	He	8249	1.93	1.0000
Cr	52	45	He	10470	1.46	1.0000
Mn	55	45	He	5395	4.64	1.0000
Fe	56	45	He	164640	1.28	1.0000
Co	59	45	He	15044	2.72	1.0000
Ni	60	45	He	4296	1.41	1.0000
Cu	63	45	He	15332	1.12	1.0000
Zn	66	115	He	2610	3.76	1.0000
As	75	115	He	1222	4.59	1.0000
Se	78	72	H2	361	7.80	1.0000
Se	78	115	He	128	17.38	1.0000
Sr	88	115	NoGas	52850	2.04	1.0000
Mo	95	115	NoGas	10434	5.87	0.9999
Ag	107	115	NoGas	13139	3.42	1.0000
Cd	111	115	He	2490	2.86	1.0000
Sn	118	115	He	5762	0.78	1.0000
Sn	118	115	NoGas	16953	0.68	0.9999
Sb	121	115	NoGas	14373	3.64	0.9996
Ba	137	165	NoGas	7775	3.29	1.0000
Tl	205	165	NoGas	45937	2.96	1.0000
[Pb]	206	165	NoGas	16082	2.13	
[Pb]	207	165	NoGas	13810	3.98	
Pb	208	165	NoGas	64183	1.21	1.0000

QC ISTD Table

Name	Mass	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li	6	NoGas	215424	1.31	220533	97.68	70	120	
Sc	45	H2	311145	0.95	326687	95.24	70	120	
Sc	45	He	101661	0.87	104972	96.85	70	120	
Sc	45	NoGas	1696979	2.02	1736910	97.70	70	120	
Ge	72	H2	79523	0.14	85628	92.87	70	120	
Ge	72	He	69743	1.15	70468	98.97	70	120	
Ge	72	NoGas	383673	0.85	393798	97.43	70	120	
In	115	H2	1829635	0.31	1929299	94.83	70	120	
In	115	He	633089	0.38	657120	96.34	70	120	
In	115	NoGas	2416043	1.16	2471241	97.77	70	120	
Tb	159	H2	3520802	0.37	3605350	97.65	70	120	
Tb	159	He	2072829	2.46	2090834	99.14	70	120	
Tb	159	NoGas	3264727	0.90	3296947	99.02	70	120	
Ho	165	H2	3403955	2.02	3502263	97.19	70	120	
Ho	165	He	2021872	0.84	2044408	98.90	70	120	
Ho	165	NoGas	3193854	1.66	3179403	100.45	70	120	

Calibration Standard Report

Sample Table

Sample Name	Standard 3
Data File Name	004CALS.d
Data Path Name	K:\ICP-MS Megatron\Data\150123D.b
Acq Date Time	2015-01-23T12:53:30-08:00
Sample Type	CalStd
Level	4
Dilution	1
Comment	
ISTD Ref File Name	001CALB.d
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	ISTD Mass	Tune Mode	CPS	%RSD	Cal Coef
Be	9	45	NoGas	267522	1.15	1.0000
B	11	45	NoGas	208605	0.28	1.0000
Na	23	45	He	1764801	1.77	1.0000
Mg	24	45	He	1780072	1.67	1.0000
Al	27	45	He	290702	1.06	0.9999
K	39	45	He	656357	0.53	1.0000
Ca	44	45	He	82358	1.21	1.0000
Ti	47	45	He	10816	2.55	1.0000
V	51	45	He	354428	1.06	1.0000
Cr	52	45	He	440572	0.23	1.0000
Mn	55	45	He	253980	0.50	1.0000
Fe	56	45	He	7785427	1.59	1.0000
Co	59	45	He	718798	0.56	1.0000
Ni	60	45	He	195283	1.92	1.0000
Cu	63	45	He	542189	0.59	1.0000
Zn	66	115	He	93541	0.28	1.0000
As	75	115	He	59089	0.32	1.0000
Se	78	72	H2	17827	1.45	1.0000
Se	78	115	He	3749	2.89	1.0000
Sr	88	115	NoGas	2637377	2.17	1.0000
Mo	95	115	NoGas	488307	0.85	0.9999
Ag	107	115	NoGas	670197	1.48	1.0000
Cd	111	115	He	128584	1.18	1.0000
Sn	118	115	He	262964	0.37	1.0000
Sn	118	115	NoGas	778004	0.43	0.9999
Sb	121	115	NoGas	953085	1.49	0.9996
Ba	137	165	NoGas	387826	0.85	1.0000
Tl	205	165	NoGas	2314790	1.75	1.0000
[Pb]	206	165	NoGas	775104	0.83	
[Pb]	207	165	NoGas	681497	0.70	
Pb	208	165	NoGas	3151763	0.62	1.0000

QC ISTD Table

Name	Mass	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li	6	NoGas	212987	1.91	220533	96.58	70	120	
Sc	45	H2	311376	1.05	326687	95.31	70	120	
Sc	45	He	101425	0.93	104972	96.62	70	120	
Sc	45	NoGas	1675493	1.42	1736910	96.46	70	120	
Ge	72	H2	79685	0.34	85628	93.06	70	120	
Ge	72	He	69363	1.00	70468	98.43	70	120	
Ge	72	NoGas	376669	1.50	393798	95.65	70	120	
In	115	H2	1843867	1.28	1929299	95.57	70	120	
In	115	He	627070	0.75	657120	95.43	70	120	
In	115	NoGas	2431391	0.41	2471241	98.39	70	120	
Tb	159	H2	3516710	0.57	3605350	97.54	70	120	
Tb	159	He	2036676	1.18	2090834	97.41	70	120	
Tb	159	NoGas	3193660	0.72	3296947	96.87	70	120	
Ho	165	H2	3446858	0.89	3502263	98.42	70	120	
Ho	165	He	2009896	1.09	2044408	98.31	70	120	
Ho	165	NoGas	3099507	0.71	3179403	97.49	70	120	

Calibration Standard Report

Sample Table

Sample Name	Standard 4
Data File Name	005CALS.d
Data Path Name	K:\ICP-MS Megatron\Data\150123D.b
Acq Date Time	2015-01-23T12:59:31-08:00
Sample Type	CalStd
Level	5
Dilution	1
Comment	
ISTD Ref File Name	001CALB.d
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	ISTD Mass	Tune Mode	CPS	%RSD	Cal Coef
Be	9	45	NoGas	529400	0.92	1.0000
B	11	45	NoGas	402278	1.30	1.0000
Na	23	45	He	3357157	0.63	1.0000
Mg	24	45	He	3506446	0.54	1.0000
Al	27	45	He	591411	1.44	0.9999
K	39	45	He	1236293	0.21	1.0000
Ca	44	45	He	165338	1.20	1.0000
Ti	47	45	He	21317	2.57	1.0000
V	51	45	He	706192	0.90	1.0000
Cr	52	45	He	881416	0.98	1.0000
Mn	55	45	He	505751	0.99	1.0000
Fe	56	45	He	15539632	1.29	1.0000
Co	59	45	He	1440081	1.72	1.0000
Ni	60	45	He	386783	0.77	1.0000
Cu	63	45	He	1083476	0.72	1.0000
Zn	66	115	He	185180	1.29	1.0000
As	75	115	He	119405	0.59	1.0000
Se	78	72	H2	35676	0.37	1.0000
Se	78	115	He	7506	2.85	1.0000
Sr	88	115	NoGas	5156196	2.02	1.0000
Mo	95	115	NoGas	985767	0.36	0.9999
Ag	107	115	NoGas	1327539	1.21	1.0000
Cd	111	115	He	256263	0.65	1.0000
Sn	118	115	He	520106	1.44	1.0000
Sn	118	115	NoGas	1563211	1.01	0.9999
Sb	121	115	NoGas	1980319	0.71	0.9996
Ba	137	165	NoGas	768847	0.81	1.0000
Tl	205	165	NoGas	4593884	0.90	1.0000
[Pb]	206	165	NoGas	1605410	1.87	
[Pb]	207	165	NoGas	1348238	0.89	
Pb	208	165	NoGas	6317296	0.63	1.0000

QC ISTD Table

Name	Mass	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li	6	NoGas	209378	1.29	220533	94.94	70	120	
Sc	45	H2	308766	2.09	326687	94.51	70	120	
Sc	45	He	100853	0.67	104972	96.08	70	120	
Sc	45	NoGas	1685963	1.12	1736910	97.07	70	120	
Ge	72	H2	80328	0.40	85628	93.81	70	120	
Ge	72	He	69459	0.63	70468	98.57	70	120	
Ge	72	NoGas	373186	0.20	393798	94.77	70	120	
In	115	H2	1828250	0.57	1929299	94.76	70	120	
In	115	He	622578	0.48	657120	94.74	70	120	
In	115	NoGas	2372266	0.06	2471241	95.99	70	120	
Tb	159	H2	3489413	1.65	3605350	96.78	70	120	
Tb	159	He	1995349	2.64	2090834	95.43	70	120	
Tb	159	NoGas	3226970	0.81	3296947	97.88	70	120	
Ho	165	H2	3324865	1.59	3502263	94.93	70	120	
Ho	165	He	1980767	0.35	2044408	96.89	70	120	
Ho	165	NoGas	3099693	1.11	3179403	97.49	70	120	

Initial Calibration Verification (ICV) Report

Sample Table

Sample Name	ICV
Data File Name	006_ICV.d
Data Path Name	K:\ICP-MS Megatron\Data\150123D.b
Acq Date Time	2015-01-23T13:05:32-08:00
Sample Type	ICV
Dilution	1
Comment	
ISTD Ref File Name	001CALB.d
Sample QC Pass/Fail	Fail
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	ISTD Mass	Tune Mode	Conc	Conc %RSD	CPS	CPS %RSD	Exp Value	%Rec	%Low	%High	QC Flag
Be	9	45	NoGas	94.544	1.888	503997	1.26	100	94.5	89.6	110.4	
B	11	45	NoGas	95.052	2.734	384673	1.73	100	95.1	89.6	110.4	
Na	23	45	He	2447.244	1.392	3365855	1.32	2500	97.9	89.6	110.4	
Mg	24	45	He	2447.223	1.774	1753958	1.12	2500	97.9	89.6	110.4	
Al	27	45	He	2384.020	0.594	715471	0.35	2500	95.4	89.6	110.4	
K	39	45	He	2480.055	1.077	1544294	1.39	2500	99.2	89.6	110.4	
Ca	44	45	He	2610.057	0.928	87946	0.77	2500	104.4	89.6	110.4	
Ti	47	45	He	97.961	3.047	21329	2.35	100	98.0	89.6	110.4	
V	51	45	He	98.795	1.112	711046	0.37	100	98.8	89.6	110.4	
Cr	52	45	He	97.308	1.061	873406	0.35	100	97.3	89.6	110.4	
Mn	55	45	He	96.615	1.057	498091	0.91	100	96.6	89.6	110.4	
Fe	56	45	He	2365.517	1.909	18716015	1.32	2500	94.6	89.6	110.4	
Co	59	45	He	97.635	2.920	1431907	3.37	100	97.6	89.6	110.4	
Ni	60	45	He	98.435	1.068	388554	0.31	100	98.4	89.6	110.4	
Cu	63	45	He	96.788	0.761	1067745	0.53	100	96.8	89.6	110.4	
Zn	66	115	He	93.778	0.661	178091	0.11	100	93.8	89.6	110.4	
As	75	115	He	93.734	1.156	114348	0.44	100	93.7	89.6	110.4	
Se	78	72	H2	97.702	2.956	34437	2.26	100	97.7	89.6	110.4	
Se	78	115	He	97.570	1.134	7486	1.74	100	97.6	89.6	110.4	
Sr	88	115	NoGas	98.149	2.138	5100501	0.52	100	98.1	89.6	110.4	
Mo	95	115	NoGas	98.841	2.188	975677	0.35	100	98.8	89.6	110.4	
Ag	107	115	NoGas	49.305	0.873	1316216	1.40	50	98.6	89.6	110.4	
Cd	111	115	He	97.279	0.165	255424	0.65	100	97.3	89.6	110.4	
Sn	118	115	He	50.002	1.938	267082	1.19	100	50.0	89.6	110.4	>+\- 10%
Sn	118	115	NoGas	50.423	1.627	790877	0.62	100	50.4	89.6	110.4	>+\- 10%
Sb	121	115	NoGas	116.029	2.935	2287430	0.71	100	116.0	89.6	110.4	>+\- 10%
Ba	137	165	NoGas	97.885	2.018	760121	0.77	100	97.9	89.6	110.4	
Tl	205	165	NoGas	98.170	1.623	4554667	1.13	100	98.2	89.6	110.4	
Pb	208	165	NoGas	96.661	1.672	6153759	0.63	100	96.7	89.6	110.4	

QC ISTD Table

Name	Mass	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li	6	NoGas	203392	1.20	220533	92.23	70	120	
Sc	45	H2	307259	0.89	326687	94.05	70	120	
Sc	45	He	102854	0.76	104972	97.98	70	120	
Sc	45	NoGas	1692042	1.00	1736910	97.42	70	120	
Ge	72	H2	79257	1.12	85628	92.56	70	120	
Ge	72	He	69123	0.99	70468	98.09	70	120	
Ge	72	NoGas	382728	0.93	393798	97.19	70	120	
In	115	H2	1834715	1.20	1929299	95.10	70	120	
In	115	He	638360	0.76	657120	97.15	70	120	
In	115	NoGas	2392614	2.27	2471241	96.82	70	120	
Tb	159	H2	3469903	2.29	3605350	96.24	70	120	
Tb	159	He	2026048	1.17	2090834	96.90	70	120	
Tb	159	NoGas	3227592	0.96	3296947	97.90	70	120	
Ho	165	H2	3354899	1.12	3502263	95.79	70	120	
Ho	165	He	2007851	0.13	2044408	98.21	70	120	
Ho	165	NoGas	3125710	1.44	3179403	98.31	70	120	

Initial Calibration Blank (ICB) Report

Sample Table

Sample Name	ICB
Data File Name	009_ICB.d
Data Path Name	K:\ICP-MS Megatron\Data\150123D.b
Acq Date Time	2015-01-23T13:23:38-08:00
Sample Type	ICB
Dilution	1
Comment	
ISTD Ref File Name	001CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	ISTD Mass	Tune Mode	Conc	Conc %RSD	CPS	CPS %RSD	Upper Limit	QC Flag
Be	9	45	NoGas	-0.003	-65.3	20	50.0	0.1	
B	11	45	NoGas	-0.381	-6.4	15280	3.2	8	
Na	23	45	He	2.133	60.0	93956	0.4	50	
Mg	24	45	He	-0.085	-233.3	988	12.3	20	
Al	27	45	He	-0.222	-111.0	591	10.8	10	
K	39	45	He	1.201	115.0	74662	2.4	40	
Ca	44	45	He	1.655	86.9	280	15.2	150	
Ti	47	45	He	0.012	473.4	10	120.2	0.5	
V	51	45	He	-0.004	-236.1	1054	6.3	0.4	
Cr	52	45	He	0.006	191.5	1587	4.5	0.2	
Mn	55	45	He	-0.077	-9.4	174	19.3	0.3	
Fe	56	45	He	-2.562	-1.9	12683	2.7	30	
Co	59	45	He	0.001	420.4	524	11.4	0.4	
Ni	60	45	He	-0.005	-93.0	186	8.9	0.4	
Cu	63	45	He	-0.036	-35.6	3889	1.8	0.4	
Zn	66	115	He	-0.036	-63.7	488	8.7	15	
As	75	115	He	0.009	65.4	68	11.1	0.2	
Se	78	72	H2	0.013	42.0	10	21.7	0.4	
Se	78	115	He	-0.053	-89.2	58	6.2	0.4	
Sr	88	115	NoGas	0.000	368.2	570	12.3	0.1	
Mo	95	115	NoGas	0.062	15.7	1407	6.0	0.3	
Ag	107	115	NoGas	0.001	231.0	80	69.6	0.1	
Cd	111	115	He	0.004	110.5	17	68.2	0.1	
Sn	118	115	He	0.015	194.9	692	22.6	0.1	
Sn	118	115	NoGas	0.031	26.2	2258	4.3	0.1	
Sb	121	115	NoGas	0.055	16.5	3000	3.8	0.5	
Ba	137	165	NoGas	0.008	65.9	170	23.5	0.4	
Tl	205	165	NoGas	0.010	20.0	643	14.4	0.2	
Pb	208	165	NoGas	-0.002	-284.7	3237	9.1	0.4	

QC ISTD Table

Name	Mass	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li	6	NoGas	206402	0.87	220533	93.59	70	120	
Sc	45	H2	311784	0.74	326687	95.44	70	120	
Sc	45	He	101113	1.86	104972	96.32	70	120	
Sc	45	NoGas	1691893	3.64	1736910	97.41	70	120	
Ge	72	H2	81118	2.27	85628	94.73	70	120	
Ge	72	He	69425	2.53	70468	98.52	70	120	
Ge	72	NoGas	382088	1.64	393798	97.03	70	120	
In	115	H2	1838122	1.18	1929299	95.27	70	120	
In	115	He	632971	0.15	657120	96.33	70	120	
In	115	NoGas	2438778	2.31	2471241	98.69	70	120	
Tb	159	H2	3448995	0.37	3605350	95.66	70	120	
Tb	159	He	2037010	0.44	2090834	97.43	70	120	
Tb	159	NoGas	3195459	2.15	3296947	96.92	70	120	
Ho	165	H2	3380482	1.16	3502263	96.52	70	120	
Ho	165	He	2025266	1.23	2044408	99.06	70	120	
Ho	165	NoGas	3140978	0.61	3179403	98.79	70	120	

Continuing Calibration Verification (CCV) Report

Sample Table

Sample Name	CCV
Data File Name	013_CCV.d
Data Path Name	K:\ICP-MS Megatron\Data\150123D.b
Acq Date Time	2015-01-23T13:47:44-08:00
Sample Type	CCV
Dilution	1
Comment	
ISTD Ref File Name	001CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	ISTD Mass	Tune Mode	Conc	Conc %RSD	CPS	CPS %RSD	Exp Value	%Rec	%Low	%High2	QC Flag
Be	9	45	NoGas	48.145	2.616	258536	2.37	50	96.3	89.6	110.4	
B	11	45	NoGas	47.622	2.590	202592	3.02	50	95.2	89.6	110.4	
Na	23	45	He	1259.171	2.009	1764511	1.75	1250	100.7	89.6	110.4	
Mg	24	45	He	2517.746	3.108	1791638	1.44	2500	100.7	89.6	110.4	
Al	27	45	He	971.381	1.663	289875	0.60	1000	97.1	89.6	110.4	
K	39	45	He	985.684	2.015	654454	0.45	1000	98.6	89.6	110.4	
Ca	44	45	He	2448.237	1.191	81945	2.06	2500	97.9	89.6	110.4	
Ti	47	45	He	49.590	2.517	10727	1.94	50	99.2	89.6	110.4	
V	51	45	He	49.267	1.165	352702	1.59	50	98.5	89.6	110.4	
Cr	52	45	He	49.485	2.329	441818	1.54	50	99.0	89.6	110.4	
Mn	55	45	He	49.830	2.821	255360	1.97	50	99.7	89.6	110.4	
Fe	56	45	He	964.531	2.123	7598977	2.51	1000	96.5	89.6	110.4	
Co	59	45	He	49.045	2.536	714386	1.28	50	98.1	89.6	110.4	
Ni	60	45	He	49.652	1.660	194731	0.74	50	99.3	89.6	110.4	
Cu	63	45	He	49.896	2.303	548649	0.71	50	99.8	89.6	110.4	
Zn	66	115	He	50.028	0.476	94364	1.42	50	100.1	89.6	110.4	
As	75	115	He	49.052	1.218	59295	0.46	50	98.1	89.6	110.4	
Se	78	72	H2	49.842	2.491	17727	0.98	50	99.7	89.6	110.4	
Se	78	115	He	50.241	3.702	3847	3.31	50	100.5	89.6	110.4	
Sr	88	115	NoGas	50.183	3.374	2603532	2.01	50	100.4	89.6	110.4	
Mo	95	115	NoGas	49.823	2.560	491378	1.26	50	99.6	89.6	110.4	
Ag	107	115	NoGas	24.813	1.714	661219	0.49	25	99.3	89.6	110.4	
Cd	111	115	He	49.463	1.057	128633	0.62	50	98.9	89.6	110.4	
Sn	118	115	He	49.830	0.777	263647	0.86	50	99.7	89.6	110.4	
Sn	118	115	NoGas	49.489	2.322	774949	1.32	50	99.0	89.6	110.4	
Sb	121	115	NoGas	48.289	2.996	951693	2.70	50	96.6	89.6	110.4	
Ba	137	165	NoGas	49.256	2.556	386180	0.20	50	98.5	89.6	110.4	
Tl	205	165	NoGas	49.137	2.156	2301543	1.01	50	98.3	89.6	110.4	
Pb	208	165	NoGas	48.356	2.603	3109302	0.59	50	96.7	89.6	110.4	

QC ISTD Table

Name	Mass	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li	6	NoGas	201355	0.25	220533	91.30	70	120	
Sc	45	H2	307237	0.22	326687	94.05	70	120	
Sc	45	He	102157	2.25	104972	97.32	70	120	
Sc	45	NoGas	1704734	2.97	1736910	98.15	70	120	
Ge	72	H2	79970	1.62	85628	93.39	70	120	
Ge	72	He	69111	0.39	70468	98.08	70	120	
Ge	72	NoGas	374564	0.24	393798	95.12	70	120	
In	115	H2	1841069	1.42	1929299	95.43	70	120	
In	115	He	632278	1.12	657120	96.22	70	120	
In	115	NoGas	2388390	1.35	2471241	96.65	70	120	
Tb	159	H2	3490220	1.59	3605350	96.81	70	120	
Tb	159	He	2015357	0.69	2090834	96.39	70	120	
Tb	159	NoGas	3238180	0.76	3296947	98.22	70	120	
Ho	165	H2	3385259	1.69	3502263	96.66	70	120	
Ho	165	He	2016972	2.40	2044408	98.66	70	120	
Ho	165	NoGas	3156240	2.69	3179403	99.27	70	120	

Continuing Calibration Blank (CCB) Report

Sample Table

Sample Name	CCB
Data File Name	015_CCB.d
Data Path Name	K:\ICP-MS Megatron\Data\150123D.b
Acq Date Time	2015-01-23T13:59:44-08:00
Sample Type	CCB
Dilution	1
Comment	
ISTD Ref File Name	001CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	ISTD Mass	Tune Mode	Conc	Conc %RSD	CPS	CPS %RSD	Upper Limit	QC Flag
Be	9	45	NoGas	-0.002	-71.3	27	21.7	0.1	
B	11	45	NoGas	-0.549	-18.3	14379	3.2	8	
Na	23	45	He	-0.376	-176.9	90725	0.5	50	
Mg	24	45	He	0.058	293.4	1091	11.5	20	
Al	27	45	He	-0.192	-72.8	601	7.8	10	
K	39	45	He	-3.592	-80.1	71912	2.7	40	
Ca	44	45	He	-0.279	-427.0	217	17.7	150	
Ti	47	45	He	0.001	683.6	8	24.7	0.5	
V	51	45	He	0.012	72.6	1168	4.1	0.4	
Cr	52	45	He	0.000	1131.5	1538	1.3	0.2	
Mn	55	45	He	-0.082	-5.7	148	15.0	0.3	
Fe	56	45	He	-2.502	-0.9	13154	0.5	30	
Co	59	45	He	0.003	138.0	556	11.5	0.4	
Ni	60	45	He	0.003	313.7	217	18.7	0.4	
Cu	63	45	He	-0.062	-11.4	3615	3.2	0.4	
Zn	66	115	He	-0.048	-67.9	469	13.2	15	
As	75	115	He	0.000	3351.4	57	15.3	0.2	
Se	78	72	H2	0.005	99.5	7	27.3	0.4	
Se	78	115	He	0.057	225.5	67	14.9	0.4	
Sr	88	115	NoGas	0.000	735.2	570	29.0	0.1	
Mo	95	115	NoGas	0.048	18.2	1263	7.5	0.3	
Ag	107	115	NoGas	0.001	91.6	93	37.6	0.1	
Cd	111	115	He	0.002	66.5	13	32.9	0.1	
Sn	118	115	He	0.011	76.4	676	6.5	0.1	
Sn	118	115	NoGas	0.034	47.7	2275	8.7	0.1	
Sb	121	115	NoGas	0.110	8.0	4081	6.6	0.5	
Ba	137	165	NoGas	0.000	1325.4	110	18.2	0.4	
Tl	205	165	NoGas	0.005	53.8	387	30.3	0.2	
Pb	208	165	NoGas	-0.004	-26.5	3067	1.4	0.4	

QC ISTD Table

Name	Mass	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li	6	NoGas	211257	1.49	220533	95.79	70	120	
Sc	45	H2	308991	0.98	326687	94.58	70	120	
Sc	45	He	101174	1.19	104972	96.38	70	120	
Sc	45	NoGas	1662349	0.64	1736910	95.71	70	120	
Ge	72	H2	80172	0.80	85628	93.63	70	120	
Ge	72	He	69835	0.80	70468	99.10	70	120	
Ge	72	NoGas	381918	1.67	393798	96.98	70	120	
In	115	H2	1845472	1.42	1929299	95.66	70	120	
In	115	He	639259	0.37	657120	97.28	70	120	
In	115	NoGas	2420694	2.54	2471241	97.95	70	120	
Tb	159	H2	3516530	1.44	3605350	97.54	70	120	
Tb	159	He	2017462	1.94	2090834	96.49	70	120	
Tb	159	NoGas	3288513	2.03	3296947	99.74	70	120	
Ho	165	H2	3421524	0.45	3502263	97.69	70	120	
Ho	165	He	2029596	0.81	2044408	99.28	70	120	
Ho	165	NoGas	3133139	1.04	3179403	98.54	70	120	

Interference Check Solution A (ICS-A) Report

Sample Table

Sample Name	ICSA
Data File Name	016ICSA.d
Data Path Name	K:\ICP-MS Megatron\Data\150123D.b
Acq Date Time	2015-01-23T14:05:45-08:00
Sample Type	ICSA
Dilution	1
Comment	
ISTD Ref File Name	001CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Mode	Conc	Conc %RSD	CPS	CPS %RSD	Upper Limit	QC Flag
Be	9	NoGas	0.004	71.5	57	27.0	0.1	
B	11	NoGas	0.877	11.2	19491	1.8	8	
Na	23	He	46053.376	1.3	59561607	1.0	60000	
Mg	24	He	45717.911	1.2	31620817	0.8	60000	
Al	27	He	45841.405	1.6	13272726	2.1	60000	
K	39	He	47181.188	0.5	27056565	0.3	60000	
Ca	44	He	46720.809	1.5	1516200	0.8	60000	
Ti	47	He	989.888	0.7	208067	1.1	1200	
V	51	He	-0.047	-16.9	741	7.4	0.2	
Cr	52	He	0.511	2.7	5928	1.3	30	
Mn	55	He	2.334	1.2	12155	0.5	24	
Fe	56	He	45711.065	1.1	348631773	0.5	60000	
Co	59	He	0.537	2.9	8096	2.6	5	
Ni	60	He	0.746	9.2	3041	8.6	20	
Cu	63	He	0.313	9.1	7526	4.5	25	
Zn	66	He	0.404	4.4	1238	3.2	60	
As	75	He	0.233	8.8	318	7.9	0.4	
Se	78	H2	0.019	19.1	11	12.4	0.4	
Se	78	He	0.012	602.1	59	8.3	0.4	
Sr	88	NoGas	2.060	0.6	101422	0.8	5	
Mo	95	NoGas	1002.142	0.7	9319465	0.6	1200	
Ag	107	NoGas	0.015	7.5	437	5.8	5	
Cd	111	He	0.176	3.2	437	3.1	0.5	
Sn	118	He	0.280	2.9	1972	1.4	5	
Sn	118	NoGas	0.261	6.6	5480	3.7	5	
Sb	121	NoGas	0.355	4.8	8359	2.5	5	
Ba	137	NoGas	0.203	51.0	1612	46.2	1.5	
Tl	205	NoGas	0.014	4.0	787	4.5	0.2	
Pb	208	NoGas	0.043	3.8	5841	0.3	1	

QC ISTD Table

Name	Mass	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li	6	NoGas	182272	1.63	220533	82.65	70	120	
Sc	45	H2	302922	1.50	326687	92.73	70	120	
Sc	45	He	99310	0.74	104972	94.61	70	120	
Sc	45	NoGas	1636602	2.52	1736910	94.22	70	120	
Ge	72	H2	76974	1.47	85628	89.89	70	120	
Ge	72	He	68486	2.57	70468	97.19	70	120	
Ge	72	NoGas	380867	0.43	393798	96.72	70	120	
In	115	H2	1697817	0.46	1929299	88.00	70	120	
In	115	He	596762	0.73	657120	90.81	70	120	
In	115	NoGas	2255051	1.23	2471241	91.25	70	120	
Tb	159	H2	3300396	1.79	3605350	91.54	70	120	
Tb	159	He	1968650	2.37	2090834	94.16	70	120	
Tb	159	NoGas	3086492	1.18	3296947	93.62	70	120	
Ho	165	H2	3233061	2.28	3502263	92.31	70	120	
Ho	165	He	1962558	0.93	2044408	96.00	70	120	
Ho	165	NoGas	3004228	1.40	3179403	94.49	70	120	

Interference Check Solution AB (ICS-AB) Report

Sample Table

Sample Name	ICSAB
Data File Name	018ICSB.d
Data Path Name	K:\ICP-MS Megatron\Data\150123D.b
Acq Date Time	2015-01-23T14:17:46-08:00
Sample Type	ICSB
Dilution	1
Comment	
ISTD Ref File Name	001CALB.d
Sample QC Pass/Fail	Fail
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	ISTD Mass	Tune Mode	Conc	Conc %RSD	CPS	CPS %RSD	Exp Value	%Rec	%Low	%High	QC Flag
Be	9	45	NoGas	43.834	2.615	223630	1.52	50	87.7	80	120	
B	11	45	NoGas	1.669	11.100	22217	1.61	-8	-20.9	80	120	
Na	23	45	He	46010.081	1.623	60741362	1.46	50000	92.0	80	120	
Mg	24	45	He	45099.378	2.451	31840003	2.15	50000	90.2	80	120	
Al	27	45	He	45461.817	1.109	13435072	0.87	50000	90.9	80	120	
K	39	45	He	46612.401	1.432	27286084	1.26	50000	93.2	80	120	
Ca	44	45	He	45742.653	0.922	1515392	1.09	50000	91.5	80	120	
Ti	47	45	He	977.791	2.230	209784	2.14	1000	97.8	80	120	
V	51	45	He	48.640	1.802	345615	2.21	50	97.3	80	120	
Cr	52	45	He	47.362	1.133	419792	1.40	50	94.7	80	120	
Mn	55	45	He	49.367	0.898	251129	1.29	50	98.7	80	120	
Fe	56	45	He	45470.167	0.956	354000484	0.64	50000	90.9	80	120	
Co	59	45	He	46.554	1.532	673132	1.57	50	93.1	80	120	
Ni	60	45	He	92.514	1.251	359942	1.03	100	92.5	80	120	
Cu	63	45	He	46.419	1.250	506944	0.89	50	92.8	80	120	
Zn	66	115	He	94.468	0.388	171190	0.87	100	94.5	80	120	
As	75	115	He	49.364	0.801	57493	1.38	50	98.7	80	120	
Se	78	72	H2	47.585	1.117	16602	0.93	50	95.2	80	120	
Se	78	115	He	48.892	3.505	3609	3.10	50	97.8	80	120	
Sr	88	115	NoGas	2.071	2.234	101813	1.92	-5	-41.4	80	120	
Mo	95	115	NoGas	1060.593	1.520	9846353	0.55	1050	101.0	80	120	
Ag	107	115	NoGas	96.047	1.031	2412975	1.83	100	96.0	80	120	
Cd	111	115	He	96.252	0.630	241163	1.24	100	96.3	80	120	
Sn	118	115	He	0.235	12.096	1782	8.61	50	0.5	80	120	>+\- 20%
Sn	118	115	NoGas	0.253	4.617	5355	2.28	50	0.5	80	120	>+\- 20%
Sb	121	115	NoGas	57.789	1.058	1073303	0.67	50	115.6	80	120	
Ba	137	165	NoGas	48.182	0.490	359540	0.54	50	96.4	80	120	
Tl	205	165	NoGas	46.463	1.983	2071097	2.02	50	92.9	80	120	
Pb	208	165	NoGas	90.368	0.585	5527450	0.31	100	90.4	80	120	

QC ISTD Table

Name	Mass	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li	6	NoGas	178899	1.22	220533	81.12	70	120	
Sc	45	H2	301966	1.67	326687	92.43	70	120	
Sc	45	He	101373	0.87	104972	96.57	70	120	
Sc	45	NoGas	1619645	2.54	1736910	93.25	70	120	
Ge	72	H2	78428	0.57	85628	91.59	70	120	
Ge	72	He	69601	1.69	70468	98.77	70	120	
Ge	72	NoGas	386228	1.34	393798	98.08	70	120	
In	115	H2	1724300	0.84	1929299	89.37	70	120	
In	115	He	609132	0.61	657120	92.70	70	120	
In	115	NoGas	2251367	1.07	2471241	91.10	70	120	
Tb	159	H2	3321571	1.44	3605350	92.13	70	120	
Tb	159	He	1978732	1.11	2090834	94.64	70	120	
Tb	159	NoGas	3057273	0.41	3296947	92.73	70	120	
Ho	165	H2	3239043	1.87	3502263	92.48	70	120	
Ho	165	He	1962066	0.85	2044408	95.97	70	120	
Ho	165	NoGas	3002641	0.79	3179403	94.44	70	120	

Continuing Calibration Verification (CCV) Report

Sample Table

Sample Name	CCV
Data File Name	069_CCV.d
Data Path Name	K:\ICP-MS Megatron\Data\150123D.b
Acq Date Time	2015-01-23T19:25:00-08:00
Sample Type	CCV
Dilution	1
Comment	
ISTD Ref File Name	001CALB.d
Sample QC Pass/Fail	Fail
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	ISTD Mass	Tune Mode	Conc	Conc %RSD	CPS	CPS %RSD	Exp Value	%Rec	%Low	%High2	QC Flag
Be	9	45	NoGas	51.814	4.719	304674	2.52	50	103.6	89.6	110.4	
B	11	45	NoGas	67.367	3.285	306183	0.91	50	134.7	89.6	110.4	>+/- 10%
Na	23	45	He	1359.845	2.223	2183836	0.91	1250	108.8	89.6	110.4	
Mg	24	45	He	2490.089	3.089	2038838	1.61	2500	99.6	89.6	110.4	
Al	27	45	He	993.963	1.231	341279	0.79	1000	99.4	89.6	110.4	
K	39	45	He	1013.278	1.809	771711	0.97	1000	101.3	89.6	110.4	
Ca	44	45	He	2532.992	1.142	97527	0.58	2500	101.3	89.6	110.4	
Ti	47	45	He	51.262	0.820	12761	2.47	50	102.5	89.6	110.4	
V	51	45	He	50.530	1.327	416146	0.46	50	101.1	89.6	110.4	
Cr	52	45	He	49.659	0.879	510184	1.04	50	99.3	89.6	110.4	
Mn	55	45	He	50.599	0.646	298389	1.19	50	101.2	89.6	110.4	
Fe	56	45	He	997.071	1.646	9035847	0.98	1000	99.7	89.6	110.4	
Co	59	45	He	49.340	1.515	826989	0.70	50	98.7	89.6	110.4	
Ni	60	45	He	49.422	1.203	223033	1.29	50	98.8	89.6	110.4	
Cu	63	45	He	49.165	1.545	622137	0.43	50	98.3	89.6	110.4	
Zn	66	115	He	50.059	1.345	106622	1.42	50	100.1	89.6	110.4	
As	75	115	He	50.707	1.195	69215	0.55	50	101.4	89.6	110.4	
Se	78	72	H2	49.546	1.799	21176	2.45	50	99.1	89.6	110.4	
Se	78	115	He	51.059	0.565	4415	0.36	50	102.1	89.6	110.4	
Sr	88	115	NoGas	51.138	2.205	2912682	1.57	50	102.3	89.6	110.4	
Mo	95	115	NoGas	50.651	2.419	548488	3.22	50	101.3	89.6	110.4	
Ag	107	115	NoGas	25.050	1.748	732864	2.40	25	100.2	89.6	110.4	
Cd	111	115	He	49.327	0.754	144869	1.45	50	98.7	89.6	110.4	
Sn	118	115	He	50.594	0.875	302278	1.24	50	101.2	89.6	110.4	
Sn	118	115	NoGas	50.105	2.933	861193	2.22	50	100.2	89.6	110.4	
Sb	121	115	NoGas	47.598	3.208	1029773	3.13	50	95.2	89.6	110.4	
Ba	137	165	NoGas	51.331	3.143	423025	2.36	50	102.7	89.6	110.4	
Tl	205	165	NoGas	51.186	2.981	2519919	2.30	50	102.4	89.6	110.4	
Pb	208	165	NoGas	50.610	3.095	3420439	2.26	50	101.2	89.6	110.4	

QC ISTD Table

Name	Mass	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li	6	NoGas	244300	2.42	220533	110.78	70	120	
Sc	45	H2	370433	0.86	326687	113.39	70	120	
Sc	45	He	117531	1.66	104972	111.96	70	120	
Sc	45	NoGas	1867421	2.33	1736910	107.51	70	120	
Ge	72	H2	96075	1.16	85628	112.20	70	120	
Ge	72	He	78937	1.44	70468	112.02	70	120	
Ge	72	NoGas	419941	2.20	393798	106.64	70	120	
In	115	H2	2107480	0.03	1929299	109.24	70	120	
In	115	He	713978	0.69	657120	108.65	70	120	
In	115	NoGas	2621923	2.22	2471241	106.10	70	120	
Tb	159	H2	3837093	1.08	3605350	106.43	70	120	
Tb	159	He	2260498	1.70	2090834	108.11	70	120	
Tb	159	NoGas	3464928	1.51	3296947	105.10	70	120	
Ho	165	H2	3718325	1.56	3502263	106.17	70	120	
Ho	165	He	2233056	1.67	2044408	109.23	70	120	
Ho	165	NoGas	3316711	1.01	3179403	104.32	70	120	

Continuing Calibration Blank (CCB) Report

Sample Table

Sample Name	CCB
Data File Name	071_CCB.d
Data Path Name	K:\ICP-MS Megatron\Data\150123D.b
Acq Date Time	2015-01-23T19:37:01-08:00
Sample Type	CCB
Dilution	1
Comment	
ISTD Ref File Name	001CALB.d
Sample QC Pass/Fail	Fail
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	ISTD Mass	Tune Mode	Conc	Conc %RSD	CPS	CPS %RSD	Upper Limit	QC Flag
Be	9	45	NoGas	0.003	84.3	60	28.9	0.1	
B	11	45	NoGas	13.736	4.0	79584	3.6	8	>LOD
Na	23	45	He	44.406	2.6	174748	0.3	50	
Mg	24	45	He	0.178	66.6	1373	8.3	20	
Al	27	45	He	0.190	92.8	833	7.4	10	
K	39	45	He	-1.771	-159.3	85203	1.1	40	
Ca	44	45	He	-0.939	-92.1	228	15.0	150	
Ti	47	45	He	-0.008	-323.0	7	100.0	0.5	
V	51	45	He	0.136	16.5	2388	6.6	0.4	
Cr	52	45	He	-0.046	-39.2	1325	15.1	0.2	
Mn	55	45	He	-0.054	-11.4	340	10.4	0.3	
Fe	56	45	He	-2.567	-1.3	14778	1.6	30	
Co	59	45	He	-0.001	-444.9	583	7.5	0.4	
Ni	60	45	He	-0.013	-51.4	178	18.0	0.4	
Cu	63	45	He	-0.136	-9.3	3286	6.0	0.4	
Zn	66	115	He	0.051	56.1	748	7.9	15	
As	75	115	He	0.019	29.2	91	8.8	0.2	
Se	78	72	H2	0.017	39.0	13	19.9	0.4	
Se	78	115	He	0.177	97.3	87	17.5	0.4	
Sr	88	115	NoGas	0.003	80.5	787	17.6	0.1	
Mo	95	115	NoGas	0.115	9.7	2144	6.8	0.3	
Ag	107	115	NoGas	0.001	444.8	77	86.9	0.1	
Cd	111	115	He	0.001	208.2	9	44.6	0.1	
Sn	118	115	He	0.065	41.6	1101	14.8	0.1	
Sn	118	115	NoGas	0.080	5.5	3346	3.2	0.1	
Sb	121	115	NoGas	0.106	10.0	4427	4.4	0.5	
Ba	137	165	NoGas	0.011	101.0	213	43.6	0.4	
Tl	205	165	NoGas	0.002	27.4	287	10.7	0.2	
Pb	208	165	NoGas	-0.008	-13.3	3057	3.9	0.4	

QC ISTD Table

Name	Mass	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li	6	NoGas	249060	2.45	220533	112.94	70	120	
Sc	45	H2	362551	1.12	326687	110.98	70	120	
Sc	45	He	118153	1.26	104972	112.56	70	120	
Sc	45	NoGas	1925437	1.46	1736910	110.85	70	120	
Ge	72	H2	95122	2.31	85628	111.09	70	120	
Ge	72	He	79861	1.20	70468	113.33	70	120	
Ge	72	NoGas	426439	0.91	393798	108.29	70	120	
In	115	H2	2069204	2.72	1929299	107.25	70	120	
In	115	He	727727	0.33	657120	110.74	70	120	
In	115	NoGas	2685289	1.00	2471241	108.66	70	120	
Tb	159	H2	3809200	0.57	3605350	105.65	70	120	
Tb	159	He	2283232	1.87	2090834	109.20	70	120	
Tb	159	NoGas	3554225	2.28	3296947	107.80	70	120	
Ho	165	H2	3686507	1.43	3502263	105.26	70	120	
Ho	165	He	2247820	0.81	2044408	109.95	70	120	
Ho	165	NoGas	3413086	1.61	3179403	107.35	70	120	

Continuing Calibration Verification (CCV) Report

Sample Table

Sample Name	CCV
Data File Name	092_CCV.d
Data Path Name	K:\ICP-MS Megatron\Data\150123D.b
Acq Date Time	2015-01-23T21:43:27-08:00
Sample Type	CCV
Dilution	1
Comment	
ISTD Ref File Name	001CALB.d
Sample QC Pass/Fail	Fail
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	ISTD Mass	Tune Mode	Conc	Conc %RSD	CPS	CPS %RSD	Exp Value	%Rec	%Low	%High2	QC Flag
Be	9	45	NoGas	51.952	2.157	288419	0.52	50	103.9	89.6	110.4	
B	11	45	NoGas	58.582	3.526	253580	1.97	50	117.2	89.6	110.4	>+/- 10%
Na	23	45	He	1283.265	0.374	1929326	0.86	1250	102.7	89.6	110.4	
Mg	24	45	He	2497.612	1.785	1909014	1.23	2500	99.9	89.6	110.4	
Al	27	45	He	984.977	0.472	315669	0.72	1000	98.5	89.6	110.4	
K	39	45	He	990.299	0.945	705790	0.68	1000	99.0	89.6	110.4	
Ca	44	45	He	2486.567	1.240	89363	0.96	2500	99.5	89.6	110.4	
Ti	47	45	He	49.687	2.134	11544	2.66	50	99.4	89.6	110.4	
V	51	45	He	49.368	0.667	379520	0.55	50	98.7	89.6	110.4	
Cr	52	45	He	49.168	0.654	471488	1.10	50	98.3	89.6	110.4	
Mn	55	45	He	49.895	0.541	274621	0.71	50	99.8	89.6	110.4	
Fe	56	45	He	984.183	0.098	8325533	0.49	1000	98.4	89.6	110.4	
Co	59	45	He	48.706	0.474	762007	0.97	50	97.4	89.6	110.4	
Ni	60	45	He	49.066	0.814	206666	0.55	50	98.1	89.6	110.4	
Cu	63	45	He	48.626	0.680	574395	0.27	50	97.3	89.6	110.4	
Zn	66	115	He	49.495	2.370	99507	1.54	50	99.0	89.6	110.4	
As	75	115	He	49.751	1.578	64104	0.78	50	99.5	89.6	110.4	
Se	78	72	H2	49.343	1.079	19117	2.14	50	98.7	89.6	110.4	
Se	78	115	He	49.789	2.926	4064	1.86	50	99.6	89.6	110.4	
Sr	88	115	NoGas	49.993	2.798	2770664	1.99	50	100.0	89.6	110.4	
Mo	95	115	NoGas	48.260	1.246	508478	0.84	50	96.5	89.6	110.4	
Ag	107	115	NoGas	24.510	1.935	697636	0.59	25	98.0	89.6	110.4	
Cd	111	115	He	49.676	1.640	137701	0.67	50	99.4	89.6	110.4	
Sn	118	115	He	50.134	1.149	282731	0.53	50	100.3	89.6	110.4	
Sn	118	115	NoGas	48.799	1.830	816234	0.51	50	97.6	89.6	110.4	
Sb	121	115	NoGas	46.700	2.952	983014	1.78	50	93.4	89.6	110.4	
Ba	137	165	NoGas	50.527	1.641	410331	0.59	50	101.1	89.6	110.4	
Tl	205	165	NoGas	51.492	1.453	2498026	0.75	50	103.0	89.6	110.4	
Pb	208	165	NoGas	50.442	2.196	3359282	0.94	50	100.9	89.6	110.4	

QC ISTD Table

Name	Mass	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li	6	NoGas	235682	0.64	220533	106.87	70	120	
Sc	45	H2	336919	0.45	326687	103.13	70	120	
Sc	45	He	109688	0.57	104972	104.49	70	120	
Sc	45	NoGas	1762546	2.67	1736910	101.48	70	120	
Ge	72	H2	87091	1.58	85628	101.71	70	120	
Ge	72	He	73743	0.83	70468	104.65	70	120	
Ge	72	NoGas	393481	1.99	393798	99.92	70	120	
In	115	H2	1968921	1.19	1929299	102.05	70	120	
In	115	He	673973	1.06	657120	102.56	70	120	
In	115	NoGas	2551084	1.38	2471241	103.23	70	120	
Tb	159	H2	3723974	0.58	3605350	103.29	70	120	
Tb	159	He	2166578	1.54	2090834	103.62	70	120	
Tb	159	NoGas	3429043	1.21	3296947	104.01	70	120	
Ho	165	H2	3628253	1.27	3502263	103.60	70	120	
Ho	165	He	2143691	0.31	2044408	104.86	70	120	
Ho	165	NoGas	3268240	1.37	3179403	102.79	70	120	

Continuing Calibration Blank (CCB) Report

Sample Table

Sample Name	CCB
Data File Name	094_CCB.d
Data Path Name	K:\ICP-MS Megatron\Data\150123D.b
Acq Date Time	2015-01-23T21:55:30-08:00
Sample Type	CCB
Dilution	1
Comment	
ISTD Ref File Name	001CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	ISTD Mass	Tune Mode	Conc	Conc %RSD	CPS	CPS %RSD	Upper Limit	QC Flag
Be	9	45	NoGas	0.001	706.0	40	50.0	0.1	
B	11	45	NoGas	7.304	2.7	47150	1.2	8	
Na	23	45	He	14.788	8.3	117711	1.4	50	
Mg	24	45	He	-0.044	-11.0	1083	0.3	20	
Al	27	45	He	0.346	15.8	808	2.3	10	
K	39	45	He	-1.196	-85.4	77964	1.0	40	
Ca	44	45	He	-0.771	-152.5	213	19.5	150	
Ti	47	45	He	-0.011	-80.0	6	34.7	0.5	
V	51	45	He	0.087	19.1	1808	7.1	0.4	
Cr	52	45	He	-0.030	-23.8	1356	4.7	0.2	
Mn	55	45	He	-0.067	-3.0	236	4.5	0.3	
Fe	56	45	He	-2.562	-1.6	13495	2.4	30	
Co	59	45	He	0.001	341.3	551	5.8	0.4	
Ni	60	45	He	-0.019	-53.1	139	29.6	0.4	
Cu	63	45	He	-0.065	-33.0	3807	6.6	0.4	
Zn	66	115	He	0.015	334.2	624	16.8	15	
As	75	115	He	0.008	45.2	70	6.2	0.2	
Se	78	72	H2	0.017	47.1	12	26.2	0.4	
Se	78	115	He	-0.140	-87.6	55	17.5	0.4	
Sr	88	115	NoGas	0.005	43.3	870	16.1	0.1	
Mo	95	115	NoGas	0.059	24.8	1433	11.1	0.3	
Ag	107	115	NoGas	0.002	6.8	123	4.7	0.1	
Cd	111	115	He	0.001	188.8	10	60.0	0.1	
Sn	118	115	He	0.062	49.3	1003	17.6	0.1	
Sn	118	115	NoGas	0.074	8.0	3054	1.8	0.1	
Sb	121	115	NoGas	0.159	17.2	5294	10.0	0.5	
Ba	137	165	NoGas	0.012	47.1	210	21.8	0.4	
Tl	205	165	NoGas	0.005	23.3	397	11.9	0.2	
Pb	208	165	NoGas	-0.006	-20.5	3094	1.5	0.4	

QC ISTD Table

Name	Mass	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li	6	NoGas	236493	2.20	220533	107.24	70	120	
Sc	45	H2	332229	1.59	326687	101.70	70	120	
Sc	45	He	107600	0.18	104972	102.50	70	120	
Sc	45	NoGas	1772023	2.48	1736910	102.02	70	120	
Ge	72	H2	86780	0.89	85628	101.35	70	120	
Ge	72	He	73921	0.68	70468	104.90	70	120	
Ge	72	NoGas	399796	1.53	393798	101.52	70	120	
In	115	H2	1975678	1.07	1929299	102.40	70	120	
In	115	He	676823	0.50	657120	103.00	70	120	
In	115	NoGas	2536316	1.46	2471241	102.63	70	120	
Tb	159	H2	3685801	2.35	3605350	102.23	70	120	
Tb	159	He	2158547	0.48	2090834	103.24	70	120	
Tb	159	NoGas	3421349	1.78	3296947	103.77	70	120	
Ho	165	H2	3533941	2.55	3502263	100.90	70	120	
Ho	165	He	2148619	0.81	2044408	105.10	70	120	
Ho	165	NoGas	3305843	1.38	3179403	103.98	70	120	

Continuing Calibration Verification (CCV) Report

Sample Table

Sample Name	CCV
Data File Name	119_CCV.d
Data Path Name	K:\ICP-MS Megatron\Data\150123D.b
Acq Date Time	2015-01-24T00:26:06-08:00
Sample Type	CCV
Dilution	1
Comment	
ISTD Ref File Name	001CALB.d
Sample QC Pass/Fail	Fail
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	ISTD Mass	Tune Mode	Conc	Conc %RSD	CPS	CPS %RSD	Exp Value	%Rec	%Low	%High2	QC Flag
Be	9	45	NoGas	53.254	1.324	275184	0.61	50	106.5	89.6	110.4	
B	11	45	NoGas	59.424	2.303	239194	1.22	50	118.8	89.6	110.4	>+/- 10%
Na	23	45	He	1316.955	4.253	1732607	2.07	1250	105.4	89.6	110.4	
Mg	24	45	He	2575.585	2.544	1725500	1.60	2500	103.0	89.6	110.4	
Al	27	45	He	993.108	1.186	278997	1.55	1000	99.3	89.6	110.4	
K	39	45	He	991.911	1.779	619560	1.15	1000	99.2	89.6	110.4	
Ca	44	45	He	2494.463	1.591	78605	3.22	2500	99.8	89.6	110.4	
Ti	47	45	He	49.072	1.343	9996	3.32	50	98.1	89.6	110.4	
V	51	45	He	50.436	1.512	339839	0.50	50	100.9	89.6	110.4	
Cr	52	45	He	50.717	1.484	426259	1.28	50	101.4	89.6	110.4	
Mn	55	45	He	50.797	2.007	245048	1.08	50	101.6	89.6	110.4	
Fe	56	45	He	1005.939	1.992	7457857	0.86	1000	100.6	89.6	110.4	
Co	59	45	He	49.911	1.367	684446	0.89	50	99.8	89.6	110.4	
Ni	60	45	He	49.986	1.433	184562	1.76	50	100.0	89.6	110.4	
Cu	63	45	He	49.997	1.666	517589	1.60	50	100.0	89.6	110.4	
Zn	66	115	He	48.222	1.229	89727	0.91	50	96.4	89.6	110.4	
As	75	115	He	48.308	1.172	57601	1.41	50	96.6	89.6	110.4	
Se	78	72	H2	49.530	2.092	17185	1.45	50	99.1	89.6	110.4	
Se	78	115	He	48.754	1.291	3685	1.75	50	97.5	89.6	110.4	
Sr	88	115	NoGas	50.327	1.565	2672524	1.77	50	100.7	89.6	110.4	
Mo	95	115	NoGas	49.101	0.328	495627	0.70	50	98.2	89.6	110.4	
Ag	107	115	NoGas	24.618	0.435	671384	0.65	25	98.5	89.6	110.4	
Cd	111	115	He	50.114	0.982	128549	1.34	50	100.2	89.6	110.4	
Sn	118	115	He	50.106	1.154	261474	1.07	50	100.2	89.6	110.4	
Sn	118	115	NoGas	49.570	0.658	794371	0.41	50	99.1	89.6	110.4	
Sb	121	115	NoGas	48.110	1.230	970331	1.50	50	96.2	89.6	110.4	
Ba	137	165	NoGas	49.258	0.874	401700	1.45	50	98.5	89.6	110.4	
Tl	205	165	NoGas	51.644	1.364	2515674	1.40	50	103.3	89.6	110.4	
Pb	208	165	NoGas	50.167	1.105	3354873	0.68	50	100.3	89.6	110.4	

QC ISTD Table

Name	Mass	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li	6	NoGas	227349	1.46	220533	103.09	70	120	
Sc	45	H2	293172	1.77	326687	89.74	70	120	
Sc	45	He	96163	2.01	104972	91.61	70	120	
Sc	45	NoGas	1640178	1.78	1736910	94.43	70	120	
Ge	72	H2	78006	0.99	85628	91.10	70	120	
Ge	72	He	66660	0.47	70468	94.60	70	120	
Ge	72	NoGas	373823	0.93	393798	94.93	70	120	
In	115	H2	1822875	1.15	1929299	94.48	70	120	
In	115	He	623606	0.48	657120	94.90	70	120	
In	115	NoGas	2443948	1.01	2471241	98.90	70	120	
Tb	159	H2	3555762	0.91	3605350	98.62	70	120	
Tb	159	He	2094144	0.58	2090834	100.16	70	120	
Tb	159	NoGas	3373904	1.53	3296947	102.33	70	120	
Ho	165	H2	3526563	2.97	3502263	100.69	70	120	
Ho	165	He	2103190	1.27	2044408	102.88	70	120	
Ho	165	NoGas	3281320	0.71	3179403	103.21	70	120	

Continuing Calibration Blank (CCB) Report

Sample Table

Sample Name	CCB
Data File Name	121_CCB.d
Data Path Name	K:\ICP-MS Megatron\Data\150123D.b
Acq Date Time	2015-01-24T00:38:08-08:00
Sample Type	CCB
Dilution	1
Comment	
ISTD Ref File Name	001CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	ISTD Mass	Tune Mode	Conc	Conc %RSD	CPS	CPS %RSD	Upper Limit	QC Flag
Be	9	45	NoGas	-0.002	-275.9	27	86.6	0.1	
B	11	45	NoGas	6.343	5.2	41129	0.9	8	
Na	23	45	He	6.534	20.7	96525	1.8	50	
Mg	24	45	He	0.078	134.1	1069	7.6	20	
Al	27	45	He	0.374	81.5	742	10.9	10	
K	39	45	He	-5.294	-38.4	68573	1.1	40	
Ca	44	45	He	0.849	72.2	246	6.4	150	
Ti	47	45	He	0.024	74.3	12	31.5	0.5	
V	51	45	He	-0.030	-17.1	846	5.7	0.4	
Cr	52	45	He	-0.037	-6.3	1167	2.7	0.2	
Mn	55	45	He	-0.079	-12.2	158	29.3	0.3	
Fe	56	45	He	-2.495	-0.8	12776	2.3	30	
Co	59	45	He	0.002	148.9	527	9.3	0.4	
Ni	60	45	He	-0.015	-38.0	139	17.0	0.4	
Cu	63	45	He	-0.091	-29.2	3193	7.5	0.4	
Zn	66	115	He	0.048	30.5	642	4.9	15	
As	75	115	He	0.010	43.3	68	7.8	0.2	
Se	78	72	H2	0.015	26.7	10	14.9	0.4	
Se	78	115	He	-0.103	-223.6	54	32.1	0.4	
Sr	88	115	NoGas	0.018	4.2	1533	1.6	0.1	
Mo	95	115	NoGas	0.092	28.5	1747	16.4	0.3	
Ag	107	115	NoGas	0.001	114.9	83	36.7	0.1	
Cd	111	115	He	0.001	217.8	10	80.0	0.1	
Sn	118	115	He	0.056	22.9	901	6.8	0.1	
Sn	118	115	NoGas	0.054	15.3	2669	5.1	0.1	
Sb	121	115	NoGas	0.171	3.7	5448	1.8	0.5	
Ba	137	165	NoGas	0.014	0.7	230	0.0	0.4	
Tl	205	165	NoGas	0.011	29.0	723	22.0	0.2	
Pb	208	165	NoGas	-0.009	-41.3	2907	8.7	0.4	

QC ISTD Table

Name	Mass	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li	6	NoGas	236761	1.81	220533	107.36	70	120	
Sc	45	H2	296934	0.35	326687	90.89	70	120	
Sc	45	He	97841	1.69	104972	93.21	70	120	
Sc	45	NoGas	1685288	2.35	1736910	97.03	70	120	
Ge	72	H2	78842	1.40	85628	92.08	70	120	
Ge	72	He	67927	1.66	70468	96.39	70	120	
Ge	72	NoGas	379170	1.60	393798	96.29	70	120	
In	115	H2	1836622	2.54	1929299	95.20	70	120	
In	115	He	630202	0.71	657120	95.90	70	120	
In	115	NoGas	2491667	1.03	2471241	100.83	70	120	
Tb	159	H2	3574470	1.73	3605350	99.14	70	120	
Tb	159	He	2100624	2.39	2090834	100.47	70	120	
Tb	159	NoGas	3374187	0.45	3296947	102.34	70	120	
Ho	165	H2	3446181	1.93	3502263	98.40	70	120	
Ho	165	He	2092806	0.48	2044408	102.37	70	120	
Ho	165	NoGas	3281191	0.37	3179403	103.20	70	120	

METALS

Raw Data

APPL, INC.

METALS BLANK

APPL Inc.
908 North Temperance Avenue
Clovis, CA 93611

Method	Analyte	Result	LOQ	LOD	DL	Units	Prep Date	Analysis Date	QC Group
6020A	LEAD (PB)	0.05 U	0.1	0.05	0.02	mg/Kg	01/19/15	01/23/15	#62A14-150119A-AZ09552
6020A	LEAD (PB)	0.40 U	3.0	0.40	0.19	ug/L	01/21/15	01/23/15	#62A14-150121A-AZ09554

Metals SC-Blank-REG MDLs
Printed: 01/28/15 12:51:02 PM

Sample Report

Sample Table

Sample Name	150121A BLK
Data File Name	072SMPL.d
Data Path Name	K:\ICP-MS Megatron\Data\150123D.b
Acq Date Time	2015-01-23T19:43:02-08:00
Sample Type	Sample
Dilution	1.111111111
Comment	
ISTD Ref FileName	001CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Fail

QC Analyte Table

Name	Mass	ISTD Mass	Tune Mode	Conc	FinalConc	Conc %RSD	CPS	%RSD	LDR	QC Flag
Be	9	45	NoGas	0.000	0.000	3946.71	40	66.14	10000	
B	11	45	NoGas	14.041	15.601	2.19	78633	1.11	10000	
Na	23	45	He	32.311	35.901	3.08	155380	0.35	1000000	
Mg	24	45	He	0.603	0.670	9.60	1713	2.43	1000000	
Al	27	45	He	6.576	7.306	6.67	3017	4.51	1000000	
K	39	45	He	-5.780	-6.423	-55.13	82066	2.28	500000	
Ca	44	45	He	6.326	7.029	10.65	506	4.68	500000	
Ti	47	45	He	0.134	0.149	34.27	42	27.72	10000	
V	51	45	He	-0.073	-0.081	-4.56	659	4.06	10000	
Cr	52	45	He	0.021	0.024	63.48	2002	6.94	10000	
Mn	55	45	He	0.011	0.012	74.68	716	5.82	50000	
Fe	56	45	He	5.390	5.988	1.81	86532	1.60	1000000	
Co	59	45	He	-0.026	-0.029	-4.07	148	11.57	10000	
Ni	60	45	He	0.000	0.000	-7950.23	236	23.01	10000	
Cu	63	45	He	-0.273	-0.304	-2.75	1550	5.49	10000	
Zn	66	115	He	0.235	0.261	7.79	1150	3.34	50000	
As	75	115	He	0.005	0.006	26.61	72	2.78	2000	
Se	78	72	H2	0.009	0.010	33.99	10	12.50	10000	
Se	78	115	He	0.009	0.009	1122.02	72	11.26	10000	
Sr	88	115	NoGas	0.021	0.023	10.93	1790	7.76	50000	
Mo	95	115	NoGas	0.113	0.126	23.02	2064	14.02	10000	
Ag	107	115	NoGas	0.000	-0.001	-190.67	47	53.93	5000	
Cd	111	115	He	0.000	0.000	385.02	9	58.08	10000	
Sn	118	115	He	0.098	0.109	10.70	1307	4.77	10000	
Sn	118	115	NoGas	0.119	0.133	9.39	3932	5.54	10000	
Sb	121	115	NoGas	0.157	0.174	2.93	5424	2.10	10000	
Ba	137	165	NoGas	0.046	0.051	21.01	503	16.18	50000	
Tl	205	165	NoGas	0.006	0.007	40.89	490	24.49	5000	
Pb	208	165	NoGas	-0.016	-0.018	-17.33	2467	9.40	50000	

QC ISTD Table

Name	Mass	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li	6	NoGas	272508	0.19	220533	123.57	70	120	ISTD Failed
Sc	45	H2	361059	0.90	326687	110.52	70	120	
Sc	45	He	117553	0.63	104972	111.99	70	120	
Sc	45	NoGas	1871105	1.29	1736910	107.73	70	120	
Ge	72	H2	93548	0.88	85628	109.25	70	120	
Ge	72	He	77890	1.07	70468	110.53	70	120	
Ge	72	NoGas	410046	1.64	393798	104.13	70	120	
In	115	H2	2055366	0.67	1929299	106.53	70	120	
In	115	He	730845	0.36	657120	111.22	70	120	
In	115	NoGas	2616113	0.70	2471241	105.86	70	120	
Tb	159	H2	3738201	0.87	3605350	103.68	70	120	
Tb	159	He	2311891	0.86	2090834	110.57	70	120	
Tb	159	NoGas	3483292	0.81	3296947	105.65	70	120	
Ho	165	H2	3579425	1.50	3502263	102.20	70	120	
Ho	165	He	2303262	1.65	2044408	112.66	70	120	
Ho	165	NoGas	3366336	2.85	3179403	105.88	70	120	

Sample Report

Sample Table

Sample Name	150119A BLK
Data File Name	099SMPL.d
Data Path Name	K:\ICP-MS Megatron\Data\150123D.b
Acq Date Time	2015-01-23T22:25:33-08:00
Sample Type	Sample
Dilution	0.1
Comment	
ISTD Ref FileName	001CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Fail

QC Analyte Table

Name	Mass	ISTD Mass	Tune Mode	Conc	FinalConc	Conc %RSD	CPS	%RSD	LDR	QC Flag
Be	9	45	NoGas	-0.002	0.000	-226.38	23	89.21	10000	
B	11	45	NoGas	6.746	0.675	5.16	39258	3.10	10000	
Na	23	45	He	126.499	12.650	9.99	220765	4.69	1000000	
Mg	24	45	He	1.350	0.135	16.84	1715	6.15	1000000	
Al	27	45	He	0.410	0.041	100.08	667	14.29	1000000	
K	39	45	He	23.803	2.380	24.43	75317	2.15	500000	
Ca	44	45	He	20.729	2.073	5.52	781	2.84	500000	
Ti	47	45	He	0.232	0.023	44.22	49	37.55	10000	
V	51	45	He	1.111	0.111	3.80	7665	2.99	10000	
Cr	52	45	He	0.236	0.024	15.61	3098	7.12	10000	
Mn	55	45	He	0.098	0.010	8.38	908	2.97	50000	
Fe	56	45	He	-0.804	-0.080	-46.34	22570	9.45	1000000	
Co	59	45	He	0.008	0.001	73.53	534	11.94	10000	
Ni	60	45	He	3.203	0.320	2.21	10833	3.14	10000	
Cu	63	45	He	5.304	0.530	2.49	52814	0.67	10000	
Zn	66	115	He	0.932	0.093	8.44	2039	6.89	50000	
As	75	115	He	0.654	0.065	10.84	749	9.87	2000	
Se	78	72	H2	0.122	0.012	10.08	91	7.68	10000	
Se	78	115	He	0.422	0.042	6.24	83	2.09	10000	
Sr	88	115	NoGas	0.162	0.016	6.44	8743	7.16	50000	
Mo	95	115	NoGas	1.426	0.143	0.99	14460	1.22	10000	
Ag	107	115	NoGas	0.014	0.001	11.32	427	10.57	5000	
Cd	111	115	He	0.003	0.000	59.00	13	32.87	10000	
Sn	118	115	He	1.641	0.164	20.44	8214	19.32	10000	
Sn	118	115	NoGas	0.821	0.082	6.70	14206	6.37	10000	
Sb	121	115	NoGas	2.555	0.255	2.58	50856	2.59	10000	
Ba	137	165	NoGas	0.100	0.010	12.97	870	9.41	50000	
Tl	205	165	NoGas	0.009	0.001	13.94	553	10.89	5000	
Pb	208	165	NoGas	-0.020	-0.002	-22.21	2017	11.99	50000	

QC ISTD Table

Name	Mass	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li	6	NoGas	157955	0.52	220533	71.62	70	120	
Sc	45	H2	257716	1.41	326687	78.89	70	120	
Sc	45	He	86757	1.96	104972	82.65	70	120	
Sc	45	NoGas	1549410	0.72	1736910	89.20	70	120	
Ge	72	H2	150474	6.53	85628	175.73	70	120	ISTD Failed
Ge	72	He	191318	4.24	70468	271.50	70	120	ISTD Failed
Ge	72	NoGas	1333196	0.67	393798	338.55	70	120	ISTD Failed
In	115	H2	1657811	2.70	1929299	85.93	70	120	
In	115	He	559982	0.50	657120	85.22	70	120	
In	115	NoGas	2330641	1.09	2471241	94.31	70	120	
Tb	159	H2	3177711	1.56	3605350	88.14	70	120	
Tb	159	He	1879308	0.53	2090834	89.88	70	120	
Tb	159	NoGas	3214661	1.15	3296947	97.50	70	120	
Ho	165	H2	3106512	2.29	3502263	88.70	70	120	
Ho	165	He	1892853	1.31	2044408	92.59	70	120	
Ho	165	NoGas	3090252	2.07	3179403	97.20	70	120	

Laboratory Control Spike Recovery

METALS

APPL Inc.
908 North Temperance Avenue
Clovis, CA 93611

Method	Compound Name	Spike Level mg/Kg	SPK Result mg/Kg	SPK % Recovery	Recovery Limits	Extract Date	Analysis Date	QC Group
EPA 6020A	LEAD (PB)	25.0	22.0	88.0	80-120	01/19/15	01/23/15	#62A14-150119A-AZ09552

Comments:

Sample Report

Sample Table

Sample Name	150119A LCS
Data File Name	100SMPL.d
Data Path Name	K:\ICP-MS Megatron\Data\150123D.b
Acq Date Time	2015-01-23T22:31:35-08:00
Sample Type	Sample
Dilution	0.1
Comment	
ISTD Ref FileName	001CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Fail

QC Analyte Table

Name	Mass	ISTD Mass	Tune Mode	Conc	FinalConc	Conc %RSD	CPS	%RSD	LDR	QC Flag
Be	9	45	NoGas	39.698	3.970	1.77	185509	1.57	10000	
B	11	45	NoGas	226.578	22.658	1.96	783381	0.85	10000	
Na	23	45	He	23159.140	2315.914	1.63	26023238	1.22	1000000	
Mg	24	45	He	22110.293	2211.029	0.68	13267800	0.30	1000000	
Al	27	45	He	1689.065	168.906	0.78	424780	0.39	1000000	
K	39	45	He	4670.745	467.075	1.30	2380494	1.02	500000	
Ca	44	45	He	22462.842	2246.284	0.76	632556	0.55	500000	
Ti	47	45	He	231.231	23.123	3.56	42166	3.14	10000	
V	51	45	He	246.515	24.651	2.80	1484804	2.55	10000	
Cr	52	45	He	240.203	24.020	2.36	1804090	2.22	10000	
Mn	55	45	He	228.227	22.823	1.53	984939	1.28	50000	
Fe	56	45	He	903.181	90.318	1.24	6003465	1.17	1000000	
Co	59	45	He	233.218	23.322	2.35	2864218	2.24	10000	
Ni	60	45	He	230.052	23.005	1.59	760456	1.37	10000	
Cu	63	45	He	238.655	23.866	1.23	2200084	1.23	10000	
Zn	66	115	He	442.391	44.239	0.36	703493	0.25	50000	
As	75	115	He	230.005	23.001	0.88	235475	0.97	2000	
Se	78	72	H2	126.371	12.637	3.39	69318	1.21	10000	
Se	78	115	He	229.265	22.927	1.43	14694	1.53	10000	
Sr	88	115	NoGas	228.910	22.891	2.00	11313858	1.86	50000	
Mo	95	115	NoGas	238.562	23.856	0.95	2238790	0.06	10000	
Ag	107	115	NoGas	91.574	9.157	0.15	2324755	0.82	5000	
Cd	111	115	He	47.036	4.704	1.37	103673	1.44	10000	
Sn	118	115	He	242.197	24.220	0.65	1084078	1.15	10000	
Sn	118	115	NoGas	238.326	23.833	0.74	3549147	0.41	10000	
Sb	121	115	NoGas	274.883	27.488	0.53	5152981	1.45	10000	
Ba	137	165	NoGas	225.366	22.537	0.89	1736080	0.94	50000	
Tl	205	165	NoGas	220.247	22.025	0.75	10136773	0.97	5000	
Pb	208	165	NoGas	220.350	22.035	1.75	13912161	1.64	50000	

QC ISTD Table

Name	Mass	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li	6	NoGas	136701	2.18	220533	61.99	70	120	ISTD Failed
Sc	45	H2	256334	0.57	326687	78.46	70	120	
Sc	45	He	86156	0.43	104972	82.08	70	120	
Sc	45	NoGas	1483117	1.71	1736910	85.39	70	120	
Ge	72	H2	123455	4.61	85628	144.18	70	120	ISTD Failed
Ge	72	He	152524	8.29	70468	216.45	70	120	ISTD Failed
Ge	72	NoGas	1064083	0.44	393798	270.21	70	120	ISTD Failed
In	115	H2	1583537	0.97	1929299	82.08	70	120	
In	115	He	535854	0.61	657120	81.55	70	120	
In	115	NoGas	2275105	0.96	2471241	92.06	70	120	
Tb	159	H2	3244640	0.35	3605350	90.00	70	120	
Tb	159	He	1870585	2.07	2090834	89.47	70	120	
Tb	159	NoGas	3203138	1.49	3296947	97.15	70	120	
Ho	165	H2	3096249	1.88	3502263	88.41	70	120	
Ho	165	He	1874714	1.01	2044408	91.70	70	120	
Ho	165	NoGas	3100660	1.67	3179403	97.52	70	120	

Laboratory Control Spike Recovery
METALS

APPL Inc.
908 North Temperance Avenue
Clovis, CA 93611

Method	Compound Name	Spike Level ug/L	SPK Result ug/L	SPK % Recovery	Recovery Limits	Extract Date	Analysis Date	QC Group
EPA 6020A	LEAD (PB)	50.0	46.9	93.8	80-120	01/21/15	01/23/15	#62A14-150121A-AZ09554

Comments: _____

Sample Report

Sample Table

Sample Name	150121A LCS
Data File Name	073SMPL.d
Data Path Name	K:\ICP-MS Megatron\Data\150123D.b
Acq Date Time	2015-01-23T19:49:04-08:00
Sample Type	Sample
Dilution	1.111111111
Comment	
ISTD Ref FileName	001CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Fail

QC Analyte Table

Name	Mass	ISTD Mass	Tune Mode	Conc	FinalConc	Conc %RSD	CPS	%RSD	LDR	QC Flag
Be	9	45	NoGas	9.357	10.397	0.39	53125	1.02	10000	
B	11	45	NoGas	60.083	66.759	0.20	265370	0.92	10000	
Na	23	45	He	4251.593	4723.992	0.87	6460901	1.02	1000000	
Mg	24	45	He	4292.729	4769.699	1.25	3438768	0.69	1000000	
Al	27	45	He	354.660	394.067	0.38	119634	1.06	1000000	
K	39	45	He	862.255	958.061	0.91	655080	0.03	500000	
Ca	44	45	He	4304.803	4783.114	1.05	161992	0.70	500000	
Ti	47	45	He	45.088	50.098	2.37	10980	1.63	10000	
V	51	45	He	44.759	49.732	0.99	360816	0.22	10000	
Cr	52	45	He	42.541	47.268	1.08	427868	0.90	10000	
Mn	55	45	He	43.484	48.316	1.11	250970	0.44	50000	
Fe	56	45	He	182.074	202.304	0.31	1644821	0.73	1000000	
Co	59	45	He	41.207	45.785	0.55	675893	0.27	10000	
Ni	60	45	He	41.528	46.142	0.16	183406	0.87	10000	
Cu	63	45	He	40.752	45.280	1.15	505407	0.40	10000	
Zn	66	115	He	78.910	87.678	0.22	166079	0.55	50000	
As	75	115	He	41.137	45.708	1.71	55618	1.29	2000	
Se	78	72	H2	39.201	43.557	1.85	16556	1.56	10000	
Se	78	115	He	40.932	45.480	2.25	3518	1.69	10000	
Sr	88	115	NoGas	44.397	49.330	2.86	2481330	2.28	50000	
Mo	95	115	NoGas	44.451	49.390	1.63	472326	0.98	10000	
Ag	107	115	NoGas	16.983	18.870	1.62	487505	1.18	5000	
Cd	111	115	He	8.109	9.010	1.27	23590	1.76	10000	
Sn	118	115	He	44.025	48.917	0.71	260560	0.98	10000	
Sn	118	115	NoGas	43.320	48.134	0.63	730980	1.22	10000	
Sb	121	115	NoGas	46.709	51.899	0.79	991651	1.02	10000	
Ba	137	165	NoGas	43.206	48.007	1.40	361222	1.45	50000	
Tl	205	165	NoGas	43.505	48.339	2.35	2172249	0.77	5000	
Pb	208	165	NoGas	42.214	46.905	1.98	2894580	1.47	50000	

QC ISTD Table

Name	Mass	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li	6	NoGas	271457	1.79	220533	123.09	70	120	ISTD Failed
Sc	45	H2	359489	1.58	326687	110.04	70	120	
Sc	45	He	114987	0.78	104972	109.54	70	120	
Sc	45	NoGas	1800685	0.91	1736910	103.67	70	120	
Ge	72	H2	94939	1.03	85628	110.87	70	120	
Ge	72	He	77636	1.07	70468	110.17	70	120	
Ge	72	NoGas	395933	0.91	393798	100.54	70	120	
In	115	H2	2022434	0.83	1929299	104.83	70	120	
In	115	He	707026	0.51	657120	107.59	70	120	
In	115	NoGas	2572422	1.03	2471241	104.09	70	120	
Tb	159	H2	3734772	1.38	3605350	103.59	70	120	
Tb	159	He	2257329	0.63	2090834	107.96	70	120	
Tb	159	NoGas	3464681	1.51	3296947	105.09	70	120	
Ho	165	H2	3617018	0.78	3502263	103.28	70	120	
Ho	165	He	2246039	0.16	2044408	109.86	70	120	
Ho	165	NoGas	3364226	1.67	3179403	105.81	70	120	

Matrix Spike Recoveries

METALS

APPL ID: **150119S-09552 MS - 193784**

Sample ID: AZ09552

Client ID: EKB100008

APPL Inc.
908 North Temperance Avenue
Clovis, CA 93611

Method	Compound Name	Spike Lvl mg/Kg	Matrix Res mg/Kg	SPK Res mg/Kg	DUP Res mg/Kg	SPK % Recovery	DUP % Recovery	RPD	RPD Max	Recovery Limits	Extract Date-Spk	Analysis Date-Spk	Extract Date-Dup	Analysis Date-Dup	QC Group	QC Sample
EPA 6020A	LEAD (PB)	50.0	0.24	44.2	42.6	87.9	84.7	3.7	20	80-120	01/19/15	01/24/15	01/19/15	01/24/15	193784	AZ09552

Comments: _____

Printed: 01/28/15 12:50:50 PM
APPL MSD SCII

Sample Report

Sample Table

Sample Name	AZ09552S11 MS 1/10
Data File Name	115SMPL.d
Data Path Name	K:\ICP-MS Megatron\Data\150123D.b
Acq Date Time	2015-01-24T00:02:01-08:00
Sample Type	Sample
Dilution	1
Comment	
ISTD Ref FileName	001CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	ISTD Mass	Tune Mode	Conc	FinalConc	Conc %RSD	CPS	%RSD	LDR	QC Flag
Be	9	45	NoGas	8.959	8.959	2.30	46923	0.68	10000	
B	11	45	NoGas	68.553	68.553	1.81	277024	1.73	10000	
Na	23	45	He	5871.384	5871.384	1.74	7207890	1.95	1000000	
Mg	24	45	He	11251.794	11251.794	1.45	7312017	0.73	1000000	
Al	27	45	He	4679.142	4679.142	1.54	1273209	0.82	1000000	
K	39	45	He	1049.444	1049.444	0.91	632147	1.05	500000	
Ca	44	45	He	177524.872	177524.872	0.78	5412270	0.66	500000	
Ti	47	45	He	504.403	504.403	0.57	99610	0.72	10000	
V	51	45	He	60.071	60.071	0.58	392598	0.67	10000	
Cr	52	45	He	62.829	62.829	1.51	512084	1.51	10000	
Mn	55	45	He	160.533	160.533	1.23	750391	0.54	50000	
Fe	56	45	He	6225.280	6225.280	1.68	44631632	1.03	1000000	
Co	59	45	He	44.401	44.401	1.12	590890	0.37	10000	
Ni	60	45	He	54.012	54.012	0.61	193494	0.25	10000	
Cu	63	45	He	48.547	48.547	0.91	487818	1.30	10000	
Zn	66	115	He	92.170	92.170	0.58	158449	1.15	50000	
As	75	115	He	46.338	46.338	1.78	51194	1.83	2000	
Se	78	72	H2	45.761	45.761	2.16	14246	0.35	10000	
Se	78	115	He	43.845	43.845	2.63	3076	2.21	10000	
Sr	88	115	NoGas	2624.581	2624.581	2.85	135201135	1.83	50000	
Mo	95	115	NoGas	44.982	44.982	0.80	440682	0.72	10000	
Ag	107	115	NoGas	17.168	17.168	0.39	454381	0.81	5000	
Cd	111	115	He	8.951	8.951	0.43	21279	1.32	10000	
Sn	118	115	He	47.357	47.357	0.65	229013	1.16	10000	
Sn	118	115	NoGas	45.390	45.390	0.82	706020	0.74	10000	
Sb	121	115	NoGas	51.940	51.940	0.36	1016479	1.16	10000	
Ba	137	165	NoGas	49.182	49.182	2.35	391772	2.16	50000	
Tl	205	165	NoGas	44.733	44.733	2.51	2128849	3.09	5000	
Pb	208	165	NoGas	44.162	44.162	1.43	2885412	1.49	50000	

QC ISTD Table

Name	Mass	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li	6	NoGas	195701	1.61	220533	88.74	70	120	
Sc	45	H2	287424	2.38	326687	87.98	70	120	
Sc	45	He	93302	0.75	104972	88.88	70	120	
Sc	45	NoGas	1661472	1.69	1736910	95.66	70	120	
Ge	72	H2	69998	1.84	85628	81.75	70	120	
Ge	72	He	62672	0.10	70468	88.94	70	120	
Ge	72	NoGas	366597	1.57	393798	93.09	70	120	
In	115	H2	1697418	1.70	1929299	87.98	70	120	
In	115	He	577808	0.91	657120	87.93	70	120	
In	115	NoGas	2371674	1.01	2471241	95.97	70	120	
Tb	159	H2	3405056	1.07	3605350	94.44	70	120	
Tb	159	He	1982353	0.96	2090834	94.81	70	120	
Tb	159	NoGas	3326799	0.88	3296947	100.91	70	120	
Ho	165	H2	3299706	1.18	3502263	94.22	70	120	
Ho	165	He	1998081	1.37	2044408	97.73	70	120	
Ho	165	NoGas	3205415	0.78	3179403	100.82	70	120	

Sample Report

Sample Table

Sample Name	AZ09552S11 MSD 1/10
Data File Name	116SMPL.d
Data Path Name	K:\ICP-MS Megatron\Data\150123D.b
Acq Date Time	2015-01-24T00:08:02-08:00
Sample Type	Sample
Dilution	1
Comment	
ISTD Ref FileName	001CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	ISTD Mass	Tune Mode	Conc	FinalConc	Conc %RSD	CPS	%RSD	LDR	QC Flag
Be	9	45	NoGas	8.730	8.730	0.72	45857	0.60	10000	
B	11	45	NoGas	69.280	69.280	0.95	280566	1.25	10000	
Na	23	45	He	5872.607	5872.607	3.41	7217845	1.97	1000000	
Mg	24	45	He	11683.631	11683.631	0.55	7604131	0.91	1000000	
Al	27	45	He	5087.460	5087.460	1.59	1386228	0.20	1000000	
K	39	45	He	1049.858	1049.858	0.84	633275	0.72	500000	
Ca	44	45	He	182080.404	182080.404	1.62	5559150	1.51	500000	
Ti	47	45	He	565.597	565.597	0.85	111865	1.88	10000	
V	51	45	He	60.369	60.369	1.69	395075	0.26	10000	
Cr	52	45	He	64.178	64.178	1.61	523759	0.36	10000	
Mn	55	45	He	175.067	175.067	2.04	819398	0.62	50000	
Fe	56	45	He	7062.486	7062.486	1.01	50705552	0.83	1000000	
Co	59	45	He	44.008	44.008	0.91	586520	0.55	10000	
Ni	60	45	He	54.826	54.826	1.35	196680	0.17	10000	
Cu	63	45	He	48.556	48.556	1.62	488561	0.62	10000	
Zn	66	115	He	90.283	90.283	1.51	155887	0.72	50000	
As	75	115	He	45.434	45.434	2.09	50413	1.31	2000	
Se	78	72	H2	44.713	44.713	1.94	14011	2.01	10000	
Se	78	115	He	43.940	43.940	1.56	3096	2.35	10000	
Sr	88	115	NoGas	2640.199	2640.199	1.79	136672545	0.63	50000	
Mo	95	115	NoGas	44.768	44.768	1.23	440714	1.14	10000	
Ag	107	115	NoGas	16.739	16.739	0.97	445158	1.13	5000	
Cd	111	115	He	8.714	8.714	1.84	20804	0.99	10000	
Sn	118	115	He	46.509	46.509	0.96	225903	0.73	10000	
Sn	118	115	NoGas	44.856	44.856	1.73	701055	0.34	10000	
Sb	121	115	NoGas	50.926	50.926	1.73	1001349	0.39	10000	
Ba	137	165	NoGas	49.087	49.087	0.56	393473	0.85	50000	
Tl	205	165	NoGas	43.980	43.980	0.78	2105862	0.62	5000	
Pb	208	165	NoGas	42.558	42.558	1.62	2797876	0.48	50000	

QC ISTD Table

Name	Mass	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li	6	NoGas	196551	1.19	220533	89.13	70	120	
Sc	45	H2	290238	0.50	326687	88.84	70	120	
Sc	45	He	93442	1.42	104972	89.02	70	120	
Sc	45	NoGas	1665982	1.26	1736910	95.92	70	120	
Ge	72	H2	70438	0.25	85628	82.26	70	120	
Ge	72	He	62631	1.48	70468	88.88	70	120	
Ge	72	NoGas	367960	0.18	393798	93.44	70	120	
In	115	H2	1688040	1.65	1929299	87.49	70	120	
In	115	He	580356	0.87	657120	88.32	70	120	
In	115	NoGas	2383349	1.88	2471241	96.44	70	120	
Tb	159	H2	3399140	0.32	3605350	94.28	70	120	
Tb	159	He	1990399	1.48	2090834	95.20	70	120	
Tb	159	NoGas	3300283	1.68	3296947	100.10	70	120	
Ho	165	H2	3307565	0.74	3502263	94.44	70	120	
Ho	165	He	1978367	2.21	2044408	96.77	70	120	
Ho	165	NoGas	3225574	1.32	3179403	101.45	70	120	

Matrix Spike Recoveries

METALS

APPL ID: **150121W-09554 MS - 193781**

Sample ID: AZ09554

Client ID: EKB100010

APPL Inc.
908 North Temperance Avenue
Clovis, CA 93611

Method	Compound Name	Spike Lvl ug/L	Matrix Res ug/L	SPK Res ug/L	DUP Res ug/L	SPK % Recovery	DUP % Recovery	RPD	RPD Max	Recovery Limits	Extract Date-Spk	Analysis Date-Spk	Extract Date-Dup	Analysis Date-Dup	QC Group	QC Sample
EPA 6020A	LEAD (PB)	50.0	ND	48.6	48.3	97.2	96.6	0.6	20	80-120	01/21/15	01/23/15	01/21/15	01/23/15	193781	AZ09554

Comments: _____

Sample Report

Sample Table

Sample Name	AZ09554W08 MS
Data File Name	077SMPL.d
Data Path Name	K:\ICP-MS Megatron\Data\150123D.b
Acq Date Time	2015-01-23T20:13:08-08:00
Sample Type	Sample
Dilution	1.111111111
Comment	
ISTD Ref FileName	001CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Fail

QC Analyte Table

Name	Mass	ISTD Mass	Tune Mode	Conc	FinalConc	Conc %RSD	CPS	%RSD	LDR	QC Flag
Be	9	45	NoGas	9.314	10.349	1.54	52911	1.60	10000	
B	11	45	NoGas	64.658	71.843	1.28	284396	1.07	10000	
Na	23	45	He	4517.611	5019.568	2.84	6716868	2.27	1000000	
Mg	24	45	He	4419.369	4910.410	1.81	3467212	1.05	1000000	
Al	27	45	He	377.599	419.554	0.68	124698	0.47	1000000	
K	39	45	He	893.134	992.371	1.05	661624	0.12	500000	
Ca	44	45	He	4495.595	4995.106	0.87	165681	0.56	500000	
Ti	47	45	He	45.118	50.131	3.07	10761	2.48	10000	
V	51	45	He	45.550	50.611	0.51	359641	1.24	10000	
Cr	52	45	He	43.844	48.715	1.06	431848	1.02	10000	
Mn	55	45	He	43.944	48.826	1.41	248397	1.00	50000	
Fe	56	45	He	181.136	201.262	1.44	1602777	0.88	1000000	
Co	59	45	He	42.003	46.670	2.20	674725	1.65	10000	
Ni	60	45	He	42.401	47.112	1.21	183393	0.51	10000	
Cu	63	45	He	41.839	46.488	1.40	508073	0.56	10000	
Zn	66	115	He	79.871	88.746	1.97	165110	0.95	50000	
As	75	115	He	41.336	45.929	1.37	54899	0.23	2000	
Se	78	72	H2	40.825	45.361	2.05	16642	1.75	10000	
Se	78	115	He	41.415	46.017	1.39	3496	1.82	10000	
Sr	88	115	NoGas	44.472	49.414	2.28	2500272	1.76	50000	
Mo	95	115	NoGas	44.753	49.725	2.20	478292	0.98	10000	
Ag	107	115	NoGas	17.041	18.935	2.50	492031	2.00	5000	
Cd	111	115	He	8.260	9.178	1.93	23601	0.76	10000	
Sn	118	115	He	44.830	49.812	1.19	260617	0.49	10000	
Sn	118	115	NoGas	43.382	48.203	1.34	736272	0.43	10000	
Sb	121	115	NoGas	46.072	51.191	0.52	983954	1.27	10000	
Ba	137	165	NoGas	44.538	49.486	0.04	367901	0.75	50000	
Tl	205	165	NoGas	44.513	49.459	1.44	2196316	1.07	5000	
Pb	208	165	NoGas	43.780	48.645	0.37	2966171	0.78	50000	

QC ISTD Table

Name	Mass	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li	6	NoGas	266069	1.04	220533	120.65	70	120	ISTD Failed
Sc	45	H2	347775	0.47	326687	106.46	70	120	
Sc	45	He	112621	0.84	104972	107.29	70	120	
Sc	45	NoGas	1801827	0.25	1736910	103.74	70	120	
Ge	72	H2	91632	0.42	85628	107.01	70	120	
Ge	72	He	75991	0.77	70468	107.84	70	120	
Ge	72	NoGas	392744	0.80	393798	99.73	70	120	
In	115	H2	2030179	1.29	1929299	105.23	70	120	
In	115	He	694574	1.22	657120	105.70	70	120	
In	115	NoGas	2587656	1.40	2471241	104.71	70	120	
Tb	159	H2	3683869	0.11	3605350	102.18	70	120	
Tb	159	He	2213393	0.71	2090834	105.86	70	120	
Tb	159	NoGas	3451585	1.53	3296947	104.69	70	120	
Ho	165	H2	3562590	0.66	3502263	101.72	70	120	
Ho	165	He	2193504	1.48	2044408	107.29	70	120	
Ho	165	NoGas	3323743	0.74	3179403	104.54	70	120	

Sample Report

Sample Table

Sample Name	AZ09554W08 MSD
Data File Name	078SMPL.d
Data Path Name	K:\ICP-MS Megatron\Data\150123D.b
Acq Date Time	2015-01-23T20:19:10-08:00
Sample Type	Sample
Dilution	1.111111111
Comment	
ISTD Ref FileName	001CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	ISTD Mass	Tune Mode	Conc	FinalConc	Conc %RSD	CPS	%RSD	LDR	QC Flag
Be	9	45	NoGas	9.426	10.473	2.27	52233	1.74	10000	
B	11	45	NoGas	65.848	73.165	2.58	282164	0.70	10000	
Na	23	45	He	4609.039	5121.154	1.46	6733348	1.17	1000000	
Mg	24	45	He	4505.036	5005.596	1.02	3473880	1.14	1000000	
Al	27	45	He	383.070	425.633	1.63	124317	1.46	1000000	
K	39	45	He	912.978	1014.420	0.16	662912	0.41	500000	
Ca	44	45	He	4566.300	5073.667	0.89	165388	0.71	500000	
Ti	47	45	He	45.985	51.094	2.29	10780	2.20	10000	
V	51	45	He	46.505	51.673	1.34	360820	1.13	10000	
Cr	52	45	He	44.517	49.464	0.89	430906	0.62	10000	
Mn	55	45	He	45.517	50.574	1.25	252843	0.98	50000	
Fe	56	45	He	191.042	212.269	2.98	1659391	2.67	1000000	
Co	59	45	He	42.709	47.454	0.67	674293	0.40	10000	
Ni	60	45	He	43.780	48.644	1.40	186096	1.24	10000	
Cu	63	45	He	42.807	47.563	0.17	510807	0.19	10000	
Zn	66	115	He	79.844	88.716	0.94	165895	1.05	50000	
As	75	115	He	41.420	46.022	1.96	55282	0.94	2000	
Se	78	72	H2	41.079	45.643	1.15	16680	1.64	10000	
Se	78	115	He	41.486	46.095	2.67	3519	1.65	10000	
Sr	88	115	NoGas	45.891	50.990	1.98	2480811	1.55	50000	
Mo	95	115	NoGas	46.063	51.181	0.90	473398	1.03	10000	
Ag	107	115	NoGas	17.241	19.157	1.16	478696	0.99	5000	
Cd	111	115	He	8.254	9.171	0.55	23705	1.67	10000	
Sn	118	115	He	45.094	50.105	0.19	263478	1.22	10000	
Sn	118	115	NoGas	44.527	49.474	1.59	726589	1.12	10000	
Sb	121	115	NoGas	47.916	53.240	0.56	983851	0.71	10000	
Ba	137	165	NoGas	44.273	49.193	0.43	361045	0.08	50000	
Tl	205	165	NoGas	45.394	50.438	0.98	2211269	1.05	5000	
Pb	208	165	NoGas	43.481	48.312	0.88	2908239	0.41	50000	

QC ISTD Table

Name	Mass	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li	6	NoGas	262588	1.95	220533	119.07	70	120	
Sc	45	H2	345914	1.46	326687	105.89	70	120	
Sc	45	He	110681	0.27	104972	105.44	70	120	
Sc	45	NoGas	1757937	2.11	1736910	101.21	70	120	
Ge	72	H2	91271	1.10	85628	106.59	70	120	
Ge	72	He	75514	1.10	70468	107.16	70	120	
Ge	72	NoGas	384748	0.94	393798	97.70	70	120	
In	115	H2	1974366	2.94	1929299	102.34	70	120	
In	115	He	698032	1.12	657120	106.23	70	120	
In	115	NoGas	2488008	0.71	2471241	100.68	70	120	
Tb	159	H2	3643584	0.66	3605350	101.06	70	120	
Tb	159	He	2191087	0.71	2090834	104.79	70	120	
Tb	159	NoGas	3395794	0.52	3296947	103.00	70	120	
Ho	165	H2	3539008	0.56	3502263	101.05	70	120	
Ho	165	He	2212952	0.23	2044408	108.24	70	120	
Ho	165	NoGas	3281320	0.47	3179403	103.21	70	120	

US EPA Tune Check Sample Report

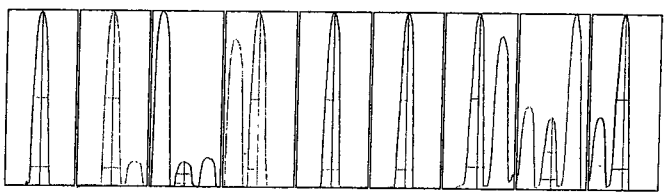
Batch Folder K:\ICP-MS Megatron\Data\150123A.b
Report Comment C:\Agilent\ICPMH\Report Templates\en\Letter\Tune Report\New and Improved 200_8TuneCheckSampleReport.xltx
Instrument Name G3281A JP12101628

[NoGas]

Mass	Count (Mean)	RSD% (Actual)	RSD% (Required)	RSD% (Flag)
9	908686	0.65	5.00	
24	352191036	0.73	5.00	
25	48696522	0.48	5.00	
26	56840995	0.71	5.00	
59	65079746	0.73	5.00	
115	89550461	0.79	5.00	
206	20295652	0.49	5.00	
207	18064920	0.60	5.00	
208	42809301	0.75	5.00	

Mass	Replicate 1 Count	Replicate 2 Count	Replicate 3 Count	Replicate 4 Count	Replicate 5 Count
9	901702	910464	905205	908579	917481
24	350797703	350345869	356230505	353257374	350323729
25	48464999	48578210	48916385	48547894	48975123
26	56203069	57023688	57100048	57187913	56690255
59	64677323	65194613	64602220	65144959	65779615
115	90032084	88862418	89289899	89040968	90526936
206	20399876	20298596	20149997	20258945	20370846
207	18078660	18002598	17999260	17996315	18247769
208	42779491	43173125	42680718	42360059	43053109

Integration Time [sec] = 0.1



Mass	Peak Height	Axis (Actual)	Axis (Required)	Axis (Flag)	Width-X% (Actual)	Width-X% (Required)	Width-X% (Flag)
9	144526	9.00	8.9 - 9.1		0.774	0.900	
24	56583089	24.00	23.9 - 24.1		0.768	0.900	
25	7798747	25.00	24.9 - 25.1		0.746	0.900	
26	9239375	26.00	25.9 - 26.1		0.764	0.900	
59	10884311	59.00	58.9 - 59.1		0.728	0.900	
115	15713652	115.00	114.9 - 115.1		0.730	0.900	
206	3694148	206.00	205.9 - 206.1		0.728	0.900	
207	3224970	207.00	206.9 - 207.1		0.723	0.900	
208	7851623	208.00	207.9 - 208.1		0.735	0.900	

X% = 10 **Integration Time [sec] =** 0.1 **Acquisition Time [sec] =** 235 **Y Axis =** Linear

Tune Parameters

Plasma Paramters

ParameterName	Value	Unit	ParameterName	Value	Unit	ParameterName	Value	Unit
RF Power	1600	W	Carrier Gas	0.46	L/min			
RF Matching	2.50	V	Option Gas	0.0	%			
Smpl Depth	8.0	mm	Nebulizer Pump	0.10	rps			
S/C Temp	2	°C						

Lenses Parameters

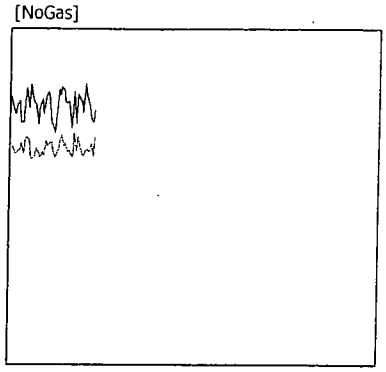
ParameterName	Value	Unit	ParameterName	Value	Unit	ParameterName	Value	Unit
Extract 1	0.0	V	Omega Lens	10.0	V			
Extract 2	-200.0	V	Cell Entrance	-30	V			
Omega Bias	-85	V	Cell Exit	-50	V			
Deflect	10.2	V						

Cell Parameters

ParameterName	Value	Unit	ParameterName	Value	Unit	ParameterName	Value	Unit
Use Gas	false		3rd Gas Flow	0	%			
He Flow	0.0	mL/min	OctP Bias	-8.0	V			
H2 Flow	0.0	mL/min	OctP RF	190	V			
Energy Discrimination	5.1	V						

Current Signal

[NoGas]



Mass	Range	Count	Avg. Count	RSD [%]
7	2000	1513	1543.6	5.00
59	5000	4427	4316.4	4.21
89	10000	6737	6416.3	3.23
140	10000	6505	6350.8	3.26
205	5000	4237	4357.2	3.74
156/140	1	0.569 %	0.648 %	18.61
70/140	10	5.934 %	6.456 %	8.87

Integration Time [sec] 0.10

Plasma Parameters

RF Power	1600	W	Carrier Gas	0.46	L/min
RF Matching	2.50	V	Option Gas	0.0	%
Smpl Depth	8.0	mm	Nebulizer Pump	0.10	rps
S/C Temp	2	°C			

Lenses Parameters

Extract 1	0.0	V	Omega Lens	10.0	V
Extract 2	-200.0	V	Cell Entrance	-30	V
Omega Bias	-85	V	Cell Exit	-50	V
Deflect	10.2	V			

Cell Parameters

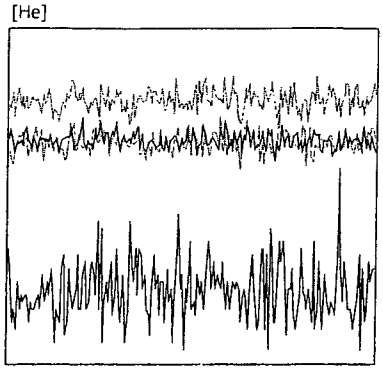
Use Gas	false		3rd Gas Flow	0	%
He Flow	0.0	mL/min	OctP Bias	-8.0	V
H2 Flow	0.0	mL/min	OctP RF	190	V
Energy Discrimination	5.1	V			

Meters

IF/BK Press	2.40E+2	Pa	TMP Revolution	100.0	%
Analyzer Press	2.34E-4	Pa	Reflected Power	78	W
Forward Power	1601	W			

Current Signal

[He]



Mass	Range	Count	Avg. Count	RSD [%]
59	2000	1606	1572.3	4.07
89	2000	1299	1313.2	4.60
140	5000	3329	3374.4	3.70
205	5000	3147	3321.5	3.59
156/140	1	0.060 %	0.229 %	44.39
75	50	14	10.8	39.85
78	50	2	6.8	52.47
Integration Time [sec]		0.10		

Plasma Parameters

RF Power	1600	W	Carrier Gas	0.46	L/min
RF Matching	2.50	V	Option Gas	0.0	%
Smpl Depth	8.0	mm	Nebulizer Pump	0.10	rps
S/C Temp	2	°C			

Lenses Parameters

Extract 1	0.0	V	Omega Lens	10.0	V
Extract 2	-200.0	V	Cell Entrance	-40	V
Omega Bias	-85	V	Cell Exit	-60	V
Deflect	1.0	V			

Cell Parameters

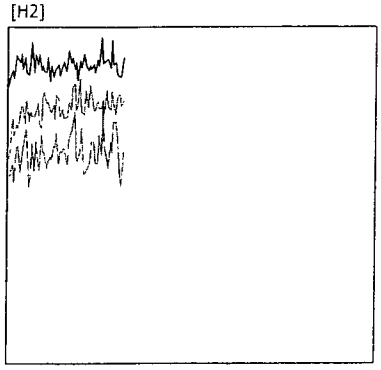
Use Gas	true		3rd Gas Flow	0	%
He Flow	3.9	mL/min	OctP Bias	-19.0	V
H2 Flow	0.0	mL/min	OctP RF	190	V
Energy Discrimination	5.0	V			

Meters

IF/BK Press	2.41E+2	Pa	TMP Revolution	100.0	%
Analyzer Press	3.39E-4	Pa	Reflected Power	80	W
Forward Power	1599	W			

Current Signal

[H2]



Mass	Range	Count	Avg. Count	RSD [%]
59	500	315	311.2	8.56
89	5000	3913	3781.3	5.76
140	2000	1447	1332.7	6.94
205	5000	4551	4441.9	3.23
56	20000	16500	15952.1	6.30
78	20	0	0.5	186.06
80	200	171	143.3	11.46

Integration Time [sec] 0.10

Plasma Parameters

RF Power	1600	W	Carrier Gas	0.46	L/min
RF Matching	2.50	V	Option Gas	0.0	%
Smpl Depth	8.0	mm	Nebulizer Pump	0.10	rps
S/C Temp	2	°C			

Lenses Parameters

Extract 1	0.0	V	Omega Lens	10.0	V
Extract 2	-200.0	V	Cell Entrance	-30	V
Omega Bias	-85	V	Cell Exit	-60	V
Deflect	-2.2	V			

Cell Parameters

Use Gas	true		3rd Gas Flow	0	%
He Flow	0.0	mL/min	OctP Bias	-18.0	V
H2 Flow	6.0	mL/min	OctP RF	190	V
Energy Discrimination	3.0	V			

Meters

IF/BK Press	2.52E+2	Pa	TMP Revolution	100.0	%
Analyzer Press	1.14E-3	Pa	Reflected Power	80	W
Forward Power	1599	W			

01/22/15

1.1% STANNOUS CHLORIDE
11g SnCl2 EMD Lot #B1006939-348
30 mL HCl BDH Lot #87003 253
Brought to 1000 mL with DI Water
Prep. Date 01/23/15
Exp. Date 01/23/16
By RE

01/22/15

01/22/15

3% HCl
30 mL of HCL in 1000 mL of DI H2O
Prep Date: 01/22/15
Exp Date: 01/22/16
Prepared by: RE
Lot# HCL: BDH 87003 253

01/22/15

01/23/15
0/200.8
A

ICP-MS STANDARDS Prep'd by: SJH
Prep Date: Today
Expires: 1 week

Prep 1% HNO3/1.0%HCL
20 mL HNO3 / 2000 mL DI Water
Lot #
20 mL HCL / 2000mL Di Water
Lot #

Internal Standard Mix: Prep 01/13/15

Standard 4

Amount	STD	Manufacturer	Lot #
50 uL	CCV-A	ENV EXPRESS	1331823-33166
50 uL	CCV-B	ENV EXPRESS	1331824-33167
50 uL	CCV-C	ENV EXPRESS	1331825-33168

Prepared in 100 mL of 1% HNO3/1.0% HCL

Standard 3
Amount STD
25 mL Standard 4
Prepared in 50 mL of 1% HNO3/1 0% HCL

Standard 2
Amount STD
500 uL Standard 4
Prepared in 50 mL of 1% HNO3/1.0% HCL

Standard 1
Amount STD
50 uL Standard 4
Prepared in 50 mL of 1% HNO3/1.0% HCL

ICP-MS ICV

Amount	STD		
50 uL	QCS ICV A	CPI	13I145-32869
50 uL	QCS ICV B	CPI	13I145-32870

Prepared in 50 mL of 1% HNO3/1.0% HCL

ICSA Prep:
1 mL ICSA-DF2 O2SI 1053467-33165
Prepared in 10 mL of 1% HNO3/1.0% HCL

ICSAB Prep:
1mL ICSA CPI 12J143-33110
100uL INT - DF10 O2SI 1054694-33223
Prepared in 10 mL of 1% HNO3/1.0% HCL

Second Source As:
25 uL Metals Mix #2 AbsoluteGrade 161613-33063
Prepared in 100 mL of 1% HNO3/ 1% HCl

01/23/15

01/23/15

Hg WORKING STANDARDS 7470A/7471/245.1

Hg WORKING STD	1ml 10ug/ml Hg STOCK STD. and 2mL HNO3 EMD LOT#54181 3180 to final vol 200mL with milipore water	01/14/15	exp:	02/11/15 final conc: 50ug/L expires daily
Hg WORKING ICV	1ml 10ug/ml Hg STOCK ICV and 2mL HNO3 EMD LOT#54181 3180 to final vol 200mL with milipore water	01/14/15	exp:	02/11/15 final conc: 50ug/L expires daily

01/23/15

01/23/15

1.1% STANNOUS CHLORIDE
11g SnCl2 EMD Lot #B1006939-348
30 mL HCl BDH Lot #87003 253
Brought to 1000 mL with DI Water
Prep. Date 01/22/15
Exp. Date 01/22/16
By RE

01/23/15

RE 1/12/15

KMnO4 Sigma Aldrich	**Lot #** MKBR0982	**DATE:**	1/12/15
KMnO4		**EXP:**	1/12/16
		PREP BY:	RE
Procedure: Add 200g KMnO4 to 4000mL DI H2O.			

RE 1/12/15

1/12/15 RE ~~1/15~~ REO

1:1 HCl	**Lot #** BDH 4114070-3188	**DATE:**	1/12/15
HCl		**EXP:**	1/12/16
Procedure: Add 500mL HCl to 500mL DI H2O		**PREP BY:**	NM

RE 1/12/15

RE 1/12/15

1:1 HNO3	**Lot #** 54181-3180	**DATE:**	1/12/15
HNO3 # EMD		**EXP:**	1/12/16
Procedure: Add 500mL HNO3 to 500mL DI H2O		**PREP BY:**	NM

RE 1/12/15

RE 1/12/15

Hg WORKING STANDARDS 7470A/7471/245.1				
Hg WORKING STD	1ml 10ug/ml Hg STOCK STD. and 2mL HNO3 JT Baker LOT#50770 to final vol 200mL with milipore water	12/16/14	exp: 01/13/15	final conc: 50ug/L expires daily
Hg WORKING ICV	1ml 10ug/ml Hg STOCK ICV and 2mL HNO3 JT Baker LOT#50770 to final vol 200mL with milipore water	12/16/14	exp: 01/13/15	final conc: 50ug/L expires daily

RE 1/12/15

RE 1/12/15

1.1% STANNOUS CHLORIDE

11g SnCl2 EMD Lot #B1006939-348
30 mL HCl BDH Lot #4114070
Brought to 1000 mL with DI Water
Prep. Date 01/12/15
Exp. Date 01/12/16
By RE

RE 1/12/15

RE 1/12/15

3% HCL

30 mL of HCL in 1000 mL of DI H2O

Prep Date: 01/12/15
Exp Date: 01/12/16
Prepared by: RE
Lot# HCL: BDH 4114070

SJH 1/13/15

Internal Standard Concentration

Amt	STD	Element	Vendor	Lot#	Final Conc. in Std	Expires
50uL	1001 ug/mL	Li	BDH	F2-L102140-33279	200 ug/L	02/01/15
125uL	1000 ug/mL	Sc	o2si	1051538-32901	500ug/L	03/30/15
125uL	1000 ug/mL	Ge	CPI	14H207-34125	500ug/L	04/07/14
125uL	1000 ug/mL	In	CPI	13H191-32872	500ug/L	03/20/15
125uL	1000 ug/mL	Tb	CPI	13J004-33038	500ug/L	04/15/15
125uL	1000 ug/mL	Ho	CPI	13G236-32873	500ug/L	03/20/15

Prep:	01/13/15	By: SJH	Prep in - 1%HNO3/1.0%HCL: Final Volume: 250mL
Expires:	02/11/15		

SJH 1/13/15

Metals Digestion Worksheet

Method Name 3050B Digestion **Prep Method** M3050alt **Set** 150119A **Units** mL

Spikes			
Spiked ID 1	LCSW LOT# 1068928-34553		
Spiked ID 2	LCSW LOT# 1069074-34554		
Spiked ID 3			
Spiked ID 4			
Spiked By	NM	Date:	01/19/15 9:33:00 AM
Witnessed By	RJS	Date:	01/19/15 9:33:00 AM

Starting Temp:	95 c
Ending Temp:	95 c
Temperature Type:	Mod Block
Sufficient Vol for Matrix QC:	Yes
End Date/Time	01/19/15 12:15

	Sample	Sample Container	Spike Amount	Spike ID	Digested Amount	Final Volume	Start Date/Time	Comments
1	150119A Blk				1.00g	100mL	01/19/15 9:33	equip: Modblock4
2	150119A LCS		1mL	1+2	1.00g	100mL	01/19/15 9:33	equip: Modblock4
3	AZ09478	AZ09478S01			0.99g	100mL	01/19/15 9:33	equip: Modblock4
4	AZ09478 DUP	AZ09478S01			0.99g	100mL	01/19/15 9:33	equip: Modblock4
5	AZ09478 MS	AZ09478S01	2mL	1+2	0.99g	100mL	01/19/15 9:33	equip: Modblock4
6	AZ09545	AZ09545S04			1.04g	100mL	01/19/15 9:33	equip: Modblock4
7	AZ09546	AZ09546S04			1.05g	100mL	01/19/15 9:33	equip: Modblock4
8	AZ09547	AZ09547S04			1.01g	100mL	01/19/15 9:33	equip: Modblock4
9	AZ09548	AZ09548S04			1.04g	100mL	01/19/15 9:33	equip: Modblock4
10	AZ09549	AZ09549S04			1.00g	100mL	01/19/15 9:33	equip: Modblock4
11	AZ09550	AZ09550S04			0.96g	100mL	01/19/15 9:33	equip: Modblock4
12	AZ09551	AZ09551S04			1.03g	100mL	01/19/15 9:33	equip: Modblock4
13	AZ09552	AZ09552S11			1.00g	100mL	01/19/15 9:33	equip: Modblock4
14	AZ09552 MS	AZ09552S11	2mL	1+2	1.00g	100mL	01/19/15 9:33	equip: Modblock4
15	AZ09552 MSD	AZ09552S11	2mL	1+2	1.00g	100mL	01/19/15 9:33	equip: Modblock4

Solvent and Lot#
1:1 HNO3 NA
HNO3 E.M.D#54181 3177
H2O2 EMD na
HCL BDH 4114070 3191

Sample COC Transfer	
Sample prep employee Initials	nm
Analyst's initials	SJH
Date	1/19/15
Time	16:10
Moved to	metals

Technician's Initials	
Scanned By	nm
Sample Preparation	nm
Digestion	nm
Bring up to volume	nm
Modified	01/19/15 10:57:55 AM

Reviewed By: SJH **Date:** 1/19/15

_M3015

Metals Digestion Worksheet

Method Name 3015 Digestion **Prep Method** M3015 **Set** 150121A **Units** mL

Spikes			
Spiked ID 1	LCSW LOT#1068928-34553		
Spiked ID 2	LCSW LOT#1069074-34554		
Spiked ID 3			
Spiked ID 4			
Spiked By	NM	Date:	01/21/15 9:32:00 AM
Witnessed By	RJS	Date:	01/21/15 9:32:00 AM

Starting Temp:	16 c
Ending Temp:	170 c
Temperature Type:	Microwave
Sufficient Vol for Matrix QC:	Yes
End Date/Time	01/21/15 10:35

	Sample	Sample Container	Spike Amount	Spike ID	Digested Amount	Final Volume	Start Date/Time	Comments
1	150121A Blk				45mL	50mL	01/21/15 9:32	equip: MultiWave
2	150121A LCS		90uL	1+2	45mL	50mL	01/21/15 9:32	equip: MultiWave
3	AZ09553	AZ09553W08			45mL	50mL	01/21/15 9:32	equip: MultiWave
4	AZ09554	AZ09554W08			45mL	50mL	01/21/15 9:32	equip: MultiWave
5	AZ09554 MS	AZ09554W08	90uL	1+2	45mL	50mL	01/21/15 9:32	equip: MultiWave
6	AZ09554 MSD	AZ09554W08	90uL	1+2	45mL	50mL	01/21/15 9:32	equip: MultiWave
7	AZ09733 FF	AZ09733W01			45mL	50mL	01/21/15 9:32	equip: MultiWave FIELD FILTER
8	AZ09735	AZ09735W06			45mL	50mL	01/21/15 9:32	equip: MultiWave
9	AZ09736	AZ09736W06			45mL	50mL	01/21/15 9:32	equip: MultiWave
10	AZ09811	AZ09811W04			45mL	50mL	01/21/15 9:32	equip: MultiWave
11	AZ09811 DUP	AZ09811W04			45mL	50mL	01/21/15 9:32	equip: MultiWave
12	AZ09811 MS	AZ09811W04	90uL	1+2	45mL	50mL	01/21/15 9:32	equip: MultiWave
13	AZ09863	AZ09863W03			45mL	50mL	01/21/15 9:32	equip: MultiWave
14	AZ09864	AZ09864W03			45mL	50mL	01/21/15 9:32	equip: MultiWave
15	AZ09866	AZ09866W06			45mL	50mL	01/21/15 9:32	equip: MultiWave

Solvent and Lot#
HNO3 E.M.D 54181 3177

Sample COC Transfer	
Sample prep employee Initials	nm
Analyst's initials	STH
Date	1/21/15
Time	15:50
Moved to	Metals

Technician's Initials	
Scanned By	nm
Sample Preparation	nm
Digestion	nm
Bring up to volume	nm
Modified	01/21/15 8:56:43 AM

Reviewed By: STH **Date:** 1/21/15

593

6020/200.8 Injection Log

Directory: K:\ICP-MS Megatron\raw data output csv\

RunID	Injected		Sample Name	Misc Info	FileName	Multiplier
1	23 Jan 2015	12:35	Calibration Blank		150123D	1.
2	23 Jan 2015	12:41	Standard 1		150123D	1.
3	23 Jan 2015	12:47	Standard 2		150123D	1.
4	23 Jan 2015	12:53	Standard 3		150123D	1.
5	23 Jan 2015	12:59	Standard 4		150123D	1.
6	23 Jan 2015	13:05	ICV		150123D	1.
8	23 Jan 2015	13:23	ICB		150123D	1.
12	23 Jan 2015	13:47	CCV		150123D	1.
13	23 Jan 2015	13:59	CCB		150123D	1.
14	23 Jan 2015	14:05	ICSA		150123D	1.
15	23 Jan 2015	14:17	ICSAB		150123D	1.
56	23 Jan 2015	19:25	CCV		150123D	1.
57	23 Jan 2015	19:37	CCB		150123D	1.
58	23 Jan 2015	19:43	150121A BLK		150123D	1.
59	23 Jan 2015	19:49	150121A LCS		150123D	1.
60	23 Jan 2015	20:01	AZ09553W08		150123D	1.
61	23 Jan 2015	20:07	AZ09554W08		150123D	1.
62	23 Jan 2015	20:13	AZ09554W08 MS		150123D	1.
63	23 Jan 2015	20:19	AZ09554W08 MSD		150123D	1.
64	23 Jan 2015	20:25	AZ09554W08-A		150123D	1.
65	23 Jan 2015	20:31	AZ09554W08 1/5		150123D	5.
77	23 Jan 2015	21:43	CCV		150123D	1.
78	23 Jan 2015	21:55	CCB		150123D	1.
81	23 Jan 2015	22:25	150119A BLK		150123D	1.
82	23 Jan 2015	22:31	150119A LCS		150123D	1.
88	23 Jan 2015	23:13	AZ09545S04 1/10		150123D	10.
89	23 Jan 2015	23:19	AZ09546S04 1/10		150123D	10.
90	23 Jan 2015	23:25	AZ09547S04 1/10		150123D	10.
91	23 Jan 2015	23:31	AZ09548S04 1/10		150123D	10.
92	23 Jan 2015	23:37	AZ09549S04 1/10		150123D	10.
93	23 Jan 2015	23:43	AZ09550S04 1/10		150123D	10.
94	23 Jan 2015	23:49	AZ09551S04 1/10		150123D	10.
95	23 Jan 2015	23:55	AZ09552S11 1/10		150123D	10.
96	24 Jan 2015	00:02	AZ09552S11 MS 1/10		150123D	10.
97	24 Jan 2015	00:08	AZ09552S11 MSD 1/10		150123D	10.
98	24 Jan 2015	00:14	AZ09552S11-A 1/10		150123D	10.
99	24 Jan 2015	00:20	AZ09552S11 1/50		150123D	50.
100	24 Jan 2015	00:26	CCV		150123D	1.
101	24 Jan 2015	00:38	CCB		150123D	1.

Wetlab Results

ARF: 75351

APPL Inc.
908 North Temperance Avenue
Clovis, CA 93611

Element Environmental
98-030 Hekaha St., Unit 9
Aiea, HI 96701

Attn: Steve Spengler

Method	Analyte	Result	RL	MDL	Units	Prep Date	Analysis Date
APPL ID: AZ09545	-Client Sample ID: EKB100001		-Sample Collection Date: 01/13/15			Project: MCBH UST KB-100 SI /	
CLP MOIST	MOISTURE	29.7	2.0		%	01/22/15	01/23/15
APPL ID: AZ09546	-Client Sample ID: EKB100002		-Sample Collection Date: 01/13/15			Project: MCBH UST KB-100 SI /	
CLP MOIST	MOISTURE	32.8	2.0		%	01/22/15	01/23/15
APPL ID: AZ09547	-Client Sample ID: EKB100003		-Sample Collection Date: 01/13/15			Project: MCBH UST KB-100 SI /	
CLP MOIST	MOISTURE	39.1	2.0		%	01/22/15	01/23/15
APPL ID: AZ09548	-Client Sample ID: EKB100004		-Sample Collection Date: 01/13/15			Project: MCBH UST KB-100 SI /	
CLP MOIST	MOISTURE	32.7	2.0		%	01/22/15	01/23/15
APPL ID: AZ09549	-Client Sample ID: EKB100005		-Sample Collection Date: 01/13/15			Project: MCBH UST KB-100 SI /	
CLP MOIST	MOISTURE	27.7	2.0		%	01/22/15	01/23/15
APPL ID: AZ09550	-Client Sample ID: EKB100006		-Sample Collection Date: 01/13/15			Project: MCBH UST KB-100 SI /	
CLP MOIST	MOISTURE	22.0	2.0		%	01/22/15	01/23/15
APPL ID: AZ09551	-Client Sample ID: EKB100007		-Sample Collection Date: 01/13/15			Project: MCBH UST KB-100 SI /	
CLP MOIST	MOISTURE	33.6	2.0		%	01/22/15	01/23/15
APPL ID: AZ09552	-Client Sample ID: EKB100008		-Sample Collection Date: 01/13/15			Project: MCBH UST KB-100 SI /	
CLP MOIST	MOISTURE	34.6	2.0		%	01/22/15	01/23/15

Printed: 01/27/15 8:51:34 AM

WETLAB

Sample/Sample Duplicate Results

Element Environmental
98-030 Hekaha St., Unit 9
Aiea, HI 96701

Attn: Steve Spengler

Project: MCBH UST KB-100 SI / 130034

Sample ID: AZ09552
Client ID: EKB100008

APPL Inc.
908 North Temperance Avenu
Clovis, CA 93611

ARF: 75351

Method	Analyte	Sample ID	Sample Result	Sample Dup Result	RPD	RPD Max	MDL	PQL	Units	Sample Extract Date	Sample Analysis Date	Sample Dup Extract Date	Sample Dup Analysis Date
CLP MOIST	MOISTURE	AZ09552	34.6	38.1	9.6	20		2.0	%	01/22/15	01/23/15	01/22/15	01/23/15

Printed: 01/27/15 8:51:30 AM

Dup-SCII (NoMC)

% Moisture

Batch: QCG 150122-M005583

Method: CLP 4.0

Date: 01/22/15 15:52

Sample	Container	Pan (g)	Pan+Wet (g)	Pan+Dry 1 (g)	Pan+Dry 2 (g)	Moisture (%)	Comments
AZ09739		0.8310 01/22/15 15:52	7.4717 01/22/15 15:53	6.5508 01/23/15 12:13	6.5508 01/23/15 12:13	13.868	AZ09739S04
AZ09738		0.8268 01/22/15 15:51	8.5574 01/22/15 15:52	7.7350 01/23/15 12:13	7.7350 01/23/15 12:13	10.638	AZ09738S04
AZ09552D		0.8238 01/22/15 15:50	9.3520 01/22/15 15:50	6.0986 01/23/15 12:13	6.0987	38.148	AZ09552S11
AZ09552		0.8311 01/22/15 15:49	9.0532 01/22/15 15:49	6.2084 01/23/15 12:12	6.2084	34.599	AZ09552S11
AZ09551		0.8178 01/22/15 15:47	9.1109 01/22/15 15:48	6.3238 01/23/15 12:12	6.3238	33.607	AZ09551S04
AZ09550		0.8150 01/22/15 15:46	8.8087 01/22/15 15:47	7.0500 01/23/15 12:11	7.0499	22.002	AZ09550S04
AZ09549		0.8272 01/22/15 15:45	8.2223 01/22/15 15:46	6.1711 01/23/15 12:11	6.1712	27.736	AZ09549S04
AZ09548		0.8185 01/22/15 15:44	9.4212 01/22/15 15:45	6.6083 01/23/15 12:11	6.6083 01/23/15 12:11	32.698	AZ09548S04
AZ09547		0.8161 01/22/15 15:43	7.5455 01/22/15 15:44	4.9124 01/23/15 12:11	4.9125	39.127	AZ09547S04
AZ09546		0.8215 01/22/15 15:42	7.8858 01/22/15 15:43	5.5652	5.5658 01/23/15 12:10	32.841	AZ09546S04
AZ09545		0.8144 01/22/15 15:40	8.2529 01/22/15 15:42	6.0417 01/23/15 12:09	6.0417 01/23/15 12:10	29.726	AZ09545S04

Date/Time InOven@104°C	Date/Time OutOven@104°C	Date/Time InOven@104°C	Date/Time OutOven@104°C
01/22/15 3:53:00 PM			01/23/15 12:09:00 PM

Date	Initials	Balance	Weight	Reading	Lower Limit	Upper Limit	Comments / Is the Bubble Centered?
1/21/15	BB	Mettler AT200	0.5g	0.4999 g	0.4995	0.5005	yes
		Mettler AT200	1g	1.0001 g	0.9990	1.0010	
		Mettler AT200	20g	19.9998 g	19.9800	20.0200	
		Mettler AT200	50g	49.9990 g	49.9500	50.0500	
		Mettler AT200	100g	99.9968 g	99.9000	100.1000	
		Mettler AT200	150g	149.9958 g	149.8500	150.1500	
		OHAUS ARC120	0.1g	0.10 g	0.08	0.12	
		OHAUS ARC120	0.5g	0.50 g	0.48	0.52	
		OHAUS ARC120	1g	1.00 g	0.98	1.02	
		OHAUS ARC120	100g	100.00 g	98.00	102.00	
		OHAUS ARC120	1kg	1000.00 g	980.00	1020.00	
		OHAUS ARC120	2kg	2000.01 g	1960.00	2040.00	
1/22/15	BB						yes
		Mettler AT200	0.5g	0.5001 g	0.4995	0.5005	
		Mettler AT200	1g	1.0002 g	0.9990	1.0010	
		Mettler AT200	20g	19.9998 g	19.9800	20.0200	
		Mettler AT200	50g	49.9990 g	49.9500	50.0500	
		Mettler AT200	100g	99.9971 g	99.9000	100.1000	
		Mettler AT200	150g	149.9963 g	149.8500	150.1500	
		OHAUS ARC120	0.1g	0.10 g	0.08	0.12	
		OHAUS ARC120	0.5g	0.50 g	0.48	0.52	
		OHAUS ARC120	1g	1.00 g	0.98	1.02	
		OHAUS ARC120	100g	100.00 g	98.00	102.00	
		OHAUS ARC120	1kg	1000.00 g	980.00	1020.00	
		OHAUS ARC120	2kg	1999.98 g	1960.00	2040.00	
1/23/15	AP	Mettler AT200	0.5g	0.4998 g	0.4995	0.5005	yes
		Mettler AT200	1g	0.9994 g	0.9990	1.0010	
		Mettler AT200	20g	19.9990 g	19 9800	20.0200	
		Mettler AT200	50g	49.9986 g	49.9500	50.0500	
		Mettler AT200	100g	99.9976 g	99.9000	100.1000	
		Mettler AT200	150g	149.9969 g	149.8500	150.1500	
		OHAUS ARC120	0.1g	0.10 g	0.08	0.12	yes
		OHAUS ARC120	0.5g	0.50 g	0.48	0.52	
		OHAUS ARC120	1g	1.00 g	0.98	1.02	
		OHAUS ARC120	100g	100.00 g	98.00	102.00	
		OHAUS ARC120	1kg	1000.00 g	980.00	1020.00	
		OHAUS ARC120	2kg	1999.98 g	1960.00	2040.00	
1/24/15	BB						yes
		Mettler AT200	0.5g	0.5000 g	0.4995	0.5005	
		Mettler AT200	1g	1.0001 g	0.9990	1.0010	
		Mettler AT200	20g	19.9998 g	19.9800	20.0200	
		Mettler AT200	50g	49.9990 g	49.9500	50.0500	
		Mettler AT200	100g	99.9979 g	99.9000	100.1000	
		Mettler AT200	150g	149.9970 g	149.8500	150.1500	
		OHAUS ARC120	0.1g	0.10 g	0.08	0.12	
		OHAUS ARC120	0.5g	0.50 g	0.48	0.52	
		OHAUS ARC120	1g	1.00 g	0.98	1.02	
		OHAUS ARC120	100g	100.00 g	98.00	102.00	
		OHAUS ARC120	1kg	999.99 g	980.00	1020.00	
		OHAUS ARC120	2kg	2000.00 g	1960.00	2040.00	

908 North Temperance Ave. ∇ Clovis, CA 93611 ∇ Phone 559-275-2175 ∇ Fax 559-275-4422

Certification Number: CA1312
NELAP Certification number: CA00046
DoD-ELAP Certificate number: 74807

Data Validatable Report

February 9, 2015

Element Environmental
98-030 Hekaha Street, Unit 9
Aiea, Hawaii 96701

Attn: Steve Spengler

Title: Report of Data: Case 75427

Project: MCBH Motor Pool UST KB-100 SI / 130034

Contract #: Prime contract # for DoD: Not stated
Subcontract: 130034

Dear Mr. Spengler:

Fourteen water samples were received January 23, 2015, in good condition. Written results for the requested analyses are provided on this February 9, 2015.

Results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

If you have any questions or require further information, please contact your APPL Project Manager, Cynthia Clark, cclark@applinc.com, at your convenience. Thank you for choosing APPL, Inc.

I certify that this data package is in compliance with the terms and conditions of the contract, both technically and for completeness, for other than the conditions detailed above. These test results meet all requirements of NELAC and DoD QSM. Release of the hard copy has been authorized by the Laboratory Manager or her designee, as verified by the following signature.

Sharon Dehmlow, Laboratory Director
APPL, Inc.

SD/ab
Enclosure
cc: File

Number of pages in this report: 459

Data Validation Package
for
MCBH Motor Pool UST KB-100 SI / 130034

ARF 75427

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SAMPLE RECEIPT INFORMATION

Sample receipt information

ARF: 75427

Project: MCBH Motor Pool UST KB-100 SI / 130034

Sample Receipt Information:

The samples were received on January 23, 2015, at 3.0°C, 3.0°C, 3.0°C, and 2.5°C. The sample group was assigned Analytical Request Form (ARF) number 75427. The sample numbers and requested analyses were compared to the chain of custody. No exception was encountered.

Sample Table

CLIENT ID	APPL ID	Matrix	Date Sampled	Date Received
EKB100011	AZ09997	WATER	01/20/15	01/23/15
EKB100012	AZ09998	WATER	01/20/15	01/23/15
EKB100013	AZ09999	WATER	01/20/15	01/23/15
EKB100014	AZ10000	WATER	01/20/15	01/23/15
EKB100015	AZ10001	WATER	01/20/15	01/23/15
EKB100016	AZ10002	WATER	01/20/15	01/23/15
EKB100017	AZ10003	WATER	01/20/15	01/23/15
EKB100018	AZ10004	WATER	01/20/15	01/23/15
EKB100019	AZ10005	WATER	01/20/15	01/23/15
EKB100020	AZ10006	WATER	01/20/15	01/23/15
EKB100021	AZ10007	WATER	01/20/15	01/23/15
Trip Blank - 02	AZ10008	WATER	01/22/15	01/23/15
Trip Blank - 03	AZ10009	WATER	01/22/15	01/23/15
Trip Blank - 04	AZ10010	WATER	01/22/15	01/23/15

The samples and blanks were screened for J-value responses between the detection limit (DL) and limit of quantitation (LOQ).

APPL's laboratory control limits generated in house statistically do not meet the control limits listed in DoD QSM 4.2 for all analytes. Laboratory control spike recoveries for this project meet all control limits listed in the DoD QSM 4.2 except where noted. A copy of our in house generated control limits is available upon request. In addition, a copy of our LOQ control limits, established using 7 data points, are also available upon request.

Only the portion of the injection log relative to these samples is included. A full sequence log is available upon request.

Measurement uncertainty can be reported upon request.

CASE NARRATIVE

EPA Method 8015C

Total Petroleum Hydrocarbons – DRO and LRO

Sample Preparation:

The water samples were extracted according to EPA method 3510C. The samples were extracted within holding time.

Sample Analysis Information:

The samples were analyzed according to the method using an Agilent Gas Chromatograph with a flame ionization detector.

Quality Control/Assurance

Calibrations:

Initial and continuing calibrations were performed according to the method. All calibration criteria were met.

Blanks:

No target compound was detected at or above one-half the LOQ in the method blanks.

Spikes:

A Laboratory Control Spike (LCS) was used for quality assurance. All spike recovery acceptance criteria were met.

Sample EKB100020 was designated by the client for MS/MSD analysis. All spike recoveries were acceptable.

Surrogates

Surrogate recoveries are summarized on the Form 2&8. All surrogate recoveries were within the control limits.

Summary:

No analytical exception was encountered. All data generated are acceptable.

EPA Method 8260B
Volatile Organic Compounds

Sample Preparation:

The water samples were purged according to EPA method 5030B.

Sample Analysis Information:

The samples were analyzed according to the EPA method 8260B using an Agilent Gas Chromatograph with a mass spectrometer detector. The samples were received in unpreserved vials; they were analyzed within seven days of collection. All holding times were met.

Quality Control/Assurance:

Calibrations:

Initial and continuing calibrations were performed according to the method. All calibration criteria were met.

Blanks:

No target analyte was detected above one half the LOQ in the method blanks.

Spikes:

Laboratory Control Spikes (LCS) were used for quality assurance. All LCS acceptance criteria were met.

Samples EKB100020 was designated by the client for MS/MSD analysis. Cis-1,2-Dichloroethene recovered below the lower control limit of 70% at 37.0% and 41.0% in the MS/MSD. All other spike recoveries were acceptable.

Surrogates:

Surrogate recoveries are summarized on Form 2 & 8. All surrogate recoveries were within the control limits.

Tuning:

The instrument was tuned using BFB. All method criteria were met.

Internal Standards:

The internal standard area counts were compared to the mid-point of the initial calibration according to method 8260. All method criteria were met.

Summary:

No other analytical exception was encountered. The data generated are acceptable.

EPA Method 6020A
Lead

Digestion Information:

The water samples were digested according to EPA method 3015. All holding times were met

Analysis Information:

Samples:

The samples were analyzed for lead according to EPA method 6020A using an Agilent 7500cx ICP-MS.

Calibrations:

Calibrations were performed according to the methods with no deviations for the initial calibration and the initial calibration verification. The initial calibration verification is prepared from a second source standard. All method criteria were met.

Blanks:

No target metal was detected above one-half the LOQ in the method blank.

Spikes:

Laboratory Control Spike (LCS), matrix spikes (MS/MSD), serial dilution test (DT), and post digestion spike (PDS) were used for quality assurance. All LCS acceptance criteria were met.

Samples EKB100020 was designated by the client for MS/MSD analysis. The DT was not applicable. MS/MSD and PDS recoveries were acceptable.

Internal Standards:

All method acceptance criteria were met in the internal standards.

Summary:

No analytical exception was noted.

APPL Inc.
Abbreviations and Flags

FLAG	DESCRIPTION
#	Recovery or RPD outside control limits
*	Recovery or RPD outside control limits
B	Analyte detected in associated method blank
C1	Reason for correction: wrote incorrect response
C2	Reason for correction: calculated incorrectly
C3	Reason for correction: needs to be rechecked
C4	Reason for correction: data not usable
DO	Diluted out
E	Exceeds linear range
F	Estimated value
G1	Includes a wide range of hydrocarbons which does not match our gasoline standard
G10	Includes a match to hydrocarbon profiles within the range of mineral spirits
G11	Includes a match to hydrocarbon profiles within the range of JP-4
G12	Pattern does not match the gasoline standard; the carbon range for this sample is consistent with JP8
G13	Closely resembles the hydrocarbon profile of aviation gasoline
G14	Analyte concentration may be biased due to carry over
G2	Closely resembles the boiling point hydrocarbon profile consistent with weathered gasoline
G3	Includes higher boiling hydrocarbons
G4	Includes dominant peak(s) not indicative of petroleum hydrocarbons
G5	Is mainly dominant peak(s) not indicative of petroleum hydrocarbons
G6	Contains recognizable contaminant peak(s) which has been removed from quantitation
G7	Is mainly a match to hydrocarbons within the range of gasoline
G8	Closely resembles the boiling point hydrocarbon profile consistent with weathered gasoline
G9	Includes hydrocarbons within the range of kerosene
J	Estimated value
M	Matrix effect
MI1	Manual integration: integration does not follow baseline
MI2	Manual integration: non-target peak interference
MI3	Manual integration: to split a peak that was integrated as one peak by the computer.
MI4	Manual integration: to integrate a split peak
MI5	Manual integration: the whole peak or part of the peak was not integrated
MI6	Manual integration: computer integrated wrong peak
MI7	Manual integration: other – (See case narrative)
MDL	Method detection limit
ND	Not detected
NT	Non-target
Q	Acceptance criteria not met
T1 I	Includes wide range of hydrocarbons not indicative of diesel
T1 M	Is mainly wide range of hydrocarbons not necessarily indicative of diesel
T2 I	Includes lower boiling hydrocarbons, i.e. mineral spirits, kerosene, stoddard solvent, white gas
T2 M	Is mainly lower boiling hydrocarbons, i.e. mineral spirits, kerosene, stoddard solvent, white gas
T3 I	Includes higher boiling hydrocarbons, i.e. asphaltene, waster oil, motor oil, or weathered diesel fuel
T3 M	Is mainly higher boiling hydrocarbons, i.e. asphaltene, waster oil, motor oil, or weathered diesel fuel
T4 I	Includes dominant peak(s) not indicative of hydrocarbons
T4 M	Is mainly dominant peak(s) not indicative of hydrocarbons
T5	Contains recognizable contaminant peak(s) which has been removed from quantitation
T6	Is mainly a match to hydrocarbons within range of diesel fuel
T7	Closely resembles the boiling point hydrocarbon profile consistent with diesel fuel
T8	Includes a match to hydrocarbon profiles within range of diesel and kerosene fuel
T9 I	Includes non-diesel hydrocarbons within boiling point range of diesel fuel
T9 M	Is mainly non-diesel hydrocarbons within boiling point range of diesel fuel
U	Not detected
Y	Percent difference between primary and confirmation column > 40%

CHAIN OF CUSTODY,

ARF, CRF, AND

CLIENT COMMUNICATION

APPL - Analysis Request Form

75427

Client: Element Environmental
Address: 98-030 Hekaha St., Unit 9
Aiea, HI 96701
Attn: Steve Spengler
Phone: 808-7284617 Fax: 808-488-1300
Job: MCBH Motor Pool UST KB-100 SI / 130034
PO #: 130034
Chain of Custody (Y/N): Y # 012115a,b
RAD Screen (Y/N): Y pH (Y/N): Y
Turn Around Type: 14 DAYS

Received by: YL
Date Received: 01/23/15 Time: 08:50
Delivered by: FED EX
Shuttle Custody Seals (Y/N): Y Time Zone: -10
Chest Temp(s): 3X3.0°C,2.5°C
Color: VOA,E-Brn,O-OrgGrn
Samples Chilled until Placed in Refrig/Freezer: Y
Project Manager: Cynthia Clark
QC Report Type: DVP4/NEDD/HI
Due Date: 02/06/15

Comments:
login to sspengler@e2hi.com & mheskett@e2hi.com
1 hard copy to LDC, 1 labeled CD to Steve
Guidance: DOD QSM v4.2; use DOD forms LOQ/LOD database/DL

EDD: NEDD/NIRIS and APPL Excel to sspengler@ mheskett@e2hi.com & akong@lab-data.com

Sample Distribution:
GC: 11-$DROWCT008
Extractions: 11-_SEP011
VOA: 14-$86BKB91W
Metals: 11-$62A14W(Pb)
Other: 11-_M3015

Charges:

Invoice To:

	Client ID	APPL ID	Sampled	Analyses Requested
1.	EKB100011	AZ09997W	01/20/15 08:45	$62A14W(Pb), $86BKB91W, $DROWCT008 -- Non-Preserved VOA
2.	EKB100012	AZ09998W	01/20/15 09:38	$62A14W(Pb), $86BKB91W, $DROWCT008 -- Non-Preserved VOA
3.	EKB100013	AZ09999W	01/20/15 10:08	$62A14W(Pb), $86BKB91W, $DROWCT008 -- Non-Preserved VOA
4.	EKB100014	AZ10000W	01/20/15 10:20	$62A14W(Pb), $86BKB91W, $DROWCT008 -- Non-Preserved VOA

Note: All times, excluding sample collection times, are Pacific Time Zone unless noted otherwise. Collection times are in: -10 UTC

5.	EKB100015		AZ10001W	01/20/15 10:45	$62A14W(Pb), $86BKB91W, $DROWCT008 -- Non-Preserved VOA
6.	EKB100016		AZ10002W	01/20/15 11:15	$62A14W(Pb), $86BKB91W, $DROWCT008 -- Non-Preserved VOA
7.	EKB100017		AZ10003W	01/20/15 11:50	$62A14W(Pb), $86BKB91W, $DROWCT008 -- Non-Preserved VOA
8.	EKB100018		AZ10004W	01/20/15 12:30	$62A14W(Pb), $86BKB91W, $DROWCT008 -- Non-Preserved VOA
9.	EKB100019		AZ10005W	01/20/15 13:45	$62A14W(Pb), $86BKB91W, $DROWCT008 -- Non-Preserved VOA
10.	EKB100020	ms/msd	AZ10006W	01/20/15 14:45	$62A14W(Pb), $86BKB91W, $DROWCT008 -- Non-Preserved VOA
11.	EKB100021		AZ10007W	01/20/15 15:00	$62A14W(Pb), $86BKB91W, $DROWCT008 -- Non-Preserved VOA
12.	Trip Blank - 02		AZ10008W	01/22/15 00:01	$86BKB91W -- Non-Preserved VOA
13.	Trip Blank - 03		AZ10009W	01/22/15 00:01	$86BKB91W -- Non-Preserved VOA
14.	Trip Blank - 04		AZ10010W	01/22/15 00:01	$86BKB91W -- Non-Preserved VOA

APPL Sample Receipt Form

ARF# **75427**

Sample	Container Type	Count	pH
AZ09997	6 PL 500mL - HNO3	1	1.7
	15 VOAs - NP	3	na
	17 Amber Liter	2	na
AZ09998	6 PL 500mL - HNO3	1	1.7
	15 VOAs - NP	2	na
	17 Amber Liter	2	na
AZ09999	6 PL 500mL - HNO3	1	1.7
	15 VOAs - NP	3	na
	17 Amber Liter	2	na
AZ10000	6 PL 500mL - HNO3	1	1.7
	15 VOAs - NP	3	na
	17 Amber Liter	2	na
AZ10001	6 PL 500mL - HNO3	1	1.7
	15 VOAs - NP	3	na
	17 Amber Liter	2	na
AZ10002	6 PL 500mL - HNO3	1	1.7
	15 VOAs - NP	3	na
	17 Amber Liter	2	na
AZ10003	6 PL 500mL - HNO3	1	1.7
	15 VOAs - NP	3	na
	17 Amber Liter	2	na
AZ10004	6 PL 500mL - HNO3	1	1.7
	15 VOAs - NP	3	na
	17 Amber Liter	2	na
AZ10005	6 PL 500mL - HNO3	1	1.7
	15 VOAs - NP	3	na
	17 Amber Liter	2	na
AZ10006	6 PL 500mL - HNO3	3	1.7
	15 VOAs - NP	9	na
	17 Amber Liter	6	na
AZ10007	6 PL 500mL - HNO3	1	1.7
	15 VOAs - NP	3	na
	17 Amber Liter	2	na
AZ10008	15 VOAs - NP	2	na
AZ10009	15 VOAs - NP	2	na
AZ10010	15 VOAs - NP	2	na

Sample	Container Type	Count	pH

~~75440~~ 1/23/15
75427

3.0
3.0
2.5
3.0

ELECTRONIC CHAIN OF CUSTODY RECORD

APPL, Inc. Phone: (559) 275-2175

908 N Temperance Ave, Clovis, CA 93611 Fax: (559) 275-4422

C.O.C.

Report to: PLEASE PRINT
Company Name: Element Environmental LLC Phone: 808-864-3953 Address: 98-030 Hekaha St, Unit 9
Aiea HI 96701 Fax: 808-488-1300
Attn: Steve Spengler Email: sspengler@e2hi.com

Invoice to: PLEASE PRINT
Company Name: Element Environmental LLC Phone: 808-864-3953 Address: 98-030 Hekaha St, Unit 9
Aiea HI 96701 Fax: 808-488-1300
Attn: Steve Spengler Email: sspengler@e2hi.com

Project Name/Number: MCBH Motor Pool UST KB-100
Purchase Order Number: 130034
Sampler (Print): Austin Lutey
Sampler (Signature):

Date Shipped: 1-21-15
Carrier: FedEx
Tracking No.:
Comments:

Sample Identification	Location	Date Collected	Time Collected	Time Zone	No. of Containers	Matrix: Aq	Sed.	Soil		TPH-DRO-8015B	TPH-RRO-8015B	VOCs-8260B	TOTAL LEAD-6020								
EKB100011	TW-1	1/20/2015	8:45	HST	6	X				X	X	X	X								
EKB100012	TW-2	1/20/2015	9:38	HST	6	X				X	X	X	X								
EKB100013	TW-6	1/20/2015	10:08	HST	6	X				X	X	X	X								
EKB100014	TW-6	1/20/2015	10:20	HST	6	X				X	X	X	X								
EKB100015	TW-3	1/20/2015	10:45	HST	6	X				X	X	X	X								
EKB100016	TW-7	1/20/2015	11:15	HST	6	X				X	X	X	X								
EKB100017	TW-5	1/20/2015	11:50	HST	6	X				X	X	X	X								
EKB100018	TW-4	1/20/2015	12:30	HST	6	X				X	X	X	X								
EKB100019	KB-100-1	1/20/2015	13:45	HST	6	X				X	X	X	X								
EKB100020 (MS/MSD)	KB-100-2	1/20/2015	14:45	HST	18	X				X	X	X	X								
EKB100021	Rinseate	1/20/2015	15:00	HST	6	X				X	X	X	X								

Shuttle Temperature:

Turnaround Requested: Check one
Standard 2-3 wk One week 24/48 Hrs. Other

Sample Disposal:
Return to client Disposal by Lab (30-day retention)

Relinquished by sampler:	Date	Time	Received by:	Relinquished by:	Date	Time	Received by:
AUSTIN LUTEY	1/21/15	1400					

Relinquished by:	Date	Time	Received by:	Relinquished by:	Date	Time	Received at lab by:
					1/23/15	08:50	Yang

Note: The first sampled date of the ARF will be used as the COC number unless indicated otherwise.

ELECTRONIC CHAIN OF CUSTODY RECORD

APPL, Inc. Phone: (559) 275-2175

908 N Temperance Ave, Clovis, CA 93611 Fax: (559) 275-4422 C.O.C.

Report to: PLEASE PRINT
Company Name: Element Environmental LLC Phone: 808-864-3953 Address: 98-030 Hekaha St, Unit 9
Aiea HI 96701 Fax: 808-488-1300
Attn: Steve Spengler Email: sspengler@e2hi.com

Invoice to: PLEASE PRINT
Company Name: Element Environmental LLC Phone: 808-864-3953 Address: 98-030 Hekaha St, Unit 9
Aiea HI 96701 Fax: 808-488-1300
Attn: Steve Spengler Email: sspengler@e2hi.com

Project Name/Number: MCBH Motor Pool UST KB-100
Purchase Order Number: 130034
Sampler (Print): Austin Lutey
Sampler (Signature):

Date Shipped: 1-21-15
Carrier: FedEx
Tracking No.:
Comments:

Sample Identification	Location	Date Collected	Time Collected	Time Zone	No. of Containers	Matrix: Aq	Sed.	Soil		TPH-DRO-8015B	TPH-RRO-8015B	VOCs-8260B	TOTAL LEAD-6020								
Trip Blank - 02	Trip Blank	-	-	-	2	X						X									
Trip Blank - 03	Trip Blank	-	-	-	2	X						X									
Trip Blank - 04	Trip Blank	-	-	-	2	X						X									

Shuttle Temperature:

Turnaround Requested: Check one: Standard 2-3 wk One week 24/48 Hrs. Other

Sample Disposal: Return to client Disposal by Lab (30-day retention)

Relinquished by:	Date	Time	Received by:	Relinquished by:	Date	Time	Received by:
Austin Lutey	1/21/15	1400					
Relinquished by:	Date	Time	Received by:	Relinquished by:	Date	Time	Received at lab by:
					1/23/15	08:50	Yang

Note: The first sampled date of the ARF will be used as the COC number unless indicated otherwise.

COOLER RECEIPT FORM **ARF: 75427**

1) Project: MCBH Motor Pool UST KB-100 SI / 130034 Date Received: 01/22/15

2) Coolers: Number of Coolers: 4

3) YES Were custody seals present and intact?
How many? 8 Name/Date on seal? see below

4) YES Was there a shipping slip? Carrier name: FED EX

5) Type of packing in cooler: X bubble wrap __popcorn __foam __plastic bags __wet ice __dry ice __no ice X other

6) YES Were cooler temperatures acceptable?

7) Serial number of certified NIST thermometer use J5297

8) Cooler temp(s): In °C
1: 3.0 2: 3.0 3: 3.0 4: 2.5 5: 6:
7: 8: 9: 10: 11: 12:

Chain of custody:

9) YES Was a chain of custody received?

10) YES Were the custody papers complete/signed in the appropriate places?

Sample Labels:

11) YES Were all sample labels complete (sample ID, date/time of sampling, etc.)?

12) YES Did all container labels agree with custody papers?

Sample Containers:

13) YES Were all containers sealed in separate bags?

14) BB YES/NO Did all containers arrive in good condition:(unbroken, no leakage, no cracked/broken lids)?

15) 1-23-15 YES Were correct containers and preservatives used for the tests indicated?

16) YES Was a sufficient amount of sample sent for tests indicated?

17) No Were bubbles present in volatile samples?
If yes, the following were received with air bubbles:
Larger than a pea:
Smaller than a pea:

Preservation Hold time:

18) Yes Was a sufficient amount of holding time remaining to analyze the samples?

19) Yes Was the pH taken of all non-VOA preserved samples and written on the sample container?

20) Yes Was the pH of acid preserved non-VOA samples < 2?

21) NA Was the pH of sodium hydroxide preserved samples for Cyanide > 12 and Sulfide >9?

22) Yes Were unpreserved VOA Vials received?

23) Yes Are unpreserved VOA vials noted in the ADD TEST FIELD on the ARF?
pH strip lot number: 90B05
Lab notified if pH was not adequate:

CUSTODY SEAL
Initials A.L.
Date: 1/23/15

Notes/Deficiencies:
SAMPLE EKB100012 CAME IN WITH ONE BROKEN VOA. RECEIVED ~~COOLERS~~ Samples IN GEL ICE.
YL 1/23/15

Personnel receiving samples: BB Second reviewer: YL
Personnel labeling samples:
Project manager notified: Date/Time of notification
Name of client notified: Date/Time of notification

EPA 8015 Modified
Total Petroleum Hydrocarbons

EPA 8015 Modified
Total Petroleum Hydrocarbons
QC Summary

Method Blank
TPH-d Water EPA 8015C

APPL Inc.
908 North Temperance Avenu
Clovis, CA 93611

Blank Name/QCG: **150126W-10006 - 194107**
Batch ID: #DROWC-150126A1

Sample Type	Analyte	Result	LOQ	LOD	DL	Units	Extraction Date	Analysis Date
BLANK	TPH-DRO (C10-C24)	50.0 U	150	50.0	40.4	ug/L	1/26/2015	1/29/2015
BLANK	TPH-LRO (C24-C36)	500.0 U	500	500.0	106.0	ug/L	1/26/2015	1/29/2015
BLANK	SURROGATE: OCTACOSANE (S)	113	28-142			%	1/26/2015	1/29/2015
BLANK	SURROGATE: ORTHO-TERPHEN	83.9	57-132			%	1/26/2015	1/29/2015

Quant Method:CTO121.M
Run #:127122
Instrument:Apollo
Sequence:150127
Initials:LA

GC SC-Blank-REG MDLs
Printed: 2/9/2015 9:32:03 AM

Form 2 & 8

Surrogate Recovery

Lab Name: APPL, Inc. SDG No: 75427

Case No: 75427 Date Analyzed: 1/29/2015

Matrix: WATER Instrument: Apollo

APPL ID.	Client Sample No.	SURROGATE: OCTACOSANE (S)			SURROGATE: ORTHO-TERPHENYL (S)		
		Limits	Result	Qualifier	Limits	Result	Qualifier
150126A1-BLK	Blank	28-142	113		57-132	83.9	
150126A1-LCS	Lab Control Spike	28-142	103		57-132	91.3	
AZ09997	EKB100011	28-142	92.5		57-132	67.9	
AZ09998	EKB100012	28-142	101		57-132	74.4	
AZ09999	EKB100013	28-142	96.9		57-132	70.9	
AZ10000	EKB100014	28-142	101		57-132	74.1	
AZ10001	EKB100015	28-142	105		57-132	75.9	
AZ10002	EKB100016	28-142	94.0		57-132	70.6	
AZ10003	EKB100017	28-142	98.8		57-132	73.0	
AZ10004	EKB100018	28-142	97.8		57-132	72.8	
AZ10005	EKB100019	28-142	114		57-132	84.1	
AZ10006-MSD	Matrix SpikeD	28-142	108		57-132	94.0	
AZ10006-MS	Matrix Spike	28-142	121		57-132	74.0	
AZ10006	EKB100020	28-142	110		57-132	82.0	
AZ10007	EKB100021	28-142	109		57-132	81.7	

Comments: Batch: #DROWC-150126A

Laboratory Control Spike Recovery
TPH-d Water EPA 8015C

APPL ID: **150126W-10006 LCS - 194107**
Batch ID: #DROWC-150126A1

APPL Inc.
908 North Temperance Avenue
Clovis, CA 93611

Compound Name	Spike Level ug/L	SPK Result ug/L	SPK % Recovery	Recovery Limits
TPH-DRO (C10-C24)	2000	1810	90.5	61-143
TPH-LRO (C24-C36)	2000	2400	120	61-143
SURROGATE: OCTACOSANE (S)	150	155	103	28-142
SURROGATE: ORTHO-TERPHENYL (S)	150	137	91.3	57-132

Comments: _____

Primary	SPK
Quant Method :	CTO121.M
Extraction Date :	1/26/2015
Analysis Date :	1/29/2015
Instrument :	Apollo
Run :	127123
Initials :	LA

Printed: 2/9/2015 9:31:57 AM
APPL Standard LCS

Matrix Spike Recoveries
TPH-d Water EPA 8015C

APPL ID: **150126W-10006 MS - 194107**
Batch ID: #DROWC-150126A1
Sample ID: AZ10006
Client ID: EKB100020

APPL Inc.
908 North Temperance Avenue
Clovis, CA 93611

Compound Name	Spike Lvl ug/L	Matrix Result ug/L	SPK Result ug/L	DUP Result ug/L	SPK % Recovery	DUP % Recovery	Recovery Limits	RPD %	RPD Limits
TPH-DRO (C10-C24)	2000	ND	1750	1830	87.5	91.5	61-143	4.5	30
TPH-LRO (C24-C36)	2000	ND	2100	2150	105	108	61-143	2.4	30
SURROGATE: OCTACOSANE (S)	150	NA	182	162	121	108	28-142		
SURROGATE: ORTHO-TERPHENYL (S)	150	NA	111	141	74.0	94.0	57-132		

Comments: _____

Primary	SPK	DUP
Quant Method :	CTO121.M	CTO121.M
Extraction Date :	1/26/2015	1/26/2015
Analysis Date :	1/29/2015	1/29/2015
Instrument :	Apollo	Apollo
Run :	127145	127144
Initials :	LA	

Printed: 2/9/2015 9:31:55 AM
APPL MSD SCII

EPA 8015C-e

Form 4

Blank Summary

Lab Name: APPL, Inc.
SDG No: 75427
Case No: 75427
Date Analyzed: 1/29/2015
Matrix: WATER
Instrument: Apollo
Blank ID: 150126A1-BLK
Time Analyzed: 1150

APPL ID.	Client Sample No.	File ID.	Date Analyzed
150126A1-BLK	Blank	127122	1/29/2015 1150
150126A1-LCS	Lab Control Spike	127123	1/29/2015 1215
AZ09997	EKB100011	127132	1/29/2015 1558
AZ09998	EKB100012	127133	1/29/2015 1623
AZ09999	EKB100013	127134	1/29/2015 1648
AZ10000	EKB100014	127135	1/29/2015 1713
AZ10001	EKB100015	127136	1/29/2015 1738
AZ10002	EKB100016	127137	1/29/2015 1803
AZ10003	EKB100017	127138	1/29/2015 1827
AZ10004	EKB100018	127139	1/29/2015 1852
AZ10005	EKB100019	127140	1/29/2015 1916
150126A1-MSD	Matrix SpikeD	127144	1/29/2015 2054
150126A1-MS	Matrix Spike	127145	1/29/2015 2118
AZ10006	EKB100020	127147	1/29/2015 2206
AZ10007	EKB100021	127148	1/29/2015 2231

Comments: Batch: #DROWC-150126A

Printed: 2/9/2015 9:31:48 AM
Form 4, Blank Summary

EPA 8015 Modified
Total Petroleum Hydrocarbons
Sample Data

TPH-d Water EPA 8015C

Element Environmental
98-030 Hekaha St., Unit 9
Aiea, HI 96701

APPL Inc.
908 North Temperance Avenue
Clovis, CA 93611

Attn: Steve Spengler

Project: MCBH Motor Pool UST KB-100 SI / 130034

ARF: 75427

Sample ID: EKB100011

APPL ID: AZ09997

Sample Collection Date: 1/20/2015

QCG: #DROWC-150126A1-19410

Method	Analyte	Result	LOQ	LOD	DL	Units	Extraction Date	Analysis Date
EPA 8015C-	TPH-DRO (C10-C24)	50.0 U	150	50.0	40.4	ug/L	1/26/2015	1/29/2015
EPA 8015C-	TPH-LRO (C24-C36)	500.0 U	500	500.0	106.0	ug/L	1/26/2015	1/29/2015
EPA 8015C-	SURROGATE: OCTACOSANE (S)	92.5	28-142			%	1/26/2015	1/29/2015
EPA 8015C-	SURROGATE: ORTHO-TERPHENYL (S	67.9	57-132			%	1/26/2015	1/29/2015

Quant Method: CTO121.M
Run #: 127132
Instrument: Apollo
Sequence: 150127
Dilution Factor: 1
Initials: LA

Printed: 2/9/2015 9:32:00 AM
APPL-F1-SC-NoMC-REG MDLs

Quantitation Report (QT Reviewed)

Data File : G:\APOLLO\DATA\150127\127132.D Vial: 32
Acq On : 1-29-15 15:58:56 Operator: lac
Sample : AZ09997W04 5/1000 Inst : Apollo
Misc : Water Multiplr: 5.00
IntFile : events.e
Quant Time: Feb 6 13:40 2015 Quant Results File: CTO121.RES

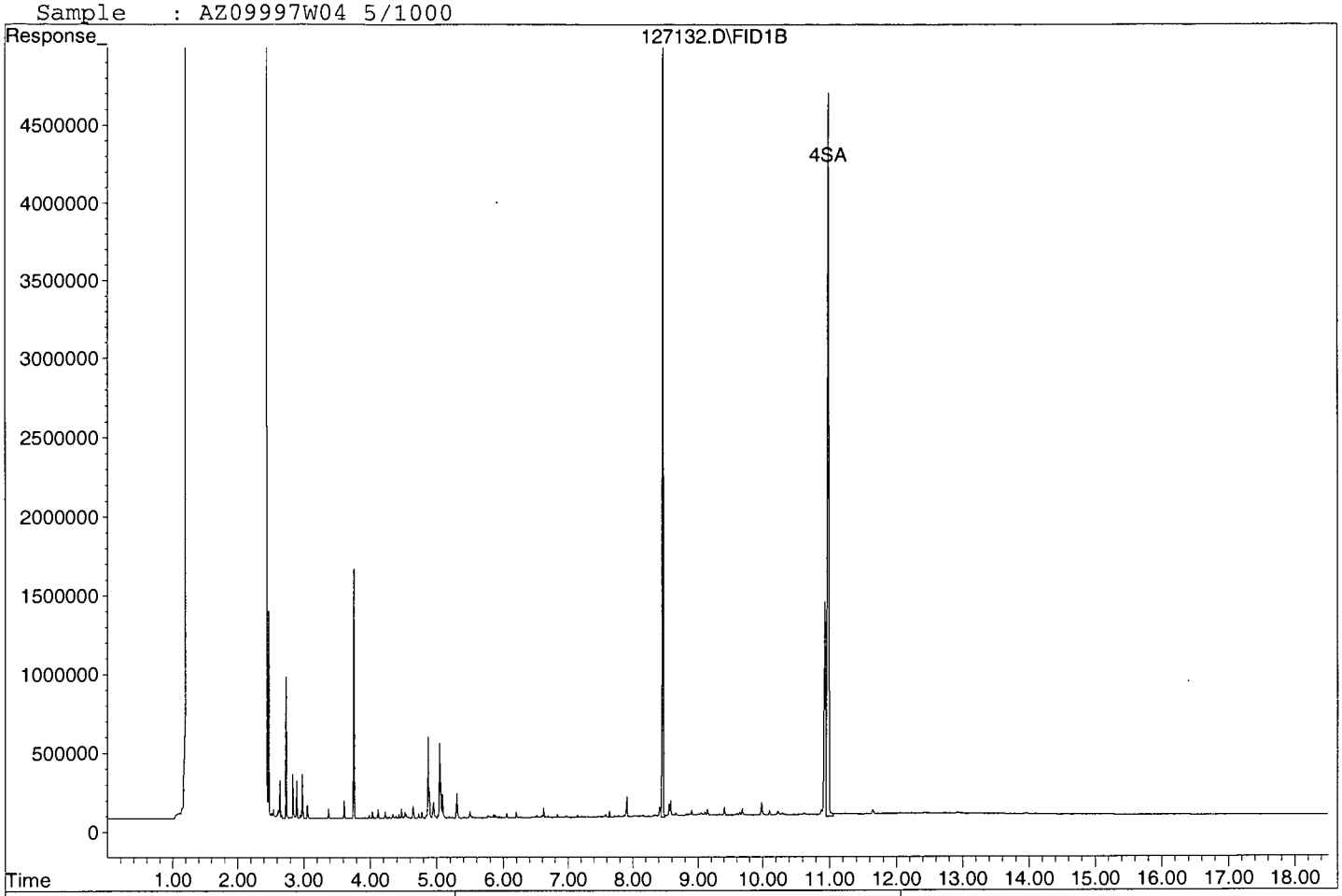
Method : G:\APOLLO\DATA\150206\CTO121.M (Chemstation Integrator)
Title : 8015 B&C
Last Update : Fri Feb 06 17:02:02 2015
Response via : Multiple Level Calibration

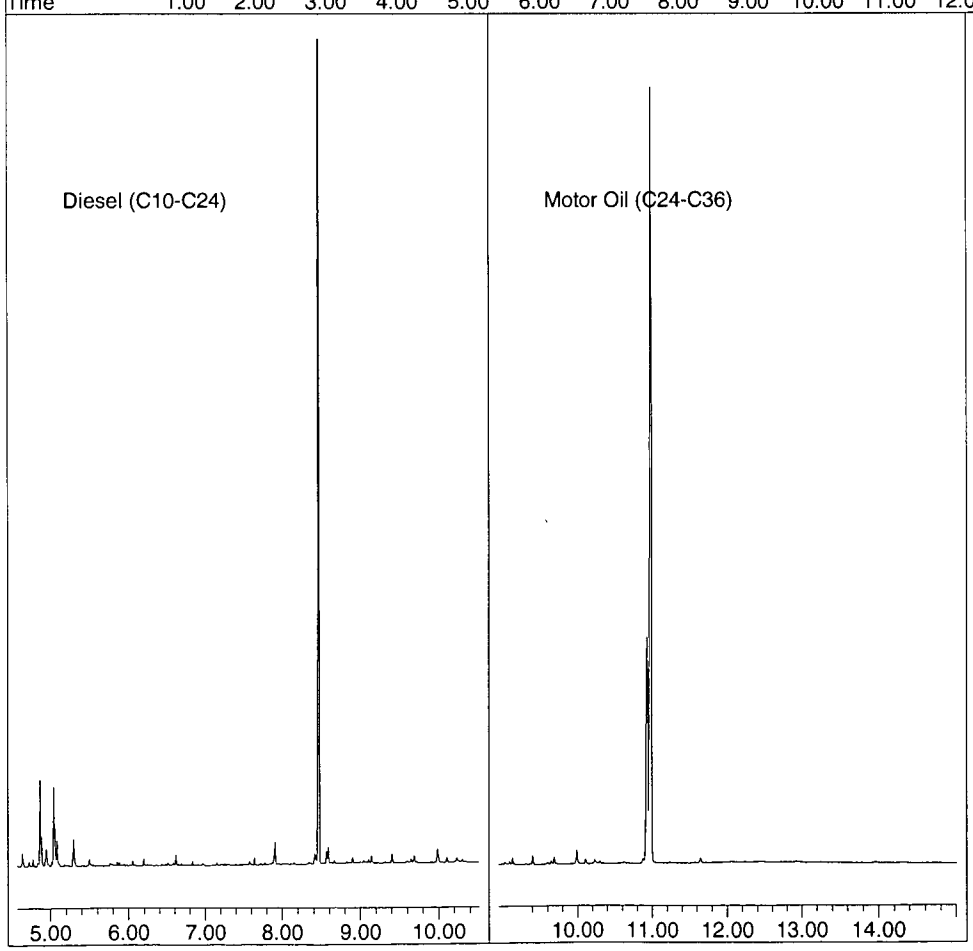
Volume Inj. : 2UL
Signal Phase : DB-5
Signal Info : FID02A

Compound	R.T.	Response	Conc Units
System Monitoring Compounds			
3) SA Ortho-Terphenyl(S)	8.47	75896124	101.840 ppb
Surrogate Spike 150.000		Recovery =	67.89%
4) SA Octacosane(S)	10.99	74918403	138.784 ppb
Surrogate Spike 150.000		Recovery =	92.52%
Target Compounds			

Quantitation Report

Data File: G:\APOLLO\DATA\150127\127132.D
Sample : AZ09997W04 5/1000





TPH-d Water EPA 8015C

Element Environmental
98-030 Hekaha St., Unit 9
Aiea, HI 96701

APPL Inc.
908 North Temperance Avenue
Clovis, CA 93611

Attn: Steve Spengler

Project: MCBH Motor Pool UST KB-100 SI / 130034

ARF: 75427

Sample ID: EKB100012

APPL ID: AZ09998

Sample Collection Date: 1/20/2015

QCG: #DROWC-150126A1-19410

Method	Analyte	Result	LOQ	LOD	DL	Units	Extraction Date	Analysis Date
EPA 8015C-	TPH-DRO (C10-C24)	50.0 U	150	50.0	40.4	ug/L	1/26/2015	1/29/2015
EPA 8015C-	TPH-LRO (C24-C36)	500.0 U	500	500.0	106.0	ug/L	1/26/2015	1/29/2015
EPA 8015C-	SURROGATE: OCTACOSANE (S)	101	28-142			%	1/26/2015	1/29/2015
EPA 8015C-	SURROGATE: ORTHO-TERPHENYL (S	74.4	57-132			%	1/26/2015	1/29/2015

Quant Method: CTO121.M
Run #: 127133
Instrument: Apollo
Sequence: 150127
Dilution Factor: 1
Initials: LA

Printed: 2/9/2015 9:32:00 AM
APPL-F1-SC-NoMC-REG MDLs

Quantitation Report (QT Reviewed)

Data File : G:\APOLLO\DATA\150127\127133.D Vial: 33
Acq On : 1-29-15 16:23:57 Operator: lac
Sample : AZ09998W05 5/950 Inst : Apollo
Misc : Water Multiplr: 5.26
IntFile : events.e
Quant Time: Feb 6 13:40 2015 Quant Results File: CTO121.RES

Method : G:\APOLLO\DATA\150206\CTO121.M (Chemstation Integrator)
Title : 8015 B&C
Last Update : Fri Feb 06 17:02:02 2015
Response via : Multiple Level Calibration

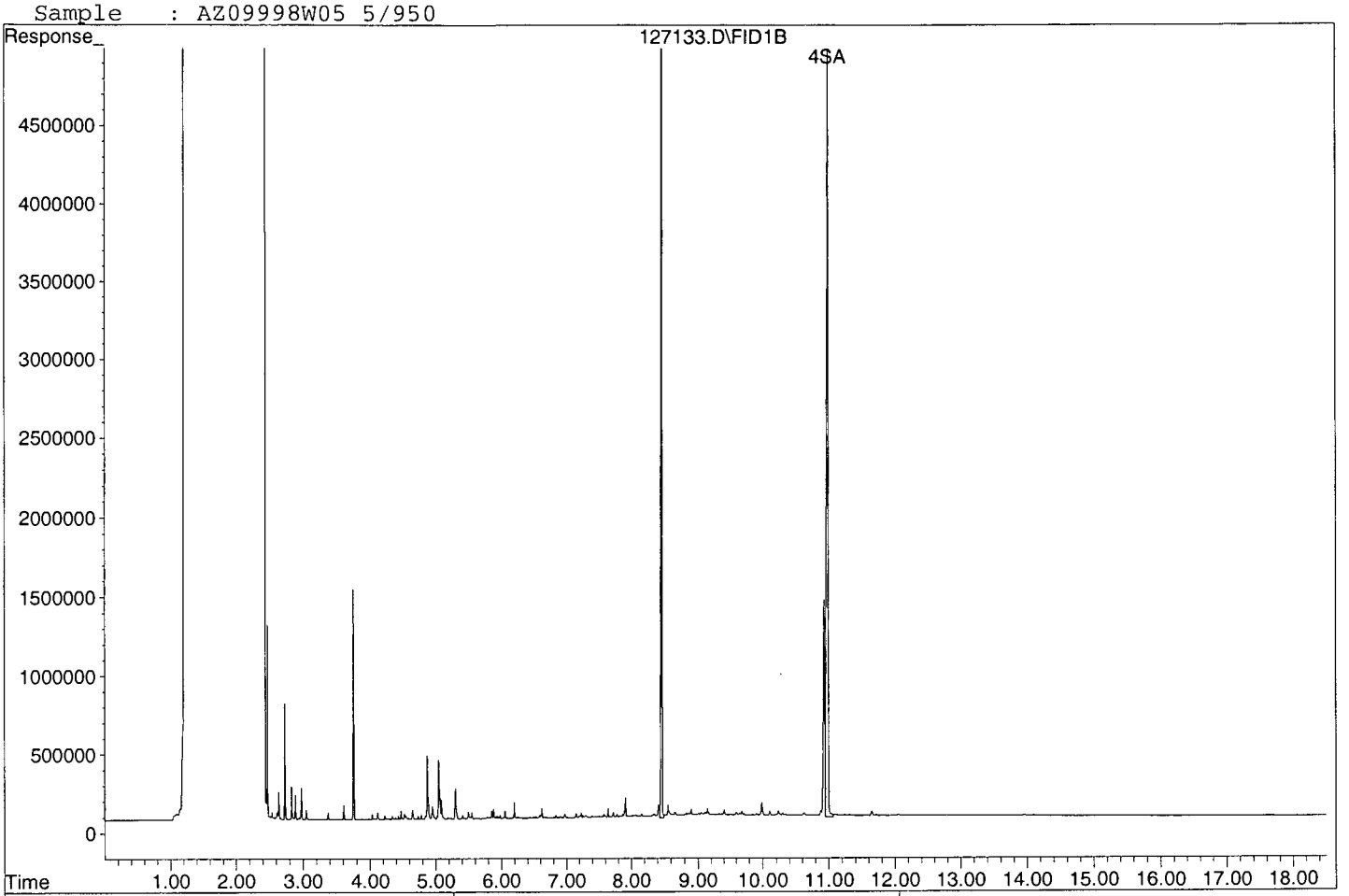
Volume Inj. : 2UL
Signal Phase : DB-5
Signal Info : FID02A

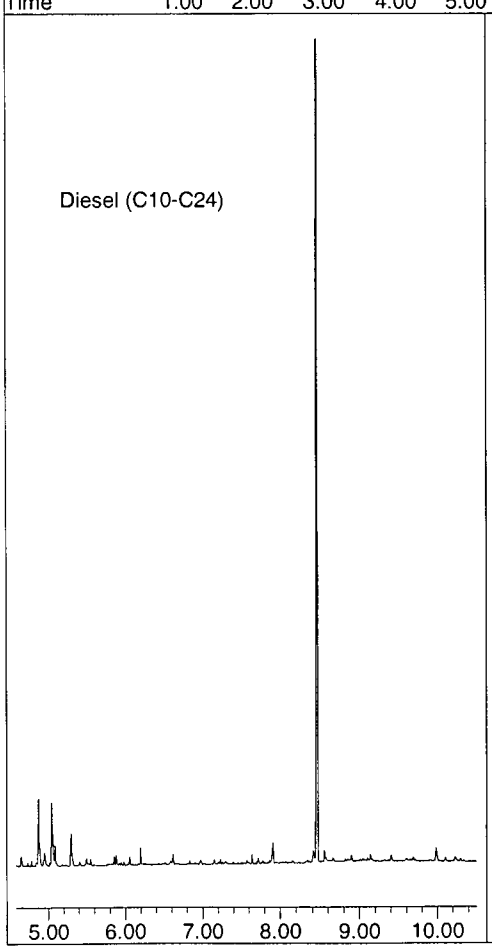
Compound	R.T.	Response	Conc Units
System Monitoring Compounds			
3) SA Ortho-Terphenyl(S)	8.47	83116543	117.398 ppb
Surrogate Spike 157.895		Recovery =	74.35%
4) SA Octacosane(S)	10.99	81550813	159.022 ppb
Surrogate Spike 157.895		Recovery =	100.71%

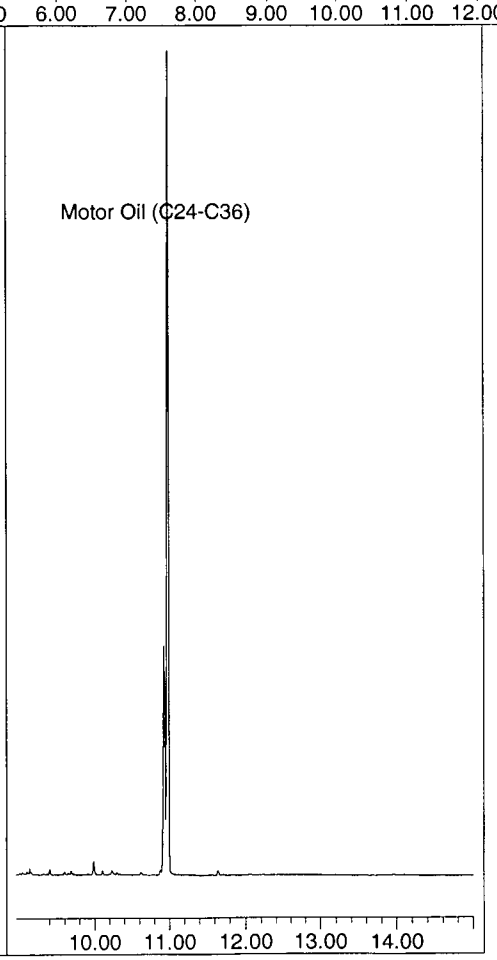
Target Compounds

Quantitation Report

Data File: G:\APOLLO\DATA\150127\127133.D
Sample : AZ09998W05 5/950







TPH-d Water EPA 8015C

Element Environmental
98-030 Hekaha St., Unit 9
Aiea, HI 96701

APPL Inc.
908 North Temperance Avenue
Clovis, CA 93611

Attn: Steve Spengler

Project: MCBH Motor Pool UST KB-100 SI / 130034

ARF: 75427

Sample ID: EKB100013

APPL ID: AZ09999

Sample Collection Date: 1/20/2015

QCG: #DROWC-150126A1-19410

Method	Analyte	Result	LOQ	LOD	DL	Units	Extraction Date	Analysis Date
EPA 8015C-	TPH-DRO (C10-C24)	50.0 U	150	50.0	40.4	ug/L	1/26/2015	1/29/2015
EPA 8015C-	TPH-LRO (C24-C36)	500.0 U	500	500.0	106.0	ug/L	1/26/2015	1/29/2015
EPA 8015C-	SURROGATE: OCTACOSANE (S)	96.9	28-142			%	1/26/2015	1/29/2015
EPA 8015C-	SURROGATE: ORTHO-TERPHENYL (S	70.9	57-132			%	1/26/2015	1/29/2015

Quant Method: CTO121.M
Run #: 127134
Instrument: Apollo
Sequence: 150127
Dilution Factor: 1
Initials: LA

Printed: 2/9/2015 9:32:00 AM
APPL-F1-SC-NoMC-REG MDLs

Quantitation Report (QT Reviewed)

Data File : G:\APOLLO\DATA\150127\127134.D Vial: 34
Acq On : 1-29-15 16:48:55 Operator: lac
Sample : AZ09999W05 5/1000 Inst : Apollo
Misc : Water Multiplr: 5.00
IntFile : events.e
Quant Time: Feb 6 13:41 2015 Quant Results File: CTO121.RES

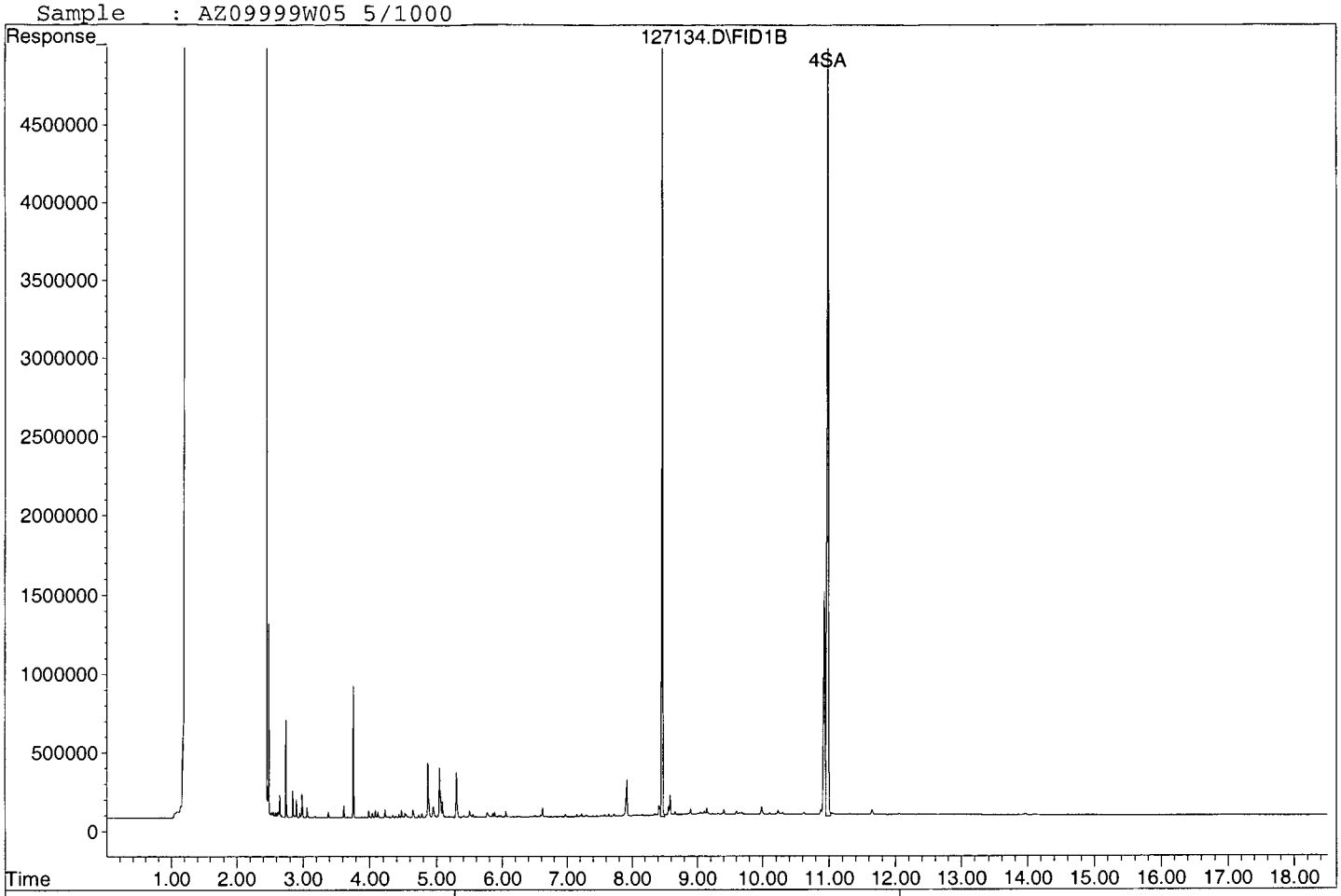
Method : G:\APOLLO\DATA\150206\CTO121.M (Chemstation Integrator)
Title : 8015 B&C
Last Update : Fri Feb 06 17:02:02 2015
Response via : Multiple Level Calibration

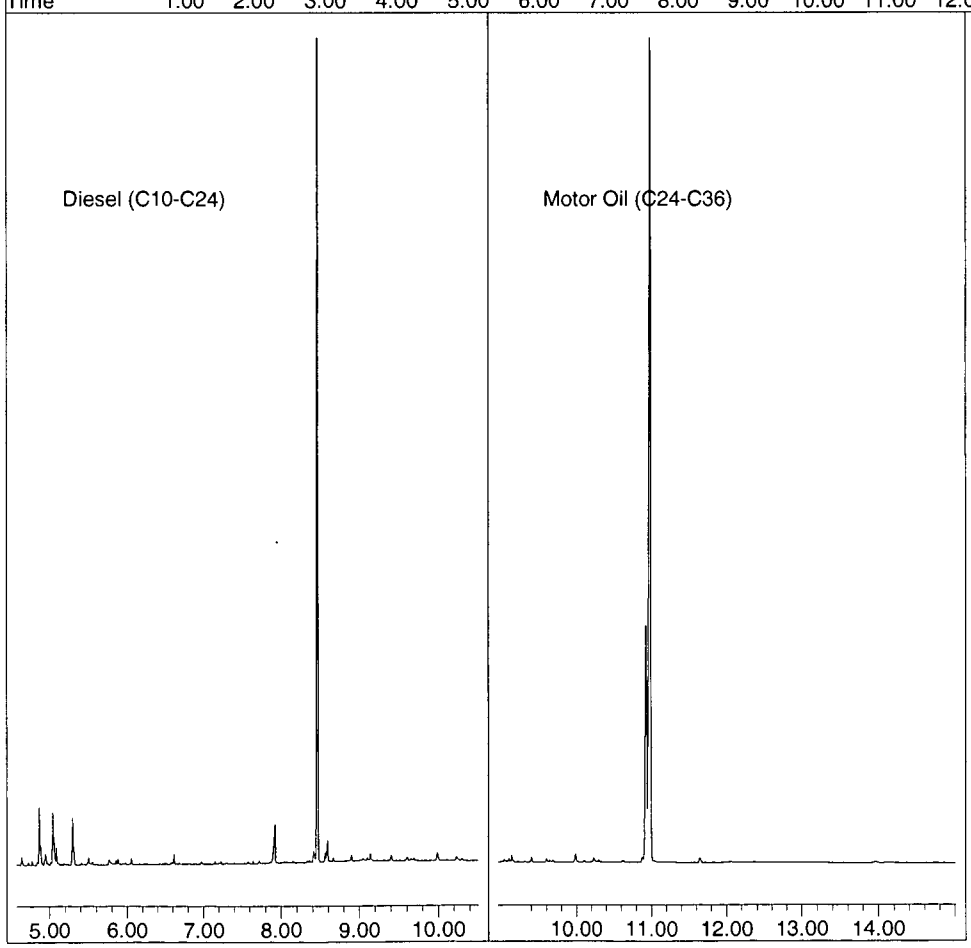
Volume Inj. : 2UL
Signal Phase : DB-5
Signal Info : FID02A

Compound	R.T.	Response	Conc Units
System Monitoring Compounds			
3) SA Ortho-Terphenyl(S)	8.47	79294075	106.399 ppb
Surrogate Spike 150.000		Recovery =	70.93%
4) SA Octacosane(S)	10.99	78424021	145.278 ppb
Surrogate Spike 150.000		Recovery =	96.85%
Target Compounds			

Quantitation Report

Data File: G:\APOLLO\DATA\150127\127134.D
Sample : AZ09999W05 5/1000





TPH-d Water EPA 8015C

Element Environmental
98-030 Hekaha St., Unit 9
Aiea, HI 96701

APPL Inc.
908 North Temperance Avenue
Clovis, CA 93611

Attn: Steve Spengler

Project: MCBH Motor Pool UST KB-100 SI / 130034

ARF: 75427

Sample ID: EKB100014

APPL ID: AZ10000

Sample Collection Date: 1/20/2015

QCG: #DROWC-150126A1-19410

Method	Analyte	Result	LOQ	LOD	DL	Units	Extraction Date	Analysis Date
EPA 8015C-	TPH-DRO (C10-C24)	50.0 U	150	50.0	40.4	ug/L	1/26/2015	1/29/2015
EPA 8015C-	TPH-LRO (C24-C36)	500.0 U	500	500.0	106.0	ug/L	1/26/2015	1/29/2015
EPA 8015C-	SURROGATE: OCTACOSANE (S)	101	28-142			%	1/26/2015	1/29/2015
EPA 8015C-	SURROGATE: ORTHO-TERPHENYL (S	74.1	57-132			%	1/26/2015	1/29/2015

Quant Method: CTO121.M
Run #: 127135
Instrument: Apollo
Sequence: 150127
Dilution Factor: 1
Initials: LA

Printed: 2/9/2015 9:32:00 AM
APPL-F1-SC-NoMC-REG MDLs

Quantitation Report (QT Reviewed)

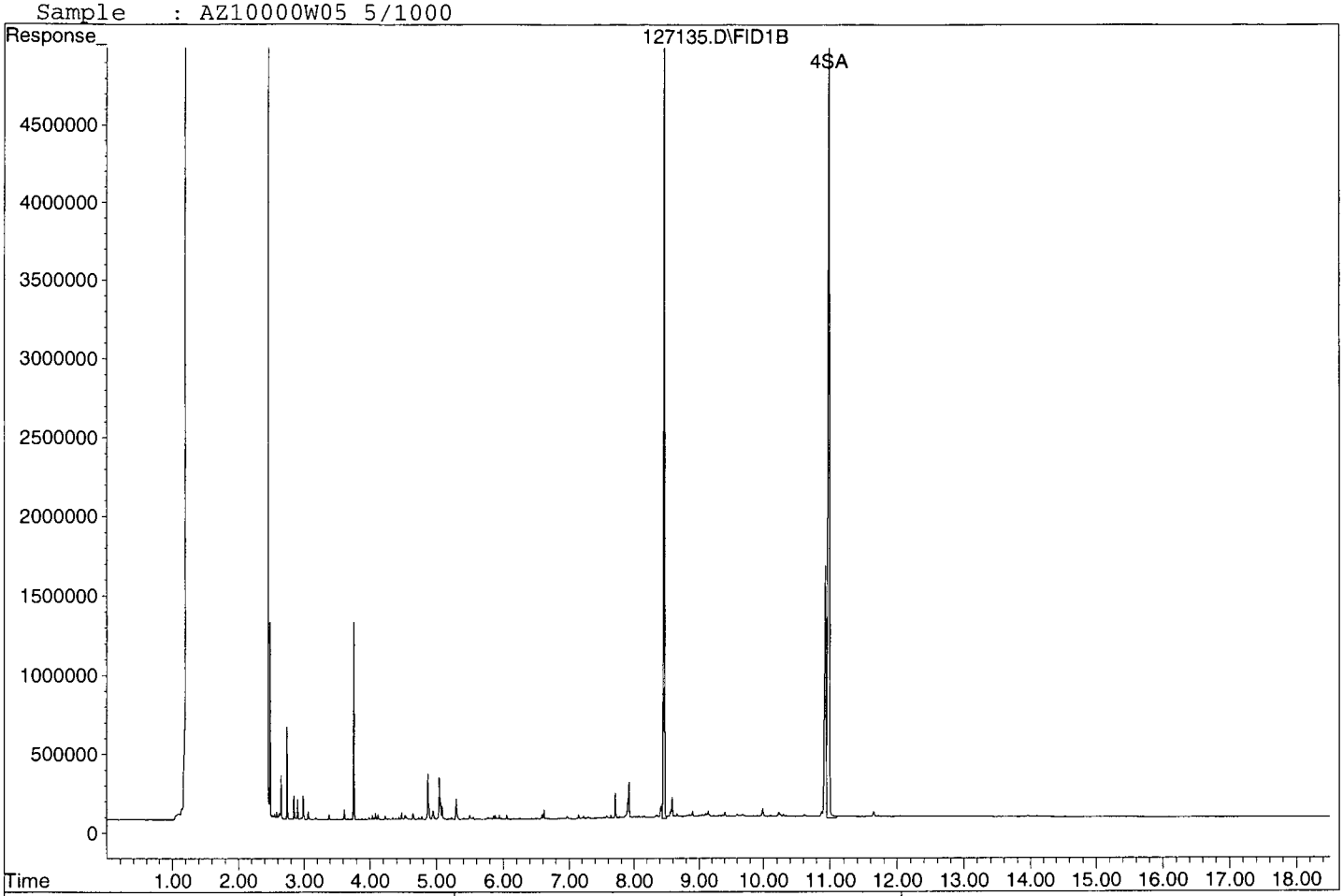
Data File : G:\APOLLO\DATA\150127\127135.D Vial: 35
Acq On : 1-29-15 17:13:48 Operator: lac
Sample : AZ10000W05 5/1000 Inst : Apollo
Misc : Water Multiplr: 5.00
IntFile : events.e
Quant Time: Feb 6 13:48 2015 Quant Results File: CTO121.RES

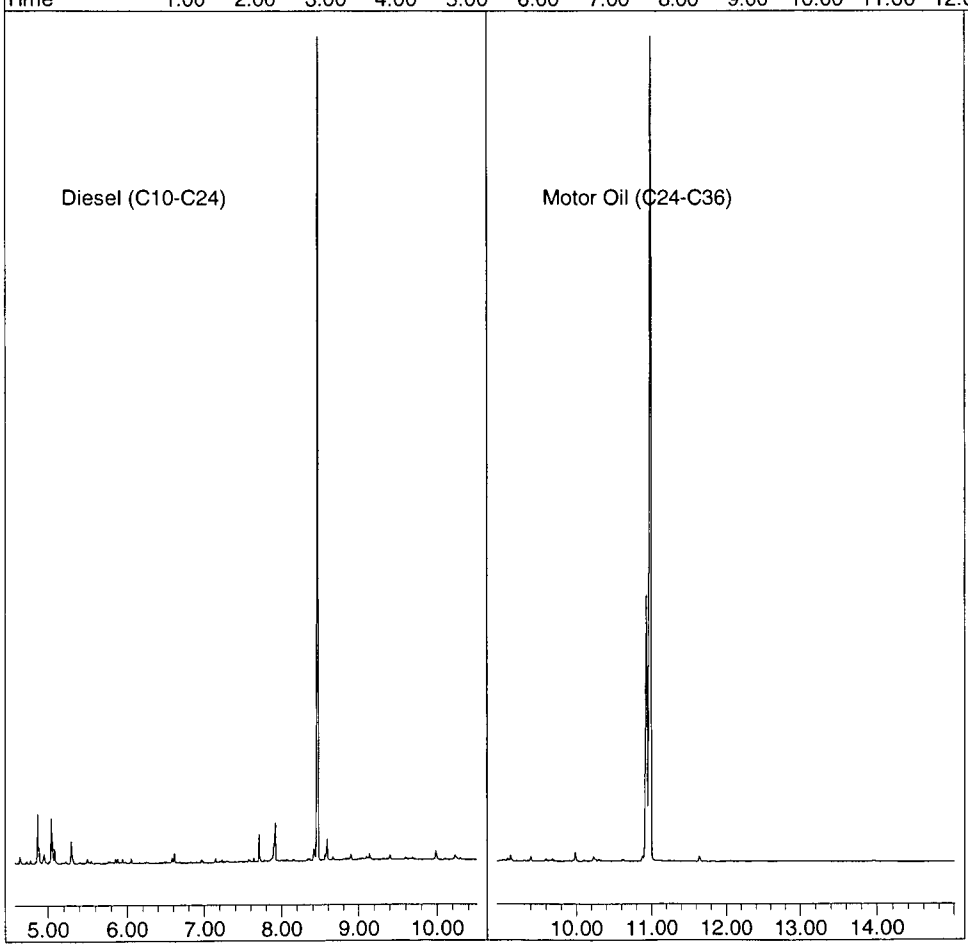
Method : G:\APOLLO\DATA\150206\CTO121.M (Chemstation Integrator)
Title : 8015 B&C
Last Update : Fri Feb 06 17:02:02 2015
Response via : Multiple Level Calibration

Volume Inj. : 2UL
Signal Phase : DB-5
Signal Info : FID02A

Compound	R.T.	Response	Conc Units
System Monitoring Compounds			
3) SA Ortho-Terphenyl(S)	8.47	82879140	111.210 ppb
Surrogate Spike 150.000		Recovery =	74.14%
4) SA Octacosane(S)	10.99	81801083	151.534 ppb
Surrogate Spike 150.000		Recovery =	101.02%
Target Compounds			

Data File: G:\APOLLO\DATA\150127\127135.D
Sample : AZ10000W05 5/1000





TPH-d Water EPA 8015C

Element Environmental
98-030 Hekaha St., Unit 9
Aiea, HI 96701

APPL Inc.
908 North Temperance Avenue
Clovis, CA 93611

Attn: Steve Spengler

Project: MCBH Motor Pool UST KB-100 SI / 130034

ARF: 75427

Sample ID: EKB100015

APPL ID: AZ10001

Sample Collection Date: 1/20/2015

QCG: #DROWC-150126A1-19410

Method	Analyte	Result	LOQ	LOD	DL	Units	Extraction Date	Analysis Date
EPA 8015C-	TPH-DRO (C10-C24)	50.0 U	150	50.0	40.4	ug/L	1/26/2015	1/29/2015
EPA 8015C-	TPH-LRO (C24-C36)	500.0 U	500	500.0	106.0	ug/L	1/26/2015	1/29/2015
EPA 8015C-	SURROGATE: OCTACOSANE (S)	105	28-142			%	1/26/2015	1/29/2015
EPA 8015C-	SURROGATE: ORTHO-TERPHENYL (S	75.9	57-132			%	1/26/2015	1/29/2015

Quant Method: CTO121.M
Run #: 127136
Instrument: Apollo
Sequence: 150127
Dilution Factor: 1
Initials: LA

Printed: 2/9/2015 9:32:00 AM
APPL-F1-SC-NoMC-REG MDLs

Quantitation Report (QT Reviewed)

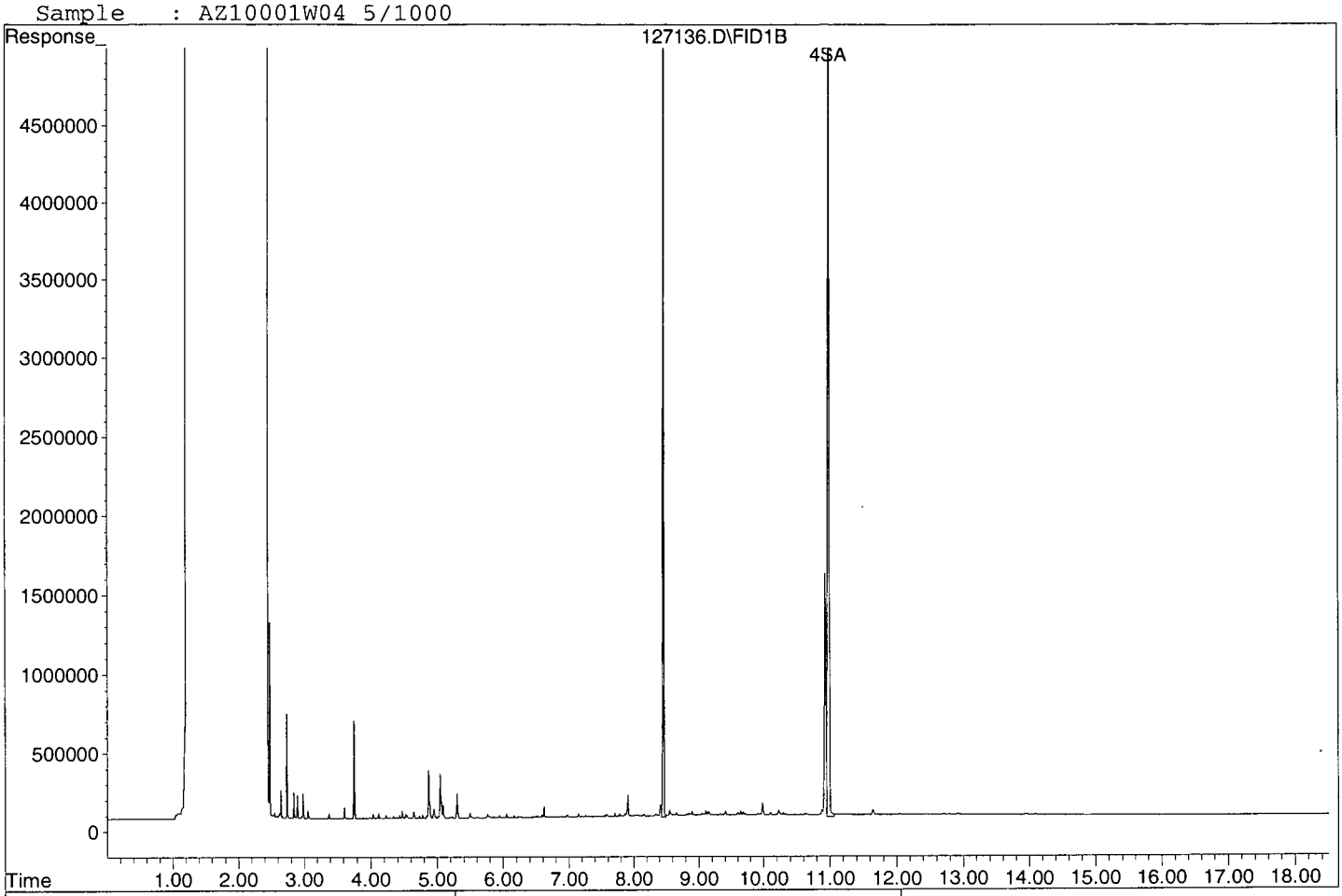
Data File : G:\APOLLO\DATA\150127\127136.D Vial: 36
Acq On : 1-29-15 17:38:34 Operator: lac
Sample : AZ10001W04 5/1000 Inst : Apollo
Misc : Water Multiplr: 5.00
IntFile : events.e
Quant Time: Feb 6 13:48 2015 Quant Results File: CTO121.RES

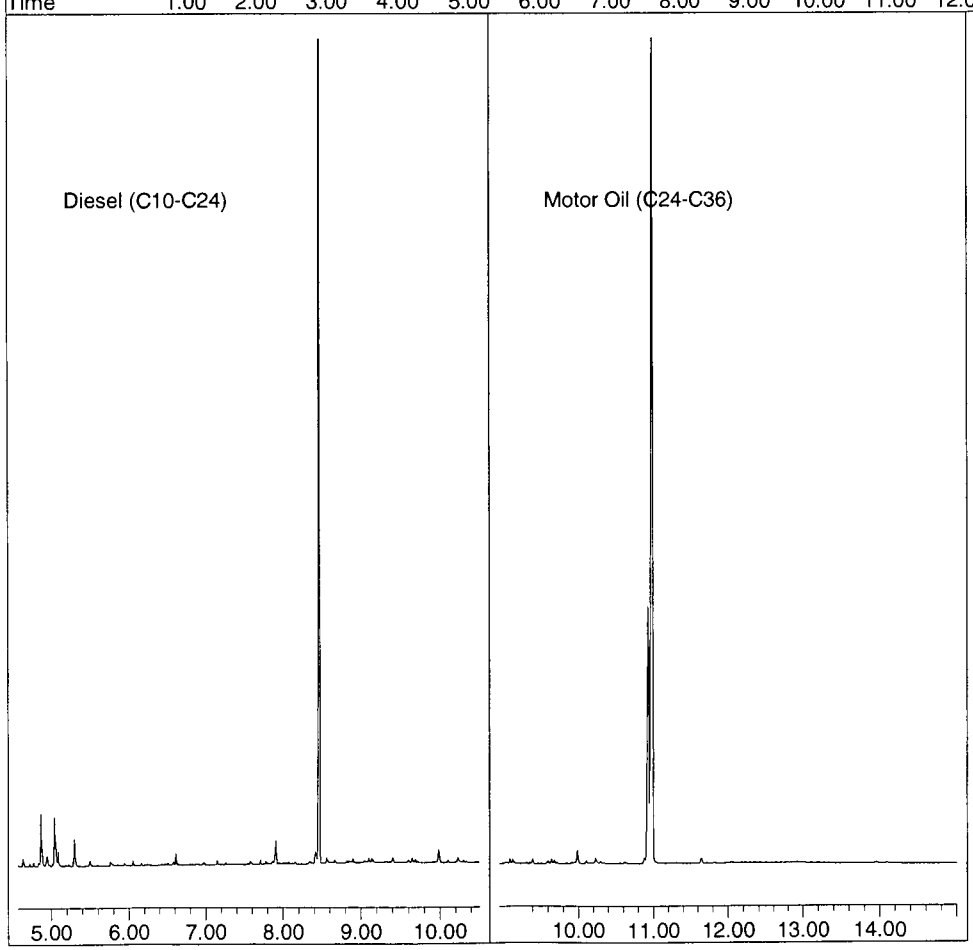
Method : G:\APOLLO\DATA\150206\CTO121.M (Chemstation Integrator)
Title : 8015 B&C
Last Update : Fri Feb 06 17:02:02 2015
Response via : Multiple Level Calibration

Volume Inj. : 2UL
Signal Phase : DB-5
Signal Info : FID02A

Compound	R.T.	Response	Conc Units
System Monitoring Compounds			
3) SA Ortho-Terphenyl(S)	8.47	84789075	113.772 ppb
Surrogate Spike 150.000		Recovery =	75.85%
4) SA Octacosane(S)	10.99	84718879	156.939 ppb
Surrogate Spike 150.000		Recovery =	104.63%
Target Compounds			

Data File: G:\APOLLO\DATA\150127\127136.D
Sample : AZ10001W04 5/1000





TPH-d Water EPA 8015C

Element Environmental
98-030 Hekaha St., Unit 9
Aiea, HI 96701

APPL Inc.
908 North Temperance Avenue
Clovis, CA 93611

Attn: Steve Spengler

Project: MCBH Motor Pool UST KB-100 SI / 130034

ARF: 75427

Sample ID: EKB100016

APPL ID: AZ10002

Sample Collection Date: 1/20/2015

QCG: #DROWC-150126A1-19410

Method	Analyte	Result	LOQ	LOD	DL	Units	Extraction Date	Analysis Date
EPA 8015C-	TPH-DRO (C10-C24)	50.0 U	150	50.0	40.4	ug/L	1/26/2015	1/29/2015
EPA 8015C-	TPH-LRO (C24-C36)	500.0 U	500	500.0	106.0	ug/L	1/26/2015	1/29/2015
EPA 8015C-	SURROGATE: OCTACOSANE (S)	94.0	28-142			%	1/26/2015	1/29/2015
EPA 8015C-	SURROGATE: ORTHO-TERPHENYL (S	70.6	57-132			%	1/26/2015	1/29/2015

Quant Method: CTO121.M
Run #: 127137
Instrument: Apollo
Sequence: 150127
Dilution Factor: 1
Initials: LA

Printed: 2/9/2015 9:32:00 AM
APPL-F1-SC-NoMC-REG MDLs

Quantitation Report (QT Reviewed)

Data File : G:\APOLLO\DATA\150127\127137.D Vial: 37
Acq On : 1-29-15 18:03:13 Operator: lac
Sample : AZ10002W04 5/1000 Inst : Apollo
Misc : Water Multiplr: 5.00
IntFile : events.e
Quant Time: Feb 6 13:48 2015 Quant Results File: CTO121.RES

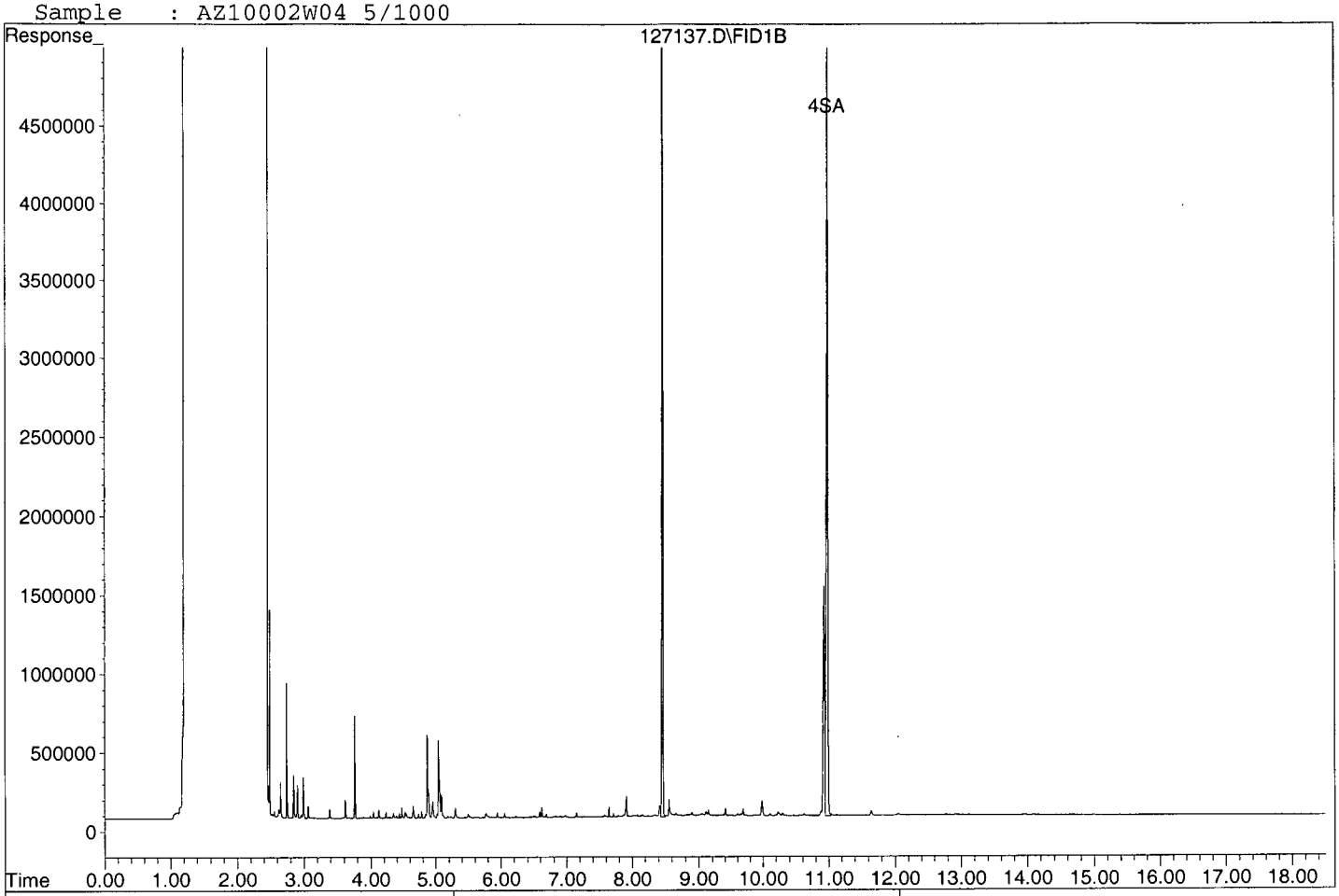
Method : G:\APOLLO\DATA\150206\CTO121.M (Chemstation Integrator)
Title : 8015 B&C
Last Update : Fri Feb 06 17:02:02 2015
Response via : Multiple Level Calibration

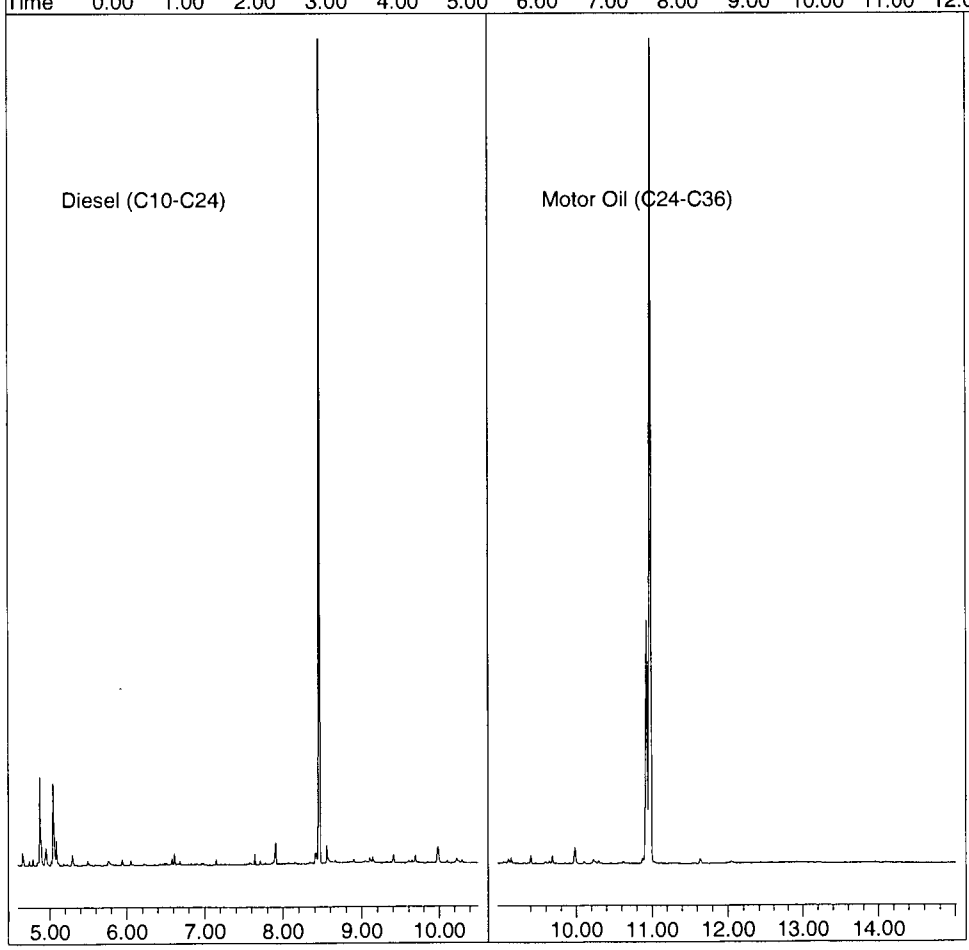
Volume Inj. : 2UL
Signal Phase : DB-5
Signal Info : FID02A

Compound	R.T.	Response	Conc Units
System Monitoring Compounds			
3) SA Ortho-Terphenyl(S)	8.47	78928311	105.908 ppb
Surrogate Spike 150.000		Recovery =	70.61%
4) SA Octacosane(S)	10.98	76081479	140.939 ppb
Surrogate Spike 150.000		Recovery =	93.96%
Target Compounds			

Quantitation Report

Data File: G:\APOLLO\DATA\150127\127137.D
Sample : AZ10002W04 5/1000





TPH-d Water EPA 8015C

Element Environmental
98-030 Hekaha St., Unit 9
Aiea, HI 96701

APPL Inc.
908 North Temperance Avenue
Clovis, CA 93611

Attn: Steve Spengler

Project: MCBH Motor Pool UST KB-100 SI / 130034

ARF: 75427

Sample ID: EKB100017

APPL ID: AZ10003

Sample Collection Date: 1/20/2015

QCG: #DROWC-150126A1-19410

Method	Analyte	Result	LOQ	LOD	DL	Units	Extraction Date	Analysis Date
EPA 8015C-	TPH-DRO (C10-C24)	50.0 U	150	50.0	40.4	ug/L	1/26/2015	1/29/2015
EPA 8015C-	TPH-LRO (C24-C36)	500.0 U	500	500.0	106.0	ug/L	1/26/2015	1/29/2015
EPA 8015C-	SURROGATE: OCTACOSANE (S)	98.8	28-142			%	1/26/2015	1/29/2015
EPA 8015C-	SURROGATE: ORTHO-TERPHENYL (S	73.0	57-132			%	1/26/2015	1/29/2015

Quant Method: CTO121.M
Run #: 127138
Instrument: Apollo
Sequence: 150127
Dilution Factor: 1
Initials: LA

Printed: 2/9/2015 9:32:00 AM
APPL-F1-SC-NoMC-REG MDLs

Quantitation Report (QT Reviewed)

Data File : G:\APOLLO\DATA\150127\127138.D Vial: 38
Acq On : 1-29-15 18:27:49 Operator: lac
Sample : AZ10003W04 5/1000 Inst : Apollo
Misc : Water Multiplr: 5.00
IntFile : events.e
Quant Time: Feb 6 13:49 2015 Quant Results File: CTO121.RES

Method : G:\APOLLO\DATA\150206\CTO121.M (Chemstation Integrator)
Title : 8015 B&C
Last Update : Fri Feb 06 17:02:02 2015
Response via : Multiple Level Calibration

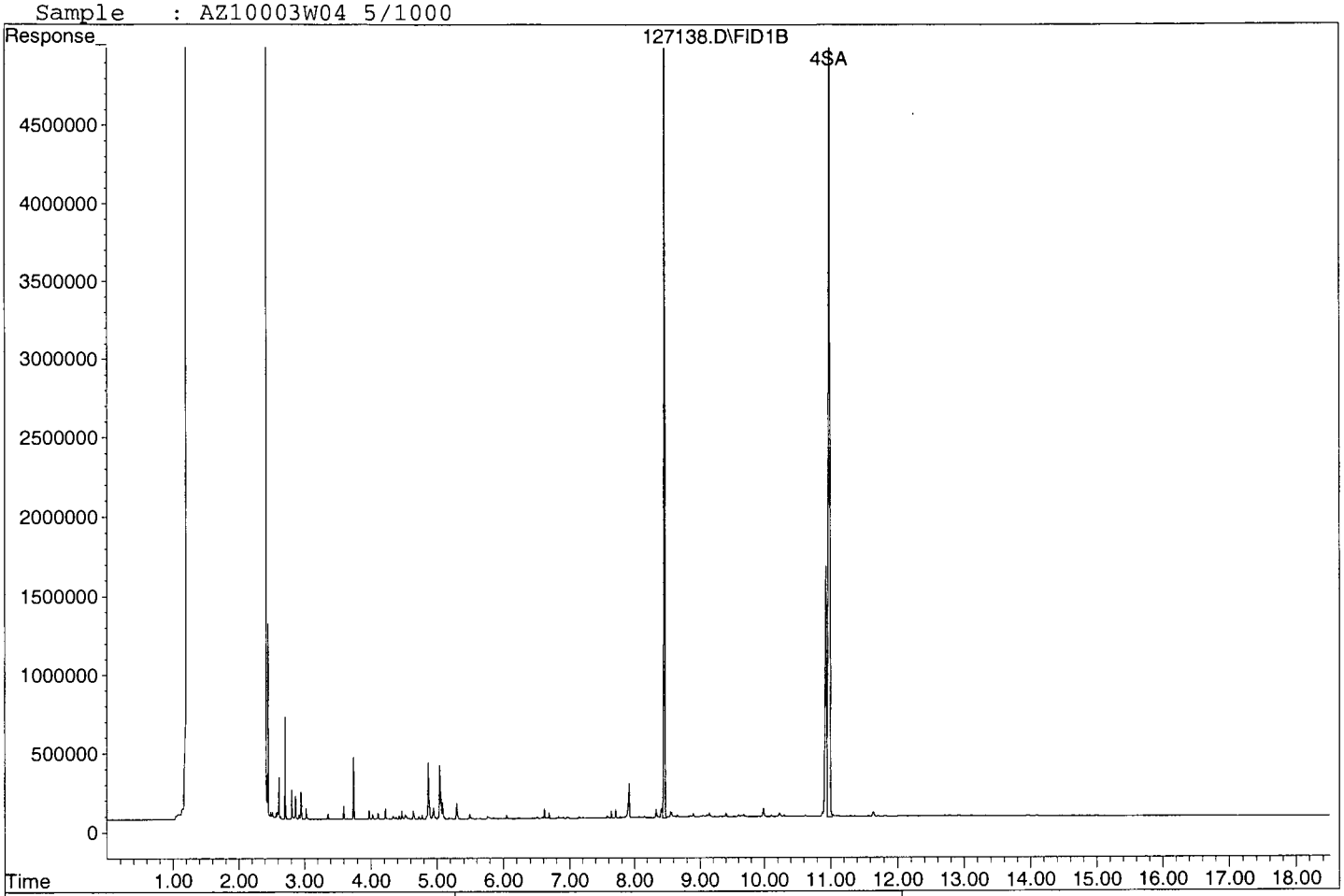
Volume Inj. : 2UL
Signal Phase : DB-5
Signal Info : FID02A

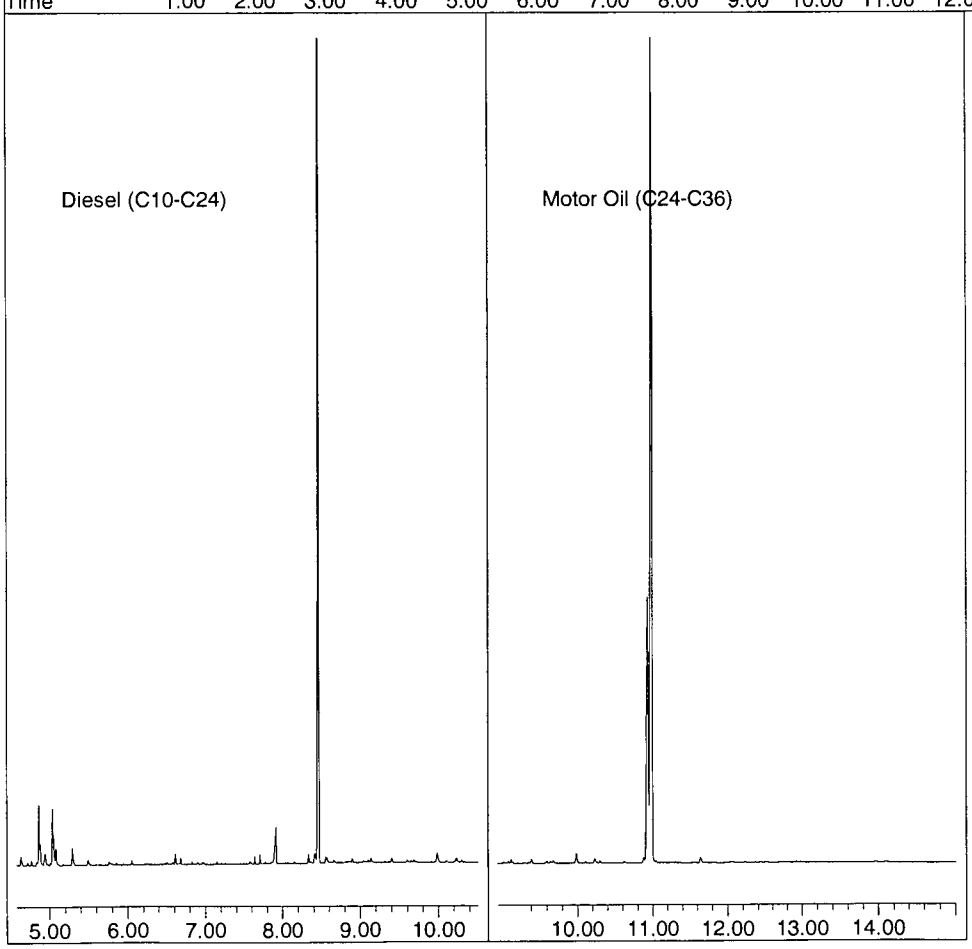
Compound	R.T.	Response	Conc Units
System Monitoring Compounds			
3) SA Ortho-Terphenyl(S)	8.47	81606572	109.502 ppb
Surrogate Spike 150.000		Recovery =	73.00%
4) SA Octacosane(S)	10.99	80011023	148.218 ppb
Surrogate Spike 150.000		Recovery =	98.81%

Target Compounds

Quantitation Report

Data File: G:\APOLLO\DATA\150127\127138.D
Sample : AZ10003W04 5/1000





TPH-d Water EPA 8015C

Element Environmental
98-030 Hekaha St., Unit 9
Aiea, HI 96701

APPL Inc.
908 North Temperance Avenue
Clovis, CA 93611

Attn: Steve Spengler

Project: MCBH Motor Pool UST KB-100 SI / 130034

ARF: 75427

Sample ID: EKB100018

APPL ID: AZ10004

Sample Collection Date: 1/20/2015

QCG: #DROWC-150126A1-19410

Method	Analyte	Result	LOQ	LOD	DL	Units	Extraction Date	Analysis Date
EPA 8015C-	TPH-DRO (C10-C24)	50.0 U	150	50.0	40.4	ug/L	1/26/2015	1/29/2015
EPA 8015C-	TPH-LRO (C24-C36)	500.0 U	500	500.0	106.0	ug/L	1/26/2015	1/29/2015
EPA 8015C-	SURROGATE: OCTACOSANE (S)	97.8	28-142			%	1/26/2015	1/29/2015
EPA 8015C-	SURROGATE: ORTHO-TERPHENYL (S	72.8	57-132			%	1/26/2015	1/29/2015

Quant Method: CTO121.M
Run #: 127139
Instrument: Apollo
Sequence: 150127
Dilution Factor: 1
Initials: LA

Printed: 2/9/2015 9:32:00 AM
APPL-F1-SC-NoMC-REG MDLs

Quantitation Report (QT Reviewed)

Data File : G:\APOLLO\DATA\150127\127139.D Vial: 39
Acq On : 1-29-15 18:52:22 Operator: lac
Sample : AZ10004W05 5/1000 Inst : Apollo
Misc : Water Multiplr: 5.00
IntFile : events.e
Quant Time: Feb 6 13:55 2015 Quant Results File: CTO121.RES

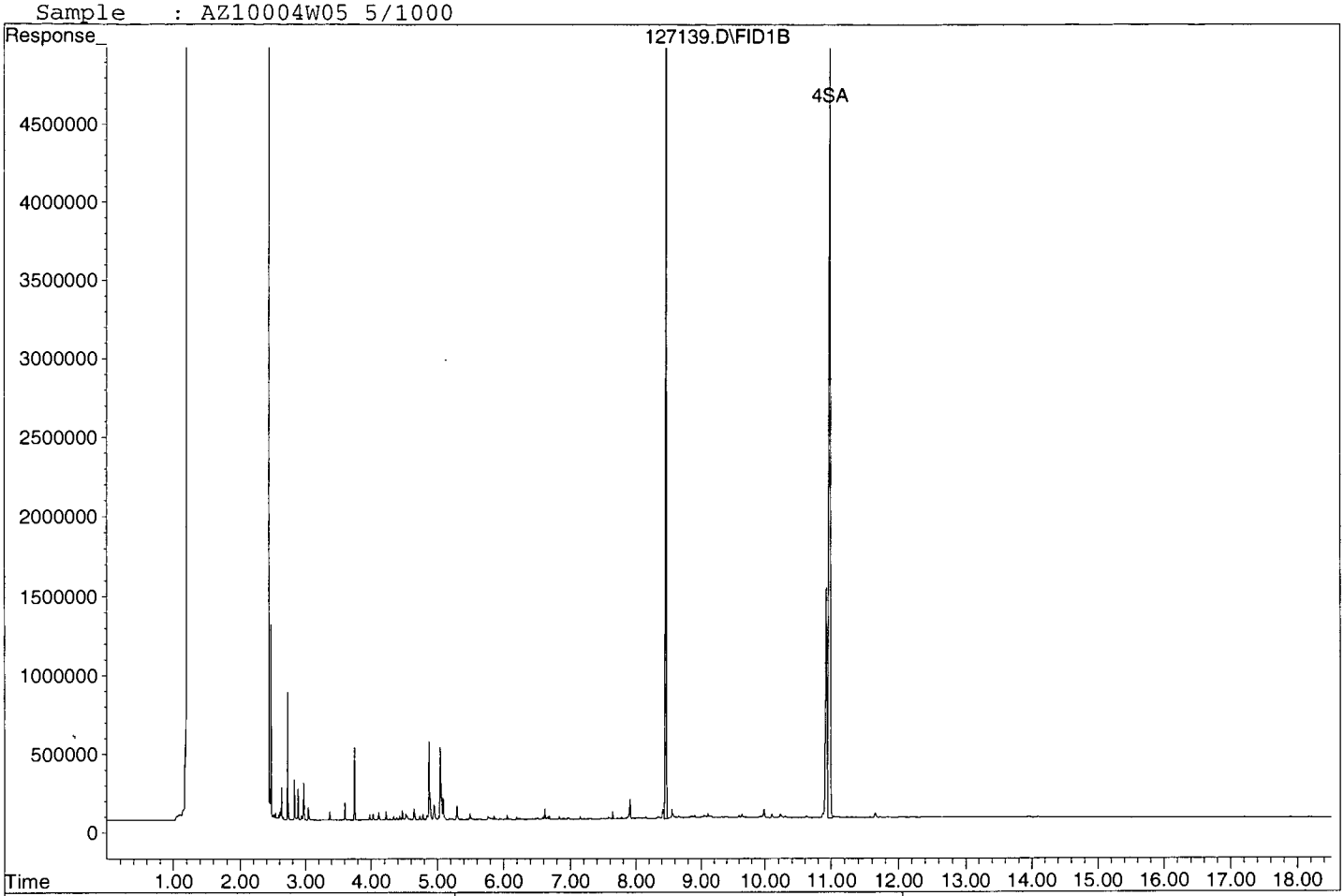
Method : G:\APOLLO\DATA\150206\CTO121.M (Chemstation Integrator)
Title : 8015 B&C
Last Update : Fri Feb 06 17:02:02 2015
Response via : Multiple Level Calibration

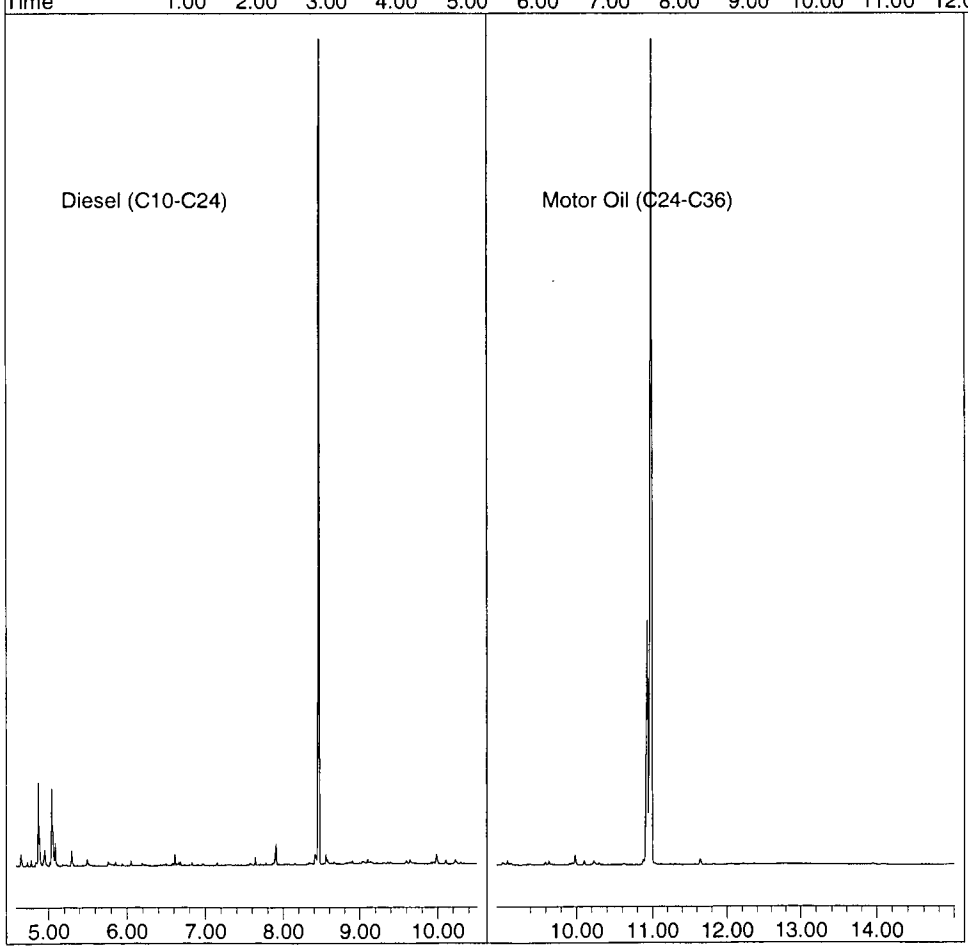
Volume Inj. : 2UL
Signal Phase : DB-5
Signal Info : FID02A

Compound	R.T.	Response	Conc Units
System Monitoring Compounds			
3) SA Ortho-Terphenyl(S)	8.47	81375180	109.192 ppb
Surrogate Spike 150.000		Recovery =	72.79%
4) SA Octacosane(S)	10.99	79212854	146.739 ppb
Surrogate Spike 150.000		Recovery =	97.83%
Target Compounds			

Quantitation Report

Data File: G:\APOLLO\DATA\150127\127139.D
Sample : AZ10004W05 5/1000





TPH-d Water EPA 8015C

Element Environmental
98-030 Hekaha St., Unit 9
Aiea, HI 96701

APPL Inc.
908 North Temperance Avenue
Clovis, CA 93611

Attn: Steve Spengler

Project: MCBH Motor Pool UST KB-100 SI / 130034

ARF: 75427

Sample ID: EKB100019

APPL ID: AZ10005

Sample Collection Date: 1/20/2015

QCG: #DROWC-150126A1-19410

Method	Analyte	Result	LOQ	LOD	DL	Units	Extraction Date	Analysis Date
EPA 8015C-	TPH-DRO (C10-C24)	50.0 U	150	50.0	40.4	ug/L	1/26/2015	1/29/2015
EPA 8015C-	TPH-LRO (C24-C36)	500.0 U	500	500.0	106.0	ug/L	1/26/2015	1/29/2015
EPA 8015C-	SURROGATE: OCTACOSANE (S)	114	28-142			%	1/26/2015	1/29/2015
EPA 8015C-	SURROGATE: ORTHO-TERPHENYL (S	84.1	57-132			%	1/26/2015	1/29/2015

Quant Method: CTO121.M
Run #: 127140
Instrument: Apollo
Sequence: 150127
Dilution Factor: 1
Initials: LA

Printed: 2/9/2015 9:32:00 AM
APPL-F1-SC-NoMC-REG MDLs

Quantitation Report (QT Reviewed)

Data File : G:\APOLLO\DATA\150127\127140.D Vial: 40
Acq On : 1-29-15 19:16:50 Operator: lac
Sample : AZ10005W04 5/1000 Inst : Apollo
Misc : Water Multiplr: 5.00
IntFile : events.e
Quant Time: Feb 6 13:55 2015 Quant Results File: CTO121.RES

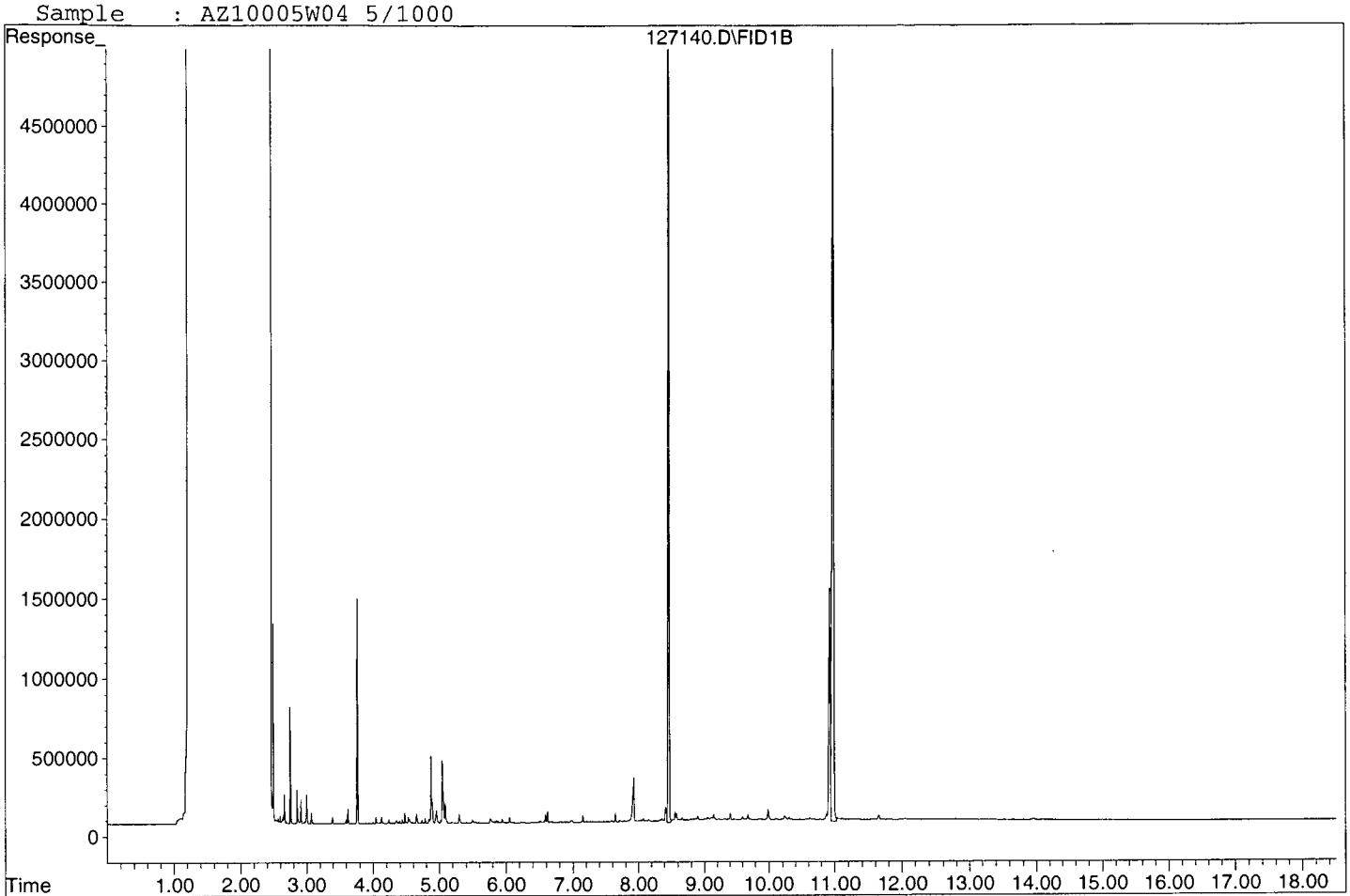
Method : G:\APOLLO\DATA\150206\CTO121.M (Chemstation Integrator)
Title : 8015 B&C
Last Update : Fri Feb 06 17:02:02 2015
Response via : Multiple Level Calibration

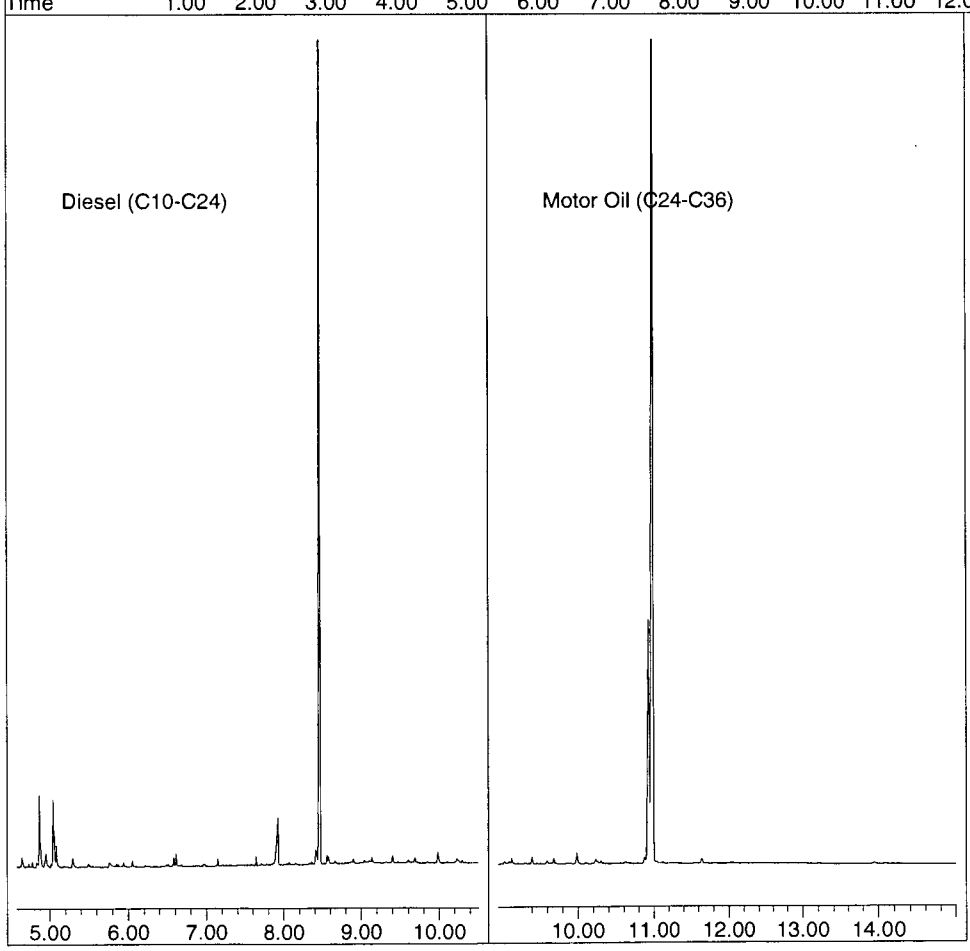
Volume Inj. : 2UL
Signal Phase : DB-5
Signal Info : FID02A

Compound	R.T.	Response	Conc Units
System Monitoring Compounds			
3) SA Ortho-Terphenyl(S)	8.47	94020039	126.159 ppb
Surrogate Spike 150.000		Recovery =	84.11%
4) SA Octacosane(S)	10.99	92116869	170.644 ppb
Surrogate Spike 150.000		Recovery =	113.76%
Target Compounds			

Quantitation Report

Data File: G:\APOLLO\DATA\150127\127140.D
Sample : AZ10005W04 5/1000





TPH-d Water EPA 8015C

Element Environmental
98-030 Hekaha St., Unit 9
Aiea, HI 96701

APPL Inc.
908 North Temperance Avenue
Clovis, CA 93611

Attn: Steve Spengler

Project: MCBH Motor Pool UST KB-100 SI / 130034

ARF: 75427

Sample ID: EKB100020

APPL ID: AZ10006

Sample Collection Date: 1/20/2015

QCG: #DROWC-150126A1-19410

Method	Analyte	Result	LOQ	LOD	DL	Units	Extraction Date	Analysis Date
EPA 8015C-	TPH-DRO (C10-C24)	50.0 U	150	50.0	40.4	ug/L	1/26/2015	1/29/2015
EPA 8015C-	TPH-LRO (C24-C36)	500.0 U	500	500.0	106.0	ug/L	1/26/2015	1/29/2015
EPA 8015C-	SURROGATE: OCTACOSANE (S)	110	28-142			%	1/26/2015	1/29/2015
EPA 8015C-	SURROGATE: ORTHO-TERPHENYL (S	82.0	57-132			%	1/26/2015	1/29/2015

Quant Method: CTO121.M
Run #: 127147
Instrument: Apollo
Sequence: 150127
Dilution Factor: 1
Initials: LA

Printed: 2/9/2015 9:32:00 AM
APPL-F1-SC-NoMC-REG MDLs

Quantitation Report (QT Reviewed)

Data File : G:\APOLLO\DATA\150127\127147.D Vial: 47
Acq On : 1-29-15 22:06:58 Operator: lac
Sample : AZ10006W15 5/1000 Inst : Apollo
Misc : Water Multiplr: 5.00
IntFile : events.e
Quant Time: Feb 6 14:28 2015 Quant Results File: CTO121.RES

Method : G:\APOLLO\DATA\150206\CTO121.M (Chemstation Integrator)
Title : 8015 B&C
Last Update : Fri Feb 06 17:02:02 2015
Response via : Multiple Level Calibration

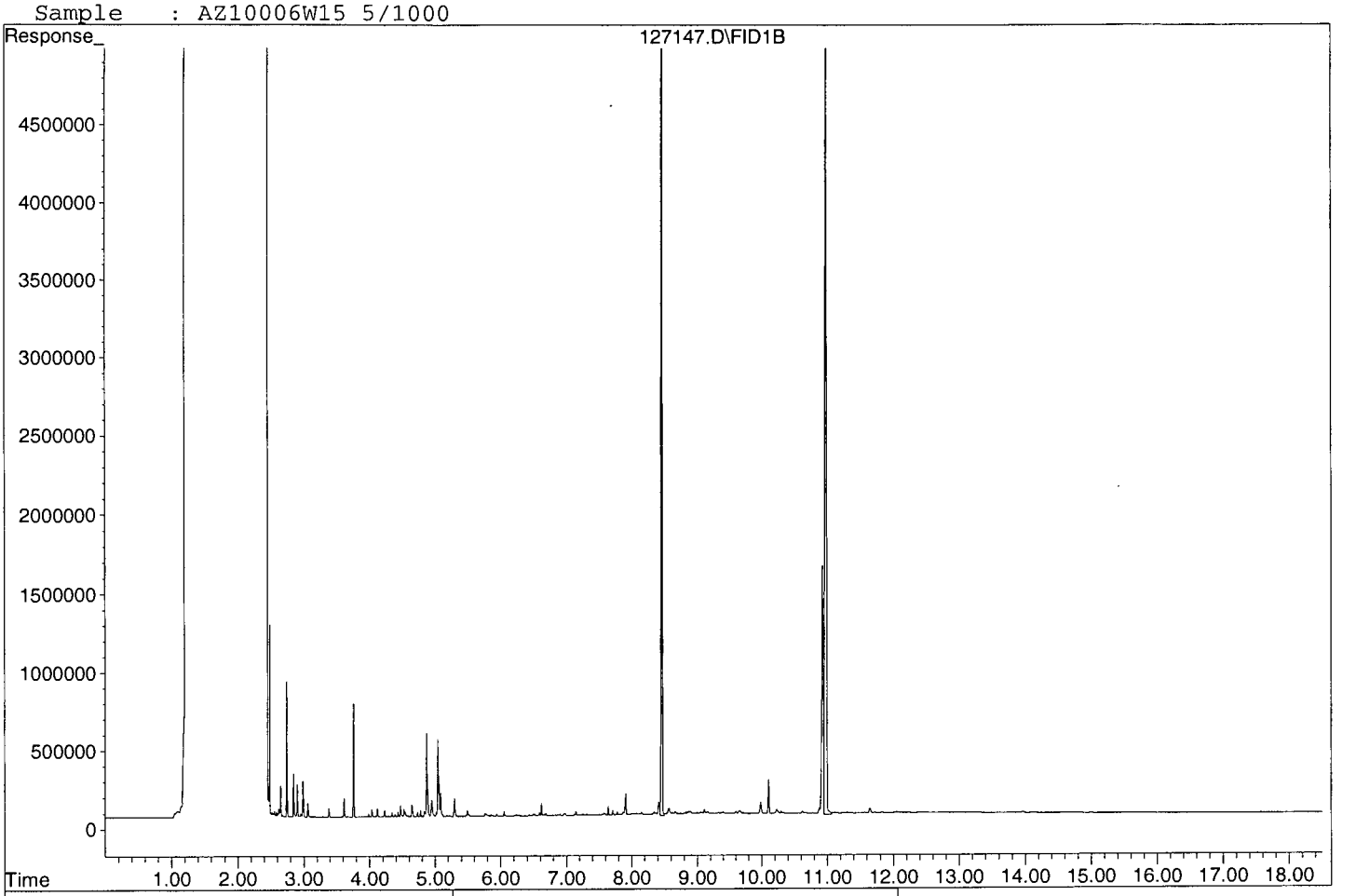
Volume Inj. : 2UL
Signal Phase : DB-5
Signal Info : FID02A

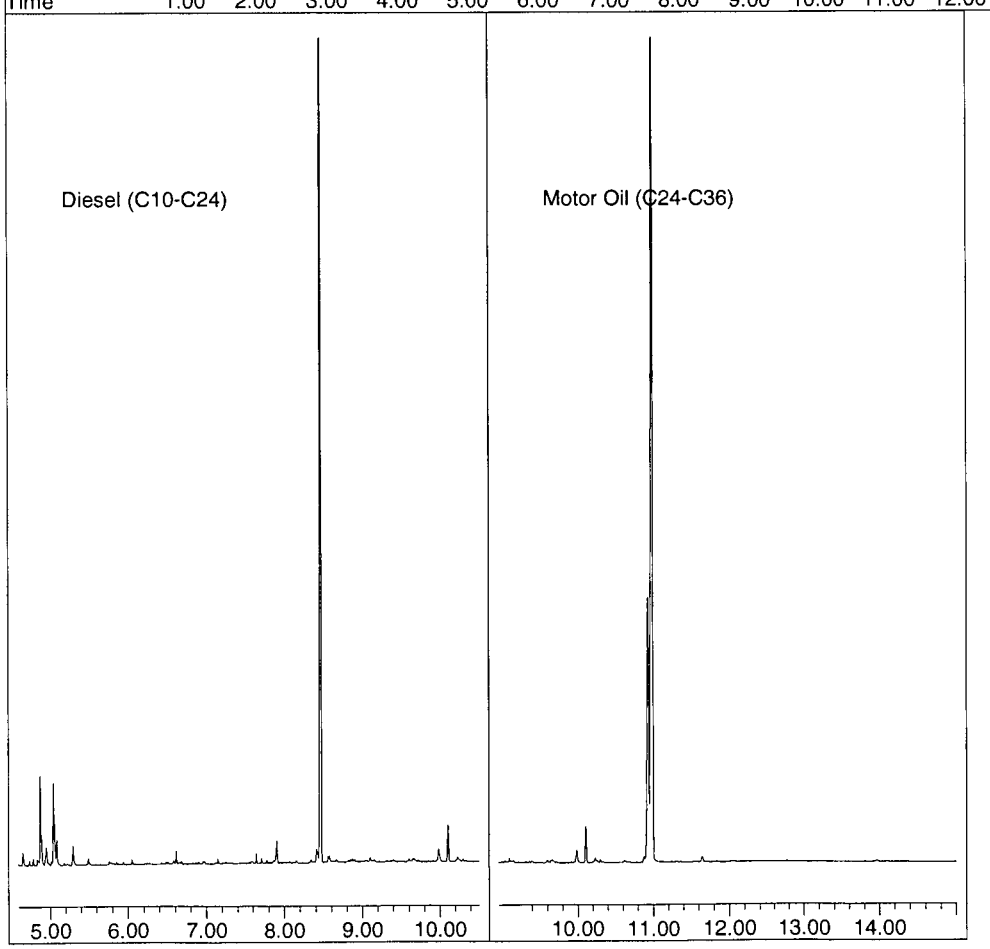
Compound	R.T.	Response	Conc Units
System Monitoring Compounds			
3) SA Ortho-Terphenyl(S)	8.47	91630752	122.953 ppb
Surrogate Spike 150.000		Recovery =	81.97%
4) SA Octacosane(S)	10.99	89363106	165.542 ppb
Surrogate Spike 150.000		Recovery =	110.36%

Target Compounds

Quantitation Report

Data File: G:\APOLLO\DATA\150127\127147.D
Sample : AZ10006W15 5/1000





TPH-d Water EPA 8015C

Element Environmental
98-030 Hekaha St., Unit 9
Aiea, HI 96701

APPL Inc.
908 North Temperance Avenue
Clovis, CA 93611

Attn: Steve Spengler

Project: MCBH Motor Pool UST KB-100 SI / 130034

ARF: 75427

Sample ID: EKB100021

APPL ID: AZ10007

Sample Collection Date: 1/20/2015

QCG: #DROWC-150126A1-19410

Method	Analyte	Result	LOQ	LOD	DL	Units	Extraction Date	Analysis Date
EPA 8015C-	TPH-DRO (C10-C24)	50.0 U	150	50.0	40.4	ug/L	1/26/2015	1/29/2015
EPA 8015C-	TPH-LRO (C24-C36)	500.0 U	500	500.0	106.0	ug/L	1/26/2015	1/29/2015
EPA 8015C-	SURROGATE: OCTACOSANE (S)	109	28-142			%	1/26/2015	1/29/2015
EPA 8015C-	SURROGATE: ORTHO-TERPHENYL (S	81.7	57-132			%	1/26/2015	1/29/2015

Quant Method: CTO121.M
Run #: 127148
Instrument: Apollo
Sequence: 150127
Dilution Factor: 1
Initials: LA

Printed: 2/9/2015 9:32:00 AM
APPL-F1-SC-NoMC-REG MDLs

Quantitation Report (QT Reviewed)

Data File : G:\APOLLO\DATA\150127\127148.D Vial: 48
Acq On : 1-29-15 22:31:10 Operator: lac
Sample : AZ10007W04 5/1000 Inst : Apollo
Misc : Water Multiplr: 5.00
IntFile : events.e
Quant Time: Feb 6 14:28 2015 Quant Results File: CTO121.RES

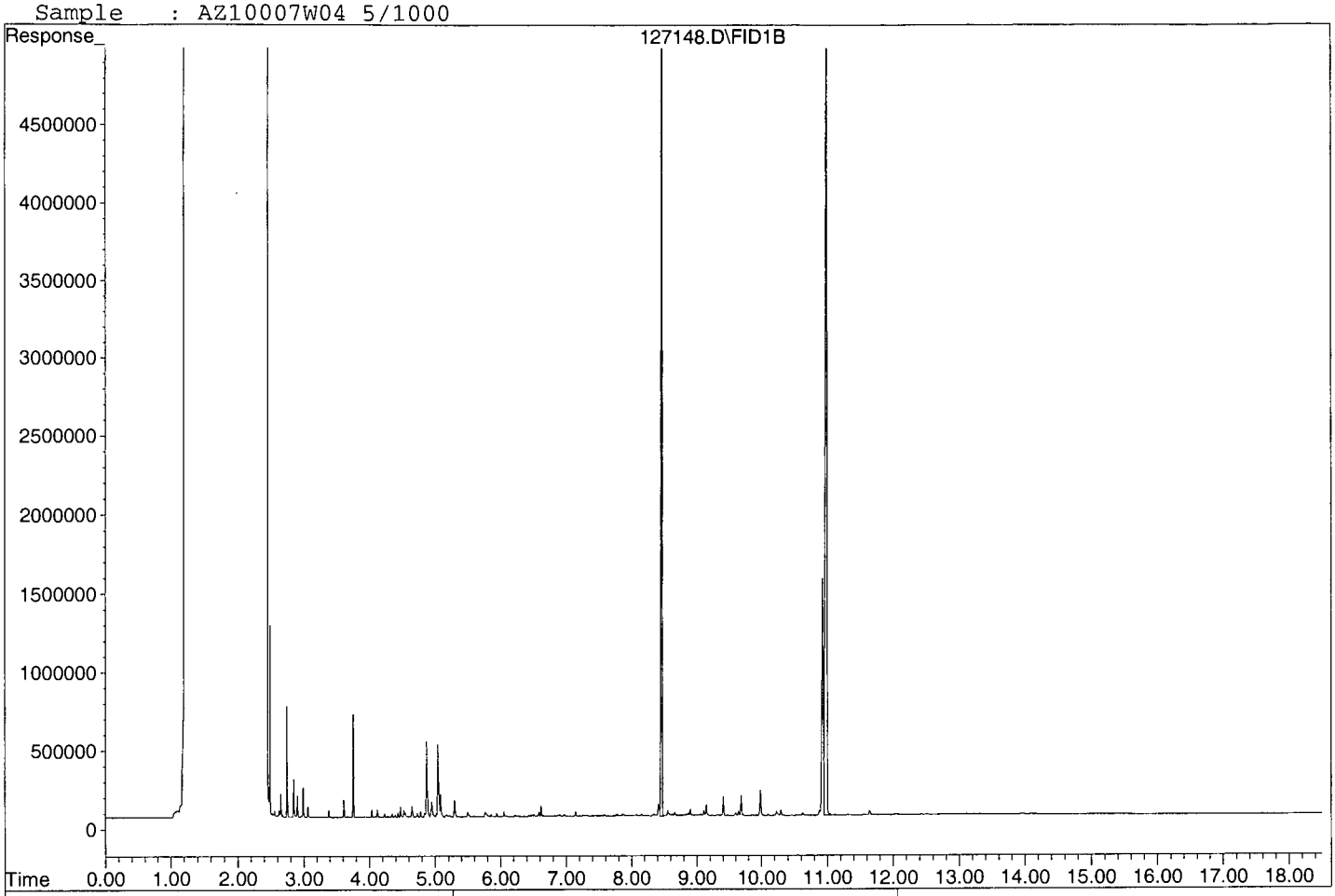
Method : G:\APOLLO\DATA\150206\CTO121.M (Chemstation Integrator)
Title : 8015 B&C
Last Update : Fri Feb 06 17:02:02 2015
Response via : Multiple Level Calibration

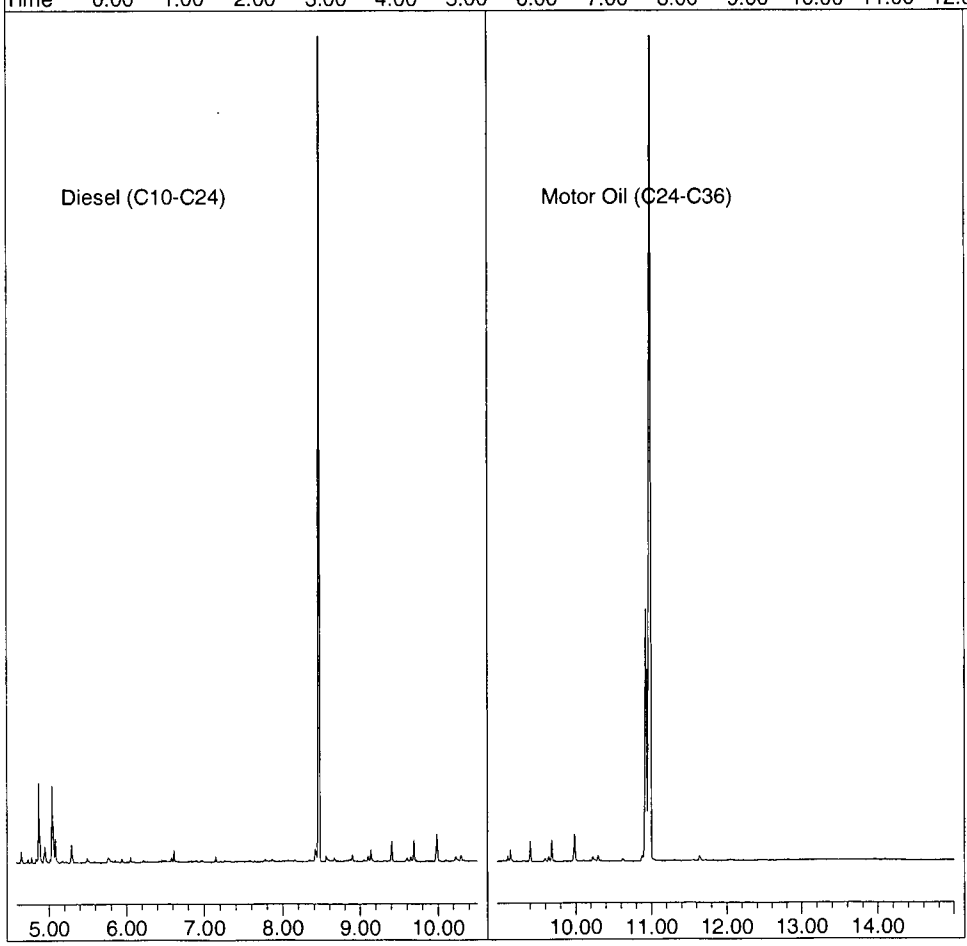
Volume Inj. : 2UL
Signal Phase : DB-5
Signal Info : FID02A

Compound	R.T.	Response	Conc Units
System Monitoring Compounds			
3) SA Ortho-Terphenyl(S)	8.47	91293888	122.501 ppb
Surrogate Spike 150.000		Recovery =	81.67%
4) SA Octacosane(S)	10.99	88090122	163.184 ppb
Surrogate Spike 150.000		Recovery =	108.79%
Target Compounds			

Quantitation Report

Data File: G:\APOLLO\DATA\150127\127148.D
Sample : AZ10007W04 5/1000





EPA 8015 Modified
Total Petroleum Hydrocarbons

Calibration Data

APPL, INC.

TPH Extractables
CTO121

Form 6
Initial Calibration

Lab Name: APPL, Inc.
Case No:
Matrix:

SDG No: 75427
Initial Cal. Date: 1/21/2015
Instrument: Apollo

Initials: LAC

121003.D 121004.D 121005.D 121006.D 121007.D 121008.D
121010.D 121011.D 121012.D 121013.D 121014.D 121015.D

		Compound	1	2	3	4	5	6					Avg	%RSD		
1	HATM	Diesel (C10-C24)	1205025	1328453	1223803	1270966	1275197	1242320					1257627	3.5	HATM	
2	HBTM	Motor Oil (C24-C36)	722970	734449	743939	791262	758160	748835					749936	3.1	HBTM	
3	SA	Ortho-Terphenyl(S)		1961830	1784177	1858966	1875849	1834821					1863129	3.5	SA	
4	SA	Octacosane(S)		1426796	1298584	1337601	1355729	1329039					1349549	3.5	SA	
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0.390815

Quantitation Report (Not Reviewed)

Data File : G:\APOLLO\DATA\150121\121003.D Vial: 3
Acq On : 1-21-15 16:13:54 Operator: lac
Sample : Diesel 10/1000 1/20/15 Inst : Apollo
Misc : Mix(A) Multiplr: 1.00
IntFile : events.e
Quant Time: Jan 23 9:31 2015 Quant Results File: CTO121.RES

Method : G:\APOLLO\DATA\150121\CTO121.M (Chemstation Integrator)
Title : 8015 B&C
Last Update : Mon Jan 26 09:50:19 2015
Response via : Multiple Level Calibration

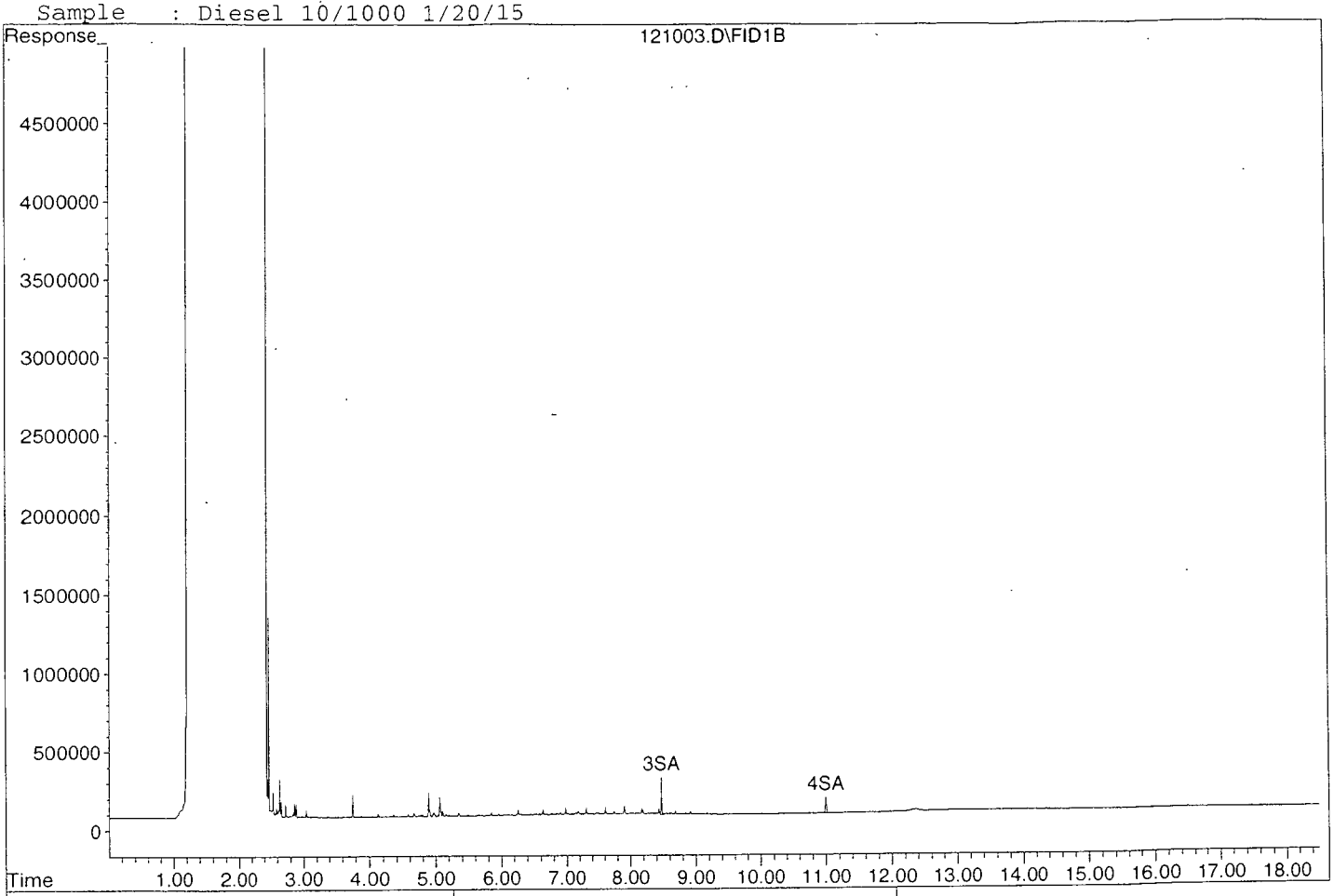
Volume Inj. : 2UL
Signal Phase : DB-5
Signal Info : FID02A

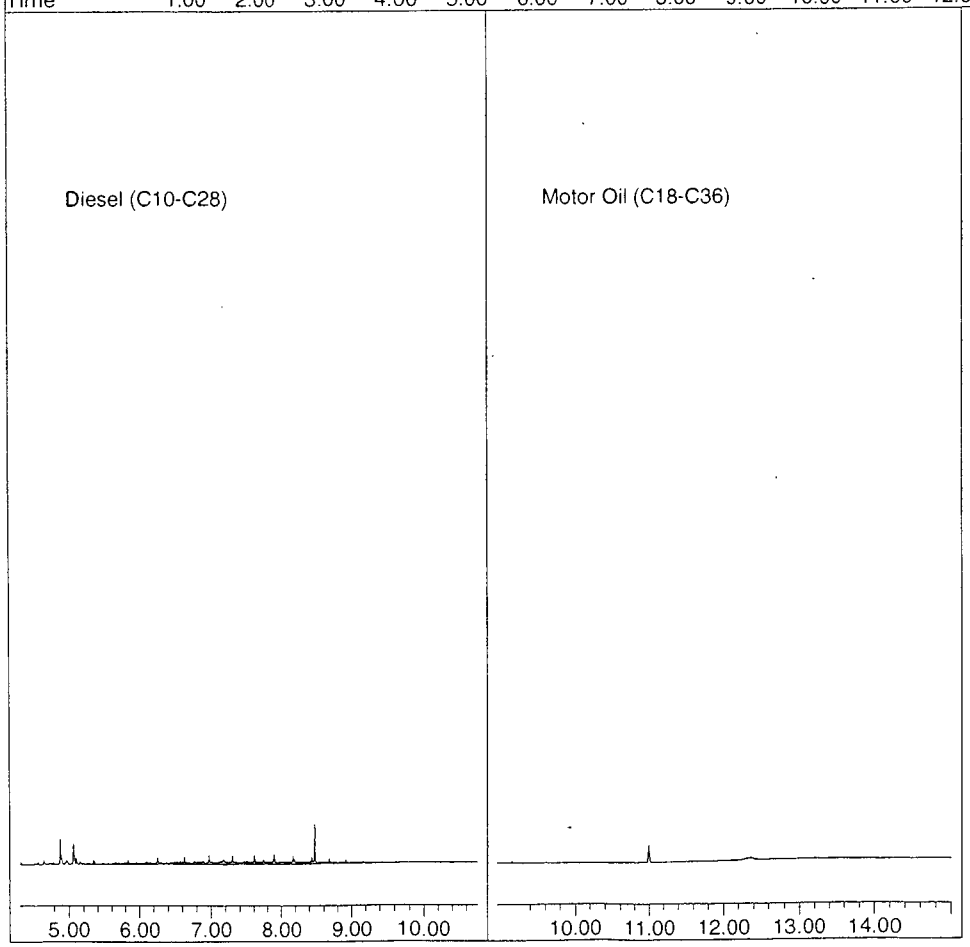
Compound	R.T.	Response	Conc Units
System Monitoring Compounds			
3) SA Ortho-Terphenyl(S)	8.47	1805261	0.484 ppb
Surrogate Spike 30.000		Recovery =	1.61%
4) SA Octacosane(S)	11.00	1403605	0.520 ppb
Surrogate Spike 30.000		Recovery =	1.73%
Target Compounds			
1) HATM Diesel (C10-C28)	7.55	24100509	9.179 ppb

(f)=RT Delta > 1/2 Window (m)=manual int.
121003.D CTO121.M Fri Jan 30 13:02:30 2015

Quantitation Report

Data File: G:\APOLLO\DATA\150121\121003.D
Sample : Diesel 10/1000 1/20/15





Quantitation Report (Not Reviewed)

Data File : G:\APOLLO\DATA\150121\121004.D Vial: 4
Acq On : 1-21-15 16:38:00 Operator: lac
Sample : Diesel 100/1000 1/20/15 Inst : Apollo
Misc : Mix(A) Multiplr: 1.00
IntFile : events.e
Quant Time: Jan 23 9:31 2015 Quant Results File: CTO121.RES

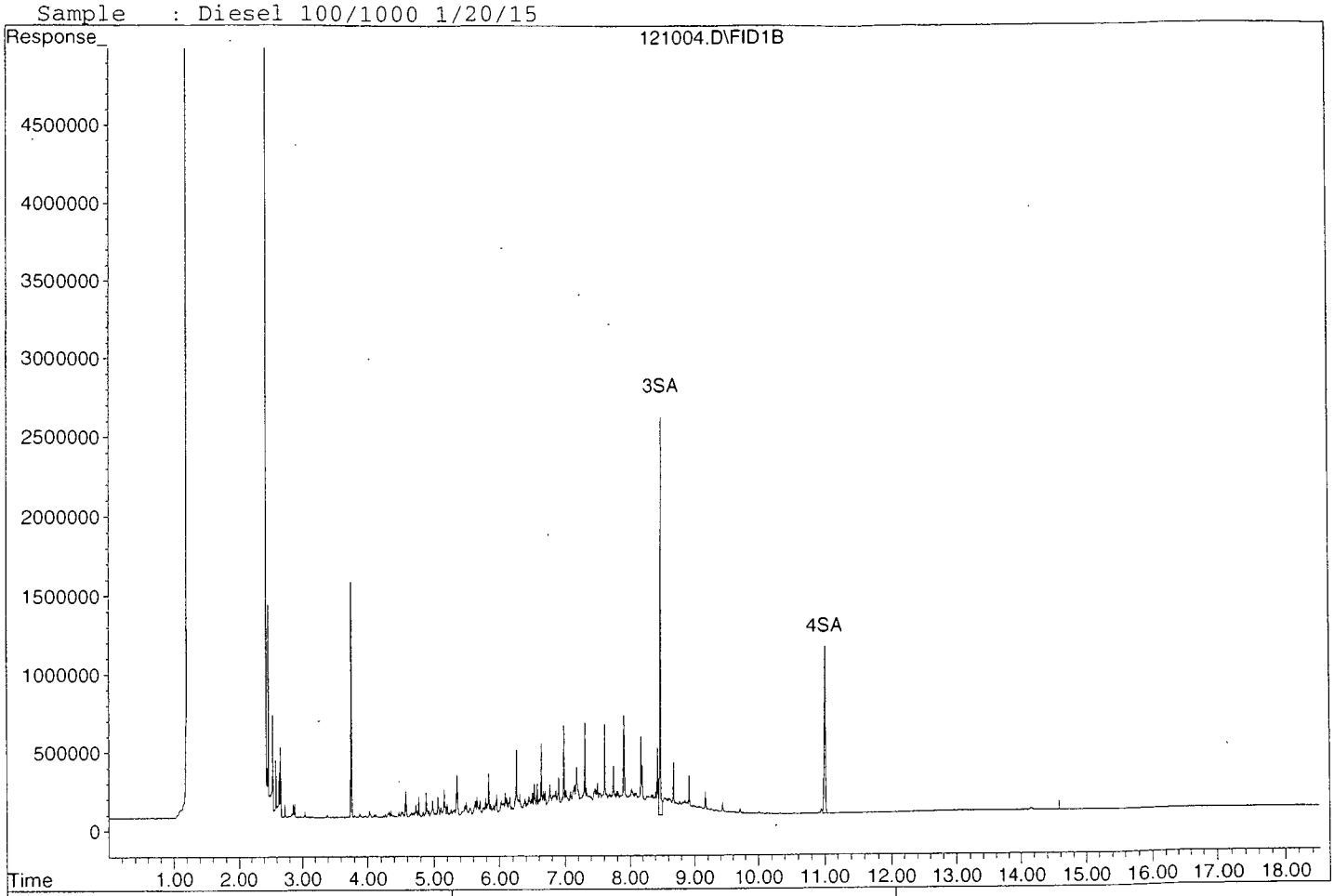
Method : G:\APOLLO\DATA\150121\CTO121.M (Chemstation Integrator)
Title : 8015 B&C
Last Update : Mon Jan 26 09:50:19 2015
Response via : Multiple Level Calibration

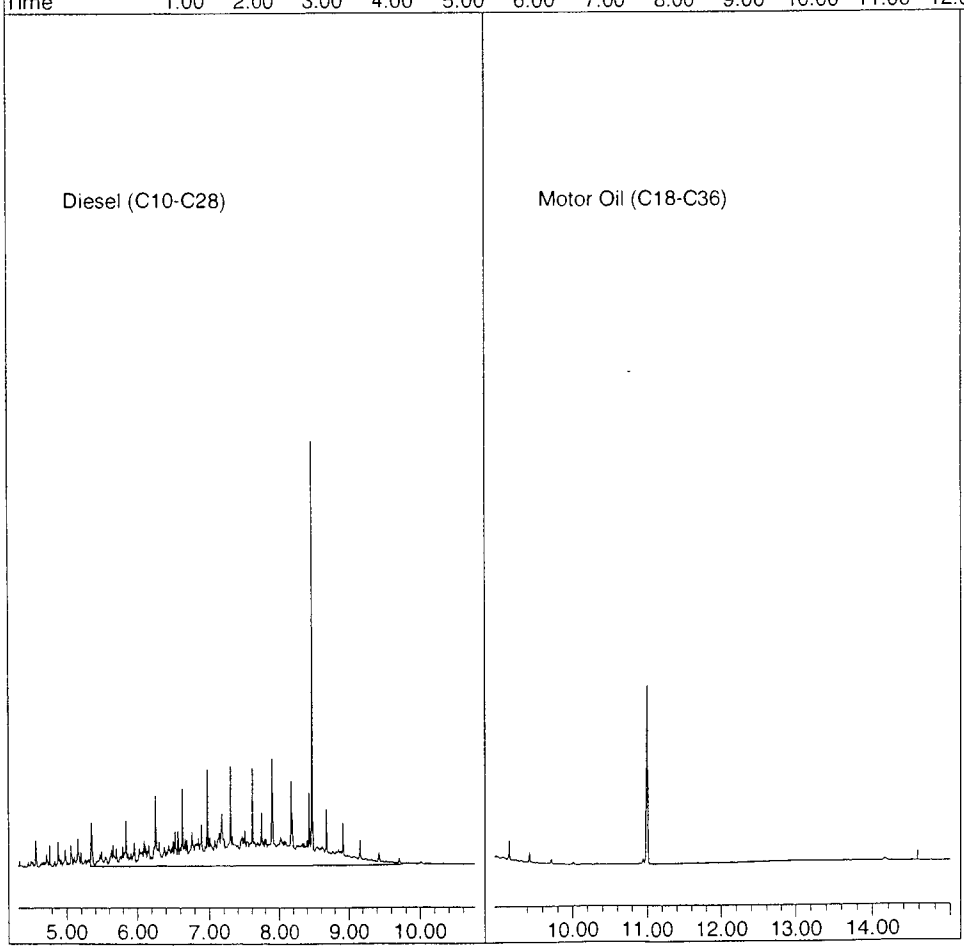
Volume Inj. : 2UL
Signal Phase : DB-5
Signal Info : FID02A

Compound	R.T.	Response	Conc Units
System Monitoring Compounds			
3) SA Ortho-Terphenyl(S)	8.47	19618300	5.265 ppb
Surrogate Spike 30.000		Recovery =	17.55%
4) SA Octacosane(S)	11.00	14267956	5.286 ppb
Surrogate Spike 30.000		Recovery =	17.62%
Target Compounds			
1) HATM Diesel (C10-C28)	7.55	265690622	101.196 ppb

Quantitation Report

Data File: G:\APOLLO\DATA\150121\121004.D
Sample : Diesel 100/1000 1/20/15





121004.D CTO121.M Fri Jan 30 13:02:32 2015

Quantitation Report (Not Reviewed)

Data File : G:\APOLLO\DATA\150121\121005.D Vial: 5
Acq On : 1-21-15 17:02:08 Operator: lac
Sample : Diesel 400/1000 1/20/15 Inst : Apollo
Misc : Mix(A) Multiplr: 1.00
IntFile : events.e
Quant Time: Jan 23 9:31 2015 Quant Results File: CTO121.RES

Method : G:\APOLLO\DATA\150121\CTO121.M (Chemstation Integrator)
Title : 8015 B&C
Last Update : Mon Jan 26 09:50:19 2015
Response via : Multiple Level Calibration

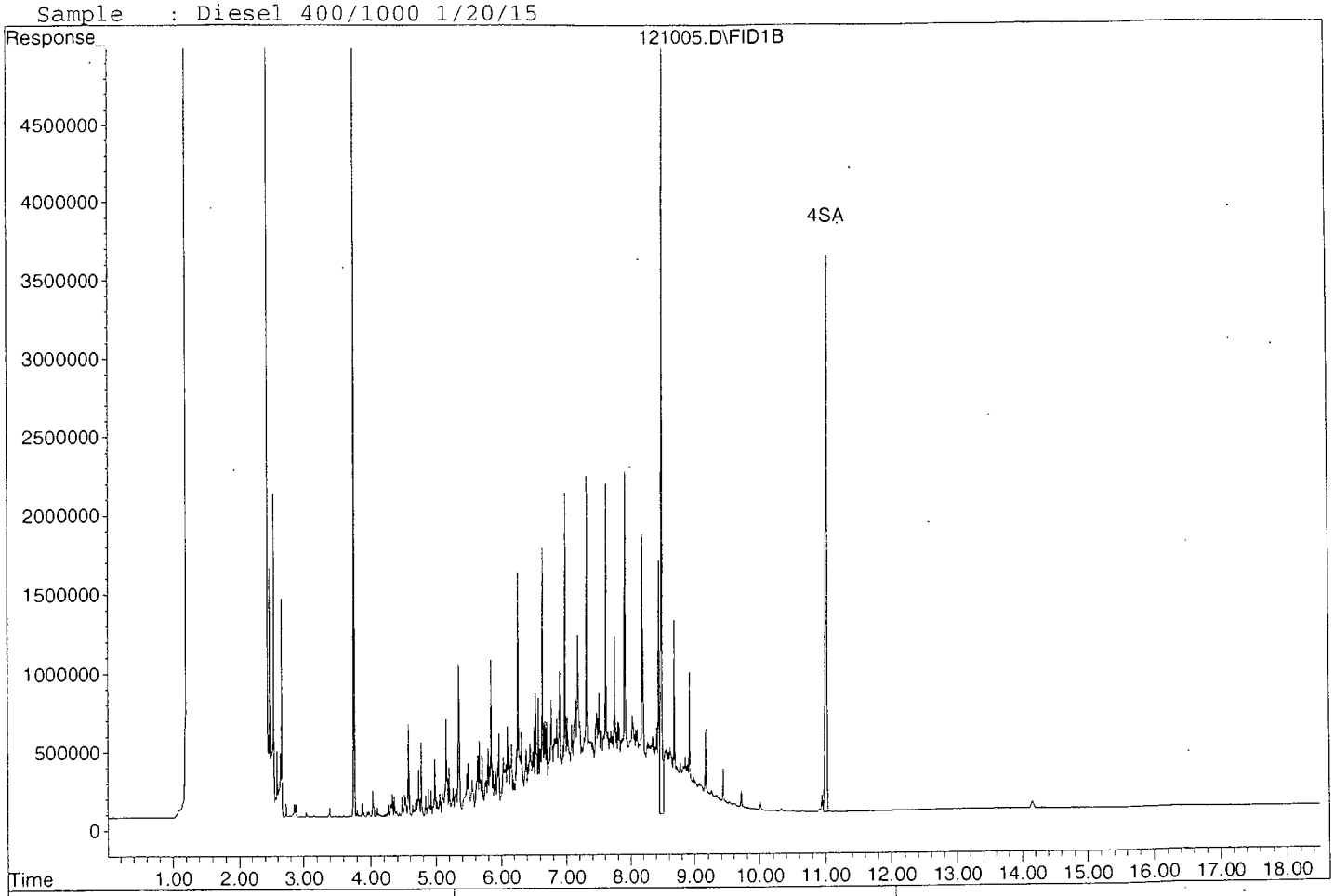
Volume Inj. : 2UL
Signal Phase : DB-5
Signal Info : FID02A

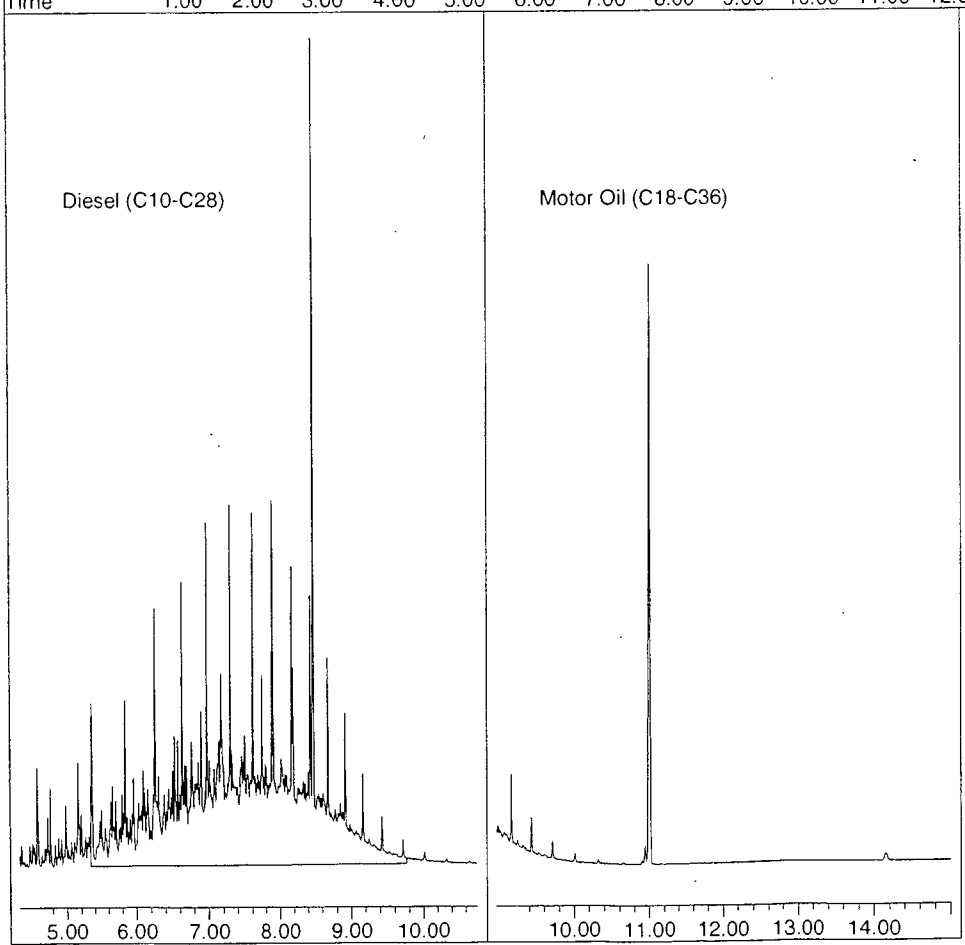
Compound	R.T.	Response	Conc Units
System Monitoring Compounds			
3) SA Ortho-Terphenyl(S)	8.48	71367095	19.152 ppb
Surrogate Spike 30.000		Recovery =	63.84%
4) SA Octacosane(S)	11.01	51943340	19.245 ppb
Surrogate Spike 30.000		Recovery =	64.15%
Target Compounds			
1) HATM Diesel (C10-C28)	7.55	979042605	372.896 ppb

(f)=RT Delta > 1/2 Window (m)=manual int.
121005.D CTO121.M Fri Jan 30 13:02:33 2015

Quantitation Report

Data File: G:\APOLLO\DATA\150121\121005.D
Sample : Diesel 400/1000 1/20/15





121005.D CTO121.M Fri Jan 30 13:02:34 2015

Quantitation Report (Not Reviewed)

Data File : G:\APOLLO\DATA\150121\121006.D
Vial: 6
Acq On : 1-21-15 17:26:19
Operator: lac
Sample : Diesel 600/1000 1/20/15
Inst : Apollo
Misc : Mix(A)
Multiplr: 1.00
IntFile : events.e
Quant Time: Jan 23 9:31 2015 Quant Results File: CTO121.RES

Method : G:\APOLLO\DATA\150121\CTO121.M (Chemstation Integrator)
Title : 8015 B&C
Last Update : Mon Jan 26 09:50:19 2015
Response via : Multiple Level Calibration

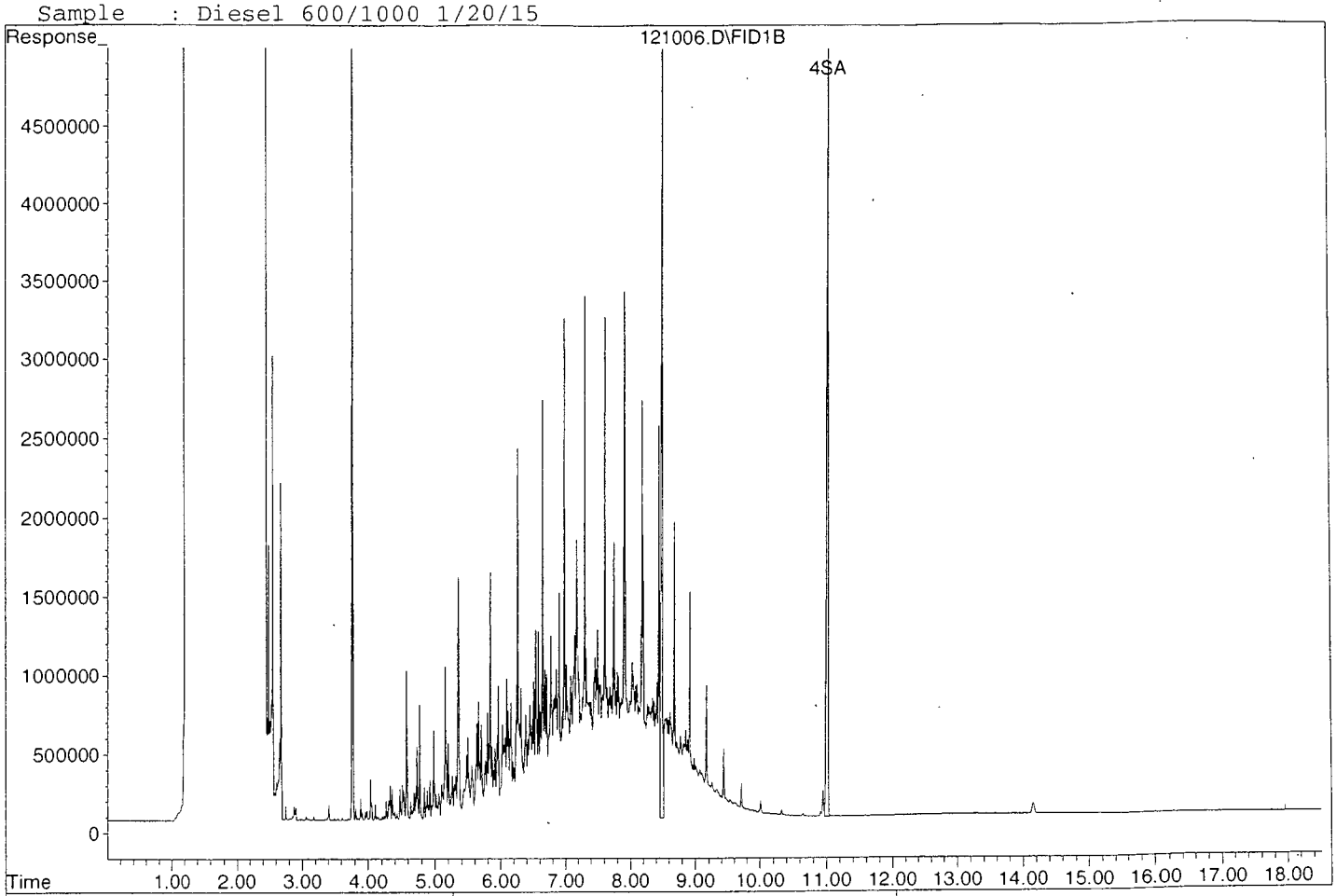
Volume Inj. : 2UL
Signal Phase : DB-5
Signal Info : FID02A

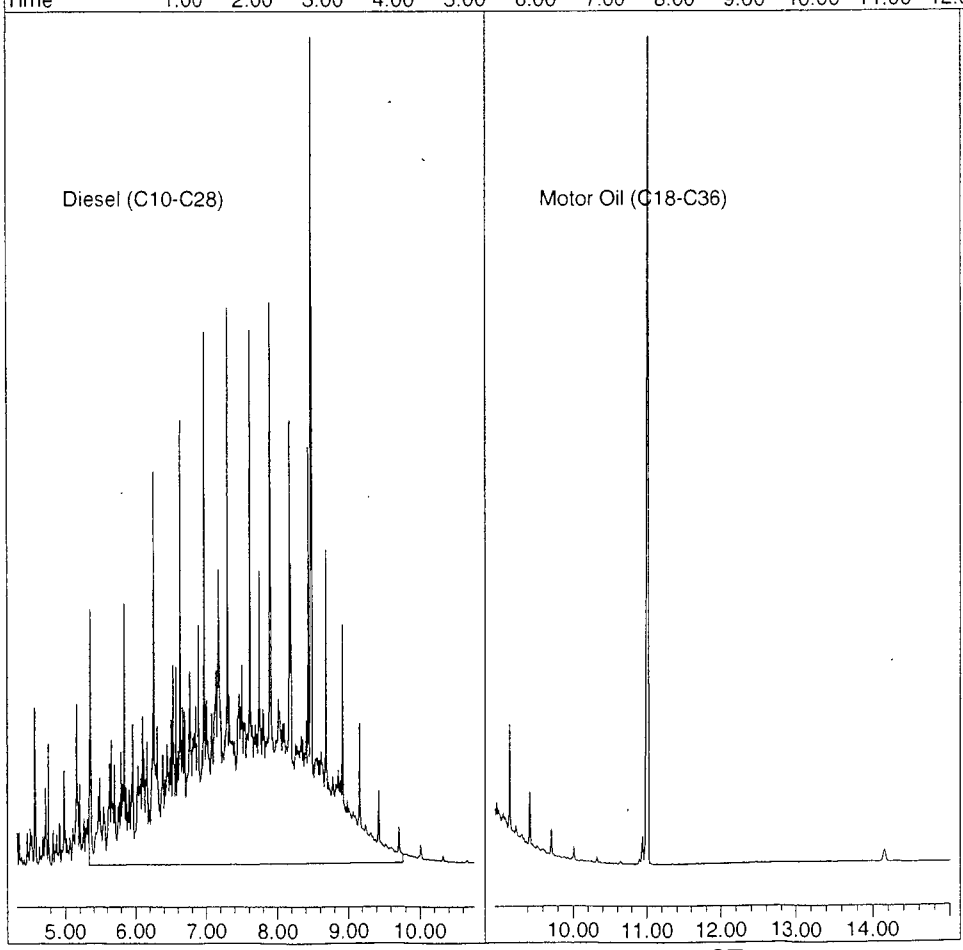
Compound	R.T.	Response	Conc Units
System Monitoring Compounds			
3) SA Ortho-Terphenyl(S)	8.48	111537945	29.933 ppb
Surrogate Spike 30.000		Recovery =	99.78%
4) SA Octacosane(S)	11.01	80256063	29.734 ppb
Surrogate Spike 30.000		Recovery =	99.11%
Target Compounds			
1) HATM Diesel (C10-C28)	7.55	1525158657	580.900 ppb

(f)=RT Delta > 1/2 Window (m)=manual int.

Quantitation Report

Data File: G:\APOLLO\DATA\150121\121006.D
Sample : Diesel 600/1000 1/20/15





121006.D CTO121.M Fri Jan 30 13:02:35 2015

Quantitation Report (Not Reviewed)

Data File : G:\APOLLO\DATA\150121\121007.D Vial: 7
Acq On : 1-21-15 17:50:18 Operator: lac
Sample : Diesel 800/1000 1/20/15 Inst : Apollo
Misc : Mix(A) Multiplr: 1.00
IntFile : events.e
Quant Time: Jan 23 9:31 2015 Quant Results File: CTO121.RES

Method : G:\APOLLO\DATA\150121\CTO121.M (Chemstation Integrator)
Title : 8015 B&C
Last Update : Mon Jan 26 09:50:19 2015
Response via : Multiple Level Calibration

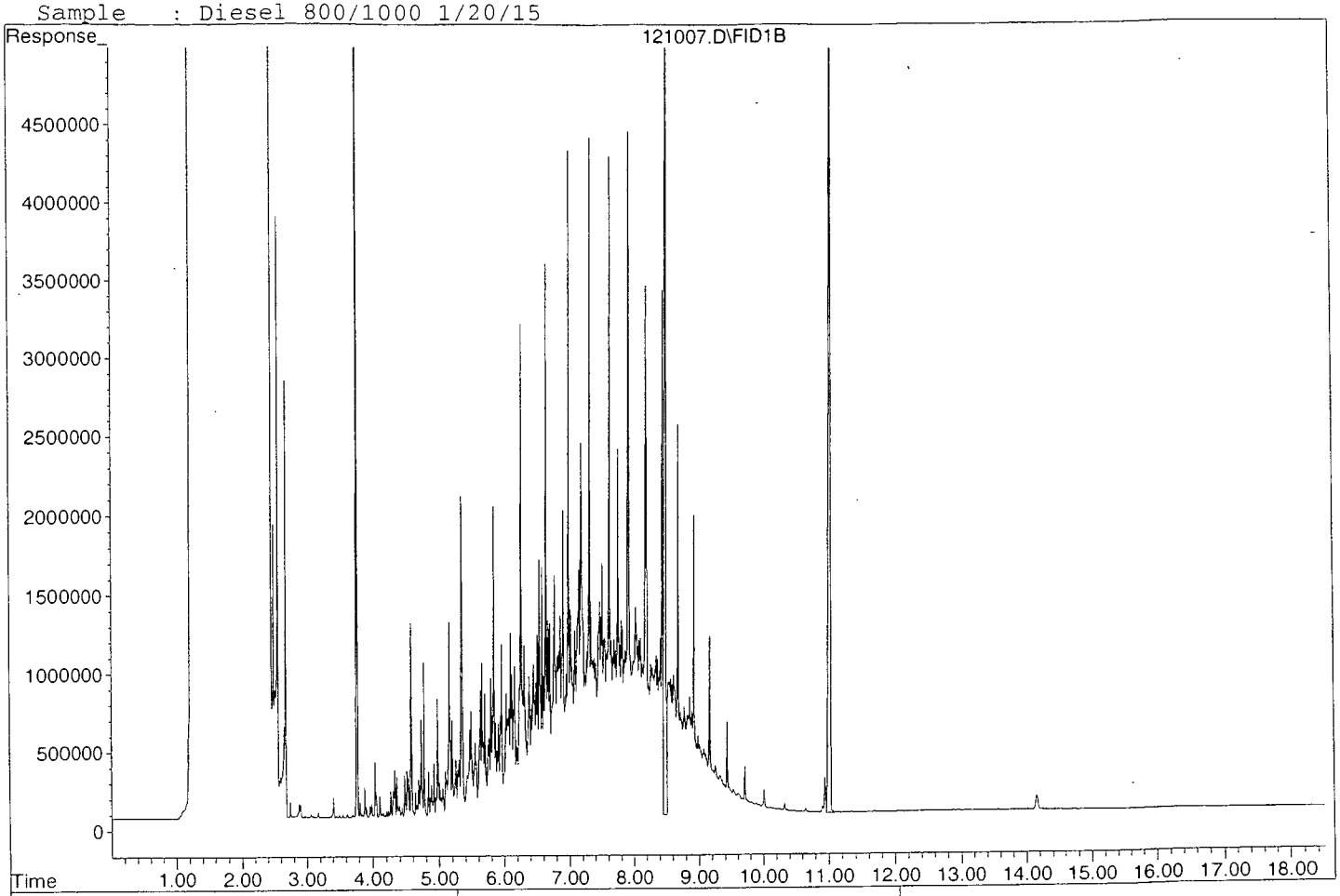
Volume Inj. : 2UL
Signal Phase : DB-5
Signal Info : FID02A

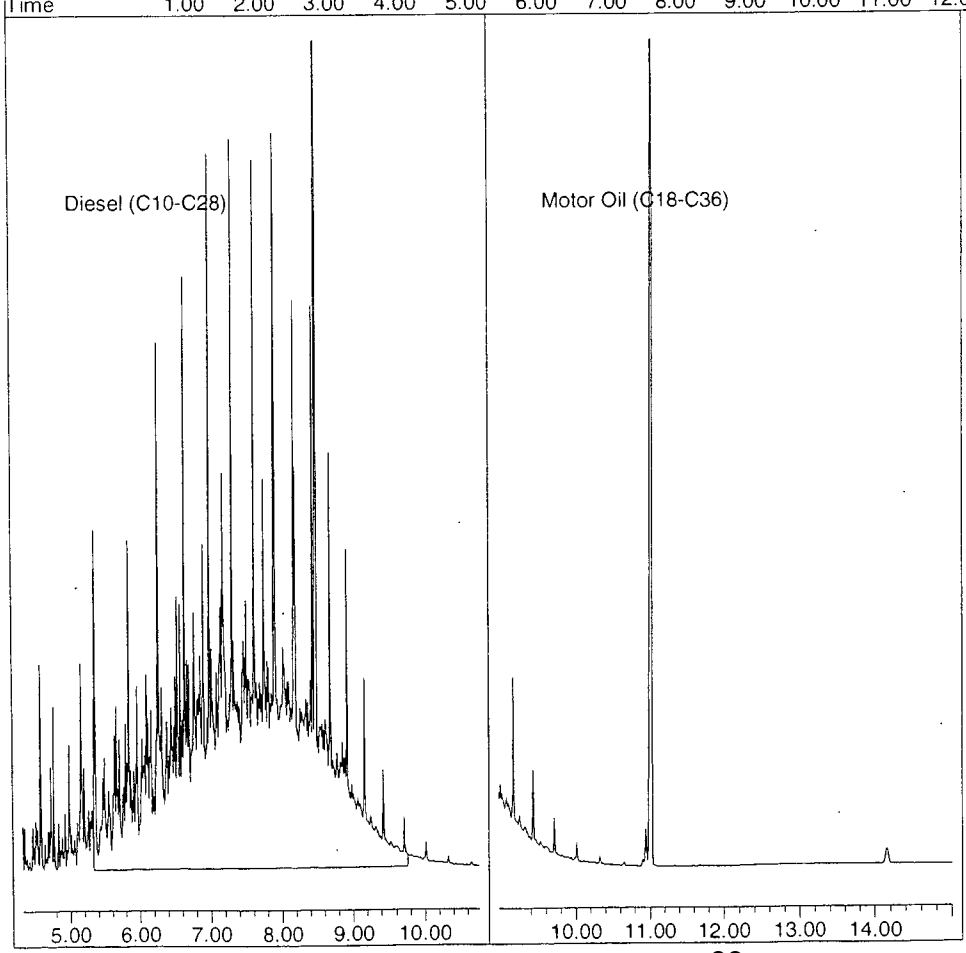
Compound	R.T.	Response	Conc Units
System Monitoring Compounds			
3) SA Ortho-Terphenyl(S)	8.49	150067953	40.273 ppb
Surrogate Spike 30.000		Recovery =	134.24%
4) SA Octacosane(S)	11.02	108458298	40.183 ppb
Surrogate Spike 30.000		Recovery =	133.94%
Target Compounds			
1) HATM Diesel (C10-C28)	7.55	2040314538	777.111 ppb

(f)=RT Delta > 1/2 Window (m)=manual int.
121007.D CTO121.M Fri Jan 30 13:02:36 2015

Quantitation Report

Data File: G:\APOLLO\DATA\150121\121007.D
Sample : Diesel 800/1000 1/20/15





121007.D CTO121.M Fri Jan 30 13:02:37 2015

Quantitation Report (Not Reviewed)

Data File : G:\APOLLO\DATA\150121\121008.D Vial: 8
Acq On : 1-21-15 18:14:25 Operator: lac
Sample : Diesel 1000/1000 1/20/15 Inst : Apollo
Misc : Mix(A) Multiplr: 1.00
IntFile : events.e
Quant Time: Jan 23 9:31 2015 Quant Results File: CTO121.RES

Method : G:\APOLLO\DATA\150121\CTO121.M (Chemstation Integrator)
Title : 8015 B&C
Last Update : Mon Jan 26 09:50:19 2015
Response via : Multiple Level Calibration

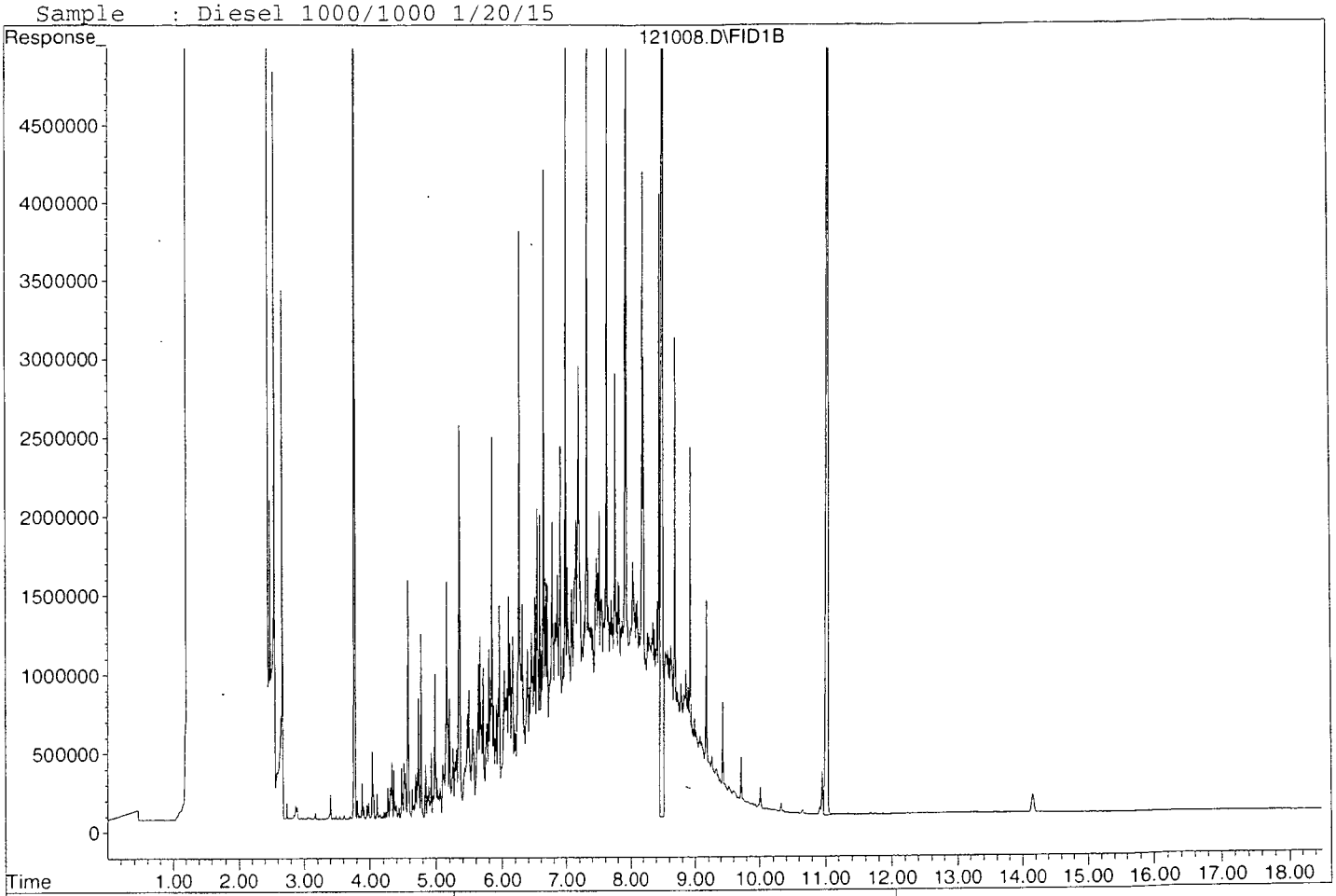
Volume Inj. : 2UL
Signal Phase : DB-5
Signal Info : FID02A

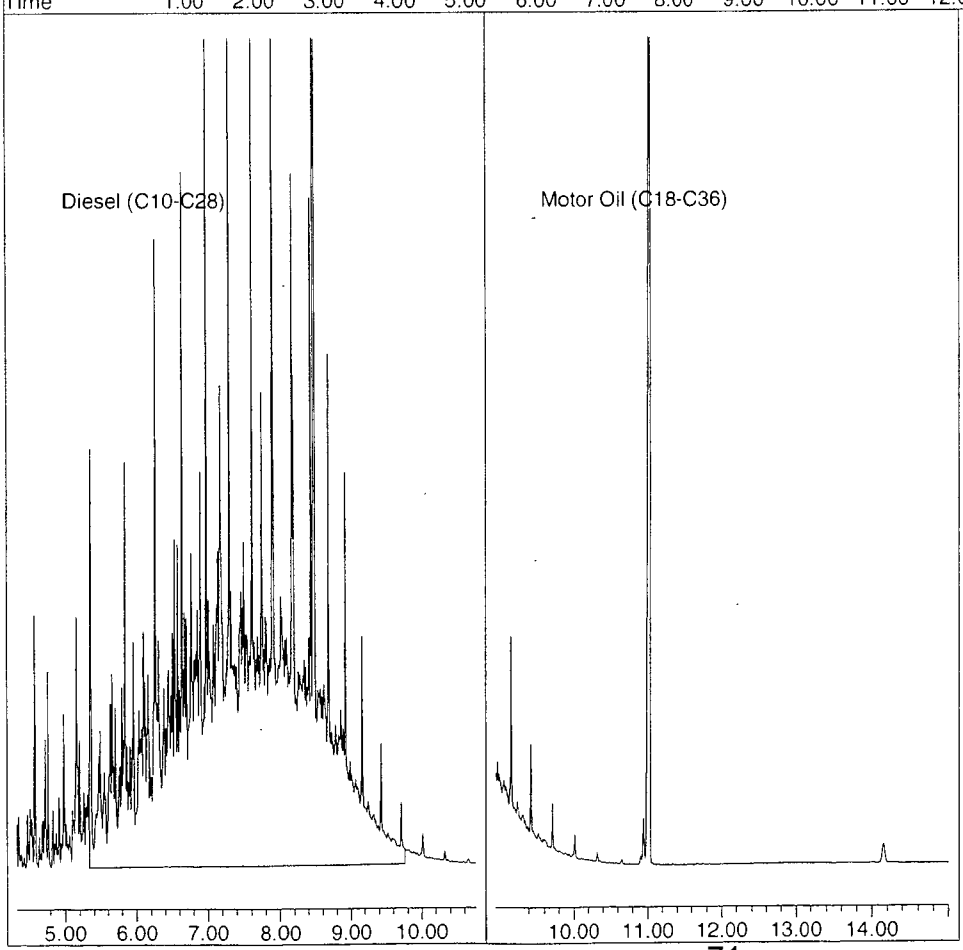
Compound	R.T.	Response	Conc Units
System Monitoring Compounds			
3) SA Ortho-Terphenyl(S)	8.49	183482132	49.240 ppb
Surrogate Spike 30.000		Recovery =	164.13%
4) SA Octacosane(S)	11.02	132903858	49.240 ppb
Surrogate Spike 30.000		Recovery =	164.13%
Target Compounds			
1) HATM Diesel (C10-C28)	7.55	2484639135	946.345 ppb

(f)=RT Delta > 1/2 Window (m)=manual int.
121008.D CTO121.M Fri Jan 30 13:02:37 2015

Quantitation Report

Data File: G:\APOLLO\DATA\150121\121008.D
Sample : Diesel 1000/1000 1/20/15





Quantitation Report (Not Reviewed)

Data File : G:\APOLLO\DATA\150121\121009.D
Acq On : 1-21-15 18:38:23
Sample : MO 10/1000 1/20/15
Misc : Mix(B)
IntFile : events.e
Quant Time: Jan 23 9:29 2015 Quant Results File: CTO121.RES

Vial: 9
Operator: lac
Inst : Apollo
Multiplr: 1.00

Method : G:\APOLLO\DATA\150121\CTO121.M (Chemstation Integrator)
Title : 8015 B&C
Last Update : Mon Jan 26 09:50:19 2015
Response via : Multiple Level Calibration

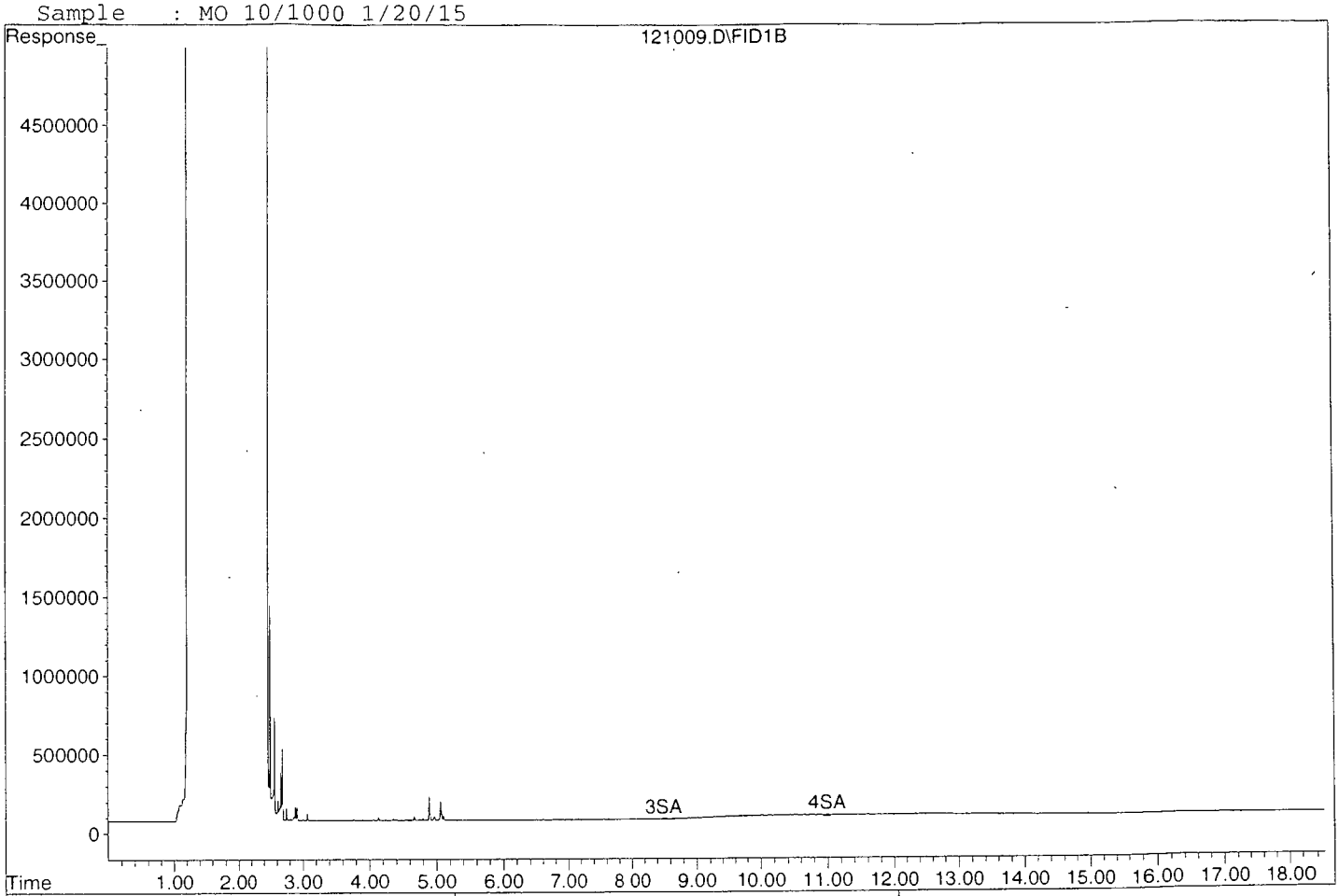
Volume Inj. : 2UL
Signal Phase : DB-5
Signal Info : FID02A

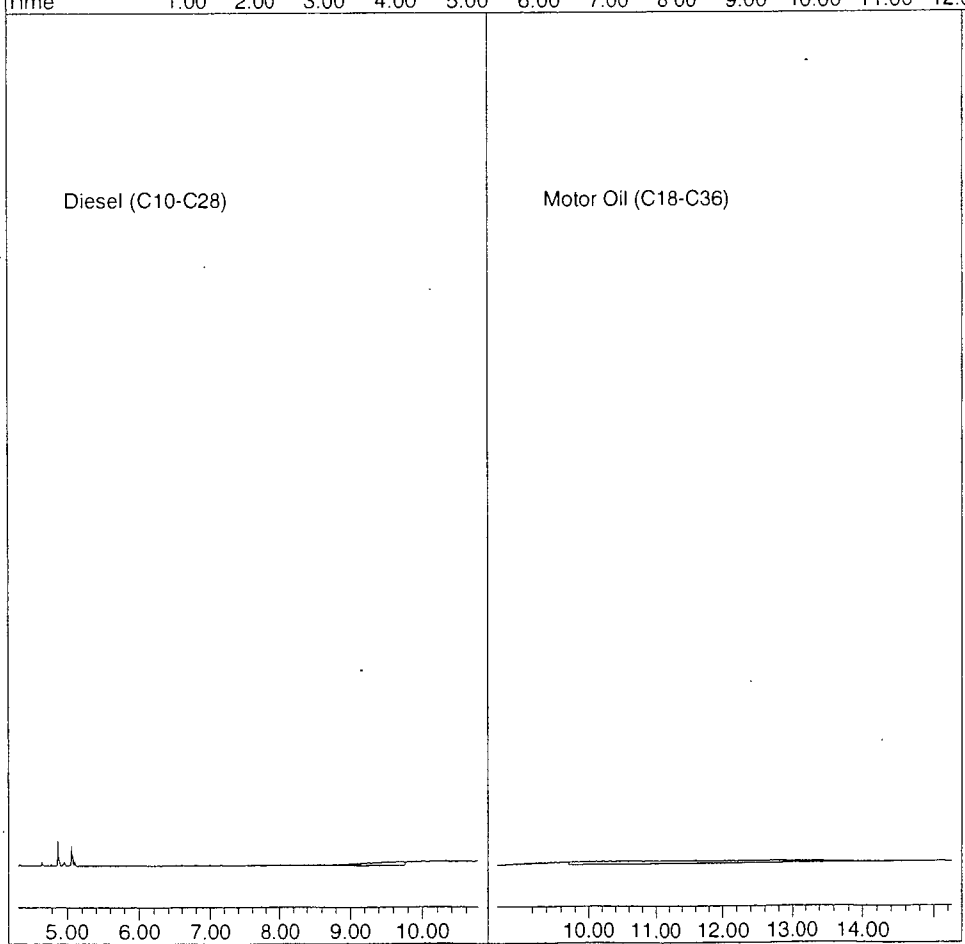
Compound	R.T.	Response	Conc Units
System Monitoring Compounds			
3) SA Ortho-Terphenyl(S)	8.49	21168	0.006 ppb
Surrogate Spike 30.000	Recovery	=	0.02%
4) SA Octacosane(S)	10.99	683890	0.253 ppb
Surrogate Spike 30.000	Recovery	=	0.84%
Target Compounds			
1) HATM Diesel (C10-C28)	7.55	10767708	4.101 ppb
2) HBTM Motor Oil (C18-C36)	11.99	33020994	16.820 ppb

(f)=RT Delta > 1/2 Window (m)=manual int.

Quantitation Report

Data File: G:\APOLLO\DATA\150121\121009.D
Sample : MO 10/1000 1/20/15





Quantitation Report (Not Reviewed)

Data File : G:\APOLLO\DATA\150121\121011.D Vial: 11
Acq On : 1-21-15 19:26:22 Operator: lac
Sample : MO 125/1000 1/20/15 Inst : Apollo
Misc : Mix(B) Multiplr: 1.00
IntFile : events.e
Quant Time: Jan 23 9:31 2015 Quant Results File: CTO121.RES

Method : G:\APOLLO\DATA\150121\CTO121.M (Chemstation Integrator)
Title : 8015 B&C
Last Update : Mon Jan 26 09:50:19 2015
Response via : Multiple Level Calibration

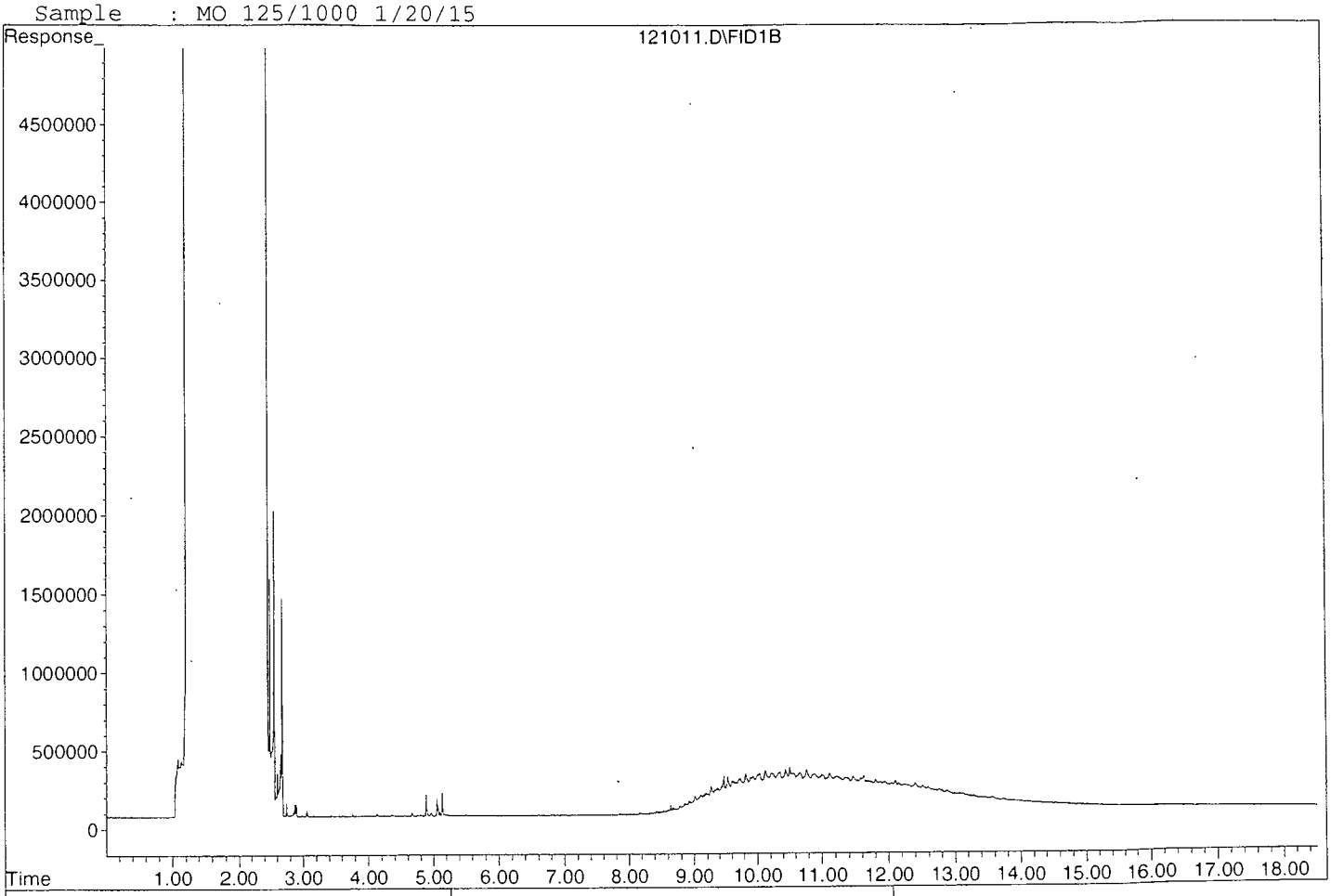
Volume Inj. : 2UL
Signal Phase : DB-5
Signal Info : FID02A

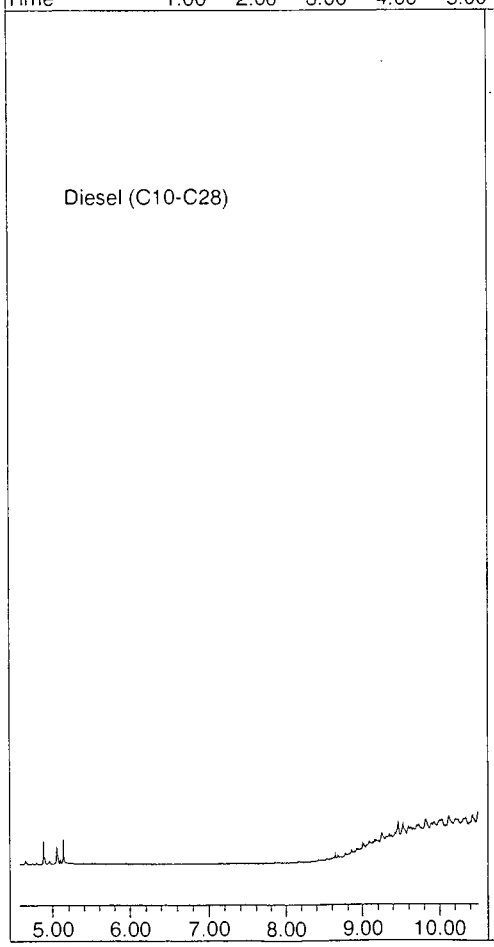
Compound	R.T.	Response	Conc Units
System Monitoring Compounds			
Target Compounds			
2) HBTM Motor Oil (C18-C36)	11.99	367224705	187.059 ppb

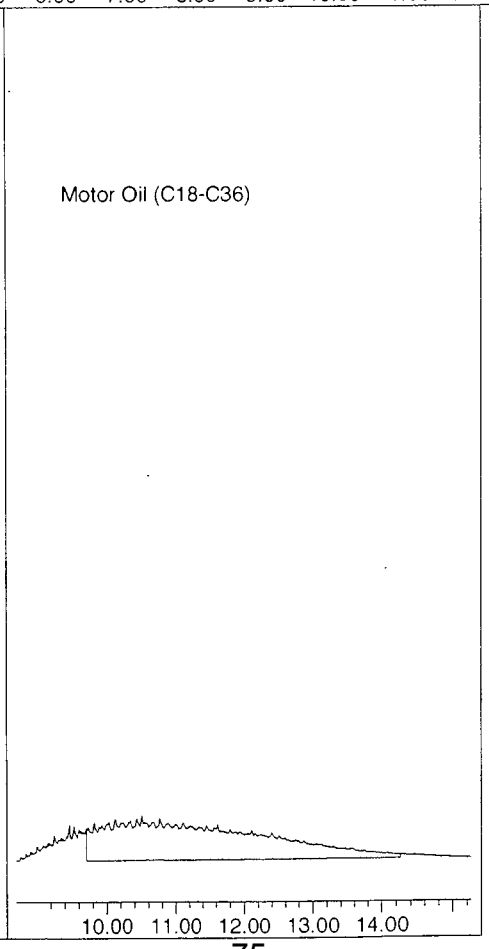
(f)=RT Delta > 1/2 Window (m)=manual int.
121011.D CTO121.M Fri Jan 30 13:02:40 2015

Quantitation Report

Data File: G:\APOLLO\DATA\150121\121011.D
Sample : MO 125/1000 1/20/15







Quantitation Report (Not Reviewed)

Data File : G:\APOLLO\DATA\150121\121012.D Vial: 12
Acq On : 1-21-15 19:50:20 Operator: lac
Sample : MO 250/1000 1/20/15 Inst : Apollo
Misc : Mix(B) Multiplr: 1.00
IntFile : events.e
Quant Time: Jan 23 9:31 2015 Quant Results File: CTO121.RES

Method : G:\APOLLO\DATA\150121\CTO121.M (Chemstation Integrator)
Title : 8015 B&C
Last Update : Mon Jan 26 09:50:19 2015
Response via : Multiple Level Calibration

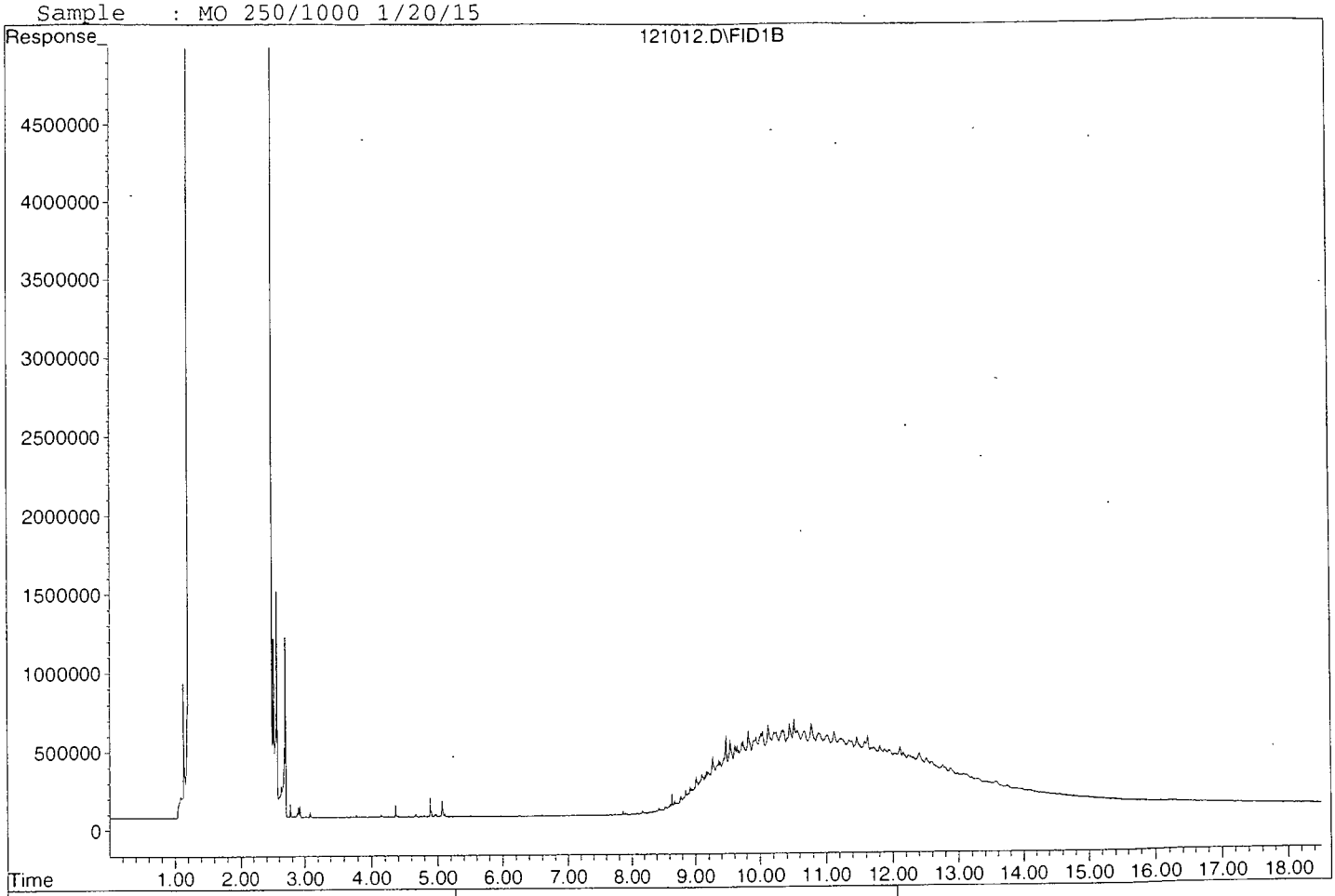
Volume Inj. : 2UL
Signal Phase : DB-5
Signal Info : FID02A

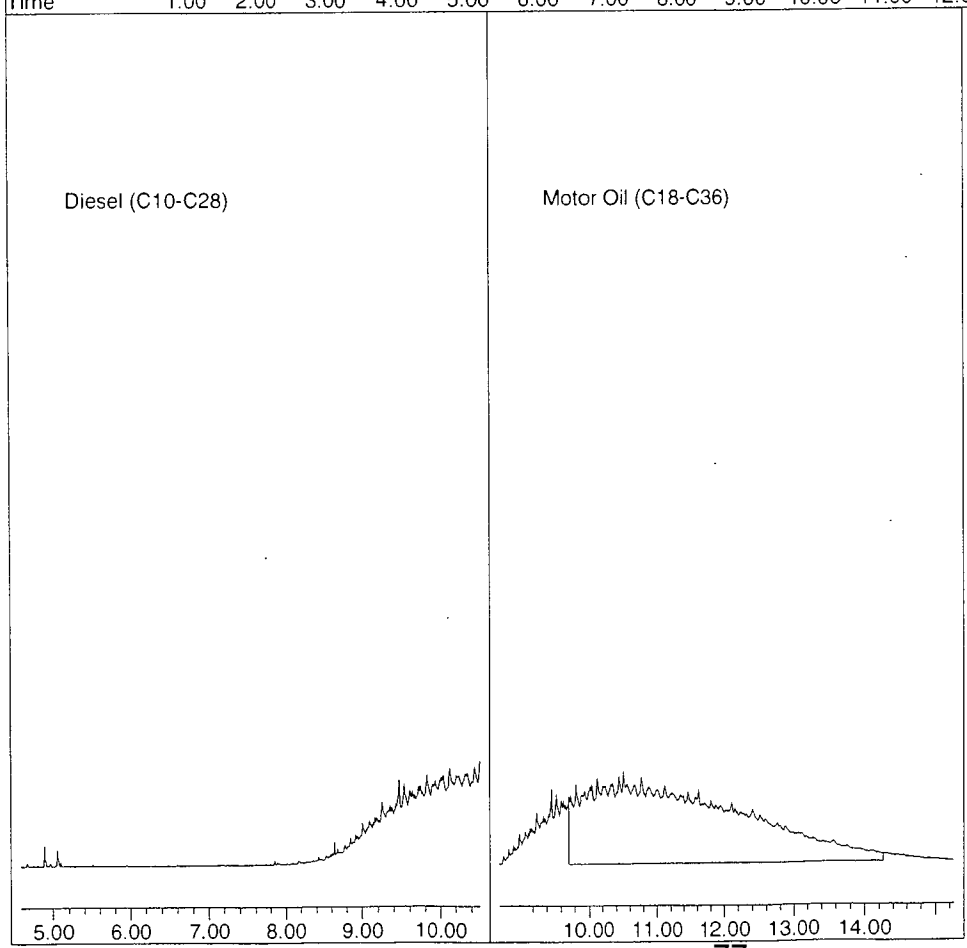
Compound	R.T.	Response	Conc Units
System Monitoring Compounds			
Target Compounds			
2) HBTM Motor Oil (C18-C36)	11.99	743938507	378.952 ppb

(f)=RT Delta > 1/2 Window (m)=manual int.
121012.D CTO121.M Fri Jan 30 13:02:42 2015

Quantitation Report

Data File: G:\APOLLO\DATA\150121\121012.D
Sample : MO 250/1000 1/20/15





121012.D CTO121.M Fri Jan 30 13:02:43 2015

Quantitation Report (Not Reviewed)

Data File : G:\APOLLO\DATA\150121\121013.D
Acq On : 1-21-15 20:14:20
Sample : MO 100/200 1/20/15
Misc : Mix(B)
IntFile : events.e
Quant Time: Jan 23 9:31 2015 Quant Results File: CTO121.RES

Vial: 13
Operator: lac
Inst : Apollo
Multiplr: 1.00

Method : G:\APOLLO\DATA\150121\CTO121.M (Chemstation Integrator)
Title : 8015 B&C
Last Update : Mon Jan 26 09:50:19 2015
Response via : Multiple Level Calibration

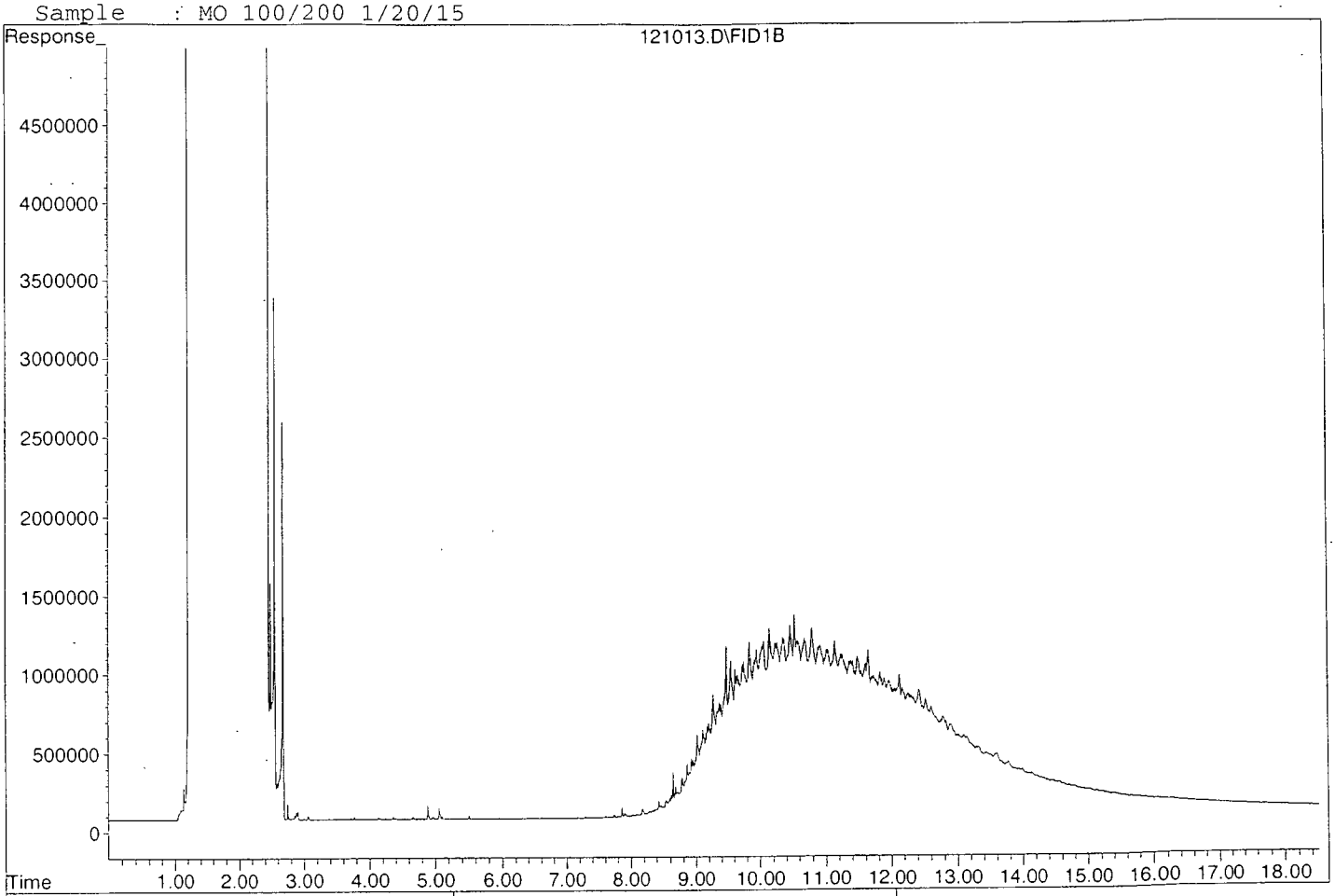
Volume Inj. : 2UL
Signal Phase : DB-5
Signal Info : FID02A

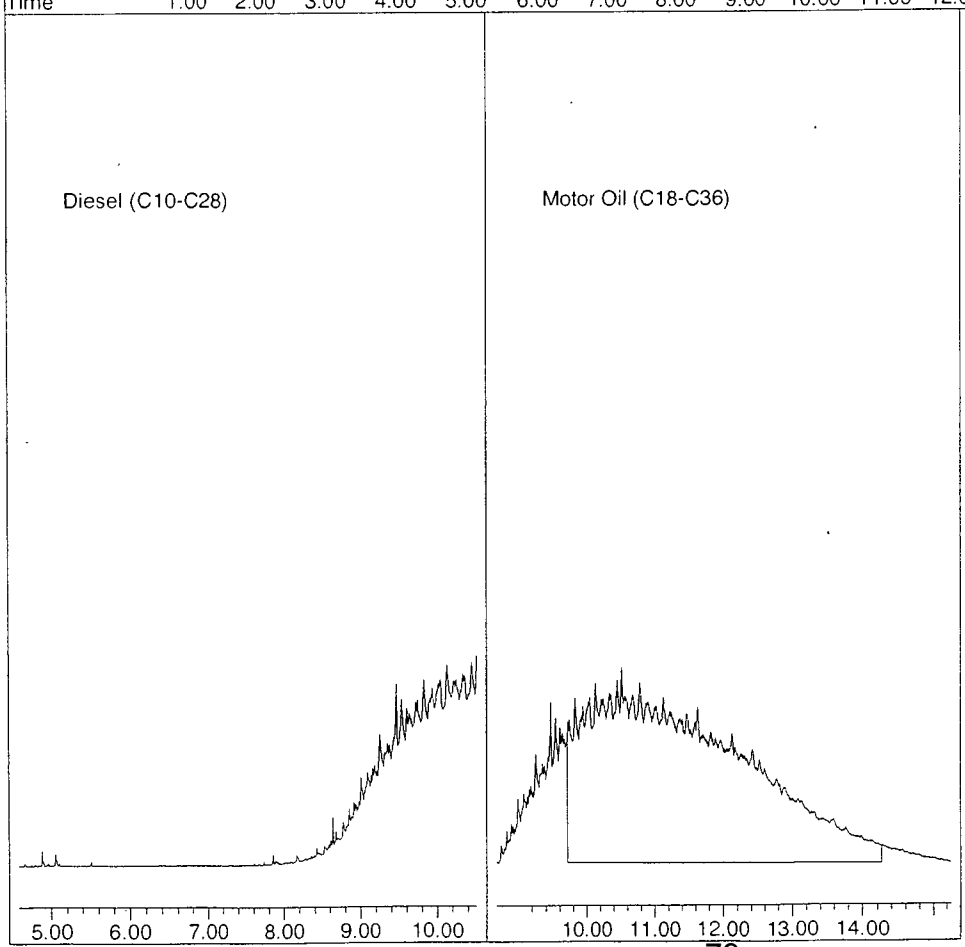
Compound	R.T.	Response	Conc Units
System Monitoring Compounds			
Target Compounds			
2) HBTM Motor Oil (C18-C36)	11.99	1582523323	806.116 ppb

(f)=RT Delta > 1/2 Window (m)=manual int.

Quantitation Report

Data File: G:\APOLLO\DATA\150121\121013.D
Sample : MO 100/200 1/20/15





Quantitation Report (Not Reviewed)

Data File : G:\APOLLO\DATA\150121\121014.D
Acq On : 1-21-15 20:38:12
Sample : MO 75/100 1/20/15
Misc : Mix(B)
IntFile : events.e
Quant Time: Jan 23 9:31 2015 Quant Results File: CTO121.RES

Vial: 14
Operator: lac
Inst : Apollo
Multiplr: 1.00

Method : G:\APOLLO\DATA\150121\CTO121.M (Chemstation Integrator)
Title : 8015 B&C
Last Update : Mon Jan 26 09:50:19 2015
Response via : Multiple Level Calibration

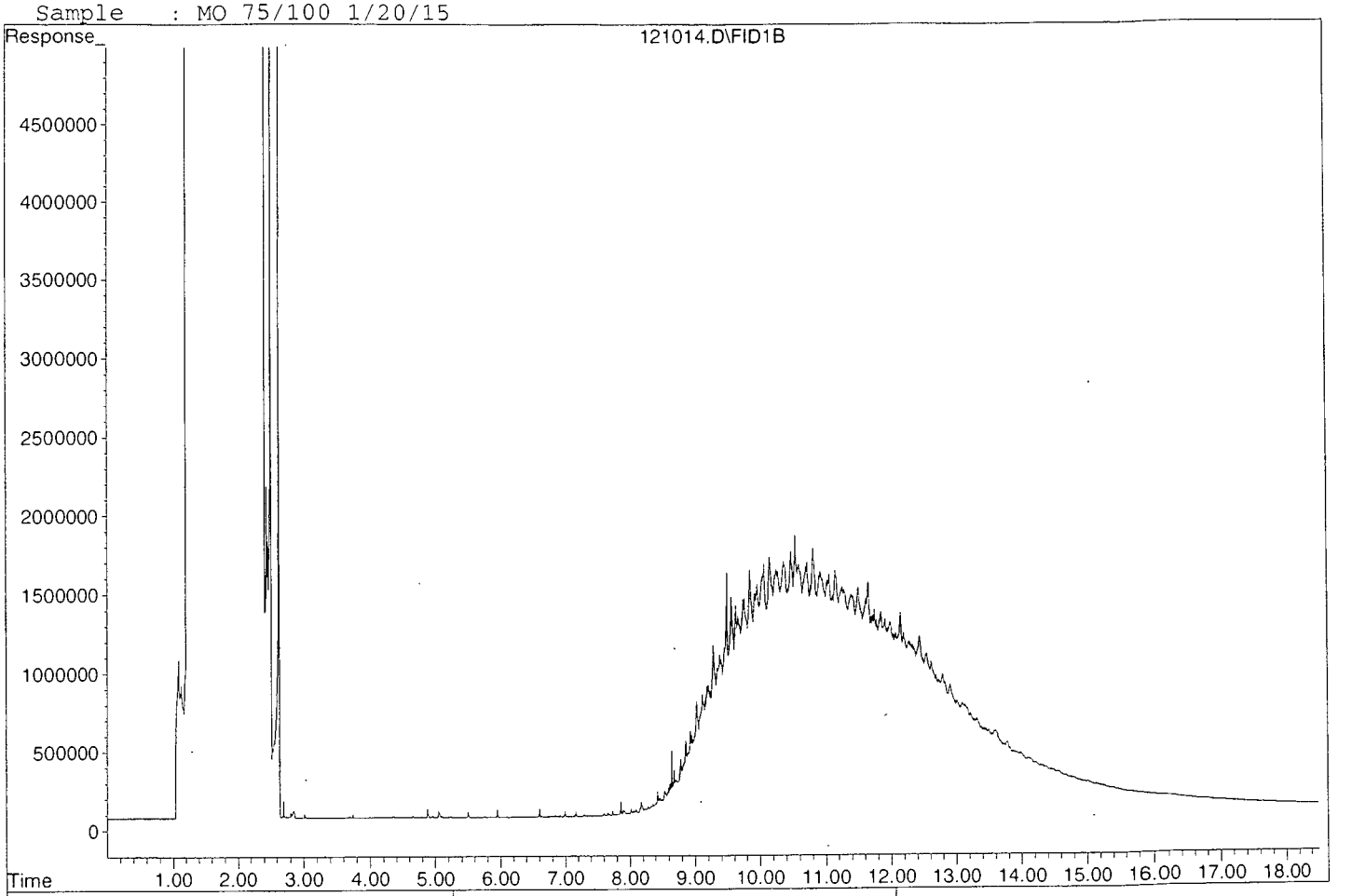
Volume Inj. : 2UL
Signal Phase : DB-5
Signal Info : FID02A

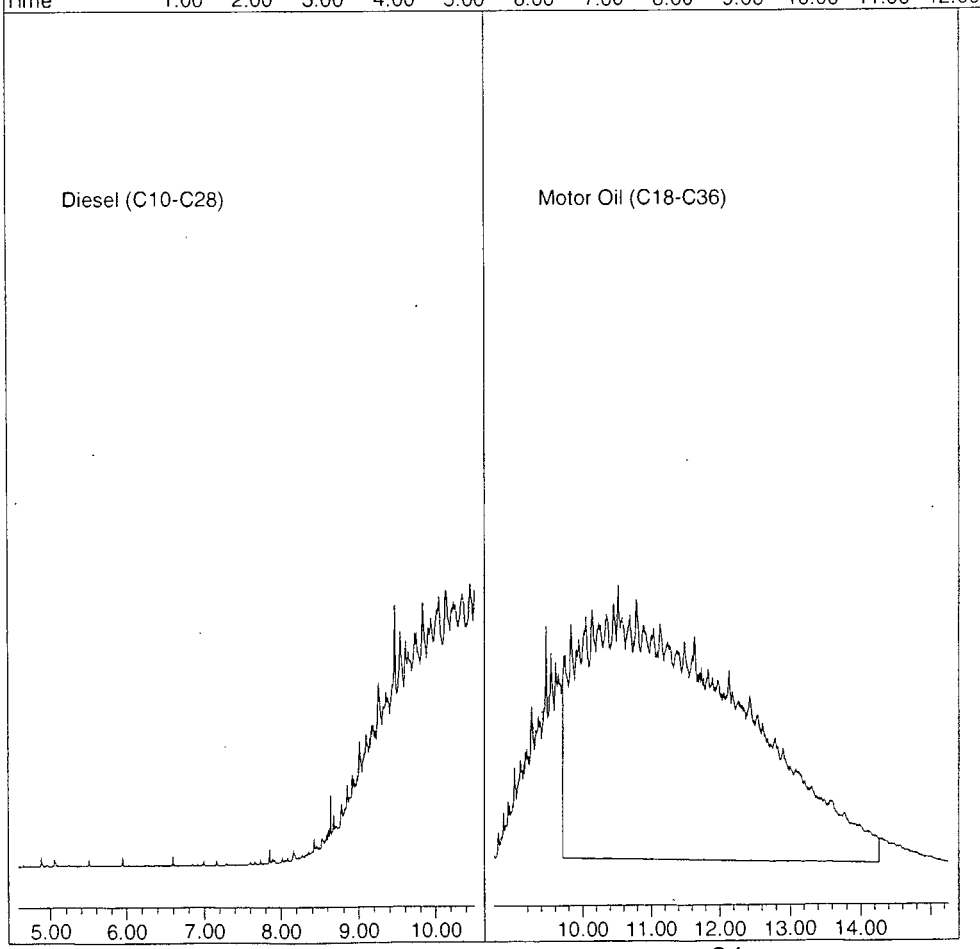
Compound	R.T.	Response	Conc Units
System Monitoring Compounds			
Target Compounds			
2) HBTM Motor Oil (C18-C36)	11.99	2274478670	1158.589 ppb

(f)=RT Delta > 1/2 Window (m)=manual int.

Quantitation Report

Data File: G:\APOLLO\DATA\150121\121014.D
Sample : MO 75/100 1/20/15





Quantitation Report (Not Reviewed)

Data File : G:\APOLLO\DATA\150121\121015.D Vial: 15
Acq On : 1-21-15 21:02:11 Operator: lac
Sample : MO 1000/1000 1/20/15 Inst : Apollo
Misc : Mix(B) Multiplr: 1.00
IntFile : events.e
Quant Time: Jan 23 9:31 2015 Quant Results File: CTO121.RES

Method : G:\APOLLO\DATA\150121\CTO121.M (Chemstation Integrator)
Title : 8015 B&C
Last Update : Mon Jan 26 09:50:19 2015
Response via : Multiple Level Calibration

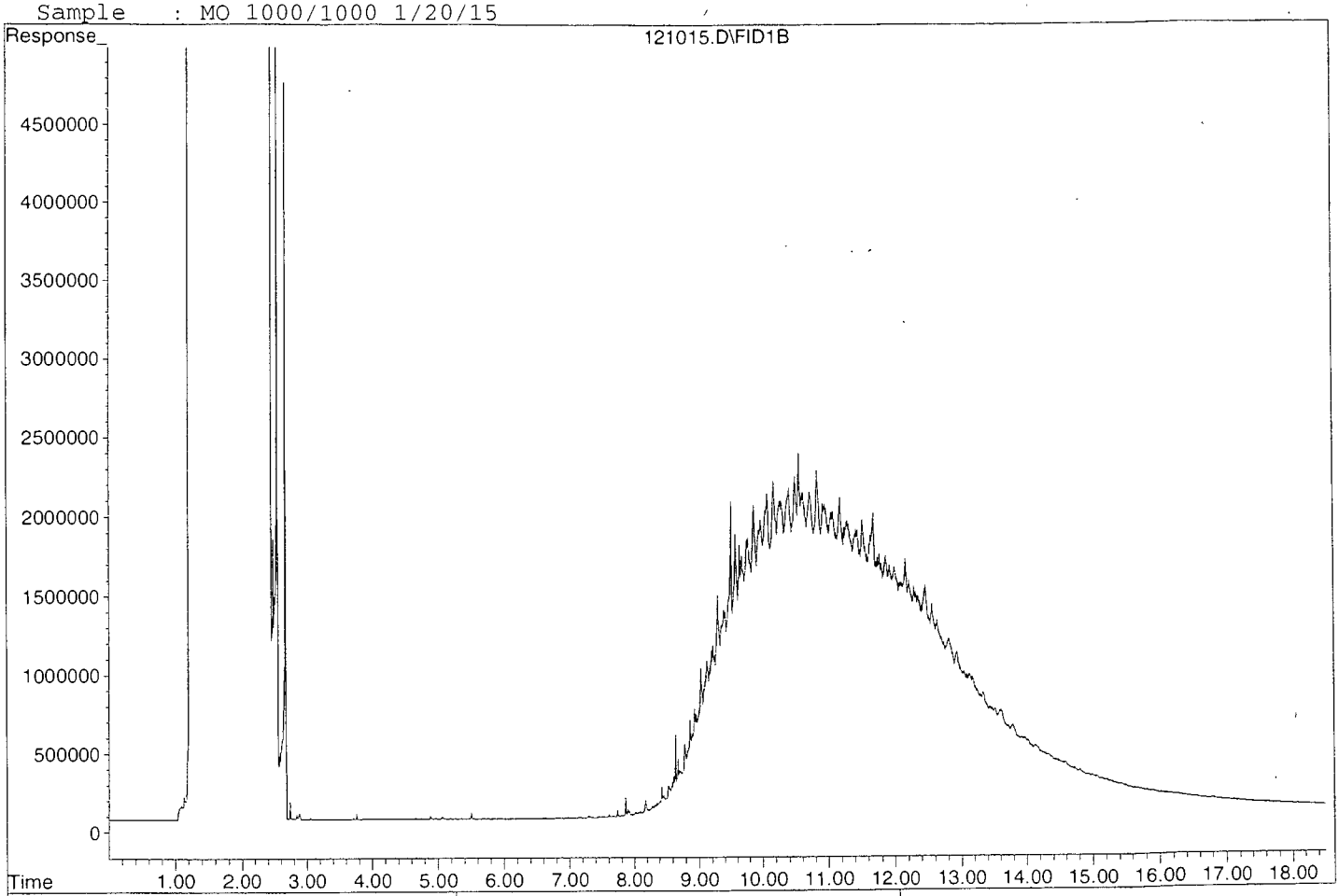
Volume Inj. : 2UL
Signal Phase : DB-5
Signal Info : FID02A

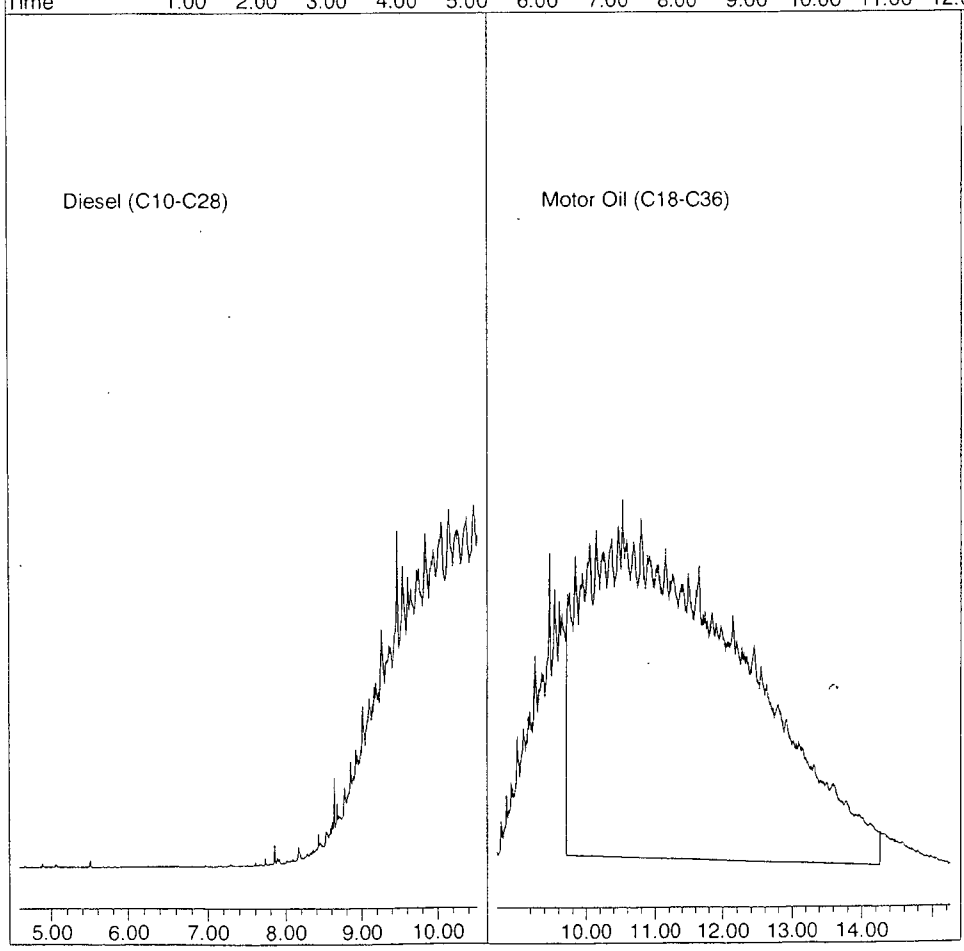
Compound	R.T.	Response	Conc Units
System Monitoring Compounds			
Target Compounds			
2) HBTM Motor Oil (C18-C36)	11.99	2995339368	1525.786 ppb

(f)=RT Delta > 1/2 Window (m)=manual int.
121015.D CTO121.M Fri Jan 30 13:02:48 2015

Quantitation Report

Data File: G:\APOLLO\DATA\150121\121015.D
Sample : MO 1000/1000 1/20/15





121015.D CTO121.M Fri Jan 30 13:02:49 2015

TPH Extractables
CTO121

Form 7

Second Source Calibration

Lab Name: APPL, Inc.
Case No:
Matrix:

SDG No: 75427
Date Analyzed: 1/21/2015
Instrument: Apollo
Initial Cal. Date: 1/21/2015
Data File: 121016,17.D

		Compound	MEAN	CCRF	%D		%Drift
1	HATM	Diesel (C10-C24)	1257630	1327680	5.6	HATM	
2	HBTM	Motor Oil (C24-C36)	749936	765734	2.1	HBTM	
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40							
		Average			3.9		

Quantitation Report (QT Reviewed)

Data File : G:\APOLLO\DATA\150121\121016.D Vial: 16
Acq On : 1-21-15 21:25:59 Operator: lac
Sample : Diesel 2ND SRC 1/21/15 Inst : Apollo
Misc : Mix(A) Multiplr: 1.00
IntFile : events.e
Quant Time: Jan 30 13:01 2015 Quant Results File: CTO121.RES

Method : G:\APOLLO\DATA\150121\CTO121.M (Chemstation Integrator)
Title : 8015 B&C
Last Update : Mon Jan 26 09:50:19 2015
Response via : Multiple Level Calibration

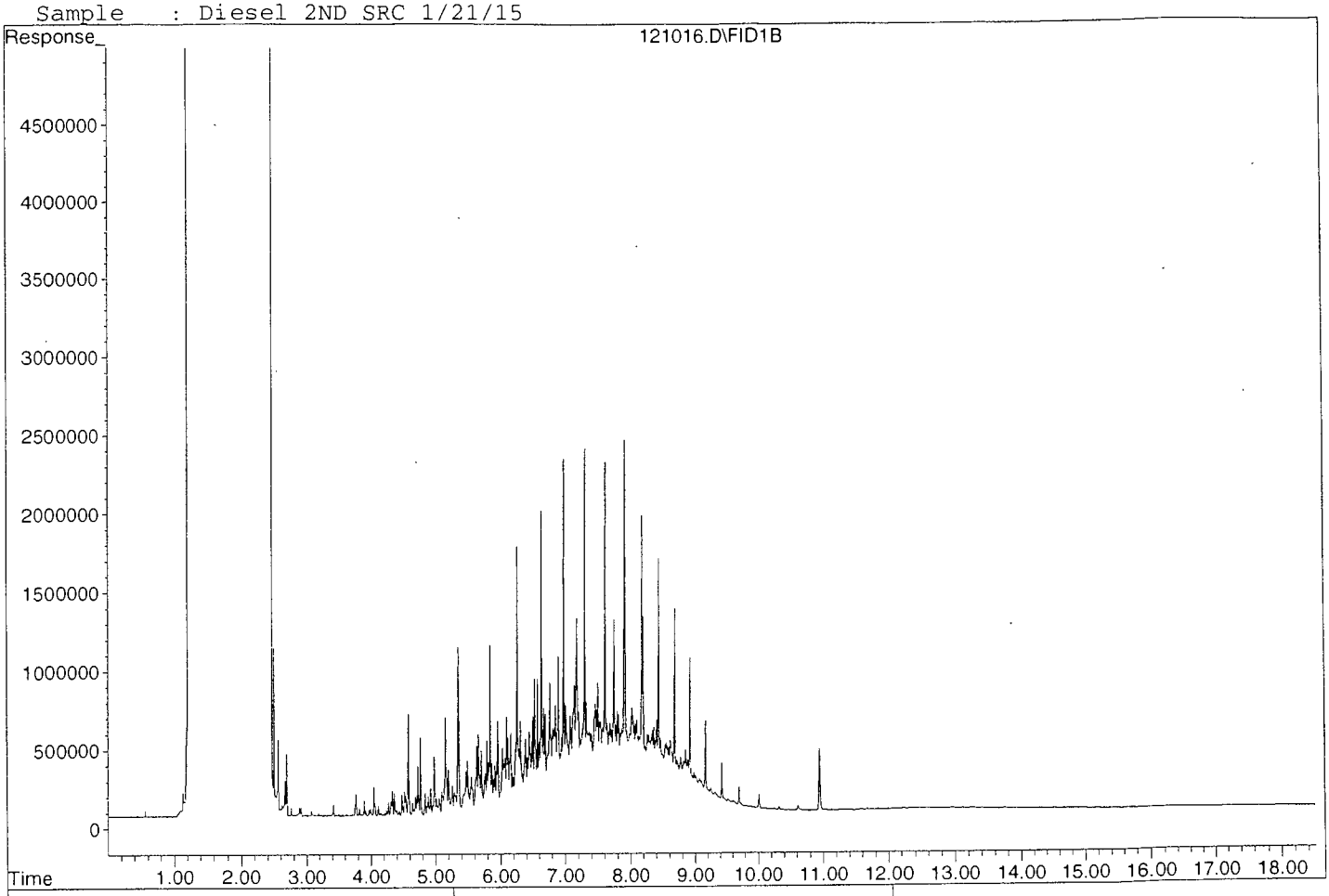
Volume Inj. : 2UL
Signal Phase : DB-5
Signal Info : FID02A

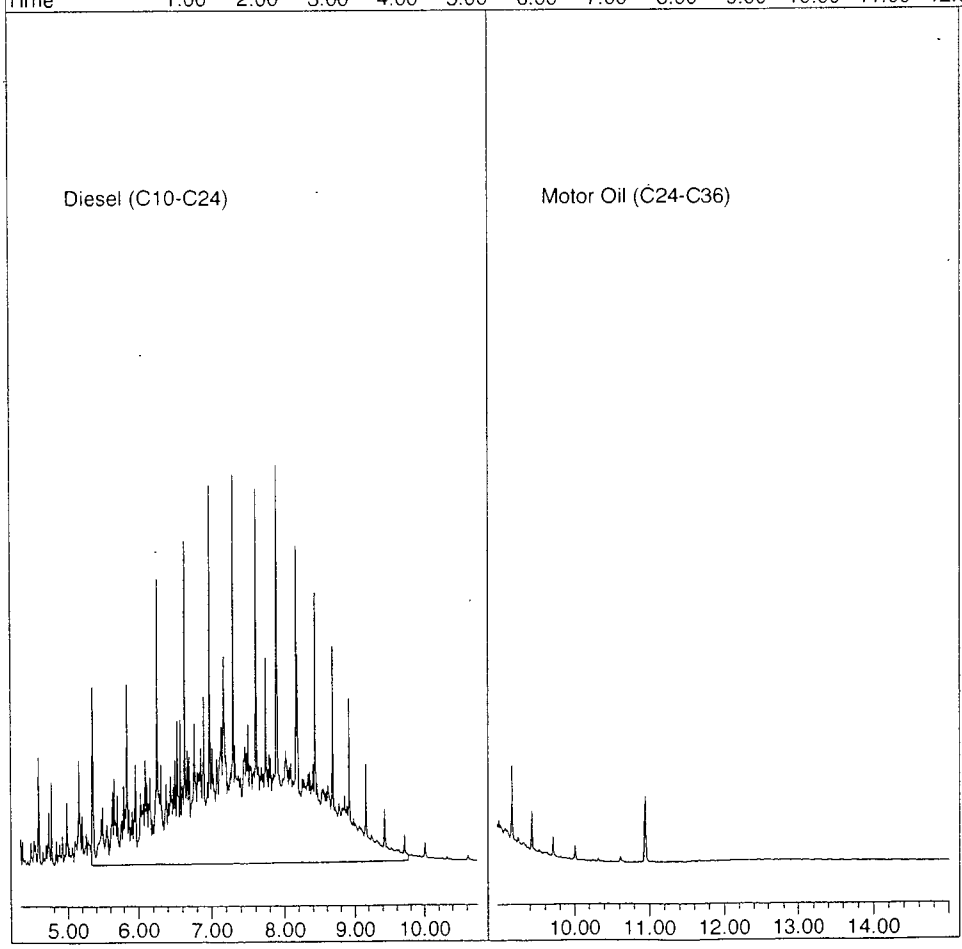
Compound	R.T.	Response	Conc Units
System Monitoring Compounds			
Target Compounds			
1) HATM Diesel (C10-C24)	7.55	1062146922	422.282 ppb

(f)=RT Delta > 1/2 Window (m)=manual int.
121016.D CTO121.M Fri Jan 30 13:02:50 2015

Quantitation Report

Data File: G:\APOLLO\DATA\150121\121016.D
Sample : Diesel 2ND SRC 1/21/15





121016.D CTO121.M Fri Jan 30 13:02:51 2015

Quantitation Report (Not Reviewed)

Data File : G:\APOLLO\DATA\150121\121017.D Vial: 17
Acq On : 1-21-15 21:49:54 Operator: lac
Sample : MO 2ND SRC 12/10/14 Inst : Apollo
Misc : Mix(B) Multiplr: 1.00
IntFile : events.e
Quant Time: Jan 23 9:42 2015 Quant Results File: CTO121.RES

Method : G:\APOLLO\DATA\150121\CTO121.M (Chemstation Integrator)
Title : 8015 B&C
Last Update : Mon Jan 26 09:50:19 2015
Response via : Multiple Level Calibration

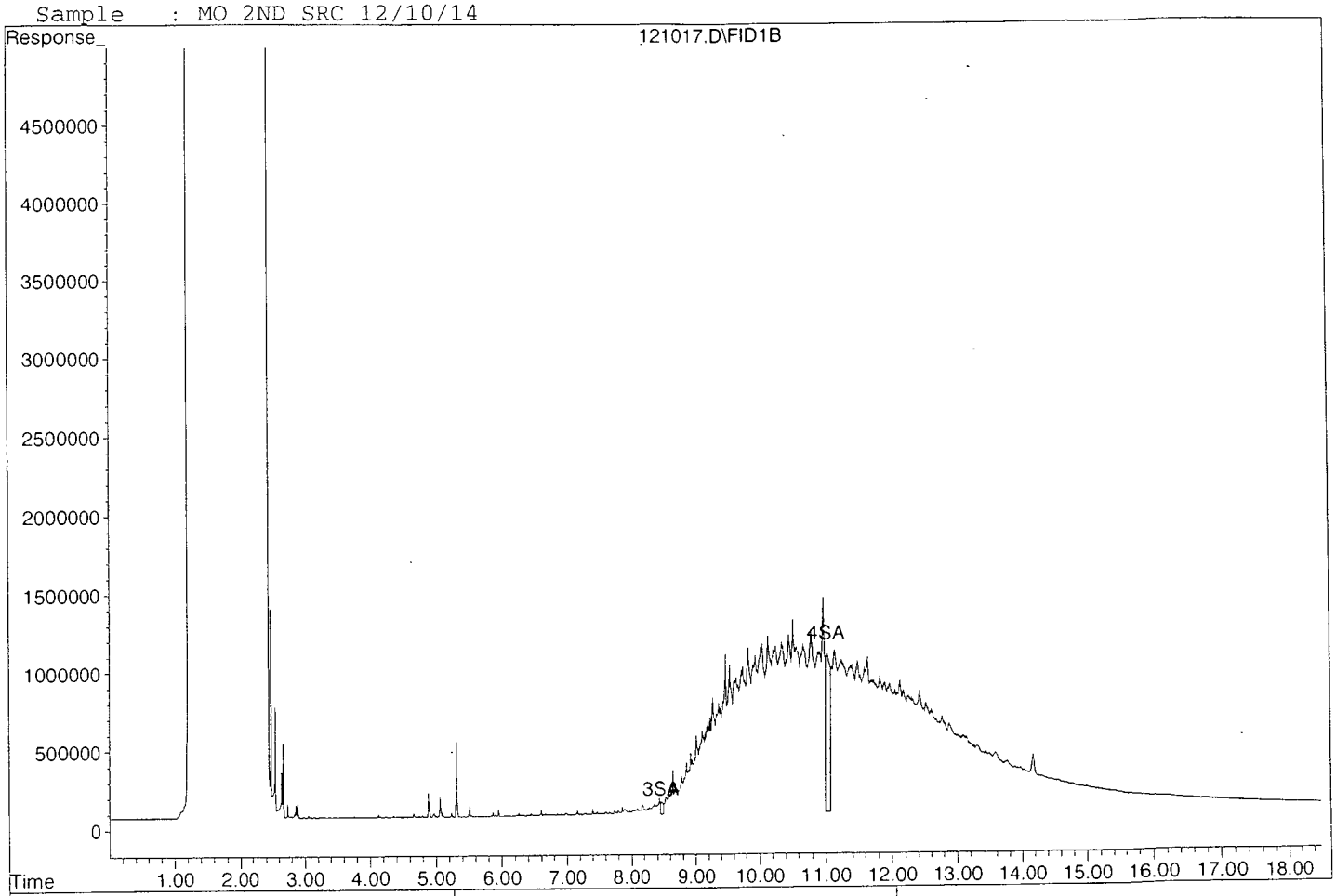
Volume Inj. : 2UL
Signal Phase : DB-5
Signal Info : FID02A

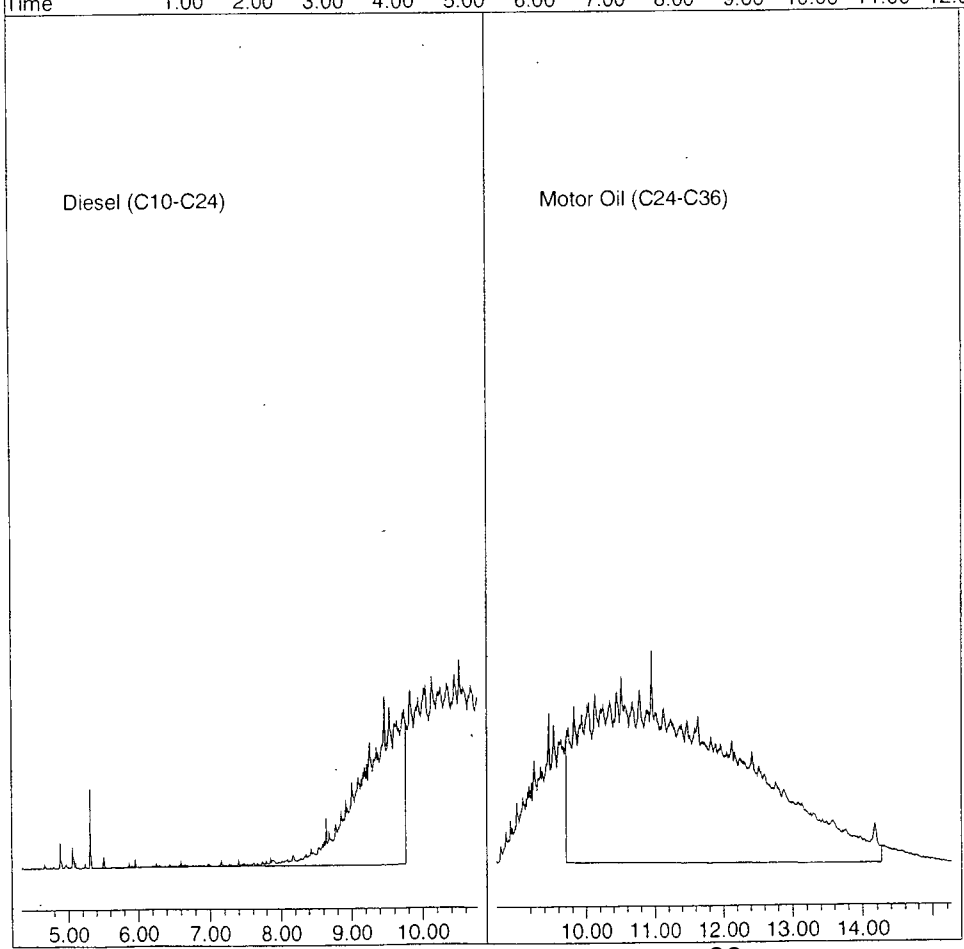
Compound	R.T.	Response	Conc Units
System Monitoring Compounds			
3) SA Ortho-Terphenyl(S)	8.46	2218619	0.595 ppb
Surrogate Spike 30.000		Recovery =	1.98%
4) SA Octacosane(S)	11.01	44533073	16.499 ppb
Surrogate Spike 30.000		Recovery =	55.00%
Target Compounds			
1) HATM Diesel (C10-C24)	7.55	390048035	155.073 ppb
2) HBTM Motor Oil (C24-C36)	11.99	1531468834	1021.067 ppb

(f)=RT Delta > 1/2 Window (m)=manual int.
121017.D CTO121.M Fri Jan 30 13:02:52 2015

Quantitation Report

Data File: G:\APOLLO\DATA\150121\121017.D
Sample : MO 2ND SRC 12/10/14





TPH Extractables
CTO121

Form 7

Continuing Calibration

Lab Name: APPL, Inc.
Case No:
Matrix:

SDG No: 75427
Date Analyzed: 1/29/2015
Instrument: Apollo
Initial Cal. Date: 1/21/2015
Data File: 127115,116.D

		Compound	MEAN	CCRF	%D	%Drift	
1	HATM	Diesel (C10-C24)	1257630	1403690	12	HATM	
2	HBTM	Motor Oil (C24-C36)	749936	618276	18	HBTM	
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		Average			15.0		

Quantitation Report (Not Reviewed)

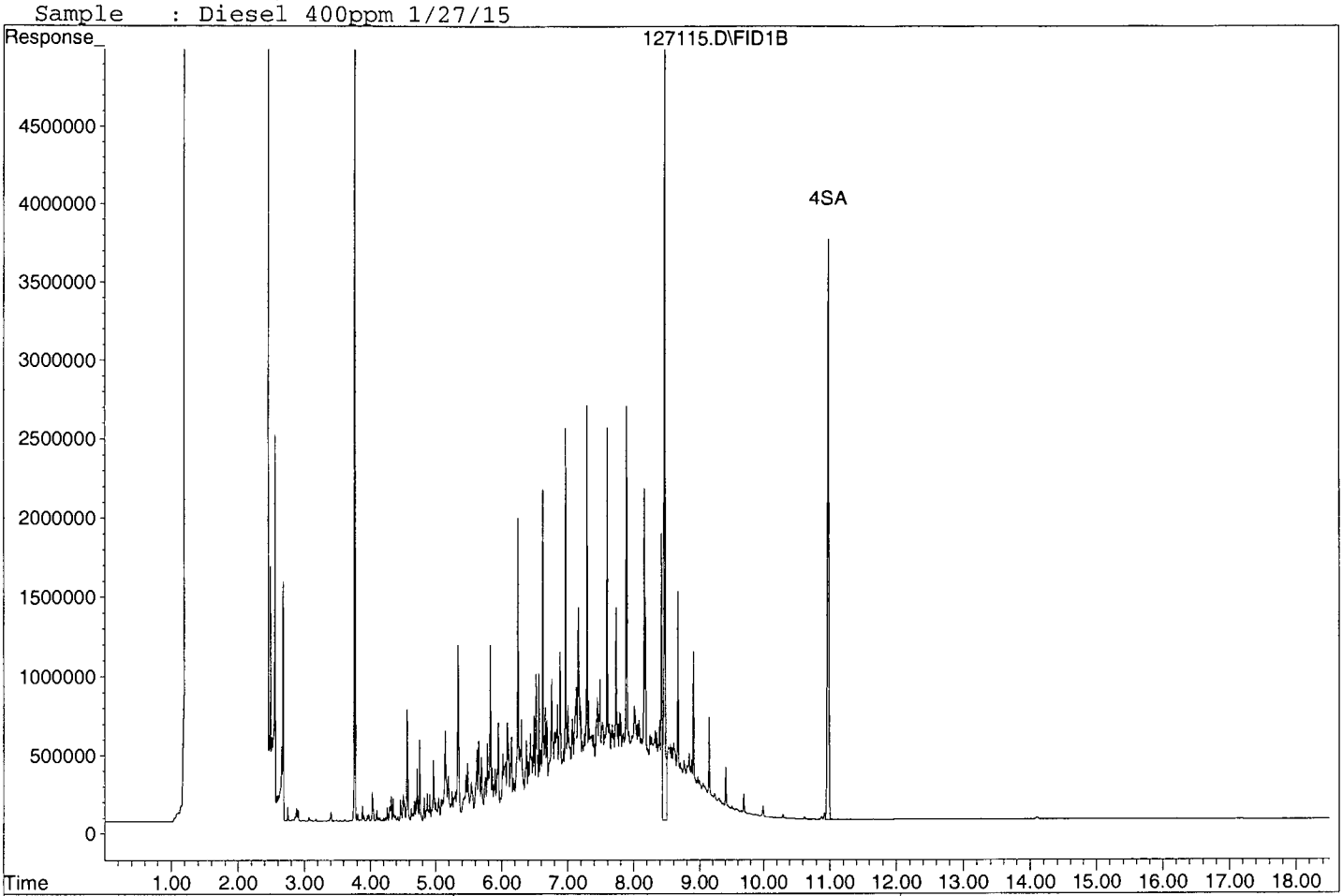
Data File : G:\APOLLO\DATA\150127\127115.D Vial: 15
Acq On : 1-29-15 8:58:21 Operator: lac
Sample : Diesel 400ppm 1/27/15 Inst : Apollo
Misc : Mix(A) Multiplr: 1.00
IntFile : events.e
Quant Time: Jan 30 11:22 2015 Quant Results File: CTO121.RES

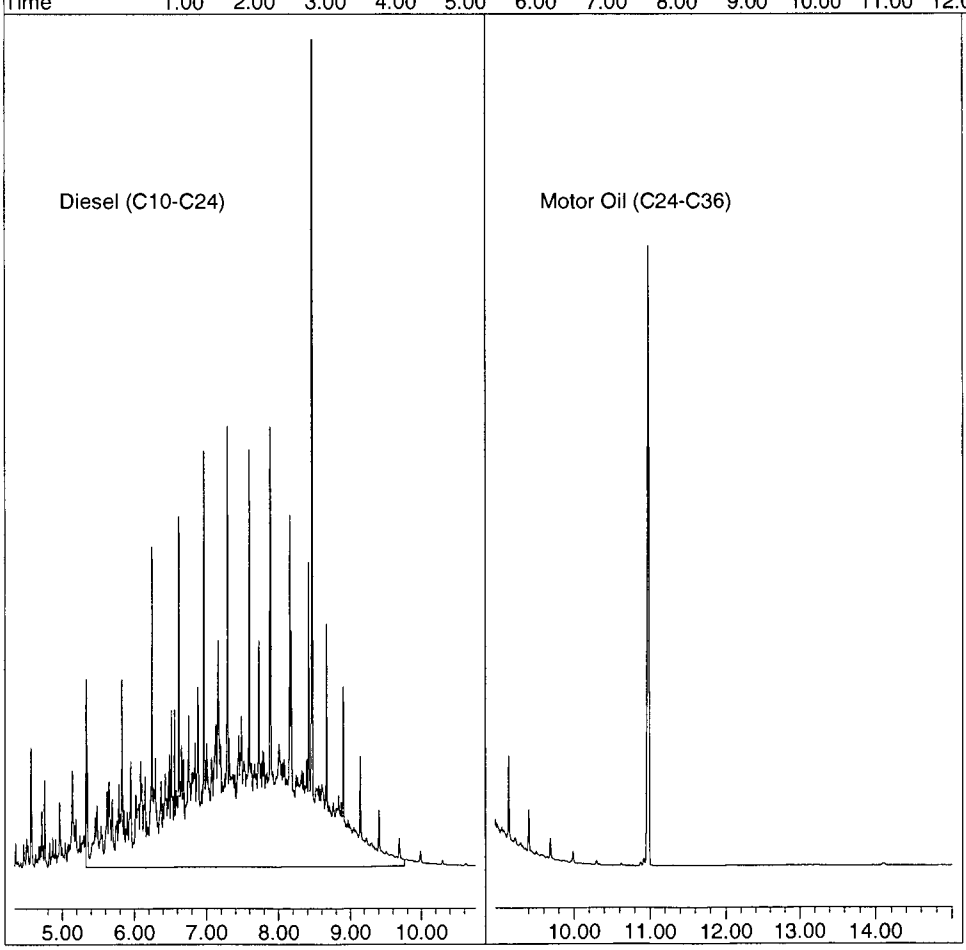
Method : G:\APOLLO\DATA\150206\CTO121.M (Chemstation Integrator)
Title : 8015 B&C
Last Update : Fri Feb 06 17:02:02 2015
Response via : Multiple Level Calibration

Volume Inj. : 2UL
Signal Phase : DB-5
Signal Info : FID02A

Compound	R.T.	Response	Conc Units
System Monitoring Compounds			
3) SA Ortho-Terphenyl(S)	8.47	82441280	22.124 ppb
Surrogate Spike 30.000		Recovery =	73.75%
4) SA Octacosane(S)	10.98	54011186	20.011 ppb
Surrogate Spike 30.000		Recovery =	66.70%
Target Compounds			
1) HATM Diesel (C10-C24)	7.55	1122950236	446.456 ppb

Data File: G:\APOLLO\DATA\150127\127115.D
Sample : Diesel 400ppm 1/27/15





Quantitation Report (QT Reviewed)

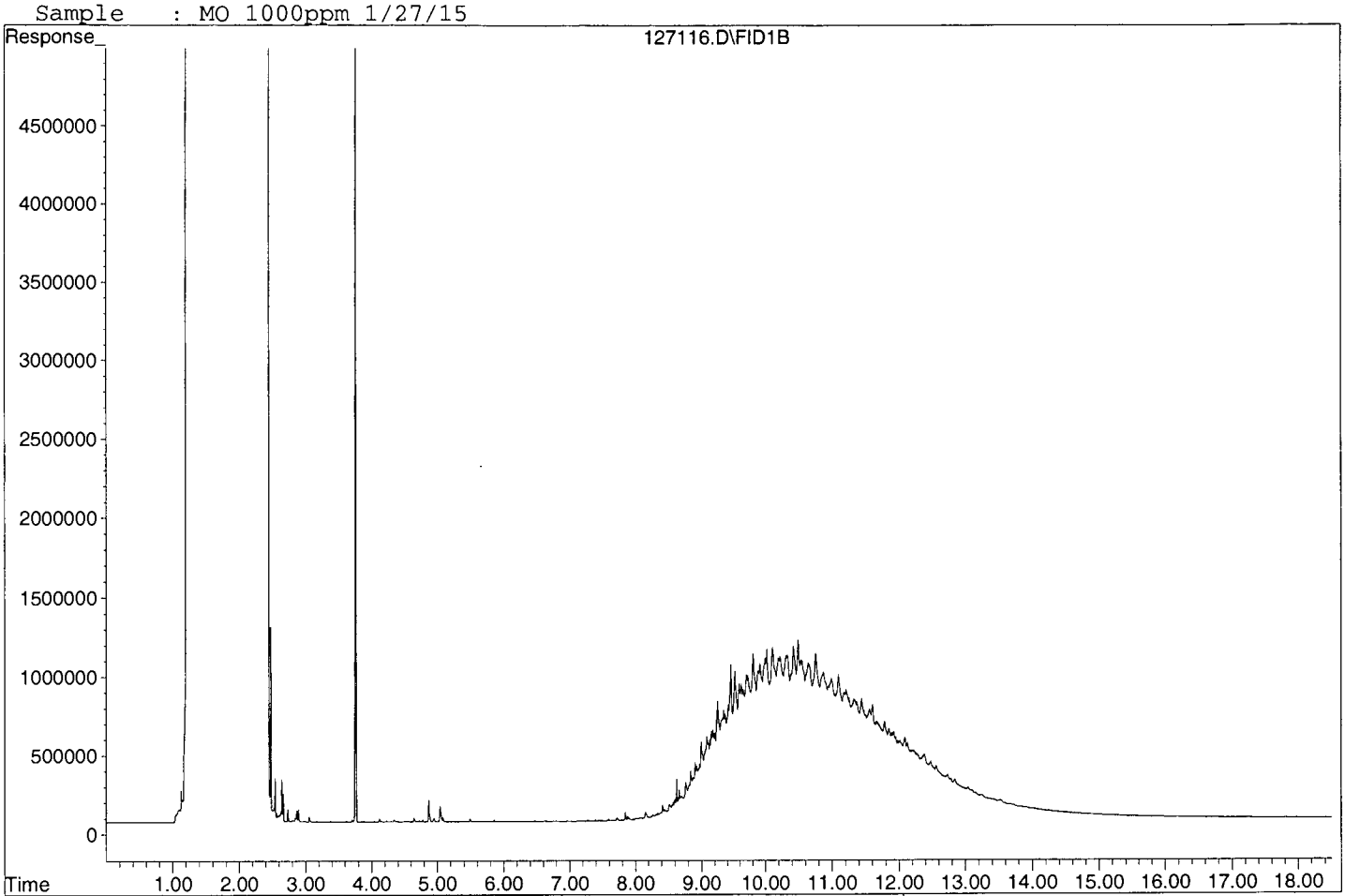
Data File : G:\APOLLO\DATA\150127\127116.D Vial: 16
Acq On : 1-29-15 9:22:27 Operator: lac
Sample : MO 1000ppm 1/27/15 Inst : Apollo
Misc : Mix(B) Multiplr: 1.00
IntFile : events.e
Quant Time: Jan 30 12:45 2015 Quant Results File: CTO121.RES

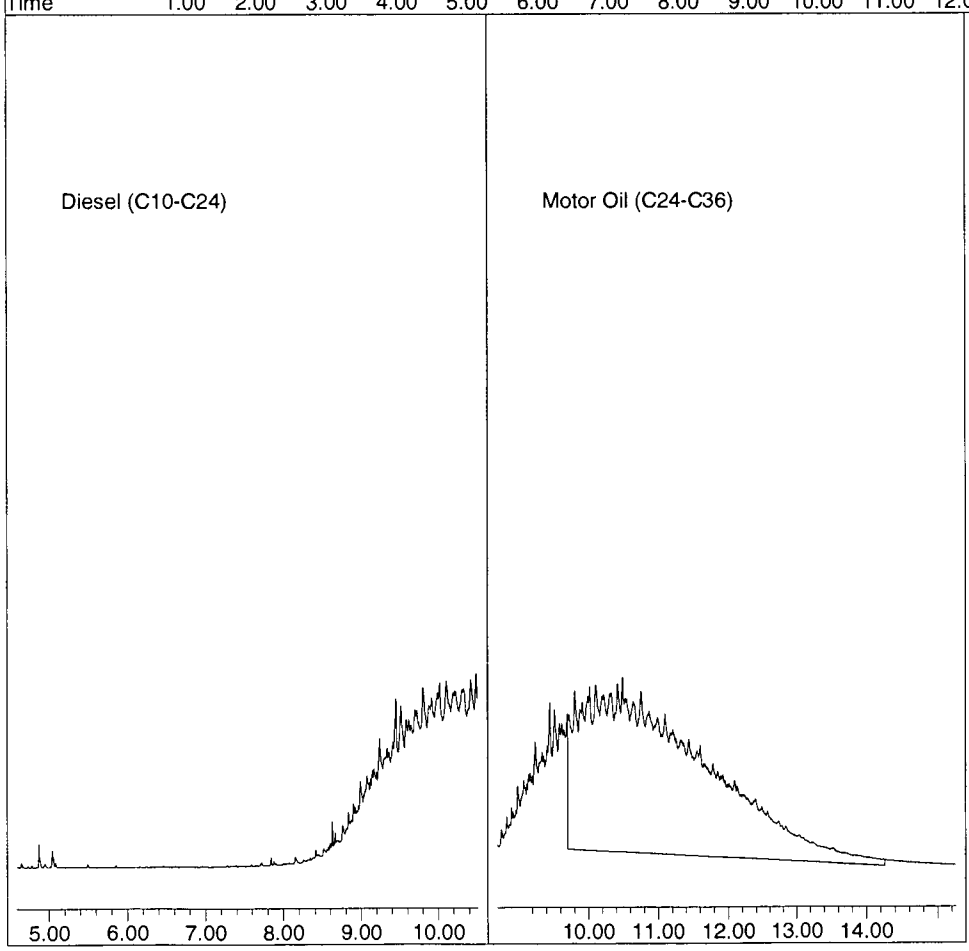
Method : G:\APOLLO\DATA\150206\CTO121.M (Chemstation Integrator)
Title : 8015 B&C
Last Update : Fri Feb 06 17:02:02 2015
Response via : Multiple Level Calibration

Volume Inj. : 2UL
Signal Phase : DB-5
Signal Info : FID02A

Compound	R.T.	Response	Conc Units
System Monitoring Compounds			
Target Compounds			
2) HBTM Motor Oil (C24-C36)	11.99	1236552405	824.439 ppb

Data File: G:\APOLLO\DATA\150127\127116.D
Sample : MO 1000ppm 1/27/15





TPH Extractables
CTO121

Form 7

Continuing Calibration

Lab Name: APPL, Inc.
Case No:
Matrix:

SDG No: 75427
Date Analyzed: 1/29/2015
Instrument: Apollo
Initial Cal. Date: 1/21/2015
Data File: 127130,131.D

		Compound	MEAN	CCRF	%D	%Drift	
1	HATM	Diesel (C10-C24)	1257630	1363220	8.4	HATM	
2	HBTM	Motor Oil (C24-C36)	749936	806627	7.6	HBTM	
3							
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		Average			8.0		

Quantitation Report (Not Reviewed)

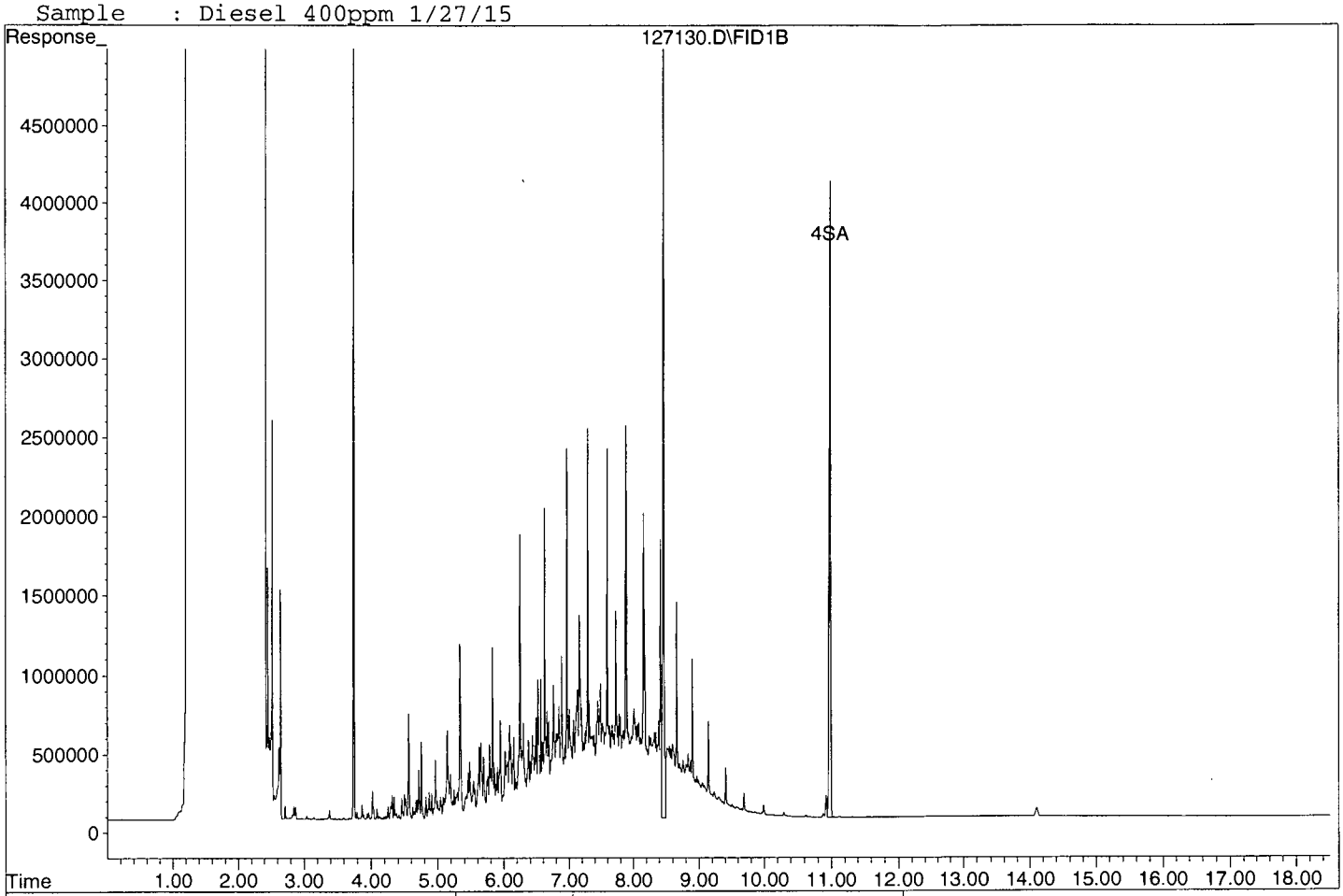
Data File : G:\APOLLO\DATA\150127\127130.D Vial: 30
Acq On : 1-29-15 15:09:34 Operator: lac
Sample : Diesel 400ppm 1/27/15 Inst : Apollo
Misc : Mix(A) Multiplr: 1.00
IntFile : events.e
Quant Time: Jan 30 12:29 2015 Quant Results File: CTO121.RES

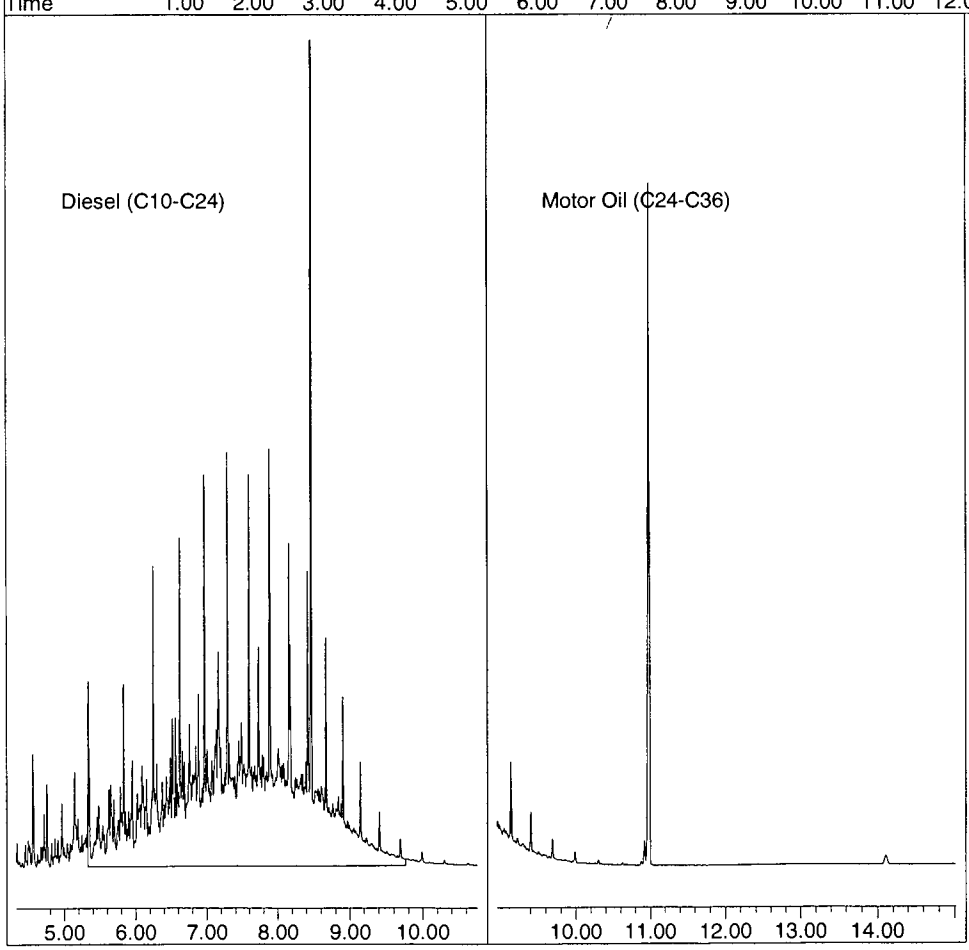
Method : G:\APOLLO\DATA\150206\CTO121.M (Chemstation Integrator)
Title : 8015 B&C
Last Update : Fri Feb 06 17:02:02 2015
Response via : Multiple Level Calibration

Volume Inj. : 2UL
Signal Phase : DB-5
Signal Info : FID02A

Compound	R.T.	Response	Conc Units
System Monitoring Compounds			
3) SA Ortho-Terphenyl(S)	8.47	79285936	21.278 ppb
Surrogate Spike 30.000		Recovery =	70.93%
4) SA Octacosane(S)	10.98	58542325	21.690 ppb
Surrogate Spike 30.000		Recovery =	72.30%
Target Compounds			
1) HATM Diesel (C10-C24)	7.55	1090573961	433.584 ppb

Data File: G:\APOLLO\DATA\150127\127130.D
Sample : Diesel 400ppm 1/27/15





Quantitation Report (Not Reviewed)

Data File : G:\APOLLO\DATA\150127\127131.D Vial: 31
Acq On : 1-29-15 15:34:01 Operator: lac
Sample : MO 1000ppm 1/27/15 Inst : Apollo
Misc : Mix(B) Multiplr: 1.00
IntFile : events.e
Quant Time: Jan 30 12:46 2015 Quant Results File: CTO121.RES

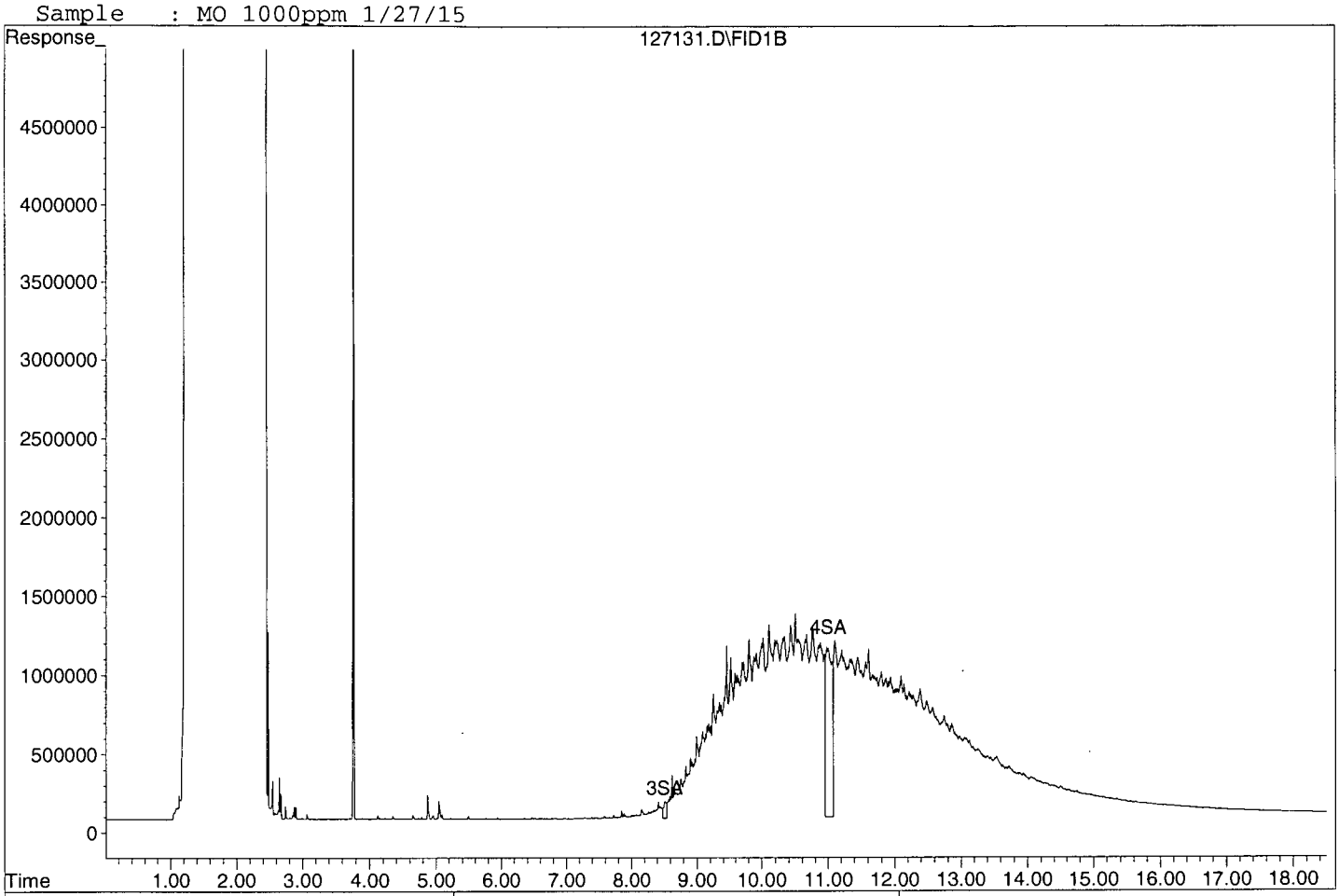
Method : G:\APOLLO\DATA\150206\CTO121.M (Chemstation Integrator)
Title : 8015 B&C
Last Update : Fri Feb 06 17:02:02 2015
Response via : Multiple Level Calibration

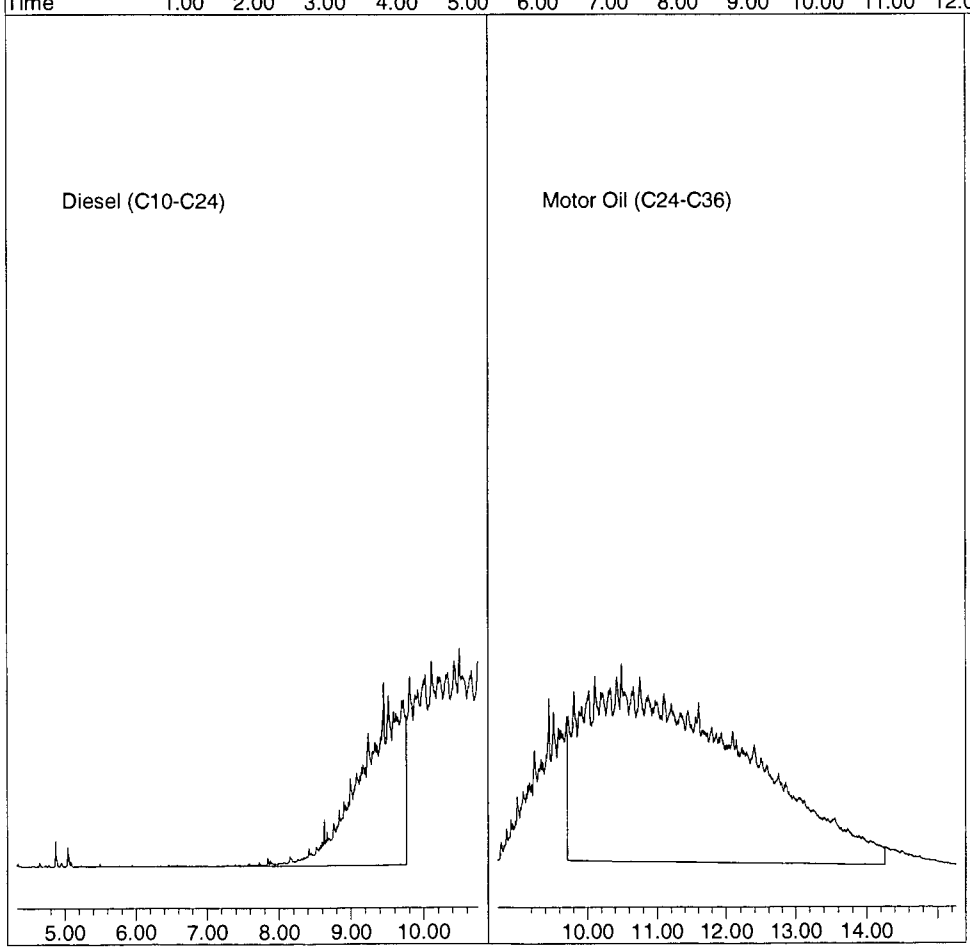
Volume Inj. : 2UL
Signal Phase : DB-5
Signal Info : FID02A

Compound	R.T.	Response	Conc Units
System Monitoring Compounds			
3) SA Ortho-Terphenyl(S)	8.52	3365855	0.903 ppb
Surrogate Spike 30.000		Recovery =	3.01%
4) SA Octacosane(S)	11.00	73101220	27.084 ppb
Surrogate Spike 30.000		Recovery =	90.28%
Target Compounds			
1) HATM Diesel (C10-C24)	7.55	407741390	162.107 ppb
2) HBTM Motor Oil (C24-C36)	11.99	1613254382	1075.595 ppb

Quantitation Report

Data File: G:\APOLLO\DATA\150127\127131.D
Sample : MO 1000ppm 1/27/15





TPH Extractables
CTO121

Form 7

Continuing Calibration

Lab Name: APPL, Inc.
Case No:
Matrix:

SDG No: 75427
Date Analyzed: 1/29/2015
Instrument: Apollo
Initial Cal. Date: 1/21/2015
Data File: 127142,143.D

		Compound	MEAN	CCRF	%D	%Drift	
1	HATM	Diesel (C10-C24)	1257630	1356800	7.9	HATM	
2	HBTM	Motor Oil (C24-C36)	749936	788993	5.2	HBTM	
3							
4							
5							
6							
7							
8							
9							
10							
11							
12							
13							
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29							
30							
31							
32							
33							
34							
35							
36							
37							
38							
39							
40							
		Average			6.6		

Quantitation Report (Not Reviewed)

Data File : G:\APOLLO\DATA\150127\127142.D Vial: 42
Acq On : 1-29-15 20:05:40 Operator: lac
Sample : Diesel 400ppm 1/27/15 Inst : Apollo
Misc : Mix(A) Multiplr: 1.00
IntFile : events.e
Quant Time: Feb 6 14:25 2015 Quant Results File: CTO121.RES

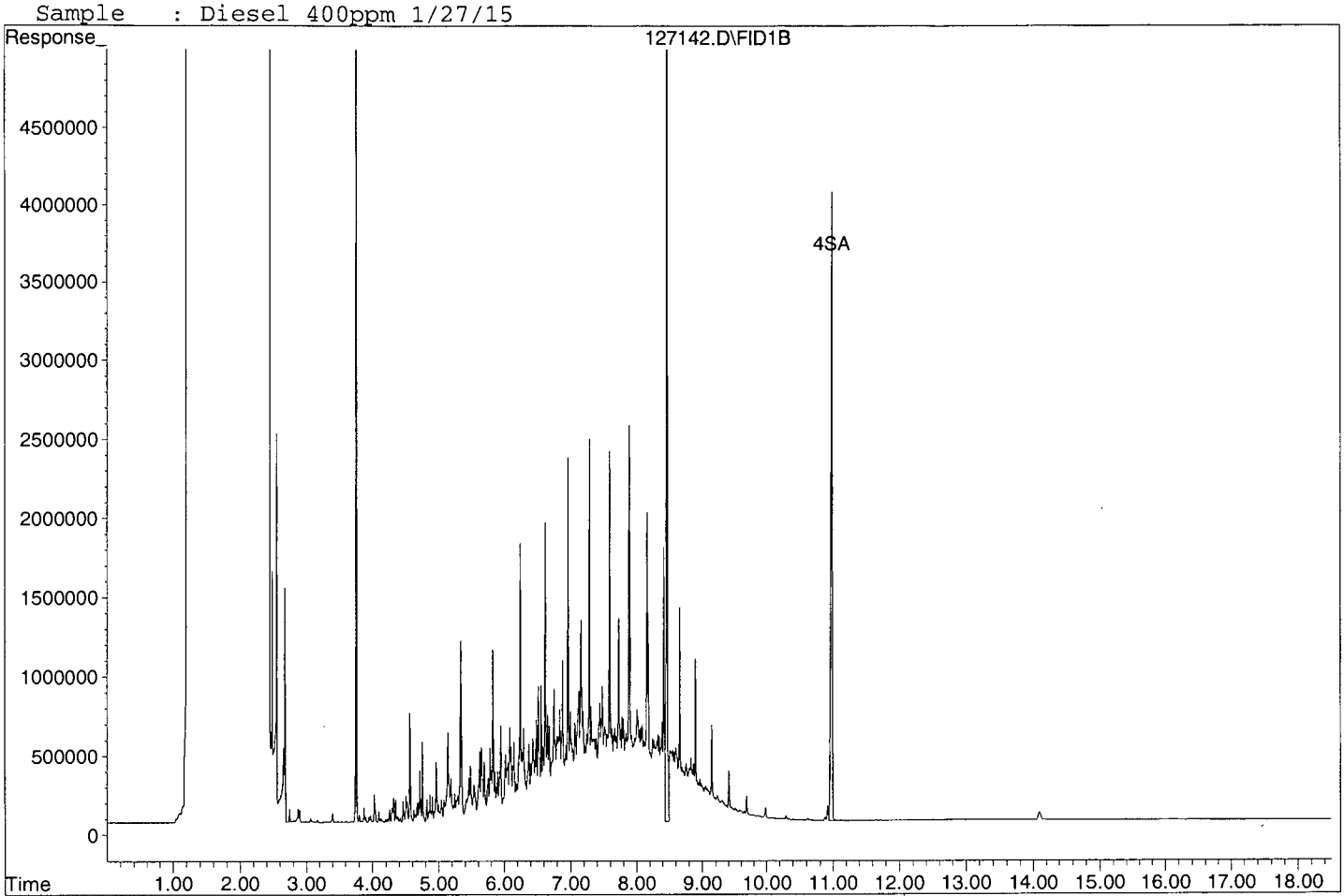
Method : G:\APOLLO\DATA\150206\CTO121.M (Chemstation Integrator)
Title : 8015 B&C
Last Update : Fri Feb 06 17:02:02 2015
Response via : Multiple Level Calibration

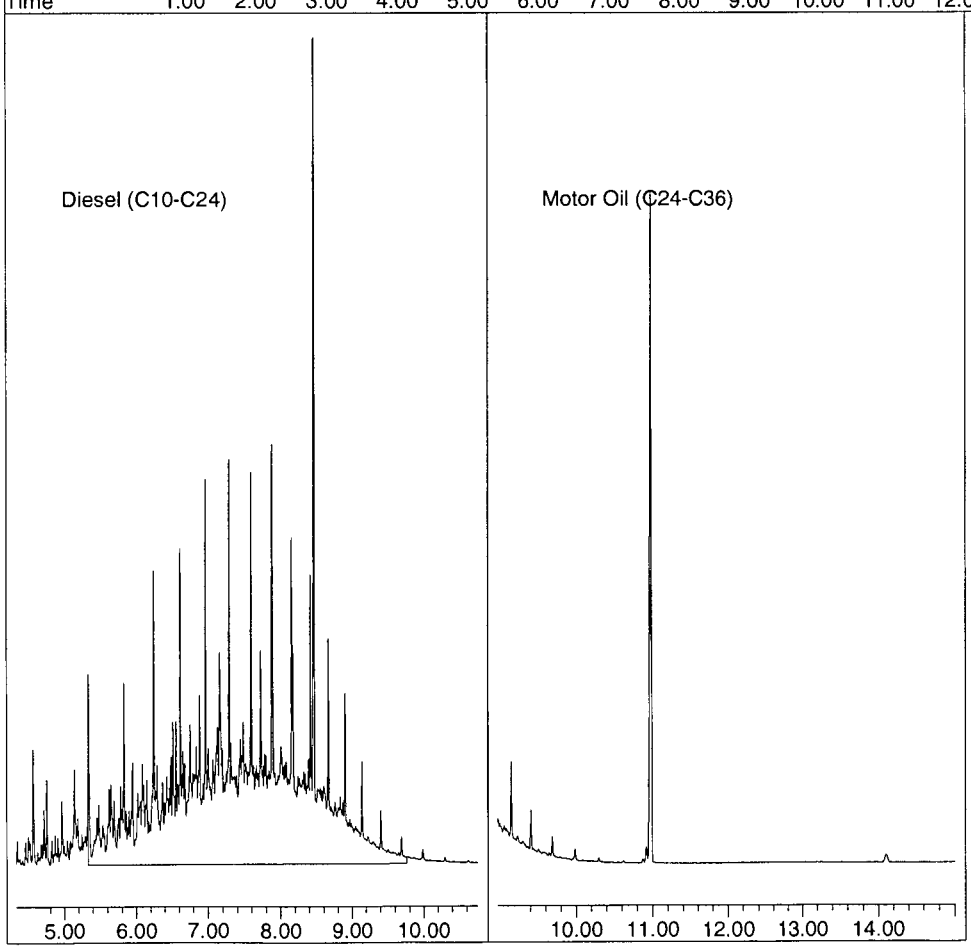
Volume Inj. : 2UL
Signal Phase : DB-5
Signal Info : FID02A

Compound	R.T.	Response	Conc Units
System Monitoring Compounds			
3) SA Ortho-Terphenyl(S)	8.47	78676692	21.114 ppb
Surrogate Spike 30.000		Recovery =	70.38%
4) SA Octacosane(S)	10.98	57745657	21.394 ppb
Surrogate Spike 30.000		Recovery =	71.31%
Target Compounds			
1) HATM Diesel (C10-C24)	7.55	1085441279	431.543 ppb

Quantitation Report

Data File: G:\APOLLO\DATA\150127\127142.D
Sample : Diesel 400ppm 1/27/15





Quantitation Report (Not Reviewed)

Data File : G:\APOLLO\DATA\150127\127143.D Vial: 43
Acq On : 1-29-15 20:29:59 Operator: lac
Sample : MO 1000ppm 1/27/15 Inst : Apollo
Misc : Mix(B) Multiplr: 1.00
IntFile : events.e
Quant Time: Feb 6 14:26 2015 Quant Results File: CTO121.RES

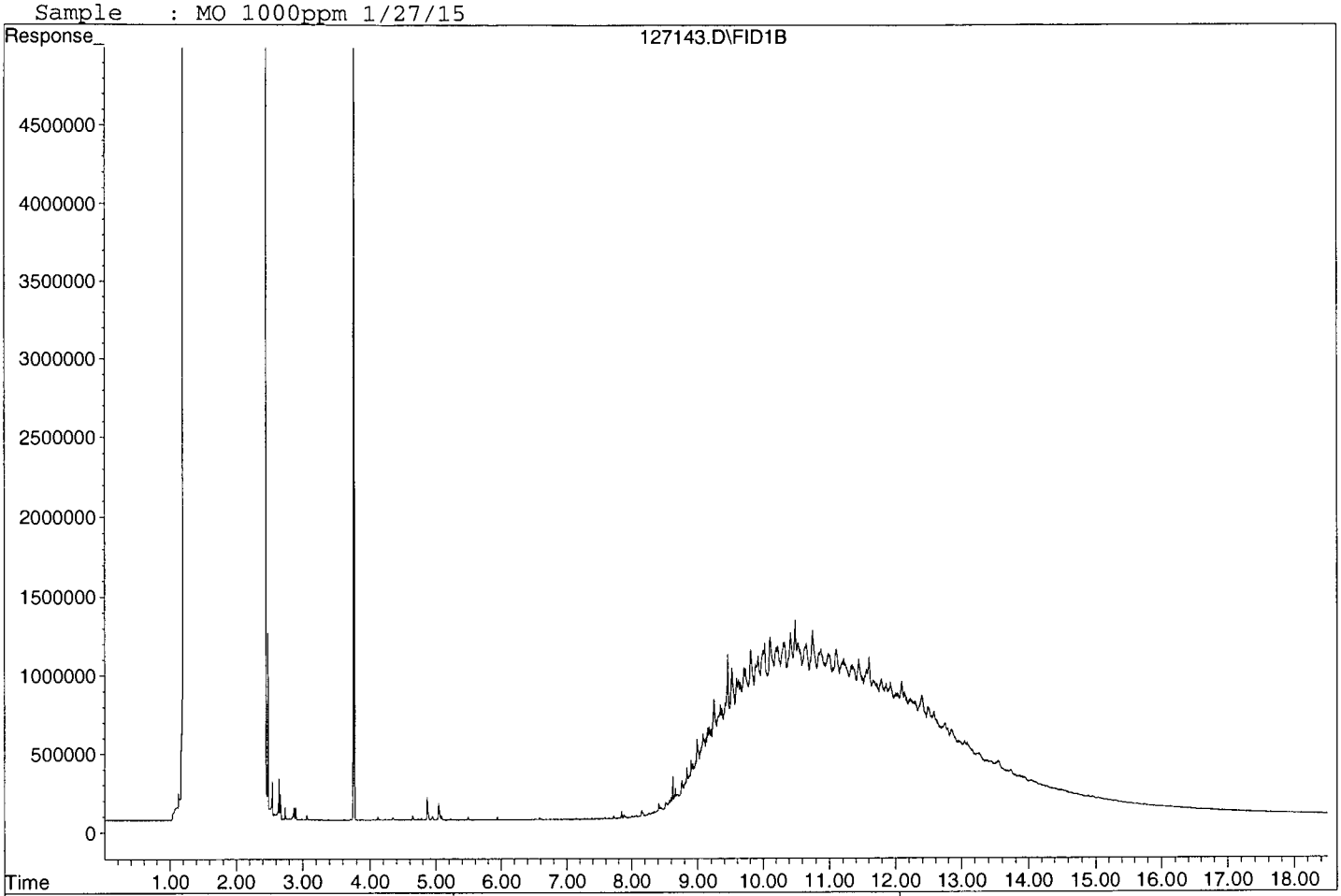
Method : G:\APOLLO\DATA\150206\CTO121.M (Chemstation Integrator)
Title : 8015 B&C
Last Update : Fri Feb 06 17:02:02 2015
Response via : Multiple Level Calibration

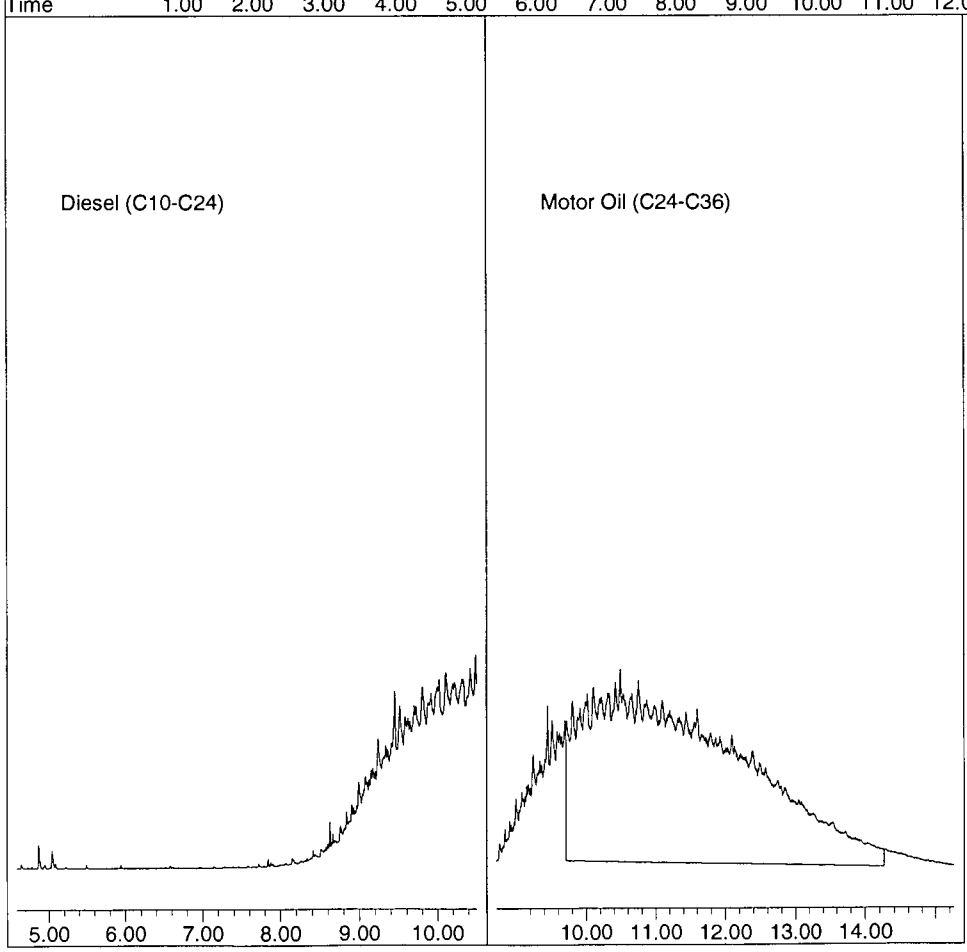
Volume Inj. : 2UL
Signal Phase : DB-5
Signal Info : FID02A

Compound	R.T.	Response	Conc Units
System Monitoring Compounds			
Target Compounds			
2) HBTM Motor Oil (C24-C36)	11.99	1577986283	1052.081 ppb

Quantitation Report

Data File: G:\APOLLO\DATA\150127\127143.D
Sample : MO 1000ppm 1/27/15





TPH Extractables
CTO121

Form 7

Continuing Calibration

Lab Name: APPL, Inc.
Case No:
Matrix:

SDG No: 75427
Date Analyzed: 1/30/2015
Instrument: Apollo
Initial Cal. Date: 1/21/2015
Data File: 127157,158.D

		Compound	MEAN	CCRF	%D	%Drift	
1	HATM	Diesel (C10-C24)	1257630	1395550	11	HATM	
2	HBTM	Motor Oil (C24-C36)	749936	805275	7.4	HBTM	
3							
4							
5							
6							
7							
8							
9							
10							
11							
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31							
32							
33							
34							
35							
36							
37							
38							
39							
40							
		Average			9.2		

Quantitation Report (Not Reviewed)

Data File : G:\APOLLO\DATA\150127\127157.D Vial: 57
Acq On : 1-30-15 2:07:40 Operator: lac
Sample : Diesel 400ppm 1/27/15 Inst : Apollo
Misc : Mix(A) Multiplr: 1.00
IntFile : events.e
Quant Time: Jan 30 12:52 2015 Quant Results File: CTO121.RES

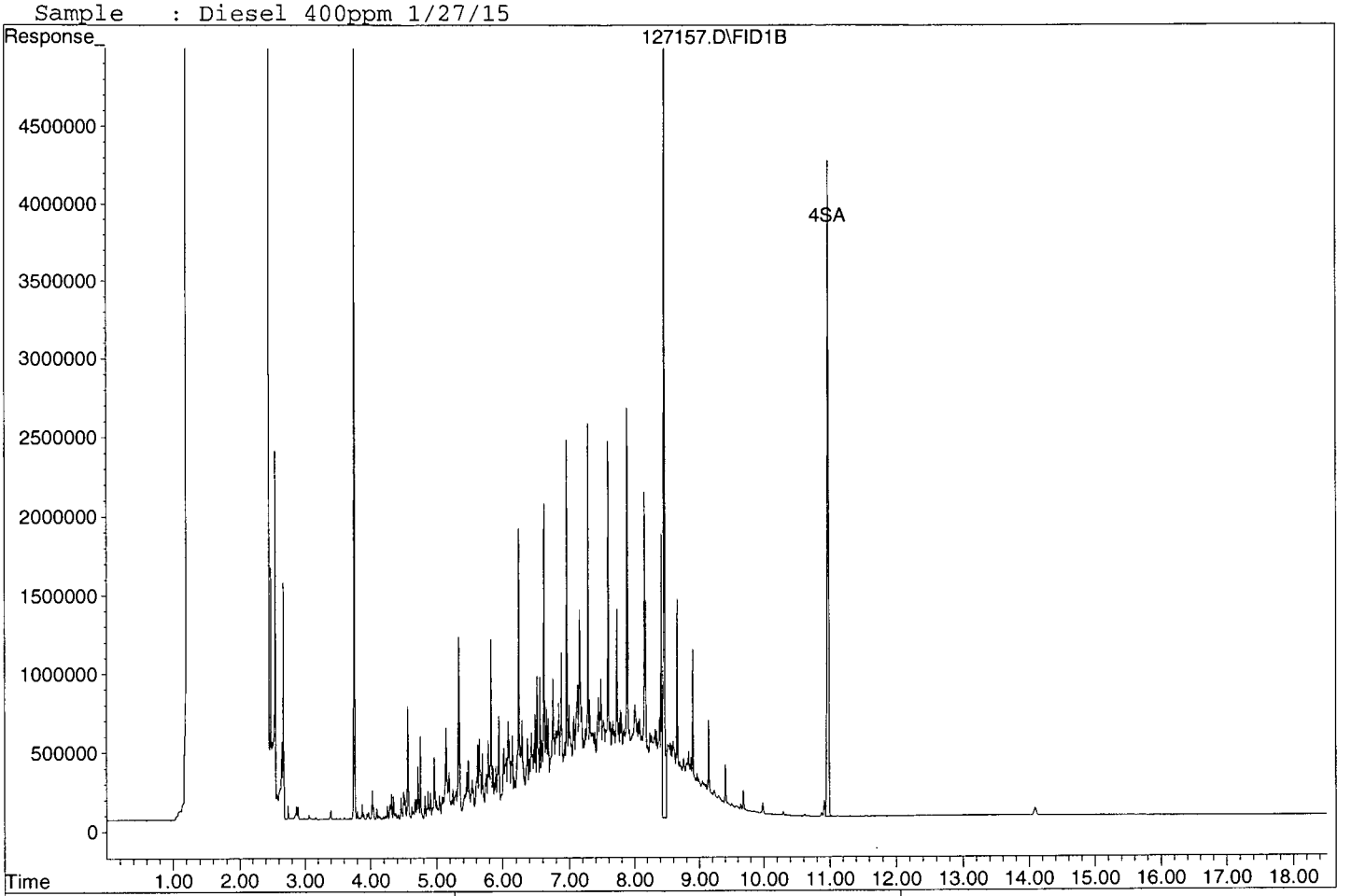
Method : G:\APOLLO\DATA\150206\CTO121.M (Chemstation Integrator)
Title : 8015 B&C
Last Update : Fri Feb 06 17:02:02 2015
Response via : Multiple Level Calibration

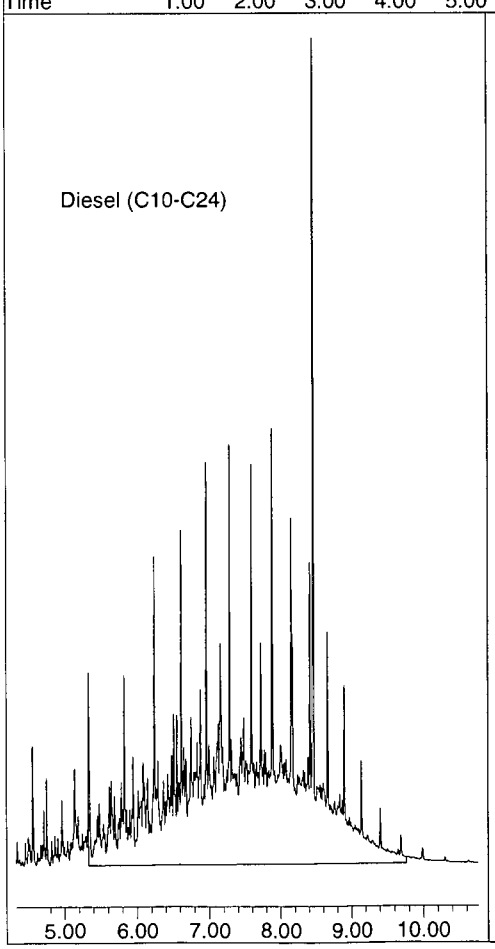
Volume Inj. : 2UL
Signal Phase : DB-5
Signal Info : FID02A

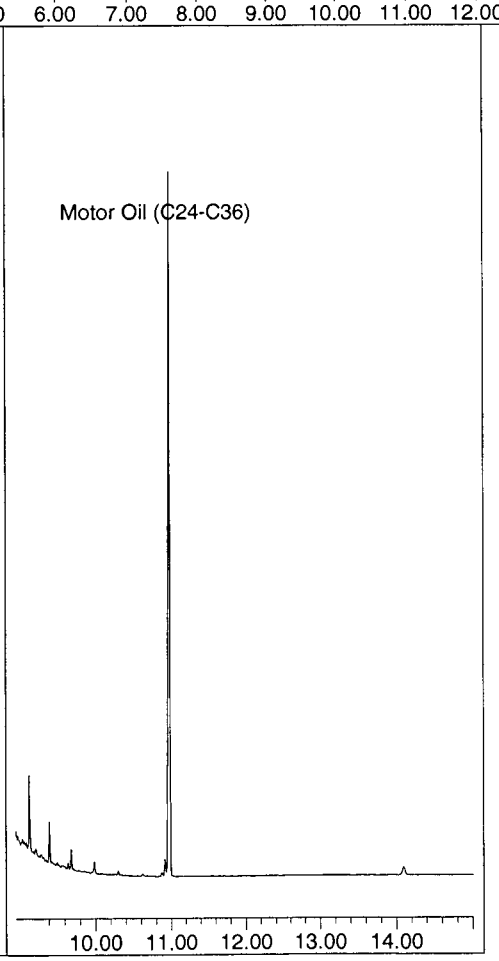
Compound	R.T.	Response	Conc Units
System Monitoring Compounds			
3) SA Ortho-Terphenyl(S)	8.47	81453744	21.859 ppb
Surrogate Spike 30.000		Recovery =	72.86%
4) SA Octacosane(S)	10.98	59686178	22.113 ppb
Surrogate Spike 30.000		Recovery =	73.71%
Target Compounds			
1) HATM Diesel (C10-C24)	7.55	1116439630	443.867 ppb

Quantitation Report

Data File: G:\APOLLO\DATA\150127\127157.D
Sample : Diesel 400ppm 1/27/15







Quantitation Report (Not Reviewed)

Data File : G:\APOLLO\DATA\150127\127158.D Vial: 58
Acq On : 1-30-15 2:31:39 Operator: lac
Sample : MO 1000ppm 1/27/15 Inst : Apollo
Misc : Mix(B) Multiplr: 1.00
IntFile : events.e
Quant Time: Jan 30 12:53 2015 Quant Results File: CTO121.RES

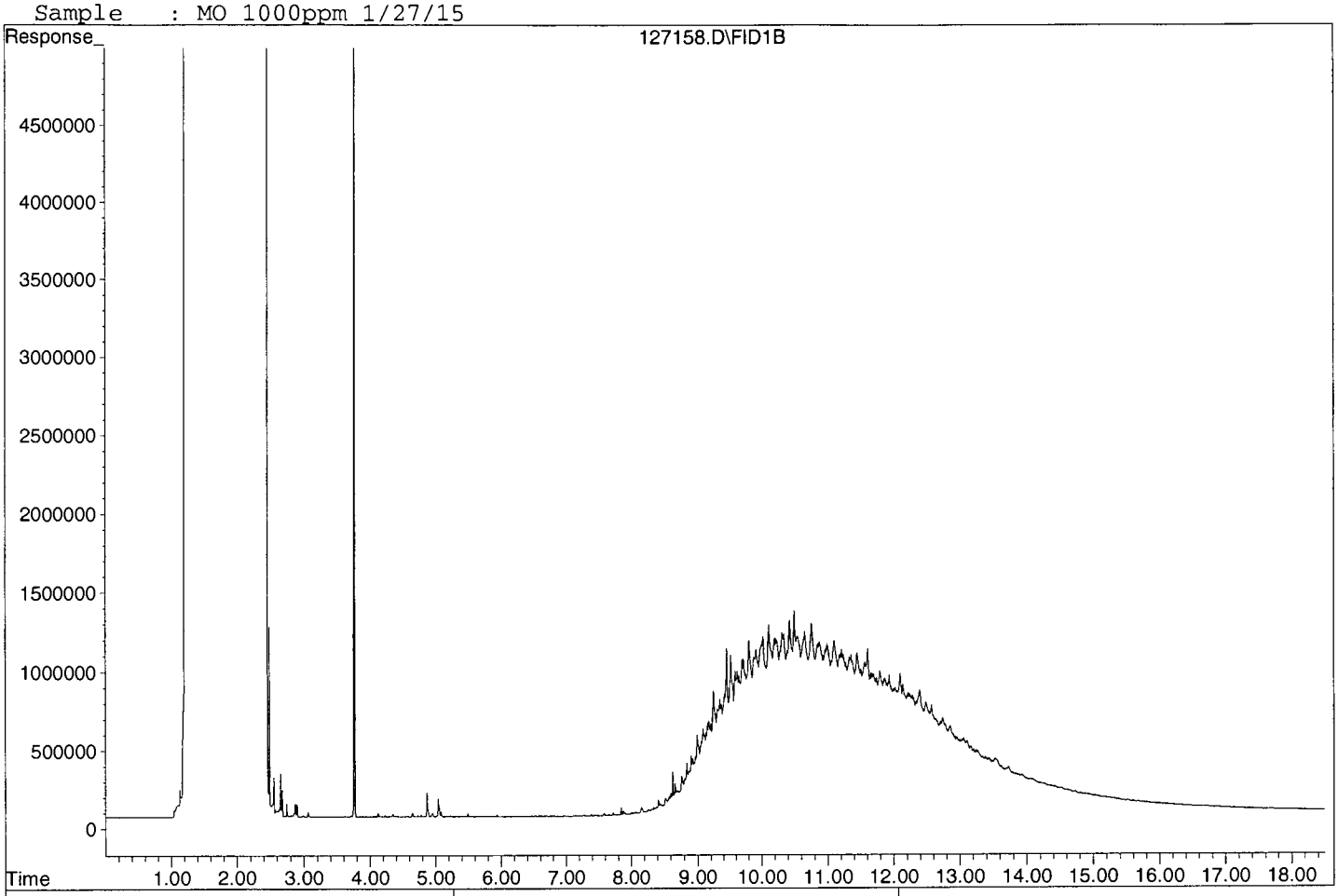
Method : G:\APOLLO\DATA\150206\CTO121.M (Chemstation Integrator)
Title : 8015 B&C
Last Update : Fri Feb 06 17:02:02 2015
Response via : Multiple Level Calibration

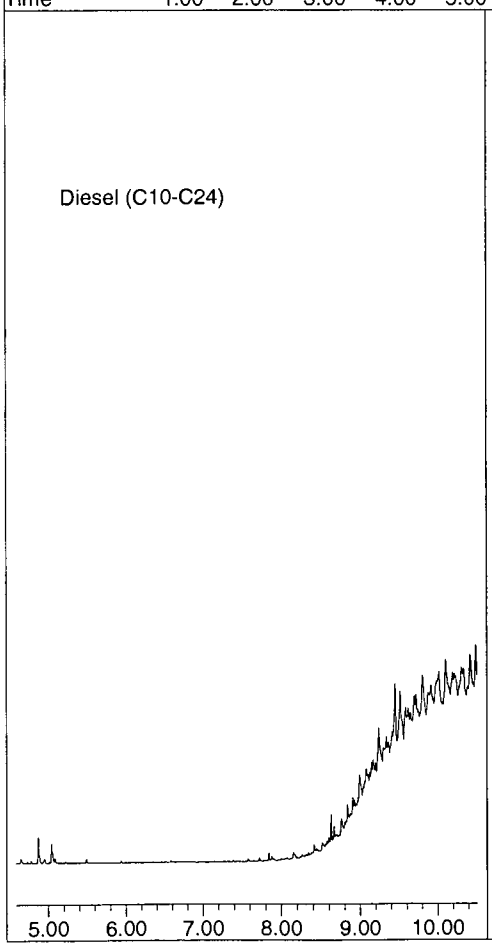
Volume Inj. : 2UL
Signal Phase : DB-5
Signal Info : FID02A

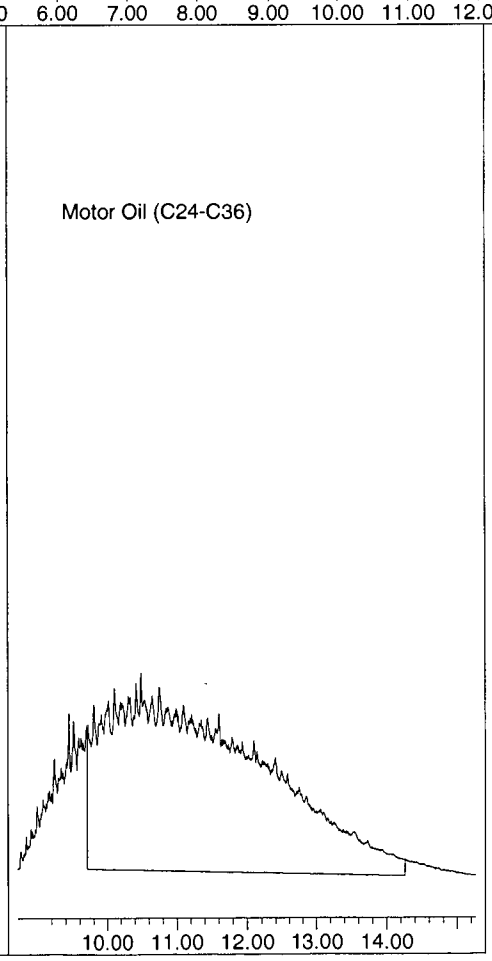
Compound	R.T.	Response	Conc Units
System Monitoring Compounds			
Target Compounds			
2) HBTM Motor Oil (C24-C36)	11.99	1610549219	1073.792 ppb

Quantitation Report

Data File: G:\APOLLO\DATA\150127\127158.D
Sample : MO 1000ppm 1/27/15







EPA 8015 Modified
Total Petroleum Hydrocarbons
Raw Data

Method Blank
TPH-d Water EPA 8015C

APPL Inc.
908 North Temperance Avenu
Clovis, CA 93611

Blank Name/QCG: **150126W-10006 - 194107**
Batch ID: #DROWC-150126A1

Sample Type	Analyte	Result	LOQ	LOD	DL	Units	Extraction Date	Analysis Date
BLANK	TPH-DRO (C10-C24)	50.0 U	150	50.0	40.4	ug/L	1/26/2015	1/29/2015
BLANK	TPH-LRO (C24-C36)	500.0 U	500	500.0	106.0	ug/L	1/26/2015	1/29/2015
BLANK	SURROGATE: OCTACOSANE (S)	113	28-142			%	1/26/2015	1/29/2015
BLANK	SURROGATE: ORTHO-TERPHEN	83.9	57-132			%	1/26/2015	1/29/2015

Quant Method:CTO121.M
Run #:127122
Instrument:Apollo
Sequence:150127
Initials:LA

GC SC-Blank-REG MDLs
Printed: 2/9/2015 9:32:02 AM

Quantitation Report (QT Reviewed)

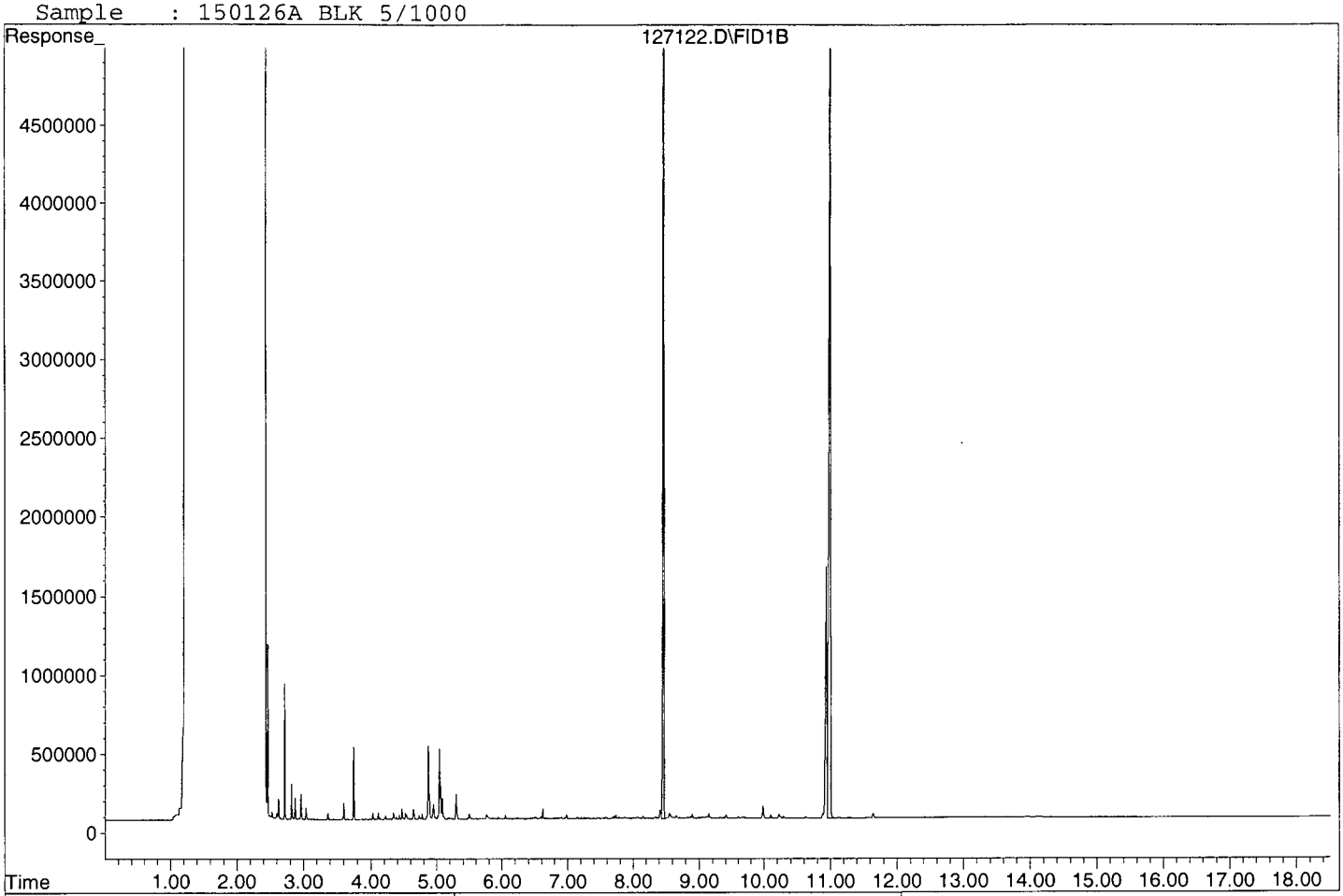
Data File : G:\APOLLO\DATA\150127\127122.D Vial: 22
Acq On : 1-29-15 11:50:51 Operator: lac
Sample : 150126A BLK 5/1000 Inst : Apollo
Misc : Water Multiplr: 5.00
IntFile : events.e
Quant Time: Feb 6 13:39 2015 Quant Results File: CTO121.RES

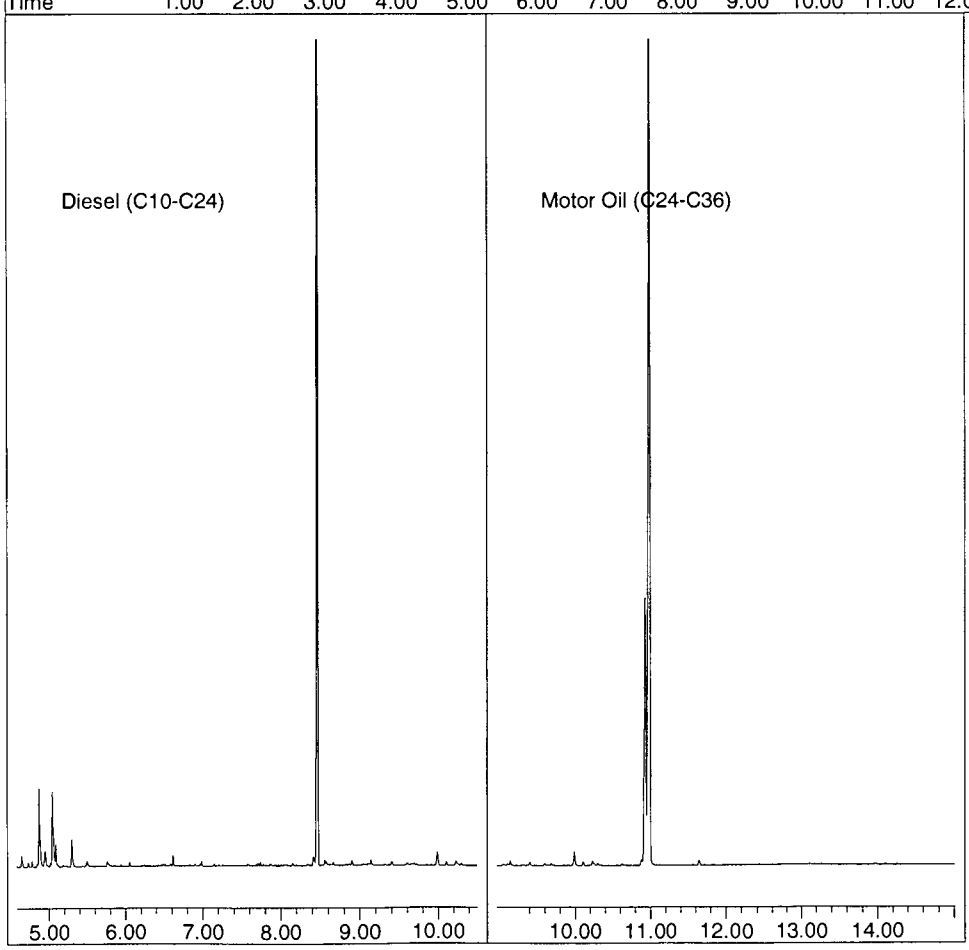
Method : G:\APOLLO\DATA\150206\CTO121.M (Chemstation Integrator)
Title : 8015 B&C
Last Update : Fri Feb 06 17:02:02 2015
Response via : Multiple Level Calibration

Volume Inj. : 2UL
Signal Phase : DB-5
Signal Info : FID02A

Compound	R.T.	Response	Conc Units
System Monitoring Compounds			
3) SA Ortho-Terphenyl(S)	8.47	93745731	125.791 ppb
Surrogate Spike 150.000		Recovery =	83.86%
4) SA Octacosane(S)	10.99	91609239	169.703 ppb
Surrogate Spike 150.000		Recovery =	113.14%
Target Compounds			

Data File: G:\APOLLO\DATA\150127\127122.D
Sample : 150126A BLK 5/1000





Laboratory Control Spike Recovery
TPH-d Water EPA 8015C

APPL ID: **150126W-10006 LCS - 194107**
Batch ID: #DROWC-150126A1

APPL Inc.
908 North Temperance Avenue
Clovis, CA 93611

Compound Name	Spike Level ug/L	SPK Result ug/L	SPK % Recovery	Recovery Limits
TPH-DRO (C10-C24)	2000	1810	90.5	61-143
TPH-LRO (C24-C36)	2000	2400	120	61-143
SURROGATE: OCTACOSANE (S)	150	155	103	28-142
SURROGATE: ORTHO-TERPHENYL (S)	150	137	91.3	57-132

Comments: _____

Primary	SPK
Quant Method :	CTO121.M
Extraction Date :	1/26/2015
Analysis Date :	1/29/2015
Instrument :	Apollo
Run :	127123
Initials :	LA

Printed: 2/9/2015 9:31:58 AM
APPL Standard LCS

Quantitation Report (QT Reviewed)

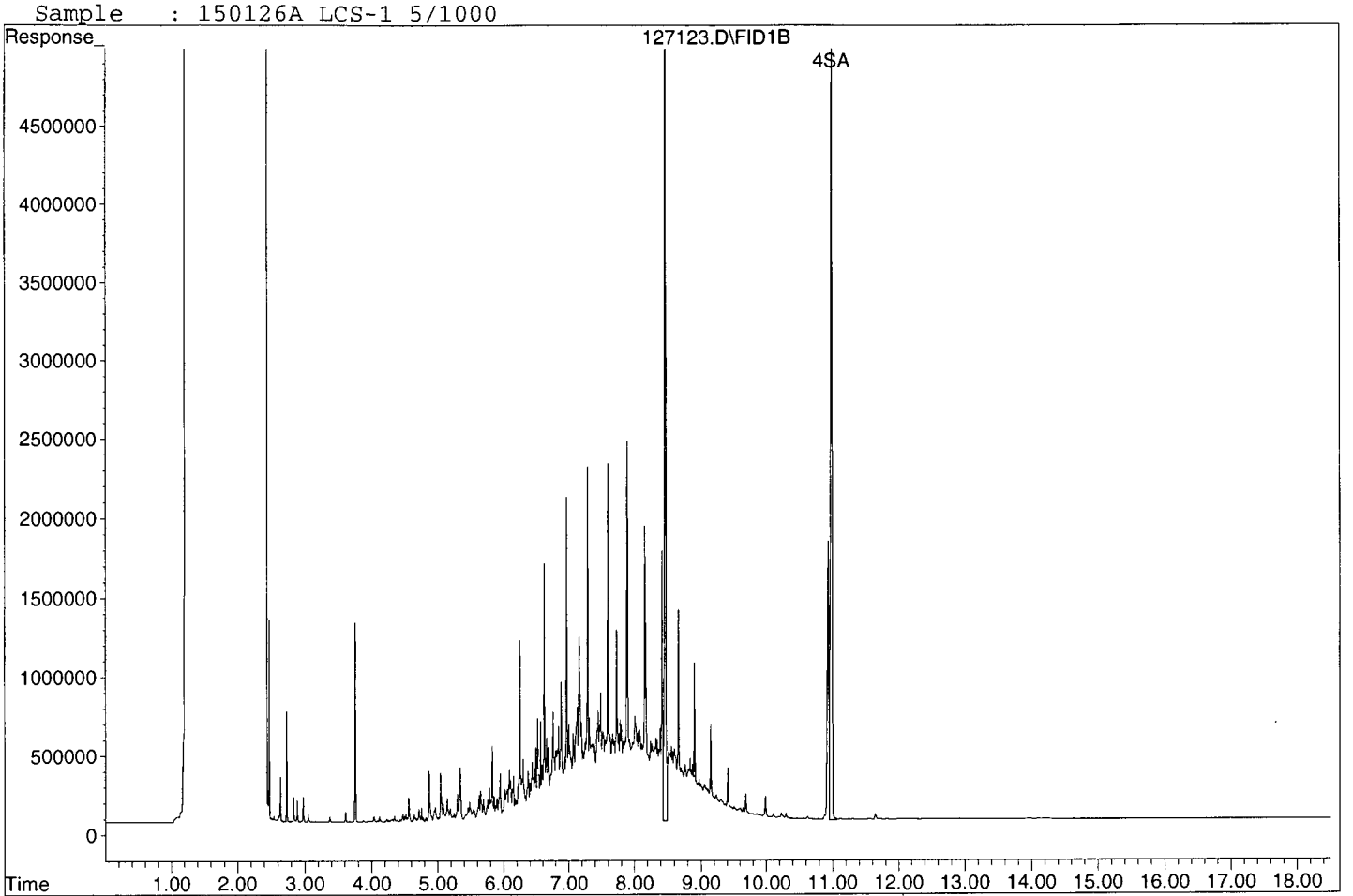
Data File : G:\APOLLO\DATA\150127\127123.D Vial: 23
Acq On : 1-29-15 12:15:24 Operator: lac
Sample : 150126A LCS-1 5/1000 Inst : Apollo
Misc : Water Multiplr: 5.00
IntFile : events.e
Quant Time: Jan 30 12:30 2015 Quant Results File: CTO121.RES

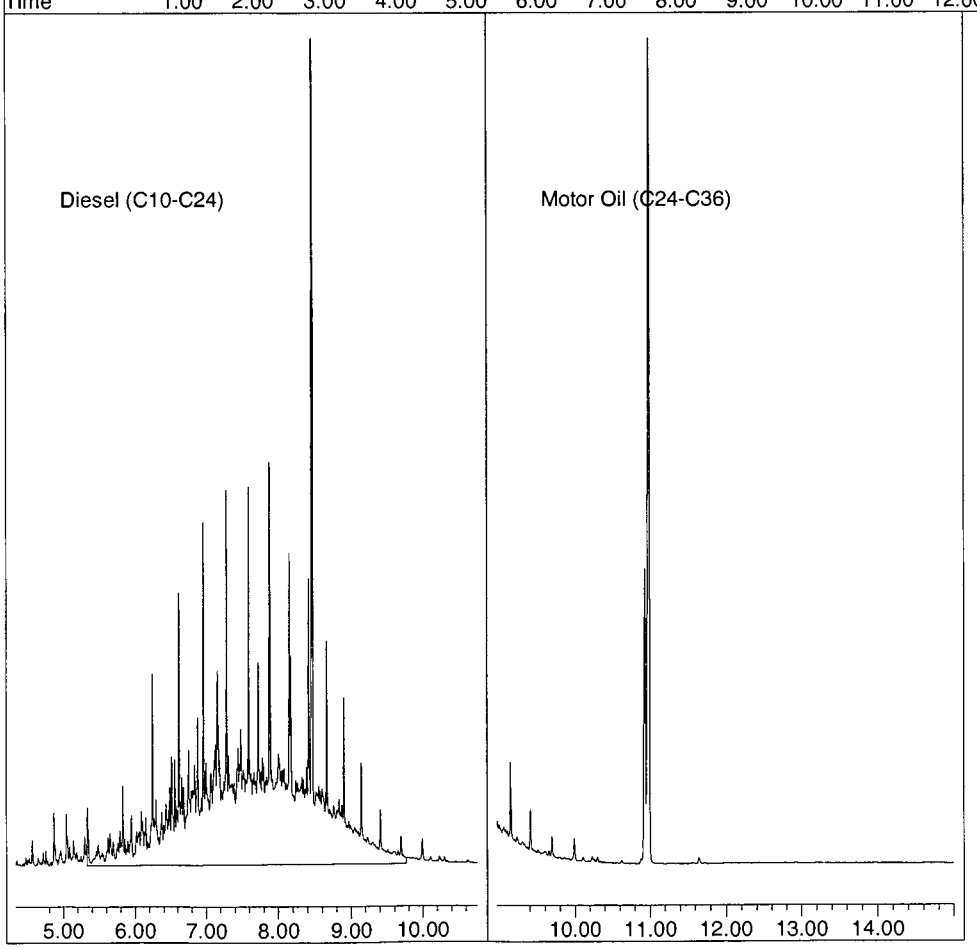
Method : G:\APOLLO\DATA\150206\CTO121.M (Chemstation Integrator)
Title : 8015 B&C
Last Update : Fri Feb 06 17:02:02 2015
Response via : Multiple Level Calibration

Volume Inj. : 2UL
Signal Phase : DB-5
Signal Info : FID02A

Compound	R.T.	Response	Conc Units
System Monitoring Compounds			
3) SA Ortho-Terphenyl(S)	8.47	102230454	137.176 ppb
Surrogate Spike 150.000		Recovery =	91.45%
4) SA Octacosane(S)	10.99	83788824	155.216 ppb
Surrogate Spike 150.000		Recovery =	103.48%
Target Compounds			
1) HATM Diesel (C10-C24)	7.55	911563423	1812.070 ppb

Data File: G:\APOLLO\DATA\150127\127123.D
Sample : 150126A LCS-1 5/1000





Quantitation Report (QT Reviewed)

Data File : G:\APOLLO\DATA\150127\127124.D Vial: 24
Acq On : 1-29-15 12:40:06 Operator: lac
Sample : 150126A LCS-2 5/1000 Inst : Apollo
Misc : Water Multiplr: 5.00
IntFile : events.e
Quant Time: Jan 30 12:44 2015 Quant Results File: CTO121.RES

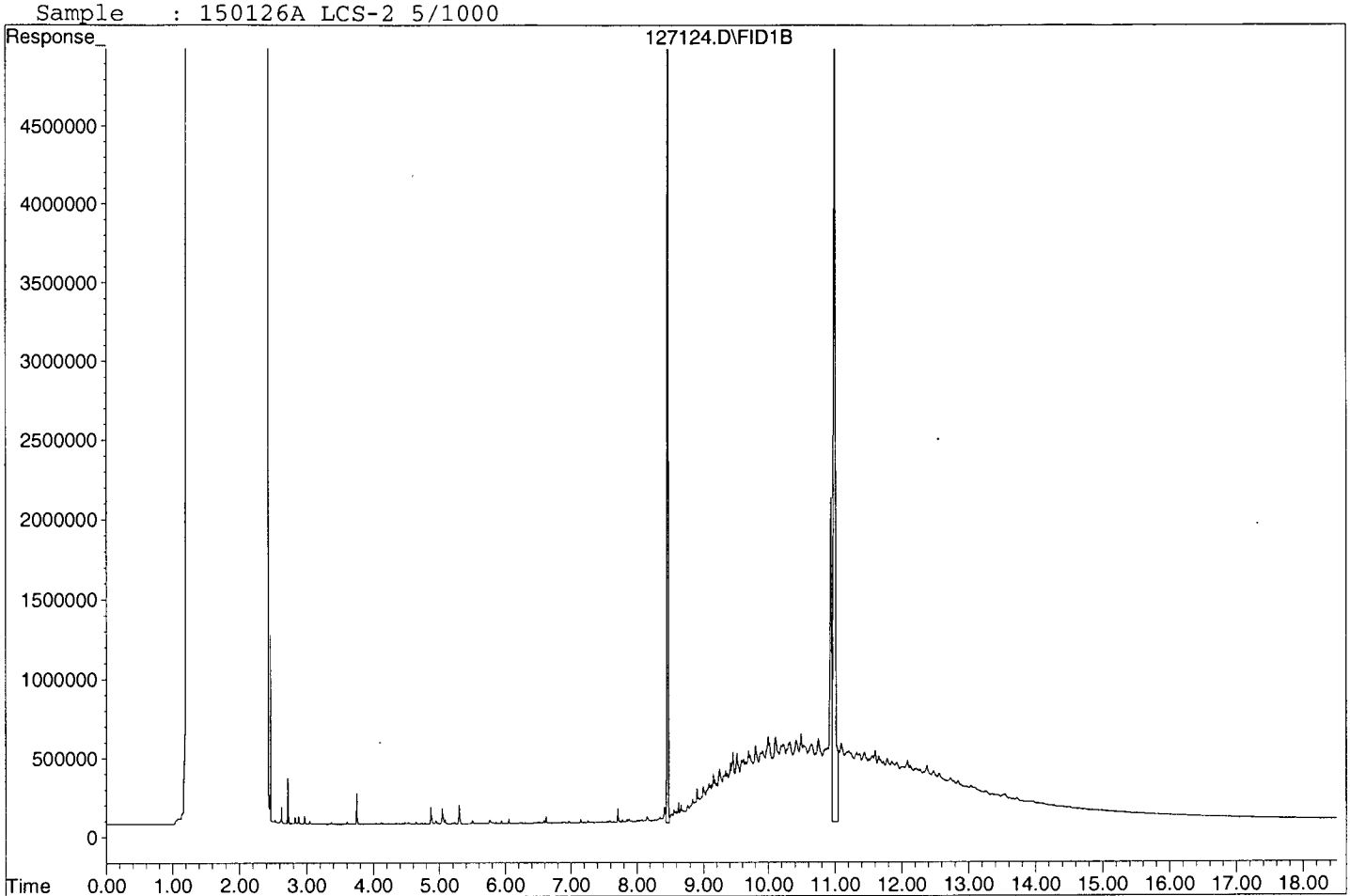
Method : G:\APOLLO\DATA\150206\CTO121.M (Chemstation Integrator)
Title : 8015 B&C
Last Update : Fri Feb 06 17:02:02 2015
Response via : Multiple Level Calibration

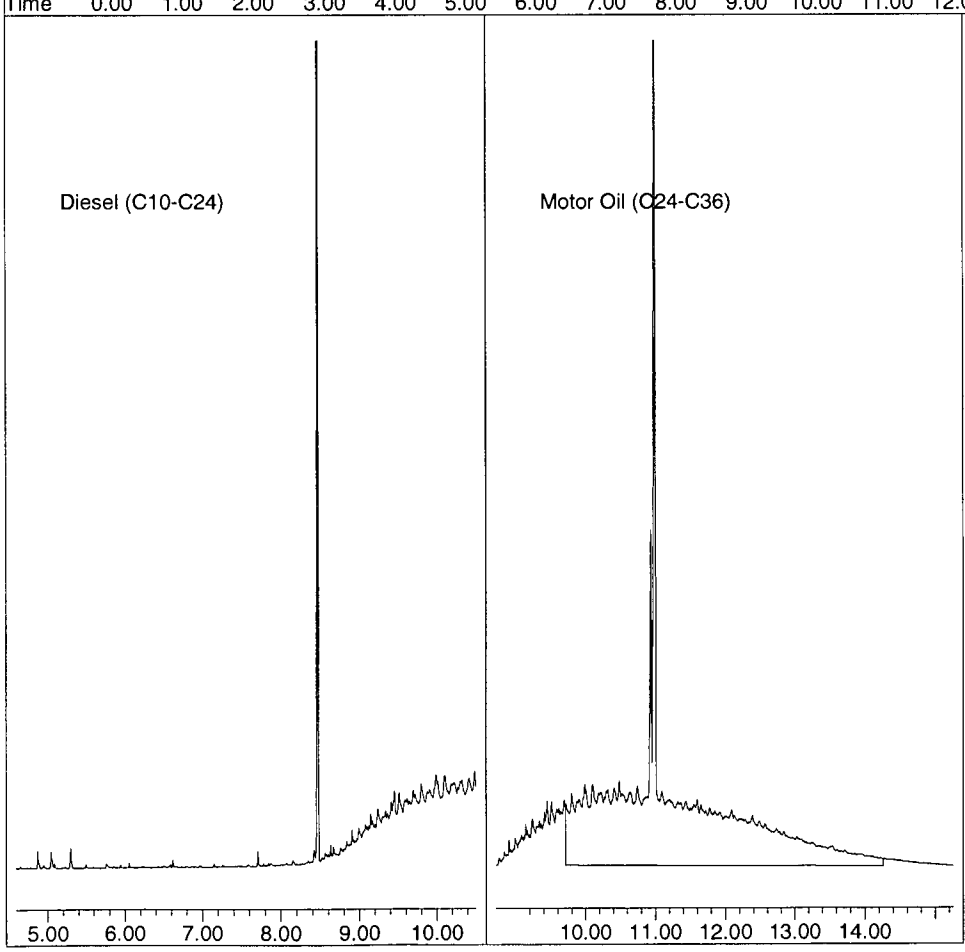
Volume Inj. : 2UL
Signal Phase : DB-5
Signal Info : FID02A

Compound	R.T.	Response	Conc Units
System Monitoring Compounds			
3) SA Ortho-Terphenyl(S)	8.47	94118034	126.290 ppb
Surrogate Spike 150.000		Recovery =	84.19%
4) SA Octacosane(S)	11.00	113080118	209.478 ppb
Surrogate Spike 150.000		Recovery =	139.65%
Target Compounds			
2) HBTM Motor Oil (C24-C36)	11.99	718801986	2396.212 ppb

(f)=RT Delta > 1/2 Window (m)=manual int.

Data File: G:\APOLLO\DATA\150127\127124.D
Sample : 150126A LCS-2 5/1000





Matrix Spike Recoveries
TPH-d Water EPA 8015C

APPL ID: **150126W-10006 MS - 194107**
Batch ID: #DROWC-150126A1
Sample ID: AZ10006
Client ID: EKB100020

APPL Inc.
908 North Temperance Avenue
Clovis, CA 93611

Compound Name	Spike Lvl ug/L	Matrix Result ug/L	SPK Result ug/L	DUP Result ug/L	SPK % Recovery	DUP % Recovery	Recovery Limits	RPD %	RPD Limits
TPH-DRO (C10-C24)	2000	ND	1750	1830	87.5	91.5	61-143	4.5	30
TPH-LRO (C24-C36)	2000	ND	2100	2150	105	108	61-143	2.4	30
SURROGATE: OCTACOSANE (S)	150	NA	182	162	121	108	28-142		
SURROGATE: ORTHO-TERPHENYL (S)	150	NA	111	141	74.0	94.0	57-132		

Comments: _____

Primary	SPK	DUP
Quant Method :	CTO121.M	CTO121.M
Extraction Date :	1/26/2015	1/26/2015
Analysis Date :	1/29/2015	1/29/2015
Instrument :	Apollo	Apollo
Run :	127145	127144
Initials :	LA	

Printed: 2/9/2015 9:31:55 AM
APPL MSD SCII

Quantitation Report (QT Reviewed)

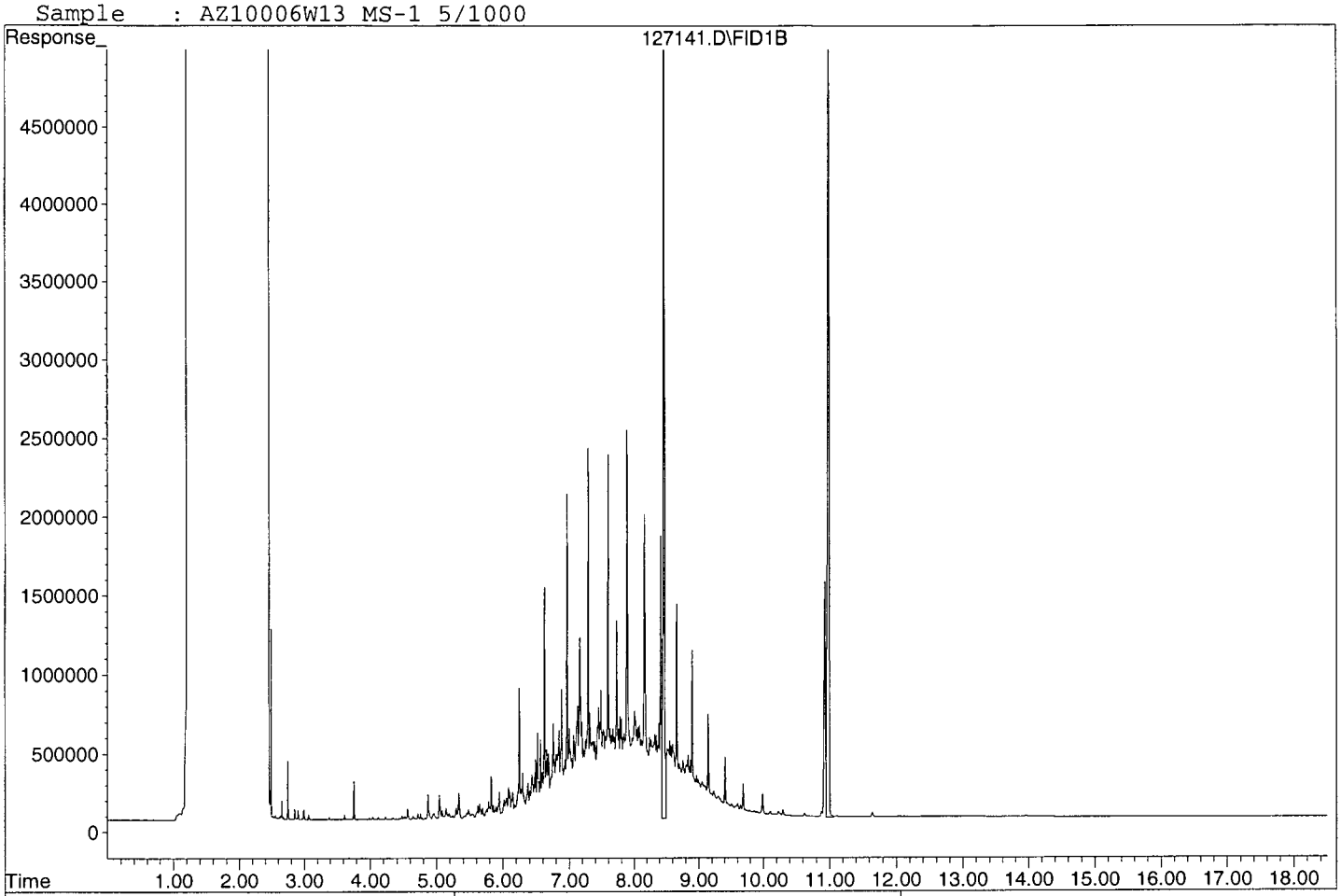
Data File : G:\APOLLO\DATA\150127\127141.D Vial: 41
Acq On : 1-29-15 19:41:18 Operator: lac
Sample : AZ10006W13 MS-1 5/1000 Inst : Apollo
Misc : Water Multiplr: 5.00
IntFile : events.e
Quant Time: Feb 6 13:56 2015 Quant Results File: CTO121.RES

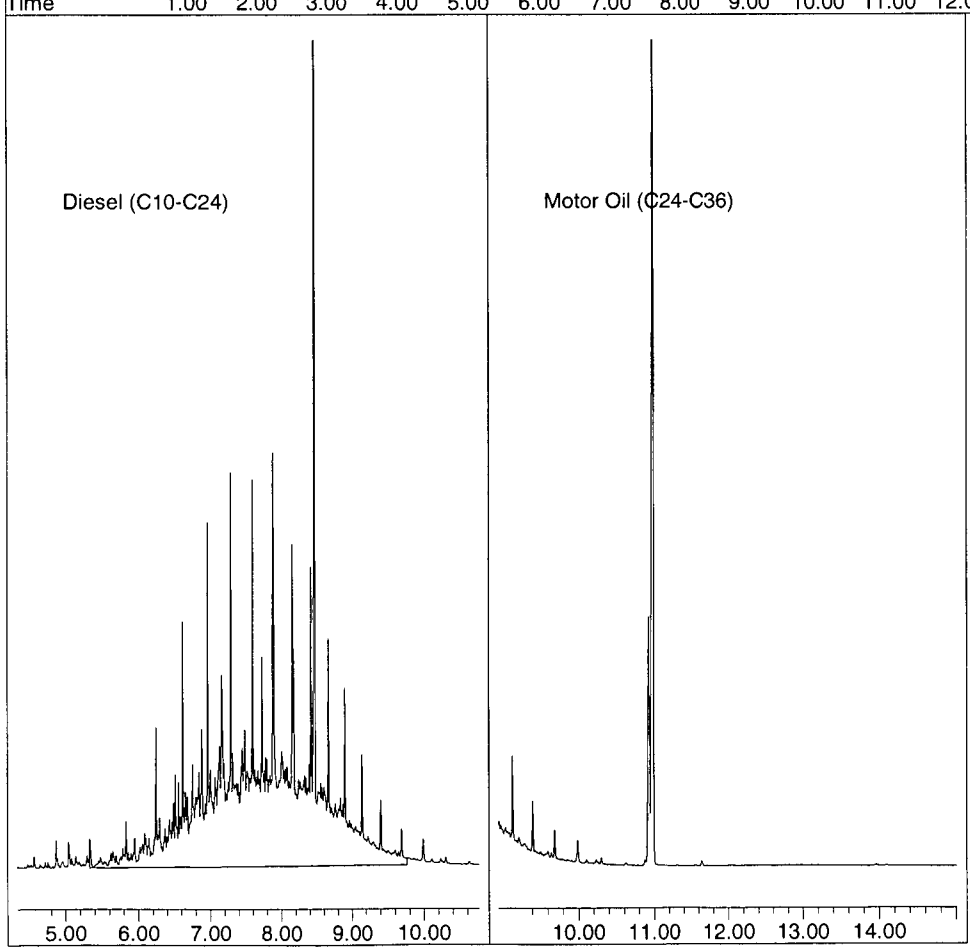
Method : G:\APOLLO\DATA\150206\CTO121.M (Chemstation Integrator)
Title : 8015 B&C
Last Update : Fri Feb 06 17:02:02 2015
Response via : Multiple Level Calibration

Volume Inj. : 2UL
Signal Phase : DB-5
Signal Info : FID02A

Compound	R.T.	Response	Conc Units
System Monitoring Compounds			
3) SA Ortho-Terphenyl(S)	8.47	106079602	142.341 ppb
Surrogate Spike 150.000		Recovery =	94.89%
4) SA Octacosane(S)	10.99	88492663	163.930 ppb
Surrogate Spike 150.000		Recovery =	109.29%
Target Compounds			
1) HATM Diesel (C10-C24)	7.55	879120564	1747.578 ppb

Data File: G:\APOLLO\DATA\150127\127141.D
Sample : AZ10006W13 MS-1 5/1000





Quantitation Report (QT Reviewed)

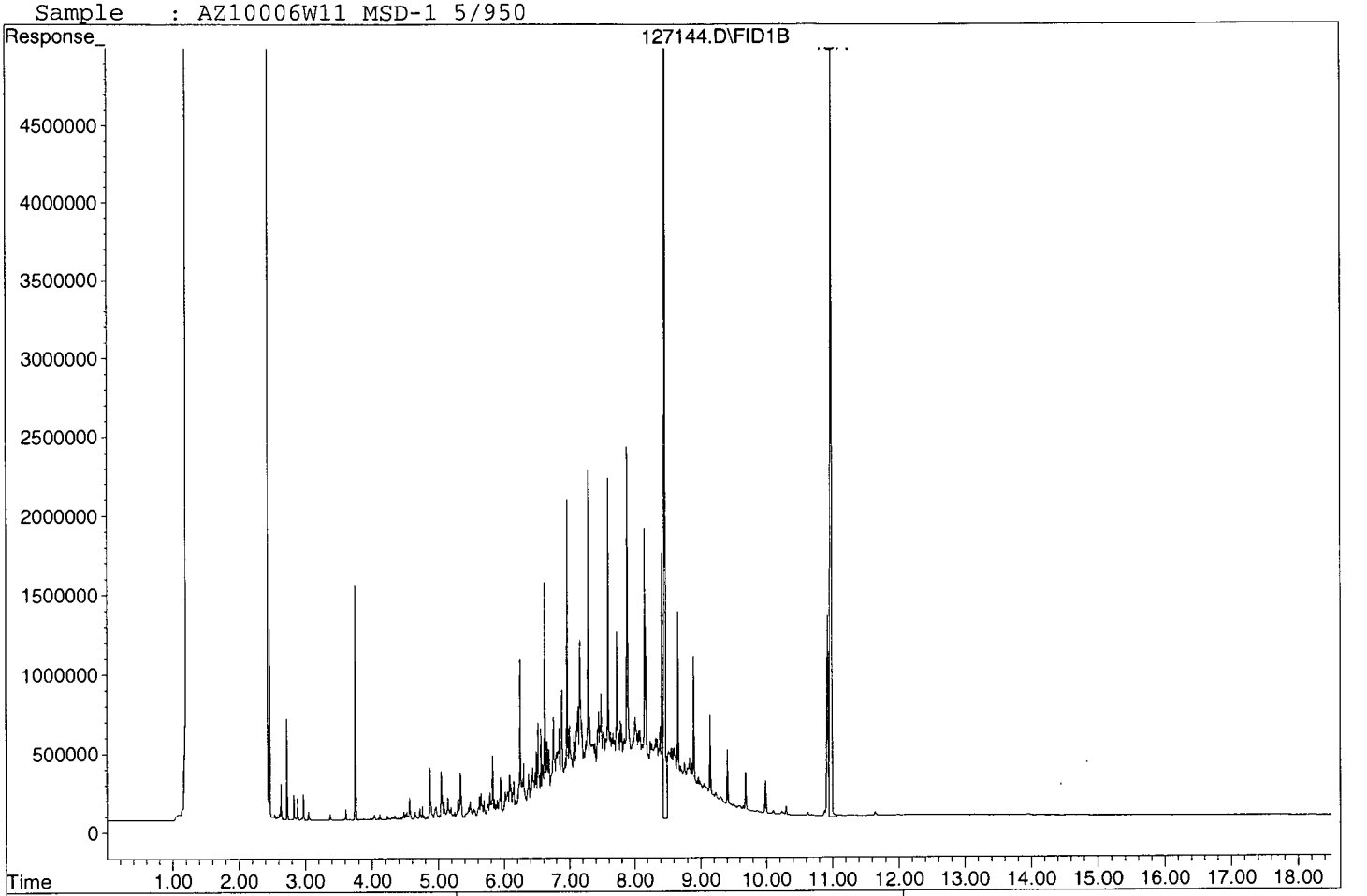
Data File : G:\APOLLO\DATA\150127\127144.D Vial: 44
Acq On : 1-29-15 20:54:15 Operator: lac
Sample : AZ10006W11 MSD-1 5/950 Inst : Apollo
Misc : Water Multiplr: 5.26
IntFile : events.e
Quant Time: Feb 6 14:27 2015 Quant Results File: CTO121.RES

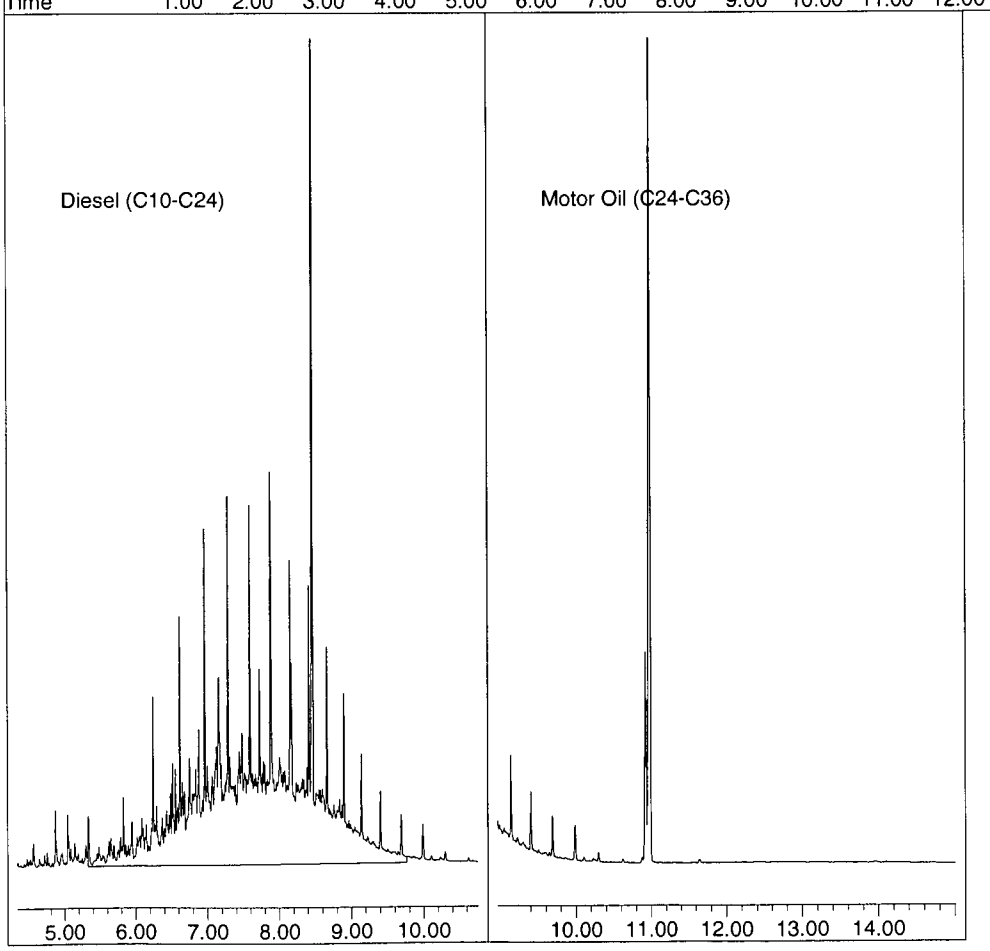
Method : G:\APOLLO\DATA\150206\CTO121.M (Chemstation Integrator)
Title : 8015 B&C
Last Update : Fri Feb 06 17:02:02 2015
Response via : Multiple Level Calibration

Volume Inj. : 2UL
Signal Phase : DB-5
Signal Info : FID02A

Compound	R.T.	Response	Conc Units
System Monitoring Compounds			
3) SA Ortho-Terphenyl(S)	8.47	99944719	141.167 ppb
Surrogate Spike 157.895		Recovery =	89.41%
4) SA Octacosane(S)	10.99	82902657	161.658 ppb
Surrogate Spike 157.895		Recovery =	102.38%
Target Compounds			
1) HATM Diesel (C10-C24)	7.55	875083661	1831.109 ppb

Data File: G:\APOLLO\DATA\150127\127144.D
Sample : AZ10006W11 MSD-1 5/950





Quantitation Report (QT Reviewed)

Data File : G:\APOLLO\DATA\150127\127145.D Vial: 45
Acq On : 1-29-15 21:18:29 Operator: lac
Sample : AZ10006W10 MS-2 5/1000 Inst : Apollo
Misc : Water Multiplr: 5.00
IntFile : events.e
Quant Time: Feb 6 14:27 2015 Quant Results File: CTO121.RES

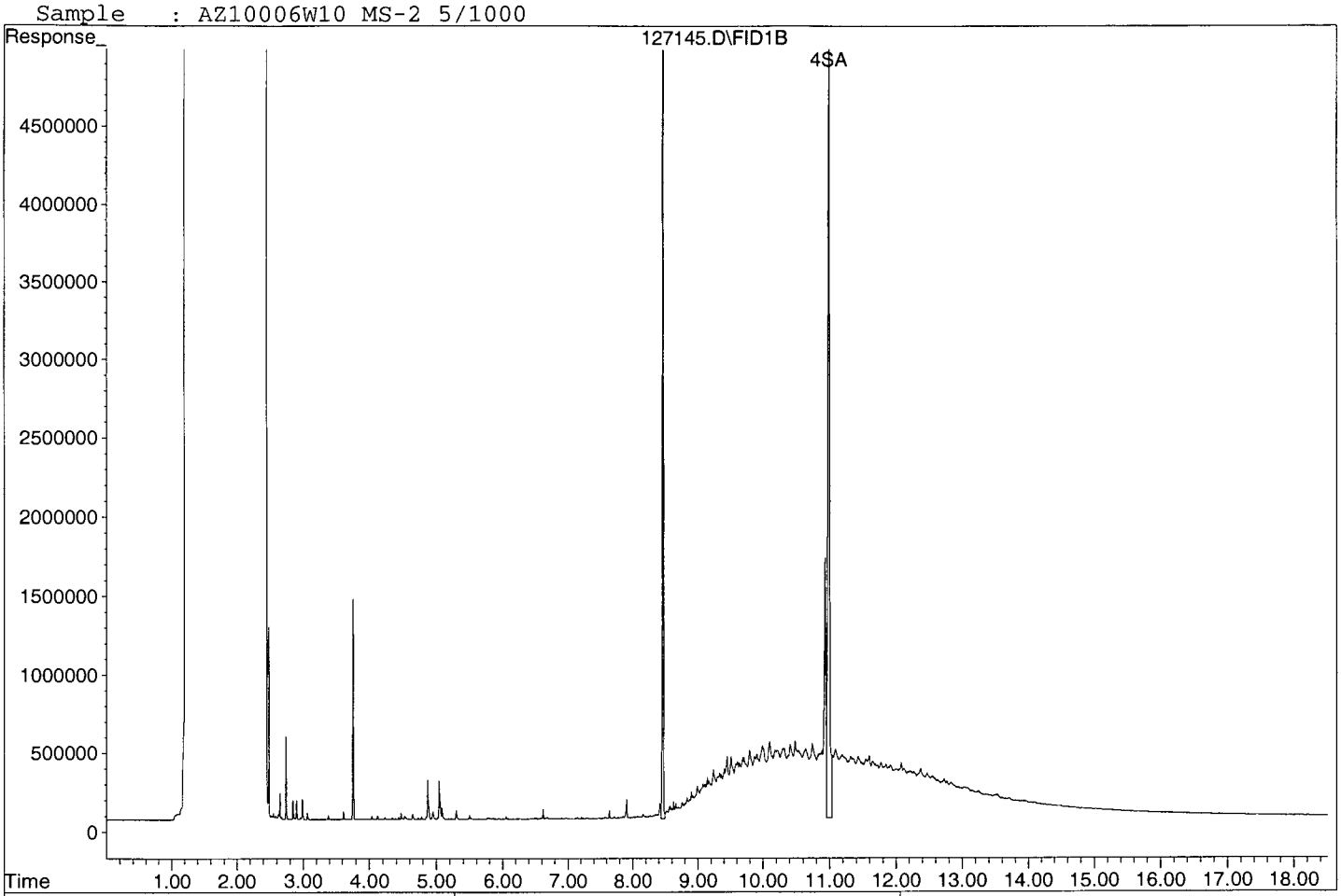
Method : G:\APOLLO\DATA\150206\CTO121.M (Chemstation Integrator)
Title : 8015 B&C
Last Update : Fri Feb 06 17:02:02 2015
Response via : Multiple Level Calibration

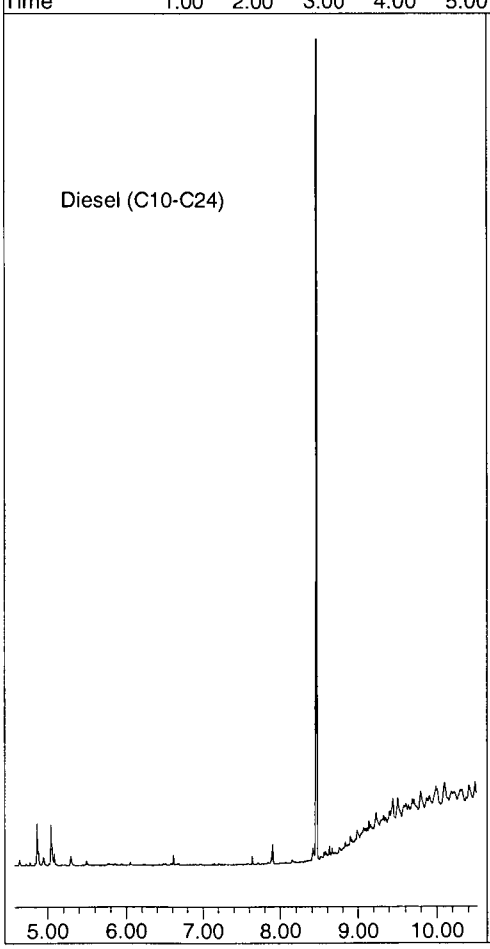
Volume Inj. : 2UL
Signal Phase : DB-5
Signal Info : FID02A

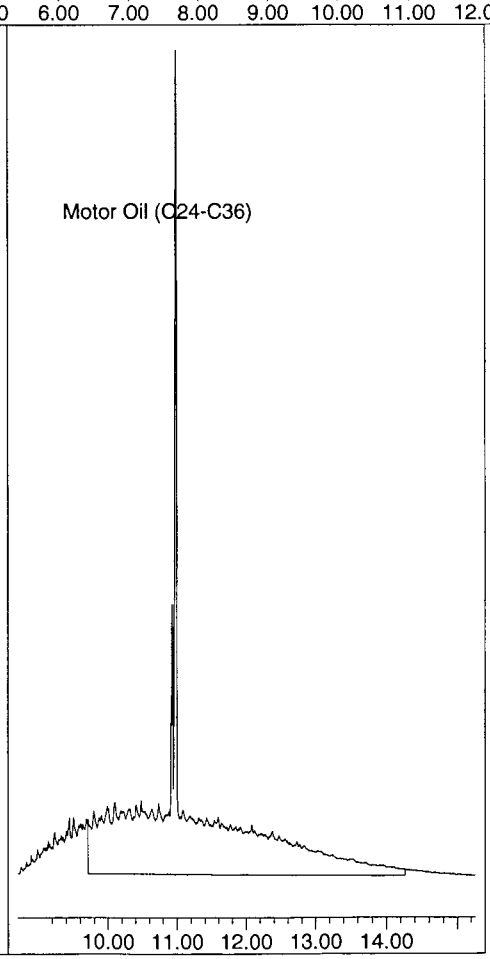
Compound	R.T.	Response	Conc Units
System Monitoring Compounds			
3) SA Ortho-Terphenyl(S)	8.47	82404403	110.573 ppb
Surrogate Spike 150.000		Recovery =	73.72%
4) SA Octacosane(S)	10.99	98259012	182.022 ppb
Surrogate Spike 150.000		Recovery =	121.35%
Target Compounds			
2) HBTM Motor Oil (C24-C36)	11.99	630200763	2100.849 ppb

Quantitation Report

Data File: G:\APOLLO\DATA\150127\127145.D
Sample : AZ10006W10 MS-2 5/1000







Quantitation Report (QT Reviewed)

Data File : G:\APOLLO\DATA\150127\127146.D Vial: 46
Acq On : 1-29-15 21:42:44 Operator: lac
Sample : AZ10006W12 MSD-2 5/950 Inst : Apollo
Misc : Water Multiplr: 5.26
IntFile : events.e
Quant Time: Feb 6 14:28 2015 Quant Results File: CTO121.RES

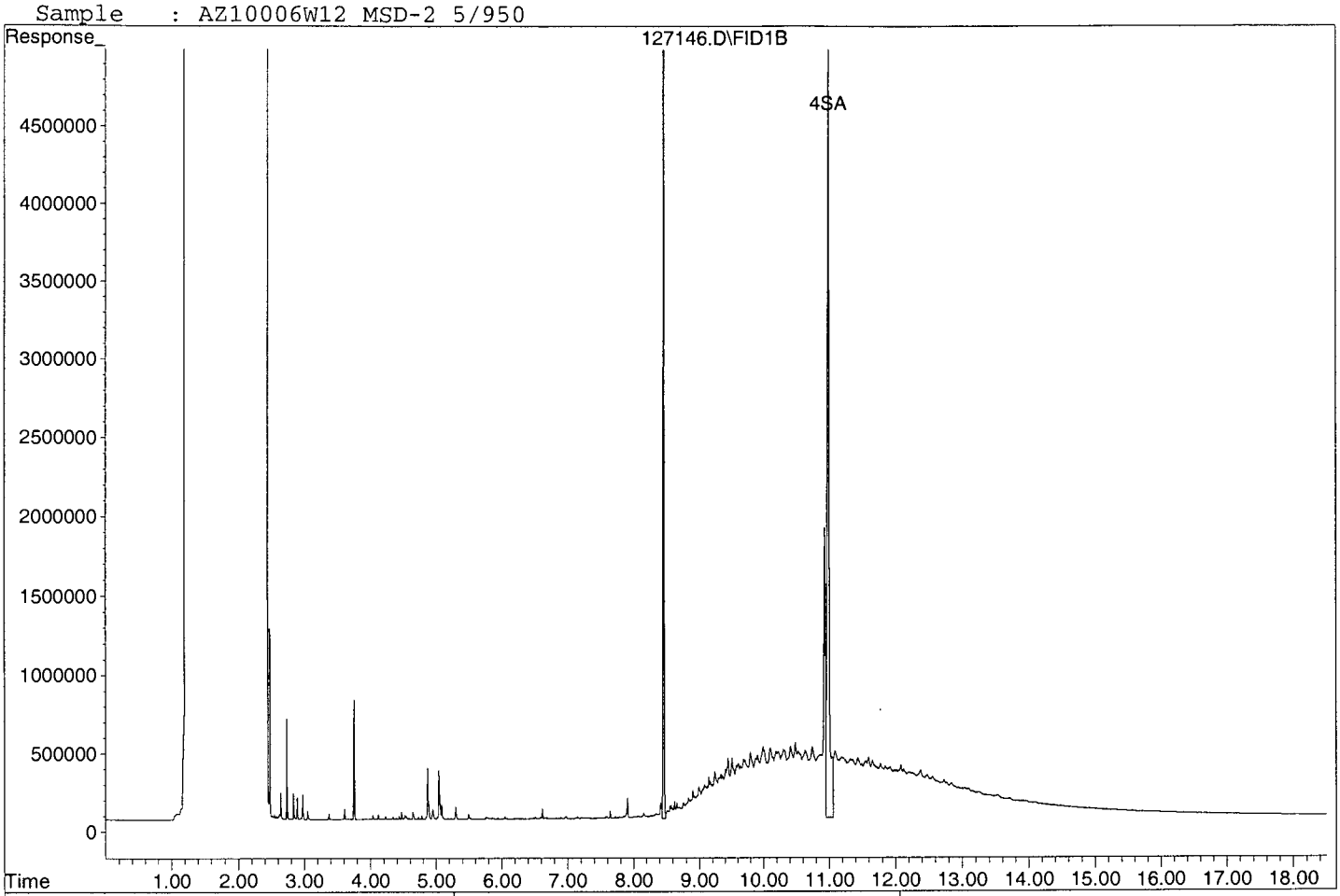
Method : G:\APOLLO\DATA\150206\CTO121.M (Chemstation Integrator)
Title : 8015 B&C
Last Update : Fri Feb 06 17:02:02 2015
Response via : Multiple Level Calibration

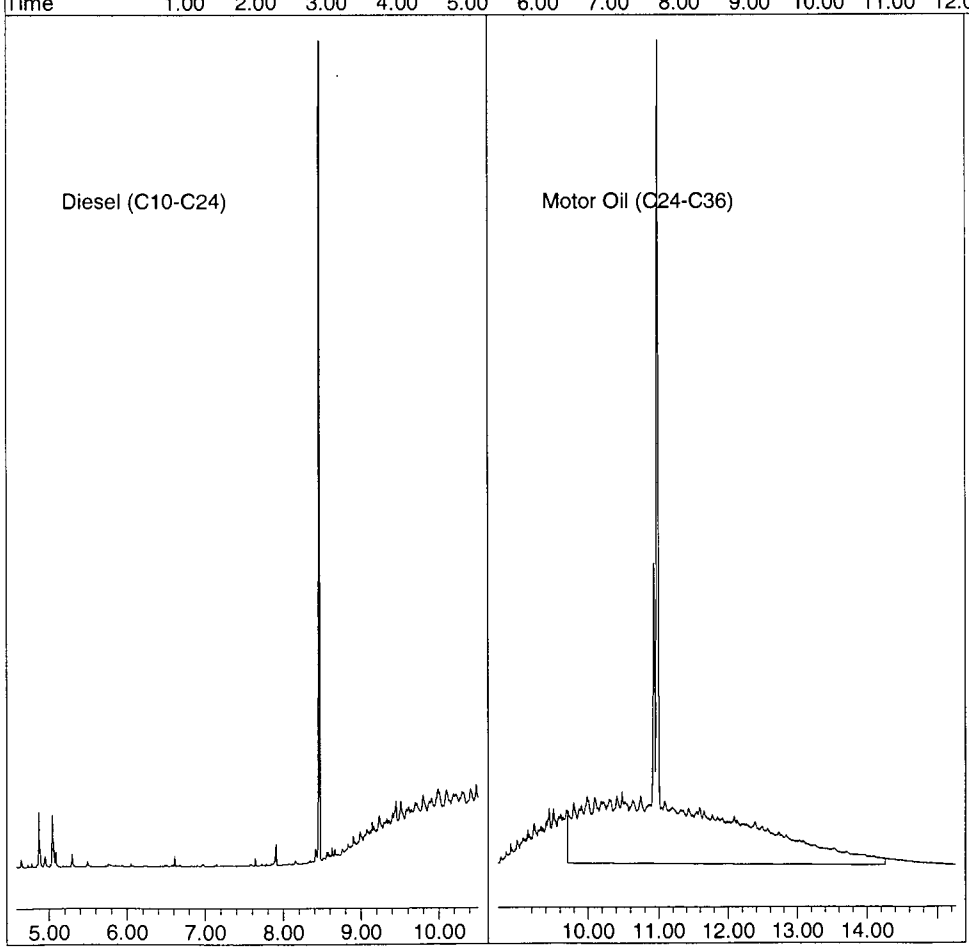
Volume Inj. : 2UL
Signal Phase : DB-5
Signal Info : FID02A

Compound	R.T.	Response	Conc Units
System Monitoring Compounds			
3) SA Ortho-Terphenyl(S)	8.47	77110141	108.914 ppb
Surrogate Spike 157.895		Recovery =	68.98%
4) SA Octacosane(S)	10.99	98440170	191.955 ppb
Surrogate Spike 157.895		Recovery =	121.57%
Target Compounds			
2) HBTM Motor Oil (C24-C36)	11.99	613239592	2151.903 ppb

Quantitation Report

Data File: G:\APOLLO\DATA\150127\127146.D
Sample : AZ10006W12 MSD-2 5/950





STANDARD	INITIAL CONC	SOURCE DATE	ALIQUOT	FINAL VOLUME	FINAL CONC	SOLVENT LOT#	DATE INITIALS

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5ES 2nd Src Stock GA 10/6/14

Compound	Init Conc.	Stock Src	Aliquot	Final Vol	Final Conc.	Solvent Lot#
alachlor	100/2000 ug/ml	O2SI	500 uL	10 mL	5/100 ug/ml	Hexane
benfluralin	CAT	130200-02-SS				080613A
captan	LOT	231047-33782				
carbophenothion	OPEN	10/03/14				
chlorothalonil	EXP	10/03/15				
chlorthal(dacthal)						
2,6 dichlorobenzonitrile(dicofol)						
kelthane						
nitrofen						
oxadiazon						
oxyfluorfen						
propachlor						
op DDD						
op DDE						
op DDT						
bis(2-ethylhexyl)phthalate						

GA 10/3/14
10/3/15

5ES 2ND SRC GA 10/6/14

Compound	Init. Conc.	Stock Src	Aliquot	Final Vol	Final Conc.	Solvent Lot#
VARIOUS	5/100 ug/ml	508 2ND SRC STK	100 uL	10 mL	0.05/1 ug/ml	Hexane
		Prep:10/03/14				080613A
		Exp: 10/03/15				

GA 10/3/14
4/3/15

DIESEL SECOND SOURCE GA 10/6/14

STANDARD	INITIAL CONC.	SOURCE DATE	ALIQUOT	FINAL VOL	FINAL CONC.	SOLVENT LOT#
DIESEL FUEL #2	50,000 ug/mL	O2SI CAT#011598-01-SS LOT#207749-32372 OP:5/5/14 EXP.5/5/15	200uL	10mL	1000ug/mL	MC #54024

GA 10/6/14
5/5/15

Chloroneb Standard GA 10/6/14

Compound	Initial Conc.	Stock Source	Aliquot	Final Volume	Final Conc.	Solvent
Chloroneb	1000ug/mL	Absolute	10uL	10mL	1ug/mL	Hexane
		Cat: 70082				080613A
		Lot: 091013-34074				
		Open: 10/06/14				
		Exp: 10/06/15				

GA 10/6/14
10/6/15

Chloroneb Curve GA 10/6/14

Compound	Initial Conc.	Stock Source	Aliquot	Final Volume	Final Conc.	Solvent
Chloroneb	1ug/mL	Prep: 10/06/14	5uL	1mL	0.005ug/mL	Hexane
		Exp: 10/06/15	50uL	1mL	0.050ug/mL	080613A
			100uL	1mL	0.100ug/mL	
			150uL	1mL	0.150ug/mL	
			200uL	1mL	0.200ug/mL	
			250uL	1mL	0.250ug/mL	

GA 10/6/14
4/6/15

PAC ECO CURVE

						1a	1b	1	2	3	4	5	6
	ID#	(µg/mL)	LOT #	DATE	EXP. DATE	µL	µL	µL	µL	µL	µL	µL	µL
	PAC ECO CAL STD	5		09/29/14	11/09/14	2	5	10	50	20	100	70	1000
						998	995	990	950	80	100	30	N/A
	Hexane		080613A		Final VOL.	1000	1000	1000	1000	100	200	100	1000

GA 10/6/14
11/9/14

GA

STANDARD
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INITIAL CONC | SOURCE DATE | ALIQUOT | FINAL VOLUME | FINAL CONC | SOLVENT LOT# | INI

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MOTOR OIL CAL STD						
STD.	INITIAL CONC	SOURCE DATE	ALIQUOT	FINAL VOL	FINAL CONC	SOLVENT / LOT#
MOTOR OIL	50,000 ug/mL	O2SI CAT#116390-02 LOT#1211942-33766 OP:10/13/14 EXP:10/13/15	1mL	25mL	2000ug/mL	MC LOT# 54128

LH 10/13/14 ex 10/13/15

MOTOR OIL CCV 1000ppm						
STANDARD	CONC.	DATE	ALIQUOT	VOL	CONC.	/LOT#
MO STD.	2000 µg/mL	MO Std.	3000µL	5mL	1000 µg/ml	MC
	PREP:	10/13/14				54128
	Exp	10/13/15				

LH 10/13/14 ex. 1/13/15

DIESEL CCV 400ug/ml						
STANDARD	INITIAL CONC.	SOURCE DATE	ALIQUOT	FINAL VDL	FINAL CONC.	SOLVENT /LOT#
DIESEL STD	1000 µg/mL	Diesel Std.	2000µL	5mL	400 µg/ml	MC
	PREP.	09/29/14				54128
	Exp	09/22/15				

LH 10/13/14 ex 1/13/15

HERB-3

Various	10/09/14 ex 10/09/15	1mL	10mL	various	MTBE #50223	LH 10/14/14 ex 4/14/15

507B STANDARD					
MEVINPHOS	5ug/ml	1000ug/ml	50ul	O2SI	10ml
MOLINATE	5	1000	Cat:	132087-01	MTBE
METOLACHLOR	5	1000	Lot:	201706-31876	LOT#
DEMETON	5	1000	Open:	02/06/14	50223
DIAZINON	5	1000	Exp	01/04/15	
SIMETRYN	5	1000			
TERBUTRYN	5	1000			
BROMACIL	5	1000			
SIMAZINE	5	1000			
ALACHLOR	5	1000			
TBP	5	1000			
TPP	5	1000			

LH 10/14/14 EX 4/14/15

DOHS SURROGATE						
Compound	Initial Conc.	Stock Source	Aliquot	Final Vol.	Final Conc.	Solvent
1,3 Dibromopropane	100ug/mL	1,3 DBP Stock	625uL	10mL	6.25ug/mL	Methanol
		Prep: 02/17/14				#070913A
		Exp: 02/17/15				

LH 10/14/14 1/14/15 Ex 4/13/15

QC on 1/13/15. HK 1/13/15

STANDARD	INITIAL CONC	SOURCE DATE	ALIQUOT	FINAL VOLUME	FINAL CONC	SOLVENT LOT#	DATE

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MOTOR OIL CCV 1000ppm						
STANDARD	CONC.	DATE	ALIQUOT	VOL	CONC.	/LOT#
MO STD.	2000 µg/mL	MO Std.	2500µL	5mL	1000 µg/ml	MC
	PREP:	10/24/14				54024
	Exp:	10/24/15				

LH
12/2/14
3/2/15

DIESEL CCV 400ug/ml						
STANDARD	INITIAL CONC.	SOURCE DATE	ALIQUOT	FINAL VOL	FINAL CONC.	SOLVENT /LOT#
DIESEL STD.	1000 µg/mL	Diesel Std.	2000µL	5mL	400 µg/ml	MC
	PREP:	08/27/14				54024
	Exp:	07/30/15				

LH
12/2/14
3/2/15

		FIN PT CURVE			
COMPOUND	INITIAL CONC	FINAL CONC	ALIQUOT	STK SRCE	FINAL VOL.
FOLPET	5 ug/ml	VARIOUS	5 ul	FIN PT Std.	1 ml
IPRODIONE	25 ug/ml		50 ul	Prep: 12/2/14	Hexane
NORFLURAZON	5 ug/ml		100 ul	EXP: 12/2/15	Lot: 051914A
PERTHANE	50 ug/ml		150 ul		
TETRADIFON	5 ug/ml		250 ul		

LH
12/2/14
ex. 6/2/15

		FIN PT STD			
COMPOUND	INITIAL CONC	FINAL CONC	ALIQUOT	STK SRCE	FINAL VOL.
FOLPET	100 ug/ml	5 ug/ml	50µL	O2SI	1ml
IPRODIONE	500 ug/ml	25 ug/ml	CAT:	130826-05	HEXANE
NOFLURAZON	100 ug/ml	5 ug/ml	LOT:	230279	051914A
PERTHANE	1000 ug/ml	50 ug/ml		-33742	
TETRADITION	100 ug/ml	5 ug/ml	OP:	12/02/14	
			EXP:	12/02/15	

LH
12/2/14
ex. 12/2/15

5ES-3

5ES STOCK 10mL Hexane LH
prep. 9/22/14 051914A 12/5/14
ex. 9/22/15 6/5/15

DIESEL CAL STD.						
STD.	INITIAL CONC.	SOURCE DATE	ALIQUOT	FINAL VOL	FINAL CONC.	SOLVENT / LOT#
DIESEL FUEL #2	50,000 ug/mL	O2SI CAT#011598-03 LOT#237372-34153 OP:12/05/14 EXP:12/05/15	1mL	50mL	1000ug/mL	MC LOT# 54200
O-TERPHENYL OCTACOSANE	600 ug/mL	O2SI CAT#110316-05 LOT#229803.-34065 OP:11/24/14 EXP:11/24/15	4160 µL		50ug/mL	

GA
12/5/14
EXP 11/24/15

DIESEL CCV 400ug/ml						
STANDARD	INITIAL CONC.	SOURCE DATE	ALIQUOT	FINAL VOL	FINAL CONC.	SOLVENT /LOT#
DIESEL STD.	1000 µg/mL	Diesel Std.	2000µL	5mL	400 µg/ml	MC
	PREP:	12/05/14				54200
	Exp:	11/24/15				

GA
12/5/14
exp 3/5/15

OPC CURVE						1	2	3	4	5	6
						µL	µL	µL	µL	µL	µL
SUPPLIER	ID#	(µg/mL)	LOT #	DATE	EXP. DATE						
	OPC STD	5		09/20/14	07/09/15	10	50	20	100	70	1000
	Hexane		051914A			990	950	80	100	30	NA
					Final VOL.	1000	1000	100	200	100	1000

GA
12/5/14
exp 6/5/15

STANDARD	INITIAL CONC	SOURCE DATE	ALIQUOT	FINAL VOLUME	FINAL CONC	SOLVENT LOT#	DATE INITIALS

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LAC 12/9/14

THC SURR CAL STD

STD.	INITIAL CONC.	SOURCE DATE	ALIQUOT	FINAL VOL	FINAL CONC.	SOLVENT LOT#
O-TERPHENYL OCTACOSANE	600 ug/mL	O2SI CAT#110316-05 LOT#229803-34065 OP:11/24/14 EXP:11/24/15	1000 µL	10mL	60ug/mL	MC LOT# 54200

LAC 12/9/14 exp 11/24/15

LAC 12/9/14

THC SURROGATE CURVE

STD	[µg/mL]	LOT #	DATE	EXP. DATE	µL	µL	µL	µL	µL	µL
THC SURR	60		12/9/2014	11/24/2014	50	100	400	600	800	1000
MC		54200		LAC	950	900	600	400	200	NA
				Final VOL.	1000	1000	1000	1000	1000	1000

LAC 12/9/14 exp 11/24/15

DIESEL CURVE

STD	[µg/mL]	LOT #	DATE	EXP. DATE	µL	µL	µL	µL	µL	µL
DIESEL	1000		12/5/2014	11/24/2015	10	100	400	600	800	1000
MC		54200			990	900	600	400	200	NA
				Final VOL.	1000	1000	1000	1000	1000	1000

LAC 12/9/14 exp 11/24/15

LAC 12/9/14

MOTOR OIL CURVE

STD	[µg/mL]	LOT #	DATE	EXP. DATE	µL	µL	µL	µL	µL	µL	µL
MOTOR OIL	2000		10/24/2014	10/24/2015	10	25	125	250	100	75	1000
MC		54200			990	975	875	750	100	25	NA
				Final VOL.	1000	1000	1000	1000	200	100	1000
				ppm	10	50	250	500	1000	1500	2000

LAC 12/9/14 exp ~~10/25/15~~

LAC 12/9/14

DIESEL 2ND SRC

STANDARD	INITIAL CONC.	SOURCE DATE	ALIQUOT	FINAL VOL	FINAL CONC.	SOLVENT /LOT#
DIESEL 2ND SRC	1000 µg/mL	D 2ND SRC	400µL	1mL	400 µg/ml	MC
	PREP:	10/6/2014				54200
	Exp:	5/5/2015				

LAC 12/9/14 exp 5/5/15

LH 12/9/14 ex 4/9/15

MOTOR OIL SECOND SOURCE

standard	initial conc.	SOURCE DATE	ALIQUOT	FINAL VOL.	FINAL CONC.	SOLVENT LOT
MOTOR OIL SECOND SOURCE	50,000 ug/mL	O2SI CAT#116390-02 LOT#239390-34438 OP:12/10/14 Exp 12/10/15	200uL	10mL	1000ug/mL	MC #47186

LH 12/10/14 ex 12/10/15

AR 1262 STD (1ug/mL)

AR1262STK 20ug/mL AR262STK 500uL 10mL 1ug/mL Hexane #0519/4A

Prep: 5/15/14

ex: 5/15/15

LH 12/9/14 ~~6/9/15~~ 5/15/15

MA 12/9/14

STANDARD	INITIAL CONC	SOURCE DATE	ALIQUOT	FINAL VOLUME	FINAL CONC	SOL. TYP. LOT #	DATE INITIALS

GC/~~DRY~~ INSTRUMENT MAINTENANCE LOG # 42 PAGE #

DIESEL CURVE											
STD	[µg/mL]	LOT #	DATE	EXP DATE	µL	µL	µL	µL	µL	µL	
DIESEL	1000		12/05/14	11/24/15	10	100	400	600	800	1000	
MC		54200			990	900	600	400	200	NA	
				Final VOL.	1000	1000	1000	1000	1000	1000	

LH 1/20/15 ex. 7/20/15

MOTOR OIL CURVE											
STD	[µg/mL]	LOT #	DATE	EXP. DATE	µL	µL	µL	µL	µL	µL	µL
MOTOR OIL	2000		10/13/14	10/13/15	10	25	125	250	100	75	1000
MC		54200			990	975	875	750	100	25	NA
				Final VOL.	1000	1000	1000	1000	200	100	1000
				ppm	10	50	250	500	1000	1500	2000

LH 1/20/15 ex. 7/20/15

OP/F CURVE													
						1A	1B	1	2	3	4	5	6
SUPPLIER	ID#	[µg/mL]	LOT #	DATE	EXP. DATE	mL	mL	mL	mL	mL	mL	mL	mL
	OP/F STD	5		12/23/14	02/08/15	2	5	10	50	20	100	70	100
VWR	Hexane		051914A			998	995	990	950	80	100	30	NA
					Final VOL	1000	1000	1000	1000	100	200	100	100

LH 1/21/15 ex. 2/8/15

DIESEL SPIKE

CAT # 011998-01-SS 1/21/15 MA
LOT # 207748-32375 Ex 1/21/16
Open 1/21/15
Ex 1/21/16

THC Surr
LOT# 240564-34471 1/22/15 IC
CAT# 116316-05 Ex 1/22/16
Open - 1/22/15
Exp - 1/22/16

DIESEL 2ND SRC						
STANDARD	INITIAL CONC.	SOURCE DATE	ALIQUOT	FINAL VOL	FINAL CONC.	SOLVENT /LOT#
DIESEL 2ND SRC	1000 µg/mL	D 2ND SRC	400µL	1mL	400 µg/ml	MC
	PREP:	10/6/2014				54200
	Exp:	5/5/2015				

LC 1/21/15 5/5/15

006

INITIAL CONC	SOURCE DATE	ALIQUOT	FINAL VOLUME	FINAL CONC	SOL. EX. LOT#	DATE INITIALS

GC/~~MS~~ INSTRUMENT MAINTENANCE LOG # 42 PAGE #

THC SURROGATE

CAT 110316-05

Lot 229803-34062

Open 11/3/14

Ex 11/3/15

11/3/014 MA

Ex 11/3/15

OP/F CURVE													
						1A	1B	1	2	3	4	5	6
SUPPLIER	ID#	(µg/mL)	LOT #	DATE	EXP. DATE	mL	mL	mL	mL	mL	mL	mL	mL
	OP/F STD	5		09/24/14	12/08/14	2	5	10	50	20	100	70	100
VWR	Hexane		051914A			998	995	990	950	80	100	30	NA
					Final VOL.	1000	1000	1000	1000	100	200	100	100

GA 11/3/14 11/3/14 exp. 12/8/14

OP 2ND SRC		(µg/mL)				100
PREP	10/10/14	5				100
EXP	02/06/15	Hexane	051914A			200

GA 11/3/14 exp 2/6/15

		OCL-OP Soil Surrogate				
Standard	Initial conc ug/ml	Source date	Aliquot	Final VOL	Final conc	Solvent LOT#
TCMX	5000	O2SI	800ul	200ml	20ug/ml	ACETONE
DBC		cat:130070-02				051314C
DECA		lot: 213973-32849				
		open:10/8/14				
		EX:10/8/15				
TBP	1000	O2SI	1000ul		5ug/ml	
TPP		cat:130161-02				
		lot:222141-34126				
		open: 11/4/14				
		EX: 11/4/15				

LH 11/4/14 Ex 2/4/15

DIESEL CCV 400ug/ml						
STANDARD	INITIAL CONC.	SOURCE DATE	ALIQUOT	FINAL VOL	FINAL CONC.	SOLVENT /LOT#
DIESEL STD.	1000 µg/mL	Diesel Std.	2000µL	5mL	400 µg/ml	MC
	PREP:	09/29/14				54024
	Exp:	09/22/15				

LH 11/5/14 Ex 2/5/15

507A Curve											
SUPPLIER	ID#	µg/mL	LOT #	DATE	EXP.	µL	µL	µL	µL	µL	µL
	507A STD	5		09/04/14	01/04/15	10	50	20	100	70	100
	MTBE		50223			990	950	80	100	30	NA
					Final VOL.	1000	1000	100	200	100	100

GA 11/5/14 exp 1/4/15

507B CURVE											
SUPPLIER	ID#	µg/mL	LOT #	DATE	EXP.	µL	µL	µL	µL	µL	µL
	507B STD	5		10/14/14	04/14/15	10	50	20	100	70	100
	MTBE		50223			990	950	80	100	30	NA
					Final VOL.	1000	1000	100	200	100	100

GA 11/5/14 exp 4/14/15

STANDARD	INITIAL CONC	SOURCE DATE	ALIQUOT	FINAL VOLUME	FINAL CONC	SOL. EXP. LOT #	DATE INITIALS

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DIESEL CURVE											
STD	[µg/mL]	LOT #	DATE	EXP. DATE	µL	µL	µL	µL	µL	µL	LH 1/20/15
DIESEL	1000		12/05/14	11/24/15	10	100	400	600	800	1000	ex. 7/20/15
MC		54200			990	900	600	400	200	NA	
				Final VOL.	1000	1000	1000	1000	1000	1000	

MOTOR OIL CURVE												
STD	[µg/mL]	LOT #	DATE	EXP. DATE	µL	µL	µL	µL	µL	µL	µL	LH 1/20/15
MOTOR OIL	2000		10/13/14	10/13/15	10	25	125	250	100	75	1000	ex. 7/20/15
MC		54200			990	975	875	750	100	25	NA	
				Final VOL	1000	1000	1000	1000	200	100	1000	
				ppm	10	50	250	500	1000	1500	2000	

OP/F CURVE														
						1A	18	1	2	3	4	5	6	LH
SUPPLIER	ID#	[µg/mL]	LOT #	DATE	EXP. DATE	mL	mL	mL	mL	mL	mL	mL	mL	1/21/15
	OP/F STD	5		12/23/14	02/08/15	2	5	10	50	20	100	70	100	ex. 2/8/15
VWR	Hexane		051914A			998	995	990	950	80	100	30	NA	
					Final VOL	1000	1000	1000	1000	100	200	100	100	

DIESEL SPIKE

CAT # 011998-01-SS 1/21/15 MA
Lot # 207749-32375 Ex 1/21/16
Open 1/21/15
Ex 1/21/16

THC Surr
Lot # 240564-34471 1/22/15 IC
Cat # 116316-05 Ex 1/22/16
Open - 1/22/15
Exp - 1/22/16

DIESEL 2ND SRC							
STANDARD	INITIAL CONC.	SOURCE DATE	ALIQUOT	FINAL VOL	FINAL CONC.	SOLVENT /LOT#	LC 1/21/15
DIESEL 2ND SRC	1000 µg/mL	D 2ND SRC	400µL	1mL	400 µg/ml	MC	5/5/15
	PREP:	10/6/2014				54200	
	Exp:	5/5/2015					

INITIAL CONC | SOURCE DATE | ALIQUOT | FINAL VOLUME | FINAL CONC | SOL. EXT. LOT # | DATE INITIALS

STANDARD

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PAC ECO CURVE						1a	1b	1	2	3	4	5	6
						µL	µL	µL	µL	µL	µL	µL	µL
	ID#	(µg/mL)	LOT #	DATE	EXP. DATE								
	PAC ECO CAL STD	5		12/11/14	11/19/15	2	5	10	50	20	100	70	1000
						998	995	990	950	80	100	30	N/A
	Hexane		051914A		Final VOL.	1000	1000	1000	1000	100	200	100	1000

LH 1/27/15 ex. 7/27/15

MOTOR OIL CAL STD						
STD.	INITIAL CONC.	SOURCE DATE	ALIQUOT	FINAL VOL	FINAL CONC.	SOLVENT / LOT#
MOTOR OIL	50,000 ug/mL	O2SI CAT#116390-02 LOT#234747-34294 OP.1/27/15 EXP:1/27/16	1mL	25mL	2000ug/mL	MC LOT# 54200

LH 1/27/15 ex. 1/27/16

DIESEL CCV 400ug/ml						
STANDARD	INITIAL CONC.	SOURCE DATE	ALIQUOT	FINAL VOL	FINAL CONC.	SOLVENT /LOT#
DIESEL STD.	1000 µg/mL	Diesel Std.	2000µL	5mL	400 µg/ml	MC
	PREP	12/05/14				54200
	Exp	11/24/15				

LH 1/27/15 ex. 4/27/15

MOTOR OIL CCV 1000ppm						
STANDARD	CONC.	DATE	ALIQUOT	VOL	CONC.	/LOT#
MO STD.	2000 µg/mL	MO Std	2500µL	5mL	1000 µg/ml	MC
	PREP:	01/27/15				54200
	Exp:	01/27/16				

LH 1/27/15 ex. 4/27/15

Velpar/ Fenamiphos Standard					
ANALYTES	INIT. CONC	SOURCE	ALIQUOT	FIN CONC.	SOLVENT
Velpar	1000µg/ml	O2SI	100µL	10µg/ml	10 ml
	CAT	031176-01			Acetone
	LOT	210104-32536			LOT#
	OPEN	01/27/15			051314C
	EXP	06/07/15			
Fenamiphos	1000µg/ml	O2SI	100µL	10µg/ml	
	Cat:	031189-02			
	Lot:	210105-32538			
	Op:	01/27/15			
	Exp:	06/07/15			

LH 1/27/15 ex. 6/7/15

OP/F CURVE						1A	1B	1	2	3	4	5	6
						mL	mL	mL	mL	mL	mL	mL	mL
SUPPLIER	ID#	(µg/mL)	LOT #	DATE	EXP. DATE								
	OP/F STD	5		12/23/14	02/08/15	2	5	10	50	20	100	70	100
						998	995	990	950	80	100	30	NA
VWR	Hexane		051914A										
					Final VOL	1000	1000	1000	1000	100	200	100	100

LH 1/28/15 ex. 2/8/15

TPH SURROGATE
CAT # 110316-05
LOT# 229803-34454
Op. 1/28/15
Ex. 1/28/16

_SEP011

Organic Extraction Worksheet

Method	THC Separatory Funnel Extraction 3510C	Extraction Set	150126A	Extraction Method	SEP011	Units	mL

Spiked ID 1	Diesel Spike Ampule 1-21-15 exp 1-21-16		Surrogate ID 1	THC Surrogate 1-22-15 exp 1-22-16
Spiked ID 2	Motor Oil Spike Ampule 11-20-14 exp 11-20-15		Surrogate ID 2	
Spiked ID 3			Surrogate ID 3	
Spiked ID 4			Surrogate ID 4	
Spiked ID 5			Surrogate ID 5	
Spiked ID 6			Sufficient Vol for Matrix QC:	YES
Spiked ID 7			Ext. Start Time:	01/26/15 14:35
Spiked ID 8			Ext. End Time:	01/27/15 12:15
			GC Requires Extract By:	**01/28/15 0:00**

pH1			Water Bath Temp Criteria	35,35,35,3
pH2				
pH3				

Spiked By: KY **Date** 01/26/15 **Witnessed By:** CFM **Date** 01/26/15

	Sample	Sample Container	Spike Amount	Spike ID	Surrogate Amount	Surrogate ID	Extract Amount	Final Volume	pH	Extract Date/Time	Comments
1	150126A Blk				0.250	1	1000	5	7	01/26/15 14:35	
						equip	E-WB1				
2	150126A LCS-1		0.040	1	0.250	1	1000	5	7	01/26/15 14:35	
						equip	E-WB2				
3	150126A LCS-2		0.040	2	0.250	1	1000	5	7	01/26/15 14:35	
						equip	E-WB3				
4	AZ09997	AZ09997W04			0.250	1	1000	5	7	01/26/15 14:35	75427 Rush 14 days
						equip	E-WB4				
5	AZ09998	AZ09998W05			0.250	1	950	5	7	01/26/15 14:35	75427 Rush 14 days
						equip	E-WB1				
6	AZ09999	AZ09999W05			0.250	1	1000	5	7	01/26/15 14:35	75427 Rush 14 days
						equip	E-WB2				
7	AZ10000	AZ10000W05			0.250	1	1000	5	7	01/26/15 14:35	75427 Rush 14 days
						equip	E-WB3				
8	AZ10001	AZ10001W04			0.250	1	1000	5	7	01/26/15 14:35	75427 Rush 14 days
						equip	E-WB4				
9	AZ10002	AZ10002W04			0.250	1	1000	5	7	01/26/15 14:35	75427 Rush 14 days
						equip	E-WB1				
10	AZ10003	AZ10003W04			0.250	1	1000	5	7	01/26/15 14:35	75427 Rush 14 days
						equip	E-WB2				
11	AZ10004	AZ10004W05			0.250	1	1000	5	7	01/26/15 14:35	75427 Rush 14 days
						equip	E-WB3				
12	AZ10005	AZ10005W04			0.250	1	1000	5	7	01/26/15 14:35	75427 Rush 14 days
						equip	E-WB4				
13	AZ10006 MS-1	AZ10006W13	0.040	1	0.250	1	1000	5	7	01/26/15 14:35	75427 Rush 14 days
						equip	E-WB1				
14	AZ10006 MSD-1	AZ10006W11	0.040	1	0.250	1	950	5	7	01/26/15 14:35	75427 Rush 14 days
						equip	E-WB2				
15	AZ10006 MS-2	AZ10006W10	0.040	2	0.250	1	1000	5	7	01/26/15 14:35	75427 Rush 14 days
						equip	E-WB3				
16	AZ10006 MSD-2	AZ10006W12	0.040	2	0.250	1	950	5	7	01/26/15 14:35	75427 Rush 14 days
						equip	E-WB4				

Solvent and Lot#	
MC	54299
Na2SO4	XC28D
PH Strip	HC413032
Filter Paper	400083

Extraction COC Transfer	
Extraction lab employee Initials	KY
GC analyst's initials	LH
Date	1/27/15
Time	1:00
Refrigerator	Hobart

	Technician's Initials
Scanned By	KY
Sample Preparation	ER
Extraction	ER,KY,CFM
Concentration	DL

Modified	01/27/15 8:47:14 AM

Reviewed By: KY **Date** 1/27/15

Organic Extraction Worksheet

Method	THC Separatory Funnel Extraction 3510C	Extraction Set	150126A	Extraction Method	SEP011	Units	mL

Spiked ID 1	Diesel Spike Ampule 1-21-15 exp 1-21-16		Surrogate ID 1	THC Surrogate 1-22-15 exp 1-22-16
Spiked ID 2	Motor Oil Spike Ampule 11-20-14 exp 11-20-15		Surrogate ID 2	
Spiked ID 3			Surrogate ID 3	
Spiked ID 4			Surrogate ID 4	
Spiked ID 5			Surrogate ID 5	
Spiked ID 6			Sufficient Vol for Matrix QC:	YES
Spiked ID 7			Ext. Start Time:	01/26/15 14:35
Spiked ID 8			Ext. End Time:	01/27/15 12:15
			GC Requires Extract By:	**01/28/15 0:00**

pH1			Water Bath Temp Criteria	35,35,35,3
pH2				
pH3				

Spiked By: KY **Date** 01/26/15 **Witnessed By:** CFM **Date** 01/26/15

	Sample	Sample Container	Spike Amount	Spike ID	Surrogate Amount	Surrogate ID	Extract Amount	Final Volume	pH	Extract Date/Time	Comments
17	AZ10006	AZ10006W15			0.250	1 equip	1000 E-WB1	5	7	01/26/15 14:35	75427 Rush 14 days
18	AZ10007	AZ10007W04			0.250	1 equip	1000 E-WB2	5	7	01/26/15 14:35	75427 Rush 14 days
19	AZ10047	AZ10047W07			0.250	1 equip	950 E-WB3	5	7	01/26/15 14:35	75439 Rush 5 days
20	AZ10049	AZ10049W07			0.250	1 equip	1050 E-WB4	5	7	01/26/15 14:35	75439 Rush 5 days
21	AZ10050	AZ10050W07			0.250	1 equip	1050 E-WB1	5	7	01/26/15 14:35	75439 Rush 5 days
22	AZ10052	AZ10052W05			0.250	1 equip	1000 E-WB2	5	7	01/26/15 14:35	75442 Rush 5 days ✱
23	AZ10053	AZ10053W06			0.250	1 equip	1050 E-WB3	5	7	01/26/15 14:35	75442 Rush 5 days
24	AZ10084	AZ10084W05			0.250	1 equip	1000 E-WB4	5	7	01/26/15 14:35	75443 Rush 2 weeks
25	AZ10085	AZ10085W05			0.250	1 equip	1000 E-WB1	5	7	01/26/15 14:35	75443 Rush 2 weeks

Ky 1/27/15

Solvent and Lot#	
MC	54299
Na2SO4	XC28D
PH Strip	HC413032
Filter Paper	400083

Extraction COC Transfer	
Extraction lab employee Initials	KY
GC analyst's initials	LH
Date	1/27/15
Time	1:00
Refrigerator	Hobart

	Technician's Initials
Scanned By	KY
Sample Preparation	ER
Extraction	ER,KY,CFM
Concentration	DL

Modified	01/27/15 8:47:14 AM

Reviewed By: Ky **Date** 1/27/15

Injection Log

Directory: G:\APOLLO\DATA\150121\150127

Line	Vial	FileName	Multiplier	SampleName	Misc Info	Injected
1	3	121003.D	1	Diesel 10/1000 1/20/15	Mix(A)	1-21-15 16:13:54
2	4	121004.D	1	Diesel 100/1000 1/20/15	Mix(A)	1-21-15 16:38:00
3	5	121005.D	1	Diesel 400/1000 1/20/15	Mix(A)	1-21-15 17:02:08
4	6	121006.D	1	Diesel 600/1000 1/20/15	Mix(A)	1-21-15 17:26:19
5	7	121007.D	1	Diesel 800/1000 1/20/15	Mix(A)	1-21-15 17:50:18
6	8	121008.D	1	Diesel 1000/1000 1/20/15	Mix(A)	1-21-15 18:14:25
7	9	121009.D	1	MO 10/1000 1/20/15	Mix(B)	1-21-15 18:38:23
8	10	121010.D	1	MO 25/1000 1/20/15	Mix(B)	1-21-15 19:02:25
9	11	121011.D	1	MO 125/1000 1/20/15	Mix(B)	1-21-15 19:26:22
10	12	121012.D	1	MO 250/1000 1/20/15	Mix(B)	1-21-15 19:50:20
11	13	121013.D	1	MO 100/200 1/20/15	Mix(B)	1-21-15 20:14:20
12	14	121014.D	1	MO 75/100 1/20/15	Mix(B)	1-21-15 20:38:12
13	15	121015.D	1	MO 1000/1000 1/20/15	Mix(B)	1-21-15 21:02:11
14	16	121016.D	1	Diesel 2ND SRC 1/21/15	Mix(A)	1-21-15 21:25:59
15	17	121017.D	1	MO 2ND SRC 12/10/14	Mix(B)	1-21-15 21:49:54
16	15	127115.D	1	Diesel 400ppm 1/27/15	Mix(A)	1-29-15 8:58:21
17	16	127116.D	1	MO 1000ppm 1/27/15	Mix(B)	1-29-15 9:22:27
18	22	127122.D	5	150126A BLK 5/1000	Water	1-29-15 11:50:51
19	23	127123.D	5	150126A LCS-1 5/1000	Water	1-29-15 12:15:24
20	24	127124.D	5	150126A LCS-2 5/1000	Water	1-29-15 12:40:06
21	30	127130.D	1	Diesel 400ppm 1/27/15	Mix(A)	1-29-15 15:09:34
22	31	127131.D	1	MO 1000ppm 1/27/15	Mix(B)	1-29-15 15:34:01
23	32	127132.D	5	AZ09997W04 5/1000	Water	1-29-15 15:58:56
24	33	127133.D	5.26316	AZ09998W05 5/950	Water	1-29-15 16:23:57
25	34	127134.D	5	AZ09999W05 5/1000	Water	1-29-15 16:48:55
26	35	127135.D	5	AZ10000W05 5/1000	Water	1-29-15 17:13:48
27	36	127136.D	5	AZ10001W04 5/1000	Water	1-29-15 17:38:34
28	37	127137.D	5	AZ10002W04 5/1000	Water	1-29-15 18:03:13
29	38	127138.D	5	AZ10003W04 5/1000	Water	1-29-15 18:27:49
30	39	127139.D	5	AZ10004W05 5/1000	Water	1-29-15 18:52:22
31	40	127140.D	5	AZ10005W04 5/1000	Water	1-29-15 19:16:50
32	41	127141.D	5	AZ10006W13 MS-1 5/1000	Water	1-29-15 19:41:18
33	42	127142.D	1	Diesel 400ppm 1/27/15	Mix(A)	1-29-15 20:05:40
34	43	127143.D	1	MO 1000ppm 1/27/15	Mix(B)	1-29-15 20:29:59
35	44	127144.D	5.26316	AZ10006W11 MSD-1 5/950	Water	1-29-15 20:54:15
36	45	127145.D	5	AZ10006W10 MS-2 5/1000	Water	1-29-15 21:18:29
37	46	127146.D	5.26316	AZ10006W12 MSD-2 5/950	Water	1-29-15 21:42:44
38	47	127147.D	5	AZ10006W15 5/1000	Water	1-29-15 22:06:58
39	48	127148.D	5	AZ10007W04 5/1000	Water	1-29-15 22:31:10
40	57	127157.D	1	Diesel 400ppm 1/27/15	Mix(A)	1-30-15 2:07:40
41	58	127158.D	1	MO 1000ppm 1/27/15	Mix(B)	1-30-15 2:31:39

EPA METHOD 8260B
Volatile Organic Compounds

APPL, INC.

EPA METHOD 8260B
Volatile Organic Compounds
QC Summary

APPL, INC.

Method Blank
EPA 8260B WATER

APPL Inc.
908 North Temperance Avenu
Clovis, CA 93611

Blank Name/QCG: **150123W-10006 - 193856**
Batch ID: #86BKB-150123BM

Sample Type	Analyte	Result	LOQ	LOD	DL	Units	Extraction Date	Analysis Date
BLANK	1,1,1-TRICHLOROETHANE	0.30 U	1.0	0.30	0.14	ug/L	01/24/15	01/24/15
BLANK	1,1,2,2-TETRACHLOROETHANE	0.30 U	1.0	0.30	0.10	ug/L	01/24/15	01/24/15
BLANK	1,1,2-TRICHLOROETHANE	0.50 U	1.0	0.50	0.20	ug/L	01/24/15	01/24/15
BLANK	1,1-DICHLOROETHANE	0.30 U	1.0	0.30	0.19	ug/L	01/24/15	01/24/15
BLANK	1,1-DICHLOROETHENE	0.50 U	1.0	0.50	0.30	ug/L	01/24/15	01/24/15
BLANK	1,2,3-TRICHLOROPROPANE	1.00 U	2.0	1.00	0.39	ug/L	01/24/15	01/24/15
BLANK	1,2-DIBROMOETHANE	0.50 U	1.0	0.50	0.20	ug/L	01/24/15	01/24/15
BLANK	1,2-DICHLOROETHANE	0.30 U	1.0	0.30	0.14	ug/L	01/24/15	01/24/15
BLANK	1,2-DICHLOROPROPANE	0.30 U	1.0	0.30	0.17	ug/L	01/24/15	01/24/15
BLANK	2-BUTANONE	2.00 U	10.0	2.00	0.60	ug/L	01/24/15	01/24/15
BLANK	4-METHYL-2-PENTANONE	5.00 U	10.0	5.00	1.90	ug/L	01/24/15	01/24/15
BLANK	ACETONE	2.00 U	10.0	2.00	0.95	ug/L	01/24/15	01/24/15
BLANK	BENZENE	0.30 U	1.0	0.30	0.16	ug/L	01/24/15	01/24/15
BLANK	BROMODICHLOROMETHANE	0.30 U	1.0	0.30	0.14	ug/L	01/24/15	01/24/15
BLANK	BROMOFORM	0.30 U	1.0	0.30	0.14	ug/L	01/24/15	01/24/15
BLANK	BROMOMETHANE	0.50 U	2.0	0.50	0.24	ug/L	01/24/15	01/24/15
BLANK	CARBON TETRACHLORIDE	0.30 U	1.0	0.30	0.10	ug/L	01/24/15	01/24/15
BLANK	CHLOROBENZENE	0.50 U	1.0	0.50	0.21	ug/L	01/24/15	01/24/15
BLANK	CHLOROETHANE	0.50 U	1.0	0.50	0.21	ug/L	01/24/15	01/24/15
BLANK	CHLOROFORM	0.30 U	1.0	0.30	0.07	ug/L	01/24/15	01/24/15
BLANK	CHLOROMETHANE	0.50 U	1.0	0.50	0.42	ug/L	01/24/15	01/24/15
BLANK	CIS-1,2-DICHLOROETHENE	0.30 U	1.0	0.30	0.16	ug/L	01/24/15	01/24/15
BLANK	CIS-1,3-DICHLOROPROPENE	0.30 U	1.0	0.30	0.15	ug/L	01/24/15	01/24/15
BLANK	DIBROMOCHLOROMETHANE	0.30 U	1.0	0.30	0.19	ug/L	01/24/15	01/24/15
BLANK	ETHYLBENZENE	0.50 U	1.0	0.50	0.23	ug/L	01/24/15	01/24/15
BLANK	METHYLENE CHLORIDE	1.00 U	5.0	1.00	0.35	ug/L	01/24/15	01/24/15
BLANK	STYRENE	0.50 U	1.0	0.50	0.25	ug/L	01/24/15	01/24/15
BLANK	TETRACHLOROETHENE	0.30 U	1.0	0.30	0.24	ug/L	01/24/15	01/24/15
BLANK	TOLUENE	0.30 U	1.0	0.30	0.17	ug/L	01/24/15	01/24/15
BLANK	TRANS-1,2-DICHLOROETHENE	0.30 U	1.0	0.30	0.19	ug/L	01/24/15	01/24/15
BLANK	TRANS-1,3-DICHLOROPROPENE	0.30 U	1.0	0.30	0.18	ug/L	01/24/15	01/24/15
BLANK	TRICHLOROETHENE	0.30 U	1.0	0.30	0.16	ug/L	01/24/15	01/24/15
BLANK	VINYL CHLORIDE	0.30 U	1.0	0.30	0.23	ug/L	01/24/15	01/24/15
BLANK	XYLENES (TOTAL)	0.30 U	2.0	0.30	0.19	ug/L	01/24/15	01/24/15

Quant Method: MALLW.M
Run #: 0123M45
Instrument: MAX
Sequence: M150119
Initials: DG

GC SC-Blank-REG MDLs
Printed: 01/28/15 2:12:12 PM

Method Blank
EPA 8260B WATER

APPL Inc.
908 North Temperance Avenu
Clovis, CA 93611

Blank Name/QCG: **150123W-10006 - 193856**
Batch ID: #86BKB-150123BM

Sample Type	Analyte	Result	LOQ	LOD	DL	Units	Extraction Date	Analysis Date
BLANK	SURROGATE: 1,2-DICHLOROET	110	70-120			%	01/24/15	01/24/15
BLANK	SURROGATE: 4-BROMOFLUORO	105	75-120			%	01/24/15	01/24/15
BLANK	SURROGATE: DIBROMOFLUOR	105	85-115			%	01/24/15	01/24/15
BLANK	SURROGATE: TOLUENE-D8 (S)	106	85-120			%	01/24/15	01/24/15

Quant Method: MALLW.M
Run #: 0123M45
Instrument: MAX
Sequence: M150119
Initials: DG

GC SC-Blank-REG MDLs
Printed: 01/28/15 2:12:13 PM

Method Blank

EPA 8260B WATER DILUTION

APPL Inc.
908 North Temperance Avenu
Clovis, CA 93611

Blank Name/QCG: **150127W-10000 - 193857**
Batch ID: #86BKB-150127AM

Sample Type	Analyte	Result	LOQ	LOD	DL	Units	Extraction Date	Analysis Date
BLANK	CIS-1,2-DICHLOROETHENE	0.30 U	1.0	0.30	0.16	ug/L	01/27/15	01/27/15
BLANK	TRANS-1,2-DICHLOROETHENE	0.30 U	1.0	0.30	0.19	ug/L	01/27/15	01/27/15
BLANK	VINYL CHLORIDE	0.30 U	1.0	0.30	0.23	ug/L	01/27/15	01/27/15
BLANK	SURROGATE: 1,2-DICHLOROET	114	70-120			%	01/27/15	01/27/15
BLANK	SURROGATE: 4-BROMOFLUORO	108	75-120			%	01/27/15	01/27/15
BLANK	SURROGATE: DIBROMOFLUOR	108	85-115			%	01/27/15	01/27/15
BLANK	SURROGATE: TOLUENE-D8 (S)	107	85-120			%	01/27/15	01/27/15

Quant Method: MALLW.M
Run #: 0127M17
Instrument: MAX
Sequence: M150126
Initials: DG

GC SC-Blank-REG MDLs
Printed: 01/28/15 2:13:02 PM

Form 2 & 8

Surrogate Recovery

Lab Name: APPL, Inc.
Case No: 75427
Matrix: WATER

SDG No: 75427
Date Analyzed: 01/24/15
Instrument: MAX

APPL ID.	Client Sample No.	SURROGATE: 1,2-DICHLOROETHANE-D4 (S)			SURROGATE: 4-BROMOFLUOROBENZENE (S)		
		Limits	Result	Qualifier	Limits	Result	Qualifier
150123BM-LCS	Lab Control Spike	70-120	107		75-120	104	
150123BM-BLK	Blank	70-120	110		75-120	105	
AZ10008	Trip Blank - 02	70-120	110		75-120	100	
AZ10009	Trip Blank - 03	70-120	107		75-120	101	
AZ10010	Trip Blank - 04	70-120	110		75-120	100	
AZ09997	EKB100011	70-120	109		75-120	100	
AZ09998	EKB100012	70-120	108		75-120	99.7	
AZ09999	EKB100013	70-120	108		75-120	98.9	
AZ10000	EKB100014	70-120	110		75-120	102	
AZ10001	EKB100015	70-120	111		75-120	101	
AZ10002	EKB100016	70-120	109		75-120	101	
AZ10003	EKB100017	70-120	108		75-120	97.9	
AZ10004	EKB100018	70-120	111		75-120	102	
AZ10005	EKB100019	70-120	115		75-120	102	
AZ10006	EKB100020	70-120	110		75-120	99.7	
AZ10007	EKB100021	70-120	107		75-120	97.7	
AZ10006-MS	Matrix Spike	70-120	101		75-120	99.6	
AZ10006-MSD	Matrix SpikeD	70-120	96.8		75-120	98.2	

Comments: Batch: #86BKB-150123BM

Form 2 & 8

Surrogate Recovery

Lab Name: APPL, Inc.
Case No: 75427
Matrix: WATER

SDG No: 75427
Date Analyzed: 01/24/15
Instrument: MAX

APPL ID.	Client Sample No.	SURROGATE: DIBROMOFLUOROMETHANE (S)			SURROGATE: TOLUENE-D8 (S)		
		Limits	Result	Qualifier	Limits	Result	Qualifier
150123BM-LCS	Lab Control Spike	85-115	106		85-120	102	
150123BM-BLK	Blank	85-115	105		85-120	106	
AZ10008	Trip Blank - 02	85-115	104		85-120	103	
AZ10009	Trip Blank - 03	85-115	106		85-120	102	
AZ10010	Trip Blank - 04	85-115	104		85-120	102	
AZ09997	EKB100011	85-115	105		85-120	102	
AZ09998	EKB100012	85-115	103		85-120	99.7	
AZ09999	EKB100013	85-115	102		85-120	99.0	
AZ10000	EKB100014	85-115	103		85-120	102	
AZ10001	EKB100015	85-115	104		85-120	103	
AZ10002	EKB100016	85-115	103		85-120	102	
AZ10003	EKB100017	85-115	102		85-120	99.1	
AZ10004	EKB100018	85-115	107		85-120	103	
AZ10005	EKB100019	85-115	102		85-120	102	
AZ10006	EKB100020	85-115	102		85-120	102	
AZ10007	EKB100021	85-115	99.1		85-120	99.3	
AZ10006-MS	Matrix Spike	85-115	99.8		85-120	98.8	
AZ10006-MSD	Matrix SpikeD	85-115	93.7		85-120	96.8	

Comments: Batch: #86BKB-150123BM

Form 2 & 8

Surrogate Recovery

Lab Name: APPL, Inc.
Case No: 75427
Matrix: WATER

SDG No: 75427
Date Analyzed: 01/27/15
Instrument: MAX

APPL ID.	Client Sample No.	SURROGATE: 1,2-DICHLOROETHANE-D4 (S)			SURROGATE: 4-BROMOFLUOROBENZENE (S)		
		Limits	Result	Qualifier	Limits	Result	Qualifier
150127AM-LCS	Lab Control Spike	70-120	104		75-120	104	
150127AM-BLK	Blank	70-120	114		75-120	108	
AZ09999	EKB100013	70-120	115		75-120	109	
AZ10000	EKB100014	70-120	114		75-120	111	
AZ10005	EKB100019	70-120	115		75-120	110	

Comments: Batch: #86BKB-150127AM

Form 2 & 8

Surrogate Recovery

Lab Name: APPL, Inc.
Case No: 75427
Matrix: WATER

SDG No: 75427
Date Analyzed: 01/27/15
Instrument: MAX

APPL ID.	Client Sample No.	SURROGATE: DIBROMOFLUOROMETHANE (S)			SURROGATE: TOLUENE-D8 (S)		
		Limits	Result	Qualifier	Limits	Result	Qualifier
150127AM-LCS	Lab Control Spike	85-115	101		85-120	105	
150127AM-BLK	Blank	85-115	108		85-120	107	
AZ09999	EKB100013	85-115	111		85-120	110	
AZ10000	EKB100014	85-115	109		85-120	107	
AZ10005	EKB100019	85-115	108		85-120	109	

Comments: Batch: #86BKB-150127AM

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Form 2 & 8, Surrogate Recovery Summary

Laboratory Control Spike Recovery
EPA 8260B WATER

APPL ID: **150124W-10006 LCS - 193856**
Batch ID: #86BKB-150123BM

APPL Inc.
908 North Temperance Avenue
Clovis, CA 93611

Compound Name	Spike Level ug/L	SPK Result ug/L	SPK % Recovery	Recovery Limits
1,1,1-TRICHLOROETHANE	10.00	10.1	101	65-130
1,1,2,2-TETRACHLOROETHANE	10.00	8.86	88.6	65-130
1,1,2-TRICHLOROETHANE	10.00	9.17	91.7	75-125
1,1-DICHLOROETHANE	10.00	9.60	96.0	70-135
1,1-DICHLOROETHENE	10.00	9.72	97.2	70-130
1,2,3-TRICHLOROPROPANE	10.00	10.0	100	75-125
1,2-DIBROMOETHANE	10.00	9.75	97.5	70-130
1,2-DICHLOROETHANE	10.00	9.80	98.0	70-130
1,2-DICHLOROPROPANE	10.00	9.36	93.6	75-125
2-BUTANONE	10.00	9.15	91.5	30-150
4-METHYL-2-PENTANONE	10.00	10.1	101	60-135
ACETONE	10.00	9.87	98.7	40-140
BENZENE	10.00	9.32	93.2	80-120
BROMODICHLOROMETHANE	10.00	9.68	96.8	75-120
BROMOFORM	10.00	9.04	90.4	70-130
BROMOMETHANE	10.00	8.52	85.2	30-145
CARBON TETRACHLORIDE	10.00	10.6	106	65-140
CHLOROBENZENE	10.00	9.44	94.4	80-120
CHLOROETHANE	10.00	9.23	92.3	60-135
CHLOROFORM	10.00	10.0	100	65-135
CHLOROMETHANE	10.00	8.02	80.2	40-125
CIS-1,2-DICHLOROETHENE	10.00	9.49	94.9	70-125
CIS-1,3-DICHLOROPROPENE	10.00	9.06	90.6	70-130
DIBROMOCHLOROMETHANE	10.00	9.59	95.9	60-135
ETHYLBENZENE	10.00	9.75	97.5	75-125
METHYLENE CHLORIDE	10.00	8.55	85.5	55-140
STYRENE	10.00	9.60	96.0	65-135
TETRACHLOROETHENE	10.00	9.55	95.5	45-150
TOLUENE	10.00	9.47	94.7	75-120
TRANS-1,2-DICHLOROETHENE	10.00	9.09	90.9	60-140
TRANS-1,3-DICHLOROPROPENE	10.00	9.21	92.1	55-140

Primary	SPK
Quant Method :	MALLW.M
Extraction Date :	01/24/15
Analysis Date :	01/24/15
Instrument :	MAX
Run :	0123M40
Initials :	DG

Comments: _____

Printed: 01/28/15 2:12:04 PM
APPL Standard LCS

Laboratory Control Spike Recovery
EPA 8260B WATER

APPL ID: **150124W-10006 LCS - 193856**
Batch ID: #86BKB-150123BM

APPL Inc.
908 North Temperance Avenue
Clovis, CA 93611

Compound Name	Spike Level ug/L	SPK Result ug/L	SPK % Recovery	Recovery Limits
TRICHLOROETHENE	10.00	10.2	102	70-125
VINYL CHLORIDE	10.00	9.08	90.8	50-145
XYLENES (TOTAL)	30.0	28.6	95.3	75-130
SURROGATE: 1,2-DICHLOROETHANE-D	13.3	14.3	107	70-120
SURROGATE: 4-BROMOFLUOROBENZE	14.1	14.6	104	75-120
SURROGATE: DIBROMOFLUOROMETH	14.0	14.9	106	85-115
SURROGATE: TOLUENE-D8 (S)	14.4	14.7	102	85-120

Comments: _____

Primary	SPK
Quant Method :	MALLW.M
Extraction Date :	01/24/15
Analysis Date :	01/24/15
Instrument :	MAX
Run :	0123M40
Initials :	DG

Printed: 01/28/15 2:12:04 PM
APPL Standard LCS

Laboratory Control Spike Recovery

EPA 8260B WATER DILUTION

APPL ID: **150127W-10000 LCS - 193857**
Batch ID: #86BKB-150127AM

APPL Inc.
908 North Temperance Avenue
Clovis, CA 93611

Compound Name	Spike Level ug/L	SPK Result ug/L	SPK % Recovery	Recovery Limits
CIS-1,2-DICHLOROETHENE	10.00	10.0	100	70-125
TRANS-1,2-DICHLOROETHENE	10.00	9.95	99.5	60-140
VINYL CHLORIDE	10.00	9.75	97.5	50-145
SURROGATE: 1,2-DICHLOROETHANE-D	13.5	14.1	104	70-120
SURROGATE: 4-BROMOFLUOROBENZE	14.6	15.1	104	75-120
SURROGATE: DIBROMOFLUOROMETH	14.6	14.8	101	85-115
SURROGATE: TOLUENE-D8 (S)	15.0	15.7	105	85-120

Comments: _____

Primary	SPK
Quant Method :	MALLW.M
Extraction Date :	01/27/15
Analysis Date :	01/27/15
Instrument :	MAX
Run :	0127M13
Initials :	DG

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APPL Standard LCS

Matrix Spike Recoveries

EPA 8260B WATER

APPL ID: **150127W-10006 MS - 193856**
Batch ID: #86BKB-150123BM
Sample ID: AZ10006
Client ID: EKB100020

APPL Inc.
908 North Temperance Avenue
Clovis, CA 93611

Compound Name	Spike Lvl ug/L	Matrix Result ug/L	SPK Result ug/L	DUP Result ug/L	SPK % Recovery	DUP % Recovery	Recovery Limits	RPD %	RPD Limits
1,1,1-TRICHLOROETHANE	10.00	ND	10.0	10.2	100	102	65-130	2.0	30
1,1,2,2-TETRACHLOROETHANE	10.00	ND	9.50	9.27	95.0	92.7	65-130	2.5	30
1,1,2-TRICHLOROETHANE	10.00	ND	9.57	9.42	95.7	94.2	75-125	1.6	30
1,1-DICHLOROETHANE	10.00	ND	9.88	9.84	98.8	98.4	70-135	0.41	30
1,1-DICHLOROETHENE	10.00	ND	9.99	10.2	99.9	102	70-130	2.1	30
1,2,3-TRICHLOROPROPANE	10.00	ND	9.71	10.1	97.1	101	75-125	3.9	30
1,2-DIBROMOETHANE	10.00	ND	9.58	9.53	95.8	95.3	70-130	0.52	30
1,2-DICHLOROETHANE	10.00	ND	9.70	9.67	97.0	96.7	70-130	0.31	30
1,2-DICHLOROPROPANE	10.00	ND	9.86	9.64	98.6	96.4	75-125	2.3	30
2-BUTANONE	10.00	ND	9.29	9.17	92.9	91.7	30-150	1.3	30
4-METHYL-2-PENTANONE	10.00	ND	8.70	8.30	87.0	83.0	60-135	4.7	30
ACETONE	10.00	ND	8.97	8.51	89.7	85.1	40-140	5.3	30
BENZENE	10.00	ND	9.68	9.70	96.8	97.0	80-120	0.21	30
BROMODICHLOROMETHANE	10.00	ND	10.1	10.2	101	102	75-120	0.99	30
BROMOFORM	10.00	ND	9.36	10.1	93.6	101	70-130	7.6	30
BROMOMETHANE	10.00	ND	11.6	11.4	116	114	30-145	1.7	30
CARBON TETRACHLORIDE	10.00	ND	11.1	10.8	111	108	65-140	2.7	30
CHLOROBENZENE	10.00	ND	9.44	9.55	94.4	95.5	80-120	1.2	30
CHLOROETHANE	10.00	ND	8.62	8.73	86.2	87.3	60-135	1.3	30
CHLOROFORM	10.00	ND	10.5	10.7	105	107	65-135	1.9	30
CHLOROMETHANE	10.00	ND	9.59	9.26	95.9	92.6	40-125	3.5	30
CIS-1,2-DICHLOROETHENE	10.00	87	90.7	91.1	37.0 #	41.0 #	70-125	0.44	30
CIS-1,3-DICHLOROPROPENE	10.00	ND	9.41	9.35	94.1	93.5	70-130	0.64	30
DIBROMOCHLOROMETHANE	10.00	ND	9.93	9.93	99.3	99.3	60-135	0.0	30
ETHYLBENZENE	10.00	ND	9.82	9.93	98.2	99.3	75-125	1.1	30
METHYLENE CHLORIDE	10.00	ND	10.1	10.3	101	103	55-140	2.0	30
STYRENE	10.00	ND	9.95	9.96	99.5	99.6	65-135	0.10	30
TETRACHLOROETHENE	10.00	0.35	10.2	10.1	98.5	97.5	45-150	0.99	30
TOLUENE	10.00	ND	9.86	9.83	98.6	98.3	75-120	0.30	30
TRANS-1,2-DICHLOROETHENE	10.00	46	52.1	52.1	61.0	61.0	60-140	0.0	30

= Recovery is outside QC limits.

Primary	SPK	DUP
Quant Method :	MALLW.M	MALLW.M
Extraction Date :	01/27/15	01/27/15
Analysis Date :	01/27/15	01/27/15
Instrument :	MAX	MAX
Run :	0127M30	0127M31
Initials :	DG	

Comments: _____

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APPL MSD SCII

Matrix Spike Recoveries

EPA 8260B WATER

APPL ID: **150127W-10006 MS - 193856**
Batch ID: #86BKB-150123BM
Sample ID: AZ10006
Client ID: EKB100020

APPL Inc.
908 North Temperance Avenue
Clovis, CA 93611

Compound Name	Spike Lvl ug/L	Matrix Result ug/L	SPK Result ug/L	DUP Result ug/L	SPK % Recovery	DUP % Recovery	Recovery Limits	RPD %	RPD Limits
TRANS-1,3-DICHLOROPROPENE	10.00	ND	9.43	9.30	94.3	93.0	55-140	1.4	30
TRICHLOROETHENE	10.00	0.64	10.6	10.5	99.6	98.6	70-125	0.95	30
VINYL CHLORIDE	10.00	38	43.5	43.2	55.0	52.0	50-145	0.69	30
XYLENES (TOTAL)	30.0	ND	29.8	29.9	99.3	99.7	75-130	0.34	30
SURROGATE: 1,2-DICHLOROETHANE-D	13.5	NA	13.7	13.1	101	96.8	70-120		30
SURROGATE: 4-BROMOFLUOROBENZE	14.6	NA	14.5	14.3	99.6	98.2	75-120		30
SURROGATE: DIBROMOFLUOROMETH	14.6	NA	14.6	13.7	99.8	93.7	85-115		30
SURROGATE: TOLUENE-D8 (S)	15.0	NA	14.8	14.5	98.8	96.8	85-120		30

= Recovery is outside QC limits.

Comments:

Primary	SPK	DUP
Quant Method :	MALLW.M	MALLW.M
Extraction Date :	01/27/15	01/27/15
Analysis Date :	01/27/15	01/27/15
Instrument :	MAX	MAX
Run :	0127M30	0127M31
Initials :	DG	

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APPL MSD SCII

EPA 8260B

Form 4

Blank Summary

Lab Name: APPL, Inc.
Case No: 75427
Matrix: WATER
Blank ID: 150123BM-BLK

SDG No: 75427
Date Analyzed: 01/24/15
Instrument: MAX
Time Analyzed: 0408

APPL ID.	Client Sample No.	File ID.	Date Analyzed
150123BM-LCS	Lab Control Spike	0123M40	01/24/15 0150
150123BM-BLK	Blank	0123M45	01/24/15 0408
AZ10008	Trip Blank - 02	0123M46	01/24/15 0436
AZ10009	Trip Blank - 03	0123M47	01/24/15 0504
AZ10010	Trip Blank - 04	0123M48	01/24/15 0531
AZ09997	EKB100011	0123M49	01/24/15 0559
AZ09998	EKB100012	0123M50	01/24/15 0627
AZ09999	EKB100013	0123M51	01/24/15 0654
AZ10000	EKB100014	0123M52	01/24/15 0722
AZ10001	EKB100015	0123M53	01/24/15 0749
AZ10002	EKB100016	0123M54	01/24/15 0817
AZ10003	EKB100017	0123M55	01/24/15 0844
AZ10004	EKB100018	0123M56	01/24/15 0912
AZ10005	EKB100019	0123M57	01/24/15 0940
AZ10006	EKB100020	0123M58	01/24/15 1007
AZ10007	EKB100021	0123M59	01/24/15 1035
150123BM-MS	Matrix Spike	0127M30	01/27/15 1944
150123BM-MSD	Matrix SpikeD	0127M31	01/27/15 2011

Comments: Batch: #86BKB-150123BM

EPA 8260B

Form 4

Blank Summary

Lab Name: APPL, Inc.
Case No: 75427
Matrix: WATER
Blank ID: 150127AM-BLK

SDG No: 75427
Date Analyzed: 01/27/15
Instrument: MAX
Time Analyzed: 1343

APPL ID.	Client Sample No.	File ID.	Date Analyzed
150127AM-LCS	Lab Control Spike	0127M13	01/27/15 1152
150127AM-BLK	Blank	0127M17	01/27/15 1343
AZ09999	EKB100013	0127M20	01/27/15 1506
AZ10000	EKB100014	0127M21	01/27/15 1534
AZ10005	EKB100019	0127M22	01/27/15 1602

Comments: Batch: #86BKB-150127AM

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Form 4, Blank Summary

Form 5
Tune Summary

Lab Name: APPL Inc.
Case No: 75427
Matrix: Water
ID: 5ng BFB Std 09-30-14

SDG No: 75427
Date Analyzed: 01/19/15
Instrument: MAX
Time Analyzed: 11:43

	Client Sample No.	APPL ID.	File ID.	Date Analyzed
1		0.3ug/L Vol Std 01-1	0119M08.D	01/19/15 13:05
2		0.5ug/L Vol Std 01-1	0119M09.D	01/19/15 13:33
3		1.0ug/L Vol Std 01-1	0119M10.D	01/19/15 14:01
4		5.0ug/L Vol Std 01-1	0119M11.D	01/19/15 14:28
5		10ug/L Vol Std 01-19	0119M12.D	01/19/15 14:56
6		20ug/L Vol Std 01-19	0119M13.D	01/19/15 15:24
7		40ug/L Vol Std 01-19	0119M14.D	01/19/15 15:51
8		100ug/L Vol Std 01-1	0119M15.D	01/19/15 16:19
9	Lab Control Spike	150119A LCS-1WM(SS)	0119M21.D	01/19/15 19:04
10				
11				
12				
13				
14				
15				
16				
17				
18				
19				
20				
21				
22				

m/e		
50	15 - 40% of mass 95	17.7
75	30 - 60.04% of mass 95	46.4
95	100 - 100.49% of mass 95	100.0
96	5 - 9% of mass 95	6.4
173	0 - 2% of mass 174	0.0
174	50 - 100% of mass 95	98.7
175	5 - 9.02% of mass 174	8.0
176	94.9 - 101% of mass 174	97.7
177	5 - 9% of mass 176	6.3

Form 5
Tune Summary

Lab Name: APPL Inc.
Case No: 75427
Matrix: Water
ID: 5ng BFB Std 09-30-14

SDG No: 75427
Date Analyzed: 01/26/15
Instrument: MAX
Time Analyzed: 10:47

	Client Sample No.	APPL ID.	File ID.	Date Analyzed
1		0.3ug/L Vol Std 01-2	0126M09.D	01/26/15 12:37
2		0.5ug/L Vol Std 01-2	0126M10.D	01/26/15 13:05
3		1.0ug/L Vol Std 01-2	0126M11.D	01/26/15 13:33
4		5.0ug/L Vol Std 01-2	0126M12.D	01/26/15 14:00
5		10ug/L Vol Std 01-26	0126M13.D	01/26/15 14:28
6		20ug/L Vol Std 01-26	0126M14.D	01/26/15 14:56
7		40ug/L Vol Std 01-26	0126M15.D	01/26/15 15:24
8		100ug/L Vol Std 01-2	0126M16.D	01/26/15 15:52
9	Lab Control Spike	150126A LCS-1WM (SS)	0126M21.D	01/26/15 18:10
10				
11				
12				
13				
14				
15				
16				
17				
18				
19				
20				
21				
22				

m/e		
50	15 - 40% of mass 95	17.9
75	30 - 60.04% of mass 95	47.7
95	100 - 100.49% of mass 95	100.0
96	5 - 9% of mass 95	7.2
173	0 - 2% of mass 174	0.0
174	50 - 100% of mass 95	97.3
175	5 - 9.02% of mass 174	5.2
176	94.9 - 101% of mass 174	98.0
177	5 - 9% of mass 176	7.0

Form 5
Tune Summary

Lab Name: APPL Inc.
Case No: 75427
Matrix: Soil
ID: 5ng BFB Std 01-09-15

SDG No: 75427
Date Analyzed: 01/24/15
Instrument: MAX
Time Analyzed: 0:55

	Client Sample No.	APPL ID.	File ID.	Date Analyzed
1		10ug/L Vol Std 01-23	0123M39.D	01/24/15 1:23
2	Lab Control Spike	150123B LCS-1WM	0123M40.D	01/24/15 1:50
3	Blank	150123B BLK-1WM	0123M45.D	01/24/15 4:08
4	Trip Blank - 02	AZ10008W01	0123M46.D	01/24/15 4:36
5	Trip Blank - 03	AZ10009W01	0123M47.D	01/24/15 5:04
6	Trip Blank - 04	AZ10010W01	0123M48.D	01/24/15 5:31
7	EKB100011	AZ09997W01	0123M49.D	01/24/15 5:59
8	EKB100012	AZ09998W01	0123M50.D	01/24/15 6:27
9	EKB100013	AZ09999W01	0123M51.D	01/24/15 6:54
10	EKB100014	AZ10000W01	0123M52.D	01/24/15 7:22
11	EKB100015	AZ10001W01	0123M53.D	01/24/15 7:49
12	EKB100016	AZ10002W01	0123M54.D	01/24/15 8:17
13	EKB100017	AZ10003W01	0123M55.D	01/24/15 8:44
14	EKB100018	AZ10004W01	0123M56.D	01/24/15 9:12
15	EKB100019	AZ10005W01	0123M57.D	01/24/15 9:40
16	EKB100020	AZ10006W01	0123M58.D	01/24/15 10:07
17	EKB100021	AZ10007W01	0123M59.D	01/24/15 10:35
18				
19				
20				
21				
22				

m/e		
50	15 - 40% of mass 95	18.5
75	30 - 60.04% of mass 95	47.1
95	100 - 100.49% of mass 95	100.0
96	5 - 9% of mass 95	6.5
173	0 - 2% of mass 174	0.0
174	50 - 100% of mass 95	98.1
175	5 - 9.02% of mass 174	5.7
176	94.9 - 101% of mass 174	98.6
177	5 - 9% of mass 176	6.9

Form 5
Tune Summary

Lab Name: APPL Inc.
Case No: 75427
Matrix: Water
ID: 5ng BFB Std 01-26-15

SDG No: 75427
Date Analyzed: 01/27/15
Instrument: MAX
Time Analyzed: 9:39

	Client Sample No.	APPL ID.	File ID.	Date Analyzed
1		10ug/L Vol Std 01-27	0127M12.D	01/27/15 11:24
2	Lab Control Spike	150127A LCS-1WM	0127M13.D	01/27/15 11:52
3	Blank	150127A BLK-1WM	0127M17.D	01/27/15 13:43
4	EKB100013	AZ09999W02 DF5	0127M20.D	01/27/15 15:06
5	EKB100014	AZ10000W02 DF5	0127M21.D	01/27/15 15:34
6	EKB100019	AZ10005W02 DF2	0127M22.D	01/27/15 16:02
7		AZ10006W234 MS-1WM	0127M30.D	01/27/15 19:44
8		AZ10006W234 MSD-1WM	0127M31.D	01/27/15 20:11
9				
10				
11				
12				
13				
14				
15				
16				
17				
18				
19				
20				
21				
22				

m/e		
50	15 - 40% of mass 95	19.3
75	30 - 60.04% of mass 95	48.4
95	100 - 100.49% of mass 95	100.0
96	5 - 9% of mass 95	6.8
173	0 - 2% of mass 174	0.0
174	50 - 100% of mass 95	103.4
175	5 - 9.02% of mass 174	8.8
176	94.9 - 101% of mass 174	97.4
177	5 - 9% of mass 176	6.5

8A
INTERNAL STANDARD AREA AND RT SUMMARY

Lab Name: APPL Inc.
Contract: Review
Lab Code:
SDG No.: 75427
Lab File ID (Standard): 0119M12.D
Date Analyzed: 01/19/15
Instrument ID: MAX
Time Analyzed: 14:56
GC Column:
ID:
Heated Purge: (Y/N)

		Fluorobenzene (IS)		Chlorobenzene-D5 (IS)		1,4-Dichlorobenzene-D (IS)	
		AREA #	RT #	AREA #	RT #	AREA #	RT #
	12 HOUR STD	423359	6.78	316237	11.03	176852	14.37
	UPPER LIMIT	846718	7.28	632474	11.53	353704	14.87
	LOWER LIMIT	211680	6.28	158119	10.53	88426	13.87
	SAMPLE NO.						
01	0.3ug/L Vol Std 01-19-15	437753	6.78	320596	11.03	177904	14.37
02	0.5ug/L Vol Std 01-19-15	423903	6.78	311999	11.03	173730	14.37
03	1.0ug/L Vol Std 01-19-15	439629	6.78	322436	11.03	179450	14.37
04	5.0ug/L Vol Std 01-19-15	432651	6.78	317206	11.03	178545	14.37
05	10ug/L Vol Std 01-19-15	423359	6.78	316237	11.03	176852	14.37
06	20ug/L Vol Std 01-19-15	420229	6.78	310450	11.03	177712	14.37
07	40ug/L Vol Std 01-19-15	437004	6.78	324181	11.03	187386	14.37
08	100ug/L Vol Std 01-19-1	416935	6.78	310275	11.03	186826	14.37
09	150119A LCS-1WM(SS	410231	6.78	303273	11.03	169519	14.37
10	10ug/L Vol Std 01-23-15	299666	6.78	220288	11.03	125464	14.36
11	150123B LCS-1WM	317678	6.78	230984	11.03	131041	14.37
12	150123B BLK-1WM	303888	6.78	219497	11.03	122323	14.37
13	AZ10008W01	298324	6.78	218354	11.03	120462	14.37
14	AZ10009W01	297040	6.78	219574	11.03	121861	14.37
15	AZ10010W01	291178	6.78	214536	11.03	119347	14.37
16	AZ09997W01	292337	6.78	216143	11.03	118770	14.37
17	AZ09998W01	289677	6.78	215204	11.03	118653	14.37
18	AZ09999W01	265334	6.78	199360	11.03	109964	14.37
19	AZ10000W01	278007	6.78	204606	11.03	113127	14.37
20	AZ10001W01	283433	6.78	208932	11.03	116172	14.37
21	AZ10002W01	288024	6.78	213500	11.03	118077	14.37
22	AZ10003W01	267569	6.78	199593	11.03	108827	14.37

AREA UPPER LIMIT = +100% of internal standard area.
AREA LOWER LIMIT = -50% of internal standard area.
RT UPPER LIMIT = +0.50 minutes of internal standard RT
RT LOWER LIMIT = -0.50 minutes of internal standard RT

Column used to flag values outside QC limits with an asterisk.
* Values outside of QC limits.

INTERNAL STANDARD AREA AND RT SUMMARY

Lab Name: APPL Inc.

Contract: Review

Lab Code:

SDG No.: 75427

Lab File ID (Standard): 0119M12.D

Date Analyzed: 01/19/15

Instrument ID: MAX

Time Analyzed: 14:56

GC Column:

ID:

Heated Purge: (Y/N)

		Fluorobenzene (IS)		Chlorobenzene-D5 (IS)		1,4-Dichlorobenzene-D (IS)	
		AREA #	RT #	AREA #	RT #	AREA #	RT #
	12 HOUR STD	423359	6.7836	316237	11.029	176852	14.37
	UPPER LIMIT	846718	7.2836	632474	11.529	353704	14.87
	LOWER LIMIT	211679.5	6.2836	158118.5	10.529	88426	13.87
	SAMPLE NO.						
23	AZ10004W01	287553	6.78	212014	11.03	119169	14.37
24	AZ10005W01	277631	6.78	203975	11.03	113011	14.37
25	AZ10006W01	292333	6.78	214190	11.03	117423	14.36
26	AZ10007W01	284539	6.78	209716	11.03	115113	14.37
27							
28							
29							
30							
31							
32							
33							
34							
35							
36							
37							
38							
39							
40							
41							
42							
43							
44							

AREA UPPER LIMIT = +100% of internal standard area.
AREA LOWER LIMIT = -50% of internal standard area.
RT UPPER LIMIT = +0.50 minutes of internal standard RT
RT LOWER LIMIT = -0.50 minutes of internal standard RT

Column used to flag values outside QC limits with an asterisk.
* Values outside of QC limits.

8A
INTERNAL STANDARD AREA AND RT SUMMARY

Lab Name: APPL Inc.
Contract: Review
Lab Code:
SDG No.: 75427
Lab File ID (Standard): 0126M13.D
Date Analyzed: 01/26/15
Instrument ID: MAX
Time Analyzed: 14:28
GC Column:
ID:
Heated Purge: (Y/N)

		Fluorobenzene (IS)		Chlorobenzene-D5 (IS)		1,4-Dichlorobenzene-D (IS)	
		AREA #	RT #	AREA #	RT #	AREA #	RT #
	12 HOUR STD	278466	6.78	207175	11.03	120481	14.37
	UPPER LIMIT	556932	7.28	414350	11.53	240962	14.87
	LOWER LIMIT	139233	6.28	103588	10.53	60241	13.87
	SAMPLE NO.						
01	0.3ug/L Vol Std 01-26-15	264234	6.78	198015	11.03	110299	14.37
02	0.5ug/L Vol Std 01-26-15	283671	6.78	208929	11.03	118468	14.37
03	1.0ug/L Vol Std 01-26-15	271052	6.78	201810	11.03	113222	14.37
04	5.0ug/L Vol Std 01-26-15	282608	6.78	208356	11.03	121453	14.37
05	10ug/L Vol Std 01-26-15	278466	6.78	207175	11.03	120481	14.37
06	20ug/L Vol Std 01-26-15	268546	6.78	200396	11.03	116476	14.37
07	40ug/L Vol Std 01-26-15	276821	6.78	212002	11.03	126229	14.37
08	100ug/L Vol Std 01-26-1	264621	6.78	200790	11.03	122104	14.37
09	150126A LCS-1WM (SS	251025	6.78	188515	11.03	106952	14.37
10	10ug/L Vol Std 01-27-15	272673	6.78	200981	11.03	112904	14.37
11	150127A LCS-1WM	261286	6.78	191970	11.03	109193	14.37
12	150127A BLK-1WM	247525	6.78	182447	11.03	101881	14.36
13	AZ09999W02 DF5	245187	6.78	181396	11.03	102394	14.36
14	AZ10000W02 DF5	251230	6.78	185961	11.03	104216	14.37
15	AZ10005W02 DF2	238664	6.78	177849	11.03	100174	14.37
16	AZ10006W234 MS-1WM	238645	6.78	177161	11.03	101202	14.36
17	AZ10006W234 MSD-1W	238165	6.78	175427	11.03	101027	14.36
18							
19							
20							
21							
22							

AREA UPPER LIMIT = +100% of internal standard area.
AREA LOWER LIMIT = -50% of internal standard area.
RT UPPER LIMIT = +0.50 minutes of internal standard RT
RT LOWER LIMIT = -0.50 minutes of internal standard RT

Column used to flag values outside QC limits with an asterisk.
* Values outside of QC limits.

EPA METHOD 8260B
Volatile Organic Compounds
Sample Data

APPL, INC.

EPA 8260B WATER

Element Environmental
98-030 Hekaha St., Unit 9
Aiea, HI 96701

APPL Inc.
908 North Temperance Avenue
Clovis, CA 93611

Attn: Steve Spengler
Project: MCBH Motor Pool UST KB-100 SI / 130034
Sample ID: EKB100011
Sample Collection Date: 01/20/15

ARF: 75427
APPL ID: AZ09997
QCG: #86BKB-150123BM-193856

Method	Analyte	Result	LOQ	LOD	DL	Units	Extraction Date	Analysis Date
EPA 8260B	1,1,1-TRICHLOROETHANE	0.30 U	1.0	0.30	0.14	ug/L	01/24/15	01/24/15
EPA 8260B	1,1,2,2-TETRACHLOROETHANE	0.30 U	1.0	0.30	0.10	ug/L	01/24/15	01/24/15
EPA 8260B	1,1,2-TRICHLOROETHANE	0.50 U	1.0	0.50	0.20	ug/L	01/24/15	01/24/15
EPA 8260B	1,1-DICHLOROETHANE	0.30 U	1.0	0.30	0.19	ug/L	01/24/15	01/24/15
EPA 8260B	1,1-DICHLOROETHENE	0.50 U	1.0	0.50	0.30	ug/L	01/24/15	01/24/15
EPA 8260B	1,2,3-TRICHLOROPROPANE	1.00 U	2.0	1.00	0.39	ug/L	01/24/15	01/24/15
EPA 8260B	1,2-DIBROMOETHANE	0.50 U	1.0	0.50	0.20	ug/L	01/24/15	01/24/15
EPA 8260B	1,2-DICHLOROETHANE	0.30 U	1.0	0.30	0.14	ug/L	01/24/15	01/24/15
EPA 8260B	1,2-DICHLOROPROPANE	0.30 U	1.0	0.30	0.17	ug/L	01/24/15	01/24/15
EPA 8260B	2-BUTANONE	2.00 U	10.0	2.00	0.60	ug/L	01/24/15	01/24/15
EPA 8260B	4-METHYL-2-PENTANONE	5.00 U	10.0	5.00	1.90	ug/L	01/24/15	01/24/15
EPA 8260B	ACETONE	1.5 J	10.0	2.00	0.95	ug/L	01/24/15	01/24/15
EPA 8260B	BENZENE	0.30 U	1.0	0.30	0.16	ug/L	01/24/15	01/24/15
EPA 8260B	BROMODICHLOROMETHANE	0.30 U	1.0	0.30	0.14	ug/L	01/24/15	01/24/15
EPA 8260B	BROMOFORM	0.30 U	1.0	0.30	0.14	ug/L	01/24/15	01/24/15
EPA 8260B	BROMOMETHANE	0.50 U	2.0	0.50	0.24	ug/L	01/24/15	01/24/15
EPA 8260B	CARBON TETRACHLORIDE	0.30 U	1.0	0.30	0.10	ug/L	01/24/15	01/24/15
EPA 8260B	CHLOROBENZENE	0.50 U	1.0	0.50	0.21	ug/L	01/24/15	01/24/15
EPA 8260B	CHLOROETHANE	0.50 U	1.0	0.50	0.21	ug/L	01/24/15	01/24/15
EPA 8260B	CHLOROFORM	0.30 U	1.0	0.30	0.07	ug/L	01/24/15	01/24/15
EPA 8260B	CHLOROMETHANE	0.50 U	1.0	0.50	0.42	ug/L	01/24/15	01/24/15
EPA 8260B	CIS-1,2-DICHLOROETHENE	3.1	1.0	0.30	0.16	ug/L	01/24/15	01/24/15
EPA 8260B	CIS-1,3-DICHLOROPROPENE	0.30 U	1.0	0.30	0.15	ug/L	01/24/15	01/24/15
EPA 8260B	DIBROMOCHLOROMETHANE	0.30 U	1.0	0.30	0.19	ug/L	01/24/15	01/24/15
EPA 8260B	ETHYLBENZENE	0.50 U	1.0	0.50	0.23	ug/L	01/24/15	01/24/15
EPA 8260B	METHYLENE CHLORIDE	1.00 U	5.0	1.00	0.35	ug/L	01/24/15	01/24/15
EPA 8260B	STYRENE	0.50 U	1.0	0.50	0.25	ug/L	01/24/15	01/24/15
EPA 8260B	TETRACHLOROETHENE	0.30 U	1.0	0.30	0.24	ug/L	01/24/15	01/24/15
EPA 8260B	TOLUENE	0.30 U	1.0	0.30	0.17	ug/L	01/24/15	01/24/15
EPA 8260B	TRANS-1,2-DICHLOROETHENE	0.30 U	1.0	0.30	0.19	ug/L	01/24/15	01/24/15
EPA 8260B	TRANS-1,3-DICHLOROPROPENE	0.30 U	1.0	0.30	0.18	ug/L	01/24/15	01/24/15
EPA 8260B	TRICHLOROETHENE	0.30 U	1.0	0.30	0.16	ug/L	01/24/15	01/24/15
EPA 8260B	VINYL CHLORIDE	0.30 U	1.0	0.30	0.23	ug/L	01/24/15	01/24/15
EPA 8260B	XYLENES (TOTAL)	0.30 U	2.0	0.30	0.19	ug/L	01/24/15	01/24/15
EPA 8260B	SURROGATE: 1,2-DICHLOROETHANE	109	70-120			%	01/24/15	01/24/15

J = Estimated value.

Quant Method: MALLW.M
Run #: 0123M49
Instrument: MAX
Sequence: M150119
Dilution Factor: 1
Initials: DG

Printed: 01/28/15 2:12:06 PM
APPL-F1-SC-NoMC-REG MDLs

EPA 8260B WATER

Element Environmental
98-030 Hekaha St., Unit 9
Aiea, HI 96701

APPL Inc.
908 North Temperance Avenue
Clovis, CA 93611

Attn: Steve Spengler
Project: MCBH Motor Pool UST KB-100 SI / 130034
Sample ID: EKB100011
Sample Collection Date: 01/20/15

ARF: 75427
APPL ID: AZ09997
QCG: #86BKB-150123BM-193856

Method	Analyte	Result	LOQ	LOD	DL	Units	Extraction Date	Analysis Date
EPA 8260B	SURROGATE: 4-BROMOFLUOROBEN	100	75-120			%	01/24/15	01/24/15
EPA 8260B	SURROGATE: DIBROMOFLUOROMET	105	85-115			%	01/24/15	01/24/15
EPA 8260B	SURROGATE: TOLUENE-D8 (S)	102	85-120			%	01/24/15	01/24/15

J = Estimated value.

Quant Method: MALLW.M
Run #: 0123M49
Instrument: MAX
Sequence: M150119
Dilution Factor: 1
Initials: DG

Printed: 01/28/15 2:12:07 PM
APPL-F1-SC-NoMC-REG MDLs

Quantitation Report (QT Reviewed)

Data File : M:\MAX\DATA\M150119\0123M49.D
Acq On : 24 Jan 15 5:59
Sample : AZ09997W01
Misc : 10mL w/IS&S: 11-03-14

Vial: 39
Operator: DG,SV,RS
Inst : MAX
Multiplr: 1.00

Quant Time: Jan 26 13:36 2015 Quant Results File: MALLW.RES

Quant Method : M:\MAX\DATA\M150119\MALLW.M (RTE Integrator)
Title : METHOD 8260B
Last Update : Wed Jan 21 13:18:25 2015
Response via : Initial Calibration
DataAcq Meth : V8260

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene (IS)	6.78	96	292337	25.00000 ppb	0.00
55) Chlorobenzene-D5 (IS)	11.03	117	216143	25.00000 ppb	0.00
70) 1,4-Dichlorobenzene-D (IS)	14.37	152	118770	25.00000 ppb	0.00
System Monitoring Compounds					
31) Dibromofluoromethane(S)	5.79	111	44010	14.66573 ppb	0.00
Spiked Amount 14.019			Recovery	= 104.618%	
36) 1,2-DCA-D4(S)	6.25	65	46114	14.53488 ppb	0.00
Spiked Amount 13.317			Recovery	= 109.148%	
56) Toluene-D8(S)	9.03	98	185722	14.73972 ppb	0.00
Spiked Amount 14.391			Recovery	= 102.425%	
64) 4-Bromofluorobenzene(S)	12.71	95	69303	14.09618 ppb	0.00
Spiked Amount 14.078			Recovery	= 100.126%	
Target Compounds					Qvalue
11) Acetone	2.70	43	2067	1.49937 ppb	94
27) Cis-1,2-DCE	5.07	96	11528	3.13014 ppb	92

(#) = qualifier out of range (m) = manual integration

Quantitation Report

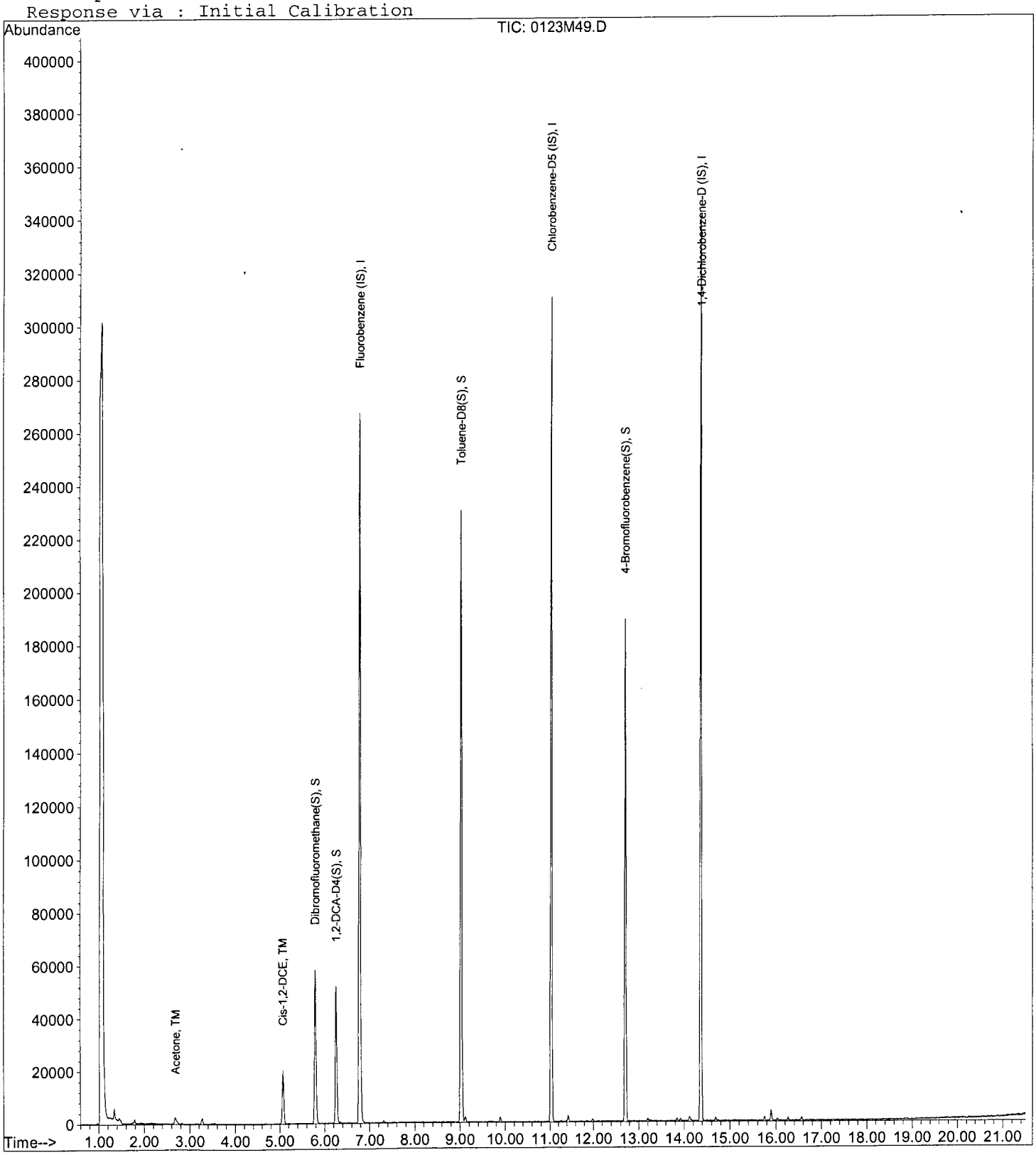
Data File : M:\MAX\DATA\M150119\0123M49.D
Acq On : 24 Jan 15 5:59
Sample : AZ09997W01
Misc : 10mL w/IS&S: 11-03-14

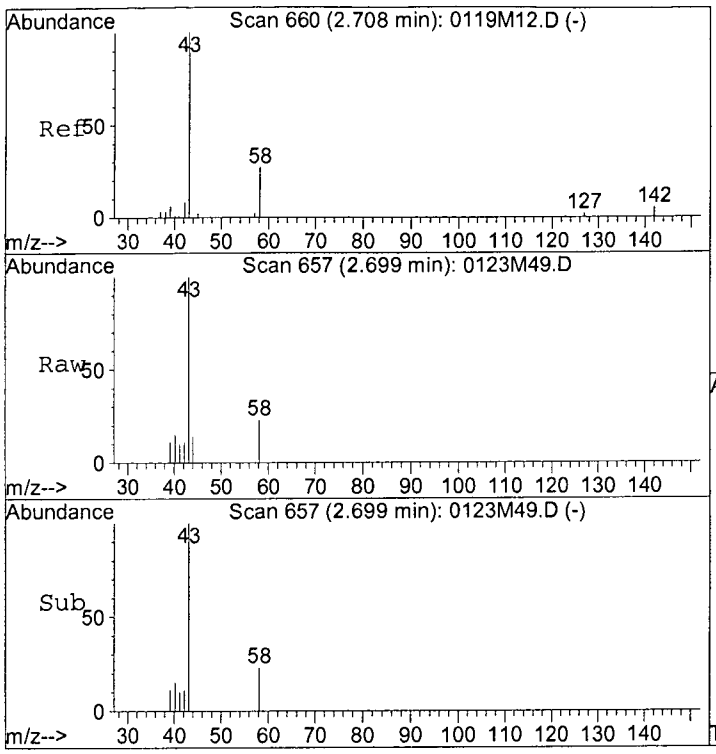
Vial: 39
Operator: DG,SV,RS
Inst : MAX
Multiplr: 1.00

Quant Time: Jan 26 13:36 2015

Quant Results File: MALLW.RES

Method : M:\MAX\DATA\M150119\MALLW.M (RTE Integrator)
Title : METHOD 8260B
Last Update : Wed Jan 21 13:18:25 2015
Response via : Initial Calibration

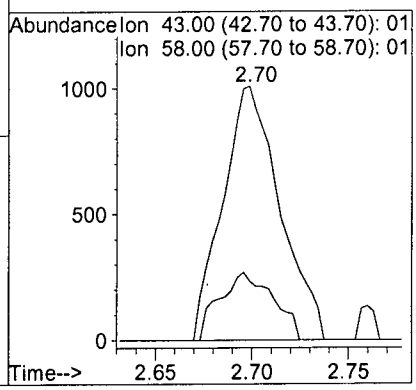


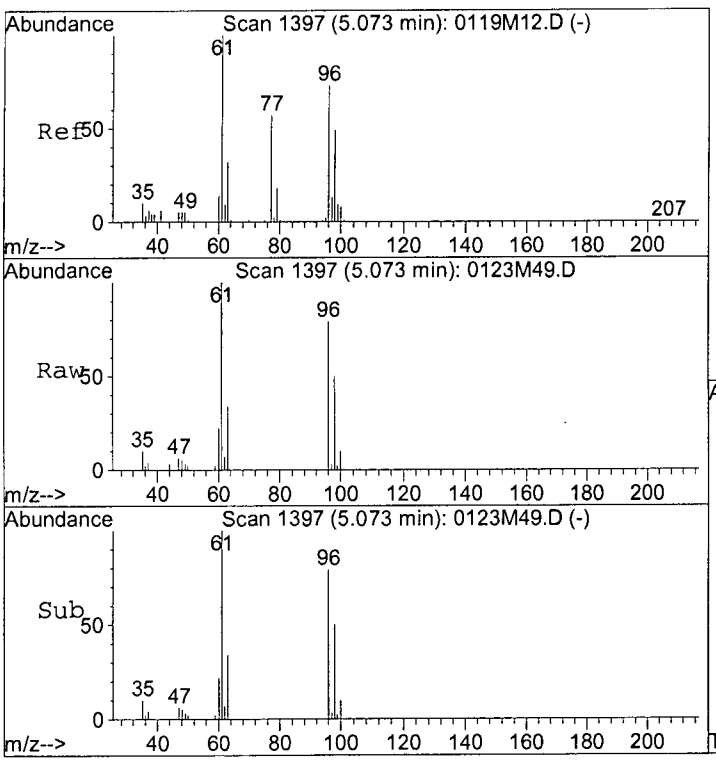


#11
Acetone
Concen: 1.49937 ppb
RT: 2.70 min Scan# 657
Delta R.T. -0.01 min
Lab File: 0123M49.D
Acq: 24 Jan 15 5:59

Tgt Ion: 43 Resp: 2067

Ion	Ratio	Lower	Upper
43	100		
58	23.3	18.3	34.1

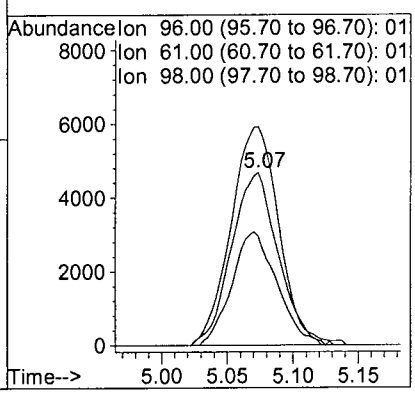




#27
Cis-1,2-DCE
Concen: 3.13014 ppb
RT: 5.07 min Scan# 1397
Delta R.T. 0.00 min
Lab File: 0123M49.D
Acq: 24 Jan 15 5:59

Tgt Ion: 96 Resp: 11528

Ion	Ratio	Lower	Upper
96	100		
61	126.4	96.7	179.5
98	63.4	46.8	86.8



EPA 8260B WATER

Element Environmental
98-030 Hekaha St., Unit 9
Aiea, HI 96701

APPL Inc.
908 North Temperance Avenue
Clovis, CA 93611

Attn: Steve Spengler
Project: MCBH Motor Pool UST KB-100 SI / 130034
Sample ID: EKB100012
Sample Collection Date: 01/20/15

ARF: 75427
APPL ID: AZ09998
QCG: #86BKB-150123BM-193856

Method	Analyte	Result	LOQ	LOD	DL	Units	Extraction Date	Analysis Date
EPA 8260B	1,1,1-TRICHLOROETHANE	0.30 U	1.0	0.30	0.14	ug/L	01/24/15	01/24/15
EPA 8260B	1,1,2,2-TETRACHLOROETHANE	0.30 U	1.0	0.30	0.10	ug/L	01/24/15	01/24/15
EPA 8260B	1,1,2-TRICHLOROETHANE	0.50 U	1.0	0.50	0.20	ug/L	01/24/15	01/24/15
EPA 8260B	1,1-DICHLOROETHANE	0.30 U	1.0	0.30	0.19	ug/L	01/24/15	01/24/15
EPA 8260B	1,1-DICHLOROETHENE	0.50 U	1.0	0.50	0.30	ug/L	01/24/15	01/24/15
EPA 8260B	1,2,3-TRICHLOROPROPANE	1.00 U	2.0	1.00	0.39	ug/L	01/24/15	01/24/15
EPA 8260B	1,2-DIBROMOETHANE	0.50 U	1.0	0.50	0.20	ug/L	01/24/15	01/24/15
EPA 8260B	1,2-DICHLOROETHANE	0.30 U	1.0	0.30	0.14	ug/L	01/24/15	01/24/15
EPA 8260B	1,2-DICHLOROPROPANE	0.30 U	1.0	0.30	0.17	ug/L	01/24/15	01/24/15
EPA 8260B	2-BUTANONE	2.00 U	10.0	2.00	0.60	ug/L	01/24/15	01/24/15
EPA 8260B	4-METHYL-2-PENTANONE	5.00 U	10.0	5.00	1.90	ug/L	01/24/15	01/24/15
EPA 8260B	ACETONE	8.2 J	10.0	2.00	0.95	ug/L	01/24/15	01/24/15
EPA 8260B	BENZENE	0.30 U	1.0	0.30	0.16	ug/L	01/24/15	01/24/15
EPA 8260B	BROMODICHLOROMETHANE	0.30 U	1.0	0.30	0.14	ug/L	01/24/15	01/24/15
EPA 8260B	BROMOFORM	0.30 U	1.0	0.30	0.14	ug/L	01/24/15	01/24/15
EPA 8260B	BROMOMETHANE	0.50 U	2.0	0.50	0.24	ug/L	01/24/15	01/24/15
EPA 8260B	CARBON TETRACHLORIDE	0.30 U	1.0	0.30	0.10	ug/L	01/24/15	01/24/15
EPA 8260B	CHLOROBENZENE	0.50 U	1.0	0.50	0.21	ug/L	01/24/15	01/24/15
EPA 8260B	CHLOROETHANE	0.50 U	1.0	0.50	0.21	ug/L	01/24/15	01/24/15
EPA 8260B	CHLOROFORM	0.30 U	1.0	0.30	0.07	ug/L	01/24/15	01/24/15
EPA 8260B	CHLOROMETHANE	0.50 U	1.0	0.50	0.42	ug/L	01/24/15	01/24/15
EPA 8260B	CIS-1,2-DICHLOROETHENE	8.4	1.0	0.30	0.16	ug/L	01/24/15	01/24/15
EPA 8260B	CIS-1,3-DICHLOROPROPENE	0.30 U	1.0	0.30	0.15	ug/L	01/24/15	01/24/15
EPA 8260B	DIBROMOCHLOROMETHANE	0.30 U	1.0	0.30	0.19	ug/L	01/24/15	01/24/15
EPA 8260B	ETHYLBENZENE	0.50 U	1.0	0.50	0.23	ug/L	01/24/15	01/24/15
EPA 8260B	METHYLENE CHLORIDE	1.00 U	5.0	1.00	0.35	ug/L	01/24/15	01/24/15
EPA 8260B	STYRENE	0.50 U	1.0	0.50	0.25	ug/L	01/24/15	01/24/15
EPA 8260B	TETRACHLOROETHENE	2.2	1.0	0.30	0.24	ug/L	01/24/15	01/24/15
EPA 8260B	TOLUENE	0.30 U	1.0	0.30	0.17	ug/L	01/24/15	01/24/15
EPA 8260B	TRANS-1,2-DICHLOROETHENE	7.9	1.0	0.30	0.19	ug/L	01/24/15	01/24/15
EPA 8260B	TRANS-1,3-DICHLOROPROPENE	0.30 U	1.0	0.30	0.18	ug/L	01/24/15	01/24/15
EPA 8260B	TRICHLOROETHENE	2.9	1.0	0.30	0.16	ug/L	01/24/15	01/24/15
EPA 8260B	VINYL CHLORIDE	0.30 U	1.0	0.30	0.23	ug/L	01/24/15	01/24/15
EPA 8260B	XYLENES (TOTAL)	0.30 U	2.0	0.30	0.19	ug/L	01/24/15	01/24/15
EPA 8260B	SURROGATE: 1,2-DICHLOROETHANE	108	70-120			%	01/24/15	01/24/15

J = Estimated value.

Quant Method: MALLW.M
Run #: 0123M50
Instrument: MAX
Sequence: M150119
Dilution Factor: 1
Initials: DG

Printed: 01/28/15 2:12:07 PM
APPL-F1-SC-NoMC-REG MDLs

EPA 8260B WATER

Element Environmental
98-030 Hekaha St., Unit 9
Aiea, HI 96701

APPL Inc.
908 North Temperance Avenue
Clovis, CA 93611

Attn: Steve Spengler
Project: MCBH Motor Pool UST KB-100 SI / 130034
Sample ID: EKB100012
Sample Collection Date: 01/20/15

ARF: 75427
APPL ID: AZ09998
QCG: #86BKB-150123BM-193856

Method	Analyte	Result	LOQ	LOD	DL	Units	Extraction Date	Analysis Date
EPA 8260B	SURROGATE: 4-BROMOFLUOROBEN	99.7	75-120			%	01/24/15	01/24/15
EPA 8260B	SURROGATE: DIBROMOFLUOROMET	103	85-115			%	01/24/15	01/24/15
EPA 8260B	SURROGATE: TOLUENE-D8 (S)	99.7	85-120			%	01/24/15	01/24/15

J = Estimated value.

Quant Method: MALLW.M
Run #: 0123M50
Instrument: MAX
Sequence: M150119
Dilution Factor: 1
Initials: DG

Printed: 01/28/15 2:12:07 PM
APPL-F1-SC-NoMC-REG MDLs

Quantitation Report (QT Reviewed)

Data File : M:\MAX\DATA\M150119\0123M50.D
Acq On : 24 Jan 15 6:27
Sample : AZ09998W01
Misc : 10mL w/IS&S: 11-03-14

Vial: 40
Operator: DG,SV,RS
Inst : MAX
Multiplr: 1.00

Quant Time: Jan 26 13:37 2015 Quant Results File: MALLW.RES

Quant Method : M:\MAX\DATA\M150119\MALLW.M (RTE Integrator)
Title : METHOD 8260B
Last Update : Wed Jan 21 13:18:25 2015
Response via : Initial Calibration
DataAcq Meth : V8260

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene (IS)	6.78	96	289677	25.00000 ppb	0.00
55) Chlorobenzene-D5 (IS)	11.03	117	215204	25.00000 ppb	0.00
70) 1,4-Dichlorobenzene-D (IS)	14.37	152	118653	25.00000 ppb	0.00
System Monitoring Compounds					
31) Dibromofluoromethane(S)	5.79	111	43119	14.50076 ppb	0.00
Spiked Amount 14.019			Recovery	= 103.441%	
36) 1,2-DCA-D4(S)	6.25	65	45397	14.44027 ppb	0.00
Spiked Amount 13.317			Recovery	= 108.434%	
56) Toluene-D8(S)	9.03	98	179956	14.34442 ppb	0.00
Spiked Amount 14.391			Recovery	= 99.673%	
64) 4-Bromofluorobenzene(S)	12.71	95	68712	14.03696 ppb	0.00
Spiked Amount 14.078			Recovery	= 99.707%	
Target Compounds					Qvalue
11) Acetone	2.69	43	5627	8.22040 ppb	89
21) Trans-1,2-DCE	3.54	96	25580	7.94219 ppb	96
27) Cis-1,2-DCE	5.07	96	30797	8.43894 ppb	97
41) TCE	7.31	95	9700	2.88236 ppb	95
58) Tetrachloroethene	9.89	164	4050	2.21055 ppb	91
78) 2-Chlorotoluene	13.20	91	5892	0.52039 ppb	86
81) Tert-Butylbenzene	13.84	119	7205	0.57425 ppb	95
83) Sec-Butylbenzene	14.16	105	2687	0.15526 ppb	98

(#) = qualifier out of range (m) = manual integration

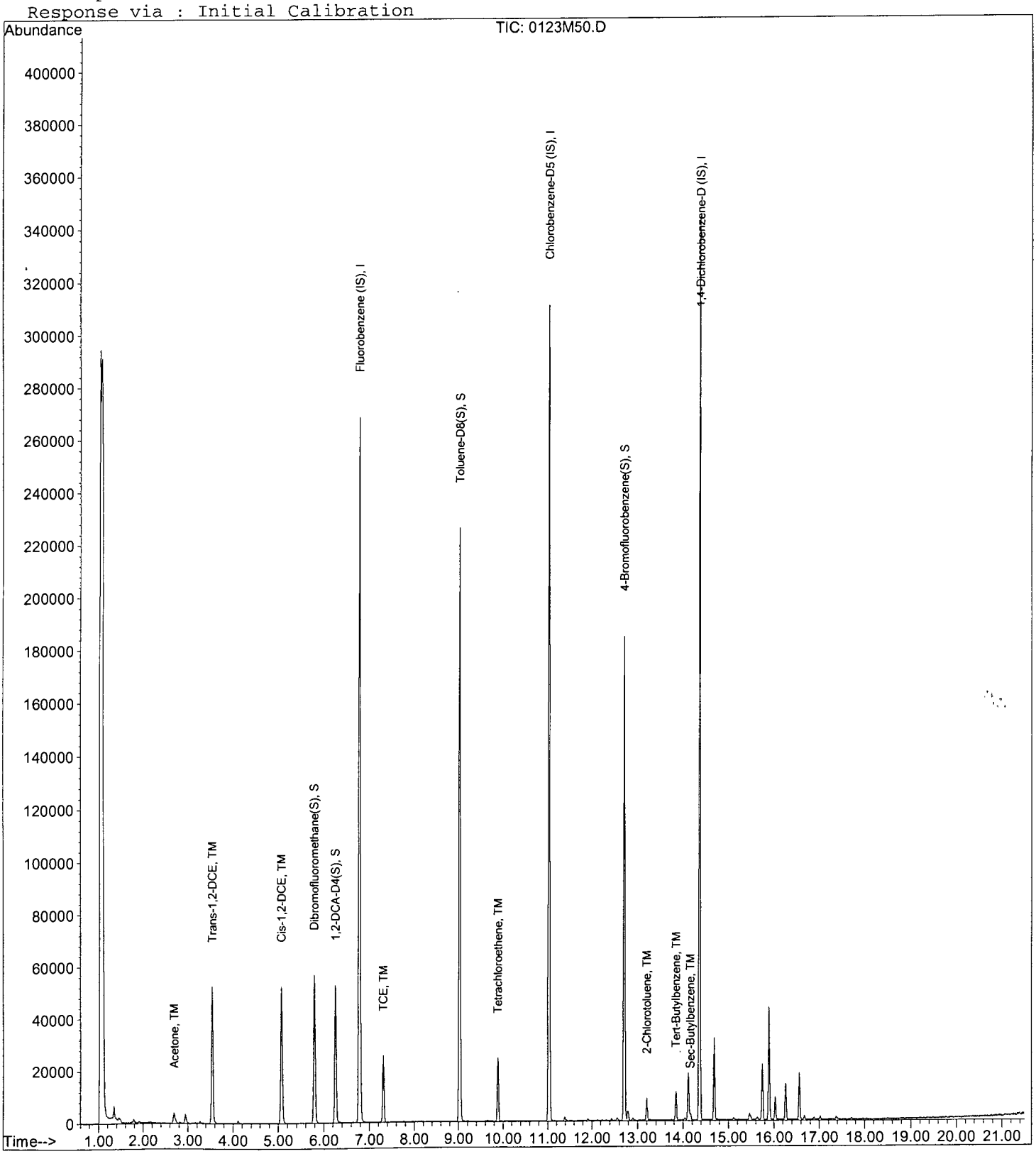
Quantitation Report

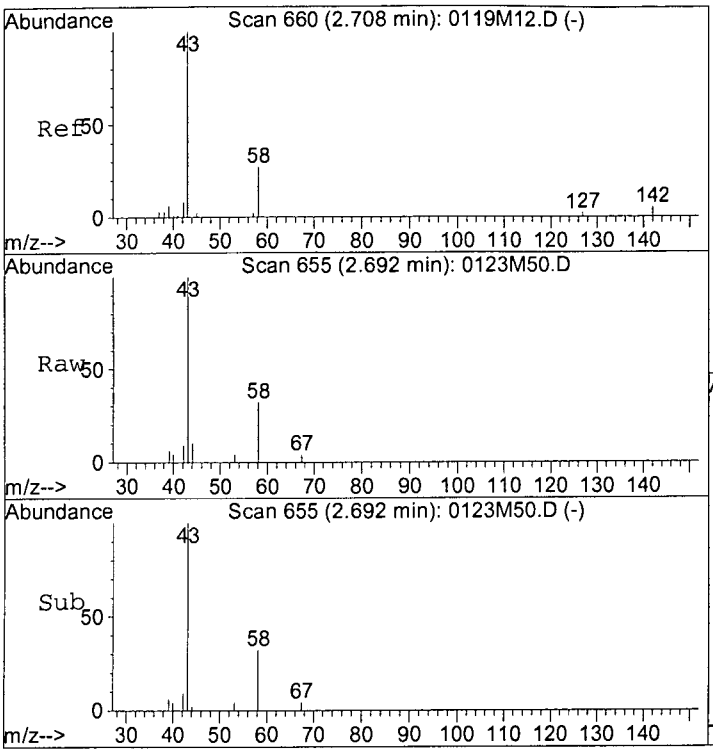
Data File : M:\MAX\DATA\M150119\0123M50.D
Acq On : 24 Jan 15 6:27
Sample : AZ09998W01
Misc : 10mL w/IS&S: 11-03-14

Vial: 40
Operator: DG,SV,RS
Inst : MAX
Multiplr: 1.00

Quant Time: Jan 26 13:37 2015 Quant Results File: MALLW.RES

Method : M:\MAX\DATA\M150119\MALLW.M (RTE Integrator)
Title : METHOD 8260B
Last Update : Wed Jan 21 13:18:25 2015
Response via : Initial Calibration

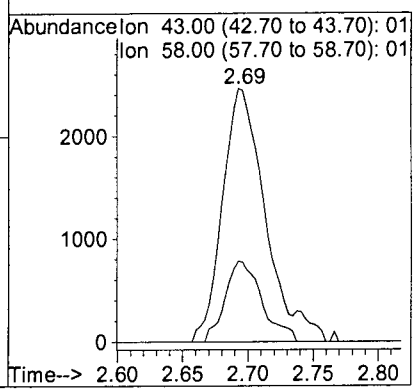


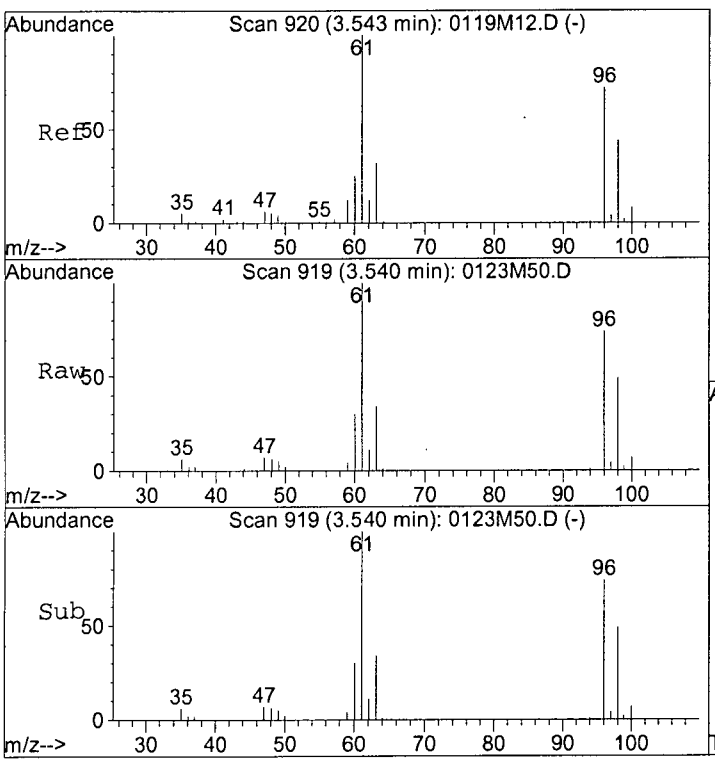


#11
Acetone
Concen: 8.22040 ppb
RT: 2.69 min Scan# 655
Delta R.T. -0.02 min
Lab File: 0123M50.D
Acq: 24 Jan 15 6:27

Tgt Ion: 43 Resp: 5627

Ion	Ratio	Lower	Upper
43	100		
58	31.6	18.3	34.1

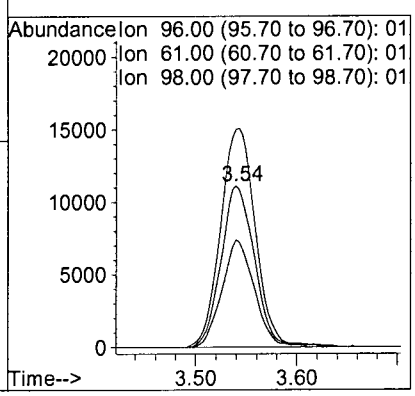


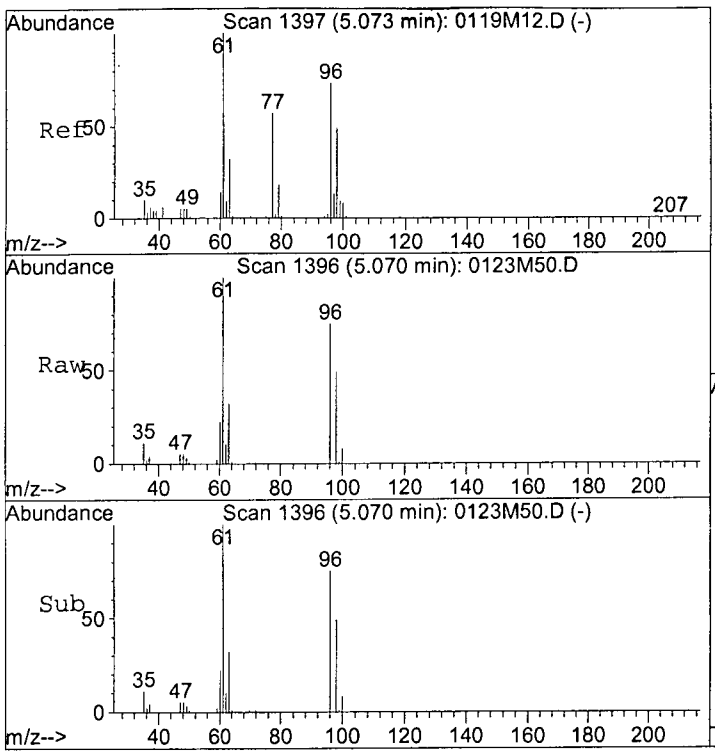


#21
Trans-1,2-DCE
Concen: 7.94219 ppb
RT: 3.54 min Scan# 919
Delta R.T. -0.00 min
Lab File: 0123M50.D
Acq: 24 Jan 15 6:27

Tgt Ion: 96 Resp: 25580

Ion	Ratio	Lower	Upper
96	100		
61	134.9	97.2	180.6
98	66.6	43.1	80.1

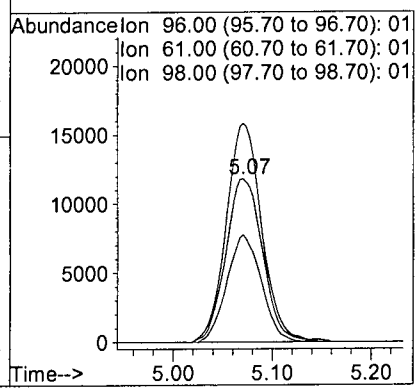


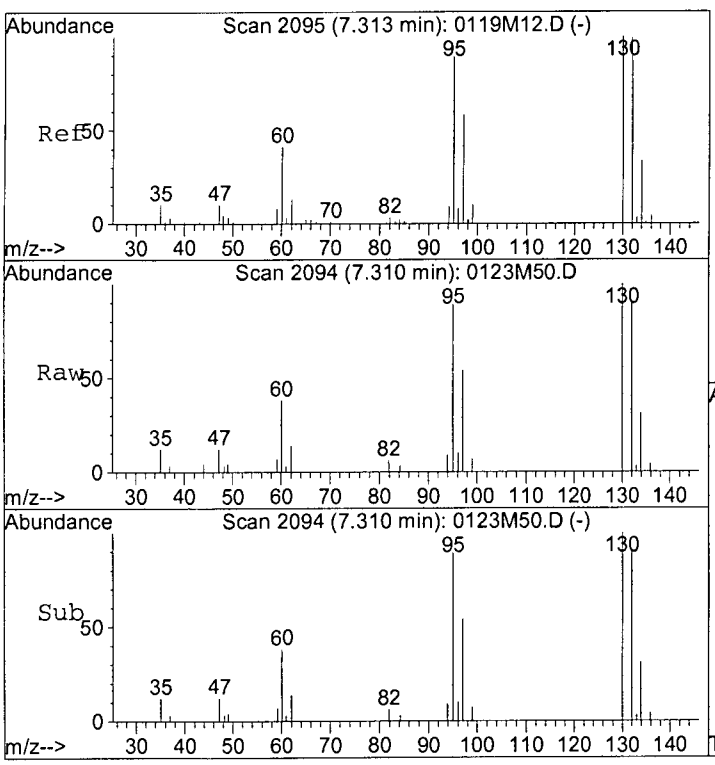


#27
Cis-1,2-DCE
Concen: 8.43894 ppb
RT: 5.07 min Scan# 1396
Delta R.T. -0.00 min
Lab File: 0123M50.D
Acq: 24 Jan 15 6:27

Tgt Ion: 96 Resp: 30797

Ion	Ratio	Lower	Upper
96	100		
61	133.9	96.7	179.5
98	65.7	46.8	86.8

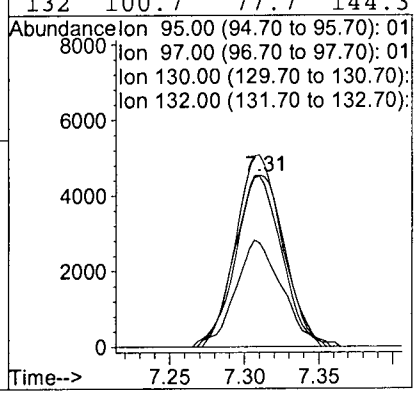


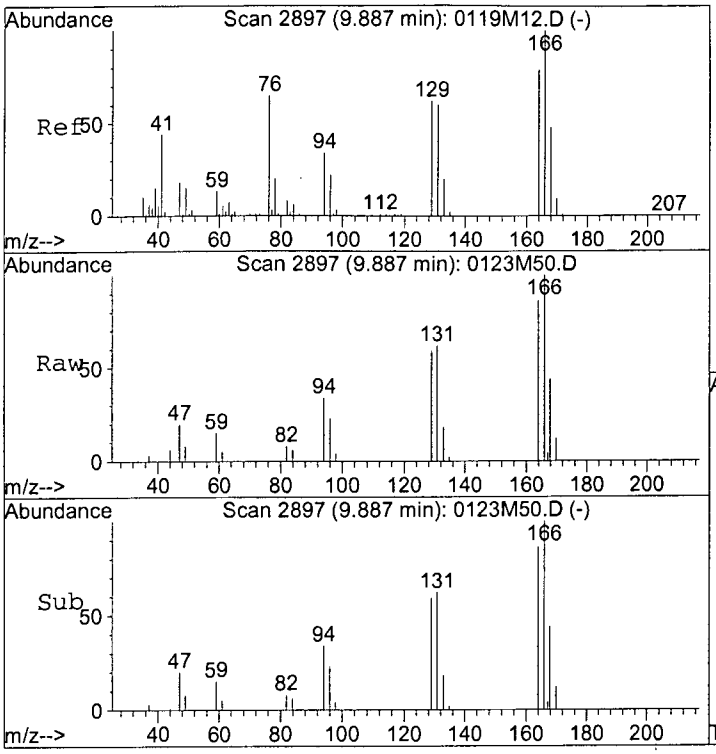


#41
TCE
Concen: 2.88236 ppb
RT: 7.31 min Scan# 2094
Delta R.T. -0.00 min
Lab File: 0123M50.D
Acq: 24 Jan 15 6:27

Tgt Ion: 95 Resp: 9700

Ion	Ratio	Lower	Upper
95	100		
97	61.0	45.4	84.4
130	112.4	78.8	146.3
132	100.7	77.7	144.3

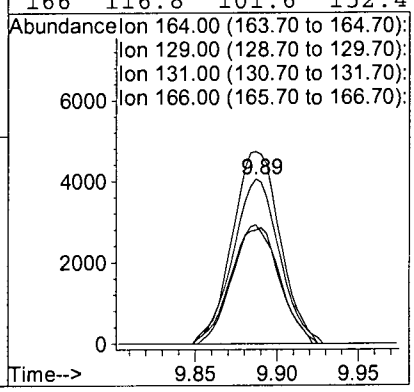


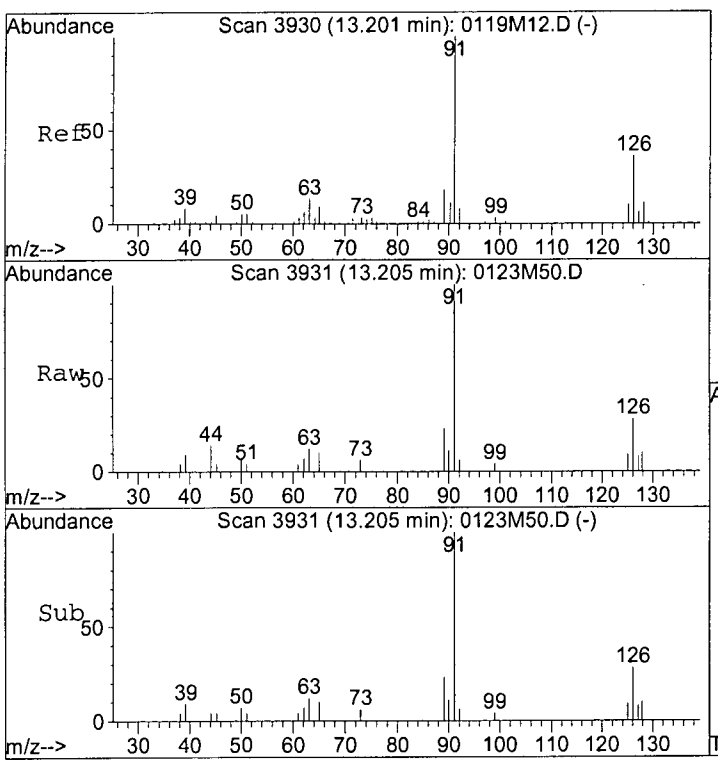


#58
Tetrachloroethene
Concen: 2.21055 ppb
RT: 9.89 min Scan# 2897
Delta R.T. 0.00 min
Lab File: 0123M50.D
Acq: 24 Jan 15 6:27

Tgt Ion:164 Resp: 4050

Ion	Ratio	Lower	Upper
164	100		
129	69.0	63.1	94.7
131	72.2	61.4	92.2
166	116.8	101.6	152.4

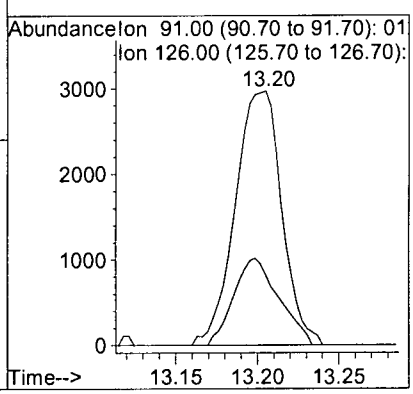


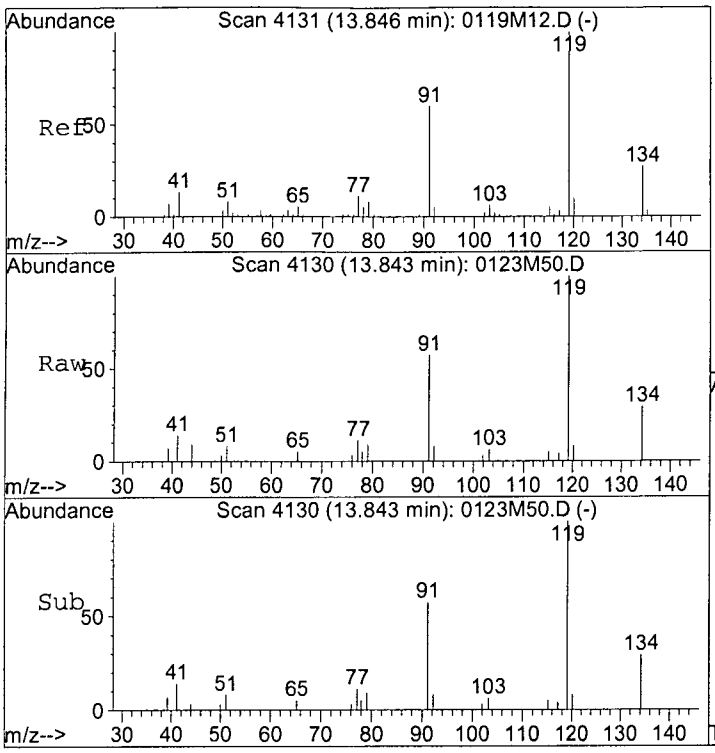


#78
2-Chlorotoluene
Concen: 0.52039 ppb
RT: 13.20 min Scan# 3931
Delta R.T. 0.00 min
Lab File: 0123M50.D
Acq: 24 Jan 15 6:27

Tgt Ion: 91 Resp: 5892

Ion	Ratio	Lower	Upper
91	100		
126	27.8	25.3	46.9

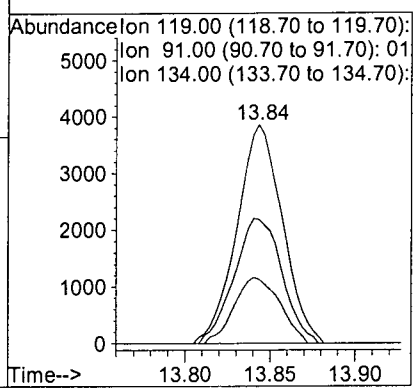


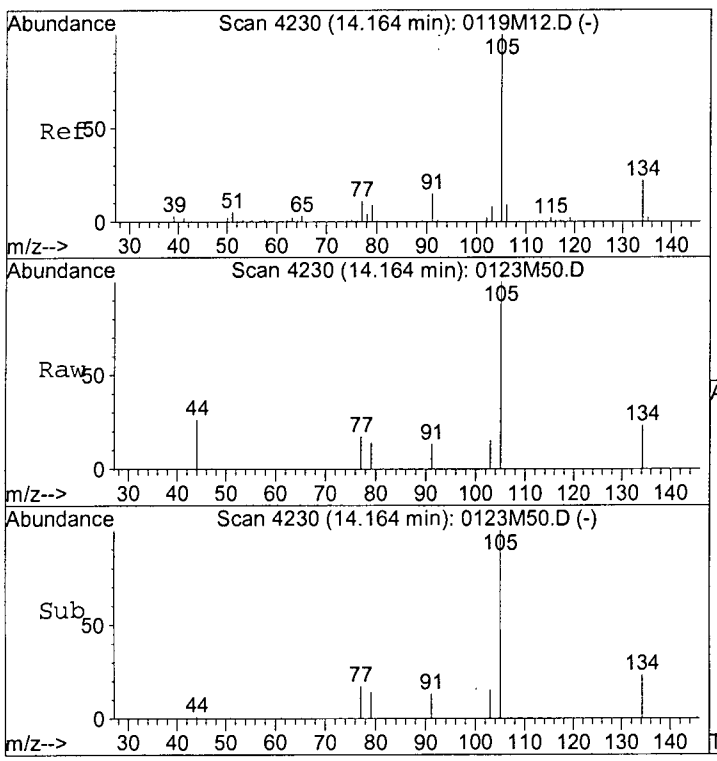


#81
Tert-Butylbenzene
Concen: 0.57425 ppb
RT: 13.84 min Scan# 4130
Delta R.T. -0.00 min
Lab File: 0123M50.D
Acq: 24 Jan 15 6:27

Tgt Ion:119 Resp: 7205

Ion	Ratio	Lower	Upper
119	100		
91	56.7	42.0	78.0
134	29.4	18.8	35.0

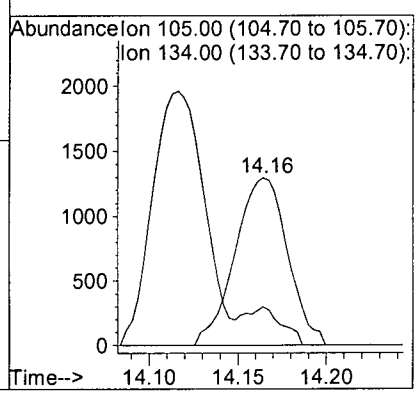




#83
Sec-Butylbenzene
Concen: 0.15526 ppb
RT: 14.16 min Scan# 4230
Delta R.T. 0.00 min
Lab File: 0123M50.D
Acq: 24 Jan 15 6:27

Tgt Ion:105 Resp: 2687

Ion	Ratio	Lower	Upper
105	100		
134	23.1	15.4	28.6



EPA 8260B WATER

Element Environmental
98-030 Hekaha St., Unit 9
Aiea, HI 96701

APPL Inc.
908 North Temperance Avenue
Clovis, CA 93611

Attn: Steve Spengler
Project: MCBH Motor Pool UST KB-100 SI / 130034
Sample ID: EKB100013
Sample Collection Date: 01/20/15

ARF: 75427
APPL ID: AZ09999
QCG: #86BKB-150123BM-193856

Method	Analyte	Result	LOQ	LOD	DL	Units	Extraction Date	Analysis Date
EPA 8260B	1,1,1-TRICHLOROETHANE	0.30 U	1.0	0.30	0.14	ug/L	01/24/15	01/24/15
EPA 8260B	1,1,2,2-TETRACHLOROETHANE	0.30 U	1.0	0.30	0.10	ug/L	01/24/15	01/24/15
EPA 8260B	1,1,2-TRICHLOROETHANE	0.50 U	1.0	0.50	0.20	ug/L	01/24/15	01/24/15
EPA 8260B	1,1-DICHLOROETHANE	0.30 U	1.0	0.30	0.19	ug/L	01/24/15	01/24/15
EPA 8260B	1,1-DICHLOROETHENE	0.45 J	1.0	0.50	0.30	ug/L	01/24/15	01/24/15
EPA 8260B	1,2,3-TRICHLOROPROPANE	1.00 U	2.0	1.00	0.39	ug/L	01/24/15	01/24/15
EPA 8260B	1,2-DIBROMOETHANE	0.50 U	1.0	0.50	0.20	ug/L	01/24/15	01/24/15
EPA 8260B	1,2-DICHLOROETHANE	0.30 U	1.0	0.30	0.14	ug/L	01/24/15	01/24/15
EPA 8260B	1,2-DICHLOROPROPANE	0.30 U	1.0	0.30	0.17	ug/L	01/24/15	01/24/15
EPA 8260B	2-BUTANONE	2.00 U	10.0	2.00	0.60	ug/L	01/24/15	01/24/15
EPA 8260B	4-METHYL-2-PENTANONE	5.00 U	10.0	5.00	1.90	ug/L	01/24/15	01/24/15
EPA 8260B	ACETONE	2.00 U	10.0	2.00	0.95	ug/L	01/24/15	01/24/15
EPA 8260B	BENZENE	0.30 U	1.0	0.30	0.16	ug/L	01/24/15	01/24/15
EPA 8260B	BROMODICHLOROMETHANE	0.30 U	1.0	0.30	0.14	ug/L	01/24/15	01/24/15
EPA 8260B	BROMOFORM	0.30 U	1.0	0.30	0.14	ug/L	01/24/15	01/24/15
EPA 8260B	BROMOMETHANE	0.50 U	2.0	0.50	0.24	ug/L	01/24/15	01/24/15
EPA 8260B	CARBON TETRACHLORIDE	0.30 U	1.0	0.30	0.10	ug/L	01/24/15	01/24/15
EPA 8260B	CHLOROBENZENE	0.50 U	1.0	0.50	0.21	ug/L	01/24/15	01/24/15
EPA 8260B	CHLOROETHANE	0.50 U	1.0	0.50	0.21	ug/L	01/24/15	01/24/15
EPA 8260B	CHLOROFORM	0.30 U	1.0	0.30	0.07	ug/L	01/24/15	01/24/15
EPA 8260B	CHLOROMETHANE	0.50 U	1.0	0.50	0.42	ug/L	01/24/15	01/24/15
EPA 8260B	CIS-1,2-DICHLOROETHENE	240 E	1.0	0.30	0.16	ug/L	01/24/15	01/24/15
EPA 8260B	CIS-1,3-DICHLOROPROPENE	0.30 U	1.0	0.30	0.15	ug/L	01/24/15	01/24/15
EPA 8260B	DIBROMOCHLOROMETHANE	0.30 U	1.0	0.30	0.19	ug/L	01/24/15	01/24/15
EPA 8260B	ETHYLBENZENE	0.50 U	1.0	0.50	0.23	ug/L	01/24/15	01/24/15
EPA 8260B	METHYLENE CHLORIDE	1.00 U	5.0	1.00	0.35	ug/L	01/24/15	01/24/15
EPA 8260B	STYRENE	0.50 U	1.0	0.50	0.25	ug/L	01/24/15	01/24/15
EPA 8260B	TETRACHLOROETHENE	25	1.0	0.30	0.24	ug/L	01/24/15	01/24/15
EPA 8260B	TOLUENE	0.30 U	1.0	0.30	0.17	ug/L	01/24/15	01/24/15
EPA 8260B	TRANS-1,2-DICHLOROETHENE	150	1.0	0.30	0.19	ug/L	01/24/15	01/24/15
EPA 8260B	TRANS-1,3-DICHLOROPROPENE	0.30 U	1.0	0.30	0.18	ug/L	01/24/15	01/24/15
EPA 8260B	TRICHLOROETHENE	30	1.0	0.30	0.16	ug/L	01/24/15	01/24/15
EPA 8260B	VINYL CHLORIDE	220 E	1.0	0.30	0.23	ug/L	01/24/15	01/24/15
EPA 8260B	XYLENES (TOTAL)	0.30 U	2.0	0.30	0.19	ug/L	01/24/15	01/24/15
EPA 8260B	SURROGATE: 1,2-DICHLOROETHANE	108	70-120			%	01/24/15	01/24/15

J = Estimated value.
E = The reported value exceeds linear range.

Quant Method: MALLW.M
Run #: 0123M51
Instrument: MAX
Sequence: M150119
Dilution Factor: 1
Initials: DG

Printed: 01/28/15 2:12:07 PM
APPL-F1-SC-NoMC-REG MDLs

EPA 8260B WATER

Element Environmental
98-030 Hekaha St., Unit 9
Aiea, HI 96701

APPL Inc.
908 North Temperance Avenue
Clovis, CA 93611

Attn: Steve Spengler
Project: MCBH Motor Pool UST KB-100 SI / 130034
Sample ID: EKB100013
Sample Collection Date: 01/20/15

ARF: 75427
APPL ID: AZ09999
QCG: #86BKB-150123BM-193856

Method	Analyte	Result	LOQ	LOD	DL	Units	Extraction Date	Analysis Date
EPA 8260B	SURROGATE: 4-BROMOFLUOROBEN	98.9	75-120			%	01/24/15	01/24/15
EPA 8260B	SURROGATE: DIBROMOFLUOROMET	102	85-115			%	01/24/15	01/24/15
EPA 8260B	SURROGATE: TOLUENE-D8 (S)	99.0	85-120			%	01/24/15	01/24/15

J = Estimated value.
E = The reported value exceeds linear range.

Quant Method: MALLW.M
Run #: 0123M51
Instrument: MAX
Sequence: M150119
Dilution Factor: 1
Initials: DG

Printed: 01/28/15 2:12:07 PM
APPL-F1-SC-NoMC-REG MDLs

Quantitation Report (QT Reviewed)

Data File : M:\MAX\DATA\M150119\0123M51.D
Acq On : 24 Jan 15 6:54
Sample : AZ09999W01
Misc : 10mL w/IS&S: 11-03-14

Vial: 41
Operator: DG,SV,RS
Inst : MAX
Multiplr: 1.00

Quant Time: Jan 26 13:39 2015 Quant Results File: MALLW.RES

Quant Method : M:\MAX\DATA\M150119\MALLW.M (RTE Integrator)
Title : METHOD 8260B
Last Update : Wed Jan 21 13:18:25 2015
Response via : Initial Calibration
DataAcq Meth : V8260

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene (IS)	6.78	96	265334	25.00000 ppb	0.00
55) Chlorobenzene-D5 (IS)	11.03	117	199360	25.00000 ppb	0.00
70) 1,4-Dichlorobenzene-D (IS)	14.37	152	109964	25.00000 ppb	0.00
System Monitoring Compounds					
31) Dibromofluoromethane(S)	5.79	111	38851	14.26413 ppb	0.00
Spiked Amount 14.019			Recovery	= 101.751%	
36) 1,2-DCA-D4(S)	6.25	65	41345	14.35795 ppb	0.00
Spiked Amount 13.317			Recovery	= 107.819%	
56) Toluene-D8(S)	9.03	98	165648	14.25329 ppb	0.00
Spiked Amount 14.391			Recovery	= 99.041%	
64) 4-Bromofluorobenzene(S)	12.71	95	63167	13.92974 ppb	0.00
Spiked Amount 14.078			Recovery	= 98.947%	
Target Compounds					Qvalue
5) Vinyl chloride	1.47	62	765056	222.51950 ppb E	99
13) 1,1-DCE	2.60	61	935	0.44625 ppb	90
21) Trans-1,2-DCE	3.55	96	430574	145.95146 ppb OK	98
27) Cis-1,2-DCE	5.07	96	818259	244.78866 ppb E	94
41) TCE	7.31	95	93473	30.32385 ppb	99
58) Tetrachloroethene	9.89	164	43208	25.45789 ppb	99
78) 2-Chlorotoluene	13.20	91	3849	0.36681 ppb	93
81) Tert-Butylbenzene	13.84	119	3839	0.33015 ppb #	90

4/26/15

(#) = qualifier out of range (m) = manual integration

Quantitation Report

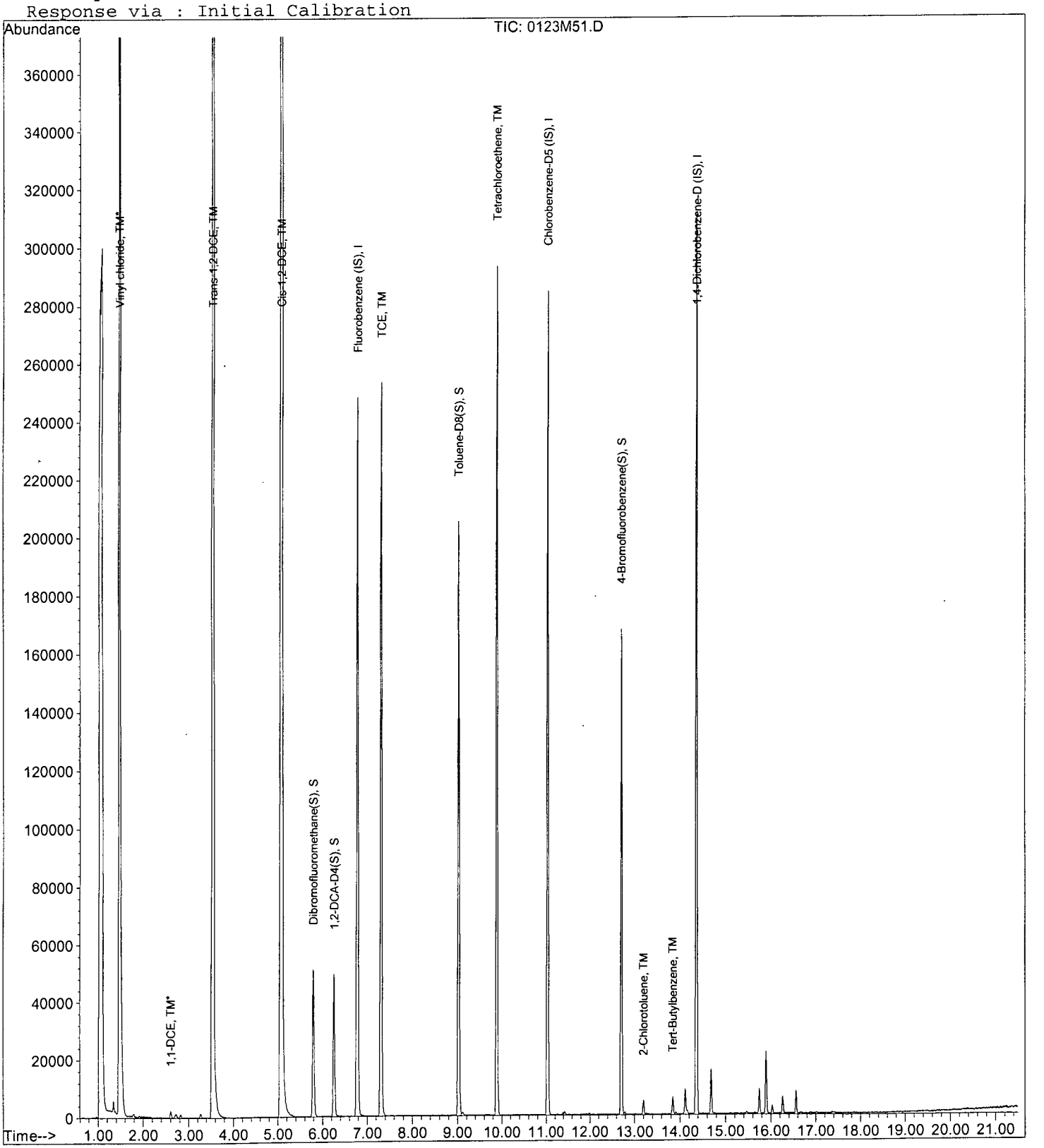
Data File : M:\MAX\DATA\M150119\0123M51.D
Acq On : 24 Jan 15 6:54
Sample : AZ09999W01
Misc : 10mL w/IS&S: 11-03-14

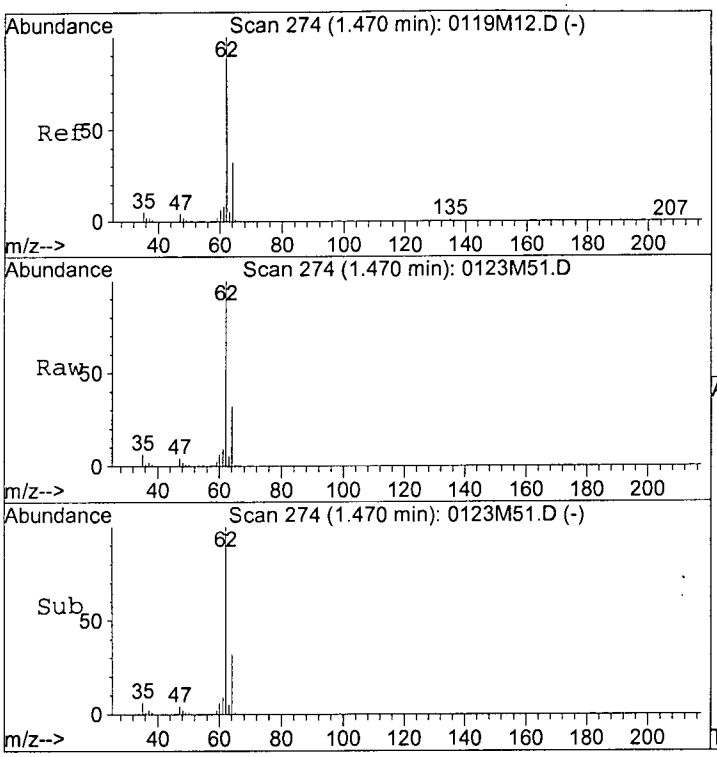
Vial: 41
Operator: DG,SV,RS
Inst : MAX
Multiplr: 1.00

Quant Time: Jan 26 13:39 2015

Quant Results File: MALLW.RES

Method : M:\MAX\DATA\M150119\MALLW.M (RTE Integrator)
Title : METHOD 8260B
Last Update : Wed Jan 21 13:18:25 2015
Response via : Initial Calibration

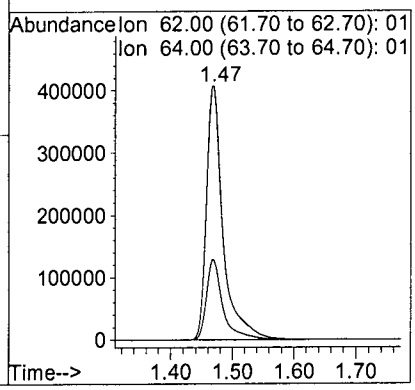


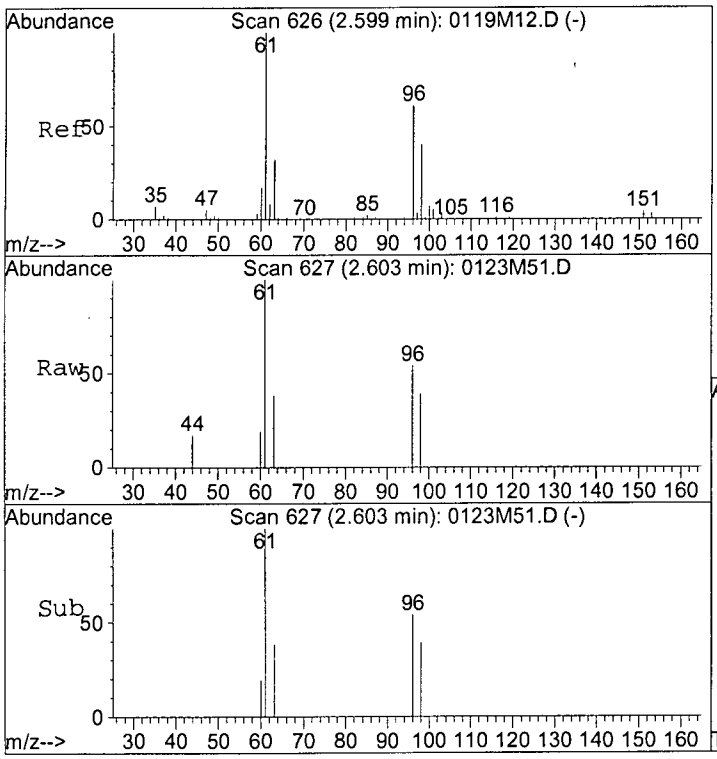


#5
Vinyl chloride
Concen: 222.51950 ppb
RT: 1.47 min Scan# 274
Delta R.T. 0.00 min
Lab File: 0123M51.D
Acq: 24 Jan 15 6:54

Tgt Ion: 62 Resp: 765056

Ion	Ratio	Lower	Upper
62	100		
64	31.5	22.5	41.9

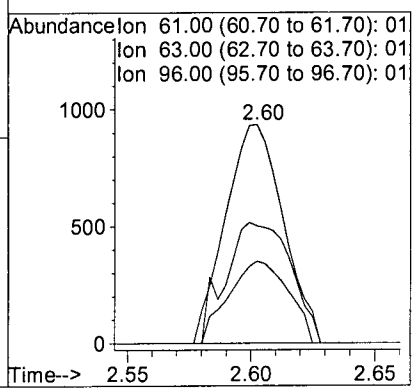


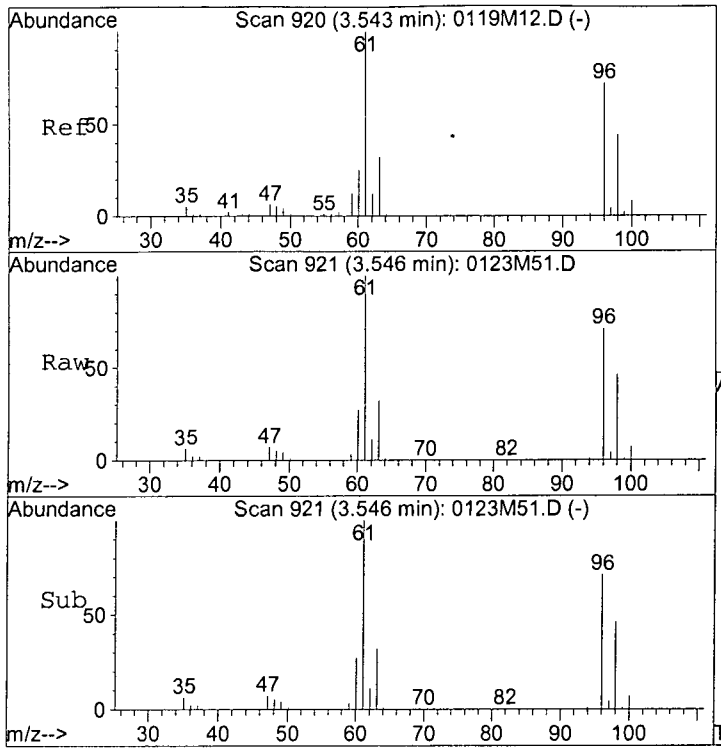


#13
1,1-DCE
Concen: 0.44625 ppb
RT: 2.60 min Scan# 627
Delta R.T. 0.00 min
Lab File: 0123M51.D
Acq: 24 Jan 15 6:54

Tgt Ion: 61 Resp: 935

Ion	Ratio	Lower	Upper
61	100		
63	37.5	25.9	38.9
96	53.7	49.0	73.6

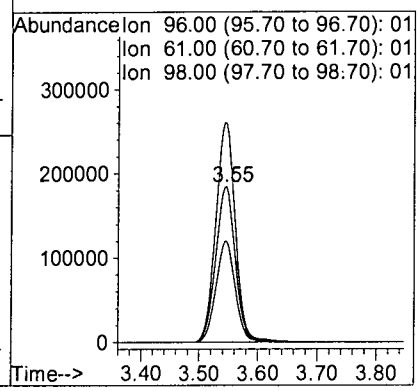


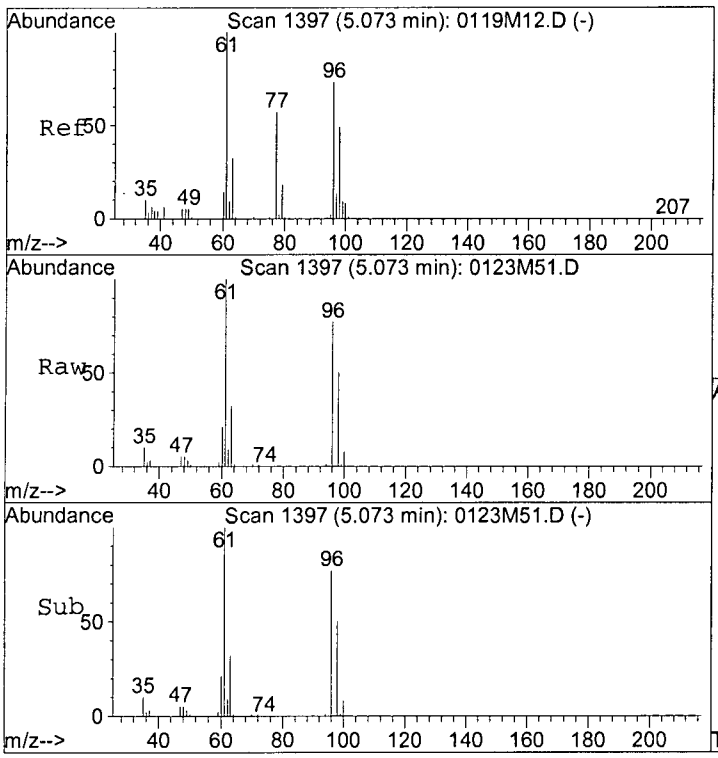


#21
Trans-1,2-DCE
Concen: 145.95146 ppb
RT: 3.55 min Scan# 921
Delta R.T. 0.00 min
Lab File: 0123M51.D
Acq: 24 Jan 15 6:54

Tgt Ion: 96 Resp: 430574

Ion	Ratio	Lower	Upper
96	100		
61	140.8	97.2	180.6
98	65.1	43.1	80.1

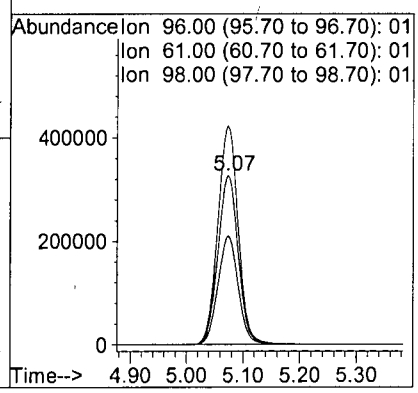


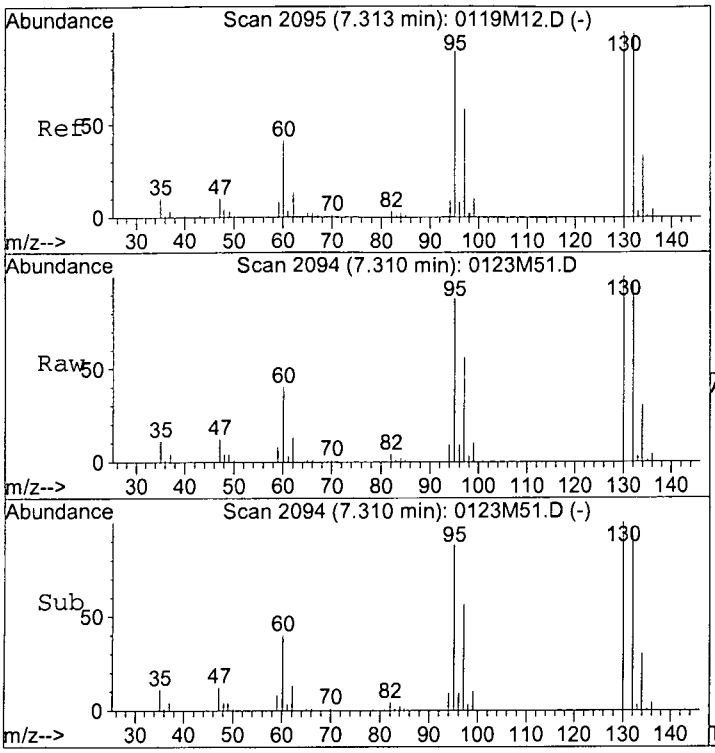


#27
Cis-1,2-DCE
Concen: 244.78866 ppb
RT: 5.07 min Scan# 1397
Delta R.T. 0.00 min
Lab File: 0123M51.D
Acq: 24 Jan 15 6:54

Tgt Ion: 96 Resp: 818259

Ion	Ratio	Lower	Upper
96	100		
61	129.2	96.7	179.5
98	64.3	46.8	86.8

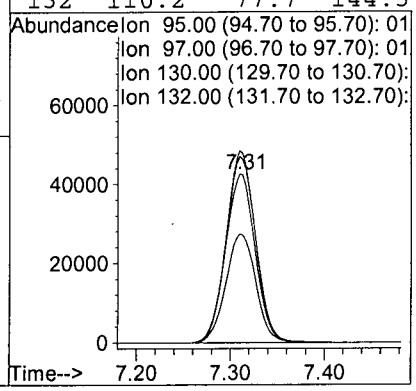


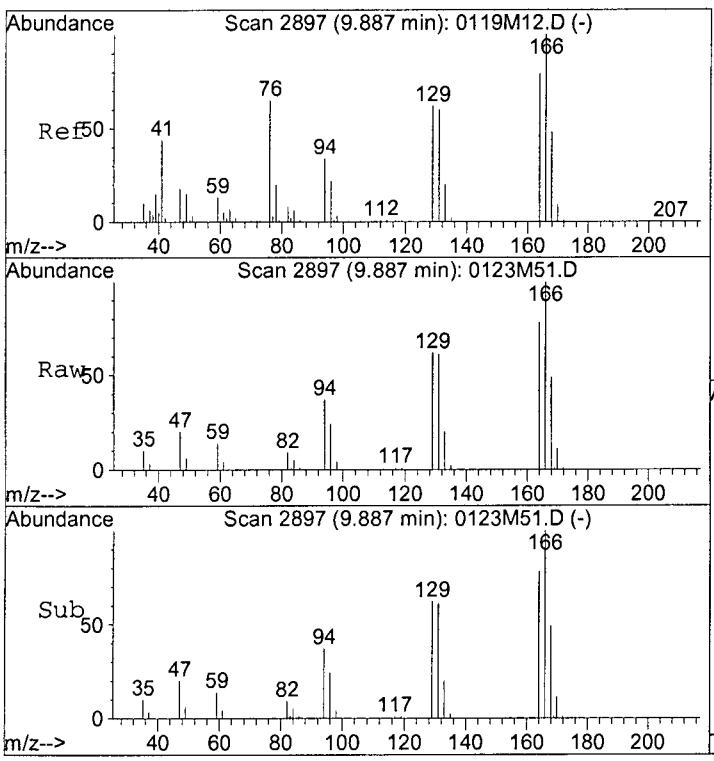


#41
TCE
Concen: 30.32385 ppb
RT: 7.31 min Scan# 2094
Delta R.T. -0.00 min
Lab File: 0123M51.D
Acq: 24 Jan 15 6:54

Tgt Ion: 95 Resp: 93473

Ion	Ratio	Lower	Upper
95	100		
97	64.1	45.4	84.4
130	113.9	78.8	146.3
132	110.2	77.7	144.3

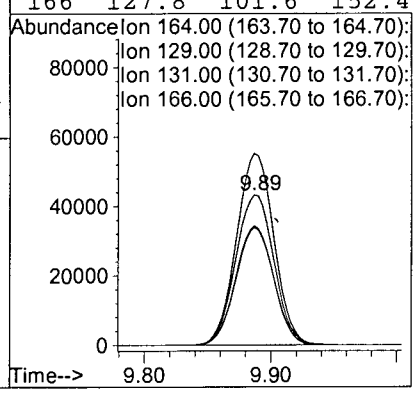


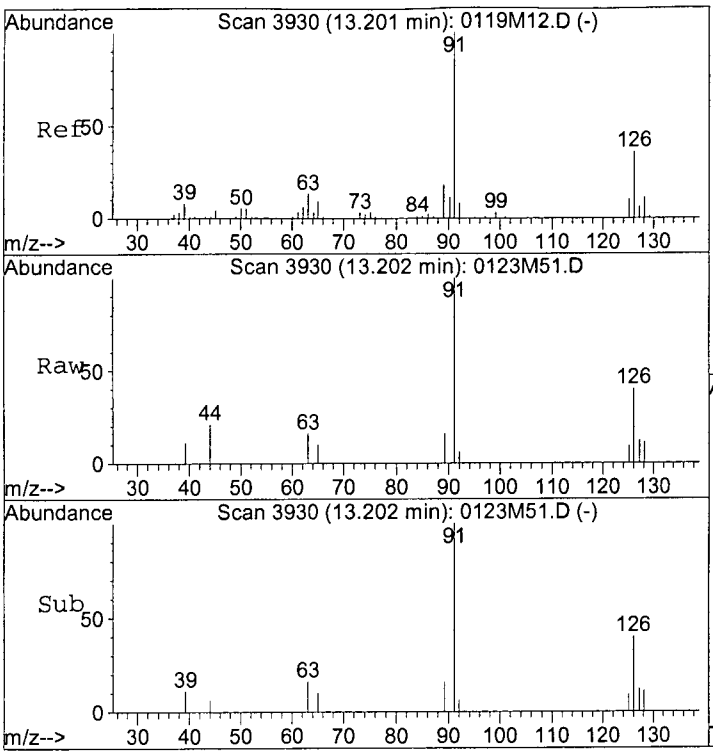


#58
Tetrachloroethene
Concen: 25.45789 ppb
RT: 9.89 min Scan# 2897
Delta R.T. 0.00 min
Lab File: 0123M51.D
Acq: 24 Jan 15 6:54

Tgt Ion:164 Resp: 43208

Ion	Ratio	Lower	Upper
164	100		
129	79.4	63.1	94.7
131	78.4	61.4	92.2
166	127.8	101.6	152.4

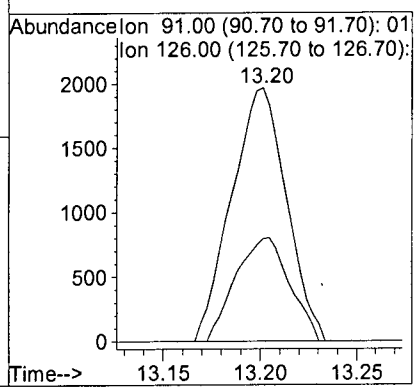


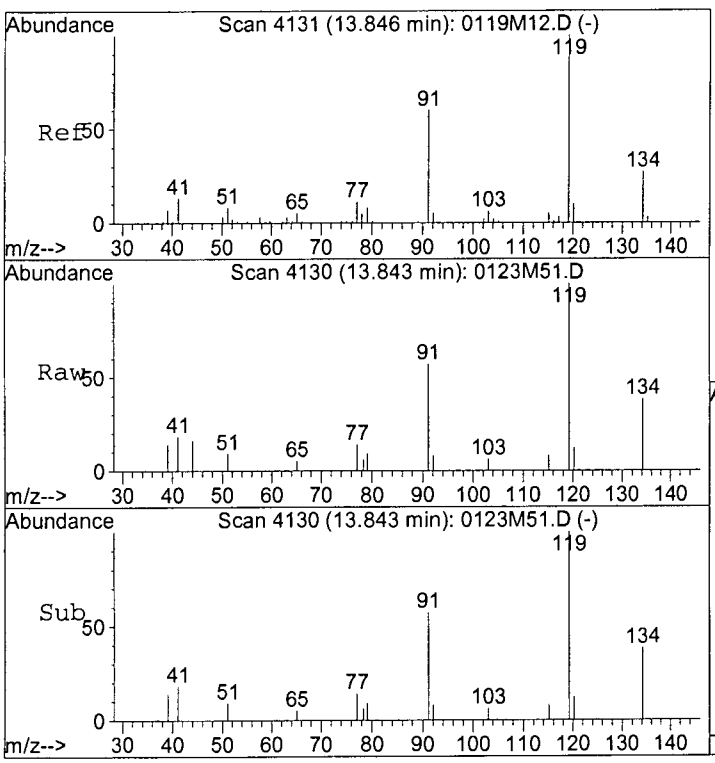


#78
2-Chlorotoluene
Concen: 0.36681 ppb
RT: 13.20 min Scan# 3930
Delta R.T. 0.00 min
Lab File: 0123M51.D
Acq: 24 Jan 15 6:54

Tgt Ion: 91 Resp: 3849

Ion	Ratio	Lower	Upper
91	100		
126	40.5	25.3	46.9

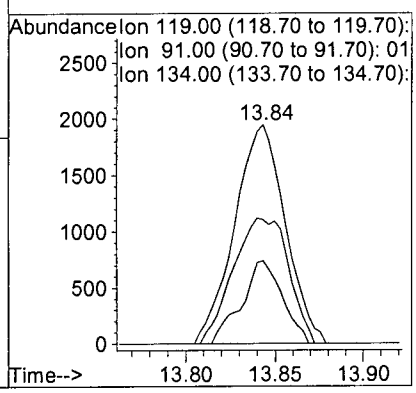




#81
Tert-Butylbenzene
Concen: 0.33015 ppb
RT: 13.84 min Scan# 4130
Delta R.T. -0.00 min
Lab File: 0123M51.D
Acq: 24 Jan 15 6:54

Tgt Ion:119 Resp: 3839

Ion	Ratio	Lower	Upper
119	100		
91	56.8	42.0	78.0
134	37.9	18.8	35.0#



EPA 8260B WATER DILUTION

Element Environmental
98-030 Hekaha St., Unit 9
Aiea, HI 96701

APPL Inc.
908 North Temperance Avenue
Clovis, CA 93611

Attn: Steve Spengler
Project: MCBH Motor Pool UST KB-100 SI / 130034
Sample ID: EKB100013
Sample Collection Date: 01/20/15

ARF: 75427
APPL ID: AZ09999
QCG: #86BKB-150127AM-193857

Method	Analyte	Result	LOQ	LOD	DL	Units	Extraction Date	Analysis Date
EPA 8260B	CIS-1,2-DICHLOROETHENE	230	5.0	1.50	0.80	ug/L	01/27/15	01/27/15
EPA 8260B	VINYL CHLORIDE	240	5.0	1.50	1.15	ug/L	01/27/15	01/27/15
EPA 8260B	SURROGATE: 1,2-DICHLOROETHANE	115	70-120			%	01/27/15	01/27/15
EPA 8260B	SURROGATE: 4-BROMOFLUOROBEN	109	75-120			%	01/27/15	01/27/15
EPA 8260B	SURROGATE: DIBROMOFLUOROMET	111	85-115			%	01/27/15	01/27/15
EPA 8260B	SURROGATE: TOLUENE-D8 (S)	110	85-120			%	01/27/15	01/27/15

Quant Method: MALLW.M
Run #: 0127M20
Instrument: MAX
Sequence: M150126
Dilution Factor: 5
Initials: DG

Printed: 01/28/15 2:12:58 PM
APPL-F1-SC-NoMC-REG MDLs

Quantitation Report (QT Reviewed)

Data File : M:\MAX\DATA\M150126\0127M20.D
Acq On : 27 Jan 15 15:06
Sample : AZ09999W02 DF5
Misc : 10mL w/IS&S: 11-03-14

Vial: 13
Operator: DG,SV,RS
Inst : MAX
Multiplr: 5.00

Quant Time: Jan 28 11:44 2015

Quant Results File: MALLW.RES

Quant Method : M:\MAX\DATA\M150126\MALLW.M (RTE Integrator)
Title : METHOD 8260B
Last Update : Tue Jan 27 10:55:52 2015
Response via : Initial Calibration
DataAcq Meth : V8260

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene (IS)	6.78	96	245187	25.00000 ppb	0.00
55) Chlorobenzene-D5 (IS)	11.03	117	181396	25.00000 ppb	0.00
70) 1,4-Dichlorobenzene-D (IS)	14.36	152	102394	25.00000 ppb	0.00
System Monitoring Compounds					
31) Dibromofluoromethane(S)	5.79	111	43178	16.25762 ppb	0.00
Spiked Amount 14.625			Recovery	= 111.164%	
36) 1,2-DCA-D4(S)	6.26	65	47723	15.57076 ppb	0.00
Spiked Amount 13.533			Recovery	= 115.061%	
56) Toluene-D8(S)	9.03	98	175918	16.47206 ppb	0.00
Spiked Amount 14.976			Recovery	= 109.988%	
64) 4-Bromofluorobenzene(S)	12.71	95	66610	15.84702 ppb	0.00
Spiked Amount 14.557			Recovery	= 108.865%	
Target Compounds					Qvalue
5) Vinyl chloride	1.47	62	143641	235.82491 ppb	100
21) Trans-1,2-DCE	3.54	96	75943	139.69009 ppb	95
27) Cis-1,2-DCE	5.07	96	140884	225.71043 ppb	95
41) TCE	7.31	95	16103	27.56995 ppb	99
58) Tetrachloroethene	9.89	164	7534	24.12439 ppb	93

(#) = qualifier out of range (m) = manual integration

Quantitation Report

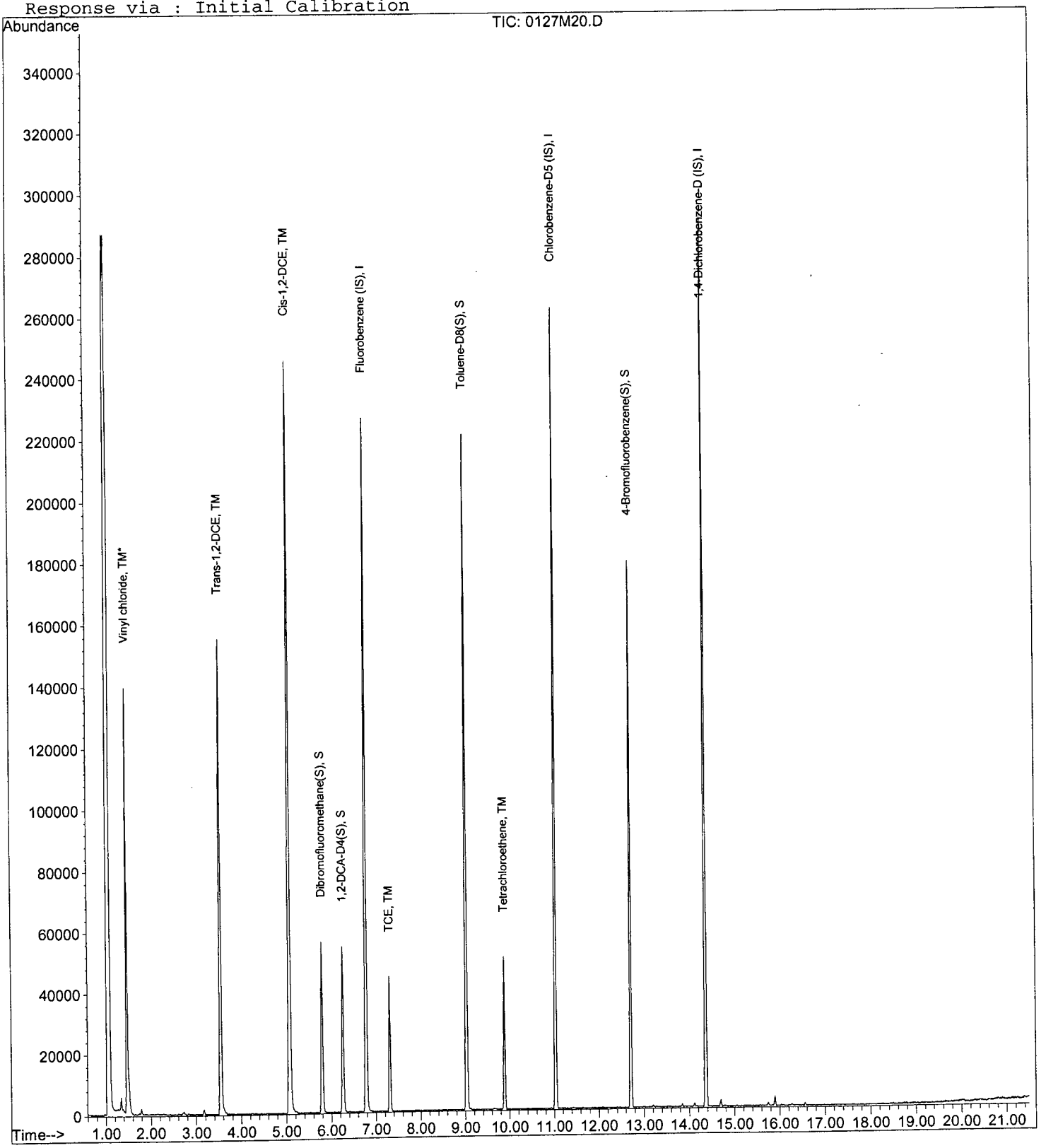
Data File : M:\MAX\DATA\M150126\0127M20.D
Acq On : 27 Jan 15 15:06
Sample : AZ09999W02 DF5
Misc : 10mL w/IS&S: 11-03-14

Vial: 13
Operator: DG,SV,RS
Inst : MAX
Multiplr: 5.00

Quant Time: Jan 28 11:44 2015

Quant Results File: MALLW.RES

Method : M:\MAX\DATA\M150126\MALLW.M (RTE Integrator)
Title : METHOD 8260B
Last Update : Tue Jan 27 10:55:52 2015
Response via : Initial Calibration



EPA 8260B WATER

Element Environmental
98-030 Hekaha St., Unit 9
Aiea, HI 96701

APPL Inc.
908 North Temperance Avenue
Clovis, CA 93611

Attn: Steve Spengler
Project: MCBH Motor Pool UST KB-100 SI / 130034
Sample ID: EKB100014
Sample Collection Date: 01/20/15

ARF: 75427
APPL ID: AZ10000
QCG: #86BKB-150123BM-193856

Method	Analyte	Result	LOQ	LOD	DL	Units	Extraction Date	Analysis Date
EPA 8260B	1,1,1-TRICHLOROETHANE	0.30 U	1.0	0.30	0.14	ug/L	01/24/15	01/24/15
EPA 8260B	1,1,2,2-TETRACHLOROETHANE	0.30 U	1.0	0.30	0.10	ug/L	01/24/15	01/24/15
EPA 8260B	1,1,2-TRICHLOROETHANE	0.50 U	1.0	0.50	0.20	ug/L	01/24/15	01/24/15
EPA 8260B	1,1-DICHLOROETHANE	0.30 U	1.0	0.30	0.19	ug/L	01/24/15	01/24/15
EPA 8260B	1,1-DICHLOROETHENE	0.41 J	1.0	0.50	0.30	ug/L	01/24/15	01/24/15
EPA 8260B	1,2,3-TRICHLOROPROPANE	1.00 U	2.0	1.00	0.39	ug/L	01/24/15	01/24/15
EPA 8260B	1,2-DIBROMOETHANE	0.50 U	1.0	0.50	0.20	ug/L	01/24/15	01/24/15
EPA 8260B	1,2-DICHLOROETHANE	0.30 U	1.0	0.30	0.14	ug/L	01/24/15	01/24/15
EPA 8260B	1,2-DICHLOROPROPANE	0.30 U	1.0	0.30	0.17	ug/L	01/24/15	01/24/15
EPA 8260B	2-BUTANONE	2.00 U	10.0	2.00	0.60	ug/L	01/24/15	01/24/15
EPA 8260B	4-METHYL-2-PENTANONE	5.00 U	10.0	5.00	1.90	ug/L	01/24/15	01/24/15
EPA 8260B	ACETONE	2.00 U	10.0	2.00	0.95	ug/L	01/24/15	01/24/15
EPA 8260B	BENZENE	0.30 U	1.0	0.30	0.16	ug/L	01/24/15	01/24/15
EPA 8260B	BROMODICHLOROMETHANE	0.30 U	1.0	0.30	0.14	ug/L	01/24/15	01/24/15
EPA 8260B	BROMOFORM	0.30 U	1.0	0.30	0.14	ug/L	01/24/15	01/24/15
EPA 8260B	BROMOMETHANE	0.50 U	2.0	0.50	0.24	ug/L	01/24/15	01/24/15
EPA 8260B	CARBON TETRACHLORIDE	0.30 U	1.0	0.30	0.10	ug/L	01/24/15	01/24/15
EPA 8260B	CHLOROBENZENE	0.50 U	1.0	0.50	0.21	ug/L	01/24/15	01/24/15
EPA 8260B	CHLOROETHANE	0.50 U	1.0	0.50	0.21	ug/L	01/24/15	01/24/15
EPA 8260B	CHLOROFORM	0.30 U	1.0	0.30	0.07	ug/L	01/24/15	01/24/15
EPA 8260B	CHLOROMETHANE	0.50 U	1.0	0.50	0.42	ug/L	01/24/15	01/24/15
EPA 8260B	CIS-1,2-DICHLOROETHENE	240 E	1.0	0.30	0.16	ug/L	01/24/15	01/24/15
EPA 8260B	CIS-1,3-DICHLOROPROPENE	0.30 U	1.0	0.30	0.15	ug/L	01/24/15	01/24/15
EPA 8260B	DIBROMOCHLOROMETHANE	0.30 U	1.0	0.30	0.19	ug/L	01/24/15	01/24/15
EPA 8260B	ETHYLBENZENE	0.50 U	1.0	0.50	0.23	ug/L	01/24/15	01/24/15
EPA 8260B	METHYLENE CHLORIDE	1.00 U	5.0	1.00	0.35	ug/L	01/24/15	01/24/15
EPA 8260B	STYRENE	0.50 U	1.0	0.50	0.25	ug/L	01/24/15	01/24/15
EPA 8260B	TETRACHLOROETHENE	26	1.0	0.30	0.24	ug/L	01/24/15	01/24/15
EPA 8260B	TOLUENE	0.30 U	1.0	0.30	0.17	ug/L	01/24/15	01/24/15
EPA 8260B	TRANS-1,2-DICHLOROETHENE	150 E	1.0	0.30	0.19	ug/L	01/24/15	01/24/15
EPA 8260B	TRANS-1,3-DICHLOROPROPENE	0.30 U	1.0	0.30	0.18	ug/L	01/24/15	01/24/15
EPA 8260B	TRICHLOROETHENE	30	1.0	0.30	0.16	ug/L	01/24/15	01/24/15
EPA 8260B	VINYL CHLORIDE	250 E	1.0	0.30	0.23	ug/L	01/24/15	01/24/15
EPA 8260B	XYLENES (TOTAL)	0.30 U	2.0	0.30	0.19	ug/L	01/24/15	01/24/15
EPA 8260B	SURROGATE: 1,2-DICHLOROETHANE	110	70-120			%	01/24/15	01/24/15

J = Estimated value.
E = The reported value exceeds linear range.

Quant Method: MALLW.M
Run #: 0123M52
Instrument: MAX
Sequence: M150119
Dilution Factor: 1
Initials: DG

Printed: 01/28/15 2:12:07 PM
APPL-F1-SC-NoMC-REG MDLs

EPA 8260B WATER

Element Environmental
98-030 Hekaha St., Unit 9
Aiea, HI 96701

APPL Inc.
908 North Temperance Avenue
Clovis, CA 93611

Attn: Steve Spengler
Project: MCBH Motor Pool UST KB-100 SI / 130034
Sample ID: EKB100014
Sample Collection Date: 01/20/15

ARF: 75427
APPL ID: AZ10000
QCG: #86BKB-150123BM-193856

Method	Analyte	Result	LOQ	LOD	DL	Units	Extraction Date	Analysis Date
EPA 8260B	SURROGATE: 4-BROMOFLUOROBEN	102	75-120			%	01/24/15	01/24/15
EPA 8260B	SURROGATE: DIBROMOFLUOROMET	103	85-115			%	01/24/15	01/24/15
EPA 8260B	SURROGATE: TOLUENE-D8 (S)	102	85-120			%	01/24/15	01/24/15

J = Estimated value.
E = The reported value exceeds linear range.

Quant Method: MALLW.M
Run #: 0123M52
Instrument: MAX
Sequence: M150119
Dilution Factor: 1
Initials: DG

Printed: 01/28/15 2:12:07 PM
APPL-F1-SC-NoMC-REG MDLs

Quantitation Report (QT Reviewed)

Data File : M:\MAX\DATA\M150119\0123M52.D
Acq On : 24 Jan 15 7:22
Sample : AZ10000W01
Misc : 10mL w/IS&S: 11-03-14

Vial: 42
Operator: DG,SV,RS
Inst : MAX
Multiplr: 1.00

Quant Time: Jan 26 13:41 2015 Quant Results File: MALLW.RES

Quant Method : M:\MAX\DATA\M150119\MALLW.M (RTE Integrator)
Title : METHOD 8260B
Last Update : Wed Jan 21 13:18:25 2015
Response via : Initial Calibration
DataAcq Meth : V8260

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene (IS)	6.78	96	278007	25.00000 ppb	0.00
55) Chlorobenzene-D5 (IS)	11.03	117	204606	25.00000 ppb	0.00
70) 1,4-Dichlorobenzene-D (IS)	14.37	152	113127	25.00000 ppb	0.00
System Monitoring Compounds					
31) Dibromofluoromethane(S)	5.79	111	41191	14.43386 ppb	0.00
Spiked Amount 14.019			Recovery	= 102.963%	
36) 1,2-DCA-D4(S)	6.26	65	44006	14.58540 ppb	0.00
Spiked Amount 13.317			Recovery	= 109.523%	
56) Toluene-D8(S)	9.03	98	174947	14.66747 ppb	0.00
Spiked Amount 14.391			Recovery	= 101.918%	
64) 4-Bromofluorobenzene(S)	12.71	95	66793	14.35170 ppb	0.00
Spiked Amount 14.078			Recovery	= 101.944%	
Target Compounds					Qvalue
5) Vinyl chloride	1.47	62	895604	248.61541 ppb E	99
13) 1,1-DCE	2.60	61	890	0.40541 ppb	87
21) Trans-1,2-DCE	3.54	96	470639	152.25997 ppb E	99
27) Cis-1,2-DCE	5.07	96	837558	239.14019 ppb E	96
41) TCE	7.31	95	97442	30.17043 ppb	98
58) Tetrachloroethene	9.89	164	45160	25.92578 ppb	99
78) 2-Chlorotoluene	13.20	91	3438	0.31848 ppb	85
81) Tert-Butylbenzene	13.84	119	3814	0.31883 ppb	93

pb 1/26/15

(#) = qualifier out of range (m) = manual integration

Quantitation Report

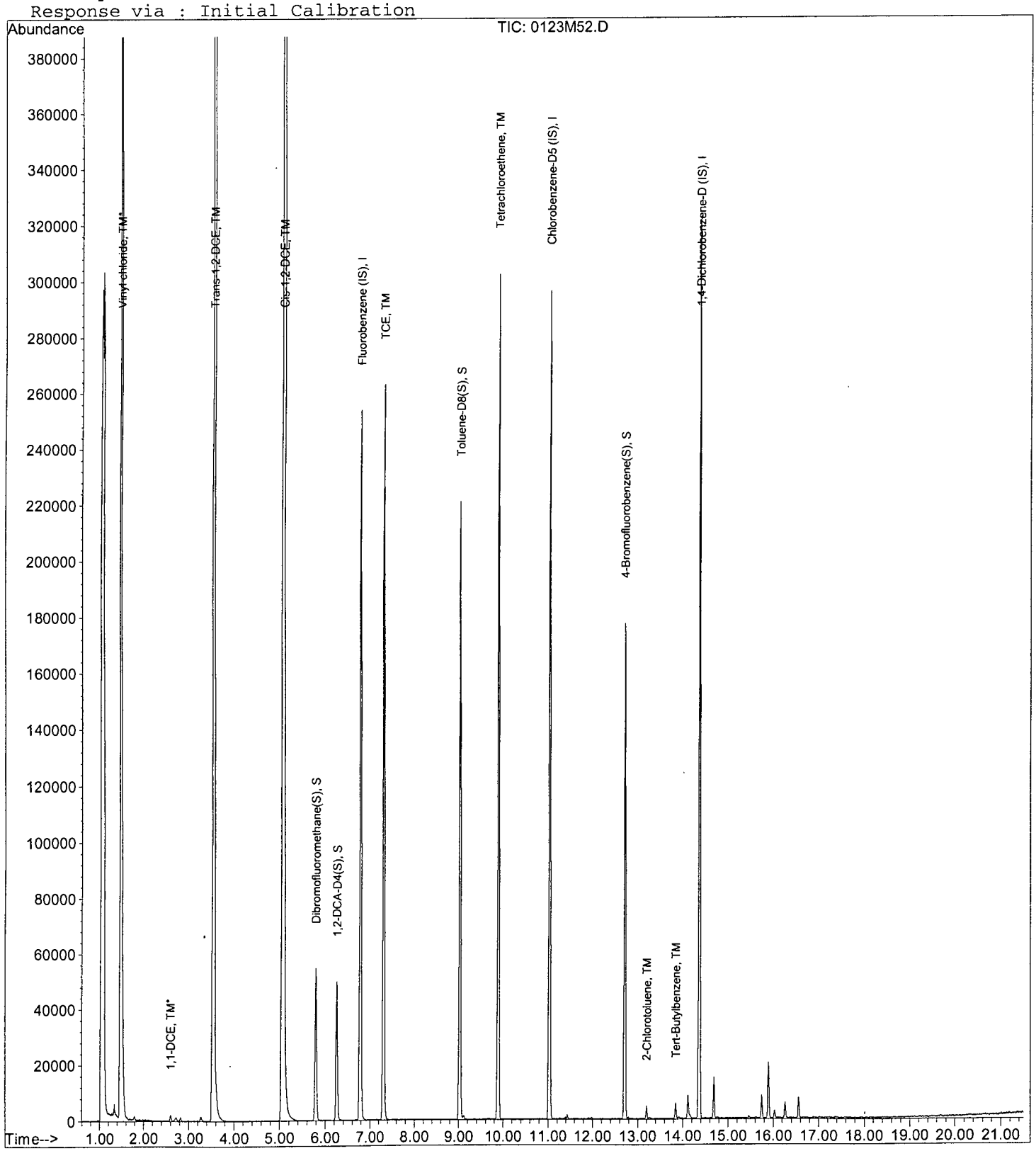
Data File : M:\MAX\DATA\M150119\0123M52.D
Acq On : 24 Jan 15 7:22
Sample : AZ10000W01
Misc : 10mL w/IS&S: 11-03-14

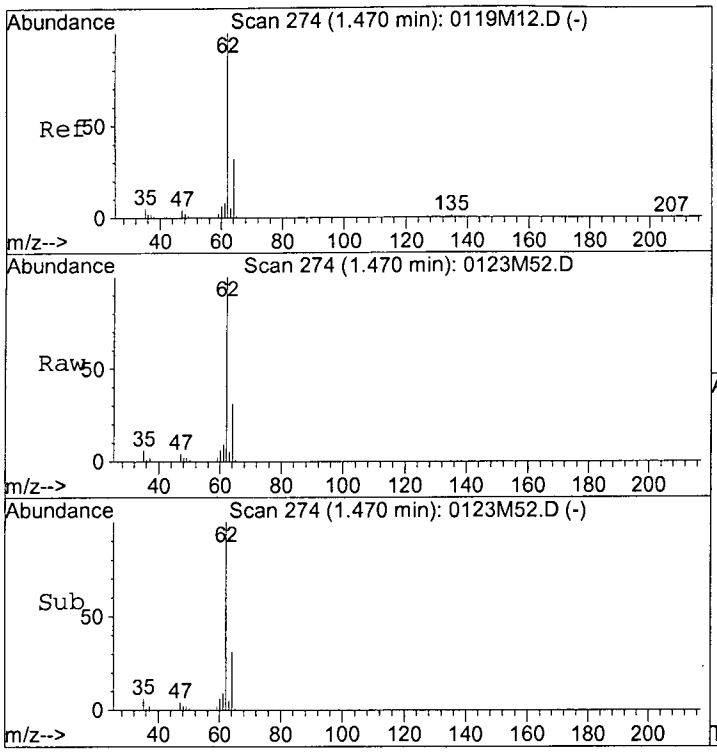
Vial: 42
Operator: DG,SV,RS
Inst : MAX
Multiplr: 1.00

Quant Time: Jan 26 13:41 2015

Quant Results File: MALLW.RES

Method : M:\MAX\DATA\M150119\MALLW.M (RTE Integrator)
Title : METHOD 8260B
Last Update : Wed Jan 21 13:18:25 2015
Response via : Initial Calibration

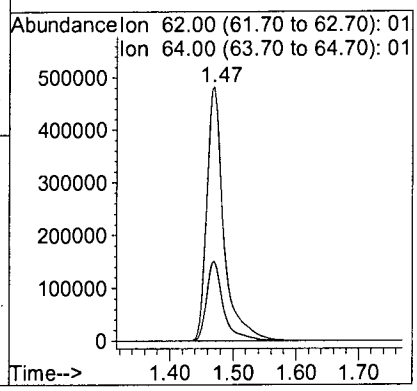


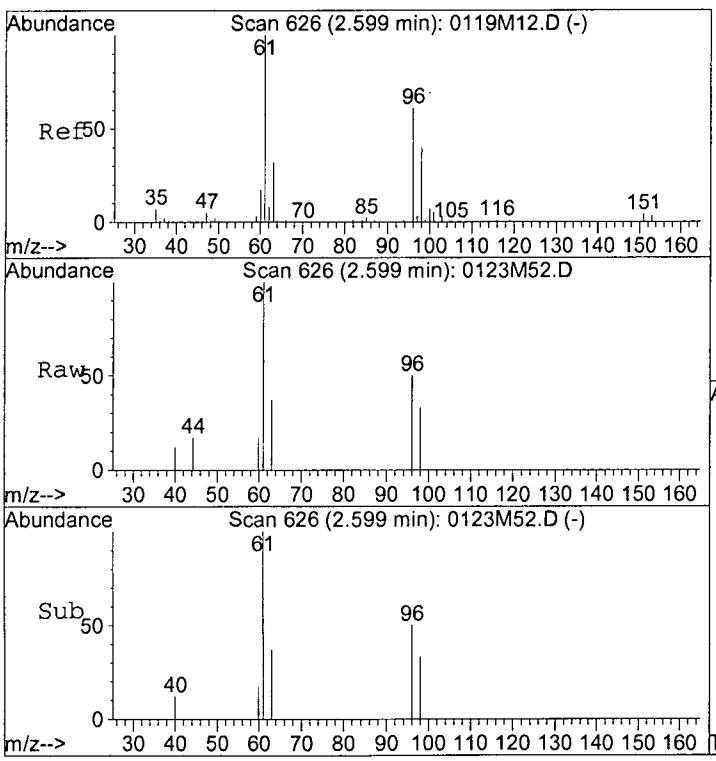


#5
Vinyl chloride
Concen: 248.61541 ppb
RT: 1.47 min Scan# 274
Delta R.T. 0.00 min
Lab File: 0123M52.D
Acq: 24 Jan 15 7:22

Tgt Ion: 62 Resp: 895604

Ion	Ratio	Lower	Upper
62	100		
64	31.4	22.5	41.9

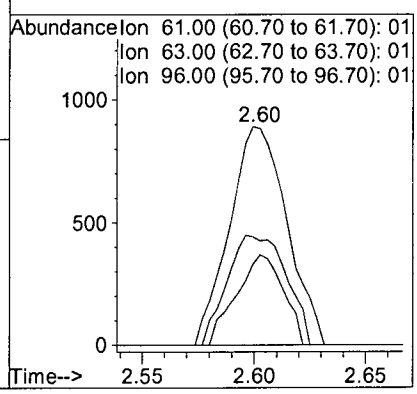


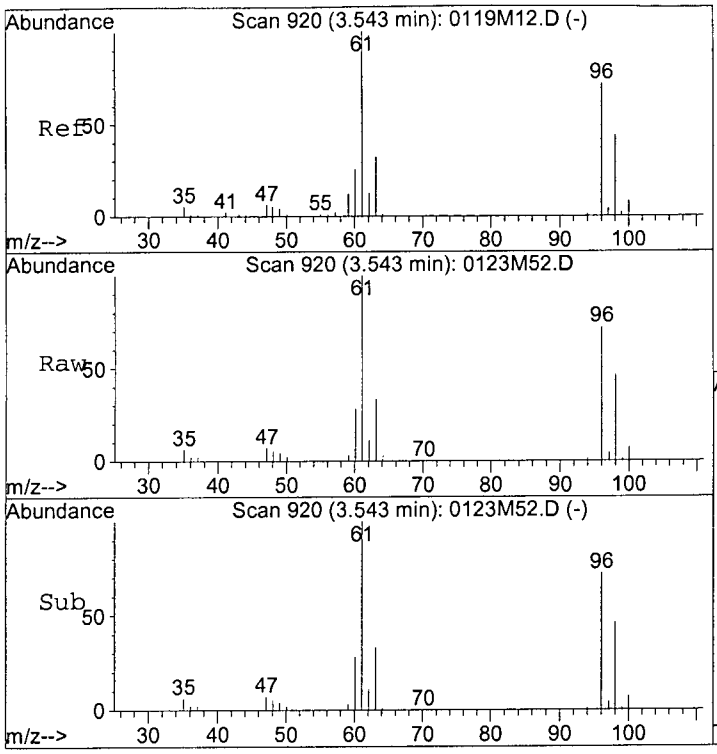


#13
1,1-DCE
Concen: 0.40541 ppb
RT: 2.60 min Scan# 626
Delta R.T. 0.00 min
Lab File: 0123M52.D
Acq: 24 Jan 15 7:22

Tgt Ion: 61 Resp: 890

Ion	Ratio	Lower	Upper
61	100		
63	37.2	25.9	38.9
96	49.7	49.0	73.6

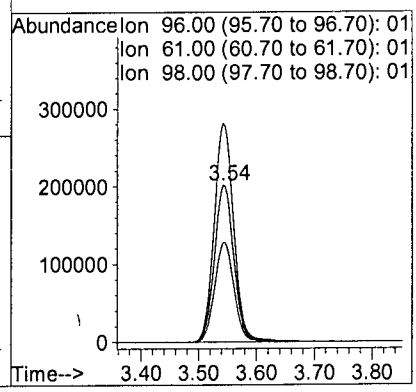


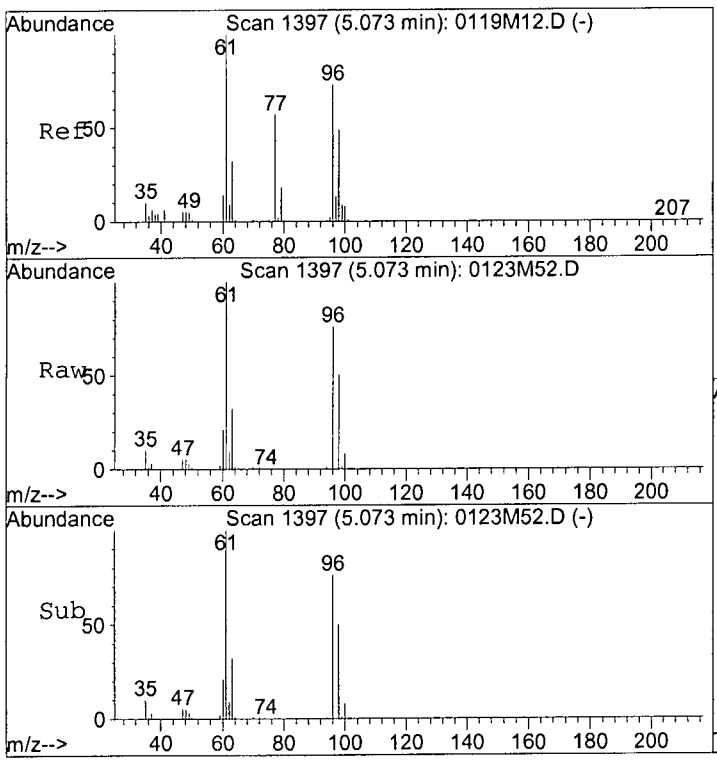


#21
Trans-1,2-DCE
Concen: 152.25997 ppb
RT: 3.54 min Scan# 920
Delta R.T. 0.00 min
Lab File: 0123M52.D
Acq: 24 Jan 15 7:22

Tgt Ion: 96 Resp: 470639

Ion	Ratio	Lower	Upper
96	100		
61	139.3	97.2	180.6
98	63.4	43.1	80.1

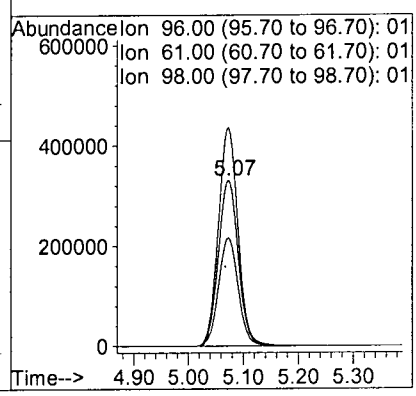


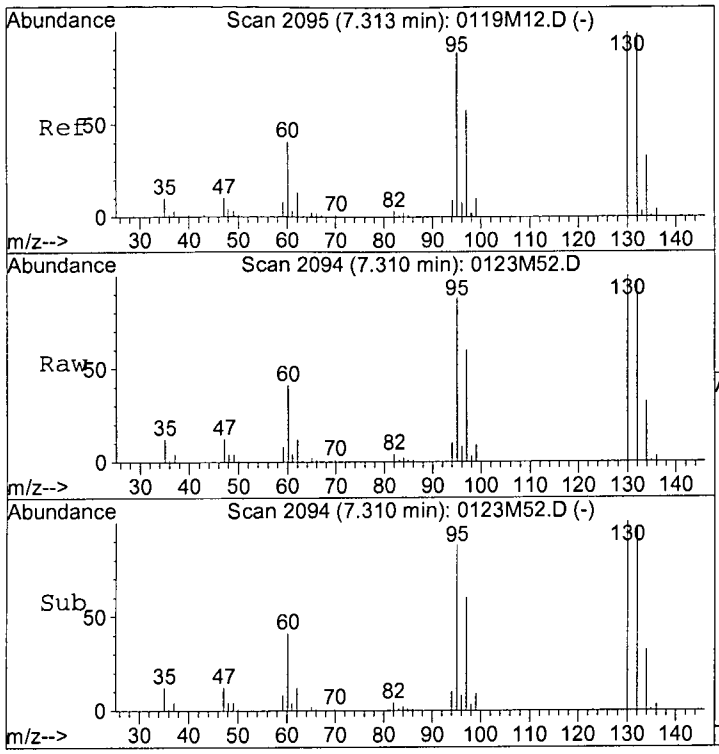


#27
Cis-1,2-DCE
Concen: 239.14019 ppb
RT: 5.07 min Scan# 1397
Delta R.T. 0.00 min
Lab File: 0123M52.D
Acq: 24 Jan 15 7:22

Tgt Ion: 96 Resp: 837558

Ion	Ratio	Lower	Upper
96	100		
61	131.6	96.7	179.5
98	65.4	46.8	86.8

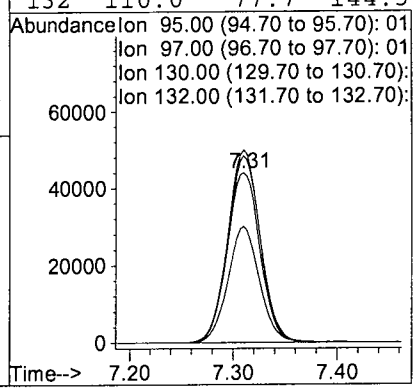


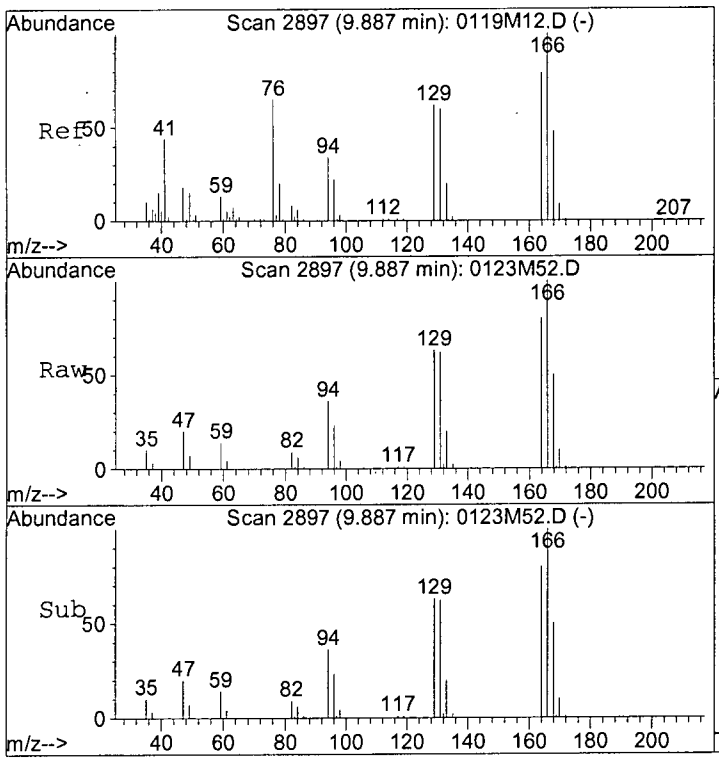


#41
TCE
Concen: 30.17043 ppb
RT: 7.31 min Scan# 2094
Delta R.T. -0.00 min
Lab File: 0123M52.D
Acq: 24 Jan 15 7:22

Tgt Ion: 95 Resp: 97442

Ion	Ratio	Lower	Upper
95	100		
97	68.5	45.4	84.4
130	113.4	78.8	146.3
132	110.0	77.7	144.3

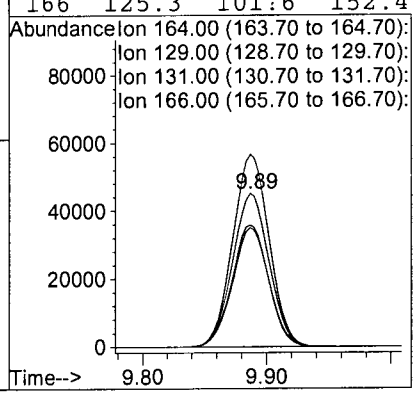


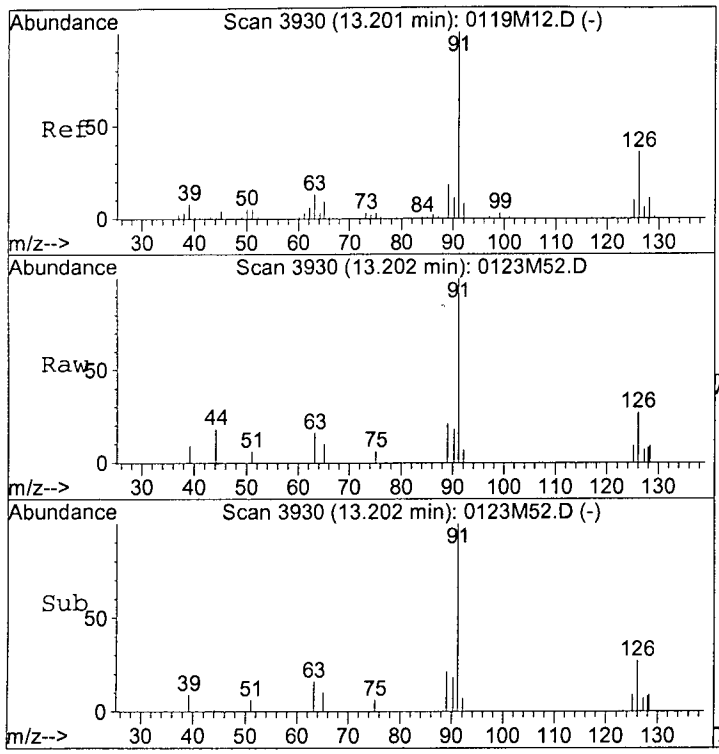


#58
Tetrachloroethene
Concen: 25.92578 ppb
RT: 9.89 min Scan# 2897
Delta R.T. 0.00 min
Lab File: 0123M52.D
Acq: 24 Jan 15 7:22

Tgt Ion:164 Resp: 45160

Ion	Ratio	Lower	Upper
164	100		
129	79.3	63.1	94.7
131	77.6	61.4	92.2
166	125.3	101.6	152.4

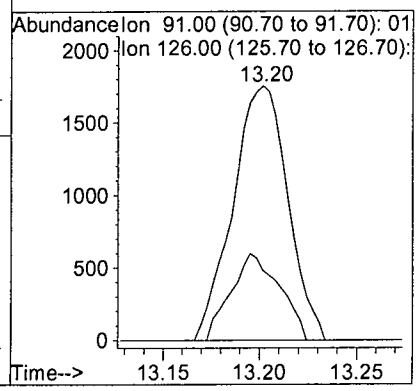


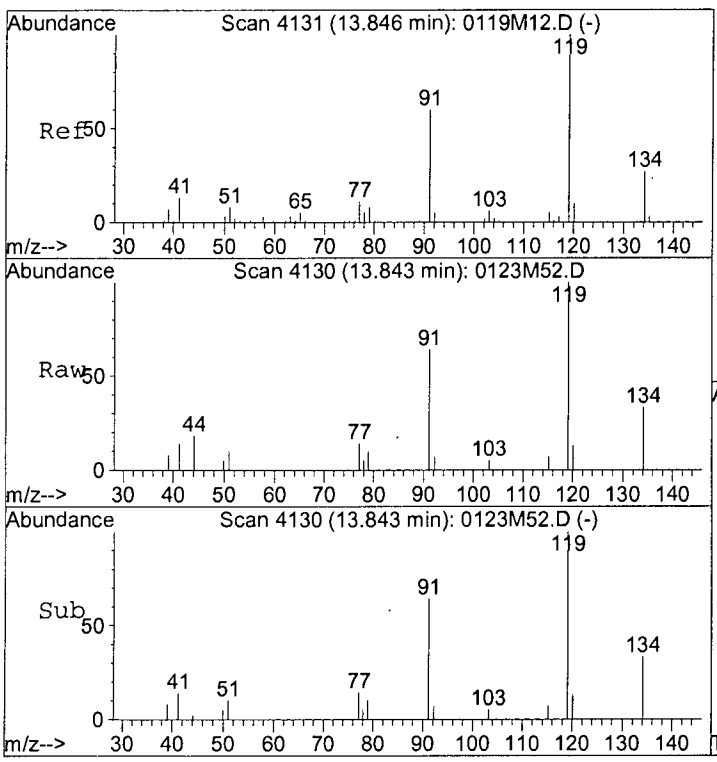


#78
2-Chlorotoluene
Concen: 0.31848 ppb
RT: 13.20 min Scan# 3930
Delta R.T. 0.00 min
Lab File: 0123M52.D
Acq: 24 Jan 15 7:22

Tgt Ion: 91 Resp: 3438

Ion	Ratio	Lower	Upper
91	100		
126	27.4	25.3	46.9

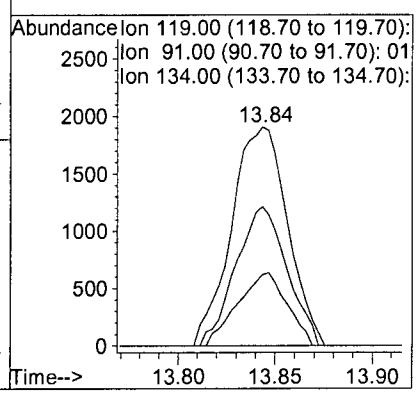




#81
Tert-Butylbenzene
Concen: 0.31883 ppb
RT: 13.84 min Scan# 4130
Delta R.T. -0.00 min
Lab File: 0123M52.D
Acq: 24 Jan 15 7:22

Tgt Ion:119 Resp: 3814

Ion	Ratio	Lower	Upper
119	100		
91	63.7	42.0	78.0
134	32.5	18.8	35.0



EPA 8260B WATER DILUTION

Element Environmental
98-030 Hekaha St., Unit 9
Aiea, HI 96701

APPL Inc.
908 North Temperance Avenue
Clovis, CA 93611

Attn: Steve Spengler
Project: MCBH Motor Pool UST KB-100 SI / 130034
Sample ID: EKB100014
Sample Collection Date: 01/20/15

ARF: 75427
APPL ID: AZ10000
QCG: #86BKB-150127AM-193857

Method	Analyte	Result	LOQ	LOD	DL	Units	Extraction Date	Analysis Date
EPA 8260B	CIS-1,2-DICHLOROETHENE	220	5.0	1.50	0.80	ug/L	01/27/15	01/27/15
EPA 8260B	TRANS-1,2-DICHLOROETHENE	140	5.0	1.50	0.95	ug/L	01/27/15	01/27/15
EPA 8260B	VINYL CHLORIDE	230	5.0	1.50	1.15	ug/L	01/27/15	01/27/15
EPA 8260B	SURROGATE: 1,2-DICHLOROETHANE	114	70-120			%	01/27/15	01/27/15
EPA 8260B	SURROGATE: 4-BROMOFLUOROBEN	111	75-120			%	01/27/15	01/27/15
EPA 8260B	SURROGATE: DIBROMOFLUOROMET	109	85-115			%	01/27/15	01/27/15
EPA 8260B	SURROGATE: TOLUENE-D8 (S)	107	85-120			%	01/27/15	01/27/15

Quant Method: MALLW.M
Run #: 0127M21
Instrument: MAX
Sequence: M150126
Dilution Factor: 5
Initials: DG

Printed: 01/28/15 2:12:58 PM
APPL-F1-SC-NoMC-REG MDLs

Quantitation Report (QT Reviewed)

Data File : M:\MAX\DATA\M150126\0127M21.D
Acq On : 27 Jan 15 15:34
Sample : AZ10000W02 DF5
Misc : 10mL w/IS&S: 11-03-14

Vial: 14
Operator: DG,SV,RS
Inst : MAX
Multiplr: 5.00

Quant Time: Jan 28 11:45 2015 Quant Results File: MALLW.RES

Quant Method : M:\MAX\DATA\M150126\MALLW.M (RTE Integrator)
Title : METHOD 8260B
Last Update : Tue Jan 27 10:55:52 2015
Response via : Initial Calibration
DataAcq Meth : V8260

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene (IS)	6.78	96	251230	25.00000 ppb	0.00
55) Chlorobenzene-D5 (IS)	11.03	117	185961	25.00000 ppb	0.00
70) 1,4-Dichlorobenzene-D (IS)	14.37	152	104216	25.00000 ppb	0.00
System Monitoring Compounds					
31) Dibromofluoromethane(S)	5.79	111	43246	15.89155 ppb	0.00
Spiked Amount 14.625			Recovery	= 108.662%	
36) 1,2-DCA-D4(S)	6.26	65	48418	15.41753 ppb	0.00
Spiked Amount 13.533			Recovery	= 113.931%	
56) Toluene-D8(S)	9.03	98	175631	16.04148 ppb	0.00
Spiked Amount 14.976			Recovery	= 107.110%	
64) 4-Bromofluorobenzene(S)	12.71	95	69604	16.15281 ppb	0.00
Spiked Amount 14.557			Recovery	= 110.968%	
Target Compounds					Qvalue
5) Vinyl chloride	1.47	62	144788	231.99027 ppb	99
21) Trans-1,2-DCE	3.54	96	76169	136.73574 ppb	96
27) Cis-1,2-DCE	5.07	96	140940	220.36883 ppb	97
41) TCE	7.31	95	15953	26.65616 ppb	98
58) Tetrachloroethene	9.89	164	7471	23.33541 ppb	98

(#) = qualifier out of range (m) = manual integration

Quantitation Report

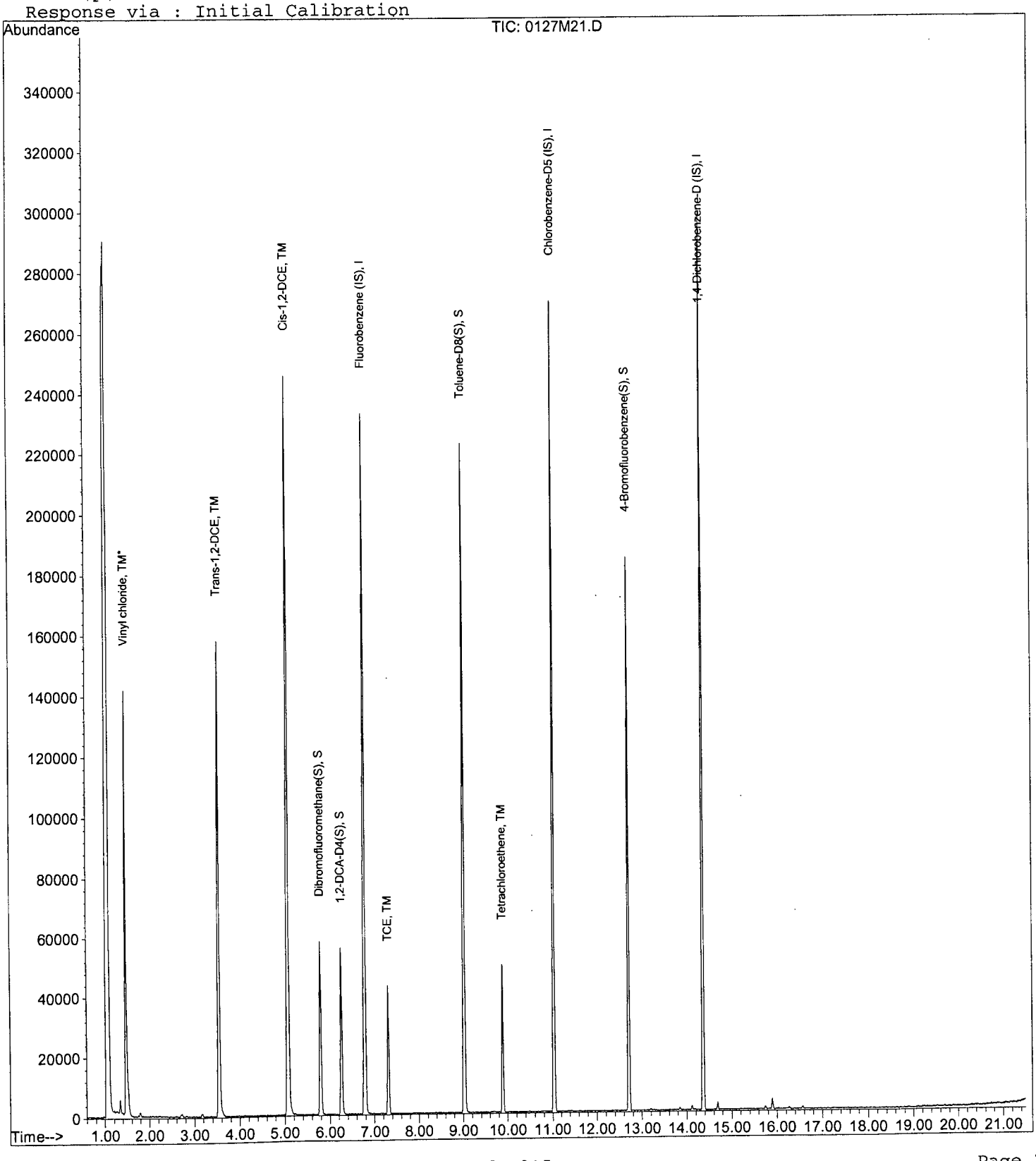
Data File : M:\MAX\DATA\M150126\0127M21.D
Acq On : 27 Jan 15 15:34
Sample : AZ10000W02 DF5
Misc : 10mL w/IS&S: 11-03-14

Vial: 14
Operator: DG,SV,RS
Inst : MAX
Multiplr: 5.00

Quant Time: Jan 28 11:45 2015

Quant Results File: MALLW.RES

Method : M:\MAX\DATA\M150126\MALLW.M (RTE Integrator)
Title : METHOD 8260B
Last Update : Tue Jan 27 10:55:52 2015
Response via : Initial Calibration



EPA 8260B WATER

Element Environmental
98-030 Hekaha St., Unit 9
Aiea, HI 96701

APPL Inc.
908 North Temperance Avenue
Clovis, CA 93611

Attn: Steve Spengler
Project: MCBH Motor Pool UST KB-100 SI / 130034
Sample ID: EKB100015
Sample Collection Date: 01/20/15

ARF: 75427
APPL ID: AZ10001
QCG: #86BKB-150123BM-193856

Method	Analyte	Result	LOQ	LOD	DL	Units	Extraction Date	Analysis Date
EPA 8260B	1,1,1-TRICHLOROETHANE	0.30 U	1.0	0.30	0.14	ug/L	01/24/15	01/24/15
EPA 8260B	1,1,2,2-TETRACHLOROETHANE	0.30 U	1.0	0.30	0.10	ug/L	01/24/15	01/24/15
EPA 8260B	1,1,2-TRICHLOROETHANE	0.50 U	1.0	0.50	0.20	ug/L	01/24/15	01/24/15
EPA 8260B	1,1-DICHLOROETHANE	0.30 U	1.0	0.30	0.19	ug/L	01/24/15	01/24/15
EPA 8260B	1,1-DICHLOROETHENE	0.50 U	1.0	0.50	0.30	ug/L	01/24/15	01/24/15
EPA 8260B	1,2,3-TRICHLOROPROPANE	1.00 U	2.0	1.00	0.39	ug/L	01/24/15	01/24/15
EPA 8260B	1,2-DIBROMOETHANE	0.50 U	1.0	0.50	0.20	ug/L	01/24/15	01/24/15
EPA 8260B	1,2-DICHLOROETHANE	0.30 U	1.0	0.30	0.14	ug/L	01/24/15	01/24/15
EPA 8260B	1,2-DICHLOROPROPANE	0.30 U	1.0	0.30	0.17	ug/L	01/24/15	01/24/15
EPA 8260B	2-BUTANONE	2.00 U	10.0	2.00	0.60	ug/L	01/24/15	01/24/15
EPA 8260B	4-METHYL-2-PENTANONE	5.00 U	10.0	5.00	1.90	ug/L	01/24/15	01/24/15
EPA 8260B	ACETONE	2.00 U	10.0	2.00	0.95	ug/L	01/24/15	01/24/15
EPA 8260B	BENZENE	0.30 U	1.0	0.30	0.16	ug/L	01/24/15	01/24/15
EPA 8260B	BROMODICHLOROMETHANE	0.30 U	1.0	0.30	0.14	ug/L	01/24/15	01/24/15
EPA 8260B	BROMOFORM	0.30 U	1.0	0.30	0.14	ug/L	01/24/15	01/24/15
EPA 8260B	BROMOMETHANE	0.50 U	2.0	0.50	0.24	ug/L	01/24/15	01/24/15
EPA 8260B	CARBON TETRACHLORIDE	0.30 U	1.0	0.30	0.10	ug/L	01/24/15	01/24/15
EPA 8260B	CHLOROBENZENE	0.50 U	1.0	0.50	0.21	ug/L	01/24/15	01/24/15
EPA 8260B	CHLOROETHANE	0.50 U	1.0	0.50	0.21	ug/L	01/24/15	01/24/15
EPA 8260B	CHLOROFORM	0.30 U	1.0	0.30	0.07	ug/L	01/24/15	01/24/15
EPA 8260B	CHLOROMETHANE	0.50 U	1.0	0.50	0.42	ug/L	01/24/15	01/24/15
EPA 8260B	CIS-1,2-DICHLOROETHENE	23	1.0	0.30	0.16	ug/L	01/24/15	01/24/15
EPA 8260B	CIS-1,3-DICHLOROPROPENE	0.30 U	1.0	0.30	0.15	ug/L	01/24/15	01/24/15
EPA 8260B	DIBROMOCHLOROMETHANE	0.30 U	1.0	0.30	0.19	ug/L	01/24/15	01/24/15
EPA 8260B	ETHYLBENZENE	0.50 U	1.0	0.50	0.23	ug/L	01/24/15	01/24/15
EPA 8260B	METHYLENE CHLORIDE	1.00 U	5.0	1.00	0.35	ug/L	01/24/15	01/24/15
EPA 8260B	STYRENE	0.50 U	1.0	0.50	0.25	ug/L	01/24/15	01/24/15
EPA 8260B	TETRACHLOROETHENE	1.2	1.0	0.30	0.24	ug/L	01/24/15	01/24/15
EPA 8260B	TOLUENE	0.30 U	1.0	0.30	0.17	ug/L	01/24/15	01/24/15
EPA 8260B	TRANS-1,2-DICHLOROETHENE	26	1.0	0.30	0.19	ug/L	01/24/15	01/24/15
EPA 8260B	TRANS-1,3-DICHLOROPROPENE	0.30 U	1.0	0.30	0.18	ug/L	01/24/15	01/24/15
EPA 8260B	TRICHLOROETHENE	0.30 J	1.0	0.30	0.16	ug/L	01/24/15	01/24/15
EPA 8260B	VINYL CHLORIDE	0.47 J	1.0	0.30	0.23	ug/L	01/24/15	01/24/15
EPA 8260B	XYLENES (TOTAL)	0.30 U	2.0	0.30	0.19	ug/L	01/24/15	01/24/15
EPA 8260B	SURROGATE: 1,2-DICHLOROETHANE	111	70-120			%	01/24/15	01/24/15

J = Estimated value.

Quant Method: MALLW.M
Run #: 0123M53
Instrument: MAX
Sequence: M150119
Dilution Factor: 1
Initials: DG

Printed: 01/28/15 2:12:08 PM
APPL-F1-SC-NoMC-REG MDLs

EPA 8260B WATER

Element Environmental
98-030 Hekaha St., Unit 9
Aiea, HI 96701

APPL Inc.
908 North Temperance Avenue
Clovis, CA 93611

Attn: Steve Spengler
Project: MCBH Motor Pool UST KB-100 SI / 130034
Sample ID: EKB100015
Sample Collection Date: 01/20/15

ARF: 75427
APPL ID: AZ10001
QCG: #86BKB-150123BM-193856

Method	Analyte	Result	LOQ	LOD	DL	Units	Extraction Date	Analysis Date
EPA 8260B	SURROGATE: 4-BROMOFLUOROBEN	101	75-120			%	01/24/15	01/24/15
EPA 8260B	SURROGATE: DIBROMOFLUOROMET	104	85-115			%	01/24/15	01/24/15
EPA 8260B	SURROGATE: TOLUENE-D8 (S)	103	85-120			%	01/24/15	01/24/15

J = Estimated value.

Quant Method: MALLW.M
Run #: 0123M53
Instrument: MAX
Sequence: M150119
Dilution Factor: 1
Initials: DG

Printed: 01/28/15 2:12:08 PM
APPL-F1-SC-NoMC-REG MDLs

Quantitation Report (QT Reviewed)

Data File : M:\MAX\DATA\M150119\0123M53.D
Acq On : 24 Jan 15 7:49
Sample : AZ10001W01
Misc : 10mL w/IS&S: 11-03-14

Vial: 43
Operator: DG,SV,RS
Inst : MAX
Multiplr: 1.00

Quant Time: Jan 26 13:42 2015 Quant Results File: MALLW.RES

Quant Method : M:\MAX\DATA\M150119\MALLW.M (RTE Integrator)
Title : METHOD 8260B
Last Update : Wed Jan 21 13:18:25 2015
Response via : Initial Calibration
DataAcq Meth : V8260

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene (IS)	6.78	96	283433	25.00000 ppb	0.00
55) Chlorobenzene-D5 (IS)	11.03	117	208932	25.00000 ppb	0.00
70) 1,4-Dichlorobenzene-D (IS)	14.37	152	116172	25.00000 ppb	0.00
System Monitoring Compounds					
31) Dibromofluoromethane(S)	5.79	111	42460	14.59370 ppb	0.00
Spiked Amount 14.019			Recovery	= 104.105%	
36) 1,2-DCA-D4(S)	6.25	65	45417	14.76489 ppb	0.00
Spiked Amount 13.317			Recovery	= 110.875%	
56) Toluene-D8(S)	9.03	98	179936	14.77339 ppb	0.00
Spiked Amount 14.391			Recovery	= 102.654%	
64) 4-Bromofluorobenzene(S)	12.71	95	67851	14.27716 ppb	0.00
Spiked Amount 14.078			Recovery	= 101.411%	
Target Compounds					Qvalue
5) Vinyl chloride	1.47	62	1738	0.47322 ppb	93
21) Trans-1,2-DCE	3.54	96	80654	25.59346 ppb	98
27) Cis-1,2-DCE	5.07	96	83559	23.40110 ppb	93
41) TCE	7.31	95	998	0.30309 ppb #	83
58) Tetrachloroethene	9.89	164	2077	1.16769 ppb	97

(#) = qualifier out of range (m) = manual integration

Quantitation Report

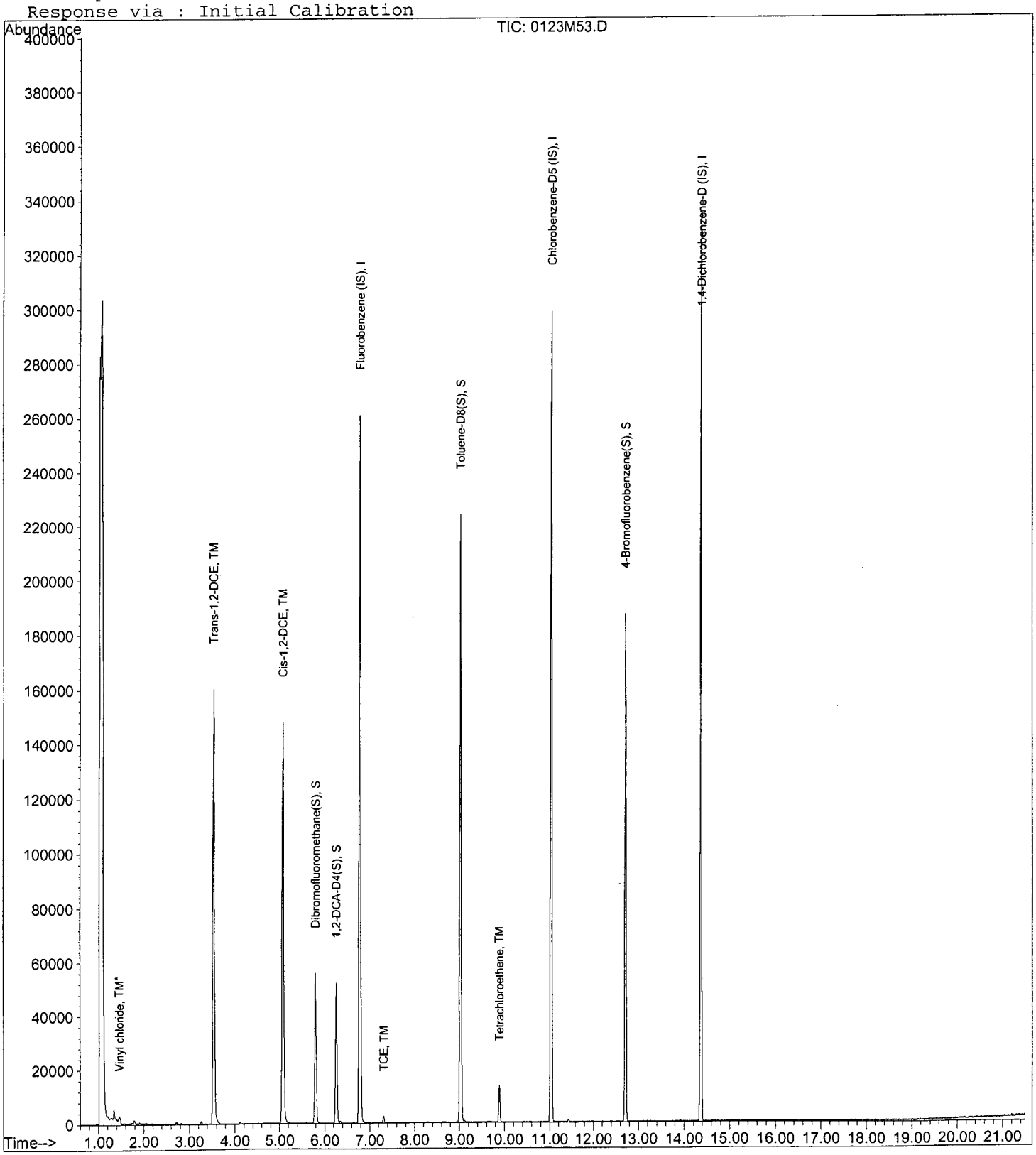
Data File : M:\MAX\DATA\M150119\0123M53.D
Acq On : 24 Jan 15 7:49
Sample : AZ10001W01
Misc : 10mL w/IS&S: 11-03-14

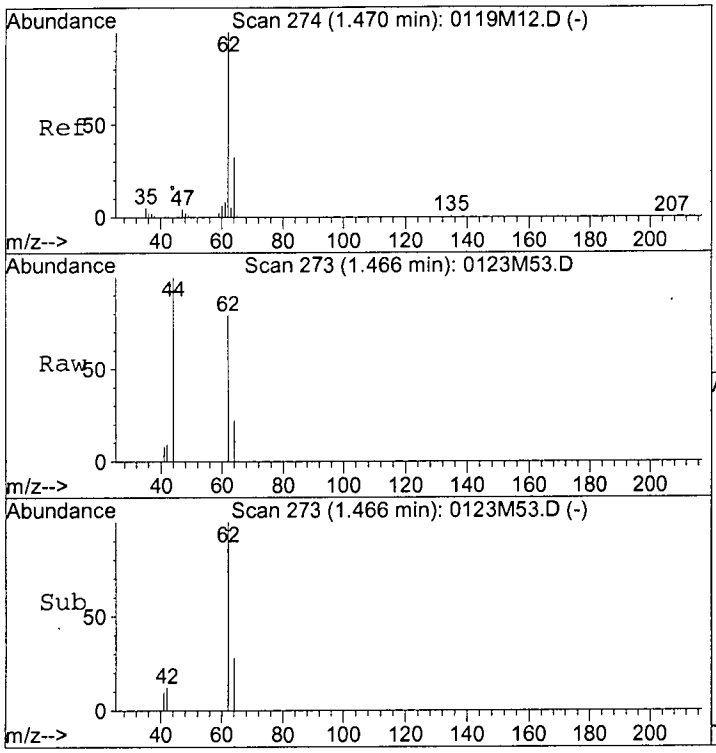
Vial: 43
Operator: DG,SV,RS
Inst : MAX
Multiplr: 1.00

Quant Time: Jan 26 13:42 2015

Quant Results File: MALLW.RES

Method : M:\MAX\DATA\M150119\MALLW.M (RTE Integrator)
Title : METHOD 8260B
Last Update : Wed Jan 21 13:18:25 2015
Response via : Initial Calibration

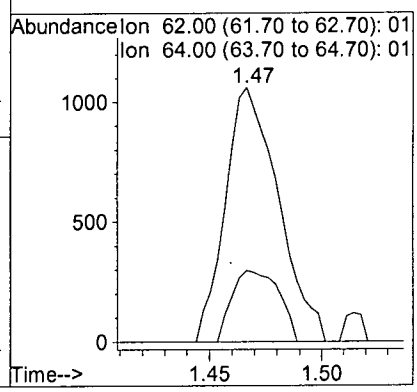


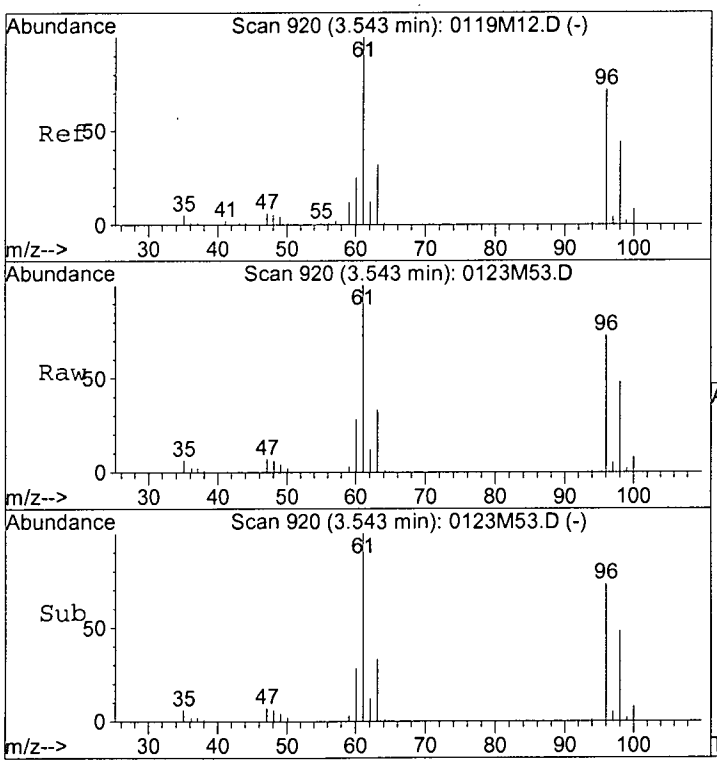


#5
Vinyl chloride
Concen: 0.47322 ppb
RT: 1.47 min Scan# 273
Delta R.T. -0.00 min
Lab File: 0123M53.D
Acq: 24 Jan 15 7:49

Tgt Ion: 62 Resp: 1738

Ion	Ratio	Lower	Upper
62	100		
64	28.1	22.5	41.9

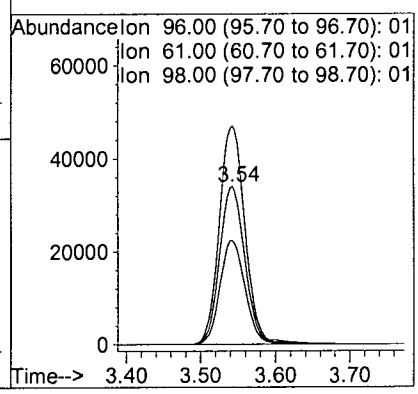


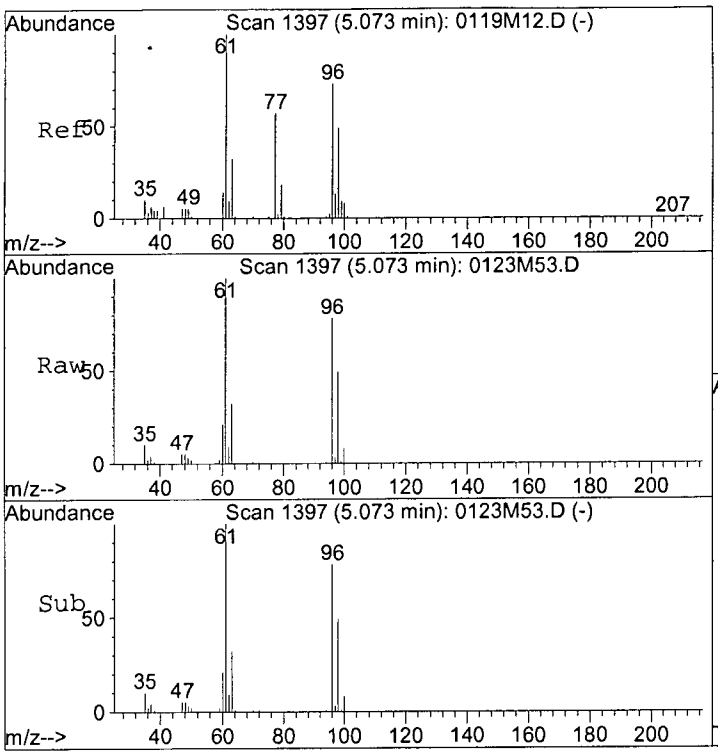


#21
Trans-1,2-DCE
Concen: 25.59346 ppb
RT: 3.54 min Scan# 920
Delta R.T. 0.00 min
Lab File: 0123M53.D
Acq: 24 Jan 15 7:49

Tgt Ion: 96 Resp: 80654

Ion	Ratio	Lower	Upper
96	100		
61	137.7	97.2	180.6
98	65.5	43.1	80.1

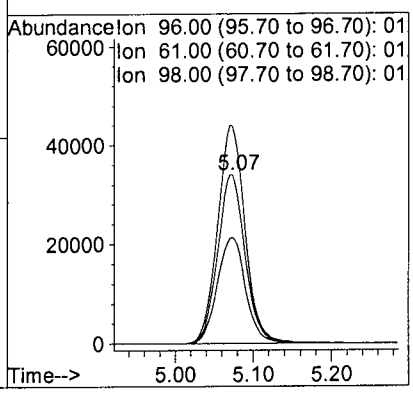


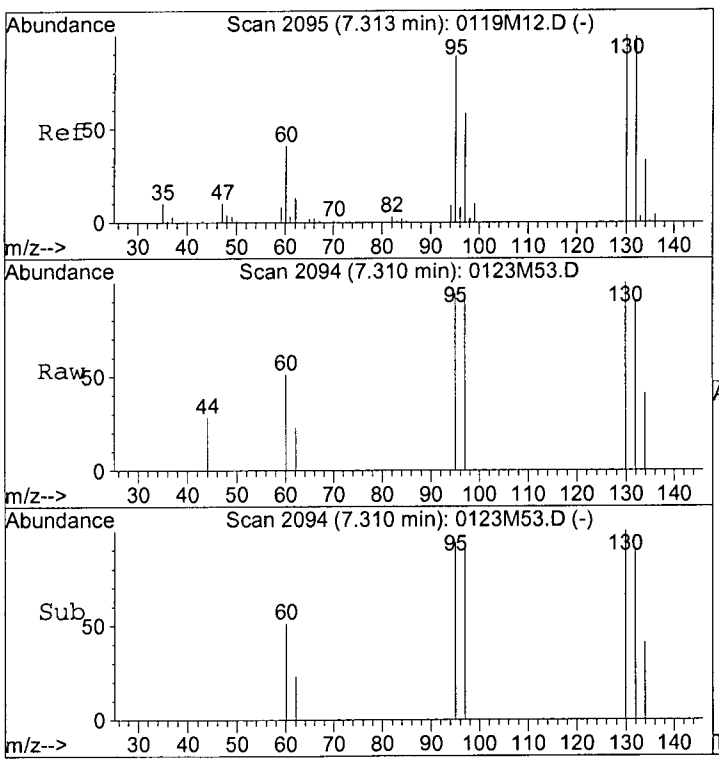


#27
Cis-1,2-DCE
Concen: 23.40110 ppb
RT: 5.07 min Scan# 1397
Delta R.T. 0.00 min
Lab File: 0123M53.D
Acq: 24 Jan 15 7:49

Tgt Ion: 96 Resp: 83559

Ion	Ratio	Lower	Upper
96	100		
61	128.9	96.7	179.5
98	62.8	46.8	86.8

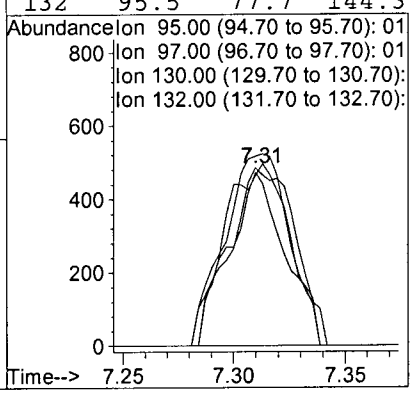


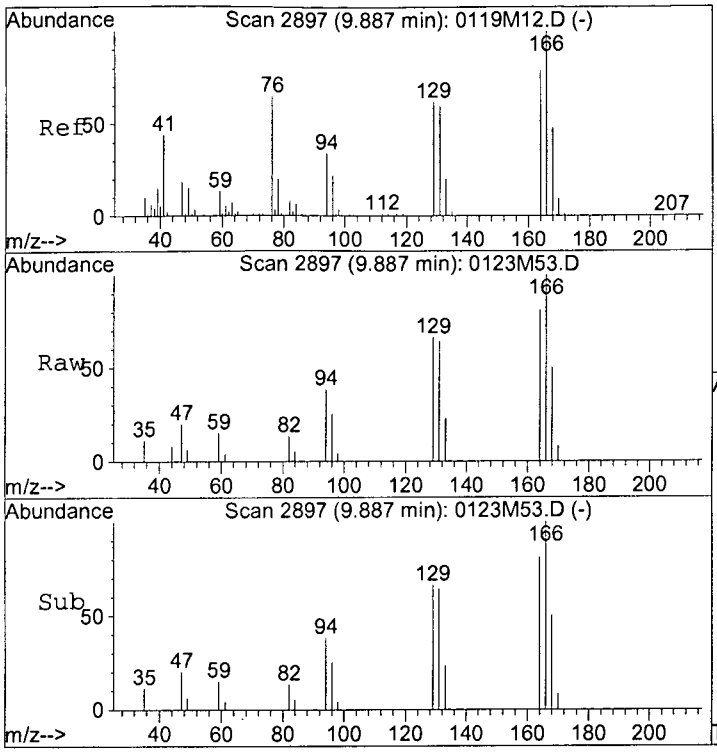


#41
TCE
Concen: 0.30309 ppb
RT: 7.31 min Scan# 2094
Delta R.T. -0.00 min
Lab File: 0123M53.D
Acq: 24 Jan 15 7:49

Tgt Ion: 95 Resp: 998

Ion	Ratio	Lower	Upper
95	100		
97	97.5	45.4	84.4#
130	106.6	78.8	146.3
132	95.5	77.7	144.3

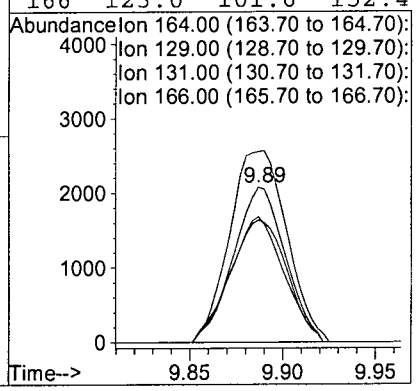




#58
Tetrachloroethene
Concen: 1.16769 ppb
RT: 9.89 min Scan# 2897
Delta R.T. 0.00 min
Lab File: 0123M53.D
Acq: 24 Jan 15 7:49

Tgt Ion:164 Resp: 2077

Ion	Ratio	Lower	Upper
164	100		
129	80.9	63.1	94.7
131	79.0	61.4	92.2
166	123.0	101.6	152.4



EPA 8260B WATER

Element Environmental
98-030 Hekaha St., Unit 9
Aiea, HI 96701

APPL Inc.
908 North Temperance Avenue
Clovis, CA 93611

Attn: Steve Spengler
Project: MCBH Motor Pool UST KB-100 SI / 130034
Sample ID: EKB100016
Sample Collection Date: 01/20/15

ARF: 75427
APPL ID: AZ10002
QCG: #86BKB-150123BM-193856

Method	Analyte	Result	LOQ	LOD	DL	Units	Extraction Date	Analysis Date
EPA 8260B	1,1,1-TRICHLOROETHANE	0.30 U	1.0	0.30	0.14	ug/L	01/24/15	01/24/15
EPA 8260B	1,1,2,2-TETRACHLOROETHANE	0.30 U	1.0	0.30	0.10	ug/L	01/24/15	01/24/15
EPA 8260B	1,1,2-TRICHLOROETHANE	0.50 U	1.0	0.50	0.20	ug/L	01/24/15	01/24/15
EPA 8260B	1,1-DICHLOROETHANE	0.30 U	1.0	0.30	0.19	ug/L	01/24/15	01/24/15
EPA 8260B	1,1-DICHLOROETHENE	0.50 U	1.0	0.50	0.30	ug/L	01/24/15	01/24/15
EPA 8260B	1,2,3-TRICHLOROPROPANE	1.00 U	2.0	1.00	0.39	ug/L	01/24/15	01/24/15
EPA 8260B	1,2-DIBROMOETHANE	0.50 U	1.0	0.50	0.20	ug/L	01/24/15	01/24/15
EPA 8260B	1,2-DICHLOROETHANE	0.30 U	1.0	0.30	0.14	ug/L	01/24/15	01/24/15
EPA 8260B	1,2-DICHLOROPROPANE	0.30 U	1.0	0.30	0.17	ug/L	01/24/15	01/24/15
EPA 8260B	2-BUTANONE	2.00 U	10.0	2.00	0.60	ug/L	01/24/15	01/24/15
EPA 8260B	4-METHYL-2-PENTANONE	5.00 U	10.0	5.00	1.90	ug/L	01/24/15	01/24/15
EPA 8260B	ACETONE	2.00 U	10.0	2.00	0.95	ug/L	01/24/15	01/24/15
EPA 8260B	BENZENE	0.30 U	1.0	0.30	0.16	ug/L	01/24/15	01/24/15
EPA 8260B	BROMODICHLOROMETHANE	0.30 U	1.0	0.30	0.14	ug/L	01/24/15	01/24/15
EPA 8260B	BROMOFORM	0.30 U	1.0	0.30	0.14	ug/L	01/24/15	01/24/15
EPA 8260B	BROMOMETHANE	0.50 U	2.0	0.50	0.24	ug/L	01/24/15	01/24/15
EPA 8260B	CARBON TETRACHLORIDE	0.30 U	1.0	0.30	0.10	ug/L	01/24/15	01/24/15
EPA 8260B	CHLOROBENZENE	0.50 U	1.0	0.50	0.21	ug/L	01/24/15	01/24/15
EPA 8260B	CHLOROETHANE	0.50 U	1.0	0.50	0.21	ug/L	01/24/15	01/24/15
EPA 8260B	CHLOROFORM	0.30 U	1.0	0.30	0.07	ug/L	01/24/15	01/24/15
EPA 8260B	CHLOROMETHANE	0.50 U	1.0	0.50	0.42	ug/L	01/24/15	01/24/15
EPA 8260B	CIS-1,2-DICHLOROETHENE	0.84 J	1.0	0.30	0.16	ug/L	01/24/15	01/24/15
EPA 8260B	CIS-1,3-DICHLOROPROPENE	0.30 U	1.0	0.30	0.15	ug/L	01/24/15	01/24/15
EPA 8260B	DIBROMOCHLOROMETHANE	0.30 U	1.0	0.30	0.19	ug/L	01/24/15	01/24/15
EPA 8260B	ETHYLBENZENE	0.50 U	1.0	0.50	0.23	ug/L	01/24/15	01/24/15
EPA 8260B	METHYLENE CHLORIDE	1.00 U	5.0	1.00	0.35	ug/L	01/24/15	01/24/15
EPA 8260B	STYRENE	0.50 U	1.0	0.50	0.25	ug/L	01/24/15	01/24/15
EPA 8260B	TETRACHLOROETHENE	0.30 U	1.0	0.30	0.24	ug/L	01/24/15	01/24/15
EPA 8260B	TOLUENE	0.30 U	1.0	0.30	0.17	ug/L	01/24/15	01/24/15
EPA 8260B	TRANS-1,2-DICHLOROETHENE	0.47 J	1.0	0.30	0.19	ug/L	01/24/15	01/24/15
EPA 8260B	TRANS-1,3-DICHLOROPROPENE	0.30 U	1.0	0.30	0.18	ug/L	01/24/15	01/24/15
EPA 8260B	TRICHLOROETHENE	0.30 J	1.0	0.30	0.16	ug/L	01/24/15	01/24/15
EPA 8260B	VINYL CHLORIDE	0.30 U	1.0	0.30	0.23	ug/L	01/24/15	01/24/15
EPA 8260B	XYLENES (TOTAL)	0.30 U	2.0	0.30	0.19	ug/L	01/24/15	01/24/15
EPA 8260B	SURROGATE: 1,2-DICHLOROETHANE	109	70-120			%	01/24/15	01/24/15

J = Estimated value.

Quant Method: MALLW.M
Run #: 0123M54
Instrument: MAX
Sequence: M150119
Dilution Factor: 1
Initials: DG

Printed: 01/28/15 2:12:08 PM
APPL-F1-SC-NoMC-REG MDLs

EPA 8260B WATER

Element Environmental
98-030 Hekaha St., Unit 9
Aiea, HI 96701

APPL Inc.
908 North Temperance Avenue
Clovis, CA 93611

Attn: Steve Spengler
Project: MCBH Motor Pool UST KB-100 SI / 130034
Sample ID: EKB100016
Sample Collection Date: 01/20/15

ARF: 75427
APPL ID: AZ10002
QCG: #86BKB-150123BM-193856

Method	Analyte	Result	LOQ	LOD	DL	Units	Extraction Date	Analysis Date
EPA 8260B	SURROGATE: 4-BROMOFLUOROBEN	101	75-120			%	01/24/15	01/24/15
EPA 8260B	SURROGATE: DIBROMOFLUOROMET	103	85-115			%	01/24/15	01/24/15
EPA 8260B	SURROGATE: TOLUENE-D8 (S)	102	85-120			%	01/24/15	01/24/15

J = Estimated value.

Quant Method: MALLW.M
Run #: 0123M54
Instrument: MAX
Sequence: M150119
Dilution Factor: 1
Initials: DG

Printed: 01/28/15 2:12:08 PM
APPL-F1-SC-NoMC-REG MDLs

Quantitation Report (QT Reviewed)

Data File : M:\MAX\DATA\M150119\0123M54.D
Acq On : 24 Jan 15 8:17
Sample : AZ10002W01
Misc : 10mL w/IS&S: 11-03-14

Vial: 44
Operator: DG,SV,RS
Inst : MAX
Multiplr: 1.00

Quant Time: Jan 26 13:43 2015

Quant Results File: MALLW.RES

Quant Method : M:\MAX\DATA\M150119\MALLW.M (RTE Integrator)
Title : METHOD 8260B
Last Update : Wed Jan 21 13:18:25 2015
Response via : Initial Calibration
DataAcq Meth : V8260

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene (IS)	6.78	96	288024	25.00000 ppb	0.00
55) Chlorobenzene-D5 (IS)	11.03	117	213500	25.00000 ppb	0.00
70) 1,4-Dichlorobenzene-D (IS)	14.37	152	118077	25.00000 ppb	0.00
System Monitoring Compounds					
31) Dibromofluoromethane(S)	5.79	111	42824	14.48420 ppb	0.00
Spiked Amount 14.019			Recovery	= 103.320%	
36) 1,2-DCA-D4(S)	6.25	65	45502	14.55674 ppb	0.00
Spiked Amount 13.317			Recovery	= 109.313%	
56) Toluene-D8(S)	9.03	98	182452	14.65945 ppb	0.00
Spiked Amount 14.391			Recovery	= 101.862%	
64) 4-Bromofluorobenzene(S)	12.71	95	69362	14.28283 ppb	0.00
Spiked Amount 14.078			Recovery	= 101.454%	
Target Compounds					Qvalue
21) Trans-1,2-DCE	3.54	96	1495	0.46684 ppb	98
27) Cis-1,2-DCE	5.07	96	3066	0.84496 ppb	97
41) TCE	7.30	95	998	0.29826 ppb	85

(#) = qualifier out of range (m) = manual integration

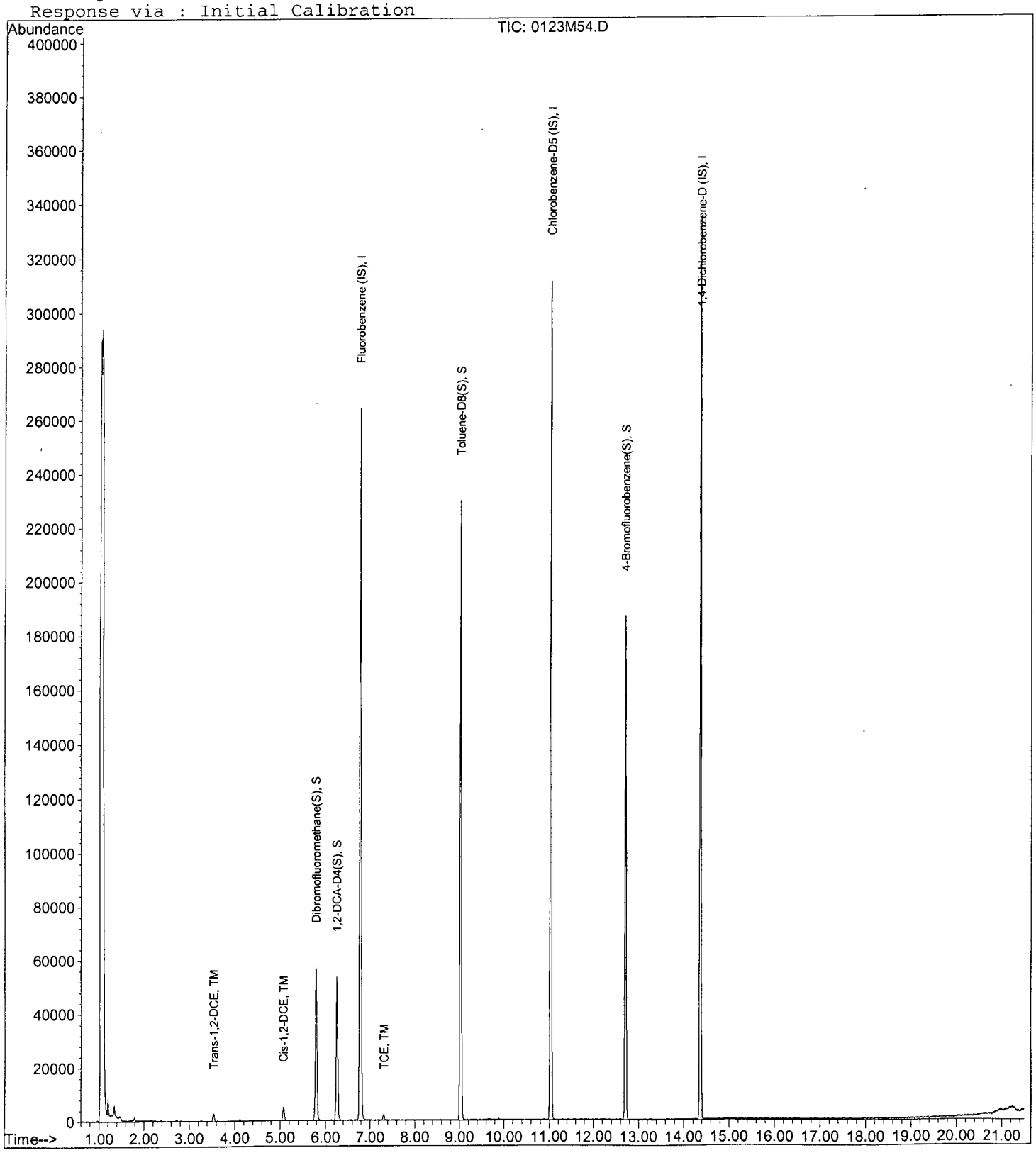
Quantitation Report

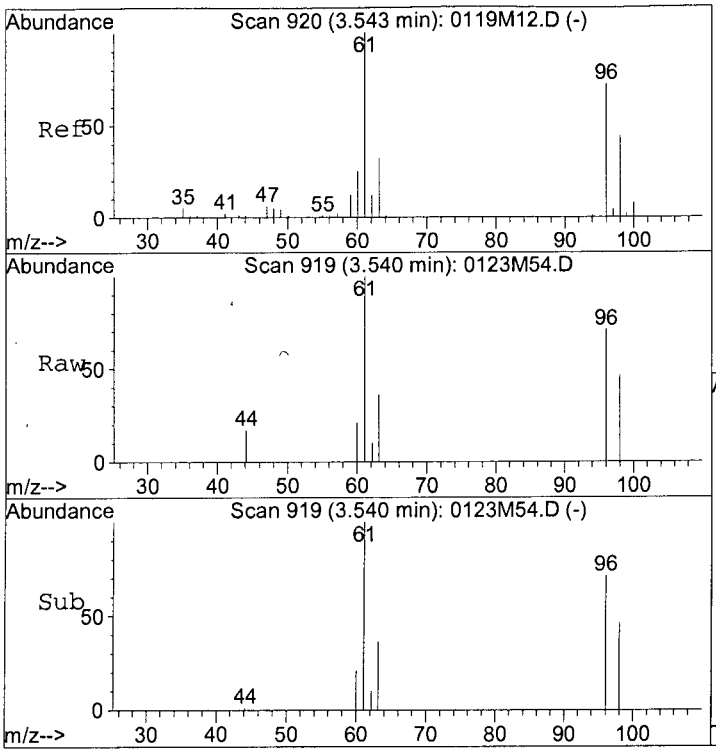
Data File : M:\MAX\DATA\M150119\0123M54.D
Acq On : 24 Jan 15 8:17
Sample : AZ10002W01
Misc : 10mL w/IS&S: 11-03-14

Vial: 44
Operator: DG,SV,RS
Inst : MAX
Multiplr: 1.00

Quant Time: Jan 26 13:43 2015 Quant Results File: MALLW.RES

Method : M:\MAX\DATA\M150119\MALLW.M (RTE Integrator)
Title : METHOD 8260B
Last Update : Wed Jan 21 13:18:25 2015
Response via : Initial Calibration

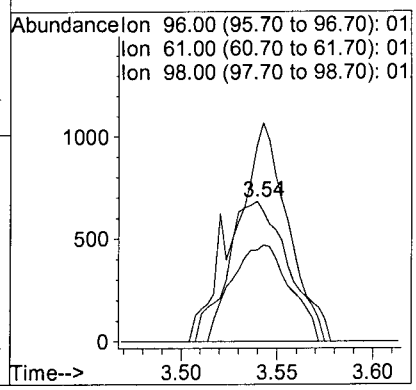


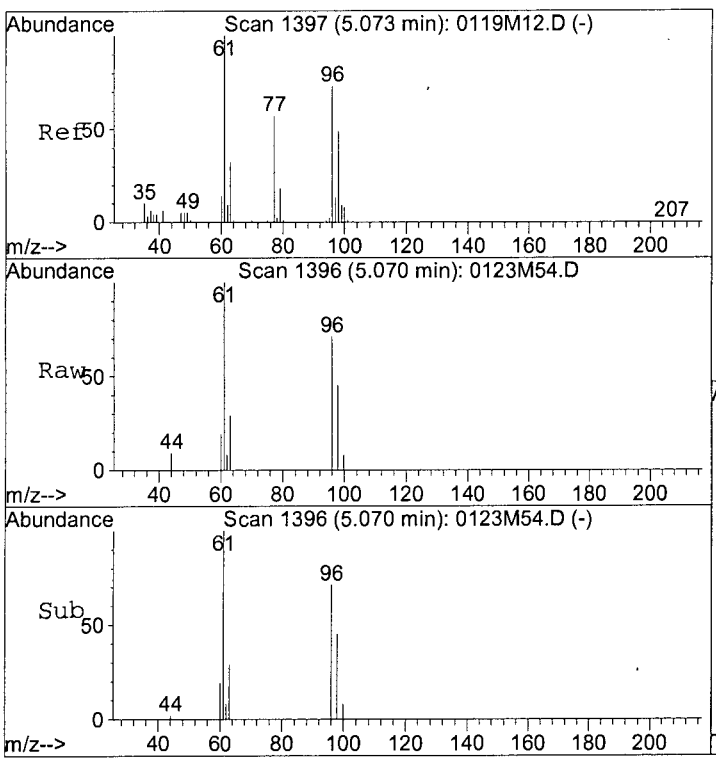


#21
Trans-1,2-DCE
Concen: 0.46684 ppb
RT: 3.54 min Scan# 919
Delta R.T. -0.00 min
Lab File: 0123M54.D
Acq: 24 Jan 15 8:17

Tgt Ion: 96 Resp: 1495

Ion	Ratio	Lower	Upper
96	100		
61	140.5	97.2	180.6
98	65.2	43.1	80.1

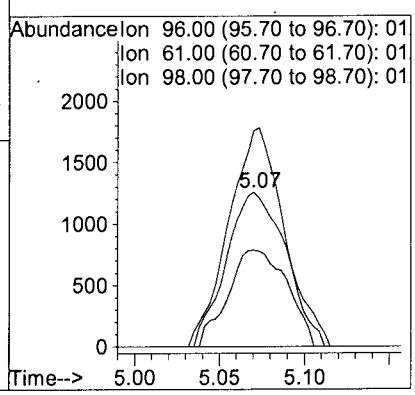


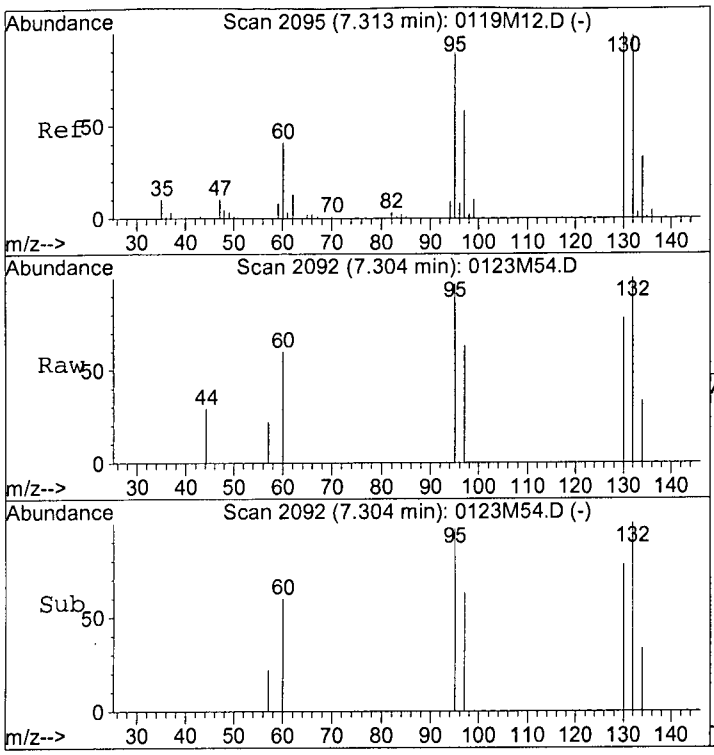


#27
Cis-1,2-DCE
Concen: 0.84496 ppb
RT: 5.07 min Scan# 1396
Delta R.T. -0.00 min
Lab File: 0123M54.D
Acq: 24 Jan 15 8:17

Tgt Ion: 96 Resp: 3066

Ion	Ratio	Lower	Upper
96	100		
61	140.0	96.7	179.5
98	62.7	46.8	86.8

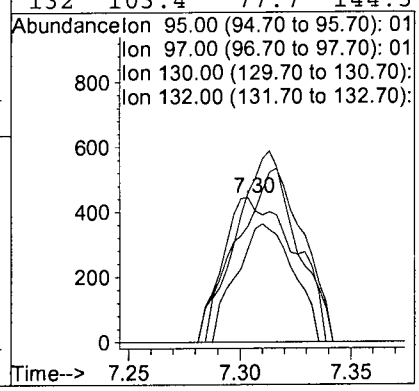




#41
TCE
Concen: 0.29826 ppb
RT: 7.30 min Scan# 2092
Delta R.T. -0.01 min
Lab File: 0123M54.D
Acq: 24 Jan 15 8:17

Tgt Ion: 95 Resp: 998

Ion	Ratio	Lower	Upper
95	100		
97	64.6	45.4	84.4
130	80.4	78.8	146.3
132	103.4	77.7	144.3



EPA 8260B WATER

Element Environmental
98-030 Hekaha St., Unit 9
Aiea, HI 96701

APPL Inc.
908 North Temperance Avenue
Clovis, CA 93611

Attn: Steve Spengler
Project: MCBH Motor Pool UST KB-100 SI / 130034
Sample ID: EKB100017
Sample Collection Date: 01/20/15

ARF: 75427
APPL ID: AZ10003
QCG: #86BKB-150123BM-193856

Method	Analyte	Result	LOQ	LOD	DL	Units	Extraction Date	Analysis Date
EPA 8260B	1,1,1-TRICHLOROETHANE	0.30 U	1.0	0.30	0.14	ug/L	01/24/15	01/24/15
EPA 8260B	1,1,2,2-TETRACHLOROETHANE	0.30 U	1.0	0.30	0.10	ug/L	01/24/15	01/24/15
EPA 8260B	1,1,2-TRICHLOROETHANE	0.50 U	1.0	0.50	0.20	ug/L	01/24/15	01/24/15
EPA 8260B	1,1-DICHLOROETHANE	0.30 U	1.0	0.30	0.19	ug/L	01/24/15	01/24/15
EPA 8260B	1,1-DICHLOROETHENE	0.50 U	1.0	0.50	0.30	ug/L	01/24/15	01/24/15
EPA 8260B	1,2,3-TRICHLOROPROPANE	1.00 U	2.0	1.00	0.39	ug/L	01/24/15	01/24/15
EPA 8260B	1,2-DIBROMOETHANE	0.50 U	1.0	0.50	0.20	ug/L	01/24/15	01/24/15
EPA 8260B	1,2-DICHLOROETHANE	0.30 U	1.0	0.30	0.14	ug/L	01/24/15	01/24/15
EPA 8260B	1,2-DICHLOROPROPANE	0.30 U	1.0	0.30	0.17	ug/L	01/24/15	01/24/15
EPA 8260B	2-BUTANONE	2.00 U	10.0	2.00	0.60	ug/L	01/24/15	01/24/15
EPA 8260B	4-METHYL-2-PENTANONE	5.00 U	10.0	5.00	1.90	ug/L	01/24/15	01/24/15
EPA 8260B	ACETONE	2.00 U	10.0	2.00	0.95	ug/L	01/24/15	01/24/15
EPA 8260B	BENZENE	0.30 U	1.0	0.30	0.16	ug/L	01/24/15	01/24/15
EPA 8260B	BROMODICHLOROMETHANE	0.30 U	1.0	0.30	0.14	ug/L	01/24/15	01/24/15
EPA 8260B	BROMOFORM	0.30 U	1.0	0.30	0.14	ug/L	01/24/15	01/24/15
EPA 8260B	BROMOMETHANE	0.50 U	2.0	0.50	0.24	ug/L	01/24/15	01/24/15
EPA 8260B	CARBON TETRACHLORIDE	0.30 U	1.0	0.30	0.10	ug/L	01/24/15	01/24/15
EPA 8260B	CHLOROBENZENE	0.50 U	1.0	0.50	0.21	ug/L	01/24/15	01/24/15
EPA 8260B	CHLOROETHANE	0.50 U	1.0	0.50	0.21	ug/L	01/24/15	01/24/15
EPA 8260B	CHLOROFORM	0.30 U	1.0	0.30	0.07	ug/L	01/24/15	01/24/15
EPA 8260B	CHLOROMETHANE	0.50 U	1.0	0.50	0.42	ug/L	01/24/15	01/24/15
EPA 8260B	CIS-1,2-DICHLOROETHENE	0.56 J	1.0	0.30	0.16	ug/L	01/24/15	01/24/15
EPA 8260B	CIS-1,3-DICHLOROPROPENE	0.30 U	1.0	0.30	0.15	ug/L	01/24/15	01/24/15
EPA 8260B	DIBROMOCHLOROMETHANE	0.30 U	1.0	0.30	0.19	ug/L	01/24/15	01/24/15
EPA 8260B	ETHYLBENZENE	0.50 U	1.0	0.50	0.23	ug/L	01/24/15	01/24/15
EPA 8260B	METHYLENE CHLORIDE	1.00 U	5.0	1.00	0.35	ug/L	01/24/15	01/24/15
EPA 8260B	STYRENE	0.50 U	1.0	0.50	0.25	ug/L	01/24/15	01/24/15
EPA 8260B	TETRACHLOROETHENE	0.30 U	1.0	0.30	0.24	ug/L	01/24/15	01/24/15
EPA 8260B	TOLUENE	0.30 U	1.0	0.30	0.17	ug/L	01/24/15	01/24/15
EPA 8260B	TRANS-1,2-DICHLOROETHENE	0.25 J	1.0	0.30	0.19	ug/L	01/24/15	01/24/15
EPA 8260B	TRANS-1,3-DICHLOROPROPENE	0.30 U	1.0	0.30	0.18	ug/L	01/24/15	01/24/15
EPA 8260B	TRICHLOROETHENE	0.20 J	1.0	0.30	0.16	ug/L	01/24/15	01/24/15
EPA 8260B	VINYL CHLORIDE	0.30 U	1.0	0.30	0.23	ug/L	01/24/15	01/24/15
EPA 8260B	XYLENES (TOTAL)	0.30 U	2.0	0.30	0.19	ug/L	01/24/15	01/24/15
EPA 8260B	SURROGATE: 1,2-DICHLOROETHANE	108	70-120			%	01/24/15	01/24/15

J = Estimated value.

Quant Method: MALLW.M
Run #: 0123M55
Instrument: MAX
Sequence: M150119
Dilution Factor: 1
Initials: DG

Printed: 01/28/15 2:12:08 PM
APPL-F1-SC-NoMC-REG MDLs

EPA 8260B WATER

Element Environmental
98-030 Hekaha St., Unit 9
Aiea, HI 96701

APPL Inc.
908 North Temperance Avenue
Clovis, CA 93611

Attn: Steve Spengler
Project: MCBH Motor Pool UST KB-100 SI / 130034
Sample ID: EKB100017
Sample Collection Date: 01/20/15

ARF: 75427
APPL ID: AZ10003
QCG: #86BKB-150123BM-193856

Method	Analyte	Result	LOQ	LOD	DL	Units	Extraction Date	Analysis Date
EPA 8260B	SURROGATE: 4-BROMOFLUOROBEN	97.9	75-120			%	01/24/15	01/24/15
EPA 8260B	SURROGATE: DIBROMOFLUOROMET	102	85-115			%	01/24/15	01/24/15
EPA 8260B	SURROGATE: TOLUENE-D8 (S)	99.1	85-120			%	01/24/15	01/24/15

J = Estimated value.

Quant Method: MALLW.M
Run #: 0123M55
Instrument: MAX
Sequence: M150119
Dilution Factor: 1
Initials: DG

Printed: 01/28/15 2:12:08 PM
APPL-F1-SC-NoMC-REG MDLs

Quantitation Report (QT Reviewed)

Data File : M:\MAX\DATA\M150119\0123M55.D
Acq On : 24 Jan 15 8:44
Sample : AZ10003W01
Misc : 10mL w/IS&S: 11-03-14

Vial: 45
Operator: DG,SV,RS
Inst : MAX
Multiplr: 1.00

Quant Time: Jan 26 13:44 2015

Quant Results File: MALLW.RES

Quant Method : M:\MAX\DATA\M150119\MALLW.M (RTE Integrator)
Title : METHOD 8260B
Last Update : Wed Jan 21 13:18:25 2015
Response via : Initial Calibration
DataAcq Meth : V8260

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene (IS)	6.78	96	267569	25.00000 ppb	0.00
55) Chlorobenzene-D5 (IS)	11.03	117	199593	25.00000 ppb	0.00
70) 1,4-Dichlorobenzene-D (IS)	14.37	152	108827	25.00000 ppb	0.00
System Monitoring Compounds					
31) Dibromofluoromethane(S)	5.79	111	39207	14.27459 ppb	0.00
Spiked Amount 14.019			Recovery	= 101.829%	
36) 1,2-DCA-D4(S)	6.26	65	41833	14.40607 ppb	0.00
Spiked Amount 13.317			Recovery	= 108.179%	
56) Toluene-D8(S)	9.03	98	165949	14.26252 ppb	0.00
Spiked Amount 14.391			Recovery	= 99.111%	
64) 4-Bromofluorobenzene(S)	12.71	95	62600	13.78859 ppb	0.00
Spiked Amount 14.078			Recovery	= 97.945%	
Target Compounds					Qvalue
21) Trans-1,2-DCE	3.54	96	745	0.25042 ppb	90
27) Cis-1,2-DCE	5.07	96	1893	0.56158 ppb	93
41) TCE	7.32	95	610	0.19624 ppb #	79

(#) = qualifier out of range (m) = manual integration

Quantitation Report

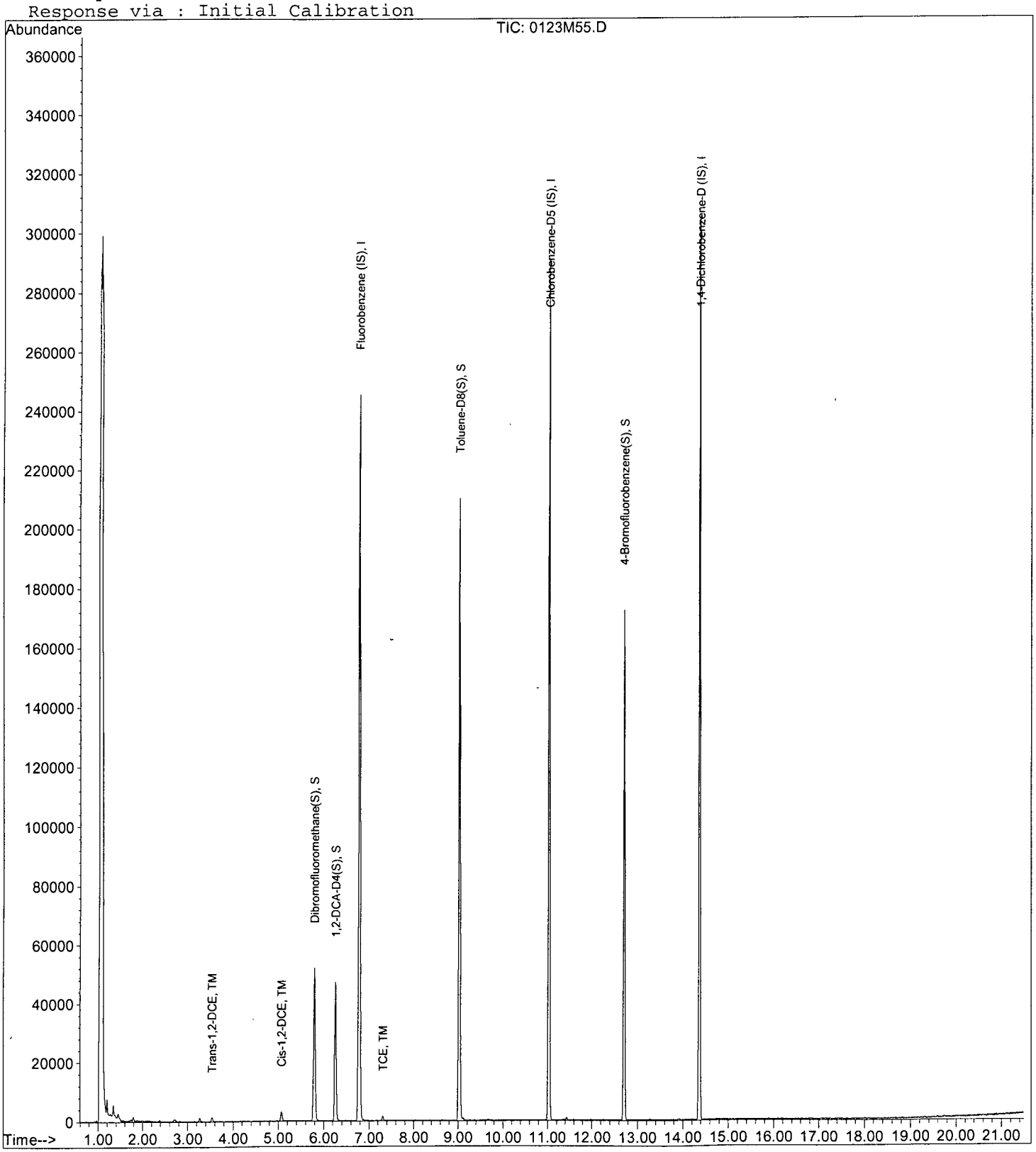
Data File : M:\MAX\DATA\M150119\0123M55.D
Acq On : 24 Jan 15 8:44
Sample : AZ10003W01
Misc : 10mL w/IS&S: 11-03-14

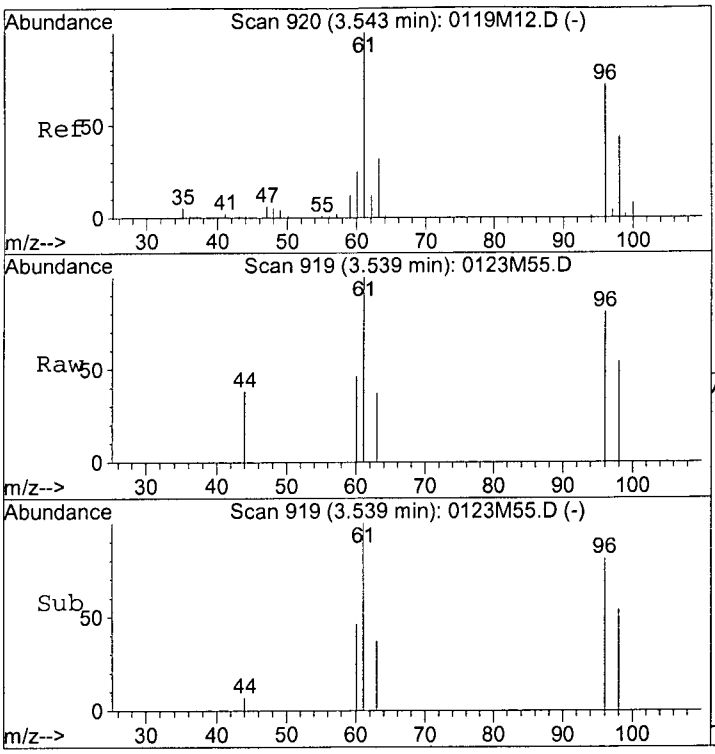
Vial: 45
Operator: DG,SV,RS
Inst : MAX
Multiplr: 1.00

Quant Time: Jan 26 13:44 2015

Quant Results File: MALLW.RES

Method : M:\MAX\DATA\M150119\MALLW.M (RTE Integrator)
Title : METHOD 8260B
Last Update : Wed Jan 21 13:18:25 2015
Response via : Initial Calibration

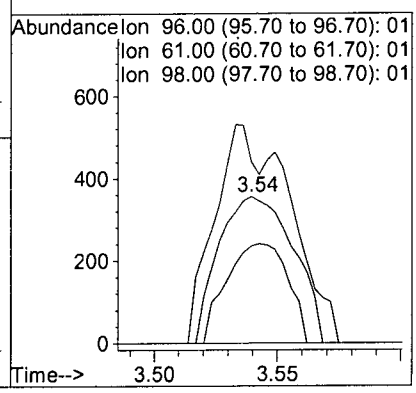


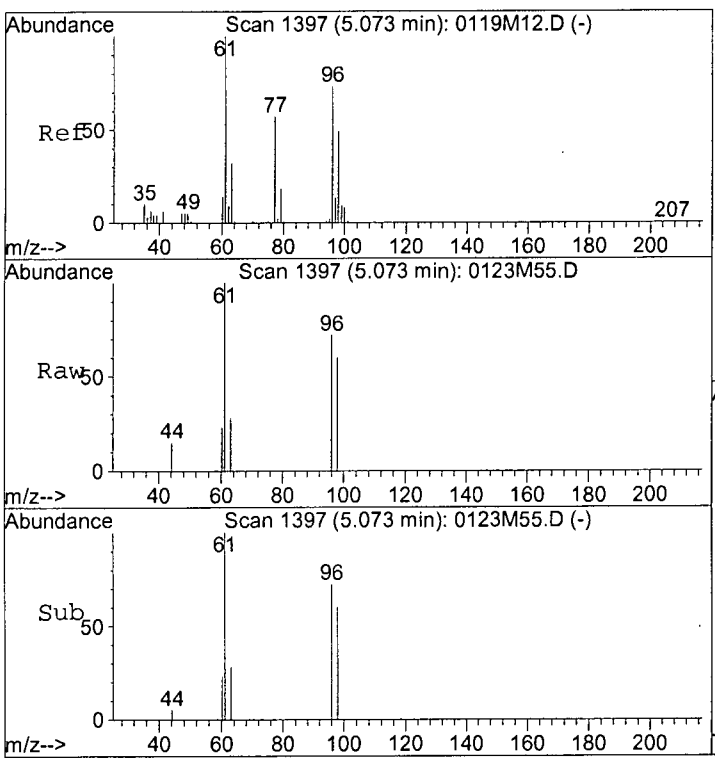


#21
Trans-1,2-DCE
Concen: 0.25042 ppb
RT: 3.54 min Scan# 919
Delta R.T. -0.00 min
Lab File: 0123M55.D
Acq: 24 Jan 15 8:44

Tgt Ion: 96 Resp: 745

Ion	Ratio	Lower	Upper
96	100		
61	123.9	97.2	180.6
98	66.3	43.1	80.1

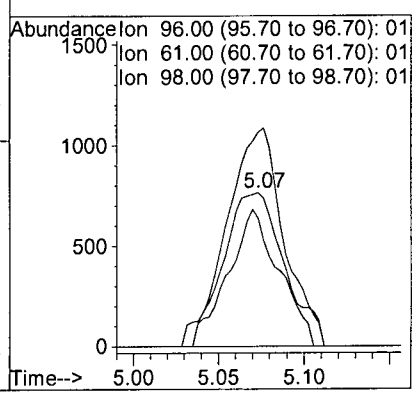


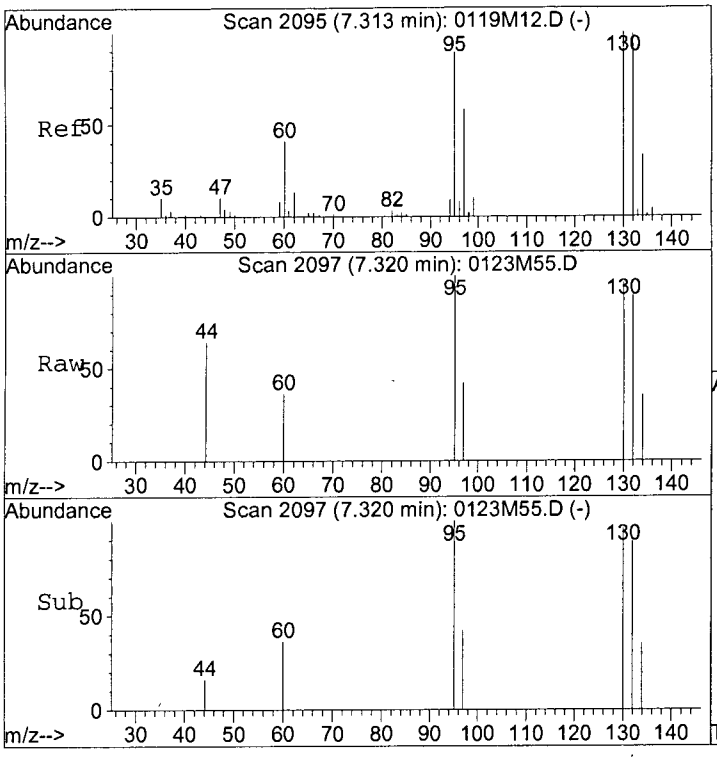


#27
Cis-1,2-DCE
Concen: 0.56158 ppb
RT: 5.07 min Scan# 1397
Delta R.T. 0.00 min
Lab File: 0123M55.D
Acq: 24 Jan 15 8:44

Tgt Ion: 96 Resp: 1893

Ion	Ratio	Lower	Upper
96	100		
61	139.3	96.7	179.5
98	83.3	46.8	86.8

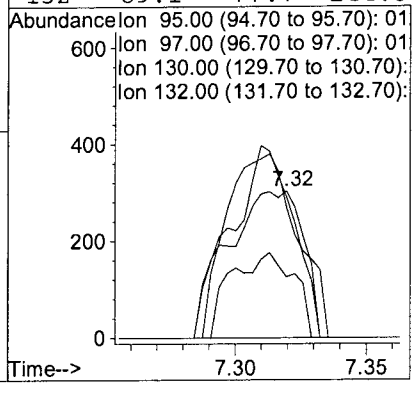




#41
TCE
Concen: 0.19624 ppb
RT: 7.32 min Scan# 2097
Delta R.T. 0.01 min
Lab File: 0123M55.D
Acq: 24 Jan 15 8:44

Tgt Ion: 95 Resp: 610

Ion	Ratio	Lower	Upper
95	100		
97	41.6	45.4	84.4#
130	96.0	78.8	146.3
132	89.1	77.7	144.3



EPA 8260B WATER

Element Environmental
98-030 Hekaha St., Unit 9
Aiea, HI 96701

APPL Inc.
908 North Temperance Avenue
Clovis, CA 93611

Attn: Steve Spengler
Project: MCBH Motor Pool UST KB-100 SI / 130034
Sample ID: EKB100018
Sample Collection Date: 01/20/15

ARF: 75427
APPL ID: AZ10004
QCG: #86BKB-150123BM-193856

Method	Analyte	Result	LOQ	LOD	DL	Units	Extraction Date	Analysis Date
EPA 8260B	1,1,1-TRICHLOROETHANE	0.30 U	1.0	0.30	0.14	ug/L	01/24/15	01/24/15
EPA 8260B	1,1,2,2-TETRACHLOROETHANE	0.30 U	1.0	0.30	0.10	ug/L	01/24/15	01/24/15
EPA 8260B	1,1,2-TRICHLOROETHANE	0.50 U	1.0	0.50	0.20	ug/L	01/24/15	01/24/15
EPA 8260B	1,1-DICHLOROETHANE	0.30 U	1.0	0.30	0.19	ug/L	01/24/15	01/24/15
EPA 8260B	1,1-DICHLOROETHENE	0.50 U	1.0	0.50	0.30	ug/L	01/24/15	01/24/15
EPA 8260B	1,2,3-TRICHLOROPROPANE	1.00 U	2.0	1.00	0.39	ug/L	01/24/15	01/24/15
EPA 8260B	1,2-DIBROMOETHANE	0.50 U	1.0	0.50	0.20	ug/L	01/24/15	01/24/15
EPA 8260B	1,2-DICHLOROETHANE	0.30 U	1.0	0.30	0.14	ug/L	01/24/15	01/24/15
EPA 8260B	1,2-DICHLOROPROPANE	0.30 U	1.0	0.30	0.17	ug/L	01/24/15	01/24/15
EPA 8260B	2-BUTANONE	2.00 U	10.0	2.00	0.60	ug/L	01/24/15	01/24/15
EPA 8260B	4-METHYL-2-PENTANONE	5.00 U	10.0	5.00	1.90	ug/L	01/24/15	01/24/15
EPA 8260B	ACETONE	2.00 U	10.0	2.00	0.95	ug/L	01/24/15	01/24/15
EPA 8260B	BENZENE	0.30 U	1.0	0.30	0.16	ug/L	01/24/15	01/24/15
EPA 8260B	BROMODICHLOROMETHANE	0.30 U	1.0	0.30	0.14	ug/L	01/24/15	01/24/15
EPA 8260B	BROMOFORM	0.30 U	1.0	0.30	0.14	ug/L	01/24/15	01/24/15
EPA 8260B	BROMOMETHANE	0.50 U	2.0	0.50	0.24	ug/L	01/24/15	01/24/15
EPA 8260B	CARBON TETRACHLORIDE	0.30 U	1.0	0.30	0.10	ug/L	01/24/15	01/24/15
EPA 8260B	CHLOROBENZENE	0.50 U	1.0	0.50	0.21	ug/L	01/24/15	01/24/15
EPA 8260B	CHLOROETHANE	0.50 U	1.0	0.50	0.21	ug/L	01/24/15	01/24/15
EPA 8260B	CHLOROFORM	0.30 U	1.0	0.30	0.07	ug/L	01/24/15	01/24/15
EPA 8260B	CHLOROMETHANE	0.50 U	1.0	0.50	0.42	ug/L	01/24/15	01/24/15
EPA 8260B	CIS-1,2-DICHLOROETHENE	0.28 J	1.0	0.30	0.16	ug/L	01/24/15	01/24/15
EPA 8260B	CIS-1,3-DICHLOROPROPENE	0.30 U	1.0	0.30	0.15	ug/L	01/24/15	01/24/15
EPA 8260B	DIBROMOCHLOROMETHANE	0.30 U	1.0	0.30	0.19	ug/L	01/24/15	01/24/15
EPA 8260B	ETHYLBENZENE	0.50 U	1.0	0.50	0.23	ug/L	01/24/15	01/24/15
EPA 8260B	METHYLENE CHLORIDE	1.00 U	5.0	1.00	0.35	ug/L	01/24/15	01/24/15
EPA 8260B	STYRENE	0.50 U	1.0	0.50	0.25	ug/L	01/24/15	01/24/15
EPA 8260B	TETRACHLOROETHENE	0.30 U	1.0	0.30	0.24	ug/L	01/24/15	01/24/15
EPA 8260B	TOLUENE	0.30 U	1.0	0.30	0.17	ug/L	01/24/15	01/24/15
EPA 8260B	TRANS-1,2-DICHLOROETHENE	0.30 J	1.0	0.30	0.19	ug/L	01/24/15	01/24/15
EPA 8260B	TRANS-1,3-DICHLOROPROPENE	0.30 U	1.0	0.30	0.18	ug/L	01/24/15	01/24/15
EPA 8260B	TRICHLOROETHENE	0.30 U	1.0	0.30	0.16	ug/L	01/24/15	01/24/15
EPA 8260B	VINYL CHLORIDE	0.30 U	1.0	0.30	0.23	ug/L	01/24/15	01/24/15
EPA 8260B	XYLENES (TOTAL)	0.30 U	2.0	0.30	0.19	ug/L	01/24/15	01/24/15
EPA 8260B	SURROGATE: 1,2-DICHLOROETHANE	111	70-120			%	01/24/15	01/24/15

J = Estimated value.

Quant Method: MALLW.M
Run #: 0123M56
Instrument: MAX
Sequence: M150119
Dilution Factor: 1
Initials: DG

Printed: 01/28/15 2:12:08 PM
APPL-F1-SC-NoMC-REG MDLs

EPA 8260B WATER

Element Environmental
98-030 Hekaha St., Unit 9
Aiea, HI 96701

APPL Inc.
908 North Temperance Avenue
Clovis, CA 93611

Attn: Steve Spengler
Project: MCBH Motor Pool UST KB-100 SI / 130034
Sample ID: EKB100018
Sample Collection Date: 01/20/15

ARF: 75427
APPL ID: AZ10004
QCG: #86BKB-150123BM-193856

Method	Analyte	Result	LOQ	LOD	DL	Units	Extraction Date	Analysis Date
EPA 8260B	SURROGATE: 4-BROMOFLUOROBEN	102	75-120			%	01/24/15	01/24/15
EPA 8260B	SURROGATE: DIBROMOFLUOROMET	107	85-115			%	01/24/15	01/24/15
EPA 8260B	SURROGATE: TOLUENE-D8 (S)	103	85-120			%	01/24/15	01/24/15

J = Estimated value.

Quant Method: MALLW.M
Run #: 0123M56
Instrument: MAX
Sequence: M150119
Dilution Factor: 1
Initials: DG

Printed: 01/28/15 2:12:08 PM
APPL-F1-SC-NoMC-REG MDLs

Quantitation Report (QT Reviewed)

Data File : M:\MAX\DATA\M150119\0123M56.D
Acq On : 24 Jan 15 9:12
Sample : AZ10004W01
Misc : 10mL w/IS&S: 11-03-14

Vial: 46
Operator: DG,SV,RS
Inst : MAX
Multiplr: 1.00

Quant Time: Jan 26 13:45 2015 Quant Results File: MALLW.RES

Quant Method : M:\MAX\DATA\M150119\MALLW.M (RTE Integrator)
Title : METHOD 8260B
Last Update : Wed Jan 21 13:18:25 2015
Response via : Initial Calibration
DataAcq Meth : V8260

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene (IS)	6.78	96	287553	25.00000 ppb	0.00
55) Chlorobenzene-D5 (IS)	11.03	117	212014	25.00000 ppb	0.00
70) 1,4-Dichlorobenzene-D (IS)	14.37	152	119169	25.00000 ppb	0.00
System Monitoring Compounds					
31) Dibromofluoromethane(S)	5.79	111	44261	14.99475 ppb	0.00
Spiked Amount 14.019			Recovery	= 106.965%	
36) 1,2-DCA-D4(S)	6.25	65	46175	14.79624 ppb	0.00
Spiked Amount 13.317			Recovery	= 111.108%	
56) Toluene-D8(S)	9.03	98	183536	14.84990 ppb	0.00
Spiked Amount 14.391			Recovery	= 103.189%	
64) 4-Bromofluorobenzene(S)	12.71	95	69125	14.33380 ppb	0.00
Spiked Amount 14.078			Recovery	= 101.816%	
Target Compounds					Qvalue
21) Trans-1,2-DCE	3.53	96	965	0.30183 ppb #	73
27) Cis-1,2-DCE	5.06	96	1014	0.27991 ppb	79

(#) = qualifier out of range (m) = manual integration

Quantitation Report

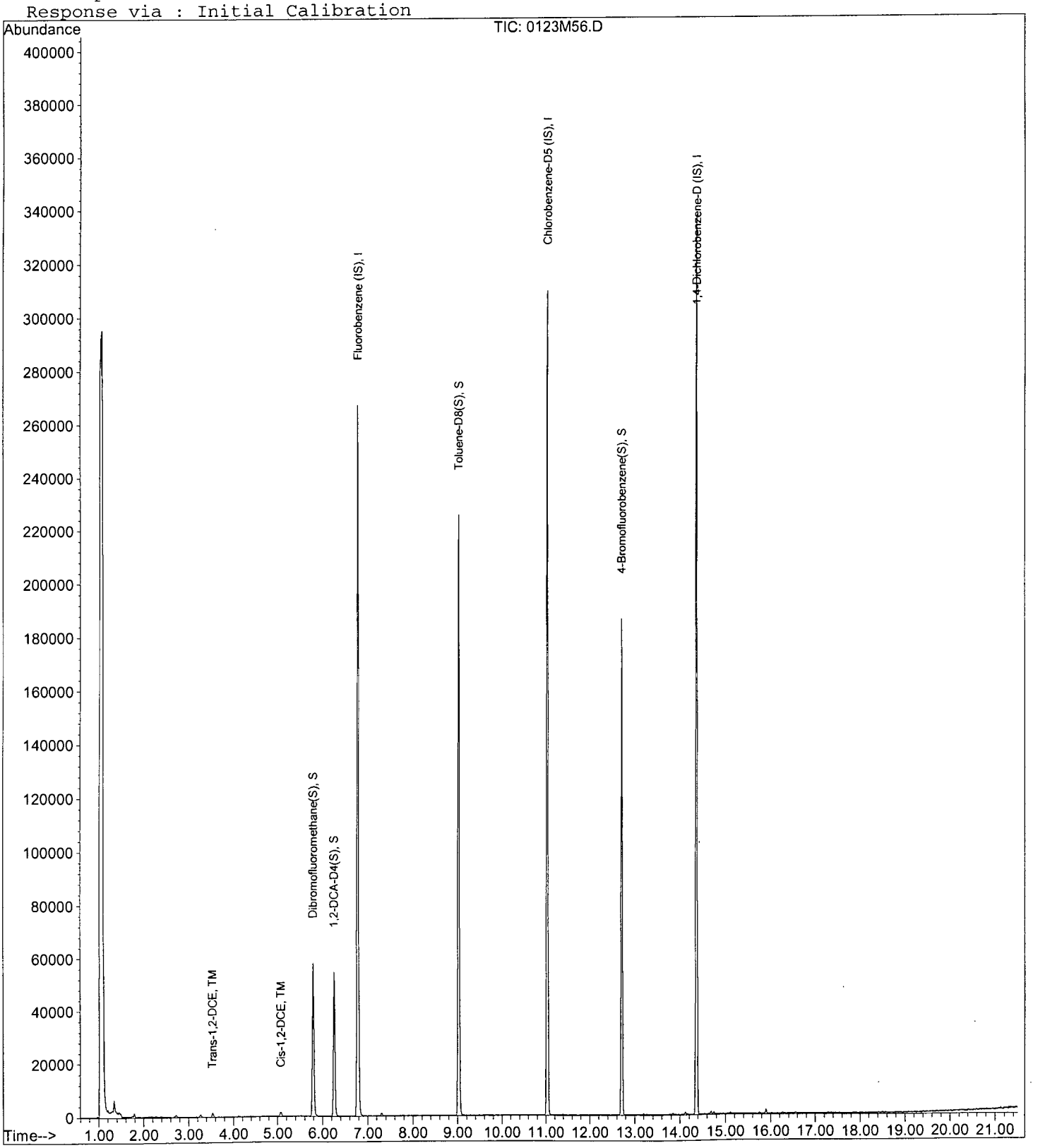
Data File : M:\MAX\DATA\M150119\0123M56.D
Acq On : 24 Jan 15 9:12
Sample : AZ10004W01
Misc : 10mL w/IS&S: 11-03-14

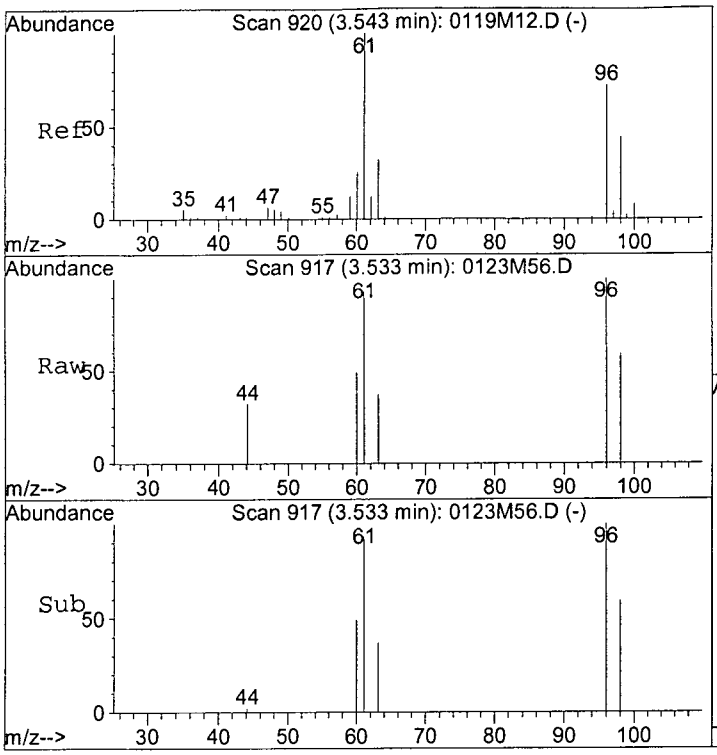
Vial: 46
Operator: DG,SV,RS
Inst : MAX
Multiplr: 1.00

Quant Time: Jan 26 13:45 2015

Quant Results File: MALLW.RES

Method : M:\MAX\DATA\M150119\MALLW.M (RTE Integrator)
Title : METHOD 8260B
Last Update : Wed Jan 21 13:18:25 2015
Response via : Initial Calibration

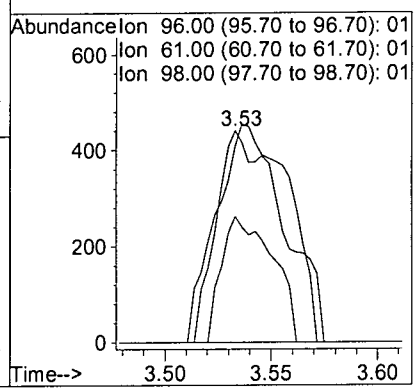


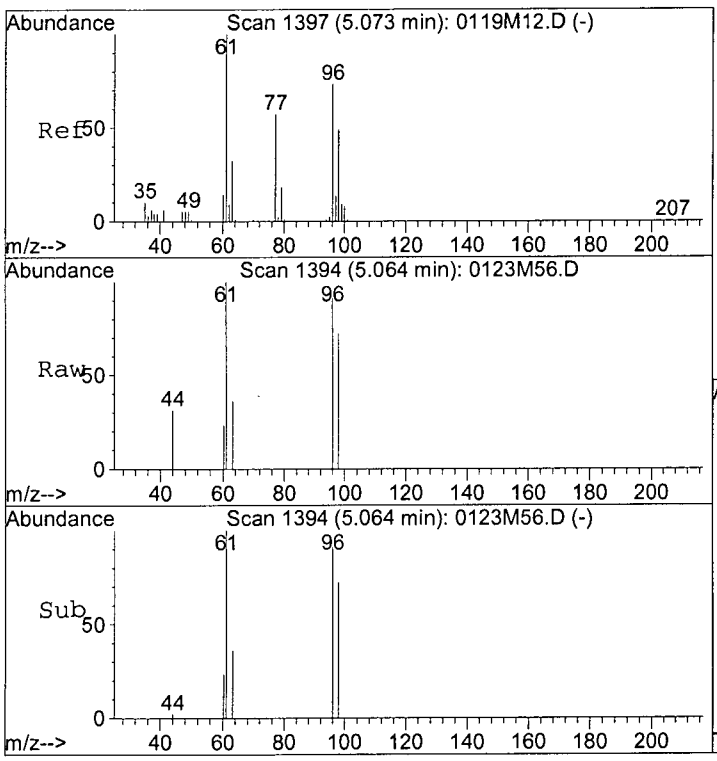


#21
Trans-1,2-DCE
Concen: 0.30183 ppb
RT: 3.53 min Scan# 917
Delta R.T. -0.01 min
Lab File: 0123M56.D
Acq: 24 Jan 15 9:12

Tgt Ion: 96 Resp: 965

Ion	Ratio	Lower	Upper
96	100		
61	92.7	97.2	180.6#
98	59.4	43.1	80.1

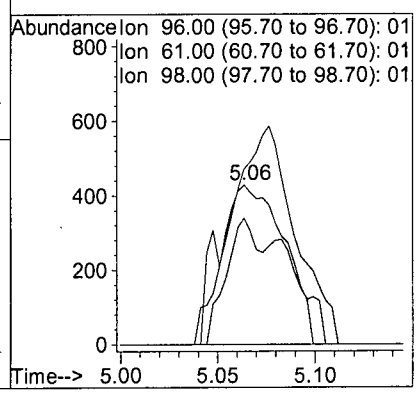




#27
Cis-1,2-DCE
Concen: 0.27991 ppb
RT: 5.06 min Scan# 1394
Delta R.T. -0.01 min
Lab File: 0123M56.D
Acq: 24 Jan 15 9:12

Tgt Ion: 96 Resp: 1014

Ion	Ratio	Lower	Upper
96	100		
61	109.8	96.7	179.5
98	79.3	46.8	86.8



EPA 8260B WATER

Element Environmental
98-030 Hekaha St., Unit 9
Aiea, HI 96701

APPL Inc.
908 North Temperance Avenue
Clovis, CA 93611

Attn: Steve Spengler
Project: MCBH Motor Pool UST KB-100 SI / 130034
Sample ID: EKB100019
Sample Collection Date: 01/20/15

ARF: 75427
APPL ID: AZ10005
QCG: #86BKB-150123BM-193856

Method	Analyte	Result	LOQ	LOD	DL	Units	Extraction Date	Analysis Date
EPA 8260B	1,1,1-TRICHLOROETHANE	0.30 U	1.0	0.30	0.14	ug/L	01/24/15	01/24/15
EPA 8260B	1,1,2,2-TETRACHLOROETHANE	0.30 U	1.0	0.30	0.10	ug/L	01/24/15	01/24/15
EPA 8260B	1,1,2-TRICHLOROETHANE	0.50 U	1.0	0.50	0.20	ug/L	01/24/15	01/24/15
EPA 8260B	1,1-DICHLOROETHANE	0.30 U	1.0	0.30	0.19	ug/L	01/24/15	01/24/15
EPA 8260B	1,1-DICHLOROETHENE	1.1	1.0	0.50	0.30	ug/L	01/24/15	01/24/15
EPA 8260B	1,2,3-TRICHLOROPROPANE	1.00 U	2.0	1.00	0.39	ug/L	01/24/15	01/24/15
EPA 8260B	1,2-DIBROMOETHANE	0.50 U	1.0	0.50	0.20	ug/L	01/24/15	01/24/15
EPA 8260B	1,2-DICHLOROETHANE	0.30 U	1.0	0.30	0.14	ug/L	01/24/15	01/24/15
EPA 8260B	1,2-DICHLOROPROPANE	0.30 U	1.0	0.30	0.17	ug/L	01/24/15	01/24/15
EPA 8260B	2-BUTANONE	2.00 U	10.0	2.00	0.60	ug/L	01/24/15	01/24/15
EPA 8260B	4-METHYL-2-PENTANONE	5.00 U	10.0	5.00	1.90	ug/L	01/24/15	01/24/15
EPA 8260B	ACETONE	2.00 U	10.0	2.00	0.95	ug/L	01/24/15	01/24/15
EPA 8260B	BENZENE	0.30 U	1.0	0.30	0.16	ug/L	01/24/15	01/24/15
EPA 8260B	BROMODICHLOROMETHANE	0.30 U	1.0	0.30	0.14	ug/L	01/24/15	01/24/15
EPA 8260B	BROMOFORM	0.30 U	1.0	0.30	0.14	ug/L	01/24/15	01/24/15
EPA 8260B	BROMOMETHANE	0.50 U	2.0	0.50	0.24	ug/L	01/24/15	01/24/15
EPA 8260B	CARBON TETRACHLORIDE	0.30 U	1.0	0.30	0.10	ug/L	01/24/15	01/24/15
EPA 8260B	CHLOROBENZENE	0.50 U	1.0	0.50	0.21	ug/L	01/24/15	01/24/15
EPA 8260B	CHLOROETHANE	0.50 U	1.0	0.50	0.21	ug/L	01/24/15	01/24/15
EPA 8260B	CHLOROFORM	0.30 U	1.0	0.30	0.07	ug/L	01/24/15	01/24/15
EPA 8260B	CHLOROMETHANE	0.50 U	1.0	0.50	0.42	ug/L	01/24/15	01/24/15
EPA 8260B	CIS-1,2-DICHLOROETHENE	150 E	1.0	0.30	0.16	ug/L	01/24/15	01/24/15
EPA 8260B	CIS-1,3-DICHLOROPROPENE	0.30 U	1.0	0.30	0.15	ug/L	01/24/15	01/24/15
EPA 8260B	DIBROMOCHLOROMETHANE	0.30 U	1.0	0.30	0.19	ug/L	01/24/15	01/24/15
EPA 8260B	ETHYLBENZENE	0.50 U	1.0	0.50	0.23	ug/L	01/24/15	01/24/15
EPA 8260B	METHYLENE CHLORIDE	1.00 U	5.0	1.00	0.35	ug/L	01/24/15	01/24/15
EPA 8260B	STYRENE	0.50 U	1.0	0.50	0.25	ug/L	01/24/15	01/24/15
EPA 8260B	TETRACHLOROETHENE	0.40 J	1.0	0.30	0.24	ug/L	01/24/15	01/24/15
EPA 8260B	TOLUENE	0.30 U	1.0	0.30	0.17	ug/L	01/24/15	01/24/15
EPA 8260B	TRANS-1,2-DICHLOROETHENE	50	1.0	0.30	0.19	ug/L	01/24/15	01/24/15
EPA 8260B	TRANS-1,3-DICHLOROPROPENE	0.30 U	1.0	0.30	0.18	ug/L	01/24/15	01/24/15
EPA 8260B	TRICHLOROETHENE	2.7	1.0	0.30	0.16	ug/L	01/24/15	01/24/15
EPA 8260B	VINYL CHLORIDE	22	1.0	0.30	0.23	ug/L	01/24/15	01/24/15
EPA 8260B	XYLENES (TOTAL)	0.30 U	2.0	0.30	0.19	ug/L	01/24/15	01/24/15
EPA 8260B	SURROGATE: 1,2-DICHLOROETHANE	115	70-120			%	01/24/15	01/24/15

J = Estimated value.
E = The reported value exceeds linear range.

Quant Method: MALLW.M
Run #: 0123M57
Instrument: MAX
Sequence: M150119
Dilution Factor: 1
Initials: DG

Printed: 01/28/15 2:12:09 PM
APPL-F1-SC-NoMC-REG MDLs

EPA 8260B WATER

Element Environmental
98-030 Hekaha St., Unit 9
Aiea, HI 96701

APPL Inc.
908 North Temperance Avenue
Clovis, CA 93611

Attn: Steve Spengler
Project: MCBH Motor Pool UST KB-100 SI / 130034
Sample ID: EKB100019
Sample Collection Date: 01/20/15

ARF: 75427
APPL ID: AZ10005
QCG: #86BKB-150123BM-193856

Method	Analyte	Result	LOQ	LOD	DL	Units	Extraction Date	Analysis Date
EPA 8260B	SURROGATE: 4-BROMOFLUOROBEN	102	75-120			%	01/24/15	01/24/15
EPA 8260B	SURROGATE: DIBROMOFLUOROMET	102	85-115			%	01/24/15	01/24/15
EPA 8260B	SURROGATE: TOLUENE-D8 (S)	102	85-120			%	01/24/15	01/24/15

J = Estimated value.
E = The reported value exceeds linear range.

Quant Method: MALLW.M
Run #: 0123M57
Instrument: MAX
Sequence: M150119
Dilution Factor: 1
Initials: DG

Printed: 01/28/15 2:12:09 PM
APPL-F1-SC-NoMC-REG MDLs

Quantitation Report (QT Reviewed)

Data File : M:\MAX\DATA\M150119\0123M57.D
Acq On : 24 Jan 15 9:40
Sample : AZ10005W01
Misc : 10mL w/IS&S: 11-03-14

Vial: 47
Operator: DG,SV,RS
Inst : MAX
Multiplr: 1.00

Quant Time: Jan 26 13:47 2015 Quant Results File: MALLW.RES

Quant Method : M:\MAX\DATA\M150119\MALLW.M (RTE Integrator)
Title : METHOD 8260B
Last Update : Wed Jan 21 13:18:25 2015
Response via : Initial Calibration
DataAcq Meth : V8260

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene (IS)	6.78	96	277631	25.00000 ppb	0.00
55) Chlorobenzene-D5 (IS)	11.03	117	203975	25.00000 ppb	0.00
70) 1,4-Dichlorobenzene-D (IS)	14.37	152	113011	25.00000 ppb	0.00
System Monitoring Compounds					
31) Dibromofluoromethane(S)	5.79	111	40882	14.34499 ppb	0.00
Spiked Amount 14.019			Recovery	= 102.328%	
36) 1,2-DCA-D4(S)	6.26	65	46052	15.28421 ppb	0.00
Spiked Amount 13.317			Recovery	= 114.772%	
56) Toluene-D8(S)	9.03	98	175000	14.71730 ppb	0.00
Spiked Amount 14.391			Recovery	= 102.265%	
64) 4-Bromofluorobenzene(S)	12.71	95	66706	14.37734 ppb	0.00
Spiked Amount 14.078			Recovery	= 102.122%	
Target Compounds					Qvalue
5) Vinyl chloride	1.47	62	80290	22.31831 ppb	97
13) 1,1-DCE	2.60	61	2502	1.14126 ppb	95
21) Trans-1,2-DCE	3.54	96	155819	50.47845 ppb	96
27) Cis-1,2-DCE	5.07	96	507859	145.20066 ppb E	95
41) TCE	7.31	95	8813	2.73242 ppb	97
58) Tetrachloroethene	9.88	164	689	0.39677 ppb	90
78) 2-Chlorotoluene	13.20	91	1963	0.18203 ppb	98
81) Tert-Butylbenzene	13.84	119	1523	0.12745 ppb	87

1/26/15

(#) = qualifier out of range (m) = manual integration

Quantitation Report

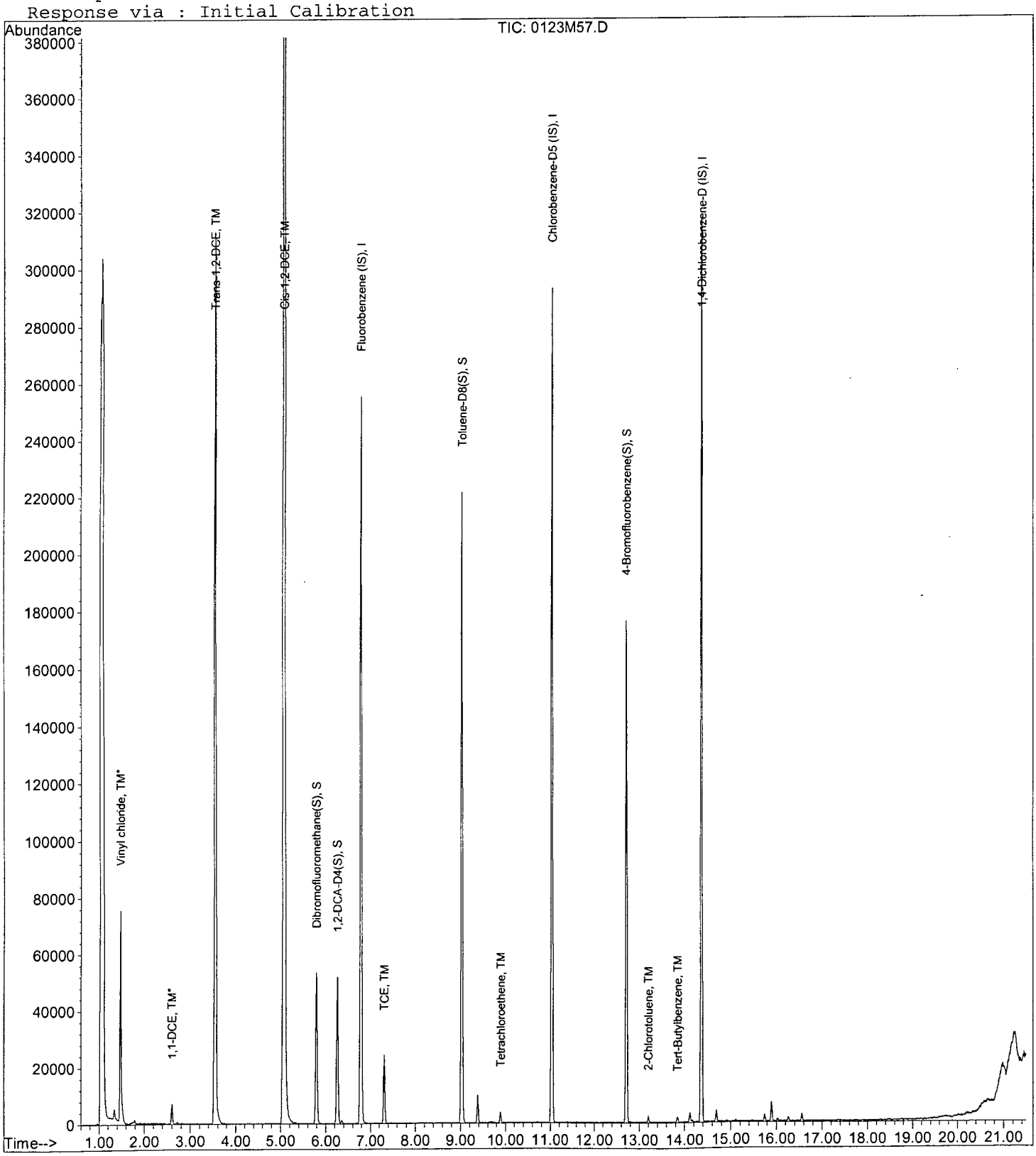
Data File : M:\MAX\DATA\M150119\0123M57.D
Acq On : 24 Jan 15 9:40
Sample : AZ10005W01
Misc : 10mL w/IS&S: 11-03-14

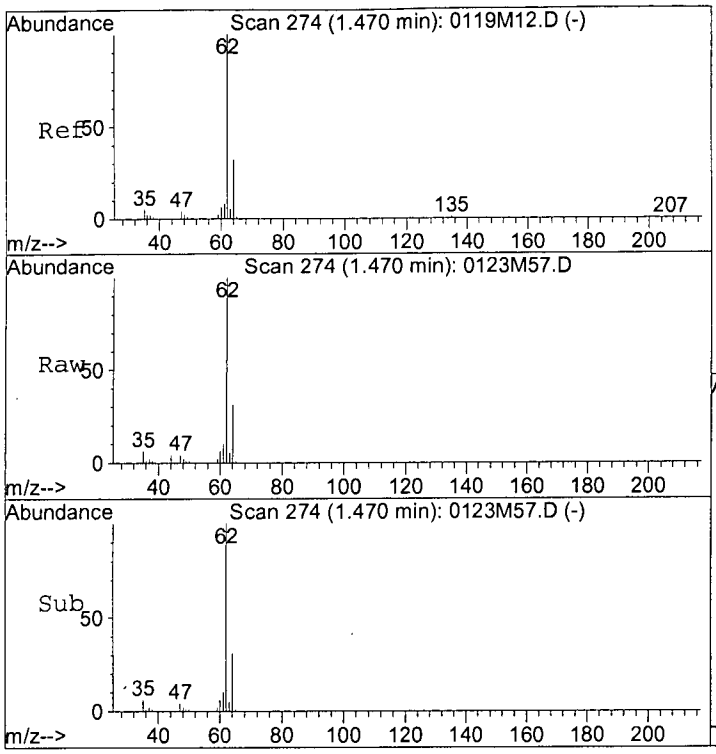
Vial: 47
Operator: DG,SV,RS
Inst : MAX
Multiplr: 1.00

Quant Time: Jan 26 13:47 2015

Quant Results File: MALLW.RES

Method : M:\MAX\DATA\M150119\MALLW.M (RTE Integrator)
Title : METHOD 8260B
Last Update : Wed Jan 21 13:18:25 2015
Response via : Initial Calibration

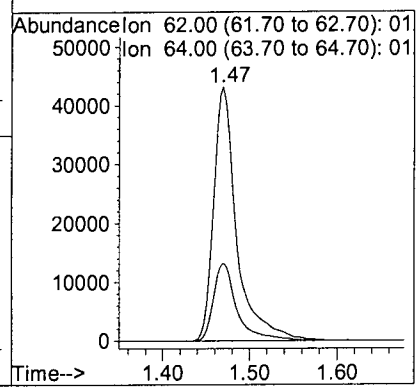


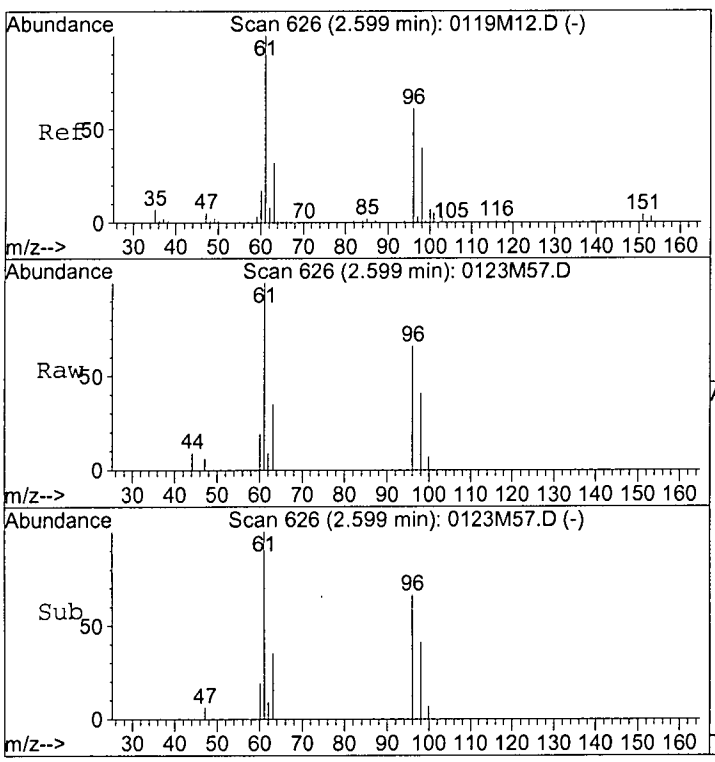


#5
Vinyl chloride
Concen: 22.31831 ppb
RT: 1.47 min Scan# 274
Delta R.T. 0.00 min
Lab File: 0123M57.D
Acq: 24 Jan 15 9:40

Tgt Ion: 62 Resp: 80290

Ion	Ratio	Lower	Upper
62	100		
64	30.6	22.5	41.9

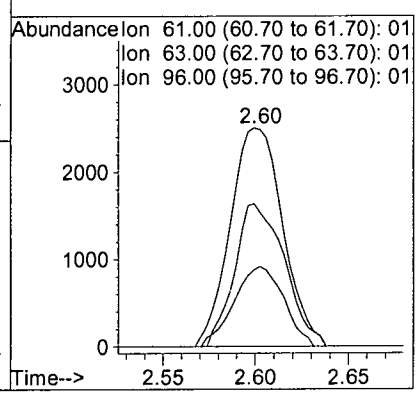


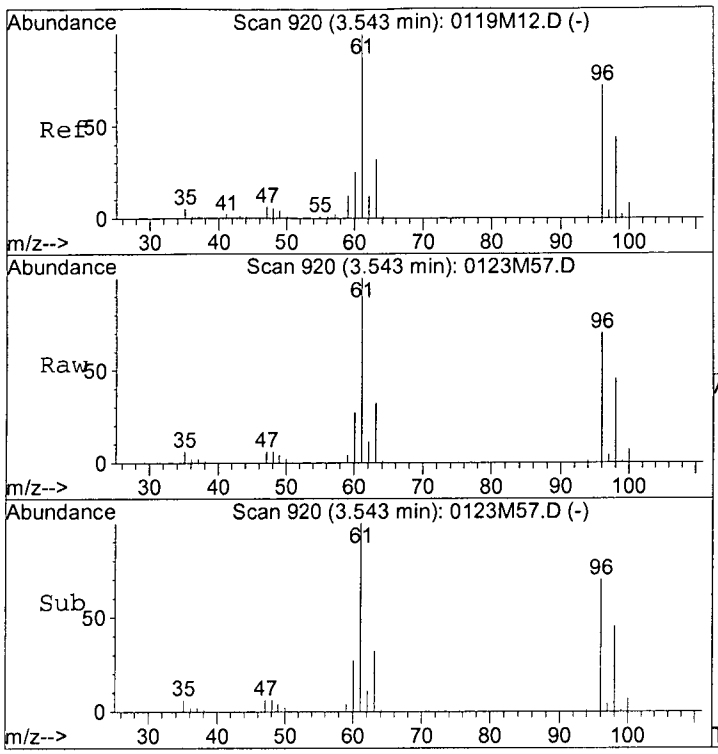


#13
1,1-DCE
Concen: 1.14126 ppb
RT: 2.60 min Scan# 626
Delta R.T. 0.00 min
Lab File: 0123M57.D
Acq: 24 Jan 15 9:40

Tgt Ion: 61 Resp: 2502

Ion	Ratio	Lower	Upper
61	100		
63	35.2	25.9	38.9
96	65.5	49.0	73.6

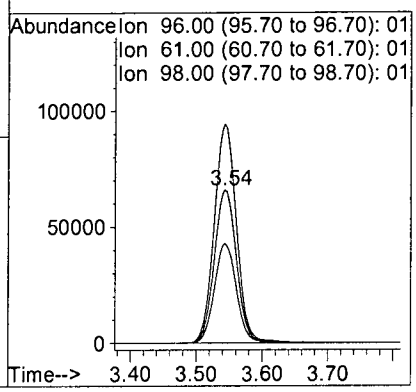


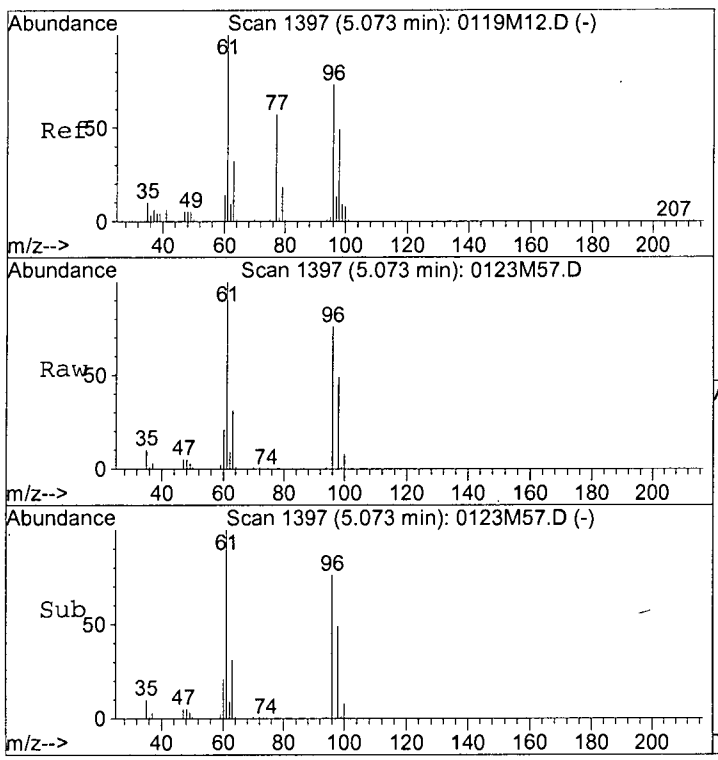


#21
Trans-1,2-DCE
Concen: 50.47845 ppb
RT: 3.54 min Scan# 920
Delta R.T. 0.00 min
Lab File: 0123M57.D
Acq: 24 Jan 15 9:40

Tgt Ion: 96 Resp: 155819

Ion	Ratio	Lower	Upper
96	100		
61	142.9	97.2	180.6
98	64.9	43.1	80.1

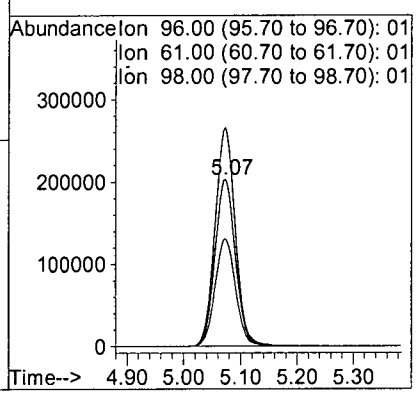


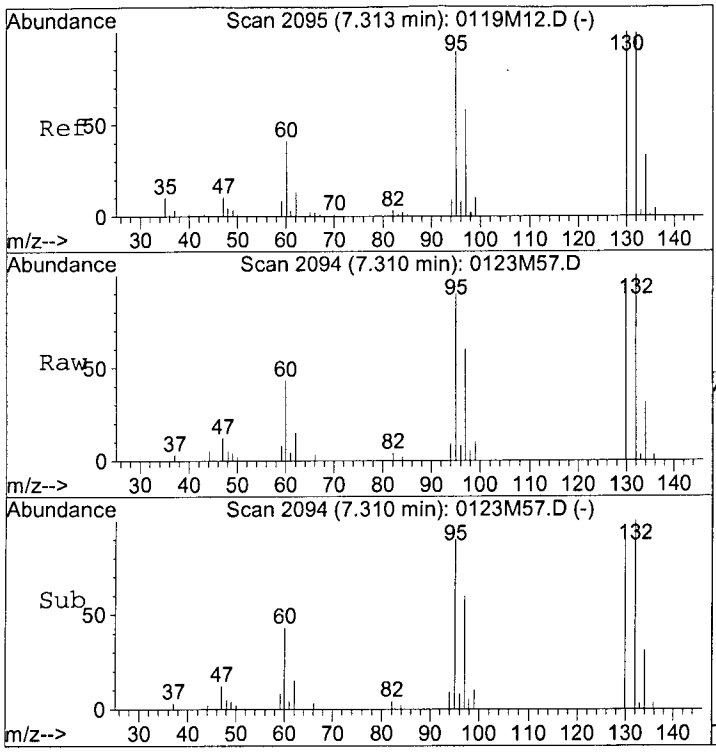


#27
Cis-1,2-DCE
Concen: 145.20066 ppb
RT: 5.07 min Scan# 1397
Delta R.T. 0.00 min
Lab File: 0123M57.D
Acq: 24 Jan 15 9:40

Tgt Ion: 96 Resp: 507859

Ion	Ratio	Lower	Upper
96	100		
61	130.8	96.7	179.5
98	64.4	46.8	86.8

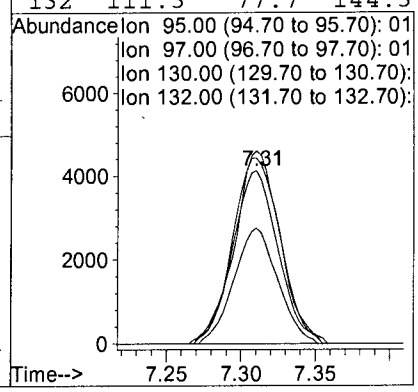


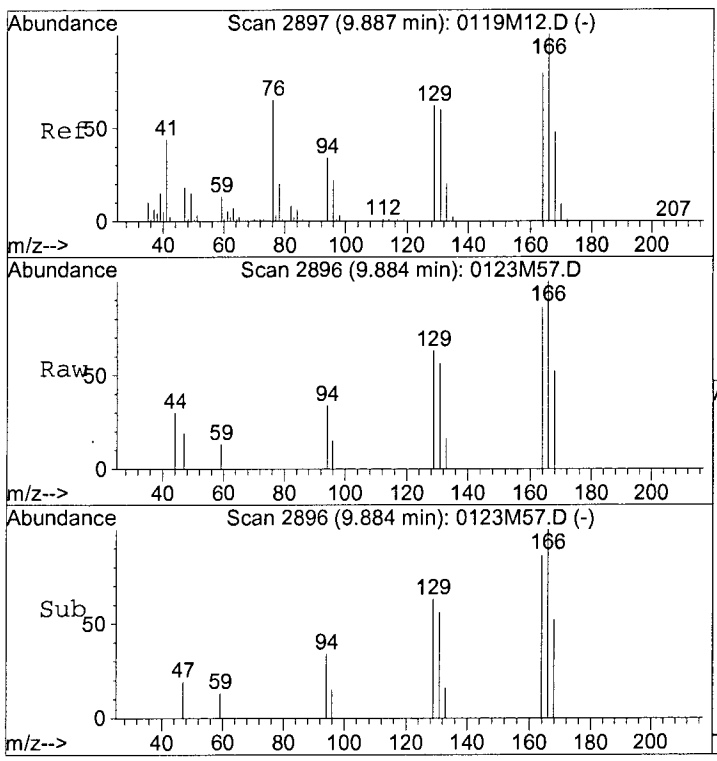


#41
TCE
Concen: 2.73242 ppb
RT: 7.31 min Scan# 2094
Delta R.T. -0.00 min
Lab File: 0123M57.D
Acq: 24 Jan 15 9:40

Tgt Ion: 95 Resp: 8813

Ion	Ratio	Lower	Upper
95	100		
97	66.7	45.4	84.4
130	107.2	78.8	146.3
132	111.3	77.7	144.3

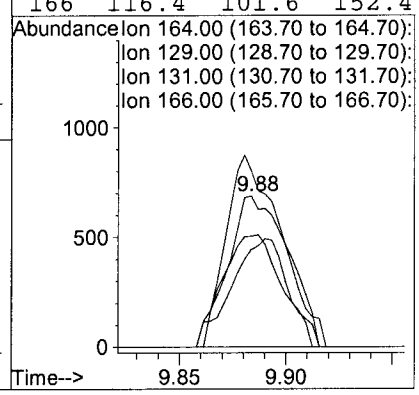


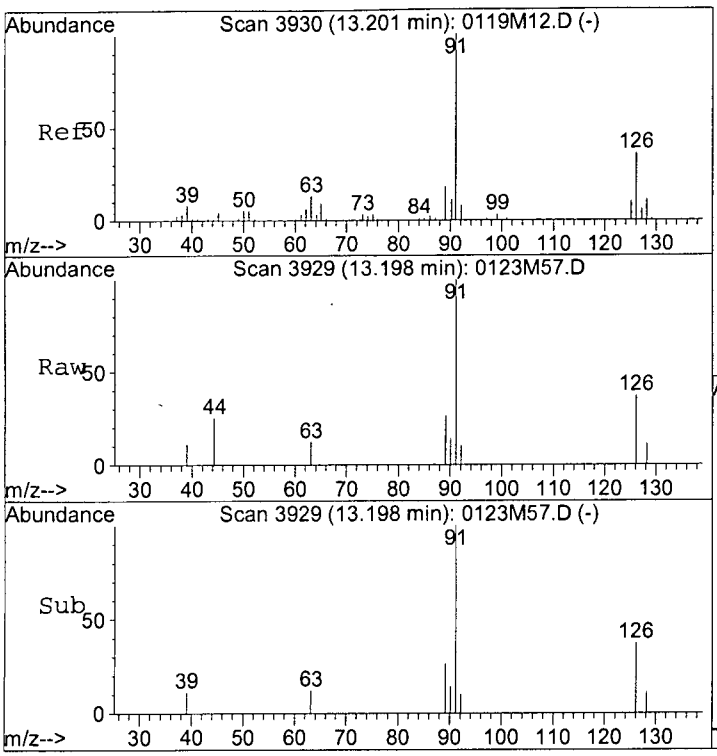


#58
Tetrachloroethene
Concen: 0.39677 ppb
RT: 9.88 min Scan# 2896
Delta R.T. -0.00 min
Lab File: 0123M57.D
Acq: 24 Jan 15 9:40

Tgt Ion:164 Resp: 689

Ion	Ratio	Lower	Upper
164	100		
129	73.6	63.1	94.7
131	64.9	61.4	92.2
166	116.4	101.6	152.4

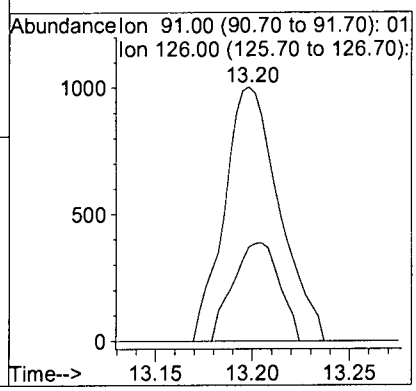


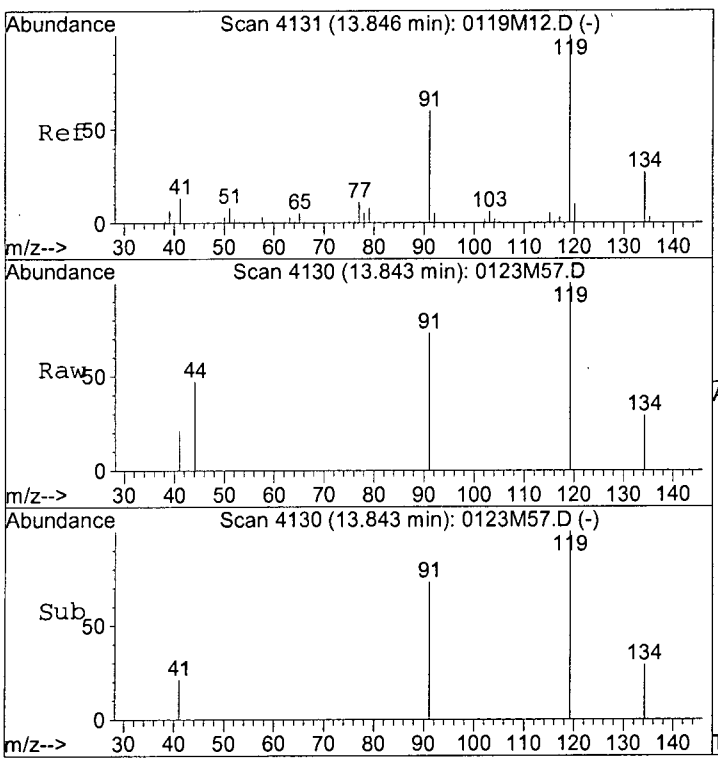


#78
2-Chlorotoluene
Concen: 0.18203 ppb
RT: 13.20 min Scan# 3929
Delta R.T. -0.00 min
Lab File: 0123M57.D
Acq: 24 Jan 15 9:40

Tgt Ion: 91 Resp: 1963

Ion	Ratio	Lower	Upper
91	100		
126	37.0	25.3	46.9

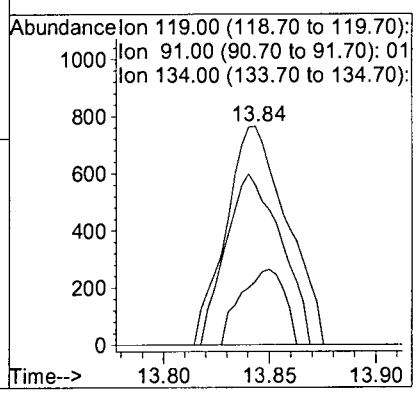




#81
Tert-Butylbenzene
Concen: 0.12745 ppb
RT: 13.84 min Scan# 4130
Delta R.T. -0.00 min
Lab File: 0123M57.D
Acq: 24 Jan 15 9:40

Tgt Ion:119 Resp: 1523

Ion	Ratio	Lower	Upper
119	100		
91	73.1	42.0	78.0
134	29.0	18.8	35.0



EPA 8260B WATER DILUTION

Element Environmental
98-030 Hekaha St., Unit 9
Aiea, HI 96701

APPL Inc.
908 North Temperance Avenue
Clovis, CA 93611

Attn: Steve Spengler
Project: MCBH Motor Pool UST KB-100 SI / 130034
Sample ID: EKB100019
Sample Collection Date: 01/20/15

ARF: 75427
APPL ID: AZ10005
QCG: #86BKB-150127AM-193857

Method	Analyte	Result	LOQ	LOD	DL	Units	Extraction Date	Analysis Date
EPA 8260B	CIS-1,2-DICHLOROETHENE	160	2.0	0.60	0.32	ug/L	01/27/15	01/27/15
EPA 8260B	SURROGATE: 1,2-DICHLOROETHANE	115	70-120			%	01/27/15	01/27/15
EPA 8260B	SURROGATE: 4-BROMOFLUOROBEN	110	75-120			%	01/27/15	01/27/15
EPA 8260B	SURROGATE: DIBROMOFLUOROMET	108	85-115			%	01/27/15	01/27/15
EPA 8260B	SURROGATE: TOLUENE-D8 (S)	109	85-120			%	01/27/15	01/27/15

Quant Method: MALLW.M
Run #: 0127M22
Instrument: MAX
Sequence: M150126
Dilution Factor: 2
Initials: DG

Printed: 01/28/15 2:12:58 PM
APPL-F1-SC-NoMC-REG MDLs

Quantitation Report (QT Reviewed)

Data File : M:\MAX\DATA\M150126\0127M22.D
Acq On : 27 Jan 15 16:02
Sample : AZ10005W02 DF2
Misc : 10mL w/IS&S: 11-03-14

Vial: 15
Operator: DG,SV,RS
Inst : MAX
Multiplr: 2.00

Quant Time: Jan 28 11:47 2015

Quant Results File: MALLW.RES

Quant Method : M:\MAX\DATA\M150126\MALLW.M (RTE Integrator)
Title : METHOD 8260B
Last Update : Tue Jan 27 10:55:52 2015
Response via : Initial Calibration
DataAcq Meth : V8260

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene (IS)	6.78	96	238664	25.00000 ppb	0.00
55) Chlorobenzene-D5 (IS)	11.03	117	177849	25.00000 ppb	0.00
70) 1,4-Dichlorobenzene-D (IS)	14.37	152	100174	25.00000 ppb	0.00
System Monitoring Compounds					
31) Dibromofluoromethane(S)	5.79	111	40737	15.75774 ppb	0.00
Spiked Amount 14.625			Recovery	= 107.746%	
36) 1,2-DCA-D4(S)	6.26	65	46572	15.61053 ppb	0.00
Spiked Amount 13.533			Recovery	= 115.357%	
56) Toluene-D8(S)	9.03	98	170697	16.30196 ppb	0.00
Spiked Amount 14.976			Recovery	= 108.853%	
64) 4-Bromofluorobenzene(S)	12.71	95	65718	15.94662 ppb	0.00
Spiked Amount 14.557			Recovery	= 109.552%	
Target Compounds					Qvalue
5) Vinyl chloride	1.47	62	43189	29.13768 ppb	97
13) 1,1-DCE	2.60	61	1448	1.45437 ppb	92
21) Trans-1,2-DCE	3.54	96	73390	55.47346 ppb	98
27) Cis-1,2-DCE	5.07	96	246603	162.35244 ppb	98
41) TCE	7.31	95	4618	3.24903 ppb	88

(#) = qualifier out of range (m) = manual integration

Quantitation Report

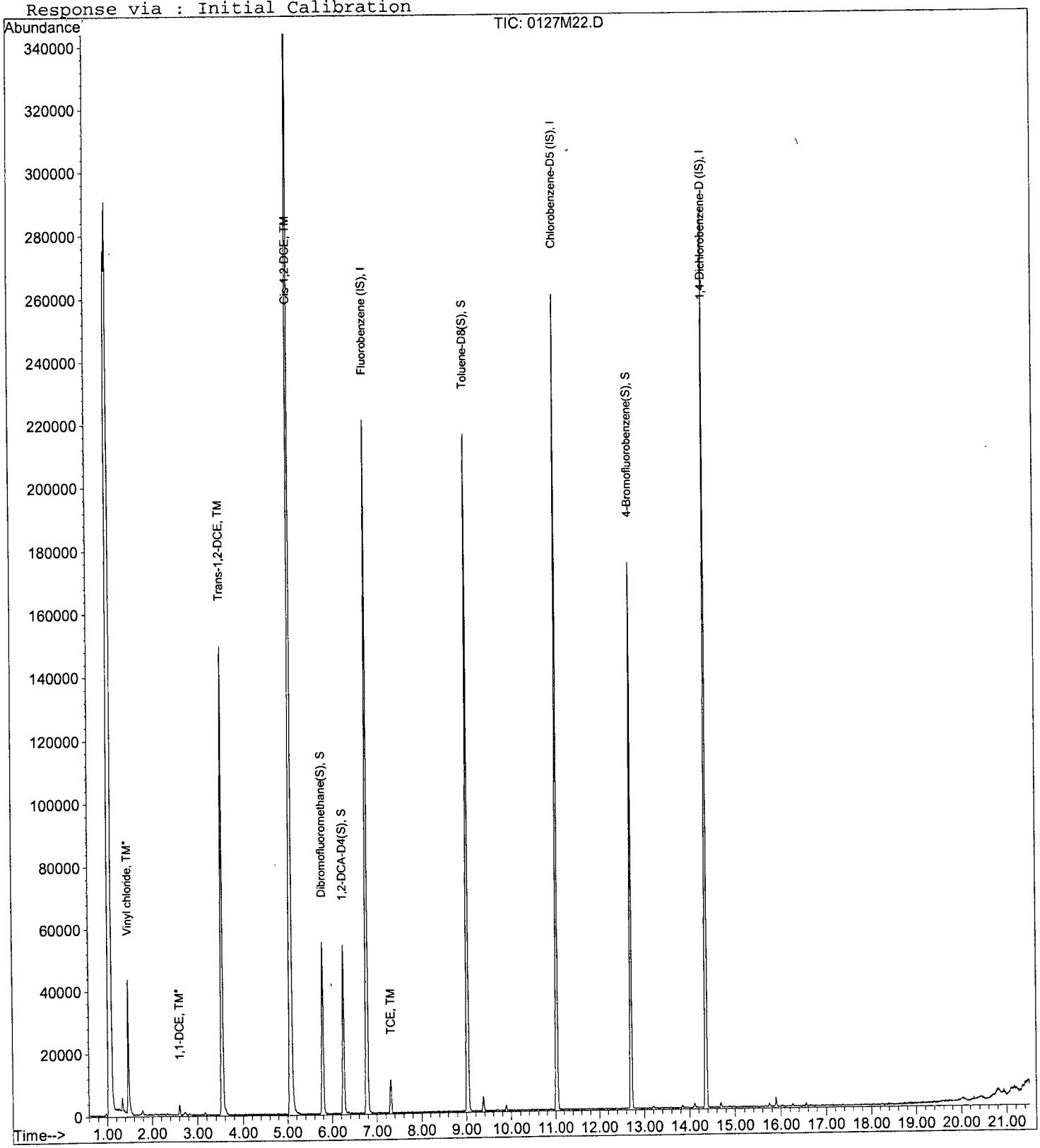
Data File : M:\MAX\DATA\M150126\0127M22.D
Acq On : 27 Jan 15 16:02
Sample : AZ10005W02 DF2
Misc : 10mL w/IS&S: 11-03-14

Vial: 15
Operator: DG,SV,RS
Inst : MAX
Multiplr: 2.00

Quant Time: Jan 28 11:47 2015

Quant Results File: MALLW.RES

Method : M:\MAX\DATA\M150126\MALLW.M (RTE Integrator)
Title : METHOD 8260B
Last Update : Tue Jan 27 10:55:52 2015
Response via : Initial Calibration



EPA 8260B WATER

Element Environmental
98-030 Hekaha St., Unit 9
Aiea, HI 96701

APPL Inc.
908 North Temperance Avenue
Clovis, CA 93611

Attn: Steve Spengler
Project: MCBH Motor Pool UST KB-100 SI / 130034
Sample ID: EKB100020
Sample Collection Date: 01/20/15

ARF: 75427
APPL ID: AZ10006
QCG: #86BKB-150123BM-193856

Method	Analyte	Result	LOQ	LOD	DL	Units	Extraction Date	Analysis Date
EPA 8260B	1,1,1-TRICHLOROETHANE	0.30 U	1.0	0.30	0.14	ug/L	01/24/15	01/24/15
EPA 8260B	1,1,2,2-TETRACHLOROETHANE	0.30 U	1.0	0.30	0.10	ug/L	01/24/15	01/24/15
EPA 8260B	1,1,2-TRICHLOROETHANE	0.50 U	1.0	0.50	0.20	ug/L	01/24/15	01/24/15
EPA 8260B	1,1-DICHLOROETHANE	0.30 U	1.0	0.30	0.19	ug/L	01/24/15	01/24/15
EPA 8260B	1,1-DICHLOROETHENE	0.50 U	1.0	0.50	0.30	ug/L	01/24/15	01/24/15
EPA 8260B	1,2,3-TRICHLOROPROPANE	1.00 U	2.0	1.00	0.39	ug/L	01/24/15	01/24/15
EPA 8260B	1,2-DIBROMOETHANE	0.50 U	1.0	0.50	0.20	ug/L	01/24/15	01/24/15
EPA 8260B	1,2-DICHLOROETHANE	0.30 U	1.0	0.30	0.14	ug/L	01/24/15	01/24/15
EPA 8260B	1,2-DICHLOROPROPANE	0.30 U	1.0	0.30	0.17	ug/L	01/24/15	01/24/15
EPA 8260B	2-BUTANONE	2.00 U	10.0	2.00	0.60	ug/L	01/24/15	01/24/15
EPA 8260B	4-METHYL-2-PENTANONE	5.00 U	10.0	5.00	1.90	ug/L	01/24/15	01/24/15
EPA 8260B	ACETONE	2.00 U	10.0	2.00	0.95	ug/L	01/24/15	01/24/15
EPA 8260B	BENZENE	0.30 U	1.0	0.30	0.16	ug/L	01/24/15	01/24/15
EPA 8260B	BROMODICHLOROMETHANE	0.30 U	1.0	0.30	0.14	ug/L	01/24/15	01/24/15
EPA 8260B	BROMOFORM	0.30 U	1.0	0.30	0.14	ug/L	01/24/15	01/24/15
EPA 8260B	BROMOMETHANE	0.50 U	2.0	0.50	0.24	ug/L	01/24/15	01/24/15
EPA 8260B	CARBON TETRACHLORIDE	0.30 U	1.0	0.30	0.10	ug/L	01/24/15	01/24/15
EPA 8260B	CHLOROBENZENE	0.50 U	1.0	0.50	0.21	ug/L	01/24/15	01/24/15
EPA 8260B	CHLOROETHANE	0.50 U	1.0	0.50	0.21	ug/L	01/24/15	01/24/15
EPA 8260B	CHLOROFORM	0.30 U	1.0	0.30	0.07	ug/L	01/24/15	01/24/15
EPA 8260B	CHLOROMETHANE	0.50 U	1.0	0.50	0.42	ug/L	01/24/15	01/24/15
EPA 8260B	CIS-1,2-DICHLOROETHENE	87	1.0	0.30	0.16	ug/L	01/24/15	01/24/15
EPA 8260B	CIS-1,3-DICHLOROPROPENE	0.30 U	1.0	0.30	0.15	ug/L	01/24/15	01/24/15
EPA 8260B	DIBROMOCHLOROMETHANE	0.30 U	1.0	0.30	0.19	ug/L	01/24/15	01/24/15
EPA 8260B	ETHYLBENZENE	0.50 U	1.0	0.50	0.23	ug/L	01/24/15	01/24/15
EPA 8260B	METHYLENE CHLORIDE	1.00 U	5.0	1.00	0.35	ug/L	01/24/15	01/24/15
EPA 8260B	STYRENE	0.50 U	1.0	0.50	0.25	ug/L	01/24/15	01/24/15
EPA 8260B	TETRACHLOROETHENE	0.35 J	1.0	0.30	0.24	ug/L	01/24/15	01/24/15
EPA 8260B	TOLUENE	0.30 U	1.0	0.30	0.17	ug/L	01/24/15	01/24/15
EPA 8260B	TRANS-1,2-DICHLOROETHENE	46	1.0	0.30	0.19	ug/L	01/24/15	01/24/15
EPA 8260B	TRANS-1,3-DICHLOROPROPENE	0.30 U	1.0	0.30	0.18	ug/L	01/24/15	01/24/15
EPA 8260B	TRICHLOROETHENE	0.64 J	1.0	0.30	0.16	ug/L	01/24/15	01/24/15
EPA 8260B	VINYL CHLORIDE	38	1.0	0.30	0.23	ug/L	01/24/15	01/24/15
EPA 8260B	XYLENES (TOTAL)	0.30 U	2.0	0.30	0.19	ug/L	01/24/15	01/24/15
EPA 8260B	SURROGATE: 1,2-DICHLOROETHANE	110	70-120			%	01/24/15	01/24/15

J = Estimated value.

Quant Method: MALLW.M
Run #: 0123M58
Instrument: MAX
Sequence: M150119
Dilution Factor: 1
Initials: DG

Printed: 01/28/15 2:12:09 PM
APPL-F1-SC-NoMC-REG MDLs

EPA 8260B WATER

Element Environmental
98-030 Hekaha St., Unit 9
Aiea, HI 96701

APPL Inc.
908 North Temperance Avenue
Clovis, CA 93611

Attn: Steve Spengler
Project: MCBH Motor Pool UST KB-100 SI / 130034
Sample ID: EKB100020
Sample Collection Date: 01/20/15

ARF: 75427
APPL ID: AZ10006
QCG: #86BKB-150123BM-193856

Method	Analyte	Result	LOQ	LOD	DL	Units	Extraction Date	Analysis Date
EPA 8260B	SURROGATE: 4-BROMOFLUOROBEN	99.7	75-120			%	01/24/15	01/24/15
EPA 8260B	SURROGATE: DIBROMOFLUOROMET	102	85-115			%	01/24/15	01/24/15
EPA 8260B	SURROGATE: TOLUENE-D8 (S)	102	85-120			%	01/24/15	01/24/15

J = Estimated value.

Quant Method: MALLW.M
Run #: 0123M58
Instrument: MAX
Sequence: M150119
Dilution Factor: 1
Initials: DG

Printed: 01/28/15 2:12:09 PM
APPL-F1-SC-NoMC-REG MDLs

Quantitation Report (QT Reviewed)

Data File : M:\MAX\DATA\M150119\0123M58.D
Acq On : 24 Jan 15 10:07
Sample : AZ10006W01
Misc : 10mL w/IS&S: 11-03-14

Vial: 48
Operator: DG,SV,RS
Inst : MAX
Multiplr: 1.00

Quant Time: Jan 26 13:48 2015

Quant Results File: MALLW.RES

Quant Method : M:\MAX\DATA\M150119\MALLW.M (RTE Integrator)
Title : METHOD 8260B
Last Update : Wed Jan 21 13:18:25 2015
Response via : Initial Calibration
DataAcq Meth : V8260

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene (IS)	6.78	96	292333	25.00000 ppb	0.00
55) Chlorobenzene-D5 (IS)	11.03	117	214190	25.00000 ppb	0.00
70) 1,4-Dichlorobenzene-D (IS)	14.36	152	117423	25.00000 ppb	0.00
System Monitoring Compounds					
31) Dibromofluoromethane(S)	5.79	111	42724	14.23738 ppb	0.00
Spiked Amount 14.019			Recovery	= 101.558%	
36) 1,2-DCA-D4(S)	6.25	65	46460	14.64413 ppb	0.00
Spiked Amount 13.317			Recovery	= 109.966%	
56) Toluene-D8(S)	9.03	98	182606	14.62456 ppb	0.00
Spiked Amount 14.391			Recovery	= 101.626%	
64) 4-Bromofluorobenzene(S)	12.71	95	68359	14.03095 ppb	0.00
Spiked Amount 14.078			Recovery	= 99.664%	
Target Compounds					Qvalue
5) Vinyl chloride	1.47	62	143519	37.88779 ppb	99
21) Trans-1,2-DCE	3.54	96	149899	46.11842 ppb	98
27) Cis-1,2-DCE	5.07	96	320018	86.89404 ppb	95
41) TCE	7.31	95	2176	0.64073 ppb	96
58) Tetrachloroethene	9.89	164	631	0.34604 ppb	93

(#) = qualifier out of range (m) = manual integration

Quantitation Report

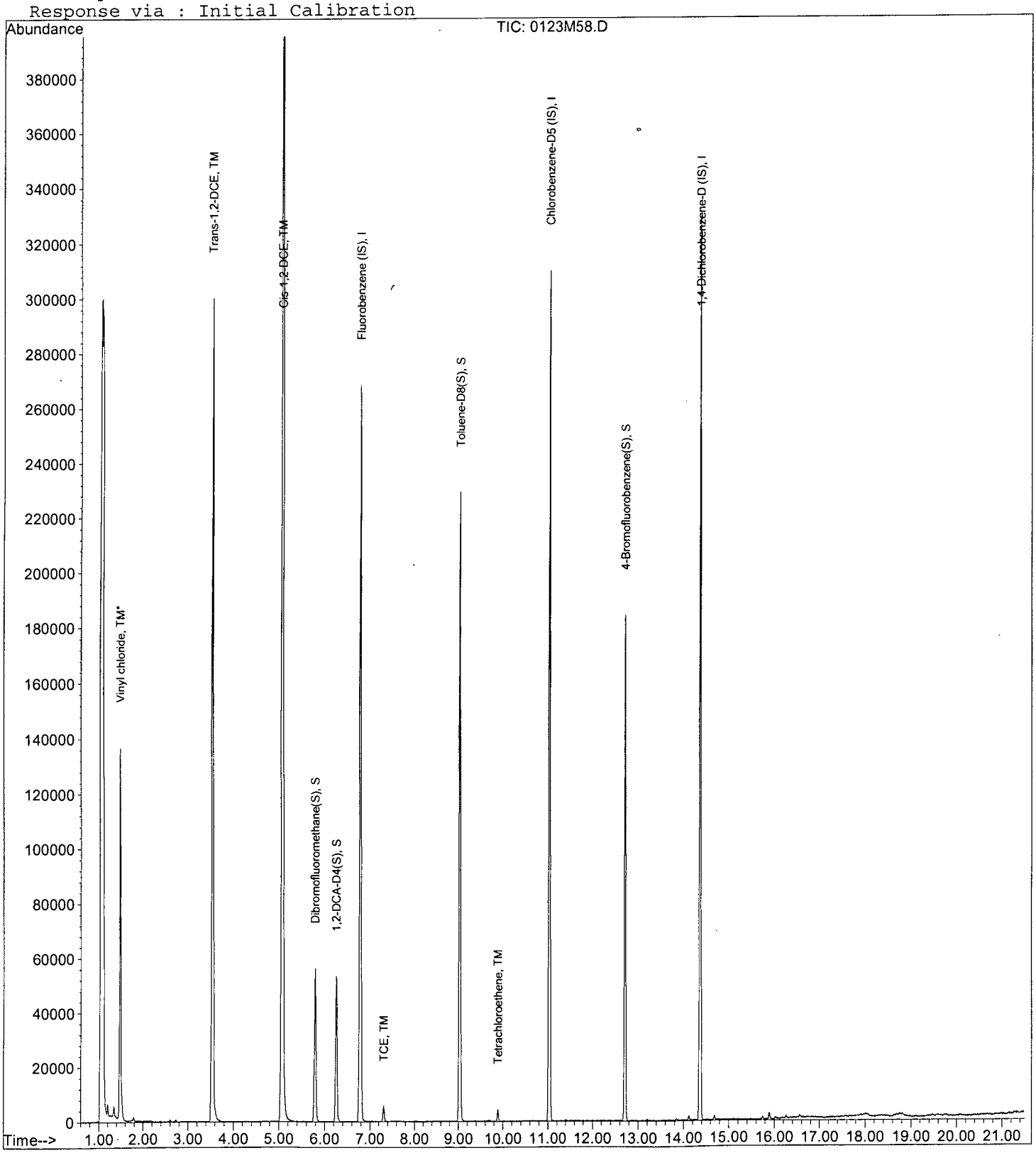
Data File : M:\MAX\DATA\M150119\0123M58.D
Acq On : 24 Jan 15 10:07
Sample : AZ10006W01
Misc : 10mL w/IS&S: 11-03-14

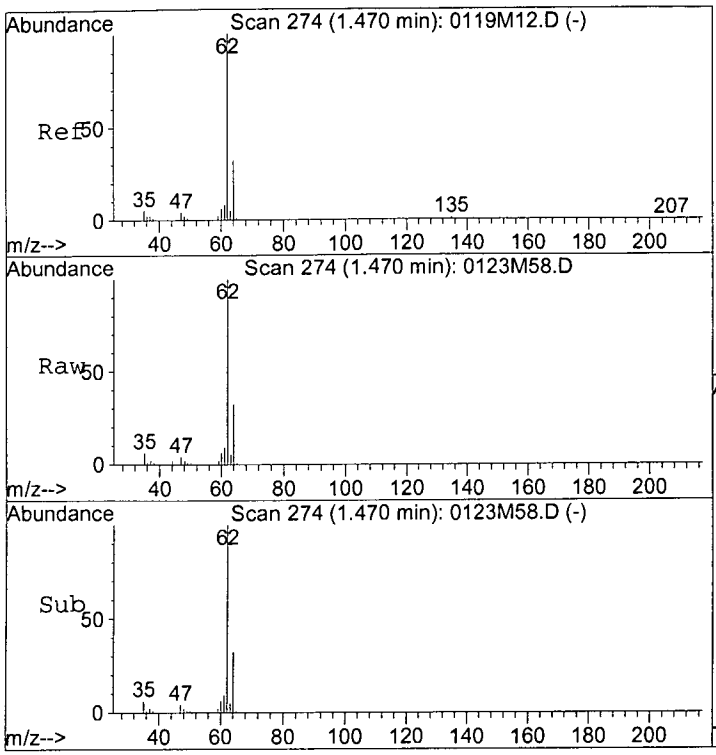
Vial: 48
Operator: DG,SV,RS
Inst : MAX
Multiplr: 1.00

Quant Time: Jan 26 13:48 2015

Quant Results File: MALLW.RES

Method : M:\MAX\DATA\M150119\MALLW.M (RTE Integrator)
Title : METHOD 8260B
Last Update : Wed Jan 21 13:18:25 2015
Response via : Initial Calibration

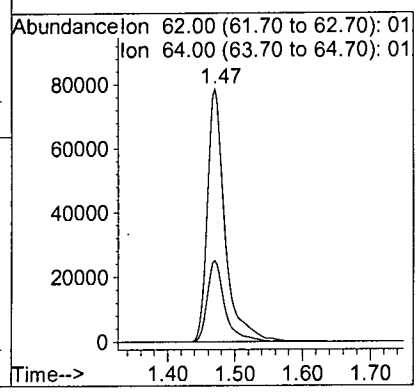


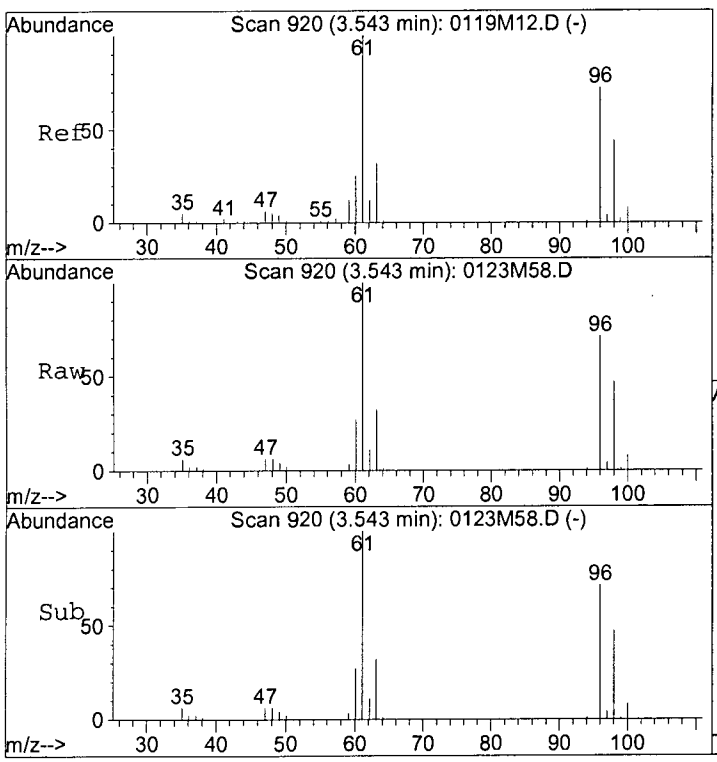


#5
Vinyl chloride
Concen: 37.88779 ppb
RT: 1.47 min Scan# 274
Delta R.T. 0.00 min
Lab File: 0123M58.D
Acq: 24 Jan 15 10:07

Tgt Ion: 62 Resp: 143519

Ion	Ratio	Lower	Upper
62	100		
64	31.8	22.5	41.9

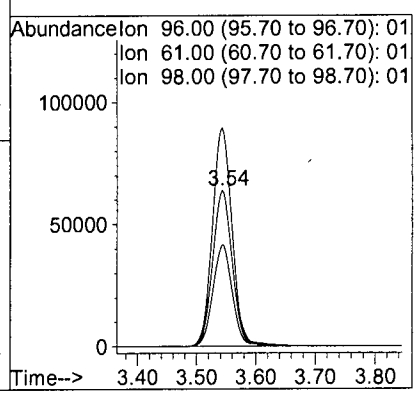


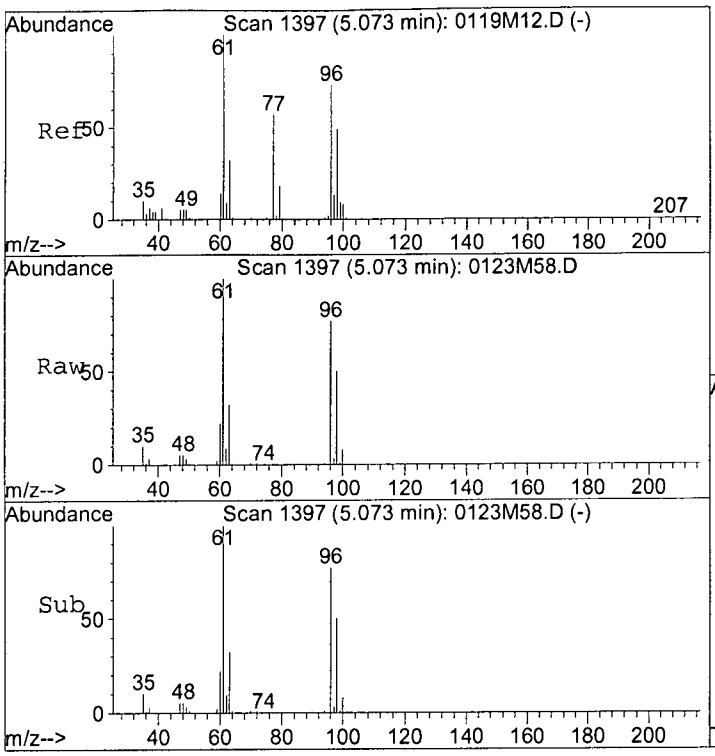


#21
Trans-1,2-DCE
Concen: 46.11842 ppb
RT: 3.54 min Scan# 920
Delta R.T. 0.00 min
Lab File: 0123M58.D
Acq: 24 Jan 15 10:07

Tgt Ion: 96 Resp: 149899

Ion	Ratio	Lower	Upper
96	100		
61	140.1	97.2	180.6
98	65.2	43.1	80.1

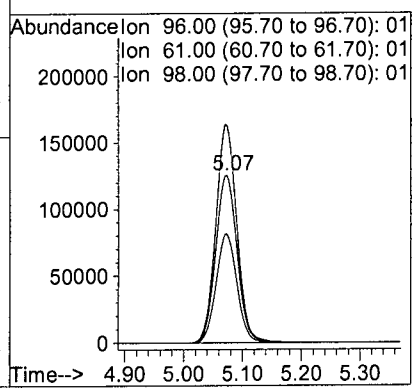


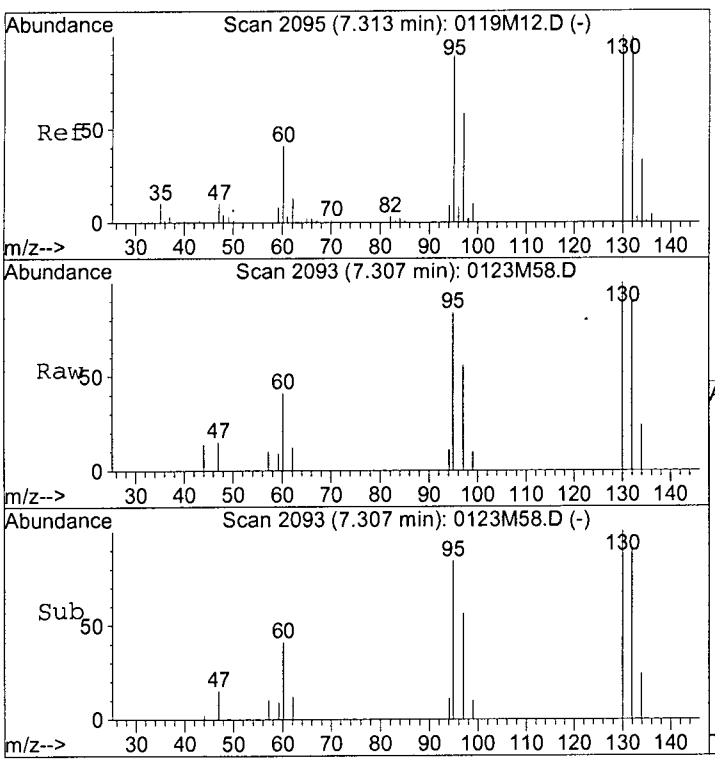


#27
Cis-1,2-DCE
Concen: 86.89404 ppb
RT: 5.07 min Scan# 1397
Delta R.T. 0.00 min
Lab File: 0123M58.D
Acq: 24 Jan 15 10:07

Tgt Ion: 96 Resp: 320018

Ion	Ratio	Lower	Upper
96	100		
61	129.8	96.7	179.5
98	64.7	46.8	86.8

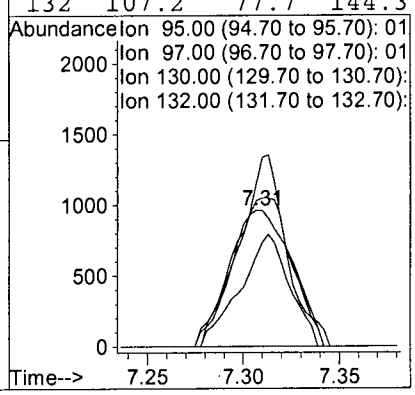


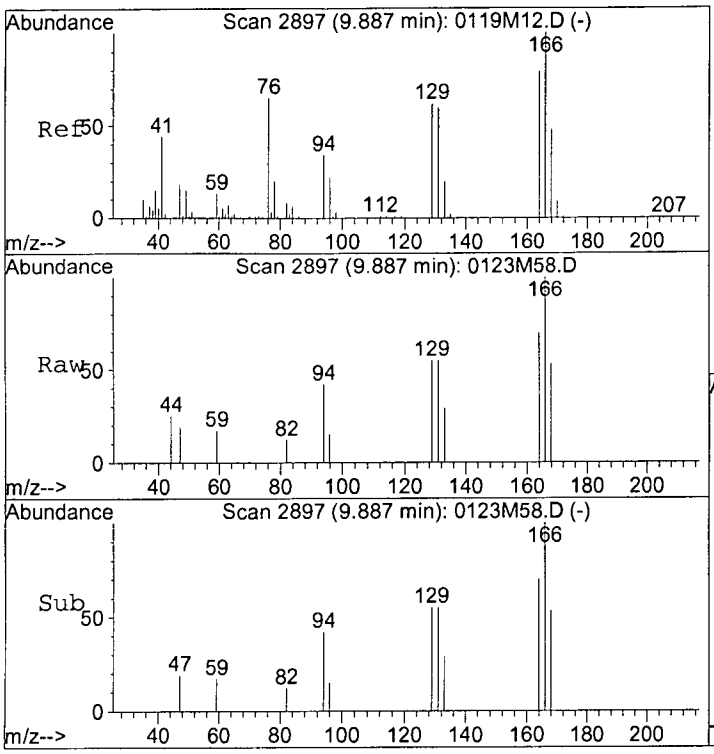


#41
TCE
Concen: 0.64073 ppb
RT: 7.31 min Scan# 2093
Delta R.T. -0.01 min
Lab File: 0123M58.D
Acq: 24 Jan 15 10:07

Tgt Ion: 95 Resp: 2176

Ion	Ratio	Lower	Upper
95	100		
97	66.4	45.4	84.4
130	119.5	78.8	146.3
132	107.2	77.7	144.3

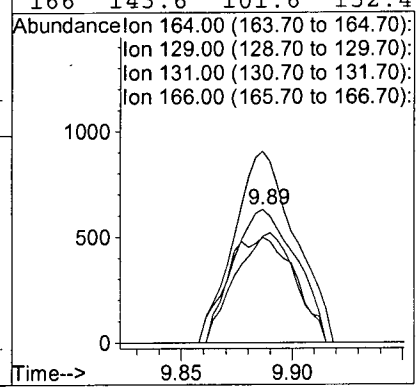




#58
Tetrachloroethene
Concen: 0.34604 ppb
RT: 9.89 min Scan# 2897
Delta R.T. 0.00 min
Lab File: 0123M58.D
Acq: 24 Jan 15 10:07

Tgt Ion:164 Resp: 631

Ion	Ratio	Lower	Upper
164	100		
129	78.9	63.1	94.7
131	79.6	61.4	92.2
166	143.6	101.6	152.4



EPA 8260B WATER

Element Environmental
98-030 Hekaha St., Unit 9
Aiea, HI 96701

APPL Inc.
908 North Temperance Avenue
Clovis, CA 93611

Attn: Steve Spengler
Project: MCBH Motor Pool UST KB-100 SI / 130034
Sample ID: EKB100021
Sample Collection Date: 01/20/15

ARF: 75427
APPL ID: AZ10007
QCG: #86BKB-150123BM-193856

Method	Analyte	Result	LOQ	LOD	DL	Units	Extraction Date	Analysis Date
EPA 8260B	1,1,1-TRICHLOROETHANE	0.30 U	1.0	0.30	0.14	ug/L	01/24/15	01/24/15
EPA 8260B	1,1,2,2-TETRACHLOROETHANE	0.30 U	1.0	0.30	0.10	ug/L	01/24/15	01/24/15
EPA 8260B	1,1,2-TRICHLOROETHANE	0.50 U	1.0	0.50	0.20	ug/L	01/24/15	01/24/15
EPA 8260B	1,1-DICHLOROETHANE	0.30 U	1.0	0.30	0.19	ug/L	01/24/15	01/24/15
EPA 8260B	1,1-DICHLOROETHENE	0.50 U	1.0	0.50	0.30	ug/L	01/24/15	01/24/15
EPA 8260B	1,2,3-TRICHLOROPROPANE	1.00 U	2.0	1.00	0.39	ug/L	01/24/15	01/24/15
EPA 8260B	1,2-DIBROMOETHANE	0.50 U	1.0	0.50	0.20	ug/L	01/24/15	01/24/15
EPA 8260B	1,2-DICHLOROETHANE	0.30 U	1.0	0.30	0.14	ug/L	01/24/15	01/24/15
EPA 8260B	1,2-DICHLOROPROPANE	0.30 U	1.0	0.30	0.17	ug/L	01/24/15	01/24/15
EPA 8260B	2-BUTANONE	2.00 U	10.0	2.00	0.60	ug/L	01/24/15	01/24/15
EPA 8260B	4-METHYL-2-PENTANONE	5.00 U	10.0	5.00	1.90	ug/L	01/24/15	01/24/15
EPA 8260B	ACETONE	2.00 U	10.0	2.00	0.95	ug/L	01/24/15	01/24/15
EPA 8260B	BENZENE	0.30 U	1.0	0.30	0.16	ug/L	01/24/15	01/24/15
EPA 8260B	BROMODICHLOROMETHANE	0.30 U	1.0	0.30	0.14	ug/L	01/24/15	01/24/15
EPA 8260B	BROMOFORM	0.30 U	1.0	0.30	0.14	ug/L	01/24/15	01/24/15
EPA 8260B	BROMOMETHANE	0.50 U	2.0	0.50	0.24	ug/L	01/24/15	01/24/15
EPA 8260B	CARBON TETRACHLORIDE	0.30 U	1.0	0.30	0.10	ug/L	01/24/15	01/24/15
EPA 8260B	CHLOROBENZENE	0.50 U	1.0	0.50	0.21	ug/L	01/24/15	01/24/15
EPA 8260B	CHLOROETHANE	0.50 U	1.0	0.50	0.21	ug/L	01/24/15	01/24/15
EPA 8260B	CHLOROFORM	0.30 U	1.0	0.30	0.07	ug/L	01/24/15	01/24/15
EPA 8260B	CHLOROMETHANE	0.50 U	1.0	0.50	0.42	ug/L	01/24/15	01/24/15
EPA 8260B	CIS-1,2-DICHLOROETHENE	0.30 U	1.0	0.30	0.16	ug/L	01/24/15	01/24/15
EPA 8260B	CIS-1,3-DICHLOROPROPENE	0.30 U	1.0	0.30	0.15	ug/L	01/24/15	01/24/15
EPA 8260B	DIBROMOCHLOROMETHANE	0.30 U	1.0	0.30	0.19	ug/L	01/24/15	01/24/15
EPA 8260B	ETHYLBENZENE	0.50 U	1.0	0.50	0.23	ug/L	01/24/15	01/24/15
EPA 8260B	METHYLENE CHLORIDE	1.00 U	5.0	1.00	0.35	ug/L	01/24/15	01/24/15
EPA 8260B	STYRENE	0.50 U	1.0	0.50	0.25	ug/L	01/24/15	01/24/15
EPA 8260B	TETRACHLOROETHENE	0.30 U	1.0	0.30	0.24	ug/L	01/24/15	01/24/15
EPA 8260B	TOLUENE	0.30 U	1.0	0.30	0.17	ug/L	01/24/15	01/24/15
EPA 8260B	TRANS-1,2-DICHLOROETHENE	0.30 U	1.0	0.30	0.19	ug/L	01/24/15	01/24/15
EPA 8260B	TRANS-1,3-DICHLOROPROPENE	0.30 U	1.0	0.30	0.18	ug/L	01/24/15	01/24/15
EPA 8260B	TRICHLOROETHENE	0.30 U	1.0	0.30	0.16	ug/L	01/24/15	01/24/15
EPA 8260B	VINYL CHLORIDE	0.30 U	1.0	0.30	0.23	ug/L	01/24/15	01/24/15
EPA 8260B	XYLENES (TOTAL)	0.30 U	2.0	0.30	0.19	ug/L	01/24/15	01/24/15
EPA 8260B	SURROGATE: 1,2-DICHLOROETHANE	107	70-120			%	01/24/15	01/24/15

Quant Method: MALLW.M
Run #: 0123M59
Instrument: MAX
Sequence: M150119
Dilution Factor: 1
Initials: DG

Printed: 01/28/15 2:12:09 PM
APPL-F1-SC-NoMC-REG MDLs

EPA 8260B WATER

Element Environmental
98-030 Hekaha St., Unit 9
Aiea, HI 96701

APPL Inc.
908 North Temperance Avenue
Clovis, CA 93611

Attn: Steve Spengler
Project: MCBH Motor Pool UST KB-100 SI / 130034
Sample ID: EKB100021
Sample Collection Date: 01/20/15

ARF: 75427
APPL ID: AZ10007
QCG: #86BKB-150123BM-193856

Method	Analyte	Result	LOQ	LOD	DL	Units	Extraction Date	Analysis Date
EPA 8260B	SURROGATE: 4-BROMOFLUOROBEN	97.7	75-120			%	01/24/15	01/24/15
EPA 8260B	SURROGATE: DIBROMOFLUOROMET	99.1	85-115			%	01/24/15	01/24/15
EPA 8260B	SURROGATE: TOLUENE-D8 (S)	99.3	85-120			%	01/24/15	01/24/15

Quant Method: MALLW.M
Run #: 0123M59
Instrument: MAX
Sequence: M150119
Dilution Factor: 1
Initials: DG

Printed: 01/28/15 2:12:09 PM
APPL-F1-SC-NoMC-REG MDLs

Quantitation Report (QT Reviewed)

Data File : M:\MAX\DATA\M150119\0123M59.D
Acq On : 24 Jan 15 10:35
Sample : AZ10007W01
Misc : 10mL w/IS&S: 11-03-14

Vial: 49
Operator: DG,SV,RS
Inst : MAX
Multiplr: 1.00

Quant Time: Jan 26 13:49 2015 Quant Results File: MALLW.RES

Quant Method : M:\MAX\DATA\M150119\MALLW.M (RTE Integrator)
Title : METHOD 8260B
Last Update : Wed Jan 21 13:18:25 2015
Response via : Initial Calibration
DataAcq Meth : V8260

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene (IS)	6.78	96	284539	25.00000 ppb	0.00
55) Chlorobenzene-D5 (IS)	11.03	117	209716	25.00000 ppb	0.00
70) 1,4-Dichlorobenzene-D (IS)	14.37	152	115113	25.00000 ppb	0.00
System Monitoring Compounds					
31) Dibromofluoromethane(S)	5.79	111	40594	13.89812 ppb	0.00
Spiked Amount 14.019			Recovery	= 99.140%	
36) 1,2-DCA-D4(S)	6.25	65	44079	14.27422 ppb	0.00
Spiked Amount 13.317			Recovery	= 107.188%	
56) Toluene-D8(S)	9.03	98	174705	14.29028 ppb	0.00
Spiked Amount 14.391			Recovery	= 99.298%	
64) 4-Bromofluorobenzene(S)	12.71	95	65584	13.74855 ppb	0.00
Spiked Amount 14.078			Recovery	= 97.661%	

Target Compounds Qvalue

(#) = qualifier out of range (m) = manual integration

Quantitation Report

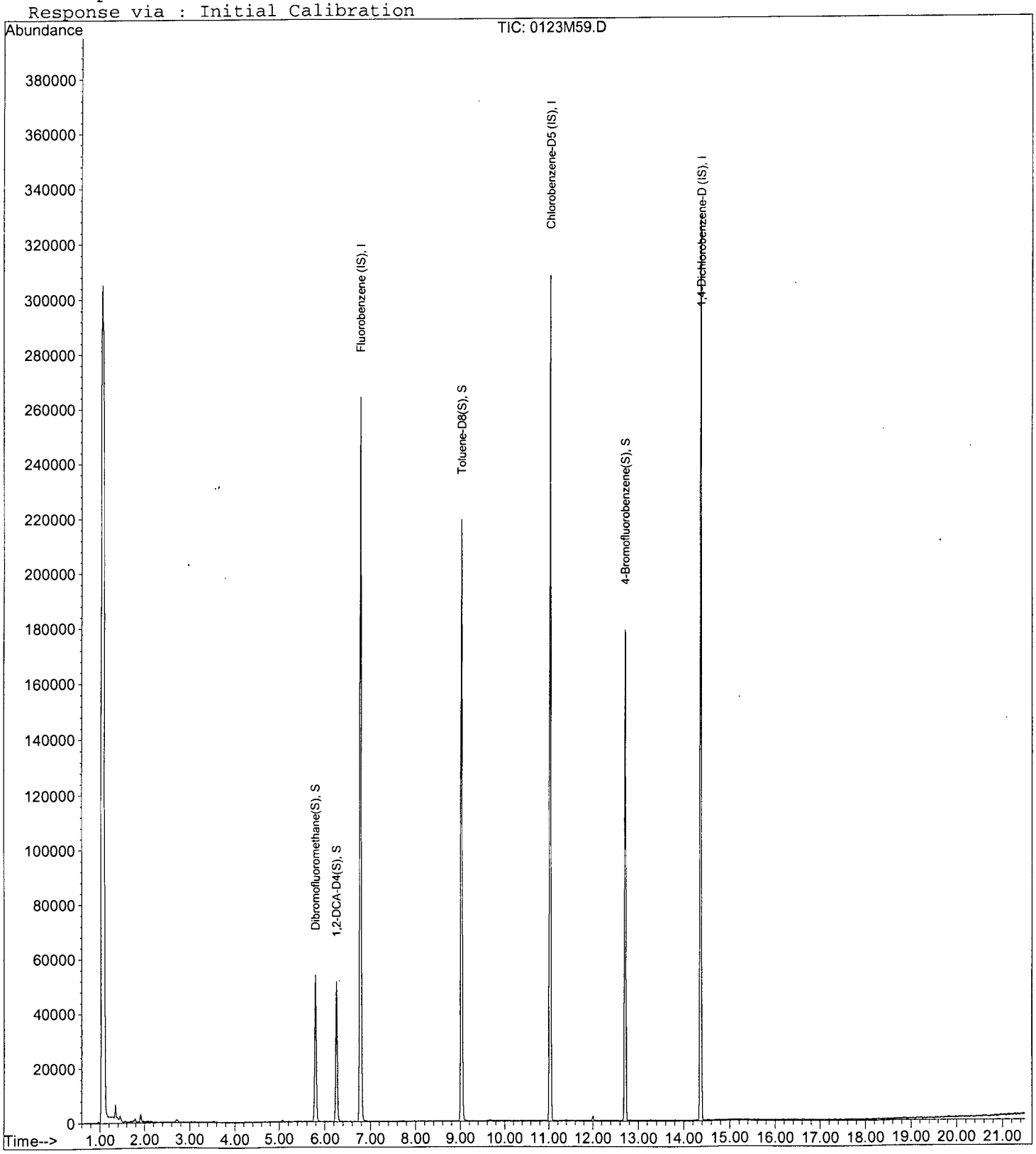
Data File : M:\MAX\DATA\M150119\0123M59.D
Acq On : 24 Jan 15 10:35
Sample : AZ10007W01
Misc : 10mL w/IS&S: 11-03-14

Vial: 49
Operator: DG,SV,RS
Inst : MAX
Multiplr: 1.00

Quant Time: Jan 26 13:49 2015

Quant Results File: MALLW.RES

Method : M:\MAX\DATA\M150119\MALLW.M (RTE Integrator)
Title : METHOD 8260B
Last Update : Wed Jan 21 13:18:25 2015
Response via : Initial Calibration



EPA 8260B WATER

Element Environmental
98-030 Hekaha St., Unit 9
Aiea, HI 96701

APPL Inc.
908 North Temperance Avenue
Clovis, CA 93611

Attn: Steve Spengler
Project: MCBH Motor Pool UST KB-100 SI / 130034
Sample ID: Trip Blank - 02
Sample Collection Date: 01/22/15

ARF: 75427
APPL ID: AZ10008
QCG: #86BKB-150123BM-193856

Method	Analyte	Result	LOQ	LOD	DL	Units	Extraction Date	Analysis Date
EPA 8260B	1,1,1-TRICHLOROETHANE	0.30 U	1.0	0.30	0.14	ug/L	01/24/15	01/24/15
EPA 8260B	1,1,2,2-TETRACHLOROETHANE	0.30 U	1.0	0.30	0.10	ug/L	01/24/15	01/24/15
EPA 8260B	1,1,2-TRICHLOROETHANE	0.50 U	1.0	0.50	0.20	ug/L	01/24/15	01/24/15
EPA 8260B	1,1-DICHLOROETHANE	0.30 U	1.0	0.30	0.19	ug/L	01/24/15	01/24/15
EPA 8260B	1,1-DICHLOROETHENE	0.50 U	1.0	0.50	0.30	ug/L	01/24/15	01/24/15
EPA 8260B	1,2,3-TRICHLOROPROPANE	1.00 U	2.0	1.00	0.39	ug/L	01/24/15	01/24/15
EPA 8260B	1,2-DIBROMOETHANE	0.50 U	1.0	0.50	0.20	ug/L	01/24/15	01/24/15
EPA 8260B	1,2-DICHLOROETHANE	0.30 U	1.0	0.30	0.14	ug/L	01/24/15	01/24/15
EPA 8260B	1,2-DICHLOROPROPANE	0.30 U	1.0	0.30	0.17	ug/L	01/24/15	01/24/15
EPA 8260B	2-BUTANONE	2.00 U	10.0	2.00	0.60	ug/L	01/24/15	01/24/15
EPA 8260B	4-METHYL-2-PENTANONE	5.00 U	10.0	5.00	1.90	ug/L	01/24/15	01/24/15
EPA 8260B	ACETONE	2.00 U	10.0	2.00	0.95	ug/L	01/24/15	01/24/15
EPA 8260B	BENZENE	0.30 U	1.0	0.30	0.16	ug/L	01/24/15	01/24/15
EPA 8260B	BROMODICHLOROMETHANE	0.30 U	1.0	0.30	0.14	ug/L	01/24/15	01/24/15
EPA 8260B	BROMOFORM	0.30 U	1.0	0.30	0.14	ug/L	01/24/15	01/24/15
EPA 8260B	BROMOMETHANE	0.50 U	2.0	0.50	0.24	ug/L	01/24/15	01/24/15
EPA 8260B	CARBON TETRACHLORIDE	0.30 U	1.0	0.30	0.10	ug/L	01/24/15	01/24/15
EPA 8260B	CHLOROBENZENE	0.50 U	1.0	0.50	0.21	ug/L	01/24/15	01/24/15
EPA 8260B	CHLOROETHANE	0.50 U	1.0	0.50	0.21	ug/L	01/24/15	01/24/15
EPA 8260B	CHLOROFORM	0.30 U	1.0	0.30	0.07	ug/L	01/24/15	01/24/15
EPA 8260B	CHLOROMETHANE	0.50 U	1.0	0.50	0.42	ug/L	01/24/15	01/24/15
EPA 8260B	CIS-1,2-DICHLOROETHENE	0.30 U	1.0	0.30	0.16	ug/L	01/24/15	01/24/15
EPA 8260B	CIS-1,3-DICHLOROPROPENE	0.30 U	1.0	0.30	0.15	ug/L	01/24/15	01/24/15
EPA 8260B	DIBROMOCHLOROMETHANE	0.30 U	1.0	0.30	0.19	ug/L	01/24/15	01/24/15
EPA 8260B	ETHYLBENZENE	0.50 U	1.0	0.50	0.23	ug/L	01/24/15	01/24/15
EPA 8260B	METHYLENE CHLORIDE	1.00 U	5.0	1.00	0.35	ug/L	01/24/15	01/24/15
EPA 8260B	STYRENE	0.50 U	1.0	0.50	0.25	ug/L	01/24/15	01/24/15
EPA 8260B	TETRACHLOROETHENE	0.30 U	1.0	0.30	0.24	ug/L	01/24/15	01/24/15
EPA 8260B	TOLUENE	0.30 U	1.0	0.30	0.17	ug/L	01/24/15	01/24/15
EPA 8260B	TRANS-1,2-DICHLOROETHENE	0.30 U	1.0	0.30	0.19	ug/L	01/24/15	01/24/15
EPA 8260B	TRANS-1,3-DICHLOROPROPENE	0.30 U	1.0	0.30	0.18	ug/L	01/24/15	01/24/15
EPA 8260B	TRICHLOROETHENE	0.30 U	1.0	0.30	0.16	ug/L	01/24/15	01/24/15
EPA 8260B	VINYL CHLORIDE	0.30 U	1.0	0.30	0.23	ug/L	01/24/15	01/24/15
EPA 8260B	XYLENES (TOTAL)	0.30 U	2.0	0.30	0.19	ug/L	01/24/15	01/24/15
EPA 8260B	SURROGATE: 1,2-DICHLOROETHANE	110	70-120			%	01/24/15	01/24/15

Quant Method: MALLW.M
Run #: 0123M46
Instrument: MAX
Sequence: M150119
Dilution Factor: 1
Initials: DG

Printed: 01/28/15 2:12:09 PM
APPL-F1-SC-NoMC-REG MDLs

EPA 8260B WATER

Element Environmental
98-030 Hekaha St., Unit 9
Aiea, HI 96701

APPL Inc.
908 North Temperance Avenue
Clovis, CA 93611

Attn: Steve Spengler
Project: MCBH Motor Pool UST KB-100 SI / 130034
Sample ID: Trip Blank - 02
Sample Collection Date: 01/22/15

ARF: 75427
APPL ID: AZ10008
QCG: #86BKB-150123BM-193856

Method	Analyte	Result	LOQ	LOD	DL	Units	Extraction Date	Analysis Date
EPA 8260B	SURROGATE: 4-BROMOFLUOROBEN	100	75-120			%	01/24/15	01/24/15
EPA 8260B	SURROGATE: DIBROMOFLUOROMET	104	85-115			%	01/24/15	01/24/15
EPA 8260B	SURROGATE: TOLUENE-D8 (S)	103	85-120			%	01/24/15	01/24/15

Quant Method: MALLW.M
Run #: 0123M46
Instrument: MAX
Sequence: M150119
Dilution Factor: 1
Initials: DG

Printed: 01/28/15 2:12:09 PM
APPL-F1-SC-NoMC-REG MDLs

Quantitation Report (QT Reviewed)

Data File : M:\MAX\DATA\M150119\0123M46.D
Acq On : 24 Jan 15 4:36
Sample : AZ10008W01
Misc : 10mL w/IS&S: 11-03-14

Vial: 36
Operator: DG,SV,RS
Inst : MAX
Multiplr: 1.00

Quant Time: Jan 26 13:33 2015 Quant Results File: MALLW.RES

Quant Method : M:\MAX\DATA\M150119\MALLW.M (RTE Integrator)
Title : METHOD 8260B
Last Update : Wed Jan 21 13:18:25 2015
Response via : Initial Calibration
DataAcq Meth : V8260

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene (IS)	6.78	96	298324	25.00000 ppb	0.00
55) Chlorobenzene-D5 (IS)	11.03	117	218354	25.00000 ppb	0.00
70) 1,4-Dichlorobenzene-D (IS)	14.37	152	120462	25.00000 ppb	0.00
System Monitoring Compounds					
31) Dibromofluoromethane(S)	5.79	111	44636	14.57582 ppb	0.00
Spiked Amount 14.019			Recovery	= 103.976%	
36) 1,2-DCA-D4(S)	6.26	65	47298	14.60888 ppb	0.00
Spiked Amount 13.317			Recovery	= 109.704%	
56) Toluene-D8(S)	9.03	98	189477	14.88546 ppb	0.00
Spiked Amount 14.391			Recovery	= 103.433%	
64) 4-Bromofluorobenzene(S)	12.71	95	70234	14.14090 ppb	0.00
Spiked Amount 14.078			Recovery	= 100.445%	

Target Compounds Qvalue

(#) = qualifier out of range (m) = manual integration

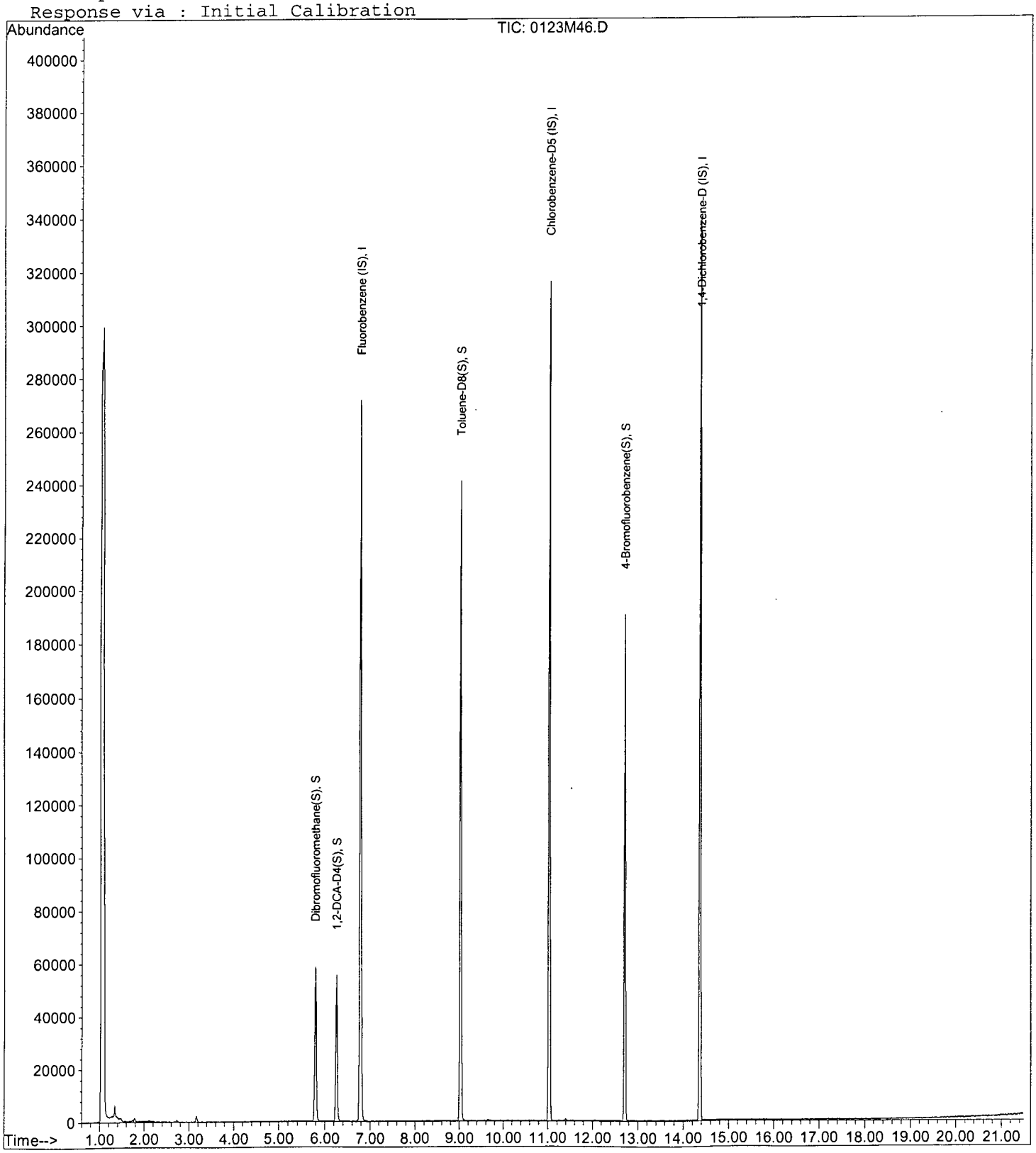
Quantitation Report

Data File : M:\MAX\DATA\M150119\0123M46.D
Acq On : 24 Jan 15 4:36
Sample : AZ10008W01
Misc : 10mL w/IS&S: 11-03-14

Vial: 36
Operator: DG,SV,RS
Inst : MAX
Multiplr: 1.00

Quant Time: Jan 26 13:33 2015 Quant Results File: MALLW.RES

Method : M:\MAX\DATA\M150119\MALLW.M (RTE Integrator)
Title : METHOD 8260B
Last Update : Wed Jan 21 13:18:25 2015
Response via : Initial Calibration



EPA 8260B WATER

Element Environmental
98-030 Hekaha St., Unit 9
Aiea, HI 96701

APPL Inc.
908 North Temperance Avenue
Clovis, CA 93611

Attn: Steve Spengler
Project: MCBH Motor Pool UST KB-100 SI / 130034
Sample ID: Trip Blank - 03
Sample Collection Date: 01/22/15

ARF: 75427
APPL ID: AZ10009
QCG: #86BKB-150123BM-193856

Method	Analyte	Result	LOQ	LOD	DL	Units	Extraction Date	Analysis Date
EPA 8260B	1,1,1-TRICHLOROETHANE	0.30 U	1.0	0.30	0.14	ug/L	01/24/15	01/24/15
EPA 8260B	1,1,2,2-TETRACHLOROETHANE	0.30 U	1.0	0.30	0.10	ug/L	01/24/15	01/24/15
EPA 8260B	1,1,2-TRICHLOROETHANE	0.50 U	1.0	0.50	0.20	ug/L	01/24/15	01/24/15
EPA 8260B	1,1-DICHLOROETHANE	0.30 U	1.0	0.30	0.19	ug/L	01/24/15	01/24/15
EPA 8260B	1,1-DICHLOROETHENE	0.50 U	1.0	0.50	0.30	ug/L	01/24/15	01/24/15
EPA 8260B	1,2,3-TRICHLOROPROPANE	1.00 U	2.0	1.00	0.39	ug/L	01/24/15	01/24/15
EPA 8260B	1,2-DIBROMOETHANE	0.50 U	1.0	0.50	0.20	ug/L	01/24/15	01/24/15
EPA 8260B	1,2-DICHLOROETHANE	0.30 U	1.0	0.30	0.14	ug/L	01/24/15	01/24/15
EPA 8260B	1,2-DICHLOROPROPANE	0.30 U	1.0	0.30	0.17	ug/L	01/24/15	01/24/15
EPA 8260B	2-BUTANONE	2.00 U	10.0	2.00	0.60	ug/L	01/24/15	01/24/15
EPA 8260B	4-METHYL-2-PENTANONE	5.00 U	10.0	5.00	1.90	ug/L	01/24/15	01/24/15
EPA 8260B	ACETONE	2.00 U	10.0	2.00	0.95	ug/L	01/24/15	01/24/15
EPA 8260B	BENZENE	0.30 U	1.0	0.30	0.16	ug/L	01/24/15	01/24/15
EPA 8260B	BROMODICHLOROMETHANE	0.30 U	1.0	0.30	0.14	ug/L	01/24/15	01/24/15
EPA 8260B	BROMOFORM	0.30 U	1.0	0.30	0.14	ug/L	01/24/15	01/24/15
EPA 8260B	BROMOMETHANE	0.50 U	2.0	0.50	0.24	ug/L	01/24/15	01/24/15
EPA 8260B	CARBON TETRACHLORIDE	0.30 U	1.0	0.30	0.10	ug/L	01/24/15	01/24/15
EPA 8260B	CHLOROBENZENE	0.50 U	1.0	0.50	0.21	ug/L	01/24/15	01/24/15
EPA 8260B	CHLOROETHANE	0.50 U	1.0	0.50	0.21	ug/L	01/24/15	01/24/15
EPA 8260B	CHLOROFORM	0.30 U	1.0	0.30	0.07	ug/L	01/24/15	01/24/15
EPA 8260B	CHLOROMETHANE	0.50 U	1.0	0.50	0.42	ug/L	01/24/15	01/24/15
EPA 8260B	CIS-1,2-DICHLOROETHENE	0.30 U	1.0	0.30	0.16	ug/L	01/24/15	01/24/15
EPA 8260B	CIS-1,3-DICHLOROPROPENE	0.30 U	1.0	0.30	0.15	ug/L	01/24/15	01/24/15
EPA 8260B	DIBROMOCHLOROMETHANE	0.30 U	1.0	0.30	0.19	ug/L	01/24/15	01/24/15
EPA 8260B	ETHYLBENZENE	0.50 U	1.0	0.50	0.23	ug/L	01/24/15	01/24/15
EPA 8260B	METHYLENE CHLORIDE	1.00 U	5.0	1.00	0.35	ug/L	01/24/15	01/24/15
EPA 8260B	STYRENE	0.50 U	1.0	0.50	0.25	ug/L	01/24/15	01/24/15
EPA 8260B	TETRACHLOROETHENE	0.30 U	1.0	0.30	0.24	ug/L	01/24/15	01/24/15
EPA 8260B	TOLUENE	0.30 U	1.0	0.30	0.17	ug/L	01/24/15	01/24/15
EPA 8260B	TRANS-1,2-DICHLOROETHENE	0.30 U	1.0	0.30	0.19	ug/L	01/24/15	01/24/15
EPA 8260B	TRANS-1,3-DICHLOROPROPENE	0.30 U	1.0	0.30	0.18	ug/L	01/24/15	01/24/15
EPA 8260B	TRICHLOROETHENE	0.30 U	1.0	0.30	0.16	ug/L	01/24/15	01/24/15
EPA 8260B	VINYL CHLORIDE	0.30 U	1.0	0.30	0.23	ug/L	01/24/15	01/24/15
EPA 8260B	XYLENES (TOTAL)	0.30 U	2.0	0.30	0.19	ug/L	01/24/15	01/24/15
EPA 8260B	SURROGATE: 1,2-DICHLOROETHANE	107	70-120			%	01/24/15	01/24/15

Quant Method: MALLW.M
Run #: 0123M47
Instrument: MAX
Sequence: M150119
Dilution Factor: 1
Initials: DG

Printed: 01/28/15 2:12:09 PM
APPL-F1-SC-NoMC-REG MDLs

EPA 8260B WATER

Element Environmental
98-030 Hekaha St., Unit 9
Aiea, HI 96701

APPL Inc.
908 North Temperance Avenue
Clovis, CA 93611

Attn: Steve Spengler
Project: MCBH Motor Pool UST KB-100 SI / 130034
Sample ID: Trip Blank - 03
Sample Collection Date: 01/22/15

ARF: 75427
APPL ID: AZ10009
QCG: #86BKB-150123BM-193856

Method	Analyte	Result	LOQ	LOD	DL	Units	Extraction Date	Analysis Date
EPA 8260B	SURROGATE: 4-BROMOFLUOROBEN	101	75-120			%	01/24/15	01/24/15
EPA 8260B	SURROGATE: DIBROMOFLUOROMET	106	85-115			%	01/24/15	01/24/15
EPA 8260B	SURROGATE: TOLUENE-D8 (S)	102	85-120			%	01/24/15	01/24/15

Quant Method: MALLW.M
Run #: 0123M47
Instrument: MAX
Sequence: M150119
Dilution Factor: 1
Initials: DG

Printed: 01/28/15 2:12:10 PM
APPL-F1-SC-NoMC-REG MDLs

Quantitation Report (QT Reviewed)

Data File : M:\MAX\DATA\M150119\0123M47.D
Acq On : 24 Jan 15 5:04
Sample : AZ10009W01
Misc : 10mL w/IS&S: 11-03-14

Vial: 37
Operator: DG,SV,RS
Inst : MAX
Multiplr: 1.00

Quant Time: Jan 26 13:33 2015

Quant Results File: MALLW.RES

Quant Method : M:\MAX\DATA\M150119\MALLW.M (RTE Integrator)
Title : METHOD 8260B
Last Update : Wed Jan 21 13:18:25 2015
Response via : Initial Calibration
DataAcq Meth : V8260

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene (IS)	6.78	96	297040	25.00000 ppb	0.00
55) Chlorobenzene-D5 (IS)	11.03	117	219574	25.00000 ppb	0.00
70) 1,4-Dichlorobenzene-D (IS)	14.37	152	121861	25.00000 ppb	0.00
System Monitoring Compounds					
31) Dibromofluoromethane(S)	5.79	111	45132	14.80150 ppb	0.00
Spiked Amount 14.019			Recovery	= 105.581%	
36) 1,2-DCA-D4(S)	6.25	65	45839	14.21944 ppb	0.00
Spiked Amount 13.317			Recovery	= 106.775%	
56) Toluene-D8(S)	9.03	98	187604	14.65643 ppb	0.00
Spiked Amount 14.391			Recovery	= 101.841%	
64) 4-Bromofluorobenzene(S)	12.71	95	70835	14.18266 ppb	0.00
Spiked Amount 14.078			Recovery	= 100.744%	

Target Compounds Qvalue

(#) = qualifier out of range (m) = manual integration

Quantitation Report

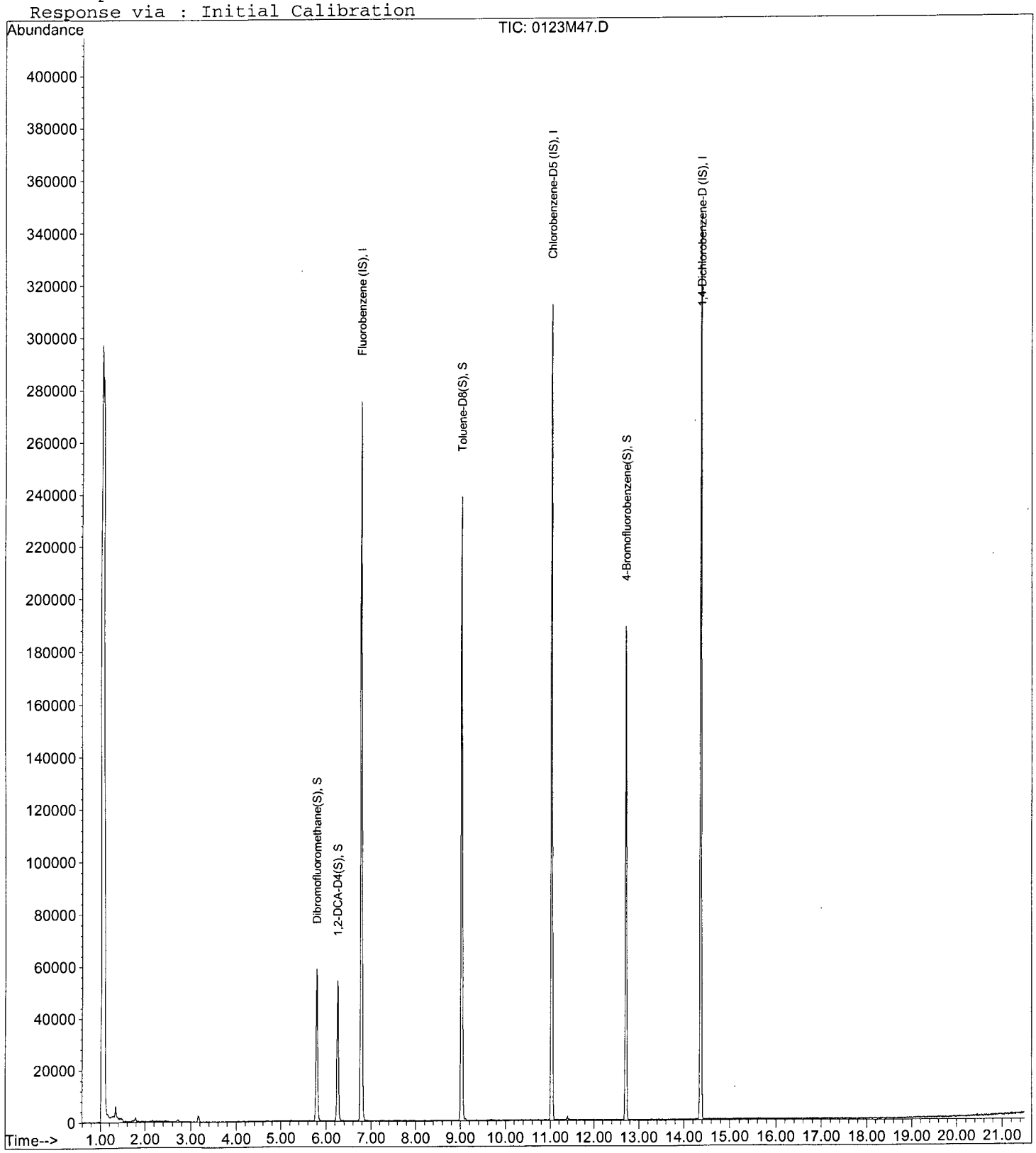
Data File : M:\MAX\DATA\M150119\0123M47.D
Acq On : 24 Jan 15 5:04
Sample : AZ10009W01
Misc : 10mL w/IS&S: 11-03-14

Vial: 37
Operator: DG,SV,RS
Inst : MAX
Multiplr: 1.00

Quant Time: Jan 26 13:33 2015

Quant Results File: MALLW.RES

Method : M:\MAX\DATA\M150119\MALLW.M (RTE Integrator)
Title : METHOD 8260B
Last Update : Wed Jan 21 13:18:25 2015
Response via : Initial Calibration



EPA 8260B WATER

Element Environmental
98-030 Hekaha St., Unit 9
Aiea, HI 96701

APPL Inc.
908 North Temperance Avenue
Clovis, CA 93611

Attn: Steve Spengler
Project: MCBH Motor Pool UST KB-100 SI / 130034
Sample ID: Trip Blank - 04
Sample Collection Date: 01/22/15

ARF: 75427
APPL ID: AZ10010
QCG: #86BKB-150123BM-193856

Method	Analyte	Result	LOQ	LOD	DL	Units	Extraction Date	Analysis Date
EPA 8260B	1,1,1-TRICHLOROETHANE	0.30 U	1.0	0.30	0.14	ug/L	01/24/15	01/24/15
EPA 8260B	1,1,2,2-TETRACHLOROETHANE	0.30 U	1.0	0.30	0.10	ug/L	01/24/15	01/24/15
EPA 8260B	1,1,2-TRICHLOROETHANE	0.50 U	1.0	0.50	0.20	ug/L	01/24/15	01/24/15
EPA 8260B	1,1-DICHLOROETHANE	0.30 U	1.0	0.30	0.19	ug/L	01/24/15	01/24/15
EPA 8260B	1,1-DICHLOROETHENE	0.50 U	1.0	0.50	0.30	ug/L	01/24/15	01/24/15
EPA 8260B	1,2,3-TRICHLOROPROPANE	1.00 U	2.0	1.00	0.39	ug/L	01/24/15	01/24/15
EPA 8260B	1,2-DIBROMOETHANE	0.50 U	1.0	0.50	0.20	ug/L	01/24/15	01/24/15
EPA 8260B	1,2-DICHLOROETHANE	0.30 U	1.0	0.30	0.14	ug/L	01/24/15	01/24/15
EPA 8260B	1,2-DICHLOROPROPANE	0.30 U	1.0	0.30	0.17	ug/L	01/24/15	01/24/15
EPA 8260B	2-BUTANONE	2.00 U	10.0	2.00	0.60	ug/L	01/24/15	01/24/15
EPA 8260B	4-METHYL-2-PENTANONE	5.00 U	10.0	5.00	1.90	ug/L	01/24/15	01/24/15
EPA 8260B	ACETONE	2.00 U	10.0	2.00	0.95	ug/L	01/24/15	01/24/15
EPA 8260B	BENZENE	0.30 U	1.0	0.30	0.16	ug/L	01/24/15	01/24/15
EPA 8260B	BROMODICHLOROMETHANE	0.30 U	1.0	0.30	0.14	ug/L	01/24/15	01/24/15
EPA 8260B	BROMOFORM	0.30 U	1.0	0.30	0.14	ug/L	01/24/15	01/24/15
EPA 8260B	BROMOMETHANE	0.50 U	2.0	0.50	0.24	ug/L	01/24/15	01/24/15
EPA 8260B	CARBON TETRACHLORIDE	0.30 U	1.0	0.30	0.10	ug/L	01/24/15	01/24/15
EPA 8260B	CHLOROBENZENE	0.50 U	1.0	0.50	0.21	ug/L	01/24/15	01/24/15
EPA 8260B	CHLOROETHANE	0.50 U	1.0	0.50	0.21	ug/L	01/24/15	01/24/15
EPA 8260B	CHLOROFORM	0.30 U	1.0	0.30	0.07	ug/L	01/24/15	01/24/15
EPA 8260B	CHLOROMETHANE	0.50 U	1.0	0.50	0.42	ug/L	01/24/15	01/24/15
EPA 8260B	CIS-1,2-DICHLOROETHENE	0.30 U	1.0	0.30	0.16	ug/L	01/24/15	01/24/15
EPA 8260B	CIS-1,3-DICHLOROPROPENE	0.30 U	1.0	0.30	0.15	ug/L	01/24/15	01/24/15
EPA 8260B	DIBROMOCHLOROMETHANE	0.30 U	1.0	0.30	0.19	ug/L	01/24/15	01/24/15
EPA 8260B	ETHYLBENZENE	0.50 U	1.0	0.50	0.23	ug/L	01/24/15	01/24/15
EPA 8260B	METHYLENE CHLORIDE	1.00 U	5.0	1.00	0.35	ug/L	01/24/15	01/24/15
EPA 8260B	STYRENE	0.50 U	1.0	0.50	0.25	ug/L	01/24/15	01/24/15
EPA 8260B	TETRACHLOROETHENE	0.30 U	1.0	0.30	0.24	ug/L	01/24/15	01/24/15
EPA 8260B	TOLUENE	0.30 U	1.0	0.30	0.17	ug/L	01/24/15	01/24/15
EPA 8260B	TRANS-1,2-DICHLOROETHENE	0.30 U	1.0	0.30	0.19	ug/L	01/24/15	01/24/15
EPA 8260B	TRANS-1,3-DICHLOROPROPENE	0.30 U	1.0	0.30	0.18	ug/L	01/24/15	01/24/15
EPA 8260B	TRICHLOROETHENE	0.30 U	1.0	0.30	0.16	ug/L	01/24/15	01/24/15
EPA 8260B	VINYL CHLORIDE	0.30 U	1.0	0.30	0.23	ug/L	01/24/15	01/24/15
EPA 8260B	XYLENES (TOTAL)	0.30 U	2.0	0.30	0.19	ug/L	01/24/15	01/24/15
EPA 8260B	SURROGATE 1,2-DICHLOROETHANE	110	70-120			%	01/24/15	01/24/15

Quant Method: MALLW.M
Run #: 0123M48
Instrument: MAX
Sequence: M150119
Dilution Factor: 1
Initials: DG

Printed: 01/28/15 2:12:10 PM
APPL-F1-SC-NoMC-REG MDLs

EPA 8260B WATER

Element Environmental
98-030 Hekaha St., Unit 9
Aiea, HI 96701

APPL Inc.
908 North Temperance Avenue
Clovis, CA 93611

Attn: Steve Spengler
Project: MCBH Motor Pool UST KB-100 SI / 130034
Sample ID: Trip Blank - 04
Sample Collection Date: 01/22/15

ARF: 75427
APPL ID: AZ10010
QCG: #86BKB-150123BM-193856

Method	Analyte	Result	LOQ	LOD	DL	Units	Extraction Date	Analysis Date
EPA 8260B	SURROGATE: 4-BROMOFLUOROBEN	100	75-120			%	01/24/15	01/24/15
EPA 8260B	SURROGATE: DIBROMOFLUOROMET	104	85-115			%	01/24/15	01/24/15
EPA 8260B	SURROGATE: TOLUENE-D8 (S)	102	85-120			%	01/24/15	01/24/15

Quant Method: MALLW.M
Run #: 0123M48
Instrument: MAX
Sequence: M150119
Dilution Factor: 1
Initials: DG

Printed: 01/28/15 2:12:10 PM
APPL-F1-SC-NoMC-REG MDLs

Quantitation Report (QT Reviewed)

Data File : M:\MAX\DATA\M150119\0123M48.D
Acq On : 24 Jan 15 5:31
Sample : AZ10010W01
Misc : 10mL w/IS&S: 11-03-14

Vial: 38
Operator: DG,SV,RS
Inst : MAX
Multiplr: 1.00

Quant Time: Jan 26 13:34 2015 Quant Results File: MALLW.RES

Quant Method : M:\MAX\DATA\M150119\MALLW.M (RTE Integrator)
Title : METHOD 8260B
Last Update : Wed Jan 21 13:18:25 2015
Response via : Initial Calibration
DataAcq Meth : V8260

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene (IS)	6.78	96	291178	25.00000 ppb	0.00
55) Chlorobenzene-D5 (IS)	11.03	117	214536	25.00000 ppb	0.00
70) 1,4-Dichlorobenzene-D (IS)	14.37	152	119347	25.00000 ppb	0.00
System Monitoring Compounds					
31) Dibromofluoromethane(S)	5.79	111	43451	14.53708 ppb	0.00
Spiked Amount 14.019			Recovery	= 103.698%	
36) 1,2-DCA-D4(S)	6.25	65	46312	14.65539 ppb	0.00
Spiked Amount 13.317			Recovery	= 110.049%	
56) Toluene-D8(S)	9.03	98	183091	14.63975 ppb	0.00
Spiked Amount 14.391			Recovery	= 101.730%	
64) 4-Bromofluorobenzene(S)	12.71	95	68715	14.08128 ppb	0.00
Spiked Amount 14.078			Recovery	= 100.019%	

Target Compounds Qvalue

(#) = qualifier out of range (m) = manual integration

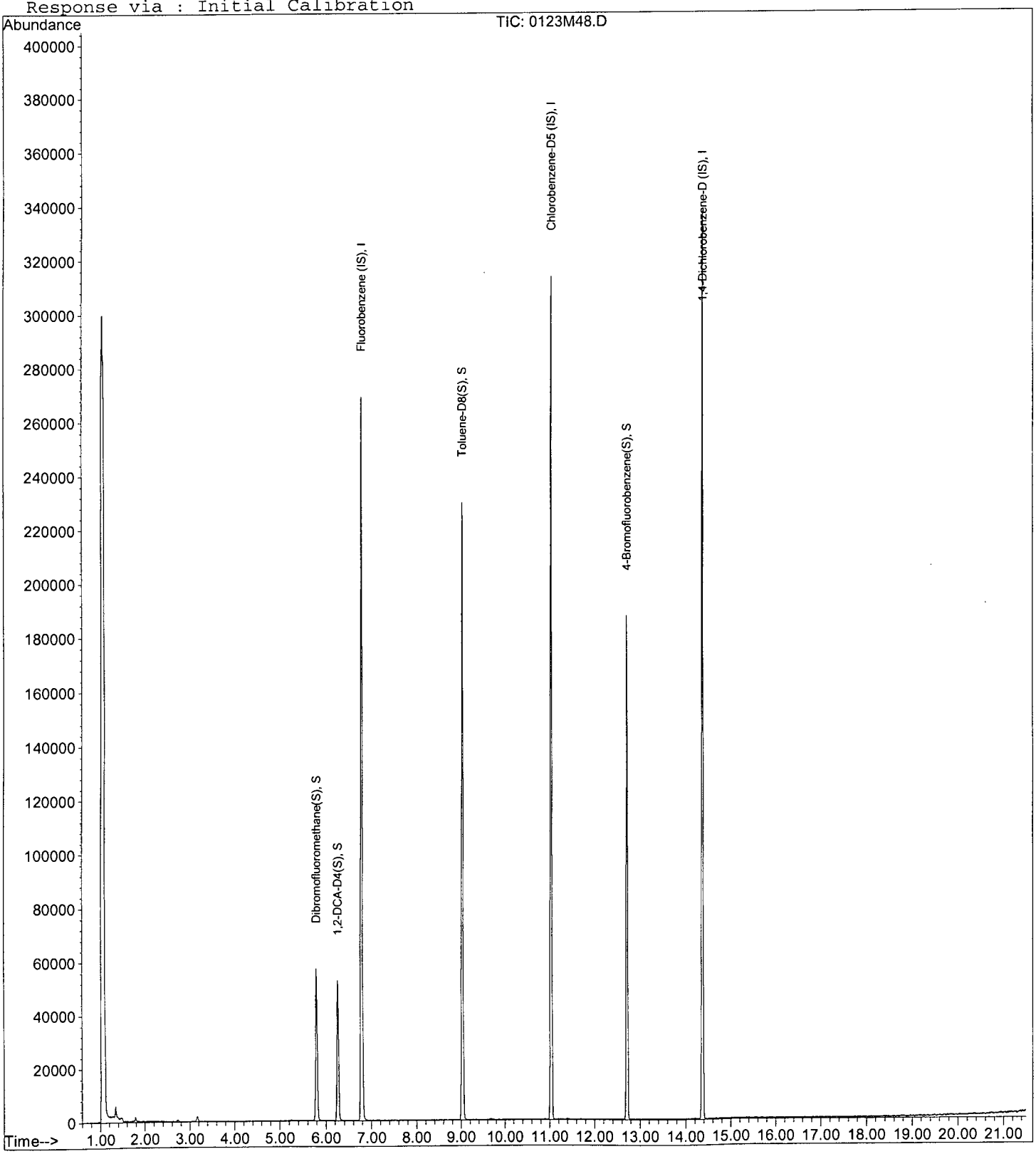
Quantitation Report

Data File : M:\MAX\DATA\M150119\0123M48.D
Acq On : 24 Jan 15 5:31
Sample : AZ10010W01
Misc : 10mL w/IS&S: 11-03-14

Vial: 38
Operator: DG,SV,RS
Inst : MAX
Multiplr: 1.00

Quant Time: Jan 26 13:34 2015 Quant Results File: MALLW.RES

Method : M:\MAX\DATA\M150119\MALLW.M (RTE Integrator)
Title : METHOD 8260B
Last Update : Wed Jan 21 13:18:25 2015
Response via : Initial Calibration



EPA METHOD 8260B
Volatile Organic Compounds
Calibration Data

APPL, INC.

VOLATILE ORGANIC ANALYSIS BY
EPA METHOD 8260B

Form 6
Initial Calibration

Lab Name: APPL, Inc.
Case No:
Matrix:

SDG No:
Initial Cal. Date: 01/19/15
Instrument: MAX

Initials:

		Compound	0119M08.D	0119M09.D	0119M10.D	0119M11.D	0119M12.D	0119M13.D	0119M14.D	0119M15.D			Avg	%RSD		
			0.3	0.5	1	5	10	20	40	100						
1	I	Fluorobenzene (IS)	ISTD													
2	TM	Dichlorodifluoromethane	0.2288	0.1773	0.2307	0.2015	0.2174	0.2425	0.2417	0.2567			0.22	11	TM	
3	TM	Freon 114	0.2088	0.1628	0.1940	0.1795	0.1791	0.2008	0.1888	0.2010			0.19	7.9	TM	
4	TM**	Chloromethane		0.4900	0.3796	0.3714	0.3602	0.3514	0.3391	0.3495			0.38	14	TM**	
5	TM*	Vinyl chloride	0.3251	0.3358	0.3058	0.3257	0.3191	0.3282	0.3229	0.3289			0.32	2.7	TM*	
6	TML	Bromomethane	0.1468	0.1154	0.0994	0.0912	0.0805	0.0765	0.0684	0.0643			0.09	30	TML	0.998
7	TM	Chloroethane		0.1977	0.1932	0.2051	0.2021	0.1984					0.20	2.3	TM	
8	TM	Dichlorofluoromethane	0.6710	0.5789	0.5567	0.5309	0.5274	0.5086	0.4793	0.4903			0.54	11	TM	
9	TM	Trichlorofluoromethane	0.3623	0.3496	0.3535	0.3654	0.3698	0.3830	0.3707	0.3847			0.37	3.4	TM	
10	TM	Acrolein	0.0292	0.0282	0.0264	0.0274	0.0275	0.0271	0.0264	0.0299			0.03	4.6	TM	
11	TML	Acetone	0.2330	0.1903	0.1809	0.0726	0.0644	0.0523	0.0466	0.0472			0.11	69	TML	0.999
12	TM	Freon-113	0.0971	0.0861	0.0929	0.0831	0.0872	0.0914	0.0868	0.0948			0.09	5.4	TM	
13	TM*	1,1-DCE	0.2083	0.1960	0.1947	0.2012	0.1998	0.2022	0.1853	0.1918			0.20	3.6	TM*	
14	TM	t-Butanol	0.0060	0.0051	0.0049	0.0052	0.0055	0.0051	0.0052	0.0043			0.01	9.2	TM	
15	TML	Methyl Acetate	0.2477	0.2452	0.1728	0.1637	0.1571	0.1465	0.1361	0.1435			0.18	25	TML	0.999
16	TML	Iodomethane	0.1430	0.1611	0.1610	0.1933	0.2218	0.2251	0.2294	0.2347			0.20	19	TML	1.000
17	TM	Acrylonitrile	0.0697	0.0628	0.0591	0.0655	0.0670	0.0638	0.0630	0.0640			0.06	4.9	TM	
18	TML	Methylene chloride	0.4742	0.7953	0.8409	0.3835	0.3486	0.2838	0.2541	0.2534			0.45	52	TML	0.999
19	TM	Carbon disulfide	0.7518	0.7547	0.6978	0.7330	0.7544	0.7490	0.7131	0.7412			0.74	2.9	TM	
20	TM	Methyl t-butyl ether (MtBE)	0.7436	0.7372	0.6376	0.6945	0.6873	0.6594	0.6052	0.6266			0.67	7.5	TM	
21	TM	Trans-1,2-DCE	0.3093	0.2979	0.2637	0.2843	0.2839	0.2699	0.2536	0.2610			0.28	6.9	TM	
22	TM	Diisopropyl Ether	1.184	1.107	1.003	1.067	1.062	1.015	0.9365	0.9581			1.0	7.8	TM	
23	TM**	1,1-DCA	0.5241	0.5553	0.4731	0.5051	0.5033	0.4847	0.4518	0.4656			0.50	6.8	TM**	
24	TML	Vinyl Acetate	0.6313	0.5068	0.3982	0.4081	0.4056	0.3656	0.3260	0.3076			0.42	25	TML	0.998
25	TM	Ethyl tert Butyl Ether	0.9280	0.9181	0.8357	0.8951	0.8845	0.8483	0.7814	0.7989			0.86	6.3	TM	
26	TM	MEK (2-Butanone)			0.1088	0.0916	0.0908	0.0800	0.0746	0.0771			0.09	15	TM	
27	TM	Cis-1,2-DCE	0.3491	0.3345	0.3026	0.3262	0.3181	0.3099	0.2873	0.2918			0.31	6.8	TM	
28	TM	2,2-Dichloropropane	0.5028	0.4935	0.4168	0.4227	0.4114	0.4054	0.3742	0.3852			0.43	11	TM	
29	TM*	Chloroform	0.4957	0.4555	0.4498	0.4706	0.4666	0.4552	0.4148	0.4304			0.45	5.4	TM*	
30	TM	Bromochloromethane	0.1531	0.1451	0.1351	0.1423	0.1451	0.1366	0.1266	0.1268			0.14	6.7	TM	
31	S	Dibromofluoromethane(S)	0.2380	0.2747	0.2547	0.2552	0.2568	0.2657	0.2472	0.2609			0.26	4.3	S	
32	TM	1,1,1-TCA	0.4445	0.4623	0.3985	0.4213	0.4231	0.4161	0.3848	0.4019			0.42	6.0	TM	
33	TM	Cyclohexane	0.3375	0.2788	0.2782	0.2496	0.2513	0.2643	0.2471	0.2627			0.27	11	TM	
34	TM	1,1-Dichloropropene	0.4021	0.3944	0.3514	0.3776	0.3702	0.3681	0.3446	0.3603			0.37	5.3	TM	
35	TM	2,2,4-Trimethylpentane	0.8317	0.6798	0.7797	0.7396	0.7317	0.8122	0.7555	0.8265			0.77	6.9	TM	

VOLATILE ORGANIC ANALYSIS BY
EPA METHOD 8260B

Form 6
Initial Calibration

Lab Name: APPL, Inc. SDG No:
Case No: Initial Cal. Date: 01/19/15
Matrix: Instrument: MAX Initials:

		Compound	0.3	0.5	1	5	10	20	40	100			Avg	%RSD		
36	S	1,2-DCA-D4(S)	0.2795	0.2897	0.2672	0.2737	0.2652	0.2768	0.2562	0.2622			0.27	4.0	S	
37	TM	Carbon Tetrachloride	0.2838	0.2859	0.2823	0.3273	0.3364	0.3462	0.3306	0.3539			0.32	9.3	TM	
38	TM	Tert Amyl Methyl Ether	0.8340	0.8395	0.7331	0.7684	0.7941	0.7406	0.6824	0.6948			0.76	7.8	TM	
39	TM	1,2-DCA	0.3868	0.3666	0.3104	0.3318	0.3397	0.3172	0.2931	0.3002			0.33	9.9	TM	
40	TM	Benzene	1.314	1.327	1.155	1.203	1.204	1.167	1.083	1.112			1.2	7.3	TM	
41	TM	TCE	0.3139	0.3198	0.2648	0.2993	0.2947	0.2896	0.2658	0.2757			0.29	7.1	TM	
42	TM	2-Pentanone	0.1620	0.1520	0.1470	0.1457	0.1522	0.1485	0.1423	0.1667			0.15	5.5	TM	
43	TM*	1,2-Dichloropropane	0.2964	0.3502	0.2839	0.3028	0.3082	0.2951	0.2705	0.2762			0.30	8.3	TM*	
44	TM	Bromodichloromethane	0.3739	0.3547	0.3223	0.3487	0.3570	0.3413	0.3197	0.3273			0.34	5.6	TM	
45	TM	Methyl Cyclohexane	0.4908	0.4309	0.4281	0.4124	0.4095	0.4478	0.4180	0.4463			0.44	6.1	TM	
46	TM	Dibromomethane	0.1365	0.1305	0.1278	0.1346	0.1353	0.1308	0.1213	0.1223			0.13	4.4	TM	
47	TM	MIBK (methyl isobutyl ketone	0.2762	0.2493	0.2287	0.2176	0.2177	0.2017	0.1886	0.1932			0.22	13	TM	
48	TM	1-Bromo-2-chloroethane	0.3461	0.3426	0.2947	0.3372	0.3409	0.3207	0.2970	0.3027			0.32	6.8	TM	
49	TM	2-Chloroethyl vinyl ether		0.0382	0.0342	0.0414	0.0429	0.0421	0.0404	0.0428			0.04	7.8	TM	
50	TM	Cis-1,3-Dichloropropene	0.5014	0.5038	0.4350	0.4725	0.4783	0.4569	0.4271	0.4390			0.46	6.4	TM	
51	TM*	Toluene	1.471	1.365	1.267	1.335	1.336	1.293	1.210	1.241			1.3	6.2	TM*	
52	TM	Trans-1,3-Dichloropropene	0.4007	0.4127	0.3560	0.3846	0.3896	0.3779	0.3483	0.3564			0.38	6.1	TM	
53	TM	1,1,2-TCA	0.1807	0.1808	0.1505	0.1703	0.1728	0.1616	0.1499	0.1541			0.17	7.8	TM	
54	TM	2-Hexanone	0.1643	0.1824	0.1382	0.1375	0.1360	0.1298	0.1207	0.1300			0.14	14	TM	
55	I	Chlorobenzene-D5 (IS)	ISTD													
56	S	Toluene-D8(S)	1.466	1.544	1.392	1.446	1.438	1.505	1.402	1.466			1.5	3.5	S	
57	TM	1,2-EDB	0.2734	0.2665	0.2480	0.2824	0.2799	0.2655	0.2477	0.2517			0.26	5.3	TM	
58	TM	Tetrachloroethene	0.2459	0.2301	0.1981	0.2236	0.2117	0.2102	0.1933	0.1897			0.21	9.1	TM	
59	TM	1-Chlorohexane	0.5654	0.5340	0.5080	0.5264	0.5140	0.5322	0.4954	0.5167			0.52	4.0	TM	
60	TM	1,1,1,2-Tetrachloroethane	0.3941	0.4162	0.3797	0.4254	0.4245	0.4133	0.3870	0.4019			0.41	4.3	TM	
61	TM	m&p-Xylene	0.8787	0.8373	0.7621	0.8168	0.8084	0.7890	0.7372	0.7582			0.80	5.8	TM	
62	TM	o-Xylene	0.8991	0.8465	0.7108	0.8179	0.8031	0.7868	0.7297	0.7379			0.79	8.1	TM	
63	TM	Styrene	1.419	1.326	1.253	1.359	1.351	1.322	1.246	1.283			1.3	4.4	TM	
64	S	4-Bromofluorobenzene(S)	0.5947	0.5834	0.5416	0.5629	0.5556	0.5754	0.5479	0.5878			0.57	3.4	S	
65	TM	1,3-Dichloropropane	0.5378	0.5607	0.4719	0.5169	0.5036	0.4896	0.4523	0.4549			0.50	7.8	TM	
66	TM	Dibromochloromethane	0.3626	0.3527	0.3201	0.3557	0.3616	0.3499	0.3267	0.3340			0.35	4.7	TM	
67	TM**	Chlorobenzene	1.378	1.201	1.135	1.204	1.192	1.148	1.083	1.099			1.2	7.8	TM**	
68	TM*	Ethylbenzene	2.094	2.144	1.926	2.073	2.046	2.008	1.872	1.939			2.0	4.7	TM*	
69	TM**	Bromoform	0.2714	0.2657	0.2242	0.2469	0.2398	0.2427	0.2299	0.2428			0.25	6.6	TM**	
70	I	1,4-Dichlorobenzene-D (IS)	ISTD													

VOLATILE ORGANIC ANALYSIS BY
EPA METHOD 8260B

Form 6
Initial Calibration

Lab Name: APPL, Inc. SDG No: _____
Case No: _____ Initial Cal. Date: 01/19/15
Matrix: _____ Instrument: MAX Initials: _____

		Compound	0.3	0.5	1	5	10	20	40	100			Avg	%RSD		
71	TM	Isopropylbenzene	3.810	3.738	3.356	3.565	3.573	3.433	3.181	3.178			3.5	6.8	TM	
72	TM**	1,1,2,2-Tetrachloroethane	0.6408	0.5333	0.4655	0.5057	0.5312	0.4812	0.4503	0.4452			0.51	13	TM**	
73	TM	1,2,3-Trichloropropane	0.2038	0.1813	0.1676	0.1920	0.1850	0.1711	0.1576	0.1564			0.18	9.4	TM	
74	TM	t-1,4-Dichloro-2-Butene		0.1120	0.1305	0.1613	0.1544	0.1480	0.1407	0.1439			0.14	12	TM	
75	TM	Bromobenzene	1.106	1.058	0.9213	0.9888	0.9926	0.9493	0.8887	0.8843			0.97	8.1	TM	
76	TM	n-Propylbenzene	4.169	4.232	3.853	4.111	4.103	3.979	3.711	3.773			4.0	4.8	TM	
77	TM	4-Ethyltoluene	3.686	3.630	3.277	3.589	3.583	3.439	3.216	3.282			3.5	5.3	TM	
78	TM	2-Chlorotoluene	2.715	2.583	2.244	2.435	2.461	2.301	2.156	2.188			2.4	8.3	TM	
79	TM	1,3,5-Trimethylbenzene	3.395	3.132	3.035	3.181	3.186	3.011	2.816	2.880			3.1	6.0	TM	
80	TM	4-Chlorotoluene	2.980	2.981	2.627	2.870	2.892	2.715	2.539	2.591			2.8	6.4	TM	
81	TM	Tert-Butylbenzene	2.778	2.865	2.532	2.738	2.688	2.620	2.438	2.490			2.6	5.7	TM	
82	TM	1,2,4-Trimethylbenzene	3.337	3.287	2.853	3.214	3.209	3.083	2.878	2.958			3.1	6.1	TM	
83	TM	Sec-Butylbenzene	4.039	3.744	3.440	3.725	3.684	3.623	3.404	3.512			3.6	5.6	TM	
84	TM	p-Isopropyltoluene	3.566	3.391	3.033	3.382	3.327	3.246	3.043	3.150			3.3	5.7	TM	
85	TM	Benzyl Chloride	0.9209	0.9826	0.9143	1.043	1.024	0.9822	0.9929	0.9717			0.98	4.6	TM	
86	TM	1,3-DCB	1.989	1.857	1.751	1.906	1.857	1.782	1.678	1.697			1.8	5.9	TM	
87	TM	1,4-DCB	2.115	2.034	1.746	1.878	1.875	1.772	1.682	1.676			1.8	8.7	TM	
88	TM	n-Butylbenzene	2.742	2.668	2.327	2.744	2.809	2.758	2.638	2.753			2.7	5.7	TM	
89	TM	1,2-DCB	1.900	1.791	1.550	1.706	1.700	1.621	1.513	1.503			1.7	8.5	TM	
90	TM	Hexachloroethane	0.3850	0.4084	0.3663	0.4743	0.4691	0.4761	0.4796	0.5159			0.45	12	TM	
91	TM	1,2-Dibromo-3-chloropropane	0.0942	0.0717	0.0900	0.0984	0.0977	0.0897	0.0863	0.0799			0.09	10	TM	
92	TM	1,2,4-Trichlorobenzene	0.8839	0.8364	0.8452	1.069	1.138	1.149	1.144	1.140			1.0	14	TM	
93	TM	Hexachlorobutadiene	0.7312	0.7161	0.6891	0.7252	0.7446	0.7440	0.7106	0.7102			0.72	2.6	TM	
94	TML	Naphthalene	0.5766	0.6349	0.8197	1.140	1.333	1.342	1.377	1.428			1.1	32	TML	1.000
95	TML	1,2,3-Trichlorobenzene	0.4708	0.5388	0.5437	0.7121	0.8399	0.8492	0.8841	0.8686			0.71	24	TML	1.000
96																
97																
98																
99																
100																
101																
102																
103																
104																
105																

Quantitation Report (Not Reviewed)

Data File : M:\MAX\DATA\M150119\0119M08.D
Acq On : 19 Jan 15 13:05
Sample : 0.3ug/L Vol Std 01-19-15
Misc : 10mL w/IS: 11-03-14

Vial: 8
Operator: DG,SV,RS
Inst : MAX
Multiplr: 1.00

Quant Time: Jan 21 11:46 2015

Quant Results File: MALLW.RES

Quant Method : M:\MAX\DATA\M150119\MALLW.M (RTE Integrator)
Title : METHOD 8260B
Last Update : Wed Jan 21 11:46:11 2015
Response via : Initial Calibration
DataAcq Meth : V8260

Internal Standards	R.T.	QIon	Response	Conc Units		Dev(Min)
1) Fluorobenzene (IS)	6.78	96	437753	25.00000 ppb		0.00
55) Chlorobenzene-D5 (IS)	11.03	117	320596	25.00000 ppb		0.00
70) 1,4-Dichlorobenzene-D (IS)	14.37	152	177904	25.00000 ppb		0.00
System Monitoring Compounds						
31) Dibromofluoromethane(S)	5.79	111	2500	0.55635 ppb		0.00
Spiked Amount 14.019			Recovery	= 3.966%		
36) 1,2-DCA-D4(S)	6.26	65	2936	0.61800 ppb		0.00
Spiked Amount 13.317			Recovery	= 4.641%		
56) Toluene-D8(S)	9.03	98	11281	0.60361 ppb		0.00
Spiked Amount 14.391			Recovery	= 4.197%		
64) 4-Bromofluorobenzene(S)	12.71	95	4576	0.62751 ppb		0.00
Spiked Amount 14.078			Recovery	= 4.461%		
Target Compounds						Qvalue
2) Dichlorodifluoromethane	1.23	85	1202	0.30566 ppb		88
3) Freon 114	1.34	85	1097	0.33085 ppb		96
4) Chloromethane	1.38	50	3199	0.48421 ppb		94
5) Vinyl chloride	1.47	62	1708	0.30111 ppb		99
6) Bromomethane	1.75	94	771	-1.00329 ppb		96
7) Chloroethane	1.84	64	1529	0.43820 ppb		91
8) Dichlorofluoromethane	2.03	67	3525	0.37082 ppb		100
9) Trichlorofluoromethane	2.08	101	1903	0.29583 ppb		94
10) Acrolein	2.50	56	5108	10.50915 ppb		88
11) Acetone	2.71	43	1224	-0.82603 ppb		100
12) Freon-113	2.63	101	510	0.32391 ppb	#	84
13) 1,1-DCE	2.60	61	1094	0.31648 ppb		95
14) t-Butanol	3.51	59	1046	11.59194 ppb		98
15) Methyl Acetate	3.12	43	1301	0.21451 ppb	#	56
16) Iodomethane	2.75	142	751	0.70089 ppb	#	84
17) Acrylonitrile	3.48	53	366	0.32483 ppb	#	60
18) Methylene chloride	3.17	84	2491	-1.48653 ppb		97
19) Carbon disulfide	2.82	76	3949	0.30607 ppb		95
20) Methyl t-butyl ether (MtBE	3.67	73	3906	0.33101 ppb		98
21) Trans-1,2-DCE	3.55	96	1625	0.33387 ppb		94
22) Diisopropyl Ether	4.45	45	6222	0.34117 ppb		94
23) 1,1-DCA	4.17	63	2753	0.31739 ppb	#	90
24) Vinyl Acetate	4.35	43	3316	-1.01886 ppb	#	74
25) Ethyl tert Butyl Ether	5.02	59	4875	0.32326 ppb		96
26) MEK (2-Butanone)	5.22	43	902	0.59110 ppb	#	56
27) Cis-1,2-DCE	5.07	96	1834	0.33256 ppb		92
28) 2,2-Dichloropropane	5.06	77	2641	0.35364 ppb	#	87
29) Chloroform	5.56	83	2604	0.32696 ppb		89
30) Bromochloromethane	5.40	128	804	0.33072 ppb		94
32) 1,1,1-TCA	5.82	97	2335	0.31821 ppb		96
33) Cyclohexane	5.90	41	1773	0.37337 ppb	#	61
34) 1,1-Dichloropropene	6.07	75	2112	0.32503 ppb	#	85
35) 2,2,4-Trimethylpentane	6.54	57	4369	0.32421 ppb	#	79
37) Carbon Tetrachloride	6.07	117	1491	0.26751 ppb	#	69
38) Tert Amyl Methyl Ether	6.69	73	4381	0.32884 ppb	#	91
39) 1,2-DCA	6.37	62	2032	0.35088 ppb	#	72
40) Benzene	6.36	78	6900	0.32959 ppb		97
41) TCE	7.31	95	1649	0.32425 ppb		97
42) 2-Pentanone	7.68	43	28370	10.65554 ppb		100

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : M:\MAX\DATA\M150119\0119M08.D
Acq On : 19 Jan 15 13:05
Sample : 0.3ug/L Vol Std 01-19-15
Misc : 10mL w/IS: 11-03-14

Vial: 8
Operator: DG,SV,RS
Inst : MAX
Multiplr: 1.00

Quant Time: Jan 21 11:46 2015

Quant Results File: MALLW.RES

Quant Method : M:\MAX\DATA\M150119\MALLW.M (RTE Integrator)
Title : METHOD 8260B
Last Update : Wed Jan 21 11:46:11 2015
Response via : Initial Calibration
DataAcq Meth : V8260

Compound	R.T.	QIon	Response	Conc Unit		Qvalue
43) 1,2-Dichloropropane	7.58	63	1557	0.29847 ppb	#	87
44) Bromodichloromethane	8.00	83	1964	0.32690 ppb		97
45) Methyl Cyclohexane	7.58	83	2578	0.33810 ppb		93
46) Dibromomethane	7.75	93	717	0.31530 ppb		91
47) MIBK (methyl isobutyl ket	8.97	43	1451	0.37390 ppb		94
48) 1-Bromo-2-chloroethane	8.40	63	1818	0.32170 ppb	#	68
49) 2-Chloroethyl vinyl ether	8.51	106	68	0.09640 ppb	#	1
50) Cis-1,3-Dichloropropene	8.66	75	2634	0.32403 ppb	#	93
51) Toluene	9.12	91	7725	0.33560 ppb		97
52) Trans-1,3-Dichloropropene	9.44	75	2105	0.31780 ppb		85
53) 1,1,2-TCA	9.67	83	949	0.32829 ppb		90
54) 2-Hexanone	10.14	43	863	0.34618 ppb	#	81
57) 1,2-EDB	10.33	107	1052	0.31024 ppb		84
58) Tetrachloroethene	9.88	164	946	0.34660 ppb		94
59) 1-Chlorohexane	11.10	91	2175	0.32367 ppb		91
60) 1,1,1,2-Tetrachloroethane	11.20	131	1516	0.29171 ppb		98
61) m&p-Xylene	11.44	106	6761	0.66029 ppb		92
62) o-Xylene	11.99	106	3459	0.34079 ppb		97
63) Styrene	12.00	104	5459	0.32252 ppb		92
65) 1,3-Dichloropropane	9.90	76	2069	0.32367 ppb		90
66) Dibromochloromethane	10.20	129	1395	0.31492 ppb		82
67) Chlorobenzene	11.07	112	5301	0.35033 ppb		97
68) Ethylbenzene	11.26	91	8057	0.31215 ppb		96
69) Bromoform	12.20	173	1044	0.33173 ppb		100
71) Isopropylbenzene	12.53	105	8134	0.32854 ppb		98
72) 1,1,2,2-Tetrachloroethane	12.93	83	1368	0.37944 ppb	#	88
73) 1,2,3-Trichloropropane	12.97	110	435	0.34565 ppb		86
74) t-1,4-Dichloro-2-Butene	13.02	53	224	0.22236 ppb	#	24
75) Bromobenzene	12.90	156	2362	0.34089 ppb		90
76) n-Propylbenzene	13.12	91	8900	0.31337 ppb		92
77) 4-Ethyltoluene	13.29	105	7868	0.31930 ppb		89
78) 2-Chlorotoluene	13.20	91	5797	0.34148 ppb		97
79) 1,3,5-Trimethylbenzene	13.39	105	7248	0.33076 ppb		95
80) 4-Chlorotoluene	13.36	91	6361	0.32219 ppb		99
81) Tert-Butylbenzene	13.85	119	5930	0.31522 ppb		95
82) 1,2,4-Trimethylbenzene	13.92	105	7125	0.32273 ppb		92
83) Sec-Butylbenzene	14.16	105	8623	0.33232 ppb		97
84) p-Isopropyltoluene	14.40	119	7613	0.32743 ppb		98
85) Benzyl Chloride	14.60	91	1966	0.28219 ppb	#	93
86) 1,3-DCB	14.27	146	4246	0.32881 ppb		95
87) 1,4-DCB	14.40	146	4516	0.34352 ppb		92
88) n-Butylbenzene	14.98	91	5854	0.30697 ppb		97
89) 1,2-DCB	14.92	146	4056	0.34324 ppb		91
90) Hexachloroethane	15.31	117	822	0.25852 ppb	#	73
91) 1,2-Dibromo-3-chloropropan	16.03	75	201	0.31931 ppb	#	69
92) 1,2,4-Trichlorobenzene	17.27	180	1887	0.25851 ppb		98
93) Hexachlorobutadiene	17.59	225	1561	0.30409 ppb		95
94) Naphthalene	17.60	128	1231	0.82637 ppb	#	62
95) 1,2,3-Trichlorobenzene	17.97	180	1005	0.49716 ppb	#	67

(#) = qualifier out of range (m) = manual integration

Quantitation Report

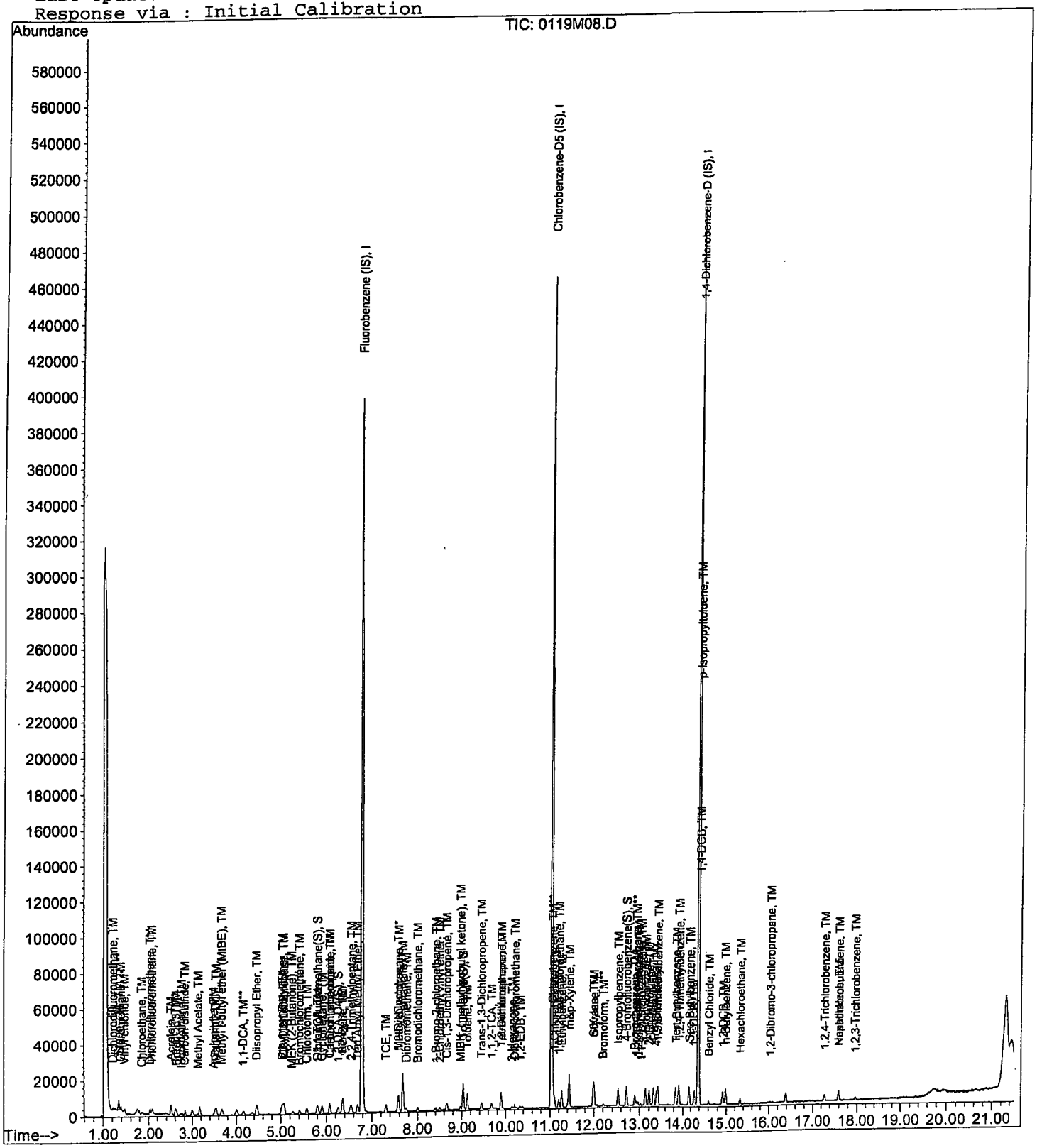
Data File : M:\MAX\DATA\M150119\0119M08.D
Acq On : 19 Jan 15 13:05
Sample : 0.3ug/L Vol Std 01-19-15
Misc : 10mL w/IS: 11-03-14

Vial: 8
Operator: DG,SV,RS
Inst : MAX
Multiplr: 1.00

Quant Time: Jan 21 11:46 2015

Quant Results File: MALLW.RES

Method : M:\MAX\DATA\M150119\MALLW.M (RTE Integrator)
Title : METHOD 8260B
Last Update : Wed Jan 21 13:18:25 2015
Response via : Initial Calibration



Quantitation Report (Not Reviewed)

Data File : M:\MAX\DATA\M150119\0119M09.D
Acq On : 19 Jan 15 13:33
Sample : 0.5ug/L Vol Std 01-19-15
Misc : 10mL w/IS: 11-03-14

Vial: 9
Operator: DG,SV,RS
Inst : MAX
Multiplr: 1.00

Quant Time: Jan 21 11:46 2015

Quant Results File: MALLW.RES

Quant Method : M:\MAX\DATA\M150119\MALLW.M (RTE Integrator)
Title : METHOD 8260B
Last Update : Wed Jan 21 11:46:11 2015
Response via : Initial Calibration
DataAcq Meth : V8260

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene (IS)	6.78	96	423903	25.00000 ppb	0.00
55) Chlorobenzene-D5 (IS)	11.03	117	311999	25.00000 ppb	0.00
70) 1,4-Dichlorobenzene-D (IS)	14.37	152	173730	25.00000 ppb	0.00
System Monitoring Compounds					
31) Dibromofluoromethane(S)	5.79	111	4657	1.07023 ppb	0.00
Spiked Amount 14.019			Recovery	= 7.633%	
36) 1,2-DCA-D4(S)	6.26	65	4912	1.06771 ppb	0.00
Spiked Amount 13.317			Recovery	= 8.020%	
56) Toluene-D8(S)	9.03	98	19267	1.05932 ppb	0.00
Spiked Amount 14.391			Recovery	= 7.359%	
64) 4-Bromofluorobenzene(S)	12.71	95	7281	1.02596 ppb	0.00
Spiked Amount 14.078			Recovery	= 7.288%	

Target Compounds					Qvalue
2) Dichlorodifluoromethane	1.23	85	1503	0.39469 ppb	94
3) Freon 114	1.34	85	1380	0.42980 ppb	80
4) Chloromethane	1.38	50	4154	0.64930 ppb	97
5) Vinyl chloride	1.47	62	2847	0.51831 ppb	100
6) Bromomethane	1.74	94	978	-0.78969 ppb	99
7) Chloroethane	1.85	64	1676	0.49602 ppb	90
8) Dichlorofluoromethane	2.03	67	4908	0.53317 ppb	94
9) Trichlorofluoromethane	2.09	101	2964	0.47583 ppb	100
10) Acrolein	2.50	56	11960	25.41035 ppb	97
11) Acetone	2.71	43	1613	-0.27711 ppb	94
12) Freon-113	2.63	101	730	0.47879 ppb	86
13) 1,1-DCE	2.60	61	1662	0.49651 ppb	88
14) t-Butanol	3.52	59	2146	24.55934 ppb	98
15) Methyl Acetate	3.12	43	2079	0.55432 ppb #	79
16) Iodomethane	2.75	142	1366	0.86104 ppb	91
17) Acrylonitrile	3.49	53	532	0.48759 ppb #	56
18) Methylene chloride	3.17	84	6743	-0.45732 ppb	94
19) Carbon disulfide	2.82	76	6398	0.51208 ppb	100
20) Methyl t-butyl ether (MtBE	3.67	73	6250	0.54695 ppb	97
21) Trans-1,2-DCE	3.54	96	2526	0.53595 ppb	95
22) Diisopropyl Ether	4.45	45	9384	0.53136 ppb	89
23) 1,1-DCA	4.17	63	4708	0.56051 ppb	98
24) Vinyl Acetate	4.35	43	4297	-0.80935 ppb	99
25) Ethyl tert Butyl Ether	5.03	59	7784	0.53301 ppb	96
26) MEK (2-Butanone)	5.21	43	1107	0.74915 ppb #	56
27) Cis-1,2-DCE	5.08	96	2836	0.53105 ppb	94
28) 2,2-Dichloropropane	5.06	77	4184	0.57856 ppb	96
29) Chloroform	5.56	83	3862	0.50076 ppb	91
30) Bromochloromethane	5.41	128	1230	0.52249 ppb	74
32) 1,1,1-TCA	5.82	97	3919	0.55153 ppb #	88
33) Cyclohexane	5.90	41	2364	0.51409 ppb	77
34) 1,1-Dichloropropene	6.07	75	3344	0.53144 ppb	98
35) 2,2,4-Trimethylpentane	6.55	57	5763	0.44163 ppb #	67
37) Carbon Tetrachloride	6.07	117	2424	0.44912 ppb	87
38) Tert Amyl Methyl Ether	6.69	73	7117	0.55166 ppb	97
39) 1,2-DCA	6.36	62	3108	0.55422 ppb	98
40) Benzene	6.36	78	11251	0.55498 ppb	99
41) TCE	7.31	95	2711	0.55050 ppb	91
42) 2-Pentanone	7.67	43	64440	24.99392 ppb	98

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : M:\MAX\DATA\M150119\0119M09.D
Acq On : 19 Jan 15 13:33
Sample : 0.5ug/L Vol Std 01-19-15
Misc : 10mL w/IS: 11-03-14

Vial: 9
Operator: DG,SV,RS
Inst : MAX
Multiplr: 1.00

Quant Time: Jan 21 11:46 2015

Quant Results File: MALLW.RES

Quant Method : M:\MAX\DATA\M150119\MALLW.M (RTE Integrator)
Title : METHOD 8260B
Last Update : Wed Jan 21 11:46:11 2015
Response via : Initial Calibration
DataAcq Meth : V8260

Compound	R.T.	QIon	Response	Conc Unit		Qvalue
43) 1,2-Dichloropropane	7.59	63	2969	0.58775 ppb	#	87
44) Bromodichloromethane	8.00	83	3007	0.51685 ppb		95
45) Methyl Cyclohexane	7.58	83	3653	0.49473 ppb		90
46) Dibromomethane	7.75	93	1106	0.50225 ppb		96
47) MIBK (methyl isobutyl ket	8.97	43	2114	0.56255 ppb	#	93
48) 1-Bromo-2-chloroethane	8.40	63	2905	0.53085 ppb		95
49) 2-Chloroethyl vinyl ether	8.50	106	324	0.47432 ppb		81
50) Cis-1,3-Dichloropropene	8.66	75	4271	0.54257 ppb		90
51) Toluene	9.12	91	11571	0.51910 ppb		99
52) Trans-1,3-Dichloropropene	9.44	75	3499	0.54551 ppb		98
53) 1,1,2-TCA	9.67	83	1533	0.54765 ppb		96
54) 2-Hexanone	10.14	43	1546	0.64042 ppb	#	71
57) 1,2-EDB	10.32	107	1663	0.50395 ppb	#	79
58) Tetrachloroethene	9.89	164	1436	0.54063 ppb		91
59) 1-Chlorohexane	11.10	91	3332	0.50952 ppb		98
60) 1,1,1,2-Tetrachloroethane	11.20	131	2597	0.51349 ppb		97
61) m&p-Xylene	11.43	106	10450	1.04868 ppb		100
62) o-Xylene	11.98	106	5282	0.53474 ppb		95
63) Styrene	12.00	104	8273	0.50225 ppb	#	98
65) 1,3-Dichloropropane	9.90	76	3499	0.56245 ppb		87
66) Dibromochloromethane	10.20	129	2201	0.51056 ppb		97
67) Chlorobenzene	11.07	112	7496	0.50905 ppb		91
68) Ethylbenzene	11.26	91	13380	0.53266 ppb		94
69) Bromoform	12.21	173	1658	0.54134 ppb		100
71) Isopropylbenzene	12.53	105	12987	0.53716 ppb		97
72) 1,1,2,2-Tetrachloroethane	12.94	83	1853	0.52631 ppb		97
73) 1,2,3-Trichloropropane	12.97	110	630	0.51263 ppb		100
74) t-1,4-Dichloro-2-Butene	13.03	53	389	0.39542 ppb		95
75) Bromobenzene	12.90	156	3677	0.54342 ppb		98
76) n-Propylbenzene	13.12	91	14703	0.53013 ppb		98
77) 4-Ethyltoluene	13.29	105	12612	0.52412 ppb		100
78) 2-Chlorotoluene	13.20	91	8975	0.54139 ppb		100
79) 1,3,5-Trimethylbenzene	13.39	105	10881	0.50848 ppb		100
80) 4-Chlorotoluene	13.36	91	10359	0.53730 ppb		100
81) Tert-Butylbenzene	13.85	119	9956	0.54194 ppb		97
82) 1,2,4-Trimethylbenzene	13.92	105	11421	0.52976 ppb		96
83) Sec-Butylbenzene	14.16	105	13009	0.51339 ppb		98
84) p-Isopropyltoluene	14.39	119	11782	0.51891 ppb		95
85) Benzyl Chloride	14.60	91	3414	0.50181 ppb		92
86) 1,3-DCB	14.27	146	6451	0.51157 ppb		98
87) 1,4-DCB	14.40	146	7068	0.55056 ppb		95
88) n-Butylbenzene	14.98	91	9270	0.49778 ppb		99
89) 1,2-DCB	14.92	146	6224	0.53936 ppb		96
90) Hexachloroethane	15.31	117	1419	0.45699 ppb		91
91) 1,2-Dibromo-3-chloropropan	16.03	75	249	0.40506 ppb	#	36
92) 1,2,4-Trichlorobenzene	17.27	180	2906	0.40768 ppb		92
93) Hexachlorobutadiene	17.58	225	2488	0.49632 ppb		96
94) Naphthalene	17.60	128	2206	0.92726 ppb		95
95) 1,2,3-Trichlorobenzene	17.96	180	1872	0.64384 ppb		88

(#) = qualifier out of range (m) = manual integration

Quantitation Report

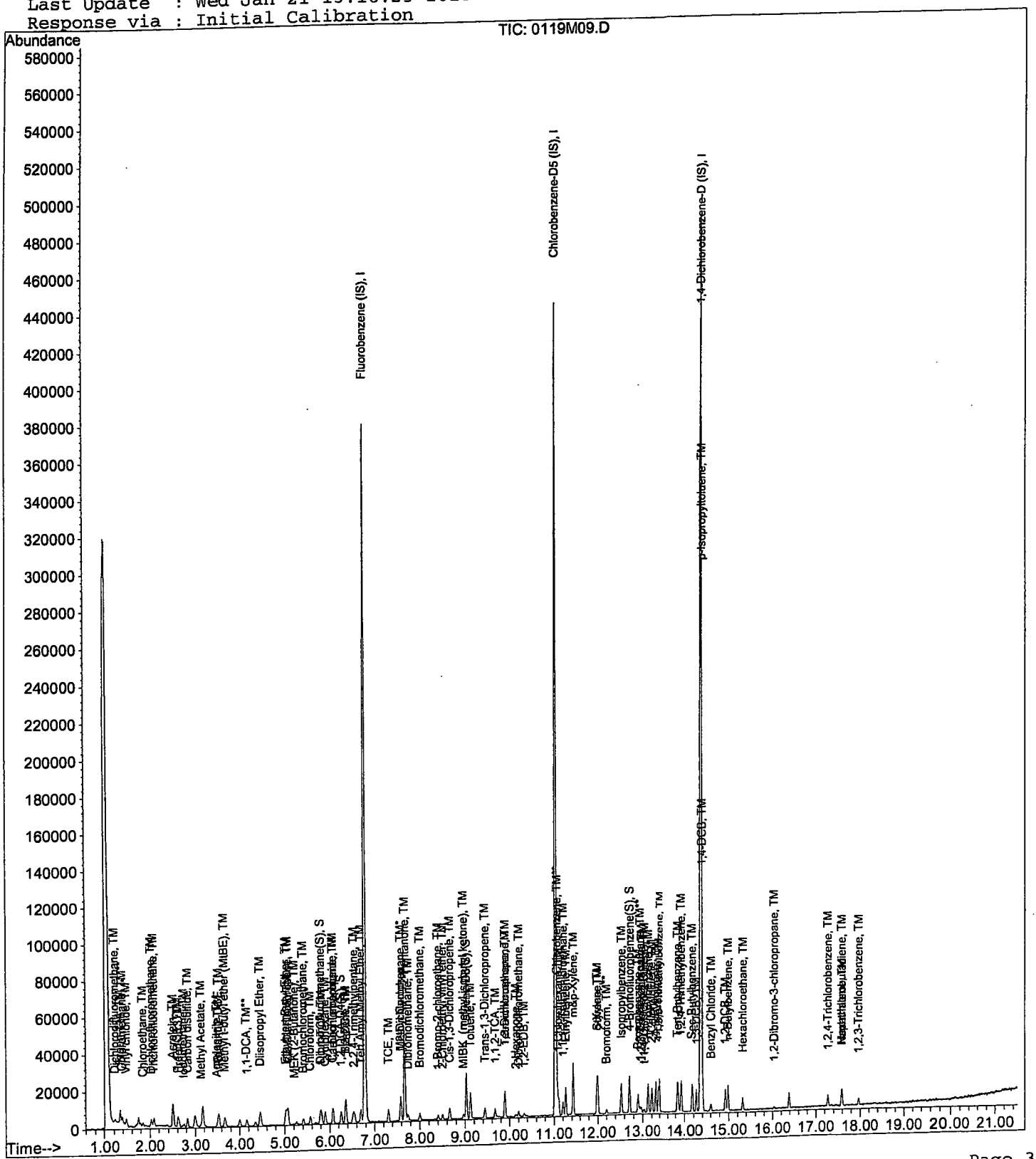
Data File : M:\MAX\DATA\M150119\0119M09.D
Acq On : 19 Jan 15 13:33
Sample : 0.5ug/L Vol Std 01-19-15
Misc : 10mL w/IS: 11-03-14

Vial: 9
Operator: DG,SV,RS
Inst : MAX
Multiplr: 1.00

Quant Time: Jan 21 11:46 2015

Quant Results File: MALLW.RES

Method : M:\MAX\DATA\M150119\MALLW.M (RTE Integrator)
Title : METHOD 8260B
Last Update : Wed Jan 21 13:18:25 2015
Response via : Initial Calibration



Quantitation Report (Not Reviewed)

Data File : M:\MAX\DATA\M150119\0119M10.D
Acq On : 19 Jan 15 14:01
Sample : 1.0ug/L Vol Std 01-19-15
Misc : 10mL w/IS: 11-03-14

Vial: 10
Operator: DG,SV,RS
Inst : MAX
Multiplr: 1.00

Quant Time: Jan 21 11:46 2015

Quant Results File: MALLW.RES

Quant Method : M:\MAX\DATA\M150119\MALLW.M (RTE Integrator)
Title : METHOD 8260B
Last Update : Wed Jan 21 11:46:11 2015
Response via : Initial Calibration
DataAcq Meth : V8260

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene (IS)	6.78	96	439629	25.00000 ppb	0.00
55) Chlorobenzene-D5 (IS)	11.03	117	322436	25.00000 ppb	0.00
70) 1,4-Dichlorobenzene-D (IS)	14.37	152	179450	25.00000 ppb	0.00
System Monitoring Compounds					
31) Dibromofluoromethane(S)	5.79	111	8958	1.98500 ppb	0.00
Spiked Amount 14.019			Recovery	= 14.160%	
36) 1,2-DCA-D4(S)	6.26	65	9398	1.96975 ppb	0.00
Spiked Amount 13.317			Recovery	= 14.793%	
56) Toluene-D8(S)	9.03	98	35912	1.91057 ppb	0.00
Spiked Amount 14.391			Recovery	= 13.279%	
64) 4-Bromofluorobenzene(S)	12.71	95	13971	1.90491 ppb	0.00
Spiked Amount 14.078			Recovery	= 13.531%	

Target Compounds						Qvalue
2) Dichlorodifluoromethane	1.23	85	4057	1.02728 ppb		99
3) Freon 114	1.34	85	3411	1.02436 ppb		100
4) Chloromethane	1.38	50	6675	1.00603 ppb		96
5) Vinyl chloride	1.47	62	5378	0.94407 ppb		90
6) Bromomethane	1.74	94	1748	-0.13665 ppb		96
7) Chloroethane	1.84	64	3397	0.96940 ppb		99
8) Dichlorofluoromethane	2.03	67	9790	1.02547 ppb		96
9) Trichlorofluoromethane	2.08	101	6216	0.96219 ppb		89
10) Acrolein	2.50	56	23185	47.49706 ppb		95
11) Acetone	2.71	43	3181	1.58915 ppb		94
12) Freon-113	2.63	101	1634	1.03337 ppb		94
13) 1,1-DCE	2.60	61	3424	0.98630 ppb		96
14) t-Butanol	3.52	59	4312	47.58236 ppb		97
15) Methyl Acetate	3.12	43	3038	0.90706 ppb		95
16) Iodomethane	2.75	142	2831	1.20295 ppb		97
17) Acrylonitrile	3.49	53	1039	0.91820 ppb	#	83
18) Methylene chloride	3.17	84	14787	1.32862 ppb		96
19) Carbon disulfide	2.82	76	12271	0.94700 ppb		97
20) Methyl t-butyl ether (MtBE	3.67	73	11212	0.94608 ppb		96
21) Trans-1,2-DCE	3.54	96	4637	0.94865 ppb		94
22) Diisopropyl Ether	4.46	45	17630	0.96258 ppb		97
23) 1,1-DCA	4.16	63	8320	0.95510 ppb		95
24) Vinyl Acetate	4.35	43	7002	-0.33578 ppb		97
25) Ethyl tert Butyl Ether	5.03	59	14696	0.97032 ppb		99
26) MEK (2-Butanone)	5.22	43	1914	1.24894 ppb	#	73
27) Cis-1,2-DCE	5.07	96	5321	0.96073 ppb		98
28) 2,2-Dichloropropane	5.06	77	7330	0.97732 ppb		93
29) Chloroform	5.56	83	7909	0.98883 ppb		96
30) Bromochloromethane	5.41	128	2375	0.97278 ppb		85
32) 1,1,1-TCA	5.81	97	7008	0.95097 ppb		96
33) Cyclohexane	5.90	41	4892	1.02580 ppb		93
34) 1,1-Dichloropropene	6.07	75	6180	0.94701 ppb		99
35) 2,2,4-Trimethylpentane	6.55	57	13712	1.01319 ppb	#	74
37) Carbon Tetrachloride	6.07	117	4964	0.88684 ppb		86
38) Tert Amyl Methyl Ether	6.69	73	12891	0.96347 ppb		95
39) 1,2-DCA	6.37	62	5459	0.93863 ppb		94
40) Benzene	6.36	78	20311	0.96604 ppb		98
41) TCE	7.31	95	4656	0.91163 ppb		92
42) 2-Pentanone	7.67	43	129223	48.32800 ppb		100

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : M:\MAX\DATA\M150119\0119M10.D
Acq On : 19 Jan 15 14:01
Sample : 1.0ug/L Vol Std 01-19-15
Misc : 10mL w/IS: 11-03-14

Vial: 10
Operator: DG,SV,RS
Inst : MAX
Multiplr: 1.00

Quant Time: Jan 21 11:46 2015

Quant Results File: MALLW.RES

Quant Method : M:\MAX\DATA\M150119\MALLW.M (RTE Integrator)
Title : METHOD 8260B
Last Update : Wed Jan 21 11:46:11 2015
Response via : Initial Calibration
DataAcq Meth : V8260

Compound	R.T.	QIon	Response	Conc Unit		Qvalue
43) 1,2-Dichloropropane	7.59	63	4992	0.95287 ppb		97
44) Bromodichloromethane	8.00	83	5668	0.93939 ppb		93
45) Methyl Cyclohexane	7.58	83	7529	0.98319 ppb		96
46) Dibromomethane	7.75	93	2247	0.98388 ppb		93
47) MIBK (methyl isobutyl ket	8.97	43	4022	1.03199 ppb	#	95
48) 1-Bromo-2-chloroethane	8.40	63	5182	0.91306 ppb		99
49) 2-Chloroethyl vinyl ether	8.50	106	602	0.84978 ppb		83
50) Cis-1,3-Dichloropropene	8.65	75	7649	0.93695 ppb		97
51) Toluene	9.12	91	22277	0.96365 ppb		100
52) Trans-1,3-Dichloropropene	9.44	75	6260	0.94105 ppb		84
53) 1,1,2-TCA	9.67	83	2647	0.91179 ppb		96
54) 2-Hexanone	10.14	43	2430	0.97060 ppb	#	92
57) 1,2-EDB	10.33	107	3199	0.93803 ppb		86
58) Tetrachloroethene	9.89	164	2555	0.93077 ppb		91
59) 1-Chlorohexane	11.10	91	6552	0.96948 ppb		98
60) 1,1,1,2-Tetrachloroethane	11.20	131	4897	0.93692 ppb		95
61) m&p-Xylene	11.43	106	19658	1.90887 ppb		99
62) o-Xylene	11.98	106	9168	0.89811 ppb		95
63) Styrene	12.00	104	16160	0.94930 ppb		97
65) 1,3-Dichloropropane	9.90	76	6086	0.94664 ppb		99
66) Dibromochloromethane	10.20	129	4129	0.92679 ppb		86
67) Chlorobenzene	11.07	112	14633	0.96155 ppb		96
68) Ethylbenzene	11.26	91	24838	0.95679 ppb		99
69) Bromoform	12.20	173	2891	0.91337 ppb		93
71) Isopropylbenzene	12.53	105	24090	0.96464 ppb		100
72) 1,1,2,2-Tetrachloroethane	12.94	83	3341	0.91870 ppb		91
73) 1,2,3-Trichloropropane	12.96	110	1203	0.94767 ppb		93
74) t-1,4-Dichloro-2-Butene	13.03	53	937	0.92211 ppb	#	72
75) Bromobenzene	12.90	156	6613	0.94618 ppb		97
76) n-Propylbenzene	13.12	91	27654	0.96530 ppb		99
77) 4-Ethyltoluene	13.29	105	23521	0.94632 ppb		97
78) 2-Chlorotoluene	13.20	91	16105	0.94051 ppb		98
79) 1,3,5-Trimethylbenzene	13.39	105	21783	0.98550 ppb		96
80) 4-Chlorotoluene	13.36	91	18855	0.94680 ppb		99
81) Tert-Butylbenzene	13.85	119	18177	0.95791 ppb		97
82) 1,2,4-Trimethylbenzene	13.92	105	20476	0.91949 ppb		96
83) Sec-Butylbenzene	14.16	105	24693	0.94343 ppb		98
84) p-Isopropyltoluene	14.39	119	21772	0.92834 ppb		99
85) Benzyl Chloride	14.60	91	6563	0.93391 ppb		99
86) 1,3-DCB	14.27	146	12568	0.96488 ppb		98
87) 1,4-DCB	14.40	146	12532	0.94507 ppb		98
88) n-Butylbenzene	14.98	91	16700	0.86817 ppb		97
89) 1,2-DCB	14.92	146	11127	0.93351 ppb		99
90) Hexachloroethane	15.32	117	2629	0.81969 ppb		96
91) 1,2-Dibromo-3-chloropropan	16.04	75	646	1.01739 ppb	#	78
92) 1,2,4-Trichlorobenzene	17.27	180	6067	0.82400 ppb		97
93) Hexachlorobutadiene	17.58	225	4946	0.95520 ppb		83
94) Naphthalene	17.60	128	5884	1.27806 ppb		96
95) 1,2,3-Trichlorobenzene	17.96	180	3903	0.95787 ppb		95

(#) = qualifier out of range (m) = manual integration

Quantitation Report

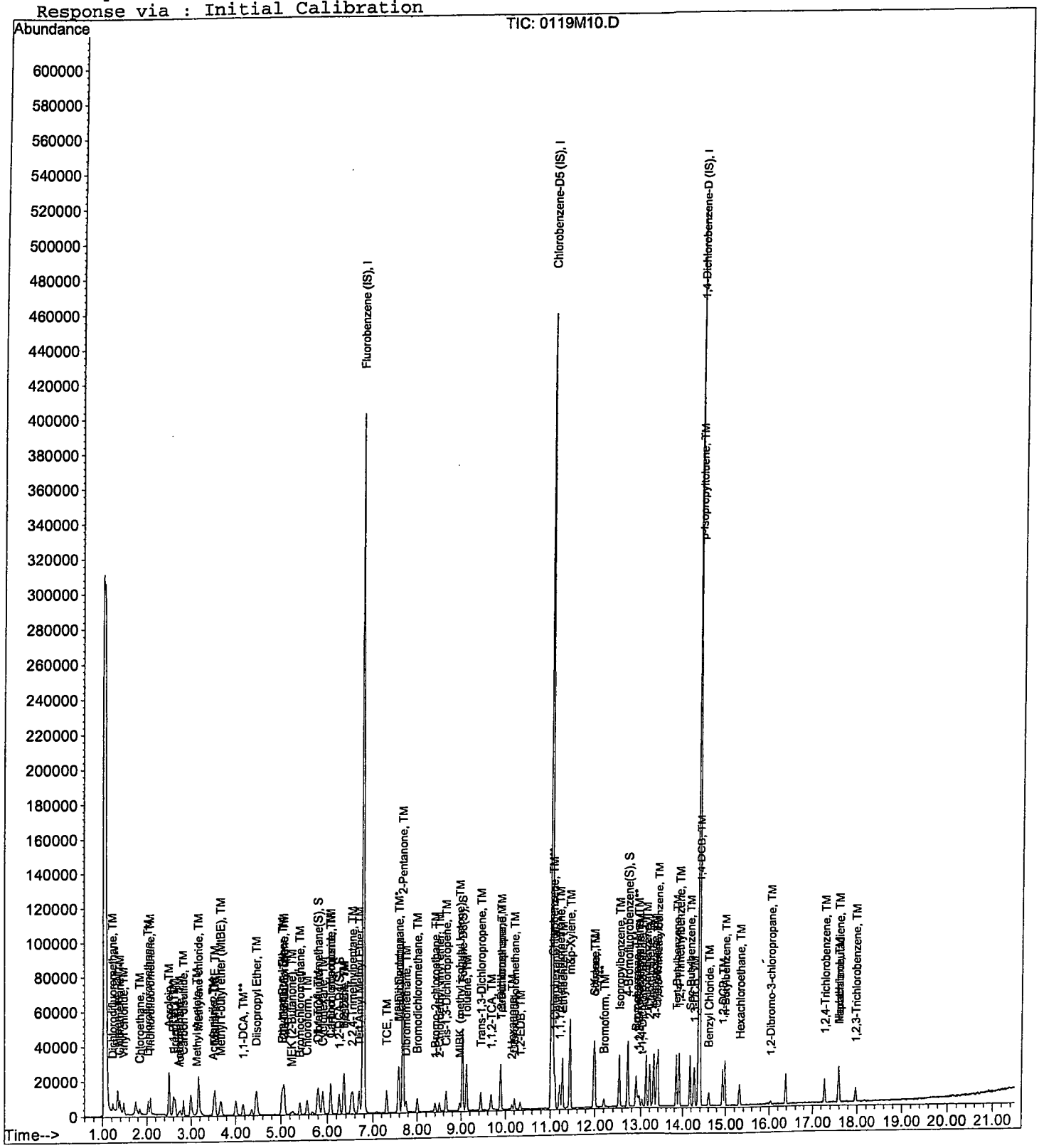
Data File : M:\MAX\DATA\M150119\0119M10.D
Acq On : 19 Jan 15 14:01
Sample : 1.0ug/L Vol Std 01-19-15
Misc : 10mL w/IS: 11-03-14

Vial: 10
Operator: DG,SV,RS
Inst : MAX
Multiplr: 1.00

Quant Time: Jan 21 11:46 2015

Quant Results File: MALLW.RES

Method : M:\MAX\DATA\M150119\MALLW.M (RTE Integrator)
Title : METHOD 8260B
Last Update : Wed Jan 21 13:18:25 2015
Response via : Initial Calibration



Quantitation Report (Not Reviewed)

Data File : M:\MAX\DATA\M150119\0119M11.D
Acq On : 19 Jan 15 14:28
Sample : 5.0ug/L Vol Std 01-19-15
Misc : 10mL w/IS: 11-03-14

Vial: 11
Operator: DG,SV,RS
Inst : MAX
Multiplr: 1.00

Quant Time: Jan 21 11:46 2015

Quant Results File: MALLW.RES

Quant Method : M:\MAX\DATA\M150119\MALLW.M (RTE Integrator)
Title : METHOD 8260B
Last Update : Wed Jan 21 11:46:11 2015
Response via : Initial Calibration
DataAcq Meth : V8260

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene (IS)	6.78	96	432651	25.00000 ppb	0.00
55) Chlorobenzene-D5 (IS)	11.03	117	317206	25.00000 ppb	0.00
70) 1,4-Dichlorobenzene-D (IS)	14.37	152	178545	25.00000 ppb	0.00
System Monitoring Compounds					
31) Dibromofluoromethane(S)	5.79	111	44162	9.94368 ppb	0.00
Spiked Amount 14.019			Recovery	= 70.934%	
36) 1,2-DCA-D4(S)	6.26	65	47370	10.08853 ppb	0.00
Spiked Amount 13.317			Recovery	= 75.761%	
56) Toluene-D8(S)	9.03	98	183500	9.92343 ppb	0.00
Spiked Amount 14.391			Recovery	= 68.953%	
64) 4-Bromofluorobenzene(S)	12.71	95	71422	9.89877 ppb	0.00
Spiked Amount 14.078			Recovery	= 70.314%	

Target Compounds					Qvalue
2) Dichlorodifluoromethane	1.23	85	17435	4.48593 ppb	92
3) Freon 114	1.34	85	15531	4.73935 ppb	99
4) Chloromethane	1.38	50	32134	4.92122 ppb	96
5) Vinyl chloride	1.47	62	28187	5.02781 ppb	99
6) Bromomethane	1.74	94	7895	5.44781 ppb	96
7) Chloroethane	1.84	64	17746	5.14582 ppb	99
8) Dichlorofluoromethane	2.03	67	45940	4.88968 ppb	100
9) Trichlorofluoromethane	2.09	101	31615	4.97270 ppb	97
10) Acrolein	2.50	56	47375	98.61828 ppb	99
11) Acetone	2.71	43	6281	5.55058 ppb	99
12) Freon-113	2.63	101	7194	4.62298 ppb	91
13) 1,1-DCE	2.60	61	17408	5.09536 ppb	99
14) t-Butanol	3.51	59	8989	100.79227 ppb	94
15) Methyl Acetate	3.12	43	14164	5.44873 ppb	96
16) Iodomethane	2.75	142	16723	4.62654 ppb	95
17) Acrylonitrile	3.49	53	5666	5.08798 ppb	93
18) Methylene chloride	3.17	84	33188	5.66781 ppb	96
19) Carbon disulfide	2.82	76	63426	4.97377 ppb	98
20) Methyl t-butyl ether (MtBE	3.67	73	60098	5.15294 ppb	97
21) Trans-1,2-DCE	3.54	96	24602	5.11430 ppb	97
22) Diisopropyl Ether	4.45	45	92322	5.12199 ppb	97
23) 1,1-DCA	4.16	63	43705	5.09804 ppb	98
24) Vinyl Acetate	4.35	43	35314	5.03726 ppb	99
25) Ethyl tert Butyl Ether	5.02	59	77454	5.19646 ppb	94
26) MEK (2-Butanone)	5.21	43	7926	5.25535 ppb	92
27) Cis-1,2-DCE	5.07	96	28230	5.17925 ppb	99
28) 2,2-Dichloropropane	5.06	77	36572	4.95487 ppb	97
29) Chloroform	5.57	83	40725	5.17378 ppb	98
30) Bromochloromethane	5.41	128	12317	5.12630 ppb	94
32) 1,1,1-TCA	5.82	97	36459	5.02719 ppb	97
33) Cyclohexane	5.90	41	21601	4.60253 ppb	96
34) 1,1-Dichloropropene	6.07	75	32673	5.08752 ppb	95
35) 2,2,4-Trimethylpentane	6.55	57	63996	4.80498 ppb	94
37) Carbon Tetrachloride	6.08	117	28318	5.14072 ppb	92
38) Tert Amyl Methyl Ether	6.69	73	66494	5.04991 ppb	99
39) 1,2-DCA	6.37	62	28708	5.01573 ppb	96
40) Benzene	6.36	78	104112	5.03170 ppb	97
41) TCE	7.31	95	25895	5.15192 ppb	97
42) 2-Pentanone	7.67	43	252140	95.81850 ppb	100

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : M:\MAX\DATA\M150119\0119M11.D
Acq On : 19 Jan 15 14:28
Sample : 5.0ug/L Vol Std 01-19-15
Misc : 10mL w/IS: 11-03-14

Vial: 11
Operator: DG,SV,RS
Inst : MAX
Multiplr: 1.00

Quant Time: Jan 21 11:46 2015

Quant Results File: MALLW.RES

Quant Method : M:\MAX\DATA\M150119\MALLW.M (RTE Integrator)
Title : METHOD 8260B
Last Update : Wed Jan 21 11:46:11 2015
Response via : Initial Calibration
DataAcq Meth : V8260

Compound	R.T.	QIon	Response	Conc Unit		Qvalue
43) 1,2-Dichloropropane	7.59	63	26202	5.08209 ppb		99
44) Bromodichloromethane	8.00	83	30177	5.08206 ppb		99
45) Methyl Cyclohexane	7.58	83	35686	4.73530 ppb		100
46) Dibromomethane	7.75	93	11647	5.18208 ppb		95
47) MIBK (methyl isobutyl ket	8.96	43	18829	4.90919 ppb	#	96
48) 1-Bromo-2-chloroethane	8.40	63	29177	5.22386 ppb		99
49) 2-Chloroethyl vinyl ether	8.50	106	3579	5.13356 ppb		91
50) Cis-1,3-Dichloropropene	8.65	75	40883	5.08864 ppb		97
51) Toluene	9.12	91	115496	5.07664 ppb		98
52) Trans-1,3-Dichloropropene	9.44	75	33283	5.08404 ppb		99
53) 1,1,2-TCA	9.67	83	14735	5.15749 ppb		98
54) 2-Hexanone	10.14	43	11899	4.82940 ppb		97
57) 1,2-EDB	10.33	107	17918	5.34064 ppb		100
58) Tetrachloroethene	9.89	164	14185	5.25272 ppb		98
59) 1-Chlorohexane	11.10	91	33395	5.02282 ppb		97
60) 1,1,1,2-Tetrachloroethane	11.20	131	26985	5.24805 ppb		98
61) m&p-Xylene	11.44	106	103640	10.22978 ppb		97
62) o-Xylene	11.98	106	51886	5.16665 ppb		96
63) Styrene	12.00	104	86190	5.14661 ppb		99
65) 1,3-Dichloropropane	9.90	76	32795	5.18515 ppb		99
66) Dibromochloromethane	10.20	129	22566	5.14867 ppb		94
67) Chlorobenzene	11.07	112	76357	5.10022 ppb		99
68) Ethylbenzene	11.26	91	131494	5.14885 ppb		99
69) Bromoform	12.20	173	15666	5.03103 ppb		96
71) Isopropylbenzene	12.53	105	127286	5.12279 ppb		100
72) 1,1,2,2-Tetrachloroethane	12.94	83	18059	4.99098 ppb		98
73) 1,2,3-Trichloropropane	12.97	110	6856	5.42823 ppb		98
74) t-1,4-Dichloro-2-Butene	13.03	53	5761	5.69819 ppb		91
75) Bromobenzene	12.89	156	35308	5.07744 ppb		100
76) n-Propylbenzene	13.12	91	146795	5.15006 ppb		98
77) 4-Ethyltoluene	13.29	105	128165	5.18259 ppb		98
78) 2-Chlorotoluene	13.20	91	86958	5.10400 ppb		100
79) 1,3,5-Trimethylbenzene	13.39	105	113603	5.16564 ppb		98
80) 4-Chlorotoluene	13.36	91	102495	5.17284 ppb		99
81) Tert-Butylbenzene	13.85	119	97759	5.17790 ppb		100
82) 1,2,4-Trimethylbenzene	13.92	105	114761	5.17957 ppb		97
83) Sec-Butylbenzene	14.16	105	133030	5.10833 ppb		99
84) p-Isopropyltoluene	14.39	119	120778	5.17596 ppb		99
85) Benzyl Chloride	14.60	91	37252	5.32781 ppb		98
86) 1,3-DCB	14.27	146	68074	5.25271 ppb		96
87) 1,4-DCB	14.40	146	67075	5.08392 ppb		100
88) n-Butylbenzene	14.98	91	97997	5.12035 ppb		98
89) 1,2-DCB	14.92	146	60936	5.13822 ppb		98
90) Hexachloroethane	15.31	117	16935	5.30690 ppb		97
91) 1,2-Dibromo-3-chloropropan	16.03	75	3512	5.55912 ppb		98
92) 1,2,4-Trichlorobenzene	17.27	180	38188	5.21287 ppb		97
93) Hexachlorobutadiene	17.58	225	25897	5.02672 ppb		97
94) Naphthalene	17.60	128	40713	4.68697 ppb		97
95) 1,2,3-Trichlorobenzene	17.96	180	25428	4.41072 ppb		95

(#) = qualifier out of range (m) = manual integration

Quantitation Report

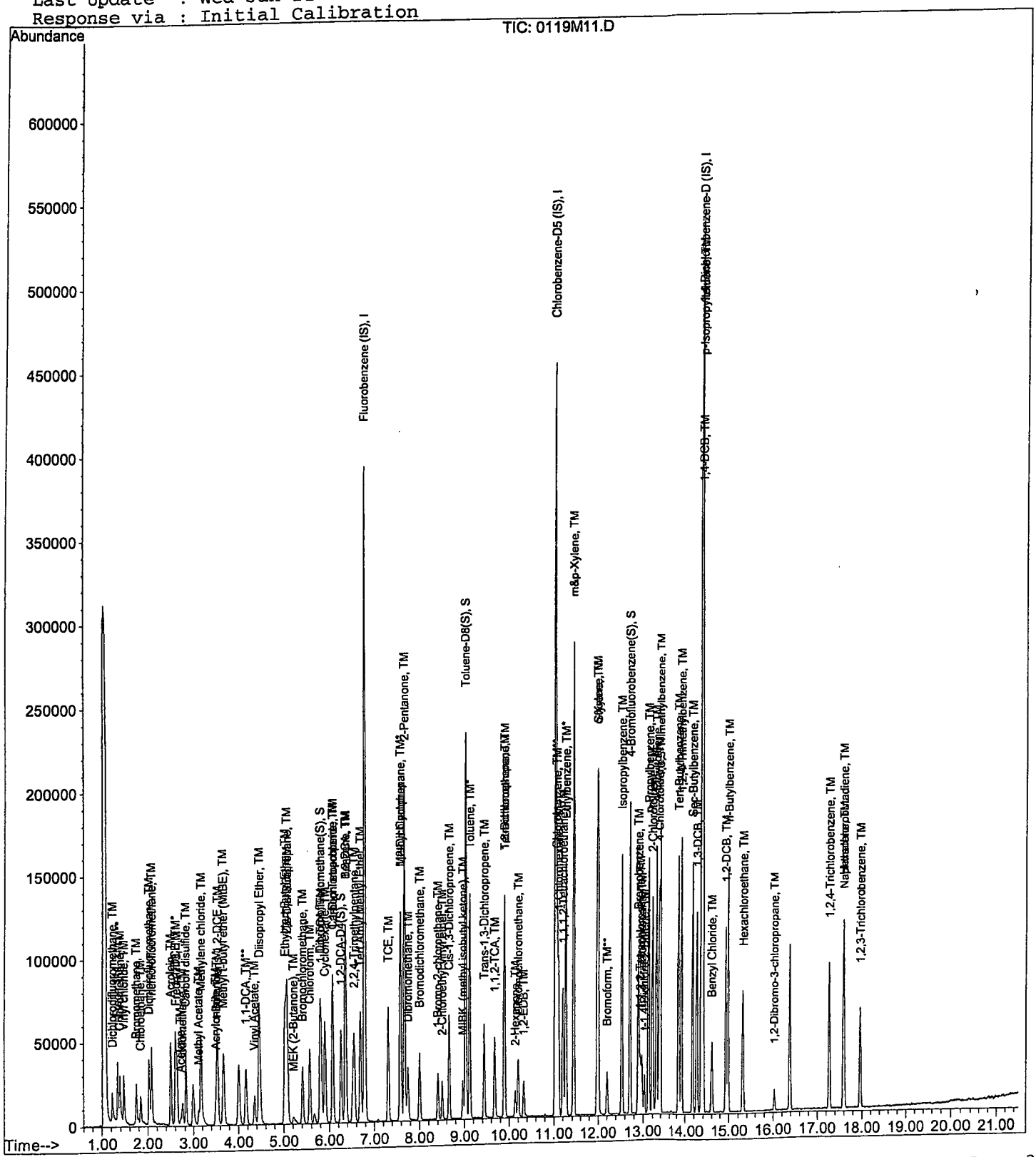
Data File : M:\MAX\DATA\M150119\0119M11.D
Acq On : 19 Jan 15 14:28
Sample : 5.0ug/L Vol Std 01-19-15
Misc : 10mL w/IS: 11-03-14

Vial: 11
Operator: DG,SV,RS
Inst : MAX
Multiplr: 1.00

Quant Time: Jan 21 11:46 2015

Quant Results File: MALLW.RES

Method : M:\MAX\DATA\M150119\MALLW.M (RTE Integrator)
Title : METHOD 8260B
Last Update : Wed Jan 21 13:18:25 2015
Response via : Initial Calibration



Quantitation Report (Not Reviewed)

Data File : M:\MAX\DATA\M150119\0119M12.D
Acq On : 19 Jan 15 14:56
Sample : 10ug/L Vol Std 01-19-15
Misc : 10mL w/IS: 11-03-14

Vial: 12
Operator: DG,SV,RS
Inst : MAX
Multiplr: 1.00

Quant Time: Jan 21 11:46 2015

Quant Results File: MALLW.RES

Quant Method : M:\MAX\DATA\M150119\MALLW.M (RTE Integrator)
Title : METHOD 8260B
Last Update : Wed Jan 21 11:46:11 2015
Response via : Initial Calibration
DataAcq Meth : V8260

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene (IS)	6.78	96	423359	25.00000 ppb	0.00
55) Chlorobenzene-D5 (IS)	11.03	117	316237	25.00000 ppb	0.00
70) 1,4-Dichlorobenzene-D (IS)	14.37	152	176852	25.00000 ppb	0.00
System Monitoring Compounds					
31) Dibromofluoromethane(S)	5.79	111	108728	25.01892 ppb	0.00
Spiked Amount 14.019			Recovery	= 178.470%	
36) 1,2-DCA-D4(S)	6.26	65	112295	24.44072 ppb	0.00
Spiked Amount 13.317			Recovery	= 183.535%	
56) Toluene-D8(S)	9.03	98	454688	24.66424 ppb	0.00
Spiked Amount 14.391			Recovery	= 171.385%	
64) 4-Bromofluorobenzene(S)	12.71	95	175695	24.42516 ppb	0.00
Spiked Amount 14.078			Recovery	= 173.494%	
Target Compounds					Qvalue
2) Dichlorodifluoromethane	1.23	85	36820	9.68152 ppb	100
3) Freon 114	1.33	85	30337	9.46066 ppb	100
4) Chloromethane	1.38	50	60990	9.54544 ppb	100
5) Vinyl chloride	1.47	62	54031	9.84922 ppb	100
6) Bromomethane	1.74	94	13632	10.90696 ppb	100
7) Chloroethane	1.84	64	34216	10.13940 ppb	100
8) Dichlorofluoromethane	2.03	67	89307	9.71414 ppb	100
9) Trichlorofluoromethane	2.08	101	62626	10.06659 ppb	100
10) Acrolein	2.50	56	58192	123.79424 ppb	100
11) Acetone	2.71	43	10909	11.67090 ppb	100
12) Freon-113	2.63	101	14762	9.69450 ppb	100
13) 1,1-DCE	2.60	61	33840	10.12244 ppb	100
14) t-Butanol	3.52	59	11615	133.09568 ppb	100
15) Methyl Acetate	3.12	43	26600	10.74052 ppb	100
16) Iodomethane	2.75	142	37565	9.94889 ppb	100
17) Acrylonitrile	3.49	53	11342	10.40849 ppb	100
18) Methylene chloride	3.17	84	59032	11.98709 ppb	100
19) Carbon disulfide	2.82	76	127746	10.23752 ppb	100
20) Methyl t-butyl ether (MtBE	3.67	73	116385	10.19814 ppb	100
21) Trans-1,2-DCE	3.54	96	48071	10.21240 ppb	100
22) Diisopropyl Ether	4.46	45	179768	10.19236 ppb	100
23) 1,1-DCA	4.16	63	85224	10.15928 ppb	100
24) Vinyl Acetate	4.35	43	68678	11.62924 ppb	100
25) Ethyl tert Butyl Ether	5.02	59	149784	10.26970 ppb	100
26) MEK (2-Butanone)	5.21	43	15381	10.42225 ppb	100
27) Cis-1,2-DCE	5.07	96	53867	10.09967 ppb	100
28) 2,2-Dichloropropane	5.06	77	69663	9.64527 ppb	100
29) Chloroform	5.56	83	79022	10.25944 ppb	100
30) Bromochloromethane	5.41	128	24568	10.44955 ppb	100
32) 1,1,1-TCA	5.82	97	71642	10.09524 ppb	100
33) Cyclohexane	5.90	41	42555	9.26622 ppb	100
34) 1,1-Dichloropropene	6.07	75	62685	9.97492 ppb	100
35) 2,2,4-Trimethylpentane	6.55	57	123914	9.50798 ppb	100
37) Carbon Tetrachloride	6.08	117	56973	10.56962 ppb	100
38) Tert Amyl Methyl Ether	6.69	73	134478	10.43714 ppb	100
39) 1,2-DCA	6.37	62	57518	10.26984 ppb	100
40) Benzene	6.36	78	203894	10.07042 ppb	100
41) TCE	7.31	95	49905	10.14674 ppb	100
42) 2-Pentanone	7.67	43	322197	125.12902 ppb	100

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : M:\MAX\DATA\M150119\0119M12.D
Acq On : 19 Jan 15 14:56
Sample : 10ug/L Vol Std 01-19-15
Misc : 10mL w/IS: 11-03-14

Vial: 12
Operator: DG,SV,RS
Inst : MAX
Multiplr: 1.00

Quant Time: Jan 21 11:46 2015

Quant Results File: MALLW.RES

Quant Method : M:\MAX\DATA\M150119\MALLW.M (RTE Integrator)
Title : METHOD 8260B
Last Update : Wed Jan 21 11:46:11 2015
Response via : Initial Calibration
DataAcq Meth : V8260

Compound	R.T.	QIon	Response	Conc Unit		Qvalue
43) 1,2-Dichloropropane	7.59	63	52200	10.34683	ppb	100
44) Bromodichloromethane	8.00	83	60463	10.40596	ppb	100
45) Methyl Cyclohexane	7.58	83	69342	9.40319	ppb	100
46) Dibromomethane	7.75	93	22908	10.41612	ppb	100
47) MIBK (methyl isobutyl ket	8.96	43	36861	9.82153	ppb	100
48) 1-Bromo-2-chloroethane	8.40	63	57733	10.56341	ppb	100
49) 2-Chloroethyl vinyl ether	8.50	106	7266	10.65077	ppb	100
50) Cis-1,3-Dichloropropene	8.65	75	80992	10.30220	ppb	100
51) Toluene	9.12	91	226207	10.16118	ppb	100
52) Trans-1,3-Dichloropropene	9.44	75	65971	10.29837	ppb	100
53) 1,1,2-TCA	9.67	83	29257	10.46519	ppb	100
54) 2-Hexanone	10.14	43	23039	9.55599	ppb	100
57) 1,2-EDB	10.33	107	35412	10.58725	ppb	100
58) Tetrachloroethene	9.89	164	26784	9.94853	ppb	100
59) 1-Chlorohexane	11.10	91	65021	9.80954	ppb	100
60) 1,1,1,2-Tetrachloroethane	11.20	131	53701	10.47579	ppb	100
61) m&p-Xylene	11.44	106	204514	20.24840	ppb	100
62) o-Xylene	11.99	106	101592	10.14723	ppb	100
63) Styrene	12.00	104	170917	10.23713	ppb	100
65) 1,3-Dichloropropane	9.90	76	63697	10.10186	ppb	100
66) Dibromochloromethane	10.20	129	45739	10.46781	ppb	100
67) Chlorobenzene	11.07	112	150834	10.10573	ppb	100
68) Ethylbenzene	11.26	91	258787	10.16425	ppb	100
69) Bromoform	12.20	173	30337	9.77238	ppb	100
71) Isopropylbenzene	12.53	105	252735	10.26902	ppb	100
72) 1,1,2,2-Tetrachloroethane	12.94	83	37580	10.48544	ppb	100
73) 1,2,3-Trichloropropane	12.97	110	13087	10.46082	ppb	100
74) t-1,4-Dichloro-2-Butene	13.02	53	10922	10.90634	ppb	100
75) Bromobenzene	12.90	156	70219	10.19445	ppb	100
76) n-Propylbenzene	13.12	91	290238	10.28000	ppb	100
77) 4-Ethyltoluene	13.29	105	253493	10.34860	ppb	100
78) 2-Chlorotoluene	13.20	91	174124	10.31804	ppb	100
79) 1,3,5-Trimethylbenzene	13.39	105	225364	10.34562	ppb	100
80) 4-Chlorotoluene	13.36	91	204613	10.42551	ppb	100
81) Tert-Butylbenzene	13.85	119	190127	10.16667	ppb	100
82) 1,2,4-Trimethylbenzene	13.92	105	227015	10.34407	ppb	100
83) Sec-Butylbenzene	14.16	105	260634	10.10412	ppb	100
84) p-Isopropyltoluene	14.39	119	235328	10.18155	ppb	100
85) Benzyl Chloride	14.60	91	72473	10.46437	ppb	100
86) 1,3-DCB	14.27	146	131378	10.23441	ppb	100
87) 1,4-DCB	14.40	146	132640	10.14964	ppb	100
88) n-Butylbenzene	14.98	91	198694	10.48115	ppb	100
89) 1,2-DCB	14.92	146	120242	10.23605	ppb	100
90) Hexachloroethane	15.32	117	33182	10.49774	ppb	100
91) 1,2-Dibromo-3-chloropropan	16.03	75	6908	11.03930	ppb	100
92) 1,2,4-Trichlorobenzene	17.27	180	80517	11.09623	ppb	100
93) Hexachlorobutadiene	17.58	225	52677	10.32271	ppb	100
94) Naphthalene	17.60	128	94266	10.01228	ppb	100
95) 1,2,3-Trichlorobenzene	17.96	180	59414	9.94861	ppb	100

(#) = qualifier out of range (m) = manual integration

Quantitation Report

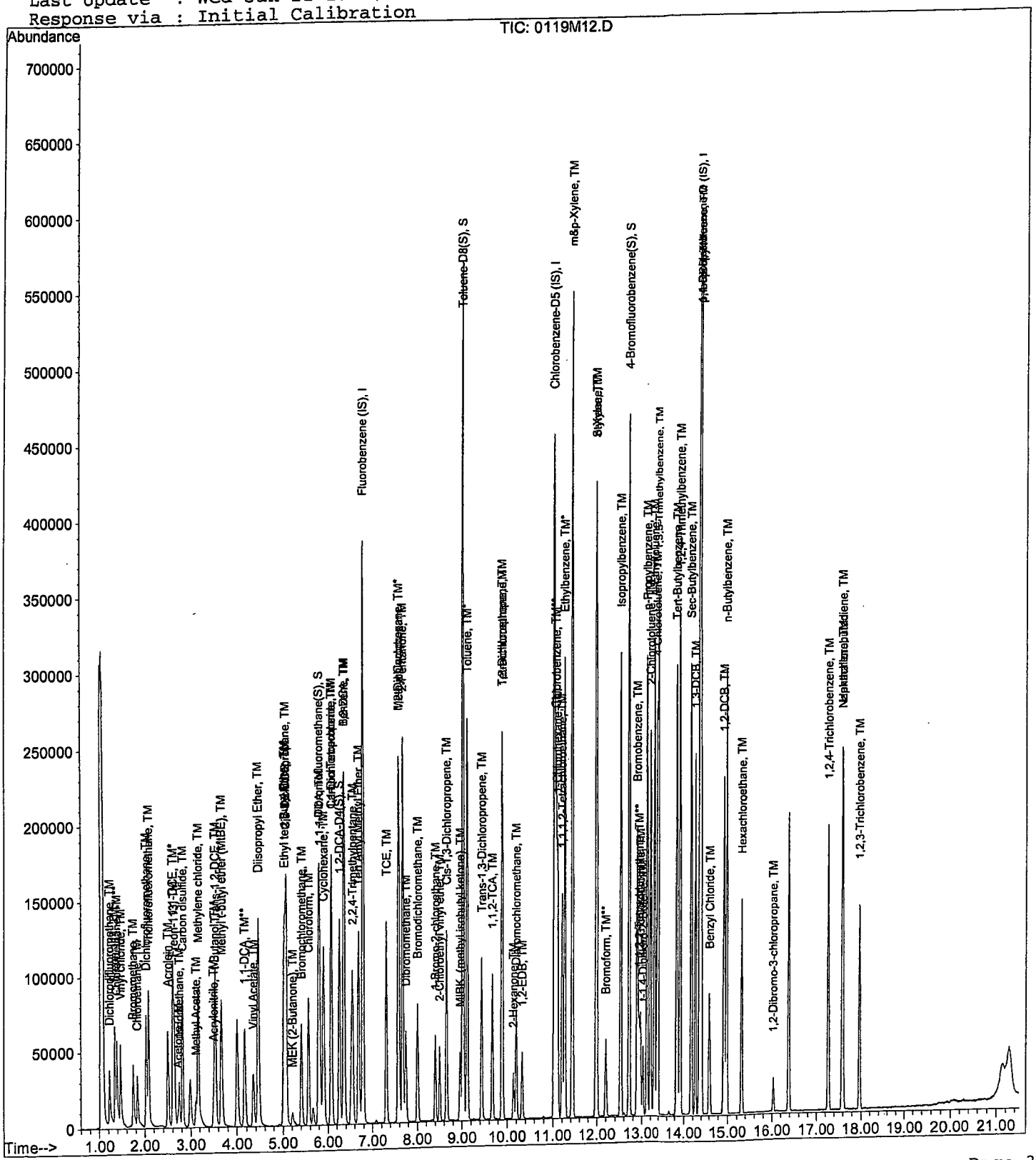
Data File : M:\MAX\DATA\M150119\0119M12.D
Acq On : 19 Jan 15 14:56
Sample : 10ug/L Vol Std 01-19-15
Misc : 10mL w/IS: 11-03-14

Vial: 12
Operator: DG,SV,RS
Inst : MAX
Multiplr: 1.00

Quant Time: Jan 21 11:46 2015

Quant Results File: MALLW.RES

Method : M:\MAX\DATA\M150119\MALLW.M (RTE Integrator)
Title : METHOD 8260B
Last Update : Wed Jan 21 13:18:25 2015
Response via : Initial Calibration



Quantitation Report (Not Reviewed)

Data File : M:\MAX\DATA\M150119\0119M13.D
Acq On : 19 Jan 15 15:24
Sample : 20ug/L Vol Std 01-19-15
Misc : 10mL w/IS: 11-03-14

Vial: 13
Operator: DG,SV,RS
Inst : MAX
Multiplr: 1.00

Quant Time: Jan 21 11:46 2015

Quant Results File: MALLW.RES

Quant Method : M:\MAX\DATA\M150119\MALLW.M (RTE Integrator)
Title : METHOD 8260B
Last Update : Wed Jan 21 11:46:11 2015
Response via : Initial Calibration
DataAcq Meth : V8260

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene (IS)	6.78	96	420229	25.00000 ppb	0.00
55) Chlorobenzene-D5 (IS)	11.03	117	310450	25.00000 ppb	0.00
70) 1,4-Dichlorobenzene-D (IS)	14.37	152	177712	25.00000 ppb	0.00
System Monitoring Compounds					
31) Dibromofluoromethane(S)	5.79	111	178629	41.40968 ppb	0.00
Spiked Amount 14.019			Recovery	= 295.393%	
36) 1,2-DCA-D4(S)	6.26	65	186103	40.80653 ppb	0.00
Spiked Amount 13.317			Recovery	= 306.432%	
56) Toluene-D8(S)	9.03	98	747759	41.31777 ppb	0.00
Spiked Amount 14.391			Recovery	= 287.110%	
64) 4-Bromofluorobenzene(S)	12.71	95	285798	40.47233 ppb	0.00
Spiked Amount 14.078			Recovery	= 287.478%	
Target Compounds					Qvalue
2) Dichlorodifluoromethane	1.23	85	81525	21.59600 ppb	99
3) Freon 114	1.33	85	67516	21.21183 ppb	100
4) Chloromethane	1.38	50	118150	18.62918 ppb	99
5) Vinyl chloride	1.47	62	110325	20.26076 ppb	99
6) Bromomethane	1.74	94	25704	22.24149 ppb	99
7) Chloroethane	1.83	64	66688	19.90919 ppb	99
8) Dichlorofluoromethane	2.03	67	170986	18.73708 ppb	98
9) Trichlorofluoromethane	2.08	101	128766	20.85219 ppb	100
10) Acrolein	2.50	56	68354	146.49535 ppb	99
11) Acetone	2.71	43	17586	20.41915 ppb	90
12) Freon-113	2.63	101	30712	20.31941 ppb	95
13) 1,1-DCE	2.60	61	67992	20.48969 ppb	100
14) t-Butanol	3.52	59	12758	147.28215 ppb	98
15) Methyl Acetate	3.12	43	49259	20.30460 ppb	96
16) Iodomethane	2.74	142	75689	19.66108 ppb	98
17) Acrylonitrile	3.49	53	21453	19.83393 ppb	99
18) Methylene chloride	3.17	84	95417	20.81414 ppb	99
19) Carbon disulfide	2.82	76	251816	20.33076 ppb	99
20) Methyl t-butyl ether (MtBE	3.67	73	221664	19.56780 ppb	99
21) Trans-1,2-DCE	3.54	96	90747	19.42226 ppb	98
22) Diisopropyl Ether	4.46	45	341298	19.49480 ppb	98
23) 1,1-DCA	4.16	63	162937	19.56787 ppb	99
24) Vinyl Acetate	4.35	43	122923	22.28551 ppb	100
25) Ethyl tert Butyl Ether	5.02	59	285179	19.69849 ppb	95
26) MEK (2-Butanone)	5.20	43	26889	18.35584 ppb	93
27) Cis-1,2-DCE	5.07	96	104194	19.68113 ppb	98
28) 2,2-Dichloropropane	5.06	77	136299	19.01200 ppb	98
29) Chloroform	5.56	83	153044	20.01772 ppb	100
30) Bromochloromethane	5.41	128	45938	19.68442 ppb	99
32) 1,1,1-TCA	5.82	97	139901	19.86062 ppb	97
33) Cyclohexane	5.90	41	88840	19.48872 ppb	96
34) 1,1-Dichloropropene	6.07	75	123764	19.84097 ppb	98
35) 2,2,4-Trimethylpentane	6.55	57	273062	21.10824 ppb	96
37) Carbon Tetrachloride	6.08	117	116392	21.75385 ppb	95
38) Tert Amyl Methyl Ether	6.69	73	248973	19.46729 ppb	98
39) 1,2-DCA	6.37	62	106653	19.18473 ppb	98
40) Benzene	6.36	78	392450	19.52766 ppb	99
41) TCE	7.31	95	97358	19.94237 ppb	99
42) 2-Pentanone	7.67	43	374395	146.48372 ppb	99

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : M:\MAX\DATA\M150119\0119M13.D
Acq On : 19 Jan 15 15:24
Sample : 20ug/L Vol Std 01-19-15
Misc : 10mL w/IS: 11-03-14

Vial: 13
Operator: DG,SV,RS
Inst : MAX
Multiplr: 1.00

Quant Time: Jan 21 11:46 2015

Quant Results File: MALLW.RES

Quant Method : M:\MAX\DATA\M150119\MALLW.M (RTE Integrator)
Title : METHOD 8260B
Last Update : Wed Jan 21 11:46:11 2015
Response via : Initial Calibration
DataAcq Meth : V8260

Compound	R.T.	QIon	Response	Conc Unit	Qvalue
43) 1,2-Dichloropropane	7.59	63	99195	19.80840 ppb	99
44) Bromodichloromethane	8.00	83	114738	19.89401 ppb	99
45) Methyl Cyclohexane	7.58	83	150549	20.56740 ppb	98
46) Dibromomethane	7.75	93	43982	20.14729 ppb	97
47) MIBK (methyl isobutyl ket	8.96	43	67795	18.19836 ppb	98
48) 1-Bromo-2-chloroethane	8.40	63	107812	19.87329 ppb	98
49) 2-Chloroethyl vinyl ether	8.50	106	14165	20.91823 ppb	97
50) Cis-1,3-Dichloropropene	8.65	75	153597	19.68309 ppb	98
51) Toluene	9.12	91	434738	19.67381 ppb	97
52) Trans-1,3-Dichloropropene	9.44	75	127057	19.98190 ppb	98
53) 1,1,2-TCA	9.67	83	54328	19.57780 ppb	96
54) 2-Hexanone	10.14	43	43634	18.23307 ppb	99
57) 1,2-EDB	10.33	107	65951	20.08514 ppb	98
58) Tetrachloroethene	9.89	164	52208	19.75339 ppb	99
59) 1-Chlorohexane	11.10	91	132185	20.31412 ppb	99
60) 1,1,1,2-Tetrachloroethane	11.20	131	102645	20.39686 ppb	99
61) m&p-Xylene	11.44	106	391904	39.52469 ppb	99
62) o-Xylene	11.99	106	195411	19.88190 ppb	98
63) Styrene	12.00	104	328398	20.03617 ppb	100
65) 1,3-Dichloropropane	9.90	76	121606	19.64529 ppb	98
66) Dibromochloromethane	10.20	129	86911	20.26119 ppb	97
67) Chlorobenzene	11.07	112	285207	19.46479 ppb	99
68) Ethylbenzene	11.26	91	498760	19.95472 ppb	99
69) Bromoform	12.20	173	60277	19.77882 ppb	100
71) Isopropylbenzene	12.53	105	488033	19.73359 ppb	100
72) 1,1,2,2-Tetrachloroethane	12.94	83	68405	18.99377 ppb	97
73) 1,2,3-Trichloropropane	12.97	110	24325	19.34958 ppb	97
74) t-1,4-Dichloro-2-Butene	13.03	53	21046	20.91413 ppb	95
75) Bromobenzene	12.90	156	134957	19.49836 ppb	98
76) n-Propylbenzene	13.12	91	565642	19.93764 ppb	99
77) 4-Ethyltoluene	13.29	105	488953	19.86442 ppb	99
78) 2-Chlorotoluene	13.20	91	327150	19.29206 ppb	99
79) 1,3,5-Trimethylbenzene	13.39	105	428027	19.55403 ppb	98
80) 4-Chlorotoluene	13.36	91	385976	19.57122 ppb	100
81) Tert-Butylbenzene	13.85	119	372514	19.82306 ppb	100
82) 1,2,4-Trimethylbenzene	13.92	105	438254	19.87266 ppb	98
83) Sec-Butylbenzene	14.17	105	515038	19.87009 ppb	99
84) p-Isopropyltoluene	14.39	119	461529	19.87159 ppb	99
85) Benzyl Chloride	14.60	91	139633	20.06402 ppb	99
86) 1,3-DCB	14.27	146	253358	19.64120 ppb	100
87) 1,4-DCB	14.40	146	251920	19.18367 ppb	98
88) n-Butylbenzene	14.98	91	392127	20.58468 ppb	99
89) 1,2-DCB	14.92	146	230428	19.52112 ppb	97
90) Hexachloroethane	15.31	117	67683	21.30915 ppb	96
91) 1,2-Dibromo-3-chloropropan	16.03	75	12756	20.28602 ppb	92
92) 1,2,4-Trichlorobenzene	17.27	180	163327	22.39954 ppb	100
93) Hexachlorobutadiene	17.58	225	105772	20.62704 ppb	97
94) Naphthalene	17.60	128	190788	19.45059 ppb	96
95) 1,2,3-Trichlorobenzene	17.97	180	120733	19.77540 ppb	98

(#) = qualifier out of range (m) = manual integration

Quantitation Report

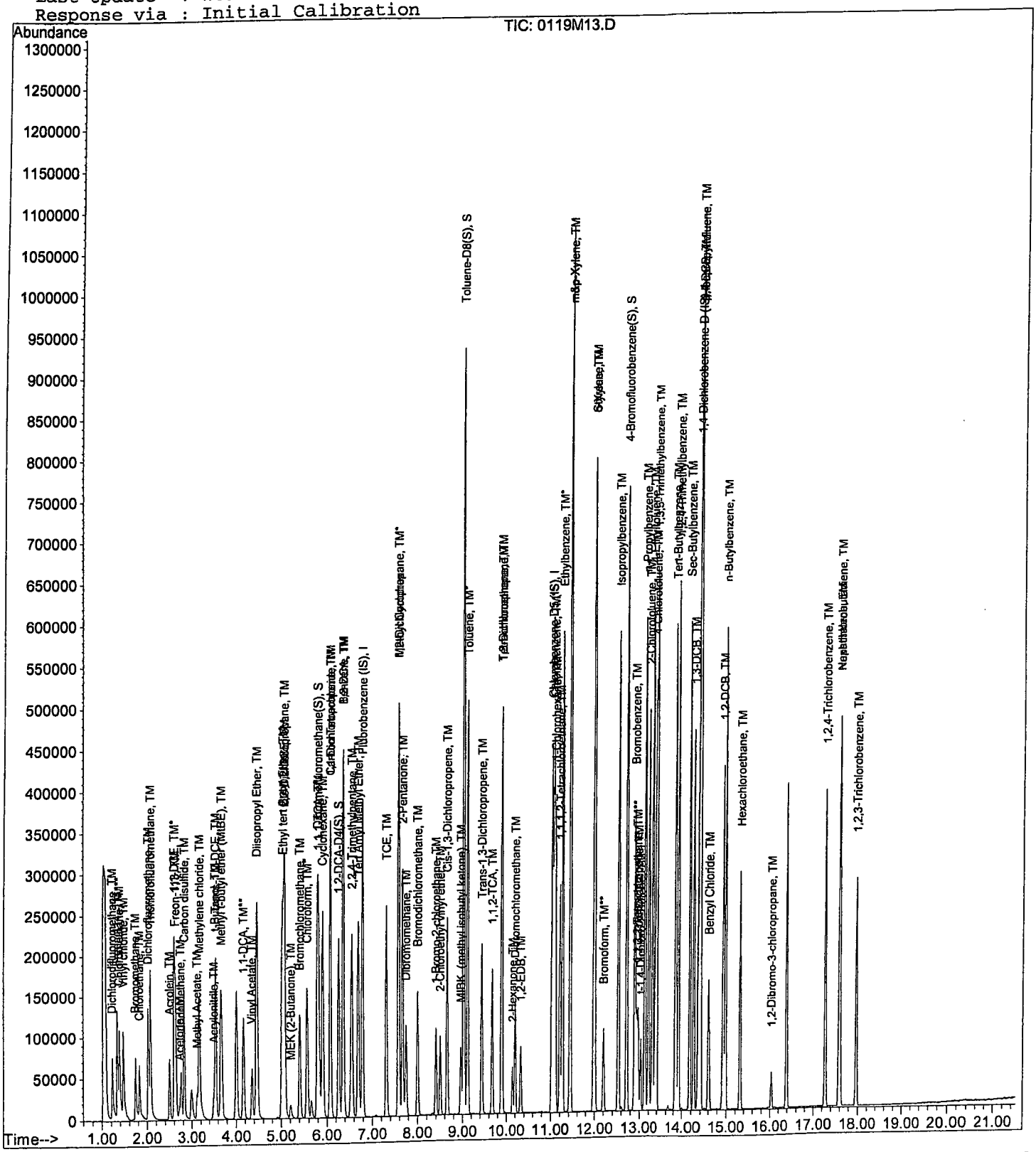
Data File : M:\MAX\DATA\M150119\0119M13.D
Acq On : 19 Jan 15 15:24
Sample : 20ug/L Vol Std 01-19-15
Misc : 10mL w/IS: 11-03-14

Vial: 13
Operator: DG,SV,RS
Inst : MAX
Multiplr: 1.00

Quant Time: Jan 21 11:46 2015

Quant Results File: MALLW.RES

Method : M:\MAX\DATA\M150119\MALLW.M (RTE Integrator)
Title : METHOD 8260B
Last Update : Wed Jan 21 13:18:25 2015
Response via : Initial Calibration



Quantitation Report (Not Reviewed)

Data File : M:\MAX\DATA\M150119\0119M14.D
Acq On : 19 Jan 15 15:51
Sample : 40ug/L Vol Std 01-19-15
Misc : 10mL w/IS: 11-03-14

Vial: 14
Operator: DG,SV,RS
Inst : MAX
Multiplr: 1.00

Quant Time: Jan 21 11:46 2015

Quant Results File: MALLW.RES

Quant Method : M:\MAX\DATA\M150119\MALLW.M (RTE Integrator)
Title : METHOD 8260B
Last Update : Wed Jan 21 11:46:11 2015
Response via : Initial Calibration
DataAcq Meth : V8260

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene (IS)	6.78	96	437004	25.00000 ppb	0.00
55) Chlorobenzene-D5 (IS)	11.03	117	324181	25.00000 ppb	0.00
70) 1,4-Dichlorobenzene-D (IS)	14.37	152	187386	25.00000 ppb	0.00
System Monitoring Compounds					
31) Dibromofluoromethane(S)	5.79	111	345621	77.04610 ppb	0.00
Spiked Amount 14.019			Recovery	= 549.598%	
36) 1,2-DCA-D4(S)	6.26	65	358292	75.54644 ppb	0.00
Spiked Amount 13.317			Recovery	= 567.298%	
56) Toluene-D8(S)	9.03	98	1454127	76.94523 ppb	0.00
Spiked Amount 14.391			Recovery	= 534.674%	
64) 4-Bromofluorobenzene(S)	12.71	95	568344	77.07516 ppb	0.00
Spiked Amount 14.078			Recovery	= 547.474%	

Target Compounds					Qvalue
2) Dichlorodifluoromethane	1.23	85	169028	43.05679 ppb	97
3) Freon 114	1.34	85	132006	39.88097 ppb	98
4) Chloromethane	1.38	50	237092	35.94822 ppb	100
5) Vinyl chloride	1.47	62	225774	39.87092 ppb	99
6) Bromomethane	1.74	94	47816	41.12171 ppb	98
7) Chloroethane	1.83	64	90290	25.92066 ppb	100
8) Dichlorofluoromethane	2.02	67	335103	35.31184 ppb	100
9) Trichlorofluoromethane	2.07	101	259169	40.35841 ppb	99
10) Acrolein	2.50	56	80773	166.46646 ppb	99
11) Acetone	2.71	43	32612	38.25074 ppb	86
12) Freon-113	2.63	101	60656	38.59024 ppb	96
13) 1,1-DCE	2.60	61	129552	37.54241 ppb	99
14) t-Butanol	3.54	59	16015	177.78498 ppb	91
15) Methyl Acetate	3.12	43	95146	37.97794 ppb	96
16) Iodomethane	2.74	142	160367	39.52012 ppb	99
17) Acrylonitrile	3.49	53	44061	39.17199 ppb	99
18) Methylene chloride	3.17	84	177640	38.89044 ppb	99
19) Carbon disulfide	2.82	76	498570	38.70767 ppb	100
20) Methyl t-butyl ether (MtBE	3.67	73	423176	35.92266 ppb	99
21) Trans-1,2-DCE	3.54	96	177338	36.49807 ppb	99
22) Diisopropyl Ether	4.46	45	654810	35.96674 ppb	98
23) 1,1-DCA	4.16	63	315920	36.48392 ppb	99
24) Vinyl Acetate	4.35	43	227914	41.01667 ppb	100
25) Ethyl tert Butyl Ether	5.03	59	546393	36.29285 ppb	96
26) MEK (2-Butanone)	5.21	43	52141	34.22785 ppb	92
27) Cis-1,2-DCE	5.07	96	200911	36.49318 ppb	99
28) 2,2-Dichloropropane	5.06	77	261673	35.09899 ppb	97
29) Chloroform	5.56	83	290042	36.48043 ppb	98
30) Bromochloromethane	5.41	128	88549	36.48672 ppb	98
32) 1,1,1-TCA	5.82	97	269089	36.73402 ppb	98
33) Cyclohexane	5.90	41	172755	36.44232 ppb	97
34) 1,1-Dichloropropene	6.07	75	240945	37.14387 ppb	96
35) 2,2,4-Trimethylpentane	6.55	57	528231	39.26588 ppb	95
37) Carbon Tetrachloride	6.07	117	231164	41.54643 ppb	98
38) Tert Amyl Methyl Ether	6.69	73	477107	35.87316 ppb	99
39) 1,2-DCA	6.37	62	204949	35.45104 ppb	98
40) Benzene	6.36	78	757245	36.23289 ppb	98
41) TCE	7.31	95	185823	36.60203 ppb	99
42) 2-Pentanone	7.67	43	435371	163.80208 ppb	99

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : M:\MAX\DATA\M150119\0119M14.D
Acq On : 19 Jan 15 15:51
Sample : 40ug/L Vol Std 01-19-15
Misc : 10mL w/IS: 11-03-14

Vial: 14
Operator: DG,SV,RS
Inst : MAX
Multiplr: 1.00

Quant Time: Jan 21 11:46 2015

Quant Results File: MALLW.RES

Quant Method : M:\MAX\DATA\M150119\MALLW.M (RTE Integrator)
Title : METHOD 8260B
Last Update : Wed Jan 21 11:46:11 2015
Response via : Initial Calibration
DataAcq Meth : V8260

Compound	R.T.	QIon	Response	Conc Unit	Qvalue
43) 1,2-Dichloropropane	7.59	63	189149	36.32153 ppb	98
44) Bromodichloromethane	8.00	83	223529	37.26916 ppb	99
45) Methyl Cyclohexane	7.58	83	292238	38.39182 ppb	99
46) Dibromomethane	7.75	93	84779	37.34483 ppb	97
47) MIBK (methyl isobutyl ket	8.97	43	131878	34.04142 ppb	99
48) 1-Bromo-2-chloroethane	8.40	63	207686	36.81378 ppb	97
49) 2-Chloroethyl vinyl ether	8.50	106	28226	40.08282 ppb	96
50) Cis-1,3-Dichloropropene	8.65	75	298661	36.80354 ppb	98
51) Toluene	9.12	91	845927	36.81242 ppb	98
52) Trans-1,3-Dichloropropene	9.44	75	243507	36.82563 ppb	98
53) 1,1,2-TCA	9.67	83	104811	36.32015 ppb	98
54) 2-Hexanone	10.14	43	84424	33.92355 ppb	96
57) 1,2-EDB	10.33	107	128483	37.47170 ppb	98
58) Tetrachloroethene	9.89	164	100288	36.33771 ppb	98
59) 1-Chlorohexane	11.10	91	256945	37.81465 ppb	99
60) 1,1,1,2-Tetrachloroethane	11.20	131	200723	38.19679 ppb	98
61) m&p-Xylene	11.44	106	764800	73.86535 ppb	100
62) o-Xylene	11.99	106	378483	36.87732 ppb	97
63) Styrene	12.00	104	646433	37.76955 ppb	100
65) 1,3-Dichloropropane	9.90	76	234628	36.29838 ppb	96
66) Dibromochloromethane	10.20	129	169453	37.83062 ppb	100
67) Chlorobenzene	11.07	112	561601	36.70469 ppb	99
68) Ethylbenzene	11.26	91	970979	37.20214 ppb	99
69) Bromoform	12.20	173	119222	37.46358 ppb	99
71) Isopropylbenzene	12.53	105	953759	36.57422 ppb	100
72) 1,1,2,2-Tetrachloroethane	12.94	83	135007	35.55160 ppb	100
73) 1,2,3-Trichloropropane	12.97	110	47258	35.65116 ppb	99
74) t-1,4-Dichloro-2-Butene	13.03	53	42199	39.76967 ppb	99
75) Bromobenzene	12.90	156	266433	36.50650 ppb	97
76) n-Propylbenzene	13.12	91	1112532	37.18983 ppb	99
77) 4-Ethyltoluene	13.29	105	964104	37.14601 ppb	99
78) 2-Chlorotoluene	13.20	91	646485	36.15511 ppb	99
79) 1,3,5-Trimethylbenzene	13.39	105	844142	36.57298 ppb	99
80) 4-Chlorotoluene	13.36	91	761277	36.60832 ppb	99
81) Tert-Butylbenzene	13.85	119	731052	36.89403 ppb	99
82) 1,2,4-Trimethylbenzene	13.92	105	862969	37.11120 ppb	99
83) Sec-Butylbenzene	14.17	105	1020451	37.33639 ppb	100
84) p-Isopropyltoluene	14.40	119	912289	37.25166 ppb	99
85) Benzyl Chloride	14.60	91	297687	40.56668 ppb	100
86) 1,3-DCB	14.27	146	503081	36.98715 ppb	100
87) 1,4-DCB	14.40	146	504346	36.42314 ppb	100
88) n-Butylbenzene	14.98	91	790919	39.37577 ppb	99
89) 1,2-DCB	14.92	146	453660	36.44849 ppb	99
90) Hexachloroethane	15.31	117	143789	42.93306 ppb	96
91) 1,2-Dibromo-3-chloropropan	16.03	75	25868	39.01439 ppb	100
92) 1,2,4-Trichlorobenzene	17.27	180	343071	44.62156 ppb	100
93) Hexachlorobutadiene	17.58	225	213049	39.40263 ppb	98
94) Naphthalene	17.60	128	412781	39.16778 ppb	100
95) 1,2,3-Trichlorobenzene	17.97	180	265073	40.81293 ppb	98

(#) = qualifier out of range (m) = manual integration

Quantitation Report

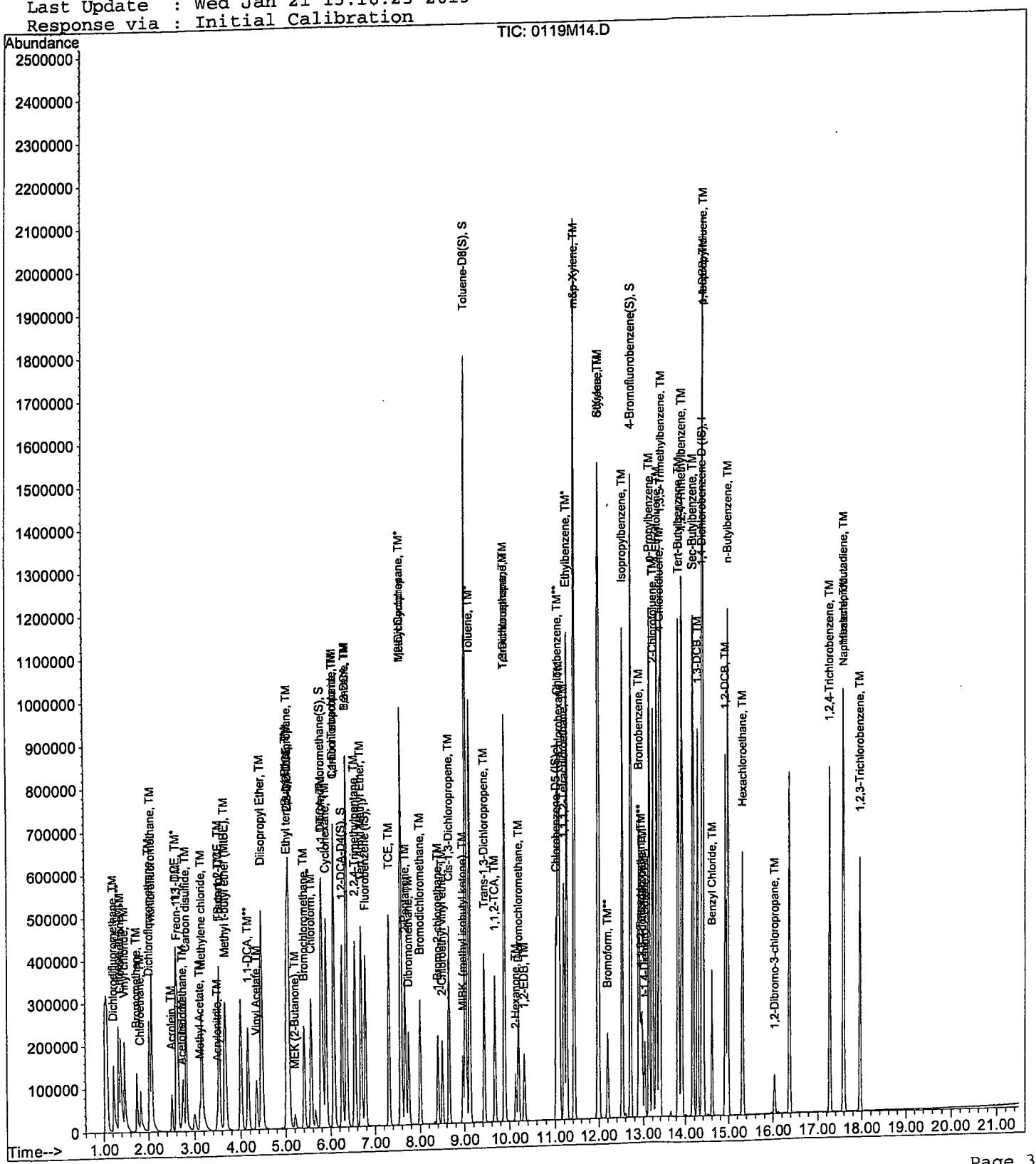
Data File : M:\MAX\DATA\M150119\0119M14.D
Acq On : 19 Jan 15 15:51
Sample : 40ug/L Vol Std 01-19-15
Misc : 10mL w/IS: 11-03-14

Vial: 14
Operator: DG,SV,RS
Inst : MAX
Multiplr: 1.00

Quant Time: Jan 21 11:46 2015

Quant Results File: MALLW.RES

Method : M:\MAX\DATA\M150119\MALLW.M (RTE Integrator)
Title : METHOD 8260B
Last Update : Wed Jan 21 13:18:25 2015
Response via : Initial Calibration



Quantitation Report (Not Reviewed)

Data File : M:\MAX\DATA\M150119\0119M15.D
Acq On : 19 Jan 15 16:19
Sample : 100ug/L Vol Std 01-19-15
Misc : 10mL w/IS: 11-03-14

Vial: 15
Operator: DG,SV,RS
Inst : MAX
Multiplr: 1.00

Quant Time: Jan 21 11:46 2015

Quant Results File: MALLW.RES

Quant Method : M:\MAX\DATA\M150119\MALLW.M (RTE Integrator)
Title : METHOD 8260B
Last Update : Wed Jan 21 11:46:11 2015
Response via : Initial Calibration
DataAcq Meth : V8260

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene (IS)	6.78	96	416935	25.00000 ppb	0.00
55) Chlorobenzene-D5 (IS)	11.03	117	310275	25.00000 ppb	0.00
70) 1,4-Dichlorobenzene-D (IS)	14.37	152	186826	25.00000 ppb	0.00
System Monitoring Compounds					
31) Dibromofluoromethane(S)	5.79	111	435086	101.65827 ppb	0.00
Spiked Amount 14.019			Recovery	= 725.165%	
36) 1,2-DCA-D4(S)	6.26	65	437299	96.64346 ppb	0.00
Spiked Amount 13.317			Recovery	= 725.722%	
56) Toluene-D8(S)	9.03	98	1819074	100.57048 ppb	0.00
Spiked Amount 14.391			Recovery	= 698.840%	
64) 4-Bromofluorobenzene(S)	12.72	95	729481	103.36128 ppb	0.00
Spiked Amount 14.078			Recovery	= 734.187%	

Target Compounds						Qvalue
2) Dichlorodifluoromethane	1.22	85	428063	114.28988 ppb		97
3) Freon 114	1.33	85	335264	106.16369 ppb		98
4) Chloromethane	1.38	50	582946	92.64157 ppb		100
5) Vinyl chloride	1.47	62	548533	101.53182 ppb		99
6) Bromomethane	1.74	94	107304	99.01166 ppb		97
7) Chloroethane	1.82	64	200904	60.45220 ppb		98
8) Dichlorofluoromethane	2.02	67	817701	90.31371 ppb		100
9) Trichlorofluoromethane	2.06	101	641646	104.72817 ppb		98
10) Acrolein	2.51	56	99839	215.66407 ppb		98
11) Acetone	2.72	43	78763	100.42263 ppb		95
12) Freon-113	2.62	101	158144	105.45652 ppb		97
13) 1,1-DCE	2.59	61	319808	97.13695 ppb		98
14) t-Butanol	3.54	59	14375	167.26037 ppb	#	88
15) Methyl Acetate	3.12	43	239378	100.65233 ppb		97
16) Iodomethane	2.74	142	391356	100.27848 ppb		100
17) Acrylonitrile	3.50	53	106716	99.44155 ppb		99
18) Methylene chloride	3.16	84	422629	100.05576 ppb		98
19) Carbon disulfide	2.81	76	1236131	100.58945 ppb		99
20) Methyl t-butyl ether (MtBE	3.67	73	1045029	92.98070 ppb		97
21) Trans-1,2-DCE	3.54	96	435244	93.88971 ppb		98
22) Diisopropyl Ether	4.46	45	1597876	91.99111 ppb		98
23) 1,1-DCA	4.16	63	776510	93.99149 ppb		99
24) Vinyl Acetate	4.35	43	513011	98.99530 ppb		100
25) Ethyl tert Butyl Ether	5.03	59	1332419	92.76279 ppb		96
26) MEK (2-Butanone)	5.21	43	128520	88.42764 ppb		92
27) Cis-1,2-DCE	5.07	96	486632	92.64580 ppb		99
28) 2,2-Dichloropropane	5.06	77	642430	90.31888 ppb		98
29) Chloroform	5.57	83	717729	94.61861 ppb		99
30) Bromochloromethane	5.41	128	211454	91.32382 ppb		99
32) 1,1,1-TCA	5.82	97	670190	95.89313 ppb		99
33) Cyclohexane	5.90	41	438181	96.88264 ppb		96
34) 1,1-Dichloropropene	6.07	75	600968	97.10411 ppb		97
35) 2,2,4-Trimethylpentane	6.55	57	1378447	107.39858 ppb		93
37) Carbon Tetrachloride	6.08	117	590165	111.17421 ppb		99
38) Tert Amyl Methyl Ether	6.69	73	1158752	91.31905 ppb		98
39) 1,2-DCA	6.37	62	500644	90.76726 ppb		99
40) Benzene	6.36	78	1853949	92.97824 ppb		98
41) TCE	7.31	95	459819	94.93134 ppb		99
42) 2-Pentanone	7.68	43	556031	219.26837 ppb		99

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : M:\MAX\DATA\M150119\0119M15.D
Acq On : 19 Jan 15 16:19
Sample : 100ug/L Vol Std 01-19-15
Misc : 10mL w/IS: 11-03-14

Vial: 15
Operator: DG,SV,RS
Inst : MAX
Multiplr: 1.00

Quant Time: Jan 21 11:46 2015

Quant Results File: MALLW.RES

Quant Method : M:\MAX\DATA\M150119\MALLW.M (RTE Integrator)
Title : METHOD 8260B
Last Update : Wed Jan 21 11:46:11 2015
Response via : Initial Calibration
DataAcq Meth : V8260

Compound	R.T.	QIon	Response	Conc Unit		Qvalue
43) 1,2-Dichloropropane	7.59	63	460662	92.71704	ppb	99
44) Bromodichloromethane	8.00	83	545791	95.38041	ppb	100
45) Methyl Cyclohexane	7.58	83	744258	102.48083	ppb	98
46) Dibromomethane	7.75	93	203948	94.16265	ppb	97
47) MIBK (methyl isobutyl ket	8.97	43	322164	87.16243	ppb	99
48) 1-Bromo-2-chloroethane	8.40	63	504759	93.77873	ppb	98
49) 2-Chloroethyl vinyl ether	8.50	106	71338	106.18103	ppb	97
50) Cis-1,3-Dichloropropene	8.66	75	732130	94.56193	ppb	98
51) Toluene	9.12	91	2069753	94.40546	ppb	98
52) Trans-1,3-Dichloropropene	9.44	75	594435	94.22370	ppb	97
53) 1,1,2-TCA	9.67	83	257066	93.36895	ppb	97
54) 2-Hexanone	10.15	43	216876	91.34061	ppb	97
57) 1,2-EDB	10.33	107	312430	95.20312	ppb	96
58) Tetrachloroethene	9.89	164	235392	89.11301	ppb	99
59) 1-Chlorohexane	11.10	91	641222	98.59822	ppb	100
60) 1,1,1,2-Tetrachloroethane	11.20	131	498807	99.17519	ppb	98
61) m&p-Xylene	11.44	106	1882020	189.91439	ppb	100
62) o-Xylene	11.99	106	915837	93.23348	ppb	100
63) Styrene	12.01	104	1592317	97.20499	ppb	99
65) 1,3-Dichloropropane	9.90	76	564608	91.26311	ppb	98
66) Dibromochloromethane	10.20	129	414570	96.70143	ppb	99
67) Chlorobenzene	11.07	112	1363532	93.11075	ppb	99
68) Ethylbenzene	11.27	91	2406650	96.34113	ppb	99
69) Bromoform	12.21	173	301298	98.92131	ppb	100
71) Isopropylbenzene	12.53	105	2374759	91.33891	ppb	99
72) 1,1,2,2-Tetrachloroethane	12.94	83	332678	87.86721	ppb	99
73) 1,2,3-Trichloropropane	12.97	110	116885	88.44166	ppb	97
74) t-1,4-Dichloro-2-Butene	13.03	53	107571	101.68219	ppb	96
75) Bromobenzene	12.90	156	660816	90.81604	ppb	98
76) n-Propylbenzene	13.12	91	2819252	94.52472	ppb	99
77) 4-Ethyltoluene	13.30	105	2452701	94.78351	ppb	100
78) 2-Chlorotoluene	13.21	91	1635415	91.73585	ppb	100
79) 1,3,5-Trimethylbenzene	13.40	105	2152280	93.52837	ppb	100
80) 4-Chlorotoluene	13.37	91	1935929	93.37409	ppb	98
81) Tert-Butylbenzene	13.85	119	1860428	94.17172	ppb	100
82) 1,2,4-Trimethylbenzene	13.92	105	2210552	95.34772	ppb	100
83) Sec-Butylbenzene	14.17	105	2624373	96.30871	ppb	100
84) p-Isopropyltoluene	14.40	119	2354214	96.41820	ppb	99
85) Benzyl Chloride	14.61	91	726120	99.24710	ppb	99
86) 1,3-DCB	14.27	146	1268257	93.52335	ppb	99
87) 1,4-DCB	14.40	146	1252464	90.72226	ppb	99
88) n-Butylbenzene	14.99	91	2057120	102.72035	ppb	99
89) 1,2-DCB	14.93	146	1123186	90.51084	ppb	98
90) Hexachloroethane	15.32	117	385556	115.46582	ppb	99
91) 1,2-Dibromo-3-chloropropan	16.03	75	59674	90.27072	ppb	96
92) 1,2,4-Trichlorobenzene	17.27	180	851798	111.12126	ppb	99
93) Hexachlorobutadiene	17.59	225	530730	98.45079	ppb	98
94) Naphthalene	17.60	128	1067277	100.45070	ppb	99
95) 1,2,3-Trichlorobenzene	17.97	180	649109	99.75346	ppb	99

(#) = qualifier out of range (m) = manual integration

Quantitation Report

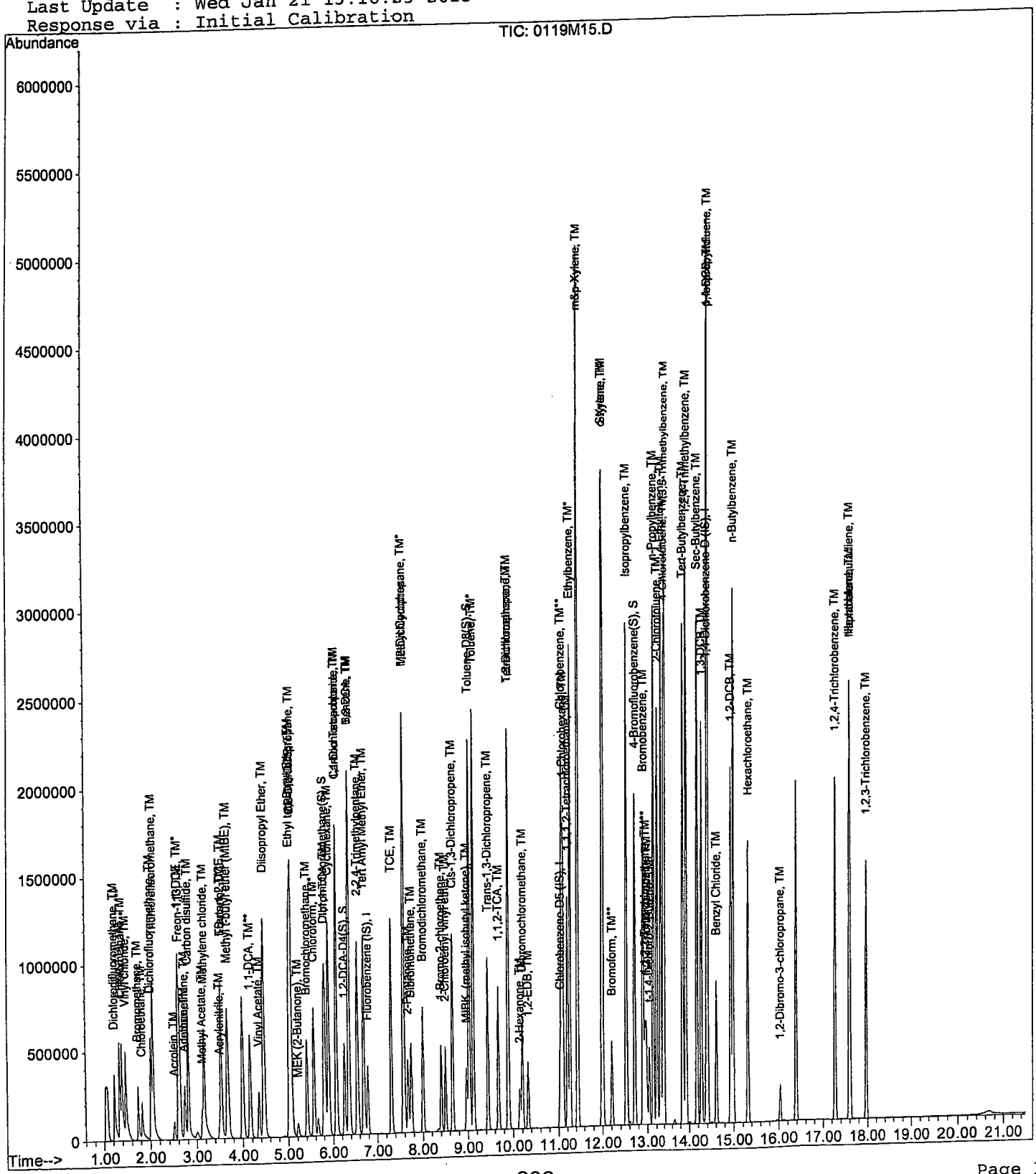
Data File : M:\MAX\DATA\M150119\0119M15.D
Acq On : 19 Jan 15 16:19
Sample : 100ug/L Vol Std 01-19-15
Misc : 10mL w/IS: 11-03-14

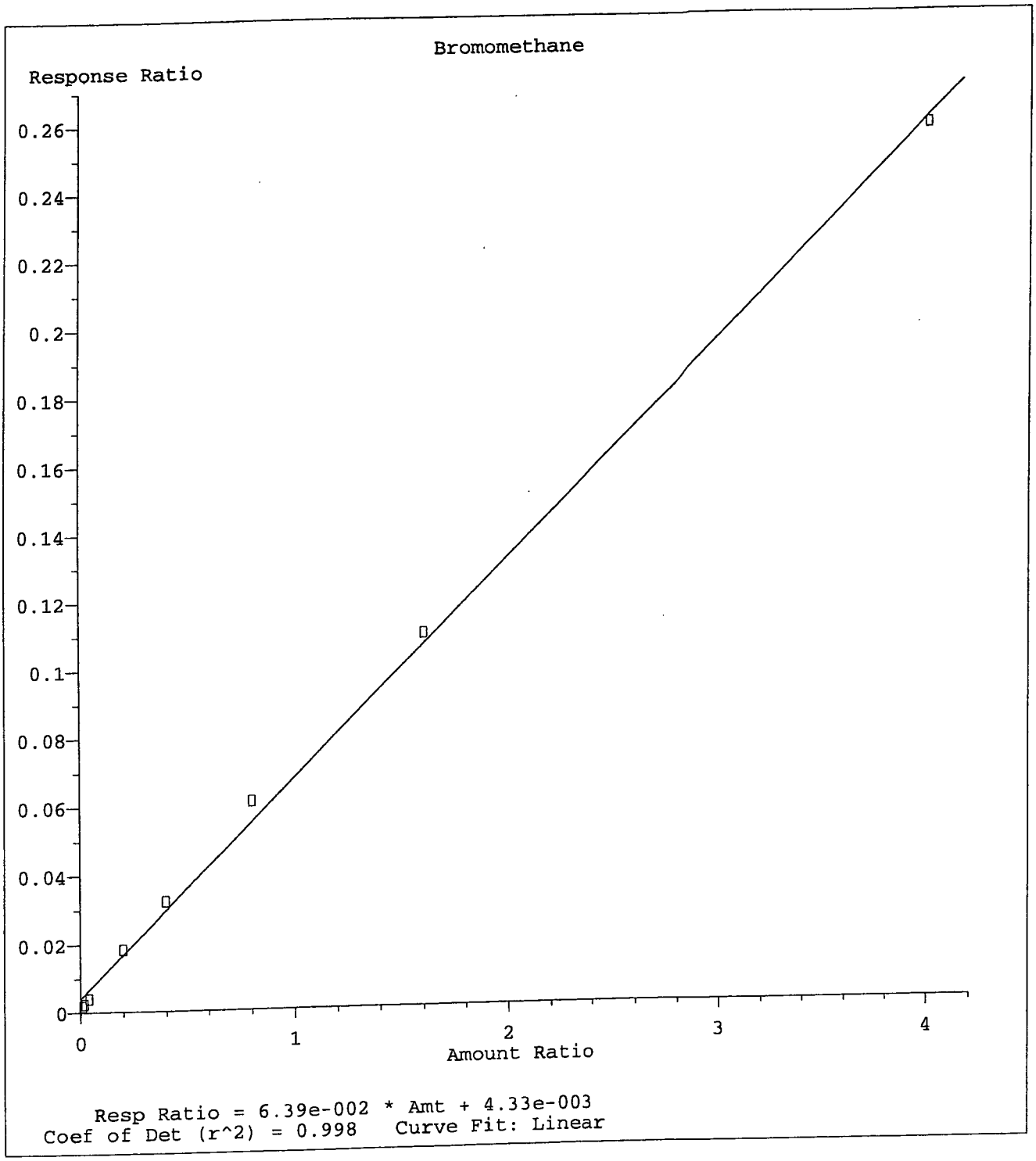
Vial: 15
Operator: DG,SV,RS
Inst : MAX
Multiplr: 1.00

Quant Time: Jan 21 11:46 2015

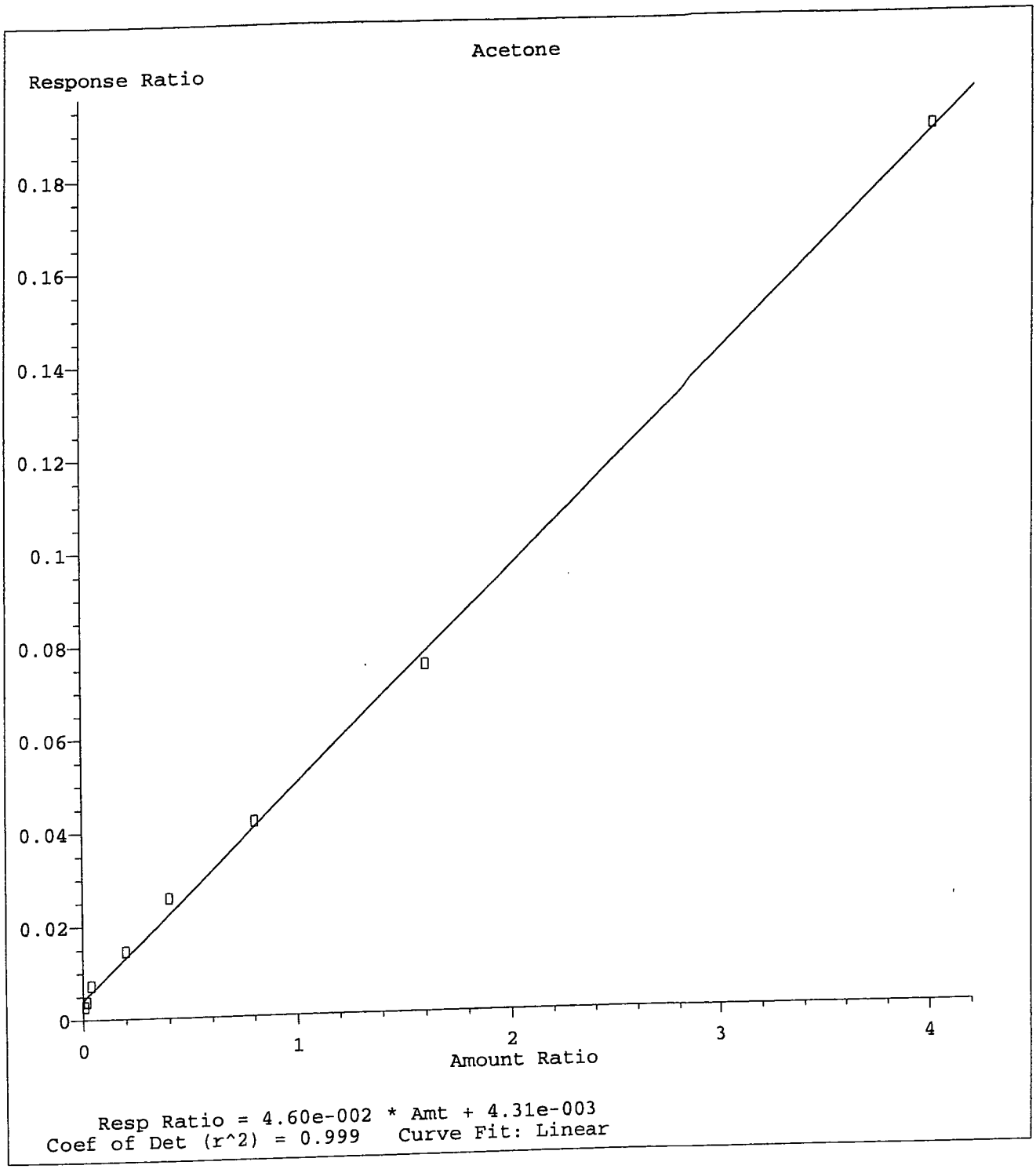
Quant Results File: MALLW.RES

Method : M:\MAX\DATA\M150119\MALLW.M (RTE Integrator)
Title : METHOD 8260B
Last Update : Wed Jan 21 13:18:25 2015
Response via : Initial Calibration

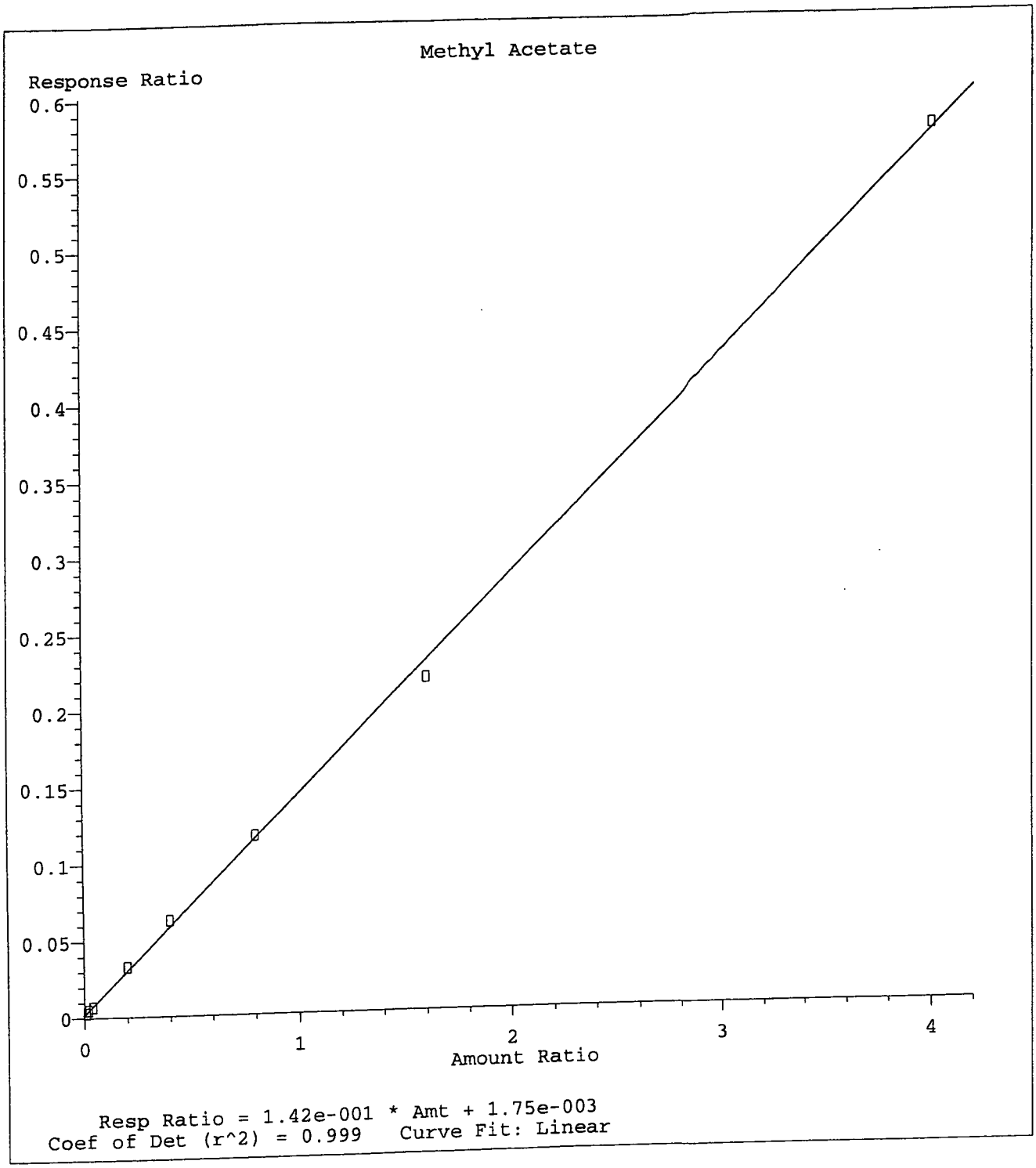




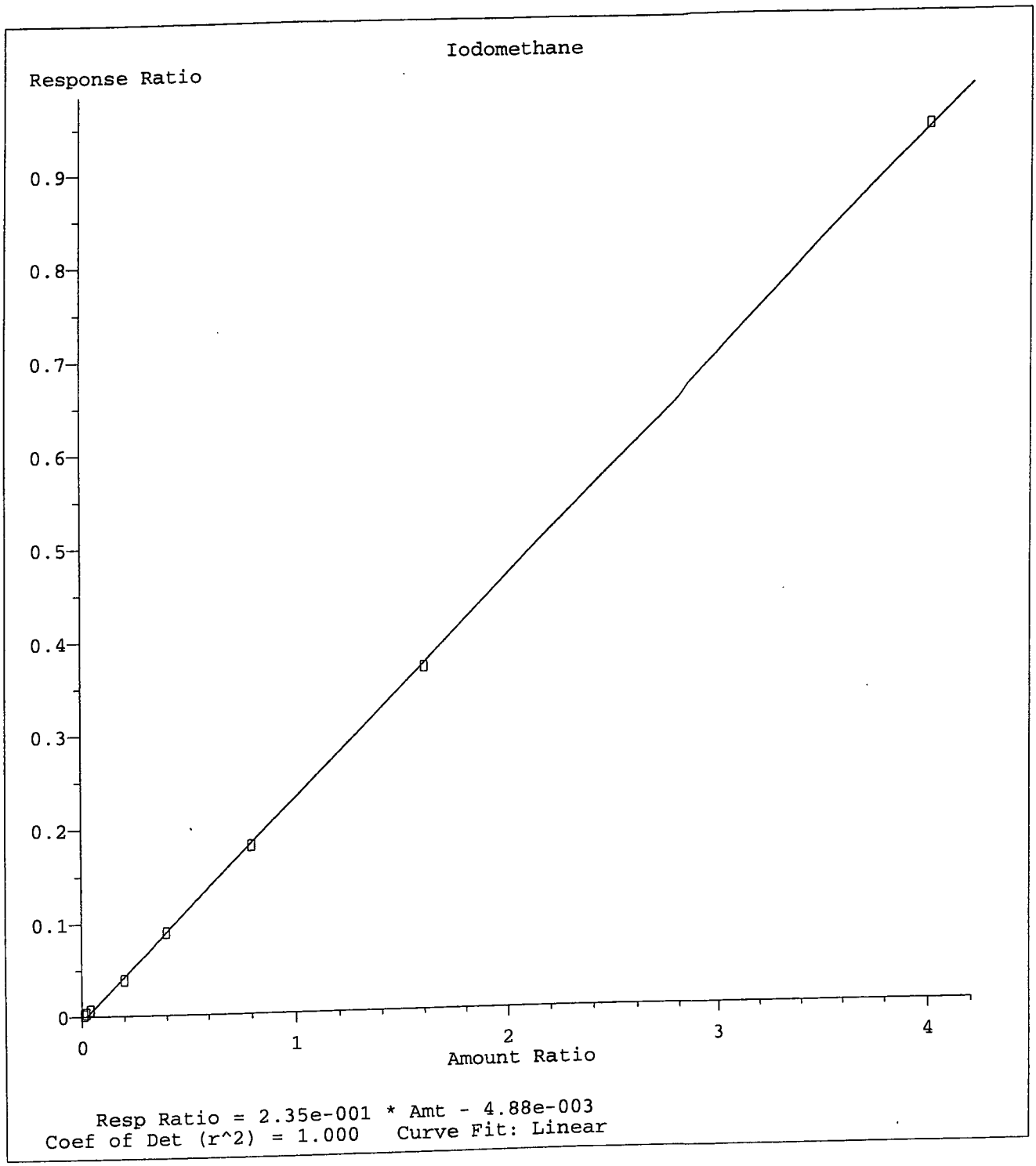
Method Name: M:\MAX\DATA\M150119\MALLW.M
Calibration Table Last Updated: Wed Jan 21 13:18:25 2015



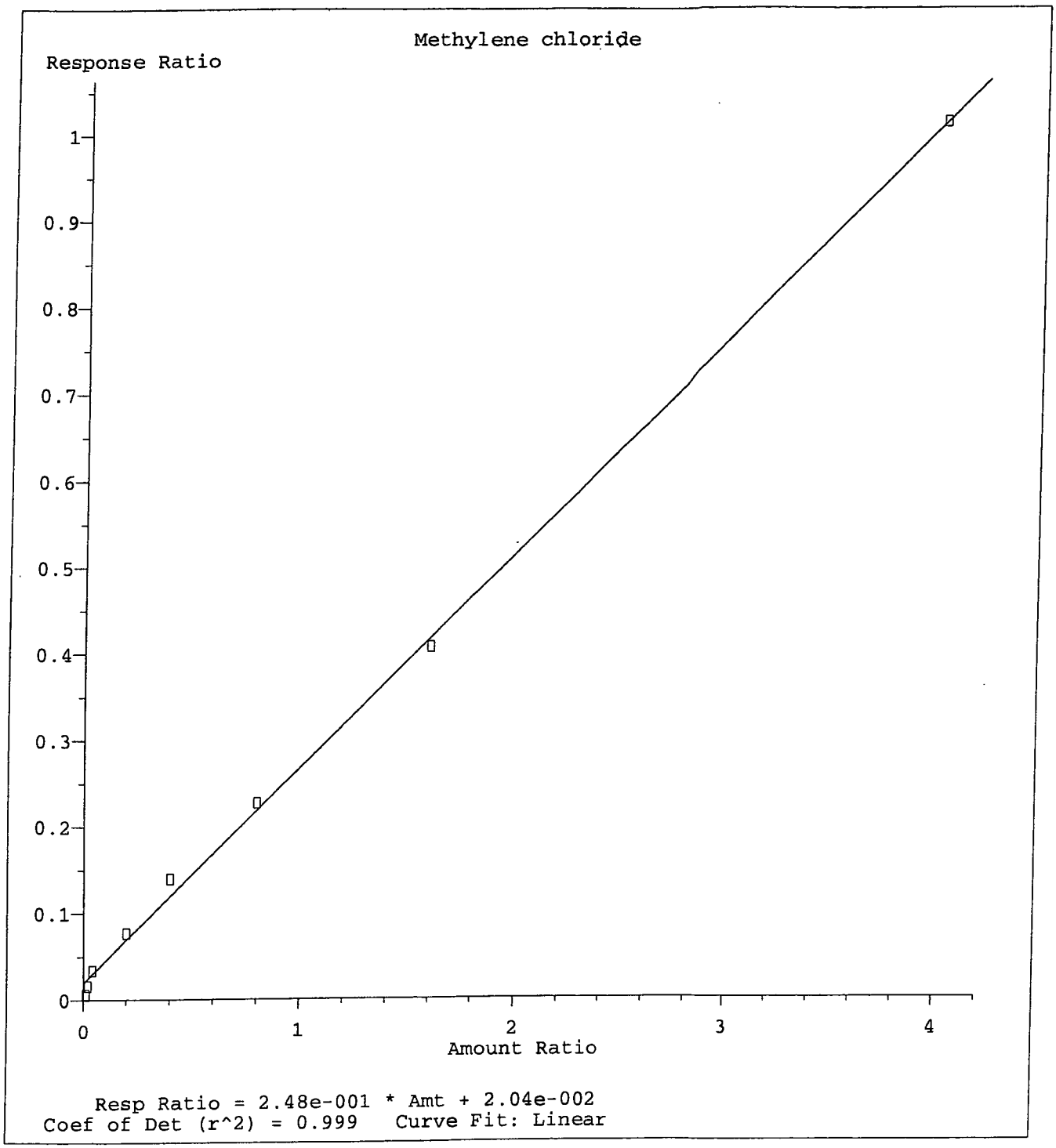
Method Name: M:\MAX\DATA\M150119\MALLW.M
Calibration Table Last Updated: Wed Jan 21 13:18:25 2015



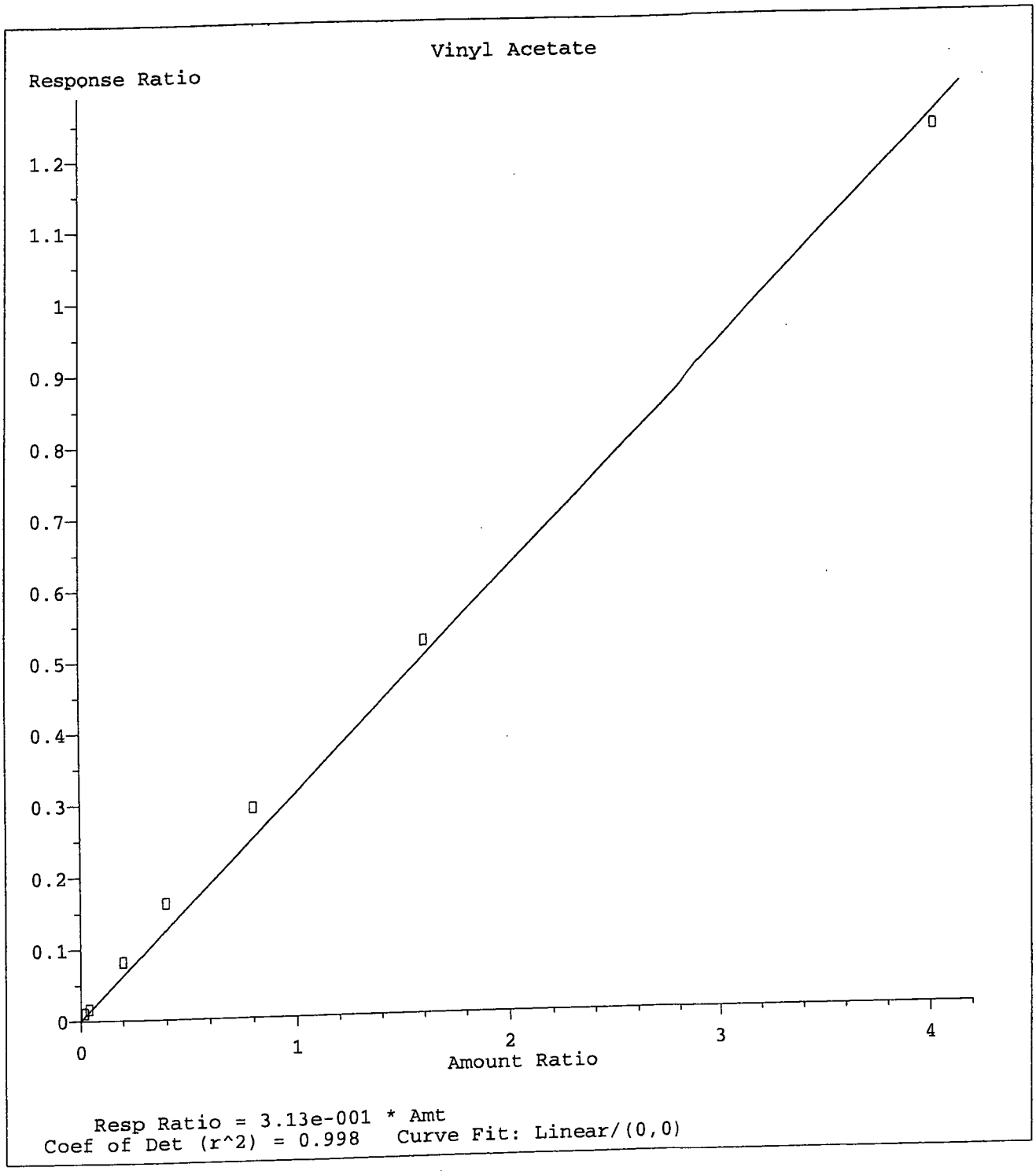
Method Name: M:\MAX\DATA\M150119\MALLW.M
Calibration Table Last Updated: Wed Jan 21 13:18:25 2015



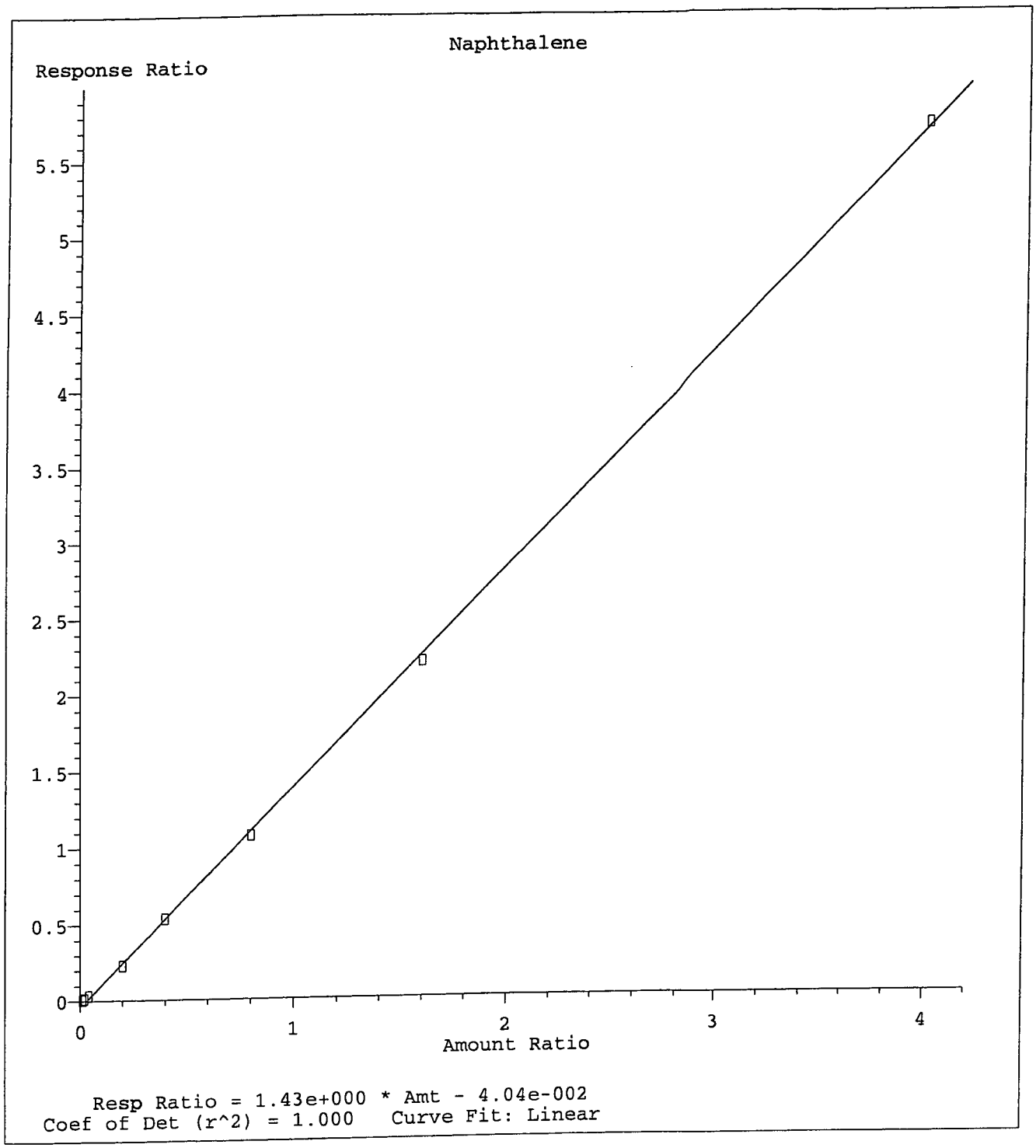
Method Name: M:\MAX\DATA\M150119\MALLW.M
Calibration Table Last Updated: Wed Jan 21 13:18:25 2015



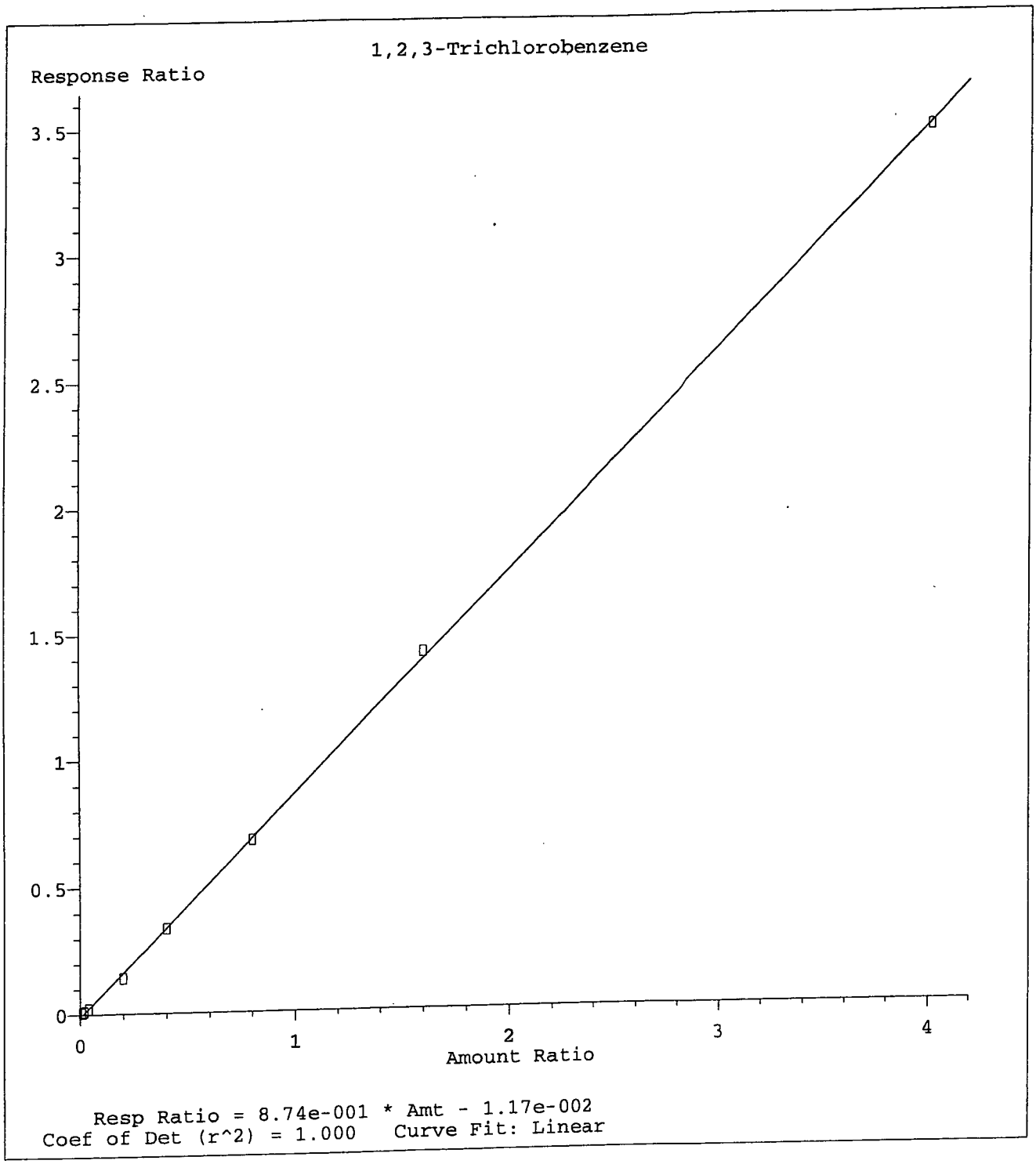
Method Name: M:\MAX\DATA\M150119\MALLW.M
Calibration Table Last Updated: Wed Jan 21 13:18:25 2015



Method Name: M:\MAX\DATA\M150119\MALLW.M
Calibration Table Last Updated: Wed Jan 21 13:18:25 2015



Method Name: M:\MAX\DATA\M150119\MALLW.M
Calibration Table Last Updated: Wed Jan 21 13:18:25 2015



Method Name: M:\MAX\DATA\M150119\MALLW.M
Calibration Table Last Updated: Wed Jan 21 13:18:25 2015

VOLATILE ORGANIC ANALYSIS BY EPA METHOD 8260B

Form 7

Second Source Calibration

Lab Name: APPL, Inc.
Case No:
Matrix:

SDG No:
Date Analyzed: 01/19/15
Instrument: MAX
Initial Cal. Date: 01/19/15
Data File: 0119M21.D

		Compound	MEAN	CCRF	%D	%Drift	
1	I	Fluorobenzene (IS)	ISTD			I	
2	TM	Dichlorodifluoromethane	0.2246	0.2630	17	TM	
3	TM	Freon 114	0.1894	0.2266	20	TM	
4	TM**	Chloromethane	0.3773	0.3529	6.5	TM**	
5	TM*	Vinyl chloride	0.3239	0.3361	3.8	TM*	
6	TML	Bromomethane	0.0928	0.0761	18	TML	2.2
7	TM	Chloroethane	0.1993	0.2021	1.4	TM	
8	TM	Dichlorofluoromethane	0.5429	0.5063	6.7	TM	
9	TM	Trichlorofluoromethane	0.3674	0.3994	8.7	TM	
10	TM	Acrolein	0.0278	0.0260	6.3	TM	
11	TML	Acetone	0.1109	0.0579	48	TML	2.4
12	TM	Freon-113	0.0899	0.0977	8.7	TM	
13	TM*	1,1-DCE	0.1974	0.2050	3.8	TM*	
14	TM	t-Butanol	0.0052	0.0050	3.4	TM	
15	TML	Methyl Acetate	0.1766	0.1377	22	TML	6.2
16	TML	Iodomethane	0.1962	0.2616	33	TML	16
17	TM	Acrylonitrile	0.0643	0.0618	4.0	TM	
18	TML	Methylene chloride	0.4542	0.2763	39	TML	9.3
19	TM	Carbon disulfide	0.7369	0.7472	1.4	TM	
20	TM	Methyl t-butyl ether (MtBE)	0.6739	0.6465	4.1	TM	
21	TM	Trans-1,2-DCE	0.2780	0.2736	1.6	TM	
22	TM	Diisopropyl Ether	1.042	0.9850	5.4	TM	
23	TM**	1,1-DCA	0.4954	0.4808	2.9	TM**	
24	TML	Vinyl Acetate	0.3883	0.2817	27	TML	10
25	TM	Ethyl tert Butyl Ether	0.8613	0.8101	5.9	TM	
26	TM	MEK (2-Butanone)	0.0871	0.0798	8.5	TM	
27	TM	Cis-1,2-DCE	0.3150	0.3020	4.1	TM	
28	TM	2,2-Dichloropropane	0.4265	0.3813	11	TM	
29	TM*	Chloroform	0.4548	0.4419	2.8	TM*	
30	TM	Bromochloromethane	0.1388	0.1319	5.0	TM	
31	S	Dibromofluoromethane(S)	0.2566	0.2523	1.7	S	
32	TM	1,1,1-TCA	0.4191	0.4184	0.17	TM	
33	TM	Cyclohexane	0.2712	0.2777	2.4	TM	
34	TM	1,1-Dichloropropene	0.3711	0.3687	0.64	TM	
35	TM	2,2,4-Trimethylpentane	0.7696	0.8154	5.9	TM	
36	S	1,2-DCA-D4(S)	0.2713	0.2644	2.6	S	
37	TM	Carbon Tetrachloride	0.3183	0.3409	7.1	TM	
38	TM	Tert Amyl Methyl Ether	0.7609	0.7371	3.1	TM	
39	TM	1,2-DCA	0.3307	0.3066	7.3	TM	
40	TM	Benzene	1.196	1.144	4.3	TM	
		Average			9.4		

VOLATILE ORGANIC ANALYSIS BY
EPA METHOD 8260B

Form 7

Second Source Calibration

Lab Name: APPL, Inc.
Case No:
Matrix: 0

SDG No:
Date Analyzed: 01/19/15
Instrument: MAX
Cal. Date: 01/19/15
Data File: 0119M21.D

		Compound	MEAN	CCRF	%D		%Drift
41	TM	TCE	0.2904	0.2930	0.87	TM	
42	TM	2-Pentanone	0.1521	0.1467	3.5	TM	
43	TM*	1,2-Dichloropropane	0.2979	0.2870	3.7	TM*	
44	TM	Bromodichloromethane	0.3431	0.3305	3.7	TM	
45	TM	Methyl Cyclohexane	0.4355	0.4537	4.2	TM	
46	TM	Dibromomethane	0.1299	0.1227	5.5	TM	
47	TM	MIBK (methyl isobutyl ketone)	0.2216	0.1984	10	TM	
48	TM	1-Bromo-2-chloroethane	0.3227	0.3108	3.7	TM	
49	TM	2-Chloroethyl vinyl ether	0.0403	0.0429	6.4	TM	
50	TM	Cis-1,3-Dichloropropene	0.4642	0.4364	6.0	TM	
51	TM*	Toluene	1.315	1.262	4.0	TM*	
52	TM	Trans-1,3-Dichloropropene	0.3783	0.3449	8.8	TM	
53	TM	1,1,2-TCA	0.1651	0.1573	4.7	TM	
54	TM	2-Hexanone	0.1424	0.1281	10	TM	
55	I	Chlorobenzene-D5 (IS)	ISTD			I	
56	S	Toluene-D8(S)	1.457	1.426	2.1	S	
57	TM	1,2-EDB	0.2644	0.2536	4.1	TM	
58	TM	Tetrachloroethene	0.2128	0.2037	4.3	TM	
59	TM	1-Chlorohexane	0.5240	0.5242	0.05	TM	
60	TM	1,1,1,2-Tetrachloroethane	0.4053	0.3913	3.4	TM	
61	TM	m&p-Xylene	0.7985	0.7828	2.0	TM	
62	TM	o-Xylene	0.7915	0.7560	4.5	TM	
63	TM	Styrene	1.320	1.277	3.3	TM	
64	S	4-Bromofluorobenzene(S)	0.5687	0.5606	1.4	S	
65	TM	1,3-Dichloropropane	0.4985	0.4619	7.3	TM	
66	TM	Dibromochloromethane	0.3454	0.3289	4.8	TM	
67	TM**	Chlorobenzene	1.180	1.136	3.7	TM**	
68	TM*	Ethylbenzene	2.013	1.944	3.4	TM*	
69	TM**	Bromoform	0.2454	0.2202	10	TM**	
70	I	1,4-Dichlorobenzene-D (IS)	ISTD			I	
71	TM	Isopropylbenzene	3.479	3.428	1.5	TM	
72	TM**	1,1,2,2-Tetrachloroethane	0.5066	0.4569	9.8	TM**	
73	TM	1,2,3-Trichloropropane	0.1769	0.1625	8.1	TM	
74	TM	t-1,4-Dichloro-2-Butene	0.1416	0.1406	0.66	TM	
75	TM	Bromobenzene	0.9737	0.9453	2.9	TM	
76	TM	n-Propylbenzene	3.991	3.976	0.38	TM	
77	TM	4-Ethyltoluene	3.463	3.421	1.2	TM	
78	TM	2-Chlorotoluene	2.386	2.314	3.0	TM	
79	TM	1,3,5-Trimethylbenzene	3.079	3.014	2.1	TM	
80	TM	4-Chlorotoluene	2.774	2.708	2.4	TM	
		Average			4.2		

VOLATILE ORGANIC ANALYSIS BY
EPA METHOD 8260B

Form 7

Second Source Calibration

Lab Name: APPL, Inc.
Case No:
Matrix: 0

SDG No:
Date Analyzed: 01/19/15
Instrument: MAX
Cal. Date: 01/19/15
Data File: 0119M21.D

		Compound	MEAN	CCRF	%D	%Drift	
81	TM	Tert-Butylbenzene	2.644	2.662	0.70	TM	
82	TM	1,2,4-Trimethylbenzene	3.102	3.053	1.6	TM	
83	TM	Sec-Butylbenzene	3.646	3.632	0.38	TM	
84	TM	p-Isopropyltoluene	3.267	3.215	1.6	TM	
85	TM	Benzyl Chloride	0.9790	0.8607	12	TM	
86	TM	1,3-DCB	1.815	1.738	4.2	TM	
87	TM	1,4-DCB	1.847	1.757	4.9	TM	
88	TM	n-Butylbenzene	2.680	2.715	1.3	TM	
89	TM	1,2-DCB	1.661	1.595	4.0	TM	
90	TM	Hexachloroethane	0.4468	0.4419	1.1	TM	
91	TM	1,2-Dibromo-3-chloropropane	0.0885	0.0828	6.4	TM	
92	TM	1,2,4-Trichlorobenzene	1.026	1.066	4.0	TM	
93	TM	Hexachlorobutadiene	0.7214	0.7313	1.4	TM	
94	TML	Naphthalene	1.081	1.208	12	TML	8.5
95	TML	1,2,3-Trichlorobenzene	0.7134	0.7715	8.1	TML	8.3
96							
97							
98							
99							
100							
101							
102							
103							
104							
105							
106							
107							
108							
109							
110							
111							
112							
113							
114							
115							
116							
117							
118							
119							
120							
		Average			4.2		

Quantitation Report (Not Reviewed)

Data File : M:\MAX\DATA\M150119\0119M21.D
Acq On : 19 Jan 15 19:04
Sample : 150119A LCS-1WM(SS)
Misc : 10mL w/IS&S: 11-03-14

Vial: 21
Operator: DG,SV,RS
Inst : MAX
Multiplr: 1.00

Quant Time: Jan 21 13:04 2015

Quant Results File: MALLW.RES

Quant Method : M:\MAX\DATA\M150119\MALLW.M (RTE Integrator)
Title : METHOD 8260B
Last Update : Wed Jan 21 13:04:27 2015
Response via : Initial Calibration
DataAcq Meth : V8260

55159X25 / 410231X0.3239 = 10.38

W 1/22/15

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene (IS)	6.78	96	410231	25.00000 ppb	0.00
55) Chlorobenzene-D5 (IS)	11.03	117	303273	25.00000 ppb	0.00
70) 1,4-Dichlorobenzene-D (IS)	14.37	152	169519	25.00000 ppb	0.00
System Monitoring Compounds					
31) Dibromofluoromethane(S)	5.79	111	58037	13.78201 ppb	0.00
Spiked Amount 14.019			Recovery = 98.312%		
36) 1,2-DCA-D4(S)	6.26	65	57775	12.97698 ppb	0.00
Spiked Amount 13.317			Recovery = 97.448%		
56) Toluene-D8(S)	9.03	98	249016	14.08512 ppb	0.00
Spiked Amount 14.391			Recovery = 97.874%		
64) 4-Bromofluorobenzene(S)	12.71	95	95738	13.87846 ppb	0.00
Spiked Amount 14.078			Recovery = 98.577%		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	1.23	85	43164	11.71282 ppb	97
3) Freon 114	1.33	85	37178	11.96506 ppb	95
4) Chloromethane	1.38	50	57912	9.35376 ppb	98
5) Vinyl chloride	1.47	62	55159	10.37661 ppb	98
6) Bromomethane	1.74	94	12489	10.21993 ppb	96
7) Chloroethane	1.84	64	33167	10.14307 ppb	98
8) Dichlorofluoromethane	2.03	67	83073	9.32522 ppb	99
9) Trichlorofluoromethane	2.08	101	65542	10.87245 ppb	99
10) Acrolein	2.50	56	53327	117.07512 ppb	96
11) Acetone	2.71	43	9493	10.24171 ppb	97
12) Freon-113	2.63	101	16039	10.87021 ppb	98
13) 1,1-DCE	2.60	61	33640	10.38463 ppb	98
14) t-Butanol	3.52	59	10208	120.71625 ppb	99
15) Methyl Acetate	3.12	43	22598	9.37862 ppb	99
16) Iodomethane	2.75	142	42934	11.64164 ppb	98
17) Acrylonitrile	3.50	53	10139	9.60226 ppb	97
18) Methylene chloride	3.17	84	45335	9.07306 ppb	98
19) Carbon disulfide	2.82	76	122610	10.14037 ppb	99
20) Methyl t-butyl ether (MtBE	3.67	73	106081	9.59272 ppb	99
21) Trans-1,2-DCE	3.54	96	44897	9.84334 ppb	97
22) Diisopropyl Ether	4.45	45	161638	9.45771 ppb	99
23) 1,1-DCA	4.16	63	78901	9.70653 ppb	99
24) Vinyl Acetate	4.35	43	46219	8.99970 ppb	99
25) Ethyl tert Butyl Ether	5.02	59	132926	9.40552 ppb	96
26) MEK (2-Butanone)	5.20	43	13090	9.15370 ppb	97
27) Cis-1,2-DCE	5.07	96	49557	9.58893 ppb	97
28) 2,2-Dichloropropane	5.06	77	62574	8.94101 ppb	98
29) Chloroform	5.57	83	72517	9.71618 ppb	100
30) Bromochloromethane	5.41	128	21649	9.50268 ppb	97
32) 1,1,1-TCA	5.82	97	68649	9.98306 ppb	99
33) Cyclohexane	5.90	41	45566	10.23937 ppb	94
34) 1,1-Dichloropropene	6.07	75	60502	9.93564 ppb	97
35) 2,2,4-Trimethylpentane	6.55	57	133793	10.59453 ppb	98
37) Carbon Tetrachloride	6.07	117	55945	10.71104 ppb	94
38) Tert Amyl Methyl Ether	6.69	73	120945	9.68721 ppb	98
39) 1,2-DCA	6.37	62	50304	9.26921 ppb	97
40) Benzene	6.36	78	187745	9.56956 ppb	98
41) TCE	7.31	95	48074	10.08725 ppb	98
42) 2-Pentanone	7.67	43	300831	120.57005 ppb	98

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : M:\MAX\DATA\M150119\0119M21.D
Acq On : 19 Jan 15 19:04
Sample : 150119A LCS-1WM(SS)
Misc : 10mL w/IS&S: 11-03-14

Vial: 21
Operator: DG,SV,RS
Inst : MAX
Multiplr: 1.00

Quant Time: Jan 21 13:04 2015 Quant Results File: MALLW.RES

Quant Method : M:\MAX\DATA\M150119\MALLW.M (RTE Integrator)
Title : METHOD 8260B
Last Update : Wed Jan 21 13:04:27 2015
Response via : Initial Calibration
DataAcq Meth : V8260

Compound	R.T.	QIon	Response	Conc Unit	Qvalue
43) 1,2-Dichloropropane	7.59	63	47088	9.63224 ppb	99
44) Bromodichloromethane	8.00	83	54227	9.63137 ppb	100
45) Methyl Cyclohexane	7.58	83	74451	10.41908 ppb	100
46) Dibromomethane	7.75	93	20139	9.45011 ppb	99
47) MIBK (methyl isobutyl ket	8.96	43	32554	8.95152 ppb	98
48) 1-Bromo-2-chloroethane	8.40	63	50995	9.62915 ppb	98
49) 2-Chloroethyl vinyl ether	8.50	106	7034	10.64065 ppb	94
50) Cis-1,3-Dichloropropene	8.65	75	71605	9.39964 ppb	97
51) Toluene	9.12	91	207132	9.60209 ppb	99
52) Trans-1,3-Dichloropropene	9.44	75	56593	9.11713 ppb	97
53) 1,1,2-TCA	9.67	83	25811	9.52802 ppb	93
54) 2-Hexanone	10.14	43	21021	8.99799 ppb	93
57) 1,2-EDB	10.33	107	30767	9.59172 ppb	97
58) Tetrachloroethene	9.89	164	24712	9.57129 ppb	96
59) 1-Chlorohexane	11.10	91	63595	10.00453 ppb	99
60) 1,1,1,2-Tetrachloroethane	11.20	131	47470	9.65612 ppb	100
61) m&p-Xylene	11.44	106	189911	19.60635 ppb	96
62) o-Xylene	11.99	106	91711	9.55186 ppb	98
63) Styrene	12.00	104	154896	9.67414 ppb	100
65) 1,3-Dichloropropane	9.90	76	56037	9.26694 ppb	99
66) Dibromochloromethane	10.20	129	39902	9.52232 ppb	94
67) Chlorobenzene	11.07	112	137803	9.62734 ppb	99
68) Ethylbenzene	11.26	91	235764	9.65582 ppb	99
69) Bromoform	12.20	173	26711	8.97216 ppb	99
71) Isopropylbenzene	12.53	105	232475	9.85443 ppb	100
72) 1,1,2,2-Tetrachloroethane	12.94	83	30984	9.01902 ppb	95
73) 1,2,3-Trichloropropane	12.97	110	11022	9.19131 ppb	98
74) t-1,4-Dichloro-2-Butene	13.03	53	9536	9.93425 ppb	93
75) Bromobenzene	12.90	156	64098	9.70835 ppb	97
76) n-Propylbenzene	13.12	91	269587	9.96161 ppb	99
77) 4-Ethyltoluene	13.29	105	231996	9.88070 ppb	98
78) 2-Chlorotoluene	13.20	91	156881	9.69841 ppb	100
79) 1,3,5-Trimethylbenzene	13.39	105	204377	9.78804 ppb	99
80) 4-Chlorotoluene	13.36	91	183618	9.76048 ppb	99
81) Tert-Butylbenzene	13.85	119	180518	10.07041 ppb	98
82) 1,2,4-Trimethylbenzene	13.92	105	207022	9.84113 ppb	98
83) Sec-Butylbenzene	14.16	105	246304	9.96163 ppb	99
84) p-Isopropyltoluene	14.39	119	218021	9.84080 ppb	99
85) Benzyl Chloride	14.60	91	58360	8.79111 ppb	98
86) 1,3-DCB	14.27	146	117817	9.57502 ppb	98
87) 1,4-DCB	14.40	146	119141	9.51106 ppb	99
88) n-Butylbenzene	14.98	91	184085	10.13058 ppb	99
89) 1,2-DCB	14.92	146	108128	9.60298 ppb	98
90) Hexachloroethane	15.32	117	29967	9.89073 ppb	97
91) 1,2-Dibromo-3-chloropropan	16.03	75	5612	9.35618 ppb	95
92) 1,2,4-Trichlorobenzene	17.27	180	72302	10.39513 ppb	97
93) Hexachlorobutadiene	17.59	225	49587	10.13753 ppb	97
94) Naphthalene	17.60	128	81940	9.14530 ppb	99
95) 1,2,3-Trichlorobenzene	17.96	180	52316	9.16633 ppb	97

(#) = qualifier out of range (m) = manual integration

Quantitation Report

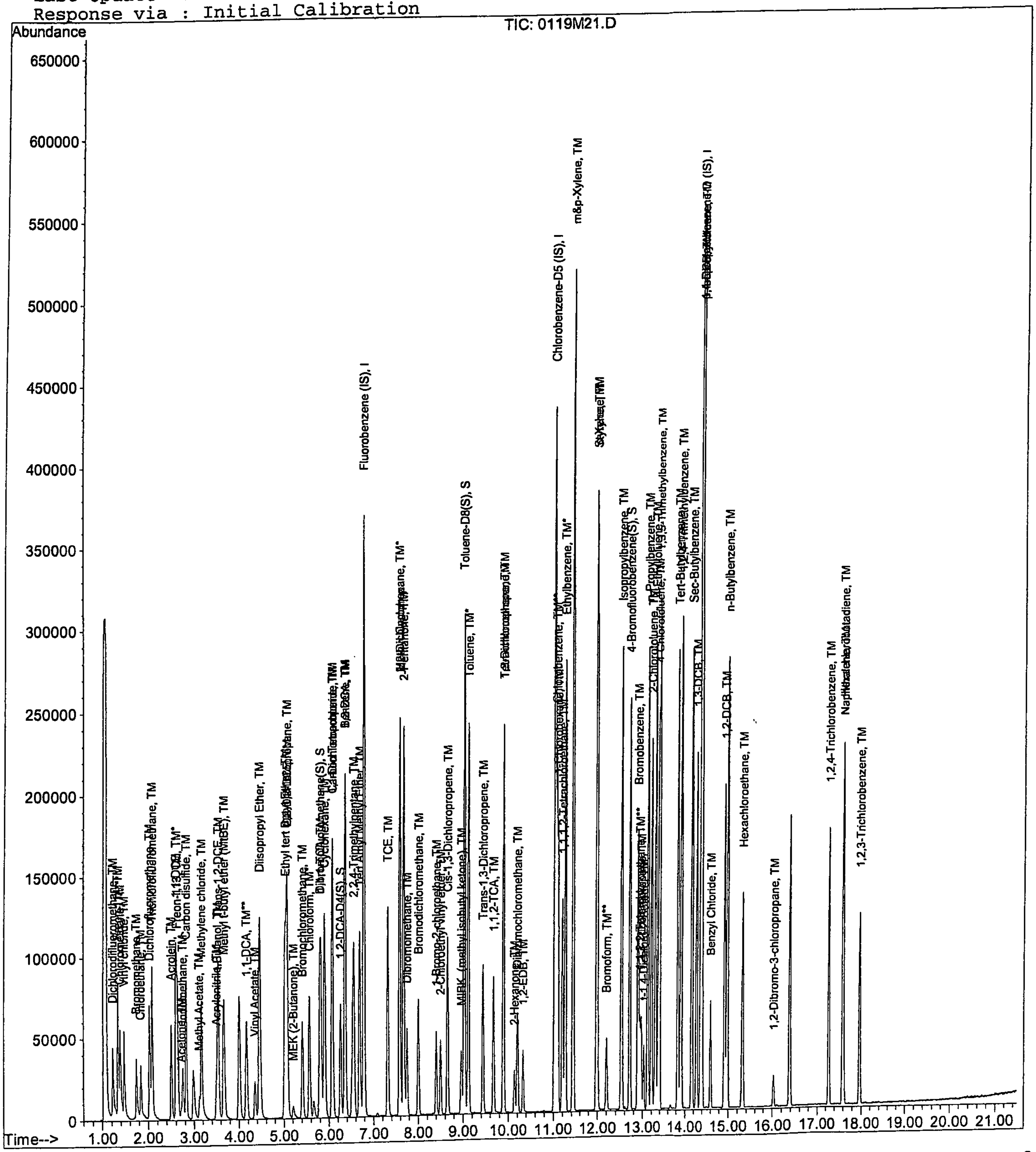
Data File : M:\MAX\DATA\M150119\0119M21.D
Acq On : 19 Jan 15 19:04
Sample : 150119A LCS-1WM(SS)
Misc : 10mL w/IS&S: 11-03-14

Vial: 21
Operator: DG,SV,RS
Inst : MAX
Multiplr: 1.00

Quant Time: Jan 21 13:04 2015

Quant Results File: MALLW.RES

Method : M:\MAX\DATA\M150119\MALLW.M (RTE Integrator)
Title : METHOD 8260B
Last Update : Wed Jan 21 13:18:25 2015
Response via : Initial Calibration



VOLATILE ORGANIC ANALYSIS BY
EPA METHOD 8260B

Form 7

Continuing Calibration

Lab Name: APPL, Inc.
Case No:
Matrix:

SDG No:
Date Analyzed: 01/24/15
Instrument: MAX
Initial Cal. Date: 01/19/15
Data File: 0123M39.D

		Compound	MEAN	CCRF	%D	%Drift	
1	I	Fluorobenzene (IS)	ISTD			I	
2	TM	Dichlorodifluoromethane	0.2246	0.2593	15	TM	
3	TM	Freon 114	0.1894	0.2311	22	TM	NT
4	TM**	Chloromethane	0.3773	0.3336	12	TM**	
5	TM*	Vinyl chloride	0.3239	0.3228	0.36	TM*	
6	TML	Bromomethane	0.0928	0.0746	20	TML	0.14
7	TM	Chloroethane	0.1993	0.2029	1.8	TM	
8	TM	Dichlorofluoromethane	0.5429	0.5535	2.0	TM	
9	TM	Trichlorofluoromethane	0.3674	0.4223	15	TM	
10	TM	Acrolein	0.0278	0.0273	1.5	TM	
11	TML	Acetone	0.1109	0.0577	48	TML	2.0
12	TM	Freon-113	0.0899	0.0999	11	TM	
13	TM*	1,1-DCE	0.1974	0.2067	4.7	TM*	
14	TM	t-Butanol	0.0052	0.0052	0.98	TM	
15	TML	Methyl Acetate	0.1766	0.1430	19	TML	2.5
16	TML	Iodomethane	0.1962	0.2117	7.9	TML	4.8
17	TM	Acrylonitrile	0.0643	0.0610	5.3	TM	
18	TML	Methylene chloride	0.4542	0.2826	38	TML	6.7
19	TM	Carbon disulfide	0.7369	0.7305	0.86	TM	
20	TM	Methyl t-butyl ether (MtBE)	0.6739	0.6886	2.2	TM	
21	TM	Trans-1,2-DCE	0.2780	0.2780	0.01	TM	
22	TM	Diisopropyl Ether	1.042	1.030	1.2	TM	
23	TM**	1,1-DCA	0.4954	0.5145	3.9	TM**	
24	TML	Vinyl Acetate	0.3883	0.2614	33	TML	16
25	TM	Ethyl tert Butyl Ether	0.8613	0.8545	0.78	TM	
26	TM	MEK (2-Butanone)	0.0871	0.0827	5.1	TM	
27	TM	Cis-1,2-DCE	0.3150	0.3172	0.70	TM	
28	TM	2,2-Dichloropropane	0.4265	0.3951	7.4	TM	
29	TM*	Chloroform	0.4548	0.4855	6.7	TM*	
30	TM	Bromochloromethane	0.1388	0.1438	3.6	TM	
31	S	Dibromofluoromethane(S)	0.2566	0.1485	42	S	
32	TM	1,1,1-TCA	0.4191	0.4567	9.0	TM	
33	TM	Cyclohexane	0.2712	0.2721	0.33	TM	
34	TM	1,1-Dichloropropene	0.3711	0.3913	5.5	TM	
35	TM	2,2,4-Trimethylpentane	0.7696	0.7691	0.06	TM	
36	S	1,2-DCA-D4(S)	0.2713	0.1565	42	S	
37	TM	Carbon Tetrachloride	0.3183	0.3678	16	TM	
38	TM	Tert Amyl Methyl Ether	0.7609	0.7393	2.8	TM	
39	TM	1,2-DCA	0.3307	0.3478	5.2	TM	
40	TM	Benzene	1.196	1.194	0.17	TM	
		Average			10.6		

VOLATILE ORGANIC ANALYSIS BY
EPA METHOD 8260B

Form 7

Continuing Calibration

Lab Name: APPL, Inc.
Case No:
Matrix: 0

SDG No:
Date Analyzed: 01/24/15
Instrument: MAX
Cal. Date: 01/19/15
Data File: 0123M39.D

		Compound	MEAN	CCRF	%D		%Drift	
41	TM	TCE	0.2904	0.3112	7.1	TM		
42	TM	2-Pentanone	0.1521	0.1486	2.3	TM		
43	TM*	1,2-Dichloropropane	0.2979	0.2994	0.48	TM*		
44	TM	Bromodichloromethane	0.3431	0.3565	3.9	TM		
45	TM	Methyl Cyclohexane	0.4355	0.4571	5.0	TM		
46	TM	Dibromomethane	0.1299	0.1372	5.7	TM		
47	TM	MIBK (methyl isobutyl ketone)	0.2216	0.2359	6.4	TM		
48	TM	1-Bromo-2-chloroethane	0.3227	0.3154	2.3	TM		
49	TM	2-Chloroethyl vinyl ether	0.0403	0.0052	87	TM		NT
50	TM	Cis-1,3-Dichloropropene	0.4642	0.4441	4.3	TM		
51	TM*	Toluene	1.315	1.337	1.7	TM*		
52	TM	Trans-1,3-Dichloropropene	0.3783	0.3720	1.7	TM		
53	TM	1,1,2-TCA	0.1651	0.1660	0.55	TM		
54	TM	2-Hexanone	0.1392	0.1256	9.8	TM		
55	I	Chlorobenzene-D5 (IS)	ISTD			I		
56	S	Toluene-D8(S)	1.457	0.8623	41	S		
57	TM	1,2-EDB	0.2644	0.2675	1.2	TM		
58	TM	Tetrachloroethene	0.2128	0.2113	0.74	TM		
59	TM	1-Chlorohexane	0.5240	0.5376	2.6	TM		
60	TM	1,1,1,2-Tetrachloroethane	0.4053	0.4231	4.4	TM		
61	TM	m&p-Xylene	0.7985	0.8138	1.9	TM		
62	TM	o-Xylene	0.7915	0.8094	2.3	TM		
63	TM	Styrene	1.320	1.335	1.1	TM		
64	S	4-Bromofluorobenzene(S)	0.5687	0.3301	42	S		
65	TM	1,3-Dichloropropane	0.4985	0.5018	0.66	TM		
66	TM	Dibromochloromethane	0.3454	0.3474	0.57	TM		
67	TM**	Chlorobenzene	1.180	1.202	1.9	TM**		
68	TM*	Ethylbenzene	2.013	2.080	3.3	TM*		
69	TM**	Bromoform	0.2454	0.2310	5.9	TM**		
70	I	1,4-Dichlorobenzene-D (IS)	ISTD			I		
71	TM	Isopropylbenzene	3.479	3.566	2.5	TM		
72	TM**	1,1,2,2-Tetrachloroethane	0.5066	0.4506	11	TM**		
73	TM	1,2,3-Trichloropropane	0.1769	0.1783	0.80	TM		
74	TM	t-1,4-Dichloro-2-Butene	0.1416	0.1330	6.1	TM		
75	TM	Bromobenzene	0.9737	1.001	2.8	TM		
76	TM	n-Propylbenzene	3.991	4.124	3.3	TM		
77	TM	4-Ethyltoluene	3.463	3.521	1.7	TM		
78	TM	2-Chlorotoluene	2.386	2.392	0.28	TM		
79	TM	1,3,5-Trimethylbenzene	3.079	3.157	2.5	TM		
80	TM	4-Chlorotoluene	2.774	2.823	1.7	TM		
		Average			7.4			

VOLATILE ORGANIC ANALYSIS BY
EPA METHOD 8260B

Form 7

Continuing Calibration

Lab Name: APPL, Inc.
Case No:
Matrix: 0

SDG No:
Date Analyzed: 01/24/15
Instrument: MAX
Cal. Date: 01/19/15
Data File: 0123M39.D

		Compound	MEAN	CCRF	%D		%Drift	
81	TM	Tert-Butylbenzene	2.644	2.694	1.9	TM		
82	TM	1,2,4-Trimethylbenzene	3.102	3.207	3.4	TM		
83	TM	Sec-Butylbenzene	3.646	3.710	1.8	TM		
84	TM	p-Isopropyltoluene	3.267	3.325	1.8	TM		
85	TM	Benzyl Chloride	0.9790	0.7239	26	TM		NT
86	TM	1,3-DCB	1.815	1.854	2.2	TM		
87	TM	1,4-DCB	1.847	1.868	1.1	TM		
88	TM	n-Butylbenzene	2.680	2.749	2.6	TM		
89	TM	1,2-DCB	1.661	1.680	1.2	TM		
90	TM	Hexachloroethane	0.4468	0.4489	0.47	TM		
91	TM	1,2-Dibromo-3-chloropropane	0.0885	0.0859	2.9	TM		
92	TM	1,2,4-Trichlorobenzene	1.026	1.131	10	TM		
93	TM	Hexachlorobutadiene	0.7214	0.7424	2.9	TM		
94	TML	Naphthalene	1.081	1.267	17	TML	4.5	
95	TML	1,2,3-Trichlorobenzene	0.7134	0.8254	16	TML	2.2	
96								
97								
98								
99								
100								
101								
102								
103								
104								
105								
106								
107								
108								
109								
110								
111								
112								
113								
114								
115								
116								
117								
118								
119								
120								
		Average			6.1			

Quantitation Report (Not Reviewed)

Data File : M:\MAX\DATA\M150119\0123M39.D
Acq On : 24 Jan 15 1:23
Sample : 10ug/L Vol Std 01-23-15
Misc : 10mL w/IS&S: 11-03-14

Vial: 29
Operator: DG,SV,RS
Inst : MAX
Multiplr: 1.00

Quant Time: Jan 26 13:07 2015

Quant Results File: MALLW.RES

Quant Method : M:\MAX\DATA\M150119\MALLW.M (RTE Integrator)
Title : METHOD 8260B
Last Update : Wed Jan 21 13:18:25 2015
Response via : Initial Calibration
DataAcq Meth : V8260

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene (IS)	6.78	96	299666	25.00000 ppb	0.00
55) Chlorobenzene-D5 (IS)	11.03	117	220288	25.00000 ppb	0.00
70) 1,4-Dichlorobenzene-D (IS)	14.36	152	125464	25.00000 ppb	0.00
System Monitoring Compounds					
31) Dibromofluoromethane(S)	5.79	111	44498	14.46568 ppb	0.00
Spiked Amount 14.019			Recovery	= 103.191%	
36) 1,2-DCA-D4(S)	6.26	65	46886	14.41677 ppb	0.00
Spiked Amount 13.317			Recovery	= 108.262%	
56) Toluene-D8(S)	9.03	98	189962	14.79254 ppb	0.00
Spiked Amount 14.391			Recovery	= 102.793%	
64) 4-Bromofluorobenzene(S)	12.71	95	72708	14.51049 ppb	0.00
Spiked Amount 14.078			Recovery	= 103.066%	
Target Compounds					Qvalue
2) Dichlorodifluoromethane	1.23	85	31077	11.54437 ppb	98
3) Freon 114	1.34	85	27704	12.20569 ppb	97
4) Chloromethane	1.38	50	39986	8.84131 ppb	96
5) Vinyl chloride	1.47	62	38691	9.96415 ppb	99
6) Bromomethane	1.74	94	8944	9.98623 ppb	97
7) Chloroethane	1.84	64	24317	10.18039 ppb	98
8) Dichlorofluoromethane	2.03	67	66344	10.19510 ppb	100
9) Trichlorofluoromethane	2.08	101	50624	11.49623 ppb	99
10) Acrolein	2.49	56	40963	123.11195 ppb	100
11) Acetone	2.70	43	6911	10.19912 ppb	87
12) Freon-113	2.63	101	11978	11.11312 ppb	95
13) 1,1-DCE	2.60	61	24776	10.47025 ppb	99
14) t-Butanol	3.48	59	7797	126.22448 ppb	99
15) Methyl Acetate	3.11	43	17141	9.75041 ppb	97
16) Iodomethane	2.75	142	25372	9.51705 ppb	96
17) Acrylonitrile	3.49	53	7307	9.47345 ppb	96
18) Methylene chloride	3.17	84	33871	9.32675 ppb	97
19) Carbon disulfide	2.82	76	87568	9.91435 ppb	98
20) Methyl t-butyl ether (MtBE	3.65	73	82539	10.21773 ppb	96
21) Trans-1,2-DCE	3.54	96	33323	10.00139 ppb	98
22) Diisopropyl Ether	4.44	45	123402	9.88453 ppb	99
23) 1,1-DCA	4.16	63	61670	10.38595 ppb	98
24) Vinyl Acetate	4.35	43	31333	8.35219 ppb	98
25) Ethyl tert Butyl Ether	5.01	59	102430	9.92181 ppb	99
26) MEK (2-Butanone)	5.19	43	9909	9.48589 ppb	92
27) Cis-1,2-DCE	5.07	96	38018	10.07036 ppb	98
28) 2,2-Dichloropropane	5.06	77	47364	9.26471 ppb	100
29) Chloroform	5.56	83	58197	10.67450 ppb	98
30) Bromochloromethane	5.41	128	17234	10.35584 ppb	95
32) 1,1,1-TCA	5.82	97	54740	10.89746 ppb	99
33) Cyclohexane	5.90	41	32615	10.03323 ppb	94
34) 1,1-Dichloropropene	6.07	75	46909	10.54565 ppb	97
35) 2,2,4-Trimethylpentane	6.55	57	92189	9.99352 ppb	99
37) Carbon Tetrachloride	6.07	117	44086	11.55479 ppb	96
38) Tert Amyl Methyl Ether	6.67	73	88613	9.71626 ppb	100
39) 1,2-DCA	6.36	62	41686	10.51529 ppb	99
40) Benzene	6.35	78	143065	9.98270 ppb	98
41) TCE	7.31	95	37302	10.71484 ppb	98
42) 2-Pentanone	7.65	43	222622	122.14507 ppb	99

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : M:\MAX\DATA\M150119\0123M39.D
Acq On : 24 Jan 15 1:23
Sample : 10ug/L Vol Std 01-23-15
Misc : 10mL w/IS&S: 11-03-14

Vial: 29
Operator: DG,SV,RS
Inst : MAX
Multiplr: 1.00

Quant Time: Jan 26 13:07 2015 Quant Results File: MALLW.RES

Quant Method : M:\MAX\DATA\M150119\MALLW.M (RTE Integrator)
Title : METHOD 8260B
Last Update : Wed Jan 21 13:18:25 2015
Response via : Initial Calibration
DataAcq Meth : V8260

Compound	R.T.	QIon	Response	Conc Unit		Qvalue
43) 1,2-Dichloropropane	7.59	63	35882	10.04812 ppb		98
44) Bromodichloromethane	8.00	83	42728	10.38906 ppb		97
45) Methyl Cyclohexane	7.58	83	54786	10.49590 ppb		99
46) Dibromomethane	7.74	93	16448	10.56582 ppb		88
47) MIBK (methyl isobutyl ket	8.95	43	28272	10.64240 ppb		99
48) 1-Bromo-2-chloroethane	8.40	63	37801	9.77135 ppb		99
49) 2-Chloroethyl vinyl ether	8.40	106	627	1.29845 ppb	#	1
50) Cis-1,3-Dichloropropene	8.65	75	53231	9.56585 ppb		95
51) Toluene	9.12	91	160279	10.17153 ppb		99
52) Trans-1,3-Dichloropropene	9.44	75	44587	9.83320 ppb		95
53) 1,1,2-TCA	9.67	83	19897	10.05487 ppb		96
54) 2-Hexanone	10.13	43	15056	9.02090 ppb		96
57) 1,2-EDB	10.33	107	23575	10.11827 ppb		95
58) Tetrachloroethene	9.89	164	18616	9.92640 ppb		96
59) 1-Chlorohexane	11.10	91	47372	10.25979 ppb		99
60) 1,1,1,2-Tetrachloroethane	11.20	131	37279	10.43976 ppb		97
61) m&p-Xylene	11.43	106	143412	20.38333 ppb		98
62) o-Xylene	11.98	106	71320	10.22636 ppb		98
63) Styrene	12.00	104	117626	10.11389 ppb		96
65) 1,3-Dichloropropane	9.90	76	44213	10.06594 ppb		97
66) Dibromochloromethane	10.20	129	30612	10.05733 ppb		97
67) Chlorobenzene	11.06	112	105905	10.18608 ppb		99
68) Ethylbenzene	11.26	91	183249	10.33228 ppb		100
69) Bromoform	12.20	173	20355	9.41284 ppb		100
71) Isopropylbenzene	12.53	105	178960	10.24968 ppb		99
72) 1,1,2,2-Tetrachloroethane	12.93	83	22612	8.89324 ppb		95
73) 1,2,3-Trichloropropane	12.97	110	8946	10.07964 ppb		100
74) t-1,4-Dichloro-2-Butene	13.03	53	6674	9.39408 ppb		92
75) Bromobenzene	12.89	156	50221	10.27745 ppb		99
76) n-Propylbenzene	13.12	91	206958	10.33265 ppb		98
77) 4-Ethyltoluene	13.29	105	176720	10.16932 ppb		98
78) 2-Chlorotoluene	13.20	91	120055	10.02789 ppb		97
79) 1,3,5-Trimethylbenzene	13.39	105	158413	10.25070 ppb		100
80) 4-Chlorotoluene	13.36	91	141650	10.17353 ppb		99
81) Tert-Butylbenzene	13.84	119	135190	10.18991 ppb		97
82) 1,2,4-Trimethylbenzene	13.91	105	160926	10.33604 ppb		99
83) Sec-Butylbenzene	14.16	105	186208	10.17552 ppb		100
84) p-Isopropyltoluene	14.39	119	166891	10.17804 ppb		99
85) Benzyl Chloride	14.60	91	36327	7.39362 ppb		100
86) 1,3-DCB	14.27	146	93068	10.21954 ppb		99
87) 1,4-DCB	14.40	146	93726	10.10943 ppb		98
88) n-Butylbenzene	14.98	91	137947	10.25716 ppb		99
89) 1,2-DCB	14.92	146	84326	10.11879 ppb		98
90) Hexachloroethane	15.31	117	22530	10.04721 ppb		96
91) 1,2-Dibromo-3-chloropropan	16.03	75	4310	9.70861 ppb		99
92) 1,2,4-Trichlorobenzene	17.27	180	56735	11.02122 ppb		99
93) Hexachlorobutadiene	17.58	225	37259	10.29189 ppb		98
94) Naphthalene	17.60	128	63577	9.55330 ppb		99
95) 1,2,3-Trichlorobenzene	17.96	180	41423	9.78280 ppb		99

(#) = qualifier out of range (m) = manual integration

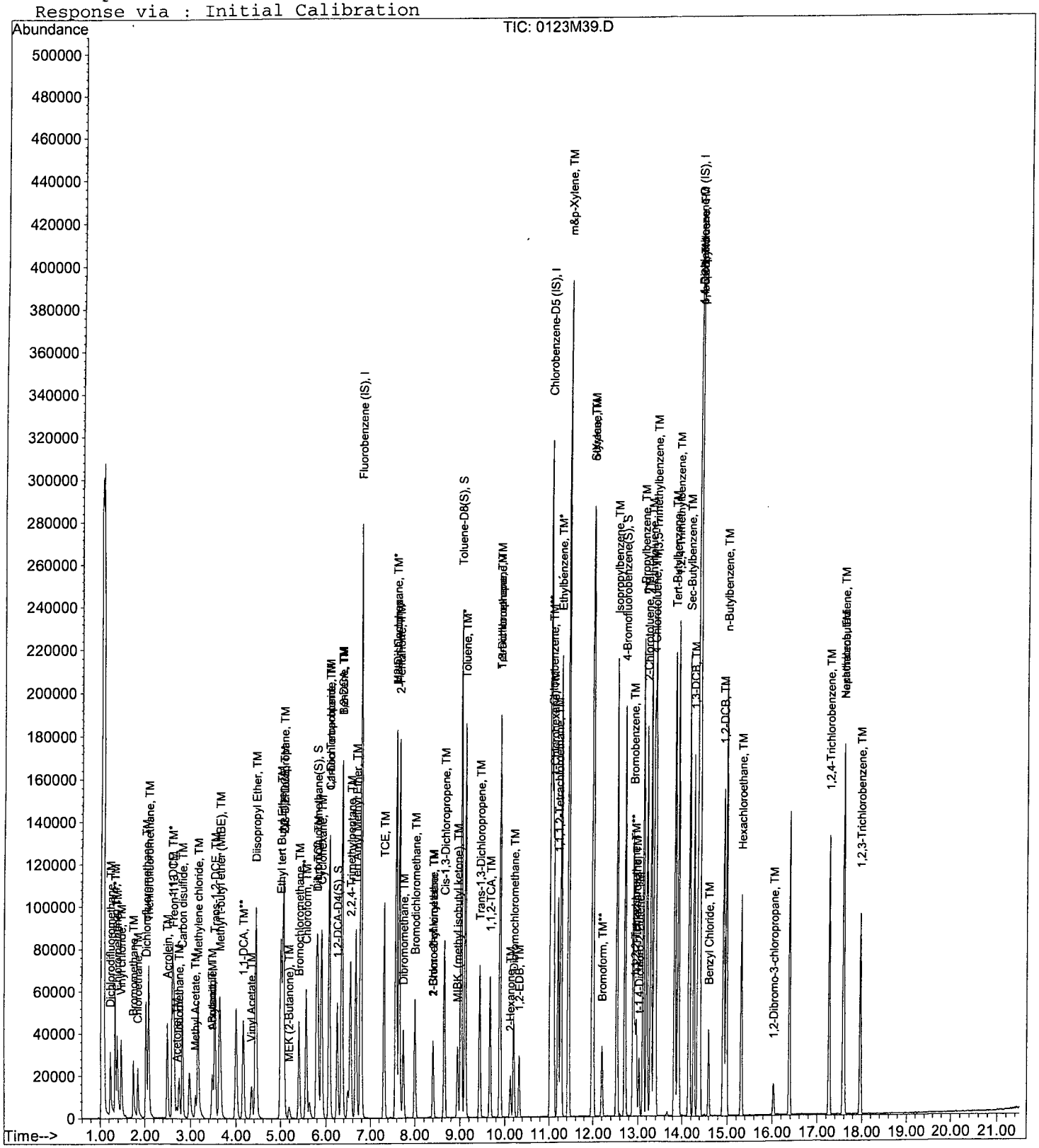
Quantitation Report

Data File : M:\MAX\DATA\M150119\0123M39.D
Acq On : 24 Jan 15 1:23
Sample : 10ug/L Vol Std 01-23-15
Misc : 10mL w/IS&S: 11-03-14

Vial: 29
Operator: DG,SV,RS
Inst : MAX
Multiplr: 1.00

Quant Time: Jan 26 13:07 2015 Quant Results File: MALLW.RES

Method : M:\MAX\DATA\M150119\MALLW.M (RTE Integrator)
Title : METHOD 8260B
Last Update : Wed Jan 21 13:18:25 2015
Response via : Initial Calibration



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VOLATILE ORGANIC ANALYSIS BY
EPA METHOD 8260B

Form 6
Initial Calibration

Lab Name: APPL, Inc. SDG No:
Case No: Initial Cal. Date: 01/26/15
Matrix: Instrument: MAX Initials:

		Compound	0.3	0.5	1	5	10	20	40	100			Avg	%RSD		r
			0126M09.D	0126M10.D	0126M11.D	0126M12.D	0126M13.D	0126M14.D	0126M15.D	0126M16.D						
1	I	Fluorobenzene (IS)	ISTD													
2	TML	Dichlorodifluoromethane		0.1622	0.2178	0.2273	0.2572	0.2560	0.2741	0.2854			0.24	17	TML	1.000
3	TML	Freon 114		0.1054	0.1838	0.1883	0.1965	0.2121	0.1998	0.2098			0.19	20	TML	1.000
4	TM**L	Chloromethane	0.5226	0.4146	0.3674	0.3622	0.3311	0.3299	0.3348	0.3376			0.38	18	TM**L	1.000
5	TM*	Vinyl chloride	0.3359	0.2448	0.3175	0.3167	0.3116	0.3095	0.3235	0.3248			0.31	9.0	TM*	
6	TML	Bromomethane	0.0959	0.0911	0.0755	0.0631	0.0609	0.0631	0.0628	0.0577			0.07	21	TML	0.999
7	TMQ	Chloroethane	0.4564	0.3973	0.2347	0.2184	0.1989	0.1825	0.1193				0.26	47	TMQ	0.999
8	TM	Dichlorofluoromethane	0.5689	0.5348	0.5366	0.5122	0.4988	0.5264	0.4990	0.5239			0.53	4.4	TM	
9	TM	Trichlorofluoromethane	0.3665	0.3317	0.3734	0.4144	0.4216	0.4090	0.4230	0.4315			0.40	8.9	TM	
10	TM	Acrolein	0.0207	0.0183	0.0178	0.0179	0.0190	0.0204	0.0202	0.0219			0.02	7.7	TM	
11	TML	Acetone	0.1858	0.1204	0.0863	0.0688	0.0650	0.0620	0.0589	0.0580			0.09	51	TML	1.000
12	TM	Freon-113	0.0908	0.0848	0.1091	0.0931	0.0950	0.1005	0.0977	0.1026			0.10	7.8	TM	
13	TM*	1,1-DCE	0.2337	0.2152	0.1991	0.2009	0.2025	0.2079	0.1985	0.2108			0.21	5.6	TM*	
14	TM	t-Butanol	0.0065	0.0059	0.0060	0.0057	0.0062	0.0066	0.0057	0.0058			0.01	5.8	TM	
15	TM	Methyl Acetate	0.1517	0.1616	0.1716	0.1497	0.1484	0.1593	0.1551	0.1692			0.16	5.5	TM	
16	TML	Iodomethane		0.1514	0.1777	0.1878	0.2049	0.2312	0.2308	0.2473			0.20	17	TML	1.000
17	TML	Acrylonitrile		0.0372	0.0551	0.0640	0.0653	0.0697	0.0681	0.0756			0.06	20	TML	0.999
18	TML	Methylene chloride	0.4841	0.3326	0.3126	0.2790	0.2610	0.2797	0.2627	0.2693			0.31	24	TML	1.000
19	TM	Carbon disulfide	0.8701	0.7352	0.7515	0.7215	0.7121	0.7705	0.7359	0.7718			0.76	6.6	TM	
20	TM	Methyl t-butyl ether (MtBE)	0.7919	0.7507	0.7488	0.7212	0.6980	0.7398	0.7022	0.7386			0.74	4.1	TM	
21	TM	Trans-1,2-DCE	0.3097	0.2686	0.2907	0.2670	0.2669	0.2780	0.2614	0.2749			0.28	5.8	TM	
22	TM	Diisopropyl Ether	1.104	1.051	1.027	1.006	0.9588	1.003	0.9604	0.9930			1.0	4.7	TM	
23	TM**	1,1-DCA	0.5570	0.4953	0.5219	0.4885	0.4690	0.5026	0.4684	0.4876			0.50	5.9	TM**	
24	TM	Vinyl Acetate	0.4835	0.4117	0.3839	0.3461	0.3500	0.3793	0.3296	0.3524			0.38	13	TM	
25	TM	Ethyl tert Butyl Ether	0.9878	0.8691	0.9041	0.8654	0.8456	0.8989	0.8447	0.8846			0.89	5.2	TM	
26	TM	MEK (2-Butanone)	0.0618	0.0883	0.0730	0.0912	0.0951	0.0892	0.0868	0.0898			0.08	13	TM	
27	TM	Cis-1,2-DCE	0.3551	0.3386	0.3124	0.3177	0.3054	0.3166	0.2944	0.3055			0.32	6.2	TM	
28	TM	2,2-Dichloropropane	0.5178	0.4442	0.4020	0.4104	0.3972	0.4125	0.3930	0.4142			0.42	9.7	TM	
29	TM*	Chloroform		0.4713	0.4910	0.4794	0.4596	0.4815	0.4489	0.4725			0.47	3.0	TM*	
30	TM	Bromochloromethane	0.1394	0.1308	0.1443	0.1431	0.1371	0.1436	0.1339	0.1358			0.14	3.6	TM	
31	S	Dibromofluoromethane(S)	0.2837	0.2551	0.2625	0.2677	0.2684	0.2801	0.2671	0.2818			0.27	3.7	S	
32	TM	1,1,1-TCA	0.5213	0.4414	0.4592	0.4389	0.4295	0.4553	0.4310	0.4564			0.45	6.5	TM	
33	TM	Cyclohexane	0.2454	0.2258	0.2705	0.2392	0.2514	0.2704	0.2617	0.2764			0.26	6.9	TM	
34	TM	1,1-Dichloropropene	0.4015	0.3578	0.4032	0.3516	0.3644	0.3846	0.3650	0.3844			0.38	5.2	TM	
35	TM	2,2,4-Trimethylpentane	0.7219	0.6093	0.7084	0.7008	0.7593	0.8140	0.7877	0.8236			0.74	9.6	TM	

VOLATILE ORGANIC ANALYSIS BY
EPA METHOD 8260B

Form 6
Initial Calibration

Lab Name: APPL, Inc.
Case No:
Matrix:

SDG No:
Initial Cal. Date: 01/26/15
Instrument: MAX

Initials:

		Compound	0.3	0.5	1	5	10	20	40	100			Avg	%RSD		
36	S	1,2-DCA-D4(S)	0.3527	0.3234	0.3028	0.3026	0.2999	0.3169	0.2950	0.3066			0.31	6.0	S	
37	TM	Carbon Tetrachloride	0.3255	0.2785	0.3059	0.3299	0.3429	0.3768	0.3661	0.4021			0.34	12	TM	
38	TM	Tert Amyl Methyl Ether	0.7377	0.7399	0.7826	0.7731	0.7787	0.8022	0.7582	0.7898			0.77	3.0	TM	
39	TM	1,2-DCA	0.3958	0.3442	0.3777	0.3649	0.3423	0.3650	0.3465	0.3562			0.36	5.1	TM	
40	TM	Benzene	1.338	1.154	1.232	1.139	1.103	1.164	1.094	1.137			1.2	6.8	TM	
41	TM	TCE	0.3428	0.2859	0.3210	0.2963	0.2753	0.2960	0.2754	0.2895			0.30	7.8	TM	
42	TM	2-Pentanone	0.1683	0.1513	0.1570	0.1512	0.1639	0.1682	0.1648	0.1762			0.16	5.4	TM	
43	TM*	1,2-Dichloropropane	0.3182	0.2679	0.2931	0.2807	0.2791	0.2944	0.2746	0.2827			0.29	5.4	TM*	
44	TM	Bromodichloromethane		0.3182	0.3599	0.3535	0.3450	0.3687	0.3485	0.3671			0.35	4.9	TM	
45	TM	Methyl Cyclohexane	0.4321	0.3652	0.4100	0.4138	0.4181	0.4509	0.4381	0.4633			0.42	7.1	TM	
46	TM	Dibromomethane	0.1596	0.1370	0.1455	0.1400	0.1355	0.1420	0.1355	0.1386			0.14	5.6	TM	
47	TM	MIBK (methyl isobutyl ketone	0.2293	0.2101	0.2258	0.2139	0.2285	0.2181	0.2130	0.2235			0.22	3.4	TM	
48	TM	1-Bromo-2-chloroethane	0.3785	0.3238	0.3360	0.3313	0.3135	0.3336	0.3163	0.3285			0.33	6.1	TM	
49	TM	2-Chloroethyl vinyl ether			0.0297	0.0397	0.0407	0.0459	0.0433	0.0471			0.04	15	TM	
50	TM	Cis-1,3-Dichloropropene	0.4895	0.4308	0.4795	0.4540	0.4435	0.4693	0.4420	0.4647			0.46	4.4	TM	
51	TM*	Toluene	1.428	1.305	1.337	1.282	1.244	1.308	1.233	1.284			1.3	4.7	TM*	
52	TM	Trans-1,3-Dichloropropene	0.3876	0.3626	0.3747	0.3737	0.3809	0.3922	0.3754	0.3971			0.38	3.0	TM	
53	TM	1,1,2-TCA	0.1672	0.1823	0.1847	0.1702	0.1669	0.1730	0.1627	0.1684			0.17	4.5	TM	
54	TM	2-Hexanone	0.1315	0.1221	0.1232	0.1390	0.1421	0.1417	0.1399	0.1531			0.14	7.6	TM	
55	I	Chlorobenzene-D5 (IS)	ISTD													
56	S	Toluene-D8(S)	1.716	1.421	1.455	1.427	1.424	1.486	1.383	1.462			1.5	7.0	S	
57	TM	1,2-EDB	0.2630	0.2953	0.2873	0.2815	0.2720	0.2886	0.2638	0.2818			0.28	4.2	TM	
58	TM	Tetrachloroethene		0.2666	0.2386	0.2180	0.1935	0.2107	0.1874	0.1916			0.22	13	TM	
59	TM	1-Chlorohexane	0.5698	0.5107	0.5364	0.5120	0.4960	0.5258	0.4962	0.5246			0.52	4.6	TM	
60	TM	1,1,1,2-Tetrachloroethane	0.5341	0.4073	0.4235	0.4232	0.3968	0.4281	0.3997	0.4260			0.43	10	TM	
61	TM	m&p-Xylene	0.8547	0.7687	0.7978	0.7794	0.7522	0.7932	0.7271	0.7575			0.78	4.9	TM	
62	TM	o-Xylene	0.8383	0.7022	0.7912	0.7577	0.7353	0.7776	0.7215	0.7419			0.76	5.7	TM	
63	TM	Styrene	1.264	1.234	1.350	1.279	1.249	1.321	1.241	1.298			1.3	3.2	TM	
64	S	4-Bromofluorobenzene(S)	0.6405	0.5819	0.5539	0.5647	0.5618	0.5833	0.5519	0.5965			0.58	5.0	S	
65	TM	1,3-Dichloropropane	0.5644	0.5243	0.5401	0.5143	0.4876	0.5180	0.4708	0.4950			0.51	5.8	TM	
66	TM	Dibromochloromethane	0.3472	0.3219	0.3449	0.3649	0.3513	0.3690	0.3500	0.3726			0.35	4.6	TM	
67	TM**	Chlorobenzene	1.400	1.319	1.235	1.174	1.099	1.170	1.079	1.120			1.2	9.4	TM**	
68	TM*	Ethylbenzene	2.214	2.061	2.002	2.003	1.915	2.010	1.870	1.968			2.0	5.1	TM*	
69	TM**	Bromoform	0.2399	0.2178	0.2312	0.2413	0.2429	0.2620	0.2515	0.2765			0.25	7.4	TM**	
70	I	1,4-Dichlorobenzene-D (IS)	ISTD													

VOLATILE ORGANIC ANALYSIS BY
EPA METHOD 8260B

Form 6
Initial Calibration

Lab Name: APPL, Inc.
Case No:
Matrix:

SDG No:
Initial Cal. Date: 01/26/15
Instrument: MAX

Initials:

		Compound	0.3	0.5	1	5	10	20	40	100			Avg	%RSD		
71	TM	Isopropylbenzene	3.834	3.410	3.492	3.280	3.205	3.427	3.097	3.216			3.4	6.8	TM	
72	TM**	1,1,2,2-Tetrachloroethane	0.6407	0.5060	0.5653	0.5093	0.4988	0.5298	0.4876	0.5086			0.53	9.5	TM**	
73	TM	1,2,3-Trichloropropane	0.2448	0.1570	0.1804	0.1953	0.1779	0.1888	0.1775	0.1823			0.19	14	TM	
74	TM	t-1,4-Dichloro-2-Butene		0.1351	0.1530	0.1594	0.1560	0.1598	0.1574	0.1712			0.16	7.0	TM	
75	TM	Bromobenzene	1.114	0.9994	1.033	0.9420	0.9250	0.9789	0.8886	0.9196			0.97	7.5	TM	
76	TM	n-Propylbenzene	4.440	3.782	3.994	3.804	3.660	3.962	3.616	3.778			3.9	6.7	TM	
77	TM	4-Ethyltoluene	3.798	3.271	3.487	3.387	3.239	3.466	3.188	3.336			3.4	5.7	TM	
78	TM	2-Chlorotoluene	2.579	2.388	2.491	2.297	2.173	2.322	2.119	2.203			2.3	6.8	TM	
79	TM	1,3,5-Trimethylbenzene	3.302	2.984	3.088	2.969	2.882	3.028	2.803	2.911			3.0	5.1	TM	
80	TM	4-Chlorotoluene	3.262	2.810	2.752	2.713	2.589	2.733	2.518	2.655			2.8	8.2	TM	
81	TM	Tert-Butylbenzene	2.865	2.508	2.644	2.492	2.399	2.610	2.401	2.520			2.6	6.0	TM	
82	TM	1,2,4-Trimethylbenzene	3.290	2.908	3.197	3.009	2.916	3.057	2.850	3.001			3.0	5.0	TM	
83	TM	Sec-Butylbenzene	3.766	3.338	3.615	3.461	3.338	3.571	3.311	3.503			3.5	4.6	TM	
84	TM	p-Isopropyltoluene	3.374	3.139	3.305	3.135	3.009	3.210	2.982	3.149			3.2	4.2	TM	
85	TM	Benzyl Chloride	0.7956	0.7766	0.7854	0.8787	0.9361	0.9629	1.033	1.028			0.90	12	TM	
86	TM	1,3-DCB	2.066	1.845	1.917	1.804	1.686	1.792	1.670	1.736			1.8	7.2	TM	
87	TM	1,4-DCB	2.301	1.927	1.899	1.822	1.729	1.799	1.683	1.716			1.9	11	TM	
88	TM	n-Butylbenzene	2.738	2.550	2.660	2.603	2.524	2.756	2.584	2.773			2.6	3.7	TM	
89	TM	1,2-DCB	1.800	1.686	1.771	1.654	1.595	1.676	1.547	1.580			1.7	5.4	TM	
90	TM	Hexachloroethane	0.4110	0.3440	0.3166	0.4312	0.4406	0.4556	0.4678	0.5014			0.42	15	TM	
91	TM	1,2-Dibromo-3-chloropropane		0.0789	0.0846	0.0980	0.0991	0.1028	0.1000	0.0987			0.09	9.6	TM	
92	TM	1,2,4-Trichlorobenzene	0.9610	1.004	1.042	1.143	1.133	1.256	1.201	1.227			1.1	9.6	TM	
93	TM	Hexachlorobutadiene	0.8522	0.7740	0.7757	0.7407	0.7191	0.7645	0.7261	0.7414			0.76	5.5	TM	
94	TML	Naphthalene		0.7892	1.105	1.291	1.391	1.602	1.566				1.3	24	TML	0.999
95	TML	1,2,3-Trichlorobenzene		0.5732	0.7768	0.8359	0.8624	0.9902	0.9645	0.9927			0.86	18	TML	1.000
96																
97																
98																
99																
100																
101																
102																
103																
104																
105																

Quantitation Report (Not Reviewed)

Data File : M:\MAX\DATA\M150126\0126M09.D
Acq On : 26 Jan 15 12:37
Sample : 0.3ug/L Vol Std 01-26-15
Misc : 10mL w/IS&S: 11-03-14

Vial: 4
Operator: DG,SV,RS
Inst : MAX
Multiplr: 1.00

Quant Time: Jan 27 10:56 2015

Quant Results File: MALLW.RES

Quant Method : M:\MAX\DATA\M150126\MALLW.M (RTE Integrator)
Title : METHOD 8260B
Last Update : Tue Jan 27 10:55:52 2015
Response via : Initial Calibration
DataAcq Meth : V8260

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene (IS)	6.78	96	264234	25.00000 ppb	0.00
55) Chlorobenzene-D5 (IS)	11.03	117	198015	25.00000 ppb	0.00
70) 1,4-Dichlorobenzene-D (IS)	14.37	152	110299	25.00000 ppb	0.00
System Monitoring Compounds					
31) Dibromofluoromethane(S)	5.79	111	1799	0.62854 ppb	0.00
Spiked Amount 14.625			Recovery	= 4.301%	
36) 1,2-DCA-D4(S)	6.26	65	2237	0.67726 ppb	0.00
Spiked Amount 13.533			Recovery	= 5.003%	
56) Toluene-D8(S)	9.03	98	8156	0.69959 ppb	0.00
Spiked Amount 14.976			Recovery	= 4.674%	
64) 4-Bromofluorobenzene(S)	12.71	95	3044	0.66341 ppb	0.00
Spiked Amount 14.557			Recovery	= 4.555%	

Target Compounds						Qvalue
2) Dichlorodifluoromethane	1.23	85	696	1.20721 ppb		99
3) Freon 114	1.34	85	627	0.73844 ppb		93
4) Chloromethane	1.38	50	1657	0.44991 ppb		99
5) Vinyl chloride	1.47	62	1065	0.32449 ppb	#	71
6) Bromomethane	1.75	94	304	-0.32919 ppb		89
7) Chloroethane	1.84	64	1447	0.45764 ppb		87
8) Dichlorofluoromethane	2.03	67	1804	0.32506 ppb		96
9) Trichlorofluoromethane	2.08	101	1162	0.27737 ppb		91
10) Acrolein	2.50	56	2185	10.57998 ppb		99
12) Freon-113	2.63	101	288	0.28179 ppb		94
13) 1,1-DCE	2.60	61	741	0.33612 ppb		97
14) t-Butanol	3.48	59	682	10.70209 ppb		96
15) Methyl Acetate	3.12	43	481	0.28743 ppb	#	53
16) Iodomethane	2.75	142	619	1.37753 ppb	#	69
18) Methylene chloride	3.17	84	1535	0.43687 ppb		91
19) Carbon disulfide	2.82	76	2759	0.34411 ppb	#	88
20) Methyl t-butyl ether (MtBE	3.66	73	2511	0.32261 ppb		100
21) Trans-1,2-DCE	3.54	96	982	0.33522 ppb		95
22) Diisopropyl Ether	4.44	45	3500	0.32696 ppb	#	93
23) 1,1-DCA	4.16	63	1766	0.33499 ppb	#	90
24) Vinyl Acetate	4.34	43	1533	0.38213 ppb	#	72
25) Ethyl tert Butyl Ether	5.01	59	3132	0.33388 ppb		93
26) MEK (2-Butanone)	5.21	43	196	0.21975 ppb	#	54
27) Cis-1,2-DCE	5.07	96	1126	0.33479 ppb		74
28) 2,2-Dichloropropane	5.05	77	1642	0.36649 ppb	#	84
29) Chloroform	5.57	83	8059	1.61532 ppb		97
30) Bromochloromethane	5.40	128	442	0.30194 ppb		87
32) 1,1,1-TCA	5.81	97	1653	0.34439 ppb		90
33) Cyclohexane	5.90	41	778	0.28855 ppb		91
34) 1,1-Dichloropropene	6.07	75	1273	0.31985 ppb	#	88
35) 2,2,4-Trimethylpentane	6.55	57	2289	0.29242 ppb	#	59
37) Carbon Tetrachloride	6.08	117	1032	0.28637 ppb	#	76
38) Tert Amyl Methyl Ether	6.67	73	2339	0.28730 ppb	#	82
39) 1,2-DCA	6.37	62	1255	0.32839 ppb	#	76
40) Benzene	6.35	78	4243	0.34307 ppb		97
41) TCE	7.31	95	1087	0.34538 ppb		89
42) 2-Pentanone	7.65	43	17784	10.34860 ppb		94
43) 1,2-Dichloropropane	7.59	63	1009	0.33340 ppb	#	87
44) Bromodichloromethane	8.00	83	1628	0.43815 ppb		76

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : M:\MAX\DATA\M150126\0126M09.D
Acq On : 26 Jan 15 12:37
Sample : 0.3ug/L Vol Std 01-26-15
Misc : 10mL w/IS&S: 11-03-14

Vial: 4
Operator: DG,SV,RS
Inst : MAX
Multiplr: 1.00

Quant Time: Jan 27 10:56 2015 Quant Results File: MALLW.RES

Quant Method : M:\MAX\DATA\M150126\MALLW.M (RTE Integrator)
Title : METHOD 8260B
Last Update : Tue Jan 27 10:55:52 2015
Response via : Initial Calibration
DataAcq Meth : V8260

Compound	R.T.	QIon	Response	Conc Unit		Qvalue
45) Methyl Cyclohexane	7.58	83	1370	0.30576 ppb		92
46) Dibromomethane	7.74	93	506	0.33782 ppb		80
47) MIBK (methyl isobutyl ket	8.94	43	727	0.31227 ppb	#	81
48) 1-Bromo-2-chloroethane	8.40	63	1200	0.34128 ppb		98
49) 2-Chloroethyl vinyl ether	8.49	106	65	0.14975 ppb	#	1
50) Cis-1,3-Dichloropropene	8.65	75	1552	0.31980 ppb		93
51) Toluene	9.12	91	4529	0.32889 ppb		97
52) Trans-1,3-Dichloropropene	9.44	75	1229	0.30558 ppb		86
53) 1,1,2-TCA	9.67	83	530	0.29166 ppb		88
54) 2-Hexanone	10.13	43	417	0.28886 ppb	#	85
57) 1,2-EDB	10.32	107	625	0.28264 ppb		89
58) Tetrachloroethene	9.89	164	698	0.40949 ppb		84
59) 1-Chlorohexane	11.10	91	1354	0.32784 ppb		92
60) 1,1,1,2-Tetrachloroethane	11.19	131	1269	0.37273 ppb	#	68
61) m&p-Xylene	11.43	106	4062	0.65846 ppb		93
62) o-Xylene	11.99	106	1992	0.33170 ppb		93
63) Styrene	12.00	104	3004	0.29645 ppb		97
65) 1,3-Dichloropropane	9.90	76	1341	0.32918 ppb		97
66) Dibromochloromethane	10.20	129	825	0.29530 ppb		84
67) Chlorobenzene	11.07	112	3326	0.35008 ppb		93
68) Ethylbenzene	11.26	91	5261	0.33123 ppb		99
69) Bromoform	12.21	173	570	0.29328 ppb		99
71) Isopropylbenzene	12.53	105	5074	0.34126 ppb		99
72) 1,1,2,2-Tetrachloroethane	12.93	83	848	0.36213 ppb	#	78
73) 1,2,3-Trichloropropane	12.97	110	324	0.39061 ppb	#	75
74) t-1,4-Dichloro-2-Butene	13.02	53	109	0.15840 ppb	#	29
75) Bromobenzene	12.89	156	1474	0.34266 ppb		90
76) n-Propylbenzene	13.12	91	5877	0.34334 ppb		98
77) 4-Ethyltoluene	13.29	105	5027	0.33548 ppb		96
78) 2-Chlorotoluene	13.20	91	3413	0.33323 ppb	#	77
79) 1,3,5-Trimethylbenzene	13.39	105	4370	0.33063 ppb		97
80) 4-Chlorotoluene	13.36	91	4317	0.35528 ppb		86
81) Tert-Butylbenzene	13.84	119	3792	0.33641 ppb		92
82) 1,2,4-Trimethylbenzene	13.91	105	4355	0.32591 ppb		98
83) Sec-Butylbenzene	14.16	105	4984	0.32390 ppb		99
84) p-Isopropyltoluene	14.39	119	4466	0.32004 ppb		99
85) Benzyl Chloride	14.60	91	1053	0.26533 ppb	#	77
86) 1,3-DCB	14.26	146	2735	0.34163 ppb		98
87) 1,4-DCB	14.40	146	3045	0.37119 ppb		87
88) n-Butylbenzene	14.98	91	3624	0.31014 ppb		95
89) 1,2-DCB	14.92	146	2382	0.32453 ppb		93
90) Hexachloroethane	15.31	117	544	0.29286 ppb		82
92) 1,2,4-Trichlorobenzene	17.26	180	1272	0.25724 ppb		86
93) Hexachlorobutadiene	17.58	225	1128	0.33565 ppb		90
94) Naphthalene	17.60	128	784	0.66790 ppb	#	76
95) 1,2,3-Trichlorobenzene	17.96	180	838	0.81790 ppb	#	75

(#) = qualifier out of range (m) = manual integration

Quantitation Report

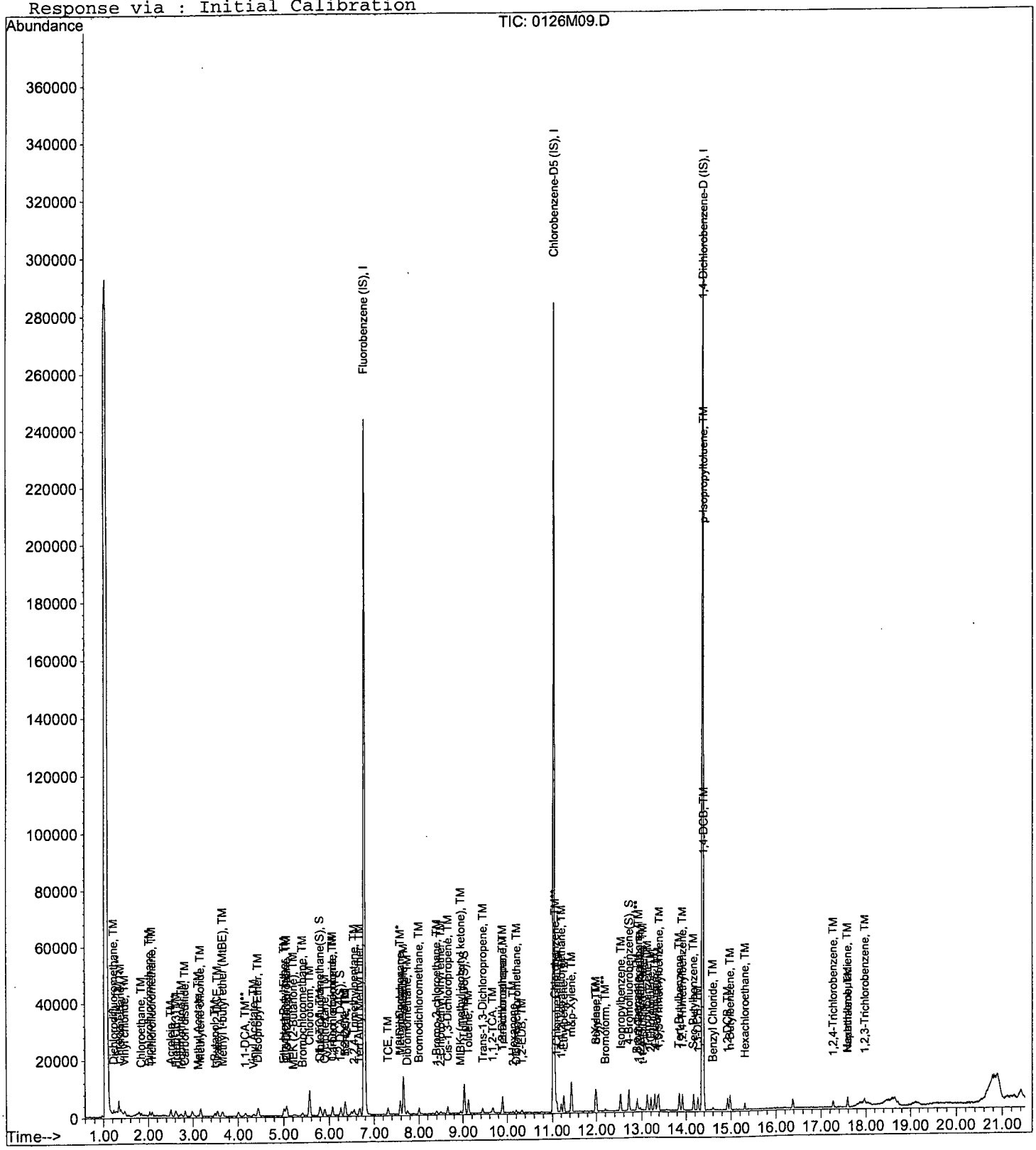
Data File : M:\MAX\DATA\M150126\0126M09.D
Acq On : 26 Jan 15 12:37
Sample : 0.3ug/L Vol Std 01-26-15
Misc : 10mL w/IS&S: 11-03-14

Vial: 4
Operator: DG,SV,RS
Inst : MAX
Multiplr: 1.00

Quant Time: Jan 27 10:56 2015

Quant Results File: MALLW.RES

Method : M:\MAX\DATA\M150126\MALLW.M (RTE Integrator)
Title : METHOD 8260B
Last Update : Tue Jan 27 10:55:52 2015
Response via : Initial Calibration



Quantitation Report (Not Reviewed)

Data File : M:\MAX\DATA\M150126\0126M10.D
Acq On : 26 Jan 15 13:05
Sample : 0.5ug/L Vol Std 01-26-15
Misc : 10mL w/IS&S: 11-03-14

Vial: 5
Operator: DG,SV,RS
Inst : MAX
Multiplr: 1.00

Quant Time: Jan 27 10:56 2015 Quant Results File: MALLW.RES

Quant Method : M:\MAX\DATA\M150126\MALLW.M (RTE Integrator)
Title : METHOD 8260B
Last Update : Tue Jan 27 10:55:52 2015
Response via : Initial Calibration
DataAcq Meth : V8260

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene (IS)	6.78	96	283671	25.00000 ppb	0.00
55) Chlorobenzene-D5 (IS)	11.03	117	208929	25.00000 ppb	0.00
70) 1,4-Dichlorobenzene-D (IS)	14.37	152	118468	25.00000 ppb	0.00
System Monitoring Compounds					
31) Dibromofluoromethane(S)	5.79	111	2895	0.94216 ppb	0.00
Spiked Amount 14.625			Recovery	= 6.441%	
36) 1,2-DCA-D4(S)	6.25	65	3670	1.03498 ppb	0.00
Spiked Amount 13.533			Recovery	= 7.648%	
56) Toluene-D8(S)	9.03	98	11876	0.96547 ppb	0.00
Spiked Amount 14.976			Recovery	= 6.444%	
64) 4-Bromofluorobenzene(S)	12.71	95	4863	1.00448 ppb	0.00
Spiked Amount 14.557			Recovery	= 6.897%	

Target Compounds						Qvalue
2) Dichlorodifluoromethane	1.23	85	920	1.26034 ppb		93
3) Freon 114	1.33	85	598	0.70688 ppb		73
4) Chloromethane	1.38	50	2352	0.59985 ppb		90
5) Vinyl chloride	1.47	62	1389	0.39421 ppb		99
7) Chloroethane	1.85	64	2254	0.72501 ppb	#	45
8) Dichlorofluoromethane	2.03	67	3034	0.50923 ppb		87
9) Trichlorofluoromethane	2.09	101	1882	0.41845 ppb		99
10) Acrolein	2.50	56	5193	23.42208 ppb		86
11) Acetone	2.70	43	683	0.15557 ppb		94
12) Freon-113	2.63	101	481	0.43839 ppb		93
13) 1,1-DCE	2.60	61	1221	0.51590 ppb		94
14) t-Butanol	3.48	59	1674	24.46885 ppb		97
15) Methyl Acetate	3.11	43	917	0.51043 ppb	#	53
16) Iodomethane	2.75	142	859	1.44658 ppb	#	83
17) Acrylonitrile	3.49	53	211	1.41118 ppb	#	65
18) Methylene chloride	3.17	84	1887	0.51541 ppb		81
19) Carbon disulfide	2.82	76	4171	0.48458 ppb		98
20) Methyl t-butyl ether (MtBE	3.65	73	4259	0.50970 ppb		97
21) Trans-1,2-DCE	3.54	96	1524	0.48459 ppb		94
22) Diisopropyl Ether	4.44	45	5960	0.51862 ppb		91
23) 1,1-DCA	4.17	63	2810	0.49650 ppb		94
24) Vinyl Acetate	4.35	43	2336	0.54239 ppb	#	72
25) Ethyl tert Butyl Ether	5.01	59	4931	0.48965 ppb		96
26) MEK (2-Butanone)	5.20	43	501	0.52321 ppb	#	54
27) Cis-1,2-DCE	5.07	96	1921	0.53202 ppb		93
28) 2,2-Dichloropropane	5.05	77	2520	0.52391 ppb	#	83
29) Chloroform	5.56	83	2674	0.49924 ppb		98
30) Bromochloromethane	5.40	128	742	0.47215 ppb		96
32) 1,1,1-TCA	5.81	97	2504	0.48594 ppb	#	89
33) Cyclohexane	5.91	41	1281	0.44255 ppb		83
34) 1,1-Dichloropropene	6.07	75	2030	0.47510 ppb		92
35) 2,2,4-Trimethylpentane	6.55	57	3457	0.41137 ppb	#	75
37) Carbon Tetrachloride	6.07	117	1580	0.40839 ppb		90
38) Tert Amyl Methyl Ether	6.67	73	4198	0.48031 ppb		98
39) 1,2-DCA	6.37	62	1953	0.47602 ppb	#	84
40) Benzene	6.35	78	6549	0.49324 ppb		98
41) TCE	7.30	95	1622	0.48006 ppb		94
42) 2-Pentanone	7.65	43	42916	23.26191 ppb		97
43) 1,2-Dichloropropane	7.59	63	1520	0.46784 ppb	#	87

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : M:\MAX\DATA\M150126\0126M10.D
Acq On : 26 Jan 15 13:05
Sample : 0.5ug/L Vol Std 01-26-15
Misc : 10mL w/IS&S: 11-03-14

Vial: 5
Operator: DG,SV,RS
Inst : MAX
Multiplr: 1.00

Quant Time: Jan 27 10:56 2015

Quant Results File: MALLW.RES

Quant Method : M:\MAX\DATA\M150126\MALLW.M (RTE Integrator)
Title : METHOD 8260B
Last Update : Tue Jan 27 10:55:52 2015
Response via : Initial Calibration
DataAcq Meth : V8260

Compound	R.T.	QIon	Response	Conc Unit		Qvalue
44) Bromodichloromethane	8.00	83	1805	0.45250 ppb		100
45) Methyl Cyclohexane	7.58	83	2072	0.43076 ppb		89
46) Dibromomethane	7.75	93	777	0.48320 ppb		92
47) MIBK (methyl isobutyl ket	8.95	43	1192	0.47693 ppb	#	83
48) 1-Bromo-2-chloroethane	8.40	63	1837	0.48665 ppb		98
49) 2-Chloroethyl vinyl ether	8.49	106	180	0.38627 ppb	#	75
50) Cis-1,3-Dichloropropene	8.65	75	2444	0.46910 ppb		93
51) Toluene	9.12	91	7405	0.50090 ppb		90
52) Trans-1,3-Dichloropropene	9.43	75	2057	0.47642 ppb	#	80
53) 1,1,2-TCA	9.67	83	1034	0.53002 ppb		80
54) 2-Hexanone	10.12	43	693	0.44715 ppb	#	78
57) 1,2-EDB	10.32	107	1234	0.52888 ppb		99
58) Tetrachloroethene	9.89	164	1114	0.61941 ppb		85
59) 1-Chlorohexane	11.09	91	2134	0.48971 ppb		90
60) 1,1,1,2-Tetrachloroethane	11.20	131	1702	0.47380 ppb		86
61) m&p-Xylene	11.43	106	6424	0.98694 ppb		99
62) o-Xylene	11.98	106	2934	0.46303 ppb		95
63) Styrene	12.00	104	5155	0.48215 ppb		98
65) 1,3-Dichloropropane	9.90	76	2191	0.50974 ppb		92
66) Dibromochloromethane	10.20	129	1345	0.45628 ppb		83
67) Chlorobenzene	11.07	112	5513	0.54997 ppb		98
68) Ethylbenzene	11.26	91	8612	0.51389 ppb		98
69) Bromoform	12.20	173	910	0.44376 ppb		99
71) Isopropylbenzene	12.53	105	8079	0.50589 ppb		100
72) 1,1,2,2-Tetrachloroethane	12.93	83	1199	0.47672 ppb	#	93
73) 1,2,3-Trichloropropane	12.97	110	372	0.41756 ppb		89
74) t-1,4-Dichloro-2-Butene	13.03	53	320	0.43297 ppb	#	29
75) Bromobenzene	12.89	156	2368	0.51253 ppb		84
76) n-Propylbenzene	13.12	91	8962	0.48747 ppb		94
77) 4-Ethyltoluene	13.29	105	7749	0.48147 ppb		92
78) 2-Chlorotoluene	13.20	91	5658	0.51433 ppb		89
79) 1,3,5-Trimethylbenzene	13.39	105	7069	0.49795 ppb		96
80) 4-Chlorotoluene	13.36	91	6659	0.51023 ppb		91
81) Tert-Butylbenzene	13.85	119	5943	0.49087 ppb		96
82) 1,2,4-Trimethylbenzene	13.91	105	6891	0.48013 ppb		97
83) Sec-Butylbenzene	14.16	105	7908	0.47848 ppb		96
84) p-Isopropyltoluene	14.39	119	7437	0.49619 ppb		98
85) Benzyl Chloride	14.60	91	1840	0.43166 ppb	#	79
86) 1,3-DCB	14.27	146	4372	0.50845 ppb		98
87) 1,4-DCB	14.40	146	4565	0.51811 ppb		85
88) n-Butylbenzene	14.98	91	6042	0.48142 ppb		96
89) 1,2-DCB	14.92	146	3995	0.50676 ppb		99
90) Hexachloroethane	15.31	117	815	0.40850 ppb	#	83
91) 1,2-Dibromo-3-chloropropan	16.03	75	187	0.41722 ppb	#	82
92) 1,2,4-Trichlorobenzene	17.26	180	2380	0.44812 ppb		96
93) Hexachlorobutadiene	17.58	225	1834	0.50810 ppb		95
94) Naphthalene	17.60	128	1870	0.80407 ppb	#	76
95) 1,2,3-Trichlorobenzene	17.96	180	1358	0.91487 ppb		98

(#) = qualifier out of range (m) = manual integration

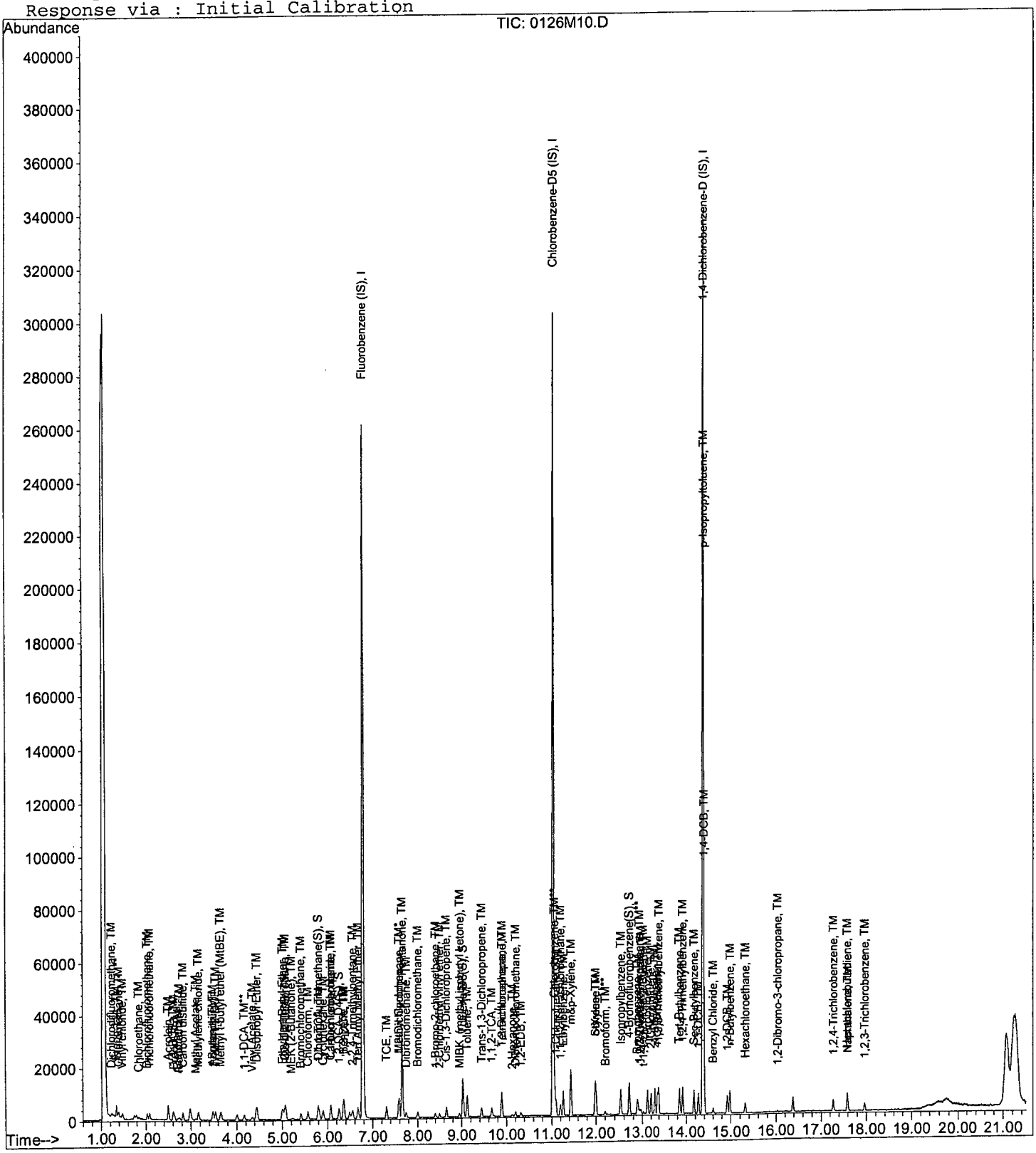
Quantitation Report

Data File : M:\MAX\DATA\M150126\0126M10.D
Acq On : 26 Jan 15 13:05
Sample : 0.5ug/L Vol Std 01-26-15
Misc : 10mL w/IS&S: 11-03-14

Vial: 5
Operator: DG,SV,RS
Inst : MAX
Multiplr: 1.00

Quant Time: Jan 27 10:56 2015 Quant Results File: MALLW.RES

Method : M:\MAX\DATA\M150126\MALLW.M (RTE Integrator)
Title : METHOD 8260B
Last Update : Tue Jan 27 10:55:52 2015
Response via : Initial Calibration



Quantitation Report (Not Reviewed)

Data File : M:\MAX\DATA\M150126\0126M11.D
Acq On : 26 Jan 15 13:33
Sample : 1.0ug/L Vol Std 01-26-15
Misc : 10mL w/IS&S: 11-03-14

Vial: 6
Operator: DG,SV,RS
Inst : MAX
Multiplr: 1.00

Quant Time: Jan 27 10:56 2015

Quant Results File: MALLW.RES

Quant Method : M:\MAX\DATA\M150126\MALLW.M (RTE Integrator)
Title : METHOD 8260B
Last Update : Tue Jan 27 10:55:52 2015
Response via : Initial Calibration
DataAcq Meth : V8260

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene (IS)	6.78	96	271052	25.00000 ppb	0.00
55) Chlorobenzene-D5 (IS)	11.03	117	201810	25.00000 ppb	0.00
70) 1,4-Dichlorobenzene-D (IS)	14.37	152	113222	25.00000 ppb	0.00
System Monitoring Compounds					
31) Dibromofluoromethane(S)	5.79	111	5693	1.93901 ppb	0.00
Spiked Amount 14.625			Recovery	= 13.258%	
36) 1,2-DCA-D4(S)	6.25	65	6565	1.93759 ppb	0.00
Spiked Amount 13.533			Recovery	= 14.321%	
56) Toluene-D8(S)	9.03	98	23495	1.97742 ppb	0.00
Spiked Amount 14.976			Recovery	= 13.201%	
64) 4-Bromofluorobenzene(S)	12.71	95	8942	1.91218 ppb	0.00
Spiked Amount 14.557			Recovery	= 13.135%	

Target Compounds						Qvalue
2) Dichlorodifluoromethane	1.23	85	2361	1.73721 ppb		88
3) Freon 114	1.34	85	1993	1.33198 ppb		89
4) Chloromethane	1.38	50	3983	1.07506 ppb		95
5) Vinyl chloride	1.47	62	3442	1.02234 ppb		93
6) Bromomethane	1.74	94	819	0.47852 ppb		92
7) Chloroethane	1.84	64	2545	0.88212 ppb		98
8) Dichlorofluoromethane	2.03	67	5818	1.02196 ppb		94
9) Trichlorofluoromethane	2.09	101	4048	0.94194 ppb		93
10) Acrolein	2.50	56	9658	45.58865 ppb		99
11) Acetone	2.70	43	936	0.60948 ppb	#	69
12) Freon-113	2.63	101	1183	1.12839 ppb		91
13) 1,1-DCE	2.60	61	2159	0.95469 ppb	#	89
14) t-Butanol	3.48	59	3251	49.73218 ppb		96
15) Methyl Acetate	3.11	43	1860	1.08353 ppb		97
16) Iodomethane	2.74	142	1927	1.85763 ppb		94
17) Acrylonitrile	3.49	53	597	1.89361 ppb	#	88
18) Methylene chloride	3.17	84	3389	1.06060 ppb		89
19) Carbon disulfide	2.82	76	8148	0.99069 ppb		95
20) Methyl t-butyl ether (MtBE	3.65	73	8119	1.01688 ppb		91
21) Trans-1,2-DCE	3.55	96	3152	1.04891 ppb		94
22) Diisopropyl Ether	4.44	45	11133	1.01386 ppb		95
23) 1,1-DCA	4.16	63	5659	1.04643 ppb	#	91
24) Vinyl Acetate	4.35	43	4162	1.01136 ppb		100
25) Ethyl tert Butyl Ether	5.01	59	9802	1.01865 ppb		93
26) MEK (2-Butanone)	5.20	43	791	0.86453 ppb	#	84
27) Cis-1,2-DCE	5.07	96	3387	0.98170 ppb		94
28) 2,2-Dichloropropane	5.06	77	4358	0.94822 ppb		99
29) Chloroform	5.57	83	5323	1.04009 ppb		99
30) Bromochloromethane	5.40	128	1565	1.04220 ppb		98
32) 1,1,1-TCA	5.82	97	4979	1.01124 ppb		97
33) Cyclohexane	5.89	41	2933	1.06045 ppb		82
34) 1,1-Dichloropropene	6.07	75	4372	1.07085 ppb		94
35) 2,2,4-Trimethylpentane	6.55	57	7680	0.95644 ppb	#	62
37) Carbon Tetrachloride	6.07	117	3317	0.89729 ppb		91
38) Tert Amyl Methyl Ether	6.67	73	8485	1.01600 ppb	#	96
39) 1,2-DCA	6.36	62	4095	1.04457 ppb		96
40) Benzene	6.35	78	13356	1.05275 ppb		96
41) TCE	7.31	95	3480	1.07791 ppb		90
42) 2-Pentanone	7.65	43	85085	48.26601 ppb		98

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : M:\MAX\DATA\M150126\0126M11.D
Acq On : 26 Jan 15 13:33
Sample : 1.0ug/L Vol Std 01-26-15
Misc : 10mL w/IS&S: 11-03-14

Vial: 6
Operator: DG,SV,RS
Inst : MAX
Multiplr: 1.00

Quant Time: Jan 27 10:56 2015

Quant Results File: MALLW.RES

Quant Method : M:\MAX\DATA\M150126\MALLW.M (RTE Integrator)
Title : METHOD 8260B
Last Update : Tue Jan 27 10:55:52 2015
Response via : Initial Calibration
DataAcq Meth : V8260

Compound	R.T.	QIon	Response	Conc Unit		Qvalue
43) 1,2-Dichloropropane	7.59	63	3178	1.02369 ppb	#	87
44) Bromodichloromethane	8.00	83	3902	1.02373 ppb		97
45) Methyl Cyclohexane	7.58	83	4445	0.96711 ppb		94
46) Dibromomethane	7.75	93	1578	1.02700 ppb		97
47) MIBK (methyl isobutyl ket	8.94	43	2448	1.02506 ppb	#	96
48) 1-Bromo-2-chloroethane	8.40	63	3643	1.01002 ppb		97
49) 2-Chloroethyl vinyl ether	8.49	106	322	0.72317 ppb		82
50) Cis-1,3-Dichloropropene	8.65	75	5199	1.04435 ppb		93
51) Toluene	9.12	91	14501	1.02656 ppb		94
52) Trans-1,3-Dichloropropene	9.44	75	4062	0.98459 ppb		86
53) 1,1,2-TCA	9.67	83	2003	1.07452 ppb		92
54) 2-Hexanone	10.13	43	1336	0.90217 ppb		90
57) 1,2-EDB	10.32	107	2319	1.02897 ppb		99
58) Tetrachloroethene	9.89	164	1926	1.10867 ppb		93
59) 1-Chlorohexane	11.10	91	4330	1.02870 ppb		89
60) 1,1,1,2-Tetrachloroethane	11.20	131	3419	0.98535 ppb		97
61) m&p-Xylene	11.43	106	12881	2.04877 ppb		99
62) o-Xylene	11.98	106	6387	1.04353 ppb		84
63) Styrene	12.00	104	10894	1.05485 ppb	#	96
65) 1,3-Dichloropropane	9.90	76	4360	1.05014 ppb		96
66) Dibromochloromethane	10.20	129	2784	0.97777 ppb		87
67) Chlorobenzene	11.06	112	9966	1.02926 ppb		99
68) Ethylbenzene	11.26	91	16158	0.99818 ppb		94
69) Bromoform	12.20	173	1866	0.94205 ppb		92
71) Isopropylbenzene	12.53	105	15814	1.03613 ppb		97
72) 1,1,2,2-Tetrachloroethane	12.93	83	2560	1.06501 ppb		97
73) 1,2,3-Trichloropropane	12.97	110	817	0.95954 ppb	#	71
74) t-1,4-Dichloro-2-Butene	13.02	53	693	0.98109 ppb		97
75) Bromobenzene	12.89	156	4677	1.05919 ppb		93
76) n-Propylbenzene	13.12	91	18090	1.02956 ppb		99
77) 4-Ethyltoluene	13.29	105	15790	1.02654 ppb		96
78) 2-Chlorotoluene	13.20	91	11280	1.07289 ppb		97
79) 1,3,5-Trimethylbenzene	13.39	105	13986	1.03085 ppb		100
80) 4-Chlorotoluene	13.36	91	12464	0.99928 ppb		96
81) Tert-Butylbenzene	13.84	119	11976	1.03502 ppb		98
82) 1,2,4-Trimethylbenzene	13.91	105	14480	1.05565 ppb		97
83) Sec-Butylbenzene	14.16	105	16372	1.03650 ppb		98
84) p-Isopropyltoluene	14.39	119	14969	1.04500 ppb		94
85) Benzyl Chloride	14.59	91	3557	0.87312 ppb		98
86) 1,3-DCB	14.27	146	8682	1.05647 ppb		100
87) 1,4-DCB	14.40	146	8599	1.02116 ppb		96
88) n-Butylbenzene	14.98	91	12049	1.00453 ppb		96
89) 1,2-DCB	14.92	146	8022	1.06473 ppb		93
90) Hexachloroethane	15.31	117	1434	0.75206 ppb		75
91) 1,2-Dibromo-3-chloropropan	16.03	75	383	0.89412 ppb	#	71
92) 1,2,4-Trichlorobenzene	17.27	180	4718	0.92949 ppb		96
93) Hexachlorobutadiene	17.58	225	3513	1.01834 ppb		90
94) Naphthalene	17.60	128	5004	1.24996 ppb		100
95) 1,2,3-Trichlorobenzene	17.97	180	3518	1.40676 ppb		87

(#) = qualifier out of range (m) = manual integration

Quantitation Report

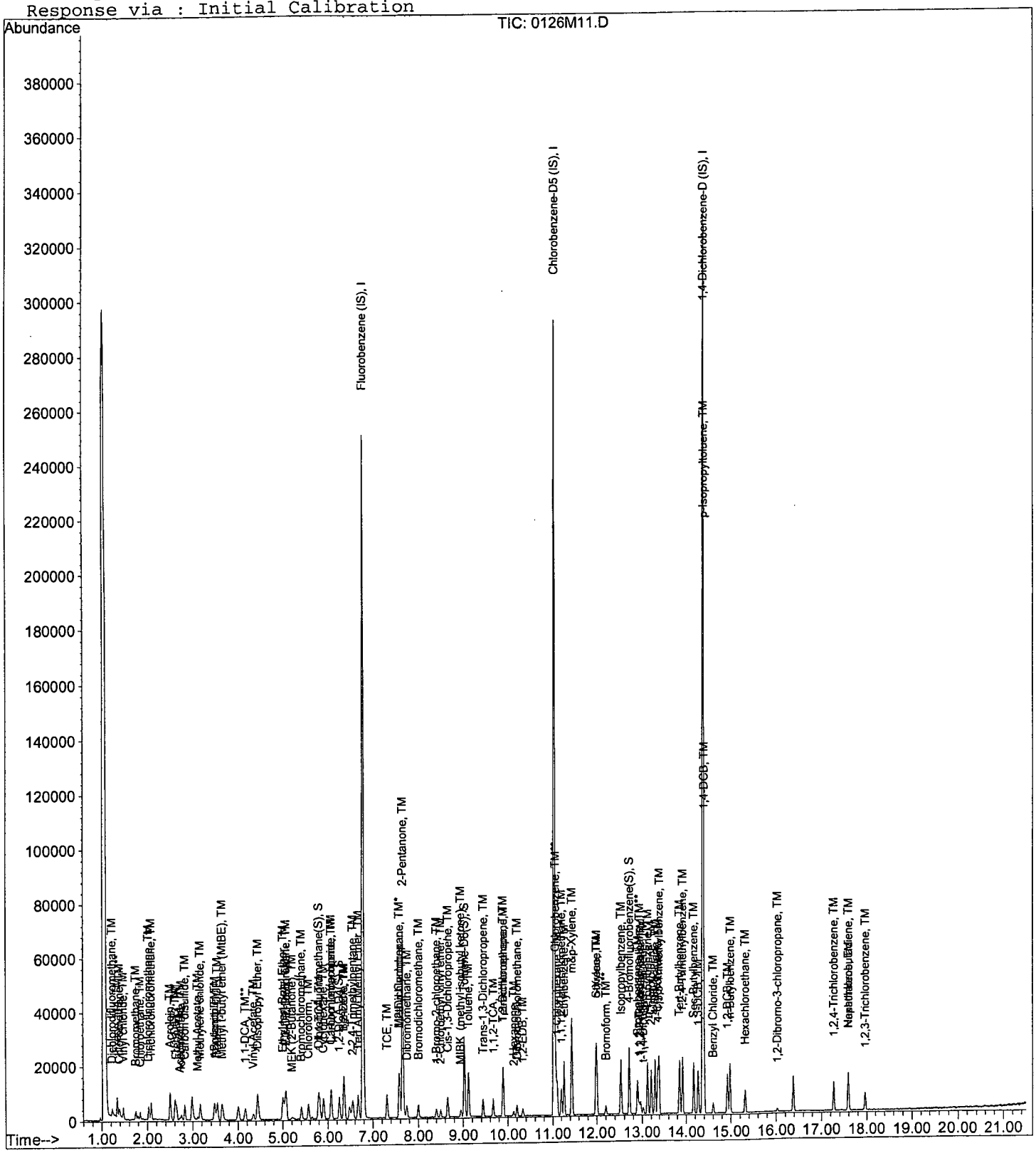
Data File : M:\MAX\DATA\M150126\0126M11.D
Acq On : 26 Jan 15 13:33
Sample : 1.0ug/L Vol Std 01-26-15
Misc : 10mL w/IS&S: 11-03-14

Vial: 6
Operator: DG,SV,RS
Inst : MAX
Multiplr: 1.00

Quant Time: Jan 27 10:56 2015

Quant Results File: MALLW.RES

Method : M:\MAX\DATA\M150126\MALLW.M (RTE Integrator)
Title : METHOD 8260B
Last Update : Tue Jan 27 10:55:52 2015
Response via : Initial Calibration



Quantitation Report (Not Reviewed)

Data File : M:\MAX\DATA\M150126\0126M12.D
Acq On : 26 Jan 15 14:00
Sample : 5.0ug/L Vol Std 01-26-15
Misc : 10mL w/IS&S: 11-03-14

Vial: 7
Operator: DG,SV,RS
Inst : MAX
Multiplr: 1.00

Quant Time: Jan 27 10:56 2015

Quant Results File: MALLW.RES

Quant Method : M:\MAX\DATA\M150126\MALLW.M (RTE Integrator)
Title : METHOD 8260B
Last Update : Tue Jan 27 10:55:52 2015
Response via : Initial Calibration
DataAcq Meth : V8260

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene (IS)	6.78	96	282608	25.00000 ppb	0.00
55) Chlorobenzene-D5 (IS)	11.03	117	208356	25.00000 ppb	0.00
70) 1,4-Dichlorobenzene-D (IS)	14.37	152	121453	25.00000 ppb	0.00
System Monitoring Compounds					
31) Dibromofluoromethane(S)	5.79	111	30261	9.88532 ppb	0.00
Spiked Amount 14.625			Recovery	= 67.589%	
36) 1,2-DCA-D4(S)	6.25	65	34209	9.68357 ppb	0.00
Spiked Amount 13.533			Recovery	= 71.559%	
56) Toluene-D8(S)	9.03	98	118906	9.69311 ppb	0.00
Spiked Amount 14.976			Recovery	= 64.723%	
64) 4-Bromofluorobenzene(S)	12.71	95	47064	9.74807 ppb	0.00
Spiked Amount 14.557			Recovery	= 66.967%	

Target Compounds					Qvalue
2) Dichlorodifluoromethane	1.23	85	12849	4.94312 ppb	96
3) Freon 114	1.34	85	10643	4.94419 ppb	97
4) Chloromethane	1.38	50	20474	5.36107 ppb	100
5) Vinyl chloride	1.47	62	17900	5.09926 ppb	97
6) Bromomethane	1.74	94	3566	4.62127 ppb	97
7) Chloroethane	1.84	64	12345	4.81696 ppb	88
8) Dichlorofluoromethane	2.03	67	28953	4.87776 ppb	97
9) Trichlorofluoromethane	2.09	101	23421	5.22705 ppb	98
10) Acrolein	2.49	56	20267	91.75445 ppb	97
11) Acetone	2.69	43	3888	5.08326 ppb #	80
12) Freon-113	2.63	101	5262	4.81387 ppb	99
13) 1,1-DCE	2.60	61	11356	4.81620 ppb	100
14) t-Butanol	3.48	59	6423	94.23811 ppb	100
15) Methyl Acetate	3.11	43	8463	4.72847 ppb	99
16) Iodomethane	2.74	142	10616	4.92506 ppb	93
17) Acrylonitrile	3.49	53	3620	5.40149 ppb	97
18) Methylene chloride	3.16	84	15770	5.09510 ppb	95
19) Carbon disulfide	2.82	76	40781	4.75567 ppb	100
20) Methyl t-butyl ether (MtBE	3.65	73	40762	4.89657 ppb	98
21) Trans-1,2-DCE	3.54	96	15089	4.81594 ppb	93
22) Diisopropyl Ether	4.44	45	56858	4.96622 ppb	98
23) 1,1-DCA	4.16	63	27612	4.89709 ppb	98
24) Vinyl Acetate	4.34	43	19564	4.55963 ppb	92
25) Ethyl tert Butyl Ether	5.01	59	48913	4.87532 ppb	99
26) MEK (2-Butanone)	5.20	43	5153	5.40170 ppb	90
27) Cis-1,2-DCE	5.07	96	17959	4.99247 ppb	94
28) 2,2-Dichloropropane	5.06	77	23195	4.84042 ppb	97
29) Chloroform	5.56	83	27098	5.07832 ppb	96
30) Bromochloromethane	5.41	128	8087	5.16526 ppb	83
32) 1,1,1-TCA	5.82	97	24808	4.83251 ppb	94
33) Cyclohexane	5.90	41	13518	4.68770 ppb	98
34) 1,1-Dichloropropene	6.07	75	19873	4.66854 ppb	99
35) 2,2,4-Trimethylpentane	6.55	57	39609	4.73106 ppb	97
37) Carbon Tetrachloride	6.07	117	18645	4.83744 ppb	100
38) Tert Amyl Methyl Ether	6.67	73	43698	5.01848 ppb	99
39) 1,2-DCA	6.36	62	20622	5.04527 ppb	98
40) Benzene	6.36	78	64357	4.86533 ppb	98
41) TCE	7.31	95	16747	4.97519 ppb	95
42) 2-Pentanone	7.65	43	170895	92.97923 ppb	99

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : M:\MAX\DATA\M150126\0126M12.D
Acq On : 26 Jan 15 14:00
Sample : 5.0ug/L Vol Std 01-26-15
Misc : 10mL w/IS&S: 11-03-14

Vial: 7
Operator: DG,SV,RS
Inst : MAX
Multiplr: 1.00

Quant Time: Jan 27 10:56 2015 Quant Results File: MALLW.RES

Quant Method : M:\MAX\DATA\M150126\MALLW.M (RTE Integrator)
Title : METHOD 8260B
Last Update : Tue Jan 27 10:55:52 2015
Response via : Initial Calibration
DataAcq Meth : V8260

Compound	R.T.	QIon	Response	Conc Unit		Qvalue
43) 1,2-Dichloropropane	7.59	63	15863	4.90083	ppb	97
44) Bromodichloromethane	8.00	83	19979	5.02738	ppb	91
45) Methyl Cyclohexane	7.58	83	23388	4.88050	ppb	96
46) Dibromomethane	7.74	93	7914	4.94002	ppb	94
47) MIBK (methyl isobutyl ket	8.94	43	12092	4.85627	ppb	97
48) 1-Bromo-2-chloroethane	8.40	63	18724	4.97894	ppb	94
49) 2-Chloroethyl vinyl ether	8.49	106	2246	4.83794	ppb	99
50) Cis-1,3-Dichloropropene	8.65	75	25663	4.94427	ppb	92
51) Toluene	9.12	91	72465	4.92022	ppb	100
52) Trans-1,3-Dichloropropene	9.44	75	21121	4.91020	ppb	95
53) 1,1,2-TCA	9.67	83	9622	4.95070	ppb	99
54) 2-Hexanone	10.12	43	7856	5.08807	ppb	93
57) 1,2-EDB	10.33	107	11732	5.04209	ppb	86
58) Tetrachloroethene	9.89	164	9084	5.06477	ppb	93
59) 1-Chlorohexane	11.10	91	21336	4.90964	ppb	96
60) 1,1,1,2-Tetrachloroethane	11.20	131	17636	4.92296	ppb	93
61) m&p-Xylene	11.43	106	64959	10.00736	ppb	97
62) o-Xylene	11.98	106	31576	4.99691	ppb	98
63) Styrene	12.00	104	53286	4.99752	ppb	99
65) 1,3-Dichloropropane	9.89	76	21432	4.99988	ppb	100
66) Dibromochloromethane	10.20	129	15206	5.17271	ppb	97
67) Chlorobenzene	11.06	112	48927	4.89428	ppb	99
68) Ethylbenzene	11.26	91	83484	4.99527	ppb	100
69) Bromoform	12.20	173	10056	4.91727	ppb	97
71) Isopropylbenzene	12.53	105	79683	4.86700	ppb	99
72) 1,1,2,2-Tetrachloroethane	12.93	83	12371	4.79778	ppb	95
73) 1,2,3-Trichloropropane	12.96	110	4744	5.19408	ppb	93
74) t-1,4-Dichloro-2-Butene	13.02	53	3871	5.10884	ppb	100
75) Bromobenzene	12.89	156	22882	4.83084	ppb	99
76) n-Propylbenzene	13.12	91	92413	4.90308	ppb	100
77) 4-Ethyltoluene	13.29	105	82283	4.98686	ppb	98
78) 2-Chlorotoluene	13.20	91	55799	4.94761	ppb	99
79) 1,3,5-Trimethylbenzene	13.39	105	72126	4.95581	ppb	100
80) 4-Chlorotoluene	13.36	91	65911	4.92617	ppb	99
81) Tert-Butylbenzene	13.84	119	60523	4.87616	ppb	100
82) 1,2,4-Trimethylbenzene	13.91	105	73102	4.96823	ppb	100
83) Sec-Butylbenzene	14.16	105	84061	4.96117	ppb	96
84) p-Isopropyltoluene	14.39	119	76151	4.95590	ppb	99
85) Benzyl Chloride	14.60	91	21344	4.88416	ppb	99
86) 1,3-DCB	14.26	146	43817	4.97053	ppb	97
87) 1,4-DCB	14.40	146	44268	4.90072	ppb	98
88) n-Butylbenzene	14.98	91	63236	4.91474	ppb	98
89) 1,2-DCB	14.92	146	40173	4.97064	ppb	99
90) Hexachloroethane	15.31	117	10475	5.12129	ppb	97
91) 1,2-Dibromo-3-chloropropan	16.03	75	2381	5.18178	ppb	94
92) 1,2,4-Trichlorobenzene	17.27	180	27758	5.09797	ppb	95
93) Hexachlorobutadiene	17.58	225	17993	4.86231	ppb	98
94) Naphthalene	17.60	128	31353	4.60769	ppb	98
95) 1,2,3-Trichlorobenzene	17.96	180	20304	4.82100	ppb	93

(#) = qualifier out of range (m) = manual integration

Quantitation Report

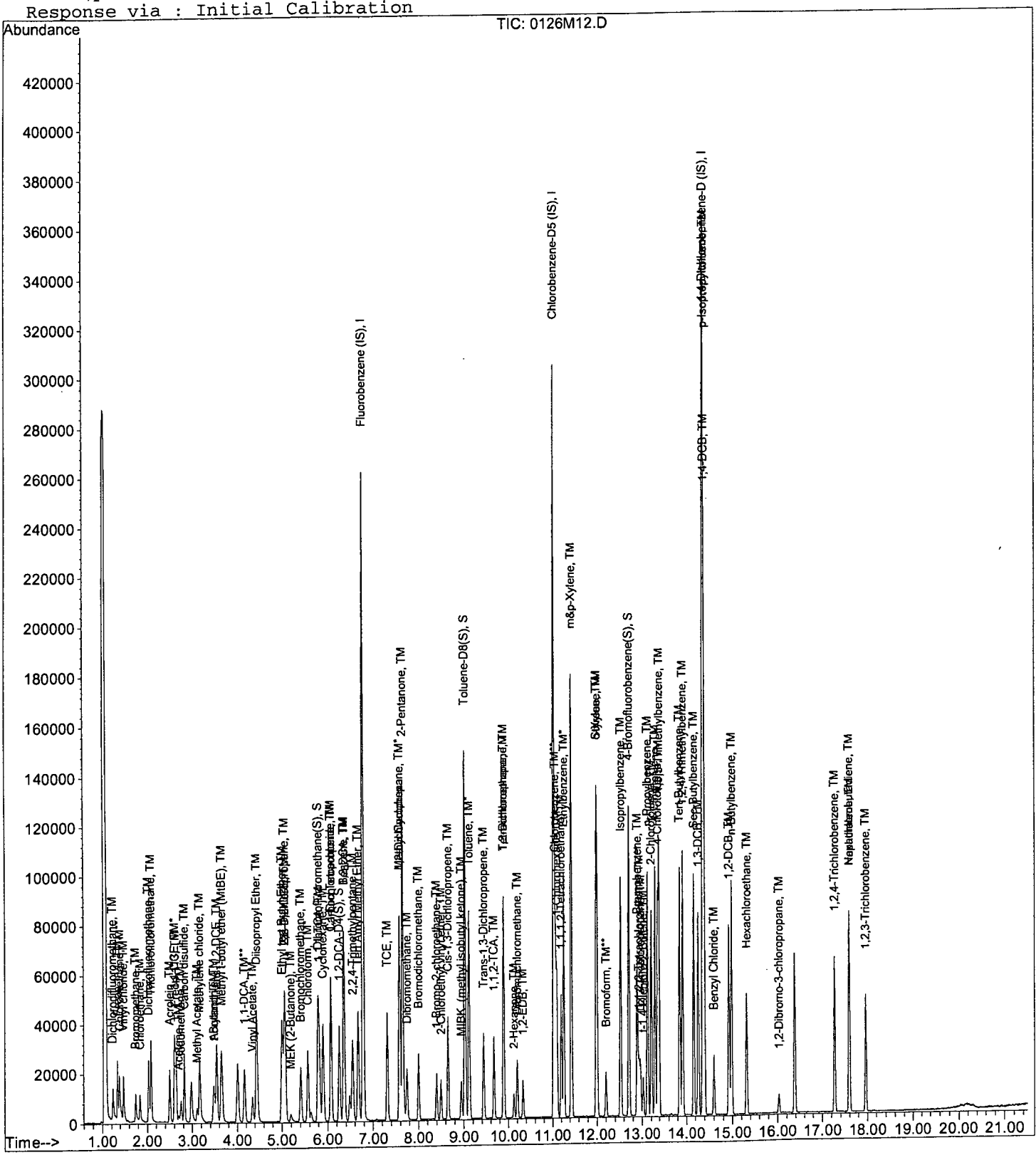
Data File : M:\MAX\DATA\M150126\0126M12.D
Acq On : 26 Jan 15 14:00
Sample : 5.0ug/L Vol Std 01-26-15
Misc : 10mL w/IS&S: 11-03-14

Vial: 7
Operator: DG,SV,RS
Inst : MAX
Multiplr: 1.00

Quant Time: Jan 27 10:56 2015

Quant Results File: MALLW.RES

Method : M:\MAX\DATA\M150126\MALLW.M (RTE Integrator)
Title : METHOD 8260B
Last Update : Tue Jan 27 10:55:52 2015
Response via : Initial Calibration



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Quantitation Report (Not Reviewed)

Data File : M:\MAX\DATA\M150126\0126M13.D
Acq On : 26 Jan 15 14:28
Sample : 10ug/L Vol Std 01-26-15
Misc : 10mL w/IS&S: 11-03-14

Vial: 8
Operator: DG,SV,RS
Inst : MAX
Multiplr: 1.00

Quant Time: Jan 27 10:57 2015 Quant Results File: MALLW.RES

Quant Method : M:\MAX\DATA\M150126\MALLW.M (RTE Integrator)
Title : METHOD 8260B
Last Update : Tue Jan 27 10:55:52 2015
Response via : Initial Calibration
DataAcq Meth : V8260

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene (IS)	6.78	96	278466	25.00000 ppb	0.00
55) Chlorobenzene-D5 (IS)	11.03	117	207175	25.00000 ppb	0.00
70) 1,4-Dichlorobenzene-D (IS)	14.37	152	120481	25.00000 ppb	0.00
System Monitoring Compounds					
31) Dibromofluoromethane(S)	5.79	111	74727	24.77406 ppb	0.00
Spiked Amount 14.625			Recovery	= 169.393%	
36) 1,2-DCA-D4(S)	6.26	65	83513	23.99172 ppb	0.00
Spiked Amount 13.533			Recovery	= 177.288%	
56) Toluene-D8(S)	9.02	98	295077	24.19152 ppb	0.00
Spiked Amount 14.976			Recovery	= 161.536%	
64) 4-Bromofluorobenzene(S)	12.71	95	116381	24.24267 ppb	0.00
Spiked Amount 14.557			Recovery	= 166.544%	
Target Compounds					Qvalue
2) Dichlorodifluoromethane	1.23	85	28649	9.95110 ppb	100
3) Freon 114	1.33	85	21888	9.82395 ppb	100
4) Chloromethane	1.38	50	36885	9.81474 ppb	100
5) Vinyl chloride	1.47	62	34712	10.03566 ppb	100
6) Bromomethane	1.74	94	6787	9.69560 ppb	100
7) Chloroethane	1.83	64	22153	9.46057 ppb	100
8) Dichlorofluoromethane	2.03	67	55558	9.49917 ppb	100
9) Trichlorofluoromethane	2.08	101	46956	10.63542 ppb	100
10) Acrolein	2.49	56	26418	121.38077 ppb	100
11) Acetone	2.70	43	7241	10.39986 ppb	100
12) Freon-113	2.63	101	10583	9.82573 ppb	100
13) 1,1-DCE	2.60	61	22552	9.70681 ppb	100
14) t-Butanol	3.48	59	8603	128.10051 ppb	100
15) Methyl Acetate	3.11	43	16529	9.37249 ppb	100
16) Iodomethane	2.74	142	22824	9.39691 ppb	100
17) Acrylonitrile	3.49	53	7271	9.80064 ppb	100
18) Methylene chloride	3.17	84	29071	9.62315 ppb	100
19) Carbon disulfide	2.82	76	79322	9.38771 ppb	100
20) Methyl t-butyl ether (MtBE	3.65	73	77745	9.47809 ppb	100
21) Trans-1,2-DCE	3.54	96	29727	9.62907 ppb	100
22) Diisopropyl Ether	4.44	45	106795	9.46668 ppb	100
23) 1,1-DCA	4.16	63	52241	9.40295 ppb	100
24) Vinyl Acetate	4.34	43	38982	9.22037 ppb	100
25) Ethyl tert Butyl Ether	5.00	59	94185	9.52736 ppb	100
26) MEK (2-Butanone)	5.19	43	10597	11.27368 ppb	100
27) Cis-1,2-DCE	5.07	96	34015	9.59656 ppb	100
28) 2,2-Dichloropropane	5.05	77	44246	9.37076 ppb	100
29) Chloroform	5.56	83	51198	9.73751 ppb	100
30) Bromochloromethane	5.41	128	15269	9.89754 ppb	100
32) 1,1,1-TCA	5.82	97	47842	9.45808 ppb	100
33) Cyclohexane	5.90	41	28008	9.85692 ppb	100
34) 1,1-Dichloropropene	6.07	75	40593	9.67789 ppb	100
35) 2,2,4-Trimethylpentane	6.55	57	84579	10.25273 ppb	100
37) Carbon Tetrachloride	6.07	117	38191	10.05604 ppb	100
38) Tert Amyl Methyl Ether	6.67	73	86737	10.10944 ppb	100
39) 1,2-DCA	6.37	62	38123	9.46570 ppb	100
40) Benzene	6.35	78	122815	9.42280 ppb	100
41) TCE	7.31	95	30668	9.24634 ppb	100
42) 2-Pentanone	7.65	43	228189	125.99798 ppb	100

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : M:\MAX\DATA\M150126\0126M13.D
Acq On : 26 Jan 15 14:28
Sample : 10ug/L Vol Std 01-26-15
Misc : 10mL w/IS&S: 11-03-14

Vial: 8
Operator: DG,SV,RS
Inst : MAX
Multiplr: 1.00

Quant Time: Jan 27 10:57 2015 Quant Results File: MALLW.RES

Quant Method : M:\MAX\DATA\M150126\MALLW.M (RTE Integrator)
Title : METHOD 8260B
Last Update : Tue Jan 27 10:55:52 2015
Response via : Initial Calibration
DataAcq Meth : V8260

Compound	R.T.	QIon	Response	Conc	Unit	Qvalue
43) 1,2-Dichloropropane	7.59	63	31087	9.74710	ppb	100
44) Bromodichloromethane	8.00	83	38432	9.81462	ppb	100
45) Methyl Cyclohexane	7.58	83	46566	9.86172	ppb	100
46) Dibromomethane	7.74	93	15093	9.56139	ppb	100
47) MIBK (methyl isobutyl ket	8.95	43	25447	10.37178	ppb	100
48) 1-Bromo-2-chloroethane	8.40	63	34918	9.42323	ppb	100
49) 2-Chloroethyl vinyl ether	8.49	106	4532	9.90724	ppb	100
50) Cis-1,3-Dichloropropene	8.65	75	49396	9.65826	ppb	100
51) Toluene	9.12	91	138617	9.55180	ppb	100
52) Trans-1,3-Dichloropropene	9.44	75	42426	10.00988	ppb	100
53) 1,1,2-TCA	9.67	83	18595	9.70979	ppb	100
54) 2-Hexanone	10.12	43	15825	10.40178	ppb	100
57) 1,2-EDB	10.33	107	22544	9.74402	ppb	100
58) Tetrachloroethene	9.89	164	16033	8.99013	ppb	100
59) 1-Chlorohexane	11.10	91	41103	9.51216	ppb	100
60) 1,1,1,2-Tetrachloroethane	11.20	131	32881	9.23081	ppb	100
61) m&p-Xylene	11.43	106	124671	19.31587	ppb	100
62) o-Xylene	11.98	106	60932	9.69747	ppb	100
63) Styrene	12.00	104	103537	9.76576	ppb	100
65) 1,3-Dichloropropane	9.90	76	40410	9.48100	ppb	100
66) Dibromochloromethane	10.20	129	29111	9.95930	ppb	100
67) Chlorobenzene	11.06	112	91041	9.15896	ppb	100
68) Ethylbenzene	11.26	91	158664	9.54780	ppb	100
69) Bromoform	12.20	173	20125	9.89700	ppb	100
71) Isopropylbenzene	12.53	105	154451	9.50990	ppb	100
72) 1,1,2,2-Tetrachloroethane	12.93	83	24036	9.39696	ppb	100
73) 1,2,3-Trichloropropane	12.96	110	8575	9.46429	ppb	100
74) t-1,4-Dichloro-2-Butene	13.02	53	7518	10.00210	ppb	100
75) Bromobenzene	12.89	156	44580	9.48765	ppb	100
76) n-Propylbenzene	13.12	91	176404	9.43482	ppb	100
77) 4-Ethyltoluene	13.29	105	156095	9.53665	ppb	100
78) 2-Chlorotoluene	13.20	91	104740	9.36206	ppb	100
79) 1,3,5-Trimethylbenzene	13.39	105	138880	9.61950	ppb	100
80) 4-Chlorotoluene	13.36	91	124791	9.40208	ppb	100
81) Tert-Butylbenzene	13.84	119	115628	9.39097	ppb	100
82) 1,2,4-Trimethylbenzene	13.91	105	140511	9.62658	ppb	100
83) Sec-Butylbenzene	14.16	105	160848	9.56963	ppb	100
84) p-Isopropyltoluene	14.39	119	145013	9.51358	ppb	100
85) Benzyl Chloride	14.60	91	45111	10.40605	ppb	100
86) 1,3-DCB	14.27	146	81239	9.28998	ppb	100
87) 1,4-DCB	14.40	146	83334	9.29998	ppb	100
88) n-Butylbenzene	14.98	91	121624	9.52895	ppb	100
89) 1,2-DCB	14.92	146	76848	9.58518	ppb	100
90) Hexachloroethane	15.31	117	21232	10.46420	ppb	100
91) 1,2-Dibromo-3-chloropropan	16.03	75	4777	10.48008	ppb	100
92) 1,2,4-Trichlorobenzene	17.27	180	54583	10.10546	ppb	100
93) Hexachlorobutadiene	17.58	225	34657	9.44103	ppb	100
94) Naphthalene	17.60	128	67037	9.28854	ppb	100
95) 1,2,3-Trichlorobenzene	17.96	180	41559	9.28035	ppb	100

(#) = qualifier out of range (m) = manual integration

Quantitation Report

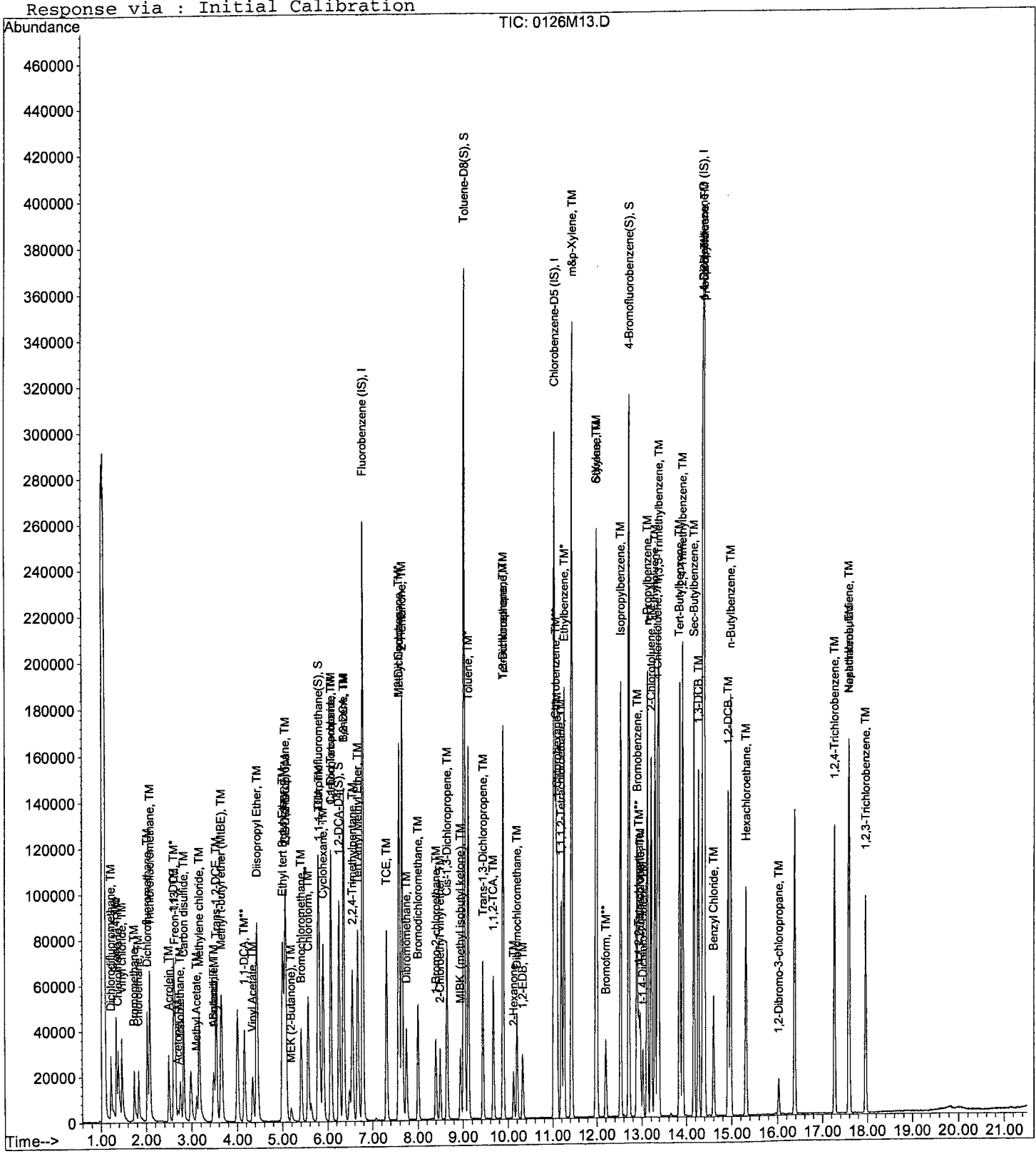
Data File : M:\MAX\DATA\M150126\0126M13.D
Acq On : 26 Jan 15 14:28
Sample : 10ug/L Vol Std 01-26-15
Misc : 10mL w/IS&S: 11-03-14

Vial: 8
Operator: DG,SV,RS
Inst : MAX
Multiplr: 1.00

Quant Time: Jan 27 10:57 2015

Quant Results File: MALLW.RES

Method : M:\MAX\DATA\M150126\MALLW.M (RTE Integrator)
Title : METHOD 8260B
Last Update : Tue Jan 27 10:55:52 2015
Response via : Initial Calibration



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Quantitation Report (Not Reviewed)

Data File : M:\MAX\DATA\M150126\0126M14.D
Acq On : 26 Jan 15 14:56
Sample : 20ug/L Vol Std 01-26-15
Misc : 10mL w/IS&S: 11-03-14

Vial: 9
Operator: DG,SV,RS
Inst : MAX
Multiplr: 1.00

Quant Time: Jan 27 10:57 2015

Quant Results File: MALLW.RES

Quant Method : M:\MAX\DATA\M150126\MALLW.M (RTE Integrator)
Title : METHOD 8260B
Last Update : Tue Jan 27 10:55:52 2015
Response via : Initial Calibration
DataAcq Meth : V8260

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene (IS)	6.78	96	268546	25.00000 ppb	0.00
55) Chlorobenzene-D5 (IS)	11.03	117	200396	25.00000 ppb	0.00
70) 1,4-Dichlorobenzene-D (IS)	14.37	152	116476	25.00000 ppb	0.00
System Monitoring Compounds					
31) Dibromofluoromethane(S)	5.79	111	120365	41.37836 ppb	0.00
Spiked Amount 14.625			Recovery	= 282.923%	
36) 1,2-DCA-D4(S)	6.25	65	136180	40.56712 ppb	0.00
Spiked Amount 13.533			Recovery	= 299.768%	
56) Toluene-D8(S)	9.03	98	476580	40.39355 ppb	0.00
Spiked Amount 14.976			Recovery	= 269.721%	
64) 4-Bromofluorobenzene(S)	12.71	95	187014	40.27363 ppb	0.00
Spiked Amount 14.557			Recovery	= 276.674%	

Target Compounds					Qvalue
2) Dichlorodifluoromethane	1.23	85	54989	18.83774 ppb	98
3) Freon 114	1.34	85	45567	20.67928 ppb	96
4) Chloromethane	1.38	50	70884	19.57366 ppb	100
5) Vinyl chloride	1.47	62	66482	19.93077 ppb	96
6) Bromomethane	1.74	94	13564	20.97830 ppb	96
7) Chloroethane	1.83	64	39207	20.75013 ppb	97
8) Dichlorofluoromethane	2.02	67	113100	20.05188 ppb	100
9) Trichlorofluoromethane	2.08	101	87869	20.63729 ppb	98
10) Acrolein	2.50	56	32939	156.93284 ppb	97
11) Acetone	2.70	43	13311	20.63038 ppb	85
12) Freon-113	2.63	101	21592	20.78750 ppb	96
13) 1,1-DCE	2.60	61	44672	19.93795 ppb	99
14) t-Butanol	3.49	59	10626	164.06814 ppb	98
15) Methyl Acetate	3.11	43	34233	20.12828 ppb	100
16) Iodomethane	2.74	142	49675	19.77250 ppb	97
17) Acrylonitrile	3.49	53	14983	19.61719 ppb	89
18) Methylene chloride	3.16	84	60092	20.74599 ppb	96
19) Carbon disulfide	2.82	76	165524	20.31331 ppb	100
20) Methyl t-butyl ether (MtBE	3.65	73	158941	20.09268 ppb	99
21) Trans-1,2-DCE	3.54	96	59734	20.06357 ppb	94
22) Diisopropyl Ether	4.44	45	215478	19.80629 ppb	99
23) 1,1-DCA	4.16	63	107970	20.15158 ppb	99
24) Vinyl Acetate	4.34	43	81490	19.98674 ppb	99
25) Ethyl tert Butyl Ether	5.01	59	193109	20.25568 ppb	100
26) MEK (2-Butanone)	5.18	43	19160	21.13644 ppb	92
27) Cis-1,2-DCE	5.07	96	68019	19.89889 ppb	97
28) 2,2-Dichloropropane	5.06	77	88614	19.46063 ppb	98
29) Chloroform	5.56	83	103449	20.40209 ppb	99
30) Bromochloromethane	5.41	128	30850	20.73602 ppb	94
32) 1,1,1-TCA	5.82	97	97811	20.05095 ppb	94
33) Cyclohexane	5.90	41	58088	21.19821 ppb	97
34) 1,1-Dichloropropene	6.07	75	82631	20.42801 ppb	98
35) 2,2,4-Trimethylpentane	6.55	57	174868	21.98067 ppb	94
37) Carbon Tetrachloride	6.07	117	80951	22.10251 ppb	97
38) Tert Amyl Methyl Ether	6.67	73	172341	20.82882 ppb	98
39) 1,2-DCA	6.37	62	78423	20.19122 ppb	99
40) Benzene	6.36	78	250116	19.89866 ppb	99
41) TCE	7.31	95	63602	19.88423 ppb	98
42) 2-Pentanone	7.65	43	271063	155.20031 ppb	99

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : M:\MAX\DATA\M150126\0126M14.D
Acq On : 26 Jan 15 14:56
Sample : 20ug/L Vol Std 01-26-15
Misc : 10mL w/IS&S: 11-03-14

Vial: 9
Operator: DG,SV,RS
Inst : MAX
Multiplr: 1.00

Quant Time: Jan 27 10:57 2015

Quant Results File: MALLW.RES

Quant Method : M:\MAX\DATA\M150126\MALLW.M (RTE Integrator)
Title : METHOD 8260B
Last Update : Tue Jan 27 10:55:52 2015
Response via : Initial Calibration
DataAcq Meth : V8260

Compound	R.T.	QIon	Response	Conc	Unit	Qvalue
43) 1,2-Dichloropropane	7.59	63	63249	20.56383	ppb	100
44) Bromodichloromethane	8.00	83	79205	20.97425	ppb	94
45) Methyl Cyclohexane	7.58	83	96868	21.27245	ppb	98
46) Dibromomethane	7.74	93	30507	20.04002	ppb	99
47) MIBK (methyl isobutyl ket	8.94	43	46854	19.80236	ppb	99
48) 1-Bromo-2-chloroethane	8.40	63	71663	20.05390	ppb	98
49) 2-Chloroethyl vinyl ether	8.50	106	9861	22.35306	ppb	90
50) Cis-1,3-Dichloropropene	8.65	75	100825	20.44225	ppb	99
51) Toluene	9.12	91	281001	20.07844	ppb	99
52) Trans-1,3-Dichloropropene	9.44	75	84266	20.61591	ppb	95
53) 1,1,2-TCA	9.67	83	37168	20.12503	ppb	98
54) 2-Hexanone	10.12	43	30435	20.74391	ppb	98
57) 1,2-EDB	10.33	107	46273	20.67679	ppb	97
58) Tetrachloroethene	9.89	164	33784	19.58441	ppb	94
59) 1-Chlorohexane	11.10	91	84289	20.16624	ppb	98
60) 1,1,1,2-Tetrachloroethane	11.20	131	68634	19.91968	ppb	96
61) m&p-Xylene	11.43	106	254335	40.73833	ppb	99
62) o-Xylene	11.98	106	124667	20.51223	ppb	100
63) Styrene	12.00	104	211746	20.64781	ppb	99
65) 1,3-Dichloropropane	9.90	76	83043	20.14266	ppb	99
66) Dibromochloromethane	10.20	129	59155	20.92239	ppb	95
67) Chlorobenzene	11.06	112	187581	19.50950	ppb	97
68) Ethylbenzene	11.26	91	322218	20.04578	ppb	99
69) Bromoform	12.20	173	42001	21.35382	ppb	94
71) Isopropylbenzene	12.53	105	319323	20.33750	ppb	99
72) 1,1,2,2-Tetrachloroethane	12.93	83	49369	19.96464	ppb	94
73) 1,2,3-Trichloropropane	12.96	110	17594	20.08633	ppb	98
74) t-1,4-Dichloro-2-Butene	13.03	53	14886	20.48561	ppb	94
75) Bromobenzene	12.89	156	91218	20.08082	ppb	96
76) n-Propylbenzene	13.12	91	369152	20.42268	ppb	97
77) 4-Ethyltoluene	13.29	105	322957	20.40955	ppb	99
78) 2-Chlorotoluene	13.20	91	216330	20.00128	ppb	99
79) 1,3,5-Trimethylbenzene	13.39	105	282115	20.21254	ppb	99
80) 4-Chlorotoluene	13.36	91	254633	19.84439	ppb	97
81) Tert-Butylbenzene	13.84	119	243192	20.43050	ppb	98
82) 1,2,4-Trimethylbenzene	13.91	105	284857	20.18696	ppb	98
83) Sec-Butylbenzene	14.16	105	332764	20.47849	ppb	99
84) p-Isopropyltoluene	14.39	119	299142	20.30002	ppb	98
85) Benzyl Chloride	14.60	91	89724	21.40890	ppb	99
86) 1,3-DCB	14.27	146	166981	19.75147	ppb	99
87) 1,4-DCB	14.40	146	167593	19.34630	ppb	98
88) n-Butylbenzene	14.98	91	256762	20.80840	ppb	99
89) 1,2-DCB	14.92	146	156214	20.15439	ppb	99
90) Hexachloroethane	15.31	117	42453	21.64241	ppb	94
91) 1,2-Dibromo-3-chloropropan	16.03	75	9580	21.73986	ppb	90
92) 1,2,4-Trichlorobenzene	17.27	180	117065	22.41856	ppb	99
93) Hexachlorobutadiene	17.58	225	71233	20.07205	ppb	95
94) Naphthalene	17.60	128	149248	20.66577	ppb	98
95) 1,2,3-Trichlorobenzene	17.96	180	92268	20.49909	ppb	97

(#) = qualifier out of range (m) = manual integration

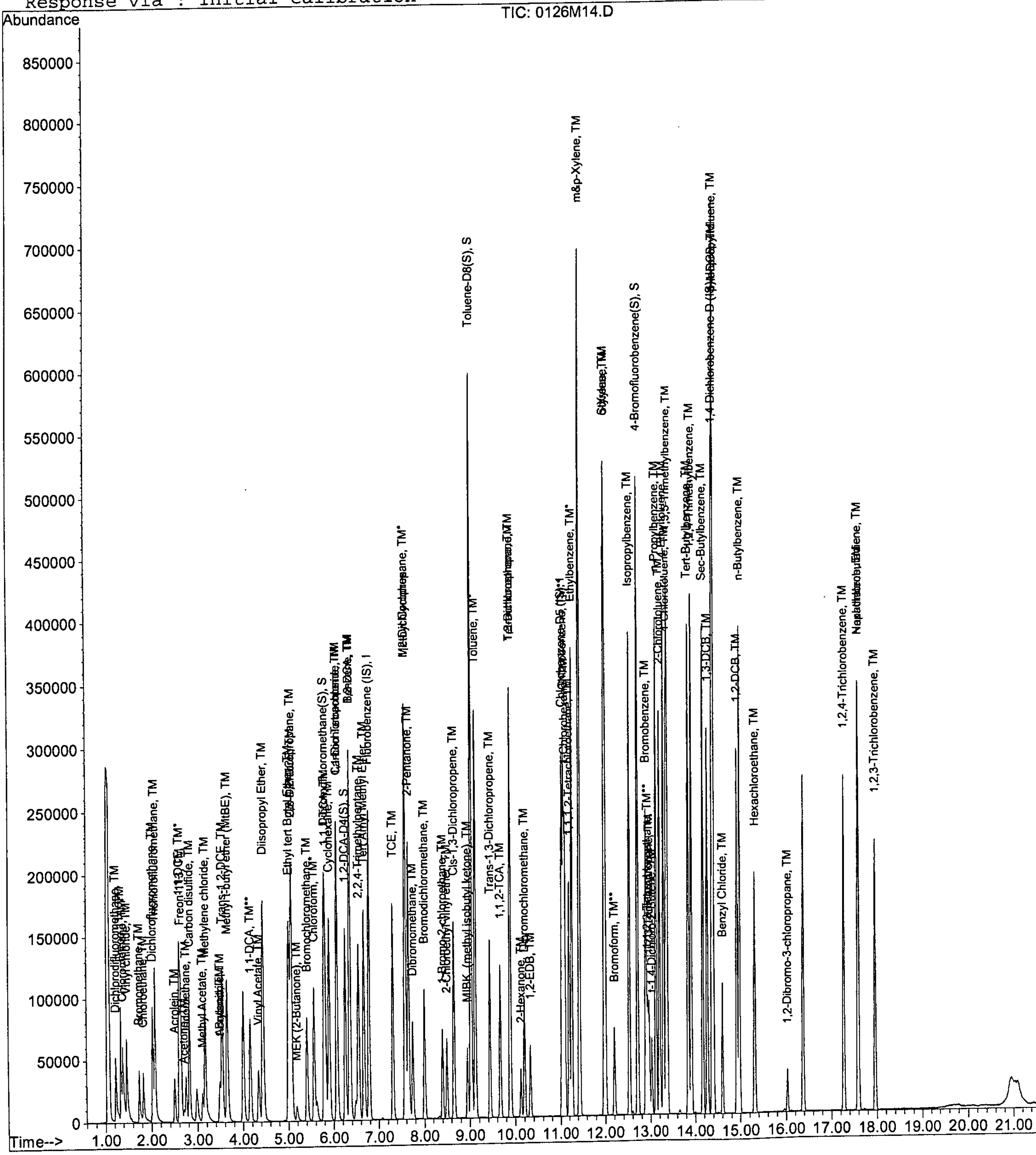
Quantitation Report

Data File : M:\MAX\DATA\M150126\0126M14.D
Acq On : 26 Jan 15 14:56
Sample : 20ug/L Vol Std 01-26-15
Misc : 10mL w/IS&S: 11-03-14

Vial: 9
Operator: DG,SV,RS
Inst : MAX
Multiplr: 1.00

Quant Time: Jan 27 10:57 2015 Quant Results File: MALLW.RES

Method : M:\MAX\DATA\M150126\MALLW.M (RTE Integrator)
Title : METHOD 8260B
Last Update : Tue Jan 27 10:55:52 2015
Response via : Initial Calibration



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0126M14.D MALLW.M Wed Jan 28 09:38:58 2015

Quantitation Report (Not Reviewed)

Data File : M:\MAX\DATA\M150126\0126M15.D
Acq On : 26 Jan 15 15:24
Sample : 40ug/L Vol Std 01-26-15
Misc : 10mL w/IS&S: 11-03-14

Vial: 10
Operator: DG,SV,RS
Inst : MAX
Multiplr: 1.00

Quant Time: Jan 27 10:57 2015

Quant Results File: MALLW.RES

Quant Method : M:\MAX\DATA\M150126\MALLW.M (RTE Integrator)
Title : METHOD 8260B
Last Update : Tue Jan 27 10:55:52 2015
Response via : Initial Calibration
DataAcq Meth : V8260

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene (IS)	6.78	96	276821	25.00000 ppb	0.00
55) Chlorobenzene-D5 (IS)	11.03	117	212002	25.00000 ppb	0.00
70) 1,4-Dichlorobenzene-D (IS)	14.37	152	126229	25.00000 ppb	0.00
System Monitoring Compounds					
31) Dibromofluoromethane(S)	5.79	111	236601	78.90587 ppb	0.00
Spiked Amount 14.625			Recovery	= 539.521%	
36) 1,2-DCA-D4(S)	6.25	65	261349	75.52685 ppb	0.00
Spiked Amount 13.533			Recovery	= 558.103%	
56) Toluene-D8(S)	9.03	98	938039	75.15297 ppb	0.00
Spiked Amount 14.976			Recovery	= 501.816%	
64) 4-Bromofluorobenzene(S)	12.71	95	374415	76.21651 ppb	0.00
Spiked Amount 14.557			Recovery	= 523.594%	
Target Compounds					Qvalue
2) Dichlorodifluoromethane	1.22	85	121421	39.23579 ppb	95
3) Freon 114	1.33	85	88491	38.55590 ppb	97
4) Chloromethane	1.38	50	148275	39.73613 ppb	100
5) Vinyl chloride	1.47	62	143264	41.66551 ppb	99
6) Bromomethane	1.74	94	27816	42.55177 ppb	91
7) Chloroethane	1.82	64	52820	38.21772 ppb	96
8) Dichlorofluoromethane	2.02	67	220994	38.00954 ppb	100
9) Trichlorofluoromethane	2.07	101	187339	42.68397 ppb	99
10) Acrolein	2.50	56	39201	181.18416 ppb	98
11) Acetone	2.70	43	26079	40.01230 ppb	91
12) Freon-113	2.62	101	43256	40.39945 ppb	98
13) 1,1-DCE	2.59	61	87928	38.07079 ppb	98
14) t-Butanol	3.50	59	10994	164.67581 ppb	96
15) Methyl Acetate	3.11	43	68674	39.17182 ppb	99
16) Iodomethane	2.74	142	102242	38.34179 ppb	95
17) Acrylonitrile	3.49	53	30152	37.18825 ppb	94
18) Methylene chloride	3.16	84	116373	39.06705 ppb	95
19) Carbon disulfide	2.81	76	325952	38.80547 ppb	99
20) Methyl t-butyl ether (MtBE	3.65	73	311017	38.14220 ppb	100
21) Trans-1,2-DCE	3.54	96	115797	37.73145 ppb	98
22) Diisopropyl Ether	4.44	45	425396	37.93265 ppb	98
23) 1,1-DCA	4.16	63	207475	37.56569 ppb	100
24) Vinyl Acetate	4.34	43	146002	34.73891 ppb	100
25) Ethyl tert Butyl Ether	5.01	59	374143	38.07163 ppb	100
26) MEK (2-Butanone)	5.18	43	38438	41.13549 ppb	92
27) Cis-1,2-DCE	5.07	96	130412	37.01143 ppb	95
28) 2,2-Dichloropropane	5.06	77	174070	37.08498 ppb	97
29) Chloroform	5.56	83	198824	38.03967 ppb	98
30) Bromochloromethane	5.41	128	59312	38.67519 ppb	94
32) 1,1,1-TCA	5.81	97	190896	37.96327 ppb	96
33) Cyclohexane	5.90	41	115926	41.04056 ppb	98
34) 1,1-Dichloropropene	6.07	75	161642	38.76654 ppb	98
35) 2,2,4-Trimethylpentane	6.55	57	348872	42.54185 ppb	96
37) Carbon Tetrachloride	6.07	117	162159	42.95167 ppb	95
38) Tert Amyl Methyl Ether	6.67	73	335820	39.37335 ppb	96
39) 1,2-DCA	6.37	62	153488	38.33656 ppb	100
40) Benzene	6.35	78	484691	37.40821 ppb	99
41) TCE	7.31	95	121957	36.98830 ppb	99
42) 2-Pentanone	7.65	43	319283	177.34453 ppb	99

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : M:\MAX\DATA\M150126\0126M15.D
Acq On : 26 Jan 15 15:24
Sample : 40ug/L Vol Std 01-26-15
Misc : 10mL w/IS&S: 11-03-14

Vial: 10
Operator: DG,SV,RS
Inst : MAX
Multiplr: 1.00

Quant Time: Jan 27 10:57 2015

Quant Results File: MALLW.RES

Quant Method : M:\MAX\DATA\M150126\MALLW.M (RTE Integrator)
Title : METHOD 8260B
Last Update : Tue Jan 27 10:55:52 2015
Response via : Initial Calibration
DataAcq Meth : V8260

Compound	R.T.	QIon	Response	Conc Unit		Qvalue
43) 1,2-Dichloropropane	7.59	63	121618	38.35905	ppb	99
44) Bromodichloromethane	8.00	83	154360	39.65411	ppb	95
45) Methyl Cyclohexane	7.58	83	194049	41.33978	ppb	100
46) Dibromomethane	7.74	93	60022	38.24977	ppb	97
47) MIBK (methyl isobutyl ket	8.95	43	94330	38.67584	ppb	99
48) 1-Bromo-2-chloroethane	8.40	63	140094	38.03146	ppb	99
49) 2-Chloroethyl vinyl ether	8.50	106	19175	42.16684	ppb	95
50) Cis-1,3-Dichloropropene	8.65	75	195774	38.50660	ppb	97
51) Toluene	9.12	91	546263	37.86548	ppb	99
52) Trans-1,3-Dichloropropene	9.44	75	166282	39.46526	ppb	96
53) 1,1,2-TCA	9.67	83	72067	37.85502	ppb	97
54) 2-Hexanone	10.12	43	61975	40.97826	ppb	100
57) 1,2-EDB	10.33	107	89493	37.80015	ppb	97
58) Tetrachloroethene	9.89	164	63568	34.83269	ppb	95
59) 1-Chlorohexane	11.10	91	168314	38.06478	ppb	98
60) 1,1,1,2-Tetrachloroethane	11.20	131	135581	37.19556	ppb	95
61) m&p-Xylene	11.44	106	493297	74.68866	ppb	99
62) o-Xylene	11.98	106	244724	38.06159	ppb	96
63) Styrene	12.00	104	420811	38.78777	ppb	100
65) 1,3-Dichloropropane	9.90	76	159704	36.61665	ppb	100
66) Dibromochloromethane	10.20	129	118727	39.69342	ppb	97
67) Chlorobenzene	11.06	112	366063	35.98838	ppb	98
68) Ethylbenzene	11.26	91	634399	37.30651	ppb	99
69) Bromoform	12.20	173	85326	41.00590	ppb	96
71) Isopropylbenzene	12.53	105	625497	36.75952	ppb	100
72) 1,1,2,2-Tetrachloroethane	12.93	83	98479	36.74753	ppb	96
73) 1,2,3-Trichloropropane	12.97	110	35848	37.76401	ppb	97
74) t-1,4-Dichloro-2-Butene	13.03	53	31787	40.36433	ppb	92
75) Bromobenzene	12.89	156	179471	36.45628	ppb	96
76) n-Propylbenzene	13.12	91	730320	37.28190	ppb	97
77) 4-Ethyltoluene	13.29	105	643851	37.54494	ppb	100
78) 2-Chlorotoluene	13.20	91	427942	36.50928	ppb	100
79) 1,3,5-Trimethylbenzene	13.39	105	566080	37.42397	ppb	100
80) 4-Chlorotoluene	13.36	91	508626	36.57622	ppb	97
81) Tert-Butylbenzene	13.84	119	484847	37.58476	ppb	98
82) 1,2,4-Trimethylbenzene	13.91	105	575686	37.64497	ppb	100
83) Sec-Butylbenzene	14.16	105	668715	37.97343	ppb	100
84) p-Isopropyltoluene	14.39	119	602274	37.71294	ppb	98
85) Benzyl Chloride	14.60	91	208608	45.92974	ppb	100
86) 1,3-DCB	14.27	146	337345	36.82001	ppb	98
87) 1,4-DCB	14.40	146	339846	36.19940	ppb	99
88) n-Butylbenzene	14.98	91	521867	39.02519	ppb	99
89) 1,2-DCB	14.92	146	312445	37.19637	ppb	99
90) Hexachloroethane	15.31	117	94475	44.44178	ppb	95
91) 1,2-Dibromo-3-chloropropan	16.03	75	20188	42.27288	ppb	95
92) 1,2,4-Trichlorobenzene	17.27	180	242520	42.85539	ppb	99
93) Hexachlorobutadiene	17.59	225	146639	38.12741	ppb	96
94) Naphthalene	17.60	128	316322	39.88397	ppb	99
95) 1,2,3-Trichlorobenzene	17.96	180	194792	39.33829	ppb	98

(#) = qualifier out of range (m) = manual integration

Quantitation Report

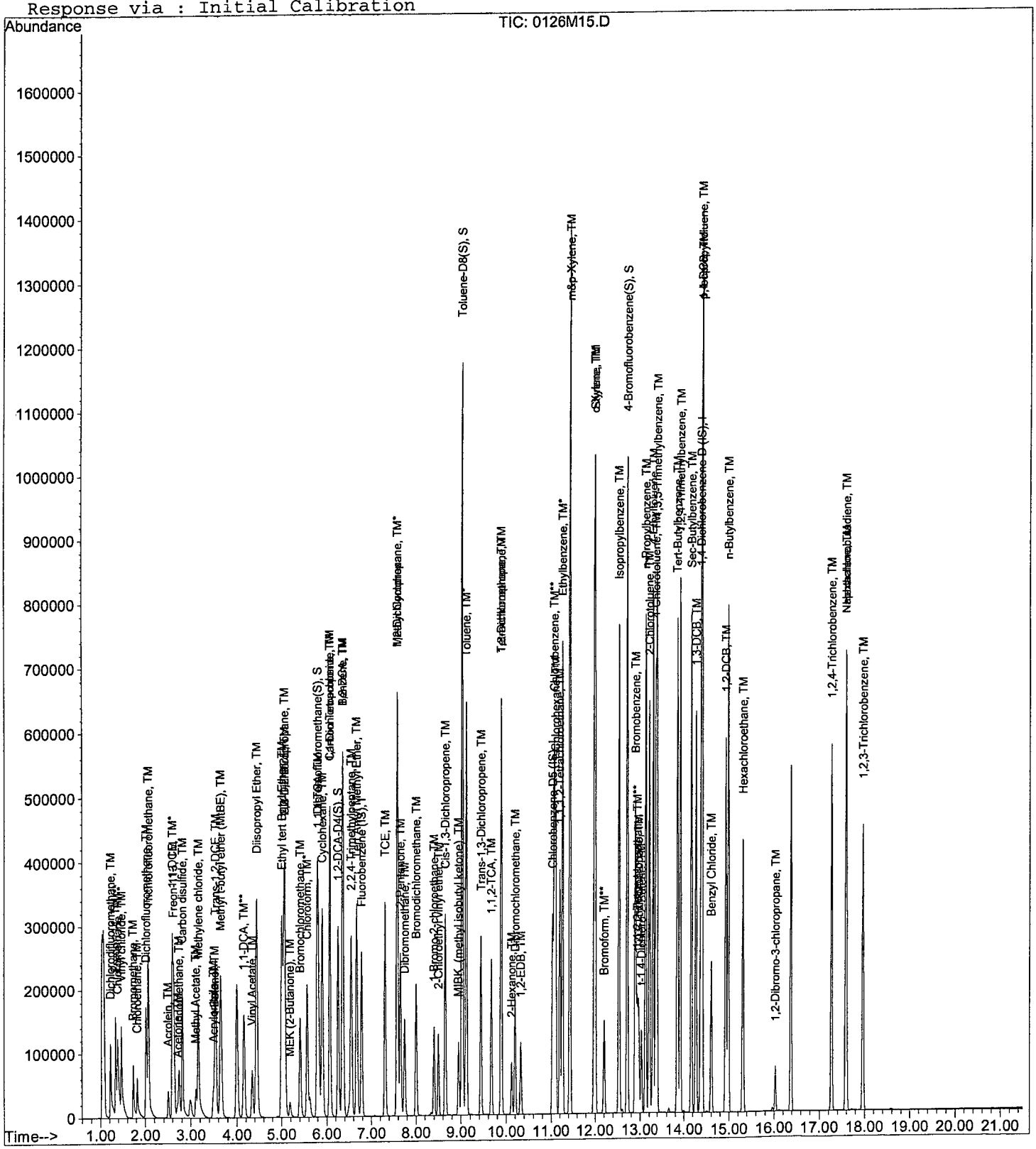
Data File : M:\MAX\DATA\M150126\0126M15.D
Acq On : 26 Jan 15 15:24
Sample : 40ug/L Vol Std 01-26-15
Misc : 10mL w/IS&S: 11-03-14

Vial: 10
Operator: DG,SV,RS
Inst : MAX
Multiplr: 1.00

Quant Time: Jan 27 10:57 2015

Quant Results File: MALLW.RES

Method : M:\MAX\DATA\M150126\MALLW.M (RTE Integrator)
Title : METHOD 8260B
Last Update : Tue Jan 27 10:55:52 2015
Response via : Initial Calibration



Quantitation Report (Not Reviewed)

Data File : M:\MAX\DATA\M150126\0126M16.D
Acq On : 26 Jan 15 15:52
Sample : 100ug/L Vol Std 01-26-15
Misc : 10mL w/IS&S: 11-03-14

Vial: 11
Operator: DG,SV,RS
Inst : MAX
Multiplr: 1.00

Quant Time: Jan 27 10:57 2015 Quant Results File: MALLW.RES

Quant Method : M:\MAX\DATA\M150126\MALLW.M (RTE Integrator)
Title : METHOD 8260B
Last Update : Tue Jan 27 10:55:52 2015
Response via : Initial Calibration
DataAcq Meth : V8260

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene (IS)	6.78	96	264621	25.00000 ppb	0.00
55) Chlorobenzene-D5 (IS)	11.03	117	200790	25.00000 ppb	0.00
70) 1,4-Dichlorobenzene-D (IS)	14.37	152	122104	25.00000 ppb	0.00
System Monitoring Compounds					
31) Dibromofluoromethane(S)	5.79	111	298242	104.04861 ppb	0.00
Spiked Amount 14.625			Recovery	= 711.436%	
36) 1,2-DCA-D4(S)	6.26	65	324555	98.11684 ppb	0.00
Spiked Amount 13.533			Recovery	= 725.031%	
56) Toluene-D8(S)	9.03	98	1174618	99.36188 ppb	0.00
Spiked Amount 14.976			Recovery	= 663.466%	
64) 4-Bromofluorobenzene(S)	12.71	95	479084	102.96873 ppb	0.00
Spiked Amount 14.557			Recovery	= 707.375%	

Target Compounds					Qvalue
2) Dichlorodifluoromethane	1.22	85	302041	100.53470 ppb	97
3) Freon 114	1.33	85	222027	100.45782 ppb	96
4) Chloromethane	1.38	50	357296	100.18959 ppb	99
5) Vinyl chloride	1.47	62	343814	104.60151 ppb	98
6) Bromomethane	1.73	94	61096	98.84280 ppb	90
7) Chloroethane	1.82	64	120856	-25.00000 ppb	96
8) Dichlorofluoromethane	2.01	67	554552	99.77669 ppb	98
9) Trichlorofluoromethane	2.06	101	456768	108.86970 ppb	99
10) Acrolein	2.50	56	46461	224.63962 ppb	99
11) Acetone	2.71	43	61389	99.83115 ppb	93
12) Freon-113	2.62	101	108576	106.08101 ppb	97
13) 1,1-DCE	2.59	61	223104	101.05243 ppb	99
14) t-Butanol	3.54	59	12182	190.88307 ppb #	90
15) Methyl Acetate	3.11	43	179127	106.88511 ppb	99
16) Iodomethane	2.73	142	261726	100.75953 ppb	95
17) Acrylonitrile	3.49	53	80031	101.18763 ppb	95
18) Methylene chloride	3.16	84	285016	100.25582 ppb	98
19) Carbon disulfide	2.81	76	816921	101.74055 ppb	100
20) Methyl t-butyl ether (MtBE	3.66	73	781847	100.30398 ppb	100
21) Trans-1,2-DCE	3.54	96	291011	99.19514 ppb	93
22) Diisopropyl Ether	4.45	45	1051100	98.04795 ppb	98
23) 1,1-DCA	4.16	63	516090	97.75203 ppb	98
24) Vinyl Acetate	4.34	43	372962	92.83178 ppb	98
25) Ethyl tert Butyl Ether	5.01	59	936356	99.67348 ppb	100
26) MEK (2-Butanone)	5.19	43	95009	106.36418 ppb	97
27) Cis-1,2-DCE	5.07	96	323327	95.99200 ppb	97
28) 2,2-Dichloropropane	5.05	77	438384	97.70203 ppb	99
29) Chloroform	5.56	83	500095	100.09104 ppb	98
30) Bromochloromethane	5.41	128	143749	98.05492 ppb	95
32) 1,1,1-TCA	5.82	97	483070	100.49665 ppb	95
33) Cyclohexane	5.90	41	292551	108.34496 ppb	95
34) 1,1-Dichloropropene	6.07	75	406852	102.07373 ppb	97
35) 2,2,4-Trimethylpentane	6.55	57	871742	111.20208 ppb	97
37) Carbon Tetrachloride	6.07	117	425625	117.93449 ppb	98
38) Tert Amyl Methyl Ether	6.67	73	835946	102.52948 ppb	96
39) 1,2-DCA	6.37	62	377041	98.51491 ppb	99
40) Benzene	6.35	78	1203535	97.17071 ppb	98
41) TCE	7.31	95	306398	97.21165 ppb	98
42) 2-Pentanone	7.66	43	372943	216.70014 ppb	98

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : M:\MAX\DATA\M150126\0126M16.D
Acq On : 26 Jan 15 15:52
Sample : 100ug/L Vol Std 01-26-15
Misc : 10mL w/IS&S: 11-03-14

Vial: 11
Operator: DG,SV,RS
Inst : MAX
Multiplr: 1.00

Quant Time: Jan 27 10:57 2015

Quant Results File: MALLW.RES

Quant Method : M:\MAX\DATA\M150126\MALLW.M (RTE Integrator)
Title : METHOD 8260B
Last Update : Tue Jan 27 10:55:52 2015
Response via : Initial Calibration
DataAcq Meth : V8260

Compound	R.T.	QIon	Response	Conc	Unit		Qvalue
43) 1,2-Dichloropropane	7.59	63	299209	98.72323	ppb		99
44) Bromodichloromethane	8.00	83	388584	104.42708	ppb		96
45) Methyl Cyclohexane	7.58	83	490343	109.27767	ppb		99
46) Dibromomethane	7.74	93	146730	97.81648	ppb		99
47) MIBK (methyl isobutyl ket	8.95	43	236586	101.47374	ppb		99
48) 1-Bromo-2-chloroethane	8.40	63	347720	98.74790	ppb		99
49) 2-Chloroethyl vinyl ether	8.50	106	49847	114.66991	ppb		92
50) Cis-1,3-Dichloropropene	8.65	75	491834	101.19834	ppb		98
51) Toluene	9.12	91	1359127	98.55449	ppb		99
52) Trans-1,3-Dichloropropene	9.44	75	420290	104.35026	ppb		97
53) 1,1,2-TCA	9.67	83	178256	97.95032	ppb		94
54) 2-Hexanone	10.13	43	162099	112.12231	ppb		98
57) 1,2-EDB	10.33	107	226358	100.94811	ppb		99
58) Tetrachloroethene	9.89	164	153920	89.05154	ppb		96
59) 1-Chlorohexane	11.10	91	421306	100.60014	ppb		98
60) 1,1,1,2-Tetrachloroethane	11.20	131	342150	99.10753	ppb		94
61) m&p-Xylene	11.44	106	1216859	194.52898	ppb		98
62) o-Xylene	11.99	106	595852	97.84682	ppb		95
63) Styrene	12.00	104	1042458	101.45284	ppb		99
65) 1,3-Dichloropropane	9.90	76	397592	96.24947	ppb		99
66) Dibromochloromethane	10.20	129	299271	105.64076	ppb		97
67) Chlorobenzene	11.07	112	899726	93.39306	ppb		98
68) Ethylbenzene	11.26	91	1580225	98.11580	ppb		99
69) Bromoform	12.21	173	222075	112.68407	ppb		98
71) Isopropylbenzene	12.53	105	1570766	95.43009	ppb		99
72) 1,1,2,2-Tetrachloroethane	12.94	83	248414	95.82743	ppb		95
73) 1,2,3-Trichloropropane	12.97	110	89037	96.96455	ppb		93
74) t-1,4-Dichloro-2-Butene	13.03	53	83612	109.76049	ppb		89
75) Bromobenzene	12.90	156	449142	94.31723	ppb		97
76) n-Propylbenzene	13.12	91	1845146	97.37440	ppb		97
77) 4-Ethyltoluene	13.29	105	1629186	98.21233	ppb		100
78) 2-Chlorotoluene	13.20	91	1076206	94.91678	ppb		100
79) 1,3,5-Trimethylbenzene	13.39	105	1421941	97.18133	ppb		100
80) 4-Chlorotoluene	13.36	91	1296627	96.39281	ppb		97
81) Tert-Butylbenzene	13.85	119	1230894	98.64088	ppb		98
82) 1,2,4-Trimethylbenzene	13.92	105	1465886	99.09476	ppb		100
83) Sec-Butylbenzene	14.17	105	1711013	100.44339	ppb		100
84) p-Isopropyltoluene	14.40	119	1537778	99.54494	ppb		98
85) Benzyl Chloride	14.60	91	502182	114.30190	ppb		99
86) 1,3-DCB	14.27	146	847875	95.66887	ppb		99
87) 1,4-DCB	14.40	146	838110	92.28891	ppb		98
88) n-Butylbenzene	14.98	91	1354260	104.69271	ppb		99
89) 1,2-DCB	14.92	146	771676	94.97105	ppb		99
90) Hexachloroethane	15.32	117	244890	119.08988	ppb		93
91) 1,2-Dibromo-3-chloropropan	16.03	75	48194	104.32558	ppb	#	90
92) 1,2,4-Trichlorobenzene	17.27	180	599068	109.43677	ppb		100
93) Hexachlorobutadiene	17.58	225	362096	97.32866	ppb		97
94) Naphthalene	17.60	128	820790	106.05079	ppb		99
95) 1,2,3-Trichlorobenzene	17.96	180	484865	100.23964	ppb		96

(#) = qualifier out of range (m) = manual integration

Quantitation Report

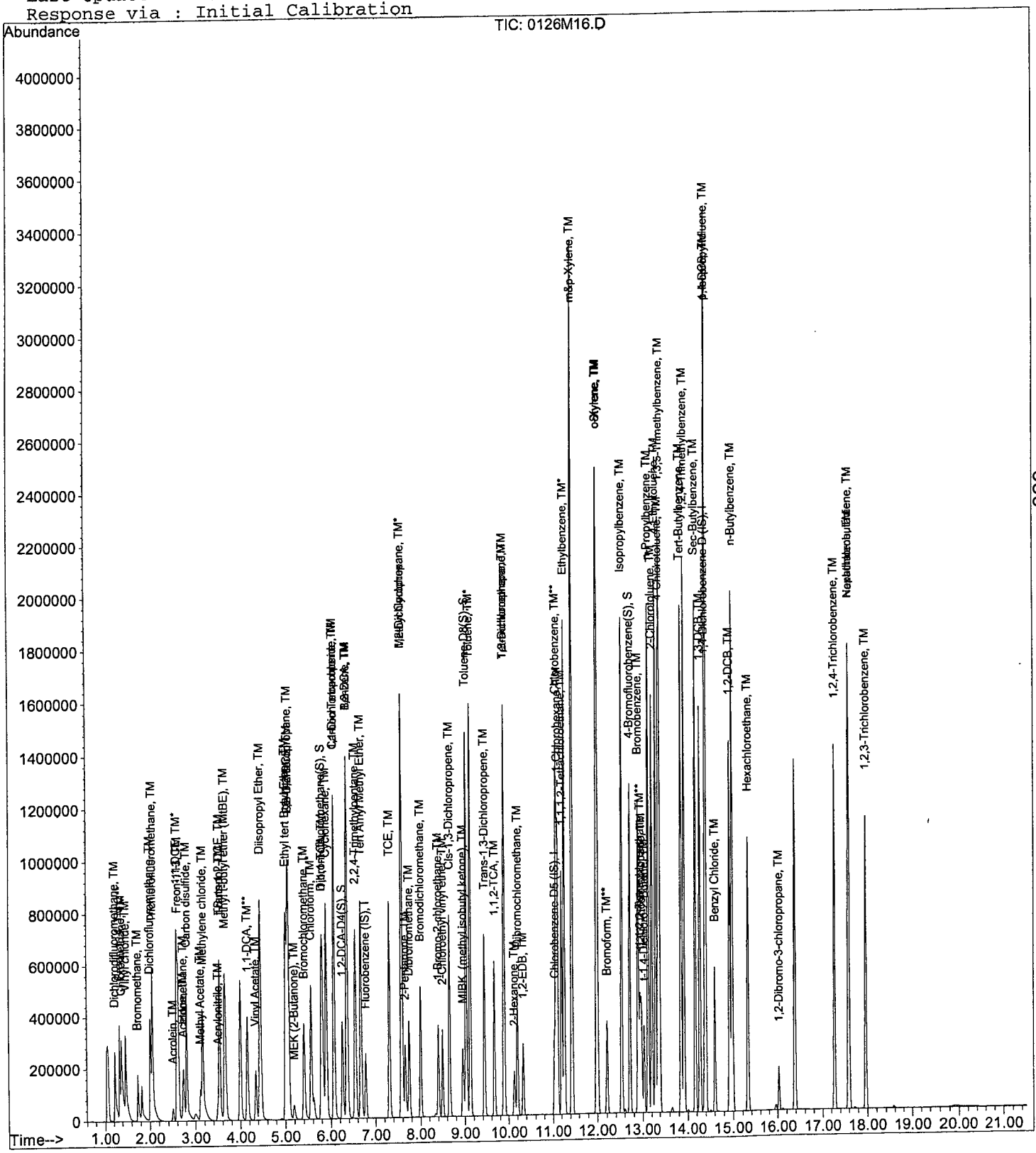
Data File : M:\MAX\DATA\M150126\0126M16.D
Acq On : 26 Jan 15 15:52
Sample : 100ug/L Vol Std 01-26-15
Misc : 10mL w/IS&S: 11-03-14

Vial: 11
Operator: DG,SV,RS
Inst : MAX
Multiplr: 1.00

Quant Time: Jan 27 10:57 2015

Quant Results File: MALLW.RES

Method : M:\MAX\DATA\M150126\MALLW.M (RTE Integrator)
Title : METHOD 8260B
Last Update : Tue Jan 27 10:55:52 2015
Response via : Initial Calibration



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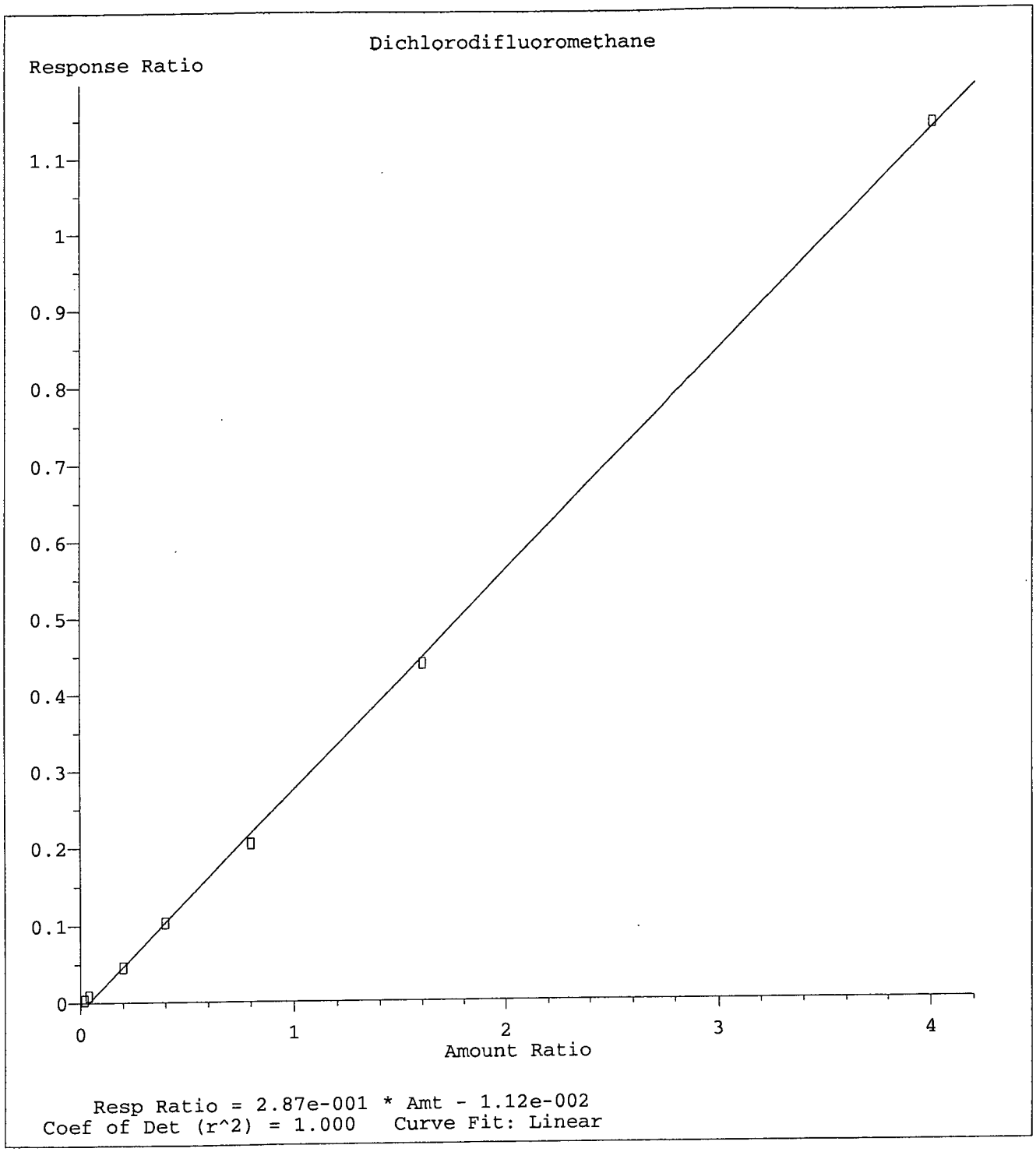
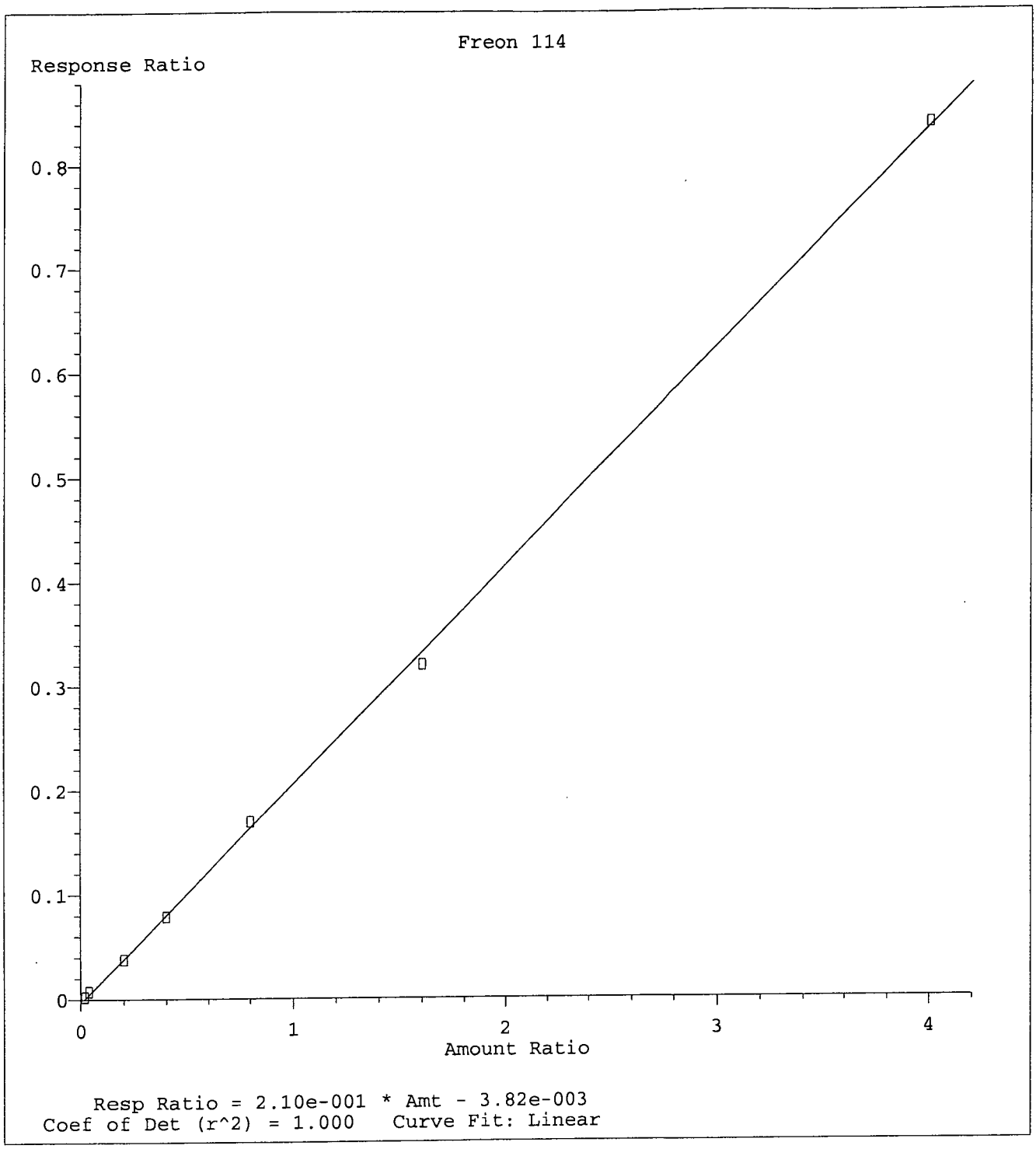
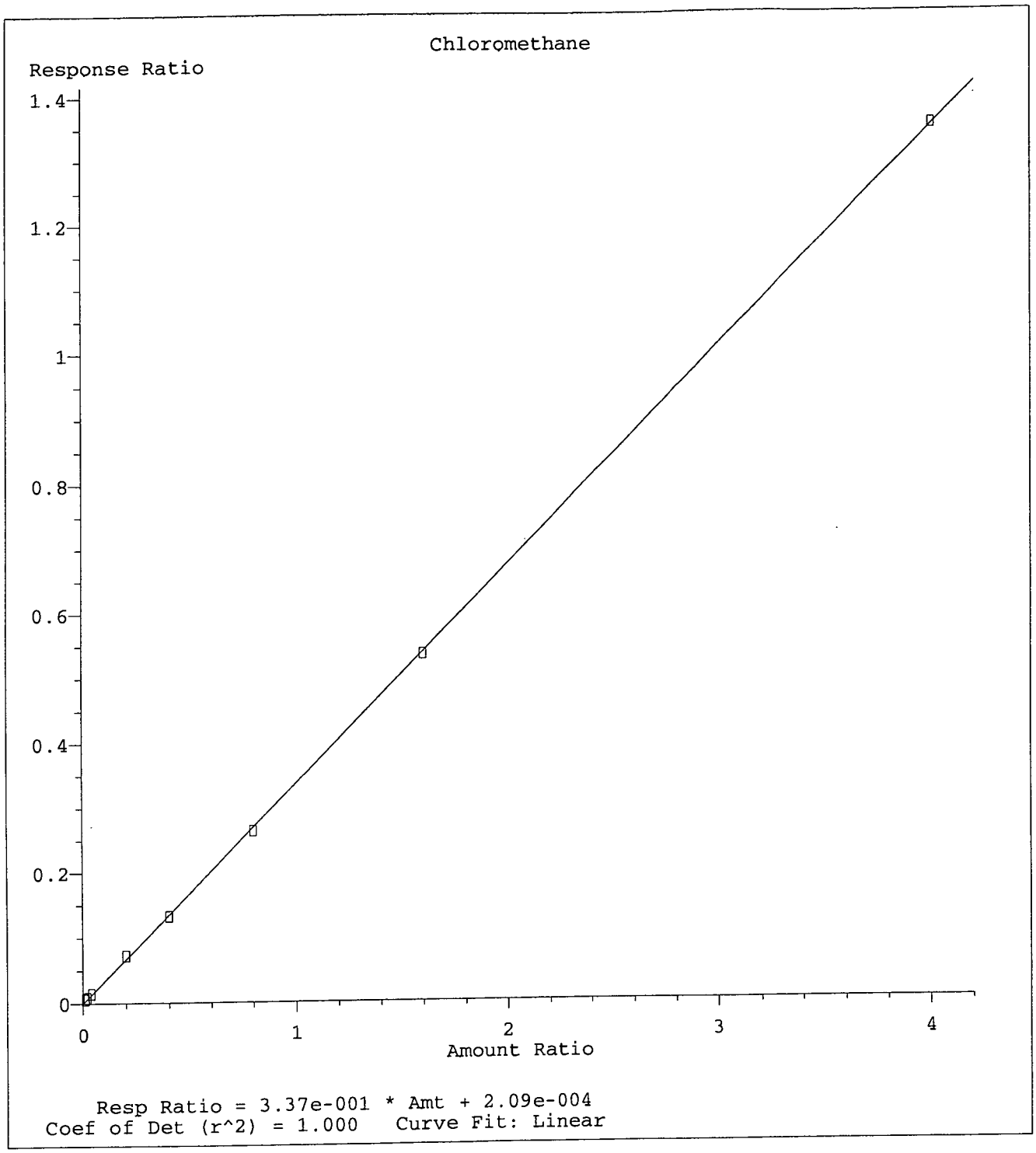


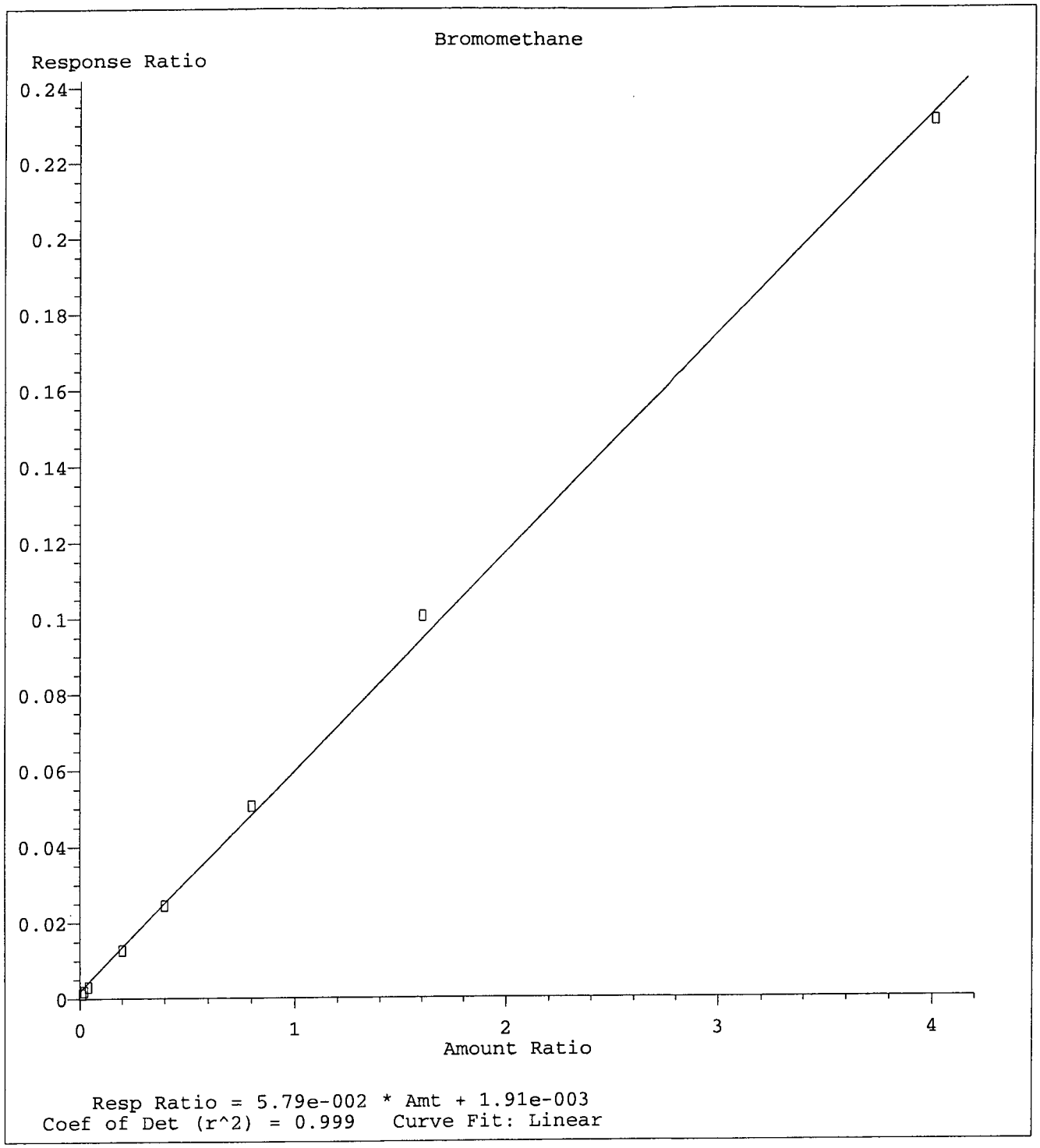
Method Name: M:\MAX\DATA\M150126\MALLW.M
Calibration Table Last Updated: Tue Jan 27 10:55:52 2015



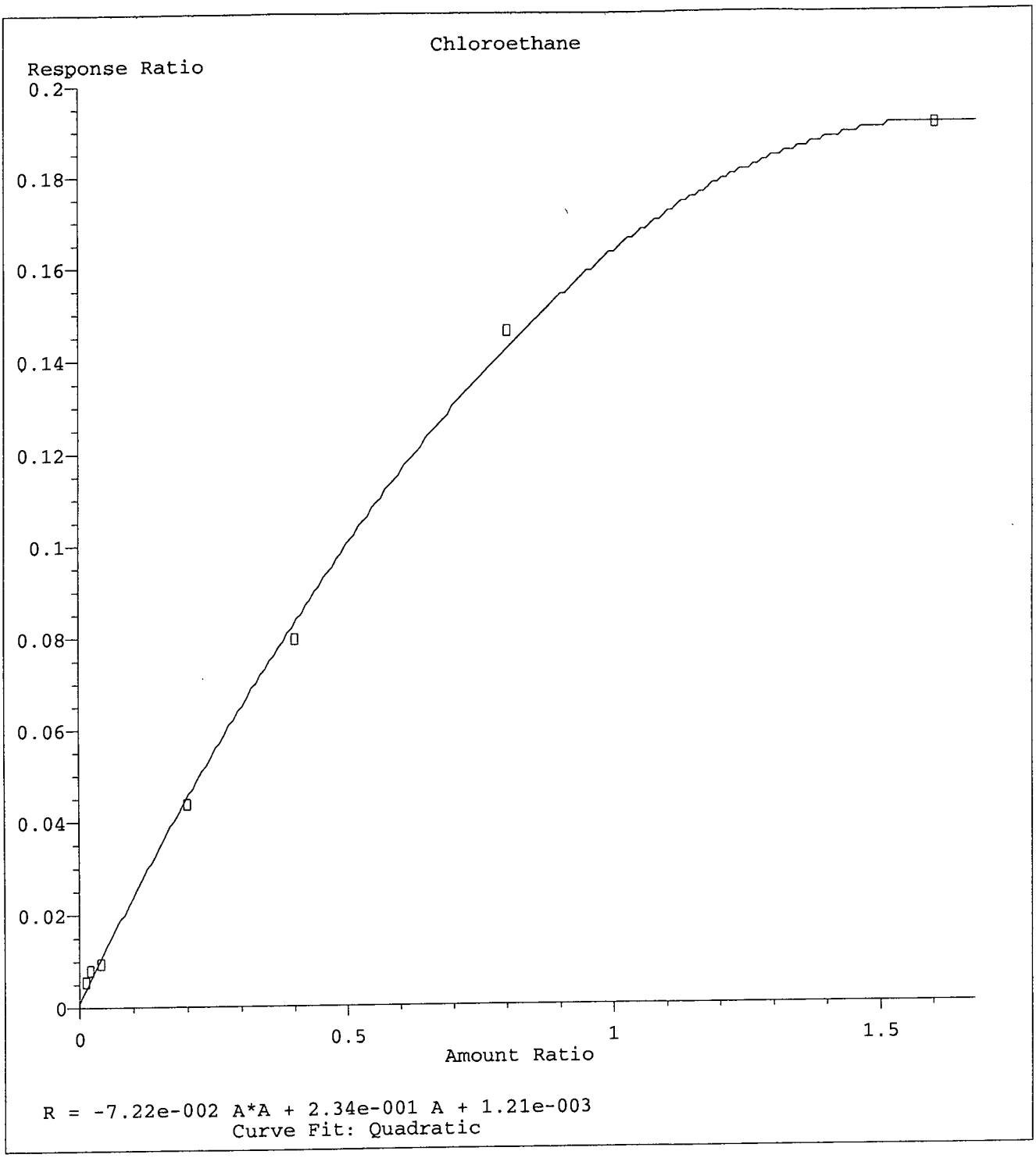
Method Name: M:\MAX\DATA\M150126\MALLW.M
Calibration Table Last Updated: Tue Jan 27 10:55:52 2015



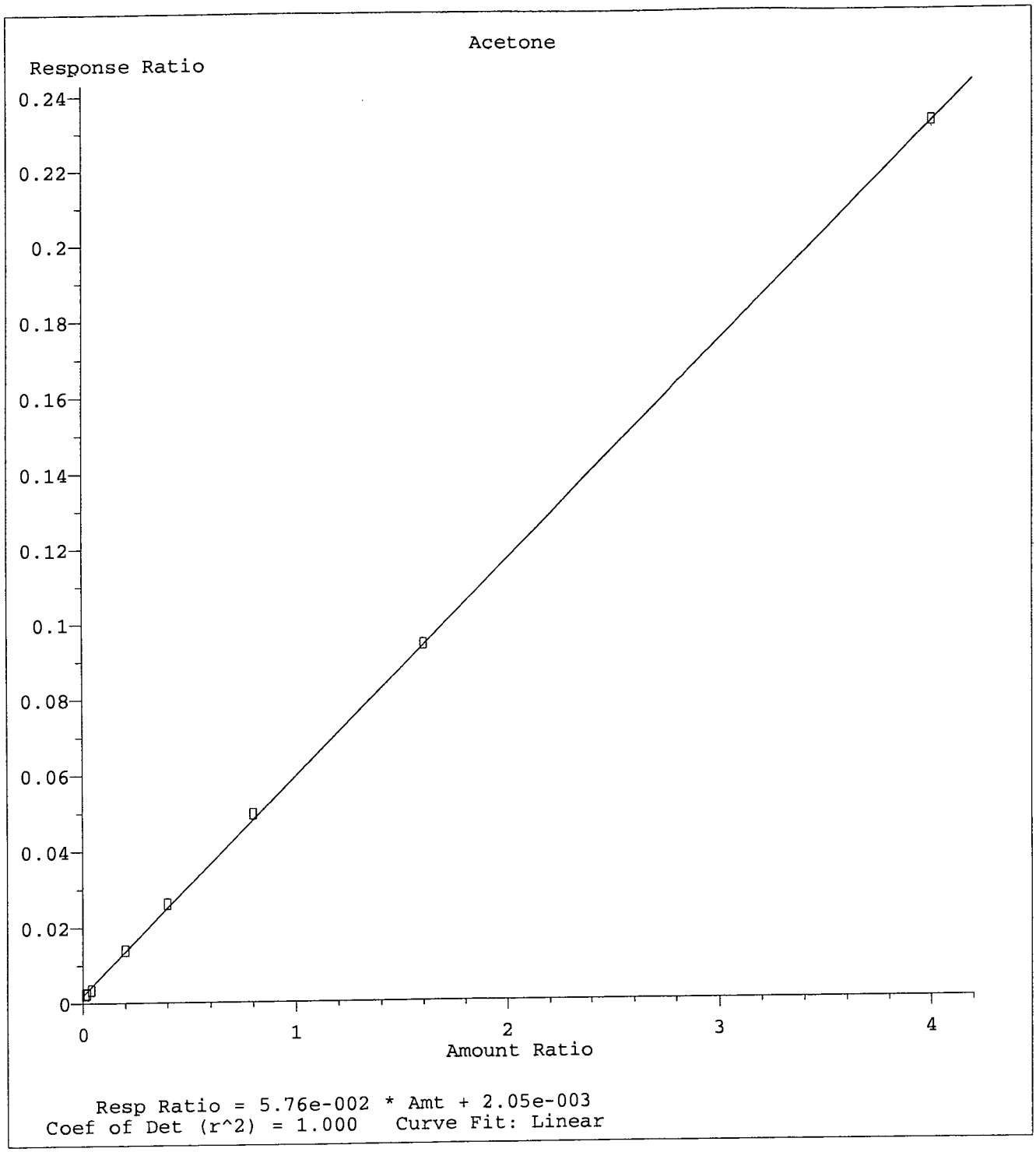
Method Name: M:\MAX\DATA\M150126\MALLW.M
Calibration Table Last Updated: Tue Jan 27 10:55:52 2015



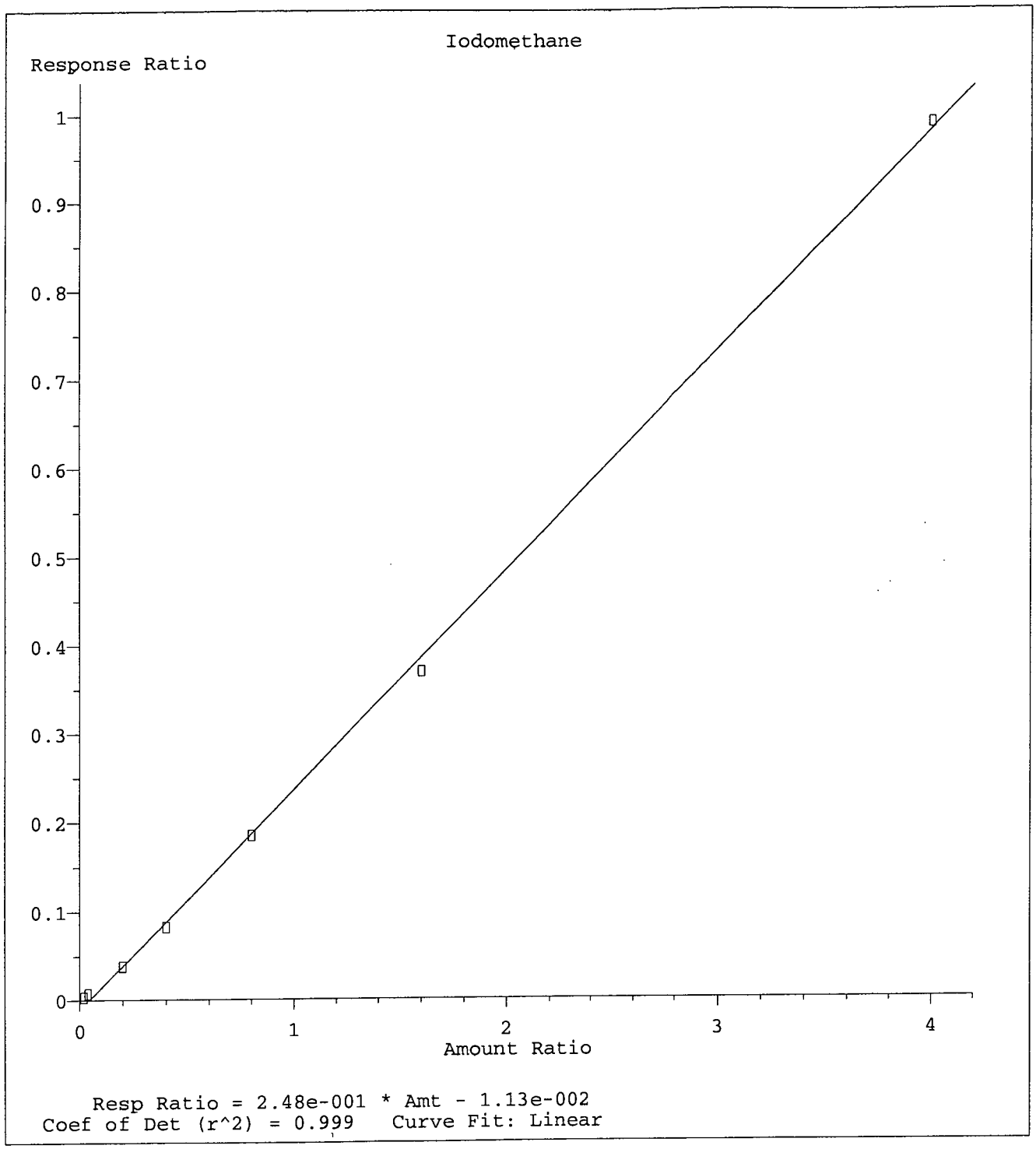
Method Name: M:\MAX\DATA\M150126\MALLW.M
Calibration Table Last Updated: Tue Jan 27 10:55:52 2015



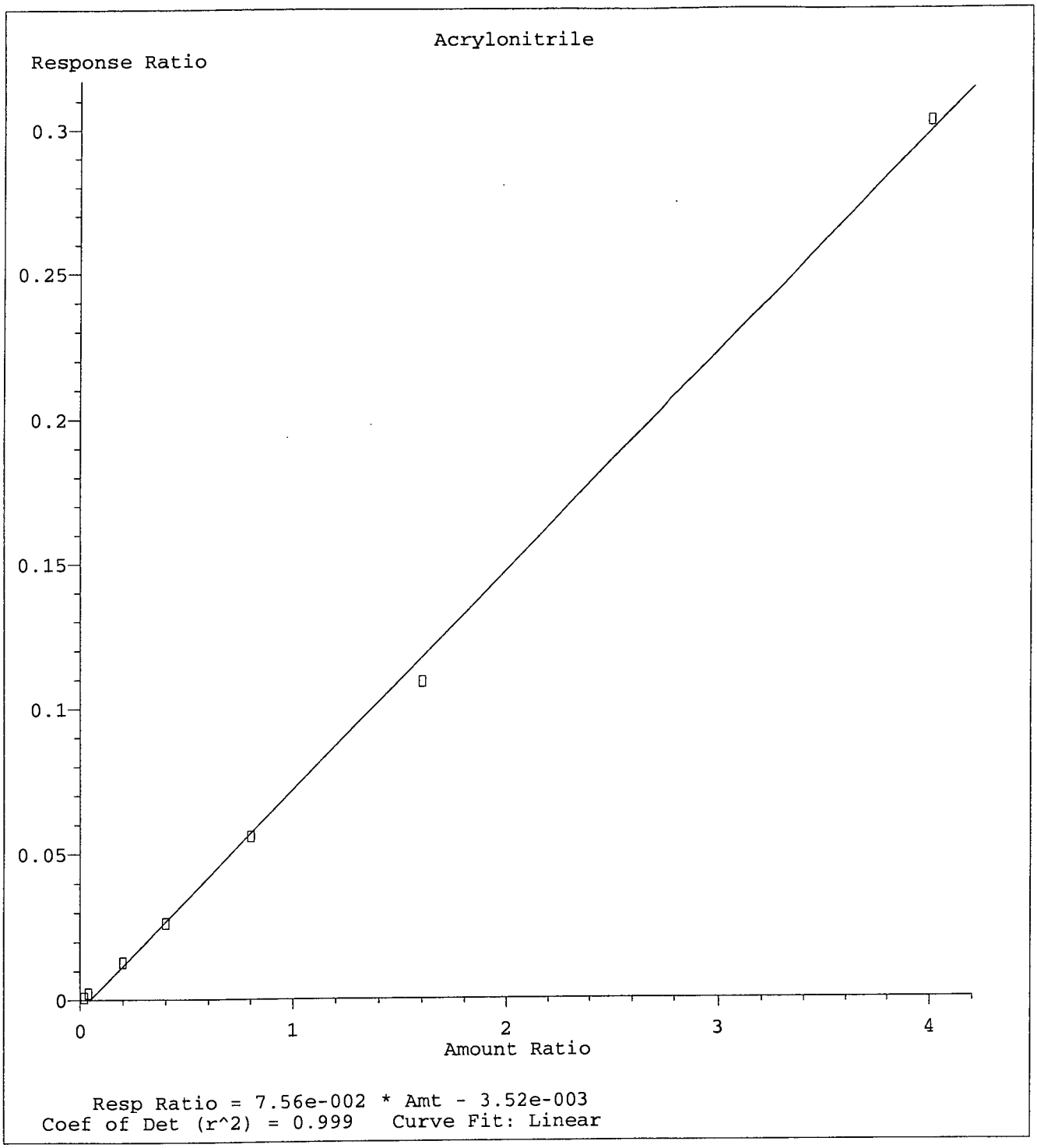
Method Name: M:\MAX\DATA\M150126\MALLW.M
Calibration Table Last Updated: Tue Jan 27 10:55:52 2015



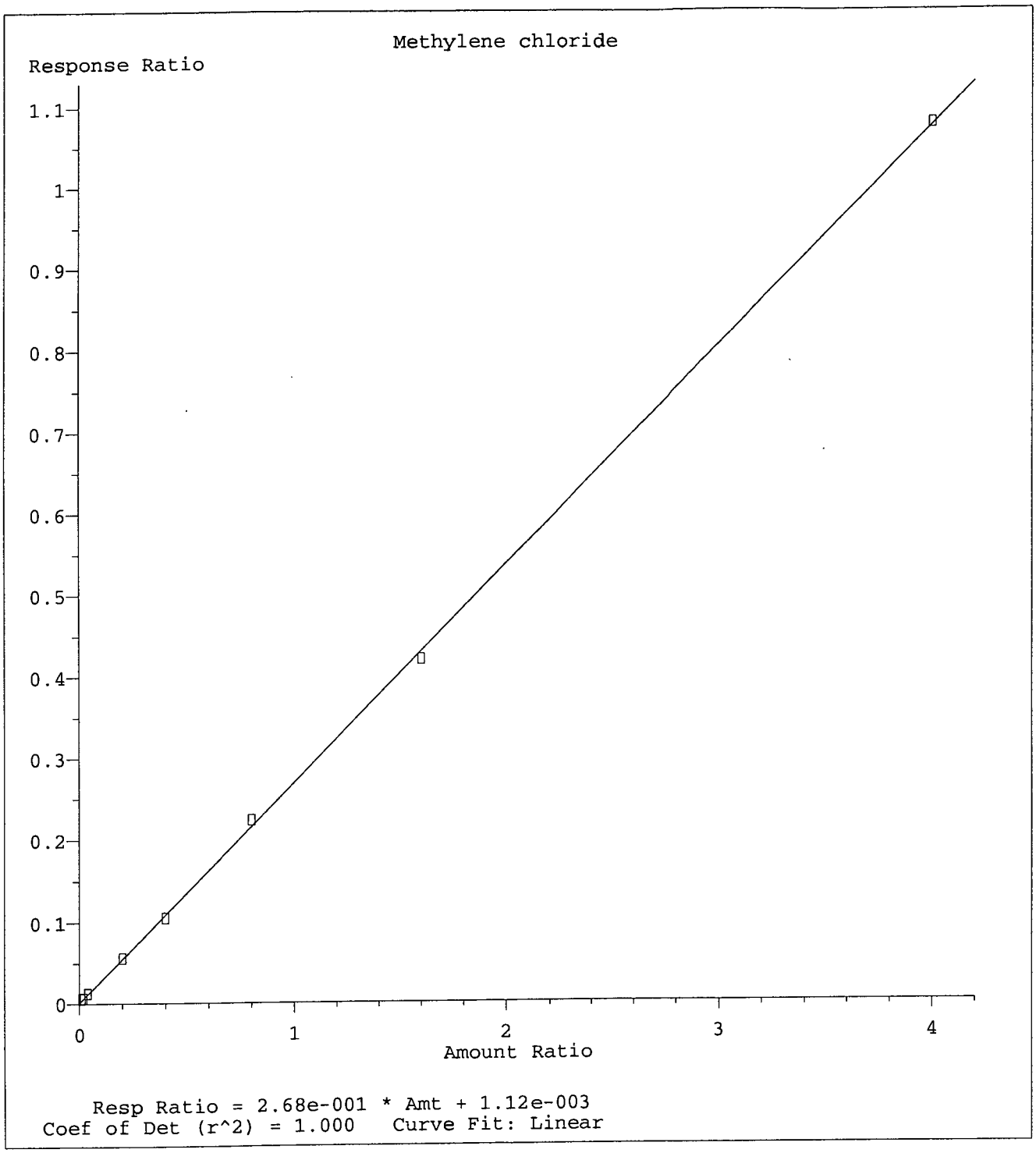
Method Name: M:\MAX\DATA\M150126\MALLW.M
Calibration Table Last Updated: Tue Jan 27 10:55:52 2015



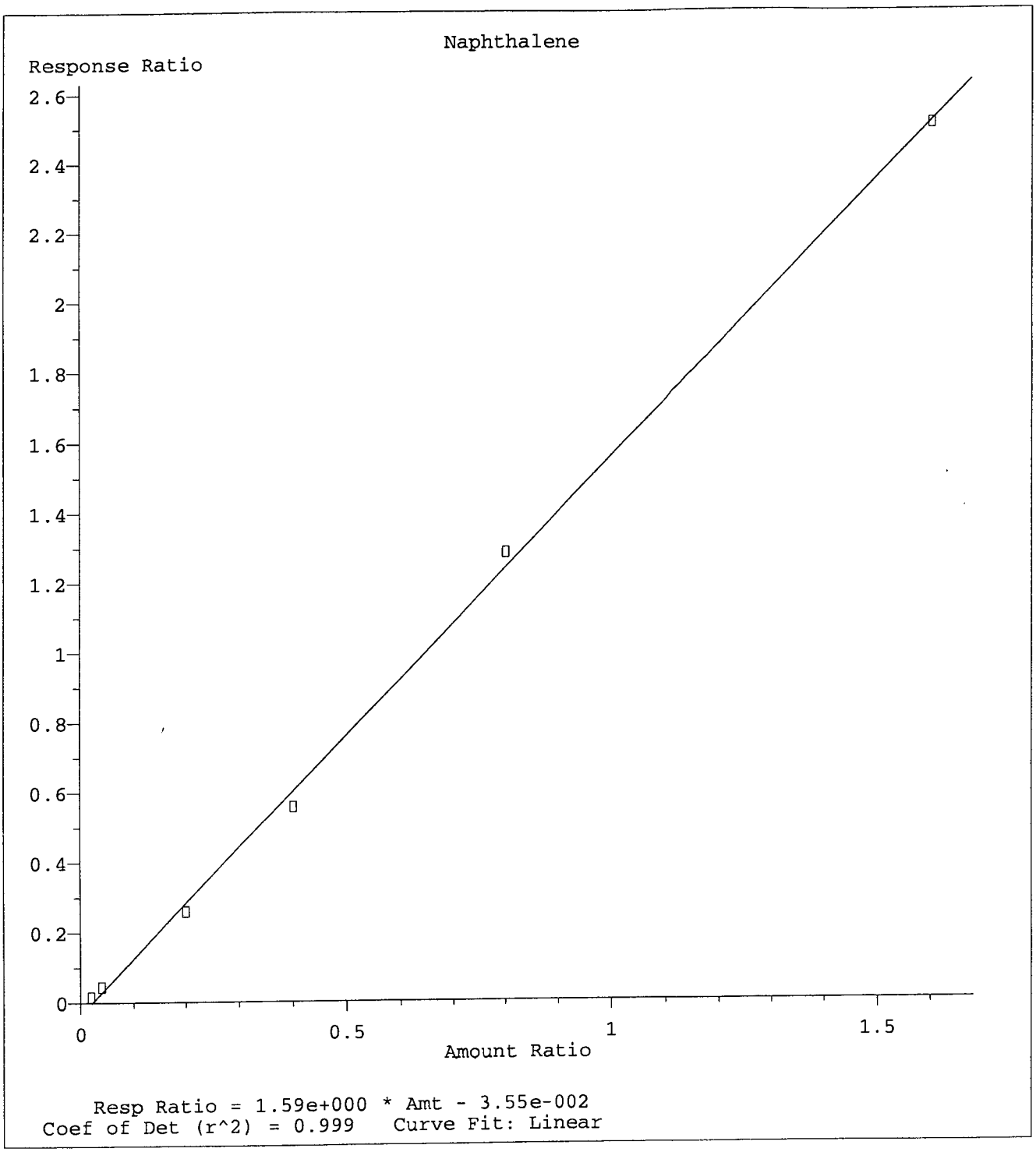
Method Name: M:\MAX\DATA\M150126\MALLW.M
Calibration Table Last Updated: Tue Jan 27 10:55:52 2015



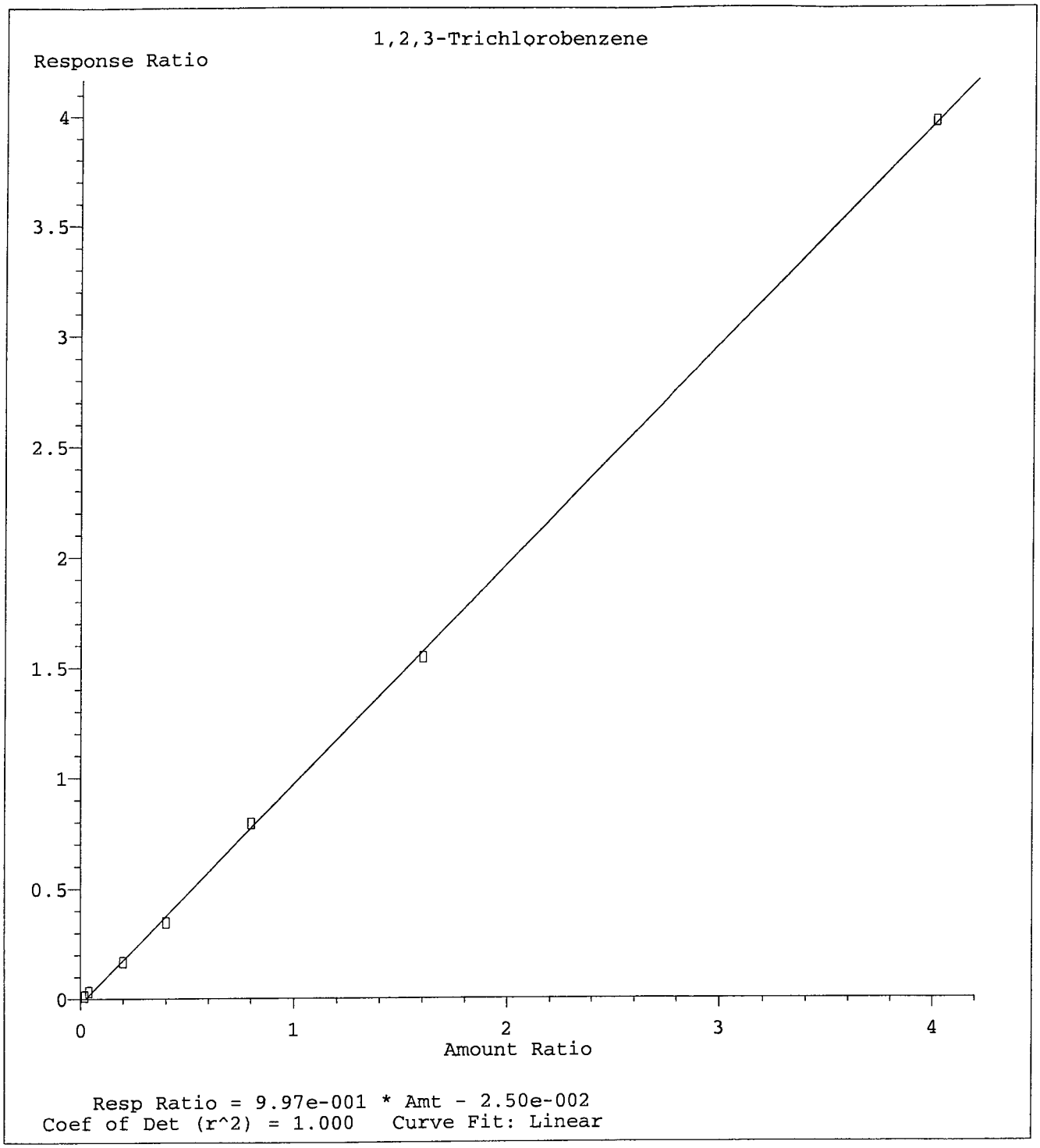
Method Name: M:\MAX\DATA\M150126\MALLW.M
Calibration Table Last Updated: Tue Jan 27 10:55:52 2015



Method Name: M:\MAX\DATA\M150126\MALLW.M
Calibration Table Last Updated: Tue Jan 27 10:55:52 2015



Method Name: M:\MAX\DATA\M150126\MALLW.M
Calibration Table Last Updated: Tue Jan 27 10:55:52 2015



Method Name: M:\MAX\DATA\M150126\MALLW.M
Calibration Table Last Updated: Tue Jan 27 10:55:52 2015

VOLATILE ORGANIC ANALYSIS BY
EPA METHOD 8260B

Form 7

Second Source Calibration

Lab Name: APPL, Inc.
Case No:
Matrix:

SDG No:
Date Analyzed: 01/26/15
Instrument: MAX
Initial Cal. Date: 01/26/15
Data File: 0126M21.D

		Compound	MEAN	CCRF	%D	%Drift		
1	I	Fluorobenzene (IS)	ISTD			I		
2	TML	Dichlorodifluoromethane	0.2400	0.3064	28	TML	17	
3	TML	Freon 114	0.1851	0.2248	21	TML	12	
4	TM**L	Chloromethane	0.3750	0.3710	1.1	TM**L	10.0	
5	TM*	Vinyl chloride	0.3105	0.3534	14	TM*		
6	TML	Bromomethane	0.0713	0.0685	3.8	TML	10	
7	TMQ	Chloroethane	0.2582	0.2196	15	TMQ	6.4	
8	TM	Dichlorofluoromethane	0.5251	0.5810	11	TM		
9	TM	Trichlorofluoromethane	0.3964	0.4732	19	TM		
10	TM	Acrolein	0.0195	0.0208	6.4	TM		
11	TML	Acetone	0.0881	0.0689	22	TML	11	
12	TM	Freon-113	0.0967	0.0991	2.5	TM		
13	TM*	1,1-DCE	0.2086	0.2268	8.7	TM*		
14	TM	t-Butanol	0.0060	0.0065	8.1	TM		
15	TM	Methyl Acetate	0.1583	0.1574	0.57	TM		
16	TML	Iodomethane	0.2045	0.2675	31	TML	19	
17	TML	Acrylonitrile	0.0621	0.0700	13	TML	4.2	
18	TML	Methylene chloride	0.3101	0.2976	4.0	TML	9.9	
19	TM	Carbon disulfide	0.7586	0.8263	8.9	TM		
20	TM	Methyl t-butyl ether (MtBE)	0.7364	0.7592	3.1	TM		
21	TM	Trans-1,2-DCE	0.2772	0.3048	10.0	TM		
22	TM	Diisopropyl Ether	1.013	1.082	6.8	TM		
23	TM**	1,1-DCA	0.4988	0.5408	8.4	TM**		
24	TM	Vinyl Acetate	0.3796	0.2833	25	TM		*NT
25	TM	Ethyl tert Butyl Ether	0.8875	0.9389	5.8	TM		
26	TM	MEK (2-Butanone)	0.0844	0.0914	8.3	TM		
27	TM	Cis-1,2-DCE	0.3182	0.3409	7.1	TM		
28	TM	2,2-Dichloropropane	0.4239	0.4196	1.0	TM		
29	TM*	Chloroform	0.4720	0.5166	9.5	TM*		
30	TM	Bromochloromethane	0.1385	0.1516	9.5	TM		
31	S	Dibromofluoromethane(S)	0.2708	0.2830	4.5	S		
32	TM	1,1,1-TCA	0.4541	0.4879	7.4	TM		
33	TM	Cyclohexane	0.2551	0.2701	5.9	TM		
34	TM	1,1-Dichloropropene	0.3766	0.4025	6.9	TM		
35	TM	2,2,4-Trimethylpentane	0.7406	0.7643	3.2	TM		
36	S	1,2-DCA-D4(S)	0.3125	0.3198	2.3	S		
37	TM	Carbon Tetrachloride	0.3410	0.3819	12	TM		
38	TM	Tert Amyl Methyl Ether	0.7703	0.8155	5.9	TM		
39	TM	1,2-DCA	0.3616	0.3782	4.6	TM		
40	TM	Benzene	1.170	1.264	8.0	TM		
		Average			9.6			

VOLATILE ORGANIC ANALYSIS BY
EPA METHOD 8260B

Form 7

Second Source Calibration

Lab Name: APPL, Inc.
Case No:
Matrix: 0

SDG No:
Date Analyzed: 01/26/15
Instrument: MAX
Cal. Date: 01/26/15
Data File: 0126M21.D

		Compound	MEAN	CCRF	%D	%Drift	
41	TM	TCE	0.2978	0.3350	13	TM	
42	TM	2-Pentanone	0.1626	0.1749	7.6	TM	
43	TM*	1,2-Dichloropropane	0.2863	0.3108	8.5	TM*	
44	TM	Bromodichloromethane	0.3515	0.3916	11	TM	
45	TM	Methyl Cyclohexane	0.4239	0.4477	5.6	TM	
46	TM	Dibromomethane	0.1417	0.1473	4.0	TM	
47	TM	MIBK (methyl isobutyl ketone)	0.2203	0.2334	6.0	TM	
48	TM	1-Bromo-2-chloroethane	0.3327	0.3440	3.4	TM	
49	TM	2-Chloroethyl vinyl ether	0.0411	0.0444	8.1	TM	
50	TM	Cis-1,3-Dichloropropene	0.4592	0.4875	6.2	TM	
51	TM*	Toluene	1.303	1.415	8.6	TM*	
52	TM	Trans-1,3-Dichloropropene	0.3805	0.4068	6.9	TM	
53	TM	1,1,2-TCA	0.1719	0.1806	5.0	TM	
54	TM	2-Hexanone	0.1366	0.1423	4.2	TM	
55	I	Chlorobenzene-D5 (IS)	ISTD			I	
56	S	Toluene-D8(S)	1.472	1.502	2.0	S	
57	TM	1,2-EDB	0.2792	0.2941	5.4	TM	
58	TM	Tetrachloroethene	0.2152	0.2245	4.3	TM	
59	TM	1-Chlorohexane	0.5214	0.5533	6.1	TM	
60	TM	1,1,1,2-Tetrachloroethane	0.4298	0.4476	4.1	TM	
61	TM	m&p-Xylene	0.7789	0.8505	9.2	TM	
62	TM	o-Xylene	0.7582	0.8466	12	TM	
63	TM	Styrene	1.279	1.404	9.8	TM	
64	S	4-Bromofluorobenzene(S)	0.5793	0.6164	6.4	S	
65	TM	1,3-Dichloropropane	0.5143	0.5253	2.1	TM	
66	TM	Dibromochloromethane	0.3527	0.3789	7.4	TM	
67	TM**	Chlorobenzene	1.199	1.253	4.4	TM**	
68	TM*	Ethylbenzene	2.005	2.180	8.7	TM*	
69	TM**	Bromoform	0.2454	0.2552	4.0	TM**	
70	I	1,4-Dichlorobenzene-D (IS)	ISTD			I	
71	TM	Isopropylbenzene	3.370	3.720	10	TM	
72	TM**	1,1,2,2-Tetrachloroethane	0.5308	0.5191	2.2	TM**	
73	TM	1,2,3-Trichloropropane	0.1880	0.1993	6.0	TM	
74	TM	t-1,4-Dichloro-2-Butene	0.1560	0.1558	0.08	TM	
75	TM	Bromobenzene	0.9750	1.045	7.2	TM	
76	TM	n-Propylbenzene	3.880	4.265	9.9	TM	
77	TM	4-Ethyltoluene	3.396	3.768	11	TM	
78	TM	2-Chlorotoluene	2.321	2.565	10	TM	
79	TM	1,3,5-Trimethylbenzene	2.996	3.326	11	TM	
80	TM	4-Chlorotoluene	2.754	3.016	9.5	TM	
		Average			6.9		

VOLATILE ORGANIC ANALYSIS BY
EPA METHOD 8260B

Form 7

Second Source Calibration

Lab Name: APPL, Inc.
Case No:
Matrix: 0

SDG No:
Date Analyzed: 01/26/15
Instrument: MAX
Cal. Date: 01/26/15
Data File: 0126M21.D

		Compound	MEAN	CCRF	%D	%Drift	
81	TM	Tert-Butylbenzene	2.555	2.858	12	TM	
82	TM	1,2,4-Trimethylbenzene	3.029	3.328	9.9	TM	
83	TM	Sec-Butylbenzene	3.488	3.915	12	TM	
84	TM	p-Isopropyltoluene	3.163	3.527	12	TM	
85	TM	Benzyl Chloride	0.8995	0.8234	8.5	TM	
86	TM	1,3-DCB	1.815	1.933	6.5	TM	
87	TM	1,4-DCB	1.859	1.973	6.1	TM	
88	TM	n-Butylbenzene	2.648	2.949	11	TM	
89	TM	1,2-DCB	1.664	1.796	7.9	TM	
90	TM	Hexachloroethane	0.4210	0.4979	18	TM	
91	TM	1,2-Dibromo-3-chloropropane	0.0946	0.1046	11	TM	
92	TM	1,2,4-Trichlorobenzene	1.121	1.247	11	TM	
93	TM	Hexachlorobutadiene	0.7617	0.8112	6.5	TM	
94	TML	Naphthalene	1.291	1.495	16	TML	0.61
95	TML	1,2,3-Trichlorobenzene	0.8565	0.9356	9.2	TML	0.16
96							
97							
98							
99							
100							
101							
102							
103							
104							
105							
106							
107							
108							
109							
110							
111							
112							
113							
114							
115							
116							
117							
118							
119							
120							
		Average			10.5		

Quantitation Report (Not Reviewed)

Data File : M:\MAX\DATA\M150126\0126M21.D
Acq On : 26 Jan 15 18:10
Sample : 150126A LCS-1WM (SS)
Misc : 10mL w/IS&S: 11-03-14

Vial: 16
Operator: DG,SV,RS
Inst : MAX
Multiplr: 1.00

Quant Time: Jan 27 11:13 2015

Quant Results File: MALLW.RES

Quant Method : M:\MAX\DATA\M150126\MALLW.M (RTE Integrator)
Title : METHOD 8260B
Last Update : Tue Jan 27 10:55:52 2015
Response via : Initial Calibration
DataAcq Meth : V8260

$\frac{35483 \times 25}{251025 \times 0.3105} = 11.38$

2/5/15

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene (IS)	6.78	96	251025	25.00000 ppb	0.00
55) Chlorobenzene-D5 (IS)	11.03	117	188515	25.00000 ppb	0.00
70) 1,4-Dichlorobenzene-D (IS)	14.37	152	106952	25.00000 ppb	0.00
System Monitoring Compounds					
31) Dibromofluoromethane(S)	5.79	111	41559	15.28410 ppb	0.00
Spiked Amount 14.625			Recovery	= 104.505%	
36) 1,2-DCA-D4(S)	6.25	65	43461	13.85040 ppb	0.00
Spiked Amount 13.533			Recovery	= 102.344%	
56) Toluene-D8(S)	9.02	98	169596	15.28041 ppb	0.00
Spiked Amount 14.976			Recovery	= 102.029%	
64) 4-Bromofluorobenzene(S)	12.71	95	67661	15.48917 ppb	0.00
Spiked Amount 14.557			Recovery	= 106.406%	

Target Compounds					Qvalue
2) Dichlorodifluoromethane	1.23	85	30763	11.66660 ppb	100
3) Freon 114	1.34	85	22574	11.17377 ppb	97
4) Chloromethane	1.38	50	37257	10.99932 ppb	99
5) Vinyl chloride	1.47	62	35483	11.37999 ppb	98
6) Bromomethane	1.74	94	6882	11.00914 ppb	97
7) Chloroethane	1.84	64	22053	10.63712 ppb	97
8) Dichlorofluoromethane	2.03	67	58342	11.06561 ppb	99
9) Trichlorofluoromethane	2.08	101	47511	11.93749 ppb	100
10) Acrolein	2.49	56	26089	132.97273 ppb	97
11) Acetone	2.70	43	6922	11.08226 ppb	96
12) Freon-113	2.63	101	9954	10.25200 ppb	94
13) 1,1-DCE	2.60	61	22768	10.87105 ppb	97
14) t-Butanol	3.48	59	8181	135.13335 ppb	97
15) Methyl Acetate	3.11	43	15807	9.94290 ppb	96
16) Iodomethane	2.75	142	26862	11.91954 ppb	91
17) Acrylonitrile	3.49	53	7027	10.42317 ppb #	93
18) Methylene chloride	3.17	84	29880	10.98682 ppb	92
19) Carbon disulfide	2.82	76	82966	10.89235 ppb	99
20) Methyl t-butyl ether (MtBE	3.65	73	76231	10.30945 ppb	98
21) Trans-1,2-DCE	3.54	96	30608	10.99824 ppb	97
22) Diisopropyl Ether	4.44	45	108606	10.67962 ppb	100
23) 1,1-DCA	4.17	63	54299	10.84175 ppb	98
24) Vinyl Acetate	4.34	43	28447	7.46407 ppb	96
25) Ethyl tert Butyl Ether	5.01	59	94273	10.57872 ppb	100
26) MEK (2-Butanone)	5.19	43	9177	10.83026 ppb	98
27) Cis-1,2-DCE	5.07	96	34234	10.71416 ppb	98
28) 2,2-Dichloropropane	5.06	77	42134	9.89895 ppb	97
29) Chloroform	5.56	83	51876	10.94502 ppb	98
30) Bromochloromethane	5.41	128	15224	10.94714 ppb	91
32) 1,1,1-TCA	5.82	97	48990	10.74376 ppb	97
33) Cyclohexane	5.90	41	27117	10.58659 ppb	94
34) 1,1-Dichloropropene	6.07	75	40418	10.68956 ppb	99
35) 2,2,4-Trimethylpentane	6.55	57	76746	10.32020 ppb #	89
37) Carbon Tetrachloride	6.08	117	38344	11.20001 ppb	98
38) Tert Amyl Methyl Ether	6.67	73	81887	10.58749 ppb	98
39) 1,2-DCA	6.37	62	37975	10.45968 ppb	98
40) Benzene	6.35	78	126907	10.80114 ppb	98
41) TCE	7.31	95	33638	11.25045 ppb	97
42) 2-Pentanone	7.65	43	219544	134.47627 ppb	97

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : M:\MAX\DATA\M150126\0126M21.D
Acq On : 26 Jan 15 18:10
Sample : 150126A LCS-1WM (SS)
Misc : 10mL w/IS&S: 11-03-14

Vial: 16
Operator: DG,SV,RS
Inst : MAX
Multiplr: 1.00

Quant Time: Jan 27 11:13 2015 Quant Results File: MALLW.RES

Quant Method : M:\MAX\DATA\M150126\MALLW.M (RTE Integrator)
Title : METHOD 8260B
Last Update : Tue Jan 27 10:55:52 2015
Response via : Initial Calibration
DataAcq Meth : V8260

Compound	R.T.	QIon	Response	Conc Unit		Qvalue
43) 1,2-Dichloropropane	7.59	63	31207	10.85436 ppb		99
44) Bromodichloromethane	8.00	83	39320	11.13907 ppb		98
45) Methyl Cyclohexane	7.58	83	44957	10.56176 ppb		100
46) Dibromomethane	7.74	93	14794	10.39647 ppb		94
47) MIBK (methyl isobutyl ket	8.95	43	23436	10.59633 ppb		97
48) 1-Bromo-2-chloroethane	8.40	63	34541	10.34047 ppb		100
49) 2-Chloroethyl vinyl ether	8.49	106	4459	10.81323 ppb		95
50) Cis-1,3-Dichloropropene	8.65	75	48952	10.61775 ppb		99
51) Toluene	9.12	91	142104	10.86251 ppb		100
52) Trans-1,3-Dichloropropene	9.44	75	40849	10.69137 ppb		98
53) 1,1,2-TCA	9.67	83	18131	10.50245 ppb		97
54) 2-Hexanone	10.12	43	14292	10.42106 ppb		97
57) 1,2-EDB	10.33	107	22180	10.53562 ppb		99
58) Tetrachloroethene	9.89	164	16928	10.43153 ppb		95
59) 1-Chlorohexane	11.10	91	41720	10.61064 ppb		97
60) 1,1,1,2-Tetrachloroethane	11.20	131	33755	10.41416 ppb		94
61) m&p-Xylene	11.43	106	128271	21.84081 ppb		96
62) o-Xylene	11.98	106	63840	11.16599 ppb		95
63) Styrene	12.00	104	105903	10.97767 ppb		99
65) 1,3-Dichloropropane	9.89	76	39613	10.21397 ppb		100
66) Dibromochloromethane	10.20	129	28575	10.74359 ppb		96
67) Chlorobenzene	11.06	112	94467	10.44433 ppb		98
68) Ethylbenzene	11.26	91	164348	10.86878 ppb		99
69) Bromoform	12.20	173	19245	10.40104 ppb		99
71) Isopropylbenzene	12.53	105	159134	11.03768 ppb		99
72) 1,1,2,2-Tetrachloroethane	12.93	83	22209	9.78101 ppb		88
73) 1,2,3-Trichloropropane	12.96	110	8526	10.60056 ppb		91
74) t-1,4-Dichloro-2-Butene	13.02	53	6667	9.99192 ppb		100
75) Bromobenzene	12.89	156	44716	10.72041 ppb		97
76) n-Propylbenzene	13.12	91	182449	10.99250 ppb		99
77) 4-Ethyltoluene	13.29	105	161178	11.09282 ppb		99
78) 2-Chlorotoluene	13.20	91	109725	11.04827 ppb		99
79) 1,3,5-Trimethylbenzene	13.39	105	142276	11.10130 ppb		99
80) 4-Chlorotoluene	13.36	91	129031	10.95127 ppb		97
81) Tert-Butylbenzene	13.84	119	122261	11.18575 ppb		98
82) 1,2,4-Trimethylbenzene	13.91	105	142384	10.98886 ppb		98
83) Sec-Butylbenzene	14.16	105	167489	11.22523 ppb		99
84) p-Isopropyltoluene	14.39	119	150875	11.15023 ppb		98
85) Benzyl Chloride	14.60	91	35226	9.15370 ppb		97
86) 1,3-DCB	14.26	146	82702	10.65359 ppb		99
87) 1,4-DCB	14.40	146	84396	10.60990 ppb		99
88) n-Butylbenzene	14.98	91	126152	11.13396 ppb		99
89) 1,2-DCB	14.92	146	76813	10.79275 ppb		98
90) Hexachloroethane	15.31	117	21302	11.82674 ppb		98
91) 1,2-Dibromo-3-chloropropan	16.03	75	4474	11.05694 ppb	#	88
92) 1,2,4-Trichlorobenzene	17.27	180	53344	11.12535 ppb		99
93) Hexachlorobutadiene	17.58	225	34703	10.64940 ppb		95
94) Naphthalene	17.60	128	63940	9.93869 ppb		97
95) 1,2,3-Trichlorobenzene	17.96	180	40027	10.01560 ppb		94

(#) = qualifier out of range (m) = manual integration

Quantitation Report

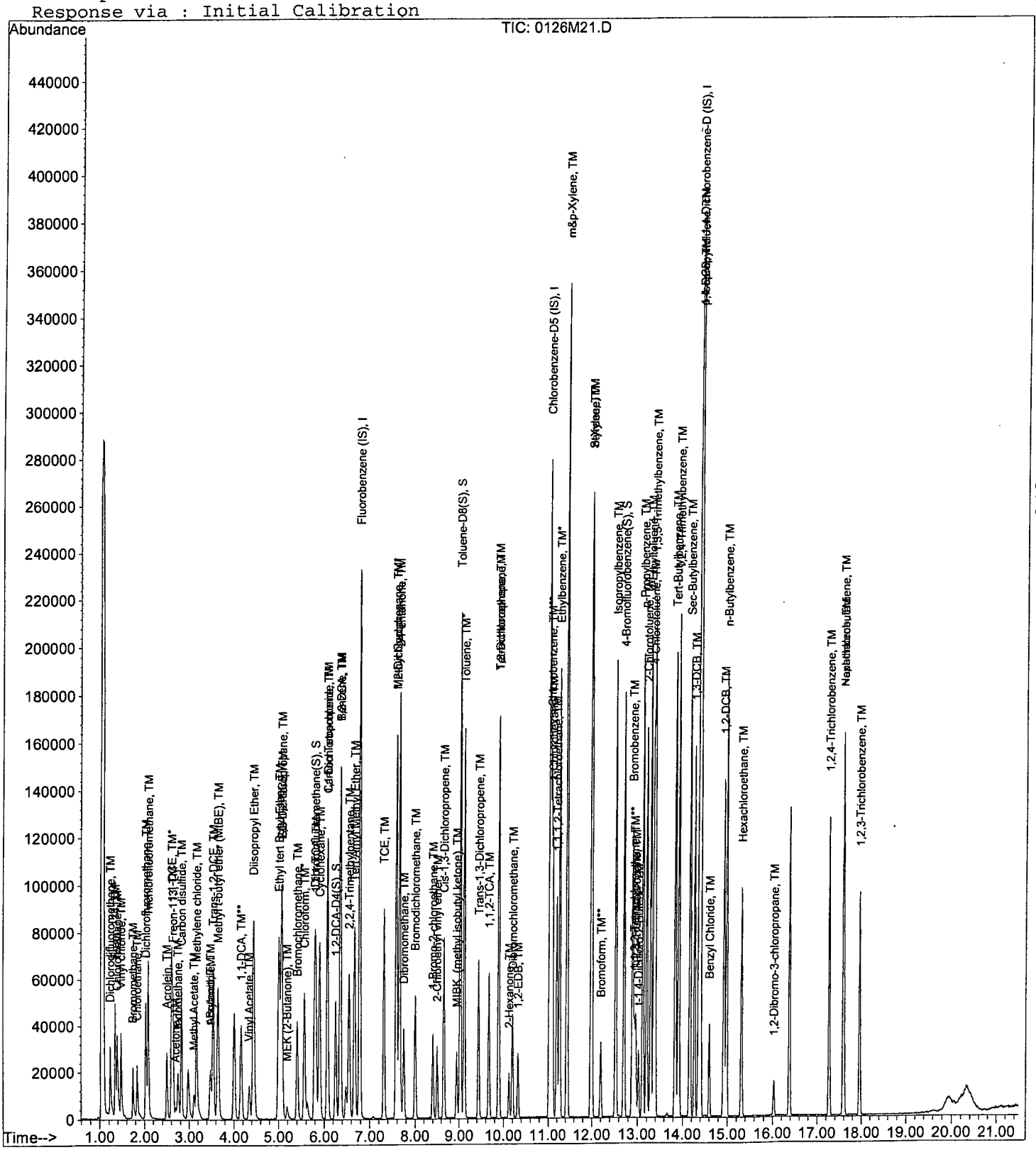
Data File : M:\MAX\DATA\M150126\0126M21.D
Acq On : 26 Jan 15 18:10
Sample : 150126A LCS-1WM (SS)
Misc : 10mL w/IS&S: 11-03-14

Vial: 16
Operator: DG,SV,RS
Inst : MAX
Multiplr: 1.00

Quant Time: Jan 27 11:13 2015

Quant Results File: MALLW.RES

Method : M:\MAX\DATA\M150126\MALLW.M (RTE Integrator)
Title : METHOD 8260B
Last Update : Tue Jan 27 10:55:52 2015
Response via : Initial Calibration



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VOLATILE ORGANIC ANALYSIS BY
EPA METHOD 8260B

Form 7

Continuing Calibration

Lab Name: APPL, Inc.
Case No:
Matrix:

SDG No:
Date Analyzed: 01/27/15
Instrument: MAX
Initial Cal. Date: 01/26/15
Data File: 0127M12.D

		Compound	MEAN	CCRF	%D	%Drift		
1	I	Fluorobenzene (IS)	ISTD			I		
2	TML	Dichlorodifluoromethane	0.2400	0.2583	7.6	TML	0.11	
3	TML	Freon 114	0.1851	0.2171	17	TML	8.0	
4	TM**L	Chloromethane	0.3750	0.3238	14	TM**L	4.0	
5	TM*	Vinyl chloride	0.3105	0.2971	4.3	TM*		
6	TML	Bromomethane	0.0713	0.0659	7.6	TML	5.5	
7	TMQ	Chloroethane	0.2582	0.1854	28	TMQ	13	
8	TM	Dichlorofluoromethane	0.5251	0.5216	0.66	TM		
9	TM	Trichlorofluoromethane	0.3964	0.4085	3.1	TM		
10	TM	Acrolein	0.0195	0.0243	24	TM		*NT
11	TML	Acetone	0.0881	0.0636	28	TML	1.6	
12	TM	Freon-113	0.0967	0.0950	1.8	TM		
13	TM*	1,1-DCE	0.2086	0.1997	4.3	TM*		
14	TM	t-Butanol	0.0060	0.0060	0.87	TM		
15	TM	Methyl Acetate	0.1583	0.1492	5.8	TM		
16	TML	Iodomethane	0.2045	0.2451	20	TML	10	
17	TML	Acrylonitrile	0.0621	0.0647	4.1	TML	2.8	
18	TML	Methylene chloride	0.3101	0.2771	11	TML	2.2	
19	TM	Carbon disulfide	0.7586	0.6924	8.7	TM		
20	TM	Methyl t-butyl ether (MtBE)	0.7364	0.7215	2.0	TM		
21	TM	Trans-1,2-DCE	0.2772	0.2674	3.5	TM		
22	TM	Diisopropyl Ether	1.013	0.9911	2.1	TM		
23	TM**	1,1-DCA	0.4988	0.4891	1.9	TM**		
24	TM	Vinyl Acetate	0.3796	0.4015	5.8	TM		
25	TM	Ethyl tert Butyl Ether	0.8875	0.8746	1.5	TM		
26	TM	MEK (2-Butanone)	0.0844	0.0896	6.1	TM		
27	TM	Cis-1,2-DCE	0.3182	0.3079	3.2	TM		
28	TM	2,2-Dichloropropane	0.4239	0.4255	0.37	TM		
29	TM*	Chloroform	0.4720	0.4703	0.38	TM*		
30	TM	Bromochloromethane	0.1385	0.1421	2.6	TM		
31	S	Dibromofluoromethane(S)	0.2708	0.2880	6.4	S		
32	TM	1,1,1-TCA	0.4541	0.4442	2.2	TM		
33	TM	Cyclohexane	0.2551	0.2567	0.62	TM		
34	TM	1,1-Dichloropropene	0.3766	0.3700	1.8	TM		
35	TM	2,2,4-Trimethylpentane	0.7406	0.7798	5.3	TM		
36	S	1,2-DCA-D4(S)	0.3125	0.3387	8.4	S		
37	TM	Carbon Tetrachloride	0.3410	0.3526	3.4	TM		
38	TM	Tert Amyl Methyl Ether	0.7703	0.7633	0.91	TM		
39	TM	1,2-DCA	0.3616	0.3544	2.0	TM		
40	TM	Benzene	1.170	1.139	2.7	TM		
		Average			6.5			

VOLATILE ORGANIC ANALYSIS BY
EPA METHOD 8260B

Form 7

Continuing Calibration

Lab Name: APPL, Inc.
Case No:
Matrix: 0

SDG No:
Date Analyzed: 01/27/15
Instrument: MAX
Cal. Date: 01/26/15
Data File: 0127M12.D

		Compound	MEAN	CCRF	%D		%Drift
41	TM	TCE	0.2978	0.2916	2.1	TM	
42	TM	2-Pentanone	0.1626	0.1617	0.53	TM	
43	TM*	1,2-Dichloropropane	0.2863	0.2855	0.30	TM*	
44	TM	Bromodichloromethane	0.3515	0.3530	0.42	TM	
45	TM	Methyl Cyclohexane	0.4239	0.4329	2.1	TM	
46	TM	Dibromomethane	0.1417	0.1347	4.9	TM	
47	TM	MIBK (methyl isobutyl ketone)	0.2203	0.2028	7.9	TM	
48	TM	1-Bromo-2-chloroethane	0.3327	0.3177	4.5	TM	
49	TM	2-Chloroethyl vinyl ether	0.0411	0.0406	1.2	TM	
50	TM	Cis-1,3-Dichloropropene	0.4592	0.4540	1.1	TM	
51	TM*	Toluene	1.303	1.286	1.3	TM*	
52	TM	Trans-1,3-Dichloropropene	0.3805	0.3754	1.3	TM	
53	TM	1,1,2-TCA	0.1719	0.1713	0.37	TM	
54	TM	2-Hexanone	0.1366	0.1341	1.8	TM	
55	I	Chlorobenzene-D5 (IS)	ISTD			I	
56	S	Toluene-D8(S)	1.472	1.559	5.9	S	
57	TM	1,2-EDB	0.2792	0.2712	2.9	TM	
58	TM	Tetrachloroethene	0.2152	0.2180	1.3	TM	
59	TM	1-Chlorohexane	0.5214	0.5170	0.85	TM	
60	TM	1,1,1,2-Tetrachloroethane	0.4298	0.4251	1.1	TM	
61	TM	m&p-Xylene	0.7789	0.7880	1.2	TM	
62	TM	o-Xylene	0.7582	0.7768	2.5	TM	
63	TM	Styrene	1.279	1.273	0.49	TM	
64	S	4-Bromofluorobenzene(S)	0.5793	0.6215	7.3	S	
65	TM	1,3-Dichloropropane	0.5143	0.5052	1.8	TM	
66	TM	Dibromochloromethane	0.3527	0.3530	0.07	TM	
67	TM**	Chlorobenzene	1.199	1.158	3.5	TM**	
68	TM*	Ethylbenzene	2.005	2.002	0.16	TM*	
69	TM**	Bromoform	0.2454	0.2508	2.2	TM**	
70	I	1,4-Dichlorobenzene-D (IS)	ISTD			I	
71	TM	Isopropylbenzene	3.370	3.542	5.1	TM	
72	TM**	1,1,2,2-Tetrachloroethane	0.5308	0.5366	1.1	TM**	
73	TM	1,2,3-Trichloropropane	0.1880	0.1978	5.2	TM	
74	TM	t-1,4-Dichloro-2-Butene	0.1560	0.1555	0.31	TM	
75	TM	Bromobenzene	0.9750	0.9871	1.2	TM	
76	TM	n-Propylbenzene	3.880	4.005	3.2	TM	
77	TM	4-Ethyltoluene	3.396	3.537	4.2	TM	
78	TM	2-Chlorotoluene	2.321	2.336	0.62	TM	
79	TM	1,3,5-Trimethylbenzene	2.996	3.113	3.9	TM	
80	TM	4-Chlorotoluene	2.754	2.787	1.2	TM	
		Average			2.3		

VOLATILE ORGANIC ANALYSIS BY
EPA METHOD 8260B

Form 7

Continuing Calibration

Lab Name: APPL, Inc.
Case No:
Matrix: 0

SDG No:
Date Analyzed: 01/27/15
Instrument: MAX
Cal. Date: 01/26/15
Data File: 0127M12.D

		Compound	MEAN	CCRF	%D		%Drift
81	TM	Tert-Butylbenzene	2.555	2.701	5.7	TM	
82	TM	1,2,4-Trimethylbenzene	3.029	3.135	3.5	TM	
83	TM	Sec-Butylbenzene	3.488	3.638	4.3	TM	
84	TM	p-Isopropyltoluene	3.163	3.260	3.1	TM	
85	TM	Benzyl Chloride	0.8995	0.9588	6.6	TM	
86	TM	1,3-DCB	1.815	1.807	0.40	TM	
87	TM	1,4-DCB	1.859	1.815	2.4	TM	
88	TM	n-Butylbenzene	2.648	2.677	1.1	TM	
89	TM	1,2-DCB	1.664	1.670	0.36	TM	
90	TM	Hexachloroethane	0.4210	0.4319	2.6	TM	
91	TM	1,2-Dibromo-3-chloropropane	0.0946	0.0970	2.5	TM	
92	TM	1,2,4-Trichlorobenzene	1.121	1.153	2.8	TM	
93	TM	Hexachlorobutadiene	0.7617	0.7545	0.95	TM	
94	TML	Naphthalene	1.291	1.438	11	TML	4.2
95	TML	1,2,3-Trichlorobenzene	0.8565	0.9061	5.8	TML	2.8
96							
97							
98							
99							
100							
101							
102							
103							
104							
105							
106							
107							
108							
109							
110							
111							
112							
113							
114							
115							
116							
117							
118							
119							
120							
		Average			3.5		

Quantitation Report (Not Reviewed)

Data File : M:\MAX\DATA\M150126\0127M12.D
Acq On : 27 Jan 15 11:24
Sample : 10ug/L Vol Std 01-27-15
Misc : 10mL w/IS&S: 11-03-14

Vial: 5
Operator: DG,SV,RS
Inst : MAX
Multiplr: 1.00

Quant Time: Jan 28 9:41 2015

Quant Results File: MALLW.RES

Quant Method : M:\MAX\DATA\M150126\MALLW.M (RTE Integrator)
Title : METHOD 8260B
Last Update : Tue Jan 27 10:55:52 2015
Response via : Initial Calibration
DataAcq Meth : V8260

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene (IS)	6.78	96	272673	25.00000 ppb	0.00
55) Chlorobenzene-D5 (IS)	11.03	117	200981	25.00000 ppb	0.00
70) 1,4-Dichlorobenzene-D (IS)	14.37	152	112904	25.00000 ppb	0.00
System Monitoring Compounds					
31) Dibromofluoromethane(S)	5.79	111	45945	15.55564 ppb	0.00
Spiked Amount 14.625			Recovery	= 106.364%	
36) 1,2-DCA-D4(S)	6.25	65	49991	14.66659 ppb	0.00
Spiked Amount 13.533			Recovery	= 108.381%	
56) Toluene-D8(S)	9.03	98	187679	15.86083 ppb	0.00
Spiked Amount 14.976			Recovery	= 105.908%	
64) 4-Bromofluorobenzene(S)	12.71	95	72736	15.61817 ppb	0.00
Spiked Amount 14.557			Recovery	= 107.292%	

Target Compounds					Qvalue
2) Dichlorodifluoromethane	1.23	85	28170	9.98852 ppb	95
3) Freon 114	1.34	85	23674	10.80365 ppb	99
4) Chloromethane	1.38	50	35317	9.59682 ppb	99
5) Vinyl chloride	1.47	62	32406	9.56802 ppb	98
6) Bromomethane	1.74	94	7187	10.55240 ppb	92
7) Chloroethane	1.84	64	20218	8.71740 ppb	92
8) Dichlorofluoromethane	2.03	67	56891	9.93373 ppb	99
9) Trichlorofluoromethane	2.08	101	44556	10.30623 ppb	100
10) Acrolein	2.49	56	33099	155.30837 ppb	95
11) Acetone	2.69	43	6940	10.16044 ppb #	81
12) Freon-113	2.63	101	10359	9.82209 ppb	97
13) 1,1-DCE	2.60	61	21776	9.57193 ppb	96
14) t-Butanol	3.47	59	8149	123.91826 ppb	100
15) Methyl Acetate	3.11	43	16268	9.42047 ppb	98
16) Iodomethane	2.75	142	26731	11.01547 ppb	94
17) Acrylonitrile	3.49	53	7057	9.72455 ppb	95
18) Methylene chloride	3.17	84	30218	10.22177 ppb	93
19) Carbon disulfide	2.82	76	75524	9.12812 ppb	99
20) Methyl t-butyl ether (MtBE	3.65	73	78692	9.79736 ppb	97
21) Trans-1,2-DCE	3.54	96	29169	9.64905 ppb	96
22) Diisopropyl Ether	4.44	45	108098	9.78575 ppb	98
23) 1,1-DCA	4.16	63	53347	9.80601 ppb	99
24) Vinyl Acetate	4.34	43	43786	10.57668 ppb	97
25) Ethyl tert Butyl Ether	5.00	59	95394	9.85466 ppb	97
26) MEK (2-Butanone)	5.18	43	9770	10.61469 ppb	96
27) Cis-1,2-DCE	5.07	96	33586	9.67684 ppb	97
28) 2,2-Dichloropropane	5.06	77	46407	10.03725 ppb	97
29) Chloroform	5.56	83	51290	9.96225 ppb	99
30) Bromochloromethane	5.41	128	15502	10.26206 ppb	95
32) 1,1,1-TCA	5.82	97	48449	9.78157 ppb	98
33) Cyclohexane	5.90	41	27996	10.06202 ppb	96
34) 1,1-Dichloropropene	6.07	75	40352	9.82482 ppb	98
35) 2,2,4-Trimethylpentane	6.55	57	85055	10.52948 ppb #	90
37) Carbon Tetrachloride	6.07	117	38463	10.34282 ppb	100
38) Tert Amyl Methyl Ether	6.67	73	83250	9.90916 ppb	99
39) 1,2-DCA	6.37	62	38657	9.80220 ppb	99
40) Benzene	6.35	78	124239	9.73457 ppb	99
41) TCE	7.31	95	31804	9.79256 ppb	97
42) 2-Pentanone	7.65	43	220499	124.33847 ppb	97

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : M:\MAX\DATA\M150126\0127M12.D
Acq On : 27 Jan 15 11:24
Sample : 10ug/L Vol Std 01-27-15
Misc : 10mL w/IS&S: 11-03-14

Vial: 5
Operator: DG,SV,RS
Inst : MAX
Multiplr: 1.00

Quant Time: Jan 28 9:41 2015

Quant Results File: MALLW.RES

Quant Method : M:\MAX\DATA\M150126\MALLW.M (RTE Integrator)
Title : METHOD 8260B
Last Update : Tue Jan 27 10:55:52 2015
Response via : Initial Calibration
DataAcq Meth : V8260

Compound	R.T.	QIon	Response	Conc Unit		Qvalue
43) 1,2-Dichloropropane	7.58	63	31137	9.97019	ppb	97
44) Bromodichloromethane	8.00	83	38505	10.04217	ppb	96
45) Methyl Cyclohexane	7.58	83	47217	10.21203	ppb	97
46) Dibromomethane	7.74	93	14692	9.50509	ppb	96
47) MIBK (methyl isobutyl ket	8.94	43	22122	9.20812	ppb	98
48) 1-Bromo-2-chloroethane	8.40	63	34646	9.54846	ppb	99
49) 2-Chloroethyl vinyl ether	8.49	106	4425	9.87884	ppb	93
50) Cis-1,3-Dichloropropene	8.65	75	49518	9.88781	ppb	93
51) Toluene	9.12	91	140286	9.87218	ppb	99
52) Trans-1,3-Dichloropropene	9.44	75	40949	9.86665	ppb	97
53) 1,1,2-TCA	9.67	83	18683	9.96301	ppb	98
54) 2-Hexanone	10.12	43	14623	9.81591	ppb	96
57) 1,2-EDB	10.32	107	21799	9.71239	ppb	96
58) Tetrachloroethene	9.89	164	17528	10.13132	ppb	93
59) 1-Chlorohexane	11.10	91	41562	9.91481	ppb	97
60) 1,1,1,2-Tetrachloroethane	11.20	131	34178	9.89063	ppb	90
61) m&p-Xylene	11.43	106	126691	20.23377	ppb	98
62) o-Xylene	11.98	106	62450	10.24537	ppb	98
63) Styrene	12.00	104	102343	9.95064	ppb	98
65) 1,3-Dichloropropane	9.89	76	40614	9.82253	ppb	99
66) Dibromochloromethane	10.20	129	28375	10.00668	ppb	97
67) Chlorobenzene	11.06	112	93076	9.65226	ppb	98
68) Ethylbenzene	11.26	91	160957	9.98428	ppb	98
69) Bromoform	12.20	173	20165	10.22229	ppb	97
71) Isopropylbenzene	12.53	105	159949	10.50935	ppb	100
72) 1,1,2,2-Tetrachloroethane	12.93	83	24232	10.10936	ppb	100
73) 1,2,3-Trichloropropane	12.96	110	8931	10.51873	ppb	90
74) t-1,4-Dichloro-2-Butene	13.02	53	7022	9.96917	ppb	91
75) Bromobenzene	12.89	156	44577	10.12369	ppb	97
76) n-Propylbenzene	13.12	91	180892	10.32414	ppb	98
77) 4-Ethyltoluene	13.29	105	159754	10.41520	ppb	99
78) 2-Chlorotoluene	13.20	91	105492	10.06208	ppb	98
79) 1,3,5-Trimethylbenzene	13.39	105	140577	10.39049	ppb	98
80) 4-Chlorotoluene	13.36	91	125852	10.11836	ppb	95
81) Tert-Butylbenzene	13.84	119	121996	10.57310	ppb	99
82) 1,2,4-Trimethylbenzene	13.91	105	141563	10.34953	ppb	100
83) Sec-Butylbenzene	14.16	105	164281	10.42980	ppb	97
84) p-Isopropyltoluene	14.39	119	147233	10.30745	ppb	98
85) Benzyl Chloride	14.60	91	43301	10.65886	ppb	99
86) 1,3-DCB	14.26	146	81619	9.95980	ppb	99
87) 1,4-DCB	14.40	146	81953	9.75964	ppb	99
88) n-Butylbenzene	14.98	91	120904	10.10824	ppb	99
89) 1,2-DCB	14.92	146	75402	10.03598	ppb	99
90) Hexachloroethane	15.31	117	19507	10.25923	ppb	96
91) 1,2-Dibromo-3-chloropropan	16.02	75	4380	10.25398	ppb	92
92) 1,2,4-Trichlorobenzene	17.27	180	52050	10.28320	ppb	99
93) Hexachlorobutadiene	17.58	225	34075	9.90543	ppb	97
94) Naphthalene	17.60	128	64923	9.58072	ppb	97
95) 1,2,3-Trichlorobenzene	17.96	180	40923	9.71975	ppb	93

(#) = qualifier out of range (m) = manual integration

Quantitation Report

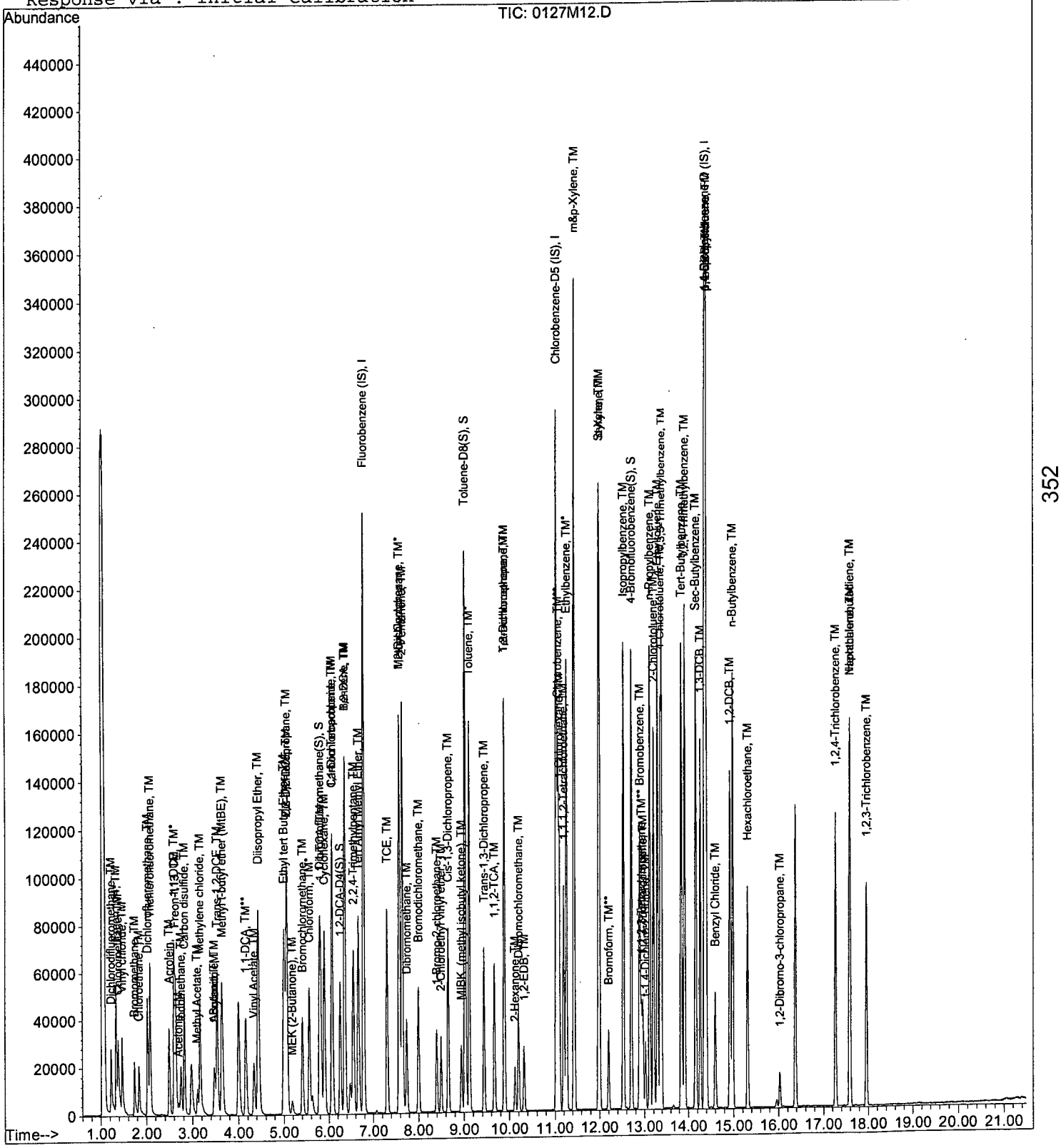
Data File : M:\MAX\DATA\M150126\0127M12.D
Acq On : 27 Jan 15 11:24
Sample : 10ug/L Vol Std 01-27-15
Misc : 10mL w/IS&S: 11-03-14

Vial: 5
Operator: DG,SV,RS
Inst : MAX
Multiplr: 1.00

Quant Time: Jan 28 9:41 2015

Quant Results File: MALLW.RES

Method : M:\MAX\DATA\M150126\MALLW.M (RTE Integrator)
Title : METHOD 8260B
Last Update : Tue Jan 27 10:55:52 2015
Response via : Initial Calibration



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EPA METHOD 8260B
Volatile Organic Compounds
Raw Data

APPL, INC.

Method Blank
EPA 8260B WATER

APPL Inc.
908 North Temperance Avenu
Clovis, CA 93611

Blank Name/QCG: **150123W-10006 - 193856**
Batch ID: #86BKB-150123BM

Sample Type	Analyte	Result	LOQ	LOD	DL	Units	Extraction Date	Analysis Date
BLANK	1,1,1-TRICHLOROETHANE	0.30 U	1.0	0.30	0.14	ug/L	01/24/15	01/24/15
BLANK	1,1,2,2-TETRACHLOROETHANE	0.30 U	1.0	0.30	0.10	ug/L	01/24/15	01/24/15
BLANK	1,1,2-TRICHLOROETHANE	0.50 U	1.0	0.50	0.20	ug/L	01/24/15	01/24/15
BLANK	1,1-DICHLOROETHANE	0.30 U	1.0	0.30	0.19	ug/L	01/24/15	01/24/15
BLANK	1,1-DICHLOROETHENE	0.50 U	1.0	0.50	0.30	ug/L	01/24/15	01/24/15
BLANK	1,2,3-TRICHLOROPROPANE	1.00 U	2.0	1.00	0.39	ug/L	01/24/15	01/24/15
BLANK	1,2-DIBROMOETHANE	0.50 U	1.0	0.50	0.20	ug/L	01/24/15	01/24/15
BLANK	1,2-DICHLOROETHANE	0.30 U	1.0	0.30	0.14	ug/L	01/24/15	01/24/15
BLANK	1,2-DICHLOROPROPANE	0.30 U	1.0	0.30	0.17	ug/L	01/24/15	01/24/15
BLANK	2-BUTANONE	2.00 U	10.0	2.00	0.60	ug/L	01/24/15	01/24/15
BLANK	4-METHYL-2-PENTANONE	5.00 U	10.0	5.00	1.90	ug/L	01/24/15	01/24/15
BLANK	ACETONE	2.00 U	10.0	2.00	0.95	ug/L	01/24/15	01/24/15
BLANK	BENZENE	0.30 U	1.0	0.30	0.16	ug/L	01/24/15	01/24/15
BLANK	BROMODICHLOROMETHANE	0.30 U	1.0	0.30	0.14	ug/L	01/24/15	01/24/15
BLANK	BROMOFORM	0.30 U	1.0	0.30	0.14	ug/L	01/24/15	01/24/15
BLANK	BROMOMETHANE	0.50 U	2.0	0.50	0.24	ug/L	01/24/15	01/24/15
BLANK	CARBON TETRACHLORIDE	0.30 U	1.0	0.30	0.10	ug/L	01/24/15	01/24/15
BLANK	CHLOROBENZENE	0.50 U	1.0	0.50	0.21	ug/L	01/24/15	01/24/15
BLANK	CHLOROETHANE	0.50 U	1.0	0.50	0.21	ug/L	01/24/15	01/24/15
BLANK	CHLOROFORM	0.30 U	1.0	0.30	0.07	ug/L	01/24/15	01/24/15
BLANK	CHLOROMETHANE	0.50 U	1.0	0.50	0.42	ug/L	01/24/15	01/24/15
BLANK	CIS-1,2-DICHLOROETHENE	0.30 U	1.0	0.30	0.16	ug/L	01/24/15	01/24/15
BLANK	CIS-1,3-DICHLOROPROPENE	0.30 U	1.0	0.30	0.15	ug/L	01/24/15	01/24/15
BLANK	DIBROMOCHLOROMETHANE	0.30 U	1.0	0.30	0.19	ug/L	01/24/15	01/24/15
BLANK	ETHYLBENZENE	0.50 U	1.0	0.50	0.23	ug/L	01/24/15	01/24/15
BLANK	METHYLENE CHLORIDE	1.00 U	5.0	1.00	0.35	ug/L	01/24/15	01/24/15
BLANK	STYRENE	0.50 U	1.0	0.50	0.25	ug/L	01/24/15	01/24/15
BLANK	TETRACHLOROETHENE	0.30 U	1.0	0.30	0.24	ug/L	01/24/15	01/24/15
BLANK	TOLUENE	0.30 U	1.0	0.30	0.17	ug/L	01/24/15	01/24/15
BLANK	TRANS-1,2-DICHLOROETHENE	0.30 U	1.0	0.30	0.19	ug/L	01/24/15	01/24/15
BLANK	TRANS-1,3-DICHLOROPROPENE	0.30 U	1.0	0.30	0.18	ug/L	01/24/15	01/24/15
BLANK	TRICHLOROETHENE	0.30 U	1.0	0.30	0.16	ug/L	01/24/15	01/24/15
BLANK	VINYL CHLORIDE	0.30 U	1.0	0.30	0.23	ug/L	01/24/15	01/24/15
BLANK	XYLENES (TOTAL)	0.30 U	2.0	0.30	0.19	ug/L	01/24/15	01/24/15

Quant Method: MALLW.M
Run #: 0123M45
Instrument: MAX
Sequence: M150119
Initials: DG

GC SC-Blank-REG MDLs
Printed: 01/28/15 2:12:12 PM

Method Blank
EPA 8260B WATER

APPL Inc.
908 North Temperance Avenu
Clovis, CA 93611

Blank Name/QCG: **150123W-10006 - 193856**
Batch ID: #86BKB-150123BM

Sample Type	Analyte	Result	LOQ	LOD	DL	Units	Extraction Date	Analysis Date
BLANK	SURROGATE: 1,2-DICHLOROET	110	70-120			%	01/24/15	01/24/15
BLANK	SURROGATE: 4-BROMOFLUORO	105	75-120			%	01/24/15	01/24/15
BLANK	SURROGATE: DIBROMOFLUOR	105	85-115			%	01/24/15	01/24/15
BLANK	SURROGATE: TOLUENE-D8 (S)	106	85-120			%	01/24/15	01/24/15

Quant Method: MALLW.M
Run #: 0123M45
Instrument: MAX
Sequence: M150119
Initials: DG

GC SC-Blank-REG MDLs
Printed: 01/28/15 2:12:13 PM

Quantitation Report (QT Reviewed)

Data File : M:\MAX\DATA\M150119\0123M45.D
Acq On : 24 Jan 15 4:08
Sample : 150123B BLK-1WM
Misc : 10mL w/IS&S: 11-03-14

Vial: 35
Operator: DG,SV,RS
Inst : MAX
Multiplr: 1.00

Quant Time: Jan 26 13:32 2015

Quant Results File: MALLW.RES

Quant Method : M:\MAX\DATA\M150119\MALLW.M (RTE Integrator)
Title : METHOD 8260B
Last Update : Wed Jan 21 13:18:25 2015
Response via : Initial Calibration
DataAcq Meth : V8260

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene (IS)	6.78	96	303888	25.00000 ppb	0.00
55) Chlorobenzene-D5 (IS)	11.03	117	219497	25.00000 ppb	0.00
70) 1,4-Dichlorobenzene-D (IS)	14.37	152	122323	25.00000 ppb	0.00
System Monitoring Compounds					
31) Dibromofluoromethane(S)	5.79	111	45804	14.68337 ppb	0.00
Spiked Amount 14.019			Recovery	= 104.739%	
36) 1,2-DCA-D4(S)	6.25	65	48455	14.69222 ppb	0.00
Spiked Amount 13.317			Recovery	= 110.327%	
56) Toluene-D8(S)	9.02	98	195358	15.26756 ppb	0.00
Spiked Amount 14.391			Recovery	= 106.094%	
64) 4-Bromofluorobenzene(S)	12.71	95	73741	14.76968 ppb	0.00
Spiked Amount 14.078			Recovery	= 104.913%	

Target Compounds Qvalue

(#) = qualifier out of range (m) = manual integration

Quantitation Report

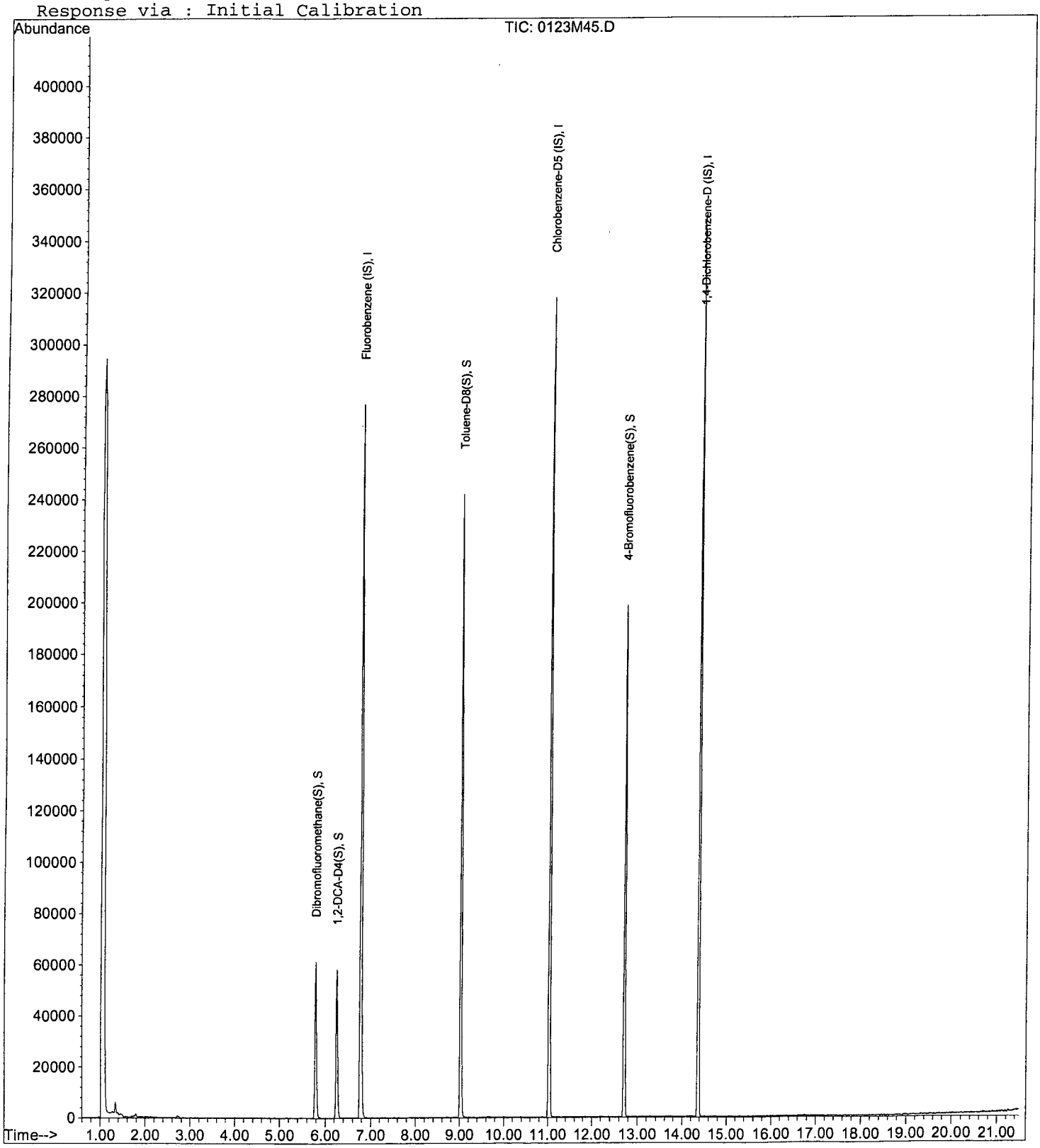
Data File : M:\MAX\DATA\M150119\0123M45.D
Acq On : 24 Jan 15 4:08
Sample : 150123B BLK-1WM
Misc : 10mL w/IS&S: 11-03-14

Vial: 35
Operator: DG,SV,RS
Inst : MAX
Multiplr: 1.00

Quant Time: Jan 26 13:32 2015

Quant Results File: MALLW.RES

Method : M:\MAX\DATA\M150119\MALLW.M (RTE Integrator)
Title : METHOD 8260B
Last Update : Wed Jan 21 13:18:25 2015
Response via : Initial Calibration



Method Blank

EPA 8260B WATER DILUTION

APPL Inc.
908 North Temperance Avenu
Clovis, CA 93611

Blank Name/QCG: **150127W-10000 - 193857**
Batch ID: #86BKB-150127AM

Sample Type	Analyte	Result	LOQ	LOD	DL	Units	Extraction Date	Analysis Date
BLANK	CIS-1,2-DICHLOROETHENE	0.30 U	1.0	0.30	0.16	ug/L	01/27/15	01/27/15
BLANK	TRANS-1,2-DICHLOROETHENE	0.30 U	1.0	0.30	0.19	ug/L	01/27/15	01/27/15
BLANK	VINYL CHLORIDE	0.30 U	1.0	0.30	0.23	ug/L	01/27/15	01/27/15
BLANK	SURROGATE: 1,2-DICHLOROET	114	70-120			%	01/27/15	01/27/15
BLANK	SURROGATE: 4-BROMOFLUORO	108	75-120			%	01/27/15	01/27/15
BLANK	SURROGATE: DIBROMOFLUOR	108	85-115			%	01/27/15	01/27/15
BLANK	SURROGATE: TOLUENE-D8 (S)	107	85-120			%	01/27/15	01/27/15

Quant Method: MALLW.M
Run #: 0127M17
Instrument: MAX
Sequence: M150126
Initials: DG

GC SC-Blank-REG MDLs
Printed: 01/28/15 2:13:02 PM

Quantitation Report (QT Reviewed)

Data File : M:\MAX\DATA\M150126\0127M17.D
Acq On : 27 Jan 15 13:43
Sample : 150127A BLK-1WM
Misc : 10mL w/IS&S: 11-03-14

Vial: 10
Operator: DG,SV,RS
Inst : MAX
Multiplr: 1.00

Quant Time: Jan 28 10:01 2015 Quant Results File: MALLW.RES

Quant Method : M:\MAX\DATA\M150126\MALLW.M (RTE Integrator)
Title : METHOD 8260B
Last Update : Tue Jan 27 10:55:52 2015
Response via : Initial Calibration
DataAcq Meth : V8260

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene (IS)	6.78	96	247525	25.00000 ppb	0.00
55) Chlorobenzene-D5 (IS)	11.03	117	182447	25.00000 ppb	0.00
70) 1,4-Dichlorobenzene-D (IS)	14.36	152	101881	25.00000 ppb	0.00
System Monitoring Compounds					
31) Dibromofluoromethane(S)	5.79	111	42207	15.74190 ppb	0.00
Spiked Amount 14.625			Recovery	= 107.636%	
36) 1,2-DCA-D4(S)	6.26	65	47647	15.39913 ppb	0.00
Spiked Amount 13.533			Recovery	= 113.790%	
56) Toluene-D8(S)	9.02	98	172844	16.09099 ppb	0.00
Spiked Amount 14.976			Recovery	= 107.444%	
64) 4-Bromofluorobenzene(S)	12.71	95	66668	15.76945 ppb	0.00
Spiked Amount 14.557			Recovery	= 108.330%	

Target Compounds Qvalue

(#) = qualifier out of range (m) = manual integration

Quantitation Report

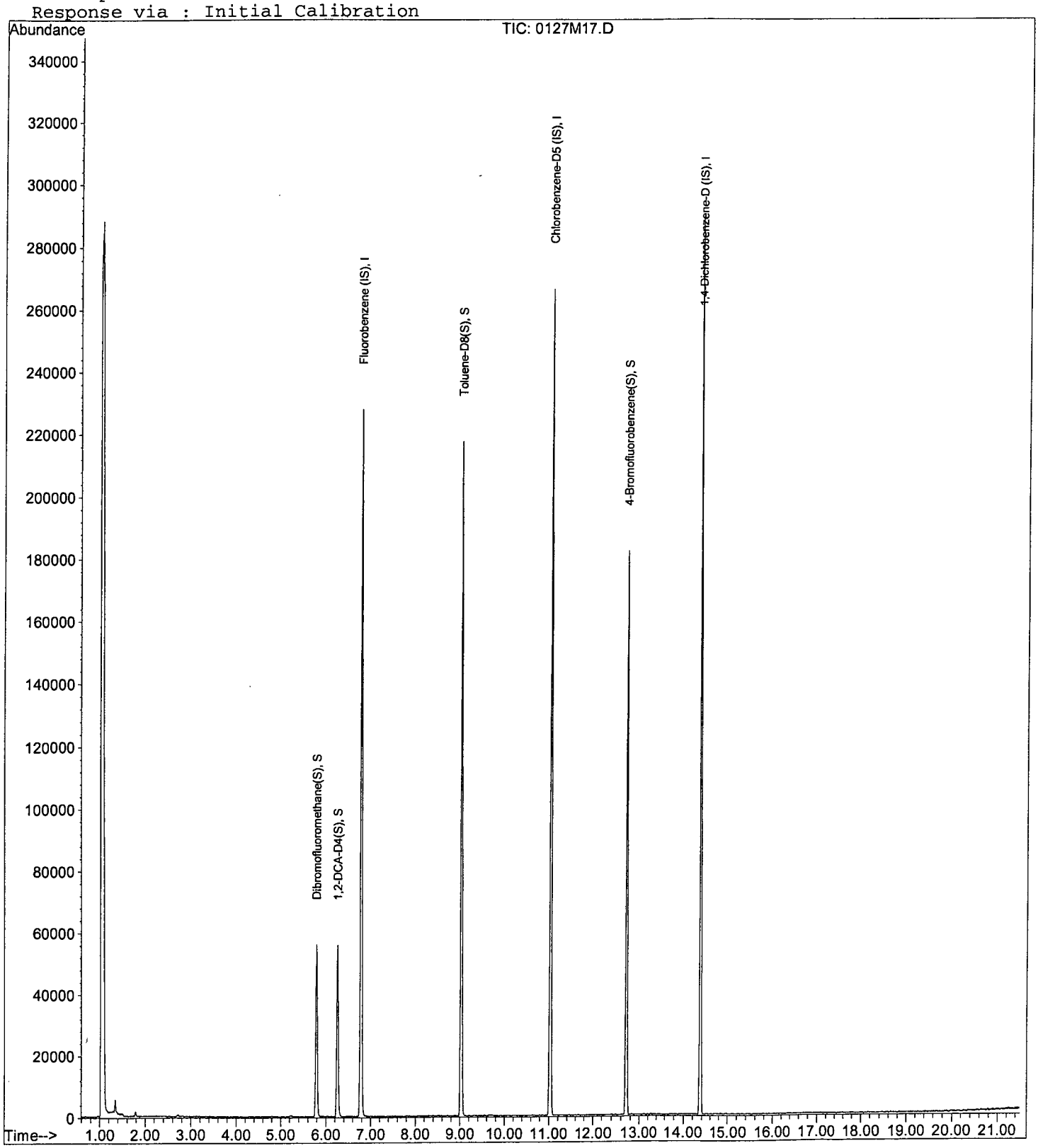
Data File : M:\MAX\DATA\M150126\0127M17.D
Acq On : 27 Jan 15 13:43
Sample : 150127A BLK-1WM
Misc : 10mL w/IS&S: 11-03-14

Vial: 10
Operator: DG,SV,RS
Inst : MAX
Multiplr: 1.00

Quant Time: Jan 28 10:01 2015

Quant Results File: MALLW.RES

Method : M:\MAX\DATA\M150126\MALLW.M (RTE Integrator)
Title : METHOD 8260B
Last Update : Tue Jan 27 10:55:52 2015
Response via : Initial Calibration



Laboratory Control Spike Recovery

EPA 8260B WATER

APPL ID: **150124W-10006 LCS - 193856**
Batch ID: #86BKB-150123BM

APPL Inc.
908 North Temperance Avenue
Clovis, CA 93611

Compound Name	Spike Level ug/L	SPK Result ug/L	SPK % Recovery	Recovery Limits
1,1,1-TRICHLOROETHANE	10.00	10.1	101	65-130
1,1,2,2-TETRACHLOROETHANE	10.00	8.86	88.6	65-130
1,1,2-TRICHLOROETHANE	10.00	9.17	91.7	75-125
1,1-DICHLOROETHANE	10.00	9.60	96.0	70-135
1,1-DICHLOROETHENE	10.00	9.72	97.2	70-130
1,2,3-TRICHLOROPROPANE	10.00	10.0	100	75-125
1,2-DIBROMOETHANE	10.00	9.75	97.5	70-130
1,2-DICHLOROETHANE	10.00	9.80	98.0	70-130
1,2-DICHLOROPROPANE	10.00	9.36	93.6	75-125
2-BUTANONE	10.00	9.15	91.5	30-150
4-METHYL-2-PENTANONE	10.00	10.1	101	60-135
ACETONE	10.00	9.87	98.7	40-140
BENZENE	10.00	9.32	93.2	80-120
BROMODICHLOROMETHANE	10.00	9.68	96.8	75-120
BROMOFORM	10.00	9.04	90.4	70-130
BROMOMETHANE	10.00	8.52	85.2	30-145
CARBON TETRACHLORIDE	10.00	10.6	106	65-140
CHLOROBENZENE	10.00	9.44	94.4	80-120
CHLOROETHANE	10.00	9.23	92.3	60-135
CHLOROFORM	10.00	10.0	100	65-135
CHLOROMETHANE	10.00	8.02	80.2	40-125
CIS-1,2-DICHLOROETHENE	10.00	9.49	94.9	70-125
CIS-1,3-DICHLOROPROPENE	10.00	9.06	90.6	70-130
DIBROMOCHLOROMETHANE	10.00	9.59	95.9	60-135
ETHYLBENZENE	10.00	9.75	97.5	75-125
METHYLENE CHLORIDE	10.00	8.55	85.5	55-140
STYRENE	10.00	9.60	96.0	65-135
TETRACHLOROETHENE	10.00	9.55	95.5	45-150
TOLUENE	10.00	9.47	94.7	75-120
TRANS-1,2-DICHLOROETHENE	10.00	9.09	90.9	60-140
TRANS-1,3-DICHLOROPROPENE	10.00	9.21	92.1	55-140

Primary	SPK
Quant Method :	MALLW.M
Extraction Date :	01/24/15
Analysis Date :	01/24/15
Instrument :	MAX
Run :	0123M40
Initials :	DG

Comments: _____

Printed: 01/28/15 2:12:04 PM
APPL Standard LCS

Laboratory Control Spike Recovery
EPA 8260B WATER

APPL ID: **150124W-10006 LCS - 193856**
Batch ID: #86BKB-150123BM

APPL Inc.
908 North Temperance Avenue
Clovis, CA 93611

Compound Name	Spike Level ug/L	SPK Result ug/L	SPK % Recovery	Recovery Limits
TRICHLOROETHENE	10.00	10.2	102	70-125
VINYL CHLORIDE	10.00	9.08	90.8	50-145
XYLENES (TOTAL)	30.0	28.6	95.3	75-130
SURROGATE: 1,2-DICHLOROETHANE-D	13.3	14.3	107	70-120
SURROGATE: 4-BROMOFLUOROBENZE	14.1	14.6	104	75-120
SURROGATE: DIBROMOFLUOROMETH	14.0	14.9	106	85-115
SURROGATE: TOLUENE-D8 (S)	14.4	14.7	102	85-120

Comments:

Primary	SPK
Quant Method :	MALLW.M
Extraction Date :	01/24/15
Analysis Date :	01/24/15
Instrument :	MAX
Run :	0123M40
Initials :	DG

Printed: 01/28/15 2:12:04 PM
APPL Standard LCS

Quantitation Report (Not Reviewed)

Data File : M:\MAX\DATA\M150119\0123M40.D
Acq On : 24 Jan 15 1:50
Sample : 150123B LCS-1WM
Misc : 10mL w/IS&S: 11-03-14

Vial: 30
Operator: DG,SV,RS
Inst : MAX
Multiplr: 1.00

Quant Time: Jan 26 13:07 2015

Quant Results File: MALLW.RES

Quant Method : M:\MAX\DATA\M150119\MALLW.M (RTE Integrator)
Title : METHOD 8260B
Last Update : Wed Jan 21 13:18:25 2015
Response via : Initial Calibration
DataAcq Meth : V8260

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene (IS)	6.78	96	317678	25.00000 ppb	0.00
55) Chlorobenzene-D5 (IS)	11.03	117	230984	25.00000 ppb	0.00
70) 1,4-Dichlorobenzene-D (IS)	14.37	152	131041	25.00000 ppb	0.00
System Monitoring Compounds					
31) Dibromofluoromethane(S)	5.79	111	48641	14.91596 ppb	0.00
Spiked Amount 14.019			Recovery	= 106.401%	
36) 1,2-DCA-D4(S)	6.25	65	49224	14.27750 ppb	0.00
Spiked Amount 13.317			Recovery	= 107.210%	
56) Toluene-D8(S)	9.03	98	197768	14.68727 ppb	0.00
Spiked Amount 14.391			Recovery	= 102.057%	
64) 4-Bromofluorobenzene(S)	12.71	95	76637	14.58637 ppb	0.00
Spiked Amount 14.078			Recovery	= 103.606%	
Target Compounds					Qvalue
2) Dichlorodifluoromethane	1.23	85	29854	10.46126 ppb	97
3) Freon 114	1.33	85	27483	11.42180 ppb	98
4) Chloromethane	1.38	50	38437	8.01693 ppb	100
5) Vinyl chloride	1.47	62	37369	9.07804 ppb	99
6) Bromomethane	1.74	94	8292	8.52098 ppb	97
7) Chloroethane	1.84	64	23380	9.23314 ppb	95
8) Dichlorofluoromethane	2.03	67	64588	9.36251 ppb	99
9) Trichlorofluoromethane	2.08	101	49292	10.55907 ppb	99
10) Acrolein	2.49	56	39363	111.59558 ppb	99
11) Acetone	2.70	43	7133	9.86793 ppb	98
12) Freon-113	2.63	101	12050	10.54603 ppb	99
13) 1,1-DCE	2.60	61	24384	9.72034 ppb	98
14) t-Butanol	3.48	59	8028	122.59528 ppb	97
15) Methyl Acetate	3.11	43	17095	9.15464 ppb	98
16) Iodomethane	2.75	142	26260	9.30393 ppb	92
17) Acrylonitrile	3.49	53	7560	9.24573 ppb	94
18) Methylene chloride	3.17	84	33466	8.55271 ppb	97
19) Carbon disulfide	2.82	76	84997	9.07764 ppb	98
20) Methyl t-butyl ether (MtBE	3.65	73	82421	9.62462 ppb	96
21) Trans-1,2-DCE	3.54	96	32123	9.09458 ppb	99
22) Diisopropyl Ether	4.44	45	120538	9.10768 ppb	98
23) 1,1-DCA	4.16	63	60408	9.59659 ppb	99
24) Vinyl Acetate	4.34	43	25911	6.51528 ppb	99
25) Ethyl tert Butyl Ether	5.01	59	102738	9.38740 ppb	94
26) MEK (2-Butanone)	5.19	43	10131	9.14852 ppb	99
27) Cis-1,2-DCE	5.07	96	37961	9.48514 ppb	99
28) 2,2-Dichloropropane	5.06	77	46531	8.58571 ppb	98
29) Chloroform	5.56	83	58043	10.04262 ppb	99
30) Bromochloromethane	5.41	128	16716	9.47505 ppb	99
32) 1,1,1-TCA	5.82	97	53723	10.08860 ppb	97
33) Cyclohexane	5.90	41	32919	9.55257 ppb	94
34) 1,1-Dichloropropene	6.07	75	44858	9.51278 ppb	99
35) 2,2,4-Trimethylpentane	6.55	57	91668	9.37362 ppb	99
37) Carbon Tetrachloride	6.08	117	43032	10.63906 ppb	96
38) Tert Amyl Methyl Ether	6.67	73	93152	9.63484 ppb	100
39) 1,2-DCA	6.36	62	41204	9.80439 ppb	99
40) Benzene	6.35	78	141607	9.32072 ppb	100
41) TCE	7.31	95	37612	10.19132 ppb	97
42) 2-Pentanone	7.65	43	227083	117.52840 ppb	99

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : M:\MAX\DATA\M150119\0123M40.D
Acq On : 24 Jan 15 1:50
Sample : 150123B LCS-1WM
Misc : 10mL w/IS&S: 11-03-14

Vial: 30
Operator: DG,SV,RS
Inst : MAX
Multiplr: 1.00

Quant Time: Jan 26 13:07 2015

Quant Results File: MALLW.RES

Quant Method : M:\MAX\DATA\M150119\MALLW.M (RTE Integrator)
Title : METHOD 8260B
Last Update : Wed Jan 21 13:18:25 2015
Response via : Initial Calibration
DataAcq Meth : V8260

Compound	R.T.	QIon	Response	Conc Unit		Qvalue
43) 1,2-Dichloropropane	7.59	63	35445	9.36296 ppb		99
44) Bromodichloromethane	8.00	83	42205	9.68006 ppb		95
45) Methyl Cyclohexane	7.58	83	53071	9.59086 ppb		96
46) Dibromomethane	7.74	93	16272	9.86010 ppb		97
47) MIBK (methyl isobutyl ket	8.95	43	28350	10.06669 ppb		97
48) 1-Bromo-2-chloroethane	8.40	63	37729	9.19977 ppb		97
49) 2-Chloroethyl vinyl ether	8.39	106	622	1.21506 ppb	#	1
50) Cis-1,3-Dichloropropene	8.65	75	53443	9.05942 ppb		96
51) Toluene	9.12	91	158187	9.46958 ppb		96
52) Trans-1,3-Dichloropropene	9.44	75	44255	9.20660 ppb		97
53) 1,1,2-TCA	9.67	83	19238	9.17063 ppb		97
54) 2-Hexanone	10.12	43	15380	8.69255 ppb		93
57) 1,2-EDB	10.33	107	23821	9.75042 ppb		99
58) Tetrachloroethene	9.89	164	18784	9.55218 ppb		98
59) 1-Chlorohexane	11.10	91	46563	9.61760 ppb		97
60) 1,1,1,2-Tetrachloroethane	11.20	131	37574	10.03513 ppb		93
61) m&p-Xylene	11.43	106	141107	19.12701 ppb		99
62) o-Xylene	11.98	106	69152	9.45635 ppb		100
63) Styrene	12.00	104	117016	9.59553 ppb		99
65) 1,3-Dichloropropane	9.90	76	44852	9.73856 ppb		98
66) Dibromochloromethane	10.20	129	30592	9.58535 ppb		100
67) Chlorobenzene	11.06	112	102966	9.44481 ppb		98
68) Ethylbenzene	11.26	91	181284	9.74817 ppb		99
69) Bromoform	12.20	173	20497	9.03959 ppb		99
71) Isopropylbenzene	12.53	105	178904	9.81039 ppb		99
72) 1,1,2,2-Tetrachloroethane	12.93	83	23542	8.86495 ppb		95
73) 1,2,3-Trichloropropane	12.96	110	9286	10.01744 ppb		95
74) t-1,4-Dichloro-2-Butene	13.03	53	7059	9.51312 ppb		98
75) Bromobenzene	12.89	156	49267	9.65313 ppb		96
76) n-Propylbenzene	13.12	91	203440	9.72474 ppb		99
77) 4-Ethyltoluene	13.29	105	175983	9.69592 ppb		100
78) 2-Chlorotoluene	13.20	91	118375	9.46676 ppb		98
79) 1,3,5-Trimethylbenzene	13.39	105	155140	9.61166 ppb		100
80) 4-Chlorotoluene	13.36	91	142348	9.78855 ppb		98
81) Tert-Butylbenzene	13.84	119	135798	9.80011 ppb		99
82) 1,2,4-Trimethylbenzene	13.91	105	159250	9.79308 ppb		98
83) Sec-Butylbenzene	14.16	105	185033	9.68098 ppb		100
84) p-Isopropyltoluene	14.39	119	164077	9.58056 ppb		98
85) Benzyl Chloride	14.60	91	35945	7.00451 ppb		96
86) 1,3-DCB	14.27	146	90602	9.52534 ppb		99
87) 1,4-DCB	14.40	146	92311	9.53306 ppb		99
88) n-Butylbenzene	14.98	91	138726	9.87609 ppb		99
89) 1,2-DCB	14.92	146	83578	9.60221 ppb		98
90) Hexachloroethane	15.31	117	21957	9.37495 ppb		97
91) 1,2-Dibromo-3-chloropropan	16.03	75	4209	9.07760 ppb		94
92) 1,2,4-Trichlorobenzene	17.27	180	57676	10.72719 ppb		99
93) Hexachlorobutadiene	17.58	225	37384	9.88693 ppb		96
94) Naphthalene	17.60	128	65337	9.41126 ppb		97
95) 1,2,3-Trichlorobenzene	17.96	180	42515	9.61918 ppb		99

(#) = qualifier out of range (m) = manual integration

Quantitation Report

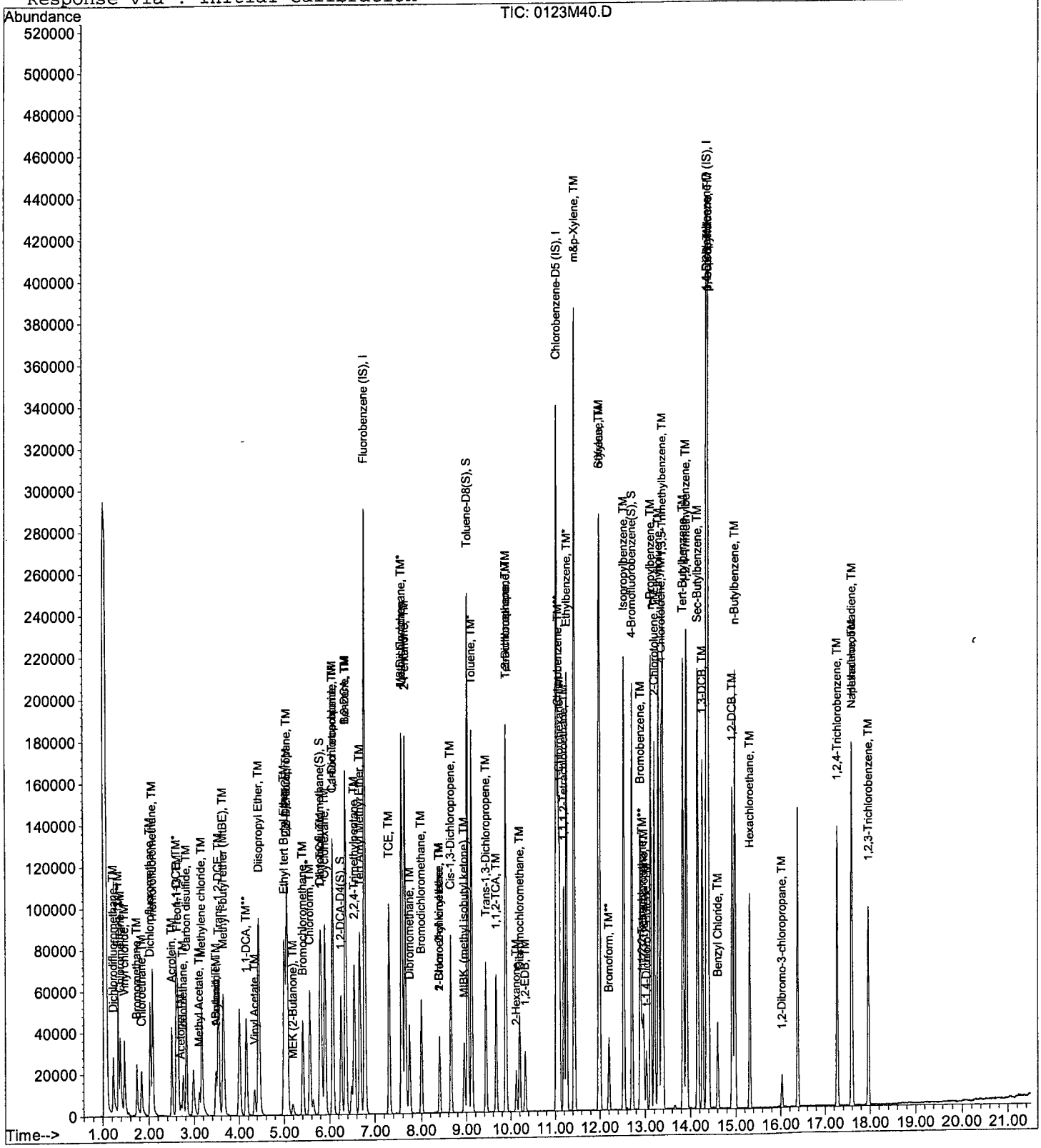
Data File : M:\MAX\DATA\M150119\0123M40.D
Acq On : 24 Jan 15 1:50
Sample : 150123B LCS-1WM
Misc : 10mL w/IS&S: 11-03-14

Vial: 30
Operator: DG,SV,RS
Inst : MAX
Multiplr: 1.00

Quant Time: Jan 26 13:07 2015

Quant Results File: MALLW.RES

Method : M:\MAX\DATA\M150119\MALLW.M (RTE Integrator)
Title : METHOD 8260B
Last Update : Wed Jan 21 13:18:25 2015
Response via : Initial Calibration



365

Laboratory Control Spike Recovery

EPA 8260B WATER DILUTION

APPL ID: **150127W-10000 LCS - 193857**
Batch ID: #86BKB-150127AM

APPL Inc.
908 North Temperance Avenue
Clovis, CA 93611

Compound Name	Spike Level ug/L	SPK Result ug/L	SPK % Recovery	Recovery Limits
CIS-1,2-DICHLOROETHENE	10.00	10.0	100	70-125
TRANS-1,2-DICHLOROETHENE	10.00	9.95	99.5	60-140
VINYL CHLORIDE	10.00	9.75	97.5	50-145
SURROGATE: 1,2-DICHLOROETHANE-D	13.5	14.1	104	70-120
SURROGATE: 4-BROMOFLUOROBENZE	14.6	15.1	104	75-120
SURROGATE: DIBROMOFLUOROMETH	14.6	14.8	101	85-115
SURROGATE: TOLUENE-D8 (S)	15.0	15.7	105	85-120

Comments: _____

Primary	SPK
Quant Method :	MALLW.M
Extraction Date :	01/27/15
Analysis Date :	01/27/15
Instrument :	MAX
Run :	0127M13
Initials :	DG

Printed: 01/28/15 2:12:54 PM
APPL Standard LCS

Quantitation Report (Not Reviewed)

Data File : M:\MAX\DATA\M150126\0127M13.D
Acq On : 27 Jan 15 11:52
Sample : 150127A LCS-1WM
Misc : 10mL w/IS&S: 11-03-14

Vial: 6
Operator: DG,SV,RS
Inst : MAX
Multiplr: 1.00

Quant Time: Jan 28 9:41 2015

Quant Results File: MALLW.RES

Quant Method : M:\MAX\DATA\M150126\MALLW.M (RTE Integrator)
Title : METHOD 8260B
Last Update : Tue Jan 27 10:55:52 2015
Response via : Initial Calibration
DataAcq Meth : V8260

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene (IS)	6.78	96	261286	25.00000 ppb	0.00
55) Chlorobenzene-D5 (IS)	11.03	117	191970	25.00000 ppb	0.00
70) 1,4-Dichlorobenzene-D (IS)	14.37	152	109193	25.00000 ppb	0.00
System Monitoring Compounds					
31) Dibromofluoromethane(S)	5.79	111	41948	14.82132 ppb	0.00
Spiked Amount 14.625			Recovery	= 101.339%	
36) 1,2-DCA-D4(S)	6.25	65	46183	14.13987 ppb	0.00
Spiked Amount 13.533			Recovery	= 104.487%	
56) Toluene-D8(S)	9.03	98	177094	15.66880 ppb	0.00
Spiked Amount 14.976			Recovery	= 104.626%	
64) 4-Bromofluorobenzene(S)	12.71	95	67153	15.09621 ppb	0.00
Spiked Amount 14.557			Recovery	= 103.706%	

Target Compounds					Qvalue
2) Dichlorodifluoromethane	1.23	85	28490	10.48805 ppb	98
3) Freon 114	1.33	85	23404	11.13146 ppb	95
4) Chloromethane	1.38	50	34695	9.83906 ppb	98
5) Vinyl chloride	1.47	62	31648	9.75144 ppb	98
6) Bromomethane	1.74	94	7363	11.33906 ppb	92
7) Chloroethane	1.84	64	20428	9.27042 ppb	98
8) Dichlorofluoromethane	2.03	67	56120	10.22616 ppb	98
9) Trichlorofluoromethane	2.08	101	45164	10.90214 ppb	100
10) Acrolein	2.49	56	32810	160.66164 ppb	99
11) Acetone	2.69	43	7254	11.16377 ppb	99
12) Freon-113	2.63	101	10742	10.62912 ppb	96
13) 1,1-DCE	2.60	61	21712	9.95973 ppb	97
14) t-Butanol	3.48	59	7960	126.31940 ppb	100
15) Methyl Acetate	3.10	43	16407	9.91502 ppb	99
16) Iodomethane	2.74	142	25406	10.93502 ppb	96
17) Acrylonitrile	3.48	53	7623	10.81398 ppb	96
18) Methylene chloride	3.17	84	29041	10.25206 ppb	99
19) Carbon disulfide	2.82	76	75000	9.45983 ppb	99
20) Methyl t-butyl ether (MtBE	3.65	73	77420	10.05907 ppb	99
21) Trans-1,2-DCE	3.54	96	28810	9.94563 ppb	98
22) Diisopropyl Ether	4.44	45	109828	10.37566 ppb	95
23) 1,1-DCA	4.16	63	52798	10.12805 ppb	98
24) Vinyl Acetate	4.34	43	41451	10.44901 ppb	99
25) Ethyl tert Butyl Ether	5.00	59	95418	10.28672 ppb	100
26) MEK (2-Butanone)	5.18	43	9534	10.80971 ppb	99
27) Cis-1,2-DCE	5.07	96	33356	10.02941 ppb	97
28) 2,2-Dichloropropane	5.06	77	47136	10.63922 ppb	99
29) Chloroform	5.56	83	52938	10.73046 ppb	99
30) Bromochloromethane	5.41	128	15322	10.58493 ppb	89
32) 1,1,1-TCA	5.82	97	47793	10.06964 ppb	94
33) Cyclohexane	5.90	41	27170	10.19072 ppb	89
34) 1,1-Dichloropropene	6.07	75	40044	10.17474 ppb	99
35) 2,2,4-Trimethylpentane	6.55	57	83487	10.78579 ppb #	89
37) Carbon Tetrachloride	6.07	117	38673	10.85250 ppb	91
38) Tert Amyl Methyl Ether	6.67	73	82318	10.22524 ppb	98
39) 1,2-DCA	6.37	62	38545	10.19975 ppb	100
40) Benzene	6.36	78	122457	10.01310 ppb	98
41) TCE	7.31	95	30935	9.94010 ppb	95
42) 2-Pentanone	7.65	43	219886	129.39649 ppb	99

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : M:\MAX\DATA\M150126\0127M13.D
Acq On : 27 Jan 15 11:52
Sample : 150127A LCS-1WM
Misc : 10mL w/IS&S: 11-03-14

Vial: 6
Operator: DG,SV,RS
Inst : MAX
Multiplr: 1.00

Quant Time: Jan 28 9:41 2015

Quant Results File: MALLW.RES

Quant Method : M:\MAX\DATA\M150126\MALLW.M (RTE Integrator)
Title : METHOD 8260B
Last Update : Tue Jan 27 10:55:52 2015
Response via : Initial Calibration
DataAcq Meth : V8260

Compound	R.T.	QIon	Response	Conc Unit	Qvalue
43) 1,2-Dichloropropane	7.59	63	29828	9.96729 ppb	99
44) Bromodichloromethane	8.00	83	39095	10.64039 ppb	95
45) Methyl Cyclohexane	7.58	83	45820	10.34177 ppb	95
46) Dibromomethane	7.74	93	15009	10.13335 ppb	97
47) MIBK (methyl isobutyl ket	8.94	43	22433	9.74451 ppb	98
48) 1-Bromo-2-chloroethane	8.40	63	35671	10.25939 ppb	100
49) 2-Chloroethyl vinyl ether	8.49	106	4432	10.32567 ppb	97
50) Cis-1,3-Dichloropropene	8.65	75	49214	10.25538 ppb	98
51) Toluene	9.12	91	138538	10.17404 ppb	99
52) Trans-1,3-Dichloropropene	9.44	75	41759	10.50032 ppb	97
53) 1,1,2-TCA	9.67	83	18329	10.20020 ppb	93
54) 2-Hexanone	10.12	43	15068	10.55542 ppb	97
57) 1,2-EDB	10.33	107	22663	10.57130 ppb	100
58) Tetrachloroethene	9.89	164	17336	10.49069 ppb	93
59) 1-Chlorohexane	11.10	91	40341	10.07526 ppb	97
60) 1,1,1,2-Tetrachloroethane	11.20	131	33722	10.21674 ppb	89
61) m&p-Xylene	11.43	106	124820	20.87070 ppb	99
62) o-Xylene	11.98	106	62368	10.71220 ppb	99
63) Styrene	12.00	104	102722	10.45630 ppb	99
65) 1,3-Dichloropropane	9.90	76	40109	10.15573 ppb	97
66) Dibromochloromethane	10.20	129	28586	10.55429 ppb	94
67) Chlorobenzene	11.06	112	90662	9.84325 ppb	98
68) Ethylbenzene	11.26	91	158810	10.31351 ppb	99
69) Bromoform	12.20	173	19999	10.61402 ppb	95
71) Isopropylbenzene	12.53	105	158277	10.75293 ppb	100
72) 1,1,2,2-Tetrachloroethane	12.93	83	24013	10.35846 ppb	93
73) 1,2,3-Trichloropropane	12.96	110	8516	10.37082 ppb	100
74) t-1,4-Dichloro-2-Butene	13.02	53	7163	10.51496 ppb	85
75) Bromobenzene	12.89	156	44286	10.39942 ppb	96
76) n-Propylbenzene	13.12	91	177540	10.47720 ppb	99
77) 4-Ethyltoluene	13.29	105	157143	10.59316 ppb	99
78) 2-Chlorotoluene	13.20	91	106415	10.49508 ppb	99
79) 1,3,5-Trimethylbenzene	13.39	105	141356	10.80316 ppb	98
80) 4-Chlorotoluene	13.36	91	123747	10.28725 ppb	98
81) Tert-Butylbenzene	13.84	119	120468	10.79551 ppb	98
82) 1,2,4-Trimethylbenzene	13.91	105	140650	10.63225 ppb	99
83) Sec-Butylbenzene	14.16	105	162798	10.68691 ppb	99
84) p-Isopropyltoluene	14.39	119	146349	10.59377 ppb	98
85) Benzyl Chloride	14.60	91	42728	10.87527 ppb	98
86) 1,3-DCB	14.26	146	80695	10.18171 ppb	98
87) 1,4-DCB	14.40	146	79969	9.84703 ppb	97
88) n-Butylbenzene	14.98	91	121853	10.53382 ppb	98
89) 1,2-DCB	14.92	146	74316	10.22760 ppb	97
90) Hexachloroethane	15.31	117	19252	10.46923 ppb	90
91) 1,2-Dibromo-3-chloropropan	16.03	75	4620	11.18343 ppb	96
92) 1,2,4-Trichlorobenzene	17.26	180	52282	10.68008 ppb	98
93) Hexachlorobutadiene	17.58	225	34555	10.38635 ppb	96
94) Naphthalene	17.60	128	65745	10.00556 ppb	98
95) 1,2,3-Trichlorobenzene	17.96	180	40393	9.90700 ppb	98

(#) = qualifier out of range (m) = manual integration

Quantitation Report

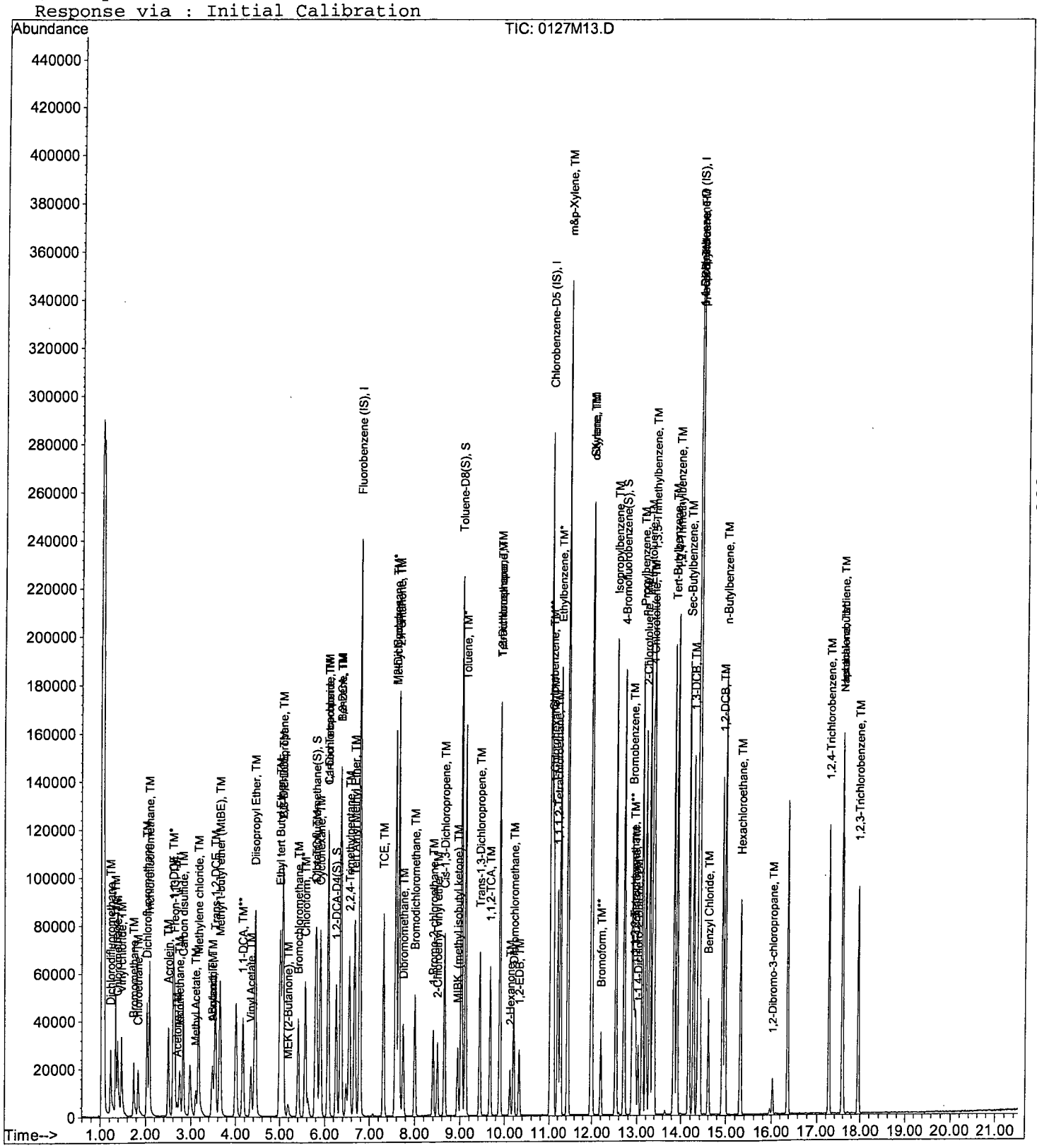
Data File : M:\MAX\DATA\M150126\0127M13.D
Acq On : 27 Jan 15 11:52
Sample : 150127A LCS-1WM
Misc : 10mL w/IS&S: 11-03-14

Vial: 6
Operator: DG,SV,RS
Inst : MAX
Multiplr: 1.00

Quant Time: Jan 28 9:41 2015

Quant Results File: MALLW.RES

Method : M:\MAX\DATA\M150126\MALLW.M (RTE Integrator)
Title : METHOD 8260B
Last Update : Tue Jan 27 10:55:52 2015
Response via : Initial Calibration



Matrix Spike Recoveries

EPA 8260B WATER

APPL ID: **150127W-10006 MS - 193856**
Batch ID: #86BKB-150123BM
Sample ID: AZ10006
Client ID: EKB100020

APPL Inc.
908 North Temperance Avenue
Clovis, CA 93611

Compound Name	Spike Lvl ug/L	Matrix Result ug/L	SPK Result ug/L	DUP Result ug/L	SPK % Recovery	DUP % Recovery	Recovery Limits	RPD %	RPD Limits
1,1,1-TRICHLOROETHANE	10.00	ND	10.0	10.2	100	102	65-130	2.0	30
1,1,2,2-TETRACHLOROETHANE	10.00	ND	9.50	9.27	95.0	92.7	65-130	2.5	30
1,1,2-TRICHLOROETHANE	10.00	ND	9.57	9.42	95.7	94.2	75-125	1.6	30
1,1-DICHLOROETHANE	10.00	ND	9.88	9.84	98.8	98.4	70-135	0.41	30
1,1-DICHLOROETHENE	10.00	ND	9.99	10.2	99.9	102	70-130	2.1	30
1,2,3-TRICHLOROPROPANE	10.00	ND	9.71	10.1	97.1	101	75-125	3.9	30
1,2-DIBROMOETHANE	10.00	ND	9.58	9.53	95.8	95.3	70-130	0.52	30
1,2-DICHLOROETHANE	10.00	ND	9.70	9.67	97.0	96.7	70-130	0.31	30
1,2-DICHLOROPROPANE	10.00	ND	9.86	9.64	98.6	96.4	75-125	2.3	30
2-BUTANONE	10.00	ND	9.29	9.17	92.9	91.7	30-150	1.3	30
4-METHYL-2-PENTANONE	10.00	ND	8.70	8.30	87.0	83.0	60-135	4.7	30
ACETONE	10.00	ND	8.97	8.51	89.7	85.1	40-140	5.3	30
BENZENE	10.00	ND	9.68	9.70	96.8	97.0	80-120	0.21	30
BROMODICHLOROMETHANE	10.00	ND	10.1	10.2	101	102	75-120	0.99	30
BROMOFORM	10.00	ND	9.36	10.1	93.6	101	70-130	7.6	30
BROMOMETHANE	10.00	ND	11.6	11.4	116	114	30-145	1.7	30
CARBON TETRACHLORIDE	10.00	ND	11.1	10.8	111	108	65-140	2.7	30
CHLOROBENZENE	10.00	ND	9.44	9.55	94.4	95.5	80-120	1.2	30
CHLOROETHANE	10.00	ND	8.62	8.73	86.2	87.3	60-135	1.3	30
CHLOROFORM	10.00	ND	10.5	10.7	105	107	65-135	1.9	30
CHLOROMETHANE	10.00	ND	9.59	9.26	95.9	92.6	40-125	3.5	30
CIS-1,2-DICHLOROETHENE	10.00	87	90.7	91.1	37.0 #	41.0 #	70-125	0.44	30
CIS-1,3-DICHLOROPROPENE	10.00	ND	9.41	9.35	94.1	93.5	70-130	0.64	30
DIBROMOCHLOROMETHANE	10.00	ND	9.93	9.93	99.3	99.3	60-135	0.0	30
ETHYLBENZENE	10.00	ND	9.82	9.93	98.2	99.3	75-125	1.1	30
METHYLENE CHLORIDE	10.00	ND	10.1	10.3	101	103	55-140	2.0	30
STYRENE	10.00	ND	9.95	9.96	99.5	99.6	65-135	0.10	30
TETRACHLOROETHENE	10.00	0.35	10.2	10.1	98.5	97.5	45-150	0.99	30
TOLUENE	10.00	ND	9.86	9.83	98.6	98.3	75-120	0.30	30
TRANS-1,2-DICHLOROETHENE	10.00	46	52.1	52.1	61.0	61.0	60-140	0.0	30

= Recovery is outside QC limits.

Primary	SPK	DUP
Quant Method :	MALLW.M	MALLW.M
Extraction Date :	01/27/15	01/27/15
Analysis Date :	01/27/15	01/27/15
Instrument :	MAX	MAX
Run :	0127M30	0127M31
Initials :	DG	

Comments: _____

Printed: 01/28/15 2:12:00 PM
APPL MSD SCII

Matrix Spike Recoveries

EPA 8260B WATER

APPL ID: **150127W-10006 MS - 193856**
Batch ID: #86BKB-150123BM
Sample ID: AZ10006
Client ID: EKB100020

APPL Inc.
908 North Temperance Avenue
Clovis, CA 93611

Compound Name	Spike Lvl ug/L	Matrix Result ug/L	SPK Result ug/L	DUP Result ug/L	SPK % Recovery	DUP % Recovery	Recovery Limits	RPD %	RPD Limits
TRANS-1,3-DICHLOROPROPENE	10.00	ND	9.43	9.30	94.3	93.0	55-140	1.4	30
TRICHLOROETHENE	10.00	0.64	10.6	10.5	99.6	98.6	70-125	0.95	30
VINYL CHLORIDE	10.00	38	43.5	43.2	55.0	52.0	50-145	0.69	30
XYLENES (TOTAL)	30.0	ND	29.8	29.9	99.3	99.7	75-130	0.34	30
SURROGATE: 1,2-DICHLOROETHANE-D	13.5	NA	13.7	13.1	101	96.8	70-120		30
SURROGATE: 4-BROMOFLUOROBENZE	14.6	NA	14.5	14.3	99.6	98.2	75-120		30
SURROGATE: DIBROMOFLUOROMETH	14.6	NA	14.6	13.7	99.8	93.7	85-115		30
SURROGATE: TOLUENE-D8 (S)	15.0	NA	14.8	14.5	98.8	96.8	85-120		30

= Recovery is outside QC limits.

Comments:

Primary	SPK	DUP
Quant Method :	MALLW.M	MALLW.M
Extraction Date :	01/27/15	01/27/15
Analysis Date :	01/27/15	01/27/15
Instrument :	MAX	MAX
Run :	0127M30	0127M31
Initials :	DG	

Printed: 01/28/15 2:12:00 PM
APPL MSD SCII

Quantitation Report (Not Reviewed)

Data File : M:\MAX\DATA\M150126\0127M30.D
Acq On : 27 Jan 15 19:44
Sample : AZ10006W234 MS-1WM
Misc : 10mL w/IS&S: 11-03-14

Vial: 23
Operator: DG,SV,RS
Inst : MAX
Multiplr: 1.00

Quant Time: Jan 28 9:42 2015

Quant Results File: MALLW.RES

Quant Method : M:\MAX\DATA\M150126\MALLW.M (RTE Integrator)
Title : METHOD 8260B
Last Update : Tue Jan 27 10:55:52 2015
Response via : Initial Calibration
DataAcq Meth : V8260

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene (IS)	6.78	96	238645	25.00000 ppb	0.00
55) Chlorobenzene-D5 (IS)	11.03	117	177161	25.00000 ppb	0.00
70) 1,4-Dichlorobenzene-D (IS)	14.36	152	101202	25.00000 ppb	0.00
System Monitoring Compounds					
31) Dibromofluoromethane(S)	5.79	111	37679	14.57602 ppb	0.00
Spiked Amount 14.625			Recovery = 99.664%		
36) 1,2-DCA-D4(S)	6.25	65	40888	13.70639 ppb	0.00
Spiked Amount 13.533			Recovery = 101.280%		
56) Toluene-D8(S)	9.02	98	154504	14.81279 ppb	0.00
Spiked Amount 14.976			Recovery = 98.910%		
64) 4-Bromofluorobenzene(S)	12.71	95	59670	14.53529 ppb	0.00
Spiked Amount 14.557			Recovery = 99.852%		

Target Compounds						Qvalue
2) Dichlorodifluoromethane	1.23	85	26888	10.80483 ppb		95
3) Freon 114	1.34	85	21823	11.35471 ppb		88
4) Chloromethane	1.38	50	30881	9.58791 ppb		99
5) Vinyl chloride	1.47	62	128860	43.47149 ppb		99
6) Bromomethane	1.74	94	6864	11.59053 ppb		94
7) Chloroethane	1.84	64	17521	8.61854 ppb		91
8) Dichlorofluoromethane	2.03	67	51347	10.24410 ppb		99
9) Trichlorofluoromethane	2.08	101	41019	10.84098 ppb		95
10) Acrolein	2.49	56	24703	132.44009 ppb		98
11) Acetone	2.69	43	5422	8.97439 ppb		96
12) Freon-113	2.63	101	9910	10.73617 ppb		99
13) 1,1-DCE	2.60	61	19896	9.99257 ppb		96
14) t-Butanol	3.47	59	6833	118.72227 ppb		95
15) Methyl Acetate	3.10	43	13435	8.88926 ppb		92
16) Iodomethane	2.75	142	17623	8.57935 ppb		97
17) Acrylonitrile	3.49	53	5805	9.20995 ppb	#	94
18) Methylene chloride	3.16	84	26201	10.12573 ppb		96
19) Carbon disulfide	2.82	76	68009	9.39188 ppb		99
20) Methyl t-butyl ether (MtBE	3.65	73	66352	9.43892 ppb		99
21) Trans-1,2-DCE	3.54	96	137941	52.13703 ppb		94
22) Diisopropyl Ether	4.43	45	92426	9.56006 ppb		98
23) 1,1-DCA	4.16	63	47026	9.87667 ppb		96
24) Vinyl Acetate	4.34	43	34349	9.48021 ppb		99
25) Ethyl tert Butyl Ether	5.00	59	88082	10.39675 ppb		100
26) MEK (2-Butanone)	5.19	43	7483	9.28920 ppb		92
27) Cis-1,2-DCE	5.07	96	275363	90.65059 ppb		98
28) 2,2-Dichloropropane	5.06	77	37724	9.32263 ppb	#	54
29) Chloroform	5.56	83	47346	10.50747 ppb		99
30) Bromochloromethane	5.41	128	13578	10.27004 ppb		86
32) 1,1,1-TCA	5.82	97	43534	10.04251 ppb		98
33) Cyclohexane	5.90	41	24899	10.22495 ppb		98
34) 1,1-Dichloropropene	6.07	75	36493	10.15217 ppb		98
35) 2,2,4-Trimethylpentane	6.55	57	73767	10.43420 ppb	#	91
37) Carbon Tetrachloride	6.07	117	36068	11.08173 ppb		95
38) Tert Amyl Methyl Ether	6.67	73	70839	9.63418 ppb		98
39) 1,2-DCA	6.36	62	33477	9.69911 ppb		97
40) Benzene	6.35	78	108133	9.68070 ppb		99
41) TCE	7.31	95	30224	10.63301 ppb		98
42) 2-Pentanone	7.64	43	184337	118.76849 ppb		97

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : M:\MAX\DATA\M150126\0127M30.D
Acq On : 27 Jan 15 19:44
Sample : AZ10006W234 MS-1WM
Misc : 10mL w/IS&S: 11-03-14

Vial: 23
Operator: DG,SV,RS
Inst : MAX
Multiplr: 1.00

Quant Time: Jan 28 9:42 2015

Quant Results File: MALLW.RES

Quant Method : M:\MAX\DATA\M150126\MALLW.M (RTE Integrator)
Title : METHOD 8260B
Last Update : Tue Jan 27 10:55:52 2015
Response via : Initial Calibration
DataAcq Meth : V8260

Compound	R.T.	QIon	Response	Conc Unit		Qvalue
43) 1,2-Dichloropropane	7.58	63	26941	9.85667 ppb		100
44) Bromodichloromethane	8.00	83	33779	10.06577 ppb		96
45) Methyl Cyclohexane	7.58	83	41630	10.28750 ppb		93
46) Dibromomethane	7.74	93	12612	9.32286 ppb		99
47) MIBK (methyl isobutyl ket	8.94	43	18301	8.70385 ppb		96
48) 1-Bromo-2-chloroethane	8.40	63	29866	9.40475 ppb		97
49) 2-Chloroethyl vinyl ether	8.40	106	420	1.07135 ppb	#	1
50) Cis-1,3-Dichloropropene	8.65	75	41234	9.40767 ppb		99
51) Toluene	9.11	91	122645	9.86139 ppb		99
52) Trans-1,3-Dichloropropene	9.44	75	34269	9.43448 ppb		100
53) 1,1,2-TCA	9.67	83	15704	9.56850 ppb		98
54) 2-Hexanone	10.12	43	11885	9.11555 ppb		97
57) 1,2-EDB	10.32	107	18962	9.58430 ppb		100
58) Tetrachloroethene	9.89	164	15580	10.21616 ppb		91
59) 1-Chlorohexane	11.10	91	36310	9.82655 ppb		97
60) 1,1,1,2-Tetrachloroethane	11.20	131	29804	9.78450 ppb		97
61) m&p-Xylene	11.43	106	109006	19.75006 ppb		98
62) o-Xylene	11.98	106	53969	10.04446 ppb		98
63) Styrene	12.00	104	90250	9.95467 ppb		100
65) 1,3-Dichloropropane	9.89	76	34851	9.56203 ppb		98
66) Dibromochloromethane	10.20	129	24818	9.92905 ppb		95
67) Chlorobenzene	11.06	112	80255	9.44170 ppb		97
68) Ethylbenzene	11.26	91	139535	9.81922 ppb		99
69) Bromoform	12.20	173	16278	9.36134 ppb		99
71) Isopropylbenzene	12.53	105	137917	10.10956 ppb		99
72) 1,1,2,2-Tetrachloroethane	12.93	83	20406	9.49757 ppb		96
73) 1,2,3-Trichloropropane	12.96	110	7391	9.71150 ppb		91
74) t-1,4-Dichloro-2-Butene	13.02	53	5413	8.57346 ppb		90
75) Bromobenzene	12.89	156	38499	9.75433 ppb		93
76) n-Propylbenzene	13.12	91	158539	10.09464 ppb		98
77) 4-Ethyltoluene	13.29	105	138248	10.05530 ppb		99
78) 2-Chlorotoluene	13.20	91	93687	9.96937 ppb		99
79) 1,3,5-Trimethylbenzene	13.39	105	122974	10.14041 ppb		100
80) 4-Chlorotoluene	13.36	91	110021	9.86838 ppb		99
81) Tert-Butylbenzene	13.84	119	106883	10.33441 ppb		99
82) 1,2,4-Trimethylbenzene	13.91	105	123918	10.10708 ppb		99
83) Sec-Butylbenzene	14.16	105	145574	10.31081 ppb		99
84) p-Isopropyltoluene	14.39	119	129288	10.09775 ppb		99
85) Benzyl Chloride	14.60	91	27279	7.49138 ppb		100
86) 1,3-DCB	14.27	146	70608	9.61244 ppb		97
87) 1,4-DCB	14.40	146	70332	9.34420 ppb		97
88) n-Butylbenzene	14.98	91	108930	10.16021 ppb		98
89) 1,2-DCB	14.92	146	64773	9.61814 ppb		98
90) Hexachloroethane	15.31	117	16833	9.87657 ppb		94
91) 1,2-Dibromo-3-chloropropan	16.02	75	3914	10.22255 ppb	#	82
92) 1,2,4-Trichlorobenzene	17.27	180	44665	9.84454 ppb		99
93) Hexachlorobutadiene	17.58	225	29420	9.54115 ppb		96
94) Naphthalene	17.60	128	52259	8.66035 ppb		98
95) 1,2,3-Trichlorobenzene	17.96	180	33930	9.03772 ppb		96

(#) = qualifier out of range (m) = manual integration

Quantitation Report

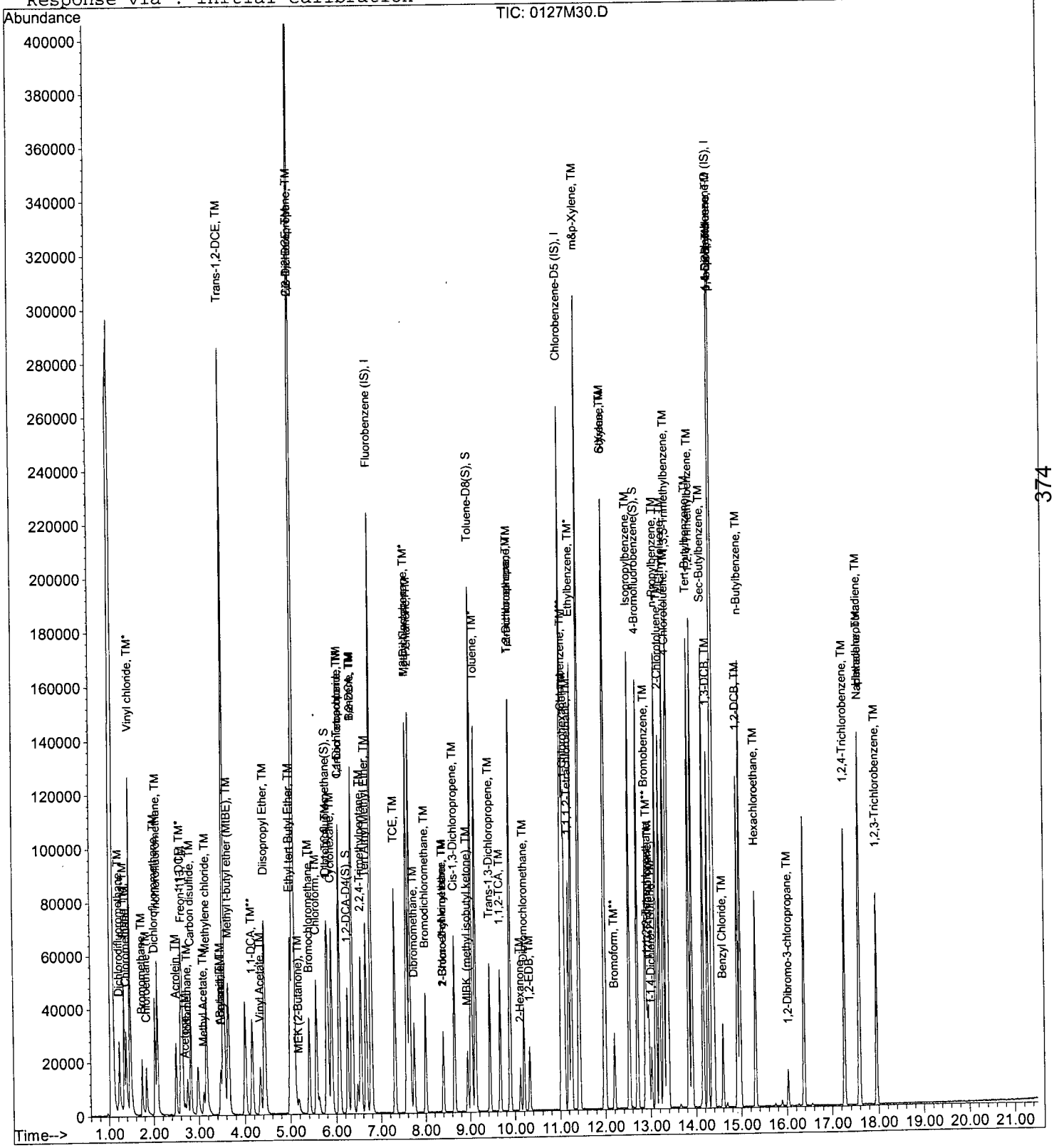
Data File : M:\MAX\DATA\M150126\0127M30.D
Acq On : 27 Jan 15 19:44
Sample : AZ10006W234 MS-1WM
Misc : 10mL w/IS&S: 11-03-14

Vial: 23
Operator: DG,SV,RS
Inst : MAX
Multiplr: 1.00

Quant Time: Jan 28 9:42 2015

Quant Results File: MALLW.RES

Method : M:\MAX\DATA\M150126\MALLW.M (RTE Integrator)
Title : METHOD 8260B
Last Update : Tue Jan 27 10:55:52 2015
Response via : Initial Calibration



374

Quantitation Report (Not Reviewed)

Data File : M:\MAX\DATA\M150126\0127M31.D
Acq On : 27 Jan 15 20:11
Sample : AZ10006W234 MSD-1WM
Misc : 10mL w/IS&S: 11-03-14

Vial: 24
Operator: DG,SV,RS
Inst : MAX
Multiplr: 1.00

Quant Time: Jan 28 9:42 2015

Quant Results File: MALLW.RES

Quant Method : M:\MAX\DATA\M150126\MALLW.M (RTE Integrator)
Title : METHOD 8260B
Last Update : Tue Jan 27 10:55:52 2015
Response via : Initial Calibration
DataAcq Meth : V8260

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene (IS)	6.78	96	238165	25.00000 ppb	0.00
55) Chlorobenzene-D5 (IS)	11.03	117	175427	25.00000 ppb	0.00
70) 1,4-Dichlorobenzene-D (IS)	14.36	152	101027	25.00000 ppb	0.00
System Monitoring Compounds					
31) Dibromofluoromethane(S)	5.79	111	35317	13.68982 ppb	0.00
Spiked Amount 14.625			Recovery = 93.606%		
36) 1,2-DCA-D4(S)	6.25	65	39036	13.11194 ppb	0.00
Spiked Amount 13.533			Recovery = 96.891%		
56) Toluene-D8(S)	9.03	98	150199	14.54239 ppb	0.00
Spiked Amount 14.976			Recovery = 97.101%		
64) 4-Bromofluorobenzene(S)	12.71	95	58000	14.26814 ppb	0.00
Spiked Amount 14.557			Recovery = 98.018%		

Target Compounds						Qvalue
2) Dichlorodifluoromethane	1.23	85	26550	10.70085 ppb		97
3) Freon 114	1.33	85	23089	12.01023 ppb		97
4) Chloromethane	1.38	50	29766	9.25982 ppb		97
5) Vinyl chloride	1.47	62	127787	43.19639 ppb		99
6) Bromomethane	1.74	94	6729	11.37086 ppb		95
7) Chloroethane	1.84	64	17690	8.73490 ppb		93
8) Dichlorofluoromethane	2.03	67	49968	9.98907 ppb		99
9) Trichlorofluoromethane	2.08	101	40596	10.75080 ppb		100
10) Acrolein	2.49	56	23734	127.50145 ppb		100
11) Acetone	2.69	43	5155	8.50755 ppb		99
12) Freon-113	2.63	101	10108	10.97275 ppb		97
13) 1,1-DCE	2.60	61	20232	10.18180 ppb		97
14) t-Butanol	3.47	59	6411	111.61459 ppb	#	91
15) Methyl Acetate	3.10	43	13457	8.92177 ppb		95
16) Iodomethane	2.75	142	19299	9.30312 ppb		94
17) Acrylonitrile	3.48	53	5867	9.31226 ppb		88
18) Methylene chloride	3.17	84	26656	10.32436 ppb		99
19) Carbon disulfide	2.82	76	67776	9.37856 ppb		99
20) Methyl t-butyl ether (MtBE	3.65	73	67051	9.55758 ppb		98
21) Trans-1,2-DCE	3.54	96	137654	52.13341 ppb		96
22) Diisopropyl Ether	4.43	45	92631	9.60057 ppb		97
23) 1,1-DCA	4.16	63	46755	9.83954 ppb		97
24) Vinyl Acetate	4.34	43	35594	9.84363 ppb		99
25) Ethyl tert Butyl Ether	5.00	59	87245	10.31871 ppb		99
26) MEK (2-Butanone)	5.18	43	7376	9.17483 ppb		100
27) Cis-1,2-DCE	5.07	96	276149	91.09256 ppb		98
28) 2,2-Dichloropropane	5.06	77	37124	9.19285 ppb	#	53
29) Chloroform	5.56	83	48034	10.68164 ppb		100
30) Bromochloromethane	5.41	128	12833	9.72611 ppb		99
32) 1,1,1-TCA	5.82	97	44232	10.22409 ppb		97
33) Cyclohexane	5.90	41	24633	10.13610 ppb		94
34) 1,1-Dichloropropene	6.07	75	35690	9.94879 ppb		98
35) 2,2,4-Trimethylpentane	6.55	57	71424	10.12315 ppb	#	91
37) Carbon Tetrachloride	6.08	117	35138	10.81775 ppb		97
38) Tert Amyl Methyl Ether	6.66	73	69720	9.50111 ppb		99
39) 1,2-DCA	6.36	62	33296	9.66611 ppb		96
40) Benzene	6.35	78	108109	9.69806 ppb		98
41) TCE	7.31	95	29653	10.45315 ppb		96
42) 2-Pentanone	7.65	43	179768	116.05811 ppb		99

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : M:\MAX\DATA\M150126\0127M31.D
Acq On : 27 Jan 15 20:11
Sample : AZ10006W234 MSD-1WM
Misc : 10mL w/IS&S: 11-03-14

Vial: 24
Operator: DG,SV,RS
Inst : MAX
Multiplr: 1.00

Quant Time: Jan 28 9:42 2015

Quant Results File: MALLW.RES

Quant Method : M:\MAX\DATA\M150126\MALLW.M (RTE Integrator)
Title : METHOD 8260B
Last Update : Tue Jan 27 10:55:52 2015
Response via : Initial Calibration
DataAcq Meth : V8260

Compound	R.T.	QIon	Response	Conc Unit		Qvalue
43) 1,2-Dichloropropane	7.58	63	26288	9.63715 ppb		99
44) Bromodichloromethane	8.00	83	34049	10.16667 ppb		89
45) Methyl Cyclohexane	7.58	83	41095	10.17576 ppb		98
46) Dibromomethane	7.74	93	12211	9.04463 ppb		96
47) MIBK (methyl isobutyl ket	8.94	43	17427	8.30488 ppb		99
48) 1-Bromo-2-chloroethane	8.40	63	30261	9.54834 ppb		95
49) 2-Chloroethyl vinyl ether	8.39	106	450	1.15019 ppb	#	1
50) Cis-1,3-Dichloropropene	8.65	75	40898	9.34982 ppb		98
51) Toluene	9.12	91	122039	9.83244 ppb		99
52) Trans-1,3-Dichloropropene	9.44	75	33696	9.29542 ppb		98
53) 1,1,2-TCA	9.67	83	15429	9.41989 ppb		92
54) 2-Hexanone	10.12	43	11245	8.64207 ppb		95
57) 1,2-EDB	10.32	107	18673	9.53152 ppb		92
58) Tetrachloroethene	9.89	164	15215	10.07544 ppb		97
59) 1-Chlorohexane	11.10	91	36071	9.85836 ppb		99
60) 1,1,1,2-Tetrachloroethane	11.20	131	28598	9.48138 ppb		96
61) m&p-Xylene	11.43	106	108292	19.81464 ppb		99
62) o-Xylene	11.98	106	53653	10.08435 ppb		95
63) Styrene	12.00	104	89432	9.96195 ppb		97
65) 1,3-Dichloropropane	9.89	76	33830	9.37364 ppb		100
66) Dibromochloromethane	10.20	129	24588	9.93426 ppb		93
67) Chlorobenzene	11.06	112	80363	9.54786 ppb		99
68) Ethylbenzene	11.26	91	139769	9.93291 ppb		100
69) Bromoform	12.20	173	17328	10.06368 ppb		96
71) Isopropylbenzene	12.53	105	138116	10.14169 ppb		100
72) 1,1,2,2-Tetrachloroethane	12.93	83	19874	9.26598 ppb		94
73) 1,2,3-Trichloropropane	12.96	110	7642	10.05870 ppb		95
74) t-1,4-Dichloro-2-Butene	13.02	53	5888	9.34195 ppb		97
75) Bromobenzene	12.89	156	38088	9.66692 ppb		94
76) n-Propylbenzene	13.12	91	158597	10.11583 ppb		98
77) 4-Ethyltoluene	13.29	105	139398	10.15651 ppb		100
78) 2-Chlorotoluene	13.20	91	93502	9.96692 ppb		98
79) 1,3,5-Trimethylbenzene	13.39	105	122738	10.13848 ppb		99
80) 4-Chlorotoluene	13.36	91	110546	9.93265 ppb		98
81) Tert-Butylbenzene	13.84	119	107826	10.44365 ppb		97
82) 1,2,4-Trimethylbenzene	13.91	105	124274	10.15367 ppb		99
83) Sec-Butylbenzene	14.16	105	144192	10.23061 ppb		100
84) p-Isopropyltoluene	14.39	119	129062	10.09756 ppb		99
85) Benzyl Chloride	14.60	91	27135	7.46474 ppb		97
86) 1,3-DCB	14.26	146	71420	9.73982 ppb		97
87) 1,4-DCB	14.40	146	70996	9.44876 ppb		99
88) n-Butylbenzene	14.98	91	107297	10.02523 ppb		98
89) 1,2-DCB	14.92	146	65231	9.70293 ppb		97
90) Hexachloroethane	15.31	117	16694	9.81198 ppb		94
91) 1,2-Dibromo-3-chloropropan	16.03	75	3915	10.24288 ppb		90
92) 1,2,4-Trichlorobenzene	17.27	180	45064	9.94968 ppb		97
93) Hexachlorobutadiene	17.58	225	30053	9.76331 ppb		97
94) Naphthalene	17.60	128	52968	8.78453 ppb		99
95) 1,2,3-Trichlorobenzene	17.96	180	33357	8.91001 ppb		92

(#) = qualifier out of range (m) = manual integration

Quantitation Report

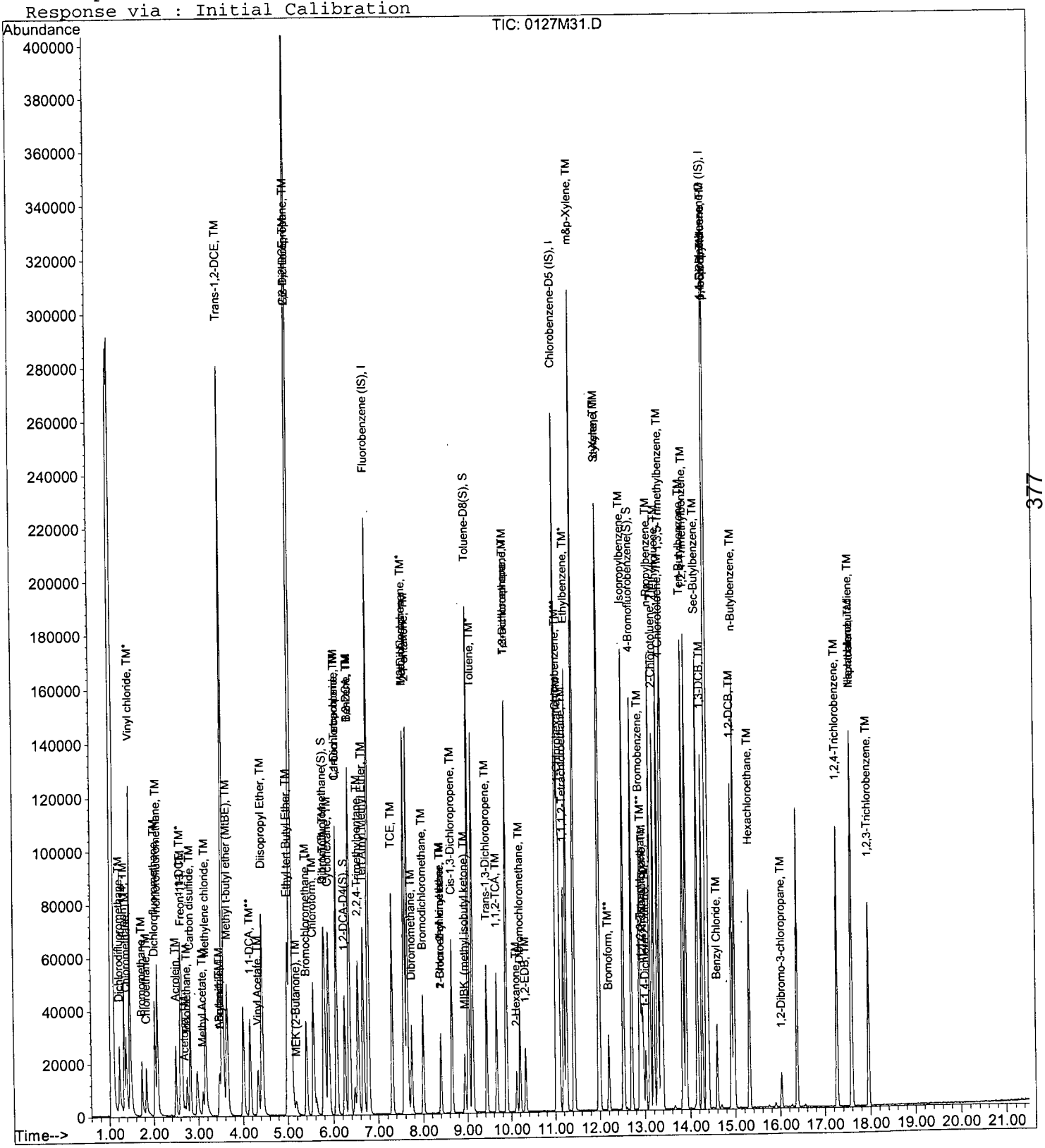
Data File : M:\MAX\DATA\M150126\0127M31.D
Acq On : 27 Jan 15 20:11
Sample : AZ10006W234 MSD-1WM
Misc : 10mL w/IS&S: 11-03-14

Vial: 24
Operator: DG,SV,RS
Inst : MAX
Multiplr: 1.00

Quant Time: Jan 28 9:42 2015

Quant Results File: MALLW.RES

Method : M:\MAX\DATA\M150126\MALLW.M (RTE Integrator)
Title : METHOD 8260B
Last Update : Tue Jan 27 10:55:52 2015
Response via : Initial Calibration



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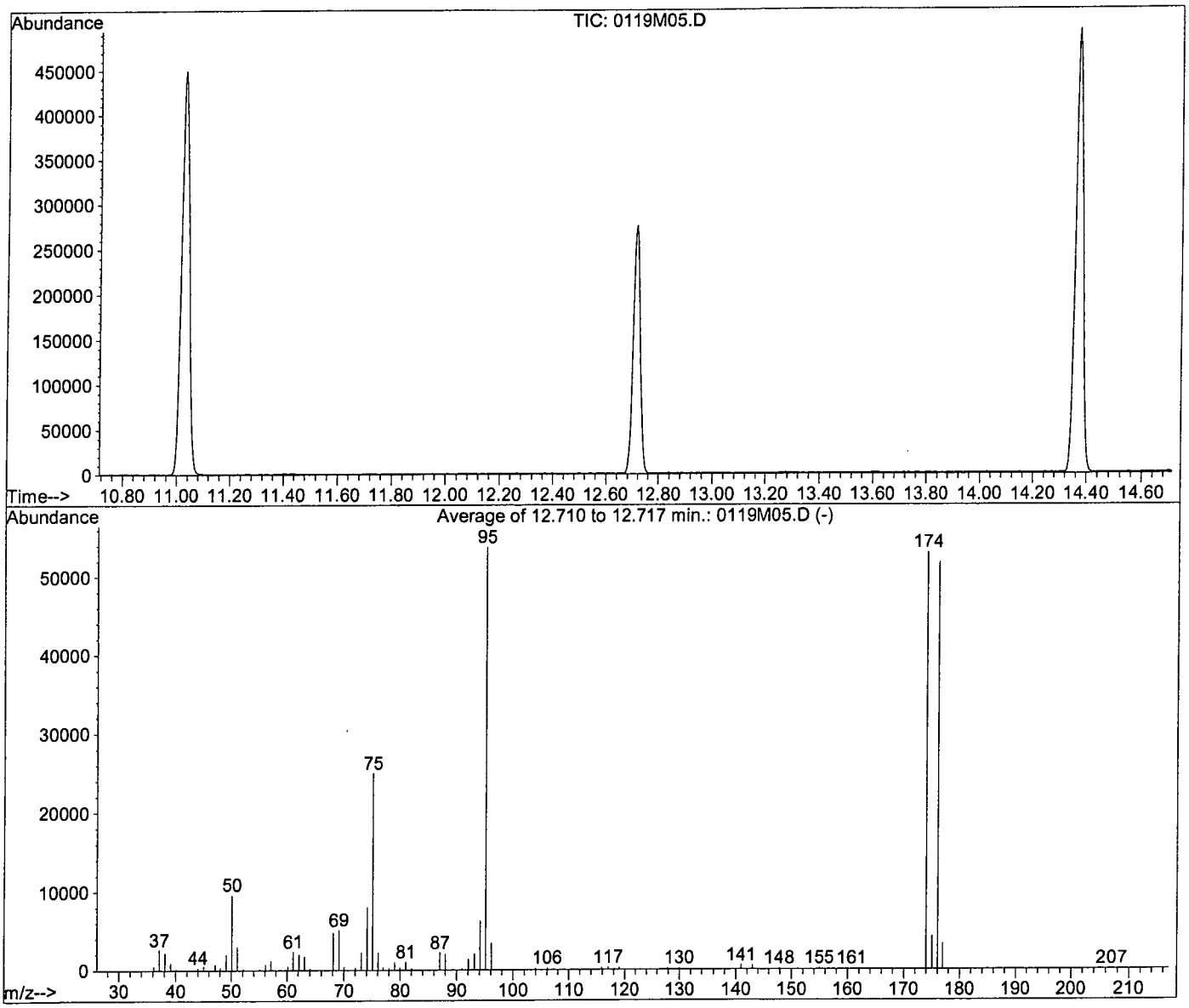
BFB

Data File : M:\MAX\DATA\M150119\0119M05.D
Acq On : 19 Jan 15 11:43
Sample : 5ng BFB Std 09-30-14
Misc : 2uL

Vial: 5
Operator: DG,SV,RS
Inst : MAX
Multiplr: 1.00

Method : M:\MAX\DATA\M150119\MALLW.M (RTE Integrator)
Title : METHOD 8260B



AutoFind: Scans 3777, 3778, 3779; Background Corrected with Scan 3761

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50	95	15	40	17.7	9556	PASS
75	95	30	60	46.4	24987	PASS
95	95	100	100	100.0	53856	PASS
96	95	5	9	6.4	3422	PASS
173	174	0.00	2	0.0	0	PASS
174	95	50	100	98.7	53149	PASS
175	174	5	9	8.0	4228	PASS
176	174	95	101	97.7	51901	PASS
177	176	5	9	6.3	3246	PASS

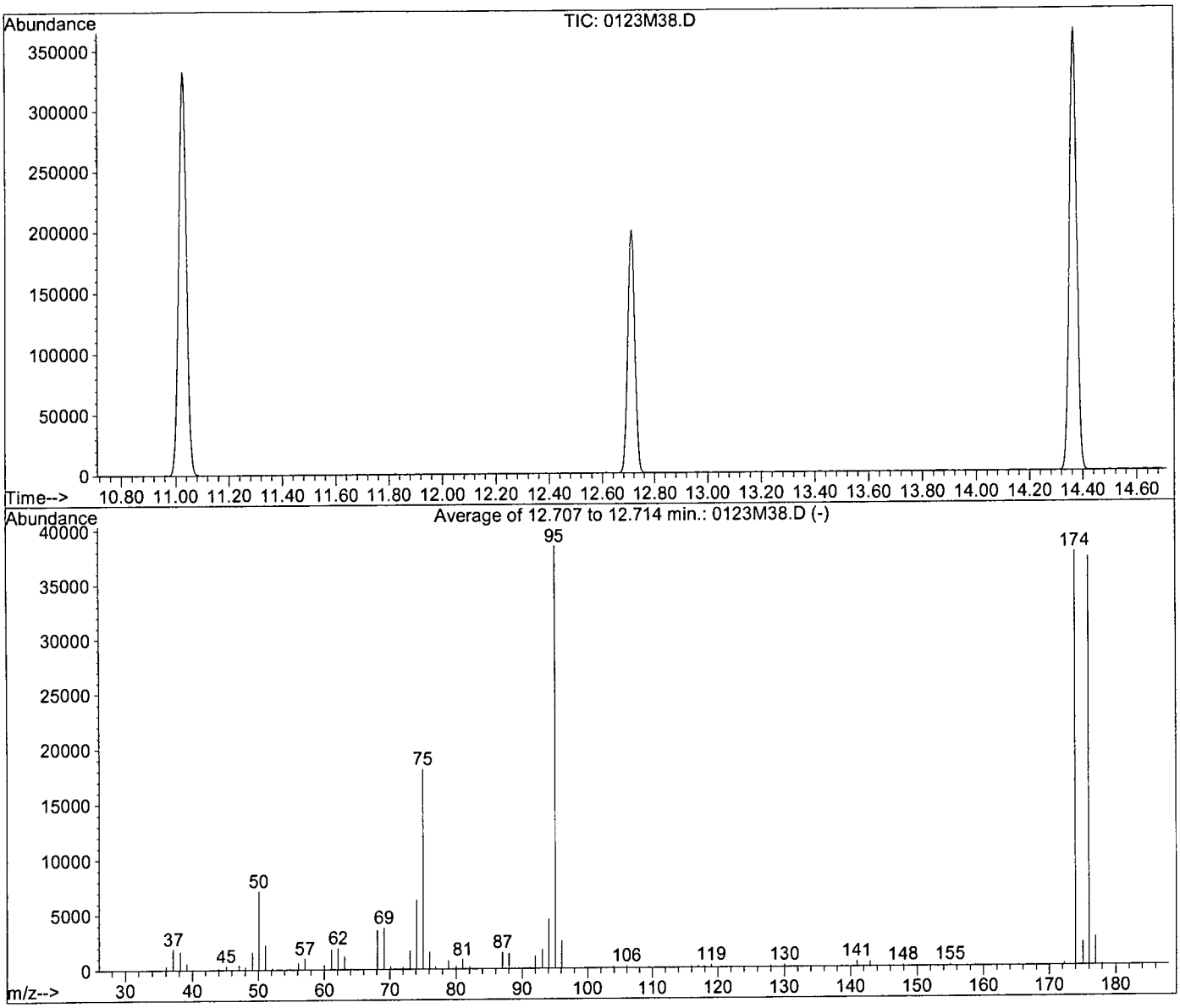
0119M05.D MALLW.M Thu Feb 05 08:27:17 2015

BFB

Data File : M:\MAX\DATA\M150119\0123M38.D
Acq On : 24 Jan 15 00:55
Sample : 5ng BFB Std 01-09-15
Misc : 10mL w/IS&S: 11-03-14

Vial: 28
Operator: DG,SV,RS
Inst : MAX
Multiplr: 1.00

Method : M:\MAX\DATA\M150119\MALLW.M (RTE Integrator)
Title : METHOD 8260B



AutoFind: Scans 3776, 3777, 3778; Background Corrected with Scan 3761

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50	95	15	40	18.5	7104	PASS
75	95	30	60	47.1	18117	PASS
95	95	100	100	100.0	38429	PASS
96	95	5	9	6.5	2480	PASS
173	174	0.00	2	0.0	0	PASS
174	95	50	100	98.1	37715	PASS
175	174	5	9	5.7	2139	PASS
176	174	95	101	98.6	37189	PASS
177	176	5	9	6.9	2558	PASS

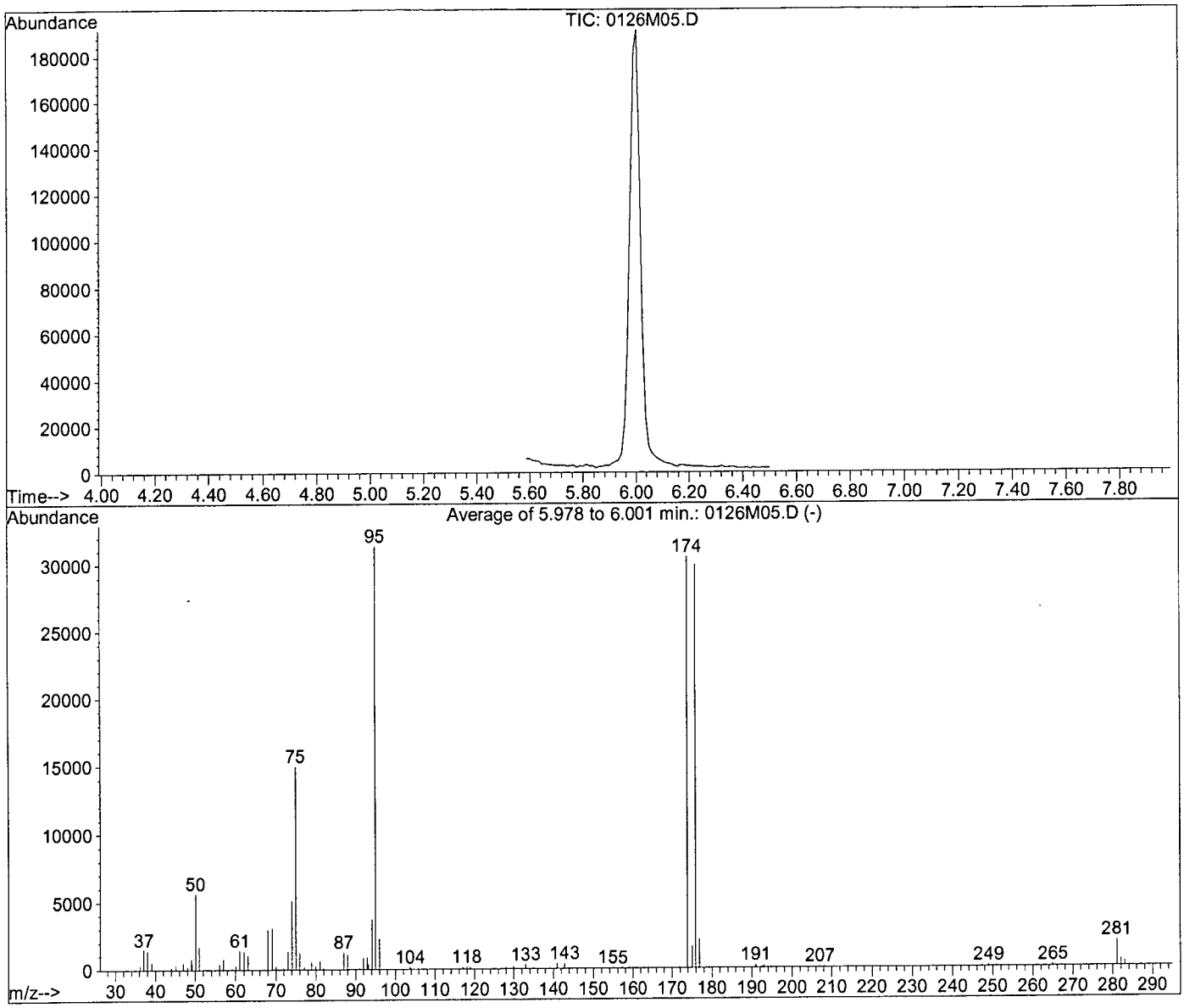
0123M38.D MALLW.M Thu Feb 05 08:56:47 2015

BFB

Data File : M:\MAX\DATA\M150126\0126M05.D
Acq On : 26 Jan 15 10:47
Sample : 5ng BFB Std 09-30-14
Misc : 2uL

Vial: 1
Operator: DG,SV,RS
Inst : MAX
Multiplr: 1.00

Method : M:\MAX\DATA\M150126\MALLW.M (RTE Integrator)
Title : METHOD 8260B



AutoFind: Scans 34, 35, 36; Background Corrected with Scan 28

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50	95	15	40	17.9	5601	PASS
75	95	30	60	47.7	14961	PASS
95	95	100	100	100.0	31371	PASS
96	95	5	9	7.2	2259	PASS
173	174	0.00	2	0.0	0	PASS
174	95	50	100	97.3	30520	PASS
175	174	5	9	5.2	1588	PASS
176	174	95	101	98.0	29912	PASS
177	176	5	9	7.0	2108	PASS

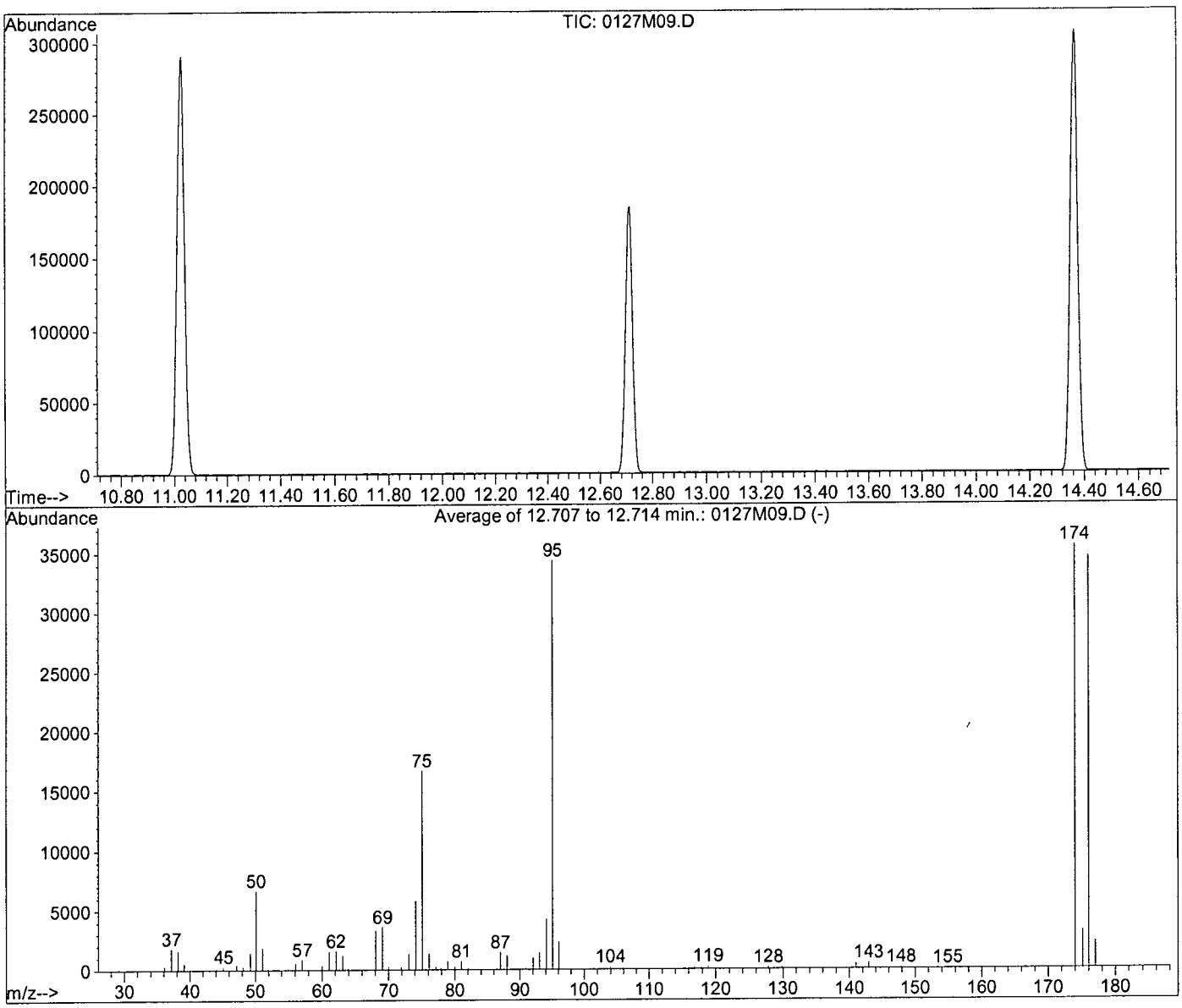
0126M05.D MALLW.M Thu Feb 05 09:03:40 2015

BFB

Data File : M:\MAX\DATA\M150126\0127M09.D
Acq On : 27 Jan 15 9:39
Sample : 5ng BFB Std 01-26-15
Misc : 10mL w/IS&S: 11-03-14

Vial: 2
Operator: DG,SV,RS
Inst : MAX
Multiplr: 1.00

Method : M:\MAX\DATA\M150126\MALLW.M (RTE Integrator)
Title : METHOD 8260B



AutoFind: Scans 3776, 3777, 3778; Background Corrected with Scan 3760

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50	95	15	40	19.3	6619	PASS
75	95	30	60	48.4	16643	PASS
95	95	100	100	100.0	34379	PASS
96	95	5	9	6.8	2336	PASS
173	174	0.00	2	0.0	0	PASS
174	95	50	100	103.4	35531	FAIL*
175	174	5	9	8.8	3123	PASS
176	174	95	101	97.4	34613	PASS
177	176	5	9	6.5	2233	PASS

0127M09.D MALLW.M Thu Feb 05 09:04:35 2015

1/14/15 RS

LOKI							RS
01-14-15A							
50ug/ml 8260 Internal Standard			Conc.		Date	Exp.	
Supplier	ID #		ug/ml	Lot #	Code	Date	uL
O2SI	120004-02	Internal Standard Mix	2000	195507-31436	10-06-14A	09/10/15	375
J.T Baker		Purge & Trap MeOH		62345-00777	01/12/15	02/19/19	14625

1/15/15 RS

A-

Method 8260B Surrogate Solution, 2,000 mg/L, 1 ml
120002-01
Lot # 229269 Storage ≤-10 Degrees Expiry 26/May/2017
Solv: P/T Methanol
Method 8260B Surrogate
Lot #: 229269 - 33847
Rec: 7/15/14 MFR exp. 5/26/17

RS

1/15/15 RS

01-15-15B							RS
50ug/ml 8260B Surrogate-LOKI			Conc.		Date	Exp.	
Supplier	ID #		ug/ml	Lot #	Code	Date	uL
O2S1	120002-01	Surrogate Standards	2000	229269-33847	01-15-15A	05/26/17	375
J.T Baker		Purge & Trap MeOH		62345-00777	01/12/15	02/19/13	14625

1/17/15 RS

A-

Method 8260 Gases, 2000 mg/L, 2 x 0.6 ml
120016-03
Lot # 231710 Storage ≤-10 °C Expiry 6/Jul/2017
Solv: P/T Methanol
Method 8260 Gases
Lot #: 231710 - 33820
Rec: 7/15/14 MFR exp. 7/6/17

RS

1/17/15 RS

B-

2-Chloroethyl Vinyl Ether Solution, 2,000 mg/L, 2 x 0.6 mL
020145-02-02
Lot # 229586 Storage ≤-10 Degrees Expiry 3/Jun/2017
Solv: P/T Methanol
2-Chloroethyl vinyl ether
Lot #: 229586 - 33693
Rec: 6/3/14 MFR exp. 6/3/17

RS

1/17/15 RS

C-

Volatile Mix, 20-29, 2,000 mg/L, 1 ml
122839-02
Lot # 212173 Storage ≤-10 Degrees C Expiry 7/22/15
Volatile Mix, 20-29
Lot #: 212173 - 32730
Rec: 7/25/13 MFR exp. 7/22/15

RS

1/17/15 RS

D-

Method 8260 VOC Liquids, 54 Compounds, 2,000 mg/L, 1 ml
120823-03
Lot # 216122 | Storage ≤-10 Degrees C | Expiry 10/11/15
Solv: P/T Methanol

8260 VOC Liquids, 54 Comp.
Lot #: 216122 - 32915
Rec: 10/15/13 MFR exp. 10/11/15

RS

1/17/15 RS

E-

Vinyl Acetate Solution, 2000 mg/L, 1 mL
020232-02
Lot # 240463 | Storage ≤-10 °C | Expiry 13/Feb/2015
Solv: P/T Methanol

Vinyl Acetate
Lot #: 240463 - 34361
Rec: 11/25/14 MFR exp. 2/18/15

RS

1/17/15 RS

G-

n-Hexane Solution, 1,000 mg/L, 1 mL
020620-02
Lot # 236597 | Storage ≤-10 Degrees | Expiry 17/Sep/2019
Solv: P/T Methanol

n-Hexane, 1000mg/L
Lot #: 236597 - 34363
Rec: 11/25/14 MFR exp. 9/17/19

RS

1/17/15 RS

H-

Ketones Solution, 2,000 mg/L, 1 ml
121010-05
Lot # 232379 | Storage ≤-10 °C | Expiry 14/Jul/2015
Solv: P/T MeOH:Water 9:1

Ketones
Lot #: 232379 - 33870
Rec: 7/17/14 MFR exp. 7/14/15

RS

1/17/15 RS

I-

VOC Mix 4-3, 2,000 mg/L, 1 mL
120166-01
Lot # 229587 | Storage ≤6 Degrees C | Expiry 29/May/2016
Solv: P/T Methanol

VOC Mix 4-3, 2000mg/L
Lot #: 229587 - 33999
Rec: 8/27/14 MFR exp. 5/29/16

RS

1/17/15 RS

J-

Acrolein Solution, 10,000 mg/L, 2 x 0.6 mL
020229-09-02
Lot # 242699 | Storage ≤6 °C | Expiry 17/Feb/2015
Solv: Water, HPLC Grade

Acrolein solution
Lot #: 242699 - 34577
Rec: 1/14/15 MFR exp. 2/17/15

RS

1/17/15 RS K-

Method 8260 Gases (Second Source), 2,000 mg/L, 2 X 0.6 ml
120016-03-SS
Lot # 239850 Storage ≤-10 °C Expiry 14/Nov/2017
Solv: P/T Methanol

Method 8260 Gases (SS)
Lot #: 239850 - 34549
Rec: 12/19/14 MFR exp. 11/14/17

RS

1/17/15 RS L-

Custom 8260 Solution, Second Source, 2,000 mg/L, 1 mL
120196-01-SS
Lot # 240496 Storage ≤-10 Degrees Expiry 24/May/2016
Solv: P/T Methanol

Custom 8260 Solution, 2000mg/L (SS)
Lot #: 240496 - 34383
Rec: 11/25/14 MFR exp. 5/24/16

RS

1/17/15 RS M-

Acrolein Solution (Second Source), 10,000 mg/L, 2 x 0.6 mL
020229-09-02-SS
Lot # 242700 Storage ≤6 °C Expiry 17/Feb/2015
Solv: Water, HPLC Grade

Acrolein Solution SS
Lot #: 242700 - 34579
Rec: 1/14/15 MFR exp. 2/17/15

RS

RS

01/17/15N							
50ug/ml Vol Work Std #7							
Exp:02/17/15							
			Conc.		Date	Exp.	
Supplier	ID #	ID	ug/ml	Lot #	Code	Date	ul
02SI	120016-03	Gas Mix	2000	231710-33820	01/17/15A	07/06/17	100
02SI	020049-02	HEXACHLOROETHANE	1000	234821-33993	01/05/15B	08/24/16	200
02SI	020228-02	Benzyl Chloride	1000	227320-33832	01/05/15C	04/28/16	200
J&T Brand		Purge & Trap MeOH		62345-00779	01/12/15	07/09/18	3500
01/17/15O							
50ug/ml Vol Work Std #1							
Exp:02/17/15					Date	Exp.	
Supplier	ID #	ID	ug/ml	Lot #	Code	Date	ul
02SI	020145-02-02	2-CEVE	2000	229586-33693	01/17/15B	06/03/17	50
J&T Brand		Purge & Trap MeOH		62345-00779	01/12/15	07/09/18	1950
01/17/15P							
50ug/ml Vol Work Std #8							
Exp:02/17/15							
			Conc.		Date	Exp.	
Supplier	ID #	ID	ug/ml	Lot #	Code	Date	ul
02SI	122039-02	Volatile Mix, 20-29	2000	212173-32730	01/17/15C	07/22/15	100
02SI	120023-03	VOC'S-54 COMP	2000	216122-32915	01/17/15D	10/11/15	100
02SI	020232-02	Vinyl Acetate	2000	240463-34361	01/17/15E	02/18/15	100
02SI	020620-02	n-Hexane	1000	236597-34363	01/17/15G	09/09/17	200
J&T Brand		Purge & Trap MeOH		62345-00779	01/12/15	07/09/18	3500
01/17/15Q							
50ug/ml Vol Work Std #2							
Exp:02/17/15							
Supplier	ID #	ID	ug/ml				
02SI	121020-05	HSL'S-Ketone Solution	2000	232379-33873	01/17/15H	07/14/15	100
J&T Brand		Purge & Trap MeOH		62345-00779	01/12/15	07/09/18	3900

1/17/15 RS

1/17/15 RS

		01/17/15R					
		5ug/ml Vol Work Std #9					
		SOURCES	Lot	APPL Code	APPL Exp Date	ul	
		50ug/ml Vol Work Std #7		01/17/15N	02/17/15	200	
		50ug/ml Vol Work Std #8		01/17/15P	02/17/15	200	
		J&T Brand		01/12/15	07/09/18	1600	
		01/17/15S					
		5ug/ml Vol Work Std #10					
		SOURCES	Lot	APPL Code	APPL Exp Date	ul	
		50ug/ml Vol Work Std #1		01/17/15O	02/17/15	200	
		J&T Brand		01/12/15	07/09/18	1800	
		01/17/15T					
		5ug/ml Vol Work Std #12					
		SOURCES	Lot	APPL Code	APPL Exp Date	ul	
		50ug/ml Vol Work Std #2		01/17/15Q	02/17/15	200	
		J&T Brand		01/12/15	07/09/18	1800	
01/17/15U							
50ug/ml 8260 Surrogate			Conc.		Date	Exp.	
Exp:02/17/15			ug/ml	Lot #	Code	Date	uL
O2SI	120002-01	8260B Surr Solution	2000	229269-33847	01/15/15A	05/26/17	10(
J&T Brand		Purge & Trap MeOH		62345-00779	01/12/15	07/09/18	390
01/17/15V							
5.0ug/ml 8260 Surrogate			Lot	APPL Code	APPL Exp Date	ul	
		50ug/ml 8260 Surrogate		01/17/15U	02/17/15	200	
J&T Brand		Purge & Trap MeOH		01/12/15	07/09/18	1800	
01/17/15W							
250ug/ml TBA/IBA/Acetonitrile/Cyclohexanone/Acrolein/2-P							
Exp:02/17/15			Conc.		Date	Exp.	
Supplier	ID #		ug/ml	Lot #	Code	Date	uL
O2SI	120166-01	Volatile Mix 4-3	2000	229587-33999	01/17/15I	05/29/16	500
O2SI	020229-09	Acrolein	10000	242699-34577	01/17/15J	02/17/15	100
J&T Brand		Purge & Trap MeOH		62345-00779	01/12/15	07/09/18	340(

1/17/15 RS

01/17/15X							
50ug/ml VOC Std#5							
Exp:02/17/15							
			Conc.		Date	Exp.	
Supplier	ID #	ID	ug/ml	Lot #	Code	Date	ul
O2SI	120016-03-SS	8260 Gases(SS)	2000	239850-34549	01/17/15K	11/14/17	50
O2SI	020145-02-02-S	2-CEVE	2000	219465-33220	12/03/14N	12/16/15	50
J&T Brand		Purge & Trap MeOH		62345-00779	01/12/15	07/09/18	190
01/17/15Y							
50ug/ml VOC Std#6							
Exp:02/17/15							
	ID #	ID	ug/ml	Lot #	Code	Date	ul
O2SI	120023-03-SS	VOC'S 54 COMP.	2000	208329-32738	12/03/14P	05/02/15	50
O2SI	120296-01-SS	Custom 8260 Solution	2000	240496-34383	01/17/15L	05/24/16	50
O2SI	020232-02-SS	Vinyl Acetate(SS)	2000	240484-34393	12/03/14Q	02/18/15	50
O2SI	020620-02-SS	n-Hexane	1000	205230-33679	12/03/14R	03/12/15	10(
O2SI	020049-02-SS	HEXACHLOROETHANE	1000	226063-33536	12/03/14S	04/07/16	10(
J&T Brand		Purge & Trap MeOH		62345-00779	01/12/15	07/09/18	165
01/17/15Z							
250ug/ml TBA/IBA/Acetonitrile/Acrolein/2-P							
Exp:02/17/15			Conc.		Date	Exp.	
Supplier	ID #		ug/ml	Lot #	Code	Date	uL
O2SI	120166-01-SS	VOC Mix 4-3 (SS)	2000	189667-33306	12/03/14T	05/18/15	250
O2SI	020229-09-SS	Acrolein SOLUTION (SS)	10000	242700-34579	01/17/15M	02/17/15	50
J&T Brand		Purge & Trap MeOH		62345-00779	01/12/15	07/09/18	170(

1/19/15 RS

Volatile Standard Curve Preparation for 5mL Purge (8260 soil)-LOKI

Exp: Date:	01/20/15	5µg/mL	5µg/mL	5µg/mL	5µg/mL	50µg/mL	50µg/mL	50µg/mL	50µg/mL	50µg/mL	250µg/mL	
		Vol Std #9	Vol Std #10	Vol Std #12	Surrogate	Vol Std #7	Vol Std #8	Vol Std #1	Vol Std #2	Surrogate	TBA	Final Vol
	Conc.	01-19-15R	01-19-15S	01-19-15T	01-19-15V	01-19-15N	01-19-15P	01-19-15O	01-19-15Q	01-19-15U	01-19-15W	w/P&T H2O
Date/code	µg/L	Exp:02-19-15	Exp:02-19-15	Exp:02-19-15	Exp:02-19-15	Exp:02-19-15	Exp:02-19-15	Exp:02-19-15	Exp:02-19-15	Exp:02-19-15	Exp:02-19-15	mL
01-19-15A	2	2	2	2	2	n/a	n/a	n/a	n/a	n/a	1	5
01-19-15B	5	5	5	5	5	n/a	n/a	n/a	n/a	n/a	2	5
01-19-15C	10	10	10	10	10	n/a	n/a	n/a	n/a	n/a	3	5
01-19-15D	20	20	20	20	20	n/a	n/a	n/a	n/a	n/a	4	5
01-19-15E	50	n/a	n/a	n/a	n/a	5	5	5	5	5	5	5
01-19-15F	100	n/a	n/a	n/a	n/a	10	10	10	10	10	6	5
01-19-15G	150	n/a	n/a	n/a	n/a	15	15	15	15	15	7	5
01-19-15H	200	n/a	n/a	n/a	n/a	20	20	20	20	20	8	5

GC/MS STANDARD PREPARATION BOOK # 64 PAGE # 029

RS 1/20/15

1/19/15 RS

Volatile Standard Curve Preparation for 10mL Purge (8260 water)-~~LOW~~ MAX												
Exp: Date:	01/20/15	5µg/mL	5µg/mL	5µg/mL	5µg/mL	50µg/mL	50µg/mL	50µg/mL	50µg/mL	50µg/mL	250µg/mL	
		Vol Std #9	Vol Std #10	Vol Std #12	Surrogate	Vol Std #7	Vol Std #8	Vol Std #1	Vol Std #2	Surrogate	TBA	Final Vol
	Conc.	01-19-15R	01-19-15S	01-19-15T	01-19-15V	01-19-15N	01-19-15P	01-19-15O	01-19-15Q	01-19-15U	01-19-15W	w/P&T H2O
Date/code	µg/L	Exp:02-19-15	Exp:02-19-15	Exp:02-19-15	Exp:02-19-15	Exp:02-19-15	Exp:02-19-15	Exp:02-19-15	Exp:02-19-15	Exp:02-19-15	Exp:02-19-15	mL
01-19-15I	0.3	3	3	3	6	n/a	n/a	n/a	n/a	n/a	2	50
01-19-15J	0.5	5	5	5	10	n/a	n/a	n/a	n/a	n/a	5	50
01-19-15K	1	10	10	10	20	n/a	n/a	n/a	n/a	n/a	10	50
01-19-15L	5	n/a	n/a	n/a	n/a	5	5	5	5	10	20	50
01-19-15M	10	n/a	n/a	n/a	n/a	10	10	10	10	25	25	50
01-19-15N	20	n/a	n/a	n/a	n/a	20	20	20	20	40	30	50
01-19-15O	40	n/a	n/a	n/a	n/a	40	40	40	40	80	35	50
01-13-15P	100	n/a	n/a	n/a	n/a	100	100	100	100	100	40	50

1/23/15 RS

A-

Gasoline
Lot #: LC01901 - 34327
Rec: 11/25/14 MFR exp. 7/31/16

Gasoline
Lot: LC01901 EXP: JUL/2016 STORAGE: ROOM TEMP. 1 x 1ml

47516-U

DATE RECEIVED:

SUPELCO
Solutions within.
595 North Harrison Road • Bellefonte, PA
16823-0048 USA • Phone 814-359-3441

RS

STANDARD TRANSFER LABEL

Date of Preparation:
Reference Number:
Description:
Exp. Date: EXP: JUL/2016
Storage: ROOM TEMP.

1/23/15 RS

RS

01-23-15B					
2000ug/ml Gasoline					
Supplier	ID #		ug/ml	Lot #	uL
Supelco	47516-U	Gasoline	20,000	LC01901-34327	200
J&T Brand		Purge & Trap MeOH		62345-00777	1800

1/23/15 RS

Gasoline Curve Preparation for 100mL Purge (water)-THOR			
Exp Date:	01/24/15	2000ug/ml	
		Gasoline	Final Vol
	Conc.	01-23-15B	w/P&T H2O
Date/code	µg/L	Exp.02-23-15	mL
01-23-15C	20	1	100
01-23-15D	50	2.5	100
01-23-15E	100	5	100
01-23-15F	300	15	100
01-23-15G	600	30	100
01-23-15H	800	40	100
01-23-15I	1000	50	100

1/20/15 RS

A-

VOC Mix 4-3, 2,000 mg/L, 1 mL

120166-01

Lot #	Storage	Expiry
229587	≤ 6 Degrees C	29/May/2016

Solv: P/T Methanol

VOC Mix 4-3, 2000mg/L
Lot #: 229587 - 33662
Rec: 6/3/14 MFR exp. 5/29/16

RS

Injection Log

Directory: M:\MAX\DATA\M150119\

Line	Vial	FileName	Multiplier	SampleName	Misc Info	Injected
1	5	0119M05.D	1	5ng BFB Std 09-30-14	2uL	19 Jan 15 11:43
2	8	0119M08.D	1	0.3ug/L Vol Std 01-19-15	10mL w/IS: 11-03-14	19 Jan 15 13:05
3	9	0119M09.D	1	0.5ug/L Vol Std 01-19-15	10mL w/IS: 11-03-14	19 Jan 15 13:33
4	10	0119M10.D	1	1.0ug/L Vol Std 01-19-15	10mL w/IS: 11-03-14	19 Jan 15 14:01
5	11	0119M11.D	1	5.0ug/L Vol Std 01-19-15	10mL w/IS: 11-03-14	19 Jan 15 14:28
6	12	0119M12.D	1	10ug/L Vol Std 01-19-15	10mL w/IS: 11-03-14	19 Jan 15 14:56
7	13	0119M13.D	1	20ug/L Vol Std 01-19-15	10mL w/IS: 11-03-14	19 Jan 15 15:24
8	14	0119M14.D	1	40ug/L Vol Std 01-19-15	10mL w/IS: 11-03-14	19 Jan 15 15:51
9	15	0119M15.D	1	100ug/L Vol Std 01-19-15	10mL w/IS: 11-03-14	19 Jan 15 16:19
10	21	0119M21.D	1	150119A LCS-1WM(SS)	10mL w/IS&S: 11-03-14	19 Jan 15 19:04
11	28	0123M38.D	1	5ng BFB Std 01-09-15	2ul	24 Jan 15 00:55
12	29	0123M39.D	1	10ug/L Vol Std 01-23-15	10mL w/IS&S: 11-03-14	24 Jan 15 1:23
13	30	0123M40.D	1	150123B LCS-1WM	10mL w/IS&S: 11-03-14	24 Jan 15 1:50
14	35	0123M45.D	1	150123B BLK-1WM	10mL w/IS&S: 11-03-14	24 Jan 15 4:08
15	36	0123M46.D	1	AZ10008W01	10mL w/IS&S: 11-03-14	24 Jan 15 4:36
16	37	0123M47.D	1	AZ10009W01	10mL w/IS&S: 11-03-14	24 Jan 15 5:04
17	38	0123M48.D	1	AZ10010W01	10mL w/IS&S: 11-03-14	24 Jan 15 5:31
18	39	0123M49.D	1	AZ09997W01	10mL w/IS&S: 11-03-14	24 Jan 15 5:59
19	40	0123M50.D	1	AZ09998W01	10mL w/IS&S: 11-03-14	24 Jan 15 6:27
20	41	0123M51.D	1	AZ09999W01	10mL w/IS&S: 11-03-14	24 Jan 15 6:54
21	42	0123M52.D	1	AZ10000W01	10mL w/IS&S: 11-03-14	24 Jan 15 7:22
22	43	0123M53.D	1	AZ10001W01	10mL w/IS&S: 11-03-14	24 Jan 15 7:49
23	44	0123M54.D	1	AZ10002W01	10mL w/IS&S: 11-03-14	24 Jan 15 8:17
24	45	0123M55.D	1	AZ10003W01	10mL w/IS&S: 11-03-14	24 Jan 15 8:44
25	46	0123M56.D	1	AZ10004W01	10mL w/IS&S: 11-03-14	24 Jan 15 9:12
26	47	0123M57.D	1	AZ10005W01	10mL w/IS&S: 11-03-14	24 Jan 15 9:40
27	48	0123M58.D	1	AZ10006W01	10mL w/IS&S: 11-03-14	24 Jan 15 10:07
28	49	0123M59.D	1	AZ10007W01	10mL w/IS&S: 11-03-14	24 Jan 15 10:35

Injection Log

Directory: M:\MAX\DATA\M150126\

Line	Vial	FileName	Multiplier	SampleName	Misc Info	Injected
1	1	0126M05.D	1	5ng BFB Std 09-30-14	2uL	26 Jan 15 10:47
2	4	0126M09.D	1	0.3ug/L Vol Std 01-26-15	10mL w/IS&S: 11-03-14	26 Jan 15 12:37
3	5	0126M10.D	1	0.5ug/L Vol Std 01-26-15	10mL w/IS&S: 11-03-14	26 Jan 15 13:05
4	6	0126M11.D	1	1.0ug/L Vol Std 01-26-15	10mL w/IS&S: 11-03-14	26 Jan 15 13:33
5	7	0126M12.D	1	5.0ug/L Vol Std 01-26-15	10mL w/IS&S: 11-03-14	26 Jan 15 14:00
6	8	0126M13.D	1	10ug/L Vol Std 01-26-15	10mL w/IS&S: 11-03-14	26 Jan 15 14:28
7	9	0126M14.D	1	20ug/L Vol Std 01-26-15	10mL w/IS&S: 11-03-14	26 Jan 15 14:56
8	10	0126M15.D	1	40ug/L Vol Std 01-26-15	10mL w/IS&S: 11-03-14	26 Jan 15 15:24
9	11	0126M16.D	1	100ug/L Vol Std 01-26-15	10mL w/IS&S: 11-03-14	26 Jan 15 15:52
10	16	0126M21.D	1	150126A LCS-1WM (SS)	10mL w/IS&S: 11-03-14	26 Jan 15 18:10
11	2	0127M09.D	1	5ng BFB Std 01-26-15	2ul	27 Jan 15 9:39
12	5	0127M12.D	1	10ug/L Vol Std 01-27-15	10mL w/IS&S: 11-03-14	27 Jan 15 11:24
13	6	0127M13.D	1	150127A LCS-1WM	10mL w/IS&S: 11-03-14	27 Jan 15 11:52
14	10	0127M17.D	1	150127A BLK-1WM	10mL w/IS&S: 11-03-14	27 Jan 15 13:43
15	13	0127M20.D	5	AZ09999W02 DF5	10mL w/IS&S: 11-03-14	27 Jan 15 15:06
16	14	0127M21.D	5	AZ10000W02 DF5	10mL w/IS&S: 11-03-14	27 Jan 15 15:34
17	15	0127M22.D	2	AZ10005W02 DF2	10mL w/IS&S: 11-03-14	27 Jan 15 16:02
18	23	0127M30.D	1	AZ10006W234 MS-1WM	10mL w/IS&S: 11-03-14	27 Jan 15 19:44
19	24	0127M31.D	1	AZ10006W234 MSD-1WM	10mL w/IS&S: 11-03-14	27 Jan 15 20:11

METALS

APPL, INC.

METALS

QC Summary

APPL, INC.

METALS BLANK

APPL Inc.
908 North Temperance Avenue
Clovis, CA 93611

Method	Analyte	Result	LOQ	LOD	DL	Units	Prep Date	Analysis Date	QC Group
6020A	LEAD (PB)	0.40 U	3.0	0.40	0.19	ug/L	01/26/15	01/27/15	#62A14-150126A-AZ10006

Metals SC-Blank-REG MDLs
Printed: 01/28/15 3:27:48 PM

Laboratory Control Spike Recovery

METALS

APPL Inc.
908 North Temperance Avenue
Clovis, CA 93611

Method	Compound Name	Spike Level ug/L	SPK Result ug/L	SPK % Recovery	Recovery Limits	Extract Date	Analysis Date	QC Group
EPA 6020A	LEAD (PB)	50.0	46.5	93.0	80-120	01/26/15	01/27/15	#62A14-150126A-AZ10006

Comments:

Matrix Spike Recoveries

METALS

APPL ID: **150126W-10006 MS - 193868**

Sample ID: AZ10006

Client ID: EKB100020

APPL Inc.
908 North Temperance Avenue
Clovis, CA 93611

Method	Compound Name	Spike Lvl ug/L	Matrix Res ug/L	SPK Res ug/L	DUP Res ug/L	SPK % Recovery	DUP % Recovery	RPD	RPD Max	Recovery Limits	Extract Date-Spk	Analysis Date-Spk	Extract Date-Dup	Analysis Date-Dup	QC Group	QC Sample
EPA 6020A	LEAD (PB)	50.0	ND	45.6	46.5	91.2	93.0	2.0	20	80-120	01/26/15	01/27/15	01/26/15	01/27/15	193868	AZ10006

Comments: _____

METALS

Sample Data

APPL, INC.

Metals Analysis

Element Environmental
98-030 Hekaha St., Unit 9
Aiea, HI 96701

APPL Inc.
908 North Temperance Avenue
Clovis, CA 93611

Attn: Steve Spengler
Project: MCBH Motor Pool UST KB-100 SI / 130034
Sample ID: EKB100011
Sample Collection Date: 01/20/15

ARF: 75427
APPL ID: AZ09997

Method	Analyte	Result	LOQ	LOD	DL	Units	DF	Prep Date	Analysis Date
6020A/3015^	LEAD (PB)	0.40 U	3.0	0.40	0.19	ug/L	1	01/26/15	01/27/15

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APPL-F1-SC-NoMC-REG MDLs

Sample Report

Sample Table

Sample Name	AZ09997W06
Data File Name	034SMPL.d
Data Path Name	K:\ICP-MS Megatron\Data\150127B.b
Acq Date Time	2015-01-27T13:12:14-08:00
Sample Type	Sample
Dilution	1.111111111
Comment	
ISTD Ref FileName	001CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	ISTD Mass	Tune Mode	Conc	FinalConc	Conc %RSD	CPS	%RSD	LDR	QC Flag
Be	9	72	NoGas	-0.049	-0.055	-22.97	83	61.58	10000	
B	11	72	NoGas	745.265	828.072	2.54	2218448	2.28	10000	
Na	23	72	He	73148.716	81276.351	1.88	85476188	1.23	1000000	
Mg	24	72	He	31234.158	34704.620	0.51	19307433	0.44	1000000	
Al	27	72	He	105.138	116.820	1.88	30599	0.93	1000000	
K	39	72	He	11491.763	12768.626	1.89	5824845	1.58	500000	
Ca	44	72	He	33505.933	37228.814	1.66	980853	0.93	500000	
Ti	47	72	He	15.431	17.145	3.60	3051	3.06	10000	
V	51	72	He	2.173	2.415	0.72	14985	1.49	10000	
Cr	52	72	He	0.670	0.744	4.15	6767	3.36	10000	
Mn	55	72	He	11.513	12.792	1.75	54823	1.69	50000	
Fe	56	72	He	203.819	226.465	2.36	1571728	2.06	1000000	
Co	59	72	He	-0.133	-0.147	-15.06	3886	6.14	10000	
Ni	60	72	He	4.896	5.439	1.12	17857	1.31	10000	
Cu	63	72	He	0.382	0.425	8.33	11038	2.99	10000	
Zn	66	115	He	0.517	0.574	20.95	5805	2.77	50000	
As	75	159	He	1.290	1.434	5.24	1381	3.80	2000	
Se	78	72	H2	0.237	0.264	13.72	88	12.36	10000	
Se	78	115	He	0.315	0.350	25.57	65	8.57	10000	
Sr	88	115	NoGas	506.003	562.225	1.23	26817938	1.04	50000	
Mo	95	115	NoGas	10.247	11.386	0.62	122632	1.63	10000	
Ag	107	115	NoGas	-0.001	-0.001	-115.92	93	26.97	5000	
Cd	111	115	He	0.016	0.018	40.28	61	27.15	10000	
Sn	118	115	He	0.153	0.170	2.19	1198	1.89	10000	
Sn	118	115	NoGas	0.176	0.195	1.85	4176	2.03	10000	
Sb	121	115	NoGas	0.211	0.234	9.75	8192	4.06	10000	
Ba	137	165	NoGas	2.540	2.823	2.89	21221	3.43	50000	
Tl	205	159	NoGas	-0.008	-0.009	-12.64	873	8.89	5000	
Pb	208	159	NoGas	-0.324	-0.361	-2.12	22274	1.61	50000	

QC ISTD Table

Name	Mass	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li	6	NoGas	191762	2.52	175880	109.03	70	120	
Sc	45	H2	267460	0.80	257908	103.70	70	120	
Sc	45	He	89927	0.81	84759	106.10	70	120	
Sc	45	NoGas	1601674	1.59	1558939	102.74	70	120	
Ge	72	H2	70841	0.41	69883	101.37	70	120	
Ge	72	He	62565	0.83	61504	101.72	70	120	
Ge	72	NoGas	355317	0.40	364560	97.46	70	120	
In	115	H2	1747713	0.12	1834785	95.25	70	120	
In	115	He	601266	0.40	603637	99.61	70	120	
In	115	NoGas	2477725	1.81	2563332	96.66	70	120	
Tb	159	H2	3475573	1.83	3755419	92.55	70	120	
Tb	159	He	2087795	1.24	2112061	98.85	70	120	
Tb	159	NoGas	3616757	2.84	3584585	100.90	70	120	
Ho	165	H2	3364389	0.70	3627891	92.74	70	120	
Ho	165	He	2114635	1.35	2100491	100.67	70	120	
Ho	165	NoGas	3540595	0.58	3483510	101.64	70	120	

Metals Analysis

Element Environmental
98-030 Hekaha St., Unit 9
Aiea, HI 96701

APPL Inc.
908 North Temperance Avenue
Clovis, CA 93611

Attn: Steve Spengler
Project: MCBH Motor Pool UST KB-100 SI / 130034
Sample ID: EKB100012
Sample Collection Date: 01/20/15

ARF: 75427
APPL ID: AZ09998

Method	Analyte	Result	LOQ	LOD	DL	Units	DF	Prep Date	Analysis Date
6020A/3015^	LEAD (PB)	0.40 U	3.0	0.40	0.19	ug/L	1	01/26/15	01/27/15

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APPL-F1-SC-NoMC-REG MDLs

Sample Report

Sample Table

Sample Name	AZ09998W06
Data File Name	035SMPL.d
Data Path Name	K:\ICP-MS Megatron\Data\150127B.b
Acq Date Time	2015-01-27T13:18:15-08:00
Sample Type	Sample
Dilution	1.111111111
Comment	
ISTD Ref FileName	001CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	ISTD Mass	Tune Mode	Conc	FinalConc	Conc %RSD	CPS	%RSD	LDR	QC Flag
Be	9	72	NoGas	-0.058	-0.065	-7.63	43	48.04	10000	
B	11	72	NoGas	955.366	1061.518	1.78	2924814	2.72	10000	
Na	23	72	He	106577.664	118419.626	0.93	127641008	0.80	1000000	
Mg	24	72	He	23495.884	26106.537	0.84	14894738	0.43	1000000	
Al	27	72	He	36.318	40.353	2.89	13417	2.43	1000000	
K	39	72	He	14106.247	15673.608	0.72	7319673	1.32	500000	
Ca	44	72	He	18624.751	20694.168	1.20	559350	0.56	500000	
Ti	47	72	He	2.947	3.275	13.92	650	12.13	10000	
V	51	72	He	2.470	2.744	2.41	17355	1.80	10000	
Cr	52	72	He	0.498	0.554	1.61	5506	1.79	10000	
Mn	55	72	He	8.130	9.033	0.92	39790	0.70	50000	
Fe	56	72	He	36.012	40.014	2.51	381010	2.36	1000000	
Co	59	72	He	-0.271	-0.302	-1.94	2066	4.10	10000	
Ni	60	72	He	4.021	4.468	1.21	15091	1.33	10000	
Cu	63	72	He	-0.359	-0.399	-2.94	3722	3.42	10000	
Zn	66	115	He	-1.725	-1.917	-2.54	2116	2.56	50000	
As	75	159	He	3.171	3.524	1.30	3393	2.50	2000	
Se	78	72	H2	0.048	0.053	14.94	26	9.09	10000	
Se	78	115	He	0.053	0.058	15.07	48	0.00	10000	
Sr	88	115	NoGas	293.168	325.742	2.29	15787624	1.50	50000	
Mo	95	115	NoGas	4.575	5.083	1.37	67346	1.90	10000	
Ag	107	115	NoGas	-0.001	-0.001	-121.71	83	48.50	5000	
Cd	111	115	He	0.004	0.004	113.58	31	36.85	10000	
Sn	118	115	He	0.195	0.216	12.20	1455	9.98	10000	
Sn	118	115	NoGas	0.215	0.239	1.61	4912	1.28	10000	
Sb	121	115	NoGas	0.378	0.420	4.60	12091	4.24	10000	
Ba	137	165	NoGas	1.744	1.938	5.83	14987	5.86	50000	
Tl	205	159	NoGas	-0.014	-0.016	-13.86	530	21.43	5000	
Pb	208	159	NoGas	-0.546	-0.606	-0.99	5501	9.08	50000	

QC ISTD Table

Name	Mass	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li	6	NoGas	193530	1.63	175880	110.04	70	120	
Sc	45	H2	275585	0.99	257908	106.85	70	120	
Sc	45	He	92682	1.24	84759	109.35	70	120	
Sc	45	NoGas	1693774	2.34	1558939	108.65	70	120	
Ge	72	H2	73589	0.26	69883	105.30	70	120	
Ge	72	He	64149	0.67	61504	104.30	70	120	
Ge	72	NoGas	369176	1.01	364560	101.27	70	120	
In	115	H2	1769326	1.85	1834785	96.43	70	120	
In	115	He	613289	1.16	603637	101.60	70	120	
In	115	NoGas	2517592	1.28	2563332	98.22	70	120	
Tb	159	H2	3563796	1.20	3755419	94.90	70	120	
Tb	159	He	2135991	1.93	2112061	101.13	70	120	
Tb	159	NoGas	3674508	1.46	3584585	102.51	70	120	
Ho	165	H2	3460927	1.13	3627891	95.40	70	120	
Ho	165	He	2142565	1.54	2100491	102.00	70	120	
Ho	165	NoGas	3635260	1.69	3483510	104.36	70	120	

Metals Analysis

Element Environmental
98-030 Hekaha St., Unit 9
Aiea, HI 96701

APPL Inc.
908 North Temperance Avenue
Clovis, CA 93611

Attn: Steve Spengler
Project: MCBH Motor Pool UST KB-100 SI / 130034
Sample ID: EKB100013
Sample Collection Date: 01/20/15

ARF: 75427
APPL ID: AZ09999

Method	Analyte	Result	LOQ	LOD	DL	Units	DF	Prep Date	Analysis Date
6020A/3015^	LEAD (PB)	0.40 U	3.0	0.40	0.19	ug/L	1	01/26/15	01/27/15

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APPL-F1-SC-NoMC-REG MDLs

Sample Report

Sample Table

Sample Name	AZ09999W06
Data File Name	036SMPL.d
Data Path Name	K:\ICP-MS Megatron\Data\150127B.b
Acq Date Time	2015-01-27T13:24:17-08:00
Sample Type	Sample
Dilution	1.111111111
Comment	
ISTD Ref FileName	001CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	ISTD Mass	Tune Mode	Conc	FinalConc	Conc %RSD	CPS	%RSD	LDR	QC Flag
Be	9	72	NoGas	-0.050	-0.055	-9.44	83	24.98	10000	
B	11	72	NoGas	747.054	830.060	1.44	2243325	2.47	10000	
Na	23	72	He	76177.372	84641.525	3.72	91942912	1.80	1000000	
Mg	24	72	He	23444.474	26049.416	3.30	14974213	2.28	1000000	
Al	27	72	He	186.584	207.316	2.30	53030	0.99	1000000	
K	39	72	He	10081.852	11202.058	1.00	5287010	1.48	500000	
Ca	44	72	He	31516.515	35018.350	2.17	953259	0.85	500000	
Ti	47	72	He	33.387	37.097	5.47	6752	7.23	10000	
V	51	72	He	2.334	2.593	3.29	16563	1.24	10000	
Cr	52	72	He	1.207	1.341	3.77	11524	4.03	10000	
Mn	55	72	He	14.167	15.741	2.51	69616	0.70	50000	
Fe	56	72	He	430.163	477.959	2.12	3296229	0.26	1000000	
Co	59	72	He	0.076	0.084	26.67	6917	2.19	10000	
Ni	60	72	He	3.444	3.827	2.53	13064	0.64	10000	
Cu	63	72	He	-0.054	-0.060	-56.85	6899	3.15	10000	
Zn	66	115	He	-1.405	-1.561	-2.09	2636	1.90	50000	
As	75	159	He	3.265	3.628	0.88	3475	1.05	2000	
Se	78	72	H2	0.091	0.101	1.98	41	1.49	10000	
Se	78	115	He	0.213	0.237	75.82	59	18.70	10000	
Sr	88	115	NoGas	418.977	465.530	0.58	22584156	0.67	50000	
Mo	95	115	NoGas	3.637	4.041	3.29	57926	2.47	10000	
Ag	107	115	NoGas	-0.001	-0.001	-285.37	97	63.21	5000	
Cd	111	115	He	0.007	0.007	20.89	38	9.12	10000	
Sn	118	115	He	0.251	0.279	10.65	1749	8.64	10000	
Sn	118	115	NoGas	0.258	0.287	3.85	5661	2.59	10000	
Sb	121	115	NoGas	0.741	0.823	0.44	20273	0.71	10000	
Ba	137	165	NoGas	1.885	2.095	1.56	15498	2.32	50000	
Tl	205	159	NoGas	-0.013	-0.014	-14.73	603	15.04	5000	
Pb	208	159	NoGas	-0.242	-0.269	-3.12	28114	2.01	50000	

QC ISTD Table

Name	Mass	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li	6	NoGas	195413	0.87	175880	111.11	70	120	
Sc	45	H2	277410	0.53	257908	107.56	70	120	
Sc	45	He	93251	0.38	84759	110.02	70	120	
Sc	45	NoGas	1671787	1.79	1558939	107.24	70	120	
Ge	72	H2	73212	1.05	69883	104.76	70	120	
Ge	72	He	64651	1.90	61504	105.12	70	120	
Ge	72	NoGas	358439	1.26	364560	98.32	70	120	
In	115	H2	1754055	0.61	1834785	95.60	70	120	
In	115	He	607957	0.34	603637	100.72	70	120	
In	115	NoGas	2519647	0.51	2563332	98.30	70	120	
Tb	159	H2	3534719	1.16	3755419	94.12	70	120	
Tb	159	He	2125450	0.42	2112061	100.63	70	120	
Tb	159	NoGas	3556011	1.74	3584585	99.20	70	120	
Ho	165	H2	3438121	0.88	3627891	94.77	70	120	
Ho	165	He	2144421	2.56	2100491	102.09	70	120	
Ho	165	NoGas	3478327	1.16	3483510	99.85	70	120	

Metals Analysis

Element Environmental
98-030 Hekaha St., Unit 9
Aiea, HI 96701

APPL Inc.
908 North Temperance Avenue
Clovis, CA 93611

Attn: Steve Spengler
Project: MCBH Motor Pool UST KB-100 SI / 130034
Sample ID: EKB100014
Sample Collection Date: 01/20/15

ARF: 75427
APPL ID: AZ10000

Method	Analyte	Result	LOQ	LOD	DL	Units	DF	Prep Date	Analysis Date
6020A/3015^	LEAD (PB)	0.40 U	3.0	0.40	0.19	ug/L	1	01/26/15	01/27/15

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APPL-F1-SC-NoMC-REG MDLs

Sample Report

Sample Table

Sample Name	AZ10000W06
Data File Name	037SMPL.d
Data Path Name	K:\ICP-MS Megatron\Data\150127B.b
Acq Date Time	2015-01-27T13:30:17-08:00
Sample Type	Sample
Dilution	1.111111111
Comment	
ISTD Ref FileName	001CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	ISTD Mass	Tune Mode	Conc	FinalConc	Conc %RSD	CPS	%RSD	LDR	QC Flag
Be	9	72	NoGas	-0.035	-0.039	-13.02	150	13.33	10000	
B	11	72	NoGas	723.815	804.239	1.33	2198729	2.13	10000	
Na	23	72	He	75869.314	84299.238	0.75	91110536	0.61	1000000	
Mg	24	72	He	23431.358	26034.842	1.22	14888132	1.09	1000000	
Al	27	72	He	177.711	197.457	7.22	50428	6.56	1000000	
K	39	72	He	10070.203	11189.115	1.36	5252418	1.47	500000	
Ca	44	72	He	31354.102	34837.891	0.31	943395	0.82	500000	
Ti	47	72	He	29.849	33.166	1.86	6007	2.72	10000	
V	51	72	He	2.221	2.468	2.08	15719	1.12	10000	
Cr	52	72	He	1.133	1.259	1.24	10836	1.79	10000	
Mn	55	72	He	13.989	15.544	0.76	68389	0.44	50000	
Fe	56	72	He	396.177	440.196	1.30	3029331	1.83	1000000	
Co	59	72	He	0.065	0.072	8.56	6732	0.48	10000	
Ni	60	72	He	3.365	3.739	3.18	12705	2.96	10000	
Cu	63	72	He	-0.109	-0.122	-13.64	6290	1.60	10000	
Zn	66	115	He	0.576	0.640	33.12	5920	5.27	50000	
As	75	159	He	3.097	3.441	0.51	3321	1.62	2000	
Se	78	72	H2	0.119	0.133	14.07	50	7.88	10000	
Se	78	115	He	0.138	0.153	87.12	53	14.98	10000	
Sr	88	115	NoGas	423.136	470.151	1.87	22539410	0.29	50000	
Mo	95	115	NoGas	3.605	4.006	2.66	56934	1.93	10000	
Ag	107	115	NoGas	0.009	0.010	17.65	363	11.12	5000	
Cd	111	115	He	0.003	0.003	152.19	28	39.77	10000	
Sn	118	115	He	0.322	0.358	12.04	2118	9.51	10000	
Sn	118	115	NoGas	0.293	0.326	4.48	6190	4.60	10000	
Sb	121	115	NoGas	0.763	0.848	2.76	20530	1.30	10000	
Ba	137	165	NoGas	1.888	2.098	2.61	15531	2.15	50000	
Tl	205	159	NoGas	-0.007	-0.008	-6.78	893	3.93	5000	
Pb	208	159	NoGas	-0.283	-0.314	-1.59	25075	2.24	50000	

QC ISTD Table

Name	Mass	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li	6	NoGas	194945	1.68	175880	110.84	70	120	
Sc	45	H2	275642	1.90	257908	106.88	70	120	
Sc	45	He	92020	1.06	84759	108.57	70	120	
Sc	45	NoGas	1657990	1.03	1558939	106.35	70	120	
Ge	72	H2	72435	3.33	69883	103.65	70	120	
Ge	72	He	64297	0.88	61504	104.54	70	120	
Ge	72	NoGas	362058	0.93	364560	99.31	70	120	
In	115	H2	1788407	1.42	1834785	97.47	70	120	
In	115	He	602937	0.64	603637	99.88	70	120	
In	115	NoGas	2490433	1.63	2563332	97.16	70	120	
Tb	159	H2	3536414	2.04	3755419	94.17	70	120	
Tb	159	He	2140465	1.34	2112061	101.34	70	120	
Tb	159	NoGas	3560092	0.89	3584585	99.32	70	120	
Ho	165	H2	3466717	2.03	3627891	95.56	70	120	
Ho	165	He	2135753	1.33	2100491	101.68	70	120	
Ho	165	NoGas	3481693	0.93	3483510	99.95	70	120	

Metals Analysis

Element Environmental
98-030 Hekaha St., Unit 9
Aiea, HI 96701

APPL Inc.
908 North Temperance Avenue
Clovis, CA 93611

Attn: Steve Spengler
Project: MCBH Motor Pool UST KB-100 SI / 130034
Sample ID: EKB100015
Sample Collection Date: 01/20/15

ARF: 75427
APPL ID: AZ10001

Method	Analyte	Result	LOQ	LOD	DL	Units	DF	Prep Date	Analysis Date
6020A/3015^	LEAD (PB)	0.40 U	3.0	0.40	0.19	ug/L	1	01/26/15	01/27/15

Printed: 01/28/15 3:28:40 PM
APPL-F1-SC-NoMC-REG MDLs

Sample Report

Sample Table

Sample Name	AZ10001W06
Data File Name	038SMPL.d
Data Path Name	K:\ICP-MS Megatron\Data\150127B.b
Acq Date Time	2015-01-27T13:36:17-08:00
Sample Type	Sample
Dilution	1.111111111
Comment	
ISTD Ref FileName	001CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	ISTD Mass	Tune Mode	Conc	FinalConc	Conc %RSD	CPS	%RSD	LDR	QC Flag
Be	9	72	NoGas	-0.047	-0.052	-7.22	93	16.37	10000	
B	11	72	NoGas	677.351	752.613	1.32	2002439	1.19	10000	
Na	23	72	He	73610.864	81789.848	1.43	85180801	1.09	1000000	
Mg	24	72	He	57349.531	63721.701	1.69	35092416	0.45	1000000	
Al	27	72	He	294.650	327.388	1.48	78061	0.24	1000000	
K	39	72	He	14836.177	16484.641	2.55	7431001	1.29	500000	
Ca	44	72	He	68353.015	75947.795	1.33	1980798	0.10	500000	
Ti	47	72	He	41.169	45.743	3.58	7960	4.38	10000	
V	51	72	He	3.101	3.446	2.87	20854	1.64	10000	
Cr	52	72	He	2.077	2.307	0.96	18062	0.47	10000	
Mn	55	72	He	24.765	27.517	1.61	116410	0.39	50000	
Fe	56	72	He	606.740	674.156	2.76	4409638	1.92	1000000	
Co	59	72	He	0.040	0.044	40.93	6148	2.87	10000	
Ni	60	72	He	3.680	4.089	1.82	13359	0.93	10000	
Cu	63	72	He	0.220	0.245	12.44	9324	1.66	10000	
Zn	66	115	He	-0.115	-0.128	-94.24	4667	3.25	50000	
As	75	159	He	3.916	4.351	2.41	4097	2.55	2000	
Se	78	72	H2	0.100	0.111	10.42	43	7.30	10000	
Se	78	115	He	0.193	0.214	79.44	56	18.87	10000	
Sr	88	115	NoGas	958.224	1064.694	0.30	49770598	0.58	50000	
Mo	95	115	NoGas	14.646	16.273	0.11	162995	0.97	10000	
Ag	107	115	NoGas	0.000	0.000	-627.41	110	18.19	5000	
Cd	111	115	He	0.007	0.007	24.57	37	11.35	10000	
Sn	118	115	He	0.621	0.690	6.11	3660	5.47	10000	
Sn	118	115	NoGas	0.630	0.700	1.64	11625	1.86	10000	
Sb	121	115	NoGas	0.044	0.049	23.29	4427	5.83	10000	
Ba	137	165	NoGas	3.625	4.028	0.78	29760	1.06	50000	
Tl	205	159	NoGas	-0.010	-0.011	-10.02	750	7.06	5000	
Pb	208	159	NoGas	-0.390	-0.434	-0.34	16891	0.79	50000	

QC ISTD Table

Name	Mass	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li	6	NoGas	184854	2.23	175880	105.10	70	120	
Sc	45	H2	272231	1.03	257908	105.55	70	120	
Sc	45	He	90147	0.44	84759	106.36	70	120	
Sc	45	NoGas	1628559	0.34	1558939	104.47	70	120	
Ge	72	H2	71194	0.79	69883	101.88	70	120	
Ge	72	He	61957	1.23	61504	100.74	70	120	
Ge	72	NoGas	351222	0.06	364560	96.34	70	120	
In	115	H2	1720403	1.64	1834785	93.77	70	120	
In	115	He	590438	0.59	603637	97.81	70	120	
In	115	NoGas	2427984	0.87	2563332	94.72	70	120	
Tb	159	H2	3487203	2.65	3755419	92.86	70	120	
Tb	159	He	2095641	1.18	2112061	99.22	70	120	
Tb	159	NoGas	3536691	0.21	3584585	98.66	70	120	
Ho	165	H2	3402693	1.37	3627891	93.79	70	120	
Ho	165	He	2115202	2.28	2100491	100.70	70	120	
Ho	165	NoGas	3484917	1.84	3483510	100.04	70	120	

Metals Analysis

Element Environmental
98-030 Hekaha St., Unit 9
Aiea, HI 96701

APPL Inc.
908 North Temperance Avenue
Clovis, CA 93611

Attn: Steve Spengler
Project: MCBH Motor Pool UST KB-100 SI / 130034
Sample ID: EKB100016
Sample Collection Date: 01/20/15

ARF: 75427
APPL ID: AZ10002

Method	Analyte	Result	LOQ	LOD	DL	Units	DF	Prep Date	Analysis Date
6020A/3015^	LEAD (PB)	0.40 U	3.0	0.40	0.19	ug/L	1	01/26/15	01/27/15

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APPL-F1-SC-NoMC-REG MDLs

Sample Report

Sample Table

Sample Name	AZ10002W06
Data File Name	039SMPL.d
Data Path Name	K:\ICP-MS Megatron\Data\150127B.b
Acq Date Time	2015-01-27T13:42:17-08:00
Sample Type	Sample
Dilution	1.111111111
Comment	
ISTD Ref FileName	001CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	ISTD Mass	Tune Mode	Conc	FinalConc	Conc %RSD	CPS	%RSD	LDR	QC Flag
Be	9	72	NoGas	-0.009	-0.010	-164.72	267	25.52	10000	
B	11	72	NoGas	713.432	792.702	2.60	2129367	3.64	10000	
Na	23	72	He	82775.433	91972.704	1.77	96064865	2.18	1000000	
Mg	24	72	He	22672.401	25191.557	1.63	13923723	1.87	1000000	
Al	27	72	He	1003.580	1115.089	1.41	257510	1.48	1000000	
K	39	72	He	13652.186	15169.095	0.52	6863575	0.24	500000	
Ca	44	72	He	49966.007	55517.786	1.02	1452559	1.01	500000	
Ti	47	72	He	173.019	192.244	0.87	33343	0.66	10000	
V	51	72	He	6.547	7.274	1.19	43331	0.68	10000	
Cr	52	72	He	3.912	4.347	3.06	32982	2.44	10000	
Mn	55	72	He	28.200	31.333	1.35	132914	0.90	50000	
Fe	56	72	He	2200.218	2444.686	0.58	15743350	0.95	1000000	
Co	59	72	He	1.552	1.725	1.96	26428	1.92	10000	
Ni	60	72	He	8.836	9.818	1.37	31789	1.35	10000	
Cu	63	72	He	5.192	5.769	1.82	58711	1.62	10000	
Zn	66	115	He	2.610	2.899	4.72	9159	1.17	50000	
As	75	159	He	3.808	4.232	3.07	3999	2.24	2000	
Se	78	72	H2	0.047	0.052	23.91	25	15.14	10000	
Se	78	115	He	0.309	0.343	21.58	64	6.35	10000	
Sr	88	115	NoGas	532.509	591.677	1.42	27850293	1.40	50000	
Mo	95	115	NoGas	16.757	18.619	1.82	184809	1.23	10000	
Ag	107	115	NoGas	0.002	0.003	110.16	180	40.06	5000	
Cd	111	115	He	0.023	0.025	7.92	77	6.51	10000	
Sn	118	115	He	0.821	0.912	3.29	4742	2.96	10000	
Sn	118	115	NoGas	0.802	0.891	1.19	14571	1.37	10000	
Sb	121	115	NoGas	0.058	0.065	10.69	4758	4.70	10000	
Ba	137	165	NoGas	6.690	7.433	3.60	54957	1.01	50000	
Tl	205	159	NoGas	-0.003	-0.003	-49.09	1120	6.44	5000	
Pb	208	159	NoGas	-0.208	-0.231	-1.47	30256	1.19	50000	

QC ISTD Table

Name	Mass	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li	6	NoGas	186653	2.40	175880	106.13	70	120	
Sc	45	H2	273029	1.84	257908	105.86	70	120	
Sc	45	He	90665	1.08	84759	106.97	70	120	
Sc	45	NoGas	1614069	1.85	1558939	103.54	70	120	
Ge	72	H2	71172	0.93	69883	101.84	70	120	
Ge	72	He	62140	0.51	61504	101.03	70	120	
Ge	72	NoGas	355446	1.19	364560	97.50	70	120	
In	115	H2	1724028	0.91	1834785	93.96	70	120	
In	115	He	592954	1.05	603637	98.23	70	120	
In	115	NoGas	2445042	1.97	2563332	95.39	70	120	
Tb	159	H2	3457079	2.03	3755419	92.06	70	120	
Tb	159	He	2102409	0.83	2112061	99.54	70	120	
Tb	159	NoGas	3512204	1.92	3584585	97.98	70	120	
Ho	165	H2	3406053	2.14	3627891	93.89	70	120	
Ho	165	He	2100275	1.63	2100491	99.99	70	120	
Ho	165	NoGas	3494574	2.68	3483510	100.32	70	120	

Metals Analysis

Element Environmental
98-030 Hekaha St., Unit 9
Aiea, HI 96701

APPL Inc.
908 North Temperance Avenue
Clovis, CA 93611

Attn: Steve Spengler
Project: MCBH Motor Pool UST KB-100 SI / 130034
Sample ID: EKB100017
Sample Collection Date: 01/20/15

ARF: 75427
APPL ID: AZ10003

Method	Analyte	Result	LOQ	LOD	DL	Units	DF	Prep Date	Analysis Date
6020A/3015^	LEAD (PB)	0.40 U	3.0	0.40	0.19	ug/L	1	01/26/15	01/27/15

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APPL-F1-SC-NoMC-REG MDLs

Sample Report

Sample Table

Sample Name	AZ10003W06
Data File Name	040SMPL.d
Data Path Name	K:\ICP-MS Megatron\Data\150127B.b
Acq Date Time	2015-01-27T13:48:19-08:00
Sample Type	Sample
Dilution	1.111111111
Comment	
ISTD Ref FileName	001CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	ISTD Mass	Tune Mode	Conc	FinalConc	Conc %RSD	CPS	%RSD	LDR	QC Flag
Be	9	72	NoGas	-0.047	-0.052	-26.17	93	59.01	10000	
B	11	72	NoGas	621.018	690.020	0.82	1867091	0.84	10000	
Na	23	72	He	74802.503	83113.893	0.32	89087279	0.81	1000000	
Mg	24	72	He	20058.024	22286.694	0.76	12641184	1.25	1000000	
Al	27	72	He	221.394	245.993	0.45	61343	0.97	1000000	
K	39	72	He	11405.343	12672.603	0.77	5892253	0.30	500000	
Ca	44	72	He	30159.049	33510.054	0.68	899900	0.40	500000	
Ti	47	72	He	33.151	36.834	3.27	6608	3.50	10000	
V	51	72	He	2.730	3.033	0.76	18986	0.31	10000	
Cr	52	72	He	1.002	1.114	2.98	9662	2.74	10000	
Mn	55	72	He	11.080	12.311	1.16	53785	1.12	50000	
Fe	56	72	He	447.942	497.713	9.06	3380642	8.39	1000000	
Co	59	72	He	0.038	0.042	51.39	6307	4.18	10000	
Ni	60	72	He	2.246	2.495	1.74	8502	1.26	10000	
Cu	63	72	He	0.670	0.745	1.94	14182	1.50	10000	
Zn	66	115	He	2.811	3.124	2.06	9614	0.40	50000	
As	75	159	He	2.235	2.483	2.58	2392	3.74	2000	
Se	78	72	H2	0.040	0.044	37.17	23	20.44	10000	
Se	78	115	He	0.058	0.064	110.84	47	8.54	10000	
Sr	88	115	NoGas	412.067	457.852	3.02	21778376	1.81	50000	
Mo	95	115	NoGas	17.004	18.893	3.51	189195	1.69	10000	
Ag	107	115	NoGas	-0.001	-0.001	-160.82	83	59.20	5000	
Cd	111	115	He	0.009	0.010	35.33	43	17.47	10000	
Sn	118	115	He	0.222	0.247	4.96	1572	4.47	10000	
Sn	118	115	NoGas	0.233	0.259	2.51	5123	0.55	10000	
Sb	121	115	NoGas	0.041	0.046	33.86	4431	6.65	10000	
Ba	137	165	NoGas	2.762	3.069	1.60	22419	1.34	50000	
Tl	205	159	NoGas	-0.008	-0.009	-23.84	810	12.53	5000	
Pb	208	159	NoGas	-0.314	-0.349	-2.53	22224	1.47	50000	

QC ISTD Table

Name	Mass	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li	6	NoGas	192739	1.24	175880	109.59	70	120	
Sc	45	H2	274122	1.16	257908	106.29	70	120	
Sc	45	He	90981	1.55	84759	107.34	70	120	
Sc	45	NoGas	1634393	2.81	1558939	104.84	70	120	
Ge	72	H2	71649	1.24	69883	102.53	70	120	
Ge	72	He	63762	0.60	61504	103.67	70	120	
Ge	72	NoGas	355563	1.57	364560	97.53	70	120	
In	115	H2	1747024	1.30	1834785	95.22	70	120	
In	115	He	600632	1.04	603637	99.50	70	120	
In	115	NoGas	2471145	1.46	2563332	96.40	70	120	
Tb	159	H2	3529118	0.29	3755419	93.97	70	120	
Tb	159	He	2121405	1.25	2112061	100.44	70	120	
Tb	159	NoGas	3483519	1.58	3584585	97.18	70	120	
Ho	165	H2	3476176	1.36	3627891	95.82	70	120	
Ho	165	He	2129124	0.79	2100491	101.36	70	120	
Ho	165	NoGas	3441522	0.45	3483510	98.79	70	120	

Metals Analysis

Element Environmental
98-030 Hekaha St., Unit 9
Aiea, HI 96701

APPL Inc.
908 North Temperance Avenue
Clovis, CA 93611

Attn: Steve Spengler
Project: MCBH Motor Pool UST KB-100 SI / 130034
Sample ID: EKB100018
Sample Collection Date: 01/20/15

ARF: 75427
APPL ID: AZ10004

Method	Analyte	Result	LOQ	LOD	DL	Units	DF	Prep Date	Analysis Date
6020A/3015^	LEAD (PB)	0.42 J	3.0	0.40	0.19	ug/L	1	01/26/15	01/27/15

J = Estimated value.

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APPL-F1-SC-NoMC-REG MDLs

Sample Report

Sample Table

Sample Name	AZ10004W06
Data File Name	041SMPL.d
Data Path Name	K:\ICP-MS Megatron\Data\150127B.b
Acq Date Time	2015-01-27T13:54:20-08:00
Sample Type	Sample
Dilution	1.111111111
Comment	
ISTD Ref FileName	001CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	ISTD Mass	Tune Mode	Conc	FinalConc	Conc %RSD	CPS	%RSD	LDR	QC Flag
Be	9	72	NoGas	-0.041	-0.045	-14.86	123	23.41	10000	
B	11	72	NoGas	904.586	1005.096	1.26	2682476	0.94	10000	
Na	23	72	He	114819.684	127577.427	2.16	134251595	1.38	1000000	
Mg	24	72	He	14698.775	16331.972	1.58	9102723	1.01	1000000	
Al	27	72	He	412.051	457.835	2.49	108825	1.11	1000000	
K	39	72	He	9777.940	10864.378	1.71	4969450	0.66	500000	
Ca	44	72	He	24095.111	26772.345	2.55	706306	1.26	500000	
Ti	47	72	He	64.310	71.455	3.00	12530	1.76	10000	
V	51	72	He	2.422	2.691	0.39	16634	1.70	10000	
Cr	52	72	He	1.799	1.999	4.21	15992	2.66	10000	
Mn	55	72	He	14.273	15.859	1.85	67969	1.42	50000	
Fe	56	72	He	738.966	821.073	1.51	5405254	0.58	1000000	
Co	59	72	He	0.104	0.115	20.23	7083	2.69	10000	
Ni	60	72	He	3.756	4.174	3.70	13781	2.99	10000	
Cu	63	72	He	1.272	1.413	1.80	19949	0.76	10000	
Zn	66	115	He	0.973	1.081	16.03	6511	3.42	50000	
As	75	159	He	2.469	2.744	2.98	2595	1.83	2000	
Se	78	72	H2	0.032	0.036	60.95	20	32.40	10000	
Se	78	115	He	0.170	0.189	80.76	55	17.00	10000	
Sr	88	115	NoGas	287.608	319.565	0.75	15059191	1.06	50000	
Mo	95	115	NoGas	21.717	24.130	1.41	233696	1.38	10000	
Ag	107	115	NoGas	-0.001	-0.001	-81.45	90	22.22	5000	
Cd	111	115	He	0.024	0.027	8.97	81	6.19	10000	
Sn	118	115	He	0.415	0.461	3.90	2594	3.60	10000	
Sn	118	115	NoGas	0.399	0.444	0.86	7856	0.81	10000	
Sb	121	115	NoGas	0.008	0.009	204.19	3674	10.35	10000	
Ba	137	165	NoGas	2.623	2.914	3.93	21127	3.44	50000	
Tl	205	159	NoGas	-0.010	-0.011	-15.86	723	12.47	5000	
Pb	208	159	NoGas	0.376	0.417	5.98	73351	1.16	50000	

QC ISTD Table

Name	Mass	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li	6	NoGas	189029	0.91	175880	107.48	70	120	
Sc	45	H2	276654	1.21	257908	107.27	70	120	
Sc	45	He	90937	0.76	84759	107.29	70	120	
Sc	45	NoGas	1611936	0.57	1558939	103.40	70	120	
Ge	72	H2	71024	0.56	69883	101.63	70	120	
Ge	72	He	62640	1.33	61504	101.85	70	120	
Ge	72	NoGas	356924	1.28	364560	97.91	70	120	
In	115	H2	1731347	0.88	1834785	94.36	70	120	
In	115	He	596487	0.54	603637	98.82	70	120	
In	115	NoGas	2447438	0.40	2563332	95.48	70	120	
Tb	159	H2	3479720	1.51	3755419	92.66	70	120	
Tb	159	He	2089051	1.47	2112061	98.91	70	120	
Tb	159	NoGas	3506935	1.78	3584585	97.83	70	120	
Ho	165	H2	3389240	3.11	3627891	93.42	70	120	
Ho	165	He	2103511	1.90	2100491	100.14	70	120	
Ho	165	NoGas	3415158	0.79	3483510	98.04	70	120	

Metals Analysis

Element Environmental
98-030 Hekaha St., Unit 9
Aiea, HI 96701

APPL Inc.
908 North Temperance Avenue
Clovis, CA 93611

Attn: Steve Spengler
Project: MCBH Motor Pool UST KB-100 SI / 130034
Sample ID: EKB100019
Sample Collection Date: 01/20/15

ARF: 75427
APPL ID: AZ10005

Method	Analyte	Result	LOQ	LOD	DL	Units	DF	Prep Date	Analysis Date
6020A/3015^	LEAD (PB)	0.40 U	3.0	0.40	0.19	ug/L	1	01/26/15	01/27/15

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APPL-F1-SC-NoMC-REG MDLs

Sample Report

Sample Table

Sample Name	AZ10005W06
Data File Name	042SMPL.d
Data Path Name	K:\ICP-MS Megatron\Data\150127B.b
Acq Date Time	2015-01-27T14:00:22-08:00
Sample Type	Sample
Dilution	1.111111111
Comment	
ISTD Ref FileName	001CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	ISTD Mass	Tune Mode	Conc	FinalConc	Conc %RSD	CPS	%RSD	LDR	QC Flag
Be	9	72	NoGas	-0.055	-0.062	-7.80	57	36.74	10000	
B	11	72	NoGas	702.627	780.697	0.34	2128251	1.57	10000	
Na	23	72	He	70497.847	78330.941	1.85	84537392	1.73	1000000	
Mg	24	72	He	24511.773	27235.303	0.36	15550037	0.30	1000000	
Al	27	72	He	63.283	70.314	8.27	20472	7.08	1000000	
K	39	72	He	8541.640	9490.711	0.96	4456246	1.02	500000	
Ca	44	72	He	35141.230	39045.811	0.66	1055595	0.53	500000	
Ti	47	72	He	10.772	11.969	20.71	2205	19.82	10000	
V	51	72	He	1.879	2.087	1.18	13396	0.71	10000	
Cr	52	72	He	0.937	1.042	2.10	9184	2.18	10000	
Mn	55	72	He	16.193	17.992	0.53	78988	0.36	50000	
Fe	56	72	He	124.338	138.153	0.18	1029481	0.55	1000000	
Co	59	72	He	-0.247	-0.275	-1.94	2399	2.95	10000	
Ni	60	72	He	2.632	2.924	0.55	9982	0.40	10000	
Cu	63	72	He	-0.419	-0.465	-2.66	3110	3.32	10000	
Zn	66	115	He	0.843	0.936	3.02	6368	0.78	50000	
As	75	159	He	1.904	2.116	2.29	2030	1.45	2000	
Se	78	72	H2	0.052	0.058	15.15	28	8.70	10000	
Se	78	115	He	0.088	0.098	183.73	50	22.45	10000	
Sr	88	115	NoGas	484.389	538.210	0.80	25630395	1.08	50000	
Mo	95	115	NoGas	10.444	11.604	0.95	124363	0.51	10000	
Ag	107	115	NoGas	-0.002	-0.003	-80.18	50	105.83	5000	
Cd	111	115	He	0.004	0.004	98.35	31	32.17	10000	
Sn	118	115	He	0.019	0.021	37.42	479	8.30	10000	
Sn	118	115	NoGas	0.019	0.021	24.45	1525	4.97	10000	
Sb	121	115	NoGas	0.170	0.189	11.15	7282	5.41	10000	
Ba	137	165	NoGas	1.405	1.561	5.04	11498	4.72	50000	
Tl	205	159	NoGas	-0.011	-0.013	-23.74	667	23.35	5000	
Pb	208	159	NoGas	-0.376	-0.417	-0.78	18075	1.84	50000	

QC ISTD Table

Name	Mass	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li	6	NoGas	193293	1.21	175880	109.90	70	120	
Sc	45	H2	277133	0.45	257908	107.45	70	120	
Sc	45	He	91583	0.37	84759	108.05	70	120	
Sc	45	NoGas	1623232	1.18	1558939	104.12	70	120	
Ge	72	H2	73111	1.74	69883	104.62	70	120	
Ge	72	He	64196	0.40	61504	104.38	70	120	
Ge	72	NoGas	360524	1.56	364560	98.89	70	120	
In	115	H2	1766343	0.74	1834785	96.27	70	120	
In	115	He	603110	0.12	603637	99.91	70	120	
In	115	NoGas	2473328	0.36	2563332	96.49	70	120	
Tb	159	H2	3514237	1.15	3755419	93.58	70	120	
Tb	159	He	2105844	0.94	2112061	99.71	70	120	
Tb	159	NoGas	3556589	0.98	3584585	99.22	70	120	
Ho	165	H2	3442261	0.13	3627891	94.88	70	120	
Ho	165	He	2144507	1.09	2100491	102.10	70	120	
Ho	165	NoGas	3456852	0.29	3483510	99.23	70	120	

Metals Analysis

Element Environmental
98-030 Hekaha St., Unit 9
Aiea, HI 96701

APPL Inc.
908 North Temperance Avenue
Clovis, CA 93611

Attn: Steve Spengler
Project: MCBH Motor Pool UST KB-100 SI / 130034
Sample ID: EKB100020
Sample Collection Date: 01/20/15

ARF: 75427
APPL ID: AZ10006

Method	Analyte	Result	LOQ	LOD	DL	Units	DF	Prep Date	Analysis Date
6020A/3015^	LEAD (PB)	0.40 U	3.0	0.40	0.19	ug/L	1	01/26/15	01/27/15

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APPL-F1-SC-NoMC-REG MDLs

Sample Report

Sample Table

Sample Name	AZ10006W16
Data File Name	046SMPL.d
Data Path Name	K:\ICP-MS Megatron\Data\150127B.b
Acq Date Time	2015-01-27T14:24:26-08:00
Sample Type	Sample
Dilution	1.111111111
Comment	
ISTD Ref FileName	001CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	ISTD Mass	Tune Mode	Conc	FinalConc	Conc %RSD	CPS	%RSD	LDR	QC Flag
Be	9	72	NoGas	-0.053	-0.059	-4.67	67	17.32	10000	
B	11	72	NoGas	758.989	843.321	1.42	2228947	0.82	10000	
Na	23	72	He	91348.035	101497.816	1.74	106436267	1.32	1000000	
Mg	24	72	He	16291.712	18101.902	1.23	10050653	1.54	1000000	
Al	27	72	He	198.625	220.694	2.78	54248	2.02	1000000	
K	39	72	He	11173.098	12414.554	1.34	5649979	0.63	500000	
Ca	44	72	He	18656.570	20729.522	0.91	545049	0.12	500000	
Ti	47	72	He	26.655	29.617	6.35	5211	5.73	10000	
V	51	72	He	3.014	3.348	0.99	20437	1.98	10000	
Cr	52	72	He	1.182	1.313	3.36	10912	2.39	10000	
Mn	55	72	He	6.690	7.433	1.54	31906	0.50	50000	
Fe	56	72	He	353.707	393.008	1.80	2636849	1.45	1000000	
Co	59	72	He	-0.123	-0.137	-6.82	4005	1.89	10000	
Ni	60	72	He	1.784	1.982	5.59	6667	5.32	10000	
Cu	63	72	He	0.409	0.455	11.35	11275	3.68	10000	
Zn	66	115	He	-0.829	-0.921	-13.83	3514	4.96	50000	
As	75	159	He	2.955	3.284	3.37	3054	1.85	2000	
Se	78	72	H2	0.086	0.095	9.05	38	6.38	10000	
Se	78	115	He	0.171	0.190	88.31	54	18.62	10000	
Sr	88	115	NoGas	238.733	265.259	0.73	12401846	1.24	50000	
Mo	95	115	NoGas	17.616	19.573	0.74	191945	2.02	10000	
Ag	107	115	NoGas	-0.002	-0.002	-47.10	67	34.64	5000	
Cd	111	115	He	0.005	0.005	66.30	33	25.49	10000	
Sn	118	115	He	0.141	0.157	8.21	1119	5.46	10000	
Sn	118	115	NoGas	0.139	0.154	5.68	3483	4.33	10000	
Sb	121	115	NoGas	0.157	0.174	2.03	6865	1.49	10000	
Ba	137	165	NoGas	1.175	1.306	5.36	9510	3.80	50000	
Tl	205	159	NoGas	-0.004	-0.005	-89.50	1033	18.60	5000	
Pb	208	159	NoGas	-0.467	-0.519	-1.27	10835	4.44	50000	

QC ISTD Table

Name	Mass	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li	6	NoGas	190350	1.73	175880	108.23	70	120	
Sc	45	H2	268571	1.63	257908	104.13	70	120	
Sc	45	He	89555	2.15	84759	105.66	70	120	
Sc	45	NoGas	1580209	1.37	1558939	101.36	70	120	
Ge	72	H2	70373	0.62	69883	100.70	70	120	
Ge	72	He	62403	1.03	61504	101.46	70	120	
Ge	72	NoGas	350884	1.84	364560	96.25	70	120	
In	115	H2	1712130	2.61	1834785	93.31	70	120	
In	115	He	592556	0.40	603637	98.16	70	120	
In	115	NoGas	2428405	1.84	2563332	94.74	70	120	
Tb	159	H2	3432581	1.38	3755419	91.40	70	120	
Tb	159	He	2061314	1.46	2112061	97.60	70	120	
Tb	159	NoGas	3433875	1.35	3584585	95.80	70	120	
Ho	165	H2	3387954	0.76	3627891	93.39	70	120	
Ho	165	He	2095060	1.32	2100491	99.74	70	120	
Ho	165	NoGas	3412835	1.63	3483510	97.97	70	120	

Metals Analysis

Element Environmental
98-030 Hekaha St., Unit 9
Aiea, HI 96701

APPL Inc.
908 North Temperance Avenue
Clovis, CA 93611

Attn: Steve Spengler
Project: MCBH Motor Pool UST KB-100 SI / 130034
Sample ID: EKB100021
Sample Collection Date: 01/20/15

ARF: 75427
APPL ID: AZ10007

Method	Analyte	Result	LOQ	LOD	DL	Units	DF	Prep Date	Analysis Date
6020A/3015^	LEAD (PB)	0.40 U	3.0	0.40	0.19	ug/L	1	01/26/15	01/27/15

Printed: 01/28/15 3:28:41 PM
APPL-F1-SC-NoMC-REG MDLs

Sample Report

Sample Table

Sample Name	AZ10007W06
Data File Name	051SMPL.d
Data Path Name	K:\ICP-MS Megatron\Data\150127B.b
Acq Date Time	2015-01-27T14:54:36-08:00
Sample Type	Sample
Dilution	1.111111111
Comment	
ISTD Ref FileName	001CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Fail

QC Analyte Table

Name	Mass	ISTD Mass	Tune Mode	Conc	FinalConc	Conc %RSD	CPS	%RSD	LDR	QC Flag
Be	9	72	NoGas	-0.060	-0.067	-10.27	33	86.60	10000	
B	11	72	NoGas	1.553	1.725	77.86	108587	2.00	10000	
Na	23	72	He	-12.887	-14.319	-6.98	115342	0.49	1000000	
Mg	24	72	He	-16.151	-17.945	-1.02	2115	4.42	1000000	
Al	27	72	He	-4.369	-4.855	-20.66	2790	8.12	1000000	
K	39	72	He	0.101	0.112	2037.88	52792	1.60	500000	
Ca	44	72	He	-3.711	-4.123	-24.54	572	5.28	500000	
Ti	47	72	He	-0.097	-0.108	-132.60	46	55.89	10000	
V	51	72	He	-0.047	-0.052	-18.44	454	13.21	10000	
Cr	52	72	He	0.182	0.202	8.89	2852	4.49	10000	
Mn	55	72	He	0.207	0.230	17.15	1328	13.01	50000	
Fe	56	72	He	-8.283	-9.203	-2.16	55985	2.40	1000000	
Co	59	72	He	-0.408	-0.453	-0.20	183	6.56	10000	
Ni	60	72	He	0.427	0.474	7.77	1851	6.09	10000	
Cu	63	72	He	0.993	1.103	1.36	17526	0.59	10000	
Zn	66	115	He	-2.003	-2.226	-3.93	1659	7.48	50000	
As	75	159	He	0.040	0.044	45.81	97	21.30	2000	
Se	78	72	H2	0.061	0.068	13.62	31	10.00	10000	
Se	78	115	He	0.164	0.182	14.90	56	3.70	10000	
Sr	88	115	NoGas	0.078	0.086	4.25	4978	2.93	50000	
Mo	95	115	NoGas	-1.930	-2.144	-0.37	1687	4.97	10000	
Ag	107	115	NoGas	0.037	0.042	3.95	1180	3.88	5000	
Cd	111	115	He	-0.003	-0.003	-98.23	14	51.51	10000	
Sn	118	115	He	0.160	0.178	12.74	1275	8.95	10000	
Sn	118	115	NoGas	0.169	0.188	5.18	4136	2.81	10000	
Sb	121	115	NoGas	0.377	0.419	5.49	12095	3.57	10000	
Ba	137	165	NoGas	0.283	0.315	6.11	2417	5.51	50000	
Tl	205	159	NoGas	-0.011	-0.012	-16.73	703	15.07	5000	
Pb	208	159	NoGas	-0.517	-0.575	-0.75	7434	5.08	50000	

QC ISTD Table

Name	Mass	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li	6	NoGas	213898	2.05	175880	121.62	70	120	ISTD Failed
Sc	45	H2	276961	0.50	257908	107.39	70	120	
Sc	45	He	91077	1.47	84759	107.45	70	120	
Sc	45	NoGas	1583084	2.49	1558939	101.55	70	120	
Ge	72	H2	73554	1.91	69883	105.25	70	120	
Ge	72	He	63965	0.53	61504	104.00	70	120	
Ge	72	NoGas	356897	2.69	364560	97.90	70	120	
In	115	H2	1800019	1.81	1834785	98.11	70	120	
In	115	He	619259	0.70	603637	102.59	70	120	
In	115	NoGas	2522761	0.83	2563332	98.42	70	120	
Tb	159	H2	3555382	0.42	3755419	94.67	70	120	
Tb	159	He	2132869	2.09	2112061	100.99	70	120	
Tb	159	NoGas	3547018	1.24	3584585	98.95	70	120	
Ho	165	H2	3492306	0.92	3627891	96.26	70	120	
Ho	165	He	2145944	0.18	2100491	102.16	70	120	
Ho	165	NoGas	3486410	0.66	3483510	100.08	70	120	

METALS

Calibration Data

APPL, INC.

A.P.P.L. INC.
2A
INITIAL AND CONTINUING CALIBRATION VERIFICATION

Lab Name: A.P.P.L. INC. Contract: Element Environmental
ARF No: 75427 SDG: 75427
Initial Calibration Source: CPI
Continuing Calibration Source: Environmental Express
Analysis Date: 01/27/15 Concentration Units: ug/L

Analyte	Initial Calibration			Continuing Calibration						M
	True	Found 10:23	%R(1)	True CCV1	Found 11:05	%R(1)	True CCV1	Found 12:36	%R(1)	
Lead (Pb)	100	102.202	102	50	49.1421	98.3	50	49.6376	99.3	P

(1) Control Limits: Metals 90-110

ILM02.0

A.P.P.L. INC.
2A
INITIAL AND CONTINUING CALIBRATION VERIFICATION

Lab Name: A.P.P.L. INC. Contract: Element Environmental
ARF No: 75427 SDG: 75427
Initial Calibration Source: CPI
Continuing Calibration Source: Environmental Express
Analysis Date: 01/27/15 Concentration Units: ug/L

Analyte	Initial Calibration			Continuing Calibration						M
	True	Found 10:23	%R(1)	True CCV1	Found 14:06	%R(1)	True CCV1	Found 15:00	%R(1)	
Lead (Pb)	100	102.202	102	50	48.6988	97.4	50	49.6471	99.3	P

(1) Control Limits: Metals 90-110

ILM02.0

A.P.P.L. INC.
3
BLANKS

Lab Name: A.P.P.L. INC. Contract: Element Environmental

ARF No.: 75427 SDG: 75427

Preparation Blank Matrix (soil/water): water

Preparation Blank Concentration Units (ug/L or mg/kg): ug/L

Analysis Date: 01/27/15

Analyte	Initial Calibration Blank (ug/L)		Continuing Calibration Blank (ug/L)						Preparation Blank		M
		C	1	C	2	C	3	C		C	
	10:41		11:18		12:48		14:18		12:54		
Lead (Pb)	3.00	U	3.00	U	3.00	U	3.00	U	3.00	U	P

A.P.P.L. INC.
3
BLANKS

Lab Name: A.P.P.L. INC. Contract: Element Environmental

ARF No.: 75427 SDG: 75427

Preparation Blank Matrix (soil/water): water

Preparation Blank Concentration Units (ug/L or mg/kg): ug/L

Analysis Date: 01/27/15

Analyte	Initial Calibration Blank (ug/L)		Continuing Calibration Blank (ug/L)						Preparation Blank		M
		C	1	C	2	C	3	C		C	
	10:41		15:12						12:54		
Lead (Pb)	3.00	U	3.00	U					3.00	U	P

A.P.P.L. INC.
4
ICP INTERFERENCE CHECK SAMPLE

Lab Name: A.P.P.L. INC.
ARF No.: 75427
ICP ID Number: Megatron

Contract: Element Environmental
SDG: 75427
ICS Source: Environmental Express

Analysis Date: 01/27/15

Concentration Units: ug/L

Analyte	True		Initial Found		
	Sol A	Sol AB	Sol A 11:24	Sol AB 11:36	%R(1)
Lead (Pb)		100	-0.504315	94.871899	94.9

(1) Control Limits: Metals 80-120

A.P.P.L. INC.
9
ICP SERIAL DILUTION

CLIENT SAMPLE NO.
EKB100020

Lab Name: A.P.P.L. INC.
Contract: Element Environmental
ARF No.: 75427
SDG: 75427
Matrix: water

Analysis Date: 01/27/15
Concentration Units: ug/L

Analyte	Initial Sample Result (I)	C	Serial Dilution Result (S)	C	%D	Q	M
Lead (Pb)	-0.531352		-3.015819		NA		

Comments:

01/27/15 14:24 AZ10006W16

01/27/15 14:48 AZ10006W16 1/5

Sample Report

Sample Table

Sample Name	AZ10006W16 1/5
Data File Name	050SMPL.d
Data Path Name	K:\ICP-MS Megatron\Data\150127B.b
Acq Date Time	2015-01-27T14:48:35-08:00
Sample Type	Sample
Dilution	5.555555556
Comment	
ISTD Ref FileName	001CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	ISTD Mass	Tune Mode	Conc	FinalConc	Conc %RSD	CPS	%RSD	LDR	QC Flag
Be	9	72	NoGas	-0.055	-0.304	-4.06	60	16.67	10000	
B	11	72	NoGas	137.178	762.099	1.47	497783	1.07	10000	
Na	23	72	He	18370.978	102060.986	1.50	21490057	1.12	1000000	
Mg	24	72	He	3288.345	18268.583	1.90	2036441	1.54	1000000	
Al	27	72	He	29.606	164.479	10.75	11336	6.72	1000000	
K	39	72	He	2246.501	12480.562	3.49	1176118	2.95	500000	
Ca	44	72	He	3655.881	20310.450	0.34	107258	0.19	500000	
Ti	47	72	He	5.365	29.806	8.37	1099	8.26	10000	
V	51	72	He	0.753	4.183	0.60	5663	0.78	10000	
Cr	52	72	He	0.257	1.428	10.51	3390	6.80	10000	
Mn	55	72	He	1.398	7.767	2.52	6915	2.01	50000	
Fe	56	72	He	55.597	308.873	0.37	509906	0.65	1000000	
Co	59	72	He	-0.328	-1.822	-2.83	1249	9.59	10000	
Ni	60	72	He	0.399	2.219	2.62	1708	2.54	10000	
Cu	63	72	He	-0.185	-1.028	-5.74	5348	2.20	10000	
Zn	66	115	He	-1.037	-5.761	-2.13	3200	1.35	50000	
As	75	159	He	0.711	3.949	1.94	786	0.85	2000	
Se	78	72	H2	0.141	0.783	18.41	54	14.91	10000	
Se	78	115	He	0.278	1.542	97.29	62	29.08	10000	
Sr	88	115	NoGas	48.948	271.933	0.67	2595349	0.59	50000	
Mo	95	115	NoGas	1.921	10.674	1.66	39919	0.85	10000	
Ag	107	115	NoGas	0.078	0.433	4.99	2290	4.62	5000	
Cd	111	115	He	0.009	0.051	29.39	44	16.39	10000	
Sn	118	115	He	0.519	2.882	1.97	3156	2.36	10000	
Sn	118	115	NoGas	0.424	2.353	5.75	8368	5.03	10000	
Sb	121	115	NoGas	0.529	2.939	4.37	15244	3.35	10000	
Ba	137	165	NoGas	0.267	1.485	11.01	2244	10.27	50000	
Tl	205	159	NoGas	0.000	0.002	640.76	1290	10.14	5000	
Pb	208	159	NoGas	-0.533	-2.962	-1.55	6147	9.42	50000	

QC ISTD Table

Name	Mass	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li	6	NoGas	188870	2.86	175880	107.39	70	120	
Sc	45	H2	253673	1.05	257908	98.36	70	120	
Sc	45	He	86902	1.47	84759	102.53	70	120	
Sc	45	NoGas	1541522	0.53	1558939	98.88	70	120	
Ge	72	H2	68476	2.99	69883	97.99	70	120	
Ge	72	He	62351	0.39	61504	101.38	70	120	
Ge	72	NoGas	358767	0.40	364560	98.41	70	120	
In	115	H2	1722287	1.57	1834785	93.87	70	120	
In	115	He	597643	0.67	603637	99.01	70	120	
In	115	NoGas	2477846	0.11	2563332	96.67	70	120	
Tb	159	H2	3413398	2.76	3755419	90.89	70	120	
Tb	159	He	2089288	1.10	2112061	98.92	70	120	
Tb	159	NoGas	3490107	0.72	3584585	97.36	70	120	
Ho	165	H2	3290957	0.59	3627891	90.71	70	120	
Ho	165	He	2080865	0.80	2100491	99.07	70	120	
Ho	165	NoGas	3422816	1.18	3483510	98.26	70	120	

A.P.P.L. INC.
5B
POST DIGEST SPIKE SAMPLE RECOVERY

CLIENT SAMPLE NO.
EKB100020

Lab Name: A.P.P.L. INC. Contract: Element Environmental

ARF No.: 75427 SDG: 75427

Analysis Date: 01/27/15 Concentration Units: ug/L

Analyte	Control Limit %R	Spiked Sample Result (SSR)	C	Sample Result (SR)	C	Spike Added (SA)	%R	Q	M
Lead (Pb)	75-125	265.218871		-0.531352		250.000	106		

Comments:

01/27/15 14:24 AZ10006W16

01/27/15 14:42 AZ10006W16-A

Sample Report

Sample Table

Sample Name	AZ10006W16-A
Data File Name	049SMPL.d
Data Path Name	K:\ICP-MS Megatron\Data\150127B.b
Acq Date Time	2015-01-27T14:42:34-08:00
Sample Type	Sample
Dilution	1.111111111
Comment	
ISTD Ref FileName	001CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	ISTD Mass	Tune Mode	Conc	FinalConc	Conc %RSD	CPS	%RSD	LDR	QC Flag
Be	9	72	NoGas	55.294	61.437	1.03	253159	1.51	10000	
B	11	72	NoGas	1092.777	1214.197	0.86	3213345	2.31	10000	
Na	23	72	He	113640.663	126267.403	1.98	134609039	0.90	1000000	
Mg	24	72	He	40873.241	45414.713	2.14	25619241	0.93	1000000	
Al	27	72	He	2274.497	2527.219	2.83	590908	1.18	1000000	
K	39	72	He	15920.319	17689.244	2.80	8162885	0.91	500000	
Ca	44	72	He	44544.019	49493.354	3.91	1321945	2.02	500000	
Ti	47	72	He	289.268	321.409	1.29	56882	1.08	10000	
V	51	72	He	275.559	306.176	2.01	1831228	1.99	10000	
Cr	52	72	He	259.232	288.035	1.79	2145714	1.85	10000	
Mn	55	72	He	262.838	292.042	3.73	1262307	3.47	50000	
Fe	56	72	He	1336.498	1484.997	2.49	9808985	0.58	1000000	
Co	59	72	He	250.730	278.589	2.32	3434369	0.94	10000	
Ni	60	72	He	240.253	266.947	2.68	875017	1.13	10000	
Cu	63	72	He	243.048	270.053	3.36	2470663	1.47	10000	
Zn	66	115	He	524.698	582.998	2.13	853203	1.89	50000	
As	75	159	He	272.914	303.238	2.21	275290	2.45	2000	
Se	78	72	H2	245.584	272.871	1.03	81573	2.02	10000	
Se	78	115	He	253.134	281.260	2.04	16871	1.63	10000	
Sr	88	115	NoGas	496.754	551.949	1.51	25747950	3.44	50000	
Mo	95	115	NoGas	303.735	337.483	1.82	2969983	1.18	10000	
Ag	107	115	NoGas	67.766	75.296	2.57	1847708	3.11	5000	
Cd	111	115	He	49.594	55.105	0.76	123310	0.52	10000	
Sn	118	115	He	259.601	288.445	0.65	1362750	0.57	10000	
Sn	118	115	NoGas	260.240	289.156	1.04	4304646	1.09	10000	
Sb	121	115	NoGas	278.542	309.491	1.55	6031338	1.37	10000	
Ba	137	165	NoGas	266.508	296.120	1.82	2139596	2.24	50000	
Tl	205	159	NoGas	242.204	269.116	1.19	12717716	1.50	5000	
Pb	208	159	NoGas	242.572	269.524	0.71	17451491	0.94	50000	

QC ISTD Table

Name	Mass	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li	6	NoGas	197137	1.71	175880	112.09	70	120	
Sc	45	H2	272464	0.39	257908	105.64	70	120	
Sc	45	He	90297	0.47	84759	106.53	70	120	
Sc	45	NoGas	1622617	1.15	1558939	104.08	70	120	
Ge	72	H2	71238	1.09	69883	101.94	70	120	
Ge	72	He	63463	1.95	61504	103.19	70	120	
Ge	72	NoGas	356290	2.25	364560	97.73	70	120	
In	115	H2	1682860	1.67	1834785	91.72	70	120	
In	115	He	584146	0.43	603637	96.77	70	120	
In	115	NoGas	2422425	2.03	2563332	94.50	70	120	
Tb	159	H2	3364871	0.53	3755419	89.60	70	120	
Tb	159	He	2046939	1.61	2112061	96.92	70	120	
Tb	159	NoGas	3403364	0.49	3584585	94.94	70	120	
Ho	165	H2	3276254	0.72	3627891	90.31	70	120	
Ho	165	He	2078392	1.72	2100491	98.95	70	120	
Ho	165	NoGas	3419091	2.24	3483510	98.15	70	120	

Calibration Blank Report

Sample Table

Sample Name	Calibration Blank
Data File Name	001CALB.d
Data Path Name	K:\ICP-MS Megatron\Data\150127B.b
Acq Date Time	2015-01-27T09:53:37-08:00
Sample Type	CalBlk
Level	1
Dilution	1
Comment	

QC Analyte Table

Name	Mass	ISTD Mass	Tune Mode	CPS	%RSD
Be	9	45	NoGas	317	15.58
B	11	45	NoGas	106444	0.97
Na	23	45	He	125687	0.94
Mg	24	45	He	11838	3.28
Al	27	45	He	3776	5.99
K	39	45	He	50716	1.65
Ca	44	45	He	657	2.69
Ti	47	45	He	62	43.31
V	51	45	He	739	6.77
Cr	52	45	He	1282	2.16
Mn	55	45	He	314	6.90
Fe	56	45	He	112063	0.66
Co	59	45	He	5576	7.84
Ni	60	45	He	274	14.08
Cu	63	45	He	7094	2.23
Zn	66	115	He	4960	24.27
As	75	115	He	55	22.87
Se	78	72	H2	9	29.68
Se	78	115	He	44	17.19
Sr	88	115	NoGas	793	8.10
Mo	95	115	NoGas	21551	3.42
Ag	107	115	NoGas	120	43.30
Cd	111	115	He	21	14.78
Sn	118	115	He	374	18.34
Sn	118	115	NoGas	1242	5.80
Sb	121	115	NoGas	3654	10.15
Ba	137	165	NoGas	97	26.04
Tl	205	165	NoGas	1303	5.44
[Pb]	206	165	NoGas	11818	5.32
[Pb]	207	165	NoGas	9710	2.74
Pb	208	165	NoGas	46602	4.11

QC ISTD Table

Name	Mass	Tune Mode	CPS	%RSD
Li	6	NoGas	175880	0.74
Sc	45	H2	257908	0.19
Sc	45	He	84759	1.21
Sc	45	NoGas	1558939	0.99
Ge	72	H2	69883	1.60
Ge	72	He	61504	1.10
Ge	72	NoGas	364560	0.67
In	115	H2	1834785	0.41
In	115	He	603637	0.99
In	115	NoGas	2563332	0.79
Tb	159	H2	3755419	1.41
Tb	159	He	2112061	1.37
Tb	159	NoGas	3584585	1.05
Ho	165	H2	3627891	0.43
Ho	165	He	2100491	1.22
Ho	165	NoGas	3483510	1.00

Calibration Standard Report

Sample Table

Sample Name	Standard 1
Data File Name	002CALS.d
Data Path Name	K:\ICP-MS Megatron\Data\150127B.b
Acq Date Time	2015-01-27T09:59:37-08:00
Sample Type	CalStd
Level	2
Dilution	1
Comment	
ISTD Ref File Name	001CALB.d
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	ISTD Mass	Tune Mode	CPS	%RSD	Cal Coef
Be	9	45	NoGas	600	18.93	1.0000
B	11	45	NoGas	90117	0.17	-1.0000
Na	23	45	He	113362	0.52	-1.0000
Mg	24	45	He	5186	0.72	-1.0000
Al	27	45	He	1066	6.42	-1.0000
K	39	45	He	45273	2.18	-1.0000
Ca	44	45	He	508	9.61	-1.0000
Ti	47	45	He	39	50.22	-1.0000
V	51	45	He	1366	4.67	1.0000
Cr	52	45	He	2045	1.41	1.0000
Mn	55	45	He	1018	9.63	1.0000
Fe	56	45	He	30905	2.91	-1.0000
Co	59	45	He	1899	3.79	-1.0000
Ni	60	45	He	828	5.87	1.0000
Cu	63	45	He	8686	3.75	1.0000
Zn	66	115	He	5141	4.45	1.0000
As	75	115	He	153	8.03	1.0000
Se	78	72	H2	45	18.75	1.0000
Se	78	115	He	53	27.21	1.0000
Sr	88	115	NoGas	6625	1.55	1.0000
Mo	95	115	NoGas	9533	4.59	-1.0000
Ag	107	115	NoGas	1460	20.55	1.0000
Cd	111	115	He	263	4.18	1.0000
Sn	118	115	He	846	1.76	1.0000
Sn	118	115	NoGas	2807	0.63	1.0000
Sb	121	115	NoGas	4601	1.99	1.0000
Ba	137	165	NoGas	947	7.03	1.0000
Tl	205	165	NoGas	5941	0.67	1.0000
[Pb]	206	165	NoGas	5705	5.90	
[Pb]	207	165	NoGas	5291	2.73	
Pb	208	165	NoGas	23074	3.02	-1.0000

QC ISTD Table

Name	Mass	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li	6	NoGas	180248	1.72	175880	102.48	70	120	
Sc	45	H2	263666	0.96	257908	102.23	70	120	
Sc	45	He	86932	0.83	84759	102.56	70	120	
Sc	45	NoGas	1572479	0.26	1558939	100.87	70	120	
Ge	72	H2	71220	0.45	69883	101.91	70	120	
Ge	72	He	61872	1.77	61504	100.60	70	120	
Ge	72	NoGas	368920	0.23	364560	101.20	70	120	
In	115	H2	1843752	2.06	1834785	100.49	70	120	
In	115	He	604728	1.32	603637	100.18	70	120	
In	115	NoGas	2571404	0.96	2563332	100.31	70	120	
Tb	159	H2	3755001	2.48	3755419	99.99	70	120	
Tb	159	He	2105689	0.37	2112061	99.70	70	120	
Tb	159	NoGas	3667045	0.96	3584585	102.30	70	120	
Ho	165	H2	3670420	0.75	3627891	101.17	70	120	
Ho	165	He	2135776	1.68	2100491	101.68	70	120	
Ho	165	NoGas	3527310	0.84	3483510	101.26	70	120	

Calibration Standard Report

Sample Table

Sample Name	Standard 2
Data File Name	003CALS.d
Data Path Name	K:\ICP-MS Megatron\Data\150127B.b
Acq Date Time	2015-01-27T10:05:37-08:00
Sample Type	CalStd
Level	3
Dilution	1
Comment	
ISTD Ref File Name	001CALB.d
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	ISTD Mass	Tune Mode	CPS	%RSD	Cal Coef
Be	9	45	NoGas	4631	11.04	0.9995
B	11	45	NoGas	85064	0.37	-0.7482
Na	23	45	He	136405	0.51	0.6755
Mg	24	45	He	32302	1.25	0.9423
Al	27	45	He	5439	2.35	0.7107
K	39	45	He	54947	1.65	0.6568
Ca	44	45	He	1622	1.05	0.9737
Ti	47	45	He	182	8.64	0.9678
V	51	45	He	7009	1.55	1.0000
Cr	52	45	He	9202	2.20	1.0000
Mn	55	45	He	5475	3.32	0.9994
Fe	56	45	He	151321	0.97	0.6657
Co	59	45	He	14459	1.79	0.9237
Ni	60	45	He	4042	0.87	0.9990
Cu	63	45	He	17438	0.34	0.9993
Zn	66	115	He	3208	7.62	-0.9860
As	75	115	He	1073	0.57	1.0000
Se	78	72	H2	349	1.89	1.0000
Se	78	115	He	119	15.13	0.9997
Sr	88	115	NoGas	55354	1.51	1.0000
Mo	95	115	NoGas	15321	1.94	-0.1239
Ag	107	115	NoGas	14787	7.79	1.0000
Cd	111	115	He	2598	0.64	1.0000
Sn	118	115	He	5629	3.62	1.0000
Sn	118	115	NoGas	18097	0.76	1.0000
Sb	121	115	NoGas	15731	5.28	0.9998
Ba	137	165	NoGas	8246	2.66	1.0000
Tl	205	165	NoGas	55403	1.67	0.9999
[Pb]	206	165	NoGas	21749	2.92	
[Pb]	207	165	NoGas	19092	2.58	
Pb	208	165	NoGas	87626	0.83	0.8901

QC ISTD Table

Name	Mass	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li	6	NoGas	181383	0.70	175880	103.13	70	120	
Sc	45	H2	263940	1.22	257908	102.34	70	120	
Sc	45	He	87220	0.76	84759	102.90	70	120	
Sc	45	NoGas	1579289	0.51	1558939	101.31	70	120	
Ge	72	H2	71645	0.29	69883	102.52	70	120	
Ge	72	He	62582	0.71	61504	101.75	70	120	
Ge	72	NoGas	367536	0.54	364560	100.82	70	120	
In	115	H2	1843738	0.57	1834785	100.49	70	120	
In	115	He	609547	1.37	603637	100.98	70	120	
In	115	NoGas	2587472	0.38	2563332	100.94	70	120	
Tb	159	H2	3719573	0.73	3755419	99.05	70	120	
Tb	159	He	2123514	1.43	2112061	100.54	70	120	
Tb	159	NoGas	3656281	1.35	3584585	102.00	70	120	
Ho	165	H2	3681959	1.83	3627891	101.49	70	120	
Ho	165	He	2113324	0.25	2100491	100.61	70	120	
Ho	165	NoGas	3551937	1.36	3483510	101.96	70	120	

Calibration Standard Report

Sample Table

Sample Name	Standard 3
Data File Name	004CALS.d
Data Path Name	K:\ICP-MS Megatron\Data\150127B.b
Acq Date Time	2015-01-27T10:11:38-08:00
Sample Type	CalStd
Level	4
Dilution	1
Comment	
ISTD Ref File Name	001CALB.d
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	ISTD Mass	Tune Mode	CPS	%RSD	Cal Coef
Be	9	45	NoGas	231926	2.02	1.0000
B	11	45	NoGas	241895	0.65	0.9894
Na	23	45	He	1628063	0.59	0.9999
Mg	24	45	He	1606636	1.05	1.0000
Al	27	45	He	257613	0.68	0.9999
K	39	45	He	554057	1.31	0.9999
Ca	44	45	He	75243	1.08	1.0000
Ti	47	45	He	9948	0.71	1.0000
V	51	45	He	330403	1.57	1.0000
Cr	52	45	He	412443	0.53	1.0000
Mn	55	45	He	239381	0.64	1.0000
Fe	56	45	He	7235315	1.38	0.9999
Co	59	45	He	679094	0.87	1.0000
Ni	60	45	He	183362	0.94	1.0000
Cu	63	45	He	514713	1.04	1.0000
Zn	66	115	He	86846	0.62	0.9992
As	75	115	He	52500	0.26	1.0000
Se	78	72	H2	17055	0.62	1.0000
Se	78	115	He	3425	0.88	1.0000
Sr	88	115	NoGas	2737132	1.52	1.0000
Mo	95	115	NoGas	525665	1.53	0.9996
Ag	107	115	NoGas	705434	0.66	1.0000
Cd	111	115	He	128964	1.07	1.0000
Sn	118	115	He	269702	0.78	1.0000
Sn	118	115	NoGas	862595	0.71	1.0000
Sb	121	115	NoGas	1079778	1.34	1.0000
Ba	137	165	NoGas	422609	0.56	1.0000
Tl	205	165	NoGas	2810820	1.46	1.0000
[Pb]	206	165	NoGas	917637	0.96	
[Pb]	207	165	NoGas	814419	0.53	
Pb	208	165	NoGas	3815308	1.04	1.0000

QC ISTD Table

Name	Mass	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li	6	NoGas	187305	1.80	175880	106.50	70	120	
Sc	45	H2	269499	1.42	257908	104.49	70	120	
Sc	45	He	90103	1.04	84759	106.31	70	120	
Sc	45	NoGas	1582675	1.89	1558939	101.52	70	120	
Ge	72	H2	73205	1.01	69883	104.75	70	120	
Ge	72	He	63151	1.05	61504	102.68	70	120	
Ge	72	NoGas	372321	0.61	364560	102.13	70	120	
In	115	H2	1850653	1.25	1834785	100.86	70	120	
In	115	He	613081	1.12	603637	101.56	70	120	
In	115	NoGas	2606315	1.27	2563332	101.68	70	120	
Tb	159	H2	3810100	1.73	3755419	101.46	70	120	
Tb	159	He	2137240	1.96	2112061	101.19	70	120	
Tb	159	NoGas	3620752	1.69	3584585	101.01	70	120	
Ho	165	H2	3676447	1.62	3627891	101.34	70	120	
Ho	165	He	2136250	1.04	2100491	101.70	70	120	
Ho	165	NoGas	3572440	2.21	3483510	102.55	70	120	

Calibration Standard Report

Sample Table

Sample Name	Standard 4
Data File Name	005CALS.d
Data Path Name	K:\ICP-MS Megatron\Data\150127B.b
Acq Date Time	2015-01-27T10:17:39-08:00
Sample Type	CalStd
Level	5
Dilution	1
Comment	
ISTD Ref File Name	001CALB.d
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	ISTD Mass	Tune Mode	CPS	%RSD	Cal Coef
Be	9	45	NoGas	475404	0.59	1.0000
B	11	45	NoGas	408531	0.99	0.9975
Na	23	45	He	3075973	0.92	0.9999
Mg	24	45	He	3128271	2.26	0.9999
Al	27	45	He	521912	0.83	1.0000
K	39	45	He	1074321	0.58	1.0000
Ca	44	45	He	148705	0.70	1.0000
Ti	47	45	He	19657	2.35	1.0000
V	51	45	He	665655	0.25	1.0000
Cr	52	45	He	828954	0.06	1.0000
Mn	55	45	He	480526	0.58	1.0000
Fe	56	45	He	14678564	0.66	1.0000
Co	59	45	He	1377376	0.97	1.0000
Ni	60	45	He	363577	0.54	1.0000
Cu	63	45	He	1019872	0.40	1.0000
Zn	66	115	He	173357	0.52	0.9997
As	75	115	He	106694	0.30	0.9999
Se	78	72	H2	34703	1.41	1.0000
Se	78	115	He	6958	1.01	0.9998
Sr	88	115	NoGas	5507974	1.80	0.9999
Mo	95	115	NoGas	1058117	1.14	0.9998
Ag	107	115	NoGas	1455554	1.33	0.9997
Cd	111	115	He	257312	0.54	1.0000
Sn	118	115	He	544934	0.60	0.9999
Sn	118	115	NoGas	1764399	0.35	0.9998
Sb	121	115	NoGas	2336288	1.78	0.9990
Ba	137	165	NoGas	838781	0.80	1.0000
Tl	205	165	NoGas	5577359	2.69	1.0000
[Pb]	206	165	NoGas	1928638	1.20	
[Pb]	207	165	NoGas	1703933	1.60	
Pb	208	165	NoGas	7703766	1.59	1.0000

QC ISTD Table

Name	Mass	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li	6	NoGas	188954	1.01	175880	107.43	70	120	
Sc	45	H2	275401	0.89	257908	106.78	70	120	
Sc	45	He	90453	0.43	84759	106.72	70	120	
Sc	45	NoGas	1603754	0.27	1558939	102.87	70	120	
Ge	72	H2	74424	1.64	69883	106.50	70	120	
Ge	72	He	63471	0.52	61504	103.20	70	120	
Ge	72	NoGas	367378	1.71	364560	100.77	70	120	
In	115	H2	1879886	1.09	1834785	102.46	70	120	
In	115	He	602826	0.56	603637	99.87	70	120	
In	115	NoGas	2562852	2.07	2563332	99.98	70	120	
Tb	159	H2	3757839	1.56	3755419	100.06	70	120	
Tb	159	He	2162331	0.68	2112061	102.38	70	120	
Tb	159	NoGas	3620133	2.21	3584585	100.99	70	120	
Ho	165	H2	3674494	2.29	3627891	101.28	70	120	
Ho	165	He	2149211	0.98	2100491	102.32	70	120	
Ho	165	NoGas	3579313	1.97	3483510	102.75	70	120	

Initial Calibration Verification (ICV) Report

Sample Table

Sample Name	ICV
Data File Name	006_ICV.d
Data Path Name	K:\ICP-MS Megatron\Data\150127B.b
Acq Date Time	2015-01-27T10:23:40-08:00
Sample Type	ICV
Dilution	1
Comment	
ISTD Ref File Name	001CALB.d
Sample QC Pass/Fail	Fail
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	ISTD Mass	Tune Mode	Conc	Conc %RSD	CPS	CPS %RSD	Exp Value	%Rec	%Low	%High	QC Flag
Be	9	45	NoGas	99.393	1.432	460598	0.54	100	99.4	89.6	110.4	
B	11	45	NoGas	100.140	0.673	393990	1.27	100	100.1	89.6	110.4	
Na	23	45	He	2508.587	1.088	3006016	1.08	2500	100.3	89.6	110.4	
Mg	24	45	He	2516.874	2.423	1542318	1.69	2500	100.7	89.6	110.4	
Al	27	45	He	2451.748	0.635	617858	0.29	2500	98.1	89.6	110.4	
K	39	45	He	2565.584	3.756	1318176	2.73	2500	102.6	89.6	110.4	
Ca	44	45	He	2676.309	0.639	77727	0.53	2500	107.1	89.6	110.4	
Ti	47	45	He	102.120	2.103	19529	2.72	100	102.1	89.6	110.4	
V	51	45	He	100.852	0.387	650865	1.01	100	100.9	89.6	110.4	
Cr	52	45	He	99.490	0.387	799904	0.56	100	99.5	89.6	110.4	
Mn	55	45	He	98.789	0.514	460633	1.04	100	98.8	89.6	110.4	
Fe	56	45	He	2485.177	0.997	17605344	1.14	2500	99.4	89.6	110.4	
Co	59	45	He	101.887	3.256	1357902	3.77	100	101.9	89.6	110.4	
Ni	60	45	He	101.930	1.168	360477	1.52	100	101.9	89.6	110.4	
Cu	63	45	He	100.054	1.646	991461	2.22	100	100.1	89.6	110.4	
Zn	66	115	He	97.723	0.310	165782	0.69	100	97.7	89.6	110.4	
As	75	115	He	93.811	0.424	98112	1.00	100	93.8	89.6	110.4	
Se	78	72	H2	99.164	1.739	33307	0.79	100	99.2	89.6	110.4	
Se	78	115	He	94.304	0.808	6427	0.88	100	94.3	89.6	110.4	
Sr	88	115	NoGas	97.190	0.869	5308178	1.38	100	97.2	89.6	110.4	
Mo	95	115	NoGas	97.899	2.163	1023311	0.24	100	97.9	89.6	110.4	
Ag	107	115	NoGas	49.676	2.218	1427110	0.53	50	99.4	89.6	110.4	
Cd	111	115	He	98.998	0.290	250606	0.73	100	99.0	89.6	110.4	
Sn	118	115	He	49.894	0.279	266975	0.33	100	49.9	89.6	110.4	>+\- 10%
Sn	118	115	NoGas	49.462	1.500	863195	0.94	100	49.5	89.6	110.4	>+\- 10%
Sb	121	115	NoGas	109.347	1.240	249486	0.95	100	109.3	89.6	110.4	
Ba	137	165	NoGas	100.654	0.678	827155	1.01	100	100.7	89.6	110.4	
Tl	205	165	NoGas	100.363	0.397	5482631	0.54	100	100.4	89.6	110.4	
Pb	208	165	NoGas	102.203	0.490	7675643	0.68	100	102.2	89.6	110.4	

QC ISTD Table

Name	Mass	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li	6	NoGas	189068	2.33	175880	107.50	70	120	
Sc	45	H2	268031	0.86	257908	103.93	70	120	
Sc	45	He	87778	0.92	84759	103.56	70	120	
Sc	45	NoGas	1567277	1.64	1558939	100.53	70	120	
Ge	72	H2	72036	0.95	69883	103.08	70	120	
Ge	72	He	61888	2.10	61504	100.62	70	120	
Ge	72	NoGas	362553	0.62	364560	99.45	70	120	
In	115	H2	1826220	0.52	1834785	99.53	70	120	
In	115	He	594765	0.58	603637	98.53	70	120	
In	115	NoGas	2553004	2.17	2563332	99.60	70	120	
Tb	159	H2	3739149	1.49	3755419	99.57	70	120	
Tb	159	He	2112122	1.91	2112061	100.00	70	120	
Tb	159	NoGas	3607839	0.75	3584585	100.65	70	120	
Ho	165	H2	3640245	1.65	3627891	100.34	70	120	
Ho	165	He	2095952	0.87	2100491	99.78	70	120	
Ho	165	NoGas	3499154	0.52	3483510	100.45	70	120	

Initial Calibration Blank (ICB) Report

Sample Table

Sample Name	ICB
Data File Name	009_ICB.d
Data Path Name	K:\ICP-MS Megatron\Data\150127B.b
Acq Date Time	2015-01-27T10:41:43-08:00
Sample Type	ICB
Dilution	1
Comment	
ISTD Ref File Name	001CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	ISTD Mass	Tune Mode	Conc	Conc %RSD	CPS	CPS %RSD	Upper Limit	QC Flag
Be	9	45	NoGas	-0.031	-43.2	173	35.2	0.1	
B	11	45	NoGas	-14.327	-1.0	65738	0.9	8	
Na	23	45	He	-24.696	-7.3	102657	0.6	50	
Mg	24	45	He	-18.829	-0.5	818	7.0	20	
Al	27	45	He	-14.400	-0.8	308	10.7	10	
K	39	45	He	-16.329	-17.1	44814	1.6	40	
Ca	44	45	He	-16.819	-7.6	198	20.2	150	
Ti	47	45	He	-0.309	-3.2	6	34.7	0.5	
V	51	45	He	-0.008	-69.9	721	3.9	0.4	
Cr	52	45	He	-0.022	-58.6	1160	7.4	0.2	
Mn	55	45	He	0.022	35.0	430	7.5	0.3	
Fe	56	45	He	-15.454	-0.3	7373	4.2	30	
Co	59	45	He	-0.415	-0.4	270	9.9	0.4	
Ni	60	45	He	0.023	35.6	370	9.5	0.4	
Cu	63	45	He	0.080	25.8	8197	3.8	0.4	
Zn	66	115	He	-2.415	-0.7	947	2.2	15	
As	75	115	He	0.003	161.2	59	8.1	0.2	
Se	78	72	H2	0.017	26.5	16	8.9	0.4	
Se	78	115	He	0.180	110.1	57	23.7	0.4	
Sr	88	115	NoGas	-0.003	-153.9	653	34.4	0.1	
Mo	95	115	NoGas	-1.915	-1.1	1887	11.2	0.3	
Ag	107	115	NoGas	-0.001	-96.1	100	20.0	0.1	
Cd	111	115	He	-0.005	-30.6	7	56.8	0.1	
Sn	118	115	He	0.042	28.4	614	11.5	0.1	
Sn	118	115	NoGas	0.041	19.0	1977	6.8	0.1	
Sb	121	115	NoGas	-0.024	-19.3	3124	3.3	0.5	
Ba	137	165	NoGas	0.005	44.9	143	14.5	0.4	
Tl	205	165	NoGas	-0.012	-10.9	680	8.8	0.2	
Pb	208	165	NoGas	-0.547	-0.4	6067	2.0	0.4	

QC ISTD Table

Name	Mass	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li	6	NoGas	183898	0.87	175880	104.56	70	120	
Sc	45	H2	266972	0.88	257908	103.51	70	120	
Sc	45	He	88471	1.61	84759	104.38	70	120	
Sc	45	NoGas	1561818	0.57	1558939	100.18	70	120	
Ge	72	H2	72016	1.01	69883	103.05	70	120	
Ge	72	He	63818	0.97	61504	103.76	70	120	
Ge	72	NoGas	369190	0.53	364560	101.27	70	120	
In	115	H2	1842343	2.55	1834785	100.41	70	120	
In	115	He	614779	0.72	603637	101.85	70	120	
In	115	NoGas	2586553	0.20	2563332	100.91	70	120	
Tb	159	H2	3753989	0.57	3755419	99.96	70	120	
Tb	159	He	2147781	0.37	2112061	101.69	70	120	
Tb	159	NoGas	3627883	0.89	3584585	101.21	70	120	
Ho	165	H2	3642128	1.14	3627891	100.39	70	120	
Ho	165	He	2151420	0.62	2100491	102.42	70	120	
Ho	165	NoGas	3534982	1.51	3483510	101.48	70	120	

Continuing Calibration Verification (CCV) Report

Sample Table

Sample Name	CCV
Data File Name	013_CCV.d
Data Path Name	K:\ICP-MS Megatron\Data\150127B.b
Acq Date Time	2015-01-27T11:05:56-08:00
Sample Type	CCV
Dilution	1
Comment	
ISTD Ref File Name	001CALB.d
Sample QC Pass/Fail	Fail
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	ISTD Mass	Tune Mode	Conc	Conc %RSD	CPS	CPS %RSD	Exp Value	%Rec	%Low	%High2	QC Flag
Be	9	45	NoGas	48.684	1.516	230772	1.59	50	97.4	89.6	110.4	
B	11	45	NoGas	39.883	1.817	226197	1.21	50	79.8	89.6	110.4	>+/- 10%
Na	23	45	He	1252.794	2.015	1656730	0.86	1250	100.2	89.6	110.4	
Mg	24	45	He	2519.220	0.314	1633123	0.72	2500	100.8	89.6	110.4	
Al	27	45	He	989.613	2.244	266248	1.60	1000	99.0	89.6	110.4	
K	39	45	He	999.575	1.511	577233	0.46	1000	100.0	89.6	110.4	
Ca	44	45	He	2516.448	0.758	77349	0.54	2500	100.7	89.6	110.4	
Ti	47	45	He	50.086	3.008	10164	2.13	50	100.2	89.6	110.4	
V	51	45	He	49.741	2.129	339924	1.11	50	99.5	89.6	110.4	
Cr	52	45	He	49.761	2.204	423851	1.23	50	99.5	89.6	110.4	
Mn	55	45	He	50.590	1.738	249670	1.17	50	101.2	89.6	110.4	
Fe	56	45	He	988.268	1.946	7479024	1.45	1000	98.8	89.6	110.4	
Co	59	45	He	48.986	1.797	693609	0.83	50	98.0	89.6	110.4	
Ni	60	45	He	50.293	1.174	188279	0.36	50	100.6	89.6	110.4	
Cu	63	45	He	49.405	2.046	521693	0.99	50	98.8	89.6	110.4	
Zn	66	115	He	48.184	1.504	88265	0.69	50	96.4	89.6	110.4	
As	75	115	He	49.539	0.603	54327	0.95	50	99.1	89.6	110.4	
Se	78	72	H2	50.933	0.763	17485	1.11	50	101.9	89.6	110.4	
Se	78	115	He	49.930	1.208	3588	1.74	50	99.9	89.6	110.4	
Sr	88	115	NoGas	49.403	1.091	2743646	0.90	50	98.8	89.6	110.4	
Mo	95	115	NoGas	48.017	0.368	521524	1.24	50	96.0	89.6	110.4	
Ag	107	115	NoGas	24.178	1.683	706379	1.55	25	96.7	89.6	110.4	
Cd	111	115	He	49.895	0.649	132384	0.25	50	99.8	89.6	110.4	
Sn	118	115	He	49.560	1.274	277931	0.93	50	99.1	89.6	110.4	
Sn	118	115	NoGas	48.735	1.352	864789	1.26	50	97.5	89.6	110.4	
Sb	121	115	NoGas	46.157	0.586	1074035	0.88	50	92.3	89.6	110.4	
Ba	137	165	NoGas	50.577	2.367	423873	0.95	50	101.2	89.6	110.4	
Tl	205	165	NoGas	50.928	0.883	2838196	1.27	50	101.9	89.6	110.4	
Pb	208	165	NoGas	49.142	2.132	3788414	0.95	50	98.3	89.6	110.4	

QC ISTD Table

Name	Mass	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li	6	NoGas	183026	2.18	175880	104.06	70	120	
Sc	45	H2	277866	0.39	257908	107.74	70	120	
Sc	45	He	92850	1.03	84759	109.55	70	120	
Sc	45	NoGas	1601954	1.92	1558939	102.76	70	120	
Ge	72	H2	73601	1.43	69883	105.32	70	120	
Ge	72	He	64945	0.77	61504	105.59	70	120	
Ge	72	NoGas	373270	1.24	364560	102.39	70	120	
In	115	H2	1886252	1.39	1834785	102.81	70	120	
In	115	He	623364	0.73	603637	103.27	70	120	
In	115	NoGas	2595494	1.44	2563332	101.25	70	120	
Tb	159	H2	3814192	0.83	3755419	101.57	70	120	
Tb	159	He	2173446	1.40	2112061	102.91	70	120	
Tb	159	NoGas	3662385	0.48	3584585	102.17	70	120	
Ho	165	H2	3746064	3.51	3627891	103.26	70	120	
Ho	165	He	2191105	0.44	2100491	104.31	70	120	
Ho	165	NoGas	3569196	1.94	3483510	102.46	70	120	

Continuing Calibration Blank (CCB) Report

Sample Table

Sample Name	CCB
Data File Name	015_CCB.d
Data Path Name	K:\ICP-MS Megatron\Data\150127B.b
Acq Date Time	2015-01-27T11:18:01-08:00
Sample Type	CCB
Dilution	1
Comment	
ISTD Ref File Name	001CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	ISTD Mass	Tune Mode	Conc	Conc %RSD	CPS	CPS %RSD	Upper Limit	QC Flag
Be	9	45	NoGas	-0.057	-18.9	53	96.2	0.1	
B	11	45	NoGas	-17.351	-6.2	58127	4.1	8	
Na	23	45	He	-26.455	-2.5	104021	0.5	50	
Mg	24	45	He	-18.812	-0.3	856	3.9	20	
Al	27	45	He	-14.465	-0.1	301	1.7	10	
K	39	45	He	-13.094	-17.9	47993	2.2	40	
Ca	44	45	He	-18.101	-4.4	166	14.3	150	
Ti	47	45	He	-0.321	-9.1	3	173.2	0.5	
V	51	45	He	0.000	9895.7	799	16.8	0.4	
Cr	52	45	He	-0.031	-14.1	1127	2.9	0.2	
Mn	55	45	He	0.039	24.2	530	8.7	0.3	
Fe	56	45	He	-15.442	-0.1	7708	0.9	30	
Co	59	45	He	-0.419	-0.5	227	13.1	0.4	
Ni	60	45	He	0.008	141.8	324	12.8	0.4	
Cu	63	45	He	-0.021	-53.7	7437	1.7	0.4	
Zn	66	115	He	-2.460	-2.1	889	9.9	15	
As	75	115	He	-0.010	-92.3	46	23.0	0.2	
Se	78	72	H2	0.000	2126.0	10	19.2	0.4	
Se	78	115	He	0.120	128.3	54	21.0	0.4	
Sr	88	115	NoGas	-0.004	-59.3	590	22.0	0.1	
Mo	95	115	NoGas	-1.942	-0.9	1620	10.8	0.3	
Ag	107	115	NoGas	-0.001	-60.1	87	24.0	0.1	
Cd	111	115	He	-0.006	-33.8	6	88.2	0.1	
Sn	118	115	He	0.046	9.2	650	3.6	0.1	
Sn	118	115	NoGas	0.041	21.2	1998	7.0	0.1	
Sb	121	115	NoGas	0.035	34.2	4541	5.4	0.5	
Ba	137	165	NoGas	0.003	194.8	123	36.6	0.4	
Tl	205	165	NoGas	-0.018	-10.8	333	30.6	0.2	
Pb	208	165	NoGas	-0.565	-0.9	4740	7.7	0.4	

QC ISTD Table

Name	Mass	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li	6	NoGas	183877	2.04	175880	104.55	70	120	
Sc	45	H2	279127	0.52	257908	108.23	70	120	
Sc	45	He	91439	0.38	84759	107.88	70	120	
Sc	45	NoGas	1590584	1.34	1558939	102.03	70	120	
Ge	72	H2	74973	1.01	69883	107.28	70	120	
Ge	72	He	65084	1.22	61504	105.82	70	120	
Ge	72	NoGas	372588	0.77	364560	102.20	70	120	
In	115	H2	1908687	2.07	1834785	104.03	70	120	
In	115	He	627515	0.55	603637	103.96	70	120	
In	115	NoGas	2612531	0.94	2563332	101.92	70	120	
Tb	159	H2	3812571	0.58	3755419	101.52	70	120	
Tb	159	He	2209403	0.41	2112061	104.61	70	120	
Tb	159	NoGas	3657172	1.04	3584585	102.02	70	120	
Ho	165	H2	3758626	0.76	3627891	103.60	70	120	
Ho	165	He	2171843	1.72	2100491	103.40	70	120	
Ho	165	NoGas	3590099	2.11	3483510	103.06	70	120	

Interference Check Solution A (ICS-A) Report

Sample Table

Sample Name	ICSA
Data File Name	016ICSA.d
Data Path Name	K:\ICP-MS Megatron\Data\150127B.b
Acq Date Time	2015-01-27T11:24:01-08:00
Sample Type	ICSA
Dilution	1
Comment	
ISTD Ref File Name	001CALB.d
Sample QC Pass/Fail	Fail
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	ISTD Mass	Tune Mode	Conc	Conc %RSD	CPS	CPS %RSD	Upper Limit	QC Flag
Be	9	45	NoGas	-0.050	-11.1	83	30.2	0.1	
B	11	45	NoGas	-13.667	-5.8	64999	1.7	8	>RL
Na	23	45	He	46216.434	0.4	53076361	1.6	60000	
Mg	24	45	He	45202.931	2.6	27469626	1.3	60000	
Al	27	45	He	46425.673	1.4	11620675	1.3	60000	
K	39	45	He	46787.795	1.3	23119366	0.2	60000	
Ca	44	45	He	46793.682	0.8	1346779	0.7	60000	
Ti	47	45	He	968.042	0.3	184435	1.3	1200	
V	51	45	He	-0.001	-192.7	756	3.3	0.2	
Cr	52	45	He	0.452	3.8	4954	3.6	30	
Mn	55	45	He	3.299	4.0	15692	5.1	24	
Fe	56	45	He	46515.139	1.0	327204823	0.5	60000	
Co	59	45	He	0.165	3.8	7951	1.2	5	
Ni	60	45	He	0.791	5.7	3077	5.9	20	
Cu	63	45	He	0.093	18.7	8258	1.7	25	
Zn	66	115	He	-1.759	-3.8	1905	4.4	60	
As	75	115	He	0.216	16.1	266	11.7	0.4	
Se	78	72	H2	0.008	89.1	12	18.2	0.4	
Se	78	115	He	0.042	195.5	44	10.6	0.4	
Sr	88	115	NoGas	2.041	0.8	103618	0.5	5	
Mo	95	115	NoGas	1022.495	0.4	9680737	0.8	1200	
Ag	107	115	NoGas	0.013	10.1	460	7.8	5	
Cd	111	115	He	0.174	6.3	439	6.9	0.5	
Sn	118	115	He	0.319	5.3	1978	5.6	5	
Sn	118	115	NoGas	0.296	1.6	5897	0.7	5	
Sb	121	115	NoGas	0.405	3.9	11885	2.6	5	
Ba	137	165	NoGas	0.139	9.7	1197	7.8	1.5	
Tl	205	165	NoGas	-0.007	-40.3	903	14.7	0.2	
Pb	208	165	NoGas	-0.504	-1.3	8845	5.9	1	

QC ISTD Table

Name	Mass	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li	6	NoGas	160832	1.18	175880	91.44	70	120	
Sc	45	H2	269645	0.36	257908	104.55	70	120	
Sc	45	He	87714	1.26	84759	103.49	70	120	
Sc	45	NoGas	1501858	1.99	1558939	96.34	70	120	
Ge	72	H2	70570	2.08	69883	100.98	70	120	
Ge	72	He	62605	0.56	61504	101.79	70	120	
Ge	72	NoGas	367463	1.33	364560	100.80	70	120	
In	115	H2	1743361	2.40	1834785	95.02	70	120	
In	115	He	567550	1.40	603637	94.02	70	120	
In	115	NoGas	2356403	0.63	2563332	91.93	70	120	
Tb	159	H2	3592651	1.99	3755419	95.67	70	120	
Tb	159	He	2062519	2.22	2112061	97.65	70	120	
Tb	159	NoGas	3461910	1.48	3584585	96.58	70	120	
Ho	165	H2	3467891	1.97	3627891	95.59	70	120	
Ho	165	He	2079568	0.75	2100491	99.00	70	120	
Ho	165	NoGas	3378986	1.49	3483510	97.00	70	120	

Interference Check Solution AB (ICS-AB) Report

Sample Table

Sample Name	ICSAB
Data File Name	018ICSB.d
Data Path Name	K:\ICP-MS Megatron\Data\150127B.b
Acq Date Time	2015-01-27T11:36:02-08:00
Sample Type	ICSB
Dilution	1
Comment	
ISTD Ref File Name	001CALB.d
Sample QC Pass/Fail	Fail
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	ISTD Mass	Tune Mode	Conc	Conc %RSD	CPS	CPS %RSD	Exp Value	%Rec	%Low	%High	QC Flag
Be	9	45	NoGas	47.237	1.179	211239	0.54	50	94.5	80	120	
B	11	45	NoGas	-12.697	-3.761	68100	0.97	-8	158.7	80	120	>+\- 20%
Na	23	45	He	47036.037	0.841	53953288	1.38	50000	94.1	80	120	
Mg	24	45	He	45887.634	0.705	27858904	0.61	50000	91.8	80	120	
Al	27	45	He	46562.375	1.887	11641490	1.45	50000	93.1	80	120	
K	39	45	He	47481.507	2.334	23435117	1.86	50000	95.0	80	120	
Ca	44	45	He	48377.868	0.530	1390796	0.10	50000	96.8	80	120	
Ti	47	45	He	995.104	0.875	189367	0.70	1000	99.5	80	120	
V	51	45	He	49.257	1.534	317671	1.22	50	98.5	80	120	
Cr	52	45	He	48.303	0.599	388310	0.46	50	96.6	80	120	
Mn	55	45	He	50.592	0.371	235616	0.59	50	101.2	80	120	
Fe	56	45	He	48311.957	1.054	339480982	1.43	50000	96.6	80	120	
Co	59	45	He	47.854	0.603	639561	0.05	50	95.7	80	120	
Ni	60	45	He	96.693	0.665	341326	0.64	100	96.7	80	120	
Cu	63	45	He	47.842	0.365	476990	0.37	50	95.7	80	120	
Zn	66	115	He	97.175	0.615	159337	0.13	100	97.2	80	120	
As	75	115	He	49.675	0.273	50231	0.66	50	99.3	80	120	
Se	78	72	H2	47.529	0.593	15410	0.90	50	95.1	80	120	
Se	78	115	He	48.147	2.685	3192	3.10	50	96.3	80	120	
Sr	88	115	NoGas	2.083	1.986	106945	1.56	-5	-41.7	80	120	
Mo	95	115	NoGas	1098.734	2.207	10520263	1.07	1050	104.6	80	120	
Ag	107	115	NoGas	96.410	1.789	2586641	1.56	100	96.4	80	120	
Cd	111	115	He	95.506	1.078	233636	0.66	100	95.5	80	120	
Sn	118	115	He	0.324	30.627	2031	25.29	50	0.6	80	120	>+\- 20%
Sn	118	115	NoGas	0.295	6.651	5951	6.05	50	0.6	80	120	>+\- 20%
Sb	121	115	NoGas	53.703	1.165	1147128	0.50	50	107.4	80	120	
Ba	137	165	NoGas	49.190	1.168	394058	0.85	50	98.4	80	120	
Tl	205	165	NoGas	47.878	0.150	2550144	0.60	50	95.8	80	120	
Pb	208	165	NoGas	94.872	1.469	6948017	0.80	100	94.9	80	120	

QC ISTD Table

Name	Mass	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li	6	NoGas	165425	1.57	175880	94.06	70	120	
Sc	45	H2	259652	0.45	257908	100.68	70	120	
Sc	45	He	87612	0.56	84759	103.37	70	120	
Sc	45	NoGas	1511200	1.42	1558939	96.94	70	120	
Ge	72	H2	69506	0.36	69883	99.46	70	120	
Ge	72	He	63560	1.08	61504	103.34	70	120	
Ge	72	NoGas	367241	1.53	364560	100.74	70	120	
In	115	H2	1667289	1.17	1834785	90.87	70	120	
In	115	He	574786	0.49	603637	95.22	70	120	
In	115	NoGas	2383811	1.16	2563332	93.00	70	120	
Tb	159	H2	3481763	1.20	3755419	92.71	70	120	
Tb	159	He	2064189	0.56	2112061	97.73	70	120	
Tb	159	NoGas	3532263	1.96	3584585	98.54	70	120	
Ho	165	H2	3448957	1.62	3627891	95.07	70	120	
Ho	165	He	2095791	1.27	2100491	99.78	70	120	
Ho	165	NoGas	3410826	0.74	3483510	97.91	70	120	

Continuing Calibration Verification (CCV) Report

Sample Table

Sample Name	CCV
Data File Name	028_CCV.d
Data Path Name	K:\ICP-MS Megatron\Data\150127B.b
Acq Date Time	2015-01-27T12:36:10-08:00
Sample Type	CCV
Dilution	1
Comment	
ISTD Ref File Name	001CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	ISTD Mass	Tune Mode	Conc	Conc %RSD	CPS	CPS %RSD	Exp Value	%Rec	%Low	%High2	QC Flag
Be	9	72	NoGas	50.346	2.011	237316	1.00	50	100.7	89.6	110.4	
B	11	72	NoGas	50.692	1.583	255569	1.15	50	101.4	89.6	110.4	
Na	23	72	He	1363.252	1.150	1713248	2.26	1250	109.1	89.6	110.4	
Mg	24	72	He	2520.714	1.522	1564189	1.50	2500	100.8	89.6	110.4	
Al	27	72	He	989.029	1.720	254713	0.50	1000	98.9	89.6	110.4	
K	39	72	He	983.571	1.531	543942	0.63	1000	98.4	89.6	110.4	
Ca	44	72	He	2480.711	1.792	73000	0.47	2500	99.2	89.6	110.4	
Ti	47	72	He	47.240	6.424	9181	6.10	50	94.5	89.6	110.4	
V	51	72	He	49.139	0.980	321532	0.78	50	98.3	89.6	110.4	
Cr	52	72	He	48.942	1.286	399145	0.25	50	97.9	89.6	110.4	
Mn	55	72	He	49.513	0.772	233972	1.06	50	99.0	89.6	110.4	
Fe	56	72	He	974.192	2.033	7057906	0.67	1000	97.4	89.6	110.4	
Co	59	72	He	48.197	0.964	653439	0.48	50	96.4	89.6	110.4	
Ni	60	72	He	49.063	1.396	175854	0.09	50	98.1	89.6	110.4	
Cu	63	72	He	48.645	0.997	491850	0.43	50	97.3	89.6	110.4	
Zn	66	115	He	47.139	1.589	84268	1.24	50	94.3	89.6	110.4	
As	75	159	He	49.125	0.573	52048	0.30	50	98.3	89.6	110.4	
Se	78	72	H2	50.551	3.025	16538	2.12	50	101.1	89.6	110.4	
Se	78	115	He	49.601	0.344	3474	0.61	50	99.2	89.6	110.4	
Sr	88	115	NoGas	50.577	1.034	2736057	2.95	50	101.2	89.6	110.4	
Mo	95	115	NoGas	48.777	1.520	515547	1.15	50	97.6	89.6	110.4	
Ag	107	115	NoGas	24.134	1.383	686627	0.76	25	96.5	89.6	110.4	
Cd	111	115	He	49.108	1.245	126987	1.04	50	98.2	89.6	110.4	
Sn	118	115	He	50.078	0.530	273707	0.59	50	100.2	89.6	110.4	
Sn	118	115	NoGas	49.436	0.649	854321	1.33	50	98.9	89.6	110.4	
Sb	121	115	NoGas	47.938	0.913	1086416	2.89	50	95.9	89.6	110.4	
Ba	137	165	NoGas	49.772	1.257	414969	0.87	50	99.5	89.6	110.4	
Tl	205	159	NoGas	50.110	1.327	2811798	2.20	50	100.2	89.6	110.4	
Pb	208	159	NoGas	49.035	0.493	3806034	1.36	50	98.1	89.6	110.4	

QC ISTD Table

Name	Mass	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li	6	NoGas	198759	1.42	175880	113.01	70	120	
Sc	45	H2	262768	1.74	257908	101.88	70	120	
Sc	45	He	86584	0.59	84759	102.15	70	120	
Sc	45	NoGas	1543811	1.13	1558939	99.03	70	120	
Ge	72	H2	70149	0.99	69883	100.38	70	120	
Ge	72	He	62365	1.34	61504	101.40	70	120	
Ge	72	NoGas	366804	1.86	364560	100.62	70	120	
In	115	H2	1776061	0.94	1834785	96.80	70	120	
In	115	He	607519	0.27	603637	100.64	70	120	
In	115	NoGas	2527759	1.98	2563332	98.61	70	120	
Tb	159	H2	3653538	0.86	3755419	97.29	70	120	
Tb	159	He	2148071	0.57	2112061	101.70	70	120	
Tb	159	NoGas	3635381	0.88	3584585	101.42	70	120	
Ho	165	H2	3592664	0.19	3627891	99.03	70	120	
Ho	165	He	2164822	1.20	2100491	103.06	70	120	
Ho	165	NoGas	3549862	0.62	3483510	101.90	70	120	

Continuing Calibration Blank (CCB) Report

Sample Table

Sample Name	CCB
Data File Name	030_CCB.d
Data Path Name	K:\ICP-MS Megatron\Data\150127B.b
Acq Date Time	2015-01-27T12:48:10-08:00
Sample Type	CCB
Dilution	1
Comment	
ISTD Ref File Name	001CALB.d
Sample QC Pass/Fail	Fail
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	ISTD Mass	Tune Mode	Conc	Conc %RSD	CPS	CPS %RSD	Upper Limit	QC Flag
Be	9	72	NoGas	-0.045	-19.2	110	39.6	0.1	
B	11	72	NoGas	-12.119	-3.5	74219	2.4	8	
Na	23	72	He	-21.459	-4.2	105894	0.3	50	
Mg	24	72	He	-17.627	-0.7	1191	6.0	20	
Al	27	72	He	-13.847	-1.8	327	19.1	10	
K	39	72	He	-8.102	-23.8	48938	1.3	40	
Ca	44	72	He	-17.122	-10.0	172	30.1	150	
Ti	47	72	He	-0.272	-21.5	11	105.4	0.5	
V	51	72	He	0.117	16.1	1560	7.7	0.4	
Cr	52	72	He	-0.033	-20.5	1067	5.3	0.2	
Mn	55	72	He	0.025	24.0	452	7.2	0.3	
Fe	56	72	He	-14.809	-0.2	8323	2.8	30	
Co	59	72	He	-0.405	-0.3	214	8.0	0.4	
Ni	60	72	He	-0.008	-210.4	260	22.5	0.4	
Cu	63	72	He	-0.244	-4.8	4916	2.2	0.4	
Zn	66	115	He	-2.510	-2.0	802	11.0	15	
As	75	159	He	0.023	27.7	79	7.7	0.2	
Se	78	72	H2	0.024	43.8	18	19.3	0.4	
Se	78	115	He	0.111	94.2	53	14.6	0.4	
Sr	88	115	NoGas	0.006	43.3	1120	12.5	0.1	
Mo	95	115	NoGas	-1.868	-0.9	2364	7.2	0.3	
Ag	107	115	NoGas	0.000	247.3	133	24.1	0.1	
Cd	111	115	He	-0.004	-76.2	11	75.8	0.1	
Sn	118	115	He	0.145	4.3	1208	2.7	0.1	>LOD
Sn	118	115	NoGas	0.132	5.6	3570	3.9	0.1	>LOD
Sb	121	115	NoGas	0.066	9.3	5211	3.7	0.5	
Ba	137	165	NoGas	0.001	254.2	110	24.1	0.4	
Tl	205	159	NoGas	-0.016	-8.5	437	17.2	0.2	
Pb	208	159	NoGas	-0.574	-0.8	3320	9.6	0.4	

QC ISTD Table

Name	Mass	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li	6	NoGas	199450	1.16	175880	113.40	70	120	
Sc	45	H2	269211	0.89	257908	104.38	70	120	
Sc	45	He	90476	1.08	84759	106.75	70	120	
Sc	45	NoGas	1571245	1.33	1558939	100.79	70	120	
Ge	72	H2	73410	0.53	69883	105.05	70	120	
Ge	72	He	64440	0.79	61504	104.77	70	120	
Ge	72	NoGas	380190	0.94	364560	104.29	70	120	
In	115	H2	1832814	1.75	1834785	99.89	70	120	
In	115	He	627485	1.23	603637	103.95	70	120	
In	115	NoGas	2581012	1.01	2563332	100.69	70	120	
Tb	159	H2	3708965	0.38	3755419	98.76	70	120	
Tb	159	He	2144361	1.37	2112061	101.53	70	120	
Tb	159	NoGas	3693863	0.93	3584585	103.05	70	120	
Ho	165	H2	3656739	1.74	3627891	100.80	70	120	
Ho	165	He	2188713	2.58	2100491	104.20	70	120	
Ho	165	NoGas	3589552	0.46	3483510	103.04	70	120	

Continuing Calibration Verification (CCV) Report

Sample Table

Sample Name	CCV
Data File Name	043_CCV.d
Data Path Name	K:\ICP-MS Megatron\Data\150127B.b
Acq Date Time	2015-01-27T14:06:23-08:00
Sample Type	CCV
Dilution	1
Comment	
ISTD Ref File Name	001CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	ISTD Mass	Tune Mode	Conc	Conc %RSD	CPS	CPS %RSD	Exp Value	%Rec	%Low	%High2	QC Flag
Be	9	72	NoGas	50.319	0.811	232999	0.74	50	100.6	89.6	110.4	
B	11	72	NoGas	46.917	0.851	240172	1.04	50	93.8	89.6	110.4	
Na	23	72	He	1313.185	0.479	1655384	1.91	1250	105.1	89.6	110.4	
Mg	24	72	He	2640.276	3.366	1637694	1.25	2500	105.6	89.6	110.4	
Al	27	72	He	999.536	1.261	257460	1.06	1000	100.0	89.6	110.4	
K	39	72	He	1014.520	0.627	559664	1.87	1000	101.5	89.6	110.4	
Ca	44	72	He	2506.296	2.204	73759	0.20	2500	100.3	89.6	110.4	
Ti	47	72	He	49.189	1.327	9563	2.72	50	98.4	89.6	110.4	
V	51	72	He	49.392	1.188	323286	1.77	50	98.8	89.6	110.4	
Cr	52	72	He	49.586	1.137	404506	1.25	50	99.2	89.6	110.4	
Mn	55	72	He	50.627	1.639	239264	0.72	50	101.3	89.6	110.4	
Fe	56	72	He	986.490	2.492	7146751	0.15	1000	98.6	89.6	110.4	
Co	59	72	He	48.799	1.338	661699	1.05	50	97.6	89.6	110.4	
Ni	60	72	He	49.541	0.375	177648	2.20	50	99.1	89.6	110.4	
Cu	63	72	He	48.426	0.959	489824	1.47	50	96.9	89.6	110.4	
Zn	66	115	He	47.600	0.987	83965	1.78	50	95.2	89.6	110.4	
As	75	159	He	50.295	1.666	52588	1.48	50	100.6	89.6	110.4	
Se	78	72	H2	49.446	1.494	16509	2.45	50	98.9	89.6	110.4	
Se	78	115	He	50.025	0.649	3458	1.34	50	100.0	89.6	110.4	
Sr	88	115	NoGas	49.158	0.956	2633778	0.67	50	98.3	89.6	110.4	
Mo	95	115	NoGas	47.425	1.045	497152	0.34	50	94.9	89.6	110.4	
Ag	107	115	NoGas	24.311	1.293	685209	0.98	25	97.2	89.6	110.4	
Cd	111	115	He	49.819	0.081	127184	0.92	50	99.6	89.6	110.4	
Sn	118	115	He	49.776	0.951	268575	0.62	50	99.6	89.6	110.4	
Sn	118	115	NoGas	48.879	0.807	836748	0.07	50	97.8	89.6	110.4	
Sb	121	115	NoGas	46.656	0.646	1047334	0.88	50	93.3	89.6	110.4	
Ba	137	165	NoGas	50.433	1.390	417375	0.49	50	100.9	89.6	110.4	
Tl	205	159	NoGas	50.128	0.241	2765608	1.06	50	100.3	89.6	110.4	
Pb	208	159	NoGas	48.574	1.246	3707411	0.57	50	97.1	89.6	110.4	

QC ISTD Table

Name	Mass	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li	6	NoGas	190411	1.90	175880	108.26	70	120	
Sc	45	H2	269561	1.32	257908	104.52	70	120	
Sc	45	He	88193	1.11	84759	104.05	70	120	
Sc	45	NoGas	1540063	3.01	1558939	98.79	70	120	
Ge	72	H2	71574	1.74	69883	102.42	70	120	
Ge	72	He	62387	2.29	61504	101.44	70	120	
Ge	72	NoGas	360251	0.58	364560	98.82	70	120	
In	115	H2	1803994	1.42	1834785	98.32	70	120	
In	115	He	599771	0.94	603637	99.36	70	120	
In	115	NoGas	2503842	0.74	2563332	97.68	70	120	
Tb	159	H2	3633383	0.78	3755419	96.75	70	120	
Tb	159	He	2119919	0.22	2112061	100.37	70	120	
Tb	159	NoGas	3574696	0.97	3584585	99.72	70	120	
Ho	165	H2	3536835	0.91	3627891	97.49	70	120	
Ho	165	He	2105608	1.05	2100491	100.24	70	120	
Ho	165	NoGas	3523944	1.49	3483510	101.16	70	120	

Continuing Calibration Blank (CCB) Report

Sample Table

Sample Name	CCB
Data File Name	045_CCB.d
Data Path Name	K:\ICP-MS Megatron\Data\150127B.b
Acq Date Time	2015-01-27T14:18:26-08:00
Sample Type	CCB
Dilution	1
Comment	
ISTD Ref File Name	001CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	ISTD Mass	Tune Mode	Conc	Conc %RSD	CPS	CPS %RSD	Upper Limit	QC Flag
Be	9	72	NoGas	-0.052	-2.9	77	7.5	0.1	
B	11	72	NoGas	-11.181	-6.0	76010	1.1	8	
Na	23	72	He	-20.386	-8.3	105691	0.4	50	
Mg	24	72	He	-18.038	-0.2	917	2.3	20	
Al	27	72	He	-13.887	-0.2	312	0.6	10	
K	39	72	He	-4.906	-58.4	49894	2.9	40	
Ca	44	72	He	-17.013	-4.5	173	14.5	150	
Ti	47	72	He	-0.288	-18.7	8	137.8	0.5	
V	51	72	He	0.156	9.3	1801	3.8	0.4	
Cr	52	72	He	-0.024	-25.4	1124	5.3	0.2	
Mn	55	72	He	0.029	15.1	467	3.8	0.3	
Fe	56	72	He	-14.863	-0.1	7820	2.5	30	
Co	59	72	He	-0.406	-0.6	201	14.1	0.4	
Ni	60	72	He	-0.004	-208.3	269	11.2	0.4	
Cu	63	72	He	-0.347	-1.5	3806	1.7	0.4	
Zn	66	115	He	-2.043	-14.0	1572	31.4	15	
As	75	159	He	0.010	36.2	66	6.6	0.2	
Se	78	72	H2	0.011	70.7	14	19.3	0.4	
Se	78	115	He	0.190	27.1	57	6.6	0.4	
Sr	88	115	NoGas	0.002	65.9	877	6.7	0.1	
Mo	95	115	NoGas	-1.977	-0.5	1217	6.6	0.3	
Ag	107	115	NoGas	-0.001	-245.0	100	43.6	0.1	
Cd	111	115	He	-0.004	-23.2	11	21.7	0.1	
Sn	118	115	He	0.065	4.8	736	1.6	0.1	
Sn	118	115	NoGas	0.066	1.3	2376	2.2	0.1	
Sb	121	115	NoGas	0.019	105.2	4044	11.9	0.5	
Ba	137	165	NoGas	0.004	126.6	127	29.9	0.4	
Tl	205	159	NoGas	-0.016	-5.1	397	11.4	0.2	
Pb	208	159	NoGas	-0.576	-0.7	3044	9.2	0.4	

QC ISTD Table

Name	Mass	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li	6	NoGas	188995	1.09	175880	107.46	70	120	
Sc	45	H2	268056	0.98	257908	103.93	70	120	
Sc	45	He	89149	0.81	84759	105.18	70	120	
Sc	45	NoGas	1551832	1.26	1558939	99.54	70	120	
Ge	72	H2	72008	1.08	69883	103.04	70	120	
Ge	72	He	63551	1.54	61504	103.33	70	120	
Ge	72	NoGas	375183	3.02	364560	102.91	70	120	
In	115	H2	1838059	1.11	1834785	100.18	70	120	
In	115	He	610576	0.75	603637	101.15	70	120	
In	115	NoGas	2536267	1.75	2563332	98.94	70	120	
Tb	159	H2	3668766	1.03	3755419	97.69	70	120	
Tb	159	He	2144835	1.01	2112061	101.55	70	120	
Tb	159	NoGas	3530461	1.42	3584585	98.49	70	120	
Ho	165	H2	3577952	1.67	3627891	98.62	70	120	
Ho	165	He	2147885	1.53	2100491	102.26	70	120	
Ho	165	NoGas	3500814	0.88	3483510	100.50	70	120	

Continuing Calibration Verification (CCV) Report

Sample Table

Sample Name	CCV
Data File Name	052_CCV.d
Data Path Name	K:\ICP-MS Megatron\Data\150127B.b
Acq Date Time	2015-01-27T15:00:37-08:00
Sample Type	CCV
Dilution	1
Comment	
ISTD Ref File Name	001CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	ISTD Mass	Tune Mode	Conc	Conc %RSD	CPS	CPS %RSD	Exp Value	%Rec	%Low	%High2	QC Flag
Be	9	72	NoGas	51.154	0.079	232934	1.32	50	102.3	89.6	110.4	
B	11	72	NoGas	47.135	4.556	236784	2.52	50	94.3	89.6	110.4	
Na	23	72	He	1299.362	1.434	1590014	0.55	1250	103.9	89.6	110.4	
Mg	24	72	He	2573.083	1.471	1548988	0.73	2500	102.9	89.6	110.4	
Al	27	72	He	993.326	1.076	248231	0.81	1000	99.3	89.6	110.4	
K	39	72	He	992.333	0.566	532089	0.56	1000	99.2	89.6	110.4	
Ca	44	72	He	2476.556	0.849	70724	1.09	2500	99.1	89.6	110.4	
Ti	47	72	He	49.730	2.237	9376	1.96	50	99.5	89.6	110.4	
V	51	72	He	49.102	1.089	311765	0.97	50	98.2	89.6	110.4	
Cr	52	72	He	48.912	1.008	387091	1.03	50	97.8	89.6	110.4	
Mn	55	72	He	49.820	0.890	228425	0.57	50	99.6	89.6	110.4	
Fe	56	72	He	984.996	1.784	6923738	1.32	1000	98.5	89.6	110.4	
Co	59	72	He	48.559	1.163	638783	1.07	50	97.1	89.6	110.4	
Ni	60	72	He	49.426	1.285	171902	0.63	50	98.9	89.6	110.4	
Cu	63	72	He	48.668	1.171	477490	1.02	50	97.3	89.6	110.4	
Zn	66	115	He	47.569	1.340	81614	0.92	50	95.1	89.6	110.4	
As	75	159	He	49.205	0.770	50486	1.57	50	98.4	89.6	110.4	
Se	78	72	H2	50.204	1.981	16312	0.37	50	100.4	89.6	110.4	
Se	78	115	He	48.197	1.356	3243	1.92	50	96.4	89.6	110.4	
Sr	88	115	NoGas	50.320	3.631	2657916	2.23	50	100.6	89.6	110.4	
Mo	95	115	NoGas	47.172	2.101	487728	1.31	50	94.3	89.6	110.4	
Ag	107	115	NoGas	24.370	1.745	677297	0.53	25	97.5	89.6	110.4	
Cd	111	115	He	49.705	0.486	123429	0.97	50	99.4	89.6	110.4	
Sn	118	115	He	49.779	0.386	261264	0.35	50	99.6	89.6	110.4	
Sn	118	115	NoGas	48.906	1.180	825601	0.73	50	97.8	89.6	110.4	
Sb	121	115	NoGas	47.535	1.374	1052185	1.22	50	95.1	89.6	110.4	
Ba	137	165	NoGas	50.587	0.561	407778	1.10	50	101.2	89.6	110.4	
Tl	205	159	NoGas	50.554	0.802	2739743	0.99	50	101.1	89.6	110.4	
Pb	208	159	NoGas	49.092	1.163	3680230	0.66	50	98.2	89.6	110.4	

QC ISTD Table

Name	Mass	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li	6	NoGas	190294	0.80	175880	108.20	70	120	
Sc	45	H2	263948	0.45	257908	102.34	70	120	
Sc	45	He	84618	1.80	84759	99.83	70	120	
Sc	45	NoGas	1495438	2.07	1558939	95.93	70	120	
Ge	72	H2	69674	1.76	69883	99.70	70	120	
Ge	72	He	60512	0.79	61504	98.39	70	120	
Ge	72	NoGas	354277	1.40	364560	97.18	70	120	
In	115	H2	1763498	0.50	1834785	96.11	70	120	
In	115	He	583395	0.73	603637	96.65	70	120	
In	115	NoGas	2469296	1.59	2563332	96.33	70	120	
Tb	159	H2	3589199	1.69	3755419	95.57	70	120	
Tb	159	He	2080180	1.36	2112061	98.49	70	120	
Tb	159	NoGas	3511388	0.49	3584585	97.96	70	120	
Ho	165	H2	3526246	1.76	3627891	97.20	70	120	
Ho	165	He	2052791	0.19	2100491	97.73	70	120	
Ho	165	NoGas	3431962	0.96	3483510	98.52	70	120	

Continuing Calibration Blank (CCB) Report

Sample Table

Sample Name	CCB
Data File Name	054_CCB.d
Data Path Name	K:\ICP-MS Megatron\Data\150127B.b
Acq Date Time	2015-01-27T15:12:39-08:00
Sample Type	CCB
Dilution	1
Comment	
ISTD Ref File Name	001CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	ISTD Mass	Tune Mode	Conc	Conc %RSD	CPS	CPS %RSD	Upper Limit	QC Flag
Be	9	72	NoGas	-0.050	-8.8	80	25.0	0.1	
B	11	72	NoGas	-14.194	-3.6	63223	2.3	8	
Na	23	72	He	-22.231	-9.2	100608	0.9	50	
Mg	24	72	He	-18.054	-0.5	881	5.2	20	
Al	27	72	He	-13.796	-1.3	327	15.2	10	
K	39	72	He	-3.289	-32.7	49302	0.7	40	
Ca	44	72	He	-17.461	-5.1	156	17.8	150	
Ti	47	72	He	-0.287	-9.3	8	65.5	0.5	
V	51	72	He	0.126	8.6	1558	3.8	0.4	
Cr	52	72	He	-0.029	-16.0	1053	2.0	0.2	
Mn	55	72	He	0.021	29.3	417	8.5	0.3	
Fe	56	72	He	-14.848	-0.1	7706	3.2	30	
Co	59	72	He	-0.407	-0.4	190	9.3	0.4	
Ni	60	72	He	0.001	632.3	279	6.0	0.4	
Cu	63	72	He	-0.351	-4.7	3664	3.9	0.4	
Zn	66	115	He	-2.501	-0.1	773	2.0	15	
As	75	159	He	0.014	51.5	69	10.1	0.2	
Se	78	72	H2	0.006	65.6	11	12.3	0.4	
Se	78	115	He	0.036	111.3	45	5.6	0.4	
Sr	88	115	NoGas	0.000	241.7	770	7.2	0.1	
Mo	95	115	NoGas	-1.983	-0.6	1097	10.2	0.3	
Ag	107	115	NoGas	0.033	28.9	1013	25.7	0.1	
Cd	111	115	He	-0.001	-240.2	18	29.4	0.1	
Sn	118	115	He	0.092	17.6	861	10.5	0.1	
Sn	118	115	NoGas	0.091	10.0	2672	6.0	0.1	
Sb	121	115	NoGas	0.005	113.5	3557	3.7	0.5	
Ba	137	165	NoGas	0.016	40.0	220	23.6	0.4	
Tl	205	159	NoGas	-0.016	-18.7	433	36.8	0.2	
Pb	208	159	NoGas	-0.578	-0.8	2894	11.9	0.4	

QC ISTD Table

Name	Mass	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li	6	NoGas	185931	0.73	175880	105.71	70	120	
Sc	45	H2	256882	1.11	257908	99.60	70	120	
Sc	45	He	84985	1.06	84759	100.27	70	120	
Sc	45	NoGas	1496933	0.42	1558939	96.02	70	120	
Ge	72	H2	69542	0.69	69883	99.51	70	120	
Ge	72	He	61776	1.65	61504	100.44	70	120	
Ge	72	NoGas	353935	0.05	364560	97.09	70	120	
In	115	H2	1769831	1.25	1834785	96.46	70	120	
In	115	He	594061	1.21	603637	98.41	70	120	
In	115	NoGas	2415491	0.37	2563332	94.23	70	120	
Tb	159	H2	3550782	1.47	3755419	94.55	70	120	
Tb	159	He	2094159	1.11	2112061	99.15	70	120	
Tb	159	NoGas	3507544	0.55	3584585	97.85	70	120	
Ho	165	H2	3429937	0.90	3627891	94.54	70	120	
Ho	165	He	2071041	2.01	2100491	98.60	70	120	
Ho	165	NoGas	3366308	0.64	3483510	96.64	70	120	

METALS

Raw Data

APPL, INC.

METALS BLANK

APPL Inc.
908 North Temperance Avenue
Clovis, CA 93611

Method	Analyte	Result	LOQ	LOD	DL	Units	Prep Date	Analysis Date	QC Group
6020A	LEAD (PB)	0.40 U	3.0	0.40	0.19	ug/L	01/26/15	01/27/15	#62A14-150126A-AZ10006

Metals SC-Blank-REG MDLs
Printed: 01/28/15 3:27:48 PM

Sample Report

Sample Table

Sample Name	150126A BLK
Data File Name	031SMPL.d
Data Path Name	K:\ICP-MS Megatron\Data\150127B.b
Acq Date Time	2015-01-27T12:54:10-08:00
Sample Type	Sample
Dilution	1.111111111
Comment	
ISTD Ref FileName	001CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Fail

QC Analyte Table

Name	Mass	ISTD Mass	Tune Mode	Conc	FinalConc	Conc %RSD	CPS	%RSD	LDR	QC Flag
Be	9	72	NoGas	-0.059	-0.065	-2.14	43	13.32	10000	
B	11	72	NoGas	-6.032	-6.702	-9.95	90774	1.54	10000	
Na	23	72	He	-28.035	-31.150	-3.07	100769	0.21	1000000	
Mg	24	72	He	-14.966	-16.628	-0.41	2967	2.51	1000000	
Al	27	72	He	-5.169	-5.744	-2.32	2676	1.80	1000000	
K	39	72	He	-9.134	-10.149	-30.44	49773	2.16	500000	
Ca	44	72	He	8.218	9.131	8.42	962	1.40	500000	
Ti	47	72	He	-0.067	-0.075	-98.47	53	25.00	10000	
V	51	72	He	-0.050	-0.055	-2.93	452	2.98	10000	
Cr	52	72	He	0.013	0.014	31.15	1490	1.16	10000	
Mn	55	72	He	0.138	0.153	24.10	1029	15.10	50000	
Fe	56	72	He	-12.727	-14.141	-0.36	24337	2.23	1000000	
Co	59	72	He	-0.407	-0.452	-0.16	198	3.89	10000	
Ni	60	72	He	0.012	0.013	88.36	342	12.18	10000	
Cu	63	72	He	-0.519	-0.576	-3.21	2150	8.22	10000	
Zn	66	115	He	-2.001	-2.223	-2.23	1725	3.20	50000	
As	75	159	He	-0.003	-0.003	-242.87	55	13.48	2000	
Se	78	72	H2	0.001	0.002	424.74	11	18.50	10000	
Se	78	115	He	0.158	0.175	101.83	58	20.90	10000	
Sr	88	115	NoGas	0.027	0.030	11.72	2327	5.53	50000	
Mo	95	115	NoGas	-1.927	-2.141	-1.22	1777	11.50	10000	
Ag	107	115	NoGas	-0.002	-0.002	-90.88	57	106.37	5000	
Cd	111	115	He	-0.005	-0.005	-32.06	9	48.04	10000	
Sn	118	115	He	0.059	0.065	37.50	738	17.34	10000	
Sn	118	115	NoGas	0.072	0.080	9.22	2547	5.40	10000	
Sb	121	115	NoGas	0.003	0.004	253.27	3804	3.58	10000	
Ba	137	165	NoGas	0.036	0.040	8.65	407	5.68	50000	
Tl	205	159	NoGas	-0.010	-0.012	-13.95	750	9.61	5000	
Pb	208	159	NoGas	-0.565	-0.628	-0.54	3980	4.90	50000	

QC ISTD Table

Name	Mass	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li	6	NoGas	211862	1.96	175880	120.46	70	120	ISTD Failed
Sc	45	H2	283899	0.64	257908	110.08	70	120	
Sc	45	He	94104	1.51	84759	111.03	70	120	
Sc	45	NoGas	1647194	0.12	1558939	105.66	70	120	
Ge	72	H2	75176	0.54	69883	107.57	70	120	
Ge	72	He	66269	1.15	61504	107.75	70	120	
Ge	72	NoGas	372342	0.98	364560	102.13	70	120	
In	115	H2	1870383	1.66	1834785	101.94	70	120	
In	115	He	642215	1.42	603637	106.39	70	120	
In	115	NoGas	2614318	2.40	2563332	101.99	70	120	
Tb	159	H2	3729447	1.12	3755419	99.31	70	120	
Tb	159	He	2227765	0.98	2112061	105.48	70	120	
Tb	159	NoGas	3689203	1.64	3584585	102.92	70	120	
Ho	165	H2	3678042	1.31	3627891	101.38	70	120	
Ho	165	He	2231151	1.82	2100491	106.22	70	120	
Ho	165	NoGas	3629783	2.12	3483510	104.20	70	120	

Laboratory Control Spike Recovery

METALS

APPL Inc.
908 North Temperance Avenue
Clovis, CA 93611

Method	Compound Name	Spike Level ug/L	SPK Result ug/L	SPK % Recovery	Recovery Limits	Extract Date	Analysis Date	QC Group
EPA 6020A	LEAD (PB)	50.0	46.5	93.0	80-120	01/26/15	01/27/15	#62A14-150126A-AZ10006

Comments:

Sample Report

Sample Table

Sample Name	150126A LCS
Data File Name	032SMPL.d
Data Path Name	K:\ICP-MS Megatron\Data\150127B.b
Acq Date Time	2015-01-27T13:00:13-08:00
Sample Type	Sample
Dilution	1.111111111
Comment	
ISTD Ref FileName	001CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Fail

QC Analyte Table

Name	Mass	ISTD Mass	Tune Mode	Conc	FinalConc	Conc %RSD	CPS	%RSD	LDR	QC Flag
Be	9	72	NoGas	9.116	10.128	2.46	43237	4.23	10000	
B	11	72	NoGas	42.527	47.252	2.74	231572	1.03	10000	
Na	23	72	He	4455.111	4950.124	0.19	5526591	1.00	1000000	
Mg	24	72	He	4498.372	4998.191	1.15	2895827	1.10	1000000	
Al	27	72	He	353.817	393.130	1.19	97415	0.31	1000000	
K	39	72	He	882.216	980.240	1.62	513367	0.37	500000	
Ca	44	72	He	4436.663	4929.626	1.12	135364	0.58	500000	
Ti	47	72	He	43.320	48.133	2.86	8769	1.76	10000	
V	51	72	He	44.366	49.295	1.35	302249	0.58	10000	
Cr	52	72	He	42.695	47.439	1.59	362614	0.54	10000	
Mn	55	72	He	43.931	48.812	0.52	216122	0.59	50000	
Fe	56	72	He	163.696	181.885	3.30	1332825	1.98	1000000	
Co	59	72	He	41.429	46.032	1.58	585495	1.14	10000	
Ni	60	72	He	42.219	46.911	1.69	157561	1.09	10000	
Cu	63	72	He	40.652	45.169	1.19	429077	0.09	10000	
Zn	66	115	He	79.008	87.787	0.86	142498	0.48	50000	
As	75	159	He	41.862	46.514	1.21	45469	1.17	2000	
Se	78	72	H2	40.891	45.434	1.04	14213	0.96	10000	
Se	78	115	He	40.971	45.523	1.06	2974	0.71	10000	
Sr	88	115	NoGas	44.051	48.946	1.30	2437348	2.34	50000	
Mo	95	115	NoGas	42.621	47.357	1.82	463511	0.97	10000	
Ag	107	115	NoGas	16.741	18.601	0.97	487265	1.68	5000	
Cd	111	115	He	8.019	8.910	0.94	21453	1.20	10000	
Sn	118	115	He	43.139	47.932	0.75	243764	0.77	10000	
Sn	118	115	NoGas	42.475	47.195	1.30	750964	1.37	10000	
Sb	121	115	NoGas	43.636	48.485	1.33	1011620	1.11	10000	
Ba	137	165	NoGas	43.818	48.687	1.13	368139	1.40	50000	
Tl	205	159	NoGas	42.982	47.758	1.21	2430651	2.65	5000	
Pb	208	159	NoGas	41.356	45.951	0.92	3241854	1.02	50000	

QC ISTD Table

Name	Mass	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li	6	NoGas	215889	0.76	175880	122.75	70	120	ISTD Failed
Sc	45	H2	278507	0.72	257908	107.99	70	120	
Sc	45	He	93530	0.69	84759	110.35	70	120	
Sc	45	NoGas	1614312	1.62	1558939	103.55	70	120	
Ge	72	H2	74517	1.89	69883	106.63	70	120	
Ge	72	He	64916	1.09	61504	105.55	70	120	
Ge	72	NoGas	366725	2.43	364560	100.59	70	120	
In	115	H2	1847444	0.85	1834785	100.69	70	120	
In	115	He	627956	0.44	603637	104.03	70	120	
In	115	NoGas	2585762	2.41	2563332	100.88	70	120	
Tb	159	H2	3677538	1.14	3755419	97.93	70	120	
Tb	159	He	2201735	0.72	2112061	104.25	70	120	
Tb	159	NoGas	3663447	1.75	3584585	102.20	70	120	
Ho	165	H2	3582643	1.21	3627891	98.75	70	120	
Ho	165	He	2196601	0.68	2100491	104.58	70	120	
Ho	165	NoGas	3577324	2.13	3483510	102.69	70	120	

Matrix Spike Recoveries

METALS

APPL ID: **150126W-10006 MS - 193868**

Sample ID: AZ10006

Client ID: EKB100020

APPL Inc.
908 North Temperance Avenue
Clovis, CA 93611

Method	Compound Name	Spike Lvl ug/L	Matrix Res ug/L	SPK Res ug/L	DUP Res ug/L	SPK % Recovery	DUP % Recovery	RPD	RPD Max	Recovery Limits	Extract Date-Spk	Analysis Date-Spk	Extract Date-Dup	Analysis Date-Dup	QC Group	QC Sample
EPA 6020A	LEAD (PB)	50.0	ND	45.6	46.5	91.2	93.0	2.0	20	80-120	01/26/15	01/27/15	01/26/15	01/27/15	193868	AZ10006

Comments:

Printed: 01/28/15 3:27:56 PM
APPL MSD SCII

Sample Report

Sample Table

Sample Name	AZ10006W16 MS
Data File Name	047SMPL.d
Data Path Name	K:\ICP-MS Megatron\Data\150127B.b
Acq Date Time	2015-01-27T14:30:30-08:00
Sample Type	Sample
Dilution	1.111111111
Comment	
ISTD Ref FileName	001CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	ISTD Mass	Tune Mode	Conc	FinalConc	Conc %RSD	CPS	%RSD	LDR	QC Flag
Be	9	72	NoGas	8.962	9.958	2.01	41009	1.67	10000	
B	11	72	NoGas	827.421	919.357	0.68	2441368	0.75	10000	
Na	23	72	He	97397.212	108219.124	1.65	113935615	2.22	1000000	
Mg	24	72	He	20885.466	23206.073	0.52	12932049	1.24	1000000	
Al	27	72	He	555.479	617.198	0.15	145414	1.00	1000000	
K	39	72	He	12435.441	13817.157	1.12	6307322	0.66	500000	
Ca	44	72	He	23372.306	25969.229	1.27	685322	0.52	500000	
Ti	47	72	He	70.617	78.463	2.82	13755	1.91	10000	
V	51	72	He	47.875	53.195	1.47	314703	0.69	10000	
Cr	52	72	He	43.470	48.300	1.72	356280	0.92	10000	
Mn	55	72	He	49.313	54.792	1.48	234071	0.51	50000	
Fe	56	72	He	514.604	571.782	2.10	3799264	1.28	1000000	
Co	59	72	He	40.631	45.146	1.12	554274	0.35	10000	
Ni	60	72	He	42.392	47.102	1.14	152681	0.48	10000	
Cu	63	72	He	40.409	44.899	1.98	411638	0.99	10000	
Zn	66	115	He	80.510	89.455	1.54	137183	0.76	50000	
As	75	159	He	46.093	51.214	2.60	46925	1.76	2000	
Se	78	72	H2	40.387	44.874	0.51	13405	1.62	10000	
Se	78	115	He	40.935	45.483	3.29	2808	1.75	10000	
Sr	88	115	NoGas	291.650	324.056	0.97	15270768	2.33	50000	
Mo	95	115	NoGas	62.854	69.838	1.07	637298	0.97	10000	
Ag	107	115	NoGas	15.920	17.689	1.05	438595	0.50	5000	
Cd	111	115	He	8.134	9.037	0.81	20574	2.37	10000	
Sn	118	115	He	43.145	47.939	0.91	230487	0.72	10000	
Sn	118	115	NoGas	42.430	47.145	0.92	710076	0.83	10000	
Sb	121	115	NoGas	44.311	49.234	0.99	972309	0.57	10000	
Ba	137	165	NoGas	44.692	49.658	0.31	350183	0.34	50000	
Tl	205	159	NoGas	42.017	46.685	1.25	2227062	0.77	5000	
Pb	208	159	NoGas	40.295	44.773	1.43	2962252	0.79	50000	

QC ISTD Table

Name	Mass	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li	6	NoGas	190603	0.56	175880	108.37	70	120	
Sc	45	H2	271754	1.20	257908	105.37	70	120	
Sc	45	He	90608	1.11	84759	106.90	70	120	
Sc	45	NoGas	1596823	2.27	1558939	102.43	70	120	
Ge	72	H2	71146	1.47	69883	101.81	70	120	
Ge	72	He	62648	0.98	61504	101.86	70	120	
Ge	72	NoGas	353844	1.18	364560	97.06	70	120	
In	115	H2	1718124	0.13	1834785	93.64	70	120	
In	115	He	593726	1.56	603637	98.36	70	120	
In	115	NoGas	2447292	1.54	2563332	95.47	70	120	
Tb	159	H2	3410298	1.71	3755419	90.81	70	120	
Tb	159	He	2064186	0.82	2112061	97.73	70	120	
Tb	159	NoGas	3434262	1.23	3584585	95.81	70	120	
Ho	165	H2	3385697	1.24	3627891	93.32	70	120	
Ho	165	He	2092124	0.76	2100491	99.60	70	120	
Ho	165	NoGas	3335925	0.61	3483510	95.76	70	120	

Sample Report

Sample Table

Sample Name	AZ10006W16 MSD
Data File Name	048SMPL.d
Data Path Name	K:\ICP-MS Megatron\Data\150127B.b
Acq Date Time	2015-01-27T14:36:31-08:00
Sample Type	Sample
Dilution	1.111111111
Comment	
ISTD Ref FileName	001CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	ISTD Mass	Tune Mode	Conc	FinalConc	Conc %RSD	CPS	%RSD	LDR	QC Flag
Be	9	72	NoGas	8.803	9.781	4.28	40220	2.12	10000	
B	11	72	NoGas	823.375	914.861	1.50	2426827	1.66	10000	
Na	23	72	He	96540.362	107267.069	1.41	114725267	0.91	1000000	
Mg	24	72	He	20713.709	23015.232	1.45	13029414	0.68	1000000	
Al	27	72	He	552.260	613.622	1.59	146890	0.82	1000000	
K	39	72	He	12420.720	13800.800	0.83	6400881	1.20	500000	
Ca	44	72	He	23273.612	25859.569	0.86	693368	0.99	500000	
Ti	47	72	He	71.068	78.965	0.93	14066	0.10	10000	
V	51	72	He	47.686	52.985	0.52	318502	1.20	10000	
Cr	52	72	He	43.228	48.031	0.90	359982	0.21	10000	
Mn	55	72	He	49.003	54.448	0.98	236328	0.30	50000	
Fe	56	72	He	511.191	567.990	2.38	3835044	1.48	1000000	
Co	59	72	He	40.451	44.946	0.57	560675	0.30	10000	
Ni	60	72	He	42.904	47.671	0.79	156990	0.07	10000	
Cu	63	72	He	40.922	45.469	0.58	423473	0.59	10000	
Zn	66	115	He	81.932	91.035	0.94	142006	0.61	50000	
As	75	159	He	46.768	51.964	1.68	47819	0.61	2000	
Se	78	72	H2	41.003	45.558	0.88	13709	0.77	10000	
Se	78	115	He	40.618	45.132	2.42	2837	2.64	10000	
Sr	88	115	NoGas	288.963	321.070	1.79	14810031	1.05	50000	
Mo	95	115	NoGas	63.417	70.463	1.39	629430	2.27	10000	
Ag	107	115	NoGas	16.166	17.962	1.23	436071	1.88	5000	
Cd	111	115	He	8.124	9.027	0.50	20913	0.70	10000	
Sn	118	115	He	42.308	47.009	1.11	230041	0.95	10000	
Sn	118	115	NoGas	42.688	47.431	1.25	699425	1.20	10000	
Sb	121	115	NoGas	45.783	50.870	0.65	983590	1.88	10000	
Ba	137	165	NoGas	45.317	50.352	1.52	355712	1.84	50000	
Tl	205	159	NoGas	42.515	47.239	0.97	2236309	2.60	5000	
Pb	208	159	NoGas	41.508	46.120	2.19	3025864	0.17	50000	

QC ISTD Table

Name	Mass	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li	6	NoGas	188139	0.79	175880	106.97	70	120	
Sc	45	H2	275972	1.03	257908	107.00	70	120	
Sc	45	He	91769	0.82	84759	108.27	70	120	
Sc	45	NoGas	1581069	3.10	1558939	101.42	70	120	
Ge	72	H2	71670	0.35	69883	102.56	70	120	
Ge	72	He	63648	0.84	61504	103.49	70	120	
Ge	72	NoGas	353432	2.32	364560	96.95	70	120	
In	115	H2	1742447	0.75	1834785	94.97	70	120	
In	115	He	604238	0.54	603637	100.10	70	120	
In	115	NoGas	2396330	2.42	2563332	93.48	70	120	
Tb	159	H2	3466696	1.08	3755419	92.31	70	120	
Tb	159	He	2073334	2.12	2112061	98.17	70	120	
Tb	159	NoGas	3407772	2.25	3584585	95.07	70	120	
Ho	165	H2	3418570	2.08	3627891	94.23	70	120	
Ho	165	He	2113831	0.48	2100491	100.64	70	120	
Ho	165	NoGas	3342536	2.63	3483510	95.95	70	120	

US EPA Tune Check Sample Report

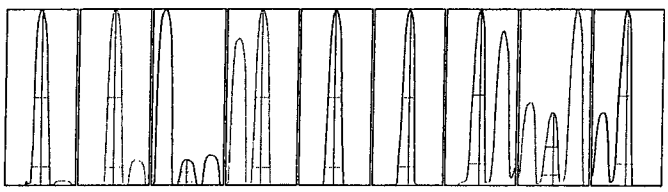
Batch Folder K:\ICP-MS Megatron\Data\150127B.b
Report Comment C:\Agilent\ICPMH\Report Templates\en\Letter\Tune Report\New and Improved 200_8TuneCheckSampleReport.xltx
Instrument Name G3281A JP12101628

[NoGas]

Mass	Count (Mean)	RSD% (Actual)	RSD% (Required)	RSD% (Flag)
9	843405	0.55	5.00	
24	324340595	0.80	5.00	
25	45478695	0.65	5.00	
26	54433914	0.58	5.00	
59	62395222	1.01	5.00	
115	98690399	1.05	5.00	
206	26121126	0.94	5.00	
207	23240775	0.76	5.00	
208	54378004	0.87	5.00	

Mass	Replicate 1 Count	Replicate 2 Count	Replicate 3 Count	Replicate 4 Count	Replicate 5 Count
9	850083	842530	843824	837038	843549
24	320591055	324352827	323355812	326244803	327158477
25	45222853	45648985	45238303	45368765	45914570
26	54036404	54295156	54745830	54327097	54765081
59	61929420	62390424	61746649	62559994	63349623
115	97712889	98228415	98447077	98618019	100445598
206	25892199	26002073	26405954	25938296	26367107
207	23036321	23126476	23495938	23234229	23310912
208	53859415	54183722	54671251	54129636	55045996

Integration Time [sec] = 0.1



Mass	Peak Height	Axis (Actual)	Axis (Required)	Axis (Flag)	Width-X% (Actual)	Width-X% (Required)	Width-X% (Flag)
9	140170	9.05	8.9 - 9.1		0.755	0.900	
24	53372232	24.00	23.9 - 24.1		0.730	0.900	
25	7561875	25.00	24.9 - 25.1		0.729	0.900	
26	9029600	26.00	25.9 - 26.1		0.729	0.900	
59	10593965	59.00	58.9 - 59.1		0.752	0.900	
115	17886624	115.05	114.9 - 115.1		0.704	0.900	
206	4788079	206.00	205.9 - 206.1		0.722	0.900	
207	4204933	207.00	206.9 - 207.1		0.721	0.900	
208	10090920	208.00	207.9 - 208.1		0.729	0.900	

X% = 10 **Integration Time [sec] =** 0.1 **Acquisition Time [sec] =** 235 **Y Axis =** Linear

Tune Parameters

Plasma Paramters

ParameterName	Value	Unit	ParameterName	Value	Unit	ParameterName	Value	Unit
RF Power	1600	W	Carrier Gas	0.46	L/min			
RF Matching	2.50	V	Option Gas	0.0	%			
Smpl Depth	8.0	mm	Nebulizer Pump	0.10	rps			
S/C Temp	2	°C						

Lenses Parameters

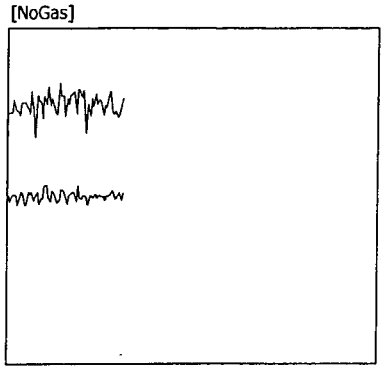
ParameterName	Value	Unit	ParameterName	Value	Unit	ParameterName	Value	Unit
Extract 1	0.0	V	Omega Lens	10.1	V			
Extract 2	-200.0	V	Cell Entrance	-30	V			
Omega Bias	-85	V	Cell Exit	-50	V			
Deflect	10.2	V						

Cell Parameters

ParameterName	Value	Unit	ParameterName	Value	Unit	ParameterName	Value	Unit
Use Gas	false		3rd Gas Flow	0	%			
He Flow	0.0	mL/min	OctP Bias	-8.0	V			
H2 Flow	0.0	mL/min	OctP RF	190	V			
Energy Discrimination	5.1	V						

Current Signal

[NoGas]



Mass	Range	Count	Avg. Count	RSD [%]
7	2000	1582	1545.3	4.08
59	5000	3576	3769.1	3.93
89	10000	6338	6188.5	3.16
140	10000	6670	6566.9	4.02
205	10000	5050	4961.6	2.73
156/140	1	0.795 %	0.705 %	17.41
70/140	10	6.988 %	7.089 %	9.91
Integration Time [sec]		0.10		

Plasma Parameters

RF Power	1600	W	Carrier Gas	0.46	L/min
RF Matching	2.50	V	Option Gas	0.0	%
Smpl Depth	8.0	mm	Nebulizer Pump	0.10	rps
S/C Temp	2	°C			

Lenses Parameters

Extract 1	0.0	V	Omega Lens	10.1	V
Extract 2	-200.0	V	Cell Entrance	-30	V
Omega Bias	-85	V	Cell Exit	-50	V
Deflect	10.2	V			

Cell Parameters

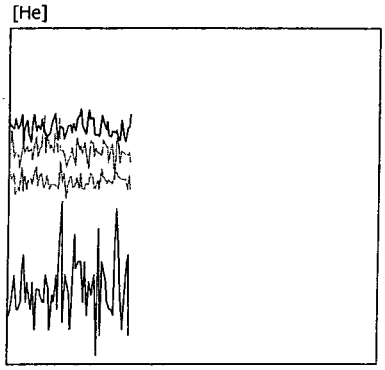
Use Gas	false		3rd Gas Flow	0	%
He Flow	0.0	mL/min	OctP Bias	-8.0	V
H2 Flow	0.0	mL/min	OctP RF	190	V
Energy Discrimination	5.1	V			

Meters

IF/BK Press	2.30E+2	Pa	TMP Revolution	100.0	%
Analyzer Press	2.33E-4	Pa	Reflected Power	75	W
Forward Power	1600	W			

Current Signal

[He]



Mass	Range	Count	Avg. Count	RSD [%]
59	2000	1192	1268.7	5.17
89	2000	1034	1082.6	4.16
140	5000	3225	3102.9	4.04
205	5000	3713	3512.5	3.59
156/140	1	0.124 %	0.324 %	37.51
75	50	4	11.1	40.09
78	20	2	4.5	68.22
Integration Time [sec]		0.10		

Plasma Parameters

RF Power	1600	W	Carrier Gas	0.46	L/min
RF Matching	2.50	V	Option Gas	0.0	%
Smpl Depth	8.0	mm	Nebulizer Pump	0.10	rps
S/C Temp	2	°C			

Lenses Parameters

Extract 1	0.0	V	Omega Lens	10.1	V
Extract 2	-200.0	V	Cell Entrance	-40	V
Omega Bias	-85	V	Cell Exit	-60	V
Deflect	1.0	V			

Cell Parameters

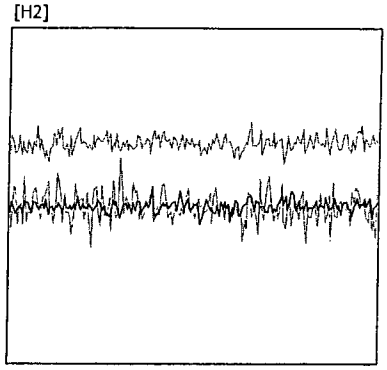
Use Gas	true		3rd Gas Flow	0	%
He Flow	3.9	mL/min	OctP Bias	-19.0	V
H2 Flow	0.0	mL/min	OctP RF	190	V
Energy Discrimination	5.0	V			

Meters

IF/BK Press	2.31E+2	Pa	TMP Revolution	100.0	%
Analyzer Press	3.37E-4	Pa	Reflected Power	75	W
Forward Power	1599	W			

Current Signal

[H2]



Mass	Range	Count	Avg. Count	RSD [%]
59	500	283	232.4	9.37
89	5000	3255	3283.5	3.50
140	2000	1175	1154.6	4.70
205	10000	4780	4663.8	3.60
56	20000	16313	16684.1	3.15
78	20	2	1.3	114.64
80	500	168	184.1	10.32
Integration Time [sec]			0.10	

## Plasma Parameters ##					
RF Power	1600	W	Carrier Gas	0.46	L/min
RF Matching	2.50	V	Option Gas	0.0	%
Smpl Depth	8.0	mm	Nebulizer Pump	0.10	rps
S/C Temp	2	°C			
## Lenses Parameters ##					
Extract 1	0.0	V	Omega Lens	10.1	V
Extract 2	-200.0	V	Cell Entrance	-30	V
Omega Bias	-85	V	Cell Exit	-60	V
Deflect	-2.2	V			
## Cell Parameters ##					
Use Gas	true		3rd Gas Flow	0	%
He Flow	0.0	mL/min	OctP Bias	-18.0	V
H2 Flow	6.0	mL/min	OctP RF	190	V
Energy Discrimination	3.0	V			

Meters

IF/BK Press	2.36E+2	Pa	TMP Revolution	100.0	%
Analyzer Press	1.17E-3	Pa	Reflected Power	76	W
Forward Power	1599	W			

JD 01/23/15

3% HCl
30 mL of HCL in 1000 mL of DI H2O
Prep Date: 01/23/15
Exp Date: 01/23/16
Prepared by: RE
Lot# HCL: BDH 87003 253 JD 01/23/15

SJH 01/26/15

Internal Standard Concentration

Amt	STD	Element	Vendor	Lot#	Final Conc. in Std	Expires
50uL	1001 ug/mL	Li	BDH	F2-L102140-33279	200 ug/L	02/01/15
125uL	1000 ug/mL	Sc	o2si	1051538-32901	500ug/L	03/30/15
125uL	1000 ug/mL	Ge	CPI	14H207-34125	500ug/L	04/07/14
125uL	1000 ug/mL	In	CPI	13H191-32872	500ug/L	03/20/15
125uL	1000 ug/mL	Tb	CPI	13J004-33038	500ug/L	04/15/15
125uL	1000 ug/mL	Ho	CPI	13G236-32873	500ug/L	03/20/15

Prep: 01/26/15 By: SJH Prep in - 1%HNO3/1.0%HCL Final Volume. 250mL
Expires. 02/24/15

SJH 1/26/15

SJH 1/26/15
6020/2008
(A)

ICP-MS STANDARDS Prep'd by: SJH
Prep Date: Today
Expires: 1 week

Prep 1% HNO3/1.0%HCL
20 mL HNO3 / 2000 mL Di Water
Lot #
20 mL HCL / 2000mL Di Water
Lot #

Internal Standard Mix: Prep 01/26/15

Standard 4

Amount	STD	Manufacturer	Lot #
50 uL	CCV-A	ENV EXPRESS	1331823-33166
50 uL	CCV-B	ENV EXPRESS	1331824-33167
50 uL	CCV-C	ENV EXPRESS	1331825-33168

Prepared in 100 mL of 1% HNO3/1.0% HCL

Standard 3
Amount STD
25 mL Standard 4
Prepared in 50 mL of 1% HNO3/1.0% HCL

Standard 2
Amount STD
500 uL Standard 4
Prepared in 50 mL of 1% HNO3/1.0% HCL

Standard 1
Amount STD
50 uL Standard 4
Prepared in 50 mL of 1% HNO3/1 0% HCL

ICP-MS ICV
Amount STD
50 uL QCS ICV A CPI 13I145-32869
50 uL QCS ICV B CPI 13I145-32870
Prepared in 50 mL of 1% HNO3/1 0% HCL

ICSA Prep:
1 mL ICSA-DF2 O2Si 1053467-33165
Prepared in 10 mL of 1% HNO3/1 0% HCL

ICSAB Prep:
1mL ICSA CPI 12J143-33110
100uL INT - DF10 O2Si 1054694-33223
Prepared in 10 mL of 1% HNO3/1.0% HCL

Second Source As:
25 uL Metals Mix #2 AbsoluteGrade 161613-33063
Prepared in 100 mL of 1% HNO3/ 1% HCl

SJH 1/26/15

SJH 1/26/15
6010B/C
(A)

1%HNO3 / 5%HCl BLK

AMOUNT	REAGENT	MANUFACTURER	LOT	OPEN DATE
100 mL	HCL	BDH	4114020	TODAY
20 mL	HNO3	JT BAKER	0000067379	TODAY
Prepared in 2000 ml DI Water				

STD 1 / LDL 6010B/6010C

AMOUNT	STD	MANUFACTURER	LOT	EXP DATE
0.5 mL	6010 LDL	ABSOLUTE	1062903-33879	08/01/15
Prepared in 50 ml 1%HNO3/5%HCl				

STD 3 / HDL 6010B/6010C

1ML	CCV-A	Environmental Express	1428118-34178	10/14/15
1ML	CCV-B	Environmental Express	1428119-34179	10/14/15
1ML	CCV-C	Environmental Express	1428120-34180	10/14/15
Prepared in 100 ml 1%HNO3 / 5%HCl				

STD 2 / CCV1 6010B/6010C/6010C

AMOUNT	STD	PREP DATE	EXP DATE
25mL	STD 3	Today	1 week
25mL	1%HNO3/5%HCl	Today	1 week

CCV2 6010B/6010C

AMOUNT	STD	PREP DATE	EXP DATE
15mL	STD 3	Today	1 week
25mL	1%HNO3/5%HCl	Today	1 week

6010B/6010C ICSA

AMOUNT	STD	MANUFACTURER	LOT	EXP DATE
1mL	Al	CPI	14D237-33868	01/15/16
1mL	Ca	CPI	14D176-33867	01/15/16
1mL	Mg	CPI	14F190-33865	01/15/16
1mL	Fe	O2SI	1062942-33880	01/12/16
Prepared in 50 ml 1%HNO3/5%HCl				

6010B/6010C ICSAB

1mL	Al	CPI	14D237-33868	01/15/16
1mL	Ca	CPI	14D176-33867	01/15/16
1mL	Mg	CPI	14F190-33865	01/15/16
1mL	Fe	O2SI	1062942-33880	01/12/16
0.5mL	INT SPECIAL MIX	O2SI	1054694-33223	01/01/15
Prepared in 50 ml 1%HNO3/5%HCl				

6010B/6010C ICV

0.5ML	QCS ICV A	CPI	13I145-32869	03/18/15
0.5ML	QCS ICV B	CPI	13I145-32870	03/18/15
Prepared in 50ml 1%HNO3/5%HCl				

6010B/6010C Internal Standard

AMOUNT	STD	MANUFACTURER	PREP	EXP
2mL	Yttrium	O2SI	Today	1 week
Prepared in 2L 1%HNO3 / 5%HCl				

SJH 1/26/15

SJH 1/27/15
6020/200.8
(A)

ICP-MS STANDARDS — Prep'd by: SJH
Prep Date: Today
Expires: 1 week

Prep 1% HNO3/1.0%HCL
20 mL HNO3 / 2000 mL Di Water
Lot #
20 mL HCL / 2000mL Di Water
Lot #

Internal Standard Mix: Prep 01/26/15

Standard 4

Amount	STD	Manufacturer	Lot #
50 uL	CCV-A	ENV EXPRESS	1331823-33166
50 uL	CCV-B	ENV EXPRESS	1331824-33167
50 uL	CCV-C	ENV EXPRESS	1331825-33168

Prepared in 100 mL of 1% HNO3/1.0% HCL

Standard 3
Amount STD
25 mL Standard 4
Prepared in 50 mL of 1% HNO3/1.0% HCL

Standard 2
Amount STD
500 uL Standard 4
Prepared in 50 mL of 1% HNO3/1 0% HCL

Standard 1
Amount STD
50 uL Standard 4
Prepared in 50 mL of 1% HNO3/1.0% HCL

ICP-MS ICV

Amount	STD		
50 uL	QCS ICV A	CPI	13I145-32869
50 uL	QCS ICV B	CPI	13I145-32870

Prepared in 50 mL of 1% HNO3/1.0% HCL

ICSA Prep:
1 mL ICSA-DF2 O2Si 1053467-33165
Prepared in 10 mL of 1% HNO3/1.0% HCL

ICSAB Prep:
1mL ICSA CPI 12J143-33110
100uL INT - DF10 O2Si 1054694-33223
Prepared in 10 mL of 1% HNO3/1.0% HCL

Second Source As:
25 uL Metals Mix #2 AbsoluteGrade 161613-33063
Prepared in 100 mL of 1% HNO3/ 1% HCl

SJH 1/27/15

SJH 1/2

SJH 1/2

SJH 1/27/15
200.7
(A)

2%HNO3 / 2%HCl BLK				
AMOUNT	REAGENT	MANUFACTURER	LOT	OPEN DATE
40 mL	HCL	BDH	4114020	TODAY
40 mL	HNO3	JT BAKER	0000067379	TODAY
Prepared in 2000 ml DI Water				
STD 1 / LDL 200.7				
AMOUNT	STD	MANUFACTURER	LOT	EXP DATE
0.250 mL	200.7 LDL	O2SI	1052542-33103	11/01/14
Prepared in 50 ml 2%HNO3/2%HCl				
STD 3 / HDL 200.7				
0.5 mL	CCV-A	Environmental Express	1428118-34178	10/14/15
0.5 mL	CCV-B	Environmental Express	1428119-34179	10/14/15
0.5 mL	CCV-C	Environmental Express	1428120-34180	10/14/15
Prepared in 100 ml 2%HNO3/2%HCl				
STD 2 / CCV1 200.7				
AMOUNT	STD	PREP DATE	EXP DATE	
25mL	STD 3	TODAY	1 WEEK	
25mL	2%HNO3/2%HCl	TODAY	1 WEEK	
CCV2 200.7				
15mL	STD 3	TODAY	1 WEEK	
25mL	2%HNO3/2%HCl	TODAY	1 WEEK	

200.7 ICV				
AMOUNT	STD	MANUFACTURER	LOT	EXP DATE
0.25ML	QCS ICV A	CPI	13I145-32869	03/18/15
0.25ML	QCS ICV B	CPI	13I145-32870	03/18/15
Prepared in 50ml 2%HNO3/2%HCl				
200.7 ICSA				
0.5mL	Al	CPI	14D237-33868	01/15/16
0.5mL	Ca	CPI	14D176-33867	01/15/16
0.5mL	Mg	CPI	14F190-33865	01/15/16
0.5mL	Fe	O2SI	1062942-33880	01/12/16
Prepared in 50 ml 2%HNO3/2%HCl				
200.7 ICSAB				
0.5mL	Al	CPI	14D237-33868	01/15/16
0.5mL	Ca	CPI	14D176-33867	01/15/16
0.5mL	Mg	CPI	14F190-33865	01/15/16
0.5mL	Fe	O2SI	1062942-33880	01/12/16
0.25mL	INT SPECIAL MIX	O2SI	1054694-33223	1/1/15
Prepared in 50 ml 2%HNO3/2%HCl				

SJH 1/27/15

SJH 1/2

SJH 1/27/15
6010B/C
(A)

1%HNO3 / 5%HCl BLK				
AMOUNT	REAGENT	MANUFACTURER	LOT	OPEN DATE
100 mL	HCL	BDH	4114020	TODAY
20 mL	HNO3	JT BAKER	0000067379	TODAY
Prepared in 2000 ml DI Water				
STD 1 / LDL 6010B/6010C				
AMOUNT	STD	MANUFACTURER	LOT	EXP DATE
0.5 mL	6010 LDL	O2SI	1062903-33879	08/01/15
Prepared in 50 ml 1%HNO3/5%HCl				
STD 3 / HDL 6010B/6010C				
1ML	CCV-A	Environmental Express	1428118-34178	10/14/15
1ML	CCV-B	Environmental Express	1428119-34179	10/14/15
1ML	CCV-C	Environmental Express	1428120-34180	10/14/15
Prepared in 100 ml 1%HNO3 / 5%HCl				
STD 2 / CCV1 6010B/6010C/6010C				
AMOUNT	STD	PREP DATE	EXP DATE	
25mL	STD 3	Today	1 week	
25mL	1%HNO3/5%HCl	Today	1 week	
CCV2 6010B/6010C				
AMOUNT	STD	PREP DATE	EXP DATE	
15mL	STD 3	Today	1 week	
25mL	1%HNO3/5%HCl	Today	1 week	

6010B/6010C ICSA				
AMOUNT	STD	MANUFACTURER	LOT	EXP DATE
1mL	Al	CPI	14D237-33868	01/15/16
1mL	Ca	CPI	14D176-33867	01/15/16
1mL	Mg	CPI	14F190-33865	01/15/16
1mL	Fe	O2SI	1062942-33880	01/12/16
Prepared in 50 ml 1%HNO3/5%HCl				
6010B/6010C ICSAB				
1mL	Al	CPI	14D237-33868	01/15/16
1mL	Ca	CPI	14D176-33867	01/15/16
1mL	Mg	CPI	14F190-33865	01/15/16
1mL	Fe	O2SI	1062942-33880	01/12/16
0.5mL	INT SPECIAL MIX	O2SI	1054694-33223	01/01/15
Prepared in 50 ml 1%HNO3/5%HCl				
6010B/6010C ICV				
0.5ML	QCS ICV A	CPI	13I145-32869	03/18/15
0.5ML	QCS ICV B	CPI	13I145-32870	03/18/15
Prepared in 50ml 1%HNO3/5%HCl				
6010B/6010C Internal Standard				
AMOUNT	STD	MANUFACTURER		
2mL	Yttrium	O2SI	1052462-33100	04/24/15
Prepared in 2L 1%HNO3 / 5%HCl				

SJH 1/27/15

SJH 1/
200.
(A)

Metals Digestion Worksheet

Method Name 3015 Digestion **Prep Method** M3015 **Set** 150126A **Units** mL

Spikes			
Spiked ID 1	LCSW LOT#1068928-34553		
Spiked ID 2	LCSW LOT#1069074-34554		
Spiked ID 3			
Spiked ID 4			
Spiked By	NM	Date:	01/26/15 9:45:00 AM
Witnessed By	SJH	Date:	01/26/15 9:45:00 AM

Starting Temp:	14 c
Ending Temp:	170 c
Temperature Type:	Microwave
Sufficient Vol for Matrix QC:	Yes
End Date/Time	01/26/15 10:40

	Sample	Sample Container	Spike Amount	Spike ID	Digested Amount	Final Volume	Start Date/Time	Comments
1	150126A Blk				45mL	50mL	01/26/15 9:45	equip: MultiWave
2	150126A LCS		90uL	1+2	45mL	50mL	01/26/15 9:45	equip: MultiWave
3	AZ09997	AZ09997W06			45mL	50mL	01/26/15 9:45	equip: MultiWave
4	AZ09998	AZ09998W06			45mL	50mL	01/26/15 9:45	equip: MultiWave
5	AZ09999	AZ09999W06			45mL	50mL	01/26/15 9:45	equip: MultiWave
6	AZ10000	AZ10000W06			45mL	50mL	01/26/15 9:45	equip: MultiWave
7	AZ10001	AZ10001W06			45mL	50mL	01/26/15 9:45	equip: MultiWave
8	AZ10002	AZ10002W06			45mL	50mL	01/26/15 9:45	equip: MultiWave
9	AZ10003	AZ10003W06			45mL	50mL	01/26/15 9:45	equip: MultiWave
10	AZ10004	AZ10004W06			45mL	50mL	01/26/15 9:45	equip: MultiWave
11	AZ10005	AZ10005W06			45mL	50mL	01/26/15 9:45	equip: MultiWave
12	AZ10006	AZ10006W16			45mL	50mL	01/26/15 9:45	equip: MultiWave
13	AZ10006 MS	AZ10006W16	90uL	1+2	45mL	50mL	01/26/15 9:45	equip: MultiWave
14	AZ10006 MSD	AZ10006W16	90uL	1+2	45mL	50mL	01/26/15 9:45	equip: MultiWave
15	AZ10007	AZ10007W06			45mL	50mL	01/26/15 9:45	equip: MultiWave

Solvent and Lot#
HNO3 E.M.D 54181 3179

Sample COC Transfer	
Sample prep employee Initials	nm
Analyst's initials	SJH
Date	1/27/15
Time	08:27
Moved to	Metals

Technician's Initials	
Scanned By	nm
Sample Preparation	nm
Digestion	nm
Bring up to volume	nm
Modified	01/26/15 8:54:15 AM

Reviewed By: **Date:** 1/27/15

6020/200.8 Injection Log

Directory: K:\ICP-MS Megatron\raw data output csv\

RunID	Injected		Sample Name	Misc Info	FileName	Multiplier
1	27 Jan 2015	09:53	Calibration Blank		150127B	1.
2	27 Jan 2015	09:59	Standard 1		150127B	1.
3	27 Jan 2015	10:05	Standard 2		150127B	1.
4	27 Jan 2015	10:11	Standard 3		150127B	1.
5	27 Jan 2015	10:17	Standard 4		150127B	1.
6	27 Jan 2015	10:23	ICV		150127B	1.
8	27 Jan 2015	10:41	ICB		150127B	1.
12	27 Jan 2015	11:05	CCV		150127B	1.
13	27 Jan 2015	11:18	CCB		150127B	1.
14	27 Jan 2015	11:24	ICSA		150127B	1.
15	27 Jan 2015	11:36	ICSAB		150127B	1.
23	27 Jan 2015	12:36	CCV		150127B	1.
24	27 Jan 2015	12:48	CCB		150127B	1.
25	27 Jan 2015	12:54	150126A BLK		150127B	1.
26	27 Jan 2015	13:00	150126A LCS		150127B	1.
27	27 Jan 2015	13:12	AZ09997W06		150127B	1.
28	27 Jan 2015	13:18	AZ09998W06		150127B	1.
29	27 Jan 2015	13:24	AZ09999W06		150127B	1.
30	27 Jan 2015	13:30	AZ10000W06		150127B	1.
31	27 Jan 2015	13:36	AZ10001W06		150127B	1.
32	27 Jan 2015	13:42	AZ10002W06		150127B	1.
33	27 Jan 2015	13:48	AZ10003W06		150127B	1.
34	27 Jan 2015	13:54	AZ10004W06		150127B	1.
35	27 Jan 2015	14:00	AZ10005W06		150127B	1.
36	27 Jan 2015	14:06	CCV		150127B	1.
37	27 Jan 2015	14:18	CCB		150127B	1.
38	27 Jan 2015	14:24	AZ10006W16		150127B	1.
39	27 Jan 2015	14:30	AZ10006W16 MS		150127B	1.
40	27 Jan 2015	14:36	AZ10006W16 MSD		150127B	1.
41	27 Jan 2015	14:42	AZ10006W16-A		150127B	1.
42	27 Jan 2015	14:48	AZ10006W16 1/5		150127B	5.
43	27 Jan 2015	14:54	AZ10007W06		150127B	1.
44	27 Jan 2015	15:00	CCV		150127B	1.
45	27 Jan 2015	15:12	CCB		150127B	1.

908 North Temperance Ave. ∇ Clovis, CA 93611 ∇ Phone 559-275-2175 ∇ Fax 559-275-4422

Certification Number: CA1312
NELAP Certification number: CA00046
DoD-ELAP Certificate number: 74807

Data Validatable Report

April 6, 2015

Element Environmental
98-030 Hekaha Street, Unit 9
Aiea, Hawaii 96701

Attn: Steve Spengler

Title: Report of Data: Case 75798

Project: MCBH Motor Pool KB-100 SI / 130034

Contract #: Prime contract # for DoD: Not stated
Subcontract: 130034

Dear Mr. Spengler:

Three water samples were received March 12, 2015, in good condition. Written results for the requested analyses are provided on this April 6, 2015.

Results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

If you have any questions or require further information, please contact your APPL Project Manager, Cynthia Clark, cclark@applinc.com, at your convenience. Thank you for choosing APPL, Inc.

I certify that this data package is in compliance with the terms and conditions of the contract, both technically and for completeness, for other than the conditions detailed above. These test results meet all requirements of NELAC and DoD QSM. Release of the hard copy has been authorized by the Laboratory Manager or her designee, as verified by the following signature.

Sharon Dehmlow, Laboratory Director
APPL, Inc.

SD/ab
Enclosure
cc: File

Number of pages in this report: 259

Data Validation Package
for
MCBH Motor Pool KB-100 SI / 130034

ARF 75798

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SAMPLE RECEIPT INFORMATION

Sample receipt information

ARF: 75798

Project: MCBH Motor Pool KB-100 SI / 130034

Sample Receipt Information:

The samples were received on March 12, 2015, at 4.0°C, 4.5°C, and 5.0°C. The sample group was assigned Analytical Request Form (ARF) number 75798. The sample numbers and requested analyses were compared to the chain of custody. No exception was encountered.

Sample Table

CLIENT ID	APPL ID	Matrix	Date Sampled	Date Received
EKB100022	AZ12342	WATER	03/10/15	03/12/15
EKB100023	AZ12343	WATER	03/10/15	03/12/15
TRIP BLANK-2	AZ12344	WATER	03/10/15	03/12/15

The samples and blanks were screened for J-value responses between the detection limit (DL) and limit of quantitation (LOQ).

APPL's laboratory control limits generated in house statistically do not meet the control limits listed in DoD QSM 4.2 for all analytes. Laboratory control spike recoveries for this project meet all control limits listed in the DoD QSM 4.2 except where noted. A copy of our in house generated control limits is available upon request. In addition, a copy of our LOQ control limits, established using 7 data points, are also available upon request.

Only the portion of the injection log relative to these samples is included. A full sequence log is available upon request.

Measurement uncertainty can be reported upon request.

CASE NARRATIVE

EPA Method 8015C

Total Petroleum Hydrocarbons – DRO and LRO

Sample Preparation:

The water samples were extracted according to EPA method 3510C. The samples were extracted within holding time.

Sample Analysis Information:

The samples were analyzed according to the method using an Agilent Gas Chromatograph with a flame ionization detector.

Quality Control/Assurance

Calibrations:

Initial and continuing calibrations were performed according to the method. All calibration criteria were met.

Blanks:

No target compound was detected at or above one-half the LOQ in the method blank.

Spikes:

A Laboratory Control Spike (LCS) was used for quality assurance. All spike recovery acceptance criteria were met.

No sample was designated by the client for MS/MSD analysis.

Surrogates

Surrogate recoveries are summarized on the Form 2&8. All surrogate recoveries were within the control limits.

Summary:

No analytical exception was encountered. All data generated are acceptable.

EPA Method 8260B
Volatile Organic Compounds

Sample Preparation:

The water samples were purged according to EPA method 5030B.

Sample Analysis Information:

The samples were analyzed according to the EPA method 8260B using an Agilent Gas Chromatograph with a mass spectrometer detector. The samples were received in unpreserved vials; they were analyzed within seven days of collection. All holding times were met.

Quality Control/Assurance:

Calibrations:

Initial and continuing calibrations were performed according to the method. All calibration criteria were met.

Blanks:

No target analyte was detected above one half the LOQ in the method blanks.

Spikes:

Laboratory Control Spikes (LCS) were used for quality assurance. All LCS acceptance criteria were met.

No sample was designated by the client for MS/MSD analysis.

Surrogates:

Surrogate recoveries are summarized on Form 2 & 8. All surrogate recoveries were within the control limits.

Tuning:

The instrument was tuned using BFB. All method criteria were met.

Internal Standards:

The internal standard area counts were compared to the mid-point of the initial calibration according to method 8260. All method criteria were met.

Summary:

No analytical exception was encountered. The data generated are acceptable.

EPA Method 6020A
Metals

Digestion Information:

The water samples were digested according to EPA method 3015. No exception was encountered. All holding times were met

Analysis Information:

Samples:

The samples were analyzed for lead according to EPA method 6020A using an Agilent 7500cx ICP-MS.

Calibrations:

Calibrations were performed according to the method with no deviations for the initial calibration and the initial calibration verification. The initial calibration verification is prepared from a second source standard. All method criteria were met.

Blanks:

No target metal was detected above one-half the LOQ in the method blank.

Spikes:

Laboratory Control Spike (LCS), Matrix Spikes (MS/MSD), serial dilution tests (DT), and post digestion spike (PDS) were used for quality assurance. All LCS acceptance criteria were met.

Sample EKB100022 was selected by the laboratory as the QC sample for the analytical batch. All acceptance criteria were met in the MS/MSD, PDS and DT.

Internal Standards:

All method acceptance criteria were met in the internal standards.

Summary:

No analytical exception was noted.

APPL Inc.
Abbreviations and Flags

FLAG	DESCRIPTION
#	Recovery or RPD outside control limits
*	Recovery or RPD outside control limits
B	Analyte detected in associated method blank
C1	Reason for correction: wrote incorrect response
C2	Reason for correction: calculated incorrectly
C3	Reason for correction: needs to be rechecked
C4	Reason for correction: data not usable
DO	Diluted out
E	Exceeds linear range
F	Estimated value
G1	Includes a wide range of hydrocarbons which does not match our gasoline standard
G10	Includes a match to hydrocarbon profiles within the range of mineral spirits
G11	Includes a match to hydrocarbon profiles within the range of JP-4
G12	Pattern does not match the gasoline standard; the carbon range for this sample is consistent with JP8
G13	Closely resembles the hydrocarbon profile of aviation gasoline
G14	Analyte concentration may be biased due to carry over
G2	Closely resembles the boiling point hydrocarbon profile consistent with weathered gasoline
G3	Includes higher boiling hydrocarbons
G4	Includes dominant peak(s) not indicative of petroleum hydrocarbons
G5	Is mainly dominant peak(s) not indicative of petroleum hydrocarbons
G6	Contains recognizable contaminant peak(s) which has been removed from quantitation
G7	Is mainly a match to hydrocarbons within the range of gasoline
G8	Closely resembles the boiling point hydrocarbon profile consistent with weathered gasoline
G9	Includes hydrocarbons within the range of kerosene
J	Estimated value
M	Matrix effect
MI1	Manual integration: integration does not follow baseline
MI2	Manual integration: non-target peak interference
MI3	Manual integration: to split a peak that was integrated as one peak by the computer.
MI4	Manual integration: to integrate a split peak
MI5	Manual integration: the whole peak or part of the peak was not integrated
MI6	Manual integration: computer integrated wrong peak
MI7	Manual integration: other – (See case narrative)
MDL	Method detection limit
ND	Not detected
NT	Non-target
Q	Acceptance criteria not met
T1 I	Includes wide range of hydrocarbons not indicative of diesel
T1 M	Is mainly wide range of hydrocarbons not necessarily indicative of diesel
T2 I	Includes lower boiling hydrocarbons, i.e. mineral spirits, kerosene, stoddard solvent, white gas
T2 M	Is mainly lower boiling hydrocarbons, i.e. mineral spirits, kerosene, stoddard solvent, white gas
T3 I	Includes higher boiling hydrocarbons, i.e. asphaltene, waster oil, motor oil, or weathered diesel fuel
T3 M	Is mainly higher boiling hydrocarbons, i.e. asphaltene, waster oil, motor oil, or weathered diesel fuel
T4 I	Includes dominant peak(s) not indicative of hydrocarbons
T4 M	Is mainly dominant peak(s) not indicative of hydrocarbons
T5	Contains recognizable contaminant peak(s) which has been removed from quantitation
T6	Is mainly a match to hydrocarbons within range of diesel fuel
T7	Closely resembles the boiling point hydrocarbon profile consistent with diesel fuel
T8	Includes a match to hydrocarbon profiles within range of diesel and kerosene fuel
T9 I	Includes non-diesel hydrocarbons within boiling point range of diesel fuel
T9 M	Is mainly non-diesel hydrocarbons within boiling point range of diesel fuel
U	Not detected
Y	Percent difference between primary and confirmation column > 40%

CHAIN OF CUSTODY,

ARF, CRF, AND

CLIENT COMMUNICATION

APPL - Analysis Request Form

75798

Client: Element Environmental
Address: 98-030 Hekaha St., Unit 9
Aiea, HI 96701
Attn: Steve Spengler
Phone: 808-864-3953 Fax: 808-488-1300
Job: MCBH Motor Pool UST KB-100 SI / 130034
PO #: 130034
Chain of Custody (Y/N): Y # 48033
RAD Screen (Y/N): Y pH (Y/N): Y
Turn Around Type: 14 DAYS

Received by: CM
Date Received: 03/12/15 Time: 09:30
Delivered by: FED EX
Shuttle Custody Seals (Y/N): Y Time Zone: -10
Chest Temp(s): 4.0° 5.0° 4.5°C
Color: VOA/B-RED/R-ORGYEL
Samples Chilled until Placed in Refrig/Freezer: Y
Project Manager: Cynthia Clark
QC Report Type: DVP4/NEDD/HI
Due Date: 03/26/15

Comments:
login to sspengler@e2hi.com & mheskett@e2hl.com
1 hard copy to LDC, 1 labeled CD to Steve
Guidance: DOD QSM v4.2; use DOD forms LOQ/LOD database/DL

EDD: NEDD/NIRIS and APPL Excel to sspengler@ mheskett@e2hi.com & akong@lab-data.com

Sample Distribution:
GC: 2-$DROWCT008
Extractions: 2-_SEP011
VOA: 3-$86BKB91W
Metals: 2-$62A14W(Pb)
Other: 2-_M3015

Charges:

Invoice To:

	Client ID	APPL ID	Sampled		Analyses Requested
1.	EKB100022	AZ12342W	03/10/15	09:30	$62A14W(Pb), $86BKB91W, $DROWCT008 -- Non-Preserved VOA
2.	EKB100023	AZ12343W	03/10/15	10:45	$62A14W(Pb), $86BKB91W, $DROWCT008 -- Non-Preserved VOA
3.	TRIP BLANK-2	AZ12344W	03/10/15	14:15	$86BKB91W -- Non-Preserved VOA

Note: All times, excluding sample collection times, are Pacific Time Zone unless noted otherwise. Collection times are in: -10 UTC

APPL Sample Receipt Form

ARF# **75798**

Sample	Container Type	Count	pH
AZ12342	[6] PL 500mL - HNO3	1	1.7
	[15] VOAs - NP	3	NA
	[17] Amber Liter	2	NA
AZ12343	[6] PL 500mL - HNO3	1	1.7
	[15] VOAs - NP	3	NA
	[17] Amber Liter	2	NA
AZ12344	[15] VOAs - NP	3	NA

Sample	Container Type	Count	pH

5.0, 4.5, 4.0
75798
a,b,c

APPL LABS

APPL, Inc.
908 N Temperance Ave
Clovis, CA 93611

Phone: (559) 275-2175
Fax: (559) 275-4422

CHAIN OF CUSTODY RECORD

C.O.C. 48033

Report to: PLEASE PRINT

Company Name: ELEMENT ENVIRONMENTAL, LLC Phone: (808) 488-1200

Address: 98-030 HEKAHA ST, UNIT 9
AIEA, HI 96701 Fax: (808) 488-1300

Attn: STEVE SPENGLER CELL: (808) 864-3953

Invoice to: PLEASE PRINT

Company Name: SAME AS: "REPORT TO:" Phone:

Address: Fax:

Attn:

Project Name/Number: 130034 / KM CBH MOTOR POOL USTS

Sampler (Print): MARVIN HESKETT, STEVE SPENGLER, BERNICE BALETE

Purchase Order Number: 130034

Sampler (Signature): [signature]

Date Shipped: 3-11-15
Carrier: FEDEX
Waybill No. 8703-4236-6542
Comments:

Sample Identification	Location	Date Collected	Time Collected	Time Zone	No. of Containers	Matrix: Aq	Matrix: Sed.	Matrix: Soil	TPH-DRO/GRO (8015B)	VOCs (8260B)	TOTAL LEAD (6020)	PAHs (8270C)	Comments
EKB100022	UST KB-100	3/10/15	0930	HST	6	X			X	X	X		
EKB100023	UST KB-100	↓	1045	↓	6	X			X	X	X		
EKB91072	UST KB-91		1140		14	X			X	X		X	MS/MSD
EKB91073	UST KB-91		1200		7	X			X	X		X	
EKB91074	UST KB-91		1215		5	X			X	X		X	
EKB91075	UST KB-91		1415		7	X			X	X		X	
TRIP BLANK-1	UST KB-91		1415		3	X				X			
TRIP BLANK-2	UST KB-100	↓	1415	↓	3	X				X			

Shuttle Temperature:

Turnaround Requested: Check one
☒ Standard 2-3 wk ☐ One week ☐ 24/48 Hrs. ☐ Other

Sample Disposal:
☐ Return to client ☒ Disposal by Lab (30-day retention)

Relinquished by:	Date	Time	Received by:	Relinquished by:	Date	Time	Received by:
B. BALETE [signature]	3/11/15	1430					
Relinquished by:	Date	Time	Received by:	Relinquished by:	Date	Time	Received at lab by:
					3/12/15	9:30	[signature]

White: Return to client with report Yellow: Laboratory Copy Pink: Sampler

See reverse side for Container Preservative and Sampling Information

COOLER RECEIPT FORM **ARF: 75798**

1) Project: MCBH Motor Pool UST KB-100 SI / 130034 Date Received: 03/12/15

2) Coolers: Number of Coolers: 3

3) YES Were custody seals present and intact?
How many? 6 Name/Date on seal? SEE BELOW

4) YES Was there a shipping slip? Carrier name: FED EX

5) Type of packing in cooler: __ bubble wrap __ popcorn __ foam __ plastic bags __ wet ice __ dry ice __ no ice __ other

6) YES Were cooler temperatures acceptable?

7) Serial number of certified NIST thermometer use J5297

8) Cooler temp(s): In °C

1: 4.0	2: 5.0	3: 4.5	4:	5:	6:
7:	8:	9:	10:	11:	12:

Chain of custody:

9) YES Was a chain of custody received?

10) YES Were the custody papers complete/signed in the appropriate places?

Sample Labels:

11) YES Were all sample labels complete (sample ID, date/time of sampling, etc.)?

12) YES Did all container labels agree with custody papers?

Sample Containers:

13) YES Were all containers sealed in separate bags?

14) YES Did all containers arrive in good condition:(unbroken, no leakage, no cracked/broken lids)

15) YES Were correct containers and preservatives used for the tests indicated?

16) YES Was a sufficient amount of sample sent for tests indicated?

17) Yes Were bubbles present in volatile samples?
If yes, the following were received with air bubbles:
Larger than a pea:
Smaller than a pea: AZ12344W02-W03

Preservation Hold time:

18) Yes Was a sufficient amount of holding time remaining to analyze the samples?

19) Yes Was the pH taken of all non-VOA preserved samples and written on the sample contains

20) Yes Was the pH of acid preserved non-VOA samples < 2?

21) NA Was the pH of sodium hydroxide preserved samples for Cyanide > 12 and Sulfide >9?

22) Yes Were unpreserved VOA Vials received?

23) Yes Are unpreserved VOA vials noted in the ADD TEST FIELD on the ARF?
pH strip lot number: 90B2031
Lab notified if pH was not adequate:

CUSTODY SEAL
Initials BB
Date: 3-1-15

VOA

Notes/Deficiencies:

Personnel receiving samples: BB Second reviewer: YL
Personnel labeling samples:
Project manager notified: Date/Time of notification
Name of client notified: Date/Time of notification

EPA 8015 Modified
Total Petroleum Hydrocarbons

EPA 8015 Modified
Total Petroleum Hydrocarbons
QC Summary

Method Blank
TPH-d Water EPA 8015C

APPL Inc.
908 North Temperance Avenu
Clovis, CA 93611

Blank Name/QCG: **150317W-12345 - 195087**
Batch ID: #DROWC-150317A

Sample Type	Analyte	Result	LOQ	LOD	DL	Units	Extraction Date	Analysis Date
BLANK	TPH-DRO (C10-C24)	50.0 U	150	50.0	40.4	ug/L	3/17/2015	3/18/2015
BLANK	TPH-LRO (C24-C36)	500.0 U	500	500.0	106.0	ug/L	3/17/2015	3/18/2015
BLANK	SURROGATE: OCTACOSANE (S)	92.7	28-142			%	3/17/2015	3/18/2015
BLANK	SURROGATE: ORTHO-TERPHEN	65.3	57-132			%	3/17/2015	3/18/2015

Quant Method:CTO121.M
Run #:318004
Instrument:Apollo
Sequence:150318
Initials:LA

GC SC-Blank-REG MDLs
Printed: 3/26/2015 3:31:27 PM

Form 2 & 8

Surrogate Recovery

Lab Name: APPL, Inc. SDG No: 75798

Case No: 75798 Date Analyzed: 3/18/2015

Matrix: WATER Instrument: Apollo

APPL ID.	Client Sample No.	SURROGATE: OCTACOSANE (S)			SURROGATE: ORTHO-TERPHENYL (S)		
		Limits	Result	Qualifier	Limits	Result	Qualifier
150317A-BLK	Blank	28-142	92.7		57-132	65.3	
150317A-LCS	Lab Control Spike	28-142	100		57-132	86.0	
AZ12342	EKB100022	28-142	87.2		57-132	62.7	
AZ12343	EKB100023	28-142	86.5		57-132	62.2	

Comments: Batch: #DROWC-150317A

Laboratory Control Spike Recovery
TPH-d Water EPA 8015C

APPL ID: **150317W-12345 LCS - 195087**
Batch ID: #DROWC-150317A

APPL Inc.
908 North Temperance Avenue
Clovis, CA 93611

Compound Name	Spike Level ug/L	SPK Result ug/L	SPK % Recovery	Recovery Limits
TPH-DRO (C10-C24)	2000	1670	83.5	61-143
TPH-LRO (C24-C36)	2000	1850	92.5	61-143
SURROGATE: OCTACOSANE (S)	150	150	100	28-142
SURROGATE: ORTHO-TERPHENYL (S)	150	129	86.0	57-132

Comments: _____

Primary	SPK
Quant Method :	CTO121.M
Extraction Date :	3/17/2015
Analysis Date :	3/18/2015
Instrument :	Apollo
Run :	318005
Initials :	LA

Printed: 3/26/2015 3:31:21 PM
APPL Standard LCS

EPA 8015C-e

Form 4

Blank Summary

Lab Name: APPL, Inc.
SDG No: 75798
Case No: 75798
Date Analyzed: 3/18/2015
Matrix: WATER
Instrument: Apollo
Blank ID: 150317A-BLK
Time Analyzed: 1125

APPL ID.	Client Sample No.	File ID.	Date Analyzed
150317A-BLK	Blank	318004	3/18/2015 1125
150317A-LCS	Lab Control Spike	318005	3/18/2015 1150
AZ12342	EKB100022	318007	3/18/2015 1240
AZ12343	EKB100023	318008	3/18/2015 1305

Comments: Batch: #DROWC-150317A

EPA 8015 Modified
Total Petroleum Hydrocarbons
Sample Data

TPH-d Water EPA 8015C

Element Environmental
98-030 Hekaha St., Unit 9
Aiea, HI 96701

APPL Inc.
908 North Temperance Avenue
Clovis, CA 93611

Attn: Steve Spengler

Project: MCBH Motor Pool UST KB-100 SI / 130034

ARF: 75798

Sample ID: EKB100022

APPL ID: AZ12342

Sample Collection Date: 3/10/2015

QCG: #DROWC-150317A-195087

Method	Analyte	Result	LOQ	LOD	DL	Units	Extraction Date	Analysis Date
EPA 8015C-	TPH-DRO (C10-C24)	50.0 U	150	50.0	40.4	ug/L	3/17/2015	3/18/2015
EPA 8015C-	TPH-LRO (C24-C36)	500.0 U	500	500.0	106.0	ug/L	3/17/2015	3/18/2015
EPA 8015C-	SURROGATE: OCTACOSANE (S)	87.2	28-142			%	3/17/2015	3/18/2015
EPA 8015C-	SURROGATE: ORTHO-TERPHENYL (S	62.7	57-132			%	3/17/2015	3/18/2015

Quant Method: CTO121.M
Run #: 318007
Instrument: Apollo
Sequence: 150318
Dilution Factor: 1
Initials: LA

Printed: 3/26/2015 3:31:24 PM
APPL-F1-SC-NoMC-REG MDLs

Quantitation Report (QT Reviewed)

Data File : G:\APOLLO\DATA\150318\318007.D Vial: 7
Acq On : 3-18-15 12:40:25 Operator: lac
Sample : AZ12342 5/1000 Inst : Apollo
Misc : Water Multiplr: 5.00
IntFile : events.e
Quant Time: Mar 23 11:45 2015 Quant Results File: CTO121.RES

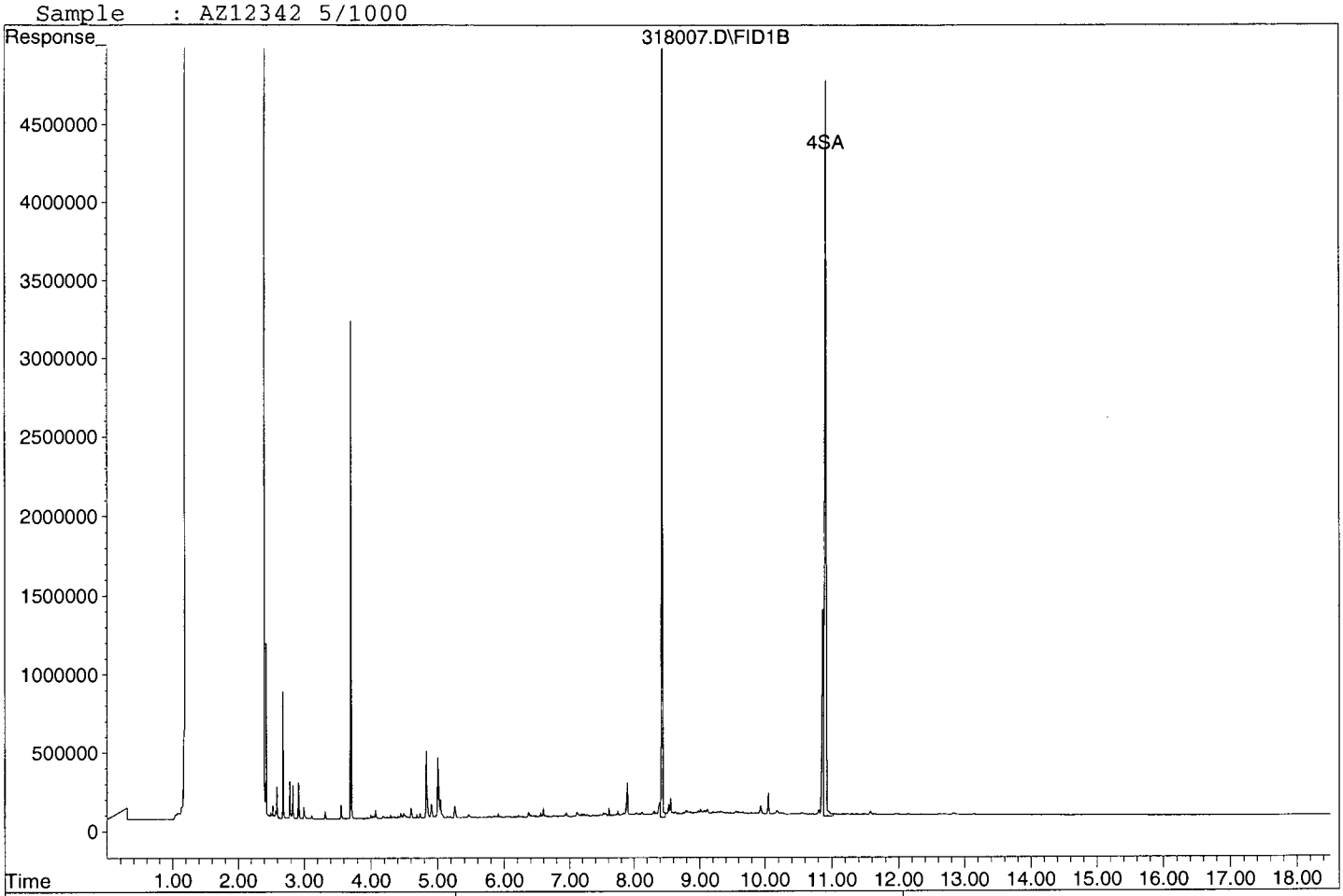
Method : G:\APOLLO\DATA\150311\CTO121.M (Chemstation Integrator)
Title : 8015 B&C
Last Update : Thu Feb 26 09:47:30 2015
Response via : Multiple Level Calibration

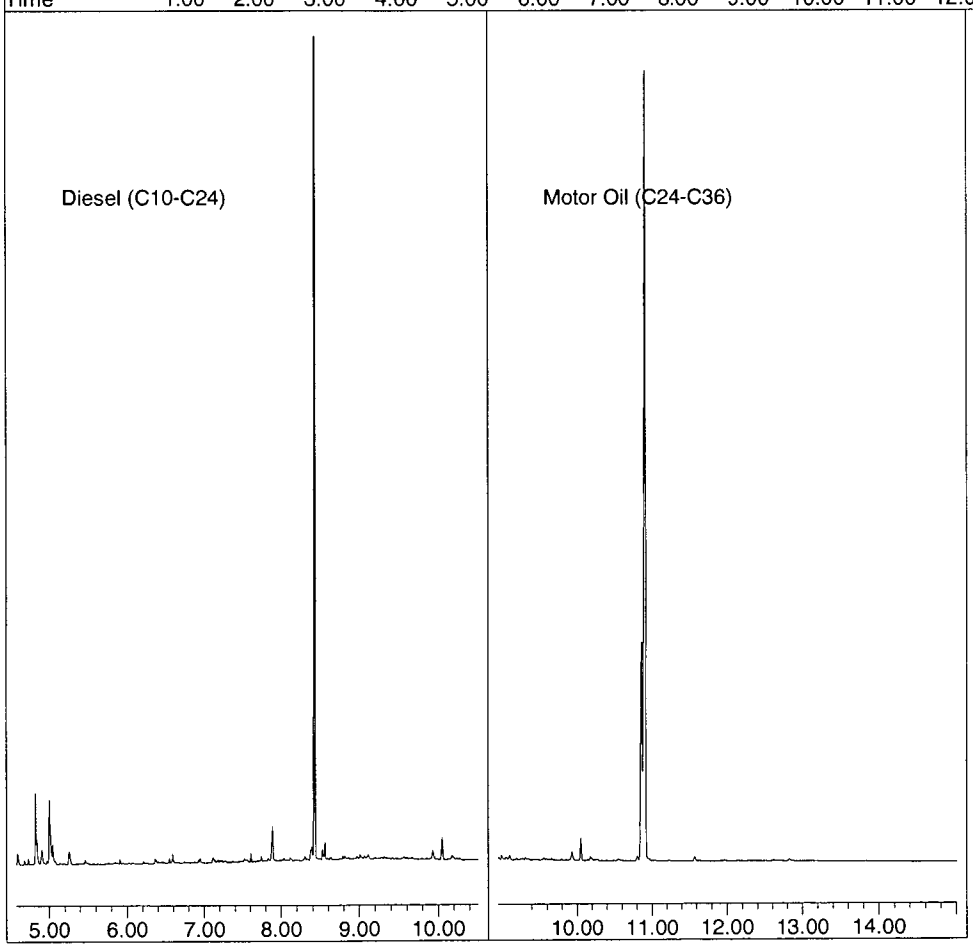
Volume Inj. : 2UL
Signal Phase : DB-5
Signal Info : FID02A

Compound	R.T.	Response	Conc Units
System Monitoring Compounds			
3) SA Ortho-Terphenyl(S)	8.43	70029841	93.968 ppb
Surrogate Spike 150.000		Recovery =	62.65%
4) SA Octacosane(S)	10.91	70584322	130.755 ppb
Surrogate Spike 150.000		Recovery =	87.17%
Target Compounds			

Quantitation Report

Data File: G:\APOLLO\DATA\150318\318007.D
Sample : AZ12342 5/1000





TPH-d Water EPA 8015C

Element Environmental
98-030 Hekaha St., Unit 9
Aiea, HI 96701

APPL Inc.
908 North Temperance Avenue
Clovis, CA 93611

Attn: Steve Spengler

Project: MCBH Motor Pool UST KB-100 SI / 130034

ARF: 75798

Sample ID: EKB100023

APPL ID: AZ12343

Sample Collection Date: 3/10/2015

QCG: #DROWC-150317A-195087

Method	Analyte	Result	LOQ	LOD	DL	Units	Extraction Date	Analysis Date
EPA 8015C-	TPH-DRO (C10-C24)	50.0 U	150	50.0	40.4	ug/L	3/17/2015	3/18/2015
EPA 8015C-	TPH-LRO (C24-C36)	500.0 U	500	500.0	106.0	ug/L	3/17/2015	3/18/2015
EPA 8015C-	SURROGATE: OCTACOSANE (S)	86.5	28-142			%	3/17/2015	3/18/2015
EPA 8015C-	SURROGATE: ORTHO-TERPHENYL (S	62.2	57-132			%	3/17/2015	3/18/2015

Quant Method: CTO121.M
Run #: 318008
Instrument: Apollo
Sequence: 150318
Dilution Factor: 1
Initials: LA

Printed: 3/26/2015 3:31:24 PM
APPL-F1-SC-NoMC-REG MDLs

Quantitation Report (QT Reviewed)

Data File : G:\APOLLO\DATA\150318\318008.D Vial: 8
Acq On : 3-18-15 13:05:18 Operator: lac
Sample : AZ12343 5/1000 Inst : Apollo
Misc : Water Multiplr: 5.00
IntFile : events.e
Quant Time: Mar 23 11:45 2015 Quant Results File: CTO121.RES

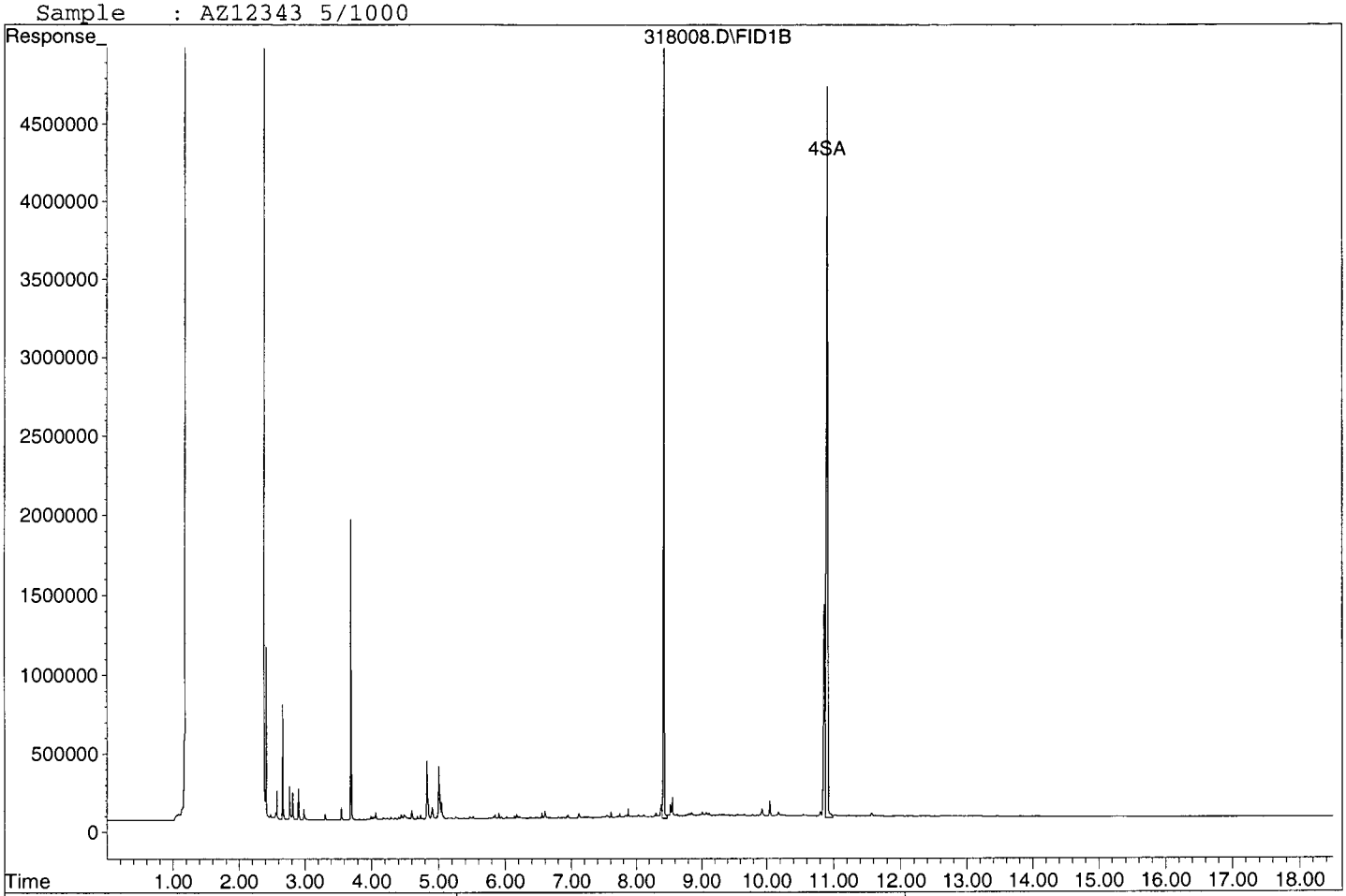
Method : G:\APOLLO\DATA\150311\CTO121.M (Chemstation Integrator)
Title : 8015 B&C
Last Update : Thu Feb 26 09:47:30 2015
Response via : Multiple Level Calibration

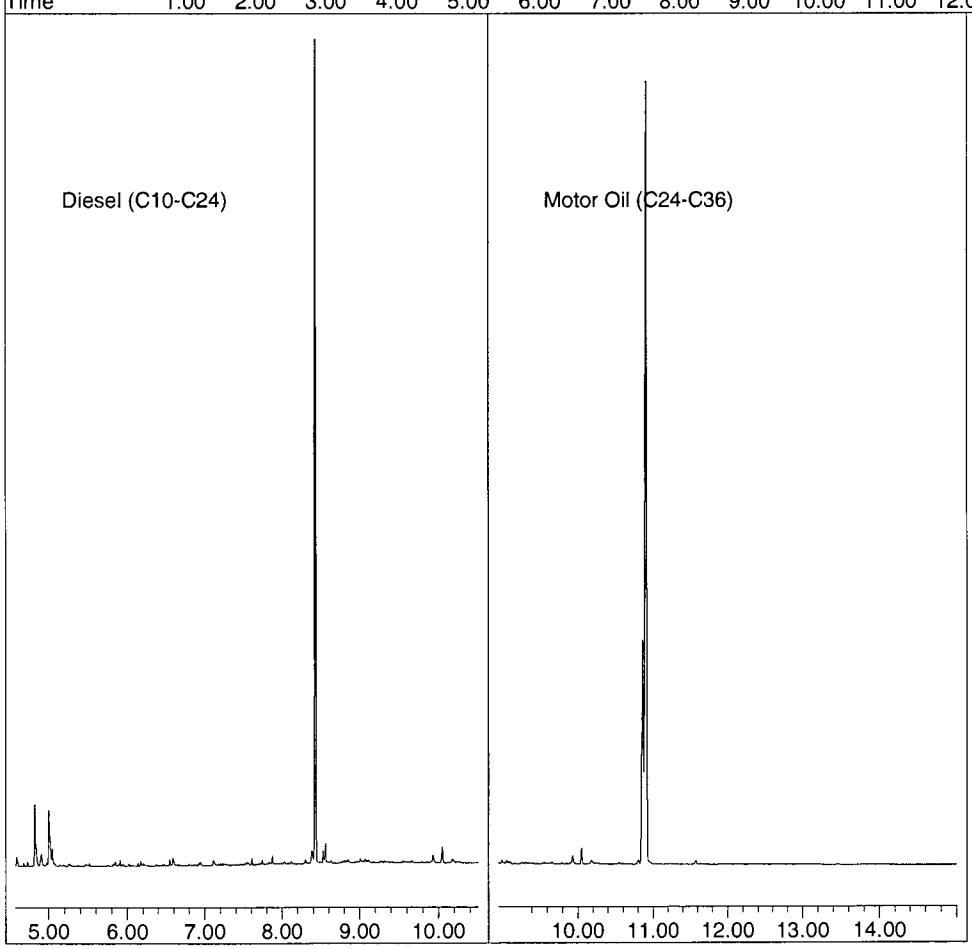
Volume Inj. : 2UL
Signal Phase : DB-5
Signal Info : FID02A

Compound	R.T.	Response	Conc Units
System Monitoring Compounds			
3) SA Ortho-Terphenyl(S)	8.43	69478463	93.228 ppb
Surrogate Spike 150.000		Recovery =	62.15%
4) SA Octacosane(S)	10.91	70075768	129.813 ppb
Surrogate Spike 150.000		Recovery =	86.54%
Target Compounds			

Quantitation Report

Data File: G:\APOLLO\DATA\150318\318008.D
Sample : AZ12343 5/1000





EPA 8015 Modified
Total Petroleum Hydrocarbons

Calibration Data

TPH Extractables
CTO121

Form 6
Initial Calibration

Lab Name: APPL, Inc.
Case No:
Matrix:

SDG No: 75798
Initial Cal. Date: 1/21/2015
Instrument: Apollo

Initials: LAC

121003.D 121004.D 121005.D 121006 D 121007.D 121008 D
121010 D 121011.D 121012.D 121013 D 121014 D 121015.D

		Compound	1	2	3	4	5	6					Avg	%RSD		
1	HATM	Diesel (C10-C24)	1205025	1328453	1223803	1270966	1275197	1242320					1257627	3.5	HATM	
2	HBTM	Motor Oil (C24-C36)	722970	734449	743939	791262	758160	748835					749936	3.1	HBTM	
3	SA	Ortho-Terphenyl(S)		1961830	1784177	1858966	1875849	1834821					1863129	3.5	SA	
4	SA	Octacosane(S)		1426796	1298584	1337601	1355729	1329039					1349549	3.5	SA	
5																
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0.390815

Quantitation Report (Not Reviewed)

Data File : G:\APOLLO\DATA\150121\121003.D Vial: 3
Acq On : 1-21-15 16:13:54 Operator: lac
Sample : Diesel 10/1000 1/20/15 Inst : Apollo
Misc : Mix(A) Multiplr: 1.00
IntFile : events.e
Quant Time: Jan 23 9:31 2015 Quant Results File: CTO121.RES

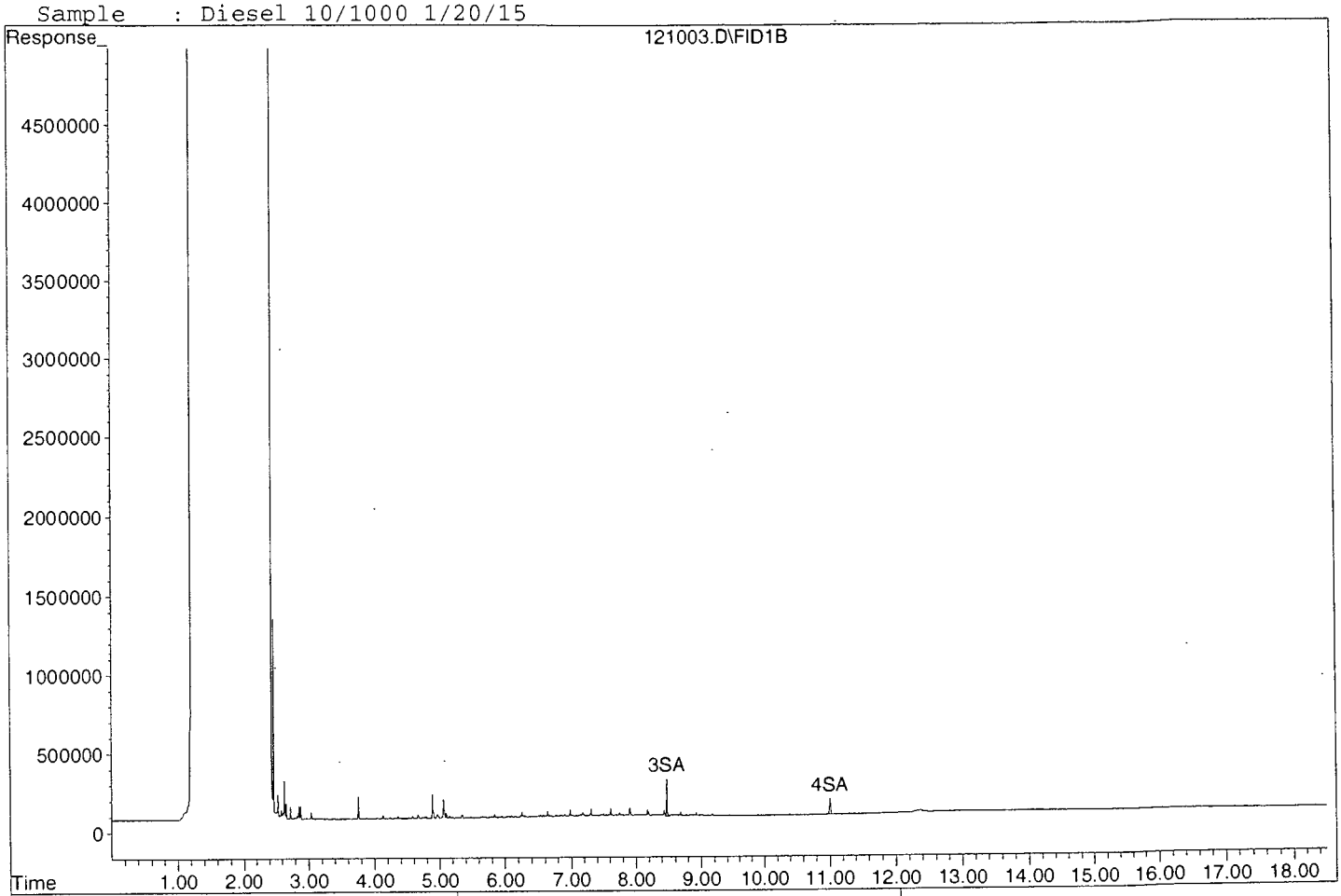
Method : G:\APOLLO\DATA\150121\CTO121.M (Chemstation Integrator)
Title : 8015 B&C
Last Update : Mon Jan 26 09:50:19 2015
Response via : Multiple Level Calibration

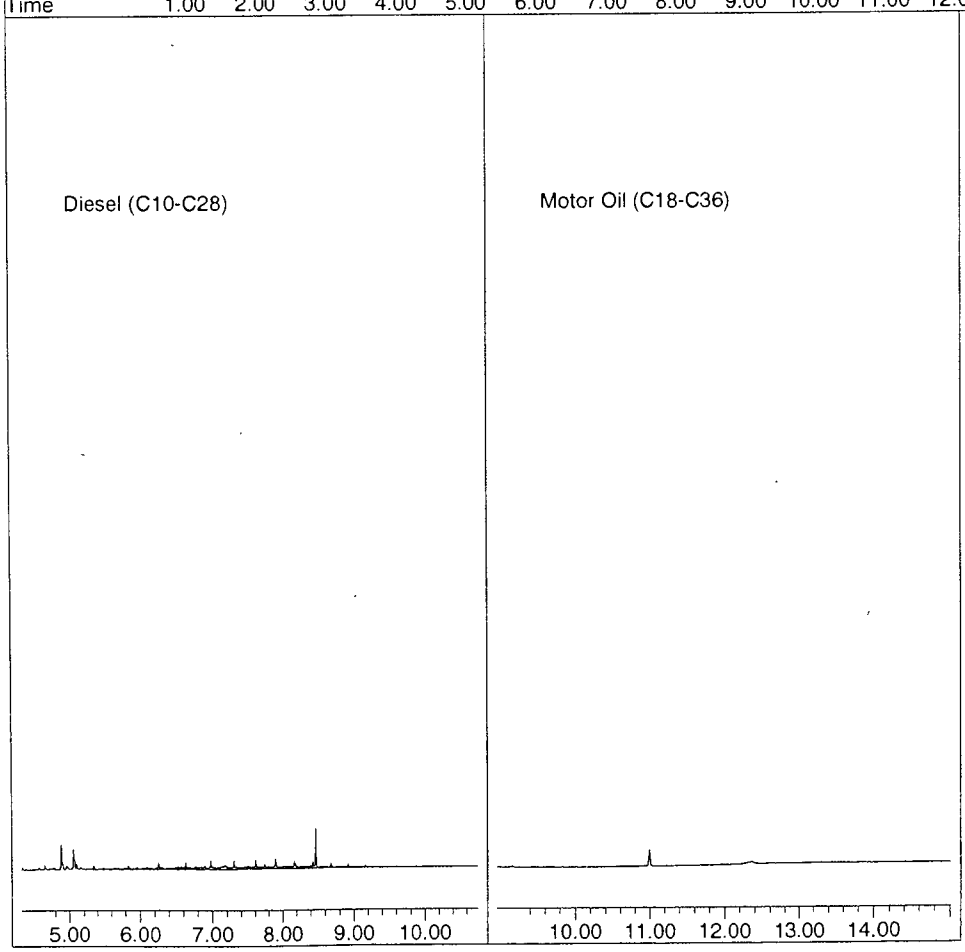
Volume Inj. : 2UL
Signal Phase : DB-5
Signal Info : FID02A

Compound	R.T.	Response	Conc Units
System Monitoring Compounds			
3) SA Ortho-Terphenyl(S)	8.47	1805261	0.484 ppb
Surrogate Spike 30.000		Recovery =	1.61%
4) SA Octacosane(S)	11.00	1403605	0.520 ppb
Surrogate Spike 30.000		Recovery =	1.73%
Target Compounds			
1) HATM Diesel (C10-C28)	7.55	24100509	9.179 ppb

(f)=RT Delta > 1/2 Window (m)=manual int.

Data File: G:\APOLLO\DATA\150121\121003.D
Sample : Diesel 10/1000 1/20/15





Quantitation Report (Not Reviewed)

Data File : G:\APOLLO\DATA\150121\121004.D Vial: 4
Acq On : 1-21-15 16:38:00 Operator: lac
Sample : Diesel 100/1000 1/20/15 Inst : Apollo
Misc : Mix(A) Multiplr: 1.00
IntFile : events.e
Quant Time: Jan 23 9:31 2015 Quant Results File: CTO121.RES

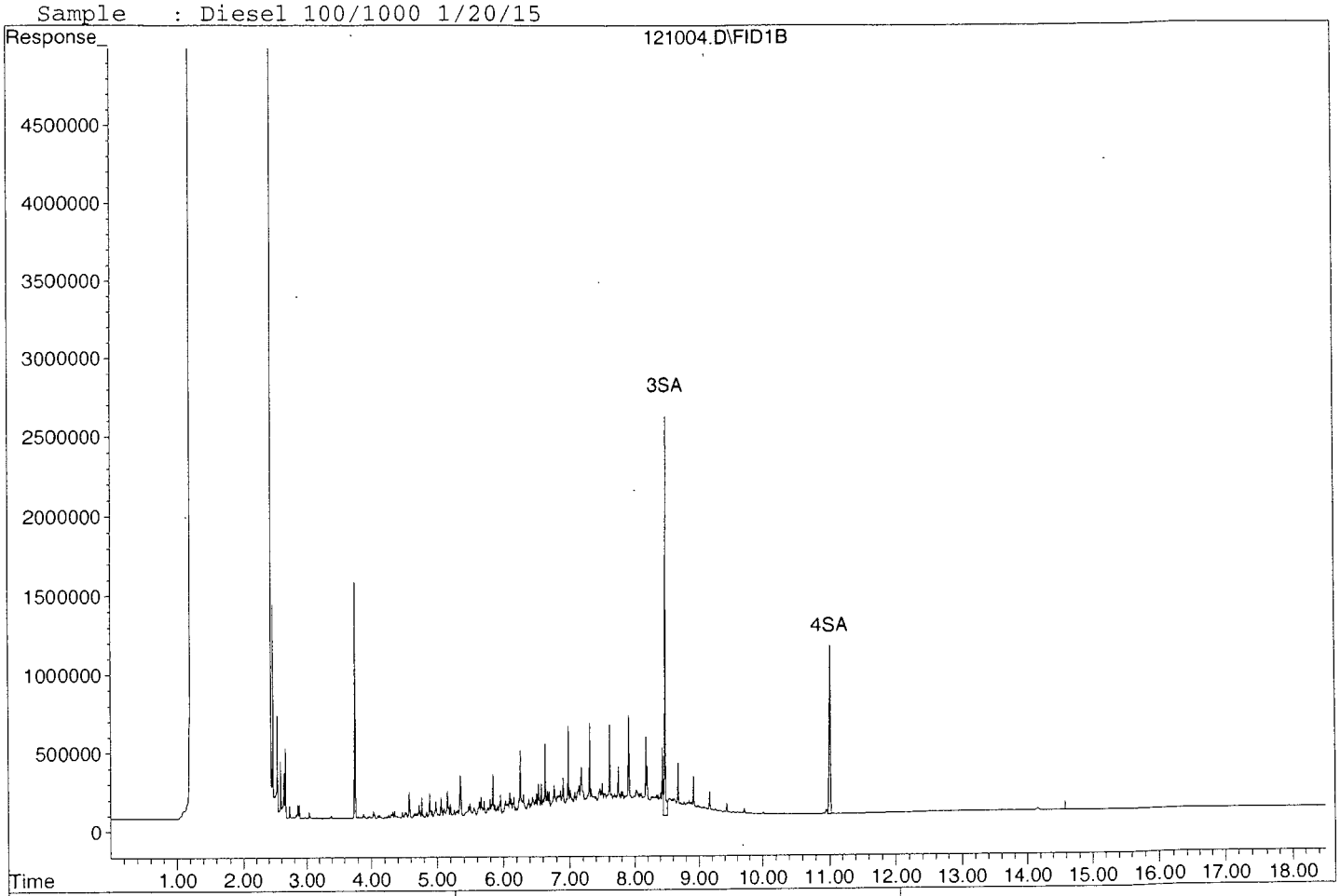
Method : G:\APOLLO\DATA\150121\CTO121.M (Chemstation Integrator)
Title : 8015 B&C
Last Update : Mon Jan 26 09:50:19 2015
Response via : Multiple Level Calibration

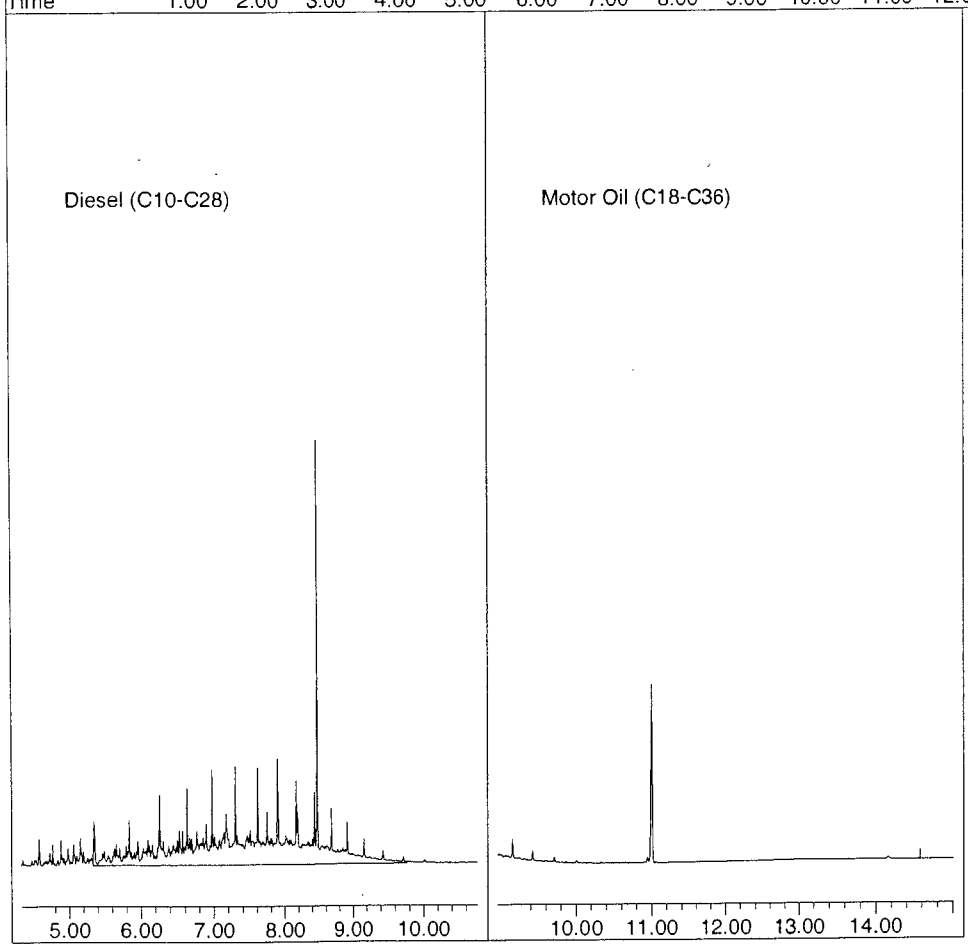
Volume Inj. : 2UL
Signal Phase : DB-5
Signal Info : FID02A

Compound	R.T.	Response	Conc Units
System Monitoring Compounds			
3) SA Ortho-Terphenyl(S)	8.47	19618300	5.265 ppb
Surrogate Spike 30.000		Recovery =	17.55%
4) SA Octacosane(S)	11.00	14267956	5.286 ppb
Surrogate Spike 30.000		Recovery =	17.62%
Target Compounds			
1) HATM Diesel (C10-C28)	7.55	265690622	101.196 ppb

(f)=RT Delta > 1/2 Window (m)=manual int.

Data File: G:\APOLLO\DATA\150121\121004.D
Sample : Diesel 100/1000 1/20/15





Quantitation Report (Not Reviewed)

Data File : G:\APOLLO\DATA\150121\121005.D Vial: 5
Acq On : 1-21-15 17:02:08 Operator: lac
Sample : Diesel 400/1000 1/20/15 Inst : Apollo
Misc : Mix(A) Multiplr: 1.00
IntFile : events.e
Quant Time: Jan 23 9:31 2015 Quant Results File: CTO121.RES

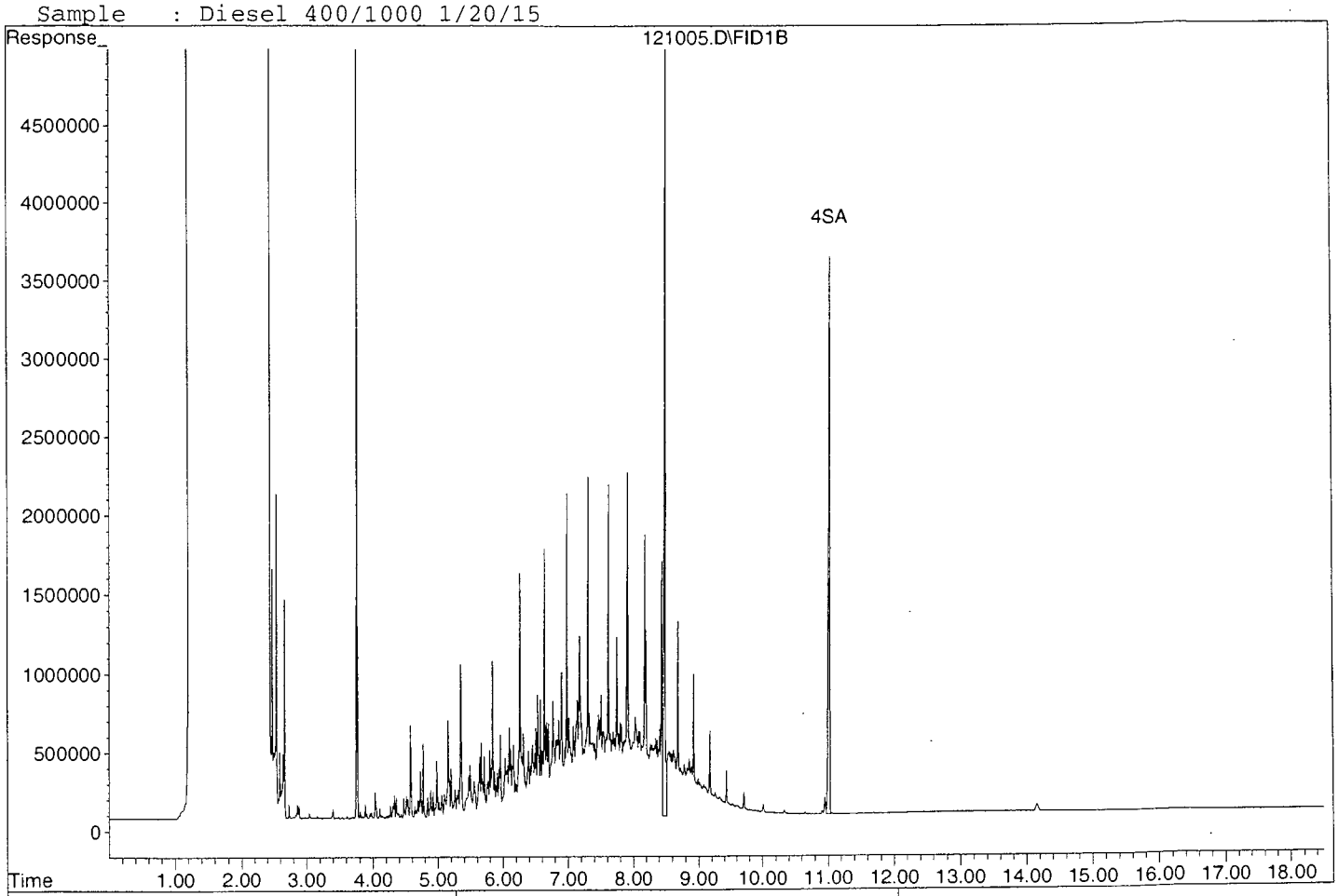
Method : G:\APOLLO\DATA\150121\CTO121.M (Chemstation Integrator)
Title : 8015 B&C
Last Update : Mon Jan 26 09:50:19 2015
Response via : Multiple Level Calibration

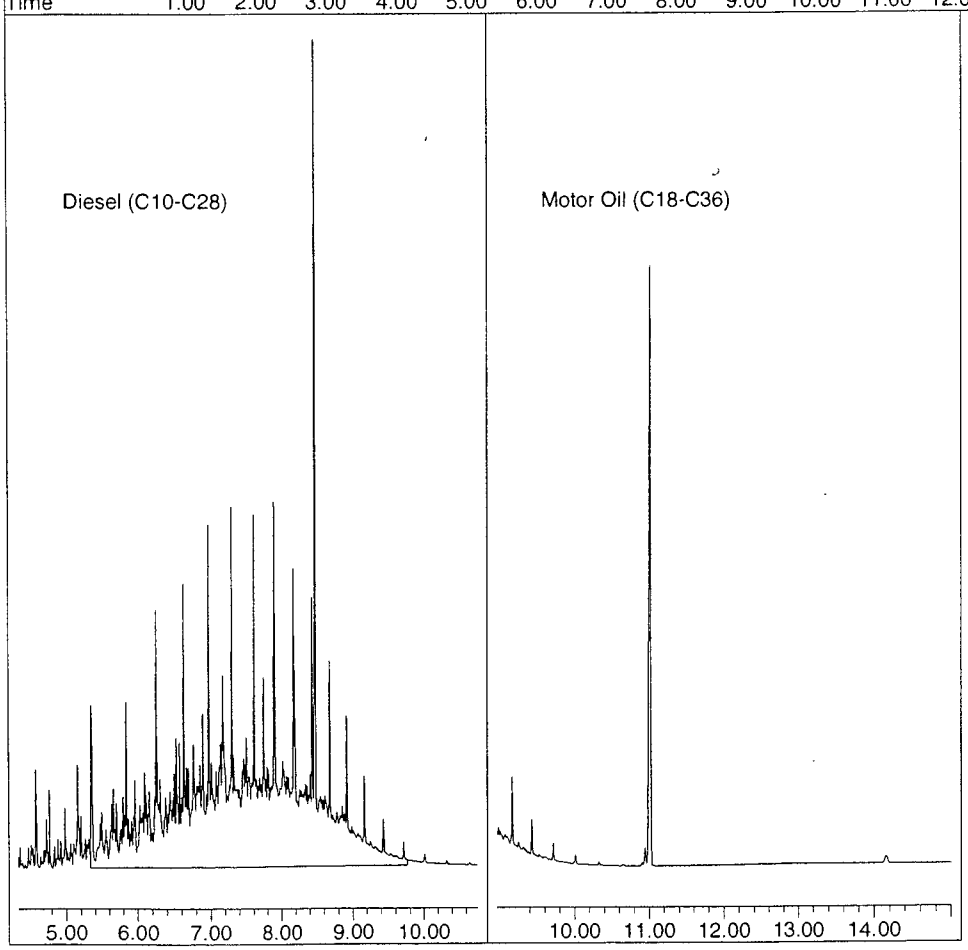
Volume Inj. : 2UL
Signal Phase : DB-5
Signal Info : FID02A

Compound	R.T.	Response	Conc Units
System Monitoring Compounds			
3) SA Ortho-Terphenyl(S)	8.48	71367095	19.152 ppb
Surrogate Spike 30.000		Recovery =	63.84%
4) SA Octacosane(S)	11.01	51943340	19.245 ppb
Surrogate Spike 30.000		Recovery =	64.15%
Target Compounds			
1) HATM Diesel (C10-C28)	7.55	979042605	372.896 ppb

(f)=RT Delta > 1/2 Window (m)=manual int.

Data File: G:\APOLLO\DATA\150121\121005.D
Sample : Diesel 400/1000 1/20/15





Quantitation Report (Not Reviewed)

Data File : G:\APOLLO\DATA\150121\121006.D
Acq On : 1-21-15 17:26:19
Sample : Diesel 600/1000 1/20/15
Misc : Mix(A)
IntFile : events.e
Quant Time: Jan 23 9:31 2015 Quant Results File: CTO121.RES

Vial: 6
Operator: lac
Inst : Apollo
Multiplr: 1.00

Method : G:\APOLLO\DATA\150121\CTO121.M (Chemstation Integrator)
Title : 8015 B&C
Last Update : Mon Jan 26 09:50:19 2015
Response via : Multiple Level Calibration

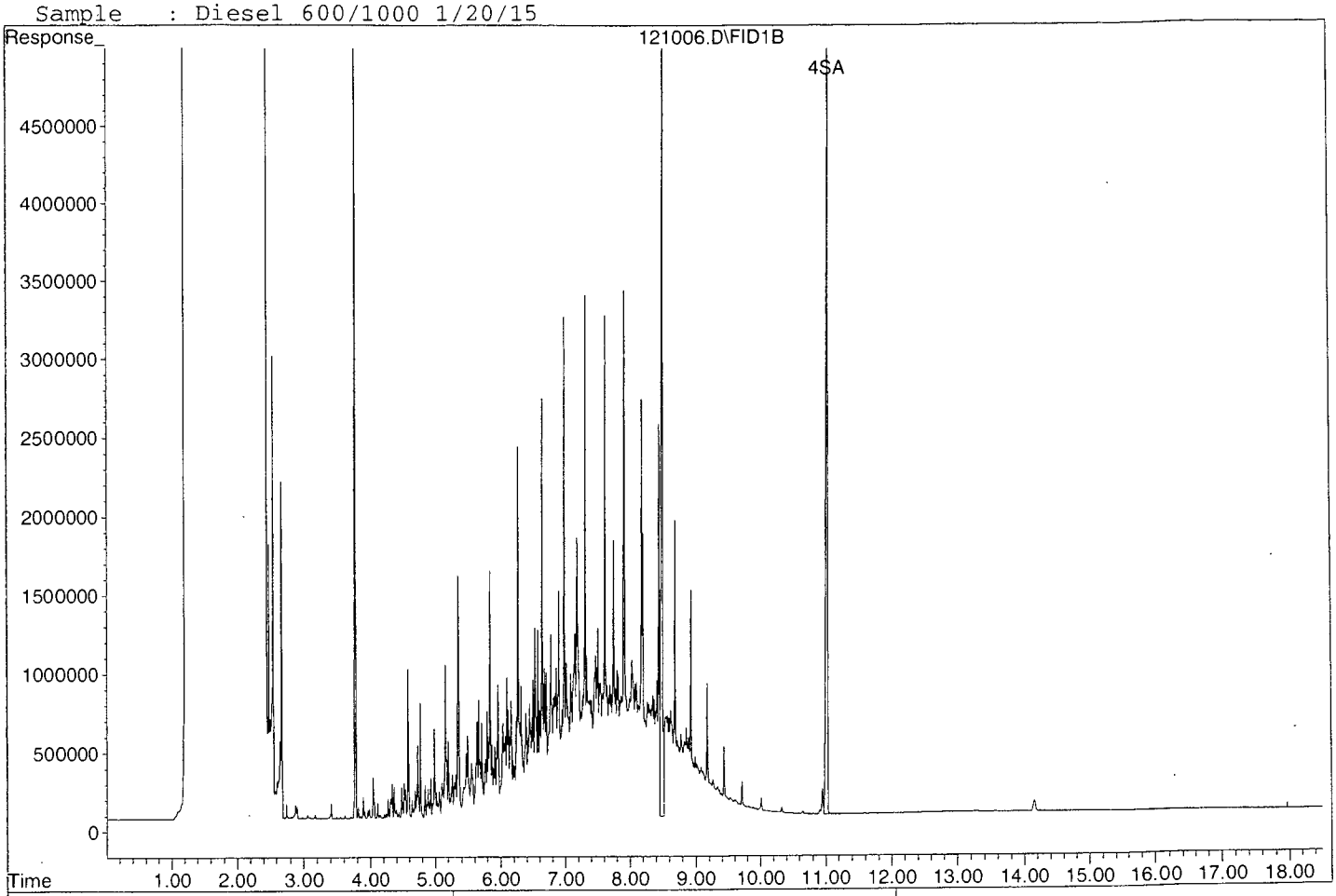
Volume Inj. : 2UL
Signal Phase : DB-5
Signal Info : FID02A

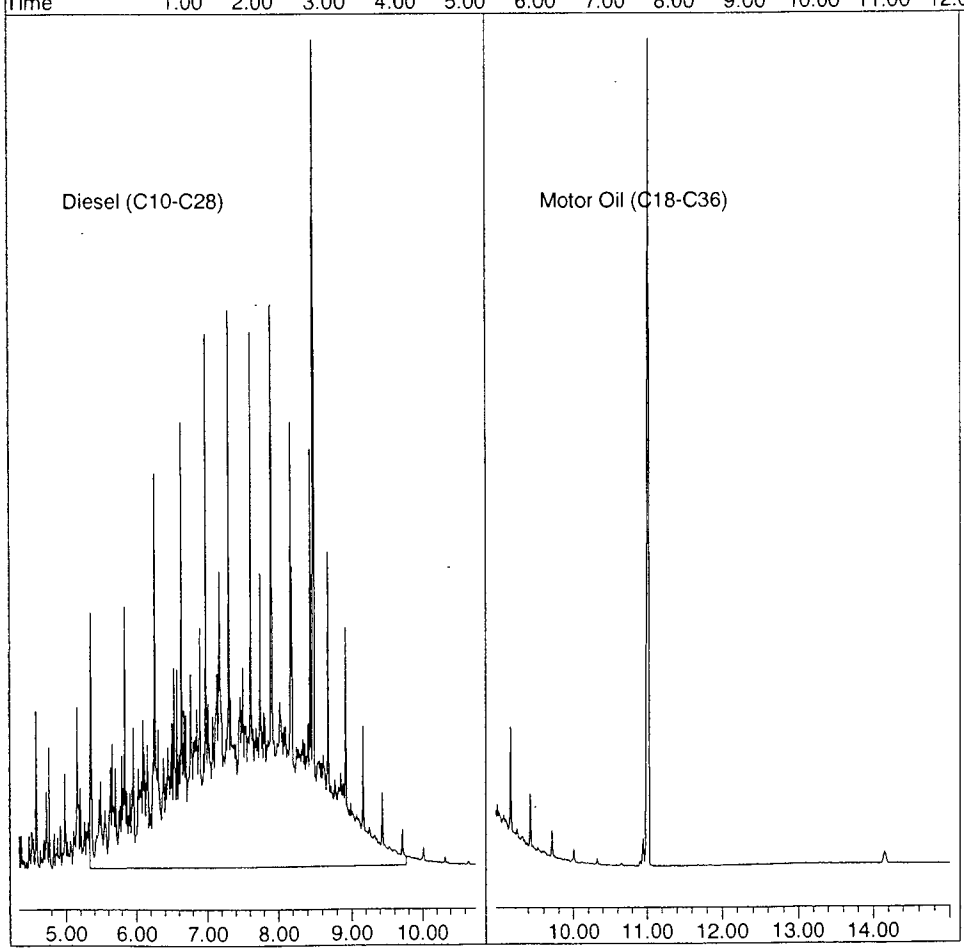
Compound	R.T.	Response	Conc Units
System Monitoring Compounds			
3) SA Ortho-Terphenyl(S)	8.48	111537945	29.933 ppb
Surrogate Spike 30.000		Recovery =	99.78%
4) SA Octacosane(S)	11.01	80256063	29.734 ppb
Surrogate Spike 30.000		Recovery =	99.11%
Target Compounds			
1) HATM Diesel (C10-C28)	7.55	1525158657	580.900 ppb

(f)=RT Delta > 1/2 Window (m)=manual int.

121006.D CTO121.M Fri Jan 30 13:02:34 2015

Data File: G:\APOLLO\DATA\150121\121006.D
Sample : Diesel 600/1000 1/20/15





Quantitation Report (Not Reviewed)

Data File : G:\APOLLO\DATA\150121\121007.D Vial: 7
Acq On : 1-21-15 17:50:18 Operator: lac
Sample : Diesel 800/1000 1/20/15 Inst : Apollo
Misc : Mix(A) Multiplr: 1.00
IntFile : events.e
Quant Time: Jan 23 9:31 2015 Quant Results File: CTO121.RES

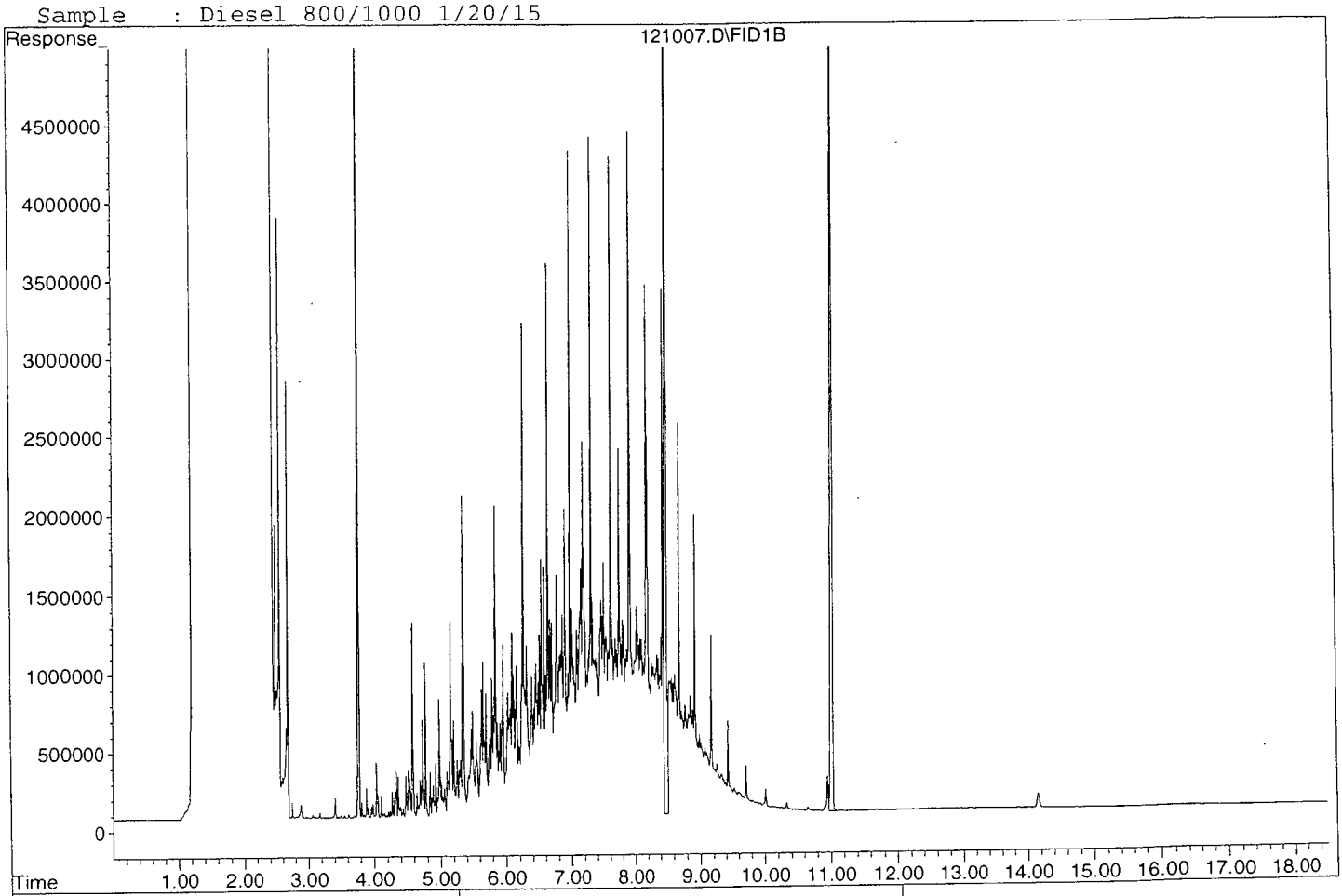
Method : G:\APOLLO\DATA\150121\CTO121.M (Chemstation Integrator)
Title : 8015 B&C
Last Update : Mon Jan 26 09:50:19 2015
Response via : Multiple Level Calibration

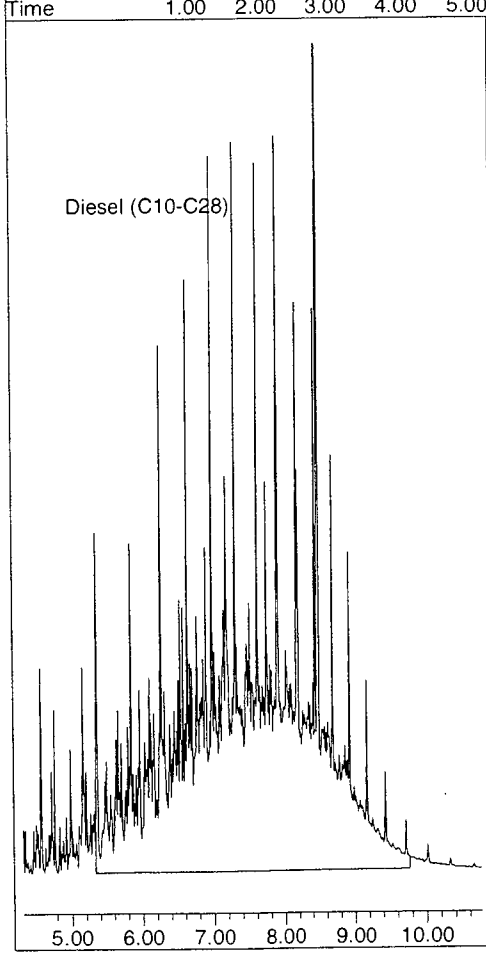
Volume Inj. : 2UL
Signal Phase : DB-5
Signal Info : FID02A

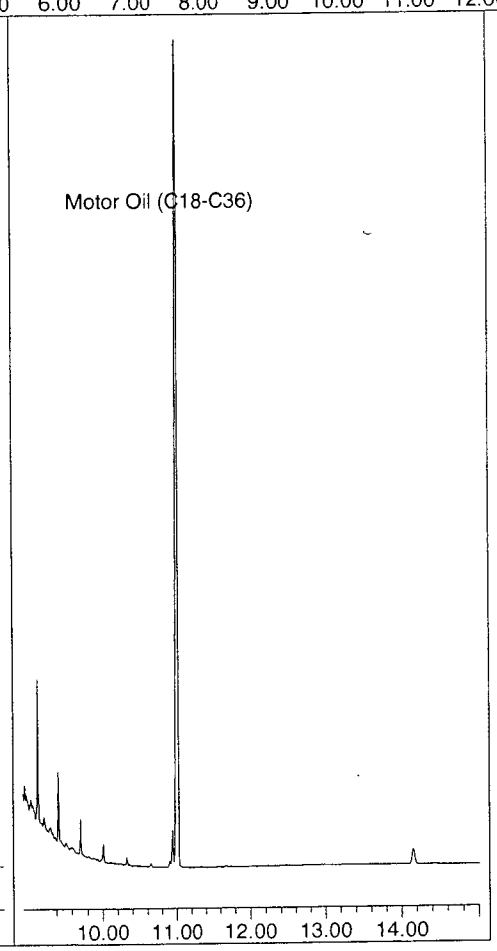
Compound	R.T.	Response	Conc Units
System Monitoring Compounds			
3) SA Ortho-Terphenyl(S)	8.49	150067953	40.273 ppb
Surrogate Spike 30.000		Recovery =	134.24%
4) SA Octacosane(S)	11.02	108458298	40.183 ppb
Surrogate Spike 30.000		Recovery =	133.94%
Target Compounds			
1) HATM Diesel (C10-C28)	7.55	2040314538	777.111 ppb

(f)=RT Delta > 1/2 Window (m)=manual int.

Data File: G:\APOLLO\DATA\150121\121007.D
Sample : Diesel 800/1000 1/20/15







Quantitation Report (Not Reviewed)

Data File : G:\APOLLO\DATA\150121\121008.D
Acq On : 1-21-15 18:14:25
Sample : Diesel 1000/1000 1/20/15
Misc : Mix(A)
IntFile : events.e
Quant Time: Jan 23 9:31 2015 Quant Results File: CTO121.RES

Vial: 8
Operator: lac
Inst : Apollo
Multiplr: 1.00

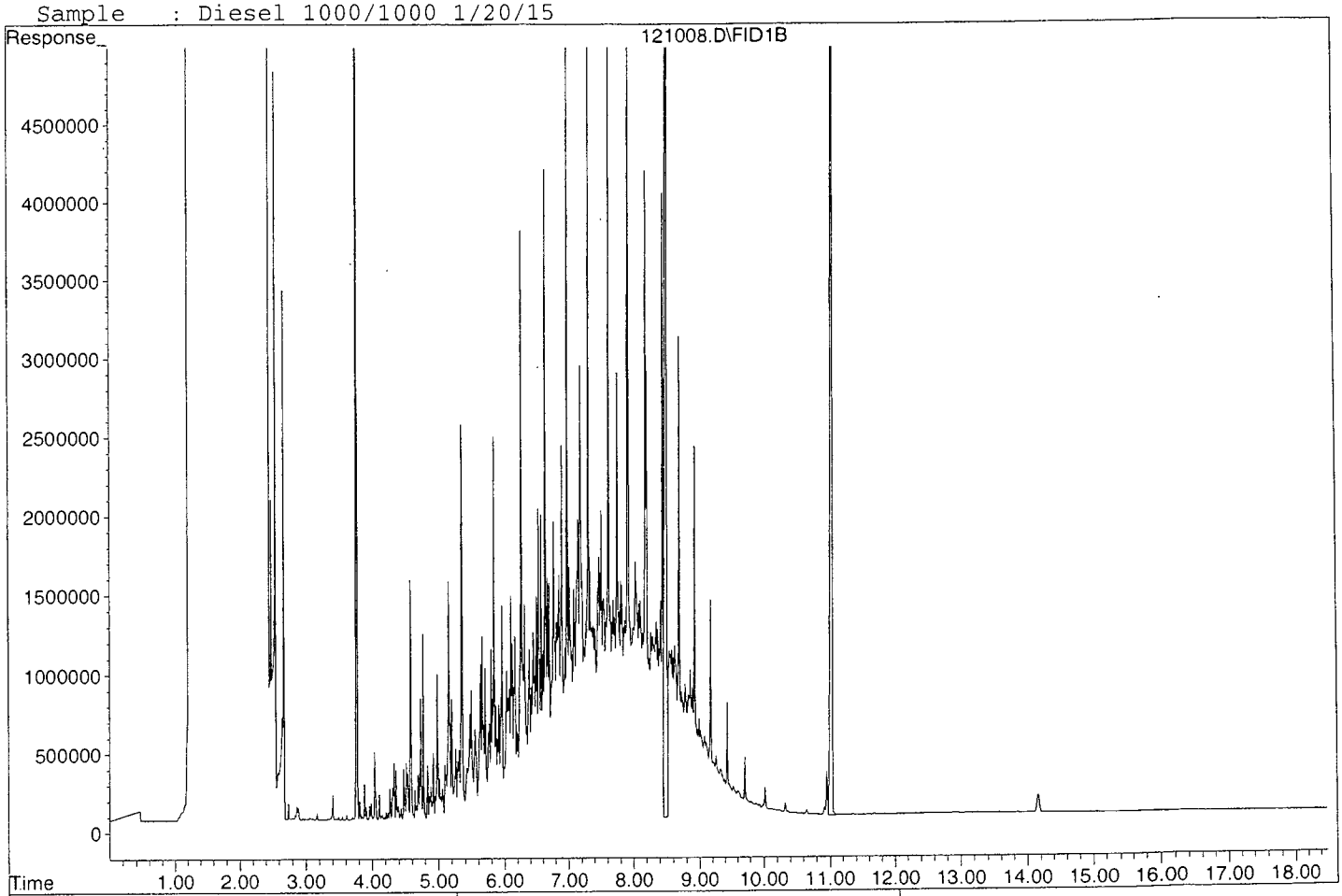
Method : G:\APOLLO\DATA\150121\CTO121.M (Chemstation Integrator)
Title : 8015 B&C
Last Update : Mon Jan 26 09:50:19 2015
Response via : Multiple Level Calibration

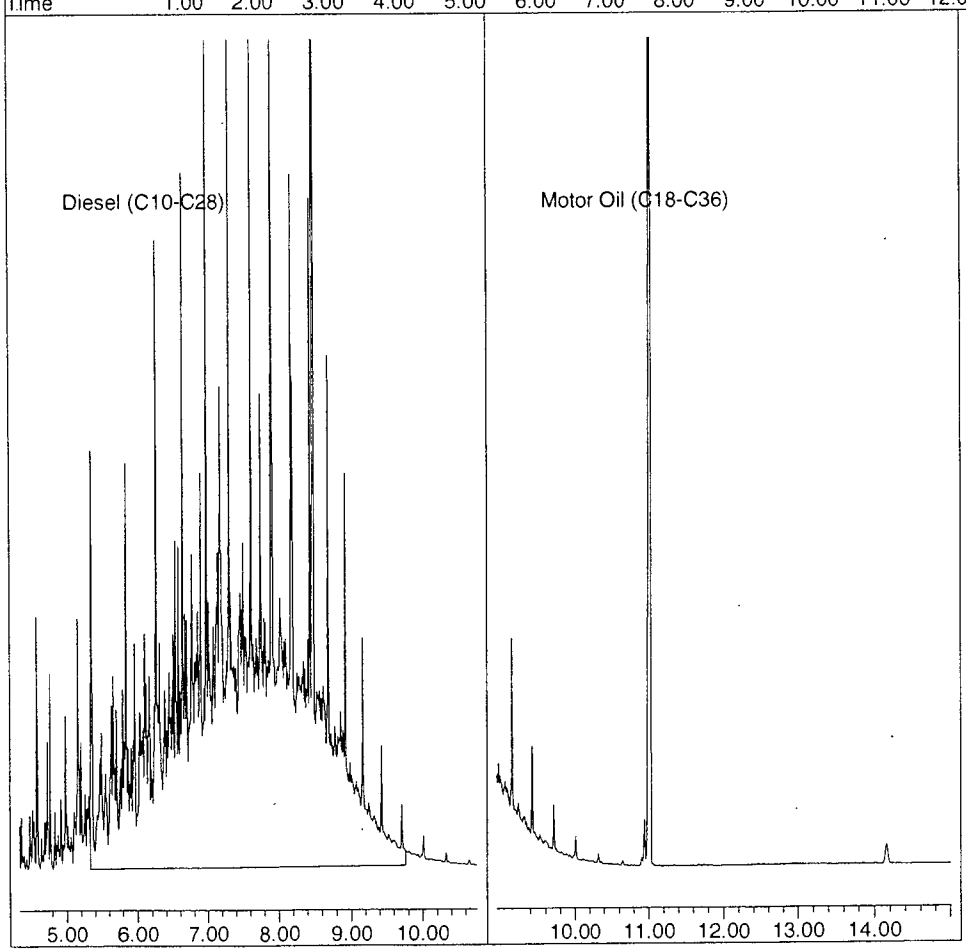
Volume Inj. : 2UL
Signal Phase : DB-5
Signal Info : FID02A

Compound	R.T.	Response	Conc Units
System Monitoring Compounds			
3) SA Ortho-Terphenyl(S)	8.49	183482132	49.240 ppb
Surrogate Spike 30.000		Recovery =	164.13%
4) SA Octacosane(S)	11.02	132903858	49.240 ppb
Surrogate Spike 30.000		Recovery =	164.13%
Target Compounds			
1) HATM Diesel (C10-C28)	7.55	2484639135	946.345 ppb

(f)=RT Delta > 1/2 Window (m)=manual int.

Data File: G:\APOLLO\DATA\150121\121008.D
Sample : Diesel 1000/1000 1/20/15





Quantitation Report (Not Reviewed)

Data File : G:\APOLLO\DATA\150121\121009.D
Acq On : 1-21-15 18:38:23
Sample : MO 10/1000 1/20/15
Misc : Mix(B)
IntFile : events.e
Quant Time: Jan 23 9:29 2015 Quant Results File: CTO121.RES

Vial: 9
Operator: lac
Inst : Apollo
Multiplr: 1.00

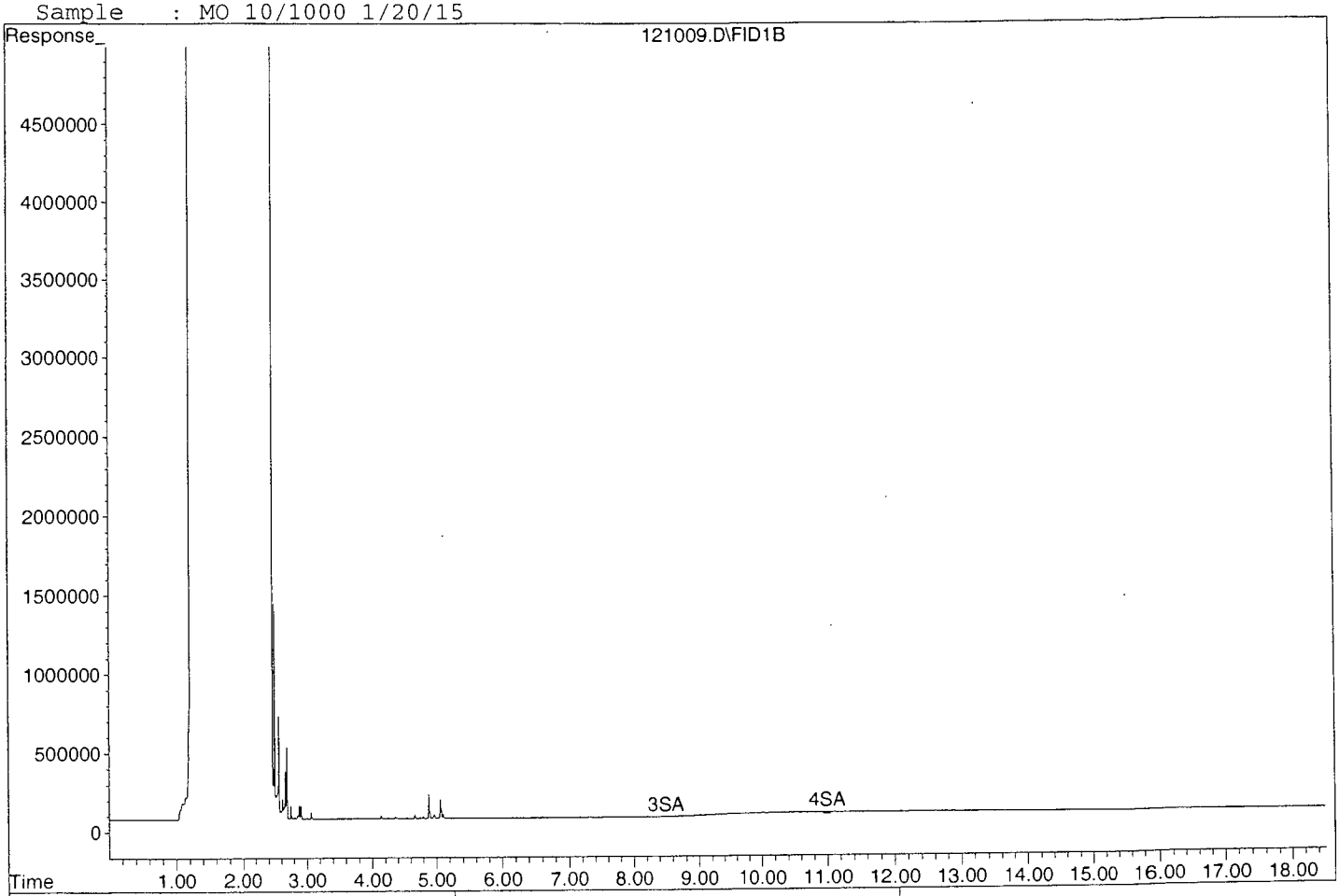
Method : G:\APOLLO\DATA\150121\CTO121.M (Chemstation Integrator)
Title : 8015 B&C
Last Update : Mon Jan 26 09:50:19 2015
Response via : Multiple Level Calibration

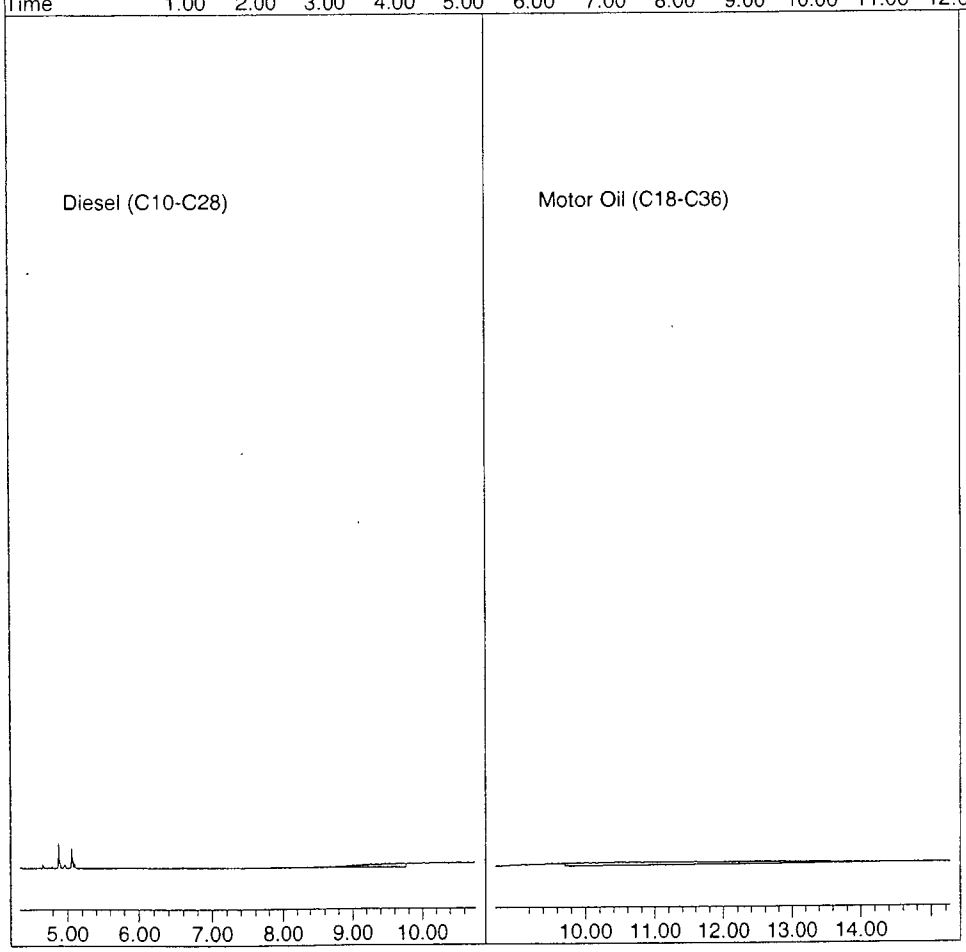
Volume Inj. : 2UL
Signal Phase : DB-5
Signal Info : FID02A

Compound	R.T.	Response	Conc Units
System Monitoring Compounds			
3) SA Ortho-Terphenyl(S)	8.49	21168	0.006 ppb
Surrogate Spike 30.000		Recovery =	0.02%
4) SA Octacosane(S)	10.99	683890	0.253 ppb
Surrogate Spike 30.000		Recovery =	0.84%
Target Compounds			
1) HATM Diesel (C10-C28)	7.55	10767708	4.101 ppb
2) HBTM Motor Oil (C18-C36)	11.99	33020994	16.820 ppb

(f)=RT Delta > 1/2 Window (m)=manual int.

Data File: G:\APOLLO\DATA\150121\121009.D
Sample : MO 10/1000 1/20/15





Quantitation Report (Not Reviewed)

Data File : G:\APOLLO\DATA\150121\121011.D Vial: 11
Acq On : 1-21-15 19:26:22 Operator: lac
Sample : MO 125/1000 1/20/15 Inst : Apollo
Misc : Mix(B) Multiplr: 1.00
IntFile : events.e
Quant Time: Jan 23 9:31 2015 Quant Results File: CTO121.RES

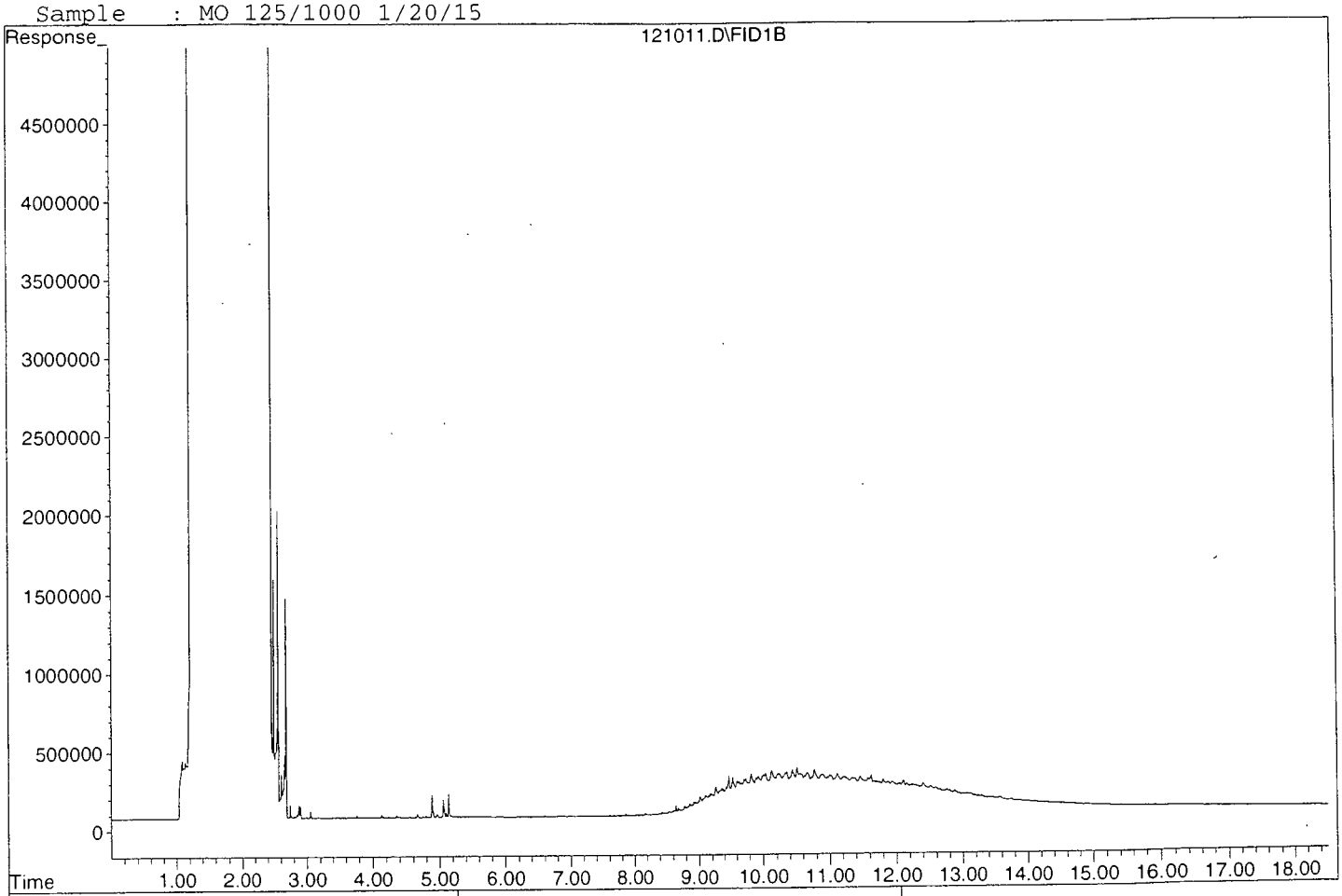
Method : G:\APOLLO\DATA\150121\CTO121.M (Chemstation Integrator)
Title : 8015 B&C
Last Update : Mon Jan 26 09:50:19 2015
Response via : Multiple Level Calibration

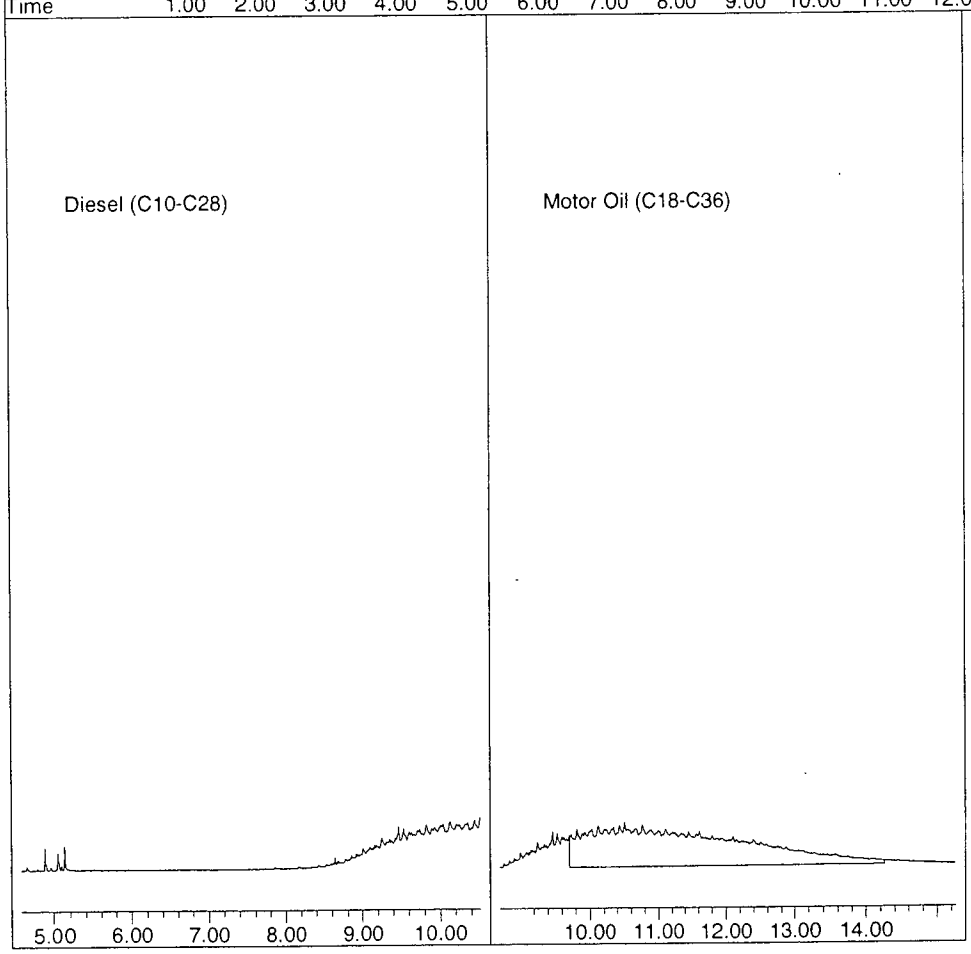
Volume Inj. : 2UL
Signal Phase : DB-5
Signal Info : FID02A

Compound	R.T.	Response	Conc Units
System Monitoring Compounds			
Target Compounds			
2) HBTM Motor Oil (C18-C36)	11.99	367224705	187.059 ppb

Quantitation Report

Data File: G:\APOLLO\DATA\150121\121011.D
Sample : MO 125/1000 1/20/15





Quantitation Report (Not Reviewed)

Data File : G:\APOLLO\DATA\150121\121012.D Vial: 12
Acq On : 1-21-15 19:50:20 Operator: lac
Sample : MO 250/1000 1/20/15 Inst : Apollo
Misc : Mix(B) Multiplr: 1.00
IntFile : events.e
Quant Time: Jan 23 9:31 2015 Quant Results File: CTO121.RES

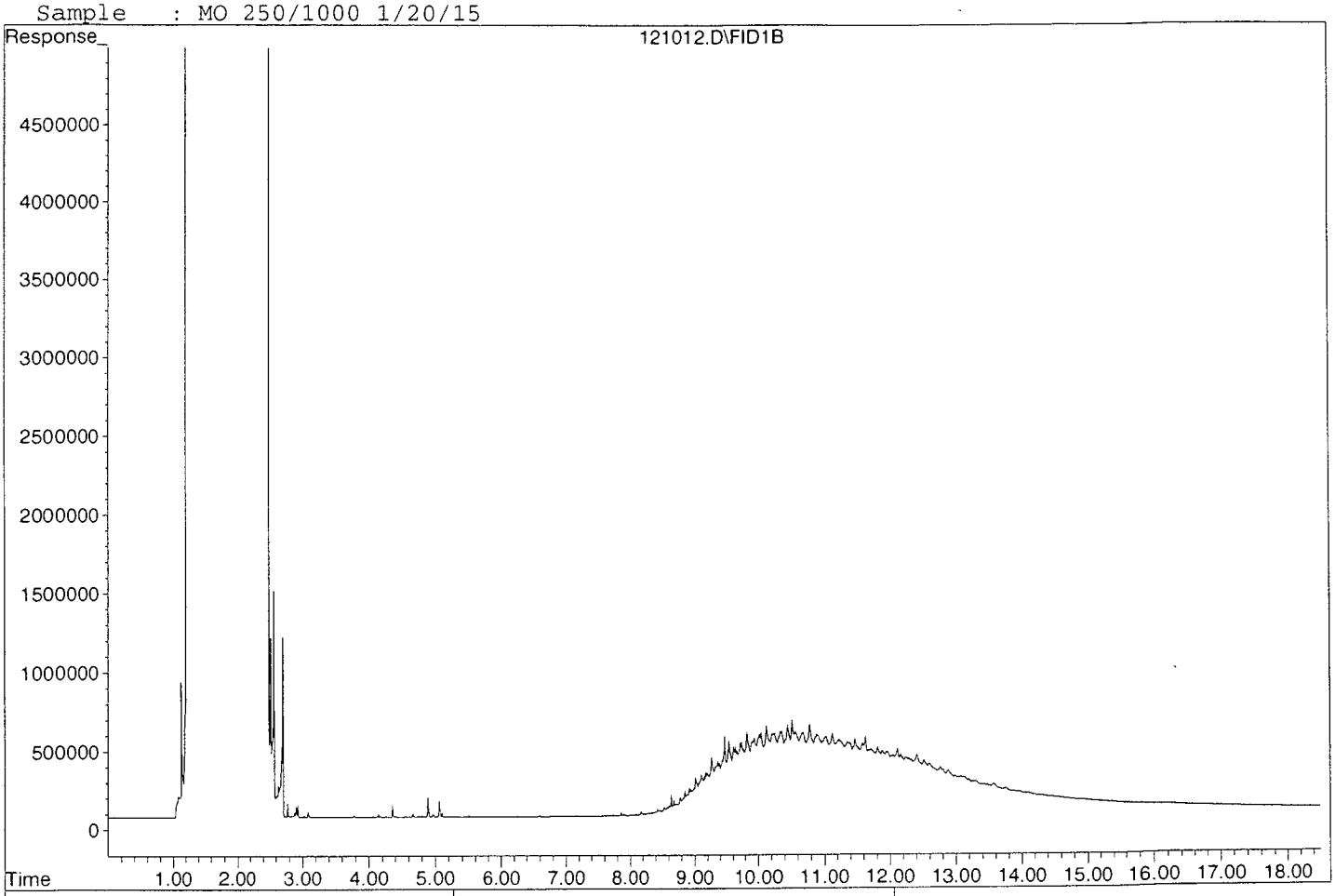
Method : G:\APOLLO\DATA\150121\CTO121.M (Chemstation Integrator)
Title : 8015 B&C
Last Update : Mon Jan 26 09:50:19 2015
Response via : Multiple Level Calibration

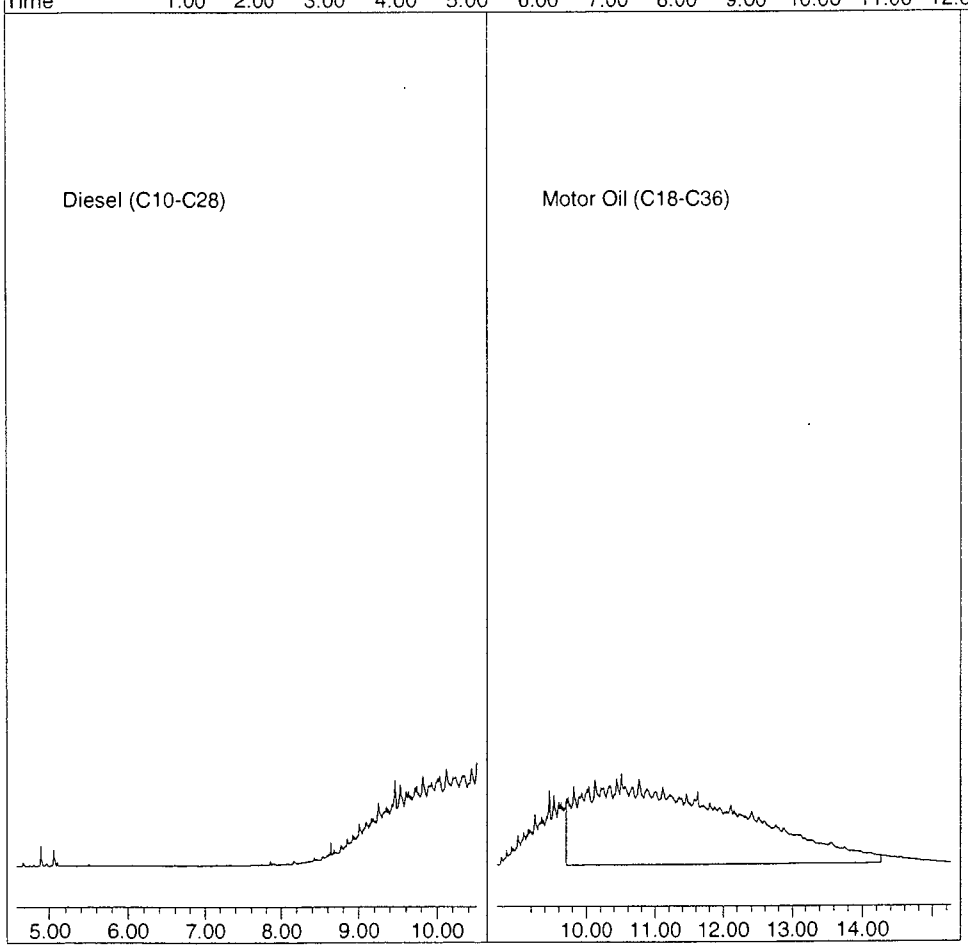
Volume Inj. : 2UL
Signal Phase : DB-5
Signal Info : FID02A

Compound	R.T.	Response	Conc Units
System Monitoring Compounds			
Target Compounds			
2) HBTM Motor Oil (C18-C36)	11.99	743938507	378.952 ppb

(f)=RT Delta > 1/2 Window (m)=manual int.

Data File: G:\APOLLO\DATA\150121\121012.D
Sample : MO 250/1000 1/20/15





Quantitation Report (Not Reviewed)

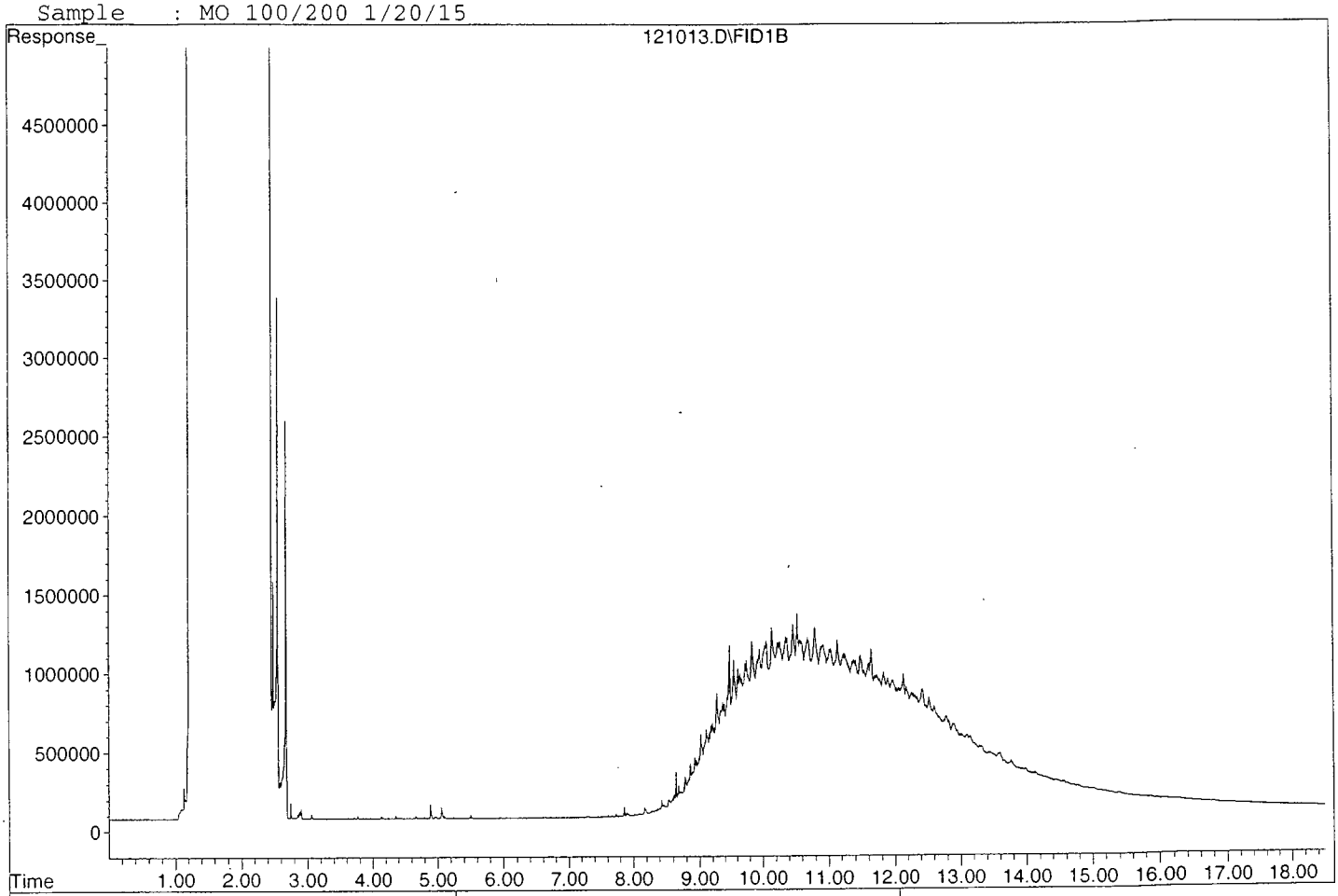
Data File : G:\APOLLO\DATA\150121\121013.D Vial: 13
Acq On : 1-21-15 20:14:20 Operator: lac
Sample : MO 100/200 1/20/15 Inst : Apollo
Misc : Mix(B) Multiplr: 1.00
IntFile : events.e
Quant Time: Jan 23 9:31 2015 Quant Results File: CTO121.RES

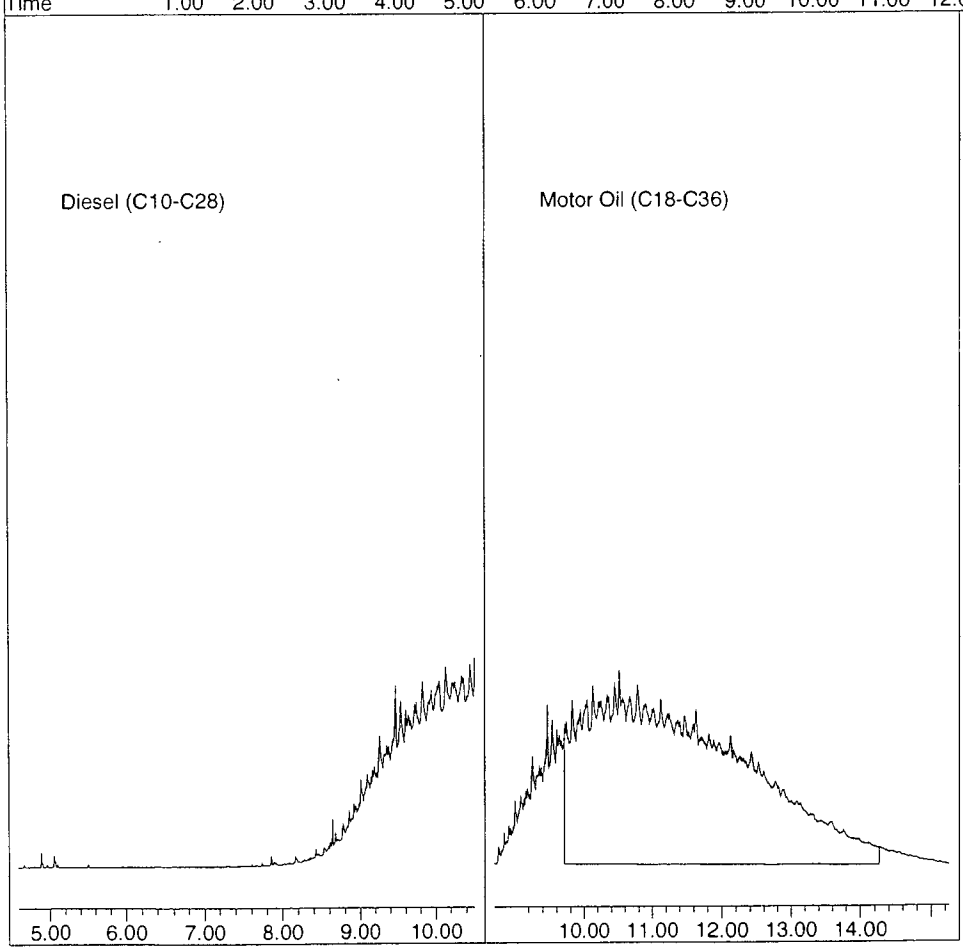
Method : G:\APOLLO\DATA\150121\CTO121.M (Chemstation Integrator)
Title : 8015 B&C
Last Update : Mon Jan 26 09:50:19 2015
Response via : Multiple Level Calibration

Volume Inj. : 2UL
Signal Phase : DB-5
Signal Info : FID02A

Compound	R.T.	Response	Conc Units
System Monitoring Compounds			
Target Compounds			
2) HBTM Motor Oil (C18-C36)	11.99	1582523323	806.116 ppb

Data File: G:\APOLLO\DATA\150121\121013.D
Sample : MO 100/200 1/20/15





Quantitation Report (Not Reviewed)

Data File : G:\APOLLO\DATA\150121\121014.D
Vial: 14
Acq On : 1-21-15 20:38:12
Operator: lac
Sample : MO 75/100 1/20/15
Inst : Apollo
Misc : Mix(B)
Multiplr: 1.00
IntFile : events.e
Quant Time: Jan 23 9:31 2015 Quant Results File: CTO121.RES

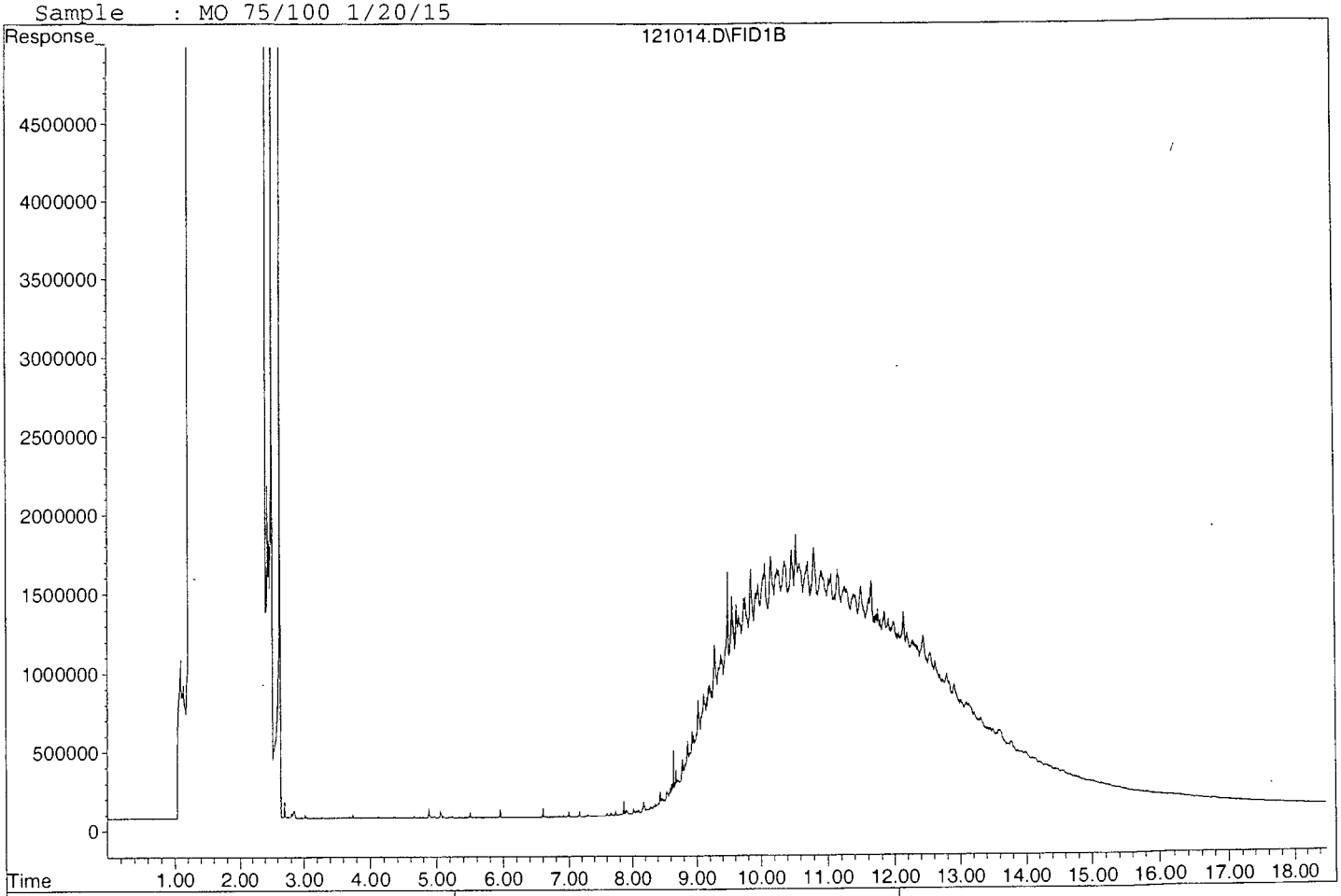
Method : G:\APOLLO\DATA\150121\CTO121.M (Chemstation Integrator)
Title : 8015 B&C
Last Update : Mon Jan 26 09:50:19 2015
Response via : Multiple Level Calibration

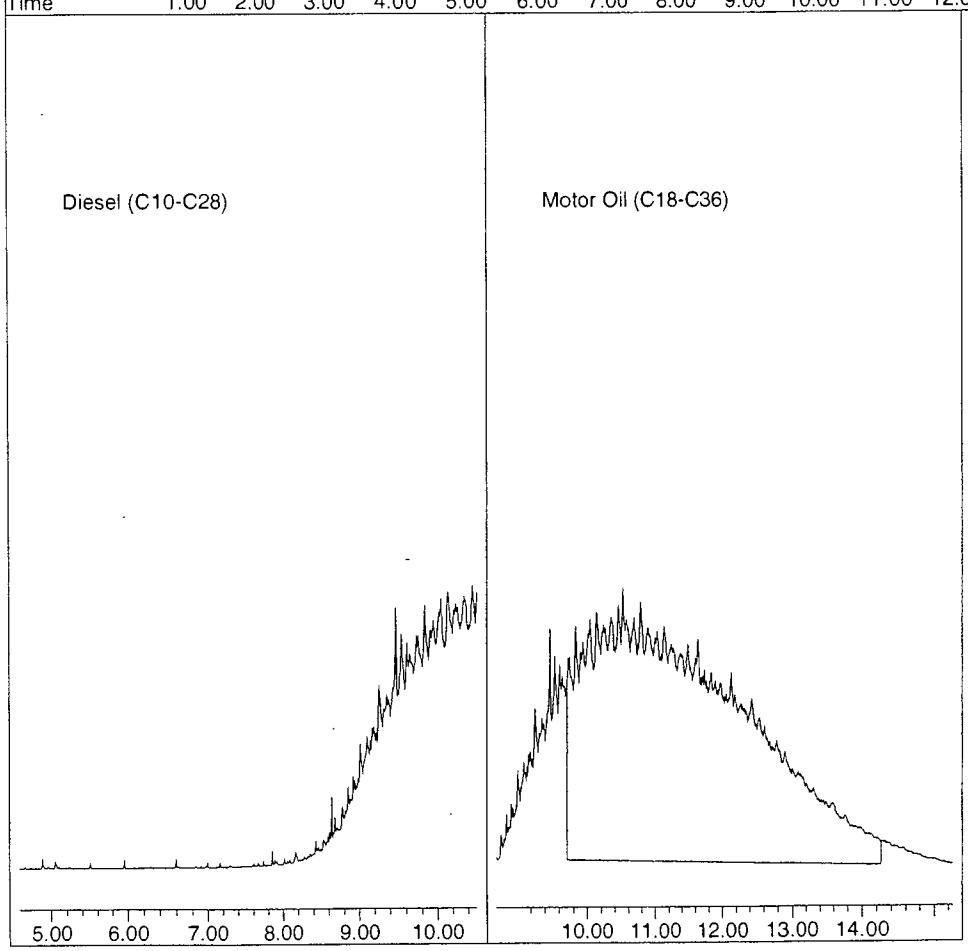
Volume Inj. : 2UL
Signal Phase : DB-5
Signal Info : FID02A

Compound	R.T.	Response	Conc Units
System Monitoring Compounds			
Target Compounds			
2) HBTM Motor Oil (C18-C36)	11.99	2274478670	1158.589 ppb

(f)=RT Delta > 1/2 Window
(m)=manual int.

Data File: G:\APOLLO\DATA\150121\121014.D
Sample : MO 75/100 1/20/15





Quantitation Report (Not Reviewed)

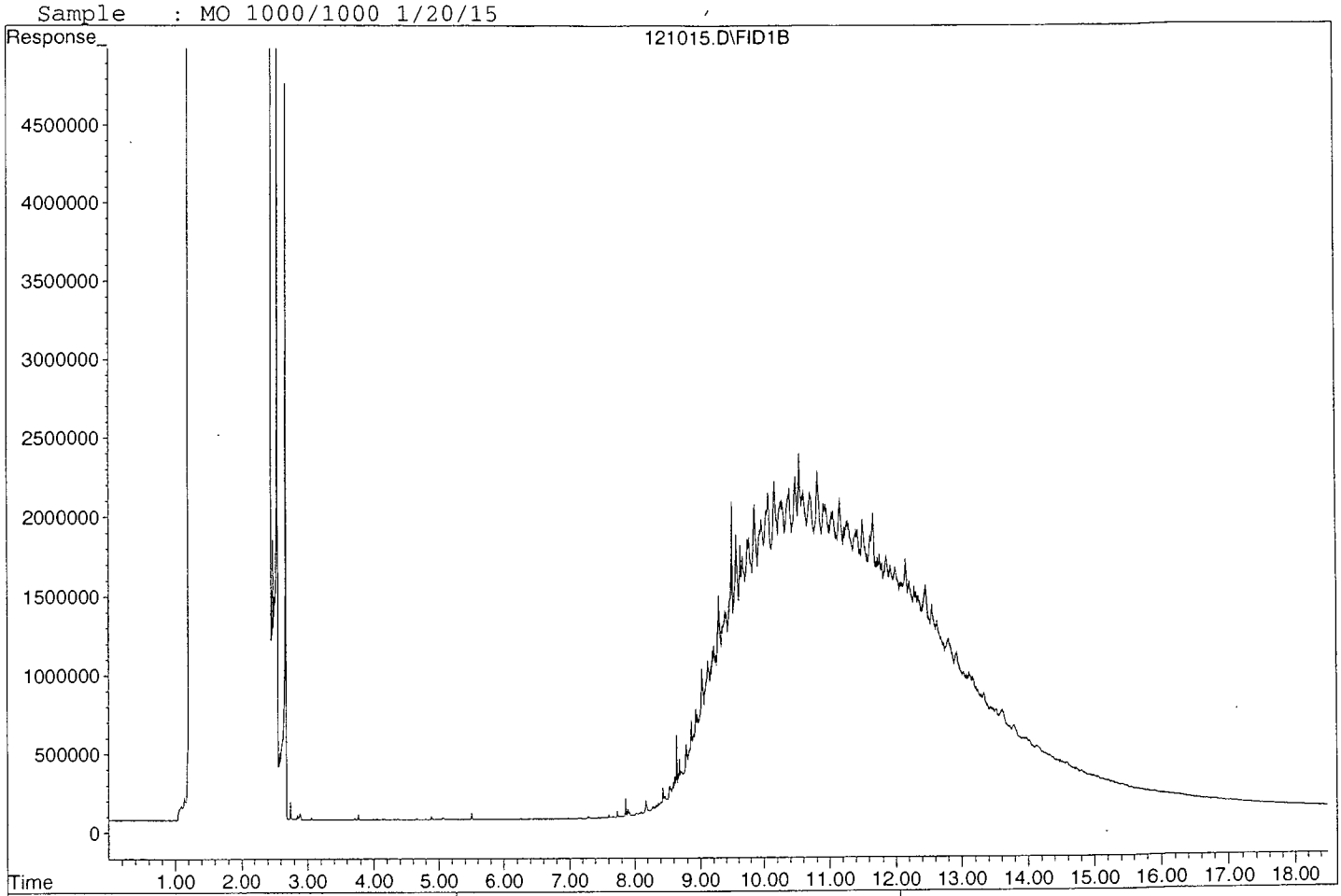
Data File : G:\APOLLO\DATA\150121\121015.D Vial: 15
Acq On : 1-21-15 21:02:11 Operator: lac
Sample : MO 1000/1000 1/20/15 Inst : Apollo
Misc : Mix(B) Multiplr: 1.00
IntFile : events.e
Quant Time: Jan 23 9:31 2015 Quant Results File: CTO121.RES

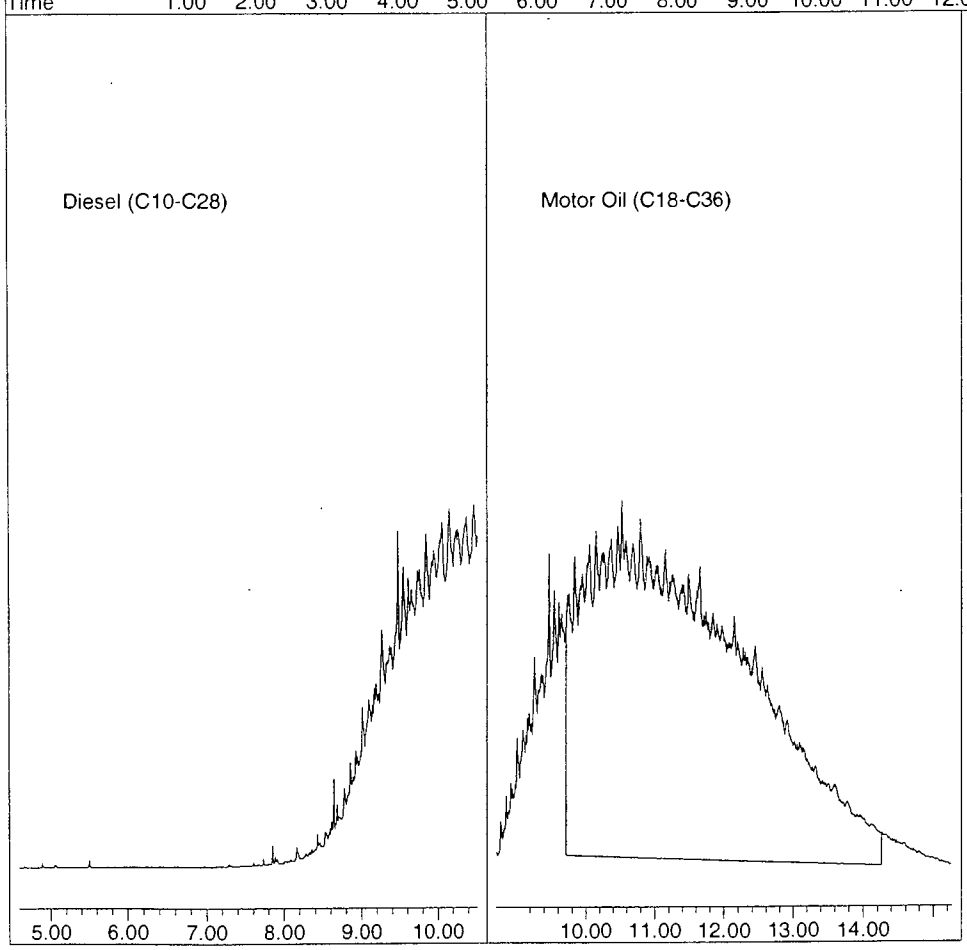
Method : G:\APOLLO\DATA\150121\CTO121.M (Chemstation Integrator)
Title : 8015 B&C
Last Update : Mon Jan 26 09:50:19 2015
Response via : Multiple Level Calibration

Volume Inj. : 2UL
Signal Phase : DB-5
Signal Info : FID02A

Compound	R.T.	Response	Conc	Units
System Monitoring Compounds				
Target Compounds				
2) HBTM Motor Oil (C18-C36)	11.99	2995339368	1525.786	ppb

Data File: G:\APOLLO\DATA\150121\121015.D
Sample : MO 1000/1000 1/20/15





TPH Extractables
CTO121

Form 7

Second Source Calibration

Lab Name: APPL, Inc.
Case No:
Matrix:

SDG No: 75798
Date Analyzed: 1/21/2015
Instrument: Apollo
Initial Cal. Date: 1/21/2015
Data File: 121016,17.D

		Compound	MEAN	CCRF	%D		%Drift
1	HATM	Diesel (C10-C24)	1257630	1327680	5.6	HATM	
2	HBTM	Motor Oil (C24-C36)	749936	765734	2.1	HBTM	
3							
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40							
		Average			3.9		

Quantitation Report (QT Reviewed)

Data File : G:\APOLLO\DATA\150121\121016.D
Acq On : 1-21-15 21:25:59
Sample : Diesel 2ND SRC 1/21/15
Misc : Mix(A)
IntFile : events.e
Quant Time: Jan 30 13:01 2015 Quant Results File: CTO121.RES

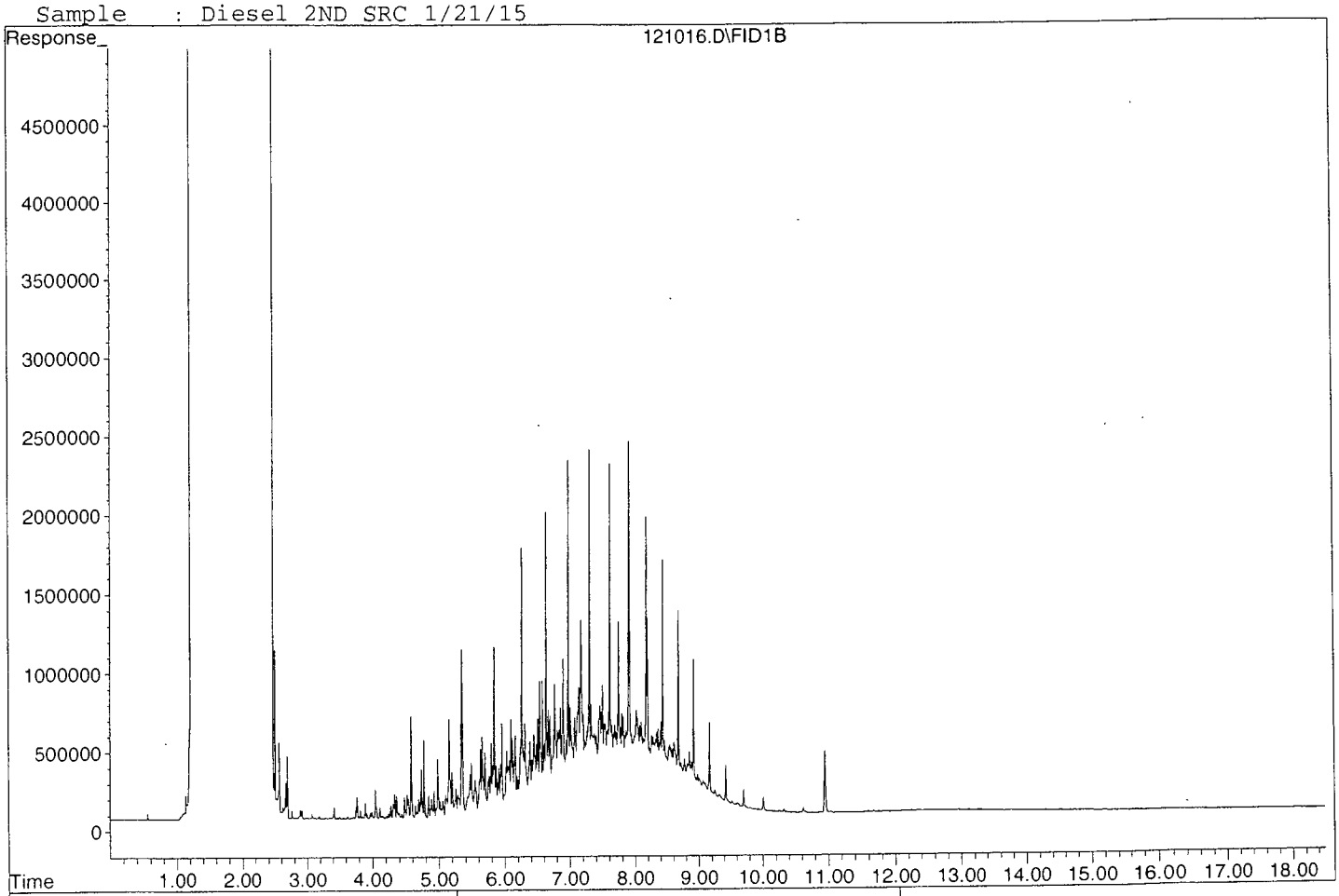
Vial: 16
Operator: lac
Inst : Apollo
Multiplr: 1.00

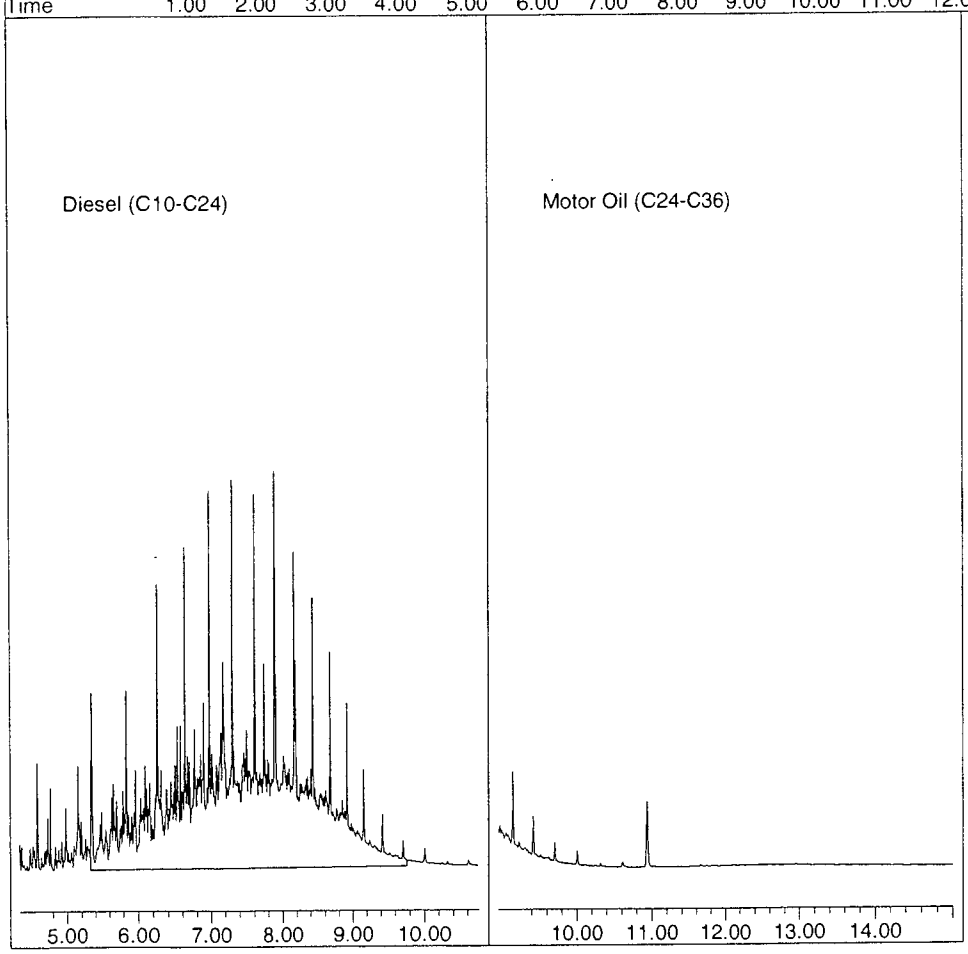
Method : G:\APOLLO\DATA\150121\CTO121.M (Chemstation Integrator)
Title : 8015 B&C
Last Update : Mon Jan 26 09:50:19 2015
Response via : Multiple Level Calibration

Volume Inj. : 2UL
Signal Phase : DB-5
Signal Info : FID02A

Compound	R.T.	Response	Conc Units
System Monitoring Compounds			
Target Compounds			
1) HATM Diesel (C10-C24)	7.55	1062146922	422.282 ppb

Data File: G:\APOLLO\DATA\150121\121016.D
Sample : Diesel 2ND SRC 1/21/15





Quantitation Report (Not Reviewed)

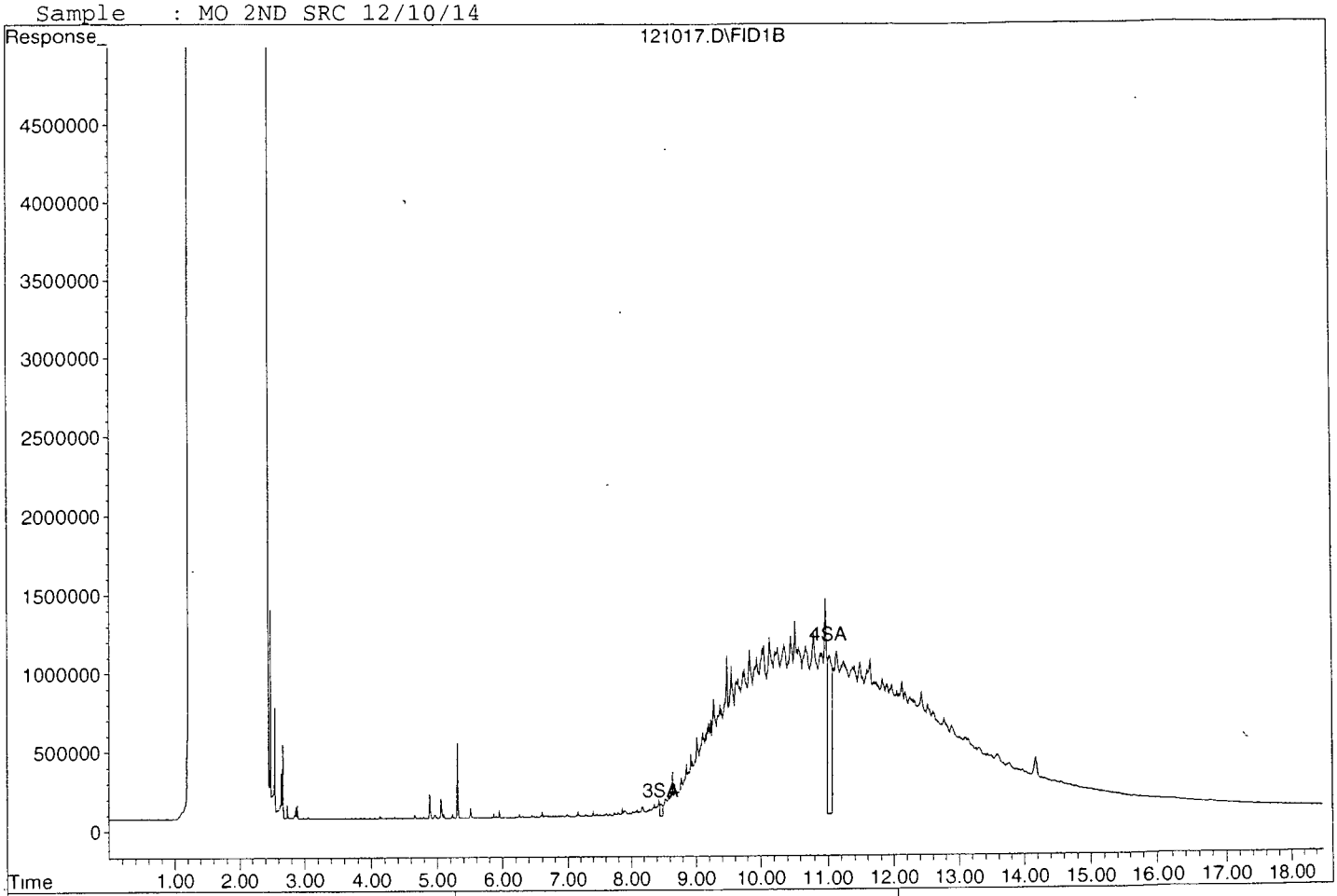
Data File : G:\APOLLO\DATA\150121\121017.D Vial: 17
Acq On : 1-21-15 21:49:54 Operator: lac
Sample : MO 2ND SRC 12/10/14 Inst : Apollo
Misc : Mix(B) Multiplr: 1.00
IntFile : events.e
Quant Time: Jan 23 9:42 2015 Quant Results File: CTO121.RES

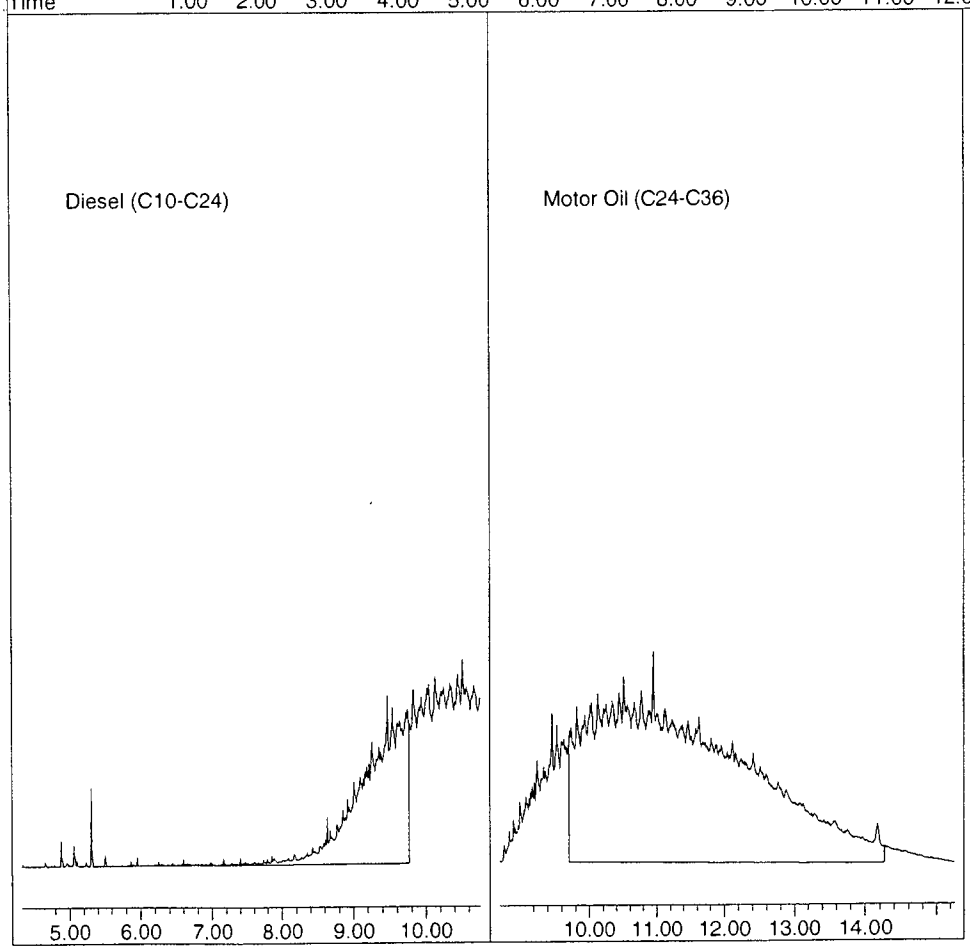
Method : G:\APOLLO\DATA\150121\CTO121.M (Chemstation Integrator)
Title : 8015 B&C
Last Update : Mon Jan 26 09:50:19 2015
Response via : Multiple Level Calibration

Volume Inj. : 2UL
Signal Phase : DB-5
Signal Info : FID02A

Compound	R.T.	Response	Conc Units
System Monitoring Compounds			
3) SA Ortho-Terphenyl(S)	8.46	2218619	0.595 ppb
Surrogate Spike 30.000		Recovery =	1.98%
4) SA Octacosane(S)	11.01	44533073	16.499 ppb
Surrogate Spike 30.000		Recovery =	55.00%
Target Compounds			
1) HATM Diesel (C10-C24)	7.55	390048035	155.073 ppb
2) HBTM Motor Oil (C24-C36)	11.99	1531468834	1021.067 ppb

Data File: G:\APOLLO\DATA\150121\121017.D
Sample : MO 2ND SRC 12/10/14





TPH Extractables
CTO121

Form 7

Continuing Calibration

Lab Name: APPL, Inc.
Case No:
Matrix:

SDG No: 75798
Date Analyzed: 3/18/2015
Instrument: Apollo
Initial Cal. Date: 1/21/2015
Data File: 318002,03.D

		Compound	MEAN	CCRF	%D		%Drift
1	HATM	Diesel (C10-C24)	1257630	1302090	3.5	HATM	
2	HBTM	Motor Oil (C24-C36)	749936	775607	3.4	HBTM	
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39							
40							
		Average			3.5		

Quantitation Report (Not Reviewed)

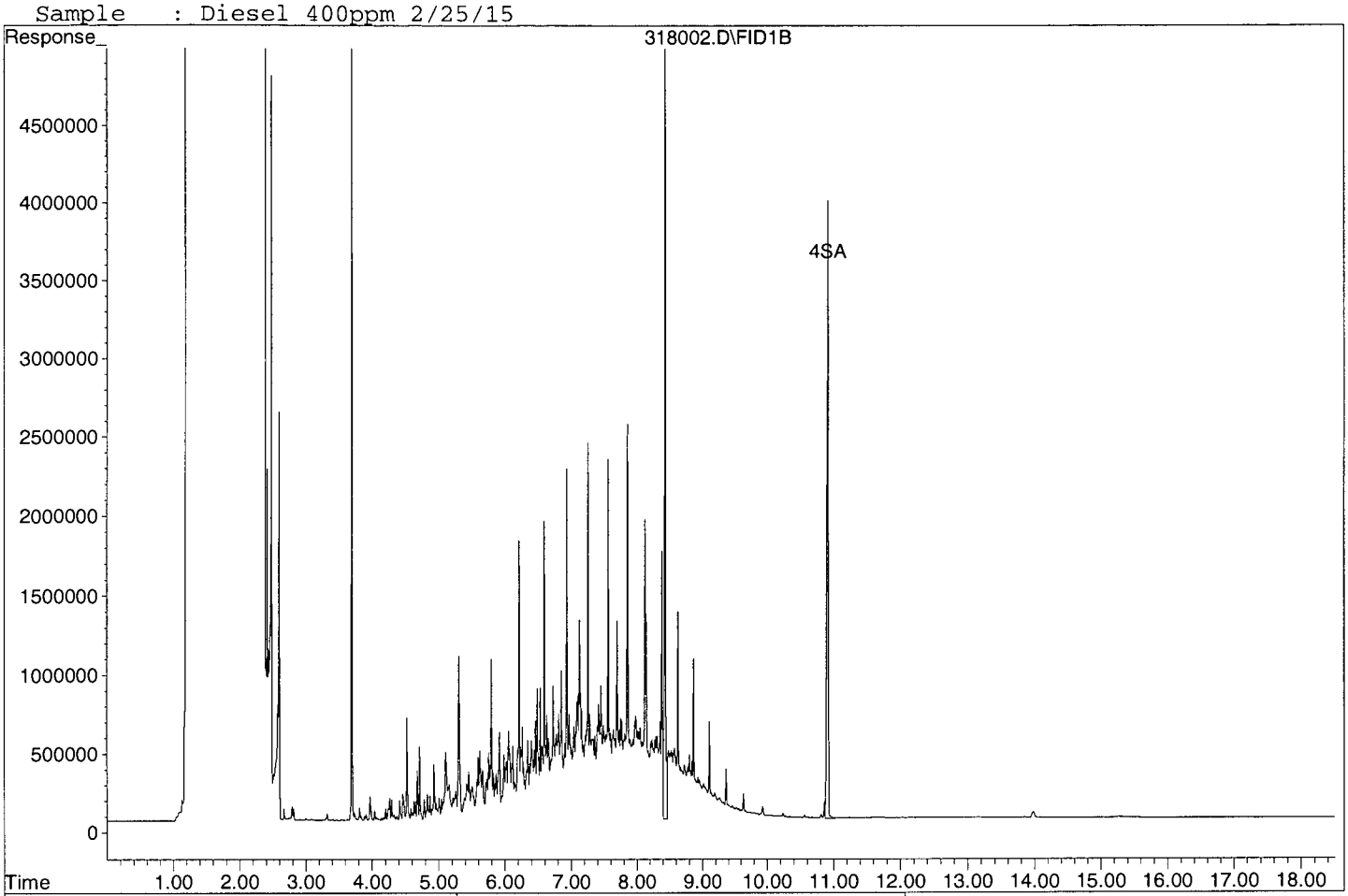
Data File : G:\APOLLO\DATA\150318\318002.D Vial: 2
Acq On : 3-18-15 10:35:45 Operator: lac
Sample : Diesel 400ppm 2/25/15 Inst : Apollo
Misc : Mix(A) Multiplr: 1.00
IntFile : events.e
Quant Time: Mar 23 11:40 2015 Quant Results File: CTO121.RES

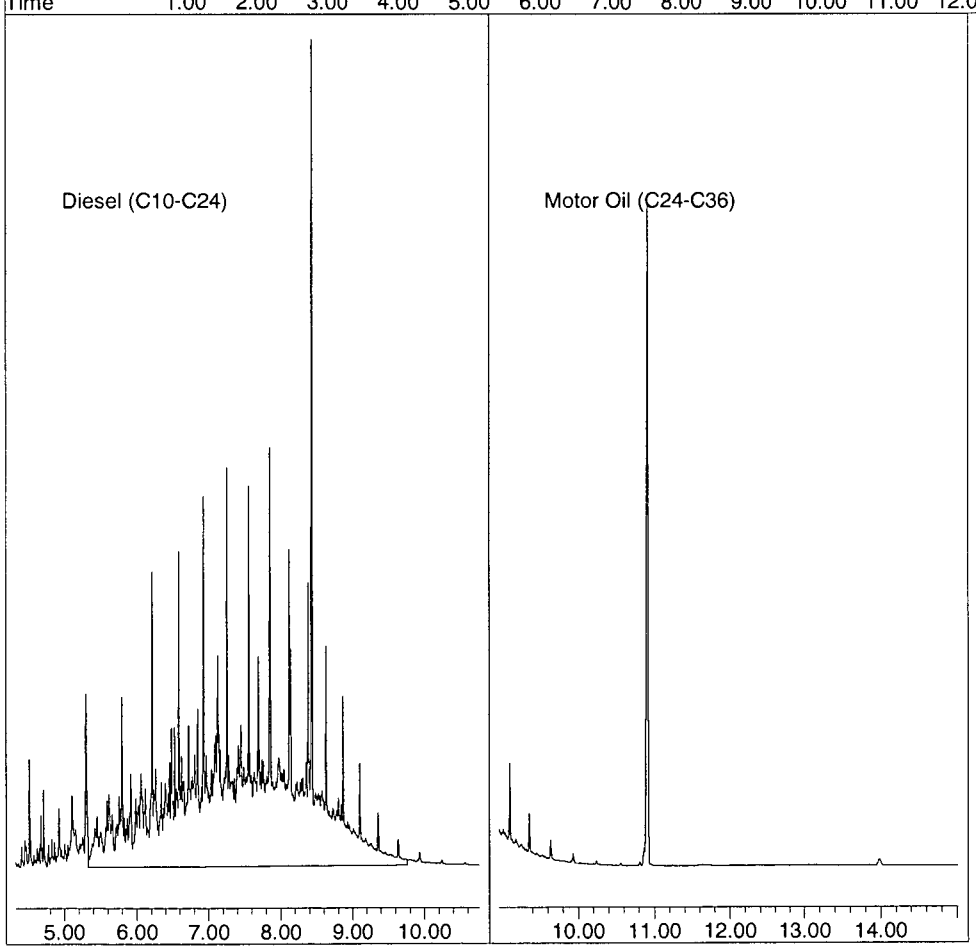
Method : G:\APOLLO\DATA\150311\CTO121.M (Chemstation Integrator)
Title : 8015 B&C
Last Update : Thu Feb 26 09:47:30 2015
Response via : Multiple Level Calibration

Volume Inj. : 2UL
Signal Phase : DB-5
Signal Info : FID02A

Compound	R.T.	Response	Conc Units
System Monitoring Compounds			
3) SA Ortho-Terphenyl(S)	8.43	75522725	20.268 ppb
Surrogate Spike 30.000		Recovery =	67.56%
4) SA Octacosane(S)	10.91	57067285	21.143 ppb
Surrogate Spike 30.000		Recovery =	70.48%
Target Compounds			
1) HATM Diesel (C10-C24)	7.55	1041673672	414.142 ppb

Data File: G:\APOLLO\DATA\150318\318002.D
Sample : Diesel 400ppm 2/25/15





Quantitation Report (Not Reviewed)

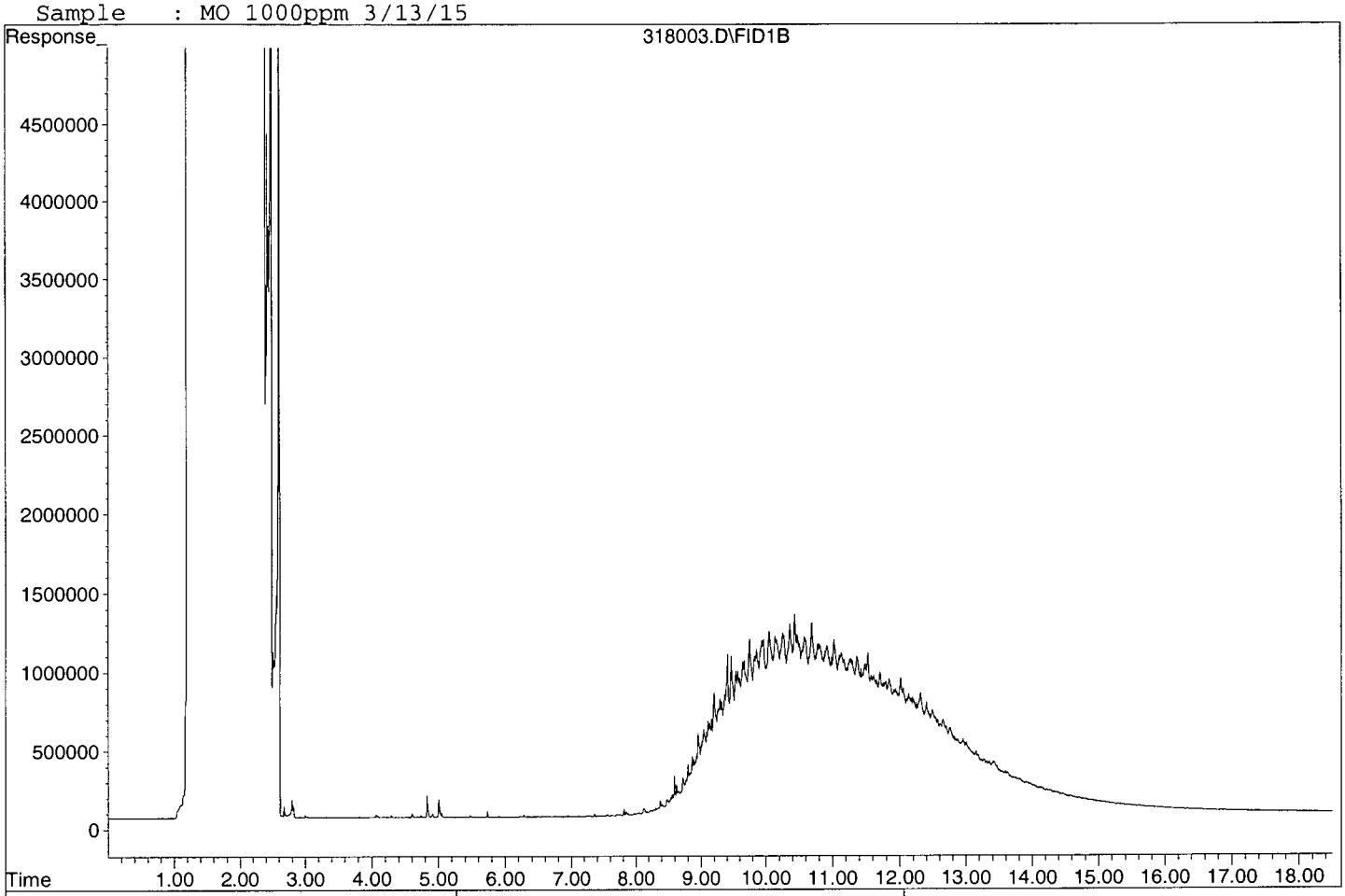
Data File : G:\APOLLO\DATA\150318\318003.D Vial: 3
Acq On : 3-18-15 11:00:41 Operator: lac
Sample : MO 1000ppm 3/13/15 Inst : Apollo
Misc : Mix(B) Multiplr: 1.00
IntFile : events.e
Quant Time: Mar 23 11:40 2015 Quant Results File: CTO121.RES

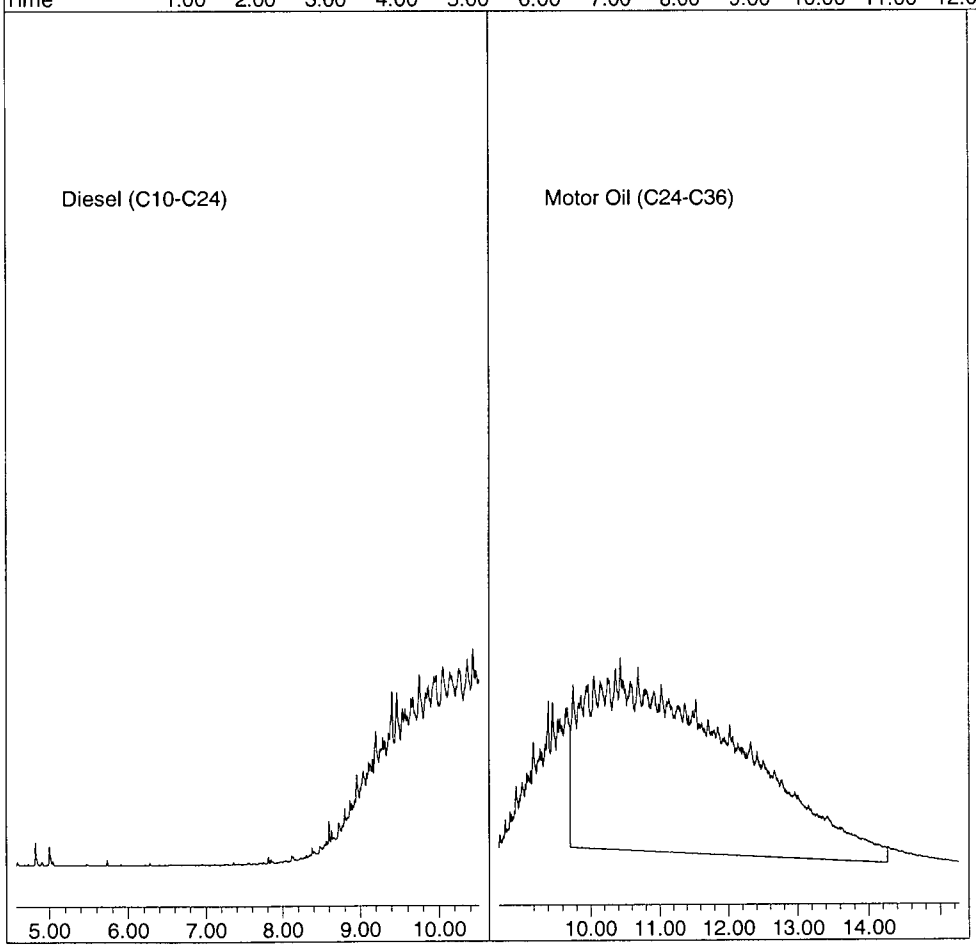
Method : G:\APOLLO\DATA\150311\CTO121.M (Chemstation Integrator)
Title : 8015 B&C
Last Update : Thu Feb 26 09:47:30 2015
Response via : Multiple Level Calibration

Volume Inj. : 2UL
Signal Phase : DB-5
Signal Info : FID02A

Compound	R.T.	Response	Conc	Units
System Monitoring Compounds				
Target Compounds				
2) HBTM Motor Oil (C24-C36)	11.99	1551213931	1034.231	ppb

Data File: G:\APOLLO\DATA\150318\318003.D
Sample : MO 1000ppm 3/13/15





TPH Extractables
CTO121

Form 7

Continuing Calibration

Lab Name: APPL, Inc.
Case No:
Matrix:

SDG No: 75798
Date Analyzed: 3/18/2015
Instrument: Apollo
Initial Cal. Date: 1/21/2015
Data File: 318021,22.D

		Compound	MEAN	CCRF	%D		%Drift
1	HATM	Diesel (C10-C24)	1257630	1372650	9.1	HATM	
2	HBTM	Motor Oil (C24-C36)	749936	727474	3.0	HBTM	
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		Average			6.1		

Quantitation Report (Not Reviewed)

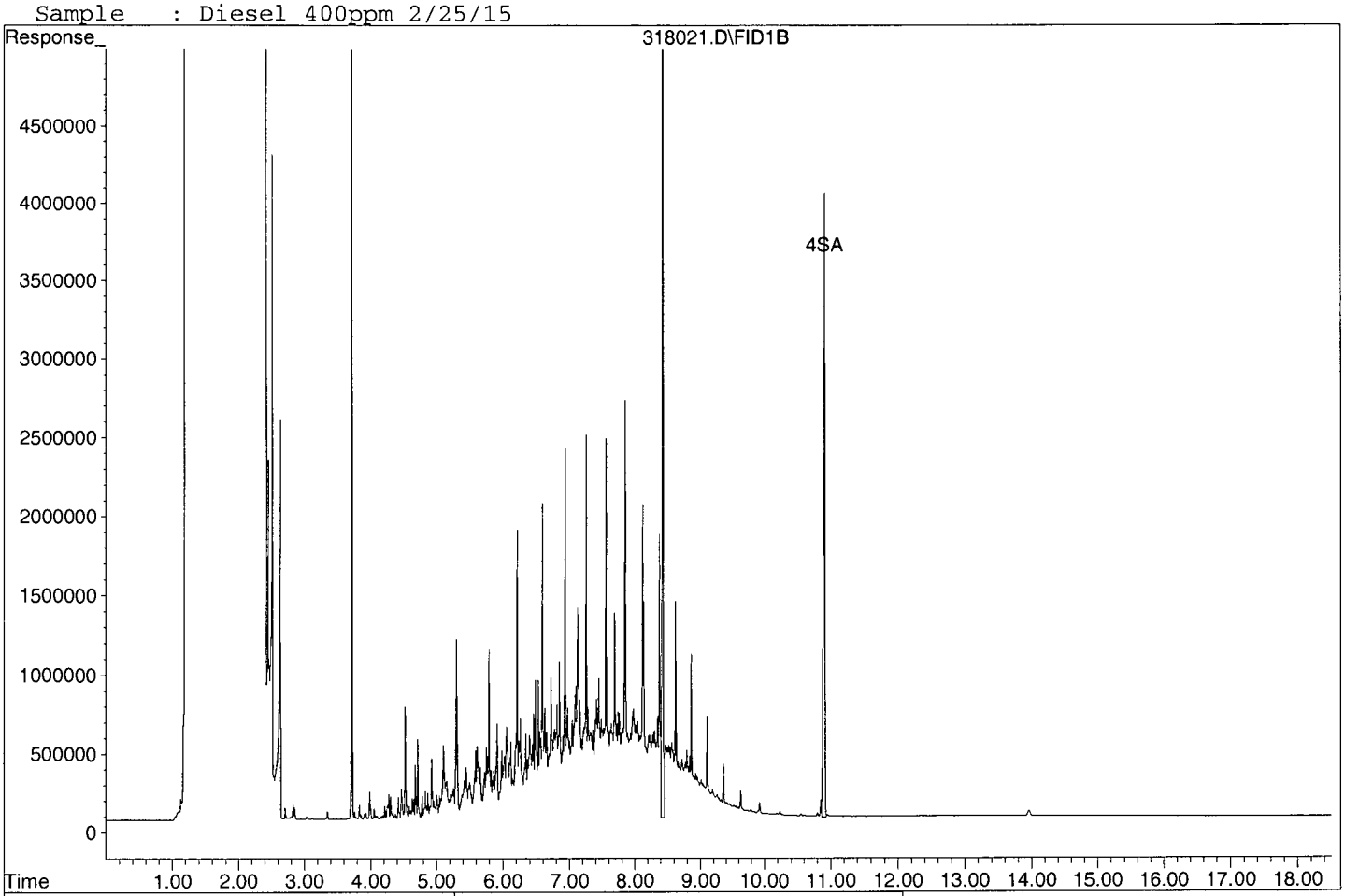
Data File : G:\APOLLO\DATA\150318\318021.D Vial: 21
Acq On : 3-18-15 18:30:33 Operator: lac
Sample : Diesel 400ppm 2/25/15 Inst : Apollo
Misc : Mix(A) Multiplr: 1.00
IntFile : events.e
Quant Time: Mar 23 11:43 2015 Quant Results File: CTO121.RES

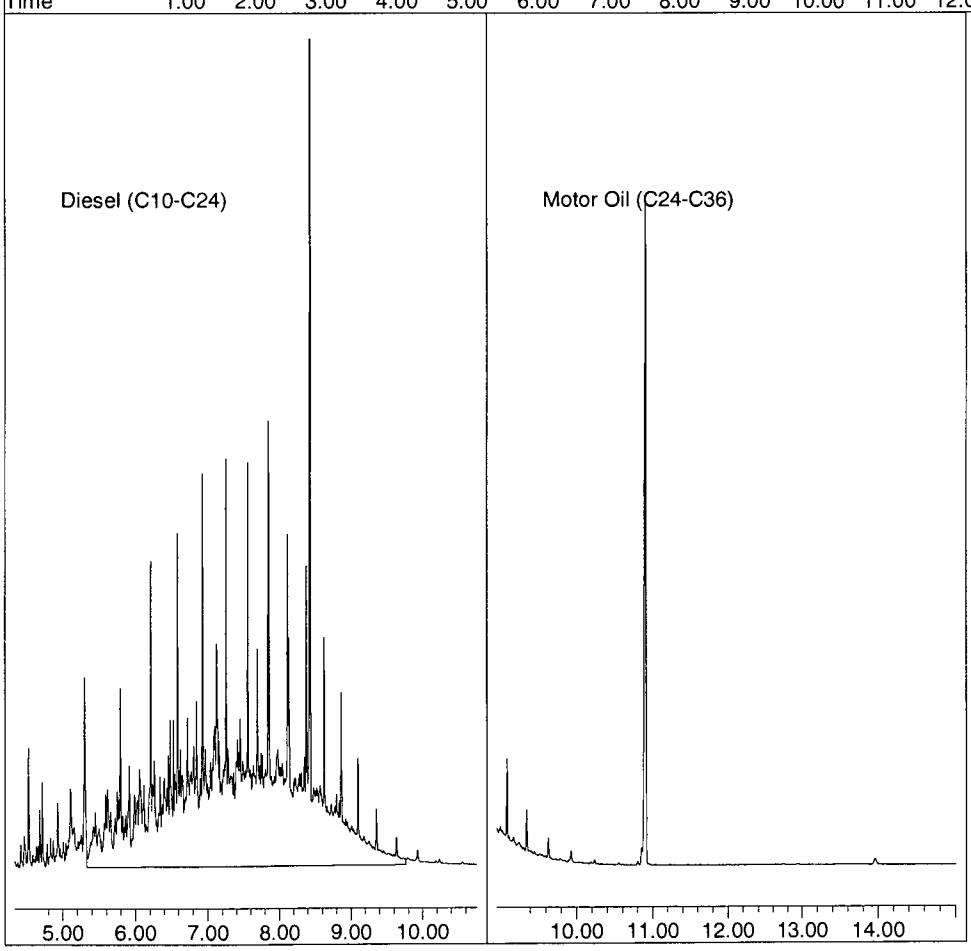
Method : G:\APOLLO\DATA\150311\CTO121.M (Chemstation Integrator)
Title : 8015 B&C
Last Update : Thu Feb 26 09:47:30 2015
Response via : Multiple Level Calibration

Volume Inj. : 2UL
Signal Phase : DB-5
Signal Info : FID02A

Compound	R.T.	Response	Conc Units
System Monitoring Compounds			
3) SA Ortho-Terphenyl(S)	8.43	79050878	21.215 ppb
Surrogate Spike 30.000		Recovery =	70.72%
4) SA Octacosane(S)	10.91	57250990	21.211 ppb
Surrogate Spike 30.000		Recovery =	70.70%
Target Compounds			
1) HATM Diesel (C10-C24)	7.55	1098119452	436.584 ppb

Data File: G:\APOLLO\DATA\150318\318021.D
Sample : Diesel 400ppm 2/25/15





Quantitation Report (Not Reviewed)

Data File : G:\APOLLO\DATA\150318\318022.D Vial: 22
Acq On : 3-18-15 18:55:37 Operator: lac
Sample : MO 1000ppm 3/13/15 Inst : Apollo
Misc : Mix(B) Multiplr: 1.00
IntFile : events.e
Quant Time: Mar 23 11:44 2015 Quant Results File: CTO121.RES

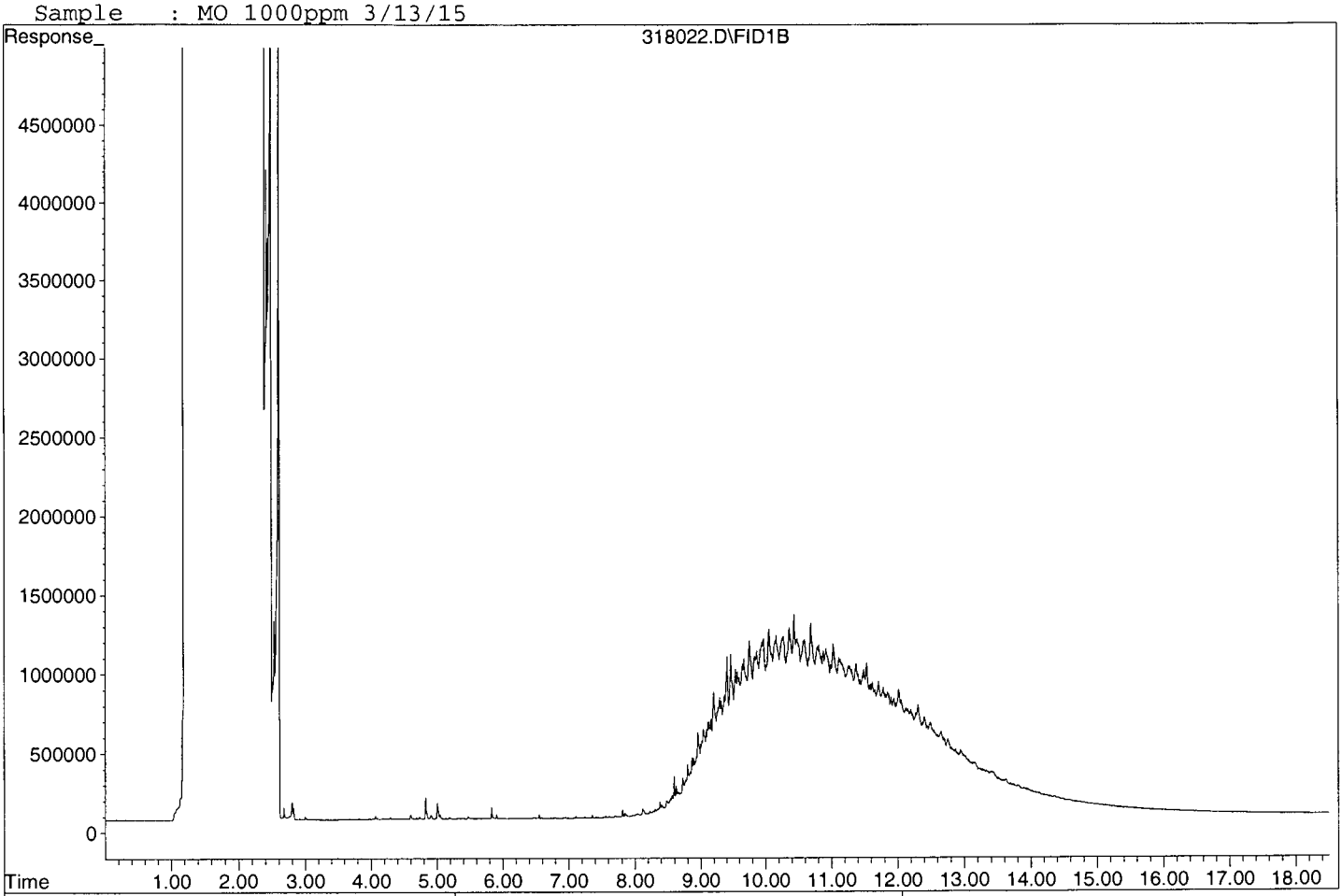
Method : G:\APOLLO\DATA\150311\CTO121.M (Chemstation Integrator)
Title : 8015 B&C
Last Update : Thu Feb 26 09:47:30 2015
Response via : Multiple Level Calibration

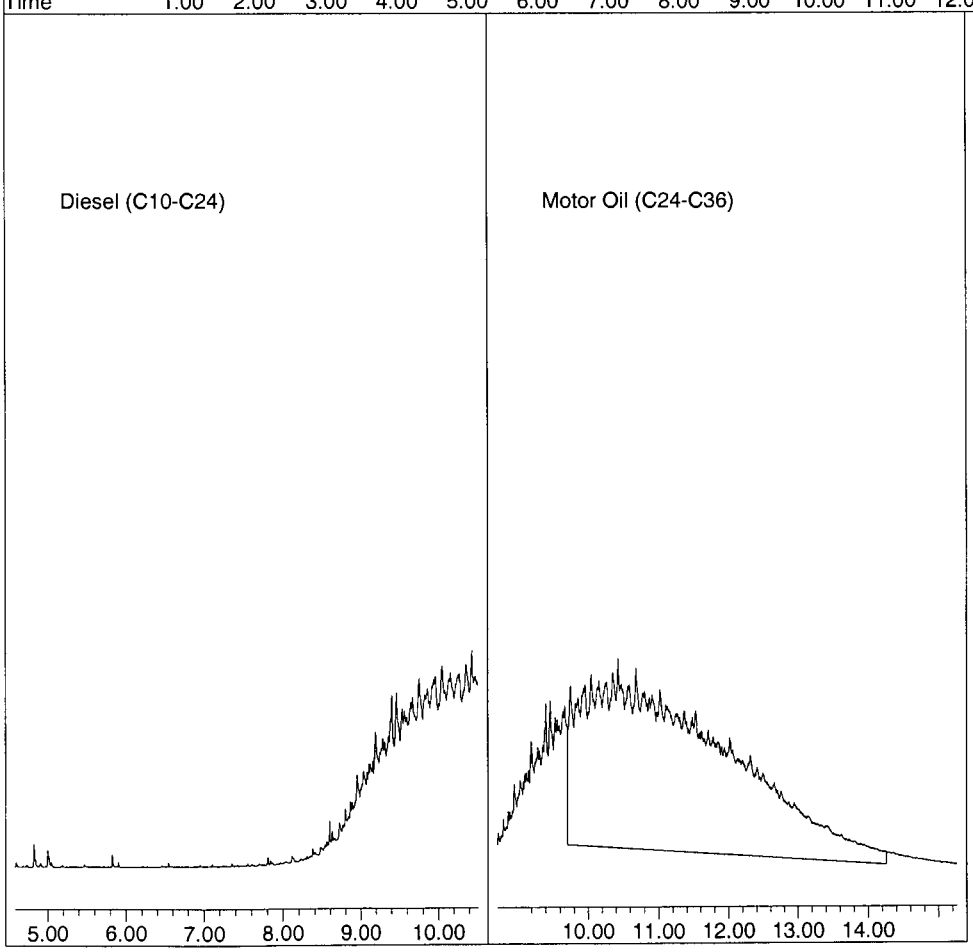
Volume Inj. : 2UL
Signal Phase : DB-5
Signal Info : FID02A

Compound	R.T.	Response	Conc Units
System Monitoring Compounds			
Target Compounds			
2) HBTM Motor Oil (C24-C36)	11.99	1454947978	970.049 ppb

Quantitation Report

Data File: G:\APOLLO\DATA\150318\318022.D
Sample : MO 1000ppm 3/13/15





EPA 8015 Modified
Total Petroleum Hydrocarbons
Raw Data

Method Blank
TPH-d Water EPA 8015C

APPL Inc.
908 North Temperance Avenu
Clovis, CA 93611

Blank Name/QCG: **150317W-12345 - 195087**
Batch ID: #DROWC-150317A

Sample Type	Analyte	Result	LOQ	LOD	DL	Units	Extraction Date	Analysis Date
BLANK	TPH-DRO (C10-C24)	50.0 U	150	50.0	40.4	ug/L	3/17/2015	3/18/2015
BLANK	TPH-LRO (C24-C36)	500.0 U	500	500.0	106.0	ug/L	3/17/2015	3/18/2015
BLANK	SURROGATE: OCTACOSANE (S)	92.7	28-142			%	3/17/2015	3/18/2015
BLANK	SURROGATE: ORTHO-TERPHEN	65.3	57-132			%	3/17/2015	3/18/2015

Quant Method: CTO121.M
Run #: 318004
Instrument: Apollo
Sequence: 150318
Initials: LA

GC SC-Blank-REG MDLs
Printed: 3/26/2015 3:31:26 PM

Quantitation Report (QT Reviewed)

Data File : G:\APOLLO\DATA\150318\318004.D Vial: 4
Acq On : 3-18-15 11:25:43 Operator: lac
Sample : 150317A BLK 5/1000 Inst : Apollo
Misc : Water Multiplr: 5.00
IntFile : events.e
Quant Time: Mar 23 11:49 2015 Quant Results File: CTO121.RES

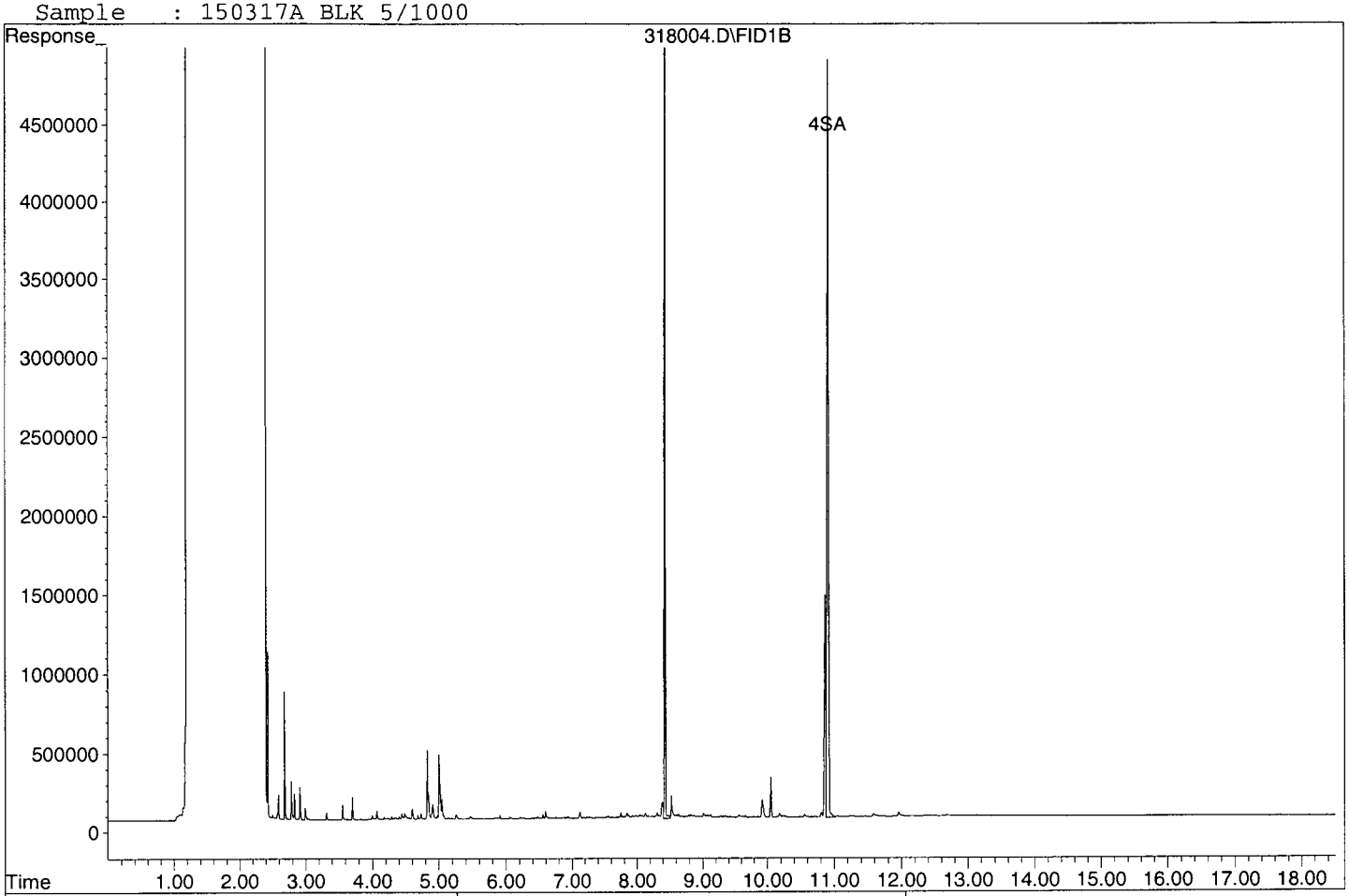
Method : G:\APOLLO\DATA\150311\CTO121.M (Chemstation Integrator)
Title : 8015 B&C
Last Update : Thu Feb 26 09:47:30 2015
Response via : Multiple Level Calibration

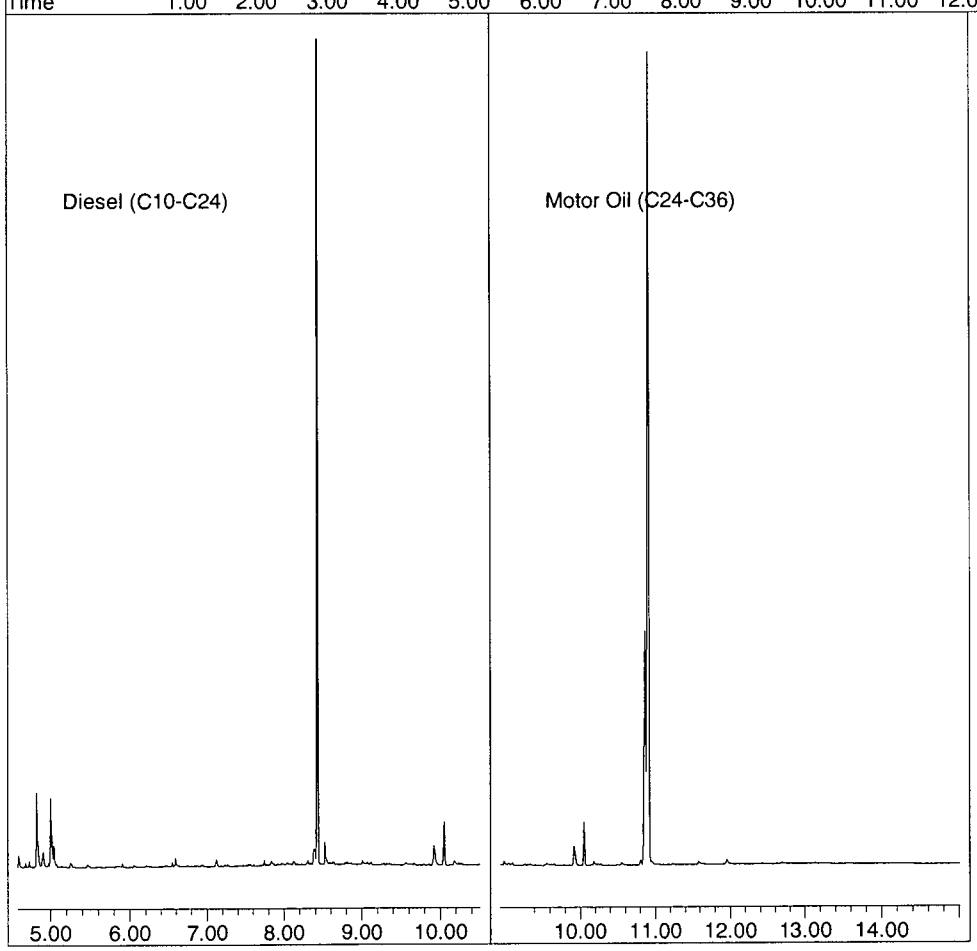
Volume Inj. : 2UL
Signal Phase : DB-5
Signal Info : FID02A

Compound	R.T.	Response	Conc Units
System Monitoring Compounds			
3) SA Ortho-Terphenyl(S)	8.43	73000111	97.954 ppb
Surrogate Spike 150.000		Recovery =	65.30%
4) SA Octacosane(S)	10.91	75029817	138.990 ppb
Surrogate Spike 150.000		Recovery =	92.66%
Target Compounds			

Quantitation Report

Data File: G:\APOLLO\DATA\150318\318004.D
Sample : 150317A BLK 5/1000





Laboratory Control Spike Recovery
TPH-d Water EPA 8015C

APPL ID: **150317W-12345 LCS - 195087**
Batch ID: #DROWC-150317A

APPL Inc.
908 North Temperance Avenue
Clovis, CA 93611

Compound Name	Spike Level ug/L	SPK Result ug/L	SPK % Recovery	Recovery Limits
TPH-DRO (C10-C24)	2000	1670	83.5	61-143
TPH-LRO (C24-C36)	2000	1850	92.5	61-143
SURROGATE: OCTACOSANE (S)	150	150	100	28-142
SURROGATE: ORTHO-TERPHENYL (S)	150	129	86.0	57-132

Comments: _____

Primary	SPK
Quant Method :	CTO121.M
Extraction Date :	3/17/2015
Analysis Date :	3/18/2015
Instrument :	Apollo
Run :	318005
Initials :	LA

Printed: 3/26/2015 3:31:21 PM
APPL Standard LCS

Quantitation Report (QT Reviewed)

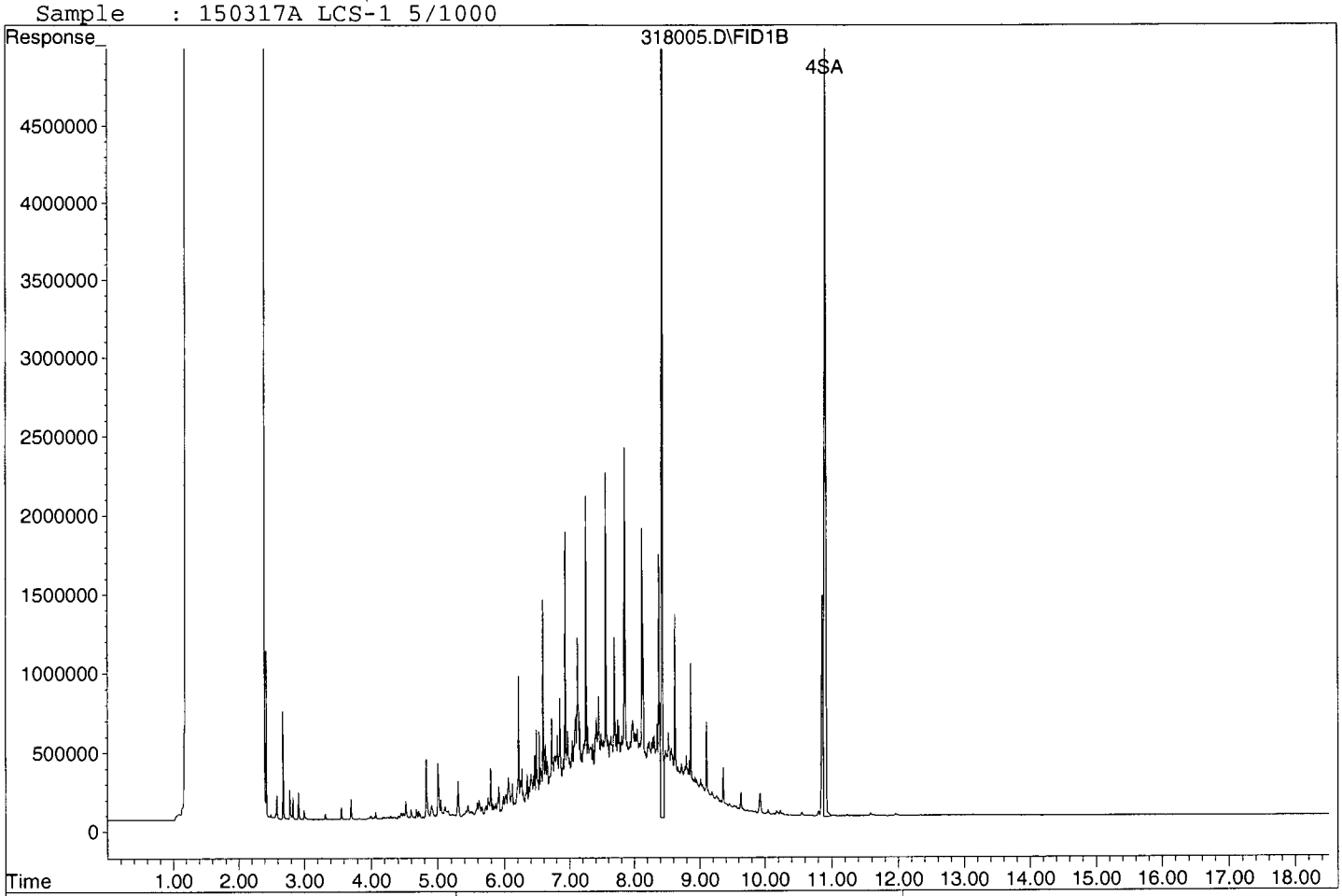
Data File : G:\APOLLO\DATA\150318\318005.D Vial: 5
Acq On : 3-18-15 11:50:52 Operator: lac
Sample : 150317A LCS-1 5/1000 Inst : Apollo
Misc : Water Multiplr: 5.00
IntFile : events.e
Quant Time: Mar 23 11:49 2015 Quant Results File: CTO121.RES

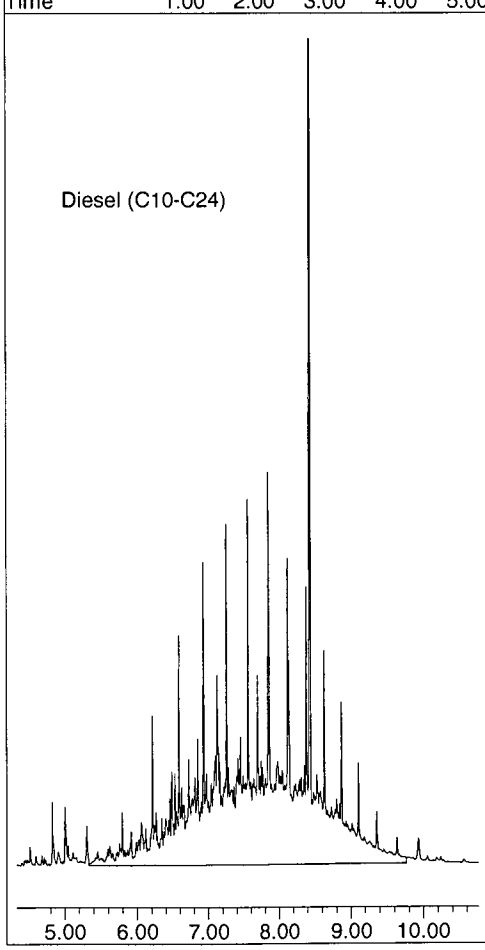
Method : G:\APOLLO\DATA\150311\CTO121.M (Chemstation Integrator)
Title : 8015 B&C
Last Update : Thu Feb 26 09:47:30 2015
Response via : Multiple Level Calibration

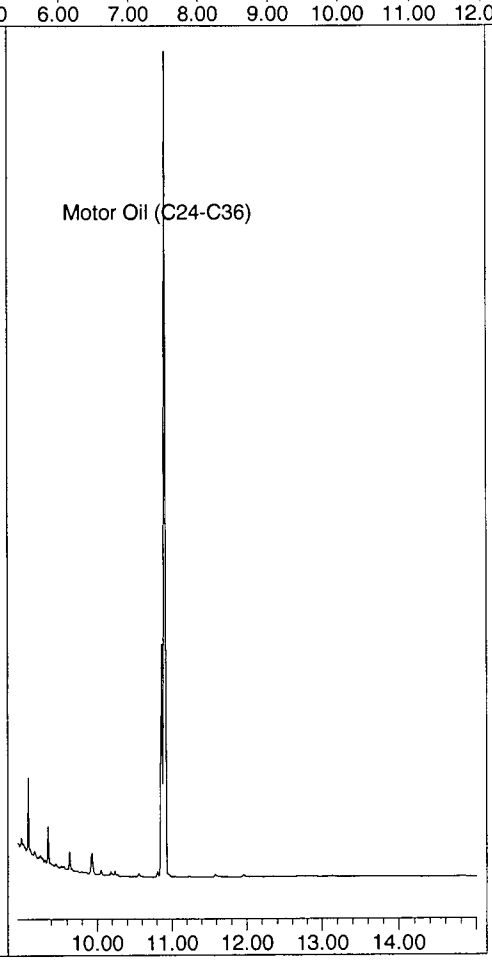
Volume Inj. : 2UL
Signal Phase : DB-5
Signal Info : FID02A

Compound	R.T.	Response	Conc Units
System Monitoring Compounds			
3) SA Ortho-Terphenyl(S)	8.43	95850164	128.615 ppb
Surrogate Spike 150.000		Recovery =	85.74%
4) SA Octacosane(S)	10.91	80914741	149.892 ppb
Surrogate Spike 150.000		Recovery =	99.93%
Target Compounds			
1) HATM Diesel (C10-C24)	7.55	837955285	1665.747 ppb

Data File: G:\APOLLO\DATA\150318\318005.D
Sample : 150317A LCS-1 5/1000







Quantitation Report (QT Reviewed)

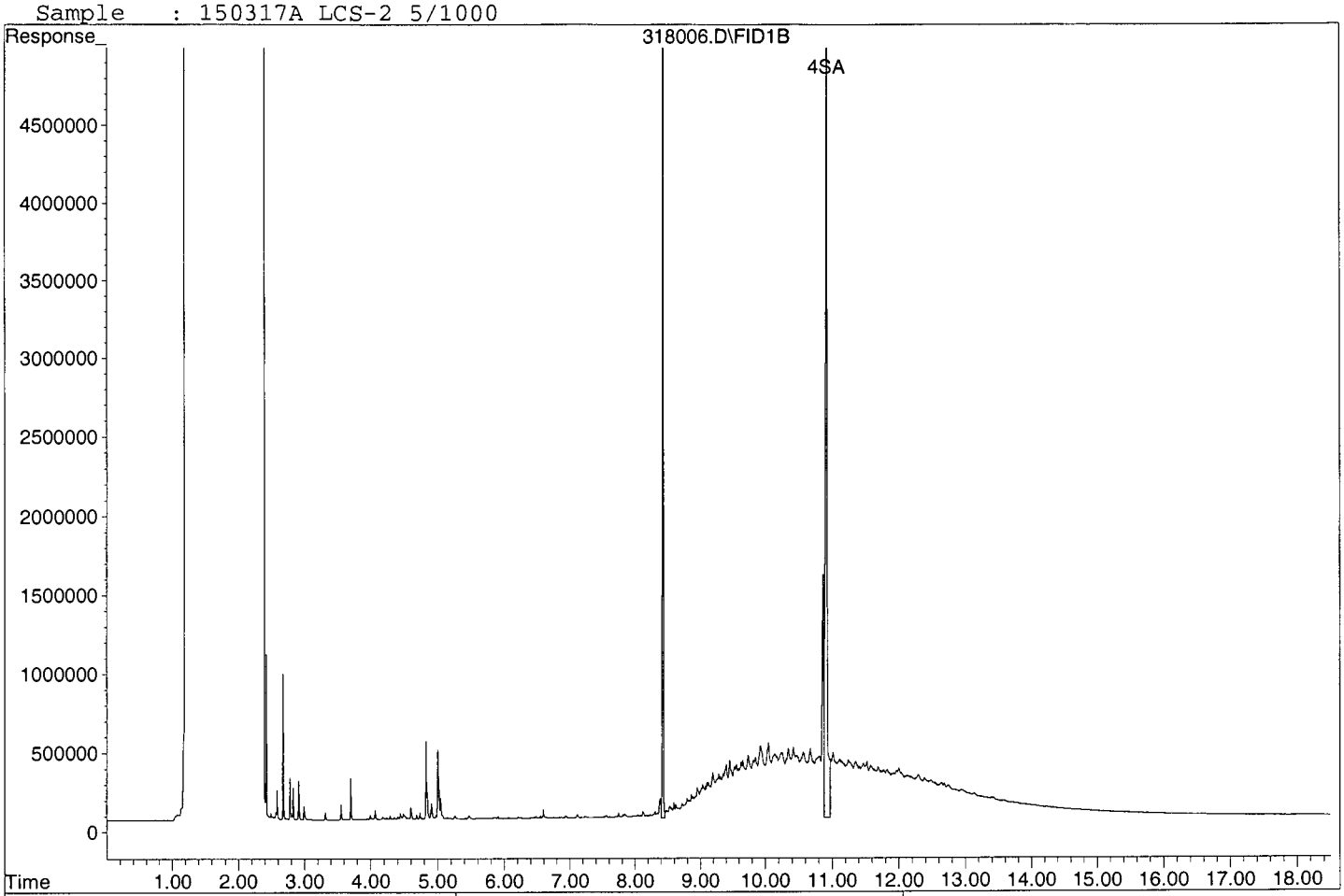
Data File : G:\APOLLO\DATA\150318\318006.D Vial: 6
Acq On : 3-18-15 12:15:35 Operator: lac
Sample : 150317A LCS-2 5/1000 Inst : Apollo
Misc : Water Multiplr: 5.00
IntFile : events.e
Quant Time: Mar 23 11:49 2015 Quant Results File: CTO121.RES

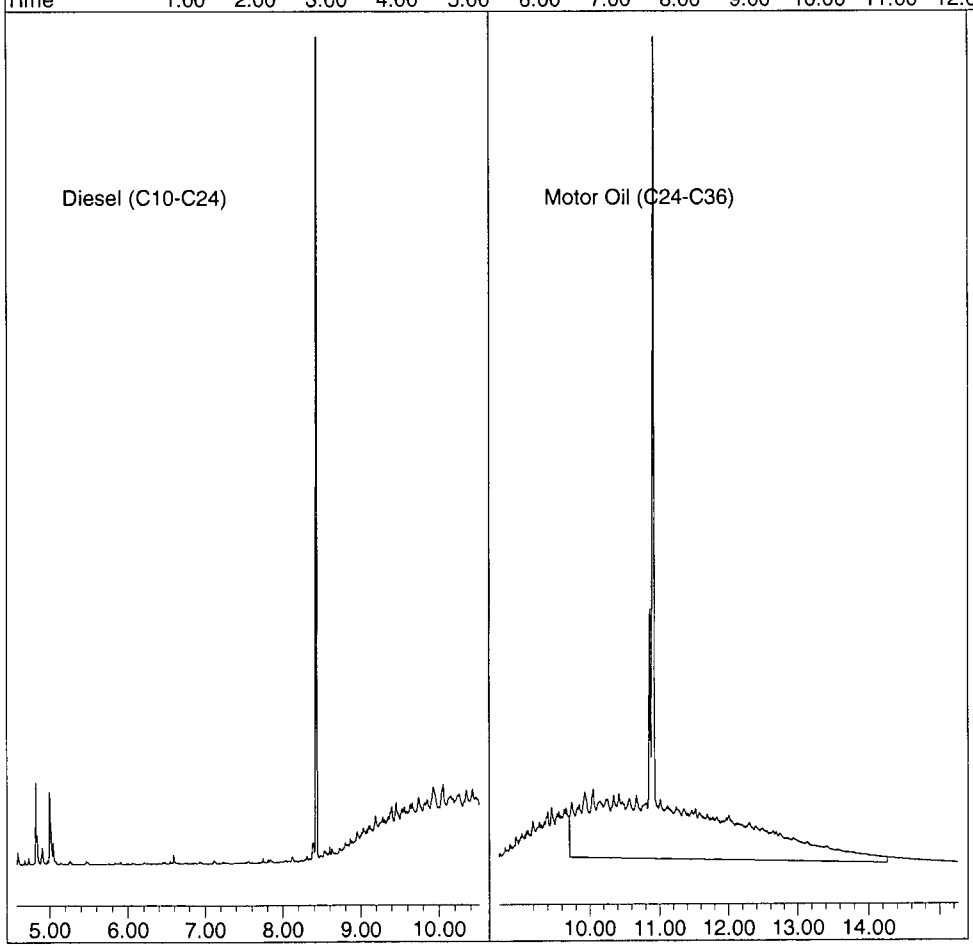
Method : G:\APOLLO\DATA\150311\CTO121.M (Chemstation Integrator)
Title : 8015 B&C
Last Update : Thu Feb 26 09:47:30 2015
Response via : Multiple Level Calibration

Volume Inj. : 2UL
Signal Phase : DB-5
Signal Info : FID02A

Compound	R.T.	Response	Conc Units
System Monitoring Compounds			
3) SA Ortho-Terphenyl(S)	8.43	77006964	103.330 ppb
Surrogate Spike 150.000		Recovery =	68.89%
4) SA Octacosane(S)	10.92	94953907	175.899 ppb
Surrogate Spike 150.000		Recovery =	117.27%
Target Compounds			
2) HBTM Motor Oil (C24-C36)	11.99	554869467	1849.724 ppb

Data File: G:\APOLLO\DATA\150318\318006.D
Sample : 150317A LCS-2 5/1000





STANDARD	INITIAL CONC	SOURCE DATE	ALIQUOT	FINAL VOLUME	FINAL CONC	SOLVENT LOT#	DATE INITIALS

GC STANDARD PREPARATION BOOK # 41 PAGE # 111

		5ES 2nd Src Stock				
Compound	Init. Conc.	Stock Src	Aliquot	Final Vol	Final Conc.	Solvent Lot#
alachlor	100/2000 ug/ml	O2SI	500 uL	10 mL	5/100 ug/ml	Hexane
benfluralin	CAT	130200-02-SS				080613A
captan	LOT	231047-33782				
carbophenothion	OPEN	10/03/14				
chlorothalonil	EXP	10/03/15				
chlorthal(dacthal)						
2,6 dichlorobenzonitrile(dicofol)						
kelthane						
nitrofen						
oxadiazon						
oxyfluorfen						
propachlor						
op DDD						
op DDE						
op DDT						
bis(2-ethylhexyl)phthalate						

GA 10/6/14

GA 10/3/14 10/3/15

		5ES 2ND SRC				
Compound	Init. Conc.	Stock Src	Aliquot	Final Vol	Final Conc.	Solvent Lot#
VARIOUS	5/100 ug/ml	508 2ND SRC STK	100 uL	10 mL	0.05/1 ug/ml	Hexane
		Prep:10/03/14				080613A
		Exp: 10/03/15				

GA 10/6/14

GA 10/3/14 4/3/15

		DIESEL SECOND SOURCE				
STANDARD	INITIAL CONC.	SOURCE DATE	ALIQUOT	FINAL VOL	FINAL CONC.	SOLVENT LOT#
DIESEL FUEL #2	50,000 ug/mL	O2SI CAT#011598-01-SS LOT#207749-32372 OP:5/5/14 EXP:5/5/15	200uL	10mL	1000ug/mL	MC #54024

GA 10/6/14

GA 10/6/14 5/5/15

Chloroneb Standard						
Compound	Initial Conc.	Stock Source	Aliquot	Final Volume	Final Conc.	Solvent
Chloroneb	1000ug/mL	Absolute	10uL	10mL	1ug/mL	Hexane
		Cat: 70082				080613A
		Lot: 091013-34074				
		Open: 10/06/14				
		Exp: 10/06/15				

GA 10/6/14

GA 10/6/14 10/6/15

Chloroneb Curve						
Compound	Initial Conc.	Stock Source	Aliquot	Final Volume	Final Conc.	Solvent
Chloroneb	1ug/mL	Prep: 10/06/14	5uL	1mL	0.005ug/mL	Hexane
		Exp: 10/06/15	50uL	1mL	0.050ug/mL	080613A
			100uL	1mL	0.100ug/mL	
			150uL	1mL	0.150ug/mL	
			200uL	1mL	0.200ug/mL	
			250uL	1mL	0.250ug/mL	

GA 10/6/14

GA 10/6/14 4/6/15

PAC ECO CURVE													
						1a	1b	1	2	3	4	5	6
	ID#	[µg/mL]	LOT #	DATE	EXP. DATE	µL	µL	µL	µL	µL	µL	µL	µL
	PAC ECO CAL STD	5		09/29/14	11/09/14	2	5	10	50	20	100	70	1000
						998	995	990	950	80	100	30	N/A
	Hexane		080613A		Final VOL.	1000	1000	1000	1000	100	200	100	1000

GA 10/6/14 11/9/14

GA

STANDARD
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INITIAL CONC | SOURCE DATE | ALIQUOT | FINAL VOLUME | FINAL CONC | SOLVENT LOT# | BY

GC STANDARD PREPARATION BOOK # 41 PAGE #

MOTOR OIL CAL STD						
STD.	INITIAL CONC.	SOURCE DATE	ALIQUOT	FINAL VOL	FINAL CONC.	SOLVENT / LOT#
MOTOR OIL	50,000 ug/mL	O2SI CAT#116390-02 LOT#1211942-33766 OP:10/13/14 EXP:10/13/15	1mL	25mL	2000ug/mL	MC LOT# 54128

LH 10/13/14 ex 10/13/15

MOTOR OIL CCV 1000ppm						
STANDARD	CONC.	DATE	ALIQUOT	VOL	CONC.	/LOT#
MO STD	2000 µg/mL	MO Std.	3000µL	5mL	1000 µg/ml	MC
	PREP:	10/13/14				54128
	Exp:	10/13/15				

LH 10/13/14 ex. 1/13/15

DIESEL CCV 400ug/ml						
STANDARD	INITIAL CONC.	SOURCE DATE	ALIQUOT	FINAL VOL	FINAL CONC.	SOLVENT /LOT#
DIESEL STD.	1000 µg/mL	Diesel Std.	2000µL	5mL	400 µg/ml	MC
	PREP.	09/29/14				54128
	Exp:	09/22/15				

LH 10/13/14 ex 1/13/15

HERB-3

Various	10/09/14	1mL	10mL	various	MTBE	LH
	ex. 10/09/15				#50223	10/14/14
						ex 4/14/15

507B STANDARD					
MEVINPHOS	5ug/ml	1000ug/ml	50ul	O2SI	10ml
MOLINATE	5	1000	Cat:	132087-01	MTBE
METOLACHLOR	5	1000	Lot:	201706-31876	LOT#
DEMETON	5	1000	Open:	02/06/14	50223
DIAZINON	5	1000	Exp:	01/04/15	
SIMETRYN	5	1000			
TERBUTRYN	5	1000			
BROMACIL	5	1000			
SIMAZINE	5	1000			
ALACHLOR	5	1000			
TBP	5	1000			
TPP	5	1000			

LH 10/14/14 EX 4/14/15

DOHS SURROGATE						
Compound	Initial Conc.	Stock Source	Aliquot	Final Vol.	Final Conc.	Solvent
1,3 Dibromopropane	100ug/mL	1,3 DBP Stock	625uL	10mL	6.25ug/mL	Methanol
		Prep: 02/17/14				#070913A
		Exp: 02/17/15				

LH 10/14/14 1/14/15 Ex 9/13/15

QC on 1/13/15. MK 1/13/15

STANDARD	INITIAL CONC	SOURCE DATE	ALIQUOT	FINAL VOLUME	FINAL CONC	SOL. EN. LOT #	DATE INITIALS

GC/~~MS~~ INSTRUMENT MAINTENANCE LOG # 42 PAGE # _____

THC SURROGATE

KY
11-06-2014
Exp. 11-06-2015

CAT NO: 110316-05
LOT NO: 229803-34067

open DATE: 11-06-2014
EXPIRE DATE: 11-06-2015

MITC CURVE						1	2	3	4	5	6	7
SUPPLIER	ID#	ug/mL	LOT #	DATE	EXP.	mL	mL	mL	mL	mL	mL	mL
					Final Conc.	0.02	0.125	0.25	1	2.5	3.5	5
	MITC STD	5		09/05/14	3/6/15	4	25	50	20	100	70	100
VWR	ETHYL ACETATE		~~[illegible]~~			996	975	950	80	200	30	N/A
			~~[illegible]~~ 30/VE		Final VOL.	1000	1000	1000	100	100	100	100

GA
exp 11/7/14

GA 11/7/14

OP/F CURVE						IA	IB	1	2	3	4	5	6
SUPPLIER	ID#	(µg/mL)	LOT #	DATE	EXP. DATE	mL	mL	mL	mL	mL	mL	mL	mL
	OP/F STD	5		09/24/14	12/08/14	2	5	10	50	20	100	70	100
VWR	Hexane		051914A			998	995	990	950	80	100	30	NA
					Final VOL	1000	1000	1000	1000	100	200	100	100

GA
11/7/14
exp 12/8/14

OP 2ND SRC		(µg/mL)				100
PREP:	10/10/14	5				100
EXP:	02/06/15	Hexane	051914A			200

GA
11/7/14
exp 2/6/15

MOTOR OIL CCV 1000ppm						
STANDARD	CONC.	DATE	ALIQUOT	VOL	CONC.	/LOT#
MO STD.	2000 µg/mL	MO Std.	2500µL	5mL	1000 µg/ml	MC
	PREP:	10/24/14				54128
	Exp:	10/24/15				

GA
11/8/14
exp 2/8/15

DIESEL Fuel #2 Composite

CAT NO: 011598-01-SS
LOT NO: 207839-32381

OPEN-11/10/14
EX -11/10/15

Diesel Fuel #2 Composite
(Second Source), 50,000
mg/L, 2 x 5 ml
011598-01-SS

Lot #	Storage	Expiry
207749	≤ -10 Degrees C	4/27/16

Solvent: Methylene Chloride

All only, not to be consumed. Made in the USA.

Diesel Fuel #2 Composite (SS)
Lot #: 207749 - 32374
Rec: 4/25/13 MFR exp. 4/27/16

LH
11/10/14
11/10/15

006

INITIAL CONC	SOURCE DATE	ALIQUOT	FINAL VOLUME	FINAL CONC	SOLVENT LOT#	DATE / INITIALS

GC/MS INSTRUMENT MAINTENANCE LOG # 42 PAGE #

THC SURROGATE
CAT 11031 6-05
Lot 229803-34062
Open 11/3/14
Ex 11/3/15

11/3/014 HA
Ex 11/3/15

OP/F CURVE													
						1A	1B	1	2	3	4	5	6
SUPPLIER	ID#	(µg/mL)	LOT #	DATE	EXP DATE	mL	mL	mL	mL	mL	mL	mL	mL
	OP/F STD	5		09/24/14	12/08/14	2	5	10	50	20	100	70	100
VWR	Hexane		051914A			998	995	990	950	80	100	30	NA
					Final VOL.	1000	1000	1000	1000	100	200	100	100

GA
11/3/14
GA 11/3/14
exp. 12/8/14

OP 2ND SRC		[µg/mL]				
PREP	10/10/14	5				100
EXP	02/06/15	Hexane	051914A			100
						200

GA
11/3/14
exp 2/6/15

		OCL-OP Soil Surrogate				
Standard	Initial conc ug/ml	Source date	Aliquot	Final VOL	Final conc	Solvent LOT#
TCMX	5000	O2SI	800ul	200ml	20ug/ml	ACETONE
DBC		cat:130070-02				051314C
DECA		lot: 213973-32849				
		open:10/8/14				
		EX:10/8/15				
TBP	1000	O2SI	1000ul		5ug/ml	
TPP		cat:130161-02				
		lot:222141-34126				
		open: 11/4/14				
		EX: 11/4/15				

LH
11/4/14
Ex 2/4/15

DIESEL CCV 400ug/ml						
STANDARD	INITIAL CONC.	SOURCE DATE	ALIQUOT	FINAL VOL	FINAL CONC.	SOLVENT /LOT#
DIESEL STD	1000 µg/mL	Diesel Std.	2000µL	5mL	400 µg/ml	MC
	PREP:	09/29/14				54024
	Exp:	09/22/15				

LH
11/5/14
Ex 2/5/15

507A Curve											
SUPPLIER	ID#	µg/mL	LOT #	DATE	EXP.	µL	µL	µL	µL	µL	µL
	507A STD	5		09/04/14	01/04/15	10	50	20	100	70	100
	MTBE		50223			990	950	80	100	30	NA
					Final VOL.	1000	1000	100	200	100	100

GA
11/5/14
exp 1/4/15

507B CURVE											
SUPPLIER	ID#	µg/mL	LOT #	DATE	EXP.	µL	µL	µL	µL	µL	µL
	507B STD	5		10/14/14	04/14/15	10	50	20	100	70	100
	MTBE		50223			990	950	80	100	30	NA
					Final VOL.	1000	1000	100	200	100	100

GA
11/5/14
exp 4/14/15

STANDARD	INITIAL CONC	SOURCE DATE	ALIQUOT	FINAL VOLUME	FINAL CONC	SOLVENT LOT#	DATE INITIALS

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MOTOR OIL CCV 1000ppm						
STANDARD	CONC.	DATE	ALIQUOT	VOL	CONC.	/LOT#
MO STD.	2000 µg/mL	MO Std.	2500µL	5mL	1000 µg/ml	MC
	PREP:	10/24/14				54024
	Exp:	10/24/15				

LH
12/2/14
3/2/15

DIESEL CCV 400ug/ml						
STANDARD	INITIAL CONC.	SOURCE DATE	ALIQUOT	FINAL VOL	FINAL CONC.	SOLVENT /LOT#
DIESEL STD.	1000 µg/mL	Diesel Std.	2000µL	5mL	400 µg/ml	MC
	PREP:	08/27/14				54024
	Exp:	07/30/15				

LH
12/2/14
3/2/15

		FIN PT CURVE			
COMPOUND	INITIAL CONC	FINAL CONC	ALIQUOT	STK SRCE	FINAL VOL.
FOLPET	5 ug/ml	VARIOUS	5 ul	FIN PT Std.	1 ml
IPRODIONE	25 ug/ml		50 ul	Prep: 12/2/14	Hexane
NORFLURAZON	5 ug/ml		100 ul	EXP: 12/2/15	Lot: 051914A
PERTHANE	50 ug/ml		150 ul		
TETRADIFON	5 ug/ml		250 ul		

LH
12/2/14
ex. 6/2/15

		FIN PT STD			
COMPOUND	INITIAL CONC	FINAL CONC	ALIQUOT	STK SRCE	FINAL VOL.
FOLPET	100 ug/ml	5 ug/ml	50µL	O2SI	1ml
IPRODIONE	500 ug/ml	25 ug/ml	CAT:	130826-05	HEXANE
NOFLURAZON	100 ug/ml	5 ug/ml	LOT:	230279	051914A
PERTHANE	1000 ug/ml	50 ug/ml		-33742	
TETRADITION	100 ug/ml	5 ug/ml	OP:	12/02/14	
			EXP:	12/02/15	

LH
12/2/14
ex. 12/2/15

5ES-3

5ES STOCK 10mL Hexane LH
prep. 9/22/14 051914A 12/5/14
ex. 9/22/15 6/5/15

DIESEL CAL. STD.						
STD.	INITIAL CONC.	SOURCE DATE	ALIQUOT	FINAL VOL	FINAL CONC.	SOLVENT / LOT#
DIESEL FUEL #2	50,000 ug/mL	O2SI CAT#011598-03 LOT#237372-34153 OP:12/05/14 EXP:12/05/15	1mL	50mL	1000ug/mL	MC LOT# 54200
O-TERPHENYL OCTACOSANE	600 ug/mL	O2SI CAT#110316-05 LOT#229803,-34065 OP:11/24/14 EXP:11/24/15	4160 µL		50ug/mL	

GA
12/5/14
EXP 11/24/15

DIESEL CCV 400ug/ml						
STANDARD	INITIAL CONC.	SOURCE DATE	ALIQUOT	FINAL VOL	FINAL CONC.	SOLVENT /LOT#
DIESEL STD.	1000 µg/mL	Diesel Std.	2000µL	5mL	400 µg/ml	MC
	PREP:	12/05/14				54200
	Exp:	11/24/15				

GA
12/5/14
exp 3/5/15

OPC CURVE											
						1	2	3	4	5	6
SUPPLIER	ID#	(µg/mL)	LOT #	DATE	EXP. DATE	µL	µL	µL	µL	µL	µL
	OPC STD	5		09/20/14	07/09/15	10	50	20	100	70	1000
	Hexane		051914A			990	950	80	200	30	NA
					Final VOL.	1000	1000	100	200	100	1000

GA
12/5/14
exp 6/5/15

LH 12/1/14

LH 12/1/14

LH 12/1/14

STANDARD	INITIAL CONC	SOURCE DATE	ALIQUOT	FINAL VOLUME	FINAL CONC	SOL'N. LOT#	DATE INITIALS

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LAC 12/9/14

THC SURR CAL STD

STD.	INITIAL CONC.	SOURCE DATE	ALIQUOT	FINAL VOL	FINAL CONC.	SOLVENT LOT#
O-TERPHENYL OCTACOSANE	600 ug/mL	O2SI CAT#110316-05 LOT#229803-34065 OP:11/24/14 EXP:11/24/15	1000 µL	10mL	60ug/mL	MC LOT# 54200

LAC 12/9/14 exp 11/24/15

LAC 12/9/14

THC SURROGATE CURVE

STD	[µg/mL]	LOT #	DATE	EXP. DATE	µL	µL	µL	µL	µL	µL
THC SURR	60		12/9/2014	11/24/2015	50	100	400	600	800	1000
MC		54200		LAC	950	900	600	400	200	NA
				Final VOL.	1000	1000	1000	1000	1000	1000

LAC 12/9/14 exp 11/24/15

DIESEL CURVE

STD	[µg/mL]	LOT #	DATE	EXP. DATE	µL	µL	µL	µL	µL	µL
DIESEL	1000		12/5/2014	11/24/2015	10	100	400	600	800	1000
MC		54200			990	900	600	400	200	NA
				Final VOL.	1000	1000	1000	1000	1000	1000

LAC 12/9/14 exp 11/24/15

LAC 12/9/14

MOTOR OIL CURVE

STD	[µg/mL]	LOT #	DATE	EXP. DATE	µL	µL	µL	µL	µL	µL	µL
MOTOR OIL	2000		10/24/2014	10/24/2015	10	25	125	250	100	75	1000
MC		54200			990	975	875	750	100	25	NA
				Final VOL.	1000	1000	1000	1000	200	100	1000
				ppm	10	50	250	500	1000	1500	2000

LAC 12/9/14 exp 10/25/15

LAC 12/9/14

DIESEL 2ND SRC

STANDARD	INITIAL CONC.	SOURCE DATE	ALIQUOT	FINAL VOL	FINAL CONC.	SOLVENT /LOT#
DIESEL 2ND SRC	1000 µg/mL	D 2ND SRC	400µL	1mL	400 µg/ml	MC
	PREP:	10/6/2014				54200
	Exp:	5/5/2015				

LAC 12/9/14 exp 5/5/15

MOTOR OIL SECOND SOURCE

standard	initial conc.	SOURCE DATE	ALIQUOT	FINAL VOL.	FINAL CONC.	SOLVENT LOT
MOTOR OIL SECOND SOURCE	50,000 ug/mL	O2SI CAT#116390-02 LOT#239390-34438 OP:12/10/14 Exp 12/10/15	200uL	10mL	1000ug/mL	MC #47186

LH 12/10/14 ex 12/10/15

AR 1262 STD (1ug/mL)

AR1262STK 20ug/mL AR262STK 500uL 10mL 1ug/mL Hexane #051914A

Prep: 5/15/14

ex: 5/15/15

LH 12/9/14 ~~6/9/15~~ 5/15/15

MA 12/9/14

STANDARD	INITIAL CONC	SOURCE DATE	ALIQUOT	FINAL VOLUME	FINAL CONC	VOL. TW. LOT #	DATE INITIALS

GC/~~MW~~ INSTRUMENT MAINTENANCE LOG # 42 PAGE #

DIESEL CURVE											
STD	[µg/mL]	LOT #	DATE	EXP. DATE	µL	µL	µL	µL	µL	µL	
DIESEL	1000		12/05/14	11/24/15	10	100	400	600	800	1000	
MC		54200			990	900	600	400	200	NA	
				Final VOL.	1000	1000	1000	1000	1000	1000	

LH 1/20/15 ex. 7/20/15

MOTOR OIL CURVE											
STD	[µg/mL]	LOT #	DATE	EXP. DATE	µL	µL	µL	µL	µL	µL	µL
MOTOR OIL	2000		10/13/14	10/13/15	10	25	125	250	100	75	1000
MC		54200			990	975	875	750	100	25	NA
				Final VOL.	1000	1000	1000	1000	200	100	1000
				ppm	10	50	250	500	1000	1500	2000

LH 1/20/15 ex. 7/20/15

OP/F CURVE													
						1A	1B	1	2	3	4	5	6
SUPPLIER	ID#	[µg/mL]	LOT #	DATE	EXP. DATE	mL	mL	mL	mL	mL	mL	mL	mL
	OP/F STD	5		12/23/14	02/08/15	2	5	10	50	20	100	70	100
VWR	Hexane		051914A			998	995	990	950	80	100	30	NA
					Final VOL.	1000	1000	1000	1000	100	200	100	100

LH 1/21/15 ex. 2/8/15

DIESEL SPIKE

CAT # 011998-01-SS 1/21/15 MA
LOT # 207742-32315 Ex 1/21/16
Open 1/21/15
Ex 1/21/16

THC Surr
LOT # 240564-34471 1/22/15 IC
CAT # 1163116-05 Ex 1/22/16
Open - 1/22/15
Exp - 1/22/16

DIESEL 2ND SRC						
STANDARD	INITIAL CONC.	SOURCE DATE	ALIQUOT	FINAL VOL	FINAL CONC.	SOLVENT /LOT#
DIESEL 2ND SRC	1000 µg/mL	D 2ND SRC	400µL	1mL	400 µg/ml	MC
	PREP:	10/6/2014				54200
	Exp:	5/5/2015				

LC 1/21/15 5/5/15

STANDARD	INITIAL CONC	SOURCE DATE	ALIQUOT	FINAL VOLUME	FINAL CONC	SOL. ID. LOT #	DATE INITIAL

~~SOMMUNINSTRUMENT MAINTENANCE LOG # 42 PAGE #~~

TPH SURROGATE

CAT# 110316-05
LOT# 229803-34455
Open 2/3/15
Ex 2/3/16

PAC ECO CURVE													
						1a	1b	1	2	3	4	5	6
	ID#	[µg/mL]	LOT #	DATE	EXP. DATE	µL	µL	µL	µL	µL	µL	µL	µL
	PAC ECO CAL STD	5		12/26/14	11/19/15	2	5	10	50	20	100	70	1000
						998	995	990	950	80	100	30	N/A
	Hexane		051914A		Final VOL.	1000	1000	1000	1000	100	200	100	1000

LH
2/4/15
ex 8/4/15

PAC ECO CURVE													
						1a	1b	1	2	3	4	5	6
	ID#	[µg/mL]	LOT #	DATE	EXP. DATE	µL	µL	µL	µL	µL	µL	µL	µL
	PAC ECO CAL STD	5		12/26/14	11/19/15	2	5	10	50	20	100	70	1000
						998	995	990	950	80	100	30	N/A
	Hexane		051914A		Final VOL.	1000	1000	1000	1000	100	200	100	1000

LH
2/5/15
ex. 8/5/15

Vel\Fen Curve											
						1	2	3	4	5	6
SUPPLIER	ID#	[µg/mL]	LOT #	DATE	EXP. DATE	µL	µL	µL	µL	µL	µL
VEL/FEN STD		10		01/27/15	06/07/15	10	50	20	200	70	100
	Hexane		051914A			990	950	80	200	30	N/A
					Final VOL.	1000	1000	100	400	100	100

LH
2/5/15
ex. 6/7/15

OP/F CURVE													
						IA	1B	1	2	3	4	5	6
SUPPLIER	ID#	[µg/mL]	LOT #	DATE	EXP. DATE	mL	mL	mL	mL	mL	mL	mL	mL
	OP/F STD	5		12/23/14	02/08/15	2	5	10	50	20	100	70	100
VWR	Hexane		051914A			998	995	990	950	80	100	30	NA
					Final VOL.	1000	1000	1000	1000	100	200	100	100

LH
2/5/15
ex. 2/8/15

TPH SURROGATE
CAT# 110316-05
LOT# 229803-34458
open 2/6/15 LH
expire 2/6/16

DATE/INITIALS	STANDARD	INITIAL CONC	SOURCE DATE	ALIQUOT	FINAL VOLUME	FINAL CONC	NOL TEN. LOT#	DATE/INITIALS
LH 2/6/15 ex. 5/2/15								
/15 /15								
/15								
/15 /19/15								
/15 /14/15								
6 µL 500 500 1000	LH 2/9/15 ex. 5/2/15							
LH 2/10/15 ex. 6/15/15								

GC/MS INSTRUMENT MAINTENANCE LOG # 42 PAGE #

		OP + FAMPHUR STANDARD			
COUMAPHOS	5ug/ml	200ug/ml	250 µL	O2SI	10ml
FENSULFOTHION	5	200	each of:		HEXANE
DEMETON	5	200			LOT#
DICHLORVOS	5	200		MIX A	051914A
DISULFOTON	5	200	Cat:	130205-01	
EPN	5	200	Lot:	234489-34014	
ETHION	5	200	Open.	02/03/15	
RONNEL	5	200	Exp:	06/15/15	
FENTHION	5	200			
MALATHION	5	200			
PARATHION	5	200		MIX B	
EPTC	5	200	Cat:	132380-01	
SULFOTEPP	5	200	Lot:	237606-34574	
TETRACHLORVINPHOS	5	200	Open:	02/03/15	
TRICHLORINATE	5	200	Exp:	02/03/16	
MERPHOS	5	200			
STRIOPHOS	5	200			
CHLOPYRIFOS	5	200		O2SI	
DEF	5	200		MIX 9-14	
DIMETHOATE	5	200		(MIX C)	
AZNPHOS METHYL	5	200	Cal:	130164-01	
METHYL PARATHION	5	200	Lot:	242334-34586	
MEVINPHOS	5	200	Open:	02/03/15	
NALED	5	200	Exp:	02/03/16	
PHORATE	5	200			
ETHOPROP	5	200			
TOKUTHION	5	200			
PROWL	5	200			
BOLSTAR	10	200*2			
TRIFLURALIN	5	200			
DIAZINON	5	200			
TEPP	5	200			
MONOCROTOPHOS	5	200			
DIPHENAMID	5	200			
TBP	5	200			
TPP	5	200			
FAMPHUR	10	1000	100ul	ABSOLUTE	
			Part.	70387	
			Lot:	011613-32091	
			Open.	02/03/15	
			Exp.	01/06/16	

LH 2/10/15 ex. 6/15/15

TPH SURROGATE
CAT # 110316-05
Lot # 229803-34457
Open 2/10/15 MA
Ex 2/10/15

MOTOR OIL SPIKE
CAT# 116390-01
Lot # 228821-34292
Open 2/10/15 MA
Ex 2/10/15

#	STANDARD	INITIAL CONC	SOURCE DATE	ALIQUOT	FINAL VOLUME	FINAL CONC	SOLVENT LOT#	DATE INITIALS

047

GC/FID INSTRUMENT MAINTENANCE LOG # 42 PAGE #

OP/F CURVE													
						1A	1B	1	2	3	4	5	6
SUPPLIER	ID#	[µg/mL]	LOT #	DATE	EXP. DATE	mL	mL	mL	mL	mL	mL	mL	mL
	OP/F STD	5		02/10/15	06/15/15	2	5	10	50	20	100	70	100
VWR	Hexane		051914A			998	995	990	950	80	100	30	NA
					Final VOL.	1000	1000	1000	1000	100	200	100	100

LH 3/2/1 ex. 6/15

OPC CURVE											
						1	2	3	4	5	6
SUPPLIER	ID#	[µg/mL]	LOT #	DATE	EXP. DATE	µL	µL	µL	µL	µL	µL
	OPC STD	5		12/08/14	07/09/15	10	50	20	100	70	1000
	Hexane		051914A			990	950	80	100	30	NA
					Final VOL.	1000	1000	100	200	100	1000

LH 3/2/15 ex. 7/9/15

Tox Calibration Curve					
Compound	Conc. In Mix	Conc. Of Stock	Aliquot	stock source	Final Vol.
Toxaphene	1A - 0.05 ug/ml	100 ug/ml	5	Tox Stock	10 mL
	1 - 0.10 ug/ml	100 ug/ml	10	prep:09/19/14	10 mL
	2 - 0.25 ug/ml	100 ug/ml	125	Ex: 08/20/15	50 mL
	3 - 0.50 ug/ml	100 ug/ml	250		50 mL
	4 - 0.75 ug/ml	100 ug/ml	75		10 mL
	5 - 1.00 ug/ml	100 ug/ml	100		10 mL
	6 - 1.50 ug/ml	100 ug/ml	150		10 mL
	1B - 0.025 ug/ml	1 ug/mL	250	Lvl 5	10 mL
				prep: 03/02/15	
				Ex: 08/20/15	
Solvent:				Hexane	Lot 051914A

LH 3/2/15 ex. 8/20/15

THC SURROGATE
CAT #110316-05
LOT # 246564-34651
Op. 3/2/15
Ex 3/2/16

OPC CURVE											
						1	2	3	4	5	6
SUPPLIER	ID#	[µg/mL]	LOT #	DATE	EXP. DATE	µL	µL	µL	µL	µL	µL
	OPC STD	5		12/08/14	07/09/15	10	50	20	100	70	1000
	Hexane		051914A			990	950	80	100	30	NA
					Final VOL.	1000	1000	100	200	100	1000

LH 3/5/15 ex. 7/9/15

OP/F CURVE													
						1A	1B	1	2	3	4	5	6
SUPPLIER	ID#	[µg/mL]	LOT #	DATE	EXP. DATE	mL	mL	mL	mL	mL	mL	mL	mL
	OP/F STD	5		02/10/15	06/15/15	2	5	10	50	20	100	70	100
VWR	Hexane		051914A			998	995	990	950	80	100	30	NA
					Final VOL.	1000	1000	1000	1000	100	200	100	100

LH 3/5/15 ex. 6/15/15

Diesel Fuel #2 Comp. (Second Source)
50,000 µg/L
OP: 3/10/15
EX: 6/10/15
LOT: 207749-32373 CAT: 611598-01-SS

LH 3/10/15 ex. 6/10/15

5/15
5/15

5	6
µL	µL
70	1000
30	N/A
00	1000

LH 2/26/15 ex. 8/26/15

LH 2/26/15 ex. 9/1/15

Vol.
ent
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LH 2/20/15 6/25/15

STANDARD	INITIAL CONC	SOURCE DATE	ALIQUOT	FINAL VOLUME	FINAL CONC	SOLVENT LOT #	DATE INITIALS

045

GC/MS INSTRUMENT MAINTENANCE LOG # 42 PAGE #

OP/F CURVE													
						1A	1B	1	2	3	4	5	6
SUPPLIER	ID#	[µg/mL]	LOT #	DATE	EXP. DATE	mL	mL	mL	mL	mL	mL	mL	mL
	OP/F STD	5		02/10/15	06/15/15	2	5	10	50	20	100	70	100
VWR	Hexane		051914A			998	995	990	950	80	100	30	NA
					Final VOL	1000	1000	1000	1000	100	200	100	100

LH 2/20/15 ex. 6/15/15

OPF 100/200 CCV						
SUPPLIER	ID#	[µg/mL]	LOT #	DATE	EXP. DATE	µL
	OPF STD	5		02/10/15	06/15/15	100
VWR	HEXANE		080613A			100
					Final VOL.	200

LH 2/20/15 ex. 6/15/15

FIN PT CURVE					
COMPOUND	INITIAL CONC	FINAL CONC	ALIQUOT	STK SRCE	FINAL VOL.
FOLPET	5 ug/ml	VARIOUS	5 ul	FIN PT Std.	1 ml
IPRODIONE	25 ug/ml		50 ul	Prep: 2/16/15	Hexane
NORFLURAZON	5 ug/ml		100 ul	EXP: 12/2/15	Lot: 051914A
PERTHANE	50 ug/ml		150 ul		
TETRADIFON	5 ug/ml		250 ul		

LH 2/23/15 ex. 8/23/15

PAC ECO CURVE													
						1a	1b	1	2	3	4	5	6
	ID#	[µg/mL]	LOT #	DATE	EXP. DATE	µL	µL	µL	µL	µL	µL	µL	µL
	PAC ECO CAL STD	5		12/26/14	11/19/15	2	5	10	50	20	100	70	1000
						998	995	990	950	80	100	30	N/A
	Hexane		051914A		Final VOL.	1000	1000	1000	1000	100	200	100	1000

LH 2/23/15 ex. 8/23/15

Vel\Fen Curve											
						1	2	3	4	5	6
SUPPLIER	ID#	[µg/mL]	LOT #	DATE	EXP. DATE	µL	µL	µL	µL	µL	µL
VEL/FEN STD		10		01/27/15	06/07/15	10	50	20	200	70	100
	Hexane		051914A			990	950	80	200	30	N/A
					Final VOL.	1000	1000	100	400	100	100

LH 2/24/15 ex. 6/7/15

PAC ECO CURVE													
						1a	1b	1	2	3	4	5	6
	ID#	[µg/mL]	LOT #	DATE	EXP. DATE	µL	µL	µL	µL	µL	µL	µL	µL
	PAC ECO CAL STD	5		12/26/14	11/19/15	2	5	10	50	20	100	70	1000
						998	995	990	950	80	100	30	N/A
	Hexane		051914A		Final VOL.	1000	1000	1000	1000	100	200	100	1000

LH 2/24/15 ex. 8/24/15

OP/F CURVE													
						1A	1B	1	2	3	4	5	6
SUPPLIER	ID#	[µg/mL]	LOT #	DATE	EXP. DATE	mL	mL	mL	mL	mL	mL	mL	mL
	OP/F STD	5		02/10/15	06/15/15	2	5	10	50	20	100	70	100
VWR	Hexane		051914A			998	995	990	950	80	100	30	NA
					Final VOL	1000	1000	1000	1000	100	200	100	100

LH 2/24/15 ex. 6/15/15

DIESEL CCV 400ug/ml						
STANDARD	INITIAL CONC.	SOURCE DATE	ALIQUOT	FINAL VOL	FINAL CONC.	SOLVENT /LOT#
DIESEL STD.	1000 µg/mL	Diesel Std.	2000µL	5mL	400 µg/ml	MC
	PREP:	12/05/14				54200
	Exp:	11/24/15				

LH 2/25/15 ex. 3/25/15

SEP011

Organic Extraction Worksheet

Method	THC Separatory Funnel Extraction 3510C	Extraction Set	150317A	Extraction Method	SEP011	Units	mL

piked ID 1	Diesel Spike Ampule 3-10-15 EXP 6-20-15		Surrogate ID 1	THC Surrogate 3-12-15 EXP 3-12-16	
piked ID 2	Motor Oil Spike Ampule 2-10-15 EXP 2-10-16		Surrogate ID 2		
piked ID 3			Surrogate ID 3		
piked ID 4			Surrogate ID 4		
piked ID 5			Surrogate ID 5		
piked ID 6			Sufficient Vol for Matrix QC:	YES	
piked ID 7			Ext. Start Time:	03/17/15 11:15	
piked ID 8			Ext. End Time:	03/17/15 17:00	
			GC Requires Extract By:	**03/23/15 0:00**	

pH1			Water Bath Temp Criteria	35,35,35,3
pH2				
pH3				

Spiked By: KY **Date** 03/17/15 **Witnessed By:** RP **Date** 03/17/15

	Sample	Sample Container	Spike Amount	Spike ID	Surrogate Amount	Surrogate ID	Extract Amount	Final Volume	pH	Extract Date/Time	Comments
1	150317A Blk				0.250	1 equip	1000 E-WB1	5	7	03/17/15 11:15	
2	150317A LCS-1		0.040	1	0.250	1 equip	1000 E-WB2	5	7	03/17/15 11:15	
3	150317A LCS-2		0.040	2	0.250	1 equip	1000 E-WB3	5	7	03/17/15 11:15	
4	AZ12342	AZ12342W05			0.250	1 equip	1000 E-WB4	5	7	03/17/15 11:15	75798 RUSH 14 DAYS
5	AZ12343	AZ12343W04			0.250	1 equip	1000 E-WB1	5	7	03/17/15 11:15	75798 RUSH 14 DAYS
6	AZ12345 MS-1	AZ12345W07	0.040	1	0.250	1 equip	1000 E-WB2	5	7	03/17/15 11:15	75802 RUSH 14 DAYS
7	AZ12345 MSD-1	AZ12345W08	0.040	1	0.250	1 equip	1000 E-WB3	5	7	03/17/15 11:15	75802 RUSH 14 DAYS
8	AZ12345 MS-2	AZ12345W10	0.040	2	0.250	1 equip	1000 E-WB4	5	7	03/17/15 11:15	75802 RUSH 14 DAYS
9	AZ12345 MSD-2	AZ12345W11	0.040	2	0.250	1 equip	1000 E-WB1	5	7	03/17/15 11:15	75802 RUSH 14 DAYS
10	AZ12345	AZ12345W12			0.250	1 equip	1050 E-WB2	5	7	03/17/15 11:15	75802 RUSH 14 DAYS
11	AZ12346	AZ12346W07			0.250	1 equip	1000 E-WB3	5	7	03/17/15 11:15	75802 RUSH 14 DAYS
12	AZ12347	AZ12347W05			0.250	1 equip	950 E-WB4	5	7	03/17/15 11:15	75802 RUSH 14 DAYS
13	AZ12348	AZ12348W07			0.250	1 equip	1030 E-WB1	5	7	03/17/15 11:15	75802 RUSH 14 DAYS
14	AZ12452	AZ12452W05			0.250	1 equip	1000 E-WB2	5	7	03/17/15 11:15	75823 RUSH 10 DAYS
15	AZ12453	AZ12453W04			0.250	1 equip	1030 E-WB3	5	7	03/17/15 11:15	75823 RUSH 10 DAYS
16	AZ12454	AZ12454W05			0.250	1 equip	1000 E-WB4	5	7	03/17/15 11:15	75823 RUSH 10 DAYS

Solvent and Lot#	
MC	54299
Na2SO4	XE21E
PH Strip	HC421273
Filter Paper	400091

Extraction COC Transfer	
Extraction lab employee Initials	KY
GC analyst's initials	LH
Date	3/19/15
Time	11:15
Refrigerator	Hobart

	Technician's Initials
Scanned By	KY
Sample Preparation	KY
Extraction	KY
Concentration	DL

Modified	03/19/15 8:48:35 AM

Reviewed By: Ky **Date** 3/19/15

SEP011

Organic Extraction Worksheet

Method	THC Separatory Funnel Extraction 3510C	Extraction Set	150317A	Extraction Method	SEP011	Units	mL

Spiked ID 1	Diesel Spike Ampule 3-10-15 EXP 6-20-15		Surrogate ID 1	THC Surrogate 3-12-15 EXP 3-12-16
Spiked ID 2	Motor Oil Spike Ampule 2-10-15 EXP 2-10-16		Surrogate ID 2	
Spiked ID 3			Surrogate ID 3	
Spiked ID 4			Surrogate ID 4	
Spiked ID 5			Surrogate ID 5	
Spiked ID 6			Sufficient Vol for Matrix QC:	YES
Spiked ID 7			Ext. Start Time:	03/17/15 11:15
Spiked ID 8			Ext. End Time:	03/17/15 17:00
			GC Requires Extract By:	**03/23/15 0:00**

pH1			Water Bath Temp Criteria	35,35,35,3
pH2				
pH3				

Spiked By: KY **Date** 03/17/15 **Witnessed By:** RP **Date** 03/17/15

	Sample	Sample Container	Spike Amount	Spike ID	Surrogate Amount	Surrogate ID	Extract Amount	Final Volume	pH	Extract Date/Time	Comments
17	AZ12455	AZ12455W04			0.250	1	1000	5	7	03/17/15 11:15	75823 RUSH 10 DAYS
						equip	E-WB1				

LH 3/19/15

Solvent and Lot#	
MC	54299
Na2SO4	XE21E
PH Strip	HC421273
Filter Paper	400091

Extraction COC Transfer	
Extraction lab employee Initials	KY
GC analyst's initials	LH
Date	3/19/15
Time	1115
Refrigerator	Hobart

	Technician's Initials
Scanned By	KY
Sample Preparation	KY
Extraction	KY
Concentration	DL

Modified	03/19/15 8:48:35 AM

Reviewed By: Ky Date 3/19/15

Injection Log

Directory: G:\APOLLO\DATA\150121\150318

Line	Vial	FileName	Multiplier	SampleName	Misc Info	Injected
1	3	121003.D	1	Diesel 10/1000 1/20/15	Mix(A)	1-21-15 16:13:54
2	4	121004.D	1	Diesel 100/1000 1/20/15	Mix(A)	1-21-15 16:38:00
3	5	121005.D	1	Diesel 400/1000 1/20/15	Mix(A)	1-21-15 17:02:08
4	6	121006.D	1	Diesel 600/1000 1/20/15	Mix(A)	1-21-15 17:26:19
5	7	121007.D	1	Diesel 800/1000 1/20/15	Mix(A)	1-21-15 17:50:18
6	8	121008.D	1	Diesel 1000/1000 1/20/15	Mix(A)	1-21-15 18:14:25
7	9	121009.D	1	MO 10/1000 1/20/15	Mix(B)	1-21-15 18:38:23
8	10	121010.D	1	MO 25/1000 1/20/15	Mix(B)	1-21-15 19:02:25
9	11	121011.D	1	MO 125/1000 1/20/15	Mix(B)	1-21-15 19:26:22
10	12	121012.D	1	MO 250/1000 1/20/15	Mix(B)	1-21-15 19:50:20
11	13	121013.D	1	MO 100/200 1/20/15	Mix(B)	1-21-15 20:14:20
12	14	121014.D	1	MO 75/100 1/20/15	Mix(B)	1-21-15 20:38:12
13	15	121015.D	1	MO 1000/1000 1/20/15	Mix(B)	1-21-15 21:02:11
14	16	121016.D	1	Diesel 2ND SRC 1/21/15	Mix(A)	1-21-15 21:25:59
15	17	121017.D	1	MO 2ND SRC 12/10/14	Mix(B)	1-21-15 21:49:54
16	2	318002.D	1	Diesel 400ppm 2/25/15	Mix(A)	3-18-15 10:35:45
17	3	318003.D	1	MO 1000ppm 3/13/15	Mix(B)	3-18-15 11:00:41
18	4	318004.D	5	150317A BLK 5/1000	Water	3-18-15 11:25:43
19	5	318005.D	5	150317A LCS-1 5/1000	Water	3-18-15 11:50:52
20	6	318006.D	5	150317A LCS-2 5/1000	Water	3-18-15 12:15:35
21	7	318007.D	5	AZ12342 5/1000	Water	3-18-15 12:40:25
22	8	318008.D	5	AZ12343 5/1000	Water	3-18-15 13:05:18
23	21	318021.D	1	Diesel 400ppm 2/25/15	Mix(A)	3-18-15 18:30:33
24	22	318022.D	1	MO 1000ppm 3/13/15	Mix(B)	3-18-15 18:55:37

EPA METHOD 8260B
Volatile Organic Compounds

APPL, INC.

EPA METHOD 8260B
Volatile Organic Compounds
QC Summary

APPL, INC.

Method Blank
EPA 8260B WATER

APPL Inc.
908 North Temperance Avenu
Clovis, CA 93611

Blank Name/QCG: **150316W-12345 - 194976**
Batch ID: #86BKB-150316AT

Sample Type	Analyte	Result	LOQ	LOD	DL	Units	Extraction Date	Analysis Date
BLANK	1,1,1-TRICHLOROETHANE	0.30 U	1.0	0.30	0.14	ug/L	03/16/15	03/16/15
BLANK	1,1,2,2-TETRACHLOROETHANE	0.30 U	1.0	0.30	0.10	ug/L	03/16/15	03/16/15
BLANK	1,1,2-TRICHLOROETHANE	0.50 U	1.0	0.50	0.20	ug/L	03/16/15	03/16/15
BLANK	1,1-DICHLOROETHANE	0.30 U	1.0	0.30	0.19	ug/L	03/16/15	03/16/15
BLANK	1,1-DICHLOROETHENE	0.50 U	1.0	0.50	0.30	ug/L	03/16/15	03/16/15
BLANK	1,2,3-TRICHLOROPROPANE	1.00 U	2.0	1.00	0.39	ug/L	03/16/15	03/16/15
BLANK	1,2-DIBROMOETHANE	0.50 U	1.0	0.50	0.20	ug/L	03/16/15	03/16/15
BLANK	1,2-DICHLOROETHANE	0.30 U	1.0	0.30	0.14	ug/L	03/16/15	03/16/15
BLANK	1,2-DICHLOROPROPANE	0.30 U	1.0	0.30	0.17	ug/L	03/16/15	03/16/15
BLANK	2-BUTANONE	2.00 U	10.0	2.00	0.60	ug/L	03/16/15	03/16/15
BLANK	4-METHYL-2-PENTANONE	5.00 U	10.0	5.00	1.90	ug/L	03/16/15	03/16/15
BLANK	ACETONE	2.00 U	10.0	2.00	0.95	ug/L	03/16/15	03/16/15
BLANK	BENZENE	0.30 U	1.0	0.30	0.16	ug/L	03/16/15	03/16/15
BLANK	BROMODICHLOROMETHANE	0.30 U	1.0	0.30	0.14	ug/L	03/16/15	03/16/15
BLANK	BROMOFORM	0.30 U	1.0	0.30	0.14	ug/L	03/16/15	03/16/15
BLANK	BROMOMETHANE	0.50 U	2.0	0.50	0.24	ug/L	03/16/15	03/16/15
BLANK	CARBON TETRACHLORIDE	0.30 U	1.0	0.30	0.10	ug/L	03/16/15	03/16/15
BLANK	CHLOROBENZENE	0.50 U	1.0	0.50	0.21	ug/L	03/16/15	03/16/15
BLANK	CHLOROETHANE	0.50 U	1.0	0.50	0.21	ug/L	03/16/15	03/16/15
BLANK	CHLOROFORM	0.30 U	1.0	0.30	0.07	ug/L	03/16/15	03/16/15
BLANK	CHLOROMETHANE	0.50 U	1.0	0.50	0.42	ug/L	03/16/15	03/16/15
BLANK	CIS-1,2-DICHLOROETHENE	0.30 U	1.0	0.30	0.16	ug/L	03/16/15	03/16/15
BLANK	CIS-1,3-DICHLOROPROPENE	0.30 U	1.0	0.30	0.15	ug/L	03/16/15	03/16/15
BLANK	DIBROMOCHLOROMETHANE	0.30 U	1.0	0.30	0.19	ug/L	03/16/15	03/16/15
BLANK	ETHYLBENZENE	0.50 U	1.0	0.50	0.23	ug/L	03/16/15	03/16/15
BLANK	METHYLENE CHLORIDE	1.00 U	5.0	1.00	0.35	ug/L	03/16/15	03/16/15
BLANK	STYRENE	0.50 U	1.0	0.50	0.25	ug/L	03/16/15	03/16/15
BLANK	TETRACHLOROETHENE	0.30 U	1.0	0.30	0.24	ug/L	03/16/15	03/16/15
BLANK	TOLUENE	0.30 U	1.0	0.30	0.17	ug/L	03/16/15	03/16/15
BLANK	TRANS-1,2-DICHLOROETHENE	0.30 U	1.0	0.30	0.19	ug/L	03/16/15	03/16/15
BLANK	TRANS-1,3-DICHLOROPROPEN	0.30 U	1.0	0.30	0.18	ug/L	03/16/15	03/16/15
BLANK	TRICHLOROETHENE	0.30 U	1.0	0.30	0.16	ug/L	03/16/15	03/16/15
BLANK	VINYL CHLORIDE	0.30 U	1.0	0.30	0.23	ug/L	03/16/15	03/16/15
BLANK	XYLENES (TOTAL)	0.30 U	2.0	0.30	0.19	ug/L	03/16/15	03/16/15

Quant Method: TALLW.M
Run #: 0316T23
Instrument: Thor
Sequence: T150316
Initials: SV

GC SC-Blank-REG MDLs
Printed: 03/17/15 3:52:04 PM

Method Blank
EPA 8260B WATER

APPL Inc.
908 North Temperance Avenu
Clovis, CA 93611

Blank Name/QCG: **150316W-12345 - 194976**
Batch ID: #86BKB-150316AT

Sample Type	Analyte	Result	LOQ	LOD	DL	Units	Extraction Date	Analysis Date
BLANK	SURROGATE: 1,2-DICHLOROET	100	70-120			%	03/16/15	03/16/15
BLANK	SURROGATE: 4-BROMOFLUOR	101	75-120			%	03/16/15	03/16/15
BLANK	SURROGATE: DIBROMOFLUOR	101	85-115			%	03/16/15	03/16/15
BLANK	SURROGATE: TOLUENE-D8 (S)	101	85-120			%	03/16/15	03/16/15

Quant Method: TALLW.M
Run #: 0316T23
Instrument: Thor
Sequence: T150316
Initials: SV

GC SC-Blank-REG MDLs
Printed: 03/17/15 3:52:05 PM

Method Blank

EPA 8260B WATER DILUTION

APPL Inc.
908 North Temperance Avenu
Clovis, CA 93611

Blank Name/QCG: **150317W-12342 - 195029**
Batch ID: #86BKB-150317AT

Sample Type	Analyte	Result	LOQ	LOD	DL	Units	Extraction Date	Analysis Date
BLANK	CIS-1,2-DICHLOROETHENE	0.30 U	1.0	0.30	0.16	ug/L	03/17/15	03/17/15
BLANK	SURROGATE: 1,2-DICHLOROET	100	70-120			%	03/17/15	03/17/15
BLANK	SURROGATE: 4-BROMOFLUOR	98.1	75-120			%	03/17/15	03/17/15
BLANK	SURROGATE: DIBROMOFLUOR	99.9	85-115			%	03/17/15	03/17/15
BLANK	SURROGATE: TOLUENE-D8 (S)	98.7	85-120			%	03/17/15	03/17/15

Quant Method: TALLW.M
Run #: 0317T09
Instrument: Thor
Sequence: T150316
Initials: SV

GC SC-Blank-REG MDLs
Printed: 03/19/15 1:44:38 PM

Form 2 & 8

Surrogate Recovery

Lab Name: APPL, Inc.
Case No: 75798
Matrix: WATER

SDG No: 75798
Date Analyzed: 03/16/15
Instrument: Thor

APPL ID.	Client Sample No.	SURROGATE: 1,2-DICHLOROETHANE-D4 (S)			SURROGATE: 4-BROMOFLUOROBENZENE (S)		
		Limits	Result	Qualifier	Limits	Result	Qualifier
150316AT-LCS	Lab Control Spike	70-120	101		75-120	100	
150316AT-BLK	Blank	70-120	100		75-120	101	
AZ12344	TRIP BLANK-2	70-120	98.4		75-120	96.5	
AZ12342	EKB100022	70-120	96.0		75-120	96.8	
AZ12343	EKB100023	70-120	97.9		75-120	97.7	

Comments: Batch: #86BKB-150316AT

Form 2 & 8

Surrogate Recovery

Lab Name: APPL, Inc.
Case No: 75798
Matrix: WATER

SDG No: 75798
Date Analyzed: 03/16/15
Instrument: Thor

APPL ID.	Client Sample No.	SURROGATE: DIBROMOFLUOROMETHANE (S)			SURROGATE: TOLUENE-D8 (S)		
		Limits	Result	Qualifier	Limits	Result	Qualifier
150316AT-LCS	Lab Control Spike	85-115	102		85-120	98.7	
150316AT-BLK	Blank	85-115	101		85-120	101	
AZ12344	TRIP BLANK-2	85-115	98.9		85-120	97.3	
AZ12342	EKB100022	85-115	98.6		85-120	97.1	
AZ12343	EKB100023	85-115	97.0		85-120	99.0	

Comments: Batch: #86BKB-150316AT

Form 2 & 8

Surrogate Recovery

Lab Name: APPL, Inc. SDG No: 75798

Case No: 75798 Date Analyzed: 03/17/15

Matrix: WATER Instrument: Thor

APPL ID.	Client Sample No.	SURROGATE: 1,2-DICHLOROETHANE-D4 (S)			SURROGATE: 4-BROMOFLUOROBENZENE (S)		
		Limits	Result	Qualifier	Limits	Result	Qualifier
150317AT-LCS	Lab Control Spike	70-120	97.1		75-120	99.9	
150317AT-BLK	Blank	70-120	100		75-120	98.1	
AZ12342	EKB100022	70-120	101		75-120	96.8	

Comments: Batch: #86BKB-150317AT

Form 2 & 8

Surrogate Recovery

Lab Name: APPL, Inc.
Case No: 75798
Matrix: WATER

SDG No: 75798
Date Analyzed: 03/17/15
Instrument: Thor

APPL ID.	Client Sample No.	SURROGATE: DIBROMOFLUOROMETHANE (S)			SURROGATE: TOLUENE-D8 (S)		
		Limits	Result	Qualifier	Limits	Result	Qualifier
150317AT-LCS	Lab Control Spike	85-115	101		85-120	98.0	
150317AT-BLK	Blank	85-115	99.9		85-120	98.7	
AZ12342	EKB100022	85-115	101		85-120	96.3	

Comments: Batch: #86BKB-150317AT

Laboratory Control Spike Recovery
EPA 8260B WATER

APPL ID: **150316W-12345 LCS - 194976**
Batch ID: #86BKB-150316AT

APPL Inc.
908 North Temperance Avenue
Clovis, CA 93611

Compound Name	Spike Level ug/L	SPK Result ug/L	SPK % Recovery	Recovery Limits
1,1,1-TRICHLOROETHANE	10.00	9.77	97.7	65-130
1,1,2,2-TETRACHLOROETHANE	10.00	8.60	86.0	65-130
1,1,2-TRICHLOROETHANE	10.00	9.25	92.5	75-125
1,1-DICHLOROETHANE	10.00	9.71	97.1	70-135
1,1-DICHLOROETHENE	10.00	9.99	99.9	70-130
1,2,3-TRICHLOROPROPANE	10.00	9.54	95.4	75-125
1,2-DIBROMOETHANE	10.00	9.59	95.9	70-130
1,2-DICHLOROETHANE	10.00	9.05	90.5	70-130
1,2-DICHLOROPROPANE	10.00	9.31	93.1	75-125
2-BUTANONE	10.00	9.06	90.6	30-150
4-METHYL-2-PENTANONE	10.00	8.73	87.3	60-135
ACETONE	10.00	10.2	102	40-140
BENZENE	10.00	9.93	99.3	80-120
BROMODICHLOROMETHANE	10.00	9.37	93.7	75-120
BROMOFORM	10.00	9.83	98.3	70-130
BROMOMETHANE	10.00	9.45	94.5	30-145
CARBON TETRACHLORIDE	10.00	10.2	102	65-140
CHLOROBENZENE	10.00	9.58	95.8	80-120
CHLOROETHANE	10.00	9.72	97.2	60-135
CHLOROFORM	10.00	8.76	87.6	65-135
CHLOROMETHANE	10.00	9.51	95.1	40-125
CIS-1,2-DICHLOROETHENE	10.00	9.64	96.4	70-125
CIS-1,3-DICHLOROPROPENE	10.00	9.36	93.6	70-130
DIBROMOCHLOROMETHANE	10.00	9.46	94.6	60-135
ETHYLBENZENE	10.00	9.67	96.7	75-125
METHYLENE CHLORIDE	10.00	9.29	92.9	55-140
STYRENE	10.00	9.69	96.9	65-135
TETRACHLOROETHENE	10.00	9.47	94.7	45-150
TOLUENE	10.00	9.63	96.3	75-120
TRANS-1,2-DICHLOROETHENE	10.00	9.77	97.7	60-140
TRANS-1,3-DICHLOROPROPENE	10.00	9.11	91.1	55-140

Comments:

Primary	SPK
Quant Method :	TALLW.M
Extraction Date :	03/16/15
Analysis Date :	03/16/15
Instrument :	Thor
Run :	0316T19
Initials :	SV

Printed: 03/17/15 3:52:13 PM
APPL Standard LCS

Laboratory Control Spike Recovery
EPA 8260B WATER

APPL ID: **150316W-12345 LCS - 194976**
Batch ID: #86BKB-150316AT

APPL Inc.
908 North Temperance Avenue
Clovis, CA 93611

Compound Name	Spike Level ug/L	SPK Result ug/L	SPK % Recovery	Recovery Limits
TRICHLOROETHENE	10.00	10.6	106	70-125
VINYL CHLORIDE	10.00	9.14	91.4	50-145
XYLENES (TOTAL)	30.0	29.7	99.0	75-130
SURROGATE: 1,2-DICHLOROETHANE-	26.8	27.0	101	70-120
SURROGATE: 4-BROMOFLUOROBENZ	27.3	27.4	100	75-120
SURROGATE: DIBROMOFLUOROMETH	28.2	28.7	102	85-115
SURROGATE: TOLUENE-D8 (S)	28.7	28.3	98.7	85-120

Comments: _____

Primary	SPK
Quant Method :	TALLW.M
Extraction Date :	03/16/15
Analysis Date :	03/16/15
Instrument :	Thor
Run :	0316T19
Initials :	SV

Printed: 03/17/15 3:52:13 PM
APPL Standard LCS

Laboratory Control Spike Recovery
EPA 8260B WATER DILUTION

APPL ID: **150317W-12342 LCS - 195029**
Batch ID: #86BKB-150317AT

APPL Inc.
908 North Temperance Avenue
Clovis, CA 93611

Compound Name	Spike Level ug/L	SPK Result ug/L	SPK % Recovery	Recovery Limits
CIS-1,2-DICHLOROETHENE	10.00	10.1	101	70-125
SURROGATE: 1,2-DICHLOROETHANE-	26.8	26.0	97.1	70-120
SURROGATE: 4-BROMOFLUOROBENZ	27.3	27.3	99.9	75-120
SURROGATE: DIBROMOFLUOROMETH	28.2	28.4	101	85-115
SURROGATE: TOLUENE-D8 (S)	28.7	28.1	98.0	85-120

Comments: _____

Primary	SPK
Quant Method :	TALLW.M
Extraction Date :	03/17/15
Analysis Date :	03/17/15
Instrument :	Thor
Run :	0317T05
Initials :	SV

Printed: 03/19/15 1:44:47 PM
APPL Standard LCS

EPA 8260B

Form 4

Blank Summary

Lab Name: APPL, Inc.
SDG No: 75798
Case No: 75798
Date Analyzed: 03/16/15
Matrix: WATER
Instrument: Thor
Blank ID: 150316AT-BLK
Time Analyzed: 2319

APPL ID.	Client Sample No.	File ID.	Date Analyzed
150316AT-LCS	Lab Control Spike	0316T19	03/16/15 2127
150316AT-BLK	Blank	0316T23	03/16/15 2319
AZ12344	TRIP BLANK-2	0316T27	03/17/15 0110
AZ12342	EKB100022	0316T33	03/17/15 0357
AZ12343	EKB100023	0316T34	03/17/15 0425

Comments: Batch: #86BKB-150316AT

Printed: 03/17/15 3:52:16 PM
Form 4, Blank Summary

EPA 8260B

Form 4

Blank Summary

Lab Name: APPL, Inc.
Case No: 75798
Matrix: WATER
Blank ID: 150317AT-BLK

SDG No: 75798
Date Analyzed: 03/17/15
Instrument: Thor
Time Analyzed: 1252

APPL ID.	Client Sample No.	File ID.	Date Analyzed
150317AT-LCS	Lab Control Spike	0317T05	03/17/15 1100
150317AT-BLK	Blank	0317T09	03/17/15 1252
AZ12342	EKB100022	0317T12	03/17/15 1415

Comments: Batch: #86BKB-150317AT

Printed: 03/19/15 1:44:53 PM
Form 4, Blank Summary

Form 5
Tune Summary

Lab Name: APPL Inc.
Case No: ~~0316T01.D~~ 75798
Matrix: Water np 4-6-15
ID: 5ng- BFB Std 02-24-15

SDG No: ~~Thor~~ np 4-6-15 75 798
Date Analyzed: 3/16/2015
Instrument: Thor
Time Analyzed: 13:12

	Client Sample No.	APPL ID.	File ID.	Date Analyzed
1		0.1ug/L VOC STD 3-16	0316T05.D	3/16/2015 14:56
2		0.3ug/L VOC STD 3-16	0316T06.D	3/16/2015 15:24
3		0.5ug/L VOC STD 3-16	0316T07.D	3/16/2015 15:52
4		1.0ug/L VOC STD 3-16	0316T08.D	3/16/2015 16:20
5		5.0ug/L VOC STD 3-16	0316T09.D	3/16/2015 16:48
6		10ug/L VOC STD 3-16-	0316T10.D	3/16/2015 17:16
7		20ug/L VOC STD 3-16-	0316T11.D	3/16/2015 17:44
8		40ug/L VOC STD 3-16-	0316T12.D	3/16/2015 18:12
9		100ug/L VOC STD 3-16	0316T13.D	3/16/2015 18:40
10				
11				
12				
13				
14				
15				
16				
17				
18				
19				
20				
21				
22				

m/e		
50	15 - 40% of mass 95	15.7
75	30 - 60% of mass 95	46.8
95	100 - 100% of mass 95	100.0
96	5 - 9% of mass 95	6.8
173	0 - 2% of mass 174	0.9
174	50 - 100% of mass 95	90.2
175	5 - 9% of mass 174	7.2
176	95 - 101% of mass 174	95.8
177	5 - 9% of mass 176	6.6

Form 5
Tune Summary

Lab Name: APPL Inc.
Case No: 75798
Matrix: Water
ID: 5ng- BFB Std 02-24-15

SDG No: 75798
Date Analyzed: 3/16/2015
Instrument: Thor
Time Analyzed: 20:03

	Client Sample No.	APPL ID.	File ID.	Date Analyzed
1		10ug/L STD 3-16-15(S	0316T17.D	3/16/2015 20:31
2		10ug/L STD 3-16-15(C	0316T18.D	3/16/2015 20:59
3	Lab Control Spike	150316A LCS-1WT	0316T19.D	3/16/2015 21:27
4	Blank	150316A BLK-1WT	0316T23.D	3/16/2015 23:19
5	TRIP BLANK-2	AZ12344W01	0316T27.D	3/17/2015 1:10
6	EKB100022	AZ12342W01	0316T33.D	3/17/2015 3:57
7	EKB100023	AZ12343W01	0316T34.D	3/17/2015 4:25
8				
9				
10				
11				
12				
13				
14				
15				
16				
17				
18				
19				
20				
21				
22				

m/e		
50	15 - 40% of mass 95	16.2
75	30 - 60% of mass 95	47.6
95	100 - 100% of mass 95	100.0
96	5 - 9% of mass 95	6.9
173	0 - 2% of mass 174	0.8
174	50 - 100.04% of mass 95	86.9
175	5 - 9% of mass 174	7.6
176	94.95 - 101% of mass 174	98.5
177	5 - 9% of mass 176	6.7

Form 5
Tune Summary

Lab Name: APPL Inc.
Case No: 75798
Matrix: Water
ID: 5ng- BFB Std 02-24-15

SDG No: 75798
Date Analyzed: 03/17/15
Instrument: Thor
Time Analyzed: 9:36

	Client Sample No.	APPL ID.	File ID.	Date Analyzed
1		10ug/L VOC STD 3-17-	0317T04.D	03/17/15 10:32
2	Lab Control Spike	150317A LCS-1WT	0317T05.D	03/17/15 11:00
3	Blank	150317A BLK-1WT	0317T09.D	03/17/15 12:52
4	EKB100022	AZ12342W02 DF5	0317T12.D	03/17/15 14:15
5				
6				
7				
8				
9				
10				
11				
12				
13				
14				
15				
16				
17				
18				
19				
20				
21				
22				

m/e		
50	15 - 40% of mass 95	15.7
75	30 - 60% of mass 95	47.4
95	100 - 100% of mass 95	100.0
96	5 - 9% of mass 95	6.5
173	0 - 2% of mass 174	1.0
174	50 - 100.04% of mass 95	89.7
175	5 - 9% of mass 174	7.3
176	94.95 - 101% of mass 174	96.1
177	5 - 9% of mass 176	6.1

8A
INTERNAL STANDARD AREA AND RT SUMMARY

Lab Name: APPL Inc.
Contract: Review
Lab Code:
SDG No.: 75798
Lab File ID (Standard): 0316T10.D
Date Analyzed: 03/16/15
Instrument ID: Thor
Time Analyzed: 17:16
GC Column:
ID:
Heated Purge: (Y/N)

		Fluorobenzene (IS)		Chlorobenzene-D5 (IS)		1,4-Dichlorobenzene-D (IS)	
		AREA #	RT #	AREA #	RT #	AREA #	RT #
	12 HOUR STD	701184	5.99	643072	9.20	345344	11.52
	UPPER LIMIT	1402368	6.49	1286144	9.70	690688	12.02
	LOWER LIMIT	350592	5.49	321536	8.70	172672	11.02
	SAMPLE NO.						
01	0.1ug/L VOC STD 3-16-	658688	5.99	600512	9.21	296384	11.52
02	0.3ug/L VOC STD 3-16-	685120	5.99	596160	9.20	307136	11.53
03	0.5ug/L VOC STD 3-16-	682496	5.99	601152	9.21	311616	11.52
04	1.0ug/L VOC STD 3-16-	682112	5.99	618944	9.21	310400	11.52
05	5.0ug/L VOC STD 3-16-	690496	5.99	628928	9.21	325248	11.52
06	10ug/L VOC STD 3-16-1	701184	5.99	643072	9.20	345344	11.52
07	20ug/L VOC STD 3-16-1	709760	5.99	651968	9.21	346560	11.52
08	40ug/L VOC STD 3-16-1	733440	5.99	670976	9.21	347392	11.52
09	100ug/L VOC STD 3-16-	710208	5.99	667840	9.21	362624	11.52
10	10ug/L STD 3-16-15(SS	711232	5.99	641280	9.21	335744	11.52
11	10ug/L STD 3-16-15(CC	698368	5.99	627840	9.21	334912	11.53
12	150316A LCS-1WT	696832	5.99	634496	9.21	329024	11.52
13	150316A BLK-1WT	667264	5.99	595904	9.21	295424	11.52
14	AZ12344W01	680384	5.99	616896	9.21	298432	11.52
15	AZ12342W01	661824	5.99	596096	9.21	283456	11.52
16	AZ12343W01	653440	5.99	584128	9.21	283456	11.53
17	10ug/L VOC STD 3-17-1	668800	5.99	606592	9.21	316544	11.52
18	150317A LCS-1WT	675456	5.99	612672	9.21	324992	11.52
19	150317A BLK-1WT	643264	6.00	587520	9.21	293312	11.52
20	AZ12342W02 DF5	645312	5.99	591744	9.21	294464	11.52
21							
22							

AREA UPPER LIMIT = +100% of internal standard area.
AREA LOWER LIMIT = -50% of internal standard area.
RT UPPER LIMIT = +0.50 minutes of internal standard RT
RT LOWER LIMIT = -0.50 minutes of internal standard RT

Column used to flag values outside QC limits with an asterisk.
* Values outside of QC limits.

EPA METHOD 8260B
Volatile Organic Compounds
Sample Data

APPL, INC.

EPA 8260B WATER

Element Environmental
98-030 Hekaha St., Unit 9
Aiea, HI 96701

APPL Inc.
908 North Temperance Avenue
Clovis, CA 93611

Attn: Steve Spengler
Project: MCBH Motor Pool UST KB-100 SI / 130034
Sample ID: EKB100022
Sample Collection Date: 03/10/15

ARF: 75798
APPL ID: AZ12342
QCG: #86BKB-150316AT-194976

Method	Analyte	Result	LOQ	LOD	DL	Units	Extraction Date	Analysis Date
EPA 8260B	1,1,1-TRICHLOROETHANE	0.30 U	1.0	0.30	0.14	ug/L	03/17/15	03/17/15
EPA 8260B	1,1,2,2-TETRACHLOROETHANE	0.30 U	1.0	0.30	0.10	ug/L	03/17/15	03/17/15
EPA 8260B	1,1,2-TRICHLOROETHANE	0.50 U	1.0	0.50	0.20	ug/L	03/17/15	03/17/15
EPA 8260B	1,1-DICHLOROETHANE	0.30 U	1.0	0.30	0.19	ug/L	03/17/15	03/17/15
EPA 8260B	1,1-DICHLOROETHENE	0.50 U	1.0	0.50	0.30	ug/L	03/17/15	03/17/15
EPA 8260B	1,2,3-TRICHLOROPROPANE	1.00 U	2.0	1.00	0.39	ug/L	03/17/15	03/17/15
EPA 8260B	1,2-DIBROMOETHANE	0.50 U	1.0	0.50	0.20	ug/L	03/17/15	03/17/15
EPA 8260B	1,2-DICHLOROETHANE	0.30 U	1.0	0.30	0.14	ug/L	03/17/15	03/17/15
EPA 8260B	1,2-DICHLOROPROPANE	0.30 U	1.0	0.30	0.17	ug/L	03/17/15	03/17/15
EPA 8260B	2-BUTANONE	2.00 U	10.0	2.00	0.60	ug/L	03/17/15	03/17/15
EPA 8260B	4-METHYL-2-PENTANONE	5.00 U	10.0	5.00	1.90	ug/L	03/17/15	03/17/15
EPA 8260B	ACETONE	1.6 J	10.0	2.00	0.95	ug/L	03/17/15	03/17/15
EPA 8260B	BENZENE	0.30 U	1.0	0.30	0.16	ug/L	03/17/15	03/17/15
EPA 8260B	BROMODICHLOROMETHANE	0.30 U	1.0	0.30	0.14	ug/L	03/17/15	03/17/15
EPA 8260B	BROMOFORM	0.30 U	1.0	0.30	0.14	ug/L	03/17/15	03/17/15
EPA 8260B	BROMOMETHANE	0.50 U	2.0	0.50	0.24	ug/L	03/17/15	03/17/15
EPA 8260B	CARBON TETRACHLORIDE	0.30 U	1.0	0.30	0.10	ug/L	03/17/15	03/17/15
EPA 8260B	CHLOROBENZENE	0.50 U	1.0	0.50	0.21	ug/L	03/17/15	03/17/15
EPA 8260B	CHLOROETHANE	0.50 U	1.0	0.50	0.21	ug/L	03/17/15	03/17/15
EPA 8260B	CHLOROFORM	0.30 U	1.0	0.30	0.07	ug/L	03/17/15	03/17/15
EPA 8260B	CHLOROMETHANE	0.50 U	1.0	0.50	0.42	ug/L	03/17/15	03/17/15
EPA 8260B	CIS-1,2-DICHLOROETHENE	200 E	1.0	0.30	0.16	ug/L	03/17/15	03/17/15
EPA 8260B	CIS-1,3-DICHLOROPROPENE	0.30 U	1.0	0.30	0.15	ug/L	03/17/15	03/17/15
EPA 8260B	DIBROMOCHLOROMETHANE	0.30 U	1.0	0.30	0.19	ug/L	03/17/15	03/17/15
EPA 8260B	ETHYLBENZENE	0.50 U	1.0	0.50	0.23	ug/L	03/17/15	03/17/15
EPA 8260B	METHYLENE CHLORIDE	1.00 U	5.0	1.00	0.35	ug/L	03/17/15	03/17/15
EPA 8260B	STYRENE	0.50 U	1.0	0.50	0.25	ug/L	03/17/15	03/17/15
EPA 8260B	TETRACHLOROETHENE	3.6	1.0	0.30	0.24	ug/L	03/17/15	03/17/15
EPA 8260B	TOLUENE	0.30 U	1.0	0.30	0.17	ug/L	03/17/15	03/17/15
EPA 8260B	TRANS-1,2-DICHLOROETHENE	81	1.0	0.30	0.19	ug/L	03/17/15	03/17/15
EPA 8260B	TRANS-1,3-DICHLOROPROPENE	0.30 U	1.0	0.30	0.18	ug/L	03/17/15	03/17/15
EPA 8260B	TRICHLOROETHENE	22	1.0	0.30	0.16	ug/L	03/17/15	03/17/15
EPA 8260B	VINYL CHLORIDE	62	1.0	0.30	0.23	ug/L	03/17/15	03/17/15
EPA 8260B	XYLENES (TOTAL)	0.30 U	2.0	0.30	0.19	ug/L	03/17/15	03/17/15
EPA 8260B	SURROGATE: 1,2-DICHLOROETHANE	96.0	70-120			%	03/17/15	03/17/15

J = Estimated value.
E = The reported value exceeds linear range.

Quant Method: TALLW.M
Run #: 0316T33
Instrument: Thor
Sequence: T150316
Dilution Factor: 1
Initials: SV

Printed: 03/19/15 1:54:16 PM
APPL-F1-SC-NoMC-REG MDLs

EPA 8260B WATER

Element Environmental
98-030 Hekaha St., Unit 9
Aiea, HI 96701

APPL Inc.
908 North Temperance Avenue
Clovis, CA 93611

Attn: Steve Spengler
Project: MCBH Motor Pool UST KB-100 SI / 130034
Sample ID: EKB100022
Sample Collection Date: 03/10/15

ARF: 75798
APPL ID: AZ12342
QCG: #86BKB-150316AT-194976

Method	Analyte	Result	LOQ	LOD	DL	Units	Extraction Date	Analysis Date
EPA 8260B	SURROGATE: 4-BROMOFLUOROBEN	96.8	75-120			%	03/17/15	03/17/15
EPA 8260B	SURROGATE: DIBROMOFLUOROMET	98.6	85-115			%	03/17/15	03/17/15
EPA 8260B	SURROGATE: TOLUENE-D8 (S)	97.1	85-120			%	03/17/15	03/17/15

J = Estimated value.
E = The reported value exceeds linear range.

Quant Method: TALLW.M
Run #: 0316T33
Instrument: Thor
Sequence: T150316
Dilution Factor: 1
Initials: SV

Printed: 03/19/15 1:54:16 PM
APPL-F1-SC-NoMC-REG MDLs

Quantitation Report (QT Reviewed)

Data File : M:\THOR\DATA\T150316\0316T33.D
Acq On : 17 Mar 15 3:57
Sample : AZ12342W01
Misc : 10ml IS&S 2/10/15,3/16/15

Vial: 32
Operator: DG, HW, SV, RS
Inst : Thor
Multiplr: 1.00

Quant Time: Mar 17 15:16 2015 Quant Results File: TALLW.RES

Quant Method : M:\THOR\DATA\T150316\TALLW.M (RTE Integrator)
Title : METHOD 8260B
Last Update : Tue Mar 17 08:51:48 2015
Response via : Initial Calibration
DataAcq Meth : 8260_BETA

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene (IS)	5.99	96	661824	25.00000 ppb	0.00
56) Chlorobenzene-D5 (IS)	9.21	117	596096	25.00000 ppb	0.00
71) 1,4-Dichlorobenzene-D (IS)	11.52	152	283456	25.00000 ppb	0.00
System Monitoring Compounds					
32) Dibromofluoromethane(S)	5.17	111	325588	27.81428 ppb	0.00
Spiked Amount 28.198			Recovery	= 98.640%	
37) 1,2-DCA-D4(S)	5.57	65	305504	25.70118 ppb	0.00
Spiked Amount 26.773			Recovery	= 95.996%	
57) Toluene-D8(S)	7.75	98	1175237	27.86136 ppb	0.00
Spiked Amount 28.680			Recovery	= 97.145%	
65) 4-Bromofluorobenzene(S)	10.38	95	430957	26.43062 ppb	0.00
Spiked Amount 27.316			Recovery	= 96.759%	
Target Compounds					Qvalue
5) Vinyl chloride	1.22	62	845261	61.96513 ppb	100
11) Acetone	2.28	43	6140	1.63303 ppb	95
21) Trans-1,2-DCE	3.03	96	877166	81.35880 ppb	99
28) Cis-1,2-DCE	4.48	96	2465544	197.51286 ppb	96
42) TCE	6.43	95	269217	22.00746 ppb	99
59) Tetrachloroethene	8.37	166	48833	3.61808 ppb	96

(#) = qualifier out of range (m) = manual integration

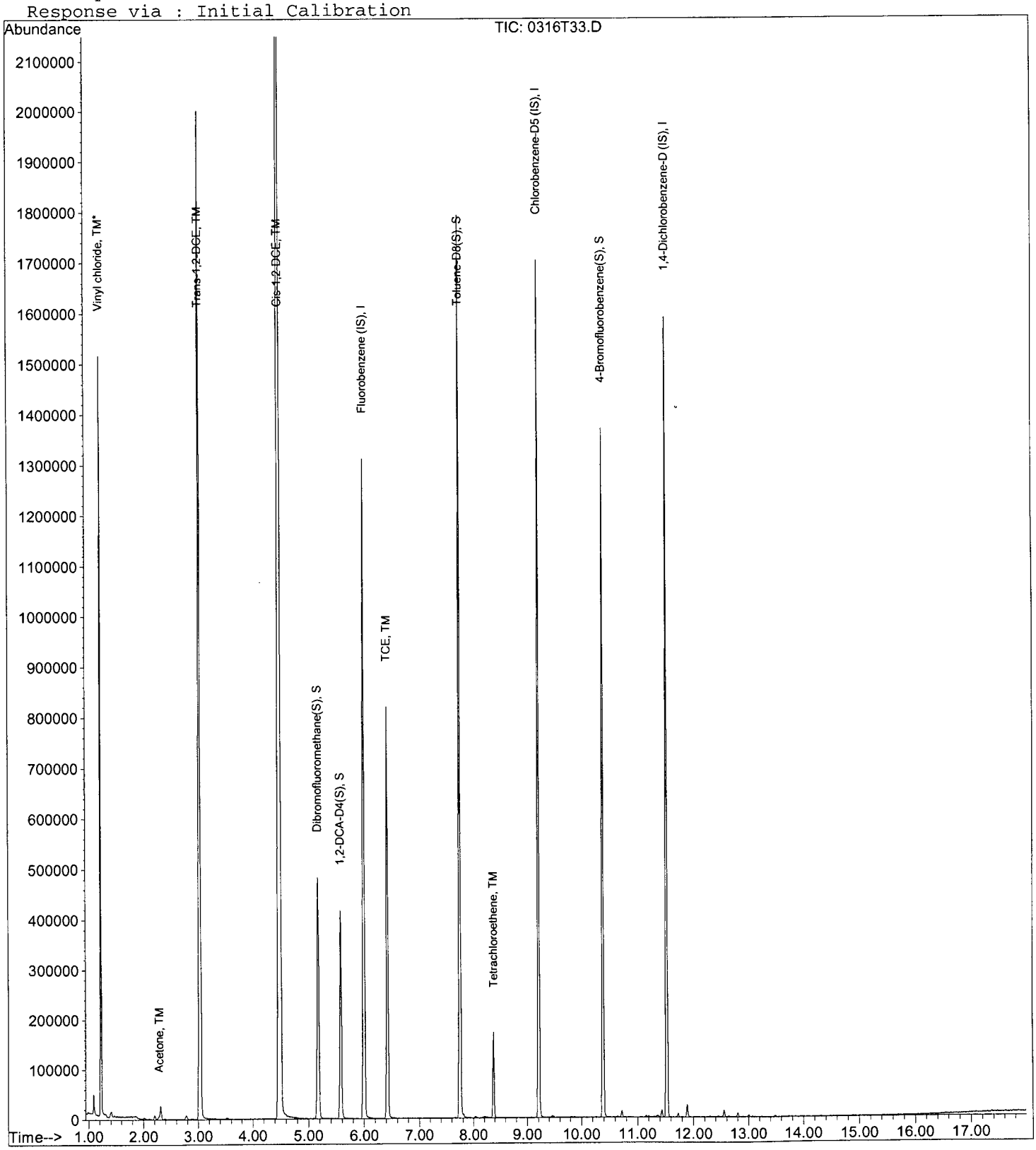
Quantitation Report

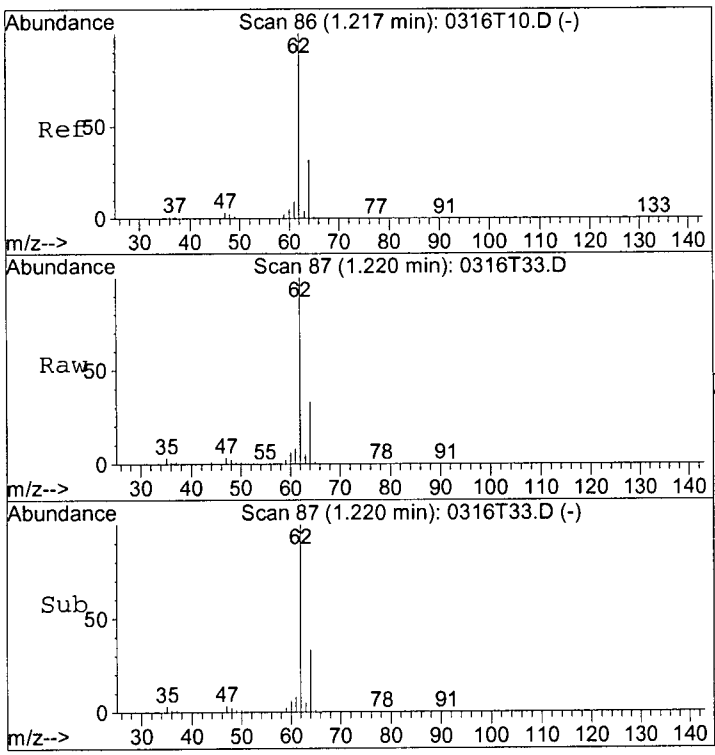
Data File : M:\THOR\DATA\T150316\0316T33.D
Acq On : 17 Mar 15 3:57
Sample : AZ12342W01
Misc : 10ml IS&S 2/10/15,3/16/15

Vial: 32
Operator: DG, HW, SV, RS
Inst : Thor
Multiplr: 1.00

Quant Time: Mar 17 15:16 2015 Quant Results File: TALLW.RES

Method : M:\THOR\DATA\T150316\TALLW.M (RTE Integrator)
Title : METHOD 8260B
Last Update : Tue Mar 17 08:51:48 2015
Response via : Initial Calibration

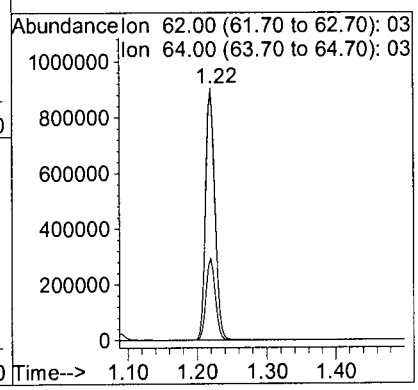


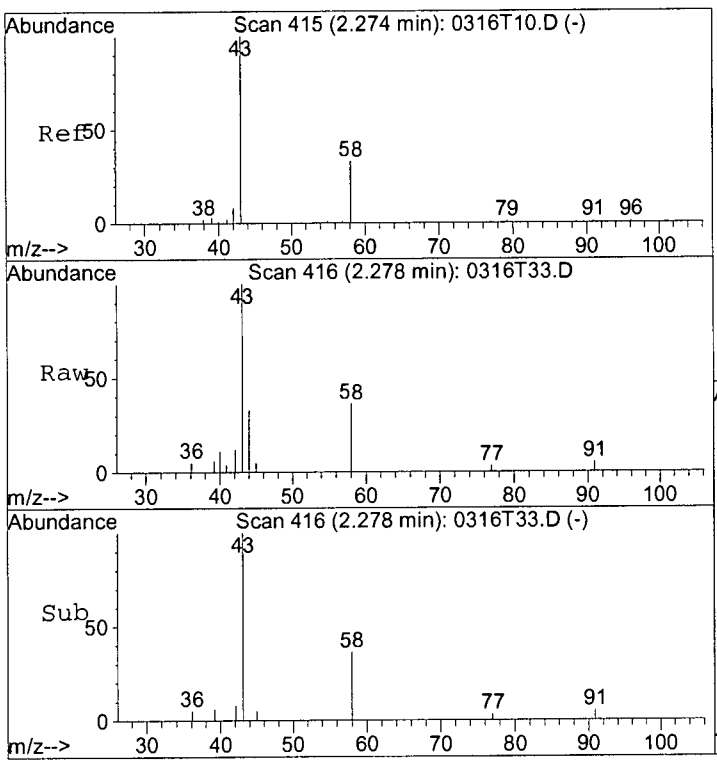


#5
Vinyl chloride
Concen: 61.96513 ppb
RT: 1.22 min Scan# 87
Delta R.T. 0.00 min
Lab File: 0316T33.D
Acq: 17 Mar 15 3:57

Tgt Ion: 62 Resp: 845261

Ion	Ratio	Lower	Upper
62	100		
64	32.5	22.6	42.0

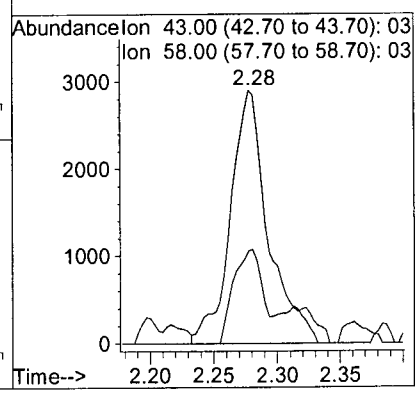


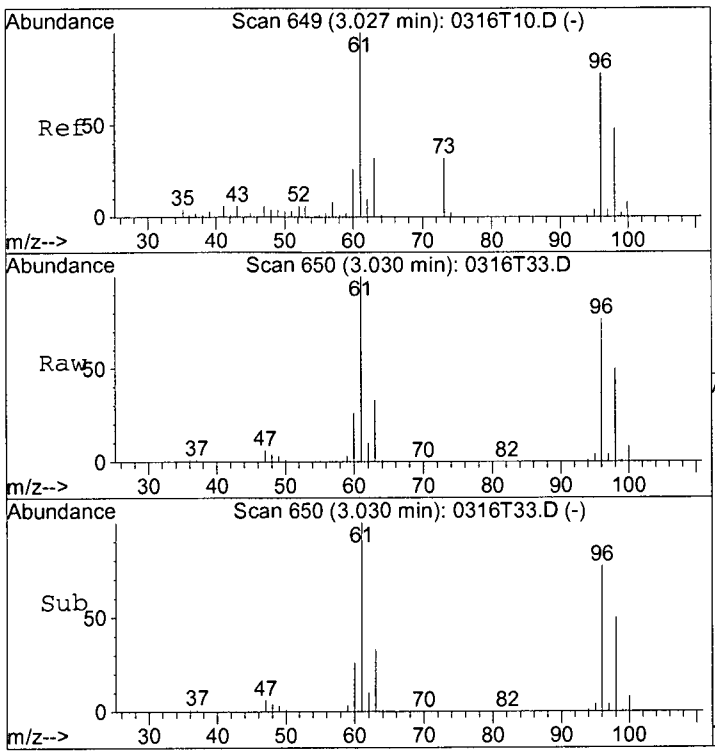


#11
Acetone
Concen: 1.63303 ppb
RT: 2.28 min Scan# 416
Delta R.T. 0.00 min
Lab File: 0316T33.D
Acq: 17 Mar 15 3:57

Tgt Ion: 43 Resp: 6140

Ion	Ratio	Lower	Upper
43	100		
58	36.4	26.9	40.3

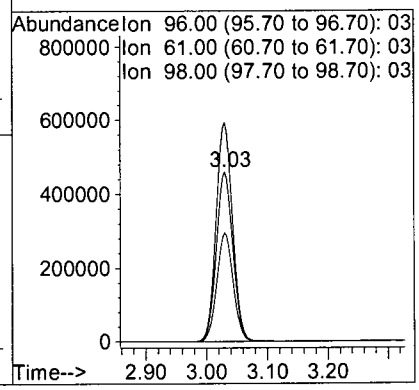


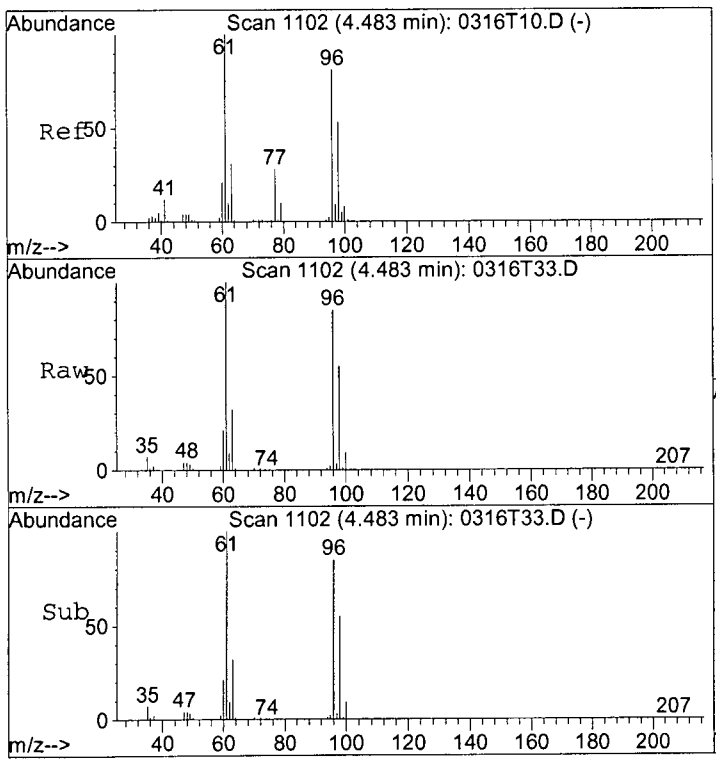


#21
Trans-1,2-DCE
Concen: 81.35880 ppb
RT: 3.03 min Scan# 650
Delta R.T. 0.00 min
Lab File: 0316T33.D
Acq: 17 Mar 15 3:57

Tgt Ion: 96 Resp: 877166

Ion	Ratio	Lower	Upper
96	100		
61	129.1	90.0	167.1
98	64.3	43.2	80.2

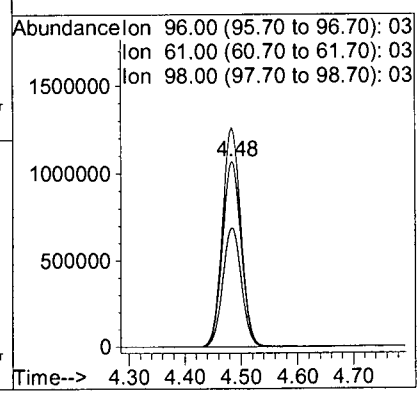


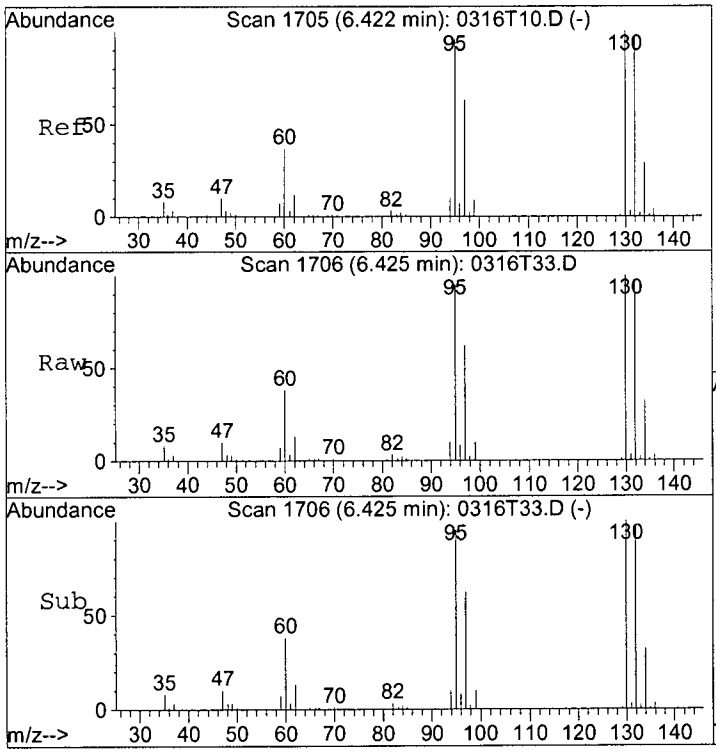


#28
Cis-1,2-DCE
Concen: 197.51286 ppb
RT: 4.48 min Scan# 1102
Delta R.T. -0.00 min
Lab File: 0316T33.D
Acq: 17 Mar 15 3:57

Tgt Ion: 96 Resp: 2465544

Ion	Ratio	Lower	Upper
96	100		
61	118.0	86.9	161.3
98	64.6	45.9	85.3

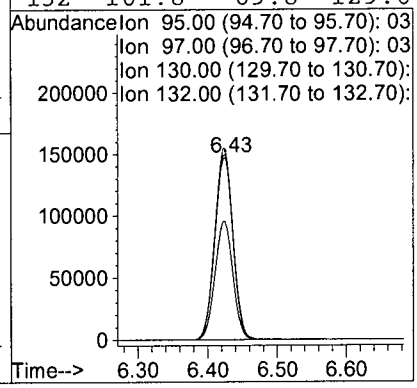


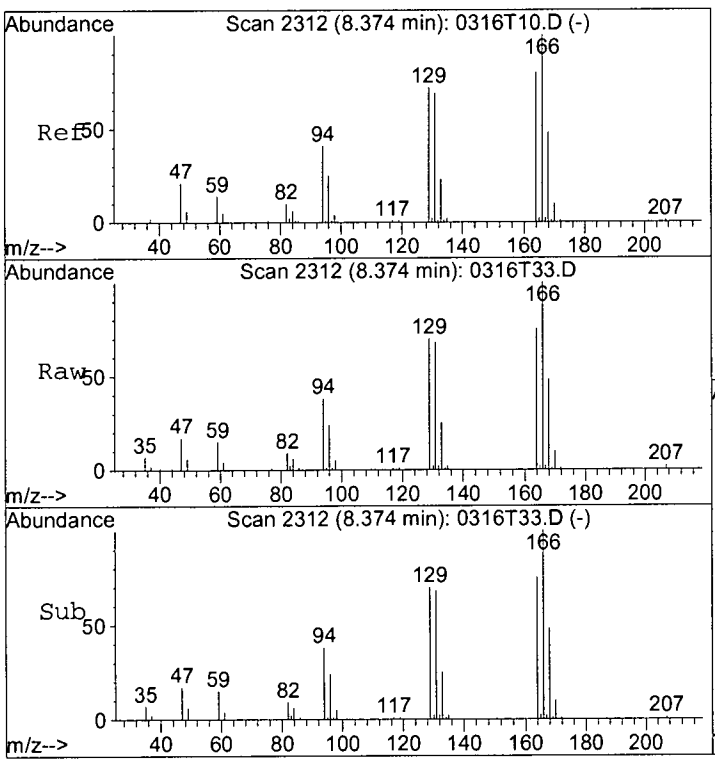


#42
TCE
Concen: 22.00746 ppb
RT: 6.43 min Scan# 1706
Delta R.T. 0.00 min
Lab File: 0316T33.D
Acq: 17 Mar 15 3:57

Tgt Ion: 95 Resp: 269217

Ion	Ratio	Lower	Upper
95	100		
97	64.7	46.0	85.4
130	104.8	72.9	135.3
132	101.8	69.8	129.6

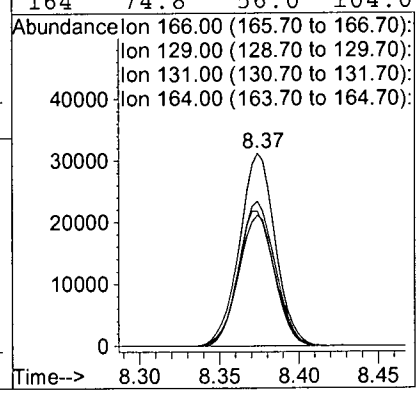




#59
Tetrachloroethene
Concen: 3.61808 ppb
RT: 8.37 min Scan# 2312
Delta R.T. -0.00 min
Lab File: 0316T33.D
Acq: 17 Mar 15 3:57

Tgt Ion:166 Resp: 48833

Ion	Ratio	Lower	Upper
166	100		
129	69.7	50.3	93.3
131	67.6	48.4	89.8
164	74.8	56.0	104.0



EPA 8260B WATER DILUTION

Element Environmental
98-030 Hekaha St., Unit 9
Aiea, HI 96701

APPL Inc.
908 North Temperance Avenue
Clovis, CA 93611

Attn: Steve Spengler
Project: MCBH Motor Pool UST KB-100 SI / 130034
Sample ID: EKB100022
Sample Collection Date: 03/10/15

ARF: 75798
APPL ID: AZ12342
QCG: #86BKB-150317AT-195029

Method	Analyte	Result	LOQ	LOD	DL	Units	Extraction Date	Analysis Date
EPA 8260B	CIS-1,2-DICHLOROETHENE	190	5.0	1.50	0.80	ug/L	03/17/15	03/17/15
EPA 8260B	SURROGATE: 1,2-DICHLOROETHANE	101	70-120			%	03/17/15	03/17/15
EPA 8260B	SURROGATE: 4-BROMOFLUOROBEN	96.8	75-120			%	03/17/15	03/17/15
EPA 8260B	SURROGATE: DIBROMOFLUOROMET	101	85-115			%	03/17/15	03/17/15
EPA 8260B	SURROGATE: TOLUENE-D8 (S)	96.3	85-120			%	03/17/15	03/17/15

Quant Method: TALLW.M
Run #: 0317T12
Instrument: Thor
Sequence: T150316
Dilution Factor: 5
Initials: SV

Printed: 03/19/15 1:44:57 PM
APPL-F1-SC-NoMC-REG MDLs

Quantitation Report (QT Reviewed)

Data File : M:\THOR\DATA\T150316\0317T12.D
Acq On : 17 Mar 15 14:15
Sample : AZ12342W02 DF5
Misc : 10ml IS&S 2/10/15,3/16/15

Vial: 11
Operator: DG, HW, SV, RS
Inst : Thor
Multiplr: 5.00

Quant Time: Mar 18 12:16 2015 Quant Results File: TALLW.RES

Quant Method : M:\THOR\DATA\T150316\TALLW.M (RTE Integrator)
Title : METHOD 8260B
Last Update : Tue Mar 17 08:51:48 2015
Response via : Initial Calibration
DataAcq Meth : 8260_BETA

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene (IS)	5.99	96	645312	25.00000 ppb	0.00
56) Chlorobenzene-D5 (IS)	9.21	117	591744	25.00000 ppb	0.00
71) 1,4-Dichlorobenzene-D (IS)	11.52	152	294464	25.00000 ppb	0.00
System Monitoring Compounds					
32) Dibromofluoromethane(S)	5.17	111	323456	28.33919 ppb	0.00
Spiked Amount 28.198			Recovery	= 100.501%	
37) 1,2-DCA-D4(S)	5.57	65	311878	26.90876 ppb	0.00
Spiked Amount 26.773			Recovery	= 100.508%	
57) Toluene-D8(S)	7.75	98	1155968	27.60609 ppb	0.00
Spiked Amount 28.680			Recovery	= 96.256%	
65) 4-Bromofluorobenzene(S)	10.38	95	427886	26.43528 ppb	0.00
Spiked Amount 27.316			Recovery	= 96.774%	

Target Compounds					Qvalue
5) Vinyl chloride	1.22	62	163417	61.43226 ppb	98
14) t-Butanol	3.03	59	6791	-3.57531 ppb #	73
21) Trans-1,2-DCE	3.03	96	166418	79.15272 ppb	99
28) Cis-1,2-DCE	4.48	96	468148	192.31296 ppb	97
42) TCE	6.42	95	51029	21.39081 ppb	96
59) Tetrachloroethene	8.37	166	9590	3.57879 ppb	94
62) m&p-Xylene	9.49	106	977	0.24305 ppb	69
69) Ethylbenzene	9.48	91	2052	0.19097 ppb	98

(#) = qualifier out of range (m) = manual integration

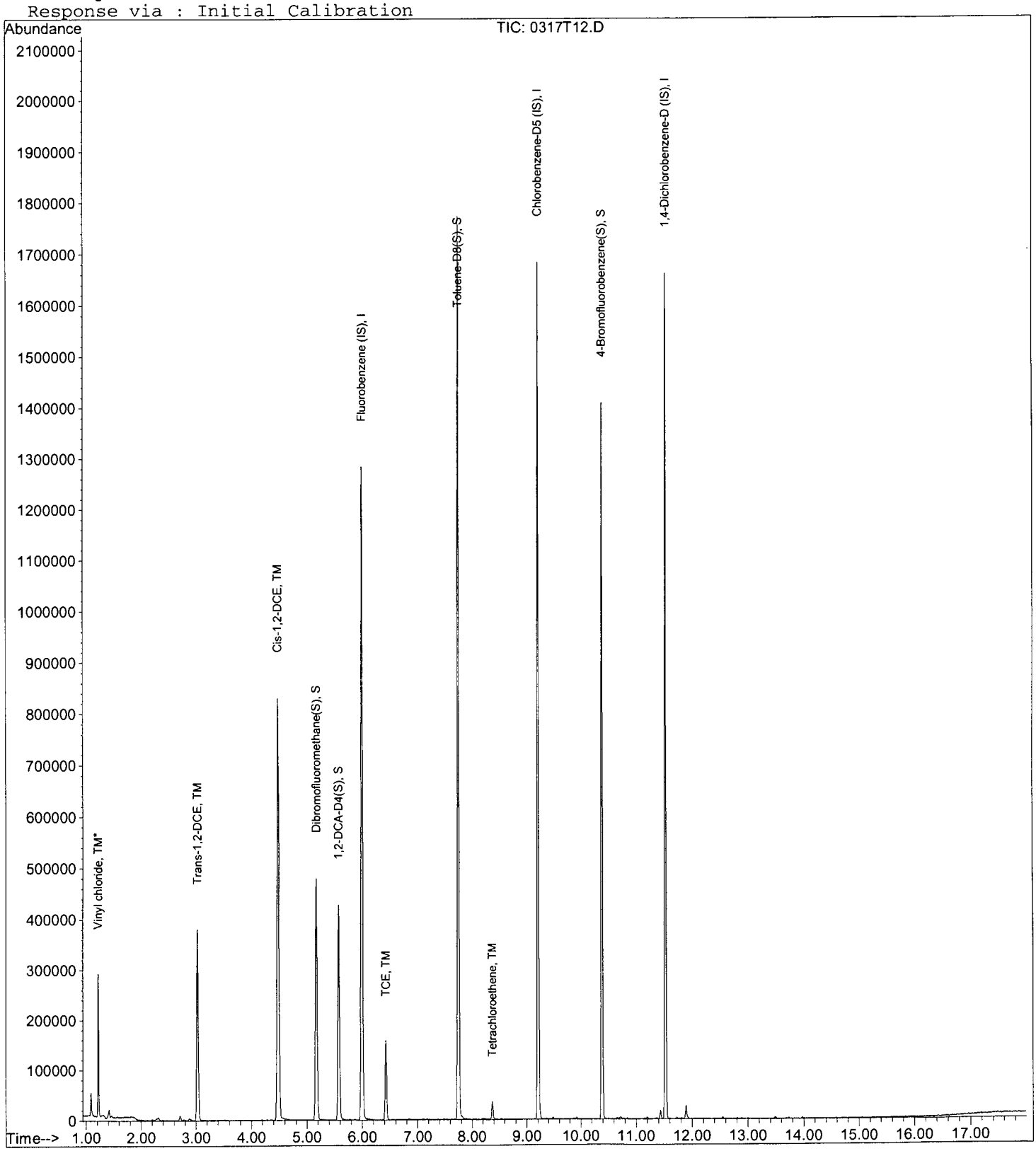
Quantitation Report

Data File : M:\THOR\DATA\T150316\0317T12.D
Acq On : 17 Mar 15 14:15
Sample : AZ12342W02 DF5
Misc : 10ml IS&S 2/10/15,3/16/15

Vial: 11
Operator: DG, HW, SV, RS
Inst : Thor
Multiplr: 5.00

Quant Time: Mar 18 12:16 2015 Quant Results File: TALLW.RES

Method : M:\THOR\DATA\T150316\TALLW.M (RTE Integrator)
Title : METHOD 8260B
Last Update : Tue Mar 17 08:51:48 2015
Response via : Initial Calibration



EPA 8260B WATER

Element Environmental
98-030 Hekaha St., Unit 9
Aiea, HI 96701

APPL Inc.
908 North Temperance Avenue
Clovis, CA 93611

Attn: Steve Spengler
Project: MCBH Motor Pool UST KB-100 SI / 130034
Sample ID: EKB100023
Sample Collection Date: 03/10/15

ARF: 75798
APPL ID: AZ12343
QCG: #86BKB-150316AT-194976

Method	Analyte	Result	LOQ	LOD	DL	Units	Extraction Date	Analysis Date
EPA 8260B	1,1,1-TRICHLOROETHANE	0.30 U	1.0	0.30	0.14	ug/L	03/17/15	03/17/15
EPA 8260B	1,1,2,2-TETRACHLOROETHANE	0.30 U	1.0	0.30	0.10	ug/L	03/17/15	03/17/15
EPA 8260B	1,1,2-TRICHLOROETHANE	0.50 U	1.0	0.50	0.20	ug/L	03/17/15	03/17/15
EPA 8260B	1,1-DICHLOROETHANE	0.30 U	1.0	0.30	0.19	ug/L	03/17/15	03/17/15
EPA 8260B	1,1-DICHLOROETHENE	0.50 U	1.0	0.50	0.30	ug/L	03/17/15	03/17/15
EPA 8260B	1,2,3-TRICHLOROPROPANE	1.00 U	2.0	1.00	0.39	ug/L	03/17/15	03/17/15
EPA 8260B	1,2-DIBROMOETHANE	0.50 U	1.0	0.50	0.20	ug/L	03/17/15	03/17/15
EPA 8260B	1,2-DICHLOROETHANE	0.30 U	1.0	0.30	0.14	ug/L	03/17/15	03/17/15
EPA 8260B	1,2-DICHLOROPROPANE	0.30 U	1.0	0.30	0.17	ug/L	03/17/15	03/17/15
EPA 8260B	2-BUTANONE	2.00 U	10.0	2.00	0.60	ug/L	03/17/15	03/17/15
EPA 8260B	4-METHYL-2-PENTANONE	5.00 U	10.0	5.00	1.90	ug/L	03/17/15	03/17/15
EPA 8260B	ACETONE	2.00 U	10.0	2.00	0.95	ug/L	03/17/15	03/17/15
EPA 8260B	BENZENE	0.30 U	1.0	0.30	0.16	ug/L	03/17/15	03/17/15
EPA 8260B	BROMODICHLOROMETHANE	0.30 U	1.0	0.30	0.14	ug/L	03/17/15	03/17/15
EPA 8260B	BROMOFORM	0.30 U	1.0	0.30	0.14	ug/L	03/17/15	03/17/15
EPA 8260B	BROMOMETHANE	0.50 U	2.0	0.50	0.24	ug/L	03/17/15	03/17/15
EPA 8260B	CARBON TETRACHLORIDE	0.30 U	1.0	0.30	0.10	ug/L	03/17/15	03/17/15
EPA 8260B	CHLOROBENZENE	0.50 U	1.0	0.50	0.21	ug/L	03/17/15	03/17/15
EPA 8260B	CHLOROETHANE	0.50 U	1.0	0.50	0.21	ug/L	03/17/15	03/17/15
EPA 8260B	CHLOROFORM	0.30 U	1.0	0.30	0.07	ug/L	03/17/15	03/17/15
EPA 8260B	CHLOROMETHANE	0.50 U	1.0	0.50	0.42	ug/L	03/17/15	03/17/15
EPA 8260B	CIS-1,2-DICHLOROETHENE	1.1	1.0	0.30	0.16	ug/L	03/17/15	03/17/15
EPA 8260B	CIS-1,3-DICHLOROPROPENE	0.30 U	1.0	0.30	0.15	ug/L	03/17/15	03/17/15
EPA 8260B	DIBROMOCHLOROMETHANE	0.30 U	1.0	0.30	0.19	ug/L	03/17/15	03/17/15
EPA 8260B	ETHYLBENZENE	0.50 U	1.0	0.50	0.23	ug/L	03/17/15	03/17/15
EPA 8260B	METHYLENE CHLORIDE	1.00 U	5.0	1.00	0.35	ug/L	03/17/15	03/17/15
EPA 8260B	STYRENE	0.50 U	1.0	0.50	0.25	ug/L	03/17/15	03/17/15
EPA 8260B	TETRACHLOROETHENE	5.5	1.0	0.30	0.24	ug/L	03/17/15	03/17/15
EPA 8260B	TOLUENE	0.30 U	1.0	0.30	0.17	ug/L	03/17/15	03/17/15
EPA 8260B	TRANS-1,2-DICHLOROETHENE	0.57 J	1.0	0.30	0.19	ug/L	03/17/15	03/17/15
EPA 8260B	TRANS-1,3-DICHLOROPROPENE	0.30 U	1.0	0.30	0.18	ug/L	03/17/15	03/17/15
EPA 8260B	TRICHLOROETHENE	1.2	1.0	0.30	0.16	ug/L	03/17/15	03/17/15
EPA 8260B	VINYL CHLORIDE	0.30 U	1.0	0.30	0.23	ug/L	03/17/15	03/17/15
EPA 8260B	XYLENES (TOTAL)	0.30 U	2.0	0.30	0.19	ug/L	03/17/15	03/17/15
EPA 8260B	SURROGATE: 1,2-DICHLOROETHANE	97.9	70-120			%	03/17/15	03/17/15

J = Estimated value.

Quant Method: TALLW.M
Run #: 0316T34
Instrument: Thor
Sequence: T150316
Dilution Factor: 1
Initials: SV

Printed: 03/17/15 3:52:20 PM
APPL-F1-SC-NoMC-REG MDLs

EPA 8260B WATER

Element Environmental
98-030 Hekaha St., Unit 9
Aiea, HI 96701

APPL Inc.
908 North Temperance Avenue
Clovis, CA 93611

Attn: Steve Spengler
Project: MCBH Motor Pool UST KB-100 SI / 130034
Sample ID: EKB100023
Sample Collection Date: 03/10/15

ARF: 75798
APPL ID: AZ12343
QCG: #86BKB-150316AT-194976

Method	Analyte	Result	LOQ	LOD	DL	Units	Extraction Date	Analysis Date
EPA 8260B	SURROGATE: 4-BROMOFLUOROBEN	97.7	75-120			%	03/17/15	03/17/15
EPA 8260B	SURROGATE: DIBROMOFLUOROMET	97.0	85-115			%	03/17/15	03/17/15
EPA 8260B	SURROGATE: TOLUENE-D8 (S)	99.0	85-120			%	03/17/15	03/17/15

J = Estimated value.

Quant Method: TALLW.M
Run #: 0316T34
Instrument: Thor
Sequence: T150316
Dilution Factor: 1
Initials: SV

Printed: 03/17/15 3:52:20 PM
APPL-F1-SC-NoMC-REG MDLs

Quantitation Report (QT Reviewed)

Data File : M:\THOR\DATA\T150316\0316T34.D
Acq On : 17 Mar 15 4:25
Sample : AZ12343W01
Misc : 10ml IS&S 2/10/15,3/16/15

Vial: 33
Operator: DG, HW, SV, RS
Inst : Thor
Multiplr: 1.00

Quant Time: Mar 17 15:17 2015 Quant Results File: TALLW.RES

Quant Method : M:\THOR\DATA\T150316\TALLW.M (RTE Integrator)
Title : METHOD 8260B
Last Update : Tue Mar 17 08:51:48 2015
Response via : Initial Calibration
DataAcq Meth : 8260_BETA

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene (IS)	5.99	96	653440	25.00000 ppb	0.00
56) Chlorobenzene-D5 (IS)	9.21	117	584128	25.00000 ppb	0.00
71) 1,4-Dichlorobenzene-D (IS)	11.52	152	283456	25.00000 ppb	0.00
System Monitoring Compounds					
32) Dibromofluoromethane(S)	5.17	111	315984	27.34018 ppb	0.00
Spiked Amount 28.198			Recovery	= 96.959%	
37) 1,2-DCA-D4(S)	5.57	65	307590	26.20868 ppb	0.00
Spiked Amount 26.773			Recovery	= 97.894%	
57) Toluene-D8(S)	7.75	98	1173835	28.39828 ppb	0.00
Spiked Amount 28.680			Recovery	= 99.018%	
65) 4-Bromofluorobenzene(S)	10.38	95	426479	26.69189 ppb	0.00
Spiked Amount 27.316			Recovery	= 97.715%	
Target Compounds					Qvalue
21) Trans-1,2-DCE	3.03	96	6053	0.56863 ppb	95
28) Cis-1,2-DCE	4.48	96	13178	1.06922 ppb	98
42) TCE	6.42	95	13970	1.15665 ppb	91
59) Tetrachloroethene	8.37	166	72411	5.47492 ppb	97

(#) = qualifier out of range (m) = manual integration

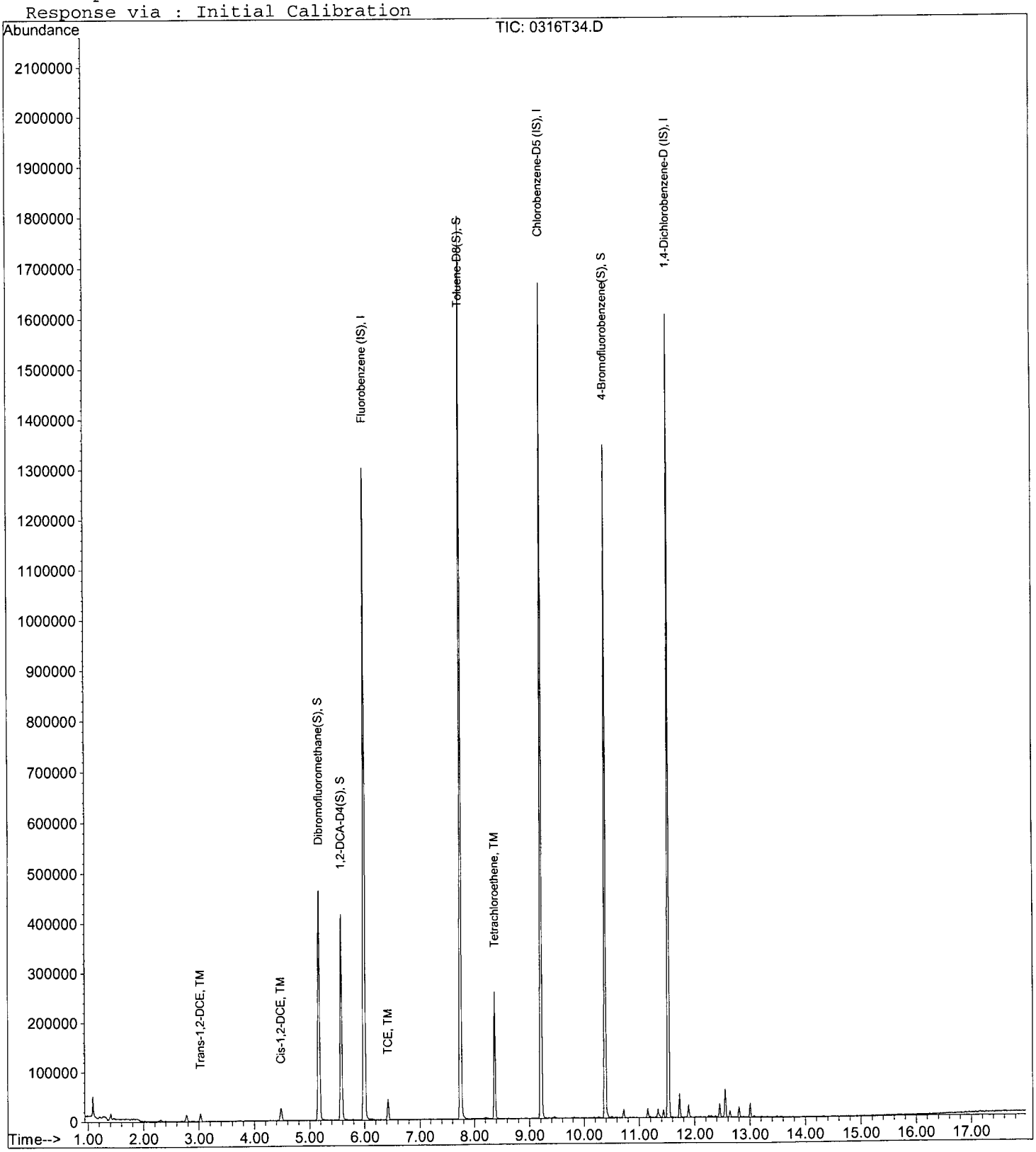
Quantitation Report

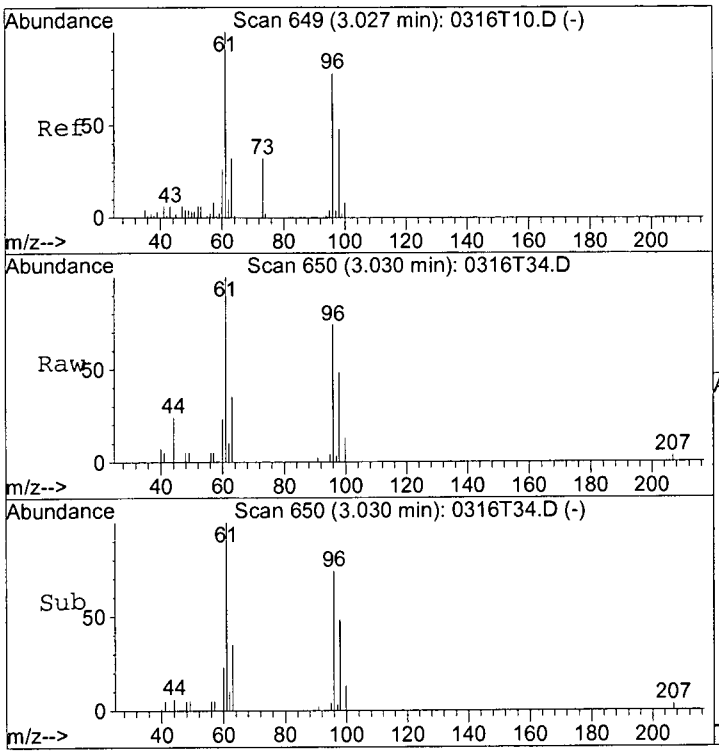
Data File : M:\THOR\DATA\T150316\0316T34.D
Acq On : 17 Mar 15 4:25
Sample : AZ12343W01
Misc : 10ml IS&S 2/10/15,3/16/15

Vial: 33
Operator: DG, HW, SV, RS
Inst : Thor
Multiplr: 1.00

Quant Time: Mar 17 15:17 2015 Quant Results File: TALLW.RES

Method : M:\THOR\DATA\T150316\TALLW.M (RTE Integrator)
Title : METHOD 8260B
Last Update : Tue Mar 17 08:51:48 2015
Response via : Initial Calibration

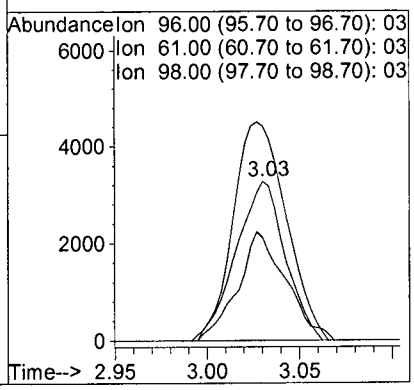


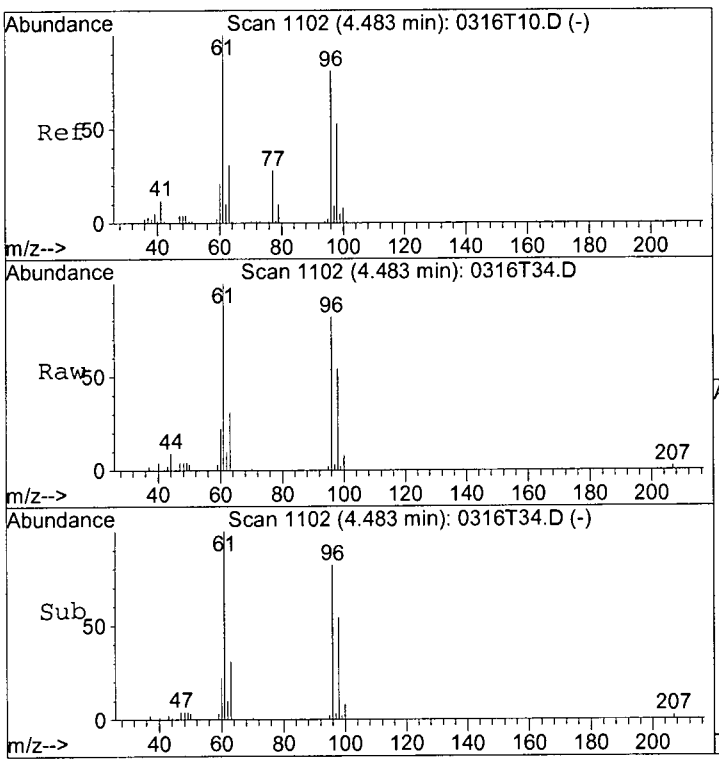


#21
Trans-1,2-DCE
Concen: 0.56863 ppb
RT: 3.03 min Scan# 650
Delta R.T. 0.00 min
Lab File: 0316T34.D
Acq: 17 Mar 15 4:25

Tgt Ion: 96 Resp: 6053

Ion	Ratio	Lower	Upper
96	100		
61	135.0	90.0	167.1
98	64.7	43.2	80.2

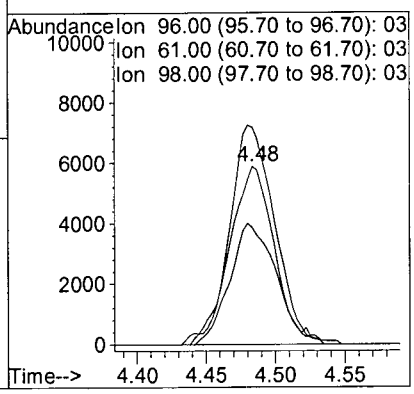


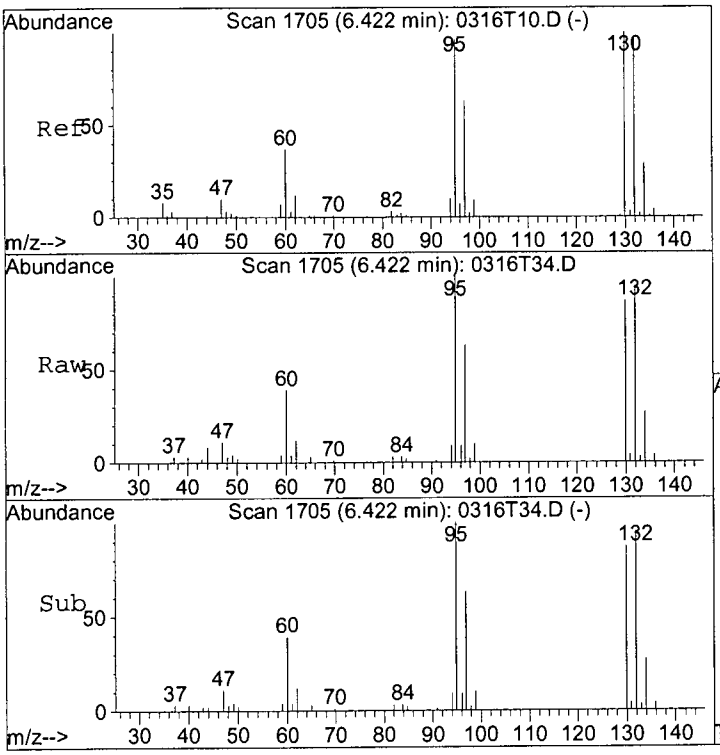


#28
Cis-1,2-DCE
Concen: 1.06922 ppb
RT: 4.48 min Scan# 1102
Delta R.T. 0.00 min
Lab File: 0316T34.D
Acq: 17 Mar 15 4:25

Tgt Ion: 96 Resp: 13178

Ion	Ratio	Lower	Upper
96	100		
61	120.1	86.9	161.3
98	65.7	45.9	85.3

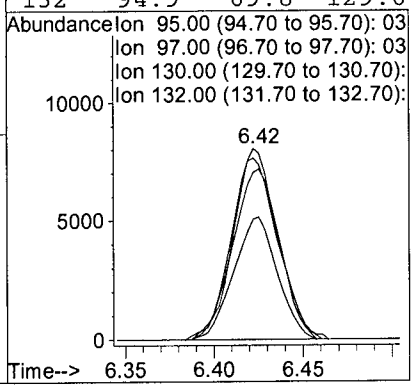


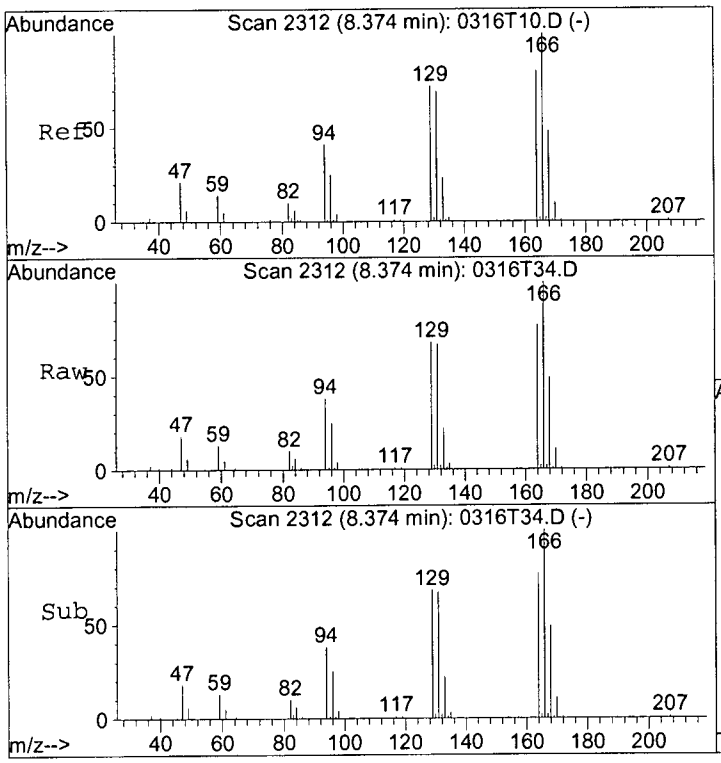


#42
TCE
Concen: 1.15665 ppb
RT: 6.42 min Scan# 1705
Delta R.T. 0.00 min
Lab File: 0316T34.D
Acq: 17 Mar 15 4:25

Tgt Ion: 95 Resp: 13970

Ion	Ratio	Lower	Upper
95	100		
97	62.8	46.0	85.4
130	87.4	72.9	135.3
132	94.9	69.8	129.6

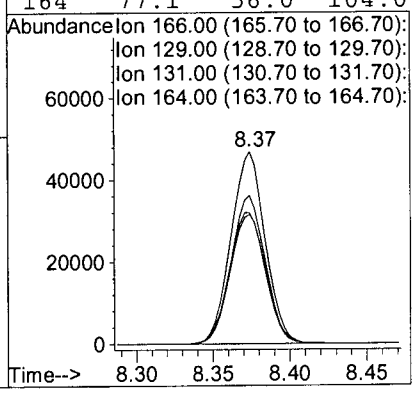




#59
Tetrachloroethene
Concen: 5.47492 ppb
RT: 8.37 min Scan# 2312
Delta R.T. 0.00 min
Lab File: 0316T34.D
Acq: 17 Mar 15 4:25

Tgt Ion:166 Resp: 72411

Ion	Ratio	Lower	Upper
166	100		
129	68.1	50.3	93.3
131	67.2	48.4	89.8
164	77.1	56.0	104.0



EPA 8260B WATER

Element Environmental
98-030 Hekaha St., Unit 9
Aiea, HI 96701

APPL Inc.
908 North Temperance Avenue
Clovis, CA 93611

Attn: Steve Spengler
Project: MCBH Motor Pool UST KB-100 SI / 130034
Sample ID: TRIP BLANK-2
Sample Collection Date: 03/10/15

ARF: 75798
APPL ID: AZ12344
QCG: #86BKB-150316AT-194976

Method	Analyte	Result	LOQ	LOD	DL	Units	Extraction Date	Analysis Date
EPA 8260B	1,1,1-TRICHLOROETHANE	0.30 U	1.0	0.30	0.14	ug/L	03/17/15	03/17/15
EPA 8260B	1,1,2,2-TETRACHLOROETHANE	0.30 U	1.0	0.30	0.10	ug/L	03/17/15	03/17/15
EPA 8260B	1,1,2-TRICHLOROETHANE	0.50 U	1.0	0.50	0.20	ug/L	03/17/15	03/17/15
EPA 8260B	1,1-DICHLOROETHANE	0.30 U	1.0	0.30	0.19	ug/L	03/17/15	03/17/15
EPA 8260B	1,1-DICHLOROETHENE	0.50 U	1.0	0.50	0.30	ug/L	03/17/15	03/17/15
EPA 8260B	1,2,3-TRICHLOROPROPANE	1.00 U	2.0	1.00	0.39	ug/L	03/17/15	03/17/15
EPA 8260B	1,2-DIBROMOETHANE	0.50 U	1.0	0.50	0.20	ug/L	03/17/15	03/17/15
EPA 8260B	1,2-DICHLOROETHANE	0.30 U	1.0	0.30	0.14	ug/L	03/17/15	03/17/15
EPA 8260B	1,2-DICHLOROPROPANE	0.30 U	1.0	0.30	0.17	ug/L	03/17/15	03/17/15
EPA 8260B	2-BUTANONE	2.00 U	10.0	2.00	0.60	ug/L	03/17/15	03/17/15
EPA 8260B	4-METHYL-2-PENTANONE	5.00 U	10.0	5.00	1.90	ug/L	03/17/15	03/17/15
EPA 8260B	ACETONE	2.00 U	10.0	2.00	0.95	ug/L	03/17/15	03/17/15
EPA 8260B	BENZENE	0.30 U	1.0	0.30	0.16	ug/L	03/17/15	03/17/15
EPA 8260B	BROMODICHLOROMETHANE	0.30 U	1.0	0.30	0.14	ug/L	03/17/15	03/17/15
EPA 8260B	BROMOFORM	0.30 U	1.0	0.30	0.14	ug/L	03/17/15	03/17/15
EPA 8260B	BROMOMETHANE	0.50 U	2.0	0.50	0.24	ug/L	03/17/15	03/17/15
EPA 8260B	CARBON TETRACHLORIDE	0.30 U	1.0	0.30	0.10	ug/L	03/17/15	03/17/15
EPA 8260B	CHLOROBENZENE	0.50 U	1.0	0.50	0.21	ug/L	03/17/15	03/17/15
EPA 8260B	CHLOROETHANE	0.50 U	1.0	0.50	0.21	ug/L	03/17/15	03/17/15
EPA 8260B	CHLOROFORM	0.30 U	1.0	0.30	0.07	ug/L	03/17/15	03/17/15
EPA 8260B	CHLOROMETHANE	0.50 U	1.0	0.50	0.42	ug/L	03/17/15	03/17/15
EPA 8260B	CIS-1,2-DICHLOROETHENE	0.30 U	1.0	0.30	0.16	ug/L	03/17/15	03/17/15
EPA 8260B	CIS-1,3-DICHLOROPROPENE	0.30 U	1.0	0.30	0.15	ug/L	03/17/15	03/17/15
EPA 8260B	DIBROMOCHLOROMETHANE	0.30 U	1.0	0.30	0.19	ug/L	03/17/15	03/17/15
EPA 8260B	ETHYLBENZENE	0.50 U	1.0	0.50	0.23	ug/L	03/17/15	03/17/15
EPA 8260B	METHYLENE CHLORIDE	1.00 U	5.0	1.00	0.35	ug/L	03/17/15	03/17/15
EPA 8260B	STYRENE	0.50 U	1.0	0.50	0.25	ug/L	03/17/15	03/17/15
EPA 8260B	TETRACHLOROETHENE	0.30 U	1.0	0.30	0.24	ug/L	03/17/15	03/17/15
EPA 8260B	TOLUENE	0.30 U	1.0	0.30	0.17	ug/L	03/17/15	03/17/15
EPA 8260B	TRANS-1,2-DICHLOROETHENE	0.30 U	1.0	0.30	0.19	ug/L	03/17/15	03/17/15
EPA 8260B	TRANS-1,3-DICHLOROPROPENE	0.30 U	1.0	0.30	0.18	ug/L	03/17/15	03/17/15
EPA 8260B	TRICHLOROETHENE	0.30 U	1.0	0.30	0.16	ug/L	03/17/15	03/17/15
EPA 8260B	VINYL CHLORIDE	0.30 U	1.0	0.30	0.23	ug/L	03/17/15	03/17/15
EPA 8260B	XYLENES (TOTAL)	0.30 U	2.0	0.30	0.19	ug/L	03/17/15	03/17/15
EPA 8260B	SURROGATE: 1,2-DICHLOROETHANE	98.4	70-120			%	03/17/15	03/17/15

Quant Method: TALLW.M
Run #: 0316T27
Instrument: Thor
Sequence: T150316
Dilution Factor: 1
Initials: SV

Printed: 03/17/15 3:52:20 PM
APPL-F1-SC-NoMC-REG MDLs

EPA 8260B WATER

Element Environmental
98-030 Hekaha St., Unit 9
Aiea, HI 96701

APPL Inc.
908 North Temperance Avenue
Clovis, CA 93611

Attn: Steve Spengler
Project: MCBH Motor Pool UST KB-100 SI / 130034
Sample ID: TRIP BLANK-2
Sample Collection Date: 03/10/15

ARF: 75798
APPL ID: AZ12344
QCG: #86BKB-150316AT-194976

Method	Analyte	Result	LOQ	LOD	DL	Units	Extraction Date	Analysis Date
EPA 8260B	SURROGATE: 4-BROMOFLUOROBEN	96.5	75-120			%	03/17/15	03/17/15
EPA 8260B	SURROGATE: DIBROMOFLUOROMET	98.9	85-115			%	03/17/15	03/17/15
EPA 8260B	SURROGATE: TOLUENE-D8 (S)	97.3	85-120			%	03/17/15	03/17/15

Quant Method: TALLW.M
Run #: 0316T27
Instrument: Thor
Sequence: T150316
Dilution Factor: 1
Initials: SV

Printed: 03/17/15 3:52:20 PM
APPL-F1-SC-NoMC-REG MDLs

Quantitation Report (QT Reviewed)

Data File : M:\THOR\DATA\T150316\0316T27.D
Acq On : 17 Mar 15 1:10
Sample : AZ12344W01
Misc : 10ml IS&S 2/10/15,3/16/15

Vial: 26
Operator: DG, HW, SV, RS
Inst : Thor
Multiplr: 1.00

Quant Time: Mar 17 15:11 2015 Quant Results File: TALLW.RES

Quant Method : M:\THOR\DATA\T150316\TALLW.M (RTE Integrator)
Title : METHOD 8260B
Last Update : Tue Mar 17 08:51:48 2015
Response via : Initial Calibration
DataAcq Meth : 8260_BETA

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene (IS)	5.99	96	680384	25.00000 ppb	0.00
56) Chlorobenzene-D5 (IS)	9.21	117	616896	25.00000 ppb	0.00
71) 1,4-Dichlorobenzene-D (IS)	11.52	152	298432	25.00000 ppb	0.00
System Monitoring Compounds					
32) Dibromofluoromethane(S)	5.17	111	335561	27.88428 ppb	0.00
Spiked Amount 28.198			Recovery	= 98.888%	
37) 1,2-DCA-D4(S)	5.57	65	322019	26.35154 ppb	0.00
Spiked Amount 26.773			Recovery	= 98.428%	
57) Toluene-D8(S)	7.75	98	1218264	27.90760 ppb	0.00
Spiked Amount 28.680			Recovery	= 97.309%	
65) 4-Bromofluorobenzene(S)	10.38	95	444952	26.36883 ppb	0.00
Spiked Amount 27.316			Recovery	= 96.532%	

Target Compounds Qvalue

(#) = qualifier out of range (m) = manual integration

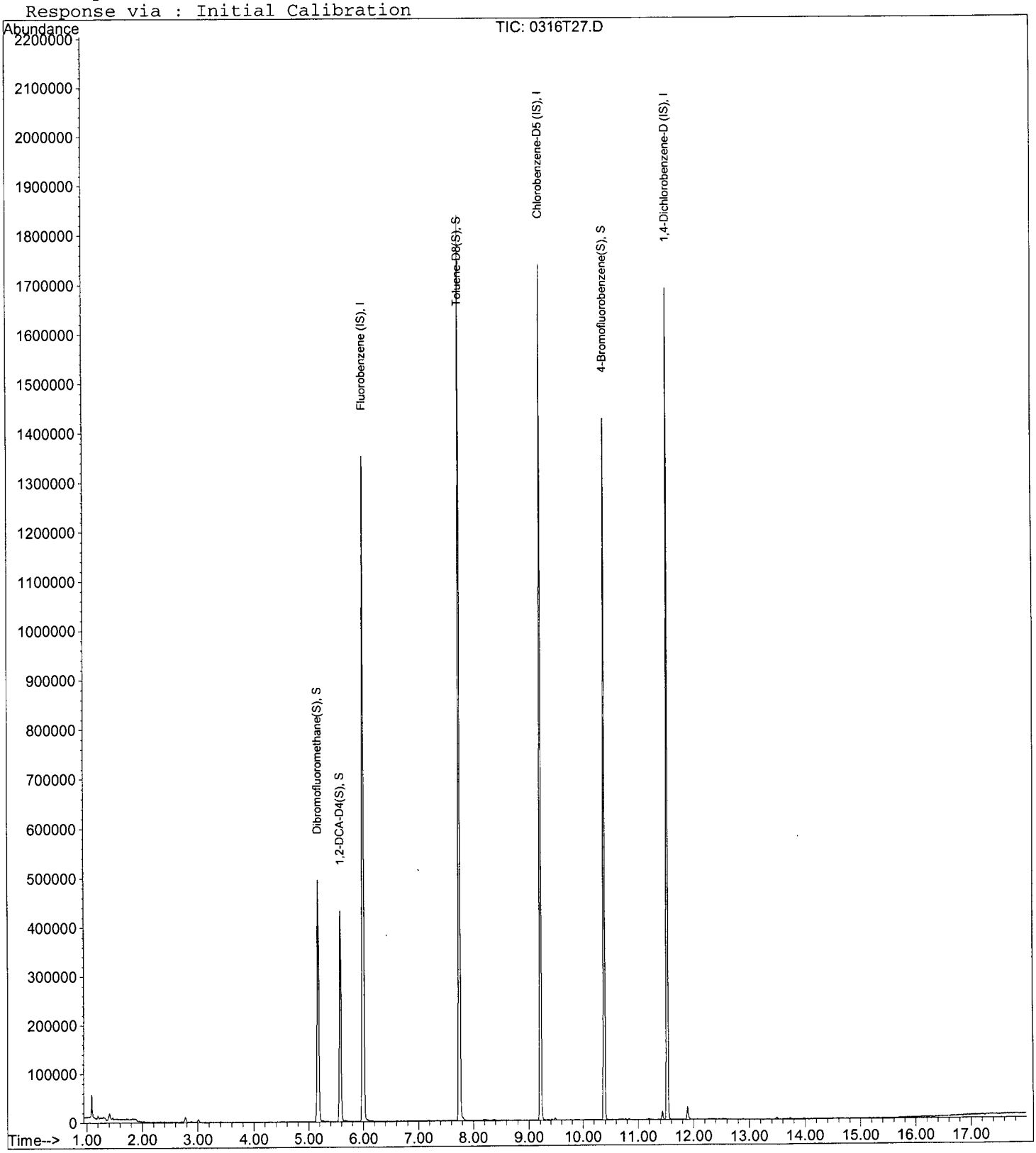
Quantitation Report

Data File : M:\THOR\DATA\T150316\0316T27.D
Acq On : 17 Mar 15 1:10
Sample : AZ12344W01
Misc : 10ml IS&S 2/10/15,3/16/15

Vial: 26
Operator: DG, HW, SV, RS
Inst : Thor
Multiplr: 1.00

Quant Time: Mar 17 15:11 2015 Quant Results File: TALLW.RES

Method : M:\THOR\DATA\T150316\TALLW.M (RTE Integrator)
Title : METHOD 8260B
Last Update : Tue Mar 17 08:51:48 2015
Response via : Initial Calibration



EPA METHOD 8260B
Volatile Organic Compounds
Calibration Data

APPL, INC.

VOLATILE ORGANIC ANALYSIS BY
EPA METHOD 8260B

Form 6
Initial Calibration

Lab Name: APPL, Inc.
Case No:
Matrix:

SDG No:
Initial Cal. Date: 03/16/15
Instrument: Thor

Initials:

		Compound	0316T05 D 0.1	0316T06.D 0.3	0316T07.D 0.5	0316T08.D 1	0316T09.D 5	0316T10.D 10	0316T11 D 20	0316T12 D 40	0316T13 D 100		Avg	%RSD		
1	I	Fluorobenzene (IS)	ISTD													
2	TML	Dichlorodifluoromethane			0.2659	0.3255	0.3332	0.3876	0.4072	0.4229			0.36	17	TML	0.999
3	TM	Freon 114			0.1958	0.2148	0.2500	0.2717	0.2703	0.2852	0.2876		0.25	14	TM	
4	TM**	Chloromethane			0.5194	0.4379	0.3983	0.3881	0.3930	0.3830	0.3875		0.42	12	TM**	
5	TM*	Vinyl chloride	0.7238	0.5776	0.4629	0.4817	0.4816	0.4820	0.4805	0.4803	0.4671		0.52	17	TM*	
6	TML	Bromomethane		0.7732	0.5941	0.5185	0.4491	0.3933	0.3897	0.3684			0.50	29	TML	0.999
7	TM	Chloroethane		0.2591	0.2988	0.2346	0.2369	0.2458	0.2263	0.2259	0.1743		0.24	15	TM	
8	TM	Dichlorofluoromethane		1.070	0.9548	0.9336	0.8606	0.8790	0.8189	0.8301	0.8389		0.90	9.4	TM	
9	TM	Trichlorofluoromethane		0.5015	0.5325	0.5959	0.6050	0.6212	0.6013	0.6212	0.6163		0.59	7.6	TM	
10	TM	Acrolein			0.0434	0.0442	0.0438	0.0420	0.0432	0.0434	0.0433		0.04	1.5	TM	
11	TML	Acetone				0.1520	0.1128	0.0932	0.0876	0.0807	0.0825		0.10	27	TML	1.000
12	TM	Freon-113		0.2767	0.2717	0.3323	0.3692	0.3672	0.3438	0.3523	0.3469		0.33	11	TM	
13	TM*	1,1-DCE		0.3862	0.3749	0.3391	0.3613	0.3636	0.3439	0.3449	0.3554		0.36	4.5	TM*	
14	TMQ	t-Butanol		0.0514	0.0300	0.0306	0.0337	0.0324	0.0358	0.0383			0.04	20	TMQ	0.998
15	TM	Methyl Acetate			0.2517	0.2378	0.2178	0.2158	0.2038	0.2025	0.2172		0.22	8.1	TM	
16	TML	Iodomethane			0.1358	0.1172	0.2216	0.3342	0.4085	0.4636	0.4926		0.31	50	TML	0.999
17	TM	Acrylonitrile		0.1056	0.0910	0.0795	0.0886	0.0893	0.0821	0.0858	0.0848		0.09	9.0	TM	
18	TM	Methylene chloride		0.5431	0.4870	0.4688	0.4392	0.4348	0.4181	0.4147	0.4195		0.45	9.8	TM	
19	TM	Carbon disulfide		1.211	1.151	1.127	1.119	1.157	1.079	1.122	1.145		1.1	3.3	TM	
20	TM	Methyl t-butyl ether (MtBE)		1.038	1.012	0.9871	1.017	1.016	0.9816	0.9847	1.019		1.0	2.0	TM	
21	TM	Trans-1,2-DCE		0.4247	0.4440	0.3962	0.4054	0.4158	0.3847	0.3909	0.3964		0.41	4.9	TM	
22	TM	Hexane		0.3357	0.3175	0.3313	0.3929	0.4179	0.3835	0.4037	0.3893		0.37	10	TM	
23	TM	Diisopropyl Ether		1.254	1.195	1.184	1.185	1.178	1.114	1.126	1.152		1.2	3.8	TM	
24	TM**	1,1-DCA		0.7948	0.7601	0.7059	0.7264	0.7209	0.6770	0.6875	0.6881		0.72	5.6	TM**	
25	TM	Vinyl Acetate		0.3430	0.3566	0.3366	0.3811	0.3717	0.3563	0.3596	0.3695		0.36	4.1	TM	
26	TM	Ethyl tert Butyl Ether		0.8581	0.7438	0.7855	0.8163	0.8337	0.8269	0.8320	0.9550		0.83	7.3	TM	
27	TML	MEK (2-Butanone)			0.2044	0.1730	0.1472	0.1256	0.1190	0.1149			0.15	24	TML	0.999
28	TM	Cis-1,2-DCE		0.5009	0.4875	0.4532	0.4705	0.4916	0.4496	0.4587	0.4603		0.47	4.1	TM	
29	TM	2,2-Dichloropropane		0.6229	0.5251	0.5491	0.5298	0.5220	0.4826	0.4983	0.5026		0.53	8.2	TM	
30	TM*	Chloroform	1.486	0.7827	0.7596	0.7190	0.7625	0.7549	0.7077	0.7238	0.7262		0.82	30	TM*	
31	TM	Bromochloromethane		0.2282	0.2407	0.2266	0.2496	0.2352	0.2190	0.2168	0.2158		0.23	5.3	TM	
32	S	Dibromofluoromethane(S)		0.4668	0.4409	0.4321	0.4451	0.4299	0.4343	0.4383	0.4500		0.44	2.7	S	
33	TM	1,1,1-TCA		0.6758	0.6329	0.5916	0.6179	0.6271	0.5871	0.6121	0.6194		0.62	4.4	TM	
34	TM	Cyclohexane		0.3032	0.2800	0.2811	0.2868	0.3034	0.2820	0.2819	0.2775		0.29	3.6	TM	
35	TM	1,1-Dichloropropene		0.5438	0.5101	0.5457	0.5400	0.5496	0.5079	0.5256	0.5276		0.53	3.0	TM	

VOLATILE ORGANIC ANALYSIS BY
EPA METHOD 8260B

Form 6
Initial Calibration

Lab Name: APPL, Inc.
Case No:
Matrix:

SDG No:
Initial Cal. Date: 03/16/15
Instrument: Thor

Initials:

		Compound	0.1	0.3	0.5	1	5	10	20	40	100		Avg	%RSD		
36	TM	2,2,4-Trimethylpentane		0.9357	0.7943	0.9484	1.068	1.122	1.059	1.095	1.081		1.0	11	TM	
37	S	1,2-DCA-D4(S)		0.5073	0.4641	0.4676	0.4503	0.4264	0.4285	0.4189	0.4291		0.45	6.6	S	
38	TM	Carbon Tetrachloride	0.6240	0.5143	0.4475	0.4866	0.5128	0.5275	0.5004	0.5164	0.5279		0.52	9.1	TM	
39	TM	Tert Amyl Methyl Ether		0.6950	0.6942	0.6605	0.6783	0.6924	0.6982	0.7226	0.8452		0.71	8.0	TM	
40	TM	1,2-DCA	0.7568	0.6042	0.5330	0.5312	0.5470	0.5502	0.5116	0.5068	0.5161		0.56	14	TM	
41	TML	Benzene	2.644	1.879	1.795	1.725	1.712	1.728	1.604	1.634	1.652		1.8	18	TML	1.000
42	TM	TCE		0.4772	0.4708	0.4535	0.4690	0.4754	0.4431	0.4471	0.4607		0.46	2.8	TM	
43	TM	2-Pentanone		0.3192	0.2145	0.2197	0.2217	0.2215	0.2273	0.2216	0.2212		0.23	15	TM	
44	TM*	1,2-Dichloropropane		0.5393	0.4289	0.4888	0.4367	0.4371	0.4216	0.4202	0.4284		0.45	9.4	TM*	
45	TM	Bromodichloromethane		0.5934	0.5285	0.5620	0.5508	0.5674	0.5354	0.5551	0.5843		0.56	4.0	TM	
46	TM	Methyl Cyclohexane		0.5352	0.4826	0.6081	0.6309	0.6471	0.6146	0.6345	0.6334		0.60	9.7	TM	
47	TM	Dibromomethane		0.2897	0.2695	0.2865	0.2610	0.2766	0.2556	0.2559	0.2585		0.27	5.1	TM	
48	TM	MIBK (methyl isobutyl ketone)			0.3508	0.3351	0.3305	0.2885	0.2872	0.2736	0.2734		0.31	11	TM	
49	TM	1-Bromo-2-chloroethane		0.5882	0.5665	0.5462	0.5440	0.5501	0.5245	0.5252	0.5387		0.55	3.9	TM	
50	TM	2-Chloroethyl vinyl ether													TM	
51	TM	Cis-1,3-Dichloropropene		0.6160	0.6833	0.6280	0.6613	0.6566	0.6492	0.6619	0.6925		0.66	3.9	TM	
52	TM*	Toluene		1.938	1.918	1.803	1.944	1.925	1.800	1.849	1.911		1.9	3.2	TM*	
53	TM	Trans-1,3-Dichloropropene		0.6594	0.5292	0.5228	0.5491	0.5479	0.5490	0.5734	0.6098		0.57	8.1	TM	
54	TM	1,1,2-TCA		0.3643	0.3260	0.3291	0.3136	0.3177	0.3053	0.3100	0.3095		0.32	5.9	TM	
55	TM	2-Hexanone		0.2423	0.2189	0.2061	0.2153	0.1871	0.1953	0.1809	0.1883		0.20	10	TM	
56	I	Chlorobenzene-D5 (IS)	ISTD													
57	S	Toluene-D8(S)		2.029	1.855	1.756	1.735	1.666	1.686	1.709	1.717		1.8	6.8	S	
58	TM	1,2-EDB		0.4501	0.3992	0.3957	0.4104	0.4100	0.3918	0.4077	0.4068		0.41	4.4	TM	
59	TM	Tetrachloroethene	0.7173	0.5860	0.5598	0.5323	0.5545	0.5550	0.5158	0.5370	0.5368		0.57	11	TM	
60	TM	1-Chlorohexane		0.5534	0.6163	0.5356	0.5791	0.5929	0.5616	0.5942	0.5980		0.58	4.6	TM	
61	TM	1,1,1,2-Tetrachloroethane		0.4856	0.4640	0.4258	0.4732	0.4749	0.4594	0.4716	0.4816		0.47	4.0	TM	
62	TM	m&p-Xylene		0.8714	0.8500	0.7820	0.8547	0.8723	0.8350	0.8592	0.8684		0.85	3.5	TM	
63	TM	o-Xylene		0.9106	0.8189	0.7535	0.8412	0.8471	0.8175	0.8442	0.8473		0.84	5.2	TM	
64	TM	Styrene		1.407	1.249	1.282	1.340	1.385	1.389	1.434	1.439		1.4	5.1	TM	
65	S	4-Bromofluorobenzene(S)		0.8491	0.7281	0.6467	0.6603	0.6364	0.6546	0.6474	0.6483		0.68	11	S	
66	TM	1,3-Dichloropropane		0.8071	0.7274	0.6631	0.6959	0.6746	0.6410	0.6590	0.6440		0.69	8.1	TM	
67	TM	Dibromochloromethane		0.4871	0.4003	0.4137	0.4573	0.4641	0.4618	0.4764	0.4920		0.46	7.2	TM	
68	TM**	Chlorobenzene		1.637	1.411	1.313	1.401	1.400	1.329	1.361	1.348		1.4	7.3	TM**	
69	TM*	Ethylbenzene		2.516	2.286	2.160	2.252	2.281	2.170	2.251	2.243		2.3	4.8	TM*	
70	TM**	Bromoform		0.2438	0.2810	0.2535	0.2772	0.2829	0.2821	0.2946	0.3096		0.28	7.6	TM**	

VOLATILE ORGANIC ANALYSIS BY
EPA METHOD 8260B

Form 6
Initial Calibration

Lab Name: APPL, Inc.
Case No:
Matrix:

SDG No:
Initial Cal. Date: 03/16/15
Instrument: Thor

Initials:

		Compound	0.1	0.3	0.5	1	5	10	20	40	100		Avg	%RSD		
71	I	1,4-Dichlorobenzene-D (IS)	ISTD													
72	TM	Isopropylbenzene		4.173	3.846	3.768	3.919	3.855	3.668	3.934	3.727		3.9	4.0	TM	
73	TM**	1,1,2,2-Tetrachloroethane		1.042	0.9736	0.9198	0.9061	0.9089	0.8660	0.8643	0.8305		0.91	7.4	TM**	
74	TM	1,2,3-Trichloropropane		0.2966	0.2736	0.2518	0.2649	0.2612	0.2580	0.2628	0.2497		0.26	5.6	TM	
75	TM	t-1,4-Dichloro-2-Butene		0.1717	0.1590	0.1488	0.1745	0.1699	0.1713	0.1717	0.1685		0.17	5.2	TM	
76	TM	Bromobenzene		1.150	1.140	1.060	1.112	1.079	1.071	1.115	1.046		1.1	3.4	TM	
77	TM	n-Propylbenzene		5.027	4.514	4.430	4.731	4.642	4.486	4.805	4.570		4.7	4.2	TM	
78	TM	4-Ethyltoluene		4.154	3.724	3.796	4.006	3.974	3.921	4.203	4.022		4.0	4.1	TM	
79	TM	2-Chlorotoluene		3.476	2.979	2.968	3.118	2.972	2.870	2.991	2.800		3.0	6.8	TM	
80	TM	1,3,5-Trimethylbenzene		3.590	3.132	3.240	3.435	3.369	3.275	3.513	3.374		3.4	4.4	TM	
81	TM	4-Chlorotoluene		3.613	3.230	3.263	3.547	3.373	3.289	3.447	3.290		3.4	4.2	TM	
82	TM	Tert-Butylbenzene		3.185	2.951	2.900	2.992	2.930	2.820	2.977	2.839		2.9	3.8	TM	
83	TM	1,2,4-Trimethylbenzene		3.890	3.403	3.160	3.457	3.386	3.283	3.482	3.368		3.4	6.2	TM	
84	TM	Sec-Butylbenzene		4.068	3.692	3.759	4.053	3.991	3.872	4.109	3.940		3.9	3.8	TM	
85	TM	p-Isopropyltoluene		3.540	3.509	3.290	3.450	3.475	3.350	3.640	3.528		3.5	3.2	TM	
86	TM	Benzyl Chloride		0.9225	0.8053	0.8136	0.8102	0.7888	0.8544	0.8807	0.8969		0.85	5.8	TM	
87	TM	1,3-DCB		2.385	1.904	1.998	2.063	2.034	1.972	2.031	1.977		2.0	7.1	TM	
88	TM	1,4-DCB		2.323	2.144	2.081	2.161	2.105	1.994	2.052	2.024		2.1	4.9	TM	
89	TM	n-Butylbenzene		3.180	2.806	2.883	3.068	3.064	2.986	3.216	3.177		3.0	4.9	TM	
90	TM	1,2-DCB		2.126	1.881	1.893	2.002	1.957	1.888	1.926	1.911		1.9	4.2	TM	
91	TM	Hexachloroethane		0.6230	0.5715	0.5880	0.5777	0.5626	0.5992	0.6290	0.6327		0.60	4.6	TM	
92	TM	1,2-Dibromo-3-chloropropane		0.1498	0.1252	0.1508	0.1567	0.1660	0.1590	0.1754	0.1775		0.16	11	TM	
93	TM	1,2,4-Trichlorobenzene		1.127	1.147	1.039	1.155	1.150	1.161	1.287	1.316		1.2	7.6	TM	
94	TM	Hexachlorobutadiene		0.7361	0.5163	0.5699	0.6086	0.5911	0.5774	0.6221	0.6193		0.61	10	TM	
95	TM	Naphthalene		2.194	1.976	1.937	2.124	2.198	2.332	2.566	2.602		2.2	11	TM	
96	TM	1,2,3-Trichlorobenzene		1.104	1.021	0.9864	1.063	1.056	1.076	1.186	1.203		1.1	6.9	TM	
97																
98																
99																
100																
101																
102																
103																
104																
105																

Quantitation Report (Not Reviewed)

Data File : M:\THOR\DATA\T150316\0316T05.D
Acq On : 16 Mar 15 14:56
Sample : 0.1ug/L VOC STD 3-16-15
Misc : 10ml IS 2/10/15

Vial: 4
Operator: DG, HW, SV, RS
Inst : Thor
Multiplr: 1.00

Quant Time: Mar 17 8:52 2015 Quant Results File: TALLW.RES

Quant Method : M:\THOR\DATA\T150316\TALLW.M (RTE Integrator)
Title : METHOD 8260B
Last Update : Tue Mar 17 08:51:48 2015
Response via : Initial Calibration
DataAcq Meth : 8260_BETA

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene (IS)	5.99	96	658688	25.00000 ppb	0.00
56) Chlorobenzene-D5 (IS)	9.21	117	600512	25.00000 ppb	0.00
71) 1,4-Dichlorobenzene-D (IS)	11.52	152	296384	25.00000 ppb	0.00
System Monitoring Compounds					
32) Dibromofluoromethane(S)	5.17	111	4895	0.42016 ppb	0.00
Spiked Amount 28.198			Recovery	= 1.489%	
37) 1,2-DCA-D4(S)	5.57	65	5384	0.45510 ppb	0.00
Spiked Amount 26.773			Recovery	= 1.699%	
57) Toluene-D8(S)	7.75	98	20666	0.48633 ppb	0.00
Spiked Amount 28.680			Recovery	= 1.695%	
65) 4-Bromofluorobenzene(S)	10.39	95	10823	0.65889 ppb	0.00
Spiked Amount 27.316			Recovery	= 2.412%	

Target Compounds						Qvalue
2) Dichlorodifluoromethane	1.01	85	722	0.68001 ppb		91
3) Freon 114	1.10	135	631	0.09443 ppb		83
4) Chloromethane	1.14	50	3546	0.32407 ppb		99
5) Vinyl chloride	1.22	62	1907	0.14047 ppb	#	77
6) Bromomethane	1.46	94	3770	-0.24491 ppb		94
7) Chloroethane	1.54	64	1004	0.16030 ppb		87
8) Dichlorofluoromethane	1.71	67	3954	0.16709 ppb		91
9) Trichlorofluoromethane	1.75	101	1486	0.09611 ppb		93
10) Acrolein	2.12	56	7423	6.50049 ppb		88
11) Acetone	2.27	43	3548	0.43481 ppb		100
12) Freon-113	2.22	101	882	0.10068 ppb		92
13) 1,1-DCE	2.20	96	1381	0.14614 ppb	#	51
14) t-Butanol	2.91	59	6716	-1.13519 ppb	#	70
15) Methyl Acetate	2.63	43	1400	0.24050 ppb	#	48
16) Iodomethane	2.33	142	856	2.24703 ppb	#	88
17) Acrylonitrile	3.01	52	164	0.07046 ppb		97
18) Methylene chloride	2.71	84	3546	0.29700 ppb		81
19) Carbon disulfide	2.39	76	4680	0.15599 ppb	#	71
20) Methyl t-butyl ether (MtBE	3.06	73	3539	0.13341 ppb		96
21) Trans-1,2-DCE	3.02	96	1638	0.15265 ppb		86
22) Hexane	3.42	57	1151	0.11760 ppb	#	51
23) Diisopropyl Ether	3.77	45	5145	0.16641 ppb		94
24) 1,1-DCA	3.59	63	2424	0.12777 ppb	#	87
25) Vinyl Acetate	3.76	87	1632	0.17240 ppb	#	76
26) Ethyl tert Butyl Ether	4.35	59	2597	0.11855 ppb	#	80
27) MEK (2-Butanone)	4.57	43	1213	-0.47392 ppb		89
28) Cis-1,2-DCE	4.48	96	2003	0.16122 ppb		78
29) 2,2-Dichloropropane	4.46	77	2751	0.19736 ppb		96
30) Chloroform	4.97	83	3916	0.18021 ppb		87
31) Bromochloromethane	4.81	128	1134	0.18796 ppb		69
33) 1,1,1-TCA	5.16	97	2083	0.12742 ppb		99
34) Cyclohexane	5.22	41	1088	0.14388 ppb	#	61
35) 1,1-Dichloropropene	5.38	75	1875	0.13395 ppb	#	76
36) 2,2,4-Trimethylpentane	5.78	57	2615	0.09799 ppb	#	57
38) Carbon Tetrachloride	5.36	117	1644	0.12058 ppb		84
39) Tert Amyl Methyl Ether	5.85	73	2136	0.11405 ppb	#	95
40) 1,2-DCA	5.67	62	1994	0.13470 ppb	#	75
41) Benzene	5.63	78	6966	0.13514 ppb	#	85
42) TCE	6.42	95	1954	0.16049 ppb		82

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : M:\THOR\DATA\T150316\0316T05.D
Acq On : 16 Mar 15 14:56
Sample : 0.1ug/L VOC STD 3-16-15
Misc : 10ml IS 2/10/15

Vial: 4
Operator: DG, HW, SV, RS
Inst : Thor
Multiplr: 1.00

Quant Time: Mar 17 8:52 2015 Quant Results File: TALLW.RES

Quant Method : M:\THOR\DATA\T150316\TALLW.M (RTE Integrator)
Title : METHOD 8260B
Last Update : Tue Mar 17 08:51:48 2015
Response via : Initial Calibration
DataAcq Meth : 8260_BETA

Compound	R.T.	QIon	Response	Conc	Unit		Qvalue
43) 2-Pentanone	6.68	43	36362	5.91459	ppb		100
44) 1,2-Dichloropropane	6.67	63	1450	0.12226	ppb	#	86
45) Bromodichloromethane	6.99	83	2136	0.14487	ppb	#	91
46) Methyl Cyclohexane	6.62	83	1717	0.10892	ppb		83
47) Dibromomethane	6.79	93	1016	0.14327	ppb		98
48) MIBK (methyl isobutyl ket	7.67	43	1681	0.20878	ppb	#	71
49) 1-Bromo-2-chloroethane	7.30	63	2197	0.15218	ppb		87
51) Cis-1,3-Dichloropropene	7.49	75	2624	0.15179	ppb	#	77
52) Toluene	7.81	91	6909	0.13903	ppb		99
53) Trans-1,3-Dichloropropene	8.07	75	1978	0.13227	ppb		84
54) 1,1,2-TCA	8.25	83	1205	0.14206	ppb	#	75
55) 2-Hexanone	8.53	43	1807	0.33575	ppb	#	80
58) 1,2-EDB	8.72	107	1348	0.13722	ppb		90
59) Tetrachloroethene	8.37	166	1723	0.12672	ppb	#	78
60) 1-Chlorohexane	9.25	91	1533	0.11025	ppb	#	73
61) 1,1,1,2-Tetrachloroethane	9.32	131	1632	0.14548	ppb		77
62) m&p-Xylene	9.48	106	5115	0.25078	ppb		85
63) o-Xylene	9.87	106	2574	0.12833	ppb		81
64) Styrene	9.89	104	4217	0.12855	ppb		99
66) 1,3-Dichloropropane	8.41	76	2470	0.14924	ppb		83
67) Dibromochloromethane	8.63	129	1367	0.12464	ppb		77
68) Chlorobenzene	9.24	112	4882	0.14518	ppb		89
69) Ethylbenzene	9.36	91	7987	0.14649	ppb		96
70) Bromoform	10.05	173	916	0.13714	ppb		83
72) Isopropylbenzene	10.25	105	5870	0.12823	ppb		100
73) 1,1,2,2-Tetrachloroethane	10.54	83	1897	0.17508	ppb	#	71
74) 1,2,3-Trichloropropane	10.57	110	448	0.14270	ppb	#	61
75) t-1,4-Dichloro-2-Butene	10.61	53	217	0.10965	ppb	#	42
76) Bromobenzene	10.52	156	1637	0.12591	ppb		98
77) n-Propylbenzene	10.65	91	7597	0.13779	ppb		100
78) 4-Ethyltoluene	10.77	105	6245	0.13252	ppb		96
79) 2-Chlorotoluene	10.72	91	4786	0.13359	ppb		92
80) 1,3,5-Trimethylbenzene	10.84	105	5806	0.14549	ppb		98
81) 4-Chlorotoluene	10.83	91	5453	0.13602	ppb		96
82) Tert-Butylbenzene	11.15	119	5026	0.14375	ppb		91
83) 1,2,4-Trimethylbenzene	11.20	105	7139	0.17564	ppb		88
84) Sec-Butylbenzene	11.37	105	6032	0.12928	ppb		97
85) p-Isopropyltoluene	11.52	119	6317	0.15343	ppb	#	85
86) Benzyl Chloride	11.69	91	1915	0.19081	ppb	#	88
87) 1,3-DCB	11.46	146	3738	0.15414	ppb		96
88) 1,4-DCB	11.54	146	3853	0.15400	ppb		94
89) n-Butylbenzene	11.92	91	5541	0.15336	ppb	#	91
90) 1,2-DCB	11.91	146	3568	0.15450	ppb		95
91) Hexachloroethane	12.16	117	883	0.12456	ppb		93
93) 1,2,4-Trichlorobenzene	13.50	180	2070	0.14890	ppb		81
94) Hexachlorobutadiene	13.69	225	967	0.13480	ppb		88
95) Naphthalene	13.74	128	5058	0.19038	ppb	#	88
96) 1,2,3-Trichlorobenzene	13.98	180	2004	0.15550	ppb		78

(#) = qualifier out of range (m) = manual integration

Quantitation Report

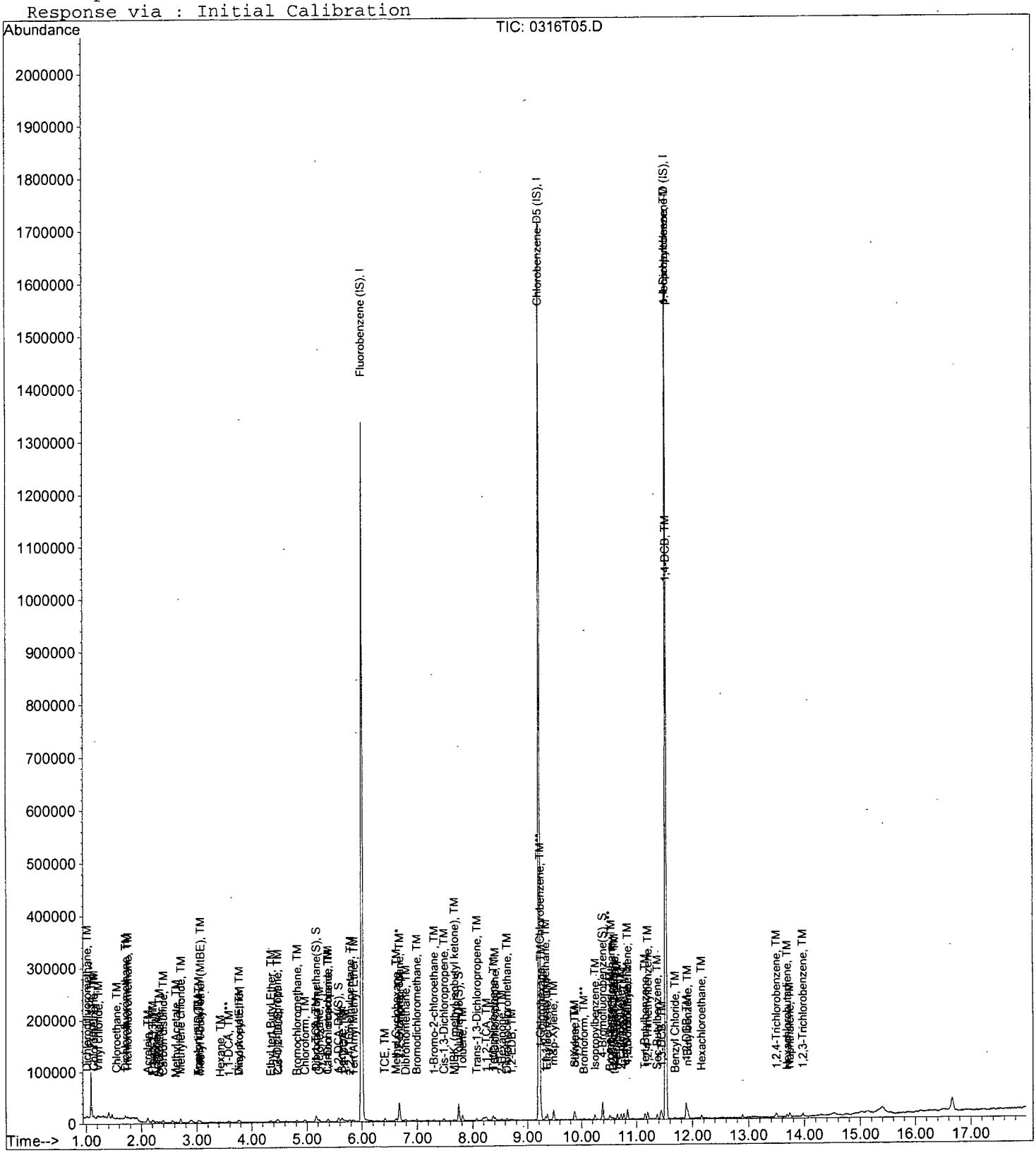
Data File : M:\THOR\DATA\T150316\0316T05.D
Acq On : 16 Mar 15 14:56
Sample : 0.1ug/L VOC STD 3-16-15
Misc : 10ml IS 2/10/15

Vial: 4
Operator: DG, HW, SV, RS
Inst : Thor
Multiplr: 1.00

Quant Time: Mar 17 8:52 2015

Quant Results File: TALLW.RES

Method : M:\THOR\DATA\T150316\TALLW.M (RTE Integrator)
Title : METHOD 8260B
Last Update : Tue Mar 17 08:51:48 2015
Response via : Initial Calibration



Quantitation Report (Not Reviewed)

Data File : M:\THOR\DATA\T150316\0316T06.D
Acq On : 16 Mar 15 15:24
Sample : 0.3ug/L VOC STD 3-16-15
Misc : 10ml IS 2/10/15

Vial: 5
Operator: DG, HW, SV, RS
Inst : Thor
Multiplr: 1.00

Quant Time: Mar 17 8:52 2015 Quant Results File: TALLW.RES

Quant Method : M:\THOR\DATA\T150316\TALLW.M (RTE Integrator)
Title : METHOD 8260B
Last Update : Tue Mar 17 08:51:48 2015
Response via : Initial Calibration
DataAcq Meth : 8260_BETA

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene (IS)	5.99	96	685120	25.00000 ppb	0.00
56) Chlorobenzene-D5 (IS)	9.20	117	596160	25.00000 ppb	0.00
71) 1,4-Dichlorobenzene-D (IS)	11.52	152	307136	25.00000 ppb	0.00
System Monitoring Compounds					
32) Dibromofluoromethane(S)	5.17	111	7675	0.63336 ppb	0.00
Spiked Amount 28.198			Recovery	= 2.245%	
37) 1,2-DCA-D4(S)	5.57	65	8341	0.67784 ppb	0.00
Spiked Amount 26.773			Recovery	= 2.532%	
57) Toluene-D8(S)	7.75	98	29028	0.68809 ppb	0.00
Spiked Amount 28.680			Recovery	= 2.399%	
65) 4-Bromofluorobenzene(S)	10.39	95	12149	0.74502 ppb	0.00
Spiked Amount 27.316			Recovery	= 2.727%	

Target Compounds						Qvalue
2) Dichlorodifluoromethane	1.01	85	2081	0.79377 ppb		96
3) Freon 114	1.10	135	1445	0.20790 ppb		98
4) Chloromethane	1.14	50	4987	0.43818 ppb		96
5) Vinyl chloride	1.22	62	4749	0.33631 ppb		96
7) Chloroethane	1.54	64	2130	0.32696 ppb	#	71
8) Dichlorofluoromethane	1.71	67	8793	0.35723 ppb		96
9) Trichlorofluoromethane	1.75	101	4123	0.25636 ppb		84
10) Acrolein	2.12	56	17984	15.14139 ppb		87
12) Freon-113	2.23	101	2275	0.24966 ppb		86
13) 1,1-DCE	2.21	96	3175	0.32302 ppb	#	86
14) t-Butanol	2.90	59	14078	11.39577 ppb		100
15) Methyl Acetate	2.62	43	2718	0.44891 ppb	#	79
16) Iodomethane	2.34	142	1251	2.27335 ppb		83
17) Acrylonitrile	3.00	52	868	0.35852 ppb	#	48
18) Methylene chloride	2.71	84	4465	0.35955 ppb		96
19) Carbon disulfide	2.39	76	9956	0.31903 ppb		94
20) Methyl t-butyl ether (MtBE	3.06	73	8534	0.30929 ppb	#	82
21) Trans-1,2-DCE	3.03	96	3492	0.31288 ppb		92
22) Hexane	3.42	57	2760	0.27111 ppb	#	38
23) Diisopropyl Ether	3.77	45	10310	0.32061 ppb	#	79
24) 1,1-DCA	3.59	63	6534	0.33111 ppb		95
25) Vinyl Acetate	3.76	87	2820	0.28641 ppb		83
26) Ethyl tert Butyl Ether	4.34	59	7055	0.30963 ppb		96
27) MEK (2-Butanone)	4.56	43	2201	-0.17059 ppb	#	88
28) Cis-1,2-DCE	4.48	96	4118	0.31867 ppb		91
29) 2,2-Dichloropropane	4.47	77	5121	0.35322 ppb		94
30) Chloroform	4.96	83	6435	0.28471 ppb		100
31) Bromochloromethane	4.82	128	1876	0.29894 ppb		89
33) 1,1,1-TCA	5.16	97	5556	0.32675 ppb		97
34) Cyclohexane	5.21	41	2493	0.31697 ppb		75
35) 1,1-Dichloropropene	5.39	75	4471	0.30708 ppb		93
36) 2,2,4-Trimethylpentane	5.79	57	7693	0.27716 ppb	#	68
38) Carbon Tetrachloride	5.37	117	4228	0.29814 ppb		88
39) Tert Amyl Methyl Ether	5.84	73	5714	0.29333 ppb	#	83
40) 1,2-DCA	5.67	62	4967	0.32258 ppb	#	87
41) Benzene	5.63	78	15452	0.31688 ppb		97
42) TCE	6.42	95	3923	0.30979 ppb		95
43) 2-Pentanone	6.68	43	87474	13.67945 ppb		99
44) 1,2-Dichloropropane	6.66	63	4434	0.35945 ppb		98

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : M:\THOR\DATA\T150316\0316T06.D
Acq On : 16 Mar 15 15:24
Sample : 0.3ug/L VOC STD 3-16-15
Misc : 10ml IS 2/10/15

Vial: 5
Operator: DG, HW, SV, RS
Inst : Thor
Multiplr: 1.00

Quant Time: Mar 17 8:52 2015 Quant Results File: TALLW.RES

Quant Method : M:\THOR\DATA\T150316\TALLW.M (RTE Integrator)
Title : METHOD 8260B
Last Update : Tue Mar 17 08:51:48 2015
Response via : Initial Calibration
DataAcq Meth : 8260_BETA

	Compound	R.T.	QIon	Response	Conc Unit		Qvalue
45)	Bromodichloromethane	6.99	83	4879	0.31814 ppb		93
46)	Methyl Cyclohexane	6.62	83	4400	0.26836 ppb		100
47)	Dibromomethane	6.79	93	2382	0.32293 ppb		85
48)	MIBK (methyl isobutyl ket	7.67	43	3590	0.42867 ppb		92
49)	1-Bromo-2-chloroethane	7.30	63	4836	0.32206 ppb		93
51)	Cis-1,3-Dichloropropene	7.48	75	5064	0.28164 ppb		93
52)	Toluene	7.81	91	15937	0.30832 ppb		87
53)	Trans-1,3-Dichloropropene	8.07	75	5421	0.34853 ppb		85
54)	1,1,2-TCA	8.25	83	2995	0.33947 ppb		87
55)	2-Hexanone	8.53	43	1992	0.35585 ppb	#	84
58)	1,2-EDB	8.72	107	3220	0.33019 ppb		85
59)	Tetrachloroethene	8.37	166	4192	0.31056 ppb		92
60)	1-Chlorohexane	9.25	91	3959	0.28680 ppb		93
61)	1,1,1,2-Tetrachloroethane	9.33	131	3474	0.31194 ppb		91
62)	m&p-Xylene	9.48	106	12468	0.61575 ppb		97
63)	o-Xylene	9.87	106	6514	0.32713 ppb		91
64)	Styrene	9.89	104	10068	0.30915 ppb	#	86
66)	1,3-Dichloropropane	8.41	76	5774	0.35142 ppb		87
67)	Dibromochloromethane	8.63	129	3485	0.32007 ppb		92
68)	Chlorobenzene	9.23	112	11713	0.35086 ppb		98
69)	Ethylbenzene	9.36	91	17997	0.33250 ppb		98
70)	Bromoform	10.05	173	1744	0.26301 ppb		92
72)	Isopropylbenzene	10.25	105	15379	0.32419 ppb		95
73)	1,1,2,2-Tetrachloroethane	10.55	83	3841	0.34210 ppb		98
74)	1,2,3-Trichloropropane	10.57	110	1093	0.33595 ppb		95
75)	t-1,4-Dichloro-2-Butene	10.61	53	633	0.30866 ppb		87
76)	Bromobenzene	10.52	156	4238	0.31456 ppb		98
77)	n-Propylbenzene	10.65	91	18526	0.32425 ppb		98
78)	4-Ethyltoluene	10.77	105	15309	0.31349 ppb		93
79)	2-Chlorotoluene	10.72	91	12813	0.34512 ppb		96
80)	1,3,5-Trimethylbenzene	10.84	105	13230	0.31992 ppb		99
81)	4-Chlorotoluene	10.83	91	13317	0.32055 ppb		98
82)	Tert-Butylbenzene	11.15	119	11740	0.32401 ppb		95
83)	1,2,4-Trimethylbenzene	11.20	105	14336	0.34035 ppb		93
84)	Sec-Butylbenzene	11.37	105	14993	0.31010 ppb		95
85)	p-Isopropyltoluene	11.52	119	13048	0.30581 ppb	#	91
86)	Benzyl Chloride	11.69	91	3400	0.32692 ppb	#	89
87)	1,3-DCB	11.45	146	8791	0.34982 ppb		90
88)	1,4-DCB	11.55	146	8563	0.33027 ppb		95
89)	n-Butylbenzene	11.92	91	11722	0.31308 ppb		96
90)	1,2-DCB	11.91	146	7837	0.32748 ppb		96
91)	Hexachloroethane	12.16	117	2296	0.31255 ppb		84
92)	1,2-Dibromo-3-chloropropan	12.68	157	552	0.28522 ppb	#	76
93)	1,2,4-Trichlorobenzene	13.50	180	4154	0.28836 ppb		96
94)	Hexachlorobutadiene	13.69	225	2713	0.36495 ppb		86
95)	Naphthalene	13.74	128	8086	0.29370 ppb		95
96)	1,2,3-Trichlorobenzene	13.98	180	4070	0.30476 ppb		93

(#) = qualifier out of range (m) = manual integration

Quantitation Report

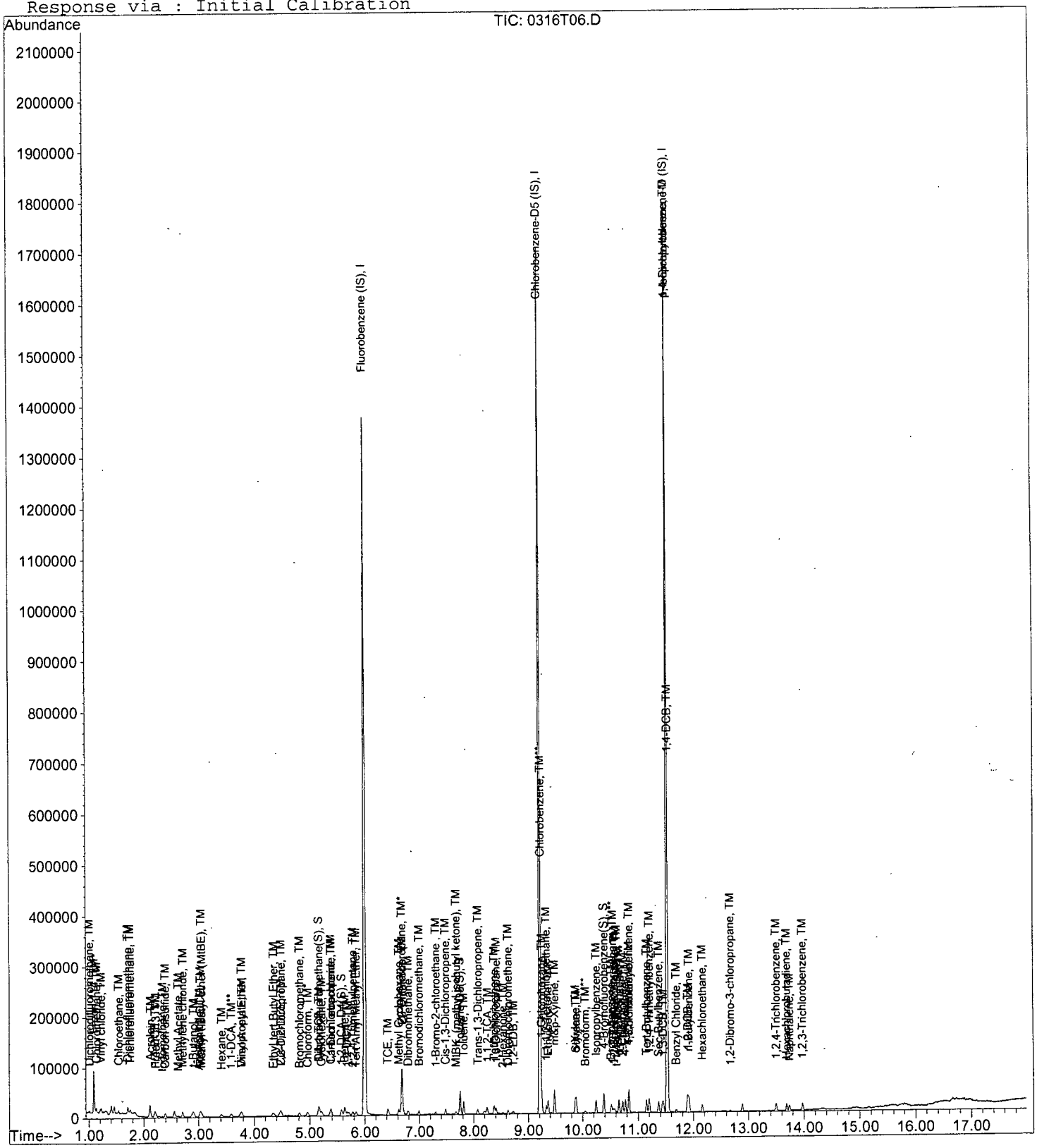
Data File : M:\THOR\DATA\T150316\0316T06.D
Acq On : 16 Mar 15 15:24
Sample : 0.3ug/L VOC STD 3-16-15
Misc : 10ml IS 2/10/15

Vial: 5
Operator: DG, HW, SV, RS
Inst : Thor
Multiplr: 1.00

Quant Time: Mar 17 8:52 2015

Quant Results File: TALLW.RES

Method : M:\THOR\DATA\T150316\TALLW.M (RTE Integrator)
Title : METHOD 8260B
Last Update : Tue Mar 17 08:51:48 2015
Response via : Initial Calibration



Quantitation Report (Not Reviewed)

Data File : M:\THOR\DATA\T150316\0316T07.D
Acq On : 16 Mar 15 15:52
Sample : 0.5ug/L VOC STD 3-16-15
Misc : 10ml IS 2/10/15

Vial: 6
Operator: DG, HW, SV, RS
Inst : Thor
Multiplr: 1.00

Quant Time: Mar 17 8:52 2015 Quant Results File: TALLW.RES

Quant Method : M:\THOR\DATA\T150316\TALLW.M (RTE Integrator)
Title : METHOD 8260B
Last Update : Tue Mar 17 08:51:48 2015
Response via : Initial Calibration
DataAcq Meth : 8260_BETA

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene (IS)	5.99	96	682496	25.00000 ppb	0.00
56) Chlorobenzene-D5 (IS)	9.21	117	601152	25.00000 ppb	0.00
71) 1,4-Dichlorobenzene-D (IS)	11.52	152	311616	25.00000 ppb	0.00
System Monitoring Compounds					
32) Dibromofluoromethane(S)	5.17	111	12036	0.99707 ppb	0.00
Spiked Amount 28.198			Recovery	= 3.536%	
37) 1,2-DCA-D4(S)	5.57	65	12671	1.03369 ppb	0.00
Spiked Amount 26.773			Recovery	= 3.862%	
57) Toluene-D8(S)	7.75	98	44607	1.04860 ppb	0.00
Spiked Amount 28.680			Recovery	= 3.658%	
65) 4-Bromofluorobenzene(S)	10.38	95	17507	1.06468 ppb	0.00
Spiked Amount 27.316			Recovery	= 3.899%	

Target Compounds						Qvalue
2) Dichlorodifluoromethane	1.01	85	3629	0.92737 ppb		84
3) Freon 114	1.10	135	2672	0.38591 ppb		74
4) Chloromethane	1.14	50	7090	0.62535 ppb		93
5) Vinyl chloride	1.22	62	6318	0.44914 ppb		92
6) Bromomethane	1.46	94	8109	0.17547 ppb		95
7) Chloroethane	1.54	64	4078	0.62840 ppb		94
8) Dichlorofluoromethane	1.71	67	13033	0.53153 ppb		89
9) Trichlorofluoromethane	1.75	101	7269	0.45372 ppb		84
10) Acrolein	2.12	56	29619	25.03320 ppb		98
11) Acetone	2.27	43	3123	0.18518 ppb	#	88
12) Freon-113	2.22	101	3708	0.40849 ppb		89
13) 1,1-DCE	2.20	96	5118	0.52270 ppb		90
14) t-Butanol	2.90	59	20465	21.72325 ppb		96
15) Methyl Acetate	2.63	43	3435	0.56951 ppb		97
16) Iodomethane	2.33	142	1854	2.31788 ppb	#	78
17) Acrylonitrile	3.01	52	1242	0.51497 ppb		67
18) Methylene chloride	2.71	84	6648	0.53739 ppb		90
19) Carbon disulfide	2.39	76	15710	0.50535 ppb		95
20) Methyl t-butyl ether (MtBE	3.06	73	13811	0.50246 ppb		96
21) Trans-1,2-DCE	3.03	96	6060	0.54505 ppb		93
22) Hexane	3.41	57	4334	0.42735 ppb	#	95
23) Diisopropyl Ether	3.77	45	16315	0.50929 ppb		91
24) 1,1-DCA	3.59	63	10375	0.52778 ppb		99
25) Vinyl Acetate	3.77	87	4867	0.49621 ppb		91
26) Ethyl tert Butyl Ether	4.35	59	10153	0.44731 ppb		91
28) Cis-1,2-DCE	4.48	96	6654	0.51690 ppb		92
29) 2,2-Dichloropropane	4.46	77	7167	0.49624 ppb	#	85
30) Chloroform	4.96	83	10369	0.46052 ppb		82
31) Bromochloromethane	4.81	128	3286	0.52564 ppb		95
33) 1,1,1-TCA	5.16	97	8639	0.51001 ppb		87
34) Cyclohexane	5.22	41	3822	0.48782 ppb		83
35) 1,1-Dichloropropene	5.39	75	6963	0.48007 ppb		96
36) 2,2,4-Trimethylpentane	5.78	57	10842	0.39212 ppb	#	82
38) Carbon Tetrachloride	5.37	117	6108	0.43237 ppb		88
39) Tert Amyl Methyl Ether	5.84	73	9476	0.48833 ppb	#	90
40) 1,2-DCA	5.67	62	7275	0.47429 ppb		96
41) Benzene	5.63	78	24503	0.51940 ppb		97
42) TCE	6.43	95	6426	0.50939 ppb		90
43) 2-Pentanone	6.68	43	146426	22.98658 ppb		96

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : M:\THOR\DATA\T150316\0316T07.D
Acq On : 16 Mar 15 15:52
Sample : 0.5ug/L VOC STD 3-16-15
Misc : 10ml IS 2/10/15

Vial: 6
Operator: DG, HW, SV, RS
Inst : Thor
Multiplr: 1.00

Quant Time: Mar 17 8:52 2015

Quant Results File: TALLW.RES

Quant Method : M:\THOR\DATA\T150316\TALLW.M (RTE Integrator)
Title : METHOD 8260B
Last Update : Tue Mar 17 08:51:48 2015
Response via : Initial Calibration
DataAcq Meth : 8260_BETA

Compound	R.T.	QIon	Response	Conc Unit		Qvalue
44) 1,2-Dichloropropane	6.66	63	5854	0.47638 ppb	#	86
45) Bromodichloromethane	6.99	83	7214	0.47220 ppb		90
46) Methyl Cyclohexane	6.62	83	6587	0.40329 ppb		95
47) Dibromomethane	6.79	93	3678	0.50055 ppb		95
48) MIBK (methyl isobutyl ket	7.67	43	4788	0.57392 ppb		99
49) 1-Bromo-2-chloroethane	7.30	63	7733	0.51697 ppb		89
51) Cis-1,3-Dichloropropene	7.48	75	9327	0.52073 ppb		97
52) Toluene	7.81	91	26186	0.50855 ppb		93
53) Trans-1,3-Dichloropropene	8.07	75	7223	0.46617 ppb		88
54) 1,1,2-TCA	8.25	83	4450	0.50632 ppb	#	77
55) 2-Hexanone	8.54	43	2988	0.53582 ppb	#	85
58) 1,2-EDB	8.72	107	4799	0.48801 ppb		93
59) Tetrachloroethene	8.38	166	6731	0.49451 ppb		90
60) 1-Chlorohexane	9.24	91	7410	0.53234 ppb		88
61) 1,1,1,2-Tetrachloroethane	9.33	131	5579	0.49680 ppb		91
62) m&p-Xylene	9.48	106	20438	1.00098 ppb		98
63) o-Xylene	9.87	106	9846	0.49035 ppb		96
64) Styrene	9.89	104	15015	0.45722 ppb		97
66) 1,3-Dichloropropane	8.41	76	8745	0.52783 ppb		91
67) Dibromochloromethane	8.63	129	4813	0.43836 ppb		73
68) Chlorobenzene	9.23	112	16962	0.50387 ppb		94
69) Ethylbenzene	9.36	91	27482	0.50353 ppb		96
70) Bromoform	10.05	173	3379	0.50534 ppb	#	65
72) Isopropylbenzene	10.25	105	23969	0.49801 ppb		97
73) 1,1,2,2-Tetrachloroethane	10.55	83	6068	0.53267 ppb		95
74) 1,2,3-Trichloropropane	10.57	110	1705	0.51653 ppb		90
75) t-1,4-Dichloro-2-Butene	10.60	53	991	0.47628 ppb	#	68
76) Bromobenzene	10.52	156	7102	0.51955 ppb		72
77) n-Propylbenzene	10.65	91	28132	0.48530 ppb		96
78) 4-Ethyltoluene	10.77	105	23211	0.46847 ppb		99
79) 2-Chlorotoluene	10.72	91	18568	0.49294 ppb		95
80) 1,3,5-Trimethylbenzene	10.83	105	19522	0.46528 ppb		95
81) 4-Chlorotoluene	10.83	91	20132	0.47763 ppb		98
82) Tert-Butylbenzene	11.15	119	18389	0.50022 ppb		95
83) 1,2,4-Trimethylbenzene	11.20	105	21207	0.49624 ppb		98
84) Sec-Butylbenzene	11.37	105	23010	0.46907 ppb		99
85) p-Isopropyltoluene	11.52	119	21872	0.50525 ppb	#	93
86) Benzyl Chloride	11.69	91	5019	0.47565 ppb		92
87) 1,3-DCB	11.46	146	11867	0.46544 ppb		92
88) 1,4-DCB	11.55	146	13364	0.50803 ppb		90
89) n-Butylbenzene	11.92	91	17485	0.46029 ppb		91
90) 1,2-DCB	11.91	146	11720	0.48269 ppb		95
91) Hexachloroethane	12.16	117	3562	0.47791 ppb		92
92) 1,2-Dibromo-3-chloropropan	12.67	157	780	0.39723 ppb	#	57
93) 1,2,4-Trichlorobenzene	13.50	180	7147	0.48899 ppb	#	88
94) Hexachlorobutadiene	13.69	225	3218	0.42666 ppb		94
95) Naphthalene	13.73	128	12315	0.44088 ppb		98
96) 1,2,3-Trichlorobenzene	13.97	180	6363	0.46961 ppb		97

(#) = qualifier out of range (m) = manual integration

Quantitation Report

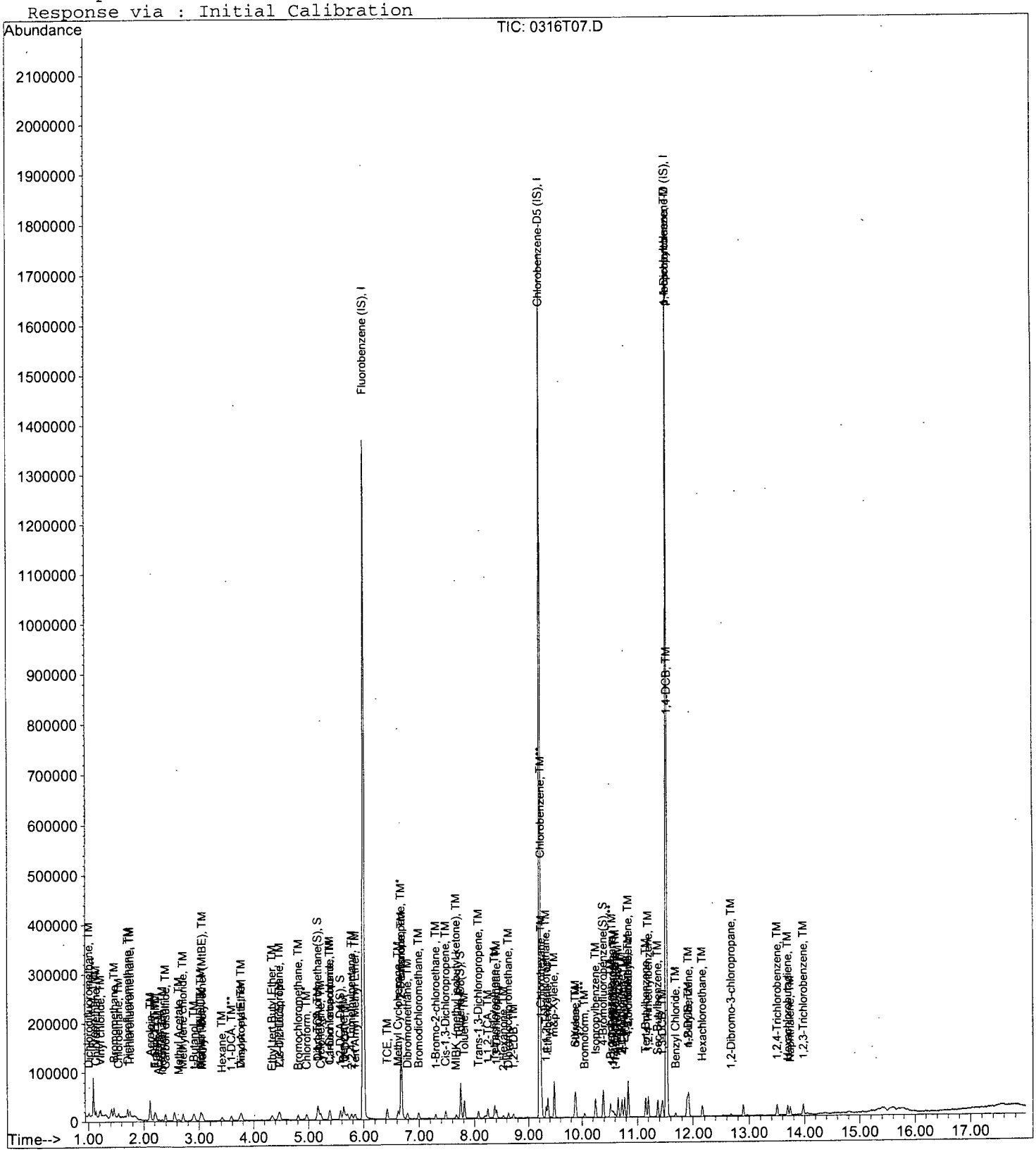
Data File : M:\THOR\DATA\T150316\0316T07.D
Acq On : 16 Mar 15 15:52
Sample : 0.5ug/L VOC STD 3-16-15
Misc : 10ml IS 2/10/15

Vial: 6
Operator: DG, HW, SV, RS
Inst : Thor
Multiplr: 1.00

Quant Time: Mar 17 8:52 2015

Quant Results File: TALLW.RES

Method : M:\THOR\DATA\T150316\TALLW.M (RTE Integrator)
Title : METHOD 8260B
Last Update : Tue Mar 17 08:51:48 2015
Response via : Initial Calibration



Quantitation Report (Not Reviewed)

Data File : M:\THOR\DATA\T150316\0316T08.D
Acq On : 16 Mar 15 16:20
Sample : 1.0ug/L VOC STD 3-16-15
Misc : 10ml IS 2/10/15

Vial: 7
Operator: DG, HW, SV, RS
Inst : Thor
Multiplr: 1.00

Quant Time: Mar 17 8:52 2015 Quant Results File: TALLW.RES

Quant Method : M:\THOR\DATA\T150316\TALLW.M (RTE Integrator)
Title : METHOD 8260B
Last Update : Tue Mar 17 08:51:48 2015
Response via : Initial Calibration
DataAcq Meth : 8260_BETA

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene (IS)	5.99	96	682112	25.00000 ppb	0.00
56) Chlorobenzene-D5 (IS)	9.21	117	618944	25.00000 ppb	0.00
71) 1,4-Dichlorobenzene-D (IS)	11.52	152	310400	25.00000 ppb	0.00
System Monitoring Compounds					
32) Dibromofluoromethane(S)	5.17	111	23580	1.95447 ppb	0.00
Spiked Amount 28.198			Recovery	= 6.930%	
37) 1,2-DCA-D4(S)	5.58	65	25514	2.08258 ppb	0.00
Spiked Amount 26.773			Recovery	= 7.780%	
57) Toluene-D8(S)	7.75	98	86951	1.98525 ppb	0.00
Spiked Amount 28.680			Recovery	= 6.921%	
65) 4-Bromofluorobenzene(S)	10.39	95	32020	1.89130 ppb	0.00
Spiked Amount 27.316			Recovery	= 6.923%	

Target Compounds					Qvalue
2) Dichlorodifluoromethane	1.01	85	8882	1.37883 ppb	99
3) Freon 114	1.10	135	5862	0.84710 ppb	69
4) Chloromethane	1.14	50	11947	1.05434 ppb	91
5) Vinyl chloride	1.22	62	13144	0.93491 ppb	96
6) Bromomethane	1.46	94	14146	0.78010 ppb	98
7) Chloroethane	1.54	64	6402	0.98707 ppb	99
8) Dichlorofluoromethane	1.71	67	25472	1.03941 ppb	99
9) Trichlorofluoromethane	1.75	101	16259	1.01543 ppb	99
10) Acrolein	2.12	56	60254	50.95377 ppb	94
11) Acetone	2.28	43	4146	0.64783 ppb	98
12) Freon-113	2.23	101	9066	0.99931 ppb	92
13) 1,1-DCE	2.20	96	9251	0.94533 ppb	95
14) t-Butanol	2.90	59	41796	51.07497 ppb	98
15) Methyl Acetate	2.63	43	6487	1.07613 ppb	96
16) Iodomethane	2.34	142	3198	2.41647 ppb #	93
17) Acrylonitrile	3.01	52	2170	0.90026 ppb	95
18) Methylene chloride	2.71	84	12790	1.03446 ppb	94
19) Carbon disulfide	2.39	76	30750	0.98971 ppb	98
20) Methyl t-butyl ether (MtBE	3.06	73	26932	0.98037 ppb	98
21) Trans-1,2-DCE	3.03	96	10810	0.97283 ppb	93
22) Hexane	3.40	57	9040	0.89189 ppb	97
23) Diisopropyl Ether	3.76	45	32313	1.00926 ppb	92
24) 1,1-DCA	3.58	63	19260	0.98031 ppb #	96
25) Vinyl Acetate	3.77	87	9184	0.93688 ppb	99
26) Ethyl tert Butyl Ether	4.35	59	21433	0.94481 ppb	92
27) MEK (2-Butanone)	4.56	43	4720	0.64957 ppb #	89
28) Cis-1,2-DCE	4.48	96	12364	0.96101 ppb	98
29) 2,2-Dichloropropane	4.46	77	14981	1.03786 ppb	91
30) Chloroform	4.96	83	19618	0.87179 ppb	96
31) Bromochloromethane	4.81	128	6182	0.98945 ppb	90
33) 1,1,1-TCA	5.17	97	16141	0.95343 ppb	94
34) Cyclohexane	5.22	41	7669	0.97937 ppb	94
35) 1,1-Dichloropropene	5.39	75	14890	1.02719 ppb	91
36) 2,2,4-Trimethylpentane	5.78	57	25876	0.93637 ppb #	71
38) Carbon Tetrachloride	5.37	117	13276	0.94030 ppb	99
39) Tert Amyl Methyl Ether	5.84	73	18022	0.92926 ppb	96
40) 1,2-DCA	5.67	62	14493	0.94541 ppb	98
41) Benzene	5.63	78	47073	1.02174 ppb	98
42) TCE	6.43	95	12373	0.98136 ppb	97

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : M:\THOR\DATA\T150316\0316T08.D
Acq On : 16 Mar 15 16:20
Sample : 1.0ug/L VOC STD 3-16-15
Misc : 10ml IS 2/10/15

Vial: 7
Operator: DG, HW, SV, RS
Inst : Thor
Multiplr: 1.00

Quant Time: Mar 17 8:52 2015 Quant Results File: TALLW.RES

Quant Method : M:\THOR\DATA\T150316\TALLW.M (RTE Integrator)
Title : METHOD 8260B
Last Update : Tue Mar 17 08:51:48 2015
Response via : Initial Calibration
DataAcq Meth : 8260_BETA

Compound	R.T.	QIon	Response	Conc Unit		Qvalue
43) 2-Pentanone	6.68	43	299699	47.07453 ppb		99
44) 1,2-Dichloropropane	6.66	63	13338	1.08602 ppb	#	95
45) Bromodichloromethane	6.99	83	15335	1.00433 ppb		99
46) Methyl Cyclohexane	6.62	83	16591	1.01636 ppb		95
47) Dibromomethane	6.79	93	7816	1.06429 ppb		92
48) MIBK (methyl isobutyl ket	7.67	43	9143	1.09656 ppb		95
49) 1-Bromo-2-chloroethane	7.30	63	14903	0.99686 ppb		98
51) Cis-1,3-Dichloropropene	7.48	75	17134	0.95714 ppb		98
52) Toluene	7.81	91	49188	0.95581 ppb		98
53) Trans-1,3-Dichloropropene	8.07	75	14264	0.92111 ppb		95
54) 1,1,2-TCA	8.25	83	8980	1.02232 ppb		92
55) 2-Hexanone	8.53	43	5624	1.00909 ppb	#	83
58) 1,2-EDB	8.72	107	9797	0.96762 ppb		86
59) Tetrachloroethene	8.37	166	13178	0.94033 ppb		95
60) 1-Chlorohexane	9.25	91	13260	0.92522 ppb		97
61) 1,1,1,2-Tetrachloroethane	9.33	131	10541	0.91167 ppb		89
62) m&p-Xylene	9.48	106	38722	1.84195 ppb		97
63) o-Xylene	9.87	106	18656	0.90240 ppb		85
64) Styrene	9.89	104	31728	0.93838 ppb		94
66) 1,3-Dichloropropane	8.41	76	16416	0.96234 ppb		90
67) Dibromochloromethane	8.63	129	10243	0.90610 ppb		97
68) Chlorobenzene	9.23	112	32517	0.93817 ppb		94
69) Ethylbenzene	9.36	91	53473	0.95157 ppb		95
70) Bromoform	10.05	173	6276	0.91162 ppb		95
72) Isopropylbenzene	10.25	105	46784	0.97585 ppb		98
73) 1,1,2,2-Tetrachloroethane	10.55	83	11420	1.00642 ppb		94
74) 1,2,3-Trichloropropane	10.58	110	3126	0.95073 ppb		99
75) t-1,4-Dichloro-2-Butene	10.61	53	1848	0.89163 ppb	#	72
76) Bromobenzene	10.52	156	13165	0.96687 ppb		99
77) n-Propylbenzene	10.65	91	55007	0.95264 ppb		98
78) 4-Ethyltoluene	10.77	105	47134	0.95503 ppb		99
79) 2-Chlorotoluene	10.72	91	36850	0.98211 ppb		98
80) 1,3,5-Trimethylbenzene	10.84	105	40232	0.96264 ppb		93
81) 4-Chlorotoluene	10.83	91	40514	0.96496 ppb		97
82) Tert-Butylbenzene	11.15	119	36011	0.98342 ppb		95
83) 1,2,4-Trimethylbenzene	11.20	105	39238	0.92176 ppb		95
84) Sec-Butylbenzene	11.37	105	46670	0.95511 ppb		99
85) p-Isopropyltoluene	11.52	119	40850	0.94735 ppb	#	90
86) Benzyl Chloride	11.69	91	10102	0.96111 ppb	#	96
87) 1,3-DCB	11.46	146	24812	0.97696 ppb		99
88) 1,4-DCB	11.55	146	25835	0.98596 ppb		89
89) n-Butylbenzene	11.92	91	35794	0.94596 ppb		98
90) 1,2-DCB	11.91	146	23501	0.97169 ppb		94
91) Hexachloroethane	12.16	117	7300	0.98328 ppb		85
92) 1,2-Dibromo-3-chloropropan	12.67	157	1872	0.95709 ppb		94
93) 1,2,4-Trichlorobenzene	13.50	180	12901	0.88613 ppb		97
94) Hexachlorobutadiene	13.69	225	7076	0.94186 ppb		90
95) Naphthalene	13.74	128	24046	0.86423 ppb		92
96) 1,2,3-Trichlorobenzene	13.97	180	12247	0.90742 ppb		93

(#) = qualifier out of range (m) = manual integration

Quantitation Report

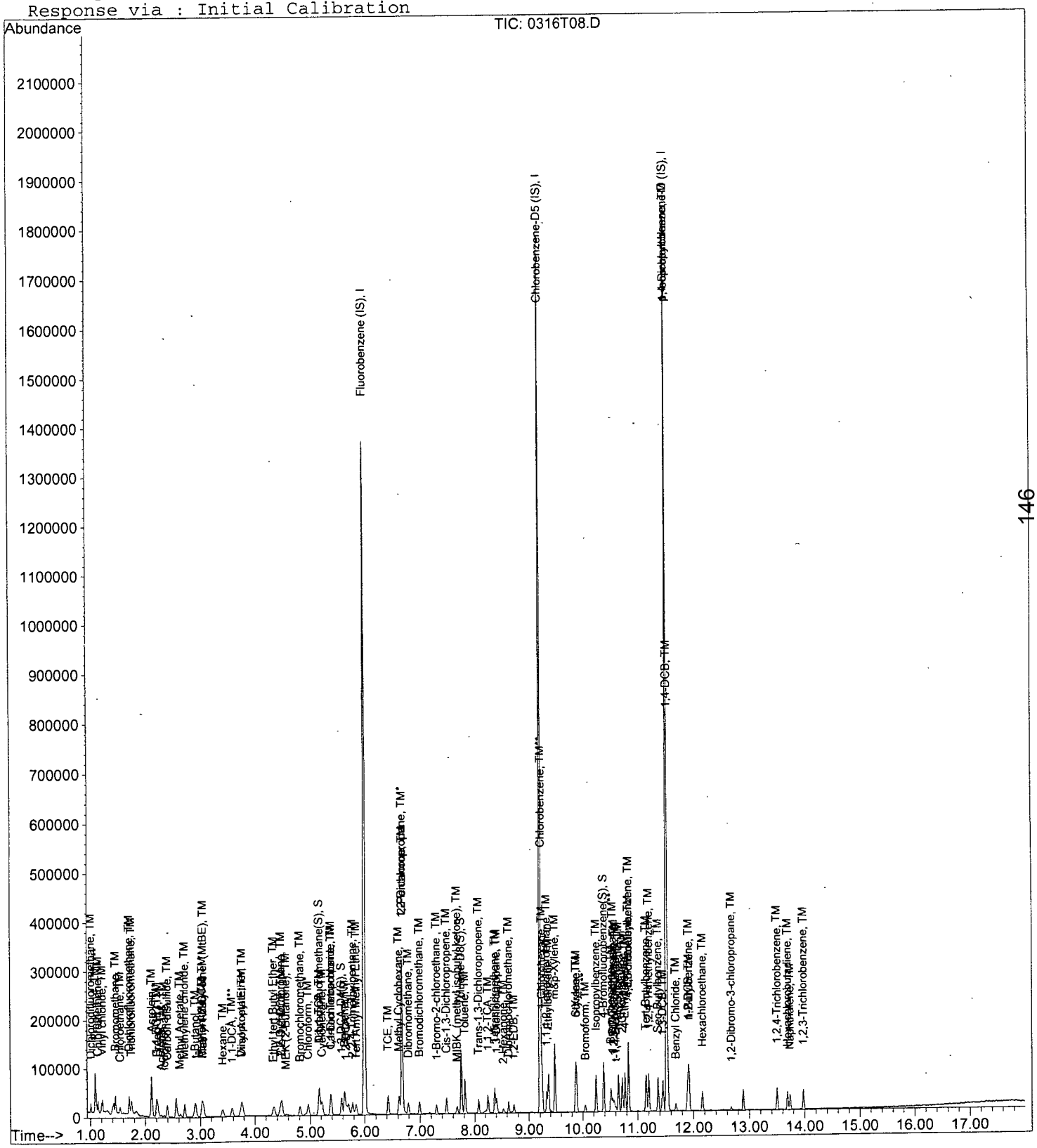
Data File : M:\THOR\DATA\T150316\0316T08.D
Acq On : 16 Mar 15 16:20
Sample : 1.0ug/L VOC STD 3-16-15
Misc : 10ml IS 2/10/15

Vial: 7
Operator: DG, HW, SV, RS
Inst : Thor
Multiplr: 1.00

Quant Time: Mar 17 8:52 2015

Quant Results File: TALLW.RES

Method : M:\THOR\DATA\T150316\TALLW.M (RTE Integrator)
Title : METHOD 8260B
Last Update : Tue Mar 17 08:51:48 2015
Response via : Initial Calibration



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Quantitation Report (Not Reviewed)

Data File : M:\THOR\DATA\T150316\0316T09.D
Acq On : 16 Mar 15 16:48
Sample : 5.0ug/L VOC STD 3-16-15
Misc : 10ml IS 2/10/15

Vial: 8
Operator: DG, HW, SV, RS
Inst : Thor
Multiplr: 1.00

Quant Time: Mar 17 8:52 2015 Quant Results File: TALLW.RES

Quant Method : M:\THOR\DATA\T150316\TALLW.M (RTE Integrator)
Title : METHOD 8260B
Last Update : Tue Mar 17 08:51:48 2015
Response via : Initial Calibration
DataAcq Meth : 8260_BETA

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene (IS)	5.99	96	690496	25.00000 ppb	0.00
56) Chlorobenzene-D5 (IS)	9.21	117	628928	25.00000 ppb	0.00
71) 1,4-Dichlorobenzene-D (IS)	11.52	152	325248	25.00000 ppb	0.00
System Monitoring Compounds					
32) Dibromofluoromethane(S)	5.17	111	122940	10.06640 ppb	0.00
Spiked Amount 28.198			Recovery	= 35.698%	
37) 1,2-DCA-D4(S)	5.57	65	124378	10.02908 ppb	0.00
Spiked Amount 26.773			Recovery	= 37.460%	
57) Toluene-D8(S)	7.75	98	436416	9.80602 ppb	0.00
Spiked Amount 28.680			Recovery	= 34.191%	
65) 4-Bromofluorobenzene(S)	10.38	95	166103	9.65531 ppb	0.00
Spiked Amount 27.316			Recovery	= 35.345%	

Target Compounds					Qvalue
2) Dichlorodifluoromethane	1.01	85	46011	4.52058 ppb	96
3) Freon 114	1.10	135	34526	4.92868 ppb	95
4) Chloromethane	1.14	50	55005	4.79532 ppb	98
5) Vinyl chloride	1.22	62	66511	4.67338 ppb	99
6) Bromomethane	1.45	94	62020	5.49594 ppb	96
7) Chloroethane	1.54	64	32720	4.98355 ppb	98
8) Dichlorofluoromethane	1.71	67	118852	4.79100 ppb	99
9) Trichlorofluoromethane	1.75	101	83544	5.15424 ppb	98
10) Acrolein	2.12	56	121041	101.11544 ppb	97
11) Acetone	2.27	43	15584	5.72628 ppb	95
12) Freon-113	2.22	101	50992	5.55242 ppb	94
13) 1,1-DCE	2.20	96	49891	5.03630 ppb	98
14) t-Butanol	2.91	59	92986	104.17104 ppb	100
15) Methyl Acetate	2.62	43	30084	4.93003 ppb	98
16) Iodomethane	2.34	142	30603	4.39805 ppb	99
17) Acrylonitrile	3.01	52	12238	5.01549 ppb	96
18) Methylene chloride	2.71	84	60657	4.84641 ppb	100
19) Carbon disulfide	2.39	76	154540	4.91358 ppb	97
20) Methyl t-butyl ether (MtBE	3.06	73	140393	5.04848 ppb	98
21) Trans-1,2-DCE	3.03	96	55991	4.97763 ppb	90
22) Hexane	3.41	57	54257	5.28802 ppb	99
23) Diisopropyl Ether	3.77	45	163633	5.04883 ppb	93
24) 1,1-DCA	3.58	63	100317	5.04402 ppb	99
25) Vinyl Acetate	3.76	87	52623	5.30301 ppb	97
26) Ethyl tert Butyl Ether	4.34	59	112731	4.90906 ppb	98
27) MEK (2-Butanone)	4.56	43	20331	5.63288 ppb	93
28) Cis-1,2-DCE	4.49	96	64974	4.98889 ppb	98
29) 2,2-Dichloropropane	4.46	77	73160	5.00687 ppb	99
30) Chloroform	4.96	83	105297	4.62243 ppb	98
31) Bromochloromethane	4.81	128	34464	5.44913 ppb	83
33) 1,1,1-TCA	5.16	97	85329	4.97909 ppb	93
34) Cyclohexane	5.21	41	39606	4.99648 ppb	94
35) 1,1-Dichloropropene	5.38	75	74576	5.08219 ppb	98
36) 2,2,4-Trimethylpentane	5.78	57	147433	5.27037 ppb	99
38) Carbon Tetrachloride	5.37	117	70817	4.95486 ppb	95
39) Tert Amyl Methyl Ether	5.84	73	93677	4.77157 ppb	99
40) 1,2-DCA	5.67	62	75535	4.86746 ppb	97
41) Benzene	5.63	78	236416	5.16950 ppb	100
42) TCE	6.42	95	64773	5.07508 ppb	96

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : M:\THOR\DATA\T150316\0316T09.D
Acq On : 16 Mar 15 16:48
Sample : 5.0ug/L VOC STD 3-16-15
Misc : 10ml IS 2/10/15

Vial: 8
Operator: DG, HW, SV, RS
Inst : Thor
Multiplr: 1.00

Quant Time: Mar 17 8:52 2015 Quant Results File: TALLW.RES

Quant Method : M:\THOR\DATA\T150316\TALLW.M (RTE Integrator)
Title : METHOD 8260B
Last Update : Tue Mar 17 08:51:48 2015
Response via : Initial Calibration
DataAcq Meth : 8260_BETA

Compound	R.T.	QIon	Response	Conc Unit		Qvalue
43) 2-Pentanone	6.68	43	612301	95.00800 ppb		99
44) 1,2-Dichloropropane	6.66	63	60305	4.85061 ppb	#	96
45) Bromodichloromethane	6.99	83	76063	4.92108 ppb		90
46) Methyl Cyclohexane	6.62	83	87122	5.27225 ppb		97
47) Dibromomethane	6.79	93	36046	4.84873 ppb		92
48) MIBK (methyl isobutyl ket	7.67	43	45638	5.40709 ppb		98
49) 1-Bromo-2-chloroethane	7.30	63	75124	4.96404 ppb		96
51) Cis-1,3-Dichloropropene	7.48	75	91330	5.03993 ppb		98
52) Toluene	7.81	91	268504	5.15414 ppb		97
53) Trans-1,3-Dichloropropene	8.07	75	75835	4.83765 ppb		95
54) 1,1,2-TCA	8.25	83	43312	4.87093 ppb		96
55) 2-Hexanone	8.53	43	29737	5.27081 ppb		91
58) 1,2-EDB	8.72	107	51626	5.01802 ppb		96
59) Tetrachloroethene	8.37	166	69751	4.89814 ppb		99
60) 1-Chlorohexane	9.25	91	72843	5.00193 ppb		99
61) 1,1,1,2-Tetrachloroethane	9.33	131	59522	5.06622 ppb		97
62) m&p-Xylene	9.48	106	215017	10.06570 ppb		97
63) o-Xylene	9.87	106	105813	5.03696 ppb		98
64) Styrene	9.89	104	168587	4.90692 ppb		99
66) 1,3-Dichloropropane	8.41	76	87536	5.05011 ppb		96
67) Dibromochloromethane	8.63	129	57527	5.00810 ppb		98
68) Chlorobenzene	9.23	112	176202	5.00302 ppb		96
69) Ethylbenzene	9.36	91	283313	4.96163 ppb		99
70) Bromoform	10.05	173	34868	4.98434 ppb		94
72) Isopropylbenzene	10.25	105	254935	5.07482 ppb		99
73) 1,1,2,2-Tetrachloroethane	10.55	83	58941	4.95720 ppb		95
74) 1,2,3-Trichloropropane	10.57	110	17234	5.00219 ppb		95
75) t-1,4-Dichloro-2-Butene	10.61	53	11350	5.22621 ppb		91
76) Bromobenzene	10.52	156	72340	5.07029 ppb		96
77) n-Propylbenzene	10.65	91	307738	5.08626 ppb		100
78) 4-Ethyltoluene	10.77	105	260616	5.03956 ppb		99
79) 2-Chlorotoluene	10.72	91	202822	5.15877 ppb		97
80) 1,3,5-Trimethylbenzene	10.84	105	223474	5.10298 ppb		99
81) 4-Chlorotoluene	10.83	91	230729	5.24462 ppb		100
82) Tert-Butylbenzene	11.15	119	194612	5.07203 ppb		99
83) 1,2,4-Trimethylbenzene	11.20	105	224850	5.04094 ppb		98
84) Sec-Butylbenzene	11.37	105	263649	5.14931 ppb		98
85) p-Isopropyltoluene	11.52	119	224440	4.96736 ppb		99
86) Benzyl Chloride	11.69	91	52703	4.78529 ppb		99
87) 1,3-DCB	11.46	146	134190	5.04247 ppb		96
88) 1,4-DCB	11.55	146	140547	5.11892 ppb		97
89) n-Butylbenzene	11.92	91	199558	5.03314 ppb		99
90) 1,2-DCB	11.91	146	130204	5.13772 ppb		98
91) Hexachloroethane	12.16	117	37581	4.83090 ppb		98
92) 1,2-Dibromo-3-chloropropan	12.68	157	10191	4.97247 ppb		86
93) 1,2,4-Trichlorobenzene	13.50	180	75112	4.92366 ppb		97
94) Hexachlorobutadiene	13.69	225	39586	5.02859 ppb		98
95) Naphthalene	13.73	128	138157	4.73877 ppb		99
96) 1,2,3-Trichlorobenzene	13.97	180	69140	4.88894 ppb		96

(#) = qualifier out of range (m) = manual integration

Quantitation Report

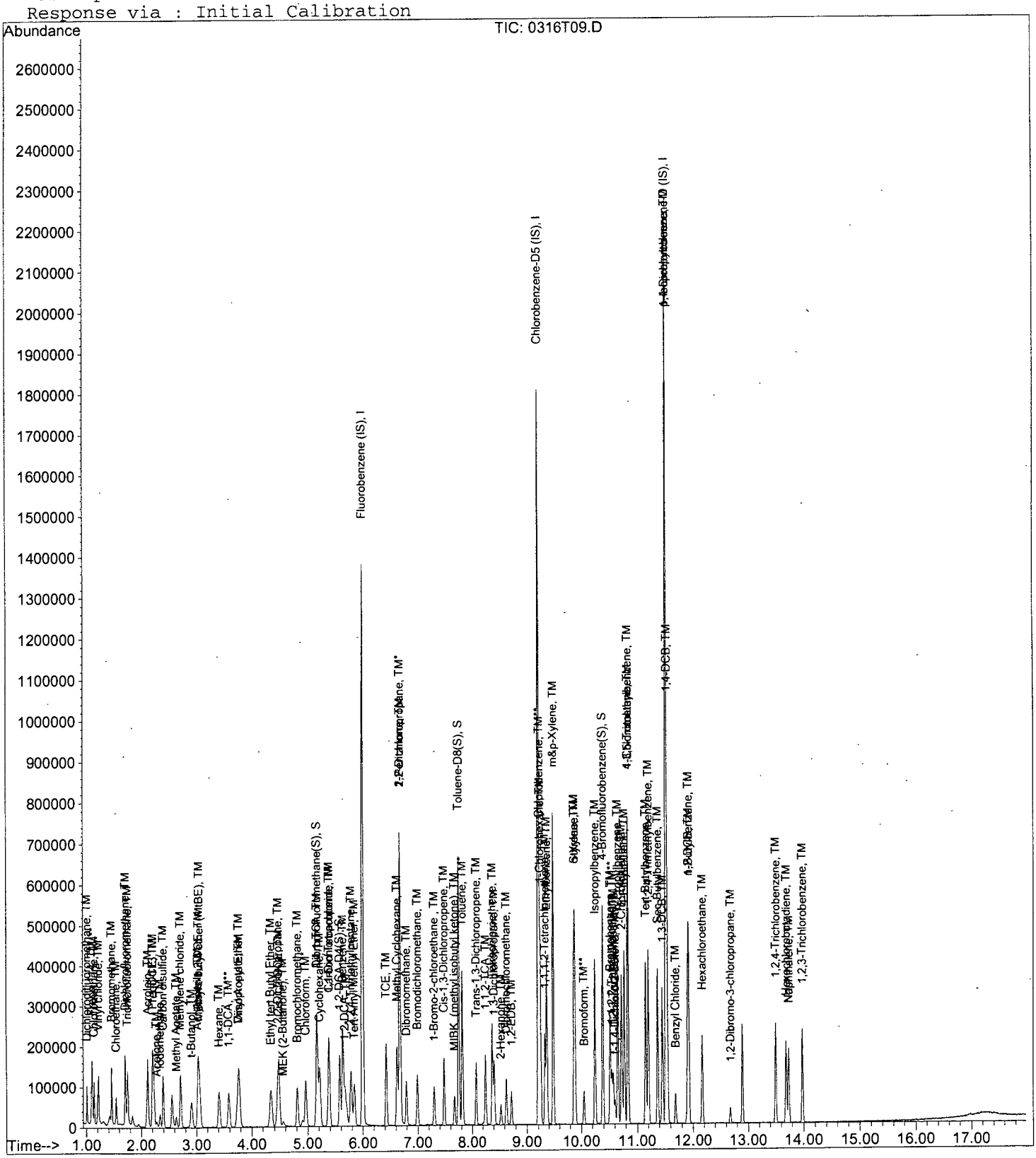
Data File : M:\THOR\DATA\T150316\0316T09.D
Acq On : 16 Mar 15 16:48
Sample : 5.0ug/L VOC STD 3-16-15
Misc : 10ml IS 2/10/15

Vial: 8
Operator: DG, HW, SV, RS
Inst : Thor
Multiplr: 1.00

Quant Time: Mar 17 8:52 2015

Quant Results File: TALLW.RES

Method : M:\THOR\DATA\T150316\TALLW.M (RTE Integrator)
Title : METHOD 8260B
Last Update : Tue Mar 17 08:51:48 2015
Response via : Initial Calibration



Quantitation Report (Not Reviewed)

Data File : M:\THOR\DATA\T150316\0316T10.D
Acq On : 16 Mar 15 17:16
Sample : 10ug/L VOC STD 3-16-15
Misc : 10ml IS 2/10/15

Vial: 9
Operator: DG, HW, SV, RS
Inst : Thor
Multiplr: 1.00

Quant Time: Mar 17 8:52 2015

Quant Results File: TALLW.RES

Quant Method : M:\THOR\DATA\T150316\TALLW.M (RTE Integrator)
Title : METHOD 8260B
Last Update : Tue Mar 17 08:51:48 2015
Response via : Initial Calibration
DataAcq Meth : 8260_BETA

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene (IS)	5.99	96	701184	25.00000 ppb	0.00
56) Chlorobenzene-D5 (IS)	9.20	117	643072	25.00000 ppb	0.00
71) 1,4-Dichlorobenzene-D (IS)	11.52	152	345344	25.00000 ppb	0.00
System Monitoring Compounds					
32) Dibromofluoromethane(S)	5.17	111	301453	24.30690 ppb	0.00
Spiked Amount 28.198			Recovery	= 86.202%	
37) 1,2-DCA-D4(S)	5.57	65	298954	23.73838 ppb	0.00
Spiked Amount 26.773			Recovery	= 88.664%	
57) Toluene-D8(S)	7.75	98	1071139	23.53852 ppb	0.00
Spiked Amount 28.680			Recovery	= 82.075%	
65) 4-Bromofluorobenzene(S)	10.38	95	409240	23.26527 ppb	0.00
Spiked Amount 27.316			Recovery	= 85.169%	

Target Compounds					Qvalue
2) Dichlorodifluoromethane	1.01	85	108709	9.70093 ppb	100
3) Freon 114	1.10	135	76193	10.71097 ppb	100
4) Chloromethane	1.14	50	108852	9.34504 ppb	100
5) Vinyl chloride	1.22	62	135186	9.35403 ppb	100
6) Bromomethane	1.45	94	110310	10.10386 ppb	100
7) Chloroethane	1.54	64	68937	10.33968 ppb	100
8) Dichlorofluoromethane	1.71	67	246546	9.78694 ppb	100
9) Trichlorofluoromethane	1.75	101	174222	10.58477 ppb	100
10) Acrolein	2.12	56	147350	121.21720 ppb	100
11) Acetone	2.27	43	26139	10.25596 ppb	100
12) Freon-113	2.22	101	103003	11.04483 ppb	100
13) 1,1-DCE	2.20	96	101981	10.13765 ppb	100
14) t-Butanol	2.90	59	113705	120.83713 ppb	100
15) Methyl Acetate	2.62	43	60535	9.76898 ppb	100
16) Iodomethane	2.33	142	93743	8.86662 ppb	100
17) Acrylonitrile	3.00	52	25036	10.10409 ppb	100
18) Methylene chloride	2.71	84	121959	9.59582 ppb	100
19) Carbon disulfide	2.39	76	324480	10.15955 ppb	100
20) Methyl t-butyl ether (MtBE	3.05	73	284948	10.09043 ppb	100
21) Trans-1,2-DCE	3.03	96	116623	10.20981 ppb	100
22) Hexane	3.41	57	117217	11.25012 ppb	100
23) Diisopropyl Ether	3.77	45	330396	10.03884 ppb	100
24) 1,1-DCA	3.58	63	202184	10.01102 ppb	100
25) Vinyl Acetate	3.77	87	104245	10.34502 ppb	100
26) Ethyl tert Butyl Ether	4.34	59	233840	10.02774 ppb	100
27) MEK (2-Butanone)	4.56	43	35215	10.22985 ppb	100
28) Cis-1,2-DCE	4.48	96	137892	10.42635 ppb	100
29) 2,2-Dichloropropane	4.46	77	146410	9.86717 ppb	100
30) Chloroform	4.96	83	211734	9.15322 ppb	100
31) Bromochloromethane	4.81	128	65978	10.27282 ppb	100
33) 1,1,1-TCA	5.16	97	175890	10.10703 ppb	100
34) Cyclohexane	5.22	41	85100	10.57213 ppb	100
35) 1,1-Dichloropropene	5.39	75	154140	10.34418 ppb	100
36) 2,2,4-Trimethylpentane	5.78	57	314785	11.08128 ppb	100
38) Carbon Tetrachloride	5.37	117	147949	10.19377 ppb	100
39) Tert Amyl Methyl Ether	5.84	73	194186	9.74037 ppb	100
40) 1,2-DCA	5.67	62	154309	9.79208 ppb	100
41) Benzene	5.63	78	484574	10.46003 ppb	100
42) TCE	6.42	95	133346	10.28864 ppb	100

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : M:\THOR\DATA\T150316\0316T10.D
Acq On : 16 Mar 15 17:16
Sample : 10ug/L VOC STD 3-16-15
Misc : 10ml IS 2/10/15

Vial: 9
Operator: DG, HW, SV, RS
Inst : Thor
Multiplr: 1.00

Quant Time: Mar 17 8:52 2015

Quant Results File: TALLW.RES

Quant Method : M:\THOR\DATA\T150316\TALLW.M (RTE Integrator)
Title : METHOD 8260B
Last Update : Tue Mar 17 08:51:48 2015
Response via : Initial Calibration
DataAcq Meth : 8260_BETA

Compound	R.T.	QIon	Response	Conc Unit		Qvalue
43) 2-Pentanone	6.68	43	776585	118.66246	ppb	100
44) 1,2-Dichloropropane	6.66	63	122583	9.70963	ppb	100
45) Bromodichloromethane	6.99	83	159131	10.13843	ppb	100
46) Methyl Cyclohexane	6.62	83	181497	10.81601	ppb	100
47) Dibromomethane	6.79	93	77578	10.27634	ppb	100
48) MIBK (methyl isobutyl ket	7.67	43	80920	9.44108	ppb	100
49) 1-Bromo-2-chloroethane	7.30	63	154284	10.03938	ppb	100
51) Cis-1,3-Dichloropropene	7.48	75	184159	10.00767	ppb	100
52) Toluene	7.81	91	540008	10.20787	ppb	100
53) Trans-1,3-Dichloropropene	8.07	75	153666	9.65321	ppb	100
54) 1,1,2-TCA	8.25	83	89113	9.86903	ppb	100
55) 2-Hexanone	8.53	43	52466	9.15771	ppb	100
58) 1,2-EDB	8.72	107	105453	10.02454	ppb	100
59) Tetrachloroethene	8.37	166	142765	9.80491	ppb	100
60) 1-Chlorohexane	9.25	91	152520	10.24279	ppb	100
61) 1,1,1,2-Tetrachloroethane	9.33	131	122169	10.16973	ppb	100
62) m&p-Xylene	9.48	106	448741	20.54511	ppb	100
63) o-Xylene	9.87	106	217909	10.14486	ppb	100
64) Styrene	9.89	104	356313	10.14281	ppb	100
66) 1,3-Dichloropropane	8.41	76	173531	9.79112	ppb	100
67) Dibromochloromethane	8.63	129	119371	10.16346	ppb	100
68) Chlorobenzene	9.23	112	360019	9.99743	ppb	100
69) Ethylbenzene	9.36	91	586629	10.04761	ppb	100
70) Bromoform	10.05	173	72765	10.17290	ppb	100
72) Isopropylbenzene	10.25	105	532562	9.98446	ppb	100
73) 1,1,2,2-Tetrachloroethane	10.55	83	125554	9.94517	ppb	100
74) 1,2,3-Trichloropropane	10.58	110	36083	9.86369	ppb	100
75) t-1,4-Dichloro-2-Butene	10.61	53	23466	10.17637	ppb	100
76) Bromobenzene	10.52	156	149086	9.84132	ppb	100
77) n-Propylbenzene	10.65	91	641287	9.98235	ppb	100
78) 4-Ethyltoluene	10.77	105	548901	9.99652	ppb	100
79) 2-Chlorotoluene	10.72	91	410594	9.83573	ppb	100
80) 1,3,5-Trimethylbenzene	10.84	105	465347	10.00776	ppb	100
81) 4-Chlorotoluene	10.83	91	465991	9.97590	ppb	100
82) Tert-Butylbenzene	11.15	119	404761	9.93513	ppb	100
83) 1,2,4-Trimethylbenzene	11.20	105	467723	9.87575	ppb	100
84) Sec-Butylbenzene	11.37	105	551276	10.14039	ppb	100
85) p-Isopropyltoluene	11.52	119	480055	10.00643	ppb	100
86) Benzyl Chloride	11.69	91	108961	9.31766	ppb	100
87) 1,3-DCB	11.46	146	280915	9.94171	ppb	100
88) 1,4-DCB	11.55	146	290740	9.97296	ppb	100
89) n-Butylbenzene	11.92	91	423285	10.05462	ppb	100
90) 1,2-DCB	11.91	146	270369	10.04768	ppb	100
91) Hexachloroethane	12.16	117	77710	9.40805	ppb	100
92) 1,2-Dibromo-3-chloropropan	12.68	157	22929	10.53666	ppb	100
93) 1,2,4-Trichlorobenzene	13.50	180	158856	9.80720	ppb	100
94) Hexachlorobutadiene	13.69	225	81647	9.76804	ppb	100
95) Naphthalene	13.73	128	303621	9.80815	ppb	100
96) 1,2,3-Trichlorobenzene	13.97	180	145820	9.71102	ppb	100

(#) = qualifier out of range (m) = manual integration

Quantitation Report

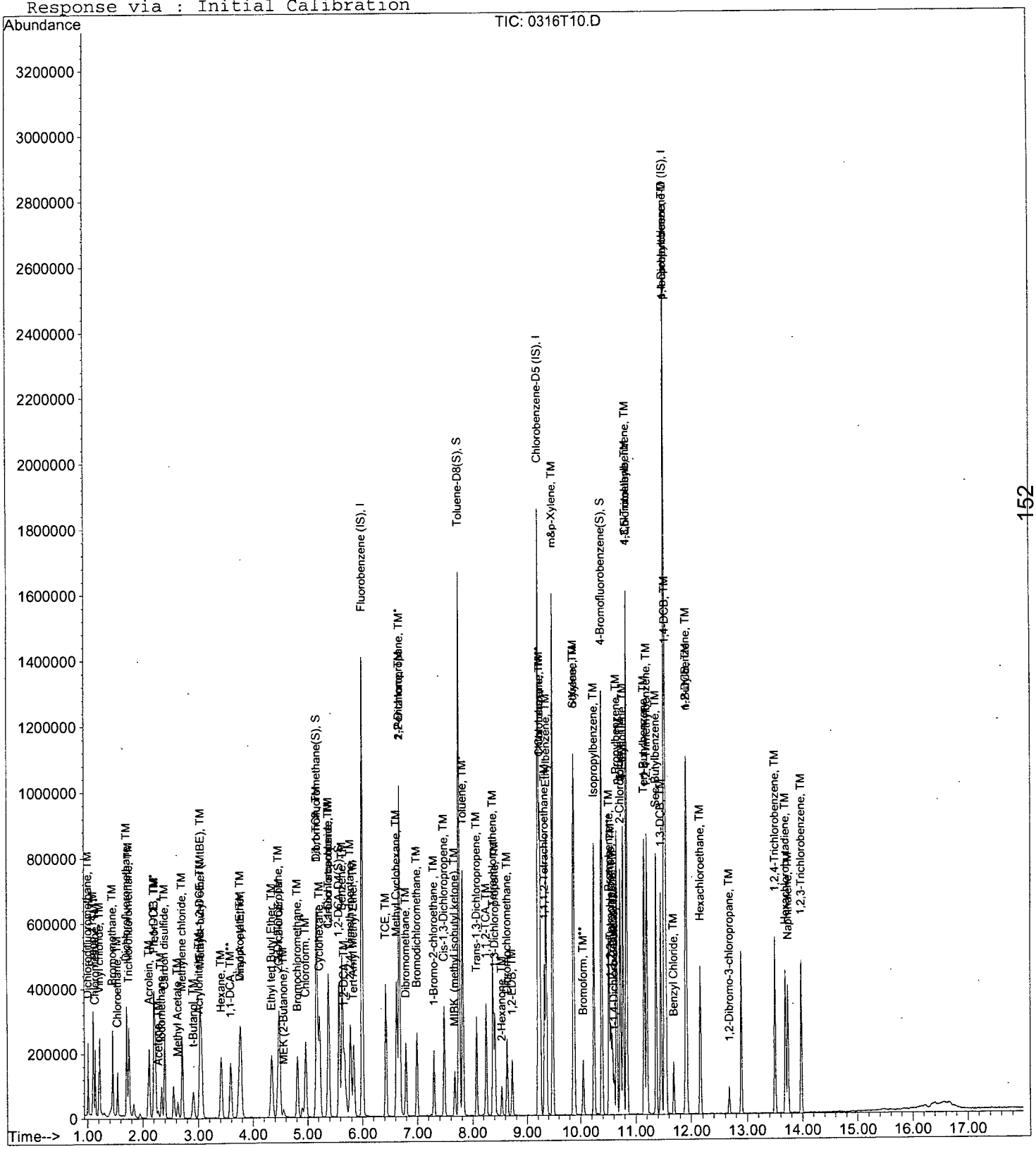
Data File : M:\THOR\DATA\T150316\0316T10.D
Acq On : 16 Mar 15 17:16
Sample : 10ug/L VOC STD 3-16-15
Misc : 10ml IS 2/10/15

Vial: 9
Operator: DG, HW, SV, RS
Inst : Thor
Multiplr: 1.00

Quant Time: Mar 17 8:52 2015

Quant Results File: TALLW.RES

Method : M:\THOR\DATA\T150316\TALLW.M (RTE Integrator)
Title : METHOD 8260B
Last Update : Tue Mar 17 08:51:48 2015
Response via : Initial Calibration



152

Quantitation Report (Not Reviewed)

Data File : M:\THOR\DATA\T150316\0316T11.D
Acq On : 16 Mar 15 17:44
Sample : 20ug/L VOC STD 3-16-15
Misc : 10ml IS 2/10/15

Vial: 10
Operator: DG, HW, SV, RS
Inst : Thor
Multiplr: 1.00

Quant Time: Mar 17 8:52 2015

Quant Results File: TALLW.RES

Quant Method : M:\THOR\DATA\T150316\TALLW.M (RTE Integrator)
Title : METHOD 8260B
Last Update : Tue Mar 17 08:51:48 2015
Response via : Initial Calibration
DataAcq Meth : 8260_BETA

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene (IS)	5.99	96	709760	25.00000 ppb	0.00
56) Chlorobenzene-D5 (IS)	9.21	117	651968	25.00000 ppb	0.00
71) 1,4-Dichlorobenzene-D (IS)	11.52	152	346560	25.00000 ppb	0.00
System Monitoring Compounds					
32) Dibromofluoromethane(S)	5.17	111	493231	39.28989 ppb	0.00
Spiked Amount 28.198			Recovery	= 139.338%	
37) 1,2-DCA-D4(S)	5.57	65	486601	38.17158 ppb	0.00
Spiked Amount 26.773			Recovery	= 142.577%	
57) Toluene-D8(S)	7.75	98	1758843	38.12359 ppb	0.00
Spiked Amount 28.680			Recovery	= 132.930%	
65) 4-Bromofluorobenzene(S)	10.38	95	682823	38.28878 ppb	0.00
Spiked Amount 27.316			Recovery	= 140.169%	

Target Compounds					Qvalue
2) Dichlorodifluoromethane	1.01	85	231205	19.70483 ppb	99
3) Freon 114	1.10	135	153505	21.31850 ppb	98
4) Chloromethane	1.14	50	223130	18.92445 ppb	99
5) Vinyl chloride	1.22	62	272821	18.64942 ppb	99
6) Bromomethane	1.45	94	221266	20.64595 ppb	99
7) Chloroethane	1.54	64	128506	19.04139 ppb	99
8) Dichlorofluoromethane	1.71	67	464957	18.23401 ppb	99
9) Trichlorofluoromethane	1.75	101	341424	20.49241 ppb	98
10) Acrolein	2.12	56	184105	149.62363 ppb	100
11) Acetone	2.27	43	49757	20.36464 ppb	95
12) Freon-113	2.22	101	195198	20.67783 ppb	98
13) 1,1-DCE	2.20	96	195285	19.17819 ppb	100
14) t-Butanol	2.91	59	152480	149.70680 ppb	99
15) Methyl Acetate	2.62	43	115742	18.45246 ppb	99
16) Iodomethane	2.33	142	231938	18.52110 ppb	97
17) Acrylonitrile	3.00	52	46638	18.59484 ppb	93
18) Methylene chloride	2.71	84	237379	18.45148 ppb	96
19) Carbon disulfide	2.39	76	612403	18.94281 ppb	100
20) Methyl t-butyl ether (MtBE	3.05	73	557364	19.49861 ppb	99
21) Trans-1,2-DCE	3.03	96	218437	18.89209 ppb	97
22) Hexane	3.41	57	217781	20.64938 ppb	99
23) Diisopropyl Ether	3.77	45	632318	18.98037 ppb	99
24) 1,1-DCA	3.58	63	384399	18.80331 ppb	99
25) Vinyl Acetate	3.77	87	202313	19.83445 ppb	95
26) Ethyl tert Butyl Ether	4.34	59	469542	19.89203 ppb	98
27) MEK (2-Butanone)	4.55	43	67544	20.17294 ppb	98
28) Cis-1,2-DCE	4.48	96	255311	19.07142 ppb	99
29) 2,2-Dichloropropane	4.46	77	274010	18.24353 ppb	98
30) Chloroform	4.96	83	401858	17.16233 ppb	99
31) Bromochloromethane	4.81	128	124358	19.12867 ppb	95
33) 1,1,1-TCA	5.16	97	333374	18.92495 ppb	97
34) Cyclohexane	5.22	41	160114	19.65090 ppb	99
35) 1,1-Dichloropropene	5.38	75	288384	19.11931 ppb	97
36) 2,2,4-Trimethylpentane	5.78	57	601374	20.91418 ppb	99
38) Carbon Tetrachloride	5.37	117	284111	19.33888 ppb	95
39) Tert Amyl Methyl Ether	5.84	73	396460	19.64615 ppb	98
40) 1,2-DCA	5.67	62	290481	18.21049 ppb	98
41) Benzene	5.63	78	910613	19.44069 ppb	99
42) TCE	6.42	95	251570	19.17596 ppb	98

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : M:\THOR\DATA\T150316\0316T11.D
Acq On : 16 Mar 15 17:44
Sample : 20ug/L VOC STD 3-16-15
Misc : 10ml IS 2/10/15

Vial: 10
Operator: DG, HW, SV, RS
Inst : Thor
Multiplr: 1.00

Quant Time: Mar 17 8:52 2015

Quant Results File: TALLW.RES

Quant Method : M:\THOR\DATA\T150316\TALLW.M (RTE Integrator)
Title : METHOD 8260B
Last Update : Tue Mar 17 08:51:48 2015
Response via : Initial Calibration
DataAcq Meth : 8260_BETA

Compound	R.T.	QIon	Response	Conc Unit	Qvalue
43) 2-Pentanone	6.68	43	967866	146.10332 ppb	99
44) 1,2-Dichloropropane	6.66	63	239383	18.73208 ppb	99
45) Bromodichloromethane	6.99	83	303981	19.13299 ppb	98
46) Methyl Cyclohexane	6.62	83	348984	20.54583 ppb	99
47) Dibromomethane	6.79	93	145133	18.99269 ppb	97
48) MIBK (methyl isobutyl ket	7.67	43	163078	18.79670 ppb	99
49) 1-Bromo-2-chloroethane	7.30	63	297819	19.14516 ppb	100
51) Cis-1,3-Dichloropropene	7.48	75	368631	19.79031 ppb	98
52) Toluene	7.81	91	1022321	19.09162 ppb	100
53) Trans-1,3-Dichloropropene	8.07	75	311716	19.34522 ppb	97
54) 1,1,2-TCA	8.25	83	173346	18.96564 ppb	96
55) 2-Hexanone	8.53	43	110889	19.12133 ppb	95
58) 1,2-EDB	8.72	107	204347	19.16051 ppb	97
59) Tetrachloroethene	8.37	166	269008	18.22301 ppb	99
60) 1-Chlorohexane	9.25	91	292897	19.40170 ppb	99
61) 1,1,1,2-Tetrachloroethane	9.33	131	239622	19.67471 ppb	99
62) m&p-Xylene	9.48	106	871045	39.33567 ppb	99
63) o-Xylene	9.87	106	426387	19.57979 ppb	98
64) Styrene	9.88	104	724424	20.34008 ppb	97
66) 1,3-Dichloropropane	8.41	76	334335	18.60674 ppb	97
67) Dibromochloromethane	8.63	129	240855	20.22701 ppb	98
68) Chlorobenzene	9.23	112	693036	18.98244 ppb	99
69) Ethylbenzene	9.36	91	1131964	19.12341 ppb	98
70) Bromoform	10.05	173	147110	20.28607 ppb	97
72) Isopropylbenzene	10.25	105	1017077	19.00122 ppb	99
73) 1,1,2,2-Tetrachloroethane	10.55	83	240104	18.95197 ppb	97
74) 1,2,3-Trichloropropane	10.58	110	71534	19.48601 ppb	96
75) t-1,4-Dichloro-2-Butene	10.61	53	47480	20.51815 ppb	95
76) Bromobenzene	10.52	156	296978	19.53504 ppb	96
77) n-Propylbenzene	10.65	91	1243694	19.29155 ppb	99
78) 4-Ethyltoluene	10.77	105	1087080	19.72830 ppb	99
79) 2-Chlorotoluene	10.72	91	795699	18.99400 ppb	98
80) 1,3,5-Trimethylbenzene	10.84	105	908073	19.46051 ppb	99
81) 4-Chlorotoluene	10.83	91	911839	19.45209 ppb	99
82) Tert-Butylbenzene	11.15	119	781808	19.12268 ppb	100
83) 1,2,4-Trimethylbenzene	11.20	105	910308	19.15328 ppb	99
84) Sec-Butylbenzene	11.37	105	1073564	19.67828 ppb	99
85) p-Isopropyltoluene	11.52	119	928851	19.29336 ppb	100
86) Benzyl Chloride	11.69	91	236869	20.18447 ppb	99
87) 1,3-DCB	11.46	146	546742	19.28155 ppb	97
88) 1,4-DCB	11.55	146	552811	18.89599 ppb	97
89) n-Butylbenzene	11.92	91	827909	19.59697 ppb	97
90) 1,2-DCB	11.91	146	523456	19.38486 ppb	98
91) Hexachloroethane	12.16	117	166125	20.04154 ppb	96
92) 1,2-Dibromo-3-chloropropan	12.68	157	44093	20.19115 ppb	87
93) 1,2,4-Trichlorobenzene	13.50	180	321824	19.79856 ppb	99
94) Hexachlorobutadiene	13.69	225	160088	19.08532 ppb	99
95) Naphthalene	13.73	128	646490	20.81088 ppb	98
96) 1,2,3-Trichlorobenzene	13.97	180	298452	19.80596 ppb	98

(#) = qualifier out of range (m) = manual integration

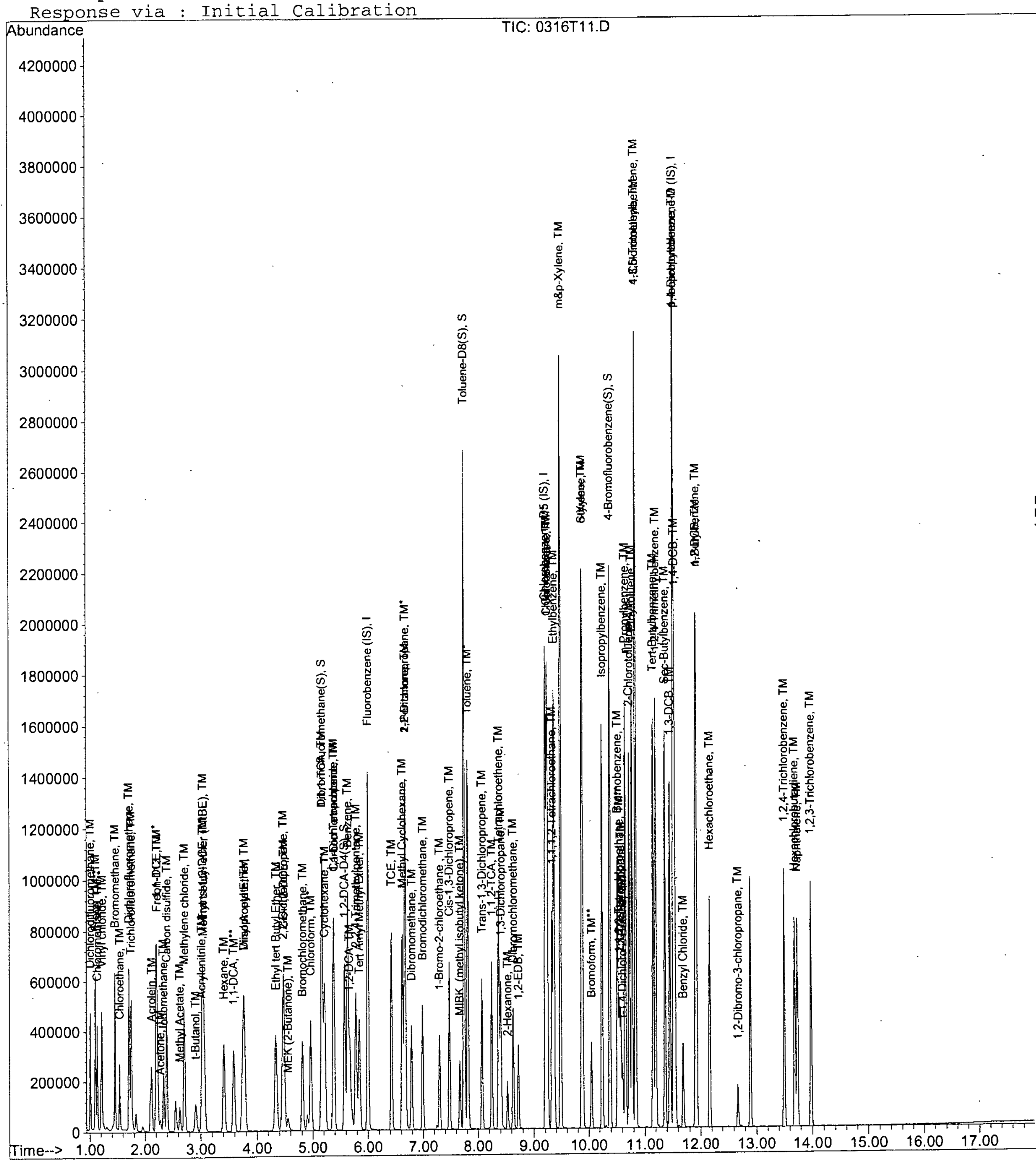
Quantitation Report

Data File : M:\THOR\DATA\T150316\0316T11.D
Acq On : 16 Mar 15 17:44
Sample : 20ug/L VOC STD 3-16-15
Misc : 10ml IS 2/10/15

Vial: 10
Operator: DG, HW, SV, RS
Inst : Thor
Multiplr: 1.00

Quant Time: Mar 17 8:52 2015 Quant Results File: TALLW.RES

Method : M:\THOR\DATA\T150316\TALLW.M (RTE Integrator)
Title : METHOD 8260B
Last Update : Tue Mar 17 08:51:48 2015
Response via : Initial Calibration



0316T11.D TALLW.M Tue Mar 17 13:00:11 2015

Quantitation Report (Not Reviewed)

Data File : M:\THOR\DATA\T150316\0316T12.D
Acq On : 16 Mar 15 18:12
Sample : 40ug/L VOC STD 3-16-15
Misc : 10ml IS 2/10/15

Vial: 11
Operator: DG, HW, SV, RS
Inst : Thor
Multiplr: 1.00

Quant Time: Mar 17 8:52 2015

Quant Results File: TALLW.RES

Quant Method : M:\THOR\DATA\T150316\TALLW.M (RTE Integrator)
Title : METHOD 8260B
Last Update : Tue Mar 17 08:51:48 2015
Response via : Initial Calibration
DataAcq Meth : 8260_BETA

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene (IS)	5.99	96	733440	25.00000 ppb	0.00
56) Chlorobenzene-D5 (IS)	9.21	117	670976	25.00000 ppb	0.00
71) 1,4-Dichlorobenzene-D (IS)	11.52	152	347392	25.00000 ppb	0.00
System Monitoring Compounds					
32) Dibromofluoromethane(S)	5.17	111	1028783	79.30511 ppb	0.00
Spiked Amount 28.198			Recovery	= 281.247%	
37) 1,2-DCA-D4(S)	5.57	65	983166	74.63472 ppb	0.00
Spiked Amount 26.773			Recovery	= 278.771%	
57) Toluene-D8(S)	7.75	98	3669955	77.29417 ppb	0.00
Spiked Amount 28.680			Recovery	= 269.508%	
65) 4-Bromofluorobenzene(S)	10.38	95	1389940	75.73187 ppb	0.00
Spiked Amount 27.316			Recovery	= 277.241%	

Target Compounds					Qvalue
2) Dichlorodifluoromethane	1.01	85	496281	40.26747 ppb	99
3) Freon 114	1.10	135	334698	44.98152 ppb	96
4) Chloromethane	1.14	50	449417	36.88602 ppb	99
5) Vinyl chloride	1.22	62	563646	37.28558 ppb	100
6) Bromomethane	1.45	94	432299	39.60088 ppb	99
7) Chloroethane	1.53	64	265126	38.01670 ppb	100
8) Dichlorofluoromethane	1.71	67	974067	36.96622 ppb	100
9) Trichlorofluoromethane	1.75	101	728991	42.34168 ppb	98
10) Acrolein	2.12	56	222866	175.27717 ppb	97
11) Acetone	2.27	43	94755	38.56103 ppb	99
12) Freon-113	2.22	101	413410	42.37967 ppb	99
13) 1,1-DCE	2.20	96	404733	38.46398 ppb	98
14) t-Butanol	2.92	59	196668	175.89572 ppb	99
15) Methyl Acetate	2.62	43	237590	36.65544 ppb	100
16) Iodomethane	2.33	142	544087	39.27320 ppb	99
17) Acrylonitrile	3.00	52	100680	38.84568 ppb	97
18) Methylene chloride	2.71	84	486626	36.60422 ppb	97
19) Carbon disulfide	2.39	76	1316205	39.39832 ppb	99
20) Methyl t-butyl ether (MtBE	3.06	73	1155544	39.11994 ppb	99
21) Trans-1,2-DCE	3.03	96	458690	38.39016 ppb	96
22) Hexane	3.41	57	473723	43.46687 ppb	99
23) Diisopropyl Ether	3.77	45	1320844	38.36787 ppb	100
24) 1,1-DCA	3.58	63	806823	38.19243 ppb	99
25) Vinyl Acetate	3.77	87	421943	40.03107 ppb	98
26) Ethyl tert Butyl Ether	4.34	59	976314	40.02590 ppb	100
27) MEK (2-Butanone)	4.55	43	134836	39.79168 ppb	98
28) Cis-1,2-DCE	4.48	96	538305	38.91248 ppb	98
29) 2,2-Dichloropropane	4.46	77	584759	37.67614 ppb	99
30) Chloroform	4.96	83	849368	35.10318 ppb	100
31) Bromochloromethane	4.81	128	254383	37.86570 ppb	96
33) 1,1,1-TCA	5.16	97	718257	39.45753 ppb	96
34) Cyclohexane	5.21	41	330826	39.29161 ppb	98
35) 1,1-Dichloropropene	5.38	75	616751	39.56926 ppb	98
36) 2,2,4-Trimethylpentane	5.78	57	1284432	43.22692 ppb	98
38) Carbon Tetrachloride	5.37	117	606030	39.91943 ppb	95
39) Tert Amyl Methyl Ether	5.84	73	847949	40.66256 ppb	99
40) 1,2-DCA	5.67	62	594749	36.08150 ppb	98
41) Benzene	5.63	78	1917084	39.63272 ppb	99
42) TCE	6.42	95	524656	38.70080 ppb	98

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : M:\THOR\DATA\T150316\0316T12.D
Acq On : 16 Mar 15 18:12
Sample : 40ug/L VOC STD 3-16-15
Misc : 10ml IS 2/10/15

Vial: 11
Operator: DG, HW, SV, RS
Inst : Thor
Multiplr: 1.00

Quant Time: Mar 17 8:52 2015 Quant Results File: TALLW.RES

Quant Method : M:\THOR\DATA\T150316\TALLW.M (RTE Integrator)
Title : METHOD 8260B
Last Update : Tue Mar 17 08:51:48 2015
Response via : Initial Calibration
DataAcq Meth : 8260_BETA

Compound	R.T.	QIon	Response	Conc Unit		Qvalue
43) 2-Pentanone	6.68	43	1137542	166.17252	ppb	98
44) 1,2-Dichloropropane	6.66	63	493151	37.34389	ppb	98
45) Bromodichloromethane	6.99	83	651418	39.67740	ppb	99
46) Methyl Cyclohexane	6.62	83	744629	42.42336	ppb	98
47) Dibromomethane	6.79	93	300301	38.02980	ppb	97
48) MIBK (methyl isobutyl ket	7.67	43	321111	35.81694	ppb	98
49) 1-Bromo-2-chloroethane	7.30	63	616324	38.34092	ppb	98
51) Cis-1,3-Dichloropropene	7.48	75	776775	40.35551	ppb	99
52) Toluene	7.81	91	2169310	39.20342	ppb	100
53) Trans-1,3-Dichloropropene	8.07	75	672852	40.40927	ppb	97
54) 1,1,2-TCA	8.25	83	363761	38.51384	ppb	99
55) 2-Hexanone	8.53	43	212259	35.41952	ppb	97
58) 1,2-EDB	8.72	107	437690	39.87720	ppb	99
59) Tetrachloroethene	8.37	166	576487	37.94581	ppb	99
60) 1-Chlorohexane	9.25	91	637876	41.05636	ppb	97
61) 1,1,1,2-Tetrachloroethane	9.33	131	506289	40.39237	ppb	97
62) m&p-Xylene	9.48	106	1844725	80.94629	ppb	100
63) o-Xylene	9.87	106	906277	40.43751	ppb	96
64) Styrene	9.89	104	1539740	42.00746	ppb	97
66) 1,3-Dichloropropane	8.41	76	707475	38.25770	ppb	95
67) Dibromochloromethane	8.63	129	511495	41.73848	ppb	99
68) Chlorobenzene	9.23	112	1461175	38.88819	ppb	99
69) Ethylbenzene	9.36	91	2416268	39.66405	ppb	99
70) Bromoform	10.05	173	316232	42.37217	ppb	96
72) Isopropylbenzene	10.25	105	2186848	40.75726	ppb	99
73) 1,1,2,2-Tetrachloroethane	10.55	83	480380	37.82671	ppb	98
74) 1,2,3-Trichloropropane	10.58	110	146058	39.69121	ppb	97
75) t-1,4-Dichloro-2-Butene	10.61	53	95446	41.14753	ppb	94
76) Bromobenzene	10.52	156	619492	40.65224	ppb	100
77) n-Propylbenzene	10.65	91	2670785	41.32865	ppb	98
78) 4-Ethyltoluene	10.77	105	2335943	42.29111	ppb	100
79) 2-Chlorotoluene	10.72	91	1662736	39.59584	ppb	99
80) 1,3,5-Trimethylbenzene	10.84	105	1952680	41.74679	ppb	100
81) 4-Chlorotoluene	10.83	91	1915742	40.77029	ppb	100
82) Tert-Butylbenzene	11.15	119	1654726	40.37693	ppb	99
83) 1,2,4-Trimethylbenzene	11.20	105	1935361	40.62332	ppb	99
84) Sec-Butylbenzene	11.37	105	2283819	41.76183	ppb	99
85) p-Isopropyltoluene	11.52	119	2023021	41.91995	ppb	99
86) Benzyl Chloride	11.69	91	489536	41.61525	ppb	97
87) 1,3-DCB	11.46	146	1128995	39.72008	ppb	98
88) 1,4-DCB	11.55	146	1140600	38.89421	ppb	97
89) n-Butylbenzene	11.92	91	1787755	42.21559	ppb	98
90) 1,2-DCB	11.91	146	1070332	39.54209	ppb	98
91) Hexachloroethane	12.16	117	349595	42.07459	ppb	98
92) 1,2-Dibromo-3-chloropropan	12.68	157	97465	44.52447	ppb	97
93) 1,2,4-Trichlorobenzene	13.50	180	715158	43.89102	ppb	99
94) Hexachlorobutadiene	13.69	225	345776	41.12389	ppb	98
95) Naphthalene	13.73	128	1426056	45.79560	ppb	99
96) 1,2,3-Trichlorobenzene	13.97	180	659276	43.64628	ppb	99

(#) = qualifier out of range (m) = manual integration

Quantitation Report

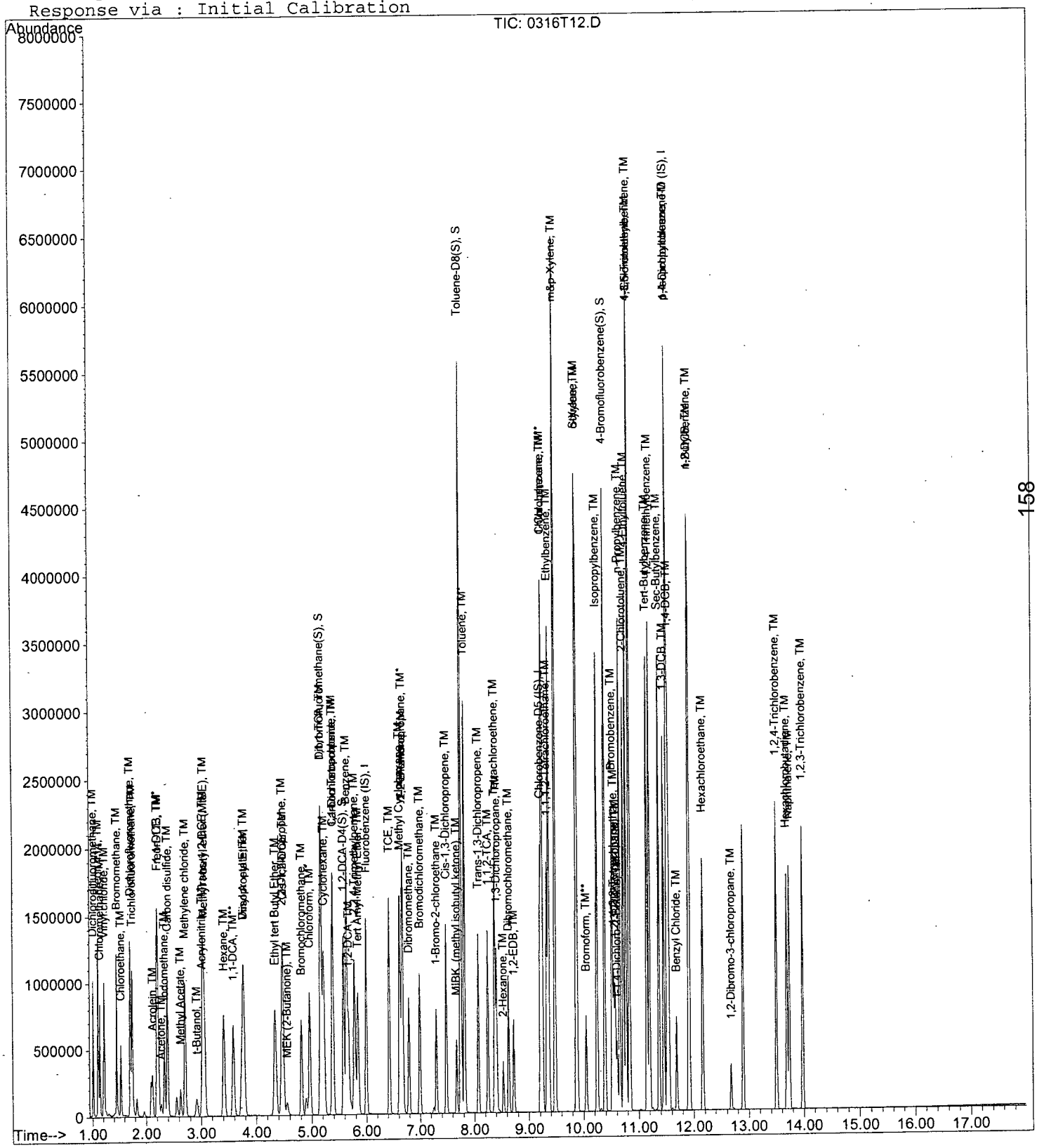
Data File : M:\THOR\DATA\T150316\0316T12.D
Acq On : 16 Mar 15 18:12
Sample : 40ug/L VOC STD 3-16-15
Misc : 10ml IS 2/10/15

Vial: 11
Operator: DG, HW, SV, RS
Inst : Thor
Multiplr: 1.00

Quant Time: Mar 17 8:52 2015

Quant Results File: TALLW.RES

Method : M:\THOR\DATA\T150316\TALLW.M (RTE Integrator)
Title : METHOD 8260B
Last Update : Tue Mar 17 08:51:48 2015
Response via : Initial Calibration



Quantitation Report (Not Reviewed)

Data File : M:\THOR\DATA\T150316\0316T13.D
Acq On : 16 Mar 15 18:40
Sample : 100ug/L VOC STD 3-16-15
Misc : 10ml IS 2/10/15

Vial: 12
Operator: DG, HW, SV, RS
Inst : Thor
Multiplr: 1.00

Quant Time: Mar 17 8:52 2015

Quant Results File: TALLW.RES

Quant Method : M:\THOR\DATA\T150316\TALLW.M (RTE Integrator)
Title : METHOD 8260B
Last Update : Tue Mar 17 08:51:48 2015
Response via : Initial Calibration
DataAcq Meth : 8260_BETA

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene (IS)	5.99	96	710208	25.00000 ppb	0.00
56) Chlorobenzene-D5 (IS)	9.21	117	667840	25.00000 ppb	0.00
71) 1,4-Dichlorobenzene-D (IS)	11.52	152	362624	25.00000 ppb	0.00
System Monitoring Compounds					
32) Dibromofluoromethane(S)	5.17	111	1278279	101.76117 ppb	0.00
Spiked Amount 28.198			Recovery	= 360.885%	
37) 1,2-DCA-D4(S)	5.57	65	1218961	95.56149 ppb	0.00
Spiked Amount 26.773			Recovery	= 356.932%	
57) Toluene-D8(S)	7.75	98	4586604	97.05364 ppb	0.00
Spiked Amount 28.680			Recovery	= 338.407%	
65) 4-Bromofluorobenzene(S)	10.39	95	1731717	94.79690 ppb	0.00
Spiked Amount 27.316			Recovery	= 347.035%	

Target Compounds					Qvalue
2) Dichlorodifluoromethane	1.01	85	1145430	95.12662 ppb	100
3) Freon 114	1.10	135	816906	113.37888 ppb	97
4) Chloromethane	1.13	50	1100778	93.30202 ppb	100
5) Vinyl chloride	1.22	62	1326874	90.64485 ppb	100
6) Bromomethane	1.45	94	971866	92.78042 ppb	99
7) Chloroethane	1.53	64	495062	73.30958 ppb	99
8) Dichlorofluoromethane	1.71	67	2383172	93.40081 ppb	99
9) Trichlorofluoromethane	1.74	101	1750682	105.01039 ppb	97
10) Acrolein	2.12	56	246155	199.92597 ppb	100
11) Acetone	2.28	43	234471	100.44427 ppb	98
12) Freon-113	2.22	101	985348	104.31463 ppb	98
13) 1,1-DCE	2.20	96	1009754	99.10149 ppb	99
14) t-Butanol	2.94	59	270068	224.19568 ppb	100
15) Methyl Acetate	2.62	43	616933	98.29407 ppb	99
16) Iodomethane	2.33	142	1399471	100.70668 ppb	99
17) Acrylonitrile	3.01	52	241012	96.03228 ppb	99
18) Methylene chloride	2.71	84	1191694	92.57198 ppb	97
19) Carbon disulfide	2.39	76	3252303	100.53659 ppb	100
20) Methyl t-butyl ether (MtBE	3.06	73	2894855	101.20862 ppb	100
21) Trans-1,2-DCE	3.03	96	1126056	97.32843 ppb	99
22) Hexane	3.41	57	1105936	104.79558 ppb	100
23) Diisopropyl Ether	3.77	45	3272201	98.16014 ppb	97
24) 1,1-DCA	3.58	63	1954658	95.55398 ppb	99
25) Vinyl Acetate	3.77	87	1049621	102.83831 ppb	97
26) Ethyl tert Butyl Ether	4.34	59	2712986	114.86248 ppb	99
27) MEK (2-Butanone)	4.55	43	335312	103.57353 ppb	96
28) Cis-1,2-DCE	4.48	96	1307604	97.61483 ppb	99
29) 2,2-Dichloropropane	4.46	77	1427905	95.00966 ppb	99
30) Chloroform	4.96	83	2063088	88.05366 ppb	99
31) Bromochloromethane	4.81	128	613184	94.26007 ppb	94
33) 1,1,1-TCA	5.16	97	1759480	99.81903 ppb	96
34) Cyclohexane	5.21	41	788467	96.70807 ppb	98
35) 1,1-Dichloropropene	5.38	75	1498738	99.30081 ppb	98
36) 2,2,4-Trimethylpentane	5.78	57	3069814	106.69259 ppb	99
38) Carbon Tetrachloride	5.37	117	1499557	102.00752 ppb	95
39) Tert Amyl Methyl Ether	5.84	73	2401070	118.90739 ppb	99
40) 1,2-DCA	5.67	62	1466024	91.84828 ppb	99
41) Benzene	5.63	78	4691646	100.20390 ppb	99
42) TCE	6.42	95	1308846	99.70407 ppb	98

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : M:\THOR\DATA\T150316\0316T13.D
Acq On : 16 Mar 15 18:40
Sample : 100ug/L VOC STD 3-16-15
Misc : 10ml IS 2/10/15

Vial: 12
Operator: DG, HW, SV, RS
Inst : Thor
Multiplr: 1.00

Quant Time: Mar 17 8:52 2015

Quant Results File: TALLW.RES

Quant Method : M:\THOR\DATA\T150316\TALLW.M (RTE Integrator)
Title : METHOD 8260B
Last Update : Tue Mar 17 08:51:48 2015
Response via : Initial Calibration
DataAcq Meth : 8260_BETA

Compound	R.T.	QIon	Response	Conc Unit		Qvalue
43) 2-Pentanone	6.68	43	1256992	189.62837	ppb	99
44) 1,2-Dichloropropane	6.66	63	1217064	95.17703	ppb	99
45) Bromodichloromethane	6.99	83	1660018	104.41797	ppb	100
46) Methyl Cyclohexane	6.62	83	1799244	105.86057	ppb	99
47) Dibromomethane	6.79	93	734376	96.04280	ppb	96
48) MIBK (methyl isobutyl ket	7.67	43	776824	89.48184	ppb	99
49) 1-Bromo-2-chloroethane	7.30	63	1530309	98.31315	ppb	98
51) Cis-1,3-Dichloropropene	7.48	75	1967174	105.54299	ppb	99
52) Toluene	7.82	91	5428169	101.30591	ppb	98
53) Trans-1,3-Dichloropropene	8.07	75	1732381	107.44443	ppb	96
54) 1,1,2-TCA	8.25	83	879159	96.12738	ppb	100
55) 2-Hexanone	8.53	43	534804	92.16164	ppb	96
58) 1,2-EDB	8.72	107	1086694	99.47177	ppb	100
59) Tetrachloroethene	8.37	166	1434034	94.83493	ppb	98
60) 1-Chlorohexane	9.25	91	1597376	103.29656	ppb	96
61) 1,1,1,2-Tetrachloroethane	9.33	131	1286445	103.11614	ppb	100
62) m&p-Xylene	9.48	106	4639760	204.54806	ppb	100
63) o-Xylene	9.87	106	2263447	101.46781	ppb	98
64) Styrene	9.89	104	3844654	105.38307	ppb	97
66) 1,3-Dichloropropane	8.41	76	1720377	93.46864	ppb	96
67) Dibromochloromethane	8.63	129	1314277	107.74986	ppb	100
68) Chlorobenzene	9.24	112	3601088	96.29059	ppb	99
69) Ethylbenzene	9.36	91	5991622	98.81683	ppb	99
70) Bromoform	10.05	173	826952	111.32425	ppb	98
72) Isopropylbenzene	10.25	105	5405282	96.50904	ppb	100
73) 1,1,2,2-Tetrachloroethane	10.55	83	1204603	90.87006	ppb	98
74) 1,2,3-Trichloropropane	10.58	110	362221	94.29873	ppb	98
75) t-1,4-Dichloro-2-Butene	10.61	53	244425	100.94736	ppb	93
76) Bromobenzene	10.52	156	1517934	95.42560	ppb	97
77) n-Propylbenzene	10.65	91	6628512	98.26336	ppb	100
78) 4-Ethyltoluene	10.77	105	5833741	101.18059	ppb	99
79) 2-Chlorotoluene	10.72	91	4062080	92.66976	ppb	98
80) 1,3,5-Trimethylbenzene	10.84	105	4893927	100.23346	ppb	100
81) 4-Chlorotoluene	10.83	91	4771880	97.28807	ppb	99
82) Tert-Butylbenzene	11.15	119	4117904	96.26018	ppb	100
83) 1,2,4-Trimethylbenzene	11.20	105	4884705	98.22342	ppb	100
84) Sec-Butylbenzene	11.37	105	5715559	100.12436	ppb	100
85) p-Isopropyltoluene	11.52	119	5118070	101.59910	ppb	100
86) Benzyl Chloride	11.69	91	1300912	105.94465	ppb	97
87) 1,3-DCB	11.46	146	2867180	96.63541	ppb	98
88) 1,4-DCB	11.55	146	2935210	95.88573	ppb	99
89) n-Butylbenzene	11.92	91	4608518	104.25320	ppb	98
90) 1,2-DCB	11.91	146	2772491	98.12383	ppb	98
91) Hexachloroethane	12.16	117	917758	105.81473	ppb	99
92) 1,2-Dibromo-3-chloropropan	12.68	157	257493	112.68829	ppb	95
93) 1,2,4-Trichlorobenzene	13.50	180	1908437	112.20567	ppb	99
94) Hexachlorobutadiene	13.69	225	898235	102.34169	ppb	98
95) Naphthalene	13.73	128	3773808	116.09947	ppb	99
96) 1,2,3-Trichlorobenzene	13.97	180	1745639	110.71275	ppb	98

(#) = qualifier out of range (m) = manual integration

Quantitation Report

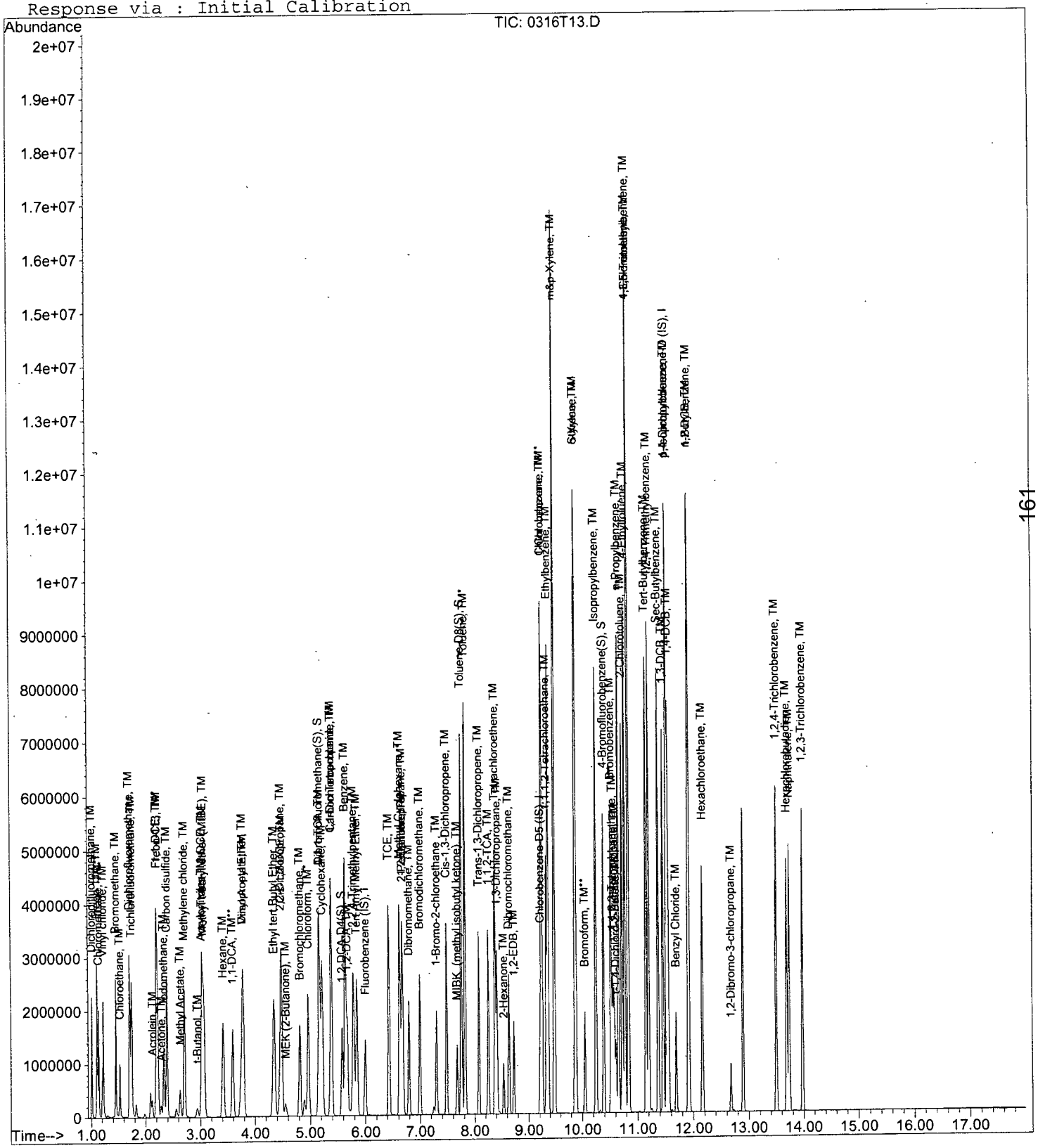
Data File : M:\THOR\DATA\T150316\0316T13.D
Acq On : 16 Mar 15 18:40
Sample : 100ug/L VOC STD 3-16-15
Misc : 10ml IS 2/10/15

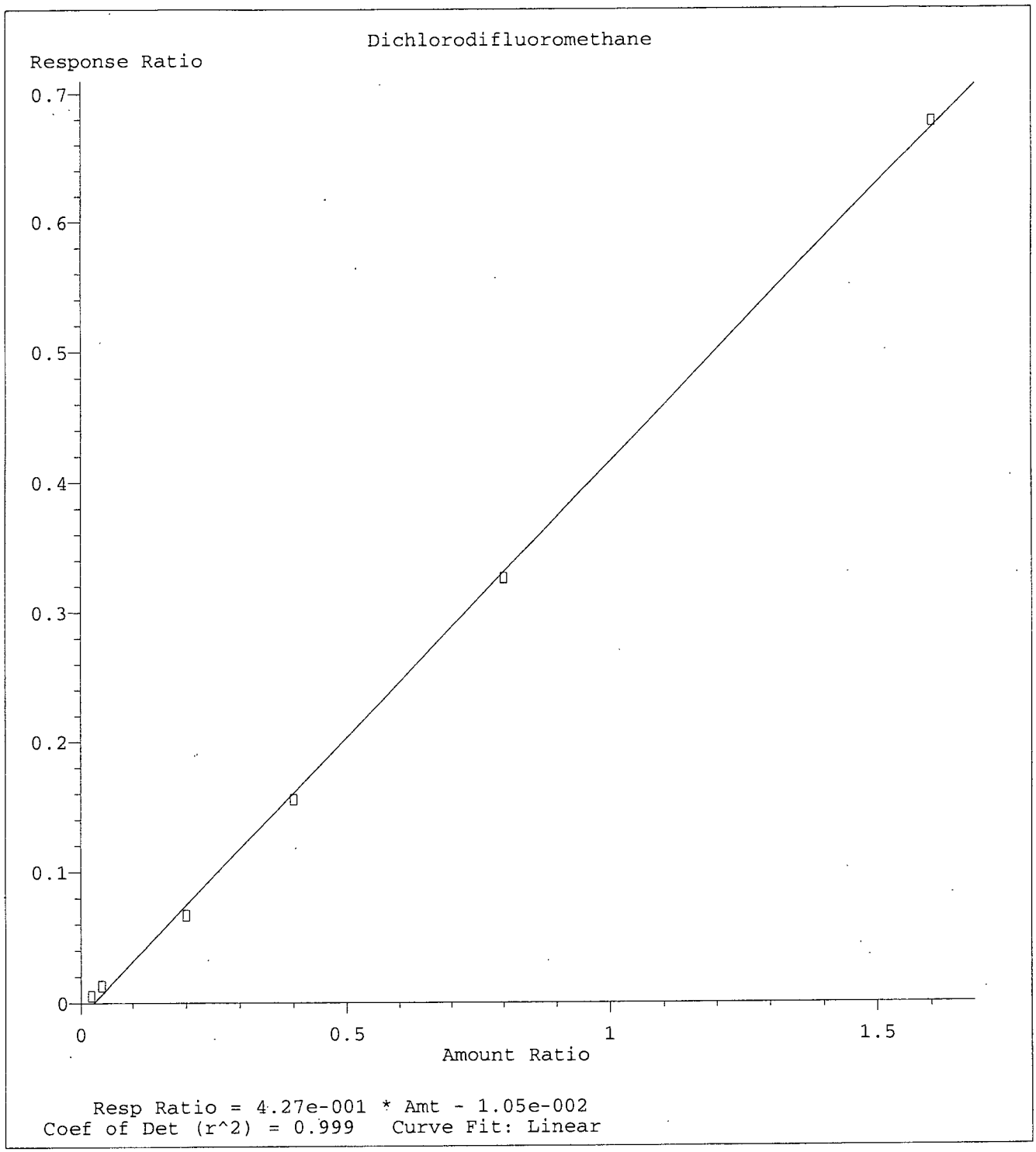
Vial: 12
Operator: DG, HW, SV, RS
Inst : Thor
Multiplr: 1.00

Quant Time: Mar 17 8:52 2015

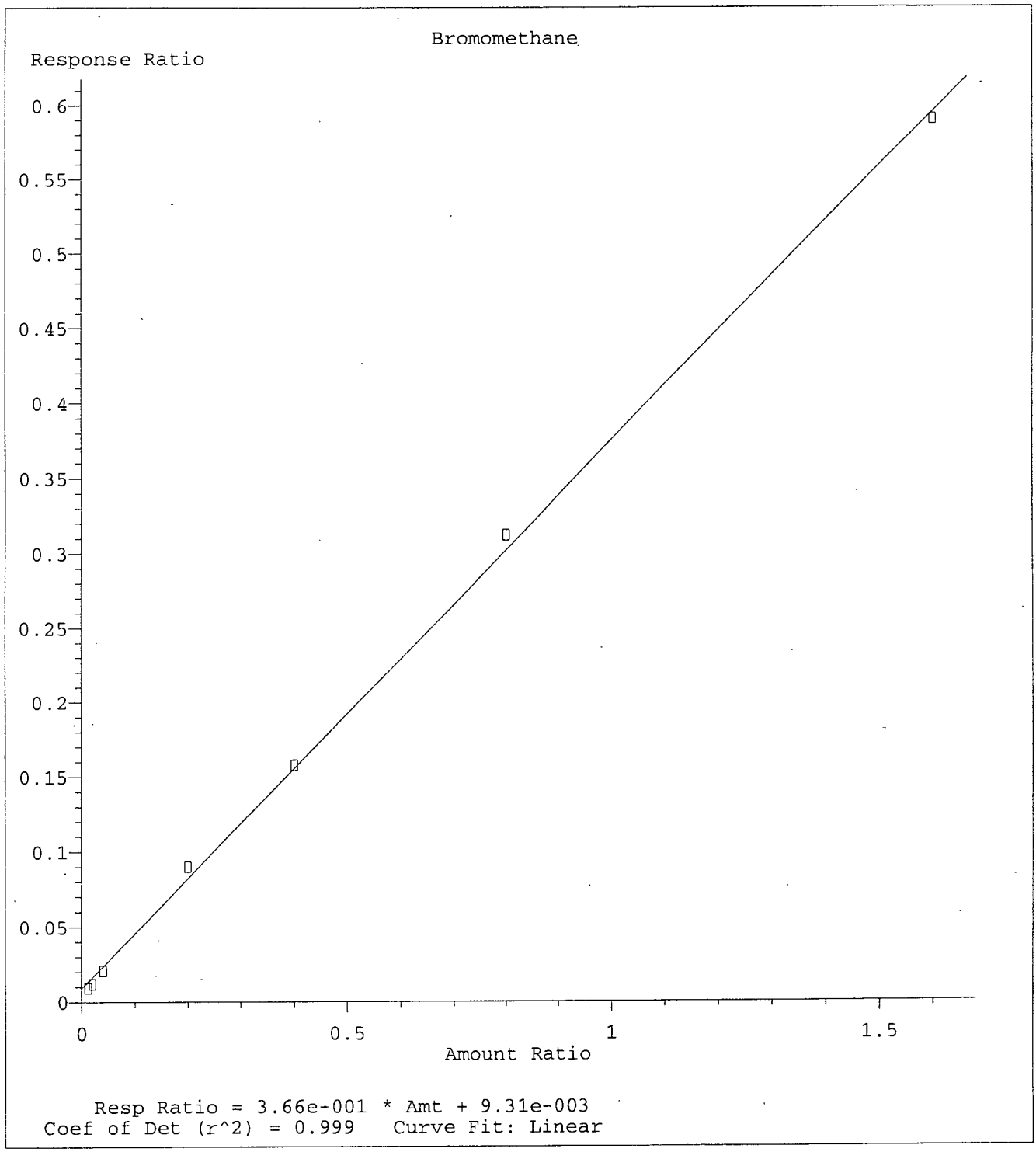
Quant Results File: TALLW.RES

Method : M:\THOR\DATA\T150316\TALLW.M (RTE Integrator)
Title : METHOD 8260B
Last Update : Tue Mar 17 08:51:48 2015
Response via : Initial Calibration

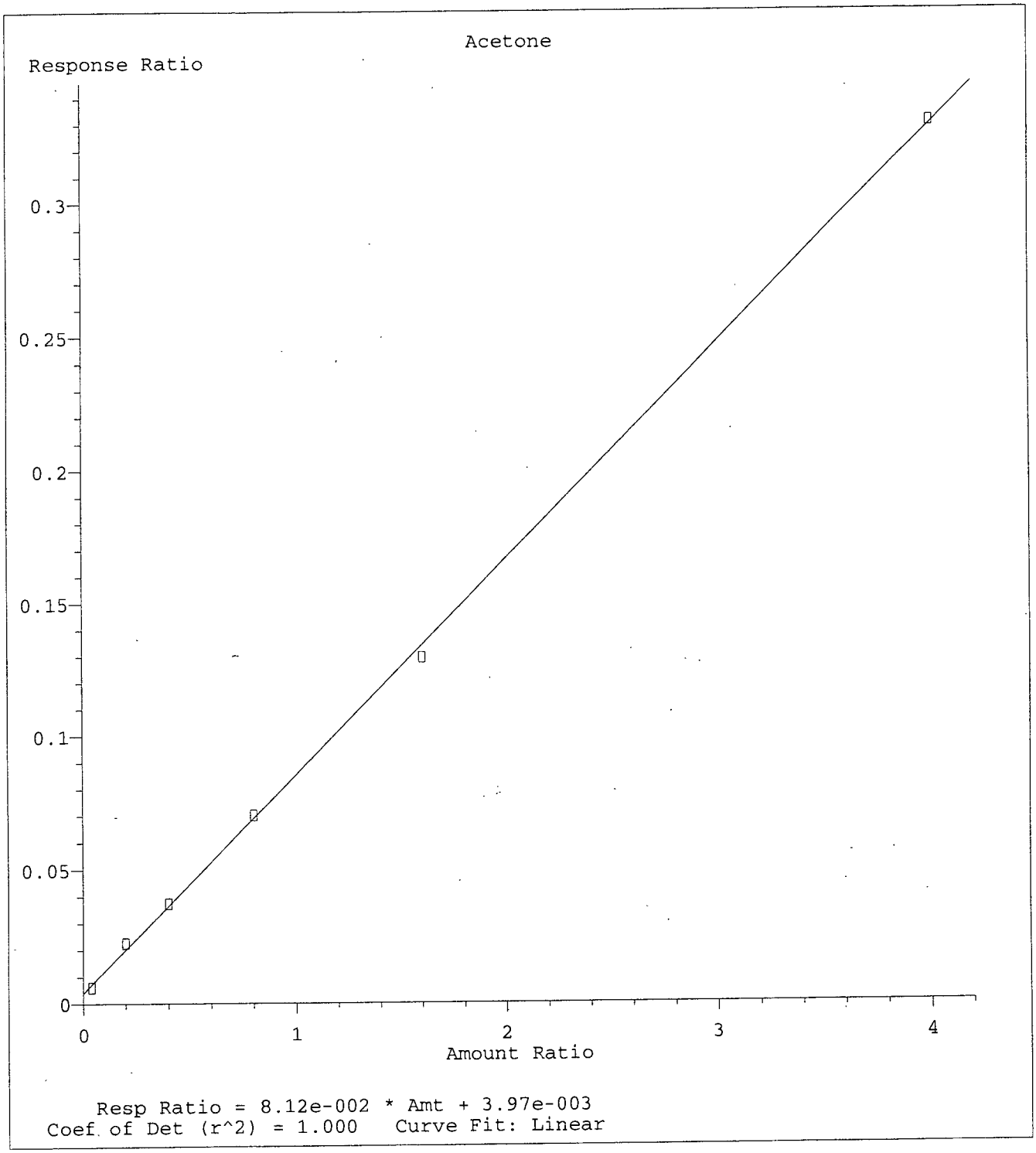




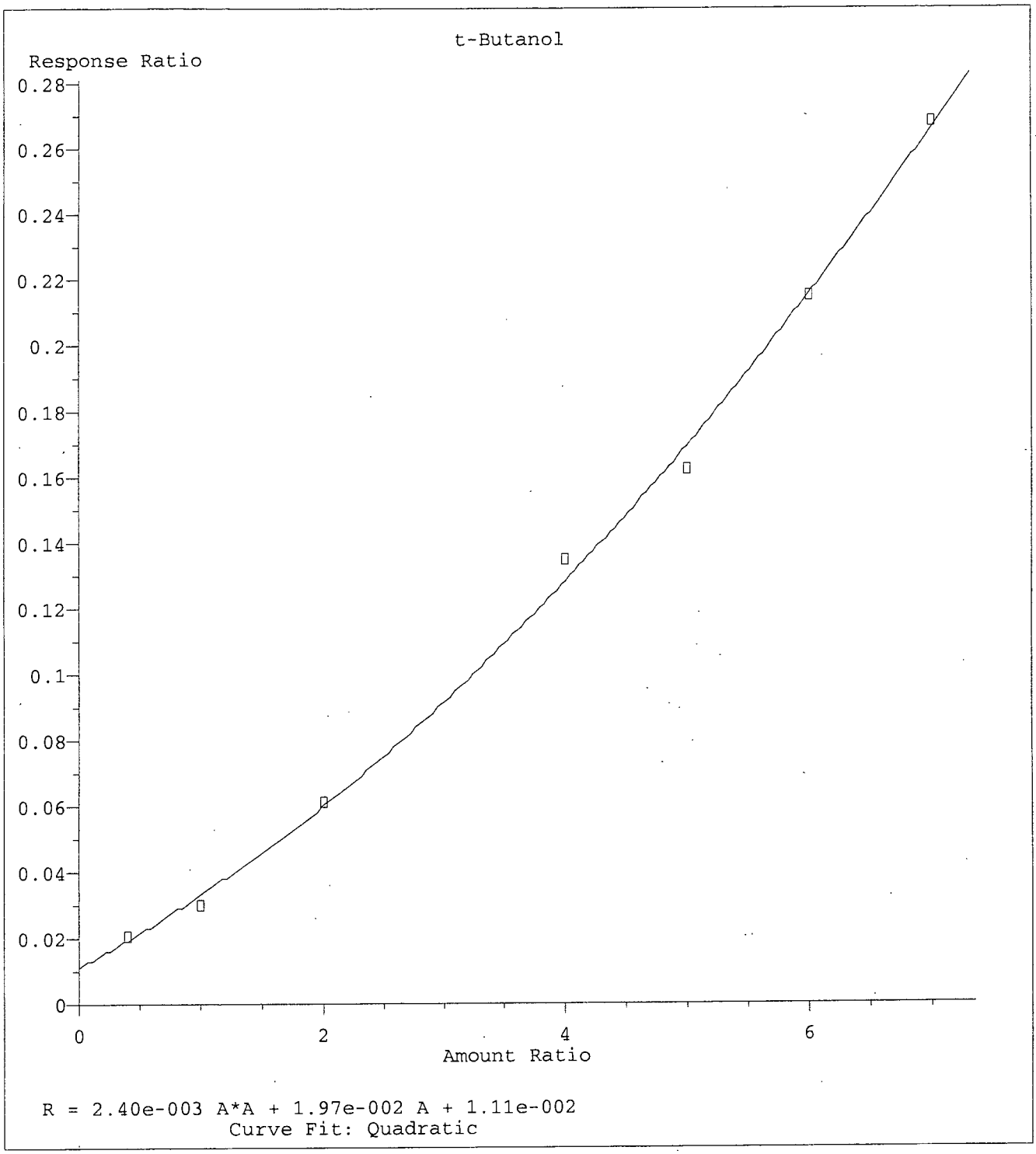
Method Name: M:\THOR\DATA\T150316\TALLW.M
Calibration Table Last Updated: Tue Mar 17 08:51:48 2015



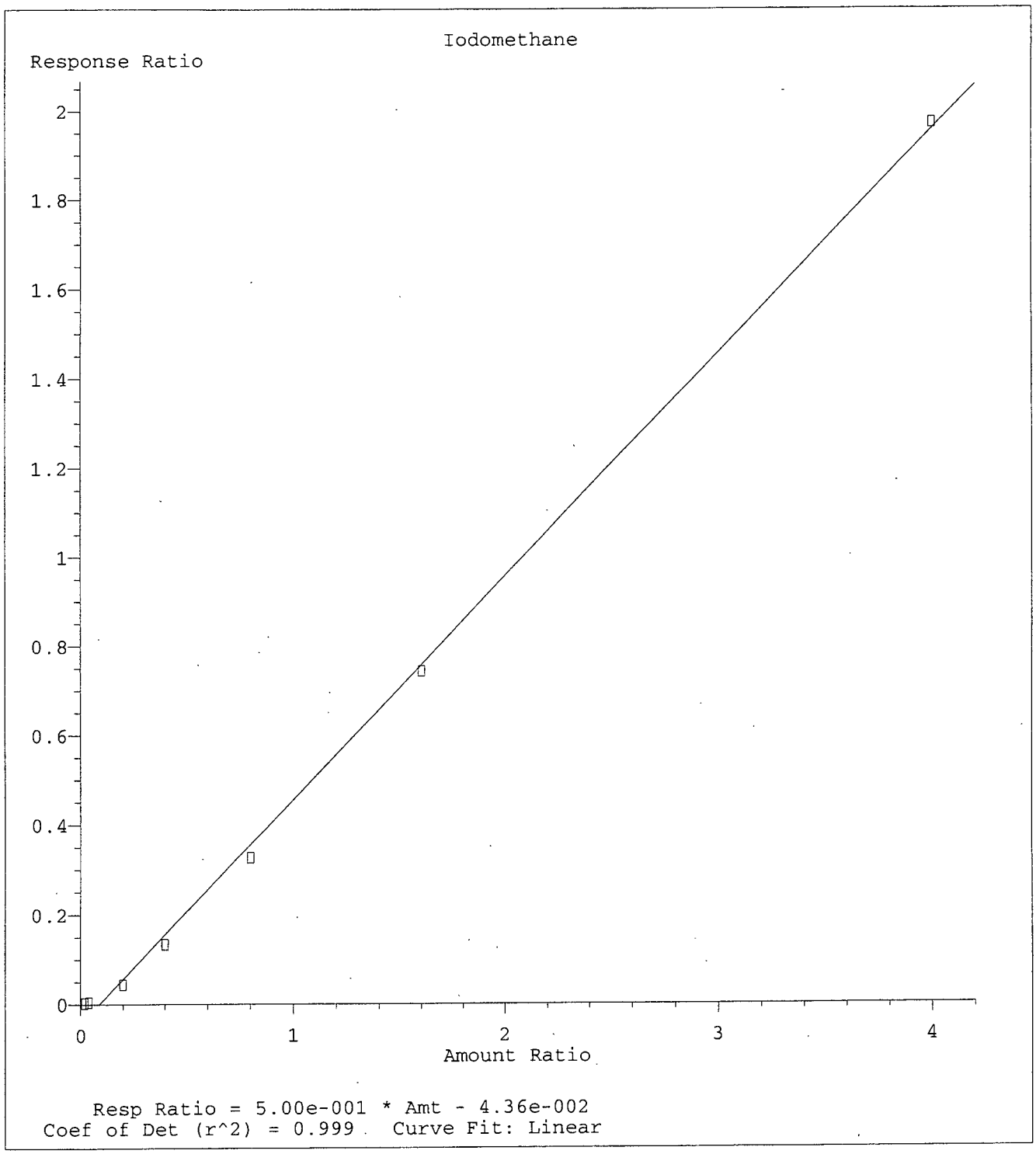
Method Name: M:\THOR\DATA\T150316\TALLW.M
Calibration Table Last Updated: Tue Mar 17 08:51:48 2015



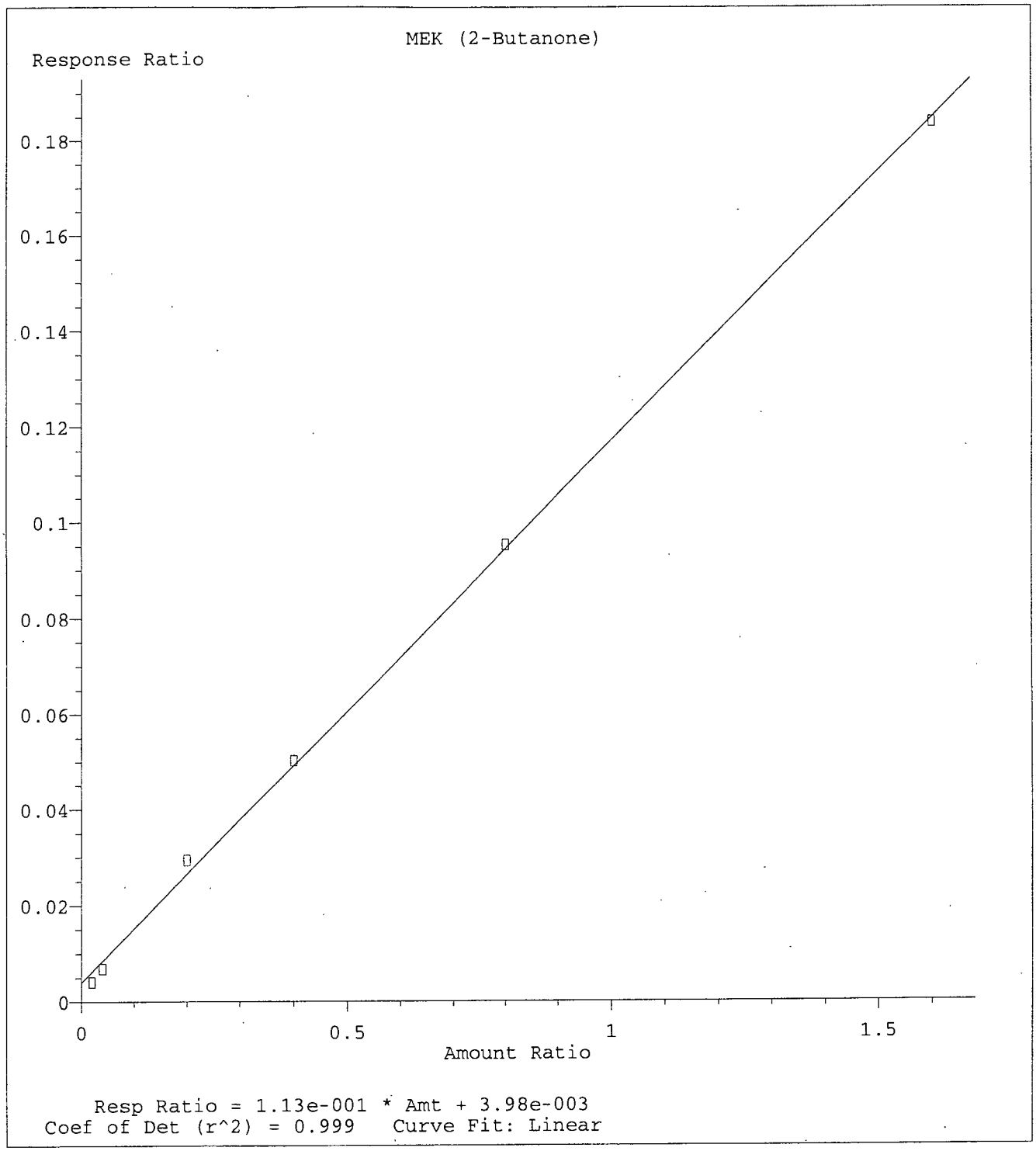
Method Name: M:\THOR\DATA\T150316\TALLW.M
Calibration Table Last Updated: Tue Mar 17 08:51:48 2015



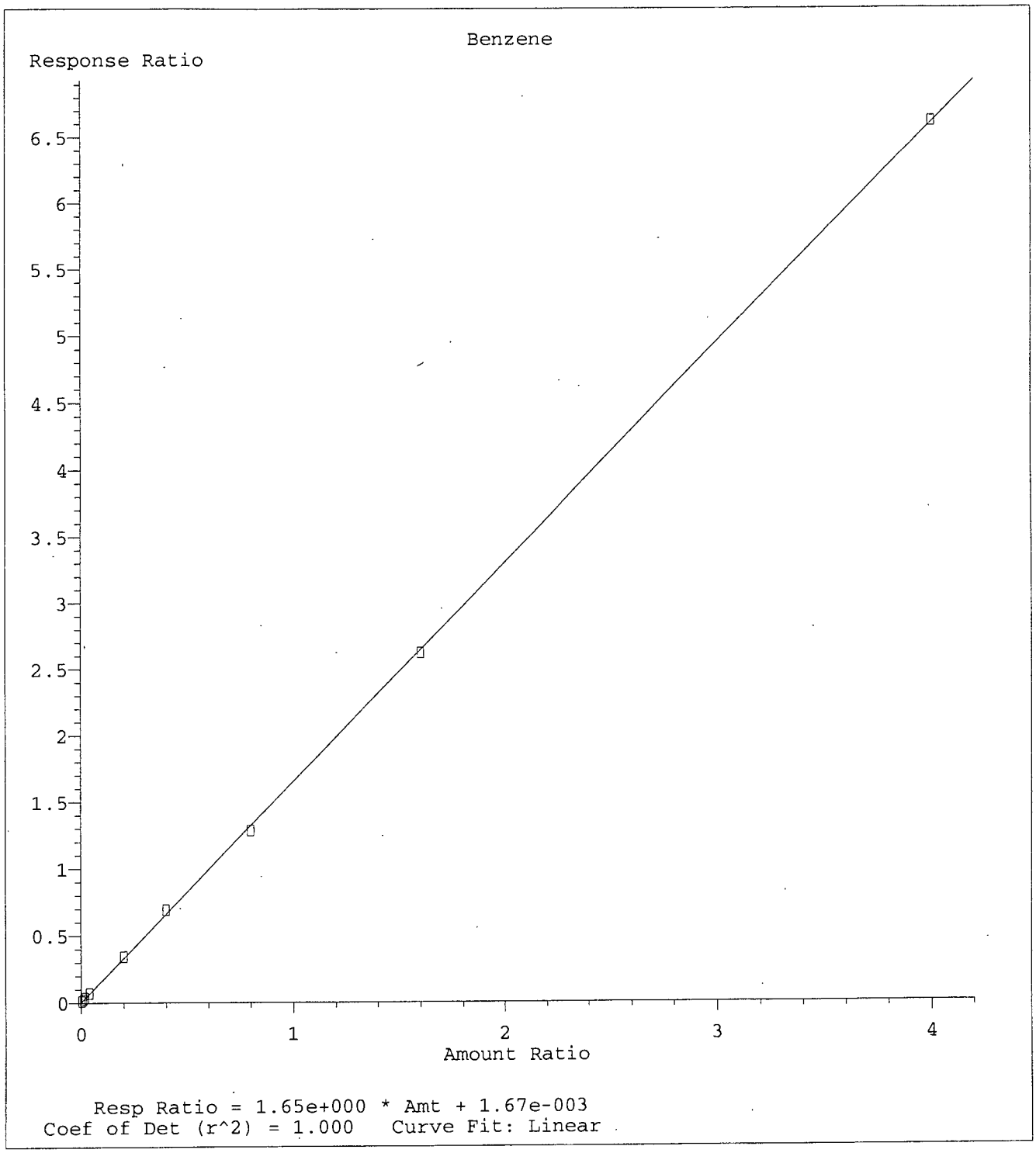
Method Name: M:\THOR\DATA\T150316\TALLW.M
Calibration Table Last Updated: Tue Mar 17 08:51:48 2015



Method Name: M:\THOR\DATA\T150316\TALLW.M
Calibration Table Last Updated: Tue Mar 17 08:51:48 2015



Method Name: M:\THOR\DATA\T150316\TALLW.M
Calibration Table Last Updated: Tue Mar 17 08:51:48 2015



Method Name: M:\THOR\DATA\T150316\TALLW.M
Calibration Table Last Updated: Tue Mar 17 08:51:48 2015

VOLATILE ORGANIC ANALYSIS BY
EPA METHOD 8260B

Form 7

Second Source Calibration

Lab Name: APPL, Inc.
Case No:
Matrix:

SDG No:
Date Analyzed: 03/16/15
Instrument: Thor
Initial Cal. Date: 03/16/15
Data File: 0316T17.D

		Compound	MEAN	CCRF	%D	%Drift	
1	I	Fluorobenzene (IS)	ISTD			I	
2	TML	Dichlorodifluoromethane	0.3570	0.3877	8.6	TML	3.0
3	TM	Freon 114	0.2536	0.2997	18	TM	
4	TM**	Chloromethane	0.4153	0.3757	9.5	TM**	
5	TM*	Vinyl chloride	0.5153	0.4589	11	TM*	
6	TML	Bromomethane	0.4980	0.3826	23	TML	1.9
7	TM	Chloroethane	0.2377	0.2289	3.7	TM	
8	TM	Dichlorofluoromethane	0.8982	0.8197	8.7	TM	
9	TM	Trichlorofluoromethane	0.5869	0.6123	4.3	TM	
10	TM	Acrolein	0.0433	0.0407	6.2	TM	
11	TML	Acetone	0.1015	0.0917	9.6	TML	0.74
12	TM	Freon-113	0.3325	0.3660	10	TM	
13	TM*	1,1-DCE	0.3587	0.3515	2.0	TM*	
14	TMQ	t-Butanol	0.0360	0.0308	15	TMQ	7.3
15	TM	Methyl Acetate	0.2209	0.1957	11	TM	
16	TML	Iodomethane	0.3105	0.2193	29	TML	34 nt
17	TM	Acrylonitrile	0.0883	0.0789	11	TM	
18	TM	Methylene chloride	0.4531	0.4189	7.6	TM	
19	TM	Carbon disulfide	1.139	1.095	3.8	TM	
20	TM	Methyl t-butyl ether (MtBE)	1.007	0.9273	7.9	TM	
21	TM	Trans-1,2-DCE	0.4073	0.3790	6.9	TM	
22	TM	Hexane	0.3715	0.3979	7.1	TM	
23	TM	Diisopropyl Ether	1.173	1.082	7.8	TM	
24	TM**	1,1-DCA	0.7201	0.6711	6.8	TM**	
25	TM	Vinyl Acetate	0.3593	0.3474	3.3	TM	
26	TM	Ethyl tert Butyl Ether	0.8314	0.7372	11	TM	
27	TML	MEK (2-Butanone)	0.1473	0.1204	18	TML	2.2
28	TM	Cis-1,2-DCE	0.4715	0.4507	4.4	TM	
29	TM	2,2-Dichloropropane	0.5290	0.4570	14	TM	
30	TM*	Chloroform	0.8248	0.7001	15	TM*	
31	TM	Bromochloromethane	0.2290	0.2227	2.7	TM	
32	S	Dibromofluoromethane(S)	0.4422	0.4968	12	S	
33	TM	1,1,1-TCA	0.6205	0.5961	3.9	TM	
34	TM	Cyclohexane	0.2870	0.2913	1.5	TM	
35	TM	1,1-Dichloropropene	0.5313	0.5182	2.5	TM	
36	TM	2,2,4-Trimethylpentane	1.013	1.088	7.5	TM	
37	S	1,2-DCA-D4(S)	0.4490	0.4882	8.7	S	
38	TM	Carbon Tetrachloride	0.5175	0.4953	4.3	TM	
39	TM	Tert Amyl Methyl Ether	0.7108	0.6172	13	TM	
40	TM	1,2-DCA	0.5619	0.5015	11	TM	
		Average			9.3		

VOLATILE ORGANIC ANALYSIS BY
EPA METHOD 8260B

Form 7

Second Source Calibration

Lab Name: APPL, Inc.
Case No:
Matrix: 0

SDG No:
Date Analyzed: 03/16/15
Instrument: Thor
Cal. Date: 03/16/15
Data File: 0316T17.D

		Compound	MEAN	CCRF	%D		%Drift
41	TML	Benzene	1.819	1.595	12	TML	3.4
42	TM	TCE	0.4621	0.4575	0.99	TM	
43	TM	2-Pentanone	0.2333	0.2129	8.7	TM	
44	TM*	1,2-Dichloropropane	0.4501	0.4075	9.5	TM*	
45	TM	Bromodichloromethane	0.5596	0.5241	6.3	TM	
46	TM	Methyl Cyclohexane	0.5983	0.6368	6.4	TM	
47	TM	Dibromomethane	0.2692	0.2445	9.2	TM	
48	TM	MIBK (methyl isobutyl ketone)	0.3056	0.2601	15	TM	
49	TM	1-Bromo-2-chloroethane	0.5479	0.5116	6.6	TM	
50	TM	2-Chloroethyl vinyl ether	0.0000	0.0073	0.00	TM	
51	TM	Cis-1,3-Dichloropropene	0.6561	0.5871	11	TM	
52	TM*	Toluene	1.886	1.796	4.8	TM*	
53	TM	Trans-1,3-Dichloropropene	0.5676	0.5077	11	TM	
54	TM	1,1,2-TCA	0.3219	0.2935	8.8	TM	
55	TM	2-Hexanone	0.2043	0.1804	12	TM	
56	I	Chlorobenzene-D5 (IS)	ISTD			I	
57	S	Toluene-D8(S)	1.769	1.992	13	S	
58	TM	1,2-EDB	0.4090	0.3834	6.2	TM	
59	TM	Tetrachloroethene	0.5661	0.5441	3.9	TM	
60	TM	1-Chlorohexane	0.5789	0.5676	2.0	TM	
61	TM	1,1,1,2-Tetrachloroethane	0.4670	0.4367	6.5	TM	
62	TM	m&p-Xylene	0.8491	0.8242	2.9	TM	
63	TM	o-Xylene	0.8350	0.8089	3.1	TM	
64	TM	Styrene	1.366	1.304	4.6	TM	
65	S	4-Bromofluorobenzene(S)	0.6838	0.7484	9.4	S	
66	TM	1,3-Dichloropropane	0.6890	0.6266	9.1	TM	
67	TM	Dibromochloromethane	0.4566	0.4231	7.3	TM	
68	TM**	Chlorobenzene	1.400	1.318	5.9	TM**	
69	TM*	Ethylbenzene	2.270	2.141	5.7	TM*	
70	TM**	Bromoform	0.2781	0.2650	4.7	TM**	
71	I	1,4-Dichlorobenzene-D (IS)	ISTD			I	
72	TM	Isopropylbenzene	3.861	3.756	2.7	TM	
73	TM**	1,1,2,2-Tetrachloroethane	0.9139	0.8203	10	TM**	
74	TM	1,2,3-Trichloropropane	0.2648	0.2593	2.1	TM	
75	TM	t-1,4-Dichloro-2-Butene	0.1669	0.1445	13	TM	
76	TM	Bromobenzene	1.097	1.067	2.7	TM	
77	TM	n-Propylbenzene	4.651	4.472	3.8	TM	
78	TM	4-Ethyltoluene	3.975	3.887	2.2	TM	
79	TM	2-Chlorotoluene	3.022	2.850	5.7	TM	
80	TM	1,3,5-Trimethylbenzene	3.366	3.260	3.1	TM	
		Average			6.6		

VOLATILE ORGANIC ANALYSIS BY
EPA METHOD 8260B

Form 7

Second Source Calibration

Lab Name: APPL, Inc.
Case No:
Matrix: 0

SDG No:
Date Analyzed: 03/16/15
Instrument: Thor
Cal. Date: 03/16/15
Data File: 0316T17.D

		Compound	MEAN	CCRF	%D	%Drift	
81	TM	4-Chlorotoluene	3.382	3.257	3.7	TM	
82	TM	Tert-Butylbenzene	2.949	2.891	2.0	TM	
83	TM	1,2,4-Trimethylbenzene	3.429	3.239	5.5	TM	
84	TM	Sec-Butylbenzene	3.936	3.902	0.86	TM	
85	TM	p-Isopropyltoluene	3.473	3.333	4.0	TM	
86	TM	Benzyl Chloride	0.8465	0.6814	20	TM	
87	TM	1,3-DCB	2.046	1.941	5.1	TM	
88	TM	1,4-DCB	2.110	1.994	5.5	TM	
89	TM	n-Butylbenzene	3.048	2.984	2.1	TM	
90	TM	1,2-DCB	1.948	1.869	4.1	TM	
91	TM	Hexachloroethane	0.5980	0.5796	3.1	TM	
92	TM	1,2-Dibromo-3-chloropropane	0.1575	0.1515	3.8	TM	
93	TM	1,2,4-Trichlorobenzene	1.173	1.073	8.5	TM	
94	TM	Hexachlorobutadiene	0.6051	0.5700	5.8	TM	
95	TM	Naphthalene	2.241	2.055	8.3	TM	
96	TM	1,2,3-Trichlorobenzene	1.087	1.005	7.6	TM	
97							
98							
99							
100							
101							
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116							
117							
118							
119							
120							
		Average			5.6		

Quantitation Report (Not Reviewed)

Data File : M:\THOR\DATA\T150316\0316T17.D
Acq On : 16 Mar 15 20:31
Sample : 10ug/L STD 3-16-15(SS)
Misc : 10ml IS&S 2/10/15,3/16/15

Vial: 16
Operator: DG, HW, SV, RS
Inst : Thor
Multiplr: 1.00

Quant Time: Mar 17 8:52 2015

Quant Results File: TALLW.RES

Quant Method : M:\THOR\DATA\T150316\TALLW.M (RTE Integrator)
Title : METHOD 8260B
Last Update : Tue Mar 17 08:51:48 2015
Response via : Initial Calibration
DataAcq Meth : 8260_BETA

$\frac{130560 \times 25}{711232 \times 0.5153} = 8.90$ 3/19/15

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene (IS)	5.99	96	711232	25.00000 ppb	0.00
56) Chlorobenzene-D5 (IS)	9.21	117	641280	25.00000 ppb	0.00
71) 1,4-Dichlorobenzene-D (IS)	11.52	152	335744	25.00000 ppb	0.00
System Monitoring Compounds					
32) Dibromofluoromethane(S)	5.17	111	353372	28.09072 ppb	0.00
Spiked Amount 28.198			Recovery	= 99.622%	
37) 1,2-DCA-D4(S)	5.57	65	347251	27.18384 ppb	0.00
Spiked Amount 26.773			Recovery	= 101.536%	
57) Toluene-D8(S)	7.75	98	1277747	28.15725 ppb	0.00
Spiked Amount 28.680			Recovery	= 98.177%	
65) 4-Bromofluorobenzene(S)	10.38	95	479923	27.35984 ppb	0.00
Spiked Amount 27.316			Recovery	= 100.160%	

Target Compounds					Qvalue
2) Dichlorodifluoromethane	1.01	85	110311	9.70457 ppb	99
3) Freon 114	1.10	135	85268	11.81736 ppb	98
4) Chloromethane	1.14	50	106891	9.04704 ppb	99
5) Vinyl chloride	1.22	62	130560	8.90631 ppb	99
6) Bromomethane	1.45	94	108852	9.81220 ppb	99
7) Chloroethane	1.54	64	65112	9.62801 ppb	99
8) Dichlorofluoromethane	1.71	67	233195	9.12617 ppb	100
9) Trichlorofluoromethane	1.75	101	174208	10.43440 ppb	97
10) Acrolein	2.12	56	144610	117.28248 ppb	99
11) Acetone	2.27	43	26093	10.07386 ppb	98
12) Freon-113	2.22	101	104121	11.00698 ppb	97
13) 1,1-DCE	2.20	96	100010	9.80127 ppb	99
14) t-Butanol	2.90	59	109420	115.93087 ppb	99
15) Methyl Acetate	2.62	43	55674	8.85760 ppb	97
16) Iodomethane	2.34	142	62386	6.56779 ppb	99
17) Acrylonitrile	3.01	52	22439	8.92804 ppb	94
18) Methylene chloride	2.71	84	119160	9.24314 ppb	98
19) Carbon disulfide	2.39	76	311599	9.61841 ppb	100
20) Methyl t-butyl ether (MtBE	3.06	73	263823	9.21038 ppb	99
21) Trans-1,2-DCE	3.03	96	107816	9.30545 ppb	96
22) Hexane	3.41	57	113203	10.71137 ppb	97
23) Diisopropyl Ether	3.77	45	307822	9.22081 ppb	98
24) 1,1-DCA	3.58	63	190911	9.31930 ppb	98
25) Vinyl Acetate	3.77	87	98844	9.67046 ppb	99
26) Ethyl tert Butyl Ether	4.34	59	209737	8.86707 ppb	99
27) MEK (2-Butanone)	4.55	43	34266	9.77768 ppb	99
28) Cis-1,2-DCE	4.48	96	128219	9.55798 ppb	98
29) 2,2-Dichloropropane	4.46	77	130021	8.63886 ppb	98
30) Chloroform	4.96	83	199167	8.48831 ppb	99
31) Bromochloromethane	4.81	128	63357	9.72536 ppb	96
33) 1,1,1-TCA	5.16	97	169587	9.60718 ppb	97
34) Cyclohexane	5.21	41	82869	10.14952 ppb	95
35) 1,1-Dichloropropene	5.38	75	147410	9.75278 ppb	98
36) 2,2,4-Trimethylpentane	5.78	57	309612	10.74519 ppb	98
38) Carbon Tetrachloride	5.37	117	140919	9.57223 ppb	91
39) Tert Amyl Methyl Ether	5.84	73	175578	8.68257 ppb	100
40) 1,2-DCA	5.67	62	142665	8.92528 ppb	99
41) Benzene	5.63	78	453782	9.65502 ppb	99
42) TCE	6.42	95	130157	9.90071 ppb	99

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : M:\THOR\DATA\T150316\0316T17.D
Acq On : 16 Mar 15 20:31
Sample : 10ug/L STD 3-16-15(SS)
Misc : 10ml IS&S 2/10/15,3/16/15

Vial: 16
Operator: DG, HW, SV, RS
Inst : Thor
Multiplr: 1.00

Quant Time: Mar 17 8:52 2015

Quant Results File: TALLW.RES

Quant Method : M:\THOR\DATA\T150316\TALLW.M (RTE Integrator)
Title : METHOD 8260B
Last Update : Tue Mar 17 08:51:48 2015
Response via : Initial Calibration
DataAcq Meth : 8260_BETA

Compound	R.T.	QIon	Response	Conc Unit		Qvalue
43) 2-Pentanone	6.68	43	757229	114.07023	ppb	98
44) 1,2-Dichloropropane	6.66	63	115923	9.05238	ppb	99
45) Bromodichloromethane	6.99	83	149105	9.36546	ppb	99
46) Methyl Cyclohexane	6.62	83	181156	10.64317	ppb	100
47) Dibromomethane	6.79	93	69567	9.08498	ppb	93
48) MIBK (methyl isobutyl ket	7.67	43	73986	8.51013	ppb	98
49) 1-Bromo-2-chloroethane	7.30	63	145548	9.33712	ppb	95
51) Cis-1,3-Dichloropropene	7.48	75	167020	8.94807	ppb	99
52) Toluene	7.81	91	510894	9.52109	ppb	99
53) Trans-1,3-Dichloropropene	8.07	75	144436	8.94520	ppb	100
54) 1,1,2-TCA	8.25	83	83491	9.11577	ppb	99
55) 2-Hexanone	8.53	43	51311	8.82959	ppb	93
58) 1,2-EDB	8.72	107	98355	9.37592	ppb	98
59) Tetrachloroethene	8.37	166	139567	9.61206	ppb	98
60) 1-Chlorohexane	9.25	91	145585	9.80438	ppb	98
61) 1,1,1,2-Tetrachloroethane	9.33	131	112021	9.35103	ppb	97
62) m&p-Xylene	9.48	106	422809	19.41193	ppb	99
63) o-Xylene	9.87	106	207483	9.68646	ppb	96
64) Styrene	9.89	104	334363	9.54457	ppb	96
66) 1,3-Dichloropropane	8.41	76	160735	9.09447	ppb	96
67) Dibromochloromethane	8.63	129	108541	9.26720	ppb	97
68) Chlorobenzene	9.23	112	338007	9.41240	ppb	99
69) Ethylbenzene	9.36	91	549305	9.43463	ppb	98
70) Bromoform	10.05	173	67974	9.52965	ppb	97
72) Isopropylbenzene	10.25	105	504405	9.72696	ppb	100
73) 1,1,2,2-Tetrachloroethane	10.55	83	110161	8.97538	ppb	98
74) 1,2,3-Trichloropropane	10.57	110	34820	9.79060	ppb	94
75) t-1,4-Dichloro-2-Butene	10.61	53	19401	8.65410	ppb	97
76) Bromobenzene	10.52	156	143246	9.72619	ppb	97
77) n-Propylbenzene	10.65	91	600622	9.61668	ppb	99
78) 4-Ethyltoluene	10.77	105	522015	9.77870	ppb	99
79) 2-Chlorotoluene	10.72	91	382778	9.43159	ppb	99
80) 1,3,5-Trimethylbenzene	10.84	105	437839	9.68541	ppb	99
81) 4-Chlorotoluene	10.83	91	437375	9.63102	ppb	100
82) Tert-Butylbenzene	11.15	119	388193	9.80091	ppb	99
83) 1,2,4-Trimethylbenzene	11.20	105	434995	9.44733	ppb	99
84) Sec-Butylbenzene	11.37	105	524011	9.91448	ppb	100
85) p-Isopropyltoluene	11.52	119	447617	9.59707	ppb	99
86) Benzyl Chloride	11.69	91	91505	8.04867	ppb	96
87) 1,3-DCB	11.46	146	260647	9.48817	ppb	98
88) 1,4-DCB	11.55	146	267724	9.44605	ppb	96
89) n-Butylbenzene	11.92	91	400724	9.79088	ppb	97
90) 1,2-DCB	11.91	146	251006	9.59482	ppb	98
91) Hexachloroethane	12.16	117	77840	9.69324	ppb	95
92) 1,2-Dibromo-3-chloropropan	12.68	157	20348	9.61797	ppb	90
93) 1,2,4-Trichlorobenzene	13.50	180	144038	9.14666	ppb	98
94) Hexachlorobutadiene	13.69	225	76550	9.42011	ppb	95
95) Naphthalene	13.73	128	275955	9.16932	ppb	100
96) 1,2,3-Trichlorobenzene	13.97	180	134912	9.24149	ppb	96

(#) = qualifier out of range (m) = manual integration

Quantitation Report

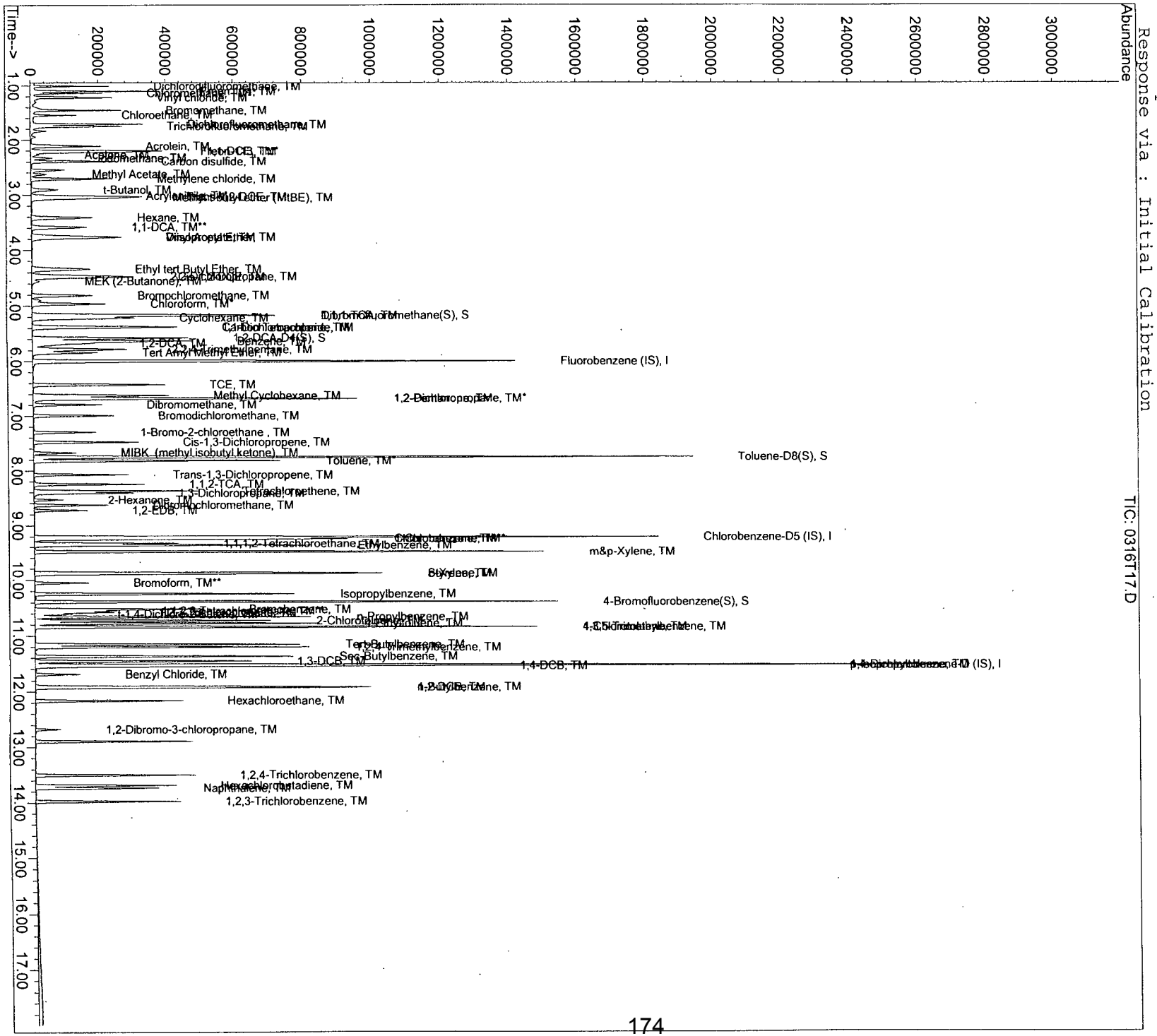
Data File : M:\THOR\DATA\T150316\0316T17.D
Acq On : 16 Mar 15 20:31
Sample : 10ug/L STD 3-16-15(SS)
Misc : 10ml IS&S 2/10/15,3/16/15

Vial: 16
Operator: DG, HW, SV, RS
Inst : Thor
Multiplr: 1.00

Quant Time: Mar 17 8:52 2015

Quant Results File: TALLW.RES

Method : M:\THOR\DATA\T150316\TALLW.M (RTE Integrator)
Title : METHOD 8260B
Last Update : Tue Mar 17 08:51:48 2015
Response via : Initial Calibration



VOLATILE ORGANIC ANALYSIS BY
EPA METHOD 8260B

Form 7

Continuing Calibration

Lab Name: APPL, Inc.
Case No:
Matrix:

SDG No:
Date Analyzed: 03/16/15
Instrument: Thor
Initial Cal. Date: 03/16/15
Data File: 0316T18.D

		Compound	MEAN	CCRF	%D	%Drift	
1	I	Fluorobenzene (IS)	ISTD			I	
2	TML	Dichlorodifluoromethane	0.3570	0.3786	6.0	TML	5.1
3	TM	Freon 114	0.2536	0.2945	16	TM	
4	TM**	Chloromethane	0.4153	0.3743	9.9	TM**	
5	TM*	Vinyl chloride	0.5153	0.4514	12	TM*	
6	TML	Bromomethane	0.4980	0.3611	27	TML	7.7
7	TM	Chloroethane	0.2377	0.2275	4.3	TM	
8	TM	Dichlorofluoromethane	0.8982	0.8202	8.7	TM	
9	TM	Trichlorofluoromethane	0.5869	0.6013	2.5	TM	
10	TM	Acrolein	0.0433	0.0412	4.9	TM	
11	TML	Acetone	0.1015	0.0869	14	TML	5.2
12	TM	Freon-113	0.3325	0.3596	8.2	TM	
13	TM*	1,1-DCE	0.3587	0.3549	1.1	TM*	
14	TMQ	t-Butanol	0.0360	0.0303	16	TMQ	8.5
15	TM	Methyl Acetate	0.2209	0.1977	11	TM	
16	TML	Iodomethane	0.3105	0.2816	9.3	TML	22 nt
17	TM	Acrylonitrile	0.0883	0.0822	7.0	TM	
18	TM	Methylene chloride	0.4531	0.4134	8.8	TM	
19	TM	Carbon disulfide	1.139	1.072	5.8	TM	
20	TM	Methyl t-butyl ether (MtBE)	1.007	0.9509	5.6	TM	
21	TM	Trans-1,2-DCE	0.4073	0.3912	3.9	TM	
22	TM	Hexane	0.3715	0.3910	5.3	TM	
23	TM	Diisopropyl Ether	1.173	1.084	7.6	TM	
24	TM**	1,1-DCA	0.7201	0.6654	7.6	TM**	
25	TM	Vinyl Acetate	0.3593	0.3508	2.3	TM	
26	TM	Ethyl tert Butyl Ether	0.8314	0.7535	9.4	TM	
27	TML	MEK (2-Butanone)	0.1473	0.1205	18	TML	2.2
28	TM	Cis-1,2-DCE	0.4715	0.4454	5.5	TM	
29	TM	2,2-Dichloropropane	0.5290	0.4556	14	TM	
30	TM*	Chloroform	0.8248	0.6957	16	TM*	
31	TM	Bromochloromethane	0.2290	0.2212	3.4	TM	
32	S	Dibromofluoromethane(S)	0.4422	0.5148	16	S	
33	TM	1,1,1-TCA	0.6205	0.5943	4.2	TM	
34	TM	Cyclohexane	0.2870	0.2957	3.0	TM	
35	TM	1,1-Dichloropropene	0.5313	0.5212	1.9	TM	
36	TM	2,2,4-Trimethylpentane	1.013	1.049	3.6	TM	
37	S	1,2-DCA-D4(S)	0.4490	0.4832	7.6	S	
38	TM	Carbon Tetrachloride	0.5175	0.5047	2.5	TM	
39	TM	Tert Amyl Methyl Ether	0.7108	0.6358	11	TM	
40	TM	1,2-DCA	0.5619	0.5078	9.6	TM	
		Average			8.5		

VOLATILE ORGANIC ANALYSIS BY
EPA METHOD 8260B

Form 7

Continuing Calibration

Lab Name: APPL, Inc.
Case No:
Matrix: 0

SDG No:
Date Analyzed: 03/16/15
Instrument: Thor
Cal. Date: 03/16/15
Data File: 0316T18.D

		Compound	MEAN	CCRF	%D		%Drift
41	TML	Benzene	1.819	1.609	12	TML	2.6
42	TM	TCE	0.4621	0.4534	1.9	TM	
43	TM	2-Pentanone	0.2333	0.2126	8.9	TM	
44	TM*	1,2-Dichloropropane	0.4501	0.4065	9.7	TM*	
45	TM	Bromodichloromethane	0.5596	0.5231	6.5	TM	
46	TM	Methyl Cyclohexane	0.5983	0.6388	6.8	TM	
47	TM	Dibromomethane	0.2692	0.2552	5.2	TM	
48	TM	MIBK (methyl isobutyl ketone)	0.3056	0.2659	13	TM	
49	TM	1-Bromo-2-chloroethane	0.5479	0.5120	6.6	TM	
50	TM	2-Chloroethyl vinyl ether	0.0000	0.0078	0.00	TM	
51	TM	Cis-1,3-Dichloropropene	0.6561	0.6017	8.3	TM	
52	TM*	Toluene	1.886	1.787	5.2	TM*	
53	TM	Trans-1,3-Dichloropropene	0.5676	0.5047	11	TM	
54	TM	1,1,2-TCA	0.3219	0.3007	6.6	TM	
55	TM	2-Hexanone	0.2043	0.1835	10	TM	
56	I	Chlorobenzene-D5 (IS)	ISTD			I	
57	S	Toluene-D8(S)	1.769	2.040	15	S	
58	TM	1,2-EDB	0.4090	0.3967	3.0	TM	
59	TM	Tetrachloroethene	0.5661	0.5446	3.8	TM	
60	TM	1-Chlorohexane	0.5789	0.5570	3.8	TM	
61	TM	1,1,1,2-Tetrachloroethane	0.4670	0.4412	5.5	TM	
62	TM	m&p-Xylene	0.8491	0.8315	2.1	TM	
63	TM	o-Xylene	0.8350	0.8115	2.8	TM	
64	TM	Styrene	1.366	1.320	3.4	TM	
65	S	4-Bromofluorobenzene(S)	0.6838	0.7668	12	S	
66	TM	1,3-Dichloropropane	0.6890	0.6343	7.9	TM	
67	TM	Dibromochloromethane	0.4566	0.4343	4.9	TM	
68	TM**	Chlorobenzene	1.400	1.318	5.8	TM**	
69	TM*	Ethylbenzene	2.270	2.174	4.2	TM*	
70	TM**	Bromoform	0.2781	0.2676	3.8	TM**	
71	I	1,4-Dichlorobenzene-D (IS)	ISTD			I	
72	TM	Isopropylbenzene	3.861	3.692	4.4	TM	
73	TM**	1,1,2,2-Tetrachloroethane	0.9139	0.8137	11	TM**	
74	TM	1,2,3-Trichloropropane	0.2648	0.2532	4.4	TM	
75	TM	t-1,4-Dichloro-2-Butene	0.1669	0.1522	8.8	TM	
76	TM	Bromobenzene	1.097	1.061	3.3	TM	
77	TM	n-Propylbenzene	4.651	4.423	4.9	TM	
78	TM	4-Ethyltoluene	3.975	3.844	3.3	TM	
79	TM	2-Chlorotoluene	3.022	2.814	6.9	TM	
80	TM	1,3,5-Trimethylbenzene	3.366	3.249	3.5	TM	
		Average			6.3		

VOLATILE ORGANIC ANALYSIS BY
EPA METHOD 8260B

Form 7

Continuing Calibration

Lab Name: APPL, Inc.
Case No:
Matrix: 0

SDG No:
Date Analyzed: 03/16/15
Instrument: Thor
Cal. Date: 03/16/15
Data File: 0316T18.D

		Compound	MEAN	CCRF	%D	%Drift	
81	TM	4-Chlorotoluene	3.382	3.239	4.2	TM	
82	TM	Tert-Butylbenzene	2.949	2.831	4.0	TM	
83	TM	1,2,4-Trimethylbenzene	3.429	3.261	4.9	TM	
84	TM	Sec-Butylbenzene	3.936	3.907	0.74	TM	
85	TM	p-Isopropyltoluene	3.473	3.312	4.6	TM	
86	TM	Benzyl Chloride	0.8465	0.6574	22	TM	nt
87	TM	1,3-DCB	2.046	1.941	5.1	TM	
88	TM	1,4-DCB	2.110	1.942	8.0	TM	
89	TM	n-Butylbenzene	3.048	2.918	4.2	TM	
90	TM	1,2-DCB	1.948	1.840	5.6	TM	
91	TM	Hexachloroethane	0.5980	0.5451	8.8	TM	
92	TM	1,2-Dibromo-3-chloropropane	0.1575	0.1522	3.4	TM	
93	TM	1,2,4-Trichlorobenzene	1.173	1.091	6.9	TM	
94	TM	Hexachlorobutadiene	0.6051	0.5749	5.0	TM	
95	TM	Naphthalene	2.241	2.189	2.3	TM	
96	TM	1,2,3-Trichlorobenzene	1.087	1.036	4.7	TM	
97							
98							
99							
100							
101							
102							
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104							
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111							
112							
113							
114							
115							
116							
117							
118							
119							
120							
		Average			5.9		

Quantitation Report (Not Reviewed)

Data File : M:\THOR\DATA\T150316\0316T18.D Vial: 17
Acq On : 16 Mar 15 20:59 Operator: DG, HW, SV, RS
Sample : 10ug/L STD 3-16-15(CCV) Inst : Thor
Misc : 10ml IS&S 2/10/15,3/16/15 Multiplr: 1.00

Quant Time: Mar 17 8:53 2015 Quant Results File: TALLW.RES

Quant Method : M:\THOR\DATA\T150316\TALLW.M (RTE Integrator)
Title : METHOD 8260B
Last Update : Tue Mar 17 08:51:48 2015
Response via : Initial Calibration
DataAcq Meth : 8260_BETA

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene (IS)	5.99	96	698368	25.00000 ppb	0.00
56) Chlorobenzene-D5 (IS)	9.21	117	627840	25.00000 ppb	0.00
71) 1,4-Dichlorobenzene-D (IS)	11.52	152	334912	25.00000 ppb	0.00
System Monitoring Compounds					
32) Dibromofluoromethane(S)	5.17	111	359533	29.10693 ppb	0.00
Spiked Amount 28.198			Recovery	= 103.225%	
37) 1,2-DCA-D4(S)	5.58	65	337462	26.90415 ppb	0.00
Spiked Amount 26.773			Recovery	= 100.490%	
57) Toluene-D8(S)	7.75	98	1280996	28.83313 ppb	0.00
Spiked Amount 28.680			Recovery	= 100.535%	
65) 4-Bromofluorobenzene(S)	10.38	95	481413	28.03228 ppb	0.00
Spiked Amount 27.316			Recovery	= 102.620%	

Target Compounds					Qvalue
2) Dichlorodifluoromethane	1.01	85	105766	9.49061 ppb	98
3) Freon 114	1.10	135	82270	11.61189 ppb	100
4) Chloromethane	1.14	50	104556	9.01242 ppb	98
5) Vinyl chloride	1.22	62	126088	8.75968 ppb	98
6) Bromomethane	1.45	94	100885	9.22588 ppb	98
7) Chloroethane	1.54	64	63560	9.57164 ppb	99
8) Dichlorofluoromethane	1.71	67	229111	9.13151 ppb	97
9) Trichlorofluoromethane	1.75	101	167961	10.24554 ppb	96
10) Acrolein	2.12	56	143965	118.91009 ppb	99
11) Acetone	2.27	43	24263	9.47501 ppb	98
12) Freon-113	2.22	101	100456	10.81515 ppb	98
13) 1,1-DCE	2.20	96	99139	9.89488 ppb	93
14) t-Butanol	2.90	59	105648	114.39375 ppb	99
15) Methyl Acetate	2.63	43	55228	8.94849 ppb	97
16) Iodomethane	2.34	142	78675	7.81478 ppb	97
17) Acrylonitrile	3.00	52	22958	9.30280 ppb	89
18) Methylene chloride	2.71	84	115487	9.12324 ppb	98
19) Carbon disulfide	2.39	76	299543	9.41659 ppb	99
20) Methyl t-butyl ether (MtBE	3.05	73	265644	9.44478 ppb	98
21) Trans-1,2-DCE	3.03	96	109278	9.60536 ppb	100
22) Hexane	3.41	57	109223	10.52515 ppb	98
23) Diisopropyl Ether	3.76	45	302946	9.24191 ppb	98
24) 1,1-DCA	3.59	63	185880	9.24085 ppb	96
25) Vinyl Acetate	3.77	87	98007	9.76519 ppb	96
26) Ethyl tert Butyl Ether	4.34	59	210483	9.06252 ppb	97
27) MEK (2-Butanone)	4.55	43	33648	9.77824 ppb #	88
28) Cis-1,2-DCE	4.48	96	124417	9.44540 ppb	98
29) 2,2-Dichloropropane	4.46	77	127279	8.61244 ppb	99
30) Chloroform	4.96	83	194331	8.43476 ppb	100
31) Bromochloromethane	4.81	128	61785	9.65876 ppb	92
33) 1,1,1-TCA	5.16	97	166024	9.57858 ppb	98
34) Cyclohexane	5.22	41	82597	10.30255 ppb	97
35) 1,1-Dichloropropene	5.38	75	145600	9.81047 ppb	97
36) 2,2,4-Trimethylpentane	5.78	57	293106	10.35972 ppb	99
38) Carbon Tetrachloride	5.37	117	140990	9.75346 ppb	94
39) Tert Amyl Methyl Ether	5.84	73	177600	8.94434 ppb	99
40) 1,2-DCA	5.67	62	141855	9.03807 ppb	100
41) Benzene	5.63	78	449398	9.73809 ppb	99
42) TCE	6.42	95	126646	9.81109 ppb	100

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : M:\THOR\DATA\T150316\0316T18.D
Acq On : 16 Mar 15 20:59
Sample : 10ug/L STD 3-16-15(CCV)
Misc : 10ml IS&S 2/10/15,3/16/15

Vial: 17
Operator: DG, HW, SV, RS
Inst : Thor
Multiplr: 1.00

Quant Time: Mar 17 8:53 2015 Quant Results File: TALLW.RES

Quant Method : M:\THOR\DATA\T150316\TALLW.M (RTE Integrator)
Title : METHOD 8260B
Last Update : Tue Mar 17 08:51:48 2015
Response via : Initial Calibration
DataAcq Meth : 8260_BETA

Compound	R.T.	QIon	Response	Conc Unit		Qvalue
43) 2-Pentanone	6.68	43	742517	113.91435	ppb	98
44) 1,2-Dichloropropane	6.66	63	113565	9.03159	ppb	99
45) Bromodichloromethane	6.99	83	146130	9.34766	ppb	98
46) Methyl Cyclohexane	6.62	83	178447	10.67713	ppb	98
47) Dibromomethane	6.79	93	71283	9.48055	ppb	98
48) MIBK (methyl isobutyl ket	7.67	43	74274	8.70062	ppb	97
49) 1-Bromo-2-chloroethane	7.30	63	143023	9.34415	ppb	100
51) Cis-1,3-Dichloropropene	7.48	75	168077	9.17057	ppb	98
52) Toluene	7.81	91	499270	9.47585	ppb	98
53) Trans-1,3-Dichloropropene	8.07	75	140984	8.89225	ppb	99
54) 1,1,2-TCA	8.25	83	83999	9.34017	ppb	96
55) 2-Hexanone	8.53	43	51271	8.98522	ppb	93
58) 1,2-EDB	8.72	107	99633	9.70106	ppb	100
59) Tetrachloroethene	8.37	166	136767	9.62085	ppb	97
60) 1-Chlorohexane	9.25	91	139880	9.62183	ppb	100
61) 1,1,1,2-Tetrachloroethane	9.33	131	110796	9.44676	ppb	100
62) m&p-Xylene	9.48	106	417645	19.58532	ppb	99
63) o-Xylene	9.87	106	203795	9.71796	ppb	98
64) Styrene	9.89	104	331448	9.66390	ppb	99
66) 1,3-Dichloropropane	8.41	76	159287	9.20547	ppb	94
67) Dibromochloromethane	8.63	129	109074	9.51206	ppb	98
68) Chlorobenzene	9.23	112	331076	9.41675	ppb	98
69) Ethylbenzene	9.36	91	546073	9.57989	ppb	99
70) Bromoform	10.05	173	67213	9.62468	ppb	97
72) Isopropylbenzene	10.25	105	494646	9.56247	ppb	98
73) 1,1,2,2-Tetrachloroethane	10.55	83	109009	8.90359	ppb	100
74) 1,2,3-Trichloropropane	10.58	110	33914	9.55954	ppb	98
75) t-1,4-Dichloro-2-Butene	10.61	53	20384	9.11517	ppb	98
76) Bromobenzene	10.52	156	142117	9.67351	ppb	99
77) n-Propylbenzene	10.65	91	592529	9.51067	ppb	100
78) 4-Ethyltoluene	10.77	105	514947	9.67027	ppb	100
79) 2-Chlorotoluene	10.72	91	376975	9.31168	ppb	100
80) 1,3,5-Trimethylbenzene	10.84	105	435317	9.65354	ppb	99
81) 4-Chlorotoluene	10.83	91	433893	9.57808	ppb	100
82) Tert-Butylbenzene	11.15	119	379228	9.59835	ppb	99
83) 1,2,4-Trimethylbenzene	11.20	105	436876	9.51176	ppb	100
84) Sec-Butylbenzene	11.37	105	523343	9.92644	ppb	99
85) p-Isopropyltoluene	11.52	119	443691	9.53652	ppb	99
86) Benzyl Chloride	11.69	91	88069	7.76569	ppb	99
87) 1,3-DCB	11.46	146	260000	9.48813	ppb	99
88) 1,4-DCB	11.55	146	260203	9.20350	ppb	96
89) n-Butylbenzene	11.92	91	390962	9.57610	ppb	98
90) 1,2-DCB	11.91	146	246462	9.44453	ppb	98
91) Hexachloroethane	12.16	117	73029	9.11673	ppb	98
92) 1,2-Dibromo-3-chloropropan	12.68	157	20388	9.66082	ppb	96
93) 1,2,4-Trichlorobenzene	13.50	180	146184	9.30599	ppb	100
94) Hexachlorobutadiene	13.69	225	77013	9.50063	ppb	97
95) Naphthalene	13.73	128	293183	9.76596	ppb	99
96) 1,2,3-Trichlorobenzene	13.98	180	138743	9.52753	ppb	97

(#) = qualifier out of range (m) = manual integration

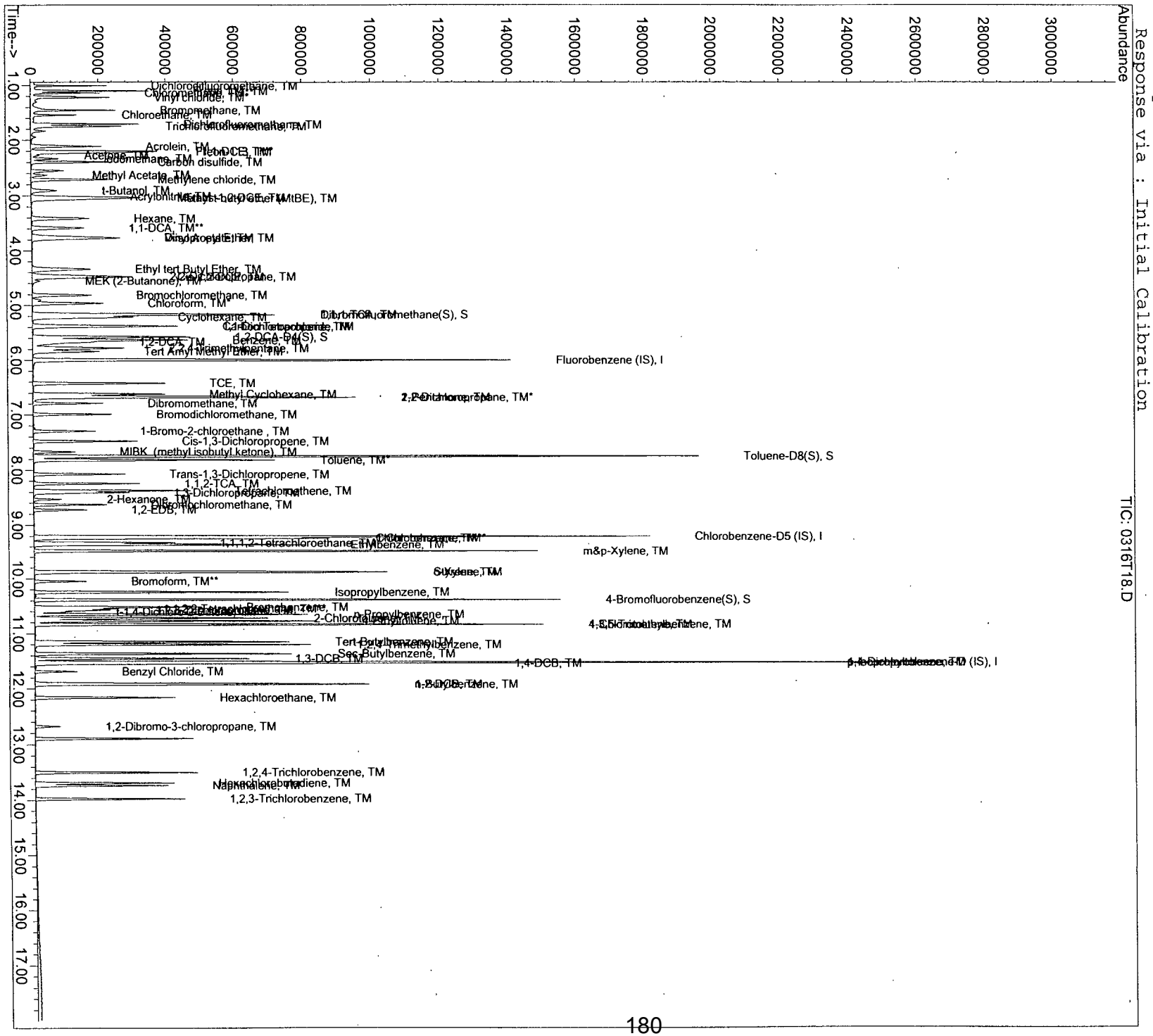
Data File : M:\THOR\DATA\T150316\0316T18.D
Acq On : 16 Mar 15 20:59
Sample : 10ug/L STD 3-16-15(CCV)
Misc : 10ml IS&S 2/10/15,3/16/15

Vial: 17
Operator: DG, HW, SV, RS
Inst : Thor
Multiplr: 1.00

Quant Time: Mar 17 8:53 2015

Quant Results File: TALLW.RES

Method : M:\THOR\DATA\T150316\TALLW.M (RTE Integrator)
Title : METHOD 8260B
Last Update : Tue Mar 17 08:51:48 2015
Response via : Initial Calibration



VOLATILE ORGANIC ANALYSIS BY
EPA METHOD 8260B

Form 7

Continuing Calibration

Lab Name: APPL, Inc.
Case No:
Matrix:

SDG No:
Date Analyzed: 3/17/2015
Instrument: Thor
Initial Cal. Date: 3/16/2015
Data File: 0317T04.D

		Compound	MEAN	CCRF	%D	%Drift	
1	I	Fluorobenzene (IS)	ISTD			I	
2	TML	Dichlorodifluoromethane	0.3570	0.3600	0.83	TML	9.5
3	TM	Freon 114	0.2536	0.2830	12	TM	
4	TM**	Chloromethane	0.4153	0.3833	7.7	TM**	
5	TM*	Vinyl chloride	0.5153	0.4635	10	TM*	
6	TML	Bromomethane	0.4980	0.3510	30	TML	11
7	TM	Chloroethane	0.2377	0.2388	0.48	TM	
8	TM	Dichlorofluoromethane	0.8982	0.8671	3.5	TM	
9	TM	Trichlorofluoromethane	0.5869	0.6163	5.0	TM	
10	TM	Acrolein	0.0433	0.0412	4.9	TM	
11	TML	Acetone	0.1015	0.0800	21	TML	14
12	TM	Freon-113	0.3325	0.3580	7.7	TM	
13	TM*	1,1-DCE	0.3587	0.3461	3.5	TM*	
14	TMQ	t-Butanol	0.0360	0.0300	17	TMQ	9.0
15	TM	Methyl Acetate	0.2209	0.1902	14	TM	
16	TML	Iodomethane	0.3105	0.3966	28	TML	1.1
17	TM	Acrylonitrile	0.0883	0.0785	11	TM	
18	TM	Methylene chloride	0.4531	0.4250	6.2	TM	
19	TM	Carbon disulfide	1.139	1.102	3.2	TM	
20	TM	Methyl t-butyl ether (MtBE)	1.007	0.9432	6.3	TM	
21	TM	Trans-1,2-DCE	0.4073	0.3965	2.6	TM	
22	TM	Hexane	0.3715	0.4167	12	TM	
23	TM	Diisopropyl Ether	1.173	1.125	4.1	TM	
24	TM**	1,1-DCA	0.7201	0.7122	1.1	TM**	
25	TM	Vinyl Acetate	0.3593	0.3653	1.7	TM	
26	TM	Ethyl tert Butyl Ether	0.8314	0.7515	9.6	TM	
27	TML	MEK (2-Butanone)	0.1473	0.1133	23	TML	8.5
28	TM	Cis-1,2-DCE	0.4715	0.4743	0.59	TM	
29	TM	2,2-Dichloropropane	0.5290	0.5644	6.7	TM	
30	TM*	Chloroform	0.8248	0.7467	9.5	TM*	
31	TM	Bromochloromethane	0.2290	0.2255	1.5	TM	
32	S	Dibromofluoromethane(S)	0.4422	0.5002	13	S	
33	TM	1,1,1-TCA	0.6205	0.6054	2.4	TM	
34	TM	Cyclohexane	0.2870	0.2828	1.5	TM	
35	TM	1,1-Dichloropropene	0.5313	0.5360	0.88	TM	
36	TM	2,2,4-Trimethylpentane	1.013	1.111	9.7	TM	
37	S	1,2-DCA-D4(S)	0.4490	0.4728	5.3	S	
38	TM	Carbon Tetrachloride	0.5175	0.5105	1.4	TM	
39	TM	Tert Amyl Methyl Ether	0.7108	0.6548	7.9	TM	
40	TM	1,2-DCA	0.5619	0.5180	7.8	TM	
		Average			8.1		

VOLATILE ORGANIC ANALYSIS BY
EPA METHOD 8260B

Form 7

Continuing Calibration

Lab Name: APPL, Inc.
Case No:
Matrix: 0

SDG No:
Date Analyzed: 3/17/2015
Instrument: Thor
Cal. Date: 3/16/2015
Data File: 0317T04.D

		Compound	MEAN	CCRF	%D		%Drift
41	TML	Benzene	1.819	1.688	7.2	TML	2.2
42	TM	TCE	0.4621	0.4464	3.4	TM	
43	TM	2-Pentanone	0.2333	0.2044	12	TM	
44	TM*	1,2-Dichloropropane	0.4501	0.4290	4.7	TM*	
45	TM	Bromodichloromethane	0.5596	0.5362	4.2	TM	
46	TM	Methyl Cyclohexane	0.5983	0.6266	4.7	TM	
47	TM	Dibromomethane	0.2692	0.2523	6.3	TM	
48	TM	MIBK (methyl isobutyl ketone)	0.3056	0.2739	10	TM	
49	TM	1-Bromo-2-chloroethane	0.5479	0.5222	4.7	TM	
50	TM	2-Chloroethyl vinyl ether	0.0000	0.0086	0.00	TM	
51	TM	Cis-1,3-Dichloropropene	0.6561	0.6380	2.8	TM	
52	TM*	Toluene	1.886	1.876	0.54	TM*	
53	TM	Trans-1,3-Dichloropropene	0.5676	0.5327	6.1	TM	
54	TM	1,1,2-TCA	0.3219	0.3018	6.3	TM	
55	TM	2-Hexanone	0.2043	0.1771	13	TM	
56	I	Chlorobenzene-D5 (IS)	ISTD			I	
57	S	Toluene-D8(S)	1.769	1.977	12	S	
58	TM	1,2-EDB	0.4090	0.3806	6.9	TM	
59	TM	Tetrachloroethene	0.5661	0.5522	2.4	TM	
60	TM	1-Chlorohexane	0.5789	0.5885	1.7	TM	
61	TM	1,1,1,2-Tetrachloroethane	0.4670	0.4645	0.54	TM	
62	TM	m&p-Xylene	0.8491	0.8609	1.4	TM	
63	TM	o-Xylene	0.8350	0.8416	0.79	TM	
64	TM	Styrene	1.366	1.386	1.5	TM	
65	S	4-Bromofluorobenzene(S)	0.6838	0.7474	9.3	S	
66	TM	1,3-Dichloropropane	0.6890	0.6397	7.2	TM	
67	TM	Dibromochloromethane	0.4566	0.4424	3.1	TM	
68	TM**	Chlorobenzene	1.400	1.376	1.7	TM**	
69	TM*	Ethylbenzene	2.270	2.240	1.3	TM*	
70	TM**	Bromoform	0.2781	0.2744	1.3	TM**	
71	I	1,4-Dichlorobenzene-D (IS)	ISTD			I	
72	TM	Isopropylbenzene	3.861	3.897	0.91	TM	
73	TM**	1,1,2,2-Tetrachloroethane	0.9139	0.8795	3.8	TM**	
74	TM	1,2,3-Trichloropropane	0.2648	0.2568	3.0	TM	
75	TM	t-1,4-Dichloro-2-Butene	0.1669	0.1469	12	TM	
76	TM	Bromobenzene	1.097	1.129	2.9	TM	
77	TM	n-Propylbenzene	4.651	4.741	1.9	TM	
78	TM	4-Ethyltoluene	3.975	4.059	2.1	TM	
79	TM	2-Chlorotoluene	3.022	2.990	1.1	TM	
80	TM	1,3,5-Trimethylbenzene	3.366	3.423	1.7	TM	
		Average			4.4		

VOLATILE ORGANIC ANALYSIS BY
EPA METHOD 8260B

Form 7

Continuing Calibration

Lab Name: APPL, Inc.
Case No:
Matrix: 0

SDG No:
Date Analyzed: 3/17/2015
Instrument: Thor
Cal. Date: 3/16/2015
Data File: 0317T04.D

		Compound	MEAN	CCRF	%D		%Drift
81	TM	4-Chlorotoluene	3.382	3.450	2.0	TM	
82	TM	Tert-Butylbenzene	2.949	3.022	2.5	TM	
83	TM	1,2,4-Trimethylbenzene	3.429	3.488	1.7	TM	
84	TM	Sec-Butylbenzene	3.936	4.118	4.6	TM	
85	TM	p-Isopropyltoluene	3.473	3.579	3.1	TM	
86	TM	Benzyl Chloride	0.8465	0.8838	4.4	TM	
87	TM	1,3-DCB	2.046	2.124	3.8	TM	
88	TM	1,4-DCB	2.110	2.158	2.3	TM	
89	TM	n-Butylbenzene	3.048	3.225	5.8	TM	
90	TM	1,2-DCB	1.948	1.994	2.4	TM	
91	TM	Hexachloroethane	0.5980	0.6052	1.2	TM	
92	TM	1,2-Dibromo-3-chloropropane	0.1575	0.1533	2.7	TM	
93	TM	1,2,4-Trichlorobenzene	1.173	1.188	1.3	TM	
94	TM	Hexachlorobutadiene	0.6051	0.6223	2.8	TM	
95	TM	Naphthalene	2.241	2.224	0.74	TM	
96	TM	1,2,3-Trichlorobenzene	1.087	1.122	3.2	TM	
97							
98							
99							
100							
101							
102							
103							
104							
105							
106							
107							
108							
109							
110							
111							
112							
113							
114							
115							
116							
117							
118							
119							
120							
		Average			2.8		

Quantitation Report (Not Reviewed)

Data File : M:\THOR\DATA\T150316\0317T04.D
Vial: 3
Acq On : 17 Mar 15 10:32
Operator: DG, HW, SV, RS
Sample : 10ug/L VOC STD 3-17-15
Inst : Thor
Misc : 10ml IS&S 2/10/15,3/16/15
Multiplr: 1.00

Quant Time: Mar 17 10:50 2015
Quant Results File: TALLW.RES

Quant Method : M:\THOR\DATA\T150316\TALLW.M (RTE Integrator)
Title : METHOD 8260B
Last Update : Tue Mar 17 08:51:48 2015
Response via : Initial Calibration
DataAcq Meth : 8260_BETA

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene (IS)	5.99	96	668800	25.00 ppb	0.00
56) Chlorobenzene-D5 (IS)	9.21	117	606592	25.00 ppb	0.00
71) 1,4-Dichlorobenzene-D (IS)	11.52	152	316544	25.00 ppb	0.00
System Monitoring Compounds					
32) Dibromofluoromethane(S)	5.17	111	334525	28.28 ppb	0.00
Spiked Amount 28.198			Recovery	= 100.292%	
37) 1,2-DCA-D4(S)	5.57	65	316209	26.32 ppb	0.00
Spiked Amount 26.773			Recovery	= 98.323%	
57) Toluene-D8(S)	7.75	98	1199498	27.94 ppb	0.00
Spiked Amount 28.680			Recovery	= 97.435%	
65) 4-Bromofluorobenzene(S)	10.38	95	453365	27.32 ppb	0.00
Spiked Amount 27.316			Recovery	= 100.028%	

Target Compounds					Qvalue
2) Dichlorodifluoromethane	1.01	85	96309	9.05 ppb	96
3) Freon 114	1.10	135	75698	11.16 ppb	96
4) Chloromethane	1.14	50	102541	9.23 ppb	99
5) Vinyl chloride	1.22	62	124001	9.00 ppb	100
6) Bromomethane	1.45	94	93892	8.95 ppb	97
7) Chloroethane	1.54	64	63897	10.05 ppb	99
8) Dichlorofluoromethane	1.71	67	231961	9.65 ppb	97
9) Trichlorofluoromethane	1.75	101	164877	10.50 ppb	96
10) Acrolein	2.12	56	137876	118.92 ppb	99
11) Acetone	2.27	43	21403	8.63 ppb	92
12) Freon-113	2.22	101	95767	10.77 ppb	96
13) 1,1-DCE	2.20	96	92586	9.65 ppb	98
14) t-Butanol	2.91	59	100416	113.71 ppb	100
15) Methyl Acetate	2.62	43	50871	8.61 ppb	92
16) Iodomethane	2.34	142	106089	10.11 ppb	98
17) Acrylonitrile	3.01	52	21006	8.89 ppb	92
18) Methylene chloride	2.71	84	113698	9.38 ppb	98
19) Carbon disulfide	2.39	76	294864	9.68 ppb	99
20) Methyl t-butyl ether (MtBE	3.06	73	252317	9.37 ppb	99
21) Trans-1,2-DCE	3.03	96	106068	9.74 ppb	94
22) Hexane	3.41	57	111467	11.22 ppb	99
23) Diisopropyl Ether	3.77	45	301034	9.59 ppb	97
24) 1,1-DCA	3.58	63	190523	9.89 ppb	99
25) Vinyl Acetate	3.77	87	97715	10.17 ppb	94
26) Ethyl tert Butyl Ether	4.34	59	201034	9.04 ppb	98
27) MEK (2-Butanone)	4.55	43	30320	9.15 ppb	100
28) Cis-1,2-DCE	4.48	96	126891	10.06 ppb	98
29) 2,2-Dichloropropane	4.46	77	150976	10.67 ppb	99
30) Chloroform	4.96	83	199753	9.05 ppb	98
31) Bromochloromethane	4.81	128	60328	9.85 ppb	96
33) 1,1,1-TCA	5.16	97	161969	9.76 ppb	98
34) Cyclohexane	5.21	41	75661	9.85 ppb	100
35) 1,1-Dichloropropene	5.39	75	143381	10.09 ppb	96
36) 2,2,4-Trimethylpentane	5.78	57	297348	10.97 ppb	98
38) Carbon Tetrachloride	5.37	117	136564	9.86 ppb	97
39) Tert Amyl Methyl Ether	5.84	73	175161	9.21 ppb	99
40) 1,2-DCA	5.67	62	138585	9.22 ppb	98
41) Benzene	5.63	78	451444	10.22 ppb	100
42) TCE	6.42	95	119414	9.66 ppb	99
43) 2-Pentanone	6.68	43	683452	109.49 ppb	98

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : M:\THOR\DATA\T150316\0317T04.D
Acq On : 17 Mar 15 10:32
Sample : 10ug/L VOC STD 3-17-15
Misc : 10ml IS&S 2/10/15,3/16/15

Vial: 3
Operator: DG, HW, SV, RS
Inst : Thor
Multiplr: 1.00

Quant Time: Mar 17 10:50 2015 Quant Results File: TALLW.RES

Quant Method : M:\THOR\DATA\T150316\TALLW.M (RTE Integrator)
Title : METHOD 8260B
Last Update : Tue Mar 17 08:51:48 2015
Response via : Initial Calibration
DataAcq Meth : 8260_BETA

	Compound	R.T.	QIon	Response	Conc Unit		Qvalue
44)	1,2-Dichloropropane	6.66	63	114754	9.53 ppb		99
45)	Bromodichloromethane	6.99	83	143435	9.58 ppb		98
46)	Methyl Cyclohexane	6.62	83	167628	10.47 ppb		99
47)	Dibromomethane	6.79	93	67494	9.37 ppb		95
48)	MIBK (methyl isobutyl ket	7.67	43	73282	8.96 ppb		99
49)	1-Bromo-2-chloroethane	7.30	63	139696	9.53 ppb		99
51)	Cis-1,3-Dichloropropene	7.48	75	170691	9.72 ppb		97
52)	Toluene	7.81	91	501875	9.95 ppb		99
53)	Trans-1,3-Dichloropropene	8.07	75	142515	9.39 ppb		97
54)	1,1,2-TCA	8.25	83	80730	9.37 ppb		96
55)	2-Hexanone	8.53	43	47387	8.67 ppb	#	93
58)	1,2-EDB	8.72	107	92343	9.31 ppb		96
59)	Tetrachloroethene	8.37	166	133994	9.76 ppb		97
60)	1-Chlorohexane	9.25	91	142782	10.17 ppb		97
61)	1,1,1,2-Tetrachloroethane	9.33	131	112709	9.95 ppb		99
62)	m&p-Xylene	9.48	106	417780	20.28 ppb		97
63)	o-Xylene	9.87	106	204204	10.08 ppb		95
64)	Styrene	9.89	104	336183	10.15 ppb		97
66)	1,3-Dichloropropane	8.41	76	155208	9.28 ppb		96
67)	Dibromochloromethane	8.63	129	107352	9.69 ppb		98
68)	Chlorobenzene	9.23	112	333850	9.83 ppb		99
69)	Ethylbenzene	9.36	91	543582	9.87 ppb		100
70)	Bromoform	10.05	173	66590	9.87 ppb		96
72)	Isopropylbenzene	10.25	105	493378	10.09 ppb		98
73)	1,1,2,2-Tetrachloroethane	10.55	83	111359	9.62 ppb		98
74)	1,2,3-Trichloropropane	10.57	110	32518	9.70 ppb		97
75)	t-1,4-Dichloro-2-Butene	10.61	53	18599	8.80 ppb		97
76)	Bromobenzene	10.52	156	142928	10.29 ppb		99
77)	n-Propylbenzene	10.65	91	600233	10.19 ppb		99
78)	4-Ethyltoluene	10.77	105	514000	10.21 ppb		100
79)	2-Chlorotoluene	10.72	91	378611	9.89 ppb		100
80)	1,3,5-Trimethylbenzene	10.83	105	433361	10.17 ppb		98
81)	4-Chlorotoluene	10.83	91	436798	10.20 ppb		99
82)	Tert-Butylbenzene	11.15	119	382607	10.25 ppb		99
83)	1,2,4-Trimethylbenzene	11.20	105	441700	10.17 ppb		100
84)	Sec-Butylbenzene	11.37	105	521362	10.46 ppb		99
85)	p-Isopropyltoluene	11.52	119	453207	10.31 ppb		98
86)	Benzyl Chloride	11.69	91	111910	10.44 ppb		99
87)	1,3-DCB	11.46	146	268944	10.38 ppb		99
88)	1,4-DCB	11.55	146	273296	10.23 ppb		98
89)	n-Butylbenzene	11.92	91	408295	10.58 ppb		98
90)	1,2-DCB	11.91	146	252460	10.24 ppb		98
91)	Hexachloroethane	12.16	117	76623	10.12 ppb		97
92)	1,2-Dibromo-3-chloropropan	12.68	157	19406	9.73 ppb		88
93)	1,2,4-Trichlorobenzene	13.50	180	150448	10.13 ppb		99
94)	Hexachlorobutadiene	13.69	225	78789	10.28 ppb		95
95)	Naphthalene	13.73	128	281645	9.93 ppb		97
96)	1,2,3-Trichlorobenzene	13.97	180	142063	10.32 ppb		96

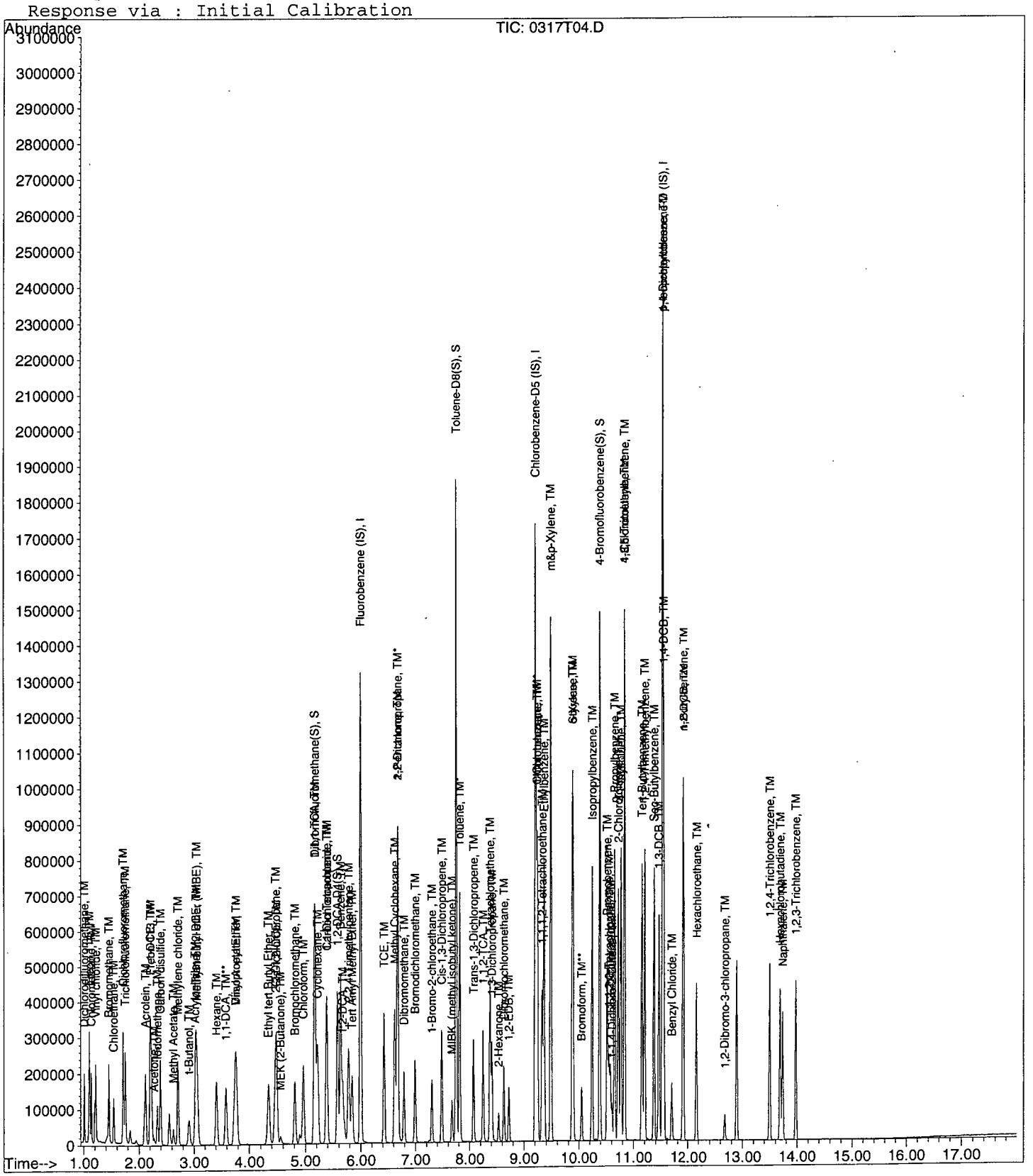
(#) = qualifier out of range (m) = manual integration

Quantitation Report

Data File : M:\THOR\DATA\T150316\0317T04.D Vial: 3
Acq On : 17 Mar 15 10:32 Operator: DG, HW, SV, RS
Sample : 10ug/L VOC STD 3-17-15 Inst : Thor
Misc : 10ml IS&S 2/10/15,3/16/15 Multiplr: 1.00

Quant Time: Mar 17 10:50 2015 Quant Results File: TALLW.RES

Method : M:\THOR\DATA\T150316\TALLW.M (RTE Integrator)
Title : METHOD 8260B
Last Update : Tue Mar 17 08:51:48 2015
Response via : Initial Calibration



186

EPA METHOD 8260B
Volatile Organic Compounds
Raw Data

APPL, INC.

Method Blank
EPA 8260B WATER

APPL Inc.
908 North Temperance Avenu
Clovis, CA 93611

Blank Name/QCG: **150316W-12345 - 194976**
Batch ID: #86BKB-150316AT

Sample Type	Analyte	Result	LOQ	LOD	DL	Units	Extraction Date	Analysis Date
BLANK	1,1,1-TRICHLOROETHANE	0.30 U	1.0	0.30	0.14	ug/L	03/16/15	03/16/15
BLANK	1,1,2,2-TETRACHLOROETHANE	0.30 U	1.0	0.30	0.10	ug/L	03/16/15	03/16/15
BLANK	1,1,2-TRICHLOROETHANE	0.50 U	1.0	0.50	0.20	ug/L	03/16/15	03/16/15
BLANK	1,1-DICHLOROETHANE	0.30 U	1.0	0.30	0.19	ug/L	03/16/15	03/16/15
BLANK	1,1-DICHLOROETHENE	0.50 U	1.0	0.50	0.30	ug/L	03/16/15	03/16/15
BLANK	1,2,3-TRICHLOROPROPANE	1.00 U	2.0	1.00	0.39	ug/L	03/16/15	03/16/15
BLANK	1,2-DIBROMOETHANE	0.50 U	1.0	0.50	0.20	ug/L	03/16/15	03/16/15
BLANK	1,2-DICHLOROETHANE	0.30 U	1.0	0.30	0.14	ug/L	03/16/15	03/16/15
BLANK	1,2-DICHLOROPROPANE	0.30 U	1.0	0.30	0.17	ug/L	03/16/15	03/16/15
BLANK	2-BUTANONE	2.00 U	10.0	2.00	0.60	ug/L	03/16/15	03/16/15
BLANK	4-METHYL-2-PENTANONE	5.00 U	10.0	5.00	1.90	ug/L	03/16/15	03/16/15
BLANK	ACETONE	2.00 U	10.0	2.00	0.95	ug/L	03/16/15	03/16/15
BLANK	BENZENE	0.30 U	1.0	0.30	0.16	ug/L	03/16/15	03/16/15
BLANK	BROMODICHLOROMETHANE	0.30 U	1.0	0.30	0.14	ug/L	03/16/15	03/16/15
BLANK	BROMOFORM	0.30 U	1.0	0.30	0.14	ug/L	03/16/15	03/16/15
BLANK	BROMOMETHANE	0.50 U	2.0	0.50	0.24	ug/L	03/16/15	03/16/15
BLANK	CARBON TETRACHLORIDE	0.30 U	1.0	0.30	0.10	ug/L	03/16/15	03/16/15
BLANK	CHLOROBENZENE	0.50 U	1.0	0.50	0.21	ug/L	03/16/15	03/16/15
BLANK	CHLOROETHANE	0.50 U	1.0	0.50	0.21	ug/L	03/16/15	03/16/15
BLANK	CHLOROFORM	0.30 U	1.0	0.30	0.07	ug/L	03/16/15	03/16/15
BLANK	CHLOROMETHANE	0.50 U	1.0	0.50	0.42	ug/L	03/16/15	03/16/15
BLANK	CIS-1,2-DICHLOROETHENE	0.30 U	1.0	0.30	0.16	ug/L	03/16/15	03/16/15
BLANK	CIS-1,3-DICHLOROPROPENE	0.30 U	1.0	0.30	0.15	ug/L	03/16/15	03/16/15
BLANK	DIBROMOCHLOROMETHANE	0.30 U	1.0	0.30	0.19	ug/L	03/16/15	03/16/15
BLANK	ETHYLBENZENE	0.50 U	1.0	0.50	0.23	ug/L	03/16/15	03/16/15
BLANK	METHYLENE CHLORIDE	1.00 U	5.0	1.00	0.35	ug/L	03/16/15	03/16/15
BLANK	STYRENE	0.50 U	1.0	0.50	0.25	ug/L	03/16/15	03/16/15
BLANK	TETRACHLOROETHENE	0.30 U	1.0	0.30	0.24	ug/L	03/16/15	03/16/15
BLANK	TOLUENE	0.30 U	1.0	0.30	0.17	ug/L	03/16/15	03/16/15
BLANK	TRANS-1,2-DICHLOROETHENE	0.30 U	1.0	0.30	0.19	ug/L	03/16/15	03/16/15
BLANK	TRANS-1,3-DICHLOROPROPEN	0.30 U	1.0	0.30	0.18	ug/L	03/16/15	03/16/15
BLANK	TRICHLOROETHENE	0.30 U	1.0	0.30	0.16	ug/L	03/16/15	03/16/15
BLANK	VINYL CHLORIDE	0.30 U	1.0	0.30	0.23	ug/L	03/16/15	03/16/15
BLANK	XYLENES (TOTAL)	0.30 U	2.0	0.30	0.19	ug/L	03/16/15	03/16/15

Quant Method: TALLW.M
Run #: 0316T23
Instrument: Thor
Sequence: T150316
Initials: SV

GC SC-Blank-REG MDLs
Printed: 03/17/15 3:52:24 PM

Method Blank
EPA 8260B WATER

APPL Inc.
908 North Temperance Avenu
Clovis, CA 93611

Blank Name/QCG: **150316W-12345 - 194976**
Batch ID: #86BKB-150316AT

Sample Type	Analyte	Result	LOQ	LOD	DL	Units	Extraction Date	Analysis Date
BLANK	SURROGATE: 1,2-DICHLOROET	100	70-120			%	03/16/15	03/16/15
BLANK	SURROGATE: 4-BROMOFLUOR	101	75-120			%	03/16/15	03/16/15
BLANK	SURROGATE: DIBROMOFLUOR	101	85-115			%	03/16/15	03/16/15
BLANK	SURROGATE: TOLUENE-D8 (S)	101	85-120			%	03/16/15	03/16/15

Quant Method: TALLW.M
Run #: 0316T23
Instrument: Thor
Sequence: T150316
Initials: SV

GC SC-Blank-REG MDLs
Printed: 03/17/15 3:52:24 PM

Quantitation Report (QT Reviewed)

Data File : M:\THOR\DATA\T150316\0316T23.D
Acq On : 16 Mar 15 23:19
Sample : 150316A BLK-1WT
Misc : 10ml IS&S 2/10/15,3/16/15

Vial: 22
Operator: DG, HW, SV, RS
Inst : Thor
Multiplr: 1.00

Quant Time: Mar 17 15:02 2015 Quant Results File: TALLW.RES

Quant Method : M:\THOR\DATA\T150316\TALLW.M (RTE Integrator)
Title : METHOD 8260B
Last Update : Tue Mar 17 08:51:48 2015
Response via : Initial Calibration
DataAcq Meth : 8260_BETA

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene (IS)	5.99	96	667264	25.00000 ppb	0.00
56) Chlorobenzene-D5 (IS)	9.21	117	595904	25.00000 ppb	0.00
71) 1,4-Dichlorobenzene-D (IS)	11.52	152	295424	25.00000 ppb	0.00
System Monitoring Compounds					
32) Dibromofluoromethane(S)	5.17	111	334750	28.36383 ppb	0.00
Spiked Amount 28.198			Recovery	= 100.590%	
37) 1,2-DCA-D4(S)	5.58	65	322286	26.89196 ppb	0.00
Spiked Amount 26.773			Recovery	= 100.445%	
57) Toluene-D8(S)	7.75	98	1218839	28.90434 ppb	0.00
Spiked Amount 28.680			Recovery	= 100.782%	
65) 4-Bromofluorobenzene(S)	10.38	95	450319	27.62699 ppb	0.00
Spiked Amount 27.316			Recovery	= 101.137%	

Target Compounds Qvalue

(#) = qualifier out of range (m) = manual integration

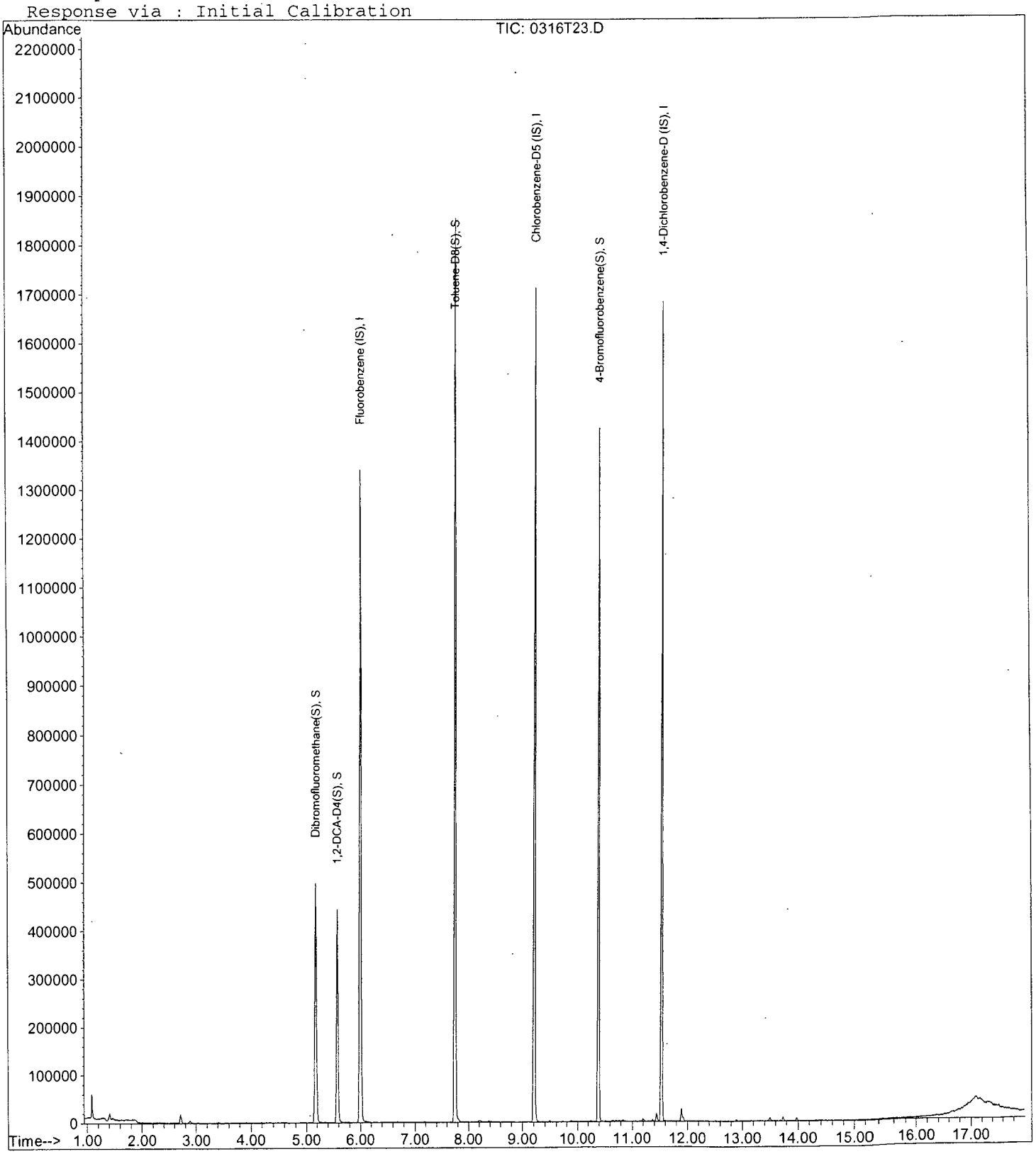
Quantitation Report

Data File : M:\THOR\DATA\T150316\0316T23.D
Acq On : 16 Mar 15 23:19
Sample : 150316A BLK-1WT
Misc : 10ml IS&S 2/10/15,3/16/15

Vial: 22
Operator: DG, HW, SV, RS
Inst : Thor
Multiplr: 1.00

Quant Time: Mar 17 15:02 2015 Quant Results File: TALLW.RES

Method : M:\THOR\DATA\T150316\TALLW.M (RTE Integrator)
Title : METHOD 8260B
Last Update : Tue Mar 17 08:51:48 2015
Response via : Initial Calibration



Method Blank

EPA 8260B WATER DILUTION

APPL Inc.
908 North Temperance Avenu
Clovis, CA 93611

Blank Name/QCG: **150317W-12342 - 195029**
Batch ID: #86BKB-150317AT

Sample Type	Analyte	Result	LOQ	LOD	DL	Units	Extraction Date	Analysis Date
BLANK	CIS-1,2-DICHLOROETHENE	0.30 U	1.0	0.30	0.16	ug/L	03/17/15	03/17/15
BLANK	SURROGATE: 1,2-DICHLOROET	100	70-120			%	03/17/15	03/17/15
BLANK	SURROGATE: 4-BROMOFLUOR	98.1	75-120			%	03/17/15	03/17/15
BLANK	SURROGATE: DIBROMOFLUOR	99.9	85-115			%	03/17/15	03/17/15
BLANK	SURROGATE: TOLUENE-D8 (S)	98.7	85-120			%	03/17/15	03/17/15

Quant Method: TALLW.M
Run #: 0317T09
Instrument: Thor
Sequence: T150316
Initials: SV

GC SC-Blank-REG MDLs
Printed: 03/19/15 1:45:03 PM

Quantitation Report (QT Reviewed)

Data File : M:\THOR\DATA\T150316\0317T09.D
Acq On : 17 Mar 15 12:52
Sample : 150317A BLK-1WT
Misc : 10ml IS&S 2/10/15,3/16/15

Vial: 8
Operator: DG, HW, SV, RS
Inst : Thor
Multiplr: 1.00

Quant Time: Mar 18 12:09 2015 Quant Results File: TALLW.RES

Quant Method : M:\THOR\DATA\T150316\TALLW.M (RTE Integrator)
Title : METHOD 8260B
Last Update : Tue Mar 17 08:51:48 2015
Response via : Initial Calibration
DataAcq Meth : 8260_BETA

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene (IS)	6.00	96	643264	25.00 ppb	0.00
56) Chlorobenzene-D5 (IS)	9.21	117	587520	25.00 ppb	0.00
71) 1,4-Dichlorobenzene-D (IS)	11.52	152	293312	25.00 ppb	0.00
System Monitoring Compounds					
32) Dibromofluoromethane(S)	5.17	111	320519	28.17 ppb	0.00
Spiked Amount 28.198			Recovery	= 99.906%	
37) 1,2-DCA-D4(S)	5.58	65	310592	26.88 ppb	0.00
Spiked Amount 26.773			Recovery	= 100.411%	
57) Toluene-D8(S)	7.75	98	1176599	28.30 ppb	0.00
Spiked Amount 28.680			Recovery	= 98.680%	
65) 4-Bromofluorobenzene(S)	10.38	95	430619	26.80 ppb	0.00
Spiked Amount 27.316			Recovery	= 98.092%	

Target Compounds Qvalue

(#) = qualifier out of range (m) = manual integration
0317T09.D TALLW.M Wed Mar 18 13:53:41 2015

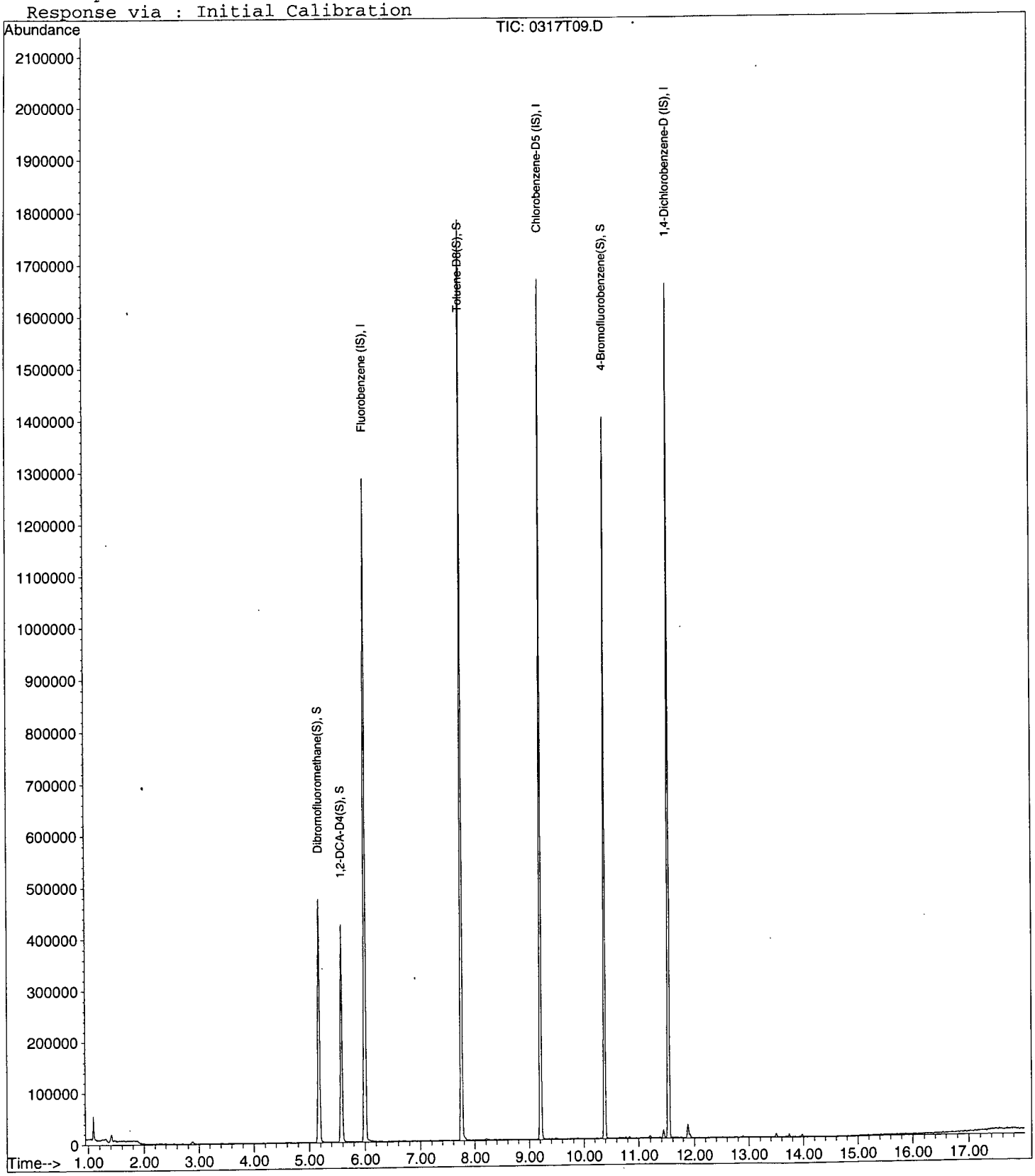
Quantitation Report

Data File : M:\THOR\DATA\T150316\0317T09.D
Acq On : 17 Mar 15 12:52
Sample : 150317A BLK-1WT
Misc : 10ml IS&S 2/10/15,3/16/15

Vial: 8
Operator: DG, HW, SV, RS
Inst : Thor
Multiplr: 1.00

Quant Time: Mar 18 12:09 2015 Quant Results File: TALLW.RES

Method : M:\THOR\DATA\T150316\TALLW.M (RTE Integrator)
Title : METHOD 8260B
Last Update : Tue Mar 17 08:51:48 2015
Response via : Initial Calibration



Laboratory Control Spike Recovery
EPA 8260B WATER

APPL ID: **150316W-12345 LCS - 194976**
Batch ID: #86BKB-150316AT

APPL Inc.
908 North Temperance Avenue
Clovis, CA 93611

Compound Name	Spike Level ug/L	SPK Result ug/L	SPK % Recovery	Recovery Limits
1,1,1-TRICHLOROETHANE	10.00	9.77	97.7	65-130
1,1,2,2-TETRACHLOROETHANE	10.00	8.60	86.0	65-130
1,1,2-TRICHLOROETHANE	10.00	9.25	92.5	75-125
1,1-DICHLOROETHANE	10.00	9.71	97.1	70-135
1,1-DICHLOROETHENE	10.00	9.99	99.9	70-130
1,2,3-TRICHLOROPROPANE	10.00	9.54	95.4	75-125
1,2-DIBROMOETHANE	10.00	9.59	95.9	70-130
1,2-DICHLOROETHANE	10.00	9.05	90.5	70-130
1,2-DICHLOROPROPANE	10.00	9.31	93.1	75-125
2-BUTANONE	10.00	9.06	90.6	30-150
4-METHYL-2-PENTANONE	10.00	8.73	87.3	60-135
ACETONE	10.00	10.2	102	40-140
BENZENE	10.00	9.93	99.3	80-120
BROMODICHLOROMETHANE	10.00	9.37	93.7	75-120
BROMOFORM	10.00	9.83	98.3	70-130
BROMOMETHANE	10.00	9.45	94.5	30-145
CARBON TETRACHLORIDE	10.00	10.2	102	65-140
CHLOROBENZENE	10.00	9.58	95.8	80-120
CHLOROETHANE	10.00	9.72	97.2	60-135
CHLOROFORM	10.00	8.76	87.6	65-135
CHLOROMETHANE	10.00	9.51	95.1	40-125
CIS-1,2-DICHLOROETHENE	10.00	9.64	96.4	70-125
CIS-1,3-DICHLOROPROPENE	10.00	9.36	93.6	70-130
DIBROMOCHLOROMETHANE	10.00	9.46	94.6	60-135
ETHYLBENZENE	10.00	9.67	96.7	75-125
METHYLENE CHLORIDE	10.00	9.29	92.9	55-140
STYRENE	10.00	9.69	96.9	65-135
TETRACHLOROETHENE	10.00	9.47	94.7	45-150
TOLUENE	10.00	9.63	96.3	75-120
TRANS-1,2-DICHLOROETHENE	10.00	9.77	97.7	60-140
TRANS-1,3-DICHLOROPROPENE	10.00	9.11	91.1	55-140

Comments:

Primary	SPK
Quant Method :	TALLW.M
Extraction Date :	03/16/15
Analysis Date :	03/16/15
Instrument :	Thor
Run :	0316T19
Initials :	SV

Printed: 03/17/15 3:52:28 PM
APPL Standard LCS

Laboratory Control Spike Recovery
EPA 8260B WATER

APPL ID: **150316W-12345 LCS - 194976**
Batch ID: #86BKB-150316AT

APPL Inc.
908 North Temperance Avenue
Clovis, CA 93611

Compound Name	Spike Level ug/L	SPK Result ug/L	SPK % Recovery	Recovery Limits
TRICHLOROETHENE	10.00	10.6	106	70-125
VINYL CHLORIDE	10.00	9.14	91.4	50-145
XYLENES (TOTAL)	30.0	29.7	99.0	75-130
SURROGATE: 1,2-DICHLOROETHANE-	26.8	27.0	101	70-120
SURROGATE: 4-BROMOFLUOROBENZ	27.3	27.4	100	75-120
SURROGATE: DIBROMOFLUOROMETH	28.2	28.7	102	85-115
SURROGATE: TOLUENE-D8 (S)	28.7	28.3	98.7	85-120

Comments: _____

Primary	SPK
Quant Method :	TALLW.M
Extraction Date :	03/16/15
Analysis Date :	03/16/15
Instrument :	Thor
Run :	0316T19
Initials :	SV

Printed: 03/17/15 3:52:28 PM
APPL Standard LCS

Quantitation Report (Not Reviewed)

Data File : M:\THOR\DATA\T150316\0316T19.D
Acq On : 16 Mar 15 21:27
Sample : 150316A LCS-1WT
Misc : 10ml IS&S 2/10/15,3/16/15

Vial: 18
Operator: DG, HW, SV, RS
Inst : Thor
Multiplr: 1.00

Quant Time: Mar 17 8:53 2015 Quant Results File: TALLW.RES

Quant Method : M:\THOR\DATA\T150316\TALLW.M (RTE Integrator)
Title : METHOD 8260B
Last Update : Tue Mar 17 08:51:48 2015
Response via : Initial Calibration
DataAcq Meth : 8260_BETA

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene (IS)	5.99	96	696832	25.00000 ppb	0.00
56) Chlorobenzene-D5 (IS)	9.21	117	634496	25.00000 ppb	0.00
71) 1,4-Dichlorobenzene-D (IS)	11.52	152	329024	25.00000 ppb	0.00
System Monitoring Compounds					
32) Dibromofluoromethane(S)	5.17	111	353258	28.66196 ppb	0.00
Spiked Amount 28.198			Recovery	= 101.647%	
37) 1,2-DCA-D4(S)	5.57	65	337586	26.97336 ppb	0.00
Spiked Amount 26.773			Recovery	= 100.747%	
57) Toluene-D8(S)	7.75	98	1270996	28.30794 ppb	0.00
Spiked Amount 28.680			Recovery	= 98.704%	
65) 4-Bromofluorobenzene(S)	10.38	95	475978	27.42506 ppb	0.00
Spiked Amount 27.316			Recovery	= 100.398%	
			110041 x 25 / 696832 x 0.4153 = 9.5061 TA 3/18/15		
Target Compounds					Qvalue
2) Dichlorodifluoromethane	1.01	85	109718	9.84252 ppb	98
3) Freon 114	1.10	135	84958	12.01771 ppb	97
4) Chloromethane	1.14	50	110041	9.50612 ppb	99
5) Vinyl chloride	1.22	62	131233	9.13722 ppb	98
6) Bromomethane	1.45	94	102923	9.44727 ppb	99
7) Chloroethane	1.54	64	64389	9.71785 ppb	99
8) Dichlorofluoromethane	1.71	67	238315	9.51928 ppb	99
9) Trichlorofluoromethane	1.75	101	172238	10.52959 ppb	100
10) Acrolein	2.12	56	143119	118.47189 ppb	100
11) Acetone	2.27	43	25796	10.17607 ppb	95
12) Freon-113	2.22	101	104510	11.27641 ppb	97
13) 1,1-DCE	2.20	96	99833	9.98611 ppb	97
14) t-Butanol	2.91	59	108086	116.68420 ppb	99
15) Methyl Acetate	2.62	43	54645	8.87355 ppb	95
16) Iodomethane	2.33	142	86957	8.42145 ppb	100
17) Acrylonitrile	3.01	52	24084	9.78058 ppb	89
18) Methylene chloride	2.71	84	117311	9.28776 ppb	92
19) Carbon disulfide	2.39	76	316583	9.97420 ppb	99
20) Methyl t-butyl ether (MtBE	3.06	73	265709	9.46792 ppb	100
21) Trans-1,2-DCE	3.03	96	110960	9.77470 ppb	94
22) Hexane	3.41	57	109536	10.57858 ppb	99
23) Diisopropyl Ether	3.77	45	312237	9.54634 ppb	99
24) 1,1-DCA	3.58	63	194872	9.70923 ppb	98
25) Vinyl Acetate	3.77	87	100262	10.01189 ppb	92
26) Ethyl tert Butyl Ether	4.34	59	221081	9.53981 ppb	97
27) MEK (2-Butanone)	4.56	43	31319	9.06229 ppb	100
28) Cis-1,2-DCE	4.48	96	126719	9.64137 ppb	97
29) 2,2-Dichloropropane	4.46	77	129661	8.79296 ppb	99
30) Chloroform	4.96	83	201442	8.76268 ppb	97
31) Bromochloromethane	4.81	128	62136	9.73504 ppb	100
33) 1,1,1-TCA	5.16	97	168895	9.76570 ppb	98
34) Cyclohexane	5.21	41	84089	10.51177 ppb	99
35) 1,1-Dichloropropene	5.38	75	146397	9.88591 ppb	99
36) 2,2,4-Trimethylpentane	5.78	57	297838	10.55018 ppb	100
38) Carbon Tetrachloride	5.37	117	147195	10.20516 ppb	99
39) Tert Amyl Methyl Ether	5.84	73	187942	9.48605 ppb	97
40) 1,2-DCA	5.67	62	141793	9.05404 ppb	97
41) Benzene	5.63	78	457122	9.92779 ppb	99
42) TCE	6.42	95	137102	10.64451 ppb	98

(#) = qualifier out of range (m) = manual integration
0316T19.D TALLW.M Tue Mar 17 13:04:29 2015

Quantitation Report (Not Reviewed)

Data File : M:\THOR\DATA\T150316\0316T19.D
Acq On : 16 Mar 15 21:27
Sample : 150316A LCS-1WT
Misc : 10ml IS&S 2/10/15,3/16/15

Vial: 18
Operator: DG, HW, SV, RS
Inst : Thor
Multiplr: 1.00

Quant Time: Mar 17 8:53 2015 Quant Results File: TALLW.RES

Quant Method : M:\THOR\DATA\T150316\TALLW.M (RTE Integrator)
Title : METHOD 8260B
Last Update : Tue Mar 17 08:51:48 2015
Response via : Initial Calibration
DataAcq Meth : 8260_BETA

Compound	R.T.	QIon	Response	Conc Unit		Qvalue
43) 2-Pentanone	6.68	43	761116	117.02513	ppb	99
44) 1,2-Dichloropropane	6.66	63	116783	9.30799	ppb	97
45) Bromodichloromethane	6.99	83	146200	9.37276	ppb	99
46) Methyl Cyclohexane	6.62	83	182829	10.96344	ppb	98
47) Dibromomethane	6.79	93	70052	9.33737	ppb	94
48) MIBK (methyl isobutyl ket	7.67	43	74353	8.72908	ppb	98
49) 1-Bromo-2-chloroethane	7.30	63	145236	9.50964	ppb	98
51) Cis-1,3-Dichloropropene	7.48	75	171110	9.35663	ppb	98
52) Toluene	7.81	91	506049	9.62568	ppb	100
53) Trans-1,3-Dichloropropene	8.07	75	144090	9.10818	ppb	96
54) 1,1,2-TCA	8.25	83	82997	9.24910	ppb	95
55) 2-Hexanone	8.53	43	49940	8.77125	ppb	93
58) 1,2-EDB	8.72	107	99491	9.58561	ppb	99
59) Tetrachloroethene	8.37	166	136052	9.47016	ppb	97
60) 1-Chlorohexane	9.25	91	147055	10.00926	ppb	96
61) 1,1,1,2-Tetrachloroethane	9.33	131	114035	9.62093	ppb	97
62) m&p-Xylene	9.48	106	426922	19.81034	ppb	98
63) o-Xylene	9.87	106	210089	9.91299	ppb	97
64) Styrene	9.89	104	335971	9.69302	ppb	99
66) 1,3-Dichloropropane	8.41	76	164064	9.38208	ppb	96
67) Dibromochloromethane	8.63	129	109599	9.45758	ppb	100
68) Chlorobenzene	9.23	112	340380	9.57983	ppb	99
69) Ethylbenzene	9.36	91	556957	9.66834	ppb	100
70) Bromoform	10.05	173	69348	9.82623	ppb	96
72) Isopropylbenzene	10.25	105	515093	10.13595	ppb	99
73) 1,1,2,2-Tetrachloroethane	10.55	83	103412	8.59759	ppb	95
74) 1,2,3-Trichloropropane	10.58	110	33233	9.53522	ppb	97
75) t-1,4-Dichloro-2-Butene	10.61	53	19949	9.08028	ppb	91
76) Bromobenzene	10.52	156	143122	9.91625	ppb	99
77) n-Propylbenzene	10.65	91	609731	9.96191	ppb	99
78) 4-Ethyltoluene	10.77	105	527679	10.08669	ppb	100
79) 2-Chlorotoluene	10.72	91	387669	9.74719	ppb	99
80) 1,3,5-Trimethylbenzene	10.84	105	446866	10.08699	ppb	100
81) 4-Chlorotoluene	10.83	91	443267	9.96012	ppb	99
82) Tert-Butylbenzene	11.15	119	394233	10.15669	ppb	99
83) 1,2,4-Trimethylbenzene	11.20	105	445536	9.87389	ppb	100
84) Sec-Butylbenzene	11.37	105	536901	10.36583	ppb	100
85) p-Isopropyltoluene	11.52	119	459821	10.06008	ppb	98
86) Benzyl Chloride	11.69	91	90806	8.15032	ppb	98
87) 1,3-DCB	11.46	146	269496	10.01066	ppb	99
88) 1,4-DCB	11.55	146	273797	9.85763	ppb	98
89) n-Butylbenzene	11.92	91	407581	10.16181	ppb	98
90) 1,2-DCB	11.91	146	256020	9.98636	ppb	99
91) Hexachloroethane	12.16	117	77840	9.89122	ppb	95
92) 1,2-Dibromo-3-chloropropan	12.68	157	19540	9.42469	ppb	84
93) 1,2,4-Trichlorobenzene	13.50	180	152779	9.89987	ppb	96
94) Hexachlorobutadiene	13.69	225	80197	10.07047	ppb	99
95) Naphthalene	13.73	128	296598	10.05652	ppb	100
96) 1,2,3-Trichlorobenzene	13.98	180	143376	10.02187	ppb	99

(#) = qualifier out of range (m) = manual integration

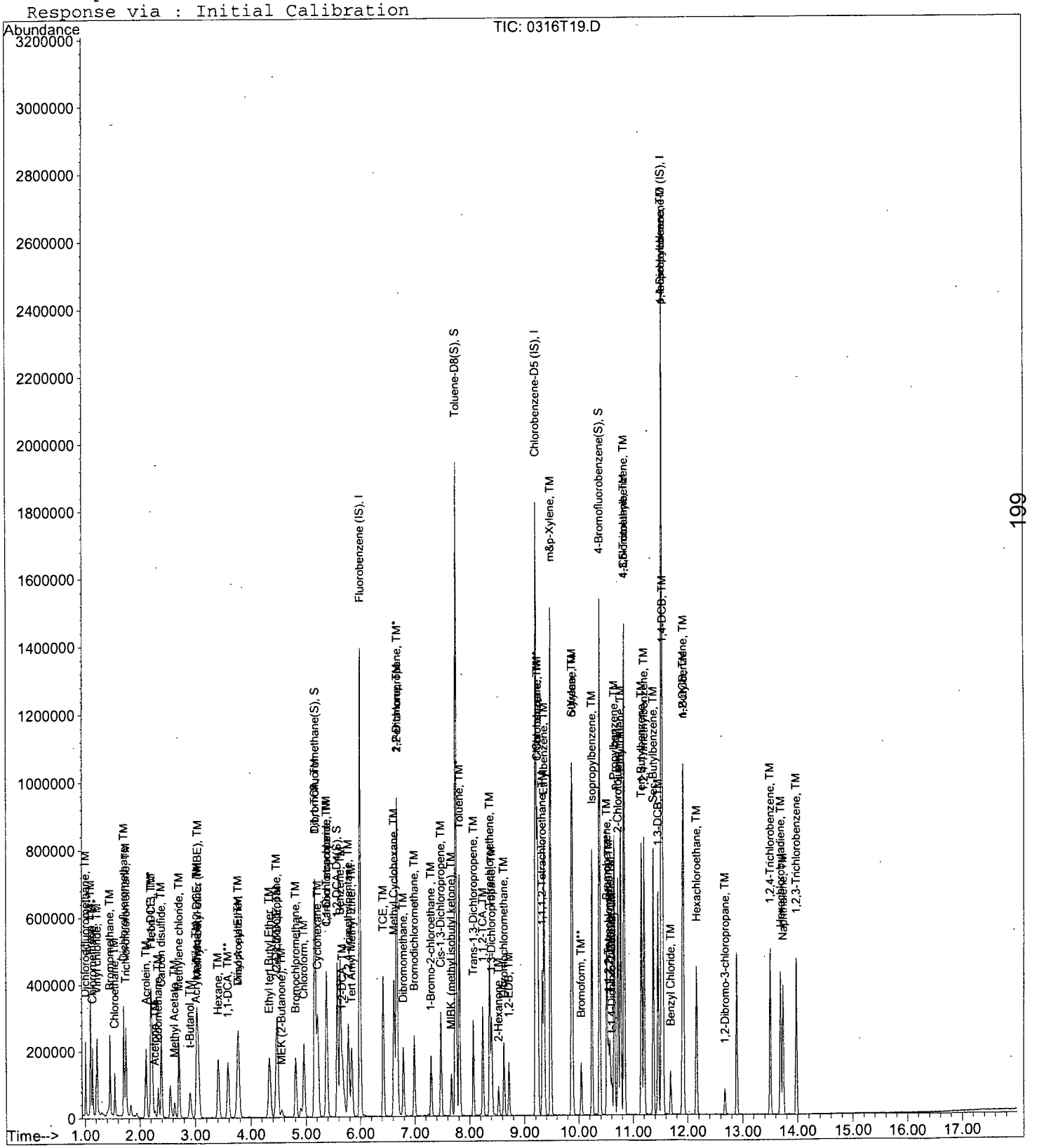
Quantitation Report

Data File : M:\THOR\DATA\T150316\0316T19.D
Acq On : 16 Mar 15 21:27
Sample : 150316A LCS-1WT
Misc : 10ml IS&S 2/10/15,3/16/15

Vial: 18
Operator: DG, HW, SV, RS
Inst : Thor
Multiplr: 1.00

Quant Time: Mar 17 8:53 2015 Quant Results File: TALLW.RES

Method : M:\THOR\DATA\T150316\TALLW.M (RTE Integrator)
Title : METHOD 8260B
Last Update : Tue Mar 17 08:51:48 2015
Response via : Initial Calibration



Laboratory Control Spike Recovery
EPA 8260B WATER DILUTION

APPL ID: **150317W-12342 LCS - 195029**
Batch ID: #86BKB-150317AT

APPL Inc.
908 North Temperance Avenue
Clovis, CA 93611

Compound Name	Spike Level ug/L	SPK Result ug/L	SPK % Recovery	Recovery Limits
CIS-1,2-DICHLOROETHENE	10.00	10.1	101	70-125
SURROGATE: 1,2-DICHLOROETHANE-	26.8	26.0	97.1	70-120
SURROGATE: 4-BROMOFLUOROBENZ	27.3	27.3	99.9	75-120
SURROGATE: DIBROMOFLUOROMETH	28.2	28.4	101	85-115
SURROGATE: TOLUENE-D8 (S)	28.7	28.1	98.0	85-120

Comments: _____

Primary	SPK
Quant Method :	TALLW.M
Extraction Date :	03/17/15
Analysis Date :	03/17/15
Instrument :	Thor
Run :	0317T05
Initials :	SV

Printed: 03/19/15 1:45:25 PM
APPL Standard LCS

Quantitation Report (Not Reviewed)

Data File : M:\THOR\DATA\T150316\0317T05.D
Acq On : 17 Mar 15 11:00
Sample : 150317A LCS-1WT
Misc : 10ml IS&S 2/10/15,3/16/15

Vial: 4
Operator: DG, HW, SV, RS
Inst : Thor
Multiplr: 1.00

Quant Time: Mar 18 13:51 2015 Quant Results File: TALLW.RES

Quant Method : M:\THOR\DATA\T150316\TALLW.M (RTE Integrator)
Title : METHOD 8260B
Last Update : Tue Mar 17 08:51:48 2015
Response via : Initial Calibration
DataAcq Meth : 8260_BETA

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene (IS)	5.99	96	675456	25.00 ppb	0.00
56) Chlorobenzene-D5 (IS)	9.21	117	612672	25.00 ppb	0.00
71) 1,4-Dichlorobenzene-D (IS)	11.52	152	324992	25.00 ppb	0.00
System Monitoring Compounds					
32) Dibromofluoromethane(S)	5.17	111	338895	28.37 ppb	0.00
Spiked Amount 28.198			Recovery	= 100.601%	
37) 1,2-DCA-D4(S)	5.57	65	315392	26.00 ppb	0.00
Spiked Amount 26.773			Recovery	= 97.106%	
57) Toluene-D8(S)	7.75	98	1216698	28.06 ppb	0.00
Spiked Amount 28.680			Recovery	= 97.853%	
65) 4-Bromofluorobenzene(S)	10.38	95	457922	27.32 ppb	0.00
Spiked Amount 27.316			Recovery	= 100.032%	

Target Compounds					Qvalue
2) Dichlorodifluoromethane	1.01	85	95776	8.92 ppb	98
3) Freon 114	1.10	135	73203	10.68 ppb	100
4) Chloromethane	1.14	50	103308	9.21 ppb	99
5) Vinyl chloride	1.22	62	125669	9.03 ppb	99
6) Bromomethane	1.45	94	93064	8.77 ppb	98
7) Chloroethane	1.54	64	61755	9.62 ppb	99
8) Dichlorofluoromethane	1.71	67	233330	9.62 ppb	99
9) Trichlorofluoromethane	1.75	101	162694	10.26 ppb	99
10) Acrolein	2.12	56	140930	120.35 ppb	98
11) Acetone	2.27	43	23439	9.46 ppb	100
12) Freon-113	2.22	101	97122	10.81 ppb	99
13) 1,1-DCE	2.20	96	96377	9.95 ppb	98
14) t-Butanol	2.90	59	98916	111.47 ppb	97
15) Methyl Acetate	2.63	43	53097	8.90 ppb	94
16) Iodomethane	2.34	142	107434	10.13 ppb	99
17) Acrylonitrile	3.00	52	21174	8.87 ppb	93
18) Methylene chloride	2.71	84	113174	9.24 ppb	100
19) Carbon disulfide	2.39	76	303707	9.87 ppb	100
20) Methyl t-butyl ether (MtBE	3.05	73	262445	9.65 ppb	99
21) Trans-1,2-DCE	3.03	96	111532	10.14 ppb	99
22) Hexane	3.41	57	107849	10.75 ppb	98
23) Diisopropyl Ether	3.76	45	307713	9.71 ppb	94
24) 1,1-DCA	3.58	63	191575	9.85 ppb	98
25) Vinyl Acetate	3.76	87	96580	9.95 ppb	94
26) Ethyl tert Butyl Ether	4.34	59	212443	9.46 ppb	100
27) MEK (2-Butanone)	4.56	43	31637	9.48 ppb	97
28) Cis-1,2-DCE	4.48	96	129303	10.15 ppb	99
29) 2,2-Dichloropropane	4.46	77	151302	10.59 ppb	98
30) Chloroform	4.96	83	200731	9.01 ppb	99
31) Bromochloromethane	4.81	128	60712	9.81 ppb	99
33) 1,1,1-TCA	5.16	97	162671	9.70 ppb	99
34) Cyclohexane	5.21	41	75606	9.75 ppb	97
35) 1,1-Dichloropropene	5.38	75	145274	10.12 ppb	96
36) 2,2,4-Trimethylpentane	5.78	57	296179	10.82 ppb	98
38) Carbon Tetrachloride	5.37	117	136671	9.78 ppb	95
39) Tert Amyl Methyl Ether	5.84	73	176282	9.18 ppb	98
40) 1,2-DCA	5.67	62	141712	9.34 ppb	97
41) Benzene	5.63	78	455361	10.20 ppb	100
42) TCE	6.42	95	122158	9.78 ppb	97
43) 2-Pentanone	6.68	43	715792	113.54 ppb	99

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : M:\THOR\DATA\T150316\0317T05.D
Acq On : 17 Mar 15 11:00
Sample : 150317A LCS-1WT
Misc : 10ml IS&S 2/10/15,3/16/15

Vial: 4
Operator: DG, HW, SV, RS
Inst : Thor
Multiplr: 1.00

Quant Time: Mar 18 13:51 2015 Quant Results File: TALLW.RES

Quant Method : M:\THOR\DATA\T150316\TALLW.M (RTE Integrator)
Title : METHOD 8260B
Last Update : Tue Mar 17 08:51:48 2015
Response via : Initial Calibration
DataAcq Meth : 8260_BETA

Compound	R.T.	QIon	Response	Conc Unit	Qvalue
44) 1,2-Dichloropropane	6.66	63	116179	9.55 ppb	99
45) Bromodichloromethane	6.99	83	144161	9.53 ppb	98
46) Methyl Cyclohexane	6.62	83	167474	10.36 ppb	99
47) Dibromomethane	6.79	93	70200	9.65 ppb	97
48) MIBK (methyl isobutyl ket	7.67	43	70968	8.60 ppb	99
49) 1-Bromo-2-chloroethane	7.30	63	142784	9.64 ppb	96
51) Cis-1,3-Dichloropropene	7.48	75	172533	9.73 ppb	99
52) Toluene	7.81	91	500242	9.82 ppb	99
53) Trans-1,3-Dichloropropene	8.07	75	141627	9.24 ppb	97
54) 1,1,2-TCA	8.25	83	79582	9.15 ppb	98
55) 2-Hexanone	8.53	43	46953	8.51 ppb	97
58) 1,2-EDB	8.72	107	96965	9.68 ppb	98
59) Tetrachloroethene	8.37	166	134717	9.71 ppb	97
60) 1-Chlorohexane	9.25	91	145545	10.26 ppb	96
61) 1,1,1,2-Tetrachloroethane	9.33	131	111651	9.76 ppb	99
62) m&p-Xylene	9.48	106	420486	20.21 ppb	99
63) o-Xylene	9.87	106	210508	10.29 ppb	100
64) Styrene	9.89	104	338115	10.10 ppb	97
66) 1,3-Dichloropropane	8.41	76	158456	9.38 ppb	97
67) Dibromochloromethane	8.63	129	108101	9.66 ppb	100
68) Chlorobenzene	9.23	112	335462	9.78 ppb	99
69) Ethylbenzene	9.36	91	556661	10.01 ppb	98
70) Bromoform	10.05	173	66624	9.78 ppb	97
72) Isopropylbenzene	10.25	105	496383	9.89 ppb	100
73) 1,1,2,2-Tetrachloroethane	10.55	83	112512	9.47 ppb	98
74) 1,2,3-Trichloropropane	10.57	110	32946	9.57 ppb	96
75) t-1,4-Dichloro-2-Butene	10.61	53	19290	8.89 ppb	96
76) Bromobenzene	10.52	156	140386	9.85 ppb	99
77) n-Propylbenzene	10.65	91	606285	10.03 ppb	99
78) 4-Ethyltoluene	10.77	105	519223	10.05 ppb	100
79) 2-Chlorotoluene	10.72	91	389434	9.91 ppb	99
80) 1,3,5-Trimethylbenzene	10.84	105	438385	10.02 ppb	100
81) 4-Chlorotoluene	10.83	91	444546	10.11 ppb	100
82) Tert-Butylbenzene	11.15	119	382942	9.99 ppb	98
83) 1,2,4-Trimethylbenzene	11.20	105	438407	9.84 ppb	100
84) Sec-Butylbenzene	11.37	105	519987	10.16 ppb	99
85) p-Isopropyltoluene	11.52	119	453569	10.05 ppb	99
86) Benzyl Chloride	11.69	91	113004	10.27 ppb	98
87) 1,3-DCB	11.46	146	266738	10.03 ppb	97
88) 1,4-DCB	11.55	146	269498	9.82 ppb	98
89) n-Butylbenzene	11.92	91	412013	10.40 ppb	98
90) 1,2-DCB	11.91	146	254729	10.06 ppb	99
91) Hexachloroethane	12.16	117	76255	9.81 ppb	96
92) 1,2-Dibromo-3-chloropropan	12.68	157	20567	10.04 ppb	96
93) 1,2,4-Trichlorobenzene	13.50	180	155155	10.18 ppb	97
94) Hexachlorobutadiene	13.69	225	78452	9.97 ppb	97
95) Naphthalene	13.73	128	294558	10.11 ppb	99
96) 1,2,3-Trichlorobenzene	13.97	180	142703	10.10 ppb	97

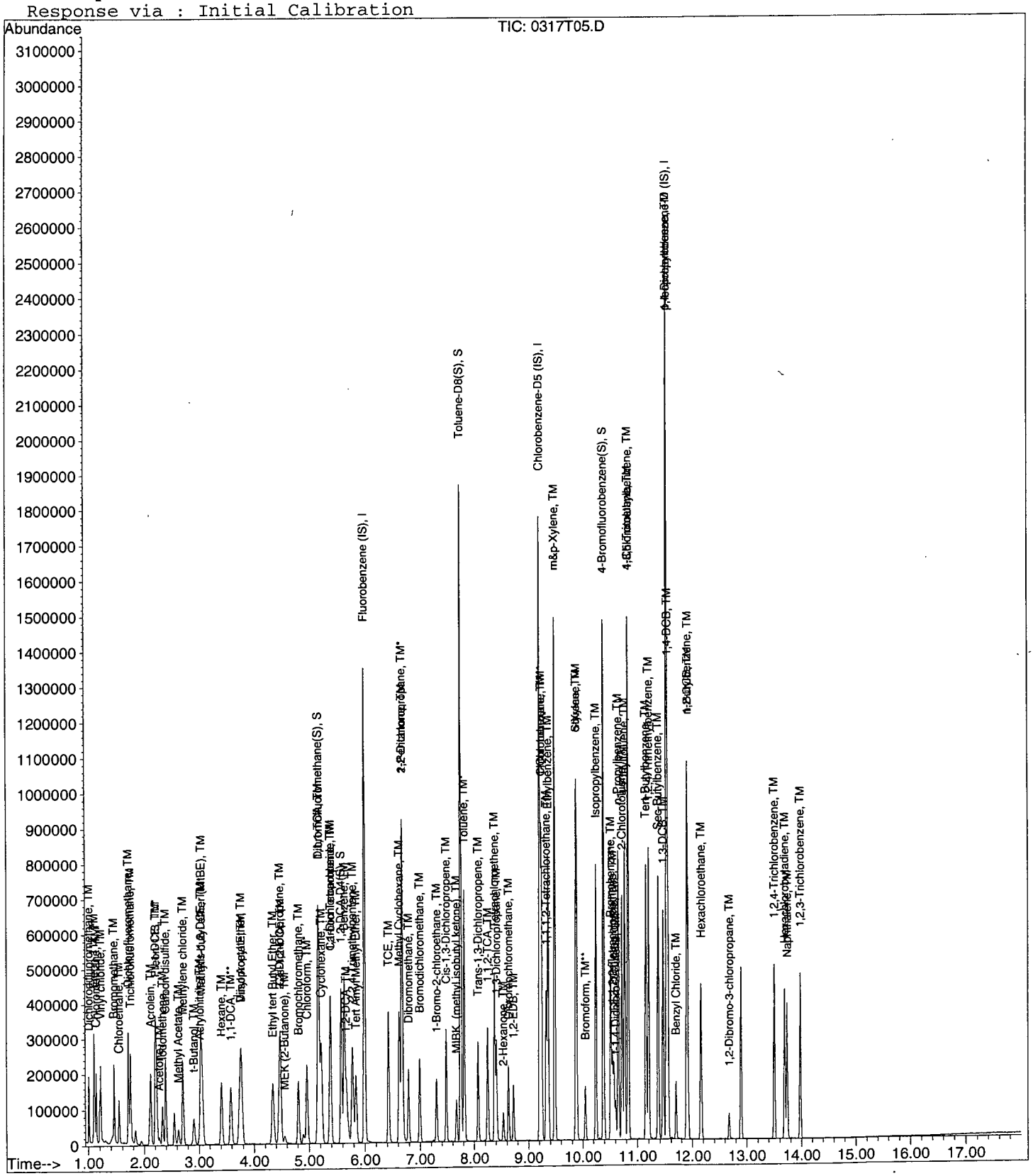
(#) = qualifier out of range (m) = manual integration

Quantitation Report

Data File : M:\THOR\DATA\T150316\0317T05.D Vial: 4
Acq On : 17 Mar 15 11:00 Operator: DG, HW, SV, RS
Sample : 150317A LCS-1WT Inst : Thor
Misc : 10ml IS&S 2/10/15,3/16/15 Multiplr: 1.00

Quant Time: Mar 18 13:51 2015 Quant Results File: TALLW.RES

Method : M:\THOR\DATA\T150316\TALLW.M (RTE Integrator)
Title : METHOD 8260B
Last Update : Tue Mar 17 08:51:48 2015
Response via : Initial Calibration



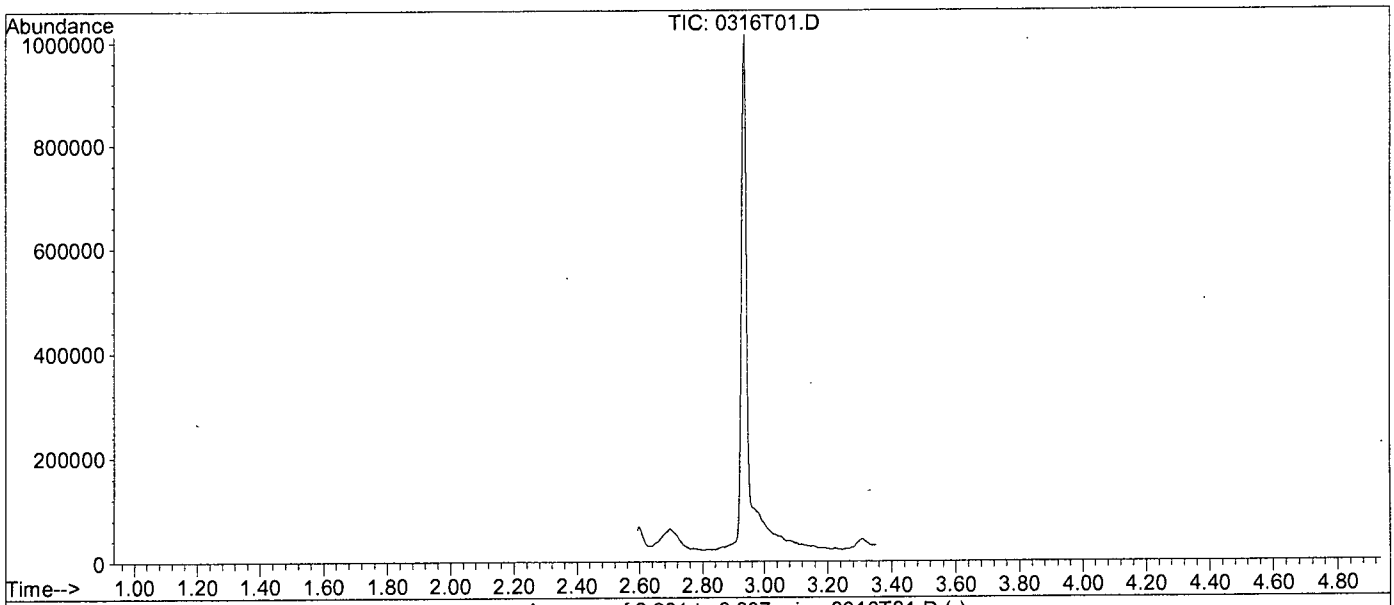
203

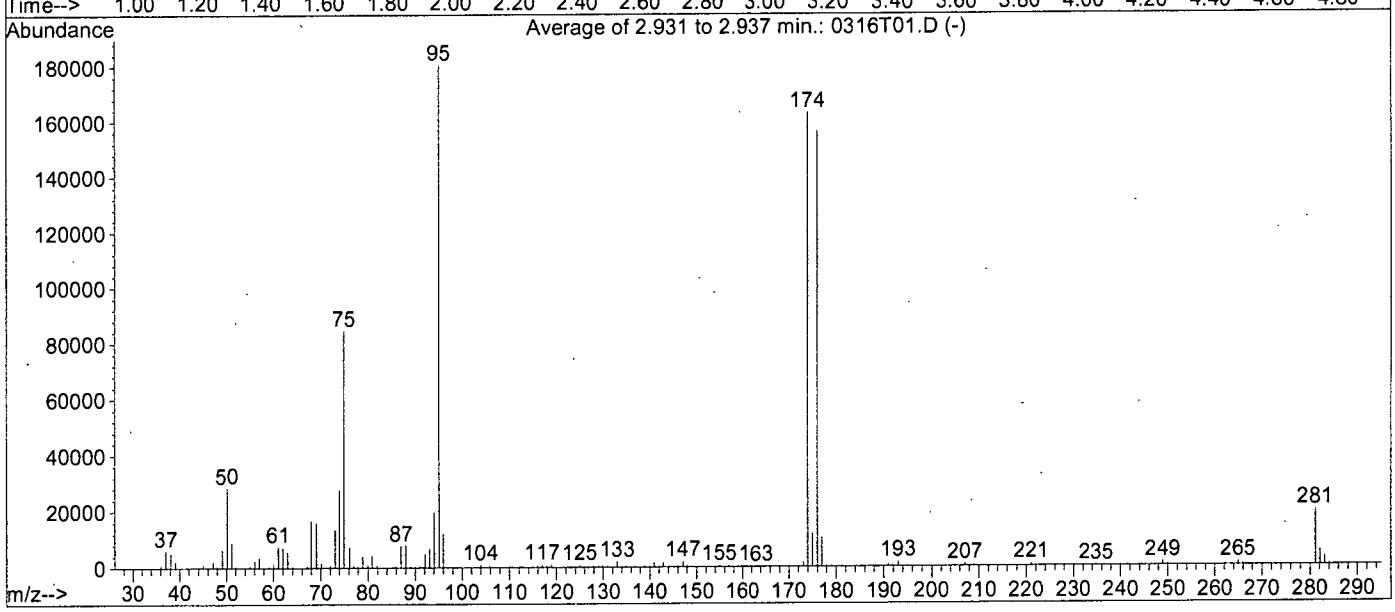
BFB

Data File : M:\THOR\DATA\T150316\0316T01.D
Acq On : 16 Mar 15 13:12
Sample : 5ng- BFB Std 02-24-15
Misc : 2ul

Vial: 1
Operator: DG, HW, SV, RS
Inst : Thor
Multiplr: 1.00

Method : M:\THOR\DATA\T150316\TALLW.M (RTE Integrator)
Title : METHOD 8260B





AutoFind: Scans 106, 107, 108; Background Corrected with Scan 95

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50	95	15	40	15.7	28435	PASS
75	95	30	60	46.8	84568	PASS
95	95	100	100	100.0	180608	PASS
96	95	5	9	6.8	12222	PASS
173	174	0.00	2	0.9	1491	PASS
174	95	50	100	90.2	162859	PASS
175	174	5	9	7.2	11770	PASS
176	174	95	101	95.8	156011	PASS
177	176	5	9	6.6	10357	PASS

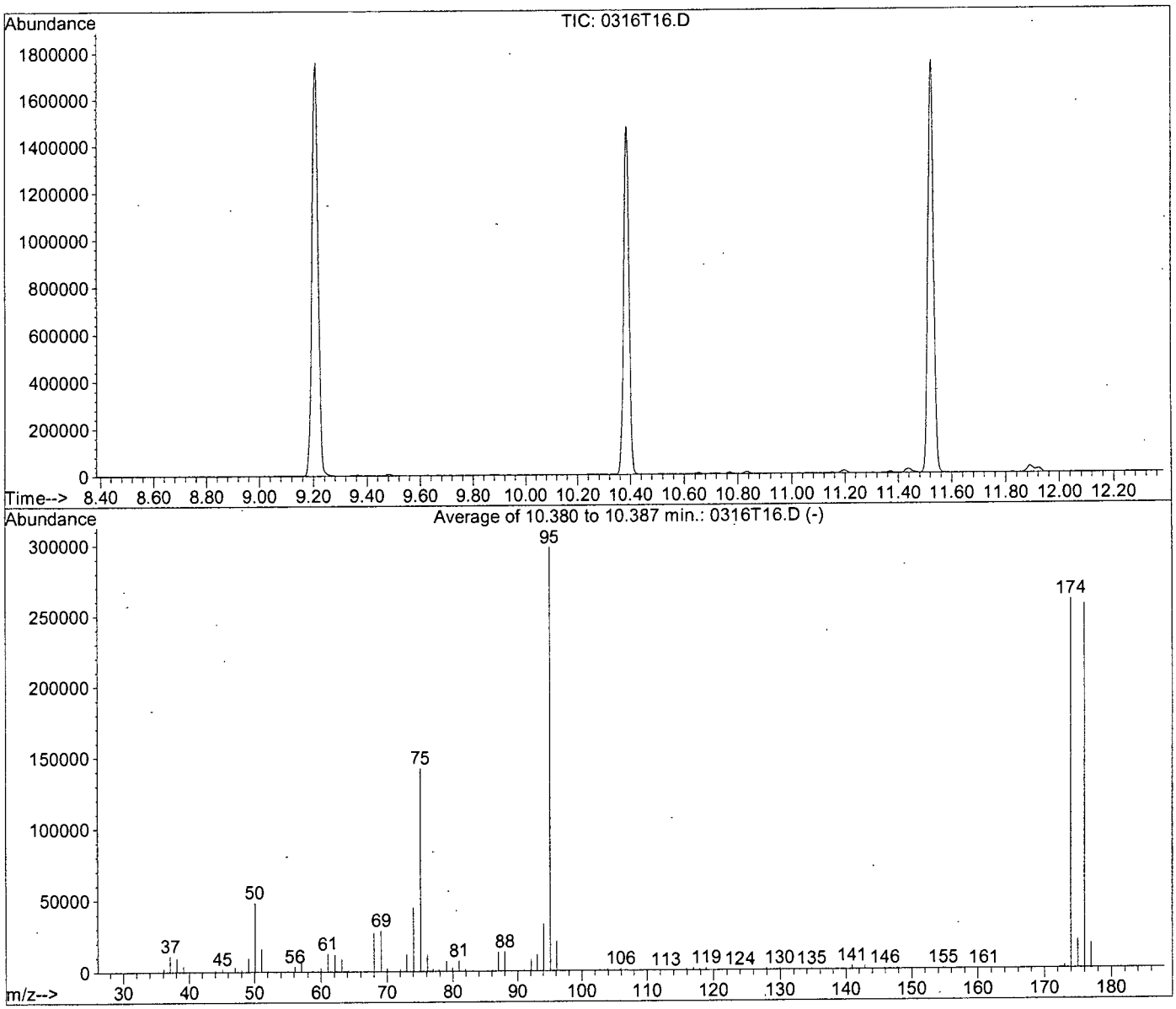
0316T01.D TALLW.M Tue Mar 17 12:58:28 2015

BFB

Data File : M:\THOR\DATA\T150316\0316T16.D
Acq On : 16 Mar 15 20:03
Sample : 5ng- BFB Std 02-24-15
Misc : 10ml IS&S 2/10/15,3/16/15

Vial: 15
Operator: DG, HW, SV, RS
Inst : Thor
Multiplr: 1.00

Method : M:\THOR\DATA\T150316\TALLW.M (RTE Integrator)
Title : METHOD 8260B



AutoFind: Scans 2936, 2937, 2938; Background Corrected with Scan 2922

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50	95	15	40	16.2	48256	PASS
75	95	30	60	47.6	141781	PASS
95	95	100	100	100.0	297707	PASS
96	95	5	9	6.9	20619	PASS
173	174	0.00	2	0.8	2130	PASS
174	95	50	100	86.9	258795	PASS
175	174	5	9	7.6	19627	PASS
176	174	95	101	98.5	254848	PASS
177	176	5	9	6.7	17143	PASS

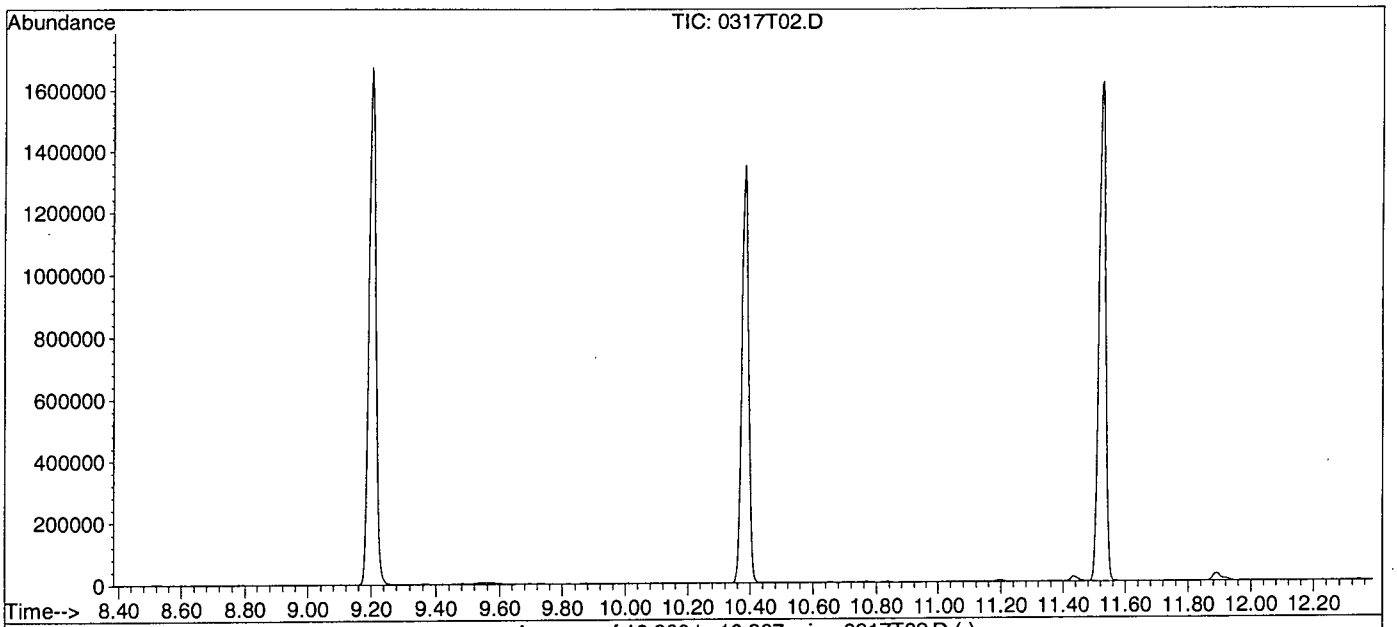
0316T16.D TALLW.M Tue Mar 17 13:03:53 2015

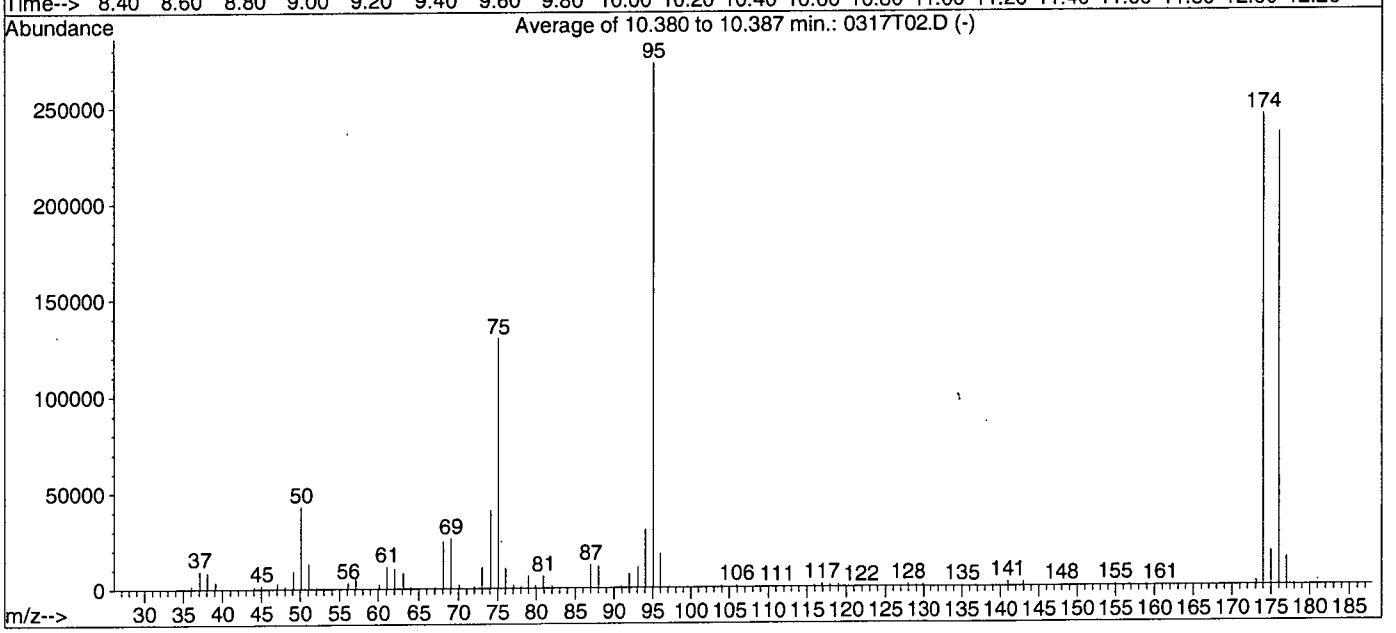
BFB

Data File : M:\THOR\DATA\T150316\0317T02.D
Acq On : 17 Mar 15 9:36
Sample : 5ng- BFB Std 02-24-15
Misc : 10ml IS&S 2/10/15,3/16/15

Vial: 1
Operator: DG, HW, SV, RS
Inst : Thor
Multiplr: 1.00

Method : M:\THOR\DATA\T150316\TALLW.M (RTE Integrator)
Title : METHOD 8260B





AutoFind: Scans 2936, 2937, 2938; Background Corrected with Scan 2922

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50	95	15	40	15.7	42829	PASS
75	95	30	60	47.4	129373	PASS
95	95	100	100	100.0	272853	PASS
96	95	5	9	6.5	17829	PASS
173	174	0.00	2	1.0	2349	PASS
174	95	50	100	89.7	244693	PASS
175	174	5	9	7.3	17832	PASS
176	174	95	101	96.1	235264	PASS
177	176	5	9	6.1	14329	PASS

PRIMARY STANDARD

03/11/15M							
50ug/ml Vol Work Std #7							
Exp:04/11/15							
			Conc.		Date	Exp.	
Supplier	ID #	ID	ug/ml	Lot #	Code	Date	ul
02SI	120016-03	Gas Mix	2000	231710-33825	03/11/15A	07/06/17	100
02SI	020049-02	HEXACHLOROETHANE	1000	234821-34335	02/16/15C	08/24/16	200
02SI	020228-02	Benzyl Chloride	1000	227320-34866	03/02/15B	04/28/16	200
J&T Brand		Purge & Trap MeOH		85233-00791	03/09/15	07/09/18	3500
03/11/15N							
50ug/ml Vol Work Std #1							
Exp:04/11/15					Date	Exp.	
Supplier	ID #	ID	ug/ml	Lot #	Code	Date	ul
02SI	020145-02-02	2-CEVE	2000	229586-33695	02/16/15D	06/03/17	50
J&T Brand		Purge & Trap MeOH		85233-00791	03/09/15	07/09/18	1950
03/11/15O							
50ug/ml Vol Work Std #8							
Exp:04/11/15							
			Conc.		Date	Exp.	
Supplier	ID #	ID	ug/ml	Lot #	Code	Date	ul
02SI	122039-02	Volatile Mix, 20-29	2000	240422-34345	03/11/15B	11/19/16	100
02SI	120023-03	VOC'S-54 COMP	2000	240477-34350	03/11/15C	11/09/16	100
02SI	020232-02	Vinyl Acetate	2000	245063-34871	03/02/15C	05/07/15	100
02SI	020620-02	n-Hexane	1000	236597-34364	02/16/15G	09/09/17	200
J&T Brand		Purge & Trap MeOH		85233-00791	03/09/15	07/09/18	3500
03/11/15P							
50ug/ml Vol Work Std #2							
Exp:04/11/15							
Supplier	ID #	ID	ug/ml				
02SI	121020-05	HSL'S-Ketone Solution	2000	232044-33836	03/11/15D	07/10/15	100
J&T Brand		Purge & Trap MeOH		85233-00791	03/09/15	07/09/18	3900
		03/11/15Q					
		5ug/ml Vol Work Std #9					
		SOURCES	**Lot**	**APPL Code**	**APPL Exp Date**	ul	
		50ug/ml Vol Work Std #7		**03/11/15M**	04/11/15	200	
		50ug/ml Vol Work Std #8		**03/11/15O**	04/11/15	200	
		J&T Brand		03/02/15	07/09/18	1600	
		03/11/15R					
		5ug/ml Vol Work Std #10					
		SOURCES	**Lot**	**APPL Code**	**APPL Exp Date**	ul	
		50ug/ml Vol Work Std #1		**03/11/15N**	04/11/15	200	
		J&T Brand		03/02/15	07/09/18	1800	
		03/11/15S					
		5ug/ml Vol Work Std #12					
		SOURCES	**Lot**	**APPL Code**	**APPL Exp Date**	ul	
		50ug/ml Vol Work Std #2		**03/11/15P**	04/11/15	200	
		J&T Brand		03/02/15	07/09/18	1800	
03/11/15T							
50ug/ml 8260 Surrogate			Conc.		Date	Exp.	
Exp:04/11/15			ug/ml	Lot #	Code	Date	uL
02SI	120002-01	8260B Surr Solution	2000	229269-33851	03/11/15E	05/26/17	100
J&T Brand		Purge & Trap MeOH		85233-00791	03/09/15	07/09/18	3900
03/11/15U							
5.0ug/ml 8260 Surrogate			**Lot**	**APPL Code**	**APPL Exp Date**	ul	
		50ug/ml 8260 Surrogate		**03/11/15T**	04/11/15	200	
J&T Brand		Purge & Trap MeOH		03/02/15	07/09/18	1800	
03/11/15V							
250ug/ml TBA/IBA/Acetonitrile/Cyclohexanone/Acrolein/2-P							
Exp:04/11/15			Conc.		Date	Exp.	
Supplier	ID #		ug/ml	Lot #	Code	Date	uL
02SI	120166-01	Volatile Mix 4-3	2000	229587-33665	03/02/15D	05/29/16	500
02SI	020229-09	Acrolein	10000	245246-34629	03/11/15F	03/21/15	100
J&T Brand		Purge & Trap MeOH		85233-00791	03/09/15	07/09/18	3400
03/11/15W							
50ug/ml VOC Std#5							
Exp:04/11/15							
			Conc.		Date	Exp.	
Supplier	ID #	ID	ug/ml	Lot #	Code	Date	ul
02SI	120016-03-SS	8260 Gases(SS)	2000	226330-34543	03/11/15G	04/14/17	50
02SI	020145-02-02-	2-CEVE	2000	219465-33219	01/29/15K	12/16/15	50
J&T Brand		Purge & Trap MeOH		85233-00791	03/09/15	07/09/18	1900
03/11/15X							
50ug/ml VOC Std#6							

Exp:04/11/15							
	ID #	ID	ug/ml	Lot #	Code	Date	ul
O2SI	120023-03-SS	VOC'S 54 COMP.	2000	216127-32945	03/11/14H	10/11/15	50
O2SI	120296-01-SS	Custom 8260 Solution	2000	240496-34383	01/17/15L	05/24/16	50
O2SI	020232-02-SS	Vinyl Acetate(SS)	2000	245491-34876	03/11/15I	05/13/15	50
O2SI	020620-02-SS	n-Hexane	1000	205230-33679	12/03/14R	03/12/15	100
O2SI	020049-02-SS	HEXACHLOROETHANE	1000	226063-33533	03/11/15J	04/07/16	100
J&T Brand		Purge & Trap MeOH		85233-00791	03/09/15	07/09/18	1650
03/11/15Y							
250ug/ml TBA/IBA/Acetonitrile/Acrolein/2-P							
Exp:04/11/15			Conc.		Date	Exp.	
Supplier	ID #		ug/ml	Lot #	Code	Date	uL
O2SI	120166-01-SS	VOC Mix 4-3 (SS)	2000	229588-33682	03/11/15K	06/03/16	250
O2SI	020229-09-SS	Acrolein SOLUTION (SS)	10000	245247-34631	03/11/15L	03/21/15	50
J&T Brand		Purge & Trap MeOH		85233-00791	03/09/15	07/09/18	1700

Volatile Standard Curve Preparation for 10mL Purge (8260 water)-THOR												
Exp. Date:	03/17/15	5µg/mL	5µg/mL	5µg/mL	5µg/mL	50µg/mL	50µg/mL	50µg/mL	50µg/mL	50µg/mL	250µg/mL	
		Vol Std #9	Vol Std #10	Vol Std #12	Surrogate	Vol Std #7	Vol Std #8	Vol Std #1	Vol Std #2	Surrogate	TBA	Final Vol
	Conc.	03-11-15Q	03-11-15R	03-11-15S	03-11-15U	03-11-15M	03-11-15O	03-11-15N	03-11-15P	03-11-15T	03-11-15V	w/P&T H2O
Date/code	µg/L	Exp:04-11-15	Exp:04-11-15	Exp:04-11-15	Exp.04-11-15	Exp:04-11-15	Exp.04-11-15	Exp 04-11-15	Exp:04-11-15	Exp:04-11-15	Exp:04-11-15	mL
03-16-15A	0.1	1	1	1	2	n/a	n/a	n/a	n/a	n/a	1	50
03-16-15B	0.3	3	3	3	6	n/a	n/a	n/a	n/a	n/a	2	50
03-16-15C	0.5	5	5	5	10	n/a	n/a	n/a	n/a	n/a	5	50
03-16-15D	1	10	10	10	20	n/a	n/a	n/a	n/a	n/a	10	C
03-16-15E	5	n/a	n/a	n/a	n/a	5	5	5	5	10	20	50
03-16-15F	10	n/a	n/a	n/a	n/a	10	10	10	10	25	25	50
03-16-15G	20	n/a	n/a	n/a	n/a	20	20	20	20	40	30	50
03-16-15H	40	n/a	n/a	n/a	n/a	40	40	40	40	80	35	50
03-16-15I	100	n/a	n/a	n/a	n/a	100	100	100	100	100	40	50

Injection Log

Directory: M:\THOR\DATA\T150316\

Line	Vial	FileName	Multiplier	SampleName	Misc Info	Injected
1	1	0316T01.D	1	5ng- BFB Std 02-24-15	2ul	16 Mar 15 13:12
2	4	0316T05.D	1	0.1ug/L VOC STD 3-16-15	10ml IS 2/10/15	16 Mar 15 14:56
3	5	0316T06.D	1	0.3ug/L VOC STD 3-16-15	10ml IS 2/10/15	16 Mar 15 15:24
4	6	0316T07.D	1	0.5ug/L VOC STD 3-16-15	10ml IS 2/10/15	16 Mar 15 15:52
5	7	0316T08.D	1	1.0ug/L VOC STD 3-16-15	10ml IS 2/10/15	16 Mar 15 16:20
6	8	0316T09.D	1	5.0ug/L VOC STD 3-16-15	10ml IS 2/10/15	16 Mar 15 16:48
7	9	0316T10.D	1	10ug/L VOC STD 3-16-15	10ml IS 2/10/15	16 Mar 15 17:16
8	10	0316T11.D	1	20ug/L VOC STD 3-16-15	10ml IS 2/10/15	16 Mar 15 17:44
9	11	0316T12.D	1	40ug/L VOC STD 3-16-15	10ml IS 2/10/15	16 Mar 15 18:12
10	12	0316T13.D	1	100ug/L VOC STD 3-16-15	10ml IS 2/10/15	16 Mar 15 18:40
11	15	0316T16.D	1	5ng- BFB Std 02-24-15	2ul	16 Mar 15 20:03
12	16	0316T17.D	1	10ug/L STD 3-16-15(SS)	10ml IS&S 2/10/15,3/16/15	16 Mar 15 20:31
13	17	0316T18.D	1	10ug/L STD 3-16-15(CCV)	10ml IS&S 2/10/15,3/16/15	16 Mar 15 20:59
14	18	0316T19.D	1	150316A LCS-1WT	10ml IS&S 2/10/15,3/16/15	16 Mar 15 21:27
15	22	0316T23.D	1	150316A BLK-1WT	10ml IS&S 2/10/15,3/16/15	16 Mar 15 23:19
16	26	0316T27.D	1	AZ12344W01	10ml IS&S 2/10/15,3/16/15	17 Mar 15 1:10
17	32	0316T33.D	1	AZ12342W01	10ml IS&S 2/10/15,3/16/15	17 Mar 15 3:57
18	33	0316T34.D	1	AZ12343W01	10ml IS&S 2/10/15,3/16/15	17 Mar 15 4:25
19	1	0317T02.D	1	5ng- BFB Std 02-24-15	2ul	17 Mar 15 9:36
20	3	0317T04.D	1	10ug/L VOC STD 3-17-15	10ml IS&S 2/10/15,3/16/15	17 Mar 15 10:32
21	4	0317T05.D	1	150317A LCS-1WT	10ml IS&S 2/10/15,3/16/15	17 Mar 15 11:00
22	8	0317T09.D	1	150317A BLK-1WT	10ml IS&S 2/10/15,3/16/15	17 Mar 15 12:52
23	11	0317T12.D	5	AZ12342W02 DF5	10ml IS&S 2/10/15,3/16/15	17 Mar 15 14:15

METALS

APPL, INC.

METALS

QC Summary

APPL, INC.

METALS BLANK

APPL Inc.
908 North Temperance Avenue
Clovis, CA 93611

Method	Analyte	Result	LOQ	LOD	DL	Units	Prep Date	Analysis Date	QC Group
6020A	LEAD (PB)	0.40 U	3.0	0.40	0.19	ug/L	04/01/15	04/01/15	#62A14-150401A2-AZ12342

Metals SC-Blank-REG MDLs
Printed: 04/03/15 2:12:01 PM

Laboratory Control Spike Recovery

METALS

APPL Inc.
908 North Temperance Avenue
Clovis, CA 93611

Method	Compound Name	Spike Level ug/L	SPK Result ug/L	SPK % Recovery	Recovery Limits	Extract Date	Analysis Date	QC Group
EPA 6020A	LEAD (PB)	50.0	48.8	97.6	80-120	04/01/15	04/01/15	#62A14-150401A2-AZ12342

Comments:

Matrix Spike Recoveries

METALS

APPL ID: **150401W-12342 MS - 195441**

Sample ID: AZ12342

Client ID: EKB100022

APPL Inc.
908 North Temperance Avenue
Clovis, CA 93611

Method	Compound Name	Spike Lvl ug/L	Matrix Res ug/L	SPK Res ug/L	DUP Res ug/L	SPK % Recovery	DUP % Recovery	RPD	RPD Max	Recovery Limits	Extract Date-Spk	Analysis Date-Spk	Extract Date-Dup	Analysis Date-Dup	QC Group	QC Sample
EPA 6020A	LEAD (PB)	50.0	ND	47.8	48.4	95.6	96.8	1.2	20	80-120	04/01/15	04/01/15	04/01/15	04/01/15	195441	AZ12342

Comments: _____

Printed: 04/06/15 1:44:04 PM
APPL MSD SCII

METALS

Sample Data

APPL, INC.

Metals Analysis

Element Environmental
98-030 Hekaha St., Unit 9
Aiea, HI 96701

APPL Inc.
908 North Temperance Avenue
Clovis, CA 93611

Attn: Steve Spengler
Project: MCBH Motor Pool UST KB-100 SI / 130034
Sample ID: EKB100022
Sample Collection Date: 03/10/15

ARF: 75798
APPL ID: AZ12342

Method	Analyte	Result	LOQ	LOD	DL	Units	DF	Prep Date	Analysis Date
6020A/3015^	LEAD (PB)	0.40 U	3.0	0.40	0.19	ug/L	1	04/01/15	04/01/15

Printed: 04/03/15 2:12:15 PM
APPL-F1-SC-NoMC-REG MDLs

Sample Report

Sample Table

Sample Name	AZ12342W06
Data File Name	043SMPL.d
Data Path Name	K:\ICP-MS Megatron\Data\150401C.b
Acq Date Time	2015-04-01T19:50:44-07:00
Sample Type	Sample
Dilution	1.111111111
Comment	
ISTD Ref FileName	001CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Fail

QC Analyte Table

Name	Mass	ISTD Mass	Tune Mode	Conc	FinalConc	Conc %RSD	CPS	%RSD	LDR	QC Flag
Be	9	45	NoGas	-0.148	-0.165	-20.56	30	33.33	10000	
B	11	45	NoGas	978.491	1087.212	0.57	299681	2.65	10000	
Na	23	45	He	155036.173	172262.414	3.14	45867836	0.53	1000000	
Mg	24	45	He	18716.297	20795.885	2.99	3087025	0.48	1000000	
Al	27	45	He	74.428	82.698	12.02	8519	11.03	1000000	
K	39	45	He	16828.134	18697.926	2.57	4112984	0.89	500000	
Ca	44	45	He	16157.222	17952.469	3.75	163185	0.74	500000	
Ti	47	45	He	6.512	7.236	25.49	391	20.64	10000	
V	51	45	He	2.001	2.223	10.07	4394	3.51	10000	
Cr	52	45	He	0.388	0.432	17.19	3547	1.56	10000	
Mn	55	45	He	2.731	3.035	16.02	7595	3.11	50000	
Fe	56	45	He	76.709	85.232	3.35	127585	0.21	1000000	
Co	59	45	He	0.291	0.324	10.36	669	7.99	10000	
Ni	60	45	He	4.167	4.630	3.34	2844	0.85	10000	
Cu	63	45	He	5.147	5.718	8.28	11488	2.65	10000	
Zn	66	115	He	11.081	12.312	8.54	4115	5.19	50000	
As	75	115	He	6.466	7.184	3.90	2848	1.35	2000	
Se	78	72	H2	0.386	0.428	14.49	25	13.18	10000	
Se	78	115	He	3.499	3.888	42.58	292	17.38	10000	
Sr	88	115	NoGas	255.846	284.273	5.14	914594	1.90	50000	
Mo	95	115	NoGas	22.717	25.241	4.06	15231	5.10	10000	
Ag	107	115	NoGas	0.034	0.037	60.20	120	33.34	5000	
Cd	111	115	He	0.047	0.052	38.57	17	35.25	10000	
Sn	118	115	He	0.994	1.105	13.04	870	13.30	10000	
Sn	118	115	NoGas	1.127	1.252	29.37	1197	18.13	10000	
Sb	121	115	NoGas	1.124	1.249	10.61	2037	4.09	10000	
Ba	137	165	NoGas	3.167	3.518	9.94	1570	3.31	50000	
Tl	205	165	NoGas	0.009	0.010	167.10	43	70.50	5000	
Pb	208	165	NoGas	0.104	0.116	33.68	1497	10.03	50000	

QC ISTD Table

Name	Mass	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li	6	NoGas	7003	2.77	14721	47.57	70	120	ISTD Failed
Sc	45	H2	18478	1.36	21004	87.97	70	120	
Sc	45	He	13298	3.05	14982	88.76	70	120	
Sc	45	NoGas	66725	3.11	87411	76.33	70	120	
Ge	72	H2	4460	1.12	5304	84.08	70	120	
Ge	72	He	7044	2.30	7357	95.74	70	120	
Ge	72	NoGas	15367	6.74	17976	85.49	70	120	
In	115	H2	84467	0.66	99048	85.28	70	120	
In	115	He	47563	2.89	53149	89.49	70	120	
In	115	NoGas	67418	7.03	82030	82.19	70	120	
Tb	159	H2	143445	1.14	160473	89.39	70	120	
Tb	159	He	81037	1.47	90371	89.67	70	120	
Tb	159	NoGas	72582	7.37	87753	82.71	70	120	
Ho	165	H2	135299	0.84	152063	88.98	70	120	
Ho	165	He	76101	1.59	85221	89.30	70	120	
Ho	165	NoGas	68241	6.40	82407	82.81	70	120	

Metals Analysis

Element Environmental
98-030 Hekaha St., Unit 9
Aiea, HI 96701

APPL Inc.
908 North Temperance Avenue
Clovis, CA 93611

Attn: Steve Spengler
Project: MCBH Motor Pool UST KB-100 SI / 130034
Sample ID: EKB100023
Sample Collection Date: 03/10/15

ARF: 75798
APPL ID: AZ12343

Method	Analyte	Result	LOQ	LOD	DL	Units	DF	Prep Date	Analysis Date
6020A/3015^	LEAD (PB)	0.40 U	3.0	0.40	0.19	ug/L	1	04/01/15	04/01/15

Printed: 04/03/15 2:12:15 PM
APPL-F1-SC-NoMC-REG MDLs

Sample Report

Sample Table

Sample Name	AZ12343W06
Data File Name	048SMPL.d
Data Path Name	K:\ICP-MS Megatron\Data\150401C.b
Acq Date Time	2015-04-01T20:21:08-07:00
Sample Type	Sample
Dilution	1.111111111
Comment	
ISTD Ref FileName	001CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Fail

QC Analyte Table

Name	Mass	ISTD Mass	Tune Mode	Conc	FinalConc	Conc %RSD	CPS	%RSD	LDR	QC Flag
Be	9	45	NoGas	-0.181	-0.201	-14.03	20	50.00	10000	
B	11	45	NoGas	594.861	660.957	0.96	200916	2.25	10000	
Na	23	45	He	76580.524	85089.471	1.65	22989006	0.92	1000000	
Mg	24	45	He	17980.511	19978.345	1.74	3003012	1.00	1000000	
Al	27	45	He	14.367	15.964	7.05	2824	4.28	1000000	
K	39	45	He	11221.539	12468.377	2.65	2863866	0.85	500000	
Ca	44	45	He	34558.944	38398.827	1.89	338282	0.30	500000	
Ti	47	45	He	1.567	1.741	28.72	114	21.07	10000	
V	51	45	He	11.823	13.137	0.43	18027	1.66	10000	
Cr	52	45	He	0.740	0.822	16.06	4135	3.13	10000	
Mn	55	45	He	-0.433	-0.481	-39.87	4239	2.85	50000	
Fe	56	45	He	14.526	16.140	2.95	38725	0.91	1000000	
Co	59	45	He	0.142	0.158	20.61	362	16.21	10000	
Ni	60	45	He	3.226	3.584	4.79	2347	4.75	10000	
Cu	63	45	He	-0.670	-0.744	-6.07	3050	2.18	10000	
Zn	66	115	He	1.539	1.710	8.16	767	5.65	50000	
As	75	115	He	9.576	10.640	1.74	4121	1.42	2000	
Se	78	72	H2	0.620	0.689	6.38	40	6.68	10000	
Se	78	115	He	3.166	3.517	8.54	281	3.39	10000	
Sr	88	115	NoGas	449.855	499.839	0.69	1786489	1.06	50000	
Mo	95	115	NoGas	9.816	10.906	1.25	7522	0.70	10000	
Ag	107	115	NoGas	0.065	0.072	24.38	193	16.63	5000	
Cd	111	115	He	0.013	0.014	142.82	6	100.00	10000	
Sn	118	115	He	0.249	0.277	21.99	344	10.70	10000	
Sn	118	115	NoGas	0.256	0.285	17.15	473	8.57	10000	
Sb	121	115	NoGas	1.615	1.794	6.51	3077	4.79	10000	
Ba	137	165	NoGas	2.905	3.228	1.95	1573	0.37	50000	
Tl	205	165	NoGas	0.008	0.009	156.11	43	58.08	5000	
Pb	208	165	NoGas	-0.214	-0.237	-6.84	683	4.47	50000	

QC ISTD Table

Name	Mass	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li	6	NoGas	6967	4.33	14721	47.33	70	120	ISTD Failed
Sc	45	H2	17634	1.11	21004	83.95	70	120	
Sc	45	He	13459	1.65	14982	89.84	70	120	
Sc	45	NoGas	71844	1.56	87411	82.19	70	120	
Ge	72	H2	4566	4.77	5304	86.09	70	120	
Ge	72	He	6890	4.42	7357	93.65	70	120	
Ge	72	NoGas	16475	0.40	17976	91.65	70	120	
In	115	H2	82973	3.73	99048	83.77	70	120	
In	115	He	47508	0.46	53149	89.39	70	120	
In	115	NoGas	74724	1.31	82030	91.09	70	120	
Tb	159	H2	137827	3.39	160473	85.89	70	120	
Tb	159	He	80595	0.30	90371	89.18	70	120	
Tb	159	NoGas	79399	1.68	87753	90.48	70	120	
Ho	165	H2	127907	3.72	152063	84.11	70	120	
Ho	165	He	75391	1.20	85221	88.46	70	120	
Ho	165	NoGas	74159	1.96	82407	89.99	70	120	

METALS

Calibration Data

APPL, INC.

A.P.P.L. INC.
2A
INITIAL AND CONTINUING CALIBRATION VERIFICATION

Lab Name: A.P.P.L. INC. Contract: Element Environmental
ARF No: 75798 SDG: 75798
Initial Calibration Source: CPI
Continuing Calibration Source: Environmental Express
Analysis Date: 04/01/15 Concentration Units: ug/L

Analyte	Initial Calibration			Continuing Calibration						M
	True	Found 16:48	%R(1)	True CCV1	Found 17:07	%R(1)	True CCV1	Found 19:14	%R(1)	
Lead (Pb)	100	100.241	100	50	50.8131	102	50	49.9818	100	P

(1) Control Limits: Metals 90-110

ILM02.0

A.P.P.L. INC.
2A
INITIAL AND CONTINUING CALIBRATION VERIFICATION

Lab Name: A.P.P.L. INC. Contract: Element Environmental
ARF No: 75798 SDG: 75798
Initial Calibration Source: CPI
Continuing Calibration Source: Environmental Express
Analysis Date: 04/01/15 Concentration Units: ug/L

Analyte	Initial Calibration			Continuing Calibration						M
	True	Found 16:48	%R(1)	True CCV1	Found 20:27	%R(1)	True	Found	%R(1)	
Lead (Pb)	100	100.241	100	50	50.0613	100				P

(1) Control Limits: Metals 90-110

ILM02.0

A.P.P.L. INC.
3
BLANKS

Lab Name: A.P.P.L. INC. Contract: Element Environmental

ARF No.: 75798 SDG: 75798

Preparation Blank Matrix (soil/water): water

Preparation Blank Concentration Units (ug/L or mg/kg): ug/L

Analysis Date: 04/01/15

Analyte	Initial Calibration Blank (ug/L)		Continuing Calibration Blank (ug/L)						Preparation Blank		M
		C	1	C	2	C	3	C		C	
	17:00		17:19		19:26		20:39		19:32		
Lead (Pb)	3.00	U	3.00	U	3.00	U	3.00	U	3.00	U	P

A.P.P.L. INC.
4
ICP INTERFERENCE CHECK SAMPLE

Lab Name: A.P.P.L. INC.
Contract: Element Environmental
ARF No.: 75798
SDG: 75798
ICP ID Number: Megatron
ICS Source: Environmental Express

Analysis Date: 04/01/15
Concentration Units: ug/L

Analyte	True		Initial Found		
	Sol A	Sol AB	Sol A 17:25	Sol AB 18:01	%R(1)
Lead (Pb)		100	-0.094989	95.875442	95.9

(1) Control Limits: Metals 80-120

A.P.P.L. INC.
9
ICP SERIAL DILUTION

CLIENT SAMPLE NO.
EKB100022

Lab Name: A.P.P.L. INC.
Contract: Element Environmental
ARF No.: 75798
SDG: 75798
Matrix: water

Analysis Date: 04/01/15
Concentration Units: ug/L

Analyte	Initial Sample Result (I)	C	Serial Dilution Result (S)	C	%D	Q	M
Lead (Pb)	0.11604		-0.187988		NA		

Comments:

04/01/15 19:50 AZ12342W06

04/01/15 20:15 AZ12342W06 1/5

Sample Report

Sample Table

Sample Name	AZ12342W06 1/5
Data File Name	047SMPL.d
Data Path Name	K:\ICP-MS Megatron\Data\150401C.b
Acq Date Time	2015-04-01T20:15:02-07:00
Sample Type	Sample
Dilution	1.111111111
Comment	
ISTD Ref FileName	001CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Fail

QC Analyte Table

Name	Mass	ISTD Mass	Tune Mode	Conc	FinalConc	Conc %RSD	CPS	%RSD	LDR	QC Flag
Be	9	45	NoGas	-0.154	-0.171	-44.83	30	88.19	10000	
B	11	45	NoGas	299.663	332.959	0.54	105387	0.70	10000	
Na	23	45	He	30884.753	34316.392	1.51	10114532	1.27	1000000	
Mg	24	45	He	3505.578	3895.086	2.51	636386	0.36	1000000	
Al	27	45	He	5.504	6.115	17.27	2134	4.05	1000000	
K	39	45	He	3441.047	3823.386	5.49	1149075	1.42	500000	
Ca	44	45	He	2628.710	2920.789	3.67	41239	0.54	500000	
Ti	47	45	He	1.086	1.207	17.43	94	10.79	10000	
V	51	45	He	0.900	1.000	2.02	3179	3.41	10000	
Cr	52	45	He	0.081	0.090	33.72	3378	1.40	10000	
Mn	55	45	He	-1.442	-1.602	-11.08	3405	5.50	50000	
Fe	56	45	He	10.015	11.127	12.35	34913	7.87	1000000	
Co	59	45	He	0.068	0.075	34.16	221	21.86	10000	
Ni	60	45	He	0.719	0.799	9.56	1006	6.52	10000	
Cu	63	45	He	1.305	1.450	18.57	6466	3.93	10000	
Zn	66	115	He	4.341	4.823	5.87	1891	3.48	50000	
As	75	115	He	1.542	1.713	4.45	894	1.89	2000	
Se	78	72	H2	0.199	0.221	13.55	15	11.78	10000	
Se	78	115	He	2.287	2.541	57.55	273	15.78	10000	
Sr	88	115	NoGas	46.814	52.015	2.63	187705	1.66	50000	
Mo	95	115	NoGas	3.849	4.277	5.65	3214	5.96	10000	
Ag	107	115	NoGas	1.173	1.303	8.99	2370	7.70	5000	
Cd	111	115	He	0.015	0.017	78.45	7	56.77	10000	
Sn	118	115	He	0.285	0.317	20.22	400	11.81	10000	
Sn	118	115	NoGas	0.335	0.373	20.90	557	11.96	10000	
Sb	121	115	NoGas	1.093	1.214	6.55	2234	5.34	10000	
Ba	137	165	NoGas	0.633	0.703	14.24	357	12.64	50000	
Tl	205	165	NoGas	0.005	0.005	322.68	37	87.67	5000	
Pb	208	165	NoGas	-0.169	-0.188	-2.83	810	1.23	50000	

QC ISTD Table

Name	Mass	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li	6	NoGas	7458	1.04	14721	50.66	70	120	ISTD Failed
Sc	45	H2	19726	1.59	21004	93.92	70	120	
Sc	45	He	14598	2.75	14982	97.44	70	120	
Sc	45	NoGas	70646	1.17	87411	80.82	70	120	
Ge	72	H2	5045	1.93	5304	95.12	70	120	
Ge	72	He	7467	2.55	7357	101.50	70	120	
Ge	72	NoGas	17686	2.17	17976	98.39	70	120	
In	115	H2	93156	1.21	99048	94.05	70	120	
In	115	He	51358	1.70	53149	96.63	70	120	
In	115	NoGas	75383	1.02	82030	91.90	70	120	
Tb	159	H2	153946	0.10	160473	95.93	70	120	
Tb	159	He	84869	1.64	90371	93.91	70	120	
Tb	159	NoGas	80115	1.67	87753	91.30	70	120	
Ho	165	H2	145039	0.55	152063	95.38	70	120	
Ho	165	He	79615	0.79	85221	93.42	70	120	
Ho	165	NoGas	73664	0.78	82407	89.39	70	120	

A.P.P.L. INC.
5B
POST DIGEST SPIKE SAMPLE RECOVERY

CLIENT SAMPLE NO.
EKB100022

Lab Name: A.P.P.L. INC. Contract: Element Environmental

ARF No.: 75798 SDG: 75798

Analysis Date: 04/01/15 Concentration Units: ug/L

Analyte	Control Limit %R	Spiked Sample Result (SSR)	C	Sample Result (SR)	C	Spike Added (SA)	%R	Q	M
Lead (Pb)	75-125	261.457304		0.11604		250.000	105		

Comments:

04/01/15 19:50 AZ12342W06

04/01/15 20:08 AZ12342W06-A

Sample Report

Sample Table

Sample Name	AZ12342W06-A
Data File Name	046SMPL.d
Data Path Name	K:\ICP-MS Megatron\Data\150401C.b
Acq Date Time	2015-04-01T20:08:58-07:00
Sample Type	Sample
Dilution	1.111111111
Comment	
ISTD Ref FileName	001CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Fail

QC Analyte Table

Name	Mass	ISTD Mass	Tune Mode	Conc	FinalConc	Conc %RSD	CPS	%RSD	LDR	QC Flag
Be	9	45	NoGas	46.388	51.542	3.51	17362	2.22	10000	
B	11	45	NoGas	1120.508	1245.009	1.06	354470	0.25	10000	
Na	23	45	He	168724.828	187472.031	2.32	51162766	0.57	1000000	
Mg	24	45	He	41241.541	45823.934	1.07	6971766	0.77	1000000	
Al	27	45	He	1939.785	2155.316	2.74	190911	0.96	1000000	
K	39	45	He	20315.108	22572.342	1.72	5034561	0.17	500000	
Ca	44	45	He	40850.292	45389.213	1.39	402418	0.58	500000	
Ti	47	45	He	252.521	280.579	3.16	14653	1.58	10000	
V	51	45	He	262.784	291.982	1.84	369326	0.51	10000	
Cr	52	45	He	240.108	266.787	1.86	380019	0.13	10000	
Mn	55	45	He	241.816	268.684	2.89	272013	1.18	50000	
Fe	56	45	He	1049.247	1165.830	2.46	1563074	0.76	1000000	
Co	59	45	He	242.640	269.600	2.85	520308	1.16	10000	
Ni	60	45	He	240.813	267.570	0.87	138605	0.91	10000	
Cu	63	45	He	243.424	270.471	1.31	368001	0.52	10000	
Zn	66	115	He	523.817	582.019	0.64	180251	0.66	50000	
As	75	115	He	266.266	295.851	0.69	107069	0.60	2000	
Se	78	72	H2	251.147	279.052	6.15	15445	4.07	10000	
Se	78	115	He	250.772	278.636	1.38	8056	2.02	10000	
Sr	88	115	NoGas	502.499	558.333	2.11	1852270	0.56	50000	
Mo	95	115	NoGas	273.660	304.067	1.90	185040	0.25	10000	
Ag	107	115	NoGas	65.710	73.011	7.05	118738	5.18	5000	
Cd	111	115	He	49.781	55.312	2.25	16060	2.98	10000	
Sn	118	115	He	258.149	286.832	0.42	177482	0.69	10000	
Sn	118	115	NoGas	257.917	286.574	1.70	238383	0.59	10000	
Sb	121	115	NoGas	262.356	291.507	2.57	403026	0.92	10000	
Ba	137	165	NoGas	262.941	292.157	1.55	139676	0.67	50000	
Tl	205	165	NoGas	236.097	262.330	1.11	504025	0.93	5000	
Pb	208	165	NoGas	235.312	261.457	1.49	693801	1.44	50000	

QC ISTD Table

Name	Mass	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li	6	NoGas	7048	5.39	14721	47.88	70	120	ISTD Failed
Sc	45	H2	17239	2.51	21004	82.08	70	120	
Sc	45	He	13627	1.77	14982	90.96	70	120	
Sc	45	NoGas	69247	1.26	87411	79.22	70	120	
Ge	72	H2	4478	4.34	5304	84.43	70	120	
Ge	72	He	7160	0.65	7357	97.33	70	120	
Ge	72	NoGas	15998	1.73	17976	88.99	70	120	
In	115	H2	77435	4.23	99048	78.18	70	120	
In	115	He	46511	1.11	53149	87.51	70	120	
In	115	NoGas	69375	1.96	82030	84.57	70	120	
Tb	159	H2	130184	4.78	160473	81.12	70	120	
Tb	159	He	80152	0.43	90371	88.69	70	120	
Tb	159	NoGas	78250	1.52	87753	89.17	70	120	
Ho	165	H2	122149	4.22	152063	80.33	70	120	
Ho	165	He	75569	0.55	85221	88.67	70	120	
Ho	165	NoGas	73711	2.03	82407	89.45	70	120	

Calibration Blank Report

Sample Table

Sample Name	Calibration Blank
Data File Name	001CALB.d
Data Path Name	K:\ICP-MS Megatron\Data\150401C.b
Acq Date Time	2015-04-01T15:35:48-07:00
Sample Type	CalBlk
Level	1
Dilution	1
Comment	

QC Analyte Table

Name	Mass	ISTD Mass	Tune Mode	CPS	%RSD
Be	9	45	NoGas	110	39.63
B	11	45	NoGas	14626	3.35
Na	23	45	He	103189	0.45
Mg	24	45	He	1989	11.82
Al	27	45	He	1597	6.51
K	39	45	He	291833	6.44
Ca	44	45	He	14815	1.43
Ti	47	45	He	28	30.20
V	51	45	He	1877	2.56
Cr	52	45	He	3324	4.23
Mn	55	45	He	5244	1.34
Fe	56	45	He	19564	6.34
Co	59	45	He	68	15.02
Ni	60	45	He	578	12.34
Cu	63	45	He	4492	2.20
Zn	66	115	He	253	13.86
As	75	115	He	219	8.51
Se	78	72	H2	1	43.30
Se	78	115	He	201	3.32
Sr	88	115	NoGas	220	24.05
Mo	95	115	NoGas	423	14.43
Ag	107	115	NoGas	73	55.12
Cd	111	115	He	2	100.00
Sn	118	115	He	190	21.56
Sn	118	115	NoGas	240	11.87
Sb	121	115	NoGas	447	12.73
Ba	137	165	NoGas	23	49.49
Tl	205	165	NoGas	30	66.67
[Pb]	206	165	NoGas	393	9.63
[Pb]	207	165	NoGas	280	6.19
Pb	208	165	NoGas	1463	7.11

QC ISTD Table

Name	Mass	Tune Mode	CPS	%RSD
Li	6	NoGas	14721	1.37
Sc	45	H2	21004	1.37
Sc	45	He	14982	2.88
Sc	45	NoGas	87411	2.93
Ge	72	H2	5304	4.98
Ge	72	He	7357	2.14
Ge	72	NoGas	17976	3.26
In	115	H2	99048	1.89
In	115	He	53149	0.19
In	115	NoGas	82030	1.90
Tb	159	H2	160473	1.92
Tb	159	He	90371	0.93
Tb	159	NoGas	87753	0.90
Ho	165	H2	152063	0.61
Ho	165	He	85221	0.90
Ho	165	NoGas	82407	0.96

Calibration Standard Report

Sample Table

Sample Name	Standard 1
Data File Name	002CALS.d
Data Path Name	K:\ICP-MS Megatron\Data\150401C.b
Acq Date Time	2015-04-01T15:41:51-07:00
Sample Type	CalStd
Level	2
Dilution	1
Comment	
ISTD Ref File Name	001CALB.d
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	ISTD Mass	Tune Mode	CPS	%RSD	Cal Coef
Be	9	45	NoGas	70	51.51	-1.0000
B	11	45	NoGas	16054	3.46	1.0000
Na	23	45	He	99812	0.20	-1.0000
Mg	24	45	He	1282	8.16	-1.0000
Al	27	45	He	1262	1.25	-1.0000
K	39	45	He	290986	7.03	1.0000
Ca	44	45	He	13474	2.75	-1.0000
Ti	47	45	He	46	11.18	1.0000
V	51	45	He	2142	5.69	1.0000
Cr	52	45	He	3289	6.40	1.0000
Mn	55	45	He	5454	1.48	1.0000
Fe	56	45	He	12956	1.30	-1.0000
Co	59	45	He	297	15.85	1.0000
Ni	60	45	He	610	10.21	1.0000
Cu	63	45	He	4860	1.36	1.0000
Zn	66	115	He	502	9.42	1.0000
As	75	115	He	319	4.28	1.0000
Se	78	72	H2	9	21.14	1.0000
Se	78	115	He	190	7.89	-1.0000
Sr	88	115	NoGas	673	13.39	1.0000
Mo	95	115	NoGas	290	43.07	-1.0000
Ag	107	115	NoGas	157	32.76	1.0000
Cd	111	115	He	40	52.92	1.0000
Sn	118	115	He	296	23.12	1.0000
Sn	118	115	NoGas	398	4.62	1.0000
Sb	121	115	NoGas	357	29.45	-1.0000
Ba	137	165	NoGas	90	40.06	1.0000
Tl	205	165	NoGas	257	17.99	1.0000
[Pb]	206	165	NoGas	390	29.12	
[Pb]	207	165	NoGas	237	24.39	
Pb	208	165	NoGas	1337	14.38	-1.0000

QC ISTD Table

Name	Mass	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li	6	NoGas	13382	1.34	14721	90.91	70	120	
Sc	45	H2	22234	16.74	21004	105.85	70	120	
Sc	45	He	14793	0.71	14982	98.74	70	120	
Sc	45	NoGas	85555	1.23	87411	97.88	70	120	
Ge	72	H2	5264	18.93	5304	99.25	70	120	
Ge	72	He	7427	0.59	7357	100.95	70	120	
Ge	72	NoGas	18333	1.27	17976	101.99	70	120	
In	115	H2	100904	17.94	99048	101.87	70	120	
In	115	He	52200	0.56	53149	98.21	70	120	
In	115	NoGas	81509	1.06	82030	99.37	70	120	
Tb	159	H2	167159	19.86	160473	104.17	70	120	
Tb	159	He	87873	0.88	90371	97.24	70	120	
Tb	159	NoGas	89110	0.53	87753	101.55	70	120	
Ho	165	H2	157808	19.99	152063	103.78	70	120	
Ho	165	He	83090	0.88	85221	97.50	70	120	
Ho	165	NoGas	81855	0.83	82407	99.33	70	120	

Calibration Standard Report

Sample Table

Sample Name	Standard 2
Data File Name	003CALS.d
Data Path Name	K:\ICP-MS Megatron\Data\150401C.b
Acq Date Time	2015-04-01T15:47:54-07:00
Sample Type	CalStd
Level	3
Dilution	1
Comment	
ISTD Ref File Name	001CALB.d
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	ISTD Mass	Tune Mode	CPS	%RSD	Cal Coef
Be	9	45	NoGas	530	8.22	0.9867
B	11	45	NoGas	18209	5.17	0.9329
Na	23	45	He	104143	1.21	0.2936
Mg	24	45	He	9755	1.01	0.9863
Al	27	45	He	3357	2.89	0.9719
K	39	45	He	330018	4.54	0.9998
Ca	44	45	He	13315	0.72	-0.7845
Ti	47	45	He	102	30.30	0.9886
V	51	45	He	3659	5.32	0.9978
Cr	52	45	He	4803	2.65	0.9961
Mn	55	45	He	6616	3.10	0.9935
Fe	56	45	He	40393	0.93	0.9479
Co	59	45	He	2651	6.07	1.0000
Ni	60	45	He	1236	4.33	0.9994
Cu	63	45	He	6421	2.21	0.9915
Zn	66	115	He	817	10.41	0.9291
As	75	115	He	708	2.00	0.9936
Se	78	72	H2	73	12.58	1.0000
Se	78	115	He	235	8.98	0.9720
Sr	88	115	NoGas	4334	4.79	0.9999
Mo	95	115	NoGas	977	8.34	0.9620
Ag	107	115	NoGas	1127	9.49	0.9998
Cd	111	115	He	373	9.22	1.0000
Sn	118	115	He	917	13.72	0.9987
Sn	118	115	NoGas	1429	3.10	0.9994
Sb	121	115	NoGas	1517	11.73	0.9871
Ba	137	165	NoGas	620	15.39	1.0000
Tl	205	165	NoGas	2394	7.91	1.0000
[Pb]	206	165	NoGas	967	7.63	
[Pb]	207	165	NoGas	880	14.90	
Pb	208	165	NoGas	4094	4.43	0.9920

QC ISTD Table

Name	Mass	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li	6	NoGas	13212	2.67	14721	89.75	70	120	
Sc	45	H2	20803	2.42	21004	99.04	70	120	
Sc	45	He	15159	1.60	14982	101.18	70	120	
Sc	45	NoGas	85532	1.57	87411	97.85	70	120	
Ge	72	H2	5151	1.42	5304	97.11	70	120	
Ge	72	He	7475	0.53	7357	101.60	70	120	
Ge	72	NoGas	17879	3.53	17976	99.46	70	120	
In	115	H2	96541	1.91	99048	97.47	70	120	
In	115	He	52758	1.90	53149	99.26	70	120	
In	115	NoGas	82746	1.82	82030	100.87	70	120	
Tb	159	H2	157797	0.23	160473	98.33	70	120	
Tb	159	He	90367	1.52	90371	100.00	70	120	
Tb	159	NoGas	87410	0.59	87753	99.61	70	120	
Ho	165	H2	149122	0.68	152063	98.07	70	120	
Ho	165	He	82788	1.75	85221	97.14	70	120	
Ho	165	NoGas	80383	0.25	82407	97.54	70	120	

Calibration Standard Report

Sample Table

Sample Name	Standard 3
Data File Name	004CALS.d
Data Path Name	K:\ICP-MS Megatron\Data\150401C.b
Acq Date Time	2015-04-01T15:53:58-07:00
Sample Type	CalStd
Level	4
Dilution	1
Comment	
ISTD Ref File Name	001CALB.d
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	ISTD Mass	Tune Mode	CPS	%RSD	Cal Coef
Be	9	45	NoGas	23222	2.05	1.0000
B	11	45	NoGas	34559	2.61	0.9884
Na	23	45	He	525991	0.36	0.9998
Mg	24	45	He	477400	0.54	1.0000
Al	27	45	He	111043	1.10	1.0000
K	39	45	He	563120	2.80	0.9938
Ca	44	45	He	40659	1.04	0.9976
Ti	47	45	He	3246	7.18	1.0000
V	51	45	He	80763	0.28	1.0000
Cr	52	45	He	91517	0.77	1.0000
Mn	55	45	He	68181	0.58	1.0000
Fe	56	45	He	1693745	2.08	1.0000
Co	59	45	He	121591	0.32	1.0000
Ni	60	45	He	32811	1.07	1.0000
Cu	63	45	He	88473	0.80	1.0000
Zn	66	115	He	19954	2.40	1.0000
As	75	115	He	23152	1.70	1.0000
Se	78	72	H2	3673	0.73	1.0000
Se	78	115	He	2027	7.57	1.0000
Sr	88	115	NoGas	213351	0.93	1.0000
Mo	95	115	NoGas	41329	1.20	1.0000
Ag	107	115	NoGas	54078	2.07	1.0000
Cd	111	115	He	18617	0.45	1.0000
Sn	118	115	He	39720	0.71	1.0000
Sn	118	115	NoGas	53824	0.93	1.0000
Sb	121	115	NoGas	86621	1.92	1.0000
Ba	137	165	NoGas	29620	1.00	1.0000
Tl	205	165	NoGas	120778	1.17	1.0000
[Pb]	206	165	NoGas	42447	2.09	
[Pb]	207	165	NoGas	36185	1.54	
Pb	208	165	NoGas	166550	1.34	1.0000

QC ISTD Table

Name	Mass	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li	6	NoGas	12988	4.76	14721	88.23	70	120	
Sc	45	H2	21303	1.97	21004	101.42	70	120	
Sc	45	He	15479	1.92	14982	103.32	70	120	
Sc	45	NoGas	85090	1.82	87411	97.35	70	120	
Ge	72	H2	5141	1.29	5304	96.92	70	120	
Ge	72	He	7665	2.48	7357	104.19	70	120	
Ge	72	NoGas	18253	2.45	17976	101.54	70	120	
In	115	H2	94990	0.41	99048	95.90	70	120	
In	115	He	53183	1.74	53149	100.06	70	120	
In	115	NoGas	81926	1.09	82030	99.87	70	120	
Tb	159	H2	160691	0.49	160473	100.14	70	120	
Tb	159	He	90854	0.60	90371	100.53	70	120	
Tb	159	NoGas	88709	1.15	87753	101.09	70	120	
Ho	165	H2	151338	0.99	152063	99.52	70	120	
Ho	165	He	83716	0.68	85221	98.23	70	120	
Ho	165	NoGas	81891	0.11	82407	99.37	70	120	

Calibration Standard Report

Sample Table

Sample Name	Standard 4
Data File Name	005CALS.d
Data Path Name	K:\ICP-MS Megatron\Data\150401C.b
Acq Date Time	2015-04-01T16:00:02-07:00
Sample Type	CalStd
Level	5
Dilution	1
Comment	
ISTD Ref File Name	001CALB.d
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	ISTD Mass	Tune Mode	CPS	%RSD	Cal Coef
Be	9	45	NoGas	45091	1.32	1.0000
B	11	45	NoGas	50318	1.87	0.9965
Na	23	45	He	933624	0.12	0.9999
Mg	24	45	He	926474	0.59	1.0000
Al	27	45	He	215589	0.60	1.0000
K	39	45	He	804498	2.09	0.9984
Ca	44	45	He	67514	1.35	0.9991
Ti	47	45	He	6386	2.04	0.9999
V	51	45	He	154867	0.09	1.0000
Cr	52	45	He	175215	0.24	1.0000
Mn	55	45	He	125864	0.45	1.0000
Fe	56	45	He	3234582	0.10	1.0000
Co	59	45	He	234271	0.44	1.0000
Ni	60	45	He	63326	0.54	1.0000
Cu	63	45	He	168157	0.75	1.0000
Zn	66	115	He	38745	1.20	1.0000
As	75	115	He	45215	0.55	1.0000
Se	78	72	H2	6994	1.62	0.9997
Se	78	115	He	3705	1.91	0.9999
Sr	88	115	NoGas	414880	1.91	0.9999
Mo	95	115	NoGas	75428	1.27	0.9999
Ag	107	115	NoGas	100897	1.40	1.0000
Cd	111	115	He	36069	0.48	1.0000
Sn	118	115	He	77044	0.81	1.0000
Sn	118	115	NoGas	104001	1.59	0.9999
Sb	121	115	NoGas	174272	0.90	0.9996
Ba	137	165	NoGas	58066	1.42	1.0000
Tl	205	165	NoGas	232393	0.10	0.9999
[Pb]	206	165	NoGas	81107	0.85	
[Pb]	207	165	NoGas	70220	1.53	
Pb	208	165	NoGas	322465	1.02	1.0000

QC ISTD Table

Name	Mass	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li	6	NoGas	12180	1.42	14721	82.74	70	120	
Sc	45	H2	20935	2.01	21004	99.67	70	120	
Sc	45	He	14873	0.70	14982	99.27	70	120	
Sc	45	NoGas	83841	0.42	87411	95.92	70	120	
Ge	72	H2	5136	1.19	5304	96.84	70	120	
Ge	72	He	7605	2.92	7357	103.37	70	120	
Ge	72	NoGas	17242	1.68	17976	95.92	70	120	
In	115	H2	93334	0.87	99048	94.23	70	120	
In	115	He	52135	1.01	53149	98.09	70	120	
In	115	NoGas	77642	2.54	82030	94.65	70	120	
Tb	159	H2	157946	0.38	160473	98.43	70	120	
Tb	159	He	89749	0.53	90371	99.31	70	120	
Tb	159	NoGas	86104	0.96	87753	98.12	70	120	
Ho	165	H2	148583	0.19	152063	97.71	70	120	
Ho	165	He	83915	0.45	85221	98.47	70	120	
Ho	165	NoGas	80598	1.44	82407	97.80	70	120	

Initial Calibration Verification (ICV) Report

Sample Table

Sample Name	ICV
Data File Name	013_ICV.d
Data Path Name	K:\ICP-MS Megatron\Data\150401C.b
Acq Date Time	2015-04-01T16:48:50-07:00
Sample Type	ICV
Dilution	1
Comment	
ISTD Ref File Name	001CALB.d
Sample QC Pass/Fail	Fail
ISTD Pass/Fail	Fail

QC Analyte Table

Name	Mass	ISTD Mass	Tune Mode	Conc	Conc %RSD	CPS	CPS %RSD	Exp Value	%Rec	%Low	%High	QC Flag
Be	9	45	NoGas	109.028	0.546	46949	1.81	100	109.0	89.6	110.4	
B	11	45	NoGas	137.380	1.668	61868	1.05	100	137.4	89.6	110.4	>+\- 10%
Na	23	45	He	2485.197	4.216	968560	0.62	2500	99.4	89.6	110.4	
Mg	24	45	He	2565.077	3.370	498293	0.29	2500	102.6	89.6	110.4	
Al	27	45	He	2507.977	3.706	282088	0.59	2500	100.3	89.6	110.4	
K	39	45	He	2504.014	5.335	976783	1.46	2500	100.2	89.6	110.4	
Ca	44	45	He	2251.609	5.643	39969	0.36	2500	90.1	89.6	110.4	
Ti	47	45	He	99.290	3.437	6616	2.93	100	99.3	89.6	110.4	
V	51	45	He	100.648	3.782	163127	0.79	100	100.6	89.6	110.4	
Cr	52	45	He	100.163	3.981	183476	0.87	100	100.2	89.6	110.4	
Mn	55	45	He	97.836	4.615	129224	1.31	100	97.8	89.6	110.4	
Fe	56	45	He	2511.077	2.441	4255251	1.41	2500	100.4	89.6	110.4	
Co	59	45	He	101.050	3.476	248124	0.72	100	101.0	89.6	110.4	
Ni	60	45	He	102.661	4.242	67970	1.36	100	102.7	89.6	110.4	
Cu	63	45	He	101.424	2.774	178275	0.88	100	101.4	89.6	110.4	
Zn	66	115	He	100.188	0.781	40313	0.76	100	100.2	89.6	110.4	
As	75	115	He	78.430	0.141	36844	0.47	100	78.4	89.6	110.4	>+\- 10%
Se	78	72	H2	102.101	3.462	7282	0.91	100	102.1	89.6	110.4	
Se	78	115	He	99.918	0.531	3856	0.84	100	99.9	89.6	110.4	
Sr	88	115	NoGas	97.742	0.664	423200	1.01	100	97.7	89.6	110.4	
Mo	95	115	NoGas	98.369	2.094	78358	1.59	100	98.4	89.6	110.4	
Ag	107	115	NoGas	49.759	1.681	105661	2.06	50	99.5	89.6	110.4	
Cd	111	115	He	99.525	1.826	37344	2.01	100	99.5	89.6	110.4	
Sn	118	115	He	51.233	1.690	41130	1.90	100	51.2	89.6	110.4	>+\- 10%
Sn	118	115	NoGas	51.322	0.306	55885	1.38	100	51.3	89.6	110.4	>+\- 10%
Sb	121	115	NoGas	97.321	1.597	175834	2.19	100	97.3	89.6	110.4	
Ba	137	165	NoGas	102.785	2.174	60772	0.93	100	102.8	89.6	110.4	
Tl	205	165	NoGas	101.767	2.934	241727	0.49	100	101.8	89.6	110.4	
Pb	208	165	NoGas	100.241	1.578	329734	1.04	100	100.2	89.6	110.4	

QC ISTD Table

Name	Mass	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li	6	NoGas	10265	1.56	14721	69.73	70	120	ISTD Failed
Sc	45	H2	20509	2.25	21004	97.64	70	120	
Sc	45	He	15608	3.17	14982	104.18	70	120	
Sc	45	NoGas	79880	2.04	87411	91.38	70	120	
Ge	72	H2	5190	2.64	5304	97.84	70	120	
Ge	72	He	7882	1.32	7357	107.13	70	120	
Ge	72	NoGas	18193	2.47	17976	101.21	70	120	
In	115	H2	96457	0.22	99048	97.38	70	120	
In	115	He	54103	0.37	53149	101.79	70	120	
In	115	NoGas	81439	1.56	82030	99.28	70	120	
Tb	159	H2	161042	0.76	160473	100.35	70	120	
Tb	159	He	92156	0.84	90371	101.97	70	120	
Tb	159	NoGas	89029	0.48	87753	101.45	70	120	
Ho	165	H2	151084	2.04	152063	99.36	70	120	
Ho	165	He	84914	1.23	85221	99.64	70	120	
Ho	165	NoGas	82035	2.43	82407	99.55	70	120	

Initial Calibration Blank (ICB) Report

Sample Table

Sample Name	ICB
Data File Name	015_ICB.d
Data Path Name	K:\ICP-MS Megatron\Data\150401C.b
Acq Date Time	2015-04-01T17:00:59-07:00
Sample Type	ICB
Dilution	1
Comment	
ISTD Ref File Name	001CALB.d
Sample QC Pass/Fail	Fail
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	ISTD Mass	Tune Mode	Conc	Conc %RSD	CPS	CPS %RSD	Upper Limit	QC Flag
Be	9	45	NoGas	-0.139	-30.2	37	41.7	0.1	
B	11	45	NoGas	66.290	14.9	33667	2.5	8	>LOD
Na	23	45	He	-85.827	-5.0	77348	0.8	50	
Mg	24	45	He	-9.352	-2.7	264	19.6	20	
Al	27	45	He	-8.381	-3.9	724	6.0	10	
K	39	45	He	132.418	35.3	337806	4.3	40	>LOD
Ca	44	45	He	-565.294	-3.2	9221	1.0	150	
Ti	47	45	He	-0.101	-117.4	22	34.7	0.5	
V	51	45	He	-0.211	-14.0	1609	4.0	0.4	
Cr	52	45	He	-0.317	-19.2	2881	4.9	0.2	
Mn	55	45	He	-0.074	-139.9	5343	2.7	0.3	
Fe	56	45	He	-7.186	-1.9	8231	2.0	30	
Co	59	45	He	0.001	481.4	72	11.6	0.4	
Ni	60	45	He	-0.051	-91.9	566	4.4	0.4	
Cu	63	45	He	0.420	30.4	5371	2.9	0.4	>LOD
Zn	66	115	He	0.031	301.2	270	13.7	15	
As	75	115	He	0.502	7.3	457	2.8	0.2	>LOD
Se	78	72	H2	0.104	25.6	8	22.9	0.4	
Se	78	115	He	0.271	157.0	214	7.2	0.4	
Sr	88	115	NoGas	0.005	308.1	217	18.7	0.1	
Mo	95	115	NoGas	-0.292	-19.3	173	23.3	0.3	
Ag	107	115	NoGas	-0.012	-101.9	43	48.0	0.1	
Cd	111	115	He	0.007	191.1	5	107.9	0.1	
Sn	118	115	He	0.040	161.4	224	21.5	0.1	
Sn	118	115	NoGas	0.087	117.3	299	24.0	0.1	
Sb	121	115	NoGas	0.412	12.7	1087	6.8	0.5	
Ba	137	165	NoGas	-0.014	-167.9	13	86.6	0.4	
Tl	205	165	NoGas	0.008	114.9	43	53.3	0.2	
Pb	208	165	NoGas	-0.208	-16.6	680	10.3	0.4	

QC ISTD Table

Name	Mass	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li	6	NoGas	10479	3.34	14721	71.18	70	120	
Sc	45	H2	20427	1.11	21004	97.25	70	120	
Sc	45	He	15519	1.12	14982	103.59	70	120	
Sc	45	NoGas	73448	7.26	87411	84.03	70	120	
Ge	72	H2	4899	0.67	5304	92.35	70	120	
Ge	72	He	7752	3.29	7357	105.36	70	120	
Ge	72	NoGas	16979	7.33	17976	94.45	70	120	
In	115	H2	97214	0.84	99048	98.15	70	120	
In	115	He	54060	1.12	53149	101.71	70	120	
In	115	NoGas	74909	10.38	82030	91.32	70	120	
Tb	159	H2	161230	0.54	160473	100.47	70	120	
Tb	159	He	90992	1.49	90371	100.69	70	120	
Tb	159	NoGas	79397	10.84	87753	90.48	70	120	
Ho	165	H2	150962	0.93	152063	99.28	70	120	
Ho	165	He	84385	0.47	85221	99.02	70	120	
Ho	165	NoGas	72599	10.55	82407	88.10	70	120	

Continuing Calibration Verification (CCV) Report

Sample Table

Sample Name	CCV
Data File Name	016_CCV.d
Data Path Name	K:\ICP-MS Megatron\Data\150401C.b
Acq Date Time	2015-04-01T17:07:03-07:00
Sample Type	CCV
Dilution	1
Comment	
ISTD Ref File Name	001CALB.d
Sample QC Pass/Fail	Fail
ISTD Pass/Fail	Fail

QC Analyte Table

Name	Mass	ISTD Mass	Tune Mode	Conc	Conc %RSD	CPS	CPS %RSD	Exp Value	%Rec	%Low	%High2	QC Flag
Be	9	45	NoGas	52.453	3.033	20492	4.06	50	104.9	89.6	110.4	
B	11	45	NoGas	111.220	2.577	47637	2.03	50	222.4	89.6	110.4	>+/- 10%
Na	23	45	He	1207.202	3.022	491827	0.59	1250	96.6	89.6	110.4	
Mg	24	45	He	2497.667	1.862	453932	0.30	2500	99.9	89.6	110.4	
Al	27	45	He	982.251	1.872	104304	0.23	1000	98.2	89.6	110.4	
K	39	45	He	1092.298	9.848	558700	3.47	1000	109.2	89.6	110.4	
Ca	44	45	He	2120.855	3.284	36056	0.17	2500	84.8	89.6	110.4	>+/- 10%
Ti	47	45	He	49.457	7.716	3094	6.07	50	98.9	89.6	110.4	
V	51	45	He	49.589	1.570	76121	0.64	50	99.2	89.6	110.4	
Cr	52	45	He	49.750	2.060	86887	0.08	50	99.5	89.6	110.4	
Mn	55	45	He	49.752	1.536	64001	0.65	50	99.5	89.6	110.4	
Fe	56	45	He	1011.517	1.880	1614520	1.04	1000	101.2	89.6	110.4	
Co	59	45	He	50.875	2.048	116890	0.51	50	101.7	89.6	110.4	
Ni	60	45	He	50.415	2.594	31514	1.07	50	100.8	89.6	110.4	
Cu	63	45	He	50.999	1.788	86021	0.53	50	102.0	89.6	110.4	
Zn	66	115	He	51.572	1.792	19079	1.09	50	103.1	89.6	110.4	
As	75	115	He	51.582	1.043	22218	1.54	50	103.2	89.6	110.4	
Se	78	72	H2	51.298	3.864	3402	1.16	50	102.6	89.6	110.4	
Se	78	115	He	52.802	3.837	1950	2.99	50	105.6	89.6	110.4	
Sr	88	115	NoGas	49.392	1.523	191274	0.71	50	98.8	89.6	110.4	
Mo	95	115	NoGas	50.119	1.091	35884	2.49	50	100.2	89.6	110.4	
Ag	107	115	NoGas	24.957	1.362	47405	0.33	25	99.8	89.6	110.4	
Cd	111	115	He	51.461	1.218	17650	1.58	50	102.9	89.6	110.4	
Sn	118	115	He	50.694	2.400	37193	1.60	50	101.4	89.6	110.4	
Sn	118	115	NoGas	51.373	1.651	50004	0.29	50	102.7	89.6	110.4	
Sb	121	115	NoGas	48.562	1.457	78632	1.28	50	97.1	89.6	110.4	
Ba	137	165	NoGas	51.293	4.810	26785	2.94	50	102.6	89.6	110.4	
Tl	205	165	NoGas	51.373	2.195	107798	0.97	50	102.7	89.6	110.4	
Pb	208	165	NoGas	50.813	2.714	148222	0.47	50	101.6	89.6	110.4	

QC ISTD Table

Name	Mass	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li	6	NoGas	9937	0.71	14721	67.50	70	120	ISTD Failed
Sc	45	H2	19527	1.53	21004	92.97	70	120	
Sc	45	He	14594	1.98	14982	97.41	70	120	
Sc	45	NoGas	72285	1.07	87411	82.70	70	120	
Ge	72	H2	4827	4.70	5304	91.01	70	120	
Ge	72	He	7259	1.59	7357	98.67	70	120	
Ge	72	NoGas	16611	0.41	17976	92.41	70	120	
In	115	H2	90943	0.64	99048	91.82	70	120	
In	115	He	49450	0.79	53149	93.04	70	120	
In	115	NoGas	72808	1.58	82030	88.76	70	120	
Tb	159	H2	153987	1.20	160473	95.96	70	120	
Tb	159	He	83827	0.94	90371	92.76	70	120	
Tb	159	NoGas	80045	1.36	87753	91.22	70	120	
Ho	165	H2	144412	0.93	152063	94.97	70	120	
Ho	165	He	78339	0.39	85221	91.92	70	120	
Ho	165	NoGas	72451	2.58	82407	87.92	70	120	

Continuing Calibration Blank (CCB) Report

Sample Table

Sample Name	CCB
Data File Name	018_CCB.d
Data Path Name	K:\ICP-MS Megatron\Data\150401C.b
Acq Date Time	2015-04-01T17:19:10-07:00
Sample Type	CCB
Dilution	1
Comment	
ISTD Ref File Name	001CALB.d
Sample QC Pass/Fail	Fail
ISTD Pass/Fail	Fail

QC Analyte Table

Name	Mass	ISTD Mass	Tune Mode	Conc	Conc %RSD	CPS	CPS %RSD	Upper Limit	QC Flag
Be	9	45	NoGas	-0.011	-677.1	90	29.4	0.1	
B	11	45	NoGas	71.321	6.6	36639	3.0	8	>LOD
Na	23	45	He	-63.543	-1.8	83589	0.6	50	
Mg	24	45	He	-4.007	-3.5	1271	3.2	20	
Al	27	45	He	-5.019	-14.3	1080	8.4	10	
K	39	45	He	125.835	46.2	330381	5.7	40	>LOD
Ca	44	45	He	-593.016	-2.7	8771	3.0	150	
Ti	47	45	He	0.025	415.7	30	22.2	0.5	
V	51	45	He	-0.055	-139.7	1827	7.5	0.4	
Cr	52	45	He	-0.147	-2.2	3129	1.0	0.2	
Mn	55	45	He	-0.088	-78.3	5234	1.8	0.3	
Fe	56	45	He	-4.010	-2.4	13328	1.7	30	
Co	59	45	He	0.107	18.3	326	14.3	0.4	
Ni	60	45	He	0.379	197.7	835	58.9	0.4	
Cu	63	45	He	0.735	10.6	5808	1.9	0.4	>LOD
Zn	66	115	He	0.761	24.7	544	13.8	15	
As	75	115	He	0.354	29.9	376	12.3	0.2	>LOD
Se	78	72	H2	0.124	10.5	9	11.5	0.4	
Se	78	115	He	1.192	45.4	240	7.9	0.4	>LOD
Sr	88	115	NoGas	0.120	9.7	713	6.5	0.1	>LOD
Mo	95	115	NoGas	-0.236	-21.8	227	16.7	0.3	
Ag	107	115	NoGas	0.035	96.9	143	49.5	0.1	
Cd	111	115	He	0.103	13.1	39	12.8	0.1	>LOD
Sn	118	115	He	0.072	39.4	243	9.6	0.1	
Sn	118	115	NoGas	0.097	5.5	332	2.3	0.1	
Sb	121	115	NoGas	0.196	19.7	773	9.2	0.5	
Ba	137	165	NoGas	0.166	50.0	113	39.8	0.4	
Tl	205	165	NoGas	0.096	16.2	240	12.5	0.2	
Pb	208	165	NoGas	-0.142	-16.2	927	5.9	0.4	

QC ISTD Table

Name	Mass	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li	6	NoGas	9514	2.01	14721	64.62	70	120	ISTD Failed
Sc	45	H2	19220	1.47	21004	91.51	70	120	
Sc	45	He	15254	1.06	14982	101.82	70	120	
Sc	45	NoGas	75957	3.40	87411	86.90	70	120	
Ge	72	H2	4795	2.82	5304	90.40	70	120	
Ge	72	He	7760	2.54	7357	105.47	70	120	
Ge	72	NoGas	17499	6.91	17976	97.35	70	120	
In	115	H2	92237	1.42	99048	93.12	70	120	
In	115	He	52390	0.56	53149	98.57	70	120	
In	115	NoGas	78921	0.65	82030	96.21	70	120	
Tb	159	H2	154171	1.33	160473	96.07	70	120	
Tb	159	He	87244	0.18	90371	96.54	70	120	
Tb	159	NoGas	85401	1.38	87753	97.32	70	120	
Ho	165	H2	144337	0.37	152063	94.92	70	120	
Ho	165	He	81781	0.43	85221	95.96	70	120	
Ho	165	NoGas	76761	1.87	82407	93.15	70	120	

Interference Check Solution A (ICS-A) Report

Sample Table

Sample Name	ICSA
Data File Name	019ICSA.d
Data Path Name	K:\ICP-MS Megatron\Data\150401C.b
Acq Date Time	2015-04-01T17:25:12-07:00
Sample Type	ICSA
Dilution	1
Comment	
ISTD Ref File Name	001CALB.d
Sample QC Pass/Fail	Fail
ISTD Pass/Fail	Fail

QC Analyte Table

Name	Mass	ISTD Mass	Tune Mode	Conc	Conc %RSD	CPS	CPS %RSD	Upper Limit	QC Flag
Be	9	45	NoGas	-0.098	-47.9	60	33.3	0.1	
B	11	45	NoGas	69.670	2.3	39616	1.8	8	>RL
Na	23	45	He	52415.307	1.8	17968460	0.3	60000	
Mg	24	45	He	50802.221	2.8	9666212	0.7	60000	
Al	27	45	He	49530.119	1.3	5449033	0.9	60000	
K	39	45	He	48793.314	3.0	13192735	0.9	60000	
Ca	44	45	He	50330.617	1.8	554662	0.4	60000	
Ti	47	45	He	1033.460	2.1	67435	0.8	1200	
V	51	45	He	-0.281	-26.6	1479	6.4	0.2	>RL
Cr	52	45	He	0.130	9.1	3637	1.6	30	
Mn	55	45	He	2.570	7.4	8571	1.7	24	
Fe	56	45	He	46417.767	2.5	76986712	1.3	60000	
Co	59	45	He	0.049	13.7	187	7.8	5	
Ni	60	45	He	0.032	250.7	612	6.9	20	
Cu	63	45	He	1.428	8.6	7006	1.8	25	
Zn	66	115	He	0.165	53.7	319	11.1	60	
As	75	115	He	0.340	9.9	375	4.1	0.4	
Se	78	72	H2	0.056	29.6	5	27.7	0.4	
Se	78	115	He	1.593	18.0	258	2.9	0.4	>RL
Sr	88	115	NoGas	0.575	6.1	2647	4.7	5	
Mo	95	115	NoGas	1079.326	0.4	836780	0.5	1200	
Ag	107	115	NoGas	-0.005	-232.1	60	44.1	5	
Cd	111	115	He	0.173	25.8	66	24.2	0.5	
Sn	118	115	He	0.275	20.6	407	10.7	5	
Sn	118	115	NoGas	0.209	11.1	454	4.5	5	
Sb	121	115	NoGas	0.143	26.4	687	8.8	5	
Ba	137	165	NoGas	0.341	6.9	230	7.5	1.5	
Tl	205	165	NoGas	0.005	318.6	43	93.3	0.2	
Pb	208	165	NoGas	-0.095	-42.7	1170	12.6	1	

QC ISTD Table

Name	Mass	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li	6	NoGas	9788	5.44	14721	66.49	70	120	ISTD Failed
Sc	45	H2	20810	8.29	21004	99.07	70	120	
Sc	45	He	15343	2.11	14982	102.41	70	120	
Sc	45	NoGas	83335	1.76	87411	95.34	70	120	
Ge	72	H2	5159	4.93	5304	97.26	70	120	
Ge	72	He	8265	1.76	7357	112.34	70	120	
Ge	72	NoGas	19742	1.59	17976	109.82	70	120	
In	115	H2	90394	8.71	99048	91.26	70	120	
In	115	He	53261	1.52	53149	100.21	70	120	
In	115	NoGas	79642	0.95	82030	97.09	70	120	
Tb	159	H2	155121	8.13	160473	96.66	70	120	
Tb	159	He	91524	0.37	90371	101.28	70	120	
Tb	159	NoGas	89425	0.53	87753	101.91	70	120	
Ho	165	H2	145176	8.63	152063	95.47	70	120	
Ho	165	He	85823	0.38	85221	100.71	70	120	
Ho	165	NoGas	83764	2.15	82407	101.65	70	120	

Interference Check Solution AB (ICS-AB) Report

Sample Table

Sample Name	ICSAB
Data File Name	025ICSB.d
Data Path Name	K:\ICP-MS Megatron\Data\150401C.b
Acq Date Time	2015-04-01T18:01:32-07:00
Sample Type	ICSB
Dilution	1
Comment	
ISTD Ref File Name	001CALB.d
Sample QC Pass/Fail	Fail
ISTD Pass/Fail	Fail

QC Analyte Table

Name	Mass	ISTD Mass	Tune Mode	Conc	Conc %RSD	CPS	CPS %RSD	Exp Value	%Rec	%Low	%High	QC Flag
Be	9	45	NoGas	49.253	12.061	20622	1.92	50	98.5	80	120	
B	11	45	NoGas	88.324	17.448	43200	1.70	-8	-1104.1	80	120	>+\- 20%
Na	23	45	He	49899.285	2.005	16942303	0.56	50000	99.8	80	120	
Mg	24	45	He	47704.722	3.510	8986461	1.04	50000	95.4	80	120	
Al	27	45	He	46704.706	2.911	5086622	0.93	50000	93.4	80	120	
K	39	45	He	45627.575	2.492	12235416	0.05	50000	91.3	80	120	
Ca	44	45	He	46375.415	2.287	507193	0.30	50000	92.8	80	120	
Tl	47	45	He	962.717	2.580	62197	0.43	1000	96.3	80	120	
V	51	45	He	49.456	2.065	79030	0.50	50	98.9	80	120	
Cr	52	45	He	46.834	3.261	85331	0.69	50	93.7	80	120	
Mn	55	45	He	48.493	3.100	65060	0.50	50	97.0	80	120	
Fe	56	45	He	43477.908	2.910	71393946	0.44	50000	87.0	80	120	
Co	59	45	He	48.035	3.824	114858	1.35	50	96.1	80	120	
Ni	60	45	He	95.684	2.765	61733	0.38	100	95.7	80	120	
Cu	63	45	He	48.720	3.555	85728	0.89	50	97.4	80	120	
Zn	66	115	He	98.788	1.210	37437	0.42	100	98.8	80	120	
As	75	115	He	47.219	0.775	20975	1.16	50	94.4	80	120	
Se	78	72	H2	49.943	5.507	3364	2.65	50	99.9	80	120	
Se	78	115	He	51.345	5.984	1960	6.15	50	102.7	80	120	
Sr	88	115	NoGas	0.647	10.154	2747	4.75	-5	-12.9	80	120	
Mo	95	115	NoGas	1080.432	12.080	776849	1.55	1050	102.9	80	120	
Ag	107	115	NoGas	97.450	11.141	187746	0.54	100	97.5	80	120	
Cd	111	115	He	97.629	1.420	34503	2.02	100	97.6	80	120	
Sn	118	115	He	0.189	34.634	324	15.93	50	0.4	80	120	>+\- 20%
Sn	118	115	NoGas	0.294	23.522	504	3.76	50	0.6	80	120	>+\- 20%
Sb	121	115	NoGas	51.747	11.176	85043	1.57	50	103.5	80	120	
Ba	137	165	NoGas	51.137	10.184	28014	1.86	50	102.3	80	120	
Tl	205	165	NoGas	47.996	12.841	105402	1.82	50	96.0	80	120	
Pb	208	165	NoGas	95.875	12.835	291537	1.84	100	95.9	80	120	

QC ISTD Table

Name	Mass	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li	6	NoGas	9044	0.68	14721	61.43	70	120	ISTD Failed
Sc	45	H2	19954	2.11	21004	95.00	70	120	
Sc	45	He	15193	2.48	14982	101.41	70	120	
Sc	45	NoGas	78115	10.61	87411	89.37	70	120	
Ge	72	H2	4902	2.94	5304	92.41	70	120	
Ge	72	He	8032	1.01	7357	109.17	70	120	
Ge	72	NoGas	18637	10.33	17976	103.68	70	120	
In	115	H2	90059	0.58	99048	90.92	70	120	
In	115	He	50955	0.94	53149	95.87	70	120	
In	115	NoGas	74510	10.84	82030	90.83	70	120	
Tb	159	H2	154151	1.37	160473	96.06	70	120	
Tb	159	He	87571	0.73	90371	96.90	70	120	
Tb	159	NoGas	81888	12.48	87753	93.32	70	120	
Ho	165	H2	146643	0.63	152063	96.44	70	120	
Ho	165	He	81902	0.96	85221	96.10	70	120	
Ho	165	NoGas	76543	11.40	82407	92.88	70	120	

Continuing Calibration Verification (CCV) Report

Sample Table

Sample Name	CCV
Data File Name	037_CCV.d
Data Path Name	K:\ICP-MS Megatron\Data\150401C.b
Acq Date Time	2015-04-01T19:14:22-07:00
Sample Type	CCV
Dilution	1
Comment	
ISTD Ref File Name	001CALB.d
Sample QC Pass/Fail	Fail
ISTD Pass/Fail	Fail

QC Analyte Table

Name	Mass	ISTD Mass	Tune Mode	Conc	Conc %RSD	CPS	CPS %RSD	Exp Value	%Rec	%Low	%High2	QC Flag
Be	9	45	NoGas	47.637	2.504	19044	2.62	50	95.3	89.6	110.4	
B	11	45	NoGas	150.540	1.070	61591	1.74	50	301.1	89.6	110.4	>+/- 10%
Na	23	45	He	1374.181	2.970	554802	0.61	1250	109.9	89.6	110.4	
Mg	24	45	He	2498.040	2.087	461361	0.95	2500	99.9	89.6	110.4	
Al	27	45	He	981.060	3.127	105850	0.86	1000	98.1	89.6	110.4	
K	39	45	He	1161.864	9.387	585620	3.98	1000	116.2	89.6	110.4	>+/- 10%
Ca	44	45	He	2135.275	3.945	36793	2.03	2500	85.4	89.6	110.4	>+/- 10%
Ti	47	45	He	49.647	7.748	3155	5.25	50	99.3	89.6	110.4	
V	51	45	He	52.186	3.463	81285	0.46	50	104.4	89.6	110.4	
Cr	52	45	He	49.867	3.204	88490	1.82	50	99.7	89.6	110.4	
Mn	55	45	He	48.644	2.490	63700	0.85	50	97.3	89.6	110.4	
Fe	56	45	He	999.298	2.297	1621030	1.08	1000	99.9	89.6	110.4	
Co	59	45	He	51.461	3.098	120131	0.15	50	102.9	89.6	110.4	
Ni	60	45	He	50.710	2.636	32207	0.42	50	101.4	89.6	110.4	
Cu	63	45	He	51.625	2.473	88434	1.47	50	103.3	89.6	110.4	
Zn	66	115	He	52.584	3.035	19751	3.54	50	105.2	89.6	110.4	
As	75	115	He	51.877	0.491	22685	0.48	50	103.8	89.6	110.4	
Se	78	72	H2	56.246	9.208	3368	1.28	50	112.5	89.6	110.4	>+/- 10%
Se	78	115	He	49.170	5.604	1857	5.16	50	98.3	89.6	110.4	
Sr	88	115	NoGas	48.967	0.994	195447	0.77	50	97.9	89.6	110.4	
Mo	95	115	NoGas	48.405	2.119	35724	1.65	50	96.8	89.6	110.4	
Ag	107	115	NoGas	24.812	0.464	48578	1.17	25	99.2	89.6	110.4	
Cd	111	115	He	50.617	1.860	17627	2.37	50	101.2	89.6	110.4	
Sn	118	115	He	50.801	2.299	37845	1.85	50	101.6	89.6	110.4	
Sn	118	115	NoGas	49.582	1.712	49747	0.71	50	99.2	89.6	110.4	
Sb	121	115	NoGas	47.237	3.050	78830	2.21	50	94.5	89.6	110.4	
Ba	137	165	NoGas	50.902	0.390	27183	1.25	50	101.8	89.6	110.4	
Tl	205	165	NoGas	50.087	1.917	107429	1.13	50	100.2	89.6	110.4	
Pb	208	165	NoGas	49.982	0.541	149075	0.32	50	100.0	89.6	110.4	

QC ISTD Table

Name	Mass	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li	6	NoGas	7723	1.48	14721	52.46	70	120	ISTD Failed
Sc	45	H2	17613	5.12	21004	83.85	70	120	
Sc	45	He	14833	2.97	14982	99.01	70	120	
Sc	45	NoGas	73952	0.89	87411	84.60	70	120	
Ge	72	H2	4382	10.39	5304	82.61	70	120	
Ge	72	He	7195	1.16	7357	97.79	70	120	
Ge	72	NoGas	17296	1.64	17976	96.21	70	120	
In	115	H2	81179	8.95	99048	81.96	70	120	
In	115	He	50208	0.73	53149	94.47	70	120	
In	115	NoGas	75035	1.16	82030	91.47	70	120	
Tb	159	H2	137241	8.65	160473	85.52	70	120	
Tb	159	He	84795	1.29	90371	93.83	70	120	
Tb	159	NoGas	80002	1.37	87753	91.17	70	120	
Ho	165	H2	128532	9.64	152063	84.53	70	120	
Ho	165	He	79876	1.95	85221	93.73	70	120	
Ho	165	NoGas	74038	0.85	82407	89.84	70	120	

Continuing Calibration Blank (CCB) Report

Sample Table

Sample Name	CCB
Data File Name	039_CCB.d
Data Path Name	K:\ICP-MS Megatron\Data\150401C.b
Acq Date Time	2015-04-01T19:26:29-07:00
Sample Type	CCB
Dilution	1
Comment	
ISTD Ref File Name	001CALB.d
Sample QC Pass/Fail	Fail
ISTD Pass/Fail	Fail

QC Analyte Table

Name	Mass	ISTD Mass	Tune Mode	Conc	Conc %RSD	CPS	CPS %RSD	Upper Limit	QC Flag
Be	9	45	NoGas	-0.072	-131.3	63	59.8	0.1	
B	11	45	NoGas	99.616	1.3	44476	0.4	8	>LOD
Na	23	45	He	59.230	5.6	118232	1.1	50	>LOD
Mg	24	45	He	-2.495	-33.4	1470	9.8	20	
Al	27	45	He	-3.496	-8.0	1177	2.5	10	
K	39	45	He	222.129	20.1	335959	5.1	40	>LOD
Ca	44	45	He	-465.267	-2.7	9570	3.2	150	
Ti	47	45	He	-0.165	-35.5	17	20.0	0.5	
V	51	45	He	1.248	8.2	3650	2.9	0.4	>LOD
Cr	52	45	He	0.357	27.6	3790	3.1	0.2	>LOD
Mn	55	45	He	-0.997	-6.8	3883	4.0	0.3	
Fe	56	45	He	-1.830	-10.3	15980	0.8	30	
Co	59	45	He	0.094	10.3	278	8.0	0.4	
Ni	60	45	He	0.002	6466.7	557	15.6	0.4	
Cu	63	45	He	1.191	12.3	6204	2.7	0.4	>LOD
Zn	66	115	He	0.715	30.4	507	15.1	15	
As	75	115	He	0.381	10.7	374	5.6	0.2	>LOD
Se	78	72	H2	0.114	28.8	8	19.0	0.4	
Se	78	115	He	1.294	18.0	235	4.7	0.4	>LOD
Sr	88	115	NoGas	0.109	6.2	640	4.1	0.1	>LOD
Mo	95	115	NoGas	-0.272	-13.2	190	13.9	0.3	
Ag	107	115	NoGas	0.064	8.6	193	6.0	0.1	
Cd	111	115	He	0.084	63.6	31	59.3	0.1	
Sn	118	115	He	0.179	8.3	313	3.7	0.1	>LOD
Sn	118	115	NoGas	0.152	11.5	373	5.0	0.1	>LOD
Sb	121	115	NoGas	0.123	47.8	617	15.6	0.5	
Ba	137	165	NoGas	0.079	73.9	63	48.2	0.4	
Tl	205	165	NoGas	0.096	52.6	233	45.0	0.2	
Pb	208	165	NoGas	-0.116	-19.2	977	8.3	0.4	

QC ISTD Table

Name	Mass	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li	6	NoGas	7640	1.87	14721	51.90	70	120	ISTD Failed
Sc	45	H2	17946	3.87	21004	85.44	70	120	
Sc	45	He	14407	1.90	14982	96.16	70	120	
Sc	45	NoGas	73186	1.06	87411	83.73	70	120	
Ge	72	H2	4338	6.27	5304	81.79	70	120	
Ge	72	He	7303	1.21	7357	99.26	70	120	
Ge	72	NoGas	17362	1.38	17976	96.58	70	120	
In	115	H2	84793	5.28	99048	85.61	70	120	
In	115	He	50453	1.54	53149	94.93	70	120	
In	115	NoGas	75399	0.47	82030	91.92	70	120	
Tb	159	H2	143386	4.63	160473	89.35	70	120	
Tb	159	He	84186	0.68	90371	93.16	70	120	
Tb	159	NoGas	78357	0.73	87753	89.29	70	120	
Ho	165	H2	135613	4.35	152063	89.18	70	120	
Ho	165	He	79195	0.50	85221	92.93	70	120	
Ho	165	NoGas	74366	1.61	82407	90.24	70	120	

Continuing Calibration Verification (CCV) Report

Sample Table

Sample Name	CCV
Data File Name	049_CCV.d
Data Path Name	K:\ICP-MS Megatron\Data\150401C.b
Acq Date Time	2015-04-01T20:27:13-07:00
Sample Type	CCV
Dilution	1
Comment	
ISTD Ref File Name	001CALB.d
Sample QC Pass/Fail	Fail
ISTD Pass/Fail	Fail

QC Analyte Table

Name	Mass	ISTD Mass	Tune Mode	Conc	Conc %RSD	CPS	CPS %RSD	Exp Value	%Rec	%Low	%High2	QC Flag
Be	9	45	NoGas	48.473	2.448	19337	0.79	50	96.9	89.6	110.4	
B	11	45	NoGas	165.827	3.635	66443	1.00	50	331.7	89.6	110.4	>+/- 10%
Na	23	45	He	1367.916	1.414	557918	0.24	1250	109.4	89.6	110.4	
Mg	24	45	He	2540.495	1.321	473530	0.55	2500	101.6	89.6	110.4	
Al	27	45	He	997.467	1.014	108617	0.90	1000	99.7	89.6	110.4	
K	39	45	He	1275.288	8.032	620236	3.11	1000	127.5	89.6	110.4	>+/- 10%
Ca	44	45	He	2014.004	4.940	35859	1.54	2500	80.6	89.6	110.4	>+/- 10%
Tl	47	45	He	49.685	10.341	3187	9.00	50	99.4	89.6	110.4	
V	51	45	He	52.833	1.566	83054	0.41	50	105.7	89.6	110.4	
Cr	52	45	He	51.757	1.510	92578	0.13	50	103.5	89.6	110.4	
Mn	55	45	He	48.831	2.777	64515	1.34	50	97.7	89.6	110.4	
Fe	56	45	He	1040.897	2.157	1703409	1.66	1000	104.1	89.6	110.4	
Co	59	45	He	53.173	2.210	125296	1.24	50	106.3	89.6	110.4	
Ni	60	45	He	52.030	1.723	33341	0.54	50	104.1	89.6	110.4	
Cu	63	45	He	53.937	1.041	93054	0.73	50	107.9	89.6	110.4	
Zn	66	115	He	51.690	2.634	20129	2.31	50	103.4	89.6	110.4	
As	75	115	He	52.494	0.452	23796	0.15	50	105.0	89.6	110.4	
Se	78	72	H2	50.946	1.423	3475	2.41	50	101.9	89.6	110.4	
Se	78	115	He	51.409	5.130	2004	4.23	50	102.8	89.6	110.4	
Sr	88	115	NoGas	47.837	2.062	202820	1.55	50	95.7	89.6	110.4	
Mo	95	115	NoGas	47.990	2.002	37634	2.89	50	96.0	89.6	110.4	
Ag	107	115	NoGas	24.558	1.971	51083	2.97	25	98.2	89.6	110.4	
Cd	111	115	He	51.731	1.111	18676	1.44	50	103.5	89.6	110.4	
Sn	118	115	He	51.524	0.973	39794	1.27	50	103.0	89.6	110.4	
Sn	118	115	NoGas	49.728	1.042	53003	0.74	50	99.5	89.6	110.4	
Sb	121	115	NoGas	47.567	2.572	84333	2.59	50	95.1	89.6	110.4	
Ba	137	165	NoGas	52.164	1.814	28718	1.87	50	104.3	89.6	110.4	
Tl	205	165	NoGas	51.793	0.960	114540	1.12	50	103.6	89.6	110.4	
Pb	208	165	NoGas	50.061	1.077	153941	1.24	50	100.1	89.6	110.4	

QC ISTD Table

Name	Mass	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li	6	NoGas	7346	6.58	14721	49.90	70	120	ISTD Failed
Sc	45	H2	19866	3.14	21004	94.58	70	120	
Sc	45	He	14966	1.38	14982	99.90	70	120	
Sc	45	NoGas	73825	1.93	87411	84.46	70	120	
Ge	72	H2	4960	1.68	5304	93.50	70	120	
Ge	72	He	7751	2.25	7357	105.35	70	120	
Ge	72	NoGas	17876	4.57	17976	99.44	70	120	
In	115	H2	94117	0.66	99048	95.02	70	120	
In	115	He	52052	0.47	53149	97.94	70	120	
In	115	NoGas	79707	1.13	82030	97.17	70	120	
Tb	159	H2	158940	0.47	160473	99.04	70	120	
Tb	159	He	89631	0.84	90371	99.18	70	120	
Tb	159	NoGas	84831	1.20	87753	96.67	70	120	
Ho	165	H2	150538	0.90	152063	99.00	70	120	
Ho	165	He	83513	0.48	85221	98.00	70	120	
Ho	165	NoGas	76331	0.17	82407	92.63	70	120	

Continuing Calibration Blank (CCB) Report

Sample Table

Sample Name	CCB
Data File Name	051_CCB.d
Data Path Name	K:\ICP-MS Megatron\Data\150401C.b
Acq Date Time	2015-04-01T20:39:20-07:00
Sample Type	CCB
Dilution	1
Comment	
ISTD Ref File Name	001CALB.d
Sample QC Pass/Fail	Fail
ISTD Pass/Fail	Fail

QC Analyte Table

Name	Mass	ISTD Mass	Tune Mode	Conc	Conc %RSD	CPS	CPS %RSD	Upper Limit	QC Flag
Be	9	45	NoGas	-0.064	-48.7	67	17.3	0.1	
B	11	45	NoGas	113.166	5.3	49288	2.6	8	>LOD
Na	23	45	He	31.704	16.4	114784	0.5	50	
Mg	24	45	He	-2.812	-13.5	1482	2.9	20	
Al	27	45	He	-2.876	-16.9	1301	2.2	10	
K	39	45	He	354.831	25.0	386716	5.2	40	>LOD
Ca	44	45	He	-607.161	-7.4	8534	3.9	150	
Ti	47	45	He	-0.006	-4226.3	28	54.1	0.5	
V	51	45	He	0.836	15.9	3190	5.3	0.4	>LOD
Cr	52	45	He	0.222	37.3	3742	2.0	0.2	>LOD
Mn	55	45	He	-2.137	-6.0	2674	5.8	0.3	
Fe	56	45	He	-2.099	-21.1	16318	2.6	30	
Co	59	45	He	0.101	15.8	310	12.4	0.4	
Ni	60	45	He	-0.175	-55.1	471	11.8	0.4	
Cu	63	45	He	1.201	7.2	6526	1.5	0.4	>LOD
Zn	66	115	He	0.764	34.1	554	17.5	15	
As	75	115	He	0.320	21.4	366	7.1	0.2	>LOD
Se	78	72	H2	0.145	20.6	10	17.6	0.4	
Se	78	115	He	1.340	70.1	249	12.4	0.4	>LOD
Sr	88	115	NoGas	0.098	11.3	630	6.3	0.1	
Mo	95	115	NoGas	-0.292	-28.4	187	35.7	0.3	
Ag	107	115	NoGas	0.041	25.0	157	13.3	0.1	
Cd	111	115	He	0.108	34.7	42	33.3	0.1	>LOD
Sn	118	115	He	0.091	26.2	262	5.7	0.1	
Sn	118	115	NoGas	0.115	44.2	357	16.8	0.1	>LOD
Sb	121	115	NoGas	0.226	41.0	837	21.3	0.5	
Ba	137	165	NoGas	0.058	96.2	53	57.3	0.4	
Tl	205	165	NoGas	0.131	8.4	317	7.3	0.2	
Pb	208	165	NoGas	-0.132	-29.9	953	12.9	0.4	

QC ISTD Table

Name	Mass	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li	6	NoGas	7106	4.41	14721	48.27	70	120	ISTD Failed
Sc	45	H2	19621	1.85	21004	93.41	70	120	
Sc	45	He	15114	2.00	14982	100.88	70	120	
Sc	45	NoGas	73851	1.35	87411	84.49	70	120	
Ge	72	H2	4724	2.05	5304	89.06	70	120	
Ge	72	He	7820	2.00	7357	106.29	70	120	
Ge	72	NoGas	18323	3.81	17976	101.93	70	120	
In	115	H2	93947	1.91	99048	94.85	70	120	
In	115	He	53322	1.64	53149	100.32	70	120	
In	115	NoGas	79848	1.68	82030	97.34	70	120	
Tb	159	H2	158690	1.18	160473	98.89	70	120	
Tb	159	He	88972	0.95	90371	98.45	70	120	
Tb	159	NoGas	84430	1.83	87753	96.21	70	120	
Ho	165	H2	148295	0.31	152063	97.52	70	120	
Ho	165	He	83277	0.40	85221	97.72	70	120	
Ho	165	NoGas	76409	0.63	82407	92.72	70	120	

METALS

Raw Data

APPL, INC.

METALS BLANK

APPL Inc.
908 North Temperance Avenue
Clovis, CA 93611

Method	Analyte	Result	LOQ	LOD	DL	Units	Prep Date	Analysis Date	QC Group
6020A	LEAD (PB)	0.40 U	3.0	0.40	0.19	ug/L	04/01/15	04/01/15	#62A14-150401A2-AZ12342

Metals SC-Blank-REG MDLs
Printed: 04/03/15 2:12:01 PM

Sample Report

Sample Table

Sample Name	150401A BLK
Data File Name	040SMPL.d
Data Path Name	K:\ICP-MS Megatron\Data\150401C.b
Acq Date Time	2015-04-01T19:32:31-07:00
Sample Type	Sample
Dilution	1.111111111
Comment	
ISTD Ref FileName	001CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Fail

QC Analyte Table

Name	Mass	ISTD Mass	Tune Mode	Conc	FinalConc	Conc %RSD	CPS	%RSD	LDR	QC Flag
Be	9	45	NoGas	-0.170	-0.189	-25.14	23	65.47	10000	
B	11	45	NoGas	123.675	137.416	5.52	49943	1.66	10000	
Na	23	45	He	100.076	111.195	7.02	125541	0.42	1000000	
Mg	24	45	He	-7.555	-8.394	-4.30	541	8.98	1000000	
Al	27	45	He	-6.140	-6.822	-6.23	864	5.58	1000000	
K	39	45	He	386.736	429.707	21.47	360172	5.62	500000	
Ca	44	45	He	-473.605	-526.228	-5.26	9067	1.20	500000	
Ti	47	45	He	-0.172	-0.191	-139.28	16	89.22	10000	
V	51	45	He	-0.770	-0.855	-5.83	638	8.51	10000	
Cr	52	45	He	0.000	0.000	166112.39	3059	4.59	10000	
Mn	55	45	He	-0.981	-1.090	-6.35	3728	1.69	50000	
Fe	56	45	He	-4.524	-5.026	-3.72	11270	2.15	1000000	
Co	59	45	He	0.013	0.015	67.82	91	21.44	10000	
Ni	60	45	He	0.084	0.093	18.13	580	2.07	10000	
Cu	63	45	He	-0.880	-0.977	-15.27	2802	5.75	10000	
Zn	66	115	He	0.686	0.763	27.28	471	12.51	50000	
As	75	115	He	-0.298	-0.331	-16.47	74	27.13	2000	
Se	78	72	H2	0.015	0.017	197.72	2	104.06	10000	
Se	78	115	He	3.246	3.606	13.99	286	6.01	10000	
Sr	88	115	NoGas	0.003	0.003	361.58	210	20.76	50000	
Mo	95	115	NoGas	-0.368	-0.409	-8.32	117	17.85	10000	
Ag	107	115	NoGas	-0.003	-0.003	-317.80	60	28.87	5000	
Cd	111	115	He	0.009	0.010	144.52	5	89.21	10000	
Sn	118	115	He	0.041	0.045	74.86	200	9.28	10000	
Sn	118	115	NoGas	0.045	0.050	35.94	260	6.66	10000	
Sb	121	115	NoGas	-0.097	-0.108	-22.79	243	15.56	10000	
Ba	137	165	NoGas	0.025	0.028	47.91	33	17.32	50000	
Tl	205	165	NoGas	0.004	0.004	282.72	33	62.45	5000	
Pb	208	165	NoGas	-0.203	-0.226	-16.33	690	13.28	50000	

QC ISTD Table

Name	Mass	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li	6	NoGas	7344	6.15	14721	49.89	70	120	ISTD Failed
Sc	45	H2	16893	10.10	21004	80.43	70	120	
Sc	45	He	13775	1.49	14982	91.95	70	120	
Sc	45	NoGas	69994	2.73	87411	80.07	70	120	
Ge	72	H2	4181	7.36	5304	78.82	70	120	
Ge	72	He	7129	1.71	7357	96.90	70	120	
Ge	72	NoGas	15938	2.09	17976	88.66	70	120	
In	115	H2	78246	10.88	99048	79.00	70	120	
In	115	He	47963	1.74	53149	90.24	70	120	
In	115	NoGas	73747	2.04	82030	89.90	70	120	
Tb	159	H2	131782	10.07	160473	82.12	70	120	
Tb	159	He	79875	0.27	90371	88.39	70	120	
Tb	159	NoGas	76619	0.65	87753	87.31	70	120	
Ho	165	H2	123728	11.17	152063	81.37	70	120	
Ho	165	He	75063	1.06	85221	88.08	70	120	
Ho	165	NoGas	71685	1.52	82407	86.99	70	120	

Laboratory Control Spike Recovery

METALS

APPL Inc.
908 North Temperance Avenue
Clovis, CA 93611

Method	Compound Name	Spike Level ug/L	SPK Result ug/L	SPK % Recovery	Recovery Limits	Extract Date	Analysis Date	QC Group
EPA 6020A	LEAD (PB)	50.0	48.8	97.6	80-120	04/01/15	04/01/15	#62A14-150401A2-AZ12342

Comments:

Sample Report

Sample Table

Sample Name	150401A LCS
Data File Name	041SMPL.d
Data Path Name	K:\ICP-MS Megatron\Data\150401C.b
Acq Date Time	2015-04-01T19:38:36-07:00
Sample Type	Sample
Dilution	1.111111111
Comment	
ISTD Ref FileName	001CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Fail

QC Analyte Table

Name	Mass	ISTD Mass	Tune Mode	Conc	FinalConc	Conc %RSD	CPS	%RSD	LDR	QC Flag
Be	9	45	NoGas	8.670	9.634	1.27	3347	1.41	10000	
B	11	45	NoGas	163.686	181.873	2.29	62259	1.55	10000	
Na	23	45	He	4733.474	5259.416	1.90	1567146	0.90	1000000	
Mg	24	45	He	4369.516	4855.018	0.95	759869	0.56	1000000	
Al	27	45	He	346.119	384.576	0.80	36201	0.77	1000000	
K	39	45	He	1230.607	1367.341	2.83	569136	2.37	500000	
Ca	44	45	He	4209.245	4676.939	0.32	54979	1.22	500000	
Ti	47	45	He	41.485	46.094	0.58	2494	1.85	10000	
V	51	45	He	46.016	51.129	1.94	67830	0.45	10000	
Cr	52	45	He	43.630	48.478	1.65	73426	0.14	10000	
Mn	55	45	He	42.416	47.129	2.48	53021	1.30	50000	
Fe	56	45	He	168.252	186.946	2.15	272650	0.92	1000000	
Co	59	45	He	44.320	49.244	2.18	97617	1.23	10000	
Ni	60	45	He	44.732	49.702	1.63	26865	0.47	10000	
Cu	63	45	He	42.904	47.671	2.27	70029	0.77	10000	
Zn	66	115	He	94.062	104.513	2.19	33548	1.86	50000	
As	75	115	He	42.932	47.702	1.05	17960	1.54	2000	
Se	78	72	H2	44.785	49.761	2.79	2772	3.06	10000	
Se	78	115	He	45.205	50.228	0.57	1645	1.05	10000	
Sr	88	115	NoGas	44.101	49.001	1.32	170223	0.90	50000	
Mo	95	115	NoGas	44.225	49.139	4.23	31596	4.28	10000	
Ag	107	115	NoGas	17.346	19.273	4.12	32845	2.51	5000	
Cd	111	115	He	9.014	10.015	1.68	2998	1.39	10000	
Sn	118	115	He	45.851	50.945	2.07	32634	2.53	10000	
Sn	118	115	NoGas	44.625	49.583	1.38	43321	2.03	10000	
Sb	121	115	NoGas	44.739	49.710	1.99	72222	1.44	10000	
Ba	137	165	NoGas	45.035	50.039	1.45	23884	0.69	50000	
Tl	205	165	NoGas	44.640	49.600	0.07	95100	0.82	5000	
Pb	208	165	NoGas	43.917	48.797	1.13	130243	0.67	50000	

QC ISTD Table

Name	Mass	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li	6	NoGas	7487	4.95	14721	50.86	70	120	ISTD Failed
Sc	45	H2	17840	2.53	21004	84.93	70	120	
Sc	45	He	13988	1.46	14982	93.36	70	120	
Sc	45	NoGas	69887	0.32	87411	79.95	70	120	
Ge	72	H2	4501	0.95	5304	84.85	70	120	
Ge	72	He	7037	0.99	7357	95.65	70	120	
Ge	72	NoGas	16371	2.72	17976	91.07	70	120	
In	115	H2	84972	1.30	99048	85.79	70	120	
In	115	He	47939	0.61	53149	90.20	70	120	
In	115	NoGas	72559	1.68	82030	88.45	70	120	
Tb	159	H2	140215	1.89	160473	87.38	70	120	
Tb	159	He	81176	0.43	90371	89.83	70	120	
Tb	159	NoGas	78026	2.17	87753	88.92	70	120	
Ho	165	H2	132386	1.52	152063	87.06	70	120	
Ho	165	He	75035	1.66	85221	88.05	70	120	
Ho	165	NoGas	73529	0.81	82407	89.23	70	120	

Matrix Spike Recoveries

METALS

APPL ID: **150401W-12342 MS - 195441**

Sample ID: AZ12342

Client ID: EKB100022

APPL Inc.
908 North Temperance Avenue
Clovis, CA 93611

Method	Compound Name	Spike Lvl ug/L	Matrix Res ug/L	SPK Res ug/L	DUP Res ug/L	SPK % Recovery	DUP % Recovery	RPD	RPD Max	Recovery Limits	Extract Date-Spk	Analysis Date-Spk	Extract Date-Dup	Analysis Date-Dup	QC Group	QC Sample
EPA 6020A	LEAD (PB)	50.0	ND	47.8	48.4	95.6	96.8	1.2	20	80-120	04/01/15	04/01/15	04/01/15	04/01/15	195441	AZ12342

Comments: _____

Sample Report

Sample Table

Sample Name	AZ12342W06 MS
Data File Name	044SMPL.d
Data Path Name	K:\ICP-MS Megatron\Data\150401C.b
Acq Date Time	2015-04-01T19:56:48-07:00
Sample Type	Sample
Dilution	1.111111111
Comment	
ISTD Ref FileName	001CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Fail

QC Analyte Table

Name	Mass	ISTD Mass	Tune Mode	Conc	FinalConc	Conc %RSD	CPS	%RSD	LDR	QC Flag
Be	9	45	NoGas	8.071	8.967	5.55	3157	5.71	10000	
B	11	45	NoGas	973.603	1081.781	1.35	315893	0.54	10000	
Na	23	45	He	157203.886	174670.984	1.56	47699404	0.55	1000000	
Mg	24	45	He	22624.668	25138.520	1.11	3827153	1.41	1000000	
Al	27	45	He	390.014	433.349	2.95	39562	1.03	1000000	
K	39	45	He	17460.225	19400.250	1.76	4366479	1.63	500000	
Ca	44	45	He	20636.428	22929.365	1.47	210044	0.61	500000	
Ti	47	45	He	52.194	57.993	6.77	3050	6.54	10000	
V	51	45	He	49.358	54.843	1.71	70789	0.91	10000	
Cr	52	45	He	43.636	48.485	1.38	71585	2.38	10000	
Mn	55	45	He	187.760	208.622	1.12	212404	0.95	50000	
Fe	56	45	He	244.689	271.877	2.05	378369	1.42	1000000	
Co	59	45	He	45.447	50.497	0.88	97570	1.44	10000	
Ni	60	45	He	48.364	53.737	1.41	28270	1.89	10000	
Cu	63	45	He	44.916	49.907	1.88	71263	0.63	10000	
Zn	66	115	He	94.672	105.191	0.50	33704	0.92	50000	
As	75	115	He	52.760	58.623	1.08	21985	1.21	2000	
Se	78	72	H2	43.529	48.366	21.98	2799	5.04	10000	
Se	78	115	He	46.015	51.128	1.57	1668	0.43	10000	
Sr	88	115	NoGas	283.573	315.081	1.83	1101398	0.26	50000	
Mo	95	115	NoGas	67.413	74.903	3.80	48297	1.82	10000	
Ag	107	115	NoGas	16.561	18.402	1.02	31606	1.93	5000	
Cd	111	115	He	8.927	9.919	2.77	2964	1.80	10000	
Sn	118	115	He	47.392	52.658	0.80	33660	0.41	10000	
Sn	118	115	NoGas	47.052	52.280	1.48	45994	0.71	10000	
Sb	121	115	NoGas	48.016	53.351	1.96	78043	0.30	10000	
Ba	137	165	NoGas	47.746	53.051	3.60	25213	1.98	50000	
Tl	205	165	NoGas	43.368	48.187	1.02	92025	1.89	5000	
Pb	208	165	NoGas	43.051	47.835	2.50	127168	0.95	50000	

QC ISTD Table

Name	Mass	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li	6	NoGas	7048	2.00	14721	47.88	70	120	ISTD Failed
Sc	45	H2	18886	21.68	21004	89.91	70	120	
Sc	45	He	13633	1.84	14982	91.00	70	120	
Sc	45	NoGas	70673	0.90	87411	80.85	70	120	
Ge	72	H2	4810	20.09	5304	90.68	70	120	
Ge	72	He	7354	2.55	7357	99.95	70	120	
Ge	72	NoGas	16735	0.89	17976	93.10	70	120	
In	115	H2	86694	22.84	99048	87.53	70	120	
In	115	He	47851	0.96	53149	90.03	70	120	
In	115	NoGas	73092	1.96	82030	89.10	70	120	
Tb	159	H2	145187	21.89	160473	90.47	70	120	
Tb	159	He	81618	1.90	90371	90.31	70	120	
Tb	159	NoGas	77530	2.10	87753	88.35	70	120	
Ho	165	H2	136471	23.17	152063	89.75	70	120	
Ho	165	He	76345	1.82	85221	89.58	70	120	
Ho	165	NoGas	73238	1.59	82407	88.87	70	120	

Sample Report

Sample Table

Sample Name	AZ12342W06 MSD
Data File Name	045SMPL.d
Data Path Name	K:\ICP-MS Megatron\Data\150401C.b
Acq Date Time	2015-04-01T20:02:52-07:00
Sample Type	Sample
Dilution	1.111111111
Comment	
ISTD Ref FileName	001CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Fail

QC Analyte Table

Name	Mass	ISTD Mass	Tune Mode	Conc	FinalConc	Conc %RSD	CPS	%RSD	LDR	QC Flag
Be	9	45	NoGas	8.300	9.222	7.10	3250	7.62	10000	
B	11	45	NoGas	969.288	1076.987	1.52	315074	1.17	10000	
Na	23	45	He	158823.739	176470.822	2.30	47401855	1.61	1000000	
Mg	24	45	He	22965.349	25517.055	2.49	3820730	1.58	1000000	
Al	27	45	He	403.551	448.390	2.27	40221	1.00	1000000	
K	39	45	He	17154.598	19060.664	2.58	4223762	0.39	500000	
Ca	44	45	He	20831.595	23146.216	1.54	208442	0.79	500000	
Ti	47	45	He	51.749	57.499	4.85	2976	5.17	10000	
V	51	45	He	50.693	56.325	2.97	71463	2.05	10000	
Cr	52	45	He	45.349	50.388	2.91	73038	1.26	10000	
Mn	55	45	He	46.629	51.810	3.79	55400	1.45	50000	
Fe	56	45	He	249.965	277.739	2.63	379782	0.48	1000000	
Co	59	45	He	45.957	51.064	2.22	97034	0.26	10000	
Ni	60	45	He	51.225	56.917	2.15	29418	1.29	10000	
Cu	63	45	He	46.507	51.674	2.87	72431	1.11	10000	
Zn	66	115	He	94.548	105.054	1.61	33324	1.50	50000	
As	75	115	He	53.104	59.004	0.53	21906	0.28	2000	
Se	78	72	H2	42.847	47.608	8.97	2856	1.39	10000	
Se	78	115	He	48.689	54.099	3.05	1737	2.54	10000	
Sr	88	115	NoGas	277.979	308.865	1.01	1088622	0.70	50000	
Mo	95	115	NoGas	65.636	72.928	2.75	47432	2.14	10000	
Ag	107	115	NoGas	16.927	18.808	1.99	32565	1.89	5000	
Cd	111	115	He	9.293	10.326	3.23	3055	3.29	10000	
Sn	118	115	He	49.004	54.449	0.46	34454	0.68	10000	
Sn	118	115	NoGas	47.078	52.309	1.63	46396	0.71	10000	
Sb	121	115	NoGas	49.239	54.710	1.94	80679	0.54	10000	
Ba	137	165	NoGas	47.308	52.565	2.65	25169	1.55	50000	
Tl	205	165	NoGas	43.963	48.847	1.89	93956	0.80	5000	
Pb	208	165	NoGas	43.591	48.435	1.55	129712	1.18	50000	

QC ISTD Table

Name	Mass	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li	6	NoGas	7045	1.99	14721	47.86	70	120	ISTD Failed
Sc	45	H2	19539	5.85	21004	93.03	70	120	
Sc	45	He	13411	2.01	14982	89.51	70	120	
Sc	45	NoGas	70790	1.02	87411	80.99	70	120	
Ge	72	H2	4876	10.20	5304	91.93	70	120	
Ge	72	He	6880	3.22	7357	93.52	70	120	
Ge	72	NoGas	16118	6.79	17976	89.66	70	120	
In	115	H2	88951	7.91	99048	89.81	70	120	
In	115	He	47373	0.25	53149	89.13	70	120	
In	115	NoGas	73688	1.66	82030	89.83	70	120	
Tb	159	H2	148607	9.64	160473	92.61	70	120	
Tb	159	He	81192	1.01	90371	89.84	70	120	
Tb	159	NoGas	79823	1.50	87753	90.96	70	120	
Ho	165	H2	139364	8.53	152063	91.65	70	120	
Ho	165	He	75933	0.73	85221	89.10	70	120	
Ho	165	NoGas	73774	1.10	82407	89.52	70	120	

US EPA Tune Check Sample Report

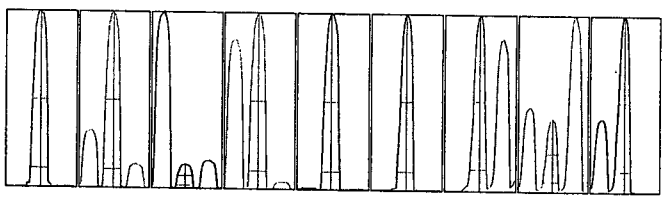
Batch Folder K:\ICP-MS Megatron\Data\150401C.b
Report Comment C:\Agilent\ICPMH\Report Templates\en\Letter\Tune Report\New and Improved 200_8TuneCheckSampleReport.xltx
Instrument Name G3281A JP12101628

[NoGas]

Mass	Count (Mean)	RSD% (Actual)	RSD% (Required)	RSD% (Flag)
9	698529	2.18	5.00	
24	2677115	2.74	5.00	
25	360742	2.53	5.00	
26	422830	2.33	5.00	
59	517079	2.57	5.00	
115	6033171	2.50	5.00	
206	1083089	2.78	5.00	
207	945963	2.63	5.00	
208	2243511	2.50	5.00	

Mass	Replicate 1 Count	Replicate 2 Count	Replicate 3 Count	Replicate 4 Count	Replicate 5 Count
9	713595	708552	706078	684190	680227
24	2776622	2725076	2654501	2637126	2592253
25	371082	369860	356957	354491	351319
26	434508	430499	422060	416570	410511
59	533709	527684	512662	509975	501364
115	6210480	6154913	6028501	5912987	5858975
206	1113859	1111062	1082654	1063639	1044229
207	980367	954187	943951	939784	911527
208	2298475	2295703	2244629	2211332	2167417

Integration Time [sec] = 0.1



Mass	Peak Height	Axis (Actual)	Axis (Required)	Axis (Flag)	Width-X% (Actual)	Width-X% (Required)	Width-X% (Flag)
9	110761	9.00	8.9 - 9.1		0.752	0.900	
24	437106	24.00	23.9 - 24.1		0.751	0.900	
25	58150	24.95	24.9 - 25.1		0.762	0.900	
26	68491	25.95	25.9 - 26.1		0.766	0.900	
59	87055	58.95	58.9 - 59.1		0.756	0.900	
115	1093118	115.00	114.9 - 115.1		0.708	0.900	
206	205171	206.00	205.9 - 206.1		0.714	0.900	
207	178051	207.00	206.9 - 207.1		0.688	0.900	
208	428981	208.00	207.9 - 208.1		0.703	0.900	

X% = 10 **Integration Time [sec] =** 0.1 **Acquisition Time [sec] =** 235 **Y Axis =** Linear

Tune Parameters

Plasma Paramters

ParameterName	Value	Unit	ParameterName	Value	Unit	ParameterName	Value	Unit
RF Power	1600	W	Carrier Gas	0.40	L/min			
RF Matching	2.50	V	Option Gas	0.0	%			
Smpl Depth	8.0	mm	Nebulizer Pump	0.10	rps			
S/C Temp	12	°C						

Lenses Parameters

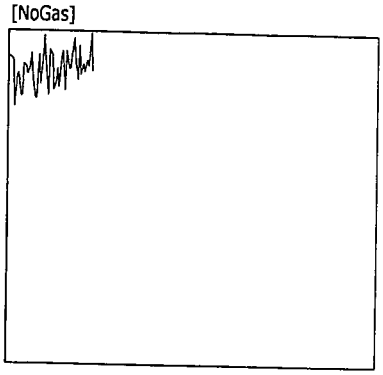
ParameterName	Value	Unit	ParameterName	Value	Unit	ParameterName	Value	Unit
Extract 1	0.0	V	Omega Lens	2.0	V			
Extract 2	-200.0	V	Cell Entrance	-30	V			
Omega Bias	-95	V	Cell Exit	-50	V			
Deflect	14.0	V						

Cell Parameters

ParameterName	Value	Unit	ParameterName	Value	Unit	ParameterName	Value	Unit
Use Gas	false		3rd Gas Flow	0	%			
He Flow	0.0	mL/min	OctP Bias	-8.0	V			
H2 Flow	0.0	mL/min	OctP RF	190	V			
Energy Discrimination	5.1	V						

Current Signal

[NoGas]



Mass	Range	Count	Avg. Count	RSD [%]
7	500	442	445.4	5.99
59	2000	1057	920.4	5.93
89	2000	1288	1297.5	4.24
140	2000	1192	1198.5	4.77
205	1000	648	614.1	5.36
156/140	2	0.419 %	0.499 %	46.71
70/140	10	5.200 %	4.997 %	16.88
Integration Time [sec]		0.10		

Plasma Parameters

RF Power	1600	W	Carrier Gas	0.40	L/min
RF Matching	2.50	V	Option Gas	0.0	%
Smpl Depth	8.0	mm	Nebulizer Pump	0.10	rps
S/C Temp	12	°C			

Lenses Parameters

Extract 1	0.0	V	Omega Lens	2.0	V
Extract 2	-200.0	V	Cell Entrance	-30	V
Omega Bias	-95	V	Cell Exit	-50	V
Deflect	14.0	V			

Cell Parameters

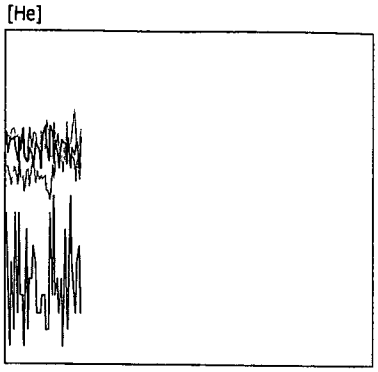
Use Gas	false		3rd Gas Flow	0	%
He Flow	0.0	mL/min	OctP Bias	-8.0	V
H2 Flow	0.0	mL/min	OctP RF	190	V
Energy Discrimination	5.1	V			

Meters

IF/BK Press	2.20E+2	Pa	TMP Revolution	100.0	%
Analyzer Press	2.24E-4	Pa	Reflected Power	85	W
Forward Power	1600	W			

Current Signal

[He]



Mass	Range	Count	Avg. Count	RSD [%]
59	1000	600	574.9	6.48
89	1000	703	668.7	5.80
140	2000	1085	1113.0	4.59
205	1000	677	646.2	5.70
156/140	2	0.184 %	0.385 %	63.89
75	20	3	4.8	53.60
78	50	14	19.0	30.45
Integration Time [sec]		0.10		

Plasma Parameters

RF Power	1600	W	Carrier Gas	0.40	L/min
RF Matching	2.50	V	Option Gas	0.0	%
Smpl Depth	8.0	mm	Nebulizer Pump	0.10	rps
S/C Temp	12	°C			

Lenses Parameters

Extract 1	0.0	V	Omega Lens	2.0	V
Extract 2	-200.0	V	Cell Entrance	-40	V
Omega Bias	-95	V	Cell Exit	-60	V
Deflect	1.2	V			

Cell Parameters

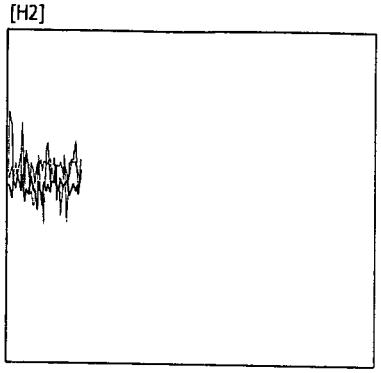
Use Gas	true		3rd Gas Flow	0	%
He Flow	3.4	mL/min	OctP Bias	-19.0	V
H2 Flow	0.0	mL/min	OctP RF	190	V
Energy Discrimination	5.0	V			

Meters

IF/BK Press	2.22E+2	Pa	TMP Revolution	100.0	%
Analyzer Press	3.07E-4	Pa	Reflected Power	83	W
Forward Power	1600	W			

Current Signal

[H2]



Mass	Range	Count	Avg. Count	RSD [%]
59	200	122	112.3	13.39
89	2000	1101	1173.1	5.21
140	1000	421	468.0	7.70
205	2000	1160	1054.3	4.73
56	500	244	231.0	8.88
78	20	1	0.2	258.73
80	20	1	3.3	73.06
Integration Time [sec]			0.10	

Plasma Parameters

RF Power	1600	W	Carrier Gas	0.40	L/min
RF Matching	2.50	V	Option Gas	0.0	%
Smpl Depth	8.0	mm	Nebulizer Pump	0.10	rps
S/C Temp	12	°C			

Lenses Parameters

Extract 1	0.0	V	Omega Lens	2.0	V
Extract 2	-200.0	V	Cell Entrance	-30	V
Omega Bias	-95	V	Cell Exit	-60	V
Deflect	-1.4	V			

Cell Parameters

Use Gas	true		3rd Gas Flow	0	%
He Flow	0.0	mL/min	OctP Bias	-18.0	V
H2 Flow	6.0	mL/min	OctP RF	190	V
Energy Discrimination	3.0	V			

Meters

IF/BK Press	2.27E+2	Pa	TMP Revolution	100.0	%
Analyzer Press	1.26E-3	Pa	Reflected Power	85	W
Forward Power	1600	W			

SJH 04/01/15

Internal Standard Concentration

Amt	STD	Element	Vendor	Lot#	Final Conc. in Std	Expires
25uL	1001 ug/mL	Li	BDH	F2-L102140-33279	200 ug/L	02/01/15
62.5uL	1000 ug/mL	Sc	o2si	1051538-32901	500ug/L	03/30/15
62.5uL	1000 ug/mL	Ge	CPI	14H207-34125	500ug/L	04/07/14
62.5uL	1000 ug/mL	In	CPI	13H191-32872	500ug/L	03/20/15
62.5uL	1000 ug/mL	Tb	CPI	13J004-33038	500ug/L	04/15/15
62.5uL	1000 ug/mL	Ho	CPI	13G236-32873	500ug/L	03/20/15

Prep: 04/01/15 By: SJH Prep in - 1%HNO3/1.0%HCL: Final Volume: 250mL

Expires: 04/30/15

SJH 04/01/15

SJH 04/01/15
6/20/2018
A

ICP-MS STANDARDS Prep'd by: SJH
Prep Date. Today
Expires: 1 week

Prep 1% HNO3/1.0%HCL
20 mL HNO3 / 2000 mL Di Water
Lot #
20 mL HCL / 2000mL Di Water
Lot #

Internal Standard Mix: Prep 04/01/15

Standard 4

Amount	STD	Manufacturer	Lot #
50 uL	CCV-A	ENV EXPRESS	1331823-33166
50 uL	CCV-B	ENV EXPRESS	1331824-33167
50 uL	CCV-C	ENV EXPRESS	1331825-33168

Prepared in 100 mL of 1% HNO3/1 0% HCL

Standard 3
Amount STD
25 mL Standard 4
Prepared in 50 mL of 1% HNO3/1 0% HCL

Standard 2
Amount STD
500 uL Standard 4
Prepared in 50 mL of 1% HNO3/1.0% HCL

Standard 1
Amount STD
50 uL Standard 4
Prepared in 50 mL of 1% HNO3/1.0% HCL

ICP-MS ICV
Amount STD
50 uL QCS ICV A CPI 13I145-32869
50 uL QCS ICV B CPI 13I145-32870
Prepared in 50 mL of 1% HNO3/1 0% HCL

ICSA Prep:
1 mL ICSA-DF2 O2Si 1053467-33165
Prepared in 10 mL of 1% HNO3/1.0% HCL

ICSAB Prep:
1mL ICSA CPI 12J143-33110
100uL INT - DF10 O2Si 1054694-33223
Prepared in 10 mL of 1% HNO3/1 0% HCL

Second Source As:
25 uL Metals Mix #2 AbsoluteGrade 161613-33063
Prepared in 100 mL of 1% HNO3/ 1% HCl

SJH 04/01/15

Metals Digestion Worksheet

Method Name 3015 Digestion **Prep Method** M3015 **Set** 150401A **Units** mL

Spikes	
Spiked ID 1	LCSW LOT#1068928-34553
Spiked ID 2	LCSW LOT#1069074-34554
Spiked ID 3	
Spiked ID 4	
Spiked By	NM Date: 04/01/15 12:35:00 PM
Witnessed By	SJH Date: 04/01/15 12:35:00 PM

Starting Temp:	19 c
Ending Temp:	170 c
Temperature Type:	Microwave
Sufficient Vol for Matrix QC:	Yes
End Date/Time	04/01/15 15:10

	Sample	Sample Container	Spike Amount	Spike ID	Digested Amount	Final Volume	Start Date/Time	Comments
1	150401A Blk				45mL	50mL	04/01/15 12:35	equip: MultiWave
2	150401A LCS		90uL	1+2	45mL	50mL	04/01/15 12:35	equip: MultiWave
3	AZ12342	AZ12342W06			45mL	50mL	04/01/15 12:35	equip: MultiWave
4	AZ12342 MS	AZ12342W06	90uL	1+2	45mL	50mL	04/01/15 12:35	equip: MultiWave
5	AZ12342 MSD	AZ12342W06	90uL	1+2	45mL	50mL	04/01/15 12:35	equip: MultiWave
6	AZ12343	AZ12343W06			45mL	50mL	04/01/15 12:35	equip: MultiWave
7	AZ12702	AZ12702W12			45mL	50mL	04/01/15 12:35	equip: MultiWave
8	AZ12702 FF	AZ12702W13			45mL	50mL	04/01/15 12:35	equip: MultiWave
9	AZ12703	AZ12703W11			45mL	50mL	04/01/15 12:35	equip: MultiWave
10	AZ12703 FF	AZ12703W12			45mL	50mL	04/01/15 12:35	equip: MultiWave
11	AZ12704	AZ12704W11			45mL	50mL	04/01/15 12:35	equip: MultiWave
12	AZ12704 FF	AZ12704W12			45mL	50mL	04/01/15 12:35	equip: MultiWave
13	AZ12705	AZ12705W12			45mL	50mL	04/01/15 12:35	equip: MultiWave
14	AZ12705 FF	AZ12705W13			45mL	50mL	04/01/15 12:35	equip: MultiWave
15	AZ12706	AZ12706W11			45mL	50mL	04/01/15 12:35	equip: MultiWave
16	AZ12706 FF	AZ12706W12			45mL	50mL	04/01/15 12:35	equip: MultiWave
17	AZ12707	AZ12707W12			45mL	50mL	04/01/15 12:35	equip: MultiWave
18	AZ12707 FF	AZ12707W11			45mL	50mL	04/01/15 12:35	equip: MultiWave

Solvent and Lot#
HNO3 EMD 54270 3323

Sample COC Transfer	
Sample prep employee Initials	nm
Analyst's initials	SJH
Date	04/01/15
Time	16:30
Moved to	Metals

Technician's Initials	
Scanned By	nm
Sample Preparation	nm
Digestion	nm
Bring up to volume	nm
Modified	04/01/15 11:43:04 AM

Reviewed By: SJH **Date:** 04/01/15

6020/200.8 Injection Log

Directory: K:\ICP-MS Megatron\raw data output csv\

RunID	Injected		Sample Name	Misc Info	FileName	Multiplier
1	01 Apr 2015	15:35	Calibration Blank		150401C	1.
2	01 Apr 2015	15:41	Standard 1		150401C	1.
3	01 Apr 2015	15:47	Standard 2		150401C	1.
4	01 Apr 2015	15:53	Standard 3		150401C	1.
5	01 Apr 2015	16:00	Standard 4		150401C	1.
9	01 Apr 2015	16:48	ICV		150401C	1.
11	01 Apr 2015	17:00	ICB		150401C	1.
12	01 Apr 2015	17:07	CCV		150401C	1.
13	01 Apr 2015	17:19	CCB		150401C	1.
14	01 Apr 2015	17:25	ICSA		150401C	1.
15	01 Apr 2015	18:01	ICSAB		150401C	1.
25	01 Apr 2015	19:14	CCV		150401C	1.
26	01 Apr 2015	19:26	CCB		150401C	1.
27	01 Apr 2015	19:32	150401A BLK		150401C	1.
28	01 Apr 2015	19:38	150401A LCS		150401C	1.
29	01 Apr 2015	19:50	AZ12342W06		150401C	1.
30	01 Apr 2015	19:56	AZ12342W06 MS		150401C	1.
31	01 Apr 2015	20:02	AZ12342W06 MSD		150401C	1.
32	01 Apr 2015	20:08	AZ12342W06-A		150401C	1.
33	01 Apr 2015	20:15	AZ12342W06 1/5		150401C	5.
34	01 Apr 2015	20:21	AZ12343W06		150401C	1.
35	01 Apr 2015	20:27	CCV		150401C	1.
36	01 Apr 2015	20:39	CCB		150401C	1.

Appendix K

Data Validation Reports

[Complete DVRs are included on the attached CD-ROM.]

LABORATORY DATA CONSULTANTS, INC.
2701 Loker Ave. West, Suite 220, Carlsbad, CA 92010 Bus: 760-827-1100 Fax: 760-827-1099

Element Environmental LLC
98-030 Hekaha Street, Unit 9
Aiea, Hawaii 96701
ATTN: Mr. Marvin Heskett

February 27, 2015

SUBJECT: MCBH UST KB-100, Data Validation

Dear Mr. Heskett,

Enclosed is the final validation report for the fractions listed below. This SDG was received on February 3, 2015. Attachment 1 is a summary of the sample that was reviewed for the analysis.

LDC Project #33690:

SDG #	Fraction
75351	Volatiles, Lead, Total Petroleum Hydrocarbons as Extractables

The data validation was performed under Standard & Full Validation guidelines. The analyses were validated using the following documents, as applicable to each method:

- Final Work Plan for Site Investigation for UST-KB-100, Marine Corps Base Motor Pool, Marine Corps Base Hawaii, Kaneohe, Hawaii, June 2014
- Project Procedures Manual, U.S. Navy Environmental Restoration Program NAVFAC Pacific, DON 2007
- U.S. Department of Defense Quality Systems Manual for Environmental Laboratories, Version 5.0, July 2013
- EPA SW 846, Third Edition, Test Methods for Evaluating Solid Waste, update 1, July 1992; update IIA, August 1993; update II, September 1994; update IIB, January 1995; update III, December 1996; update IIIA, April 1998; IIIB, November 2004; Update IV, February 2007

Please feel free to contact us if you have any questions.

Sincerely,

Andrew Kong
Project Manager/Senior Chemist

HC

Attachment 1

90/10 EDD & NIRIS

LDC #33690 (Element Environmental, LLC, Aiea, HI / MCBH UST KB-100)

Project #130034

LDC	SDG#	DATE REC'D	(3) DATE DUE	VOA (8260B)		Pb (6020A)		TPH-E (8015C)																													
Matrix:	Water/Soil			W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S
A	75351	02/03/15	02/25/15	3	7	2	7	2	7																												
A	75351	02/03/15	02/25/15	0	1	0	1	0	1																												
Total	A/AK			3	8	2	8	2	8	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	31

Shaded cells indicate Full validation (all other cells are Standard validation). These sample counts do not include MS/MSD, and DUPs

L:\Element\MCB Hawaii\33690ST.wpd

Laboratory Data Consultants, Inc.
Data Validation Report

Project/Site Name: MCBH UST KB-100

LDC Report Date: February 26, 2015

Parameters: Volatiles

Validation Level: Standard & Full

Laboratory: APPL, Inc.

Sample Delivery Group (SDG): 75351

Sample Identification	Laboratory Sample Identification	Matrix	Collection Date
EKB100001	AZ09545	Soil	01/13/15
EKB100002	AZ09546	Soil	01/13/15
EKB100003**	AZ09547**	Soil	01/13/15
EKB100004	AZ09548	Soil	01/13/15
EKB100005	AZ09549	Soil	01/13/15
EKB100006	AZ09550	Soil	01/13/15
EKB100007	AZ09551	Soil	01/13/15
EKB100008	AZ09552	Soil	01/13/15
EKB100009	AZ09553	Water	01/13/15
EKB100010	AZ09554	Water	01/13/15
TRIP BLANK-01	AZ09555	Water	01/13/15
EKB100008MS	AZ09552MS	Soil	01/13/15
EKB100008MSD	AZ09552MSD	Soil	01/13/15
EKB100007DL	AZ09551DL	Soil	01/13/15

**Indicates sample underwent Full validation

Introduction

This Data Validation Report (DVR) presents data validation findings and results for the associated samples listed on the cover page. Data validation was performed in accordance with the Final Work Plan for Site Investigation for UST-KB-100, Marine Corps Base Motor Pool, Marine Corps Base Hawaii, Kaneohe, Hawaii (June 2014), the Project Procedures Manual, U.S. Navy Environmental Restoration Program, NAVFAC Pacific (DON 2007), and the U.S. Department of Defense (DoD) Quality Systems Manual (QSM) for Environmental Laboratories, Version 5.0 (July 2013). Where specific guidance was not available, the data has been evaluated in a conservative manner consistent with industry standards using professional experience.

The analyses were performed by the following method:

Volatile Organic Compounds (VOCs) by Environmental Protection Agency (EPA) SW 846 Method 8260B

All sample results were subjected to Standard data validation, which comprises an evaluation of quality control (QC) summary results. Samples appended with a double asterisk on the cover page were subjected to Full data validation, which is comprised of the QC summary forms as well as the raw data, to confirm sample quantitation and identification.

The following are definitions of the data qualifiers utilized during data validation:

J (Estimated): The compound or analyte was analyzed for and positively identified by the laboratory; however the reported concentration is estimated due to non-conformances discovered during data validation.

U (Non-detect): The compound or analyte was analyzed for and positively identified by the laboratory; however the analyte should be considered non-detect at the reported concentration due to the presence of contaminants detected in the associated blank(s).

UJ (Non-detected estimated): The compound or analyte was reported as not detected by the laboratory; however the reported quantitation/detection limit is estimated due to non-conformances discovered during data validation.

R (Rejected): The sample results were rejected due to gross non-conformances discovered during data validation. Data qualified as rejected is not usable.

NA (Not Applicable): The non-conformance discovered during data validation demonstrates a high bias, while the affected compound in the associated sample(s) was reported as not detected by the laboratory and did not warrant the qualification of the data.

A qualification summary table is provided at the end of this report if data has been qualified. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

Qualification Code Reference

H	Holding times were exceeded.
S	Surrogate recovery was outside QC limits.
C	Calibration %RSD, r, r^2 or %D were noncompliant
R	Calibration RRF was <0.05.
B	Presumed contamination from preparation (method blank)
L	Laboratory Control Sample/Laboratory Control Sample Duplicate %R or RPD was not within control limits
Q	MS/MSD recovery was poor
E	MS/MSD or Duplicate RPD was high.
I	Internal standard performance was unsatisfactory
M	Instrument Performance Check (BFB or DFTPP) was noncompliant
T	Presumed contamination from trip blank.
F	Presumed contamination from FB or ER.
D	The analysis with this flag should not be used because another more technically sound analysis is available.
P	Instrument performance for pesticides was poor
*#	Unusual problems found with the data. The number following the asterisk (*) will indicate the section in the validation report where a description of the problem can be found.

I. Sample Receipt and Technical Holding Times

All samples were received in good condition and cooler temperatures upon receipt met validation criteria.

All technical holding time requirements were met.

II. GC/MS Instrument Performance Check

A bromofluorobenzene (BFB) tune was performed at 12 hour intervals.

All ion abundance requirements were met.

III. Initial Calibration and Initial Calibration Verification

An initial calibration was performed as required by the method.

For compounds where average relative response factors (RRFs) were utilized, percent relative standard deviations (%RSD) were less than or equal to 15.0% for all compounds.

In the case where the laboratory used a calibration curve to evaluate the compounds, all coefficients of determination (r^2) were greater than or equal to 0.990.

Average relative response factors (RRF) for all compounds were within method and validation criteria.

The percent differences (%D) of the initial calibration verification (ICV) standard were less than or equal to 20.0% for all compounds.

IV. Continuing Calibration

Continuing calibration was performed at the required frequencies.

Percent differences (%D) were less than or equal to 20.0% for all compounds.

All of the continuing calibration relative response factors (RRF) were within method and validation criteria.

V. Laboratory Blanks

Laboratory blanks were analyzed as required by the method. No contaminants were found in the laboratory blanks.

VI. Field Blanks

Sample Trip Blank-01 was identified as a trip blank. No contaminants were found.

Sample EKB100009 was identified as an equipment blank. No contaminants were found.

Sample EKB100010 was identified as a rinsate blank. No contaminants were found.

VII. Surrogates

Surrogates were added to all samples as required by the method. All surrogate recoveries (%R) were within QC limits.

VIII. Matrix Spike/Matrix Spike Duplicates

Matrix spike (MS) and matrix spike duplicate (MSD) sample analysis performed on an associated project sample. Percent recoveries (%R) were within QC limits with the following exceptions:

Spike ID (Associated Samples)	Compound	MS (%R) (Limits)	MSD (%R) (Limits)	Flag	A or P
EKB100008MS/MSD (EKB100008)	cis-1,3-Dichloropropene Styrene	73.8 (74-126) 74.0 (76-124)	- -	UJ (all non-detects) UJ (all non-detects)	A

Relative percent differences (RPD) were within QC limits with the following exceptions:

Spike ID (Associated Samples)	Compound	RPD (Limits)	Flag	A or P
EKB100008MS/MSD (EKB100008)	Chloromethane Vinyl chloride	24.4 (≤20) 20.2 (≤20)	UJ (all non-detects) UJ (all non-detects)	A

IX. Laboratory Control Samples

Laboratory control samples (LCS) were analyzed as required by the method. Percent recoveries (%R) were within QC limits.

X. Field Duplicates

Samples EKB100005 and EKB100006 were identified as field duplicates. No results were detected in any of the samples with the following exceptions:

Compound	Concentration (mg/Kg)		RPD (Limits)
	EKB100005	EKB100006	
Acetone	0.0088	0.011	22 (≤100)
Toluene	0.0026	0.0026U	200 (≤110)
Xylenes, total	0.0018	0.00057	104 (≤100)

Compound	Concentration (mg/Kg)		RPD (Limits)
	EKB100005	EKB100006	
2-Butanone	0.00410U	0.0041	200 (≤100)

XI. Internal Standards

All internal standard areas and retention times were within QC limits.

XII. Compound Quantitation

All compound quantitations met validation criteria with the following exceptions:

Sample	Compound	Reported Concentration	Recalculated Concentration	Flag	A or P
EKB100007	cis-1,2-Dichloroethene Trichloroethene	Sample result exceeded calibration range.	Reported result should be within calibration range.	J (all detects) J (all detects)	A

Raw data were not reviewed by Standard validation.

XIII. Target Compound Identifications

All target compound identifications met validation criteria for samples on which a Full validation was performed. Raw data were not evaluated for the samples reviewed by Standard validation.

XIV. System Performance

The system performance was acceptable for samples on which a Full validation was performed. Raw data were not evaluated for the samples reviewed by Standard validation.

XV. Overall Assessment of Data

The analysis was conducted within all specifications of the method.

The overall assessment of data was acceptable. In the case where more than one result was reported for an individual sample, the least technically acceptable results were rejected as follows:

Sample	Compound	Flag	A or P
EKB100007	cis-1,2-Dichloroethene Trichloroethene	R R	A

Due to MS/MSD %Rs and RPDs, data were qualified as estimated in one sample.

Due to MS/MSD %Rs and RPDs, data were qualified as estimated in one sample.

The quality control criteria reviewed, other than those discussed above, were met and are considered acceptable. Sample results that were found to be rejected (R) are unusable for all purposes. Sample results that were found to be estimated (J) are usable for limited purposes only. Based upon the data validation all other results are considered valid and usable for all purposes.

MCBH UST KB-100
Volatiles - Data Qualification Summary - SDG 75351

Sample	Compound	Flag	A or P	Reason (Code)
EKB100008	cis-1,3-Dichloropropene Styrene	UJ (all non-detects) UJ (all non-detects)	A	Matrix spike/Matrix spike duplicate (%R) (Q)
EKB100008	Chloromethane Vinyl chloride	UJ (all non-detects) UJ (all non-detects)	A	Matrix spike/Matrix spike duplicate (RPD) (E)
EKB100007	cis-1,2-Dichloroethene Trichloroethene	R R	A	Overall assessment of data (D)

MCBH UST KB-100
Volatiles - Laboratory Blank Data Qualification Summary - SDG 75351

No Sample Data Qualified in this SDG

MCBH UST KB-100
Volatiles - Field Blank Data Qualification Summary - SDG 75351

No Sample Data Qualified in this SDG

LDC #: 33690A1
SDG #: 75351
Laboratory: APPL, Inc.

VALIDATION COMPLETENESS WORKSHEET
Standard/Full

Date: 2/19/15
Page: 1 of 2
Reviewer: EJ
2nd Reviewer: A

METHOD: GC/MS Volatiles (EPA SW 846 Method 8260B)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Sample receipt/Technical holding times	A / A	
II.	GC/MS Instrument performance check	A	
III.	Initial calibration/ICV	A / A	% RSD ≤ 15, r² ICV ≤ 20
IV.	Continuing calibration	A	CCV ≤ 20
V.	Laboratory Blanks	A	
VI.	Field blanks	ND	TB = 11 EB = 9 RB = 10
VII.	Surrogate spikes	A	
VIII.	Matrix spike/Matrix spike duplicates	SW	
IX.	Laboratory control samples	A	LCS
X.	Field duplicates	SW	D = 5, 6
XI.	Internal standards	A	
XII.	Compound quantitation RL/LOQ/LODs	SW	Not reviewed for Standard validation.
XIII.	Target compound identification	A	Not reviewed for Standard validation.
XIV.	System performance	A	Not reviewed for Standard validation.
XV.	Overall assessment of data	SW	

Note: A = Acceptable; N = Not provided/applicable; SW = See worksheet; ND = No compounds detected; R = Rinsate; FB = Field blank; D = Duplicate; TB = Trip blank; EB = Equipment blank; SB=Source blank; OTHER:

** Indicates sample underwent Full validation

	Client ID		Lab ID	Matrix	Date
1	EKB100001		AZ09545	Soil	01/13/15
2	EKB100002		AZ09546	Soil	01/13/15
3	EKB100003**		AZ09547**	Soil	01/13/15
4	EKB100004		AZ09548	Soil	01/13/15
5	EKB100005		AZ09549	Soil	01/13/15
6	EKB100006		AZ09550	Soil	01/13/15
7	EKB100007		AZ09551	Soil	01/13/15
8	EKB100008		AZ09552	Soil	01/13/15
9	EKB100009	EB	AZ09553	Water	01/13/15
10	EKB100010	RB	AZ09554	Water	01/13/15
11	TRIP BLANK-01	TB	AZ09555	Water	01/13/15
12	EKB100008MS		AZ09552MS	Soil	01/13/15
13	EKB100008MSD		AZ09552MSD	Soil	01/13/15

LDC #: 33690A1
SDG #: 75351
Laboratory: APPL, Inc.

VALIDATION COMPLETENESS WORKSHEET
Standard/Full

Date: 2/19/15
Page: 2 of 2
Reviewer: FT
2nd Reviewer: [illegible]

METHOD: GC/MS Volatiles (EPA SW 846 Method 8260B)

	Client ID	Lab ID	Matrix	Date
3 14	#7 DL [illegible]		S.	
15				
16				
17				
18				
19				
20				
21				
22				
23				
24				
25				

Notes:

-	150121AL						
-	150122AL						
-	150122AT						
-	150116AL						

LDC #: 33690A1

VALIDATION FINDINGS CHECKLIST

Reviewer: FT
2nd Reviewer: A

Method: Volatiles (EPA SW 846 Method 8260B)

Validation Area	Yes	No	NA	Findings/Comments
I. Technical holding times				
All technical holding times were met.	✓			
Cooler temperature criteria was met.	✓			
II. GC/MS Instrument performance check				
Were the BFB performance results reviewed and found to be within the specified criteria?	✓			
Were all samples analyzed within the 12 hour clock criteria?	✓			
III. Initial calibration				
Did the laboratory perform a 5 point calibration prior to sample analysis?	✓			
Were all percent relative standard deviations (%RSD) and relative response factors (RRF) within method criteria for all CCCs and SPCCs?	✓			
Was a curve fit used for evaluation?	✓			
Did the initial calibration meet the curve fit acceptance criteria of ≥ 0.990?	✓			
Were all percent relative standard deviations (%RSD) ≤ 30% 15% and relative response factors (RRF) ≥ 0.05? FT	✓			
IV. Continuing calibration				
Was a continuing calibration standard analyzed at least once every 12 hours for each instrument?	✓			
Were all percent differences (%D) and relative response factors (RRF) within method criteria for all CCCs and SPCCs?	✓			
Were all percent differences (%D) ≤ 20% and relative response factors (RRF) ≥ 0.05?	✓			
V. Blanks				
Was a method blank associated with every sample in this SDG?	✓			
Was a method blank analyzed at least once every 12 hours for each matrix and concentration?	✓			
Was there contamination in the method blanks? If yes, please see the Blanks validation completeness worksheet.		✓		
VI. Surrogate spikes				
Were all surrogate %R within QC limits?	✓			
If the percent recovery (%R) for one or more surrogates was out of QC limits, was a reanalysis performed to confirm samples with %R outside of criteria?			✓	
VII. Matrix spike/Matrix spike duplicates				
Were a matrix spike (MS) and matrix spike duplicate (MSD) analyzed for each matrix in this SDG? If no, indicate which matrix does not have an associated MS/MSD. Soil / Water.	✓			
Was a MS/MSD analyzed every 20 samples of each matrix?	✓			
Were the MS/MSD percent recoveries (%R) and the relative percent differences (RPD) within the QC limits?			✓	
VIII. Laboratory control samples				
Was an LCS analyzed for this SDG?	✓			

LDC #: 33690A1

VALIDATION FINDINGS CHECKLIST

Reviewer: FT
2nd Reviewer: [illegible]

Validation Area	Yes	No	NA	Findings/Comments
Was an LCS analyzed per analytical batch?	✓			
Were the LCS percent recoveries (%R) and relative percent difference (RPD) within the QC limits?	✓			
IX. Regional Quality Assurance and Quality Control				
Were performance evaluation (PE) samples performed?			✓	
Were the performance evaluation (PE) samples within the acceptance limits?			✓	
X. Internal standards				
Were internal standard area counts within -50% or +100% of the associated calibration standard?	✓			
Were retention times within ± 30 seconds of the associated calibration standard?	✓			
XI. Target compound identification				
Were relative retention times (RRT's) within ± 0.06 RRT units of the standard?	✓			
Did compound spectra meet specified EPA "Functional Guidelines" criteria?	✓			
Were chromatogram peaks verified and accounted for?	✓			
XII. Compound quantitation/RLs				
Were the correct internal standard (IS), quantitation ion and relative response factor (RRF) used to quantitate the compound?	✓			
Were compound quantitation and RLs adjusted to reflect all sample dilutions and dry weight factors applicable to level IV validation?	✓			
XIII. Tentatively identified compounds (TICs)				
Were the major ions (> 10 percent relative intensity) in the reference spectrum evaluated in sample spectrum?			✓	
Were relative intensities of the major ions within ± 20% between the sample and the reference spectra?			✓	
Did the raw data indicate that the laboratory performed a library search for all required peaks in the chromatograms (samples and blanks)?			✓	
XIV. System performance				
System performance was found to be acceptable.	✓			
XV. Overall assessment of data				
Overall assessment of data was found to be acceptable.		✓		
XVI. Field duplicates				
Field duplicate pairs were identified in this SDG.	✓			
Target compounds were detected in the field duplicates.	✓			
XVII. Field blanks				
Field blanks were identified in this SDG.	✓			
Target compounds were detected in the field blanks.		✓		

TARGET COMPOUND WORKSHEET

METHOD: VOA

A. Chloromethane	U. 1,1,2-Trichloroethane	OO. 2,2-Dichloropropane	III. n-Butylbenzene	CCCC.1-Chlorohexane
B. Bromomethane	V. Benzene	PP. Bromochloromethane	JJJ. 1,2-Dichlorobenzene	DDDD. Isopropyl alcohol
C. Vinyl choride	W. trans-1,3-Dichloropropene	QQ. 1,1-Dichloropropene	KKK. 1,2,4-Trichlorobenzene	EEEE. Acetonitrile
D. Chloroethane	X. Bromoform	RR. Dibromomethane	LLL. Hexachlorobutadiene	FFFF. Acrolein
E. Methylene chloride	Y. 4-Methyl-2-pentanone	SS. 1,3-Dichloropropane	MMM. Naphthalene	GGGG. Acrylonitrile
F. Acetone	Z. 2-Hexanone	TT. 1,2-Dibromoethane	NNN. 1,2,3-Trichlorobenzene	HHHH. 1,4-Dioxane
G. Carbon disulfide	AA. Tetrachloroethene	UU. 1,1,1,2-Tetrachloroethane	OOO. 1,3,5-Trichlorobenzene	IIII. Isobutyl alcohol
H. 1,1-Dichloroethene	BB. 1,1,2,2-Tetrachloroethane	VV. Isopropylbenzene	PPP. trans-1,2-Dichloroethene	JJJJ. Methacrylonitrile
I. 1,1-Dichloroethane	CC. Toluene	WW. Bromobenzene	QQQ. cis-1,2-Dichloroethene	KKKK. Propionitrile
J. 1,2-Dichloroethene, total	DD. Chlorobenzene	XX. 1,2,3-Trichloropropane	RRR. m,p-Xylenes	LLLL. Ethyl ether
K. Chloroform	EE. Ethylbenzene	YY. n-Propylbenzene	SSS. o-Xylene	MMMM. Benzyl chloride
L. 1,2-Dichloroethane	FF. Styrene	ZZ. 2-Chlorotoluene	TTT. 1,1,2-Trichloro-1,2,2-trifluoroethane	NNNN. Iodomethane
M. 2-Butanone	GG. Xylenes, total	AAA. 1,3,5-Trimethylbenzene	UUU. 1,2-Dichlorotetrafluoroethane	OOOO.1,1-Difluoroethane
N. 1,1,1-Trichloroethane	HH. Vinyl acetate	BBB. 4-Chlorotoluene	VVV. 4-Ethyltoluene	PPPP.
O. Carbon tetrachloride	II. 2-Chloroethylvinyl ether	CCC. tert-Butylbenzene	WWW. Ethanol	QQQQ.
P. Bromodichloromethane	JJ. Dichlorodifluoromethane	DDD. 1,2,4-Trimethylbenzene	XXX. Di-isopropyl ether	RRRR.
Q. 1,2-Dichloropropane	KK. Trichlorofluoromethane	EEE. sec-Butylbenzene	YYY. tert-Butanol	SSSS.
R. cis-1,3-Dichloropropene	LL. Methyl-tert-butyl ether	FFF. 1,3-Dichlorobenzene	ZZZ. tert-Butyl alcohol	TTTT.
S. Trichloroethene	MM. 1,2-Dibromo-3-chloropropane	GGG. p-Isopropyltoluene	AAAA. Ethyl tert-butyl ether	UUUU.
T. Dibromochloromethane	NN. Methyl ethyl ketone	HHH. 1,4-Dichlorobenzene	BBBB. tert-Amyl methyl ether	VVVV.

.LDC #: 33690A /

VALIDATION FINDINGS WORKSHEET
Matrix Spike/Matrix Spike Duplicates

Reviewer: FT
2nd Reviewer: [illegible]

METHOD : GC/MS VOA (EPA SW 846 Method 8260B)

Please see qualifications below for all questions answered "N". Not applicable questions are identified as "N/A".

Y N N/A Were a matrix spike (MS) and matrix spike duplicate (MSD) analyzed for each matrix in this SDG? If no, indicate which matrix does not have an associated MS/MSD. Soil / Water.

Y N N/A Was a MS/MSD analyzed every 20 samples of each matrix?

Y N N/A Were the MS/MSD percent recoveries (%R) and the relative percent differences (RPD) within the QC limits?

#	MS/MSD ID	Compound	MS %R (Limits)	MSD %R (Limits)	RPD (Limits)	Associated Samples	Qualifications
	12 + 13	R	73.8 (74-126)	( )	( )	8	J/UJ/A (ND)
		FF	74.0 (76-124)	( )	( )	↓	↓ ↓
		A	( )	( )	24.4 (20)	↓	J/UJ/Adel (ND)
		C	( )	( )	20.2 (20)	↓	↓ ↓
			( )	( )	( )		
			( )	( )	( )		
			( )	( )	( )		
			( )	( )	( )		
			( )	( )	( )		
			( )	( )	( )		
			( )	( )	( )		
			( )	( )	( )		
			( )	( )	( )		
			( )	( )	( )		
			( )	( )	( )		
			( )	( )	( )		
			( )	( )	( )		
			( )	( )	( )		
			( )	( )	( )		
			( )	( )	( )		

	Compound	QC Limits (Soil)	RPD (Soil)	QC Limits (Water)	RPD (Water)
H.	1,1-Dichloroethene	59-172%	≤ 22%	61-145%	≤ 14%
S.	Trichloroethene	62-137%	≤ 24%	71-120%	≤ 14%
V.	Benzene	66-142%	≤ 21%	76-127%	≤ 11%
CC.	Toluene	59-139%	≤ 21%	76-125%	≤ 13%
DD.	Chlorobenzene	60-133%	≤ 21%	75-130%	≤ 13%

LDC#: 33690A1

VALIDATION FINDINGS WORKSHEET

Field Duplicates

Reviewer: F
2nd Reviewer: E

METHOD: VOA (EPA SW 846 Method 8260B)

Analyte	Concentration (mg/Kg)		RPD ≤ 100%
	5	6	
F	0.0088	0.011	22
CC	0.0026	0.00260U	200
GG	0.0018	0.00057	104
M	0.00410U	0.0041	200

V:\FIELD DUPLICATES\33690A1.wpd

LDC #: 33690A /

VALIDATION FINDINGS WORKSHEET
Compound Quantitation and CRQLs

Page: 1 of 1
Reviewer: FT
2nd Reviewer: [illegible]

METHOD: GC/MS VOA (EPA SW 846 Method 8260B)

Please see qualifications below for all questions answered "N". Not applicable questions are identified as "N/A".

Y N N/A Were the correct internal standard (IS), quantitation ion and relative response factor (RRF) used to quantitate the compound?

Y N N/A Were compound quantitation and CRQLs adjusted to reflect all sample dilutions and dry weight factors applicable to level IV validation?

#	Date	Sample ID	Compound	Finding	Qualifications
		7	QQQ, S	7 cal Range	J / A det

Comments: See sample calculation verification worksheet for recalculations

LDC #: 33690A1

VALIDATION FINDINGS WORKSHEET
Overall Assessment of Data

Page: 1 of 1
Reviewer: FT
2nd Reviewer: [illegible]

METHOD: GC/MS VOA (EPA SW 846 Method 8260B)

Please see qualifications below for all questions answered "N". Not applicable questions are identified as "N/A".

All available information pertaining to the data were reviewed using professional judgement to compliment the determination of the overall quality of the data.
Y N N/A Was the overall quality and usability of the data acceptable?

#	Date	Sample ID	Compound	Finding	Qualifications
		7	QQQ, S	> cal Rang	R/A

Comments:

LDC #: 33690A1

VALIDATION FINDINGS WORKSHEET
Initial Calibration Calculation Verification

Reviewer: FT
2nd Reviewer: [illegible]

METHOD: GCMS 8260B

The calibration factors (RRFF), average RRFF, and relative standard deviation (%RSD) were recalculated for compounds identified below using the following calculations:

RRF = (Ax)(Cis)/(Ais)(Cx)
average RRF = sum of the RRFs/number of standards
%RSD = 100 * (S/X)

Where:
Ax = Area of compound
Cx = Concentration of compound
S = Standard deviation of the RRFs
X = Mean of the RRFs
Ais = Area of associated internal standard
Cis = Concentration of internal Standard

#	Standard ID	Calibration Date	Compound	Reported (RRF 20 std)	Recalculated (RRF 20 std)	Reported AverageRRF (Initial)	Recalculated Average RRF (Initial)	Reported %RSD	Recalculated %RSD
	ICAL Loki	1/19/2015	C (IS 1)	0.4128	0.4128	0.3809	0.3809	12.00	12.00
			AA (IS 2)	0.3336	0.3336	0.3581	0.3581	7.10	7.10
			BB (IS 3)	1.0850	1.0850	1.1250	1.1250	1.10	1.10

LDC #: 33690A1

VALIDATION FINDINGS WORKSHEET
Continuing Calibration Results Verification

Reviewer: FT
2nd Reviewer:

METHOD: GC/MS VOA (EPA SW 846 Method 8260B)

The percent difference (%D) of the initial calibration average Relative Response Factors (RRFs) and the continuing calibration RRFs were recalculated for the compounds identified below using the following calculation:

% Difference = 100 * (ave. RRF - RRF)/ave. RRF
RRF = $(A_x)(C_{is})/(A_{is})(C_x)$

Where: ave. RRF = initial calibration average RRF
RRF = continuing calibration RRF
A_x = Area of compound, A_{is} = Area of associated internal standard
C_x = Concentration of compound, C_{is} = Concentration of internal standard

#	Standard ID	Calibration Date	Compound (Reference internal Standard)	Average RRF (initial)	Reported RRF (CC)	Recalculated RRF (CC)	Reported %D	Recalculated %D
1	CCV 012105 10:56	1/21/15	C (1st internal standard)	0.3809	0.3688	0.3688	3.2	3.2
			AA (2nd internal standard)	0.3581	0.4207	0.4207	17	17
			BB (3rd internal standard)	1.1252	1.116	1.116	0.72	0.72
			(4th internal standard)					
2			(1st internal standard)					
			(2nd internal standard)					
			(3rd internal standard)					
			(4th internal standard)					
3			(1st internal standard)					
			(2nd internal standard)					
			(3rd internal standard)					
			(4th internal standard)					
4			(1st internal standard)					
			(2nd internal standard)					
			(3rd internal standard)					
			(4th internal standard)					

Comments: Refer to Continuing Calibration findings worksheet for list of qualifications and associated samples when reported results do not agree within 10.0% of the recalculated results.

LDC #: 33690A /

VALIDATION FINDINGS WORKSHEET
Surrogate Results Verification

Reviewer: FT
2nd reviewer: [illegible]

METHOD: GC/MS VOA (EPA SW 846 Method 8260B)

The percent recoveries (%R) of surrogates were recalculated for the compounds identified below using the following calculation:

% Recovery: SF/SS * 100

Where: SF = Surrogate Found
SS = Surrogate Spiked

Sample ID: #3

	Surrogate Spiked	Surrogate Found	Percent Recovery Reported	Percent Recovery Recalculated	Percent Difference
Dibromofluoromethane					
1,2-Dichloroethane-d4	48.066	47.19203	98.2	98.2	0
Toluene-d8	61.175	58.64025	95.9	95.9	↓
Bromofluorobenzene	54.538	51.8376 /	95.0	95.0	↓

Sample ID:

	Surrogate Spiked	Surrogate Found	Percent Recovery Reported	Percent Recovery Recalculated	Percent Difference
Dibromofluoromethane					
1,2-Dichloroethane-d4					
Toluene-d8					
Bromofluorobenzene					

Sample ID:

	Surrogate Spiked	Surrogate Found	Percent Recovery Reported	Percent Recovery Recalculated	Percent Difference
Dibromofluoromethane					
1,2-Dichloroethane-d4					
Toluene-d8					
Bromofluorobenzene					

Sample ID:

	Surrogate Spiked	Surrogate Found	Percent Recovery Reported	Percent Recovery Recalculated	Percent Difference
Dibromofluoromethane					
1,2-Dichloroethane-d4					
Toluene-d8					
Bromofluorobenzene					

Sample ID:

	Surrogate Spiked	Surrogate Found	Percent Recovery Reported	Percent Recovery Recalculated	Percent Difference
Dibromofluoromethane					
1,2-Dichloroethane-d4					
Toluene-d8					
Bromofluorobenzene					

LDC #: 33690A1

VALIDATION FINDINGS WORKSHEET
Matrix Spike/Matrix Spike Duplicates Results Verification

Reviewer: FT
2nd Reviewer: ✓

METHOD: GC/MS VOA (EPA SW 846 Method 8260B)

The percent recoveries (%R) and Relative Percent Difference (RPD) of the matrix spike and matrix spike duplicate were recalculated for the compounds identified below using the following calculation:

% Recovery = 100 * (SSC - SC)/SA Where: SSC = Spiked sample concentration; SA = Spike added; SC = Sample concentration

RPD = I MSC - MSC I * 2/(MSC + MSDC) MSC = Matrix spike concentration MSDC = Matrix spike duplicate concentration

MS/MSD sample: 12 & 13

Compound	Spike Added (mg/kg)		Sample Concentration (mg/kg)	Spiked Sample Concentration (mg/kg)		Matrix Spike Percent Recovery		Matrix Spike Duplicate Percent Recovery		MS/MSD RPD	
	MS	MSD	------	MS	MSD	Reported	Recalc	Reported	Recalc	Reported	Recalculated
1,1-Dichloroethene	0.0627	0.0581	ND	0.0665	0.0601	106	106	103	103	2.9	2.9
Trichloroethene	↓	↓	↓	0.0655	0.0608	104	104	105	105	0.96	0.96
Benzene	↓	↓	↓	0.0634	0.0576	101	101	99.1	99.1	1.9	1.9
Toluene	↓	↓	0.0026	0.0631	0.0582	96.5	96.5	95.7	95.7	0.83	0.83
Chlorobenzene	↓	↓	ND	0.0573	0.0527	91.4	91.4	90.7	90.7	0.77	0.77

Comments: Refer to Matrix Spike/Matrix Spike Duplicates findings worksheet for list of qualifications and associated samples when reported results do not agree within 10.0% of the recalculated results. %RPD Based on %R

LDC #: 33690A /

VALIDATION FINDINGS WORKSHEET
Laboratory Control Sample Results Verification

Reviewer: FT
2nd Reviewer: ✓

METHOD: GC/MS VOA (EPA SW 846 Method 8260B)

The percent recoveries (%R) and Relative Percent Difference (RPD) of the laboratoy control sample and laboratory control sample duplicate (if applicable) were recalculated for the compounds identified below using the following calculation:

% Recovery = 100 * SSC/SA Where: SSC = Spiked sample concentration
SA = Spike added

RPD = I LCSC - LCSDC I * 2/(LCSC + LCSDC) LCSC = Laboraotry control sample concentration LCSDC = Laboratory control sample duplicate concentration

LCS ID: 150121AL LCS (1/21/15 – 0121L06)

Compound	Spike Added (mg/kg)		Spiked Sample Concentration (mg/kg)		LCS Percent Recovery		LCSD Percent Recovery		LCS/LCSD RPD	
	LCS	LCSD	LCS	LCSD	Reported	Recalc.	Reported	Recalc.	Reported	Recalculated
1,1-Dichloroethene	0.050	~~0.050~~ NA F1	0.0483	NA	96.6	96.6				
Trichloroethene	↓	↓	0.0564		113	113				
Benzene			0.056		112	112				
Toluene			0.0565		113	113				
Chlorobenzene			0.0566		113	113	NA			

Comments: Refer to Laboratory Control Sample findings worksheet for list of qualifications and associated samples when reported results do not agree within 10.0% of the recalculated results.

LDC #: 33690A /

VALIDATION FINDINGS WORKSHEET
Sample Calculation Verification

Reviewer: FT
2nd reviewer: [illegible]

METHOD: GC/MS VOA (EPA SW 846 Method 8260B)

Y N N/A Were all reported results recalculated and verified for all level IV samples?
Y N N/A Were all recalculated results for detected target compounds agree within 10.0% of the reported results?

Concentration = $\frac{(A_x)(I_s)(DF)}{(A_{is})(RRF)(V_o)(\%S)}$

A_x	=	Area of the characteristic ion (EICP) for the compound to be measured
A_{is}	=	Area of the characteristic ion (EICP) for the specific internal standard
I_s	=	Amount of internal standard added in nanograms (ng)
RRF	=	Relative response factor of the calibration standard.
V_o	=	Volume or weight of sample pruged in milliliters (ml) or grams (g).
Df	=	Dilution factor.
%S	=	Percent solids, applicable to soils and solid matrices only.

Example:

Sample I.D. #3, AA:

Conc. = $\frac{(130816)(50)(5)}{(679872)(0.358)(6.871)(0.609)(1000)}$

= 0.032 mg/kg

#	Sample ID	Compound	Reported Concentration ( )	Calculated Concentration ( )	Qualification

Laboratory Data Consultants, Inc.
Data Validation Report

Project/Site Name: MCBH UST KB-100

LDC Report Date: February 26, 2015

Parameters: Lead

Validation Level: Standard & Full

Laboratory: APPL, Inc.

Sample Delivery Group (SDG): 75351

Sample Identification	Laboratory Sample Identification	Matrix	Collection Date
EKB100001	AZ09545	Soil	01/13/15
EKB100002	AZ09546	Soil	01/13/15
EKB100003**	AZ09547	Soil	01/13/15
EKB100004	AZ09548	Soil	01/13/15
EKB100005	AZ09549	Soil	01/13/15
EKB100006	AZ09550	Soil	01/13/15
EKB100007	AZ09551	Soil	01/13/15
EKB100008	AZ09552	Soil	01/13/15
EKB100009	AZ09553	Water	01/13/15
EKB100010	AZ09554	Water	01/13/15
EKB100008MS	AZ09552MS	Soil	01/13/15
EKB100008MSD	AZ09552MSD	Soil	01/13/15
EKB100010MS	AZ09554MS	Water	01/13/15
EKB100010MSD	AZ09554MSD	Water	01/13/15

**Indicates sample underwent Full validation

Introduction

This Data Validation Report (DVR) presents data validation findings and results for the associated samples listed on the cover page. Data validation was performed in accordance with the Final Work Plan for Site Investigation for UST-KB-100, Marine Corps Base Motor Pool, Marine Corps Base Hawaii, Kaneohe, Hawaii (June 2014), the Project Procedures Manual, U.S. Navy Environmental Restoration Program, NAVFAC Pacific (DON 2007), and the U.S. Department of Defense (DoD) Quality Systems Manual (QSM) for Environmental Laboratories, Version 5.0 (July 2013). Where specific guidance was not available, the data has been evaluated in a conservative manner consistent with industry standards using professional experience.

The analyses were performed by the following method:

Lead by Environmental Protection Agency (EPA) SW 846 Method 6020A

All sample results were subjected to Standard data validation, which comprises an evaluation of quality control (QC) summary results. Samples appended with a double asterisk on the cover page were subjected to Full data validation, which is comprised of the QC summary forms as well as the raw data, to confirm sample quantitation and identification.

The following are definitions of the data qualifiers utilized during data validation:

J (Estimated): The compound or analyte was analyzed for and positively identified by the laboratory; however the reported concentration is estimated due to non-conformances discovered during data validation.

U (Non-detect): The compound or analyte was analyzed for and positively identified by the laboratory; however the analyte should be considered non-detect at the reported concentration due to the presence of contaminants detected in the associated blank(s).

UJ (Non-detected estimated): The compound or analyte was reported as not detected by the laboratory; however the reported quantitation/detection limit is estimated due to non-conformances discovered during data validation.

R (Rejected): The sample results were rejected due to gross non-conformances discovered during data validation. Data qualified as rejected is not usable.

NA (Not Applicable): The non-conformance discovered during data validation demonstrates a high bias, while the affected compound in the associated sample(s) was reported as not detected by the laboratory and did not warrant the qualification of the data.

A qualification summary table is provided at the end of this report if data has been qualified. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

Qualification Code Reference

H	Holding times were exceeded.
S	The sequence or number of standards used for the calibration was incorrect.
C	Correlation coefficient is <0.995.
R	%R for calibration is not within control limits
B	Presumed contamination from preparation (method) blank or calibration blank
L	Laboratory Control Sample/Laboratory Control Sample Duplicate %R or RPD was not within control limits
Q	MS/MSD recovery was poor.
E	MS/MSD or Duplicate RPD or difference was high.
I	ICP ICS results were unsatisfactory.
A	ICP Serial Dilution %D were not within control limits
F	Presumed contamination from FB or ER.
D	The analysis with this flag should not be used because another more technically sound analysis is available.
P	Post Digestion Spike recovery was not within control limits
*#	Unusual problems found with the data. The number following the asterisk (*) will indicate the section in the validation report where a description of the problem can be found.

I. Sample Receipt and Technical Holding Times

All samples were received in good condition and cooler temperatures upon receipt met validation criteria.

All technical holding time requirements were met.

II. ICPMS Tune

The mass calibration was within 0.1 AMU and the percent relative standard deviation (%RSD) was less than or equal to 5%.

III. Instrument Calibration

Initial and continuing calibrations were performed as required by the method.

The initial calibration verification (ICV) and continuing calibration verification (CCV) standards were within QC limits.

IV. ICP Interference Check Sample (ICS) Analysis

The frequency of ICS analysis was met.

Percent recoveries (%R) were within QC limits.

V. Laboratory Blanks

Laboratory blanks were analyzed as required by the method. No contaminants were found in the laboratory blanks.

VI. Field Blanks

Sample EKB100009 was identified as an equipment blank. No lead was found.

Sample EKB100010 was identified as a rinsate blank. No lead was found.

VII. Matrix Spike/Matrix Spike Duplicates

Matrix spike (MS) and matrix spike duplicate (MSD) sample analysis was performed on an associated project sample. Percent recoveries (%R) were within QC limits. Relative percent differences (RPD) were within QC limits.

VIII. Duplicate Sample Analysis

The laboratory has indicated that there were no duplicate (DUP) analyses specified for the samples in this SDG, and therefore duplicate analyses were not performed for this SDG.

IX. ICP Serial Dilution

ICP serial dilution analysis was performed on an associated project sample. The analysis criteria were met.

X. Laboratory Control Samples (LCS)

Laboratory control samples (LCS) were analyzed as required by the method. Percent recoveries (%R) were within QC limits.

XI. Field Duplicates

Samples EKB100005 and EKB100006 were identified as field duplicates. No results were detected in any of the samples with the following exceptions:

Analyte	Concentration (mg/Kg)		RPD (Limits)
	EKB100005	EKB100006	
Lead	12.2	17.7	37 (≤100)

XII. Internal Standards (ICP-MS)

All internal standard percent recoveries (%R) were within QC limits for samples on which an Full validation was performed. Raw data were not evaluated for the samples reviewed by Standard validation.

XIII. Sample Result Verification

All sample result verifications were acceptable for samples on which a Full validation was performed. Raw data were not evaluated for the samples reviewed by Standard validation.

XIV. Overall Assessment of Data

The analysis was conducted within all specifications of the method. No results were rejected in this SDG.

The quality control criteria reviewed were met and are considered acceptable. Based upon the data validation all results are considered valid and usable for all purposes.

MCBH UST KB-100
Lead - Data Qualification Summary - SDG 75351

No Sample Data Qualified in this SDG

MCBH UST KB-100
Lead - Laboratory Blank Data Qualification Summary - SDG 75351

No Sample Data Qualified in this SDG

MCBH UST KB-100
Lead - Field Blank Data Qualification Summary - SDG 75351

No Sample Data Qualified in this SDG

LDC #: 33690A4a
SDG #: 75351
Laboratory: APPL, Inc.

VALIDATION COMPLETENESS WORKSHEET
Standard/Full

Date: 2/20/15
Page: 1 of 21
Reviewer: VK
2nd Reviewer: G

METHOD: ~~Metals~~ Pb (EPA SW 846 Method ~~6010B~~/6020A/~~7470A/7471A)~~

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Sample receipt/Technical holding times	A, A	
II.	ICP/MS Tune	A	
III.	Instrument Calibration	A	
IV.	ICP Interference Check Sample (ICS) Analysis	A	
V.	Laboratory Blanks	A	
VI.	Field Blanks	ND	EB=9 RB=10
VII.	Matrix Spike/Matrix Spike Duplicates	A	MS/D
VIII.	Duplicate sample analysis	N	
IX.	ICP Serial Dilution	~~N~~ A	~~Not performed~~
X.	Laboratory control samples	A	LCS
XI.	Field Duplicates	SW	(5+6)
XII.	Internal Standard (ICP-MS)	A	Not reviewed for level III
XIII.	Sample Result Verification	A	Not reviewed for Standard validation.
XIV.	Overall Assessment of Data	A	

Note: A = Acceptable; N = Not provided/applicable; SW = See worksheet; ND = No compounds detected; R = Rinsate; FB = Field blank; D = Duplicate; TB = Trip blank; EB = Equipment blank; SB=Source blank; OTHER:

** Indicates sample underwent Full validation

	Client ID	Lab ID	Matrix	Date
1	EKB100001	AZ09545	Soil	01/13/15
2	EKB100002	AZ09546	Soil	01/13/15
3	EKB100003**	AZ09547**	Soil	01/13/15
4	EKB100004	AZ09548	Soil	01/13/15
5	EKB100005	AZ09549	Soil	01/13/15
6	EKB100006	AZ09550	Soil	01/13/15
7	EKB100007	AZ09551	Soil	01/13/15
8	EKB100008	AZ09552	Soil	01/13/15
9	EKB100009	AZ09553	Water	01/13/15
10	EKB100010	AZ09554	Water	01/13/15
11	EKB100008MS	AZ09552MS	Soil	01/13/15
12	EKB100008MSD	AZ09552MSD	Soil	01/13/15
13	EKB100010MS	AZ09554MS	Water	01/13/15
14	EKB100010MSD	AZ09554MSD	Water	01/13/15
15				

LDC #: 33690A4q

VALIDATION FINDINGS CHECKLIST

Reviewer: KK
2nd Reviewer: CL

Method: Metals (EPA SW 846 Method ~~6010/7000~~/6020A

Validation Area	Yes	No	NA	Findings/Comments
I. Technical holding times				
All technical holding times were met.	✓			
Cooler temperature criteria was met.	✓			
II. ICP/MS Tune				
Were all isotopes in the tuning solution mass resolution within 0.1 amu?	✓			
Were %RSD of isotopes in the tuning solution ≤5%?	✓			
III. Calibration				
Were all instruments calibrated daily, each set-up time?	✓			
Were the proper number of standards used?	✓			
Were all initial and continuing calibration verification %Rs within the 90-110% (80-120% for mercury) QC limits?	✓			
Were all initial calibration correlation coefficients ≥ 0.995?	✓			
IV. Blanks				
Was a method blank associated with every sample in this SDG?	✓			
Was there contamination in the method blanks? If yes, please see the Blanks validation completeness worksheet.		✓		
V. ICP Interference Check Sample				
Were ICP interference check samples performed daily?	✓			
Were the AB solution percent recoveries (%R) with the 80-120% QC limits?	✓			
VI. Matrix spike/Matrix spike duplicates				
Were a matrix spike (MS) and duplicate (DUP) analyzed for each matrix in this SDG? If no, indicate which matrix does not have an associated MS/MSD or MS/DUP. Soil / Water.	✓			
Were the MS/MSD percent recoveries (%R) and the relative percent differences (RPD) within the 75-125 QC limits? If the sample concentration exceeded the spike concentration by a factor of 4 or more, no action was taken.	✓			
Were the MS/MSD or duplicate relative percent differences (RPD) ≤ 20% for waters and ≤ 35% for soil samples? A control limit of +/- RL(+/-2X RL for soil) was used for samples that were ≤ 5X the RL, including when only one of the duplicate sample values were ≤ 5X the RL.	✓			
VII. Laboratory control samples				
Was an LCS anaylzed for this SDG?	✓			
Was an LCS analyzed per extraction batch?	✓			
Were the LCS percent recoveries (%R) and relative percent ~~difference (RPD)~~ within the 80-120% QC limits for water samples and laboratory established QC limits for soils?	✓			

LDC #: 33690A4q

VALIDATION FINDINGS CHECKLIST

Reviewer: KK
2nd Reviewer: OL

Validation Area	Yes	No	NA	Findings/Comments
VIII. Internal Standards (EPA SW 846 Method 6020/EPA 200.8)				
Were all the percent recoveries (%R) within the 30-120% (6020)/60-125% (200.8) of the intensity of the internal standard in the associated initial calibration?	✓			
If the %Rs were outside the criteria, was a reanalysis performed?	~~✓~~		✓	
IX. ICP Serial Dilution				
Was an ICP serial dilution analyzed if analyte concentrations were > 50X the MDL (ICP)/>100X the MDL(ICP/MS)?	✓			
Were all percent differences (%Ds) < 10%?	✓			
Was there evidence of negative interference? If yes, professional judgement will be used to qualify the data.			✓	
X. Sample Result Verification				
Were RLs adjusted to reflect all sample dilutions and dry weight factors applicable to level IV validation?	✓			
XI. Overall assessment of data				
Overall assessment of data was found to be acceptable.	✓			
XII. Field duplicates				
Field duplicate pairs were identified in this SDG.	✓			
Target analytes were detected in the field duplicates.	✓			
XIII. Field blanks				
Field blanks were identified in this SDG.	✓	~~✓~~		
Target analytes were detected in the field blanks.		✓		

LDC#: 33690A4a

VALIDATION FINDINGS WORKSHEET

Field Duplicates

Reviewer: KK

2nd Reviewer: [illegible]

METHOD: Pb (EPA SW 846 Method 6020A)

Analyte	Concentration (mg/Kg)		RPD (≤100)
	5	6	
Lead	12.2	17.7	37

\\LDCFILESERVER\Validation\FIELD DUPLICATES\FD_inorganic\33690A4a.wpd

LDC #: 33690A4a

VALIDATION FINDINGS WORKSHEET
Initial and Continuing Calibration Calculation Verification

Reviewer: KK
2nd Reviewer: [illegible]

METHOD: Trace Metals (EPA SW 846 Method ~~6010~~/6020A/~~7000~~)

An initial and continuing calibration verification percent recovery (%R) was recalculated for each type of analysis using the following formula:

$$\%R = \frac{Found}{True} \times 100$$

Where, Found = concentration (in ug/L) of each analyte measured in the analysis of the ICV or CCV solution
True = concentration (in ug/L) of each analyte in the ICV or CCV source

Standard ID	Type of Analysis	Element	Found (ug/L)	True (ug/L)	Recalculated %R	Reported %R	Acceptable (Y/N)
	ICP (Initial calibration)						
ICV (13:05)	ICP/MS (Initial calibration)	Pb	96.661	100	96.7	96.7	Y
	CVAA (Initial calibration)						
	ICP (Continuing calibration)						
CCV (13:47)	ICP/MS (Continuing calibration)	Pb	48.356	50	96.7	96.7	Y
	CVAA (Continuing calibration)						
	GFAA (Initial calibration)						
	GFAA (Continuing calibation)						

Comments: Refer to Calibration Verification findings worksheet for list of qualifications and associated samples when reported results do not agree within 10.0% of t recalculated results.

LDC #: 33690A4a

VALIDATION FINDINGS WORKSHEET
Level IV Recalculation Worksheet

Page: 1 of 1
Reviewer: [illegible]
2nd Reviewer: [illegible]

METHOD: ~~Trace Metals~~ Pb (EPA SW 846 Method ~~6010~~/6020A/~~7000~~)

Percent recoveries (%R) for an ICP interference check sample, a laboratory control sample and a matrix spike sample were recalculated using the following formula:

$\%R = \frac{Found}{True} \times 100$ Where, Found = Concentration of each analyte measured in the analysis of the sample. For the matrix spike calculation, Found = SSR (spiked sample result) - SR (sample result).
True = Concentration of each analyte in the source.

A sample and duplicate relative percent difference (RPD) was recalculated using the following formula:

$RPD = \frac{|S-D|}{(S+D)/2} \times 100$ Where, S = Original sample concentration
D = Duplicate sample concentration

An ICP serial dilution percent difference (%D) was recalculated using the following formula:

$\%D = \frac{|I-SDR|}{I} \times 100$ Where, I = Initial Sample Result (mg/L)
SDR = Serial Dilution Result (mg/L) (Instrument Reading x 5)

Sample ID	Type of Analysis	Element	Found / S / I (units) µg/L	True / D / SDR (units) mg/L	Recalculated %R / RPD / %D	Reported %R / RPD / %D	Acceptable (Y/N)
ICSAB (14:17)	ICP interference check	Pb	90.368	100	90.4	90.4	Y
LCS	Laboratory control sample		46.905	50.0	93.8	93.8	
13	Matrix spike		(SSR-SR) 48.645	50.0	97.3*	97.2	
13/14	Duplicate		48.645	48.312	0.7*	0.6	
8	ICP serial dilution (mg/kg)		0.244	0.248	NA	NA	

Comments: Refer to appropriate worksheet for list of qualifications and associated samples when reported results do not agree within 10.0% of the recalculated results.
* Calculated from Raw Data

TOTCLC.4SW

LDC #: 33690A4a

VALIDATION FINDINGS WORKSHEET
Sample Calculation Verification

Reviewer: KK
2nd reviewer: 02

METHOD: ~~Trace Metals~~ Pb (EPA SW 846 Method ~~6010~~/6020A/~~7000~~)

Please see qualifications below for all questions answered "N". Not applicable questions are identified as "N/A".

Y N N/A Have results been reported and calculated correctly?
Y N N/A Are results within the calibrated range of the instruments and within the linear range of the ICP?
Y N N/A Are all detection limits below the CRDL?

Detected analyte results for Pb were recalculated and verified using the following equation:

Concentration = $\frac{(RD)(FV)(Dil)}{(In.\ Vol.)}$ 1.8 1.01

RD = Raw data concentration
FV = Final volume (ml)
In. Vol. = Initial volume (ml) or weight (G)
Dil = Dilution factor

Recalculation:

3: $\frac{(0.283\ \mu g/L)(100\ mL)(10)}{(1.01\ g)(0.609)(1000)} = 0.460095\ mg/kg$

#	Sample ID	Analyte	Reported Concentration (mg/kg)	Calculated Concentration (mg/kg)	Acceptable (Y/N)
	3	Pb	0.46	0.46	Y
	~~9~~				

Note: Sample 9 non detect

Laboratory Data Consultants, Inc.
Data Verification Report

Project/Site Name: MCBH UST KB-100

LDC Report Date: February 26, 2015

Parameters: Total Petroleum Hydrocarbons as Extractables

Verification Level: Standard & Full

Laboratory: APPL, Inc.

Sample Delivery Group (SDG): 75351

Sample Identification	Laboratory Sample Identification	Matrix	Collection Date
EKB100001	AZ09545	Soil	01/13/15
EKB100002	AZ09546	Soil	01/13/15
EKB100003**	AZ09547**	Soil	01/13/15
EKB100004	AZ09548	Soil	01/13/15
EKB100005	AZ09549	Soil	01/13/15
EKB100006	AZ09550	Soil	01/13/15
EKB100007	AZ09551	Soil	01/13/15
EKB100008	AZ09552	Soil	01/13/15
EKB100009	AZ09553	Water	01/13/15
EKB100010	AZ09554	Water	01/13/15

**Indicates sample underwent Full validation

Introduction

This Data Validation Report (DVR) presents data validation findings and results for the associated samples listed on the cover page. Data validation was performed in accordance with the Final Work Plan for Site Investigation for UST-KB-100, Marine Corps Base Motor Pool, Marine Corps Base Hawaii, Kaneohe, Hawaii (June 2014), the Project Procedures Manual, U.S. Navy Environmental Restoration Program, NAVFAC Pacific (DON 2007), and the U.S. Department of Defense (DoD) Quality Systems Manual (QSM) for Environmental Laboratories, Version 5.0 (July 2013). Where specific guidance was not available, the data has been evaluated in a conservative manner consistent with industry standards using professional experience.

The analyses were performed by the following method:

Total Petroleum Hydrocarbons (TPH) as Extractables by Environmental Protection Agency (EPA) SW 846 Method 8015C

All sample results were subjected to Standard data validation, which comprises an evaluation of quality control (QC) summary results. Samples appended with a double asterisk on the cover page were subjected to Full data validation, which is comprised of the QC summary forms as well as the raw data, to confirm sample quantitation and identification.

The following are definitions of the data qualifiers utilized during data validation:

J (Estimated): The compound or analyte was analyzed for and positively identified by the laboratory; however the reported concentration is estimated due to non-conformances discovered during data validation.

U (Non-detect): The compound or analyte was analyzed for and positively identified by the laboratory; however the analyte should be considered non-detect at the reported concentration due to the presence of contaminants detected in the associated blank(s).

UJ (Non-detected estimated): The compound or analyte was reported as not detected by the laboratory; however the reported quantitation/detection limit is estimated due to non-conformances discovered during data validation.

R (Rejected): The sample results were rejected due to gross non-conformances discovered during data validation. Data qualified as rejected is not usable.

NA (Not Applicable): The non-conformance discovered during data validation demonstrates a high bias, while the affected compound in the associated sample(s) was reported as not detected by the laboratory and did not warrant the qualification of the data.

A qualification summary table is provided at the end of this report if data has been qualified. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

Qualification Code Reference

H	Holding times were exceeded.
S	Surrogate recovery was outside QC limits.
C	Calibration %RSD, r, r^2 or %D were noncompliant
R	Calibration RRF was <0.05.
B	Presumed contamination from preparation (method blank)
L	Laboratory Control Sample/Laboratory Control Sample Duplicate %R or RPD was not within control limits
Q	MS/MSD recovery was poor
E	MS/MSD or Duplicate RPD was high.
I	Internal standard performance was unsatisfactory
M	Instrument Performance Check (BFB or DFTPP) was noncompliant
T	Presumed contamination from trip blank.
F	Presumed contamination from FB or ER.
D	The analysis with this flag should not be used because another more technically sound analysis is available.
P	Instrument performance for pesticides was poor
*#	Unusual problems found with the data. The number following the asterisk (*) will indicate the section in the validation report where a description of the problem can be found.

I. Sample Receipt and Technical Holding Times

All samples were received in good condition and cooler temperatures upon receipt met validation criteria.

All technical holding time requirements were met.

II. Initial Calibration and Initial Calibration Verification

An initial calibration was performed as required by the method.

The percent relative standard deviations (%RSD) were less than or equal to 20.0% for all compounds.

The percent differences (%D) of the initial calibration verification (ICV) standard were less than or equal to 20.0% for all compounds.

III. Continuing Calibration

Continuing calibration was performed at the required frequencies.

Percent differences (%D) were less than or equal to 20.0% for all compounds.

IV. Laboratory Blanks

Laboratory blanks were analyzed as required by the method. No contaminants were found in the laboratory blanks.

V. Field Blanks

Sample EKB100009 was identified as an equipment blank. No contaminants were found.

Sample EKB100010 was identified as a rinsate blank. No contaminants were found.

VI. Surrogates

Surrogates were added to all samples as required by the method. All surrogate recoveries (%R) were within QC limits.

VII. Matrix Spike/Matrix Spike Duplicates

Matrix spike (MS) and matrix spike duplicate (MSD) sample analysis was performed on an associated project sample. Percent recoveries (%R) and relative percent differences (RPD) were within QC limits.

VIII. Laboratory Control Samples

Laboratory control samples (LCS) were analyzed as required by the method. Percent recoveries (%R) were within QC limits.

IX. Field Duplicates

Samples EKB100005 and EKB100006 were identified as field duplicates. No results were detected in any of the samples.

X. Compound Quantitation

All compound quantitations met validation criteria for samples which underwent a Full validation. Raw data were not evaluated for the samples reviewed by Standard validation.

XI. Target Compound Identifications

All target compound identifications were within validation criteria for samples which underwent a Full validation was performed. Raw data were not evaluated for the samples reviewed by Standard validation.

XII. Overall Assessment of Data

The analysis was conducted within all specifications of the method. No results were rejected in this SDG.

The quality control criteria reviewed were met and are considered acceptable. Based upon the data validation all results are considered valid and usable for all purposes.

MCBH UST KB-100
Total Petroleum Hydrocarbons as Extractables - Data Qualification Summary - SDG 75351

No Sample Data Qualified in this SDG

MCBH UST KB-100
Total Petroleum Hydrocarbons as Extractables - Laboratory Blank Data Qualification Summary - SDG 75351

No Sample Data Qualified in this SDG

MCBH UST KB-100
Total Petroleum Hydrocarbons as Extractables - Field Blank Data Qualification Summary - SDG 75351

No Sample Data Qualified in this SDG

LDC #: 33690A8
SDG #: 75351
Laboratory: APPL, Inc.

VALIDATION COMPLETENESS WORKSHEET
Standard/Full

Date: 2/19/15
Page: 1 of 1
Reviewer:
2nd Reviewer:

METHOD: GC TPH as Extractables (EPA SW 846 Method 8015~~B~~ C)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Sample receipt/Technical holding times	A / A	
II.	Initial calibration/ICV	A / A	
III.	Continuing calibration	A	
IV.	Laboratory Blanks	A	
V.	Field blanks	ND	EB = 9 RB = 10
VI.	Surrogate spikes	A	
VII.	Matrix spike/Matrix spike duplicates A	SW	
VIII.	Laboratory control samples	A	LCS
IX.	Field duplicates	ND	D = 5, 6
X.	Compound quantitation RL/LOQ/LODs	A	Not reviewed for Standard validation.
XI.	Target compound identification	A	Not reviewed for Standard validation.
XII.	System performance	A	Not reviewed for Standard validation.
XIII.	Overall assessment of data	A	

Note: A = Acceptable; N = Not provided/applicable; SW = See worksheet; ND = No compounds detected; R = Rinsate; FB = Field blank; D = Duplicate; TB = Trip blank; EB = Equipment blank; SB=Source blank; OTHER:

** Indicates sample underwent Full validation

	Client ID	Lab ID	Matrix	Date
1	EKB100001	AZ09545	Soil	01/13/15
2	EKB100002	AZ09546	Soil	01/13/15
3	EKB100003**	AZ09547**	Soil	01/13/15
4	EKB100004	AZ09548	Soil	01/13/15
5	EKB100005	AZ09549	Soil	01/13/15
6	EKB100006	AZ09550	Soil	01/13/15
7	EKB100007	AZ09551	Soil	01/13/15
8	EKB100008	AZ09552	Soil	01/13/15
9	EKB100009** EB	AZ09553**	Water	01/13/15
10	EKB100010 RB	AZ09554	Water	01/13/15
11	EKB100008MS	AZ09552MS	Soil	01/13/15
12	EKB100008MSD	AZ09552MSD	Soil	01/13/15
13	150115B			
14	150115A			
15				
16				

LDC #: 33690AX

VALIDATION FINDINGS CHECKLIST

Reviewer: M
2nd Reviewer: E

Method: ✓ GC ____ HPLC

Validation Area	Yes	No	NA	Findings/Comments
I. Technical holding times				
All technical holding times were met.	✓			
Cooler temperature criteria was met.	✓			
II. Initial calibration				
Did the laboratory perform a 5 point calibration prior to sample analysis?	✓			
Was a linear fit used for evaluation? If yes, were all percent relative standard deviations (%RSD) ≤ 20%?	✓			
Was a curve fit used for evaluation? If Yes, what was the acceptance criteria used?			✓	
Did the initial calibration meet the curve fit acceptance criteria?			✓	
Were the RT windows properly established?	✓			
IV. Continuing calibration				
What type of continuing calibration calculation was performed? ____%D or ____%R	✓			
Was a continuing calibration analyzed daily?	✓			
Were all percent differences (%D) ≤ 20%.0 or percent recoveries 80-120%?	✓			
Were all the retention times within the acceptance windows?	✓			
V. Blanks				
Was a method blank associated with every sample in this SDG?	✓			
Was a method blank analyzed for each matrix and concentration?	✓			
Was there contamination in the method blanks? If yes, please see the Blanks validation completeness worksheet.		✓		
VI. Surrogate spikes				
Were all surrogate %R within the QC limits?	✓			
If the percent recovery (%R) of one or more surrogates was outside QC limits, was a reanalysis performed to confirm %R?			✓	
If any %R was less than 10 percent, was a reanalysis performed to confirm %R?			✓	
VII. Matrix spike/Matrix spike duplicates				
Were a matrix spike (MS) and matrix spike duplicate (MSD) analyzed for each matrix in this SDG? If no, indicate which matrix does not have an associated MS/MSD. Soil / Water.	✓			
Was a MS/MSD analyzed every 20 samples of each matrix?	✓			
Were the MS/MSD percent recoveries (%R) and the relative percent differences (RPD) within the QC limits?	✓			
VIII. Laboratory control samples				
Was an LCS analyzed for this SDG?	✓			
Was an LCS analyzed per extraction batch?	✓			
Were the LCS percent recoveries (%R) and relative percent difference (RPD) within the QC limits?	✓			

LDC #: 33690AX

VALIDATION FINDINGS CHECKLIST

Reviewer: FT
2nd Reviewer: C

Validation Area	Yes	No	NA	Findings/Comments
IX. Regional Quality Assurance and Quality Control				
Were performance evaluation (PE) samples performed?			✓	
Were the performance evaluation (PE) samples within the acceptance limits?			✓	
X. Target compound identification				
Were the retention times of reported detects within the RT windows?	✓			
XI. Compound quantitation/CRQLs				
Were compound quantitation and CRQLs adjusted to reflect all sample dilutions and dry weight factors applicable to level IV validation?	✓			
XII. System performance				
System performance was found to be acceptable.	✓			
XIII. Overall assessment of data				
Overall assessment of data was found to be acceptable.	✓			
XIV. Field duplicates				
Field duplicate pairs were identified in this SDG.	✓			
Target compounds were detected in the field duplicates.		✓		
XV. Field blanks				
Field blanks were identified in this SDG.	✓			
Target compounds were detected in the field blanks.		✓		

LDC #: 33690A8

VALIDATION FINDINGS WORKSHEET
Initial Calibration Calculation Verification

Reviewer: FT
2nd Reviewer: [illegible]

METHOD: GC X HPLC _____

The calibration factors (CF), average CF, and relative standard deviation (%RSD) were recalculated for compounds identified below using the following calculations:

CF = A/C
average CF = sum of the CF/number of standards
%RSD = 100 * (S/X)

Where:
A = Area of compound
C = Concentration of compound
S = Standard deviation of calibration factors
X = Mean of calibration factors

#	Standard ID	Calibration Date	Compound	Reported (CF4 std=400)	Recalculated (CF4 std=400)	Reported Average CF (Initial)	Recalculated Average CF (Initial)	Reported %RSD	Recalculated %RSD
1	ICAL	1/21/2015	Diesel C10-C24	1223803	1223803	1257627	1257627	3.5	3.5
	Apollo								

LDC #: 33690A

VALIDATION FINDINGS WORKSHEET
Continuing Calibration Results Verification

Page: 1 of 1
Reviewer: EJ
2nd Reviewer: [illegible]

METHOD: GC ✓ HPLC _____

The percent difference (%D) of the initial calibration average Calibration Factors (CF) and the continuing calibration CF were recalculated for the compounds identified below using the following calculation:

% Difference = 100 * (ave. CF -CF)/ave.CF

Where: ave. CF = initial calibration average CF
CF = continuing calibration CF
A = Area of compound
C = Concentration of compound

#	Standard ID	Calibration Date	Compound	Average CF(Ical)/ CCV Conc.	Reported CF/ Conc. CCV	Recalculated CF/ Conc. CCV	Reported %D	Recalculated %D
1	121077 CCV 10:29	1/23/15	Diesel (C10-C24)	1257627	1405240	1405240	12	12
2	127032 CCV 23:29	1/27/15	↓	↓	1326550	1326550	5.5	5.5
3	127058 CCV 9:53	1/28/15	↓	↓	1318210	1318210	4.8	4.8
4								

Comments: Refer to Continuing Calibration findings worksheet for list of qualifications and associated samples when reported results do not agree within 10.0% of the recalculated results.

LDC #: 33690A8

VALIDATION FINDINGS WORKSHEET
Surrogate Results Verification

Reviewer: P2
2nd reviewer: ←

METHOD: ✓ GC __ HPLC

The percent recoveries (%R) of surrogates were recalculated for the compounds identified below using the following calculation:

% Recovery: SF/SS * 100

Where: SF = Surrogate Found
SS = Surrogate Spiked

Sample ID: #2

Surrogate	Column/Detector	Surrogate Spiked	Surrogate Found	Percent Recovery	Percent Recovery	Percent Difference
				Reported	Recalculated	
octacosane	DB-5	2963.256	3102.852	105	105	0
o-terphenyl	↓	↓	2356.521	79.5	79.5	0

Sample ID:

Surrogate	Column/Detector	Surrogate Spiked	Surrogate Found	Percent Recovery	Percent Recovery	Percent Difference
				Reported	Recalculated	

Sample ID:

Surrogate	Column/Detector	Surrogate Spiked	Surrogate Found	Percent Recovery	Percent Recovery	Percent Difference
				Reported	Recalculated	

LDC #: 33690A8

VALIDATION FINDINGS WORKSHEET
Matrix Spike/Matrix Spike Duplicates Results Verification

Reviewer: FZ
2nd Reviewer: [illegible]

METHOD: ✓ GC __HPLC

The percent recoveries (%R) and relative percent differences (RPD) of the matrix spike and matrix spike duplicate were recalculated for the compounds identified below using the following calculation:

%Recovery = 100 * (SSC - SC)/SA

RPD =(({SSCMS - SSCMSD} * 2) / (SSCMS + SSCMSD))*100

Where SSC = Spiked sample concentration; SC = Sample concentration; SA = Spike added; MS = Matrix spike; MSD = Matrix spike duplicate

MS/MSD samples: 11

Compound	Spike Added (mg/kg)		Sample Conc. (mg/kg)	Spike Sample Concentration (mg/kg)		Matrix spike Percent Recovery		Matrix Spike Duplicate Percent Recovery		MS/MSD RPD	
	MS	MSD	---	MS	MSD	Reported	Recalc.	Reported	Recalc.	Reported	Recalc.
Gasoline (8015)											
Diesel (8015)	39.9	39.9	10	41.3	35.1	78.4	78.4	62.9	62.9	16.2	16.2
Benzene (8021B)											
Methane (RSK-175)											
2,4-D (8151)											
Dinoseb (8151)											
Naphthalene (8310)											
Anthracene (8310)											
HMX (8330)											
2,4,6-Trinitrotoluene (8330)											

Comments: Refer to Matrix Spike/Matrix Spike Duplicates findings worksheet for list of qualifications and associated samples when reported results do not agree within 10.0% of the recalculated results.

LDC #: 33690NS

VALIDATION FINDINGS WORKSHEET

Laboratory Control Sample/Laboratory Control Sample Duplicates Results Verification

Reviewer: FZ

2nd Reviewer: [illegible]

METHOD: ✓ GC __HPLC

The percent recoveries (%R) and relative percent differences (RPD) of the laboratory control sample and laboratory control sample duplicate were recalculated for the compounds identified below using the following calculation:

%Recovery = 100 * (SSC/SA)
RPD =(({SSCLCS - SSCLCSD} * 2) / (SSCLCS + SSCLCSD))*100

Where SSC = Spiked sample concentration
LCS = Laboratory Control Sample
SA = Spike added
LCSD = Laboratory Control Sample duplicate

LCS/LCSD samples: 15011B LCS

Compound	Spike Added (mg/kg)		Spike Sample Concentration (mg/kg)		LCS Percent Recovery		LCSD Percent Recovery		LCS/LCSD RPD	
	LCS	LCSD	LCS	LCSD	Reported	Recalc.	Reported	Recalc.	Reported	Recalc.
Gasoline (8015)										
Diesel (8015)	39.7	NA	36.9	NA	92.9	92.9	NA			
Benzene (8021B)										
Methane (RSK-175)										
2,4-D (8151)										
Dinoseb (8151)										
Naphthalene (8310)										
Anthracene (8310)										
HMX (8330)										
2,4,6-Trinitrotoluene (8330)										

Comments: Refer to Laboratory Control Sample/Laboratory Control Sample Duplicate findings worksheet for list of qualifications and associated samples when reported results do not agree within 10.0% of the recalculated results.

LDC #: 33690A8

VALIDATION FINDINGS WORKSHEET
Sample Calculation Verification

Reviewer: F7
2nd Reviewer: [illegible]

METHOD: ✓ GC __ HPLC

Y N N/A Were all reported results recalculated and verified for all level IV samples?
Y N N/A Were all recalculated results for detected target compounds within 10% of the reported results?

Concentration= (A)(Fv)(Df) / (RF)(Vs or Ws)(%S/100)

A= Area or height of the compound to be measured
Fv= Final Volume of extract
Df= Dilution Factor
RF= Average response factor of the compound In the initial calibration
Vs= Initial volume of the sample
Ws= Initial weight of the sample
%S= Percent Solid

Example:

Sample ID. LCS SOIL Compound Name DRU

Concentration = 931626173 (5) / 1257627 (50.23) (2)

= 36.9 mg/kg

#	Sample ID	Compound	Reported Concentrations ( )	Recalculated Results Concentrations ( )	Qualifications

Comments:

LABORATORY DATA CONSULTANTS, INC.
2701 Loker Ave. West, Suite 220, Carlsbad, CA 92010 Bus: 760-827-1100 Fax: 760-827-1099

Element Environmental LLC
98-030 Hekaha Street, Unit 9
Aiea, Hawaii 96701
ATTN: Mr. Marvin Heskett

March 4, 2015

SUBJECT: MCBH UST KB-100, Data Validation

Dear Mr. Heskett,

Enclosed is the final validation report for the fractions listed below. This SDG was received on February 10, 2015. Attachment 1 is a summary of the sample that was reviewed for the analysis.

LDC Project #33725:

SDG #	Fraction
75427	Volatiles, Lead, Total Petroleum Hydrocarbons as Extractables

The data validation was performed under Standard & Full Validation guidelines. The analyses were validated using the following documents, as applicable to each method:

- Final Work Plan for Site Investigation for UST-KB-100, Marine Corps Base Motor Pool, Marine Corps Base Hawaii, Kaneohe, Hawaii, June 2014
- Project Procedures Manual, U.S. Navy Environmental Restoration Program NAVFAC Pacific, DON 2007
- U.S. Department of Defense Quality Systems Manual for Environmental Laboratories, Version 5.0, July 2013
- EPA SW 846, Third Edition, Test Methods for Evaluating Solid Waste, update 1, July 1992; update IIA, August 1993; update II, September 1994; update IIB, January 1995; update III, December 1996; update IIIA, April 1998; IIIB, November 2004; Update IV, February 2007

Please feel free to contact us if you have any questions.

Sincerely,

Andrew Kong
Project Manager/Senior Chemist

HC

Attachment 1

90/10 EDD & NIRIS

LDC #33725 (Element Environmental, LLC, Aiea, HI / MCBH UST KB-100)

Project #130034

LDC	SDG#	DATE REC'D	(3) DATE DUE	VOA (8260B)		Pb (6020A)		TPH-E (8015C)																													
Matrix: Water/Soil				W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S
A	75427	02/10/15	03/04/15	16	0	10	0	10	0																												
A	75427	02/10/15	03/04/15	1	0	1	0	1	0																												
Total	A/AK			17	0	11	0	11	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	39

Shaded cells indicate Full validation (all other cells are Standard validation). These sample counts do not include MS/MSD, and DUPs

L:\Element\MCB Hawaii\33725ST.wpd

Laboratory Data Consultants, Inc.
Data Validation Report

Project/Site Name: MCBH UST KB-100

LDC Report Date: February 27, 2015

Parameters: Volatiles

Validation Level: Standard & Full

Laboratory: APPL, Inc.

Sample Delivery Group (SDG): 75427

Sample Identification	Laboratory Sample Identification	Matrix	Collection Date
EKB100011	AZ09997	Water	01/20/15
EKB100012	AZ09998	Water	01/20/15
EKB100013	AZ09999	Water	01/20/15
EKB100014	AZ10000	Water	01/20/15
EKB100015**	AZ10001**	Water	01/20/15
EKB100016	AZ10002	Water	01/20/15
EKB100017	AZ10003	Water	01/20/15
EKB100018	AZ10004	Water	01/20/15
EKB100019	AZ10005	Water	01/20/15
EKB100020	AZ10006	Water	01/20/15
EKB100021	AZ10007	Water	01/20/15
Trip Blank - 02	AZ10008	Water	01/22/15
Trip Blank - 03	AZ10009	Water	01/22/15
Trip Blank - 04	AZ10010	Water	01/22/15
EKB100020MS	AZ10006MS	Water	01/20/15
EKB100020MSD	AZ10006MSD	Water	01/20/15
EKB100013DL	AZ0999DL	Water	01/20/15
EKB100014DL	AZ10000DL	Water	01/20/15
EKB100019DL	AZ10005DL	Water	01/20/15

**Indicates sample underwent Full validation

Introduction

This Data Validation Report (DVR) presents data validation findings and results for the associated samples listed on the cover page. Data validation was performed in accordance with the Final Work Plan for Site Investigation for UST-KB-100, Marine Corps Base Motor Pool, Marine Corps Base Hawaii, Kaneohe, Hawaii (June 2014), the Project Procedures Manual, U.S. Navy Environmental Restoration Program, NAVFAC Pacific (DON 2007), and the U.S. Department of Defense (DoD) Quality Systems Manual (QSM) for Environmental Laboratories, Version 5.0 (July 2013). Where specific guidance was not available, the data has been evaluated in a conservative manner consistent with industry standards using professional experience.

The analyses were performed by the following method:

Volatile Organic Compounds (VOCs) by Environmental Protection Agency (EPA) SW 846 Method 8260B

All sample results were subjected to Standard data validation, which comprises an evaluation of quality control (QC) summary results. Samples appended with a double asterisk on the cover page were subjected to Full data validation, which is comprised of the QC summary forms as well as the raw data, to confirm sample quantitation and identification.

The following are definitions of the data qualifiers utilized during data validation:

J (Estimated): The compound or analyte was analyzed for and positively identified by the laboratory; however the reported concentration is estimated due to non-conformances discovered during data validation.

U (Non-detect): The compound or analyte was analyzed for and positively identified by the laboratory; however the analyte should be considered non-detect at the reported concentration due to the presence of contaminants detected in the associated blank(s).

UJ (Non-detected estimated): The compound or analyte was reported as not detected by the laboratory; however the reported quantitation/detection limit is estimated due to non-conformances discovered during data validation.

R (Rejected): The sample results were rejected due to gross non-conformances discovered during data validation. Data qualified as rejected is not usable.

NA (Not Applicable): The non-conformance discovered during data validation demonstrates a high bias, while the affected compound in the associated sample(s) was reported as not detected by the laboratory and did not warrant the qualification of the data.

A qualification summary table is provided at the end of this report if data has been qualified. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

Qualification Code Reference

H	Holding times were exceeded.
S	Surrogate recovery was outside QC limits.
C	Calibration %RSD, r, r^2 or %D were noncompliant
R	Calibration RRF was <0.05.
B	Presumed contamination from preparation (method blank)
L	Laboratory Control Sample/Laboratory Control Sample Duplicate %R or RPD was not within control limits
Q	MS/MSD recovery was poor
E	MS/MSD or Duplicate RPD was high.
I	Internal standard performance was unsatisfactory
M	Instrument Performance Check (BFB or DFTPP) was noncompliant
T	Presumed contamination from trip blank.
F	Presumed contamination from FB or ER.
D	The analysis with this flag should not be used because another more technically sound analysis is available.
P	Instrument performance for pesticides was poor
*#	Unusual problems found with the data. The number following the asterisk (*) will indicate the section in the validation report where a description of the problem can be found.

I. Sample Receipt and Technical Holding Times

All samples were received in good condition and cooler temperatures upon receipt met validation criteria.

All technical holding time requirements were met.

II. GC/MS Instrument Performance Check

A bromofluorobenzene (BFB) tune was performed at 12 hour intervals.

All ion abundance requirements were met.

III. Initial Calibration and Initial Calibration Verification

An initial calibration was performed as required by the method.

For compounds where average relative response factors (RRFs) were utilized, percent relative standard deviations (%RSD) were less than or equal to 15.0% for all compounds.

In the case where the laboratory used a calibration curve to evaluate the compounds, all coefficients of determination (r^2) were greater than or equal to 0.990.

Average relative response factors (RRF) for all compounds were within method and validation criteria.

The percent differences (%D) of the initial calibration verification (ICV) standard were less than or equal to 20.0% for all compounds.

IV. Continuing Calibration

Continuing calibration was performed at the required frequencies.

Percent differences (%D) were less than or equal to 20.0% for all compounds.

All of the continuing calibration relative response factors (RRF) were within method and validation criteria.

V. Laboratory Blanks

Laboratory blanks were analyzed as required by the method. No contaminants were found in the laboratory blanks.

VI. Field Blanks

Samples Trip Blank - 02, Trip Blank - 03, and Trip Blank - 04 were identified as trip blanks. No contaminants were found.

Sample EKB100021 was identified as a rinsate blank. No contaminants were found.

VII. Surrogates

Surrogates were added to all samples as required by the method. All surrogate recoveries (%R) were within QC limits.

VIII. Matrix Spike/Matrix Spike Duplicates

Matrix spike (MS) and matrix spike duplicate (MSD) sample analysis performed on an associated project sample. Percent recoveries (%R) were within QC limits with the following exceptions:

Spike ID (Associated Samples)	Compound	MS (%R) (Limits)	MSD (%R) (Limits)	Flag	A or P
EKB100020MS/MSD (EKB100020)	cis-1,2-Dichloroethene trans-1,2-Dichloroethene Vinyl chloride	37.0 (78-123) 61.0 (75-124) 55.0 (58-137)	41.0 (78-123) 61.0 (75-124) 52.0 (58-137)	J (all detects) J (all detects) J (all detects)	A

Relative percent differences (RPD) were within QC limits.

IX. Laboratory Control Samples

Laboratory control samples (LCS) were analyzed as required by the method. Percent recoveries (%R) were within QC limits.

X. Field Duplicates

Samples EKB100013 and EKB100014 and samples EKB100013DL and EKB100014DL were identified as field duplicates. No results were detected in any of the samples with the following exceptions:

Compound	Concentration (ug/L)		RPD (Limits)
	EKB100013	EKB100014	
1,1-Dichloroethene	0.45	0.41	9 (≤50)
cis-1,2-Dichloroethene	240	240	0 (≤50)
Tetrachloroethene	25	26	4 (≤50)
trans-1,2-Dichloroethene	150	150	0 (≤50)
Trichloroethene	30	30	0 (≤50)
Vinyl chloride	220	250	13 (≤50)

Compound	Concentration (ug/L)		RPD (Limits)
	EKB100013DL	EKB100014DL	
cis-1,2-Dichloroethene	230	220	4 (≤50)
Vinyl chloride	240	230	4 (≤50)

XI. Internal Standards

All internal standard areas and retention times were within QC limits.

XII. Compound Quantitation

All compound quantitations met validation criteria with the following exceptions:

Sample	Compound	Reported Concentration	Recalculated Concentration	Flag	A or P
EKB100013	cis-1,2-Dichloroethene Vinyl chloride	Sample result exceeded calibration range.	Reported result should be within calibration range.	J (all detects) J (all detects)	A
EKB100014	cis-1,2-Dichloroethene trans-1,2-Dichloroethene Vinyl chloride	Sample result exceeded calibration range.	Reported result should be within calibration range.	J (all detects) J (all detects) J (all detects)	A
EKB100019	cis-1,2-Dichloroethene	Sample result exceeded calibration range.	Reported result should be within calibration range.	J (all detects)	A

Raw data were not reviewed by Standard validation.

XIII. Target Compound Identifications

All target compound identifications met validation criteria for samples on which a Full validation was performed. Raw data were not evaluated for the samples reviewed by Standard validation.

XIV. System Performance

The system performance was acceptable for samples on which a Full validation was performed. Raw data were not evaluated for the samples reviewed by Standard validation.

XV. Overall Assessment of Data

The analysis was conducted within all specifications of the method.

In the case where more than one result was reported for an individual sample, the least technically acceptable results were rejected as follows:

Sample	Compound	Flag	A or P
EKB100013	cis-1,2-Dichloroethene Vinyl chloride	R R	A
EKB100014	cis-1,2-Dichloroethene trans-1,2-Dichloroethene Vinyl chloride	R R R	A
EKB100019	cis-1,2-Dichloroethene	R	A

Due to MS/MSD %Rs, data were qualified as estimated in one sample.

The quality control criteria reviewed, other than those discussed above, were met and are considered acceptable. Sample results that were found to be rejected (R) are unusable for all purposes. Sample results that were found to be estimated (J) are usable for limited purposes only. Based upon the data validation all other results are considered valid and usable for all purposes.

MCBH UST KB-100
Volatiles - Data Qualification Summary - SDG 75427

Sample	Compound	Flag	A or P	Reason (Code)
EKB100020	cis-1,2-Dichloroethene trans-1,2-Dichloroethene Vinyl chloride	J (all detects) J (all detects) J (all detects)	A	Matrix spike/Matrix spike duplicate (%R) (Q)
EKB100013	cis-1,2-Dichloroethene Vinyl chloride	R R	A	Overall assessment of data (D)
EKB100014	cis-1,2-Dichloroethene trans-1,2-Dichloroethene Vinyl chloride	R R R	A	Overall assessment of data (D)
EKB100019	cis-1,2-Dichloroethene	R	A	Overall assessment of data (D)

MCBH UST KB-100
Volatiles - Laboratory Blank Data Qualification Summary - SDG 75427

No Sample Data Qualified in this SDG

MCBH UST KB-100
Volatiles - Field Blank Data Qualification Summary - SDG 75427

No Sample Data Qualified in this SDG

LDC #: 33725A1
SDG #: 75427
Laboratory: APPL, Inc.

VALIDATION COMPLETENESS WORKSHEET
Standard/Full

Date: 2/19/15
Page: 1 of 2
Reviewer:
2nd Reviewer:

METHOD: GC/MS Volatiles (EPA SW 846 Method 8260B)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Sample receipt/Technical holding times	A / A	
II.	GC/MS Instrument performance check	A	
III.	Initial calibration/ICV	A / A	% RSD ≤ 15, r² IC ≤ 20
IV.	Continuing calibration	A	CCV ≤ 20
V.	Laboratory Blanks	A	
VI.	Field blanks	ND	RB = 11 TB = 12, 13, 14
VII.	Surrogate spikes	A	
VIII.	Matrix spike/Matrix spike duplicates	SW	
IX.	Laboratory control samples	A	LCS
X.	Field duplicates	SW	D = 3, 4 17 & 18
XI.	Internal standards	A	
XII.	Compound quantitation RL/LOQ/LODs	SW	Not reviewed for Standard validation.
XIII.	Target compound identification	A	Not reviewed for Standard validation.
XIV.	System performance	A	Not reviewed for Standard validation.
XV.	Overall assessment of data	SW	

Note: A = Acceptable; N = Not provided/applicable; SW = See worksheet; ND = No compounds detected; R = Rinsate; FB = Field blank; D = Duplicate; TB = Trip blank; EB = Equipment blank; SB=Source blank; OTHER:

** Indicates sample underwent Full validation

	Client ID	Lab ID	Matrix	Date
1	EKB100011	AZ09997	Water	01/20/15
2	EKB100012	AZ09998	Water	01/20/15
3	EKB100013	AZ09999	Water	01/20/15
4	EKB100014	AZ10000	Water	01/20/15
5	EKB100015**	AZ10001**	Water	01/20/15
6	EKB100016	AZ10002	Water	01/20/15
7	EKB100017	AZ10003	Water	01/20/15
8	EKB100018	AZ10004	Water	01/20/15
9	EKB100019	AZ10005	Water	01/20/15
10	EKB100020	AZ10006	Water	01/20/15
11	EKB100021 RB	AZ10007	Water	01/20/15
12	Trip Blank - 02	AZ10008	Water	01/22/15
13	Trip Blank - 03	AZ10009	Water	01/22/15

LDC #: 33725A1
SDG #: 75427
Laboratory: APPL, Inc.

VALIDATION COMPLETENESS WORKSHEET
Standard/Full

Date: 2/19/15
Page: 2 of 2
Reviewer:
2nd Reviewer:

METHOD: GC/MS Volatiles (EPA SW 846 Method 8260B)

	Client ID	Lab ID	Matrix	Date
14	Trip Blank - 04	AZ10010	Water	01/22/15
15	EKB100020MS	AZ10006MS	Water	01/20/15
16	EKB100020MSD	AZ10006MSD	Water	01/20/15
17	#3 DL	AZ0999		1/20/15
18	#4 DL	AZ10000		
19	#9 DL	AZ10005		
20				
21				
22				
23				
24				
25				

Notes:

	150123BM						
	150127AM		aaa, ppp, c				

LDC #: 33725A 1

VALIDATION FINDINGS CHECKLIST

Reviewer: FT
2nd Reviewer: A

Method: Volatiles (EPA SW 846 Method 8260B)

Validation Area	Yes	No	NA	Findings/Comments
I. Technical holding times				
All technical holding times were met.	✓			
Cooler temperature criteria was met.	✓			
II. GC/MS Instrument performance check				
Were the BFB performance results reviewed and found to be within the specified criteria?	✓			
Were all samples analyzed within the 12 hour clock criteria?	✓			
III. Initial calibration				
Did the laboratory perform a 5 point calibration prior to sample analysis?	✓			
Were all percent relative standard deviations (%RSD) and relative response factors (RRF) within method criteria for all CCCs and SPCCs?	✓			
Was a curve fit used for evaluation?	✓			
Did the initial calibration meet the curve fit acceptance criteria of ≥ 0.990?	✓			
Were all percent relative standard deviations (%RSD) ≤ 30%/15% and relative response factors (RRF) ≥ 0.05?	✓			
IV. Continuing calibration				
Was a continuing calibration standard analyzed at least once every 12 hours for each instrument?	✓			
Were all percent differences (%D) and relative response factors (RRF) within method criteria for all CCCs and SPCCs?	✓			
Were all percent differences (%D) ≤ 20% and relative response factors (RRF) ≥ 0.05?	✓			
V. Blanks				
Was a method blank associated with every sample in this SDG?	✓			
Was a method blank analyzed at least once every 12 hours for each matrix and concentration?	✓			
Was there contamination in the method blanks? If yes, please see the Blanks validation completeness worksheet.		✓		
VI. Surrogate spikes				
Were all surrogate %R within QC limits?	✓			
If the percent recovery (%R) for one or more surrogates was out of QC limits, was a reanalysis performed to confirm samples with %R outside of criteria?			✓	
VII. Matrix spike/Matrix spike duplicates				
Were a matrix spike (MS) and matrix spike duplicate (MSD) analyzed for each matrix in this SDG? If no, indicate which matrix does not have an associated MS/MSD. Soil / Water.	✓			
Was a MS/MSD analyzed every 20 samples of each matrix?	✓			
Were the MS/MSD percent recoveries (%R) and the relative percent differences (RPD) within the QC limits?		✓		
VIII. Laboratory control samples				
Was an LCS analyzed for this SDG?	✓			

LDC #: 33725A 1

VALIDATION FINDINGS CHECKLIST

Reviewer: FT
2nd Reviewer: [illegible]

Validation Area	Yes	No	NA	Findings/Comments
Was an LCS analyzed per analytical batch?	✓			
Were the LCS percent recoveries (%R) and relative percent difference (RPD) within the QC limits?	✓			
IX. Regional Quality Assurance and Quality Control				
Were performance evaluation (PE) samples performed?			✓	
Were the performance evaluation (PE) samples within the acceptance limits?			✓	
X. Internal standards				
Were internal standard area counts within -50% or +100% of the associated calibration standard?	✓			
Were retention times within ± 30 seconds of the associated calibration standard?	✓			
XI. Target compound identification				
Were relative retention times (RRT's) within ± 0.06 RRT units of the standard?	✓			
Did compound spectra meet specified EPA "Functional Guidelines" criteria?	✓			
Were chromatogram peaks verified and accounted for?	✓			
XII. Compound quantitation/RLs				
Were the correct internal standard (IS), quantitation ion and relative response factor (RRF) used to quantitate the compound?	✓			
Were compound quantitation and RLs adjusted to reflect all sample dilutions and dry weight factors applicable to level IV validation?	✓			
XIII. Tentatively identified compounds (TICs)				
Were the major ions (> 10 percent relative intensity) in the reference spectrum evaluated in sample spectrum?			✓	
Were relative intensities of the major ions within ± 20% between the sample and the reference spectra?			✓	
Did the raw data indicate that the laboratory performed a library search for all required peaks in the chromatograms (samples and blanks)?			✓	
XIV. System performance				
System performance was found to be acceptable.	✓			
XV. Overall assessment of data				
Overall assessment of data was found to be acceptable.	✓			
XVI. Field duplicates				
Field duplicate pairs were identified in this SDG.	✓			
Target compounds were detected in the field duplicates.	✓			
XVII. Field blanks				
Field blanks were identified in this SDG.	✓			
Target compounds were detected in the field blanks.		✓		

TARGET COMPOUND WORKSHEET

METHOD: VOA

A. Chloromethane	U. 1,1,2-Trichloroethane	OO. 2,2-Dichloropropane	III. n-Butylbenzene	CCCC.1-Chlorohexane
B. Bromomethane	V. Benzene	PP. Bromochloromethane	JJJ. 1,2-Dichlorobenzene	DDDD. Isopropyl alcohol
C. Vinyl choride	W. trans-1,3-Dichloropropene	QQ. 1,1-Dichloropropene	KKK. 1,2,4-Trichlorobenzene	EEEE. Acetonitrile
D. Chloroethane	X. Bromoform	RR. Dibromomethane	LLL. Hexachlorobutadiene	FFFF. Acrolein
E. Methylene chloride	Y. 4-Methyl-2-pentanone	SS. 1,3-Dichloropropane	MMM. Naphthalene	GGGG. Acrylonitrile
F. Acetone	Z. 2-Hexanone	TT. 1,2-Dibromoethane	NNN. 1,2,3-Trichlorobenzene	HHHH. 1,4-Dioxane
G. Carbon disulfide	AA. Tetrachloroethene	UU. 1,1,1,2-Tetrachloroethane	OOO. 1,3,5-Trichlorobenzene	IIII. Isobutyl alcohol
H. 1,1-Dichloroethene	BB. 1,1,2,2-Tetrachloroethane	VV. Isopropylbenzene	PPP. trans-1,2-Dichloroethene	JJJJ. Methacrylonitrile
I. 1,1-Dichloroethane	CC. Toluene	WW. Bromobenzene	QQQ. cis-1,2-Dichloroethene	KKKK. Propionitrile
J. 1,2-Dichloroethene, total	DD. Chlorobenzene	XX. 1,2,3-Trichloropropane	RRR. m,p-Xylenes	LLLL. Ethyl ether
K. Chloroform	EE. Ethylbenzene	YY. n-Propylbenzene	SSS. o-Xylene	MMMM. Benzyl chloride
L. 1,2-Dichloroethane	FF. Styrene	ZZ. 2-Chlorotoluene	TTT. 1,1,2-Trichloro-1,2,2-trifluoroethane	NNNN. Iodomethane
M. 2-Butanone	GG. Xylenes, total	AAA. 1,3,5-Trimethylbenzene	UUU. 1,2-Dichlorotetrafluoroethane	OOOO.1,1-Difluoroethane
N. 1,1,1-Trichloroethane	HH. Vinyl acetate	BBB. 4-Chlorotoluene	VVV. 4-Ethyltoluene	PPPP.
O. Carbon tetrachloride	II. 2-Chloroethylvinyl ether	CCC. tert-Butylbenzene	WWW. Ethanol	QQQQ.
P. Bromodichloromethane	JJ. Dichlorodifluoromethane	DDD. 1,2,4-Trimethylbenzene	XXX. Di-isopropyl ether	RRRR.
Q. 1,2-Dichloropropane	KK. Trichlorofluoromethane	EEE. sec-Butylbenzene	YYY. tert-Butanol	SSSS.
R. cis-1,3-Dichloropropene	LL. Methyl-tert-butyl ether	FFF. 1,3-Dichlorobenzene	ZZZ. tert-Butyl alcohol	TTTT.
S. Trichloroethene	MM. 1,2-Dibromo-3-chloropropane	GGG. p-Isopropyltoluene	AAAA. Ethyl tert-butyl ether	UUUU.
T. Dibromochloromethane	NN. Methyl ethyl ketone	HHH. 1,4-Dichlorobenzene	BBBB. tert-Amyl methyl ether	VVVV.

.LDC #: 33725A1

VALIDATION FINDINGS WORKSHEET
Matrix Spike/Matrix Spike Duplicates

Page: 1 of 1
Reviewer: FT
2nd Reviewer: [illegible]

METHOD : GC/MS VOA (EPA SW 846 Method 8260B)

Please see qualifications below for all questions answered "N". Not applicable questions are identified as "N/A".

Y N N/A Were a matrix spike (MS) and matrix spike duplicate (MSD) analyzed for each matrix in this SDG? If no, indicate which matrix does not have an associated MS/MSD. Soil / Water.

Y N N/A Was a MS/MSD analyzed every 20 samples of each matrix?

Y N N/A Were the MS/MSD percent recoveries (%R) and the relative percent differences (RPD) within the QC limits? code = Q

#	MS/MSD ID	Compound	MS %R (Limits)	MSD %R (Limits)	RPD (Limits)	Associated Samples	Qualifications
	15 + 16	QQQ	37.0 (78-123)	41.0 (78-123)	( )	10	J/UJ/A Det
		PPP	61.0 (75-124)	61.0 (75-124)	( )	↓	↓ ↓
		C	55.0 (58-137)	52.0 (58-137)	( )		
			( )	( )	( )		
			( )	( )	( )		
			( )	( )	( )		
			( )	( )	( )		
			( )	( )	( )		
			( )	( )	( )		
			( )	( )	( )		
			( )	( )	( )		
			( )	( )	( )		
			( )	( )	( )		
			( )	( )	( )		
			( )	( )	( )		
			( )	( )	( )		
			( )	( )	( )		
			( )	( )	( )		
			( )	( )	( )		
			( )	( )	( )		
			( )	( )	( )		

	Compound	QC Limits (Soil)	RPD (Soil)	QC Limits (Water)	RPD (Water)
H.	1,1-Dichloroethene	59-172%	≤ 22%	61-145%	≤ 14%
S.	Trichloroethene	62-137%	≤ 24%	71-120%	≤ 14%
V.	Benzene	66-142%	≤ 21%	76-127%	≤ 11%
CC.	Toluene	59-139%	≤ 21%	76-125%	≤ 13%
DD.	Chlorobenzene	60-133%	≤ 21%	75-130%	≤ 13%

LDC#: 33725A1

VALIDATION FINDINGS WORKSHEET

Field Duplicates

Reviewer: EJ

2nd Reviewer: C

METHOD: VOA (EPA SW 846 Method 8260B)

Analyte	Concentration (ug/L)		RPD ≤ 50
	3	4	
H	0.45	0.41	9
QQQ	240	240	0
AA	25	26	4
PPP	150	150	0
S	30	30	0
C	220	250	13

Analyte	Concentration (ug/L)		RPD ≤ 50
	17	18	
QQQ	230	220	4
C	240	230	4
PPP	na	140	-

V:\FIELD DUPLICATES\33725A1.wpd

LDC #: 33725A /

VALIDATION FINDINGS WORKSHEET
Compound Quantitation and CRQLs

Page: 1 of 1
Reviewer: FT
2nd Reviewer: [illegible]

METHOD: GC/MS VOA (EPA SW 846 Method 8260B)

Please see qualifications below for all questions answered "N". Not applicable questions are identified as "N/A".

Y N N/A Were the correct internal standard (IS), quantitation ion and relative response factor (RRF) used to quantitate the compound?

Y N N/A Were compound quantitation and CRQLs adjusted to reflect all sample dilutions and dry weight factors applicable to level IV validation?

code = * X11

#	Date	Sample ID	Compound	Finding	Qualifications
		3	QQQ, C	>cal Range	J / Adjt
		4	QQQ, PPP, C	↓	↓
		9	QQQ	↓	↓

Comments: See sample calculation verification worksheet for recalculations

LDC #: 33725A1

VALIDATION FINDINGS WORKSHEET
Overall Assessment of Data

Page: 1 of 1
Reviewer: FT
2nd Reviewer: [illegible]

METHOD: GC/MS VOA (EPA SW 846 Method 8260B)

Please see qualifications below for all questions answered "N". Not applicable questions are identified as "N/A".

All available information pertaining to the data were reviewed using professional judgement to compliment the determination of the overall quality of the data.
Y N N/A Was the overall quality and usability of the data acceptable?

code = D

#	Date	Sample ID	Compound	Finding	Qualifications
		3	QQQ, C	> cal Range	R/A
		4	QQQ, PPP, C	↓	R/A
		9	QQQ	↓	R/A

Comments: _____

LDC #: 33725A1

VALIDATION FINDINGS WORKSHEET
Initial Calibration Calculation Verification

Reviewer: FT
2nd Reviewer: [illegible]

METHOD: GCMS 8260B

The calibration factors (RRFF), average RRFF, and relative standard deviation (%RSD) were recalculated for compounds identified below using the following calculations:

RRF = (Ax)(Cis)/(Ais)(Cx)
average RRF = sum of the RRFs/number of standards
%RSD = 100 * (S/X)

Where:
Ax = Area of compound
Cx = Concentration of compound
S = Standard deviation of the RRFs
X = Mean of the RRFs
Ais = Area of associated internal standard
Cis = Concentration of internal Standard

#	Standard ID	Calibration Date	Compound	Reported (RRF 10 std)	Recalculated (RRF 10 std)	Reported AverageRRF (Initial)	Recalculated Average RRF (Initial)	Reported %RSD	Recalculated %RSD
	ICAL Max	1/19/2015	C (IS 1)	0.3191	0.3191	0.3239	0.3191	2.70	2.70
			AA (IS 2)	0.2117	0.2117	0.2128	0.2117	9.10	9.10
			BB (IS 3)	0.5312	0.5312	0.5066	0.5312	13.00	13.00

LDC #: 337x5A /

VALIDATION FINDINGS WORKSHEET
Continuing Calibration Results Verification

Reviewer: FT
2nd Reviewer: C

METHOD: GC/MS VOA (EPA SW 846 Method 8260B)

The percent difference (%D) of the initial calibration average Relative Response Factors (RRFs) and the continuing calibration RRFs were recalculated for the compounds identified below using the following calculation:

% Difference = 100 * (ave. RRF - RRF)/ave. RRF
RRF = $(A_x)(C_{is})/(A_{is})(C_x)$

Where: ave. RRF = initial calibration average RRF
RRF = continuing calibration RRF
A_x = Area of compound, A_{is} = Area of associated internal standard
C_x = Concentration of compound, C_{is} = Concentration of internal standard

#	Standard ID	Calibration Date	Compound (Reference internal Standard)	Average RRF (initial)	Reported RRF (CC)	Recalculated RRF (CC)	Reported %D	Recalculated %D
1	0123M39	11/24/15	C (1st internal standard)	0.3239	0.3228	0.3228	0.36	0.36
			AA (2nd internal standard)	0.2128	0.2113	0.2113	0.74	0.74
			BB (3rd internal standard)	0.5066	0.4506	0.4506	11	11
			(4th internal standard)					
2			(1st internal standard)					
			(2nd internal standard)					
			(3rd internal standard)					
			(4th internal standard)					
3			(1st internal standard)					
			(2nd internal standard)					
			(3rd internal standard)					
			(4th internal standard)					
4			(1st internal standard)					
			(2nd internal standard)					
			(3rd internal standard)					
			(4th internal standard)					

Comments: Refer to Continuing Calibration findings worksheet for list of qualifications and associated samples when reported results do not agree within 10.0% of the recalculated results.

LDC #: 33725A1

VALIDATION FINDINGS WORKSHEET
Surrogate Results Verification

Reviewer: FT
2nd reviewer: C

METHOD: GC/MS VOA (EPA SW 846 Method 8260B)

The percent recoveries (%R) of surrogates were recalculated for the compounds identified below using the following calculation:

% Recovery: SF/SS * 100

Where: SF = Surrogate Found
SS = Surrogate Spiked

Sample ID: 5

	Surrogate Spiked	Surrogate Found	Percent Recovery Reported	Percent Recovery Recalculated	Percent Difference
Dibromofluoromethane	14.019	14.59370	104	104	0
1,2-Dichloroethane-d4	13.317	14.76489	111	111	
Toluene-d8	14.391	14.77339	103	103	
Bromofluorobenzene	14.078	14.27716	101	101	

Sample ID:

	Surrogate Spiked	Surrogate Found	Percent Recovery Reported	Percent Recovery Recalculated	Percent Difference
Dibromofluoromethane					
1,2-Dichloroethane-d4					
Toluene-d8					
Bromofluorobenzene					

Sample ID:

	Surrogate Spiked	Surrogate Found	Percent Recovery Reported	Percent Recovery Recalculated	Percent Difference
Dibromofluoromethane					
1,2-Dichloroethane-d4					
Toluene-d8					
Bromofluorobenzene					

Sample ID:

	Surrogate Spiked	Surrogate Found	Percent Recovery Reported	Percent Recovery Recalculated	Percent Difference
Dibromofluoromethane					
1,2-Dichloroethane-d4					
Toluene-d8					
Bromofluorobenzene					

Sample ID:

	Surrogate Spiked	Surrogate Found	Percent Recovery Reported	Percent Recovery Recalculated	Percent Difference
Dibromofluoromethane					
1,2-Dichloroethane-d4					
Toluene-d8					
Bromofluorobenzene					

LDC #: 33725A1

VALIDATION FINDINGS WORKSHEET
Matrix Spike/Matrix Spike Duplicates Results Verification

Reviewer: FT
2nd Reviewer: [illegible]

METHOD: GC/MS VOA (EPA SW 846 Method 8260B)

The percent recoveries (%R) and Relative Percent Difference (RPD) of the matrix spike and matrix spike duplicate were recalculated for the compounds identified below using the following calculation:

% Recovery = 100 * (SSC - SC)/SA Where: SSC = Spiked sample concentration; SA = Spike added; SC = Sample concentration

RPD = I MSC - MSC I * 2/(MSC + MSDC) MSC = Matrix spike concentration MSDC = Matrix spike duplicate concentration

MS/MSD sample: 15 + 16

Compound	Spike Added (ug/L)		Sample Concentration (ug/L)	Spiked Sample Concentration (ug/L)		Matrix Spike Percent Recovery		Matrix Spike Duplicate Percent Recovery		MS/MSD RPD	
	MS	MSD	------	MS	MSD	Reported	Recalc	Reported	Recalc	Reported	Recalculated
1,1-Dichloroethene	10.0	10.0	ND	9.99	10.2	99.9	99.9	102	102	2.1	2.1
Trichloroethene	↓	↓	0.64	10.6	10.5	99.6	99.6	98.6	98.6	0.95	0.95
Benzene	↓	↓	ND	9.68	9.70	96.8	96.8	97.0	97.0	0.21	0.21
Toluene	↓	↓	↓	9.86	9.83	98.6	98.6	98.3	98.3	0.30	0.30
Chlorobenzene	↓	↓	↓	9.44	9.55	94.4	94.4	95.5	95.5	1.2	1.2

Comments: Refer to Matrix Spike/Matrix Spike Duplicates findings worksheet for list of qualifications and associated samples when reported results do not agree within 10.0% of the recalculated results.

LDC #: 33785A1

VALIDATION FINDINGS WORKSHEET
Laboratory Control Sample Results Verification

Reviewer: FT
2nd Reviewer: [illegible]

METHOD: GC/MS VOA (EPA SW 846 Method 8260B)

The percent recoveries (%R) and Relative Percent Difference (RPD) of the laboratoy control sample and laboratory control sample duplicate (if applicable) were recalculated for the compounds identified below using the following calculation:

% Recovery = 100 * SSC/SA Where: SSC = Spiked sample concentration
SA = Spike added

RPD = I LCSC - LCSDC I * 2/(LCSC + LCSDC) LCSC = Laboraotry control sample concentration LCSDC = Laboratory control sample duplicate concentration

LCS ID: 150123BM LCS

Compound	Spike Added (ug/L)		Spiked Sample Concentration (ug/L)		LCS Percent Recovery		LCSD Percent Recovery		LCS/LCSD RPD	
	LCS	LCSD	LCS	LCSD	Reported	Recalc.	Reported	Recalc.	Reported	Recalculated
1,1-Dichloroethene	10.0	NA	9.72	NA	97.2	97.2				
Trichloroethene	↓	↓	10.2	↓	102	102				
Benzene	↓	↓	9.32	↓	93.2	93.2				
Toluene	↓	↓	9.47	↓	94.7	94.7				
Chlorobenzene	↓	↓	9.44	↓	94.4	94.4	NA			

Comments: Refer to Laboratory Control Sample findings worksheet for list of qualifications and associated samples when reported results do not agree within 10.0% of the recalculated results.

LDC #: 33725A

VALIDATION FINDINGS WORKSHEET
Sample Calculation Verification

Reviewer: FT
2nd reviewer:

METHOD: GC/MS VOA (EPA SW 846 Method 8260B)

Y N N/A Were all reported results recalculated and verified for all level IV samples?

Y N N/A Were all recalculated results for detected target compounds agree within 10.0% of the reported results?

Concentration = $\frac{(A_x)(I_s)(DF)}{(A_{is})(RRF)(V_o)(\%S)}$

A_x	=	Area of the characteristic ion (EICP) for the compound to be measured
A_{is}	=	Area of the characteristic ion (EICP) for the specific internal standard
I_s	=	Amount of internal standard added in nanograms (ng)
RRF	=	Relative response factor of the calibration standard.
V_o	=	Volume or weight of sample pruged in milliliters (ml) or grams (g).
Df	=	Dilution factor.
%S	=	Percent solids, applicable to soils and solid matrices only.

Example:

Sample I.D. # 5, QQQ

Conc. = $\frac{(83559)(25)(\quad)(\quad)}{(283433)(0.3150)(\quad)(\quad)}$

= 23 ug/L

#	Sample ID	Compound	Reported Concentration ( )	Calculated Concentration ( )	Qualification

Laboratory Data Consultants, Inc.
Data Validation Report

Project/Site Name: MCBH UST KB-100

LDC Report Date: February 27, 2015

Parameters: Lead

Validation Level: Standard & Full

Laboratory: APPL, Inc.

Sample Delivery Group (SDG): 75427

Sample Identification	Laboratory Sample Identification	Matrix	Collection Date
EKB100011	AZ09997	Water	01/20/15
EKB100012	AZ09998	Water	01/20/15
EKB100013	AZ09999	Water	01/20/15
EKB100014	AZ10000	Water	01/20/15
EKB100015**	AZ10001**	Water	01/20/15
EKB100016	AZ10002	Water	01/20/15
EKB100017	AZ10003	Water	01/20/15
EKB100018	AZ10004	Water	01/20/15
EKB100019	AZ10005	Water	01/20/15
EKB100020	AZ10006	Water	01/20/15
EKB100021	AZ10007	Water	01/20/15
EKB100020MS	AZ10006MS	Water	01/20/15
EKB100020MSD	AZ10006MSD	Water	01/20/15

Introduction

This Data Validation Report (DVR) presents data validation findings and results for the associated samples listed on the cover page. Data validation was performed in accordance with the Final Work Plan for Site Investigation for UST-KB-100, Marine Corps Base Motor Pool, Marine Corps Base Hawaii, Kaneohe, Hawaii (June 2014), the Project Procedures Manual, U.S. Navy Environmental Restoration Program, NAVFAC Pacific (DON 2007), and the U.S. Department of Defense (DoD) Quality Systems Manual (QSM) for Environmental Laboratories, Version 5.0 (July 2013). Where specific guidance was not available, the data has been evaluated in a conservative manner consistent with industry standards using professional experience.

The analyses were performed by the following method:

Lead by Environmental Protection Agency (EPA) SW 846 Method 6020A

All sample results were subjected to Standard data validation, which comprises an evaluation of quality control (QC) summary results. Samples appended with a double asterisk on the cover page were subjected to Full data validation, which is comprised of the QC summary forms as well as the raw data, to confirm sample quantitation and identification.

The following are definitions of the data qualifiers utilized during data validation:

J (Estimated): The compound or analyte was analyzed for and positively identified by the laboratory; however the reported concentration is estimated due to non-conformances discovered during data validation.

U (Non-detect): The compound or analyte was analyzed for and positively identified by the laboratory; however the analyte should be considered non-detect at the reported concentration due to the presence of contaminants detected in the associated blank(s).

UJ (Non-detected estimated): The compound or analyte was reported as not detected by the laboratory; however the reported quantitation/detection limit is estimated due to non-conformances discovered during data validation.

R (Rejected): The sample results were rejected due to gross non-conformances discovered during data validation. Data qualified as rejected is not usable.

NA (Not Applicable): The non-conformance discovered during data validation demonstrates a high bias, while the affected compound in the associated sample(s) was reported as not detected by the laboratory and did not warrant the qualification of the data.

A qualification summary table is provided at the end of this report if data has been qualified. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

Qualification Code Reference

H	Holding times were exceeded.
S	The sequence or number of standards used for the calibration was incorrect.
C	Correlation coefficient is <0.995.
R	%R for calibration is not within control limits
B	Presumed contamination from preparation (method) blank or calibration blank
L	Laboratory Control Sample/Laboratory Control Sample Duplicate %R or RPD was not within control limits
Q	MS/MSD recovery was poor.
E	MS/MSD or Duplicate RPD or difference was high.
I	ICP ICS results were unsatisfactory.
A	ICP Serial Dilution %D were not within control limits
F	Presumed contamination from FB or ER.
D	The analysis with this flag should not be used because another more technically sound analysis is available.
P	Post Digestion Spike recovery was not within control limits
*#	Unusual problems found with the data. The number following the asterisk (*) will indicate the section in the validation report where a description of the problem can be found.

I. Sample Receipt and Technical Holding Times

All samples were received in good condition and cooler temperatures upon receipt met validation criteria.

All technical holding time requirements were met.

II. ICPMS Tune

The mass calibration was within 0.1 AMU and the percent relative standard deviation (%RSD) was less than or equal to 5%.

III. Instrument Calibration

Initial and continuing calibrations were performed as required by the method.

The initial calibration verification (ICV) and continuing calibration verification (CCV) standards were within QC limits.

IV. ICP Interference Check Sample (ICS) Analysis

The frequency of ICS analysis was met.

Percent recoveries (%R) were within QC limits.

V. Laboratory Blanks

Laboratory blanks were analyzed as required by the method. No contaminants were found in the laboratory blanks.

VI. Field Blanks

Sample EKB100021 was identified as a rinsate blank. No lead was found.

VII. Matrix Spike/Matrix Spike Duplicates

Matrix spike (MS) and matrix spike duplicate (MSD) sample analysis was performed on an associated project sample. Percent recoveries (%R) were within QC limits. Relative percent differences (RPD) were within QC limits.

VIII. Duplicate Sample Analysis

The laboratory has indicated that there were no duplicate (DUP) analyses specified for the samples in this SDG, and therefore duplicate analyses were not performed for this SDG.

IX. ICP Serial Dilution

ICP serial dilution analysis was performed on an associated project sample. The analysis criteria were met.

X. Laboratory Control Samples (LCS)

Laboratory control samples (LCS) were analyzed as required by the method. Percent recoveries (%R) were within QC limits.

XI. Field Duplicates

Samples EKB100013 and EKB100014 were identified as field duplicates. No results were detected in any of the samples.

XII. Internal Standards (ICP-MS)

All internal standard percent recoveries (%R) were within QC limits for samples on which an Full validation was performed. Raw data were not evaluated for the samples reviewed by Standard validation.

XIII. Sample Result Verification

All sample result verifications were acceptable for samples on which a Full validation was performed. Raw data were not evaluated for the samples reviewed by Standard validation.

XIV. Overall Assessment of Data

The analysis was conducted within all specifications of the method. No results were rejected in this SDG.

The quality control criteria reviewed were met and are considered acceptable. Based upon the data validation all results are considered valid and usable for all purposes.

MCBH UST KB-100
Lead - Data Qualification Summary - SDG 75427

No Sample Data Qualified in this SDG

MCBH UST KB-100
Lead - Laboratory Blank Data Qualification Summary - SDG 75427

No Sample Data Qualified in this SDG

MCBH UST KB-100
Lead - Field Blank Data Qualification Summary - SDG 75427

No Sample Data Qualified in this SDG

LDC #: 33725A4a
SDG #: 75427
Laboratory: APPL, Inc.

VALIDATION COMPLETENESS WORKSHEET
Standard/Full

Date: 2/24/15
Page: 1 of 1
Reviewer: KK
2nd Reviewer: [illegible]

METHOD: Lead (EPA SW 846 Method 6020A)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Sample receipt/Technical holding times	A, A	
II.	ICP/MS Tune	A	
III.	Instrument Calibration	A	
IV.	ICP Interference Check Sample (ICS) Analysis	A	
V.	Laboratory Blanks	A	
VI.	Field Blanks	ND	RB = 11
VII.	Matrix Spike/Matrix Spike Duplicates	A	MS/D
VIII.	Duplicate sample analysis	N	
IX.	ICP Serial Dilution	A	
X.	Laboratory control samples	A	LCS
XI.	Field Duplicates	ND	~~(6+10)~~ (3+4)
XII.	Internal Standard (ICP-MS)	A	Not required for Lead Std
XIII.	Sample Result Verification	A	Not reviewed for Standard validation.
XIV.	Overall Assessment of Data	A	

Note: A = Acceptable; N = Not provided/applicable; SW = See worksheet; ND = No compounds detected; R = Rinsate; FB = Field blank; D = Duplicate; TB = Trip blank; EB = Equipment blank; SB=Source blank; OTHER:

** Indicates sample underwent Full validation

	Client ID	Lab ID	Matrix	Date
1	EKB100011	AZ09997	Water	01/20/15
2	EKB100012	AZ09998	Water	01/20/15
3	EKB100013	AZ09999	Water	01/20/15
4	EKB100014	AZ10000	Water	01/20/15
5	EKB100015**	AZ10001**	Water	01/20/15
6	EKB100016	AZ10002	Water	01/20/15
7	EKB100017	AZ10003	Water	01/20/15
8	EKB100018	AZ10004	Water	01/20/15
9	EKB100019	AZ10005	Water	01/20/15
10	EKB100020	AZ10006	Water	01/20/15
11	EKB100021	AZ10007	Water	01/20/15
12	EKB100020MS	AZ10006MS	Water	01/20/15
13	EKB100020MSD	AZ10006MSD	Water	01/20/15
14				
15				

DC #: 35125A4a

VALIDATION FINDINGS CHECKLIST

Reviewer: KK
2nd Reviewer:

Method: Metals (EPA SW 846 Method ~~6010/7000~~/6020A

Validation Area	Yes	No	NA	Findings/Comments
I. Technical holding times				
All technical holding times were met.	✓			
Cooler temperature criteria was met.	✓			
II. ICP/MS Tune				
Were all isotopes in the tuning solution mass resolution within 0.1 amu?	✓			
Were %RSD of isotopes in the tuning solution ≤5%?	✓			
III. Calibration				
Were all instruments calibrated daily, each set-up time?	✓			
Were the proper number of standards used?	✓			
Were all initial and continuing calibration verification %Rs within the 90-110% (80-120% for mercury) QC limits?	✓			
Were all initial calibration correlation coefficients ≥ 0.995?	✓			
IV. Blanks				
Was a method blank associated with every sample in this SDG?	✓			
Was there contamination in the method blanks? If yes, please see the Blanks validation completeness worksheet.		✓		
V. ICP Interference Check Sample				
Were ICP interference check samples performed daily?	✓			
Were the AB solution percent recoveries (%R) with the 80-120% QC limits?	✓			
VI. Matrix spike/Matrix spike duplicates				
Were a matrix spike (MS) and duplicate (DUP) analyzed for each matrix in this SDG? If no, indicate which matrix does not have an associated MS/MSD or MS/DUP. Soil / Water.	✓			
Were the MS/MSD percent recoveries (%R) and the relative percent differences (RPD) within the 75-125 QC limits? If the sample concentration exceeded the spike concentration by a factor of 4 or more, no action was taken.	✓			
Were the MS/MSD or duplicate relative percent differences (RPD) ≤ 20% for waters and ≤ 35% for soil samples? A control limit of +/- RL(+/-2X RL for soil) was used for samples that were ≤ 5X the RL, including when only one of the duplicate sample values were ≤ 5X the RL.	✓			
VII. Laboratory control samples				
Was an LCS anaylzed for this SDG?	✓			
Was an LCS analyzed per extraction batch?	✓			
Were the LCS percent recoveries (%R) and relative ~~percent difference (RPD)~~ within the 80-120% QC limits for water samples and laboratory established QC limits for soils?	✓			

LDC #: 33725A4a

VALIDATION FINDINGS CHECKLIST

Reviewer: KK
2nd Reviewer: a

Validation Area	Yes	No	NA	Findings/Comments
VIII. Internal Standards (EPA SW 846 Method 6020/EPA 200.8)				
Were all the percent recoveries (%R) within the 30-120% (6020)/60-125% (200.8) of the intensity of the internal standard in the associated initial calibration?	✓			
If the %Rs were outside the criteria, was a reanalysis performed?			✓	
IX. ICP Serial Dilution				
Was an ICP serial dilution analyzed if analyte concentrations were > 50X the MDL (ICP)/>100X the MDL(ICP/MS)?	✓			
Were all percent differences (%Ds) < 10%?	✓			
Was there evidence of negative interference? If yes, professional judgement will be used to qualify the data.			✓	
X. Sample Result Verification				
Were RLs adjusted to reflect all sample dilutions and dry weight factors applicable to level IV validation?	✓			
XI. Overall assessment of data				
Overall assessment of data was found to be acceptable.	✓			
XII. Field duplicates				
Field duplicate pairs were identified in this SDG.	✓			
Target analytes were detected in the field duplicates.		✓		
XIII. Field blanks				
Field blanks were identified in this SDG.	✓			
Target analytes were detected in the field blanks.		✓		

LDC #: 33725A4a

VALIDATION FINDINGS WORKSHEET
Initial and Continuing Calibration Calculation Verification

Reviewer: KK
2nd Reviewer: [illegible]

METHOD: ~~Trace Metals~~ Pb (EPA SW 846 Method ~~6010/6020/7000~~ A)

An initial and continuing calibration verification percent recovery (%R) was recalculated for each type of analysis using the following formula:

$$\%R = \frac{Found}{True} \times 100$$

Where, Found = concentration (in ug/L) of each analyte measured in the analysis of the ICV or CCV solution
True = concentration (in ug/L) of each analyte in the ICV or CCV source

Standard ID	Type of Analysis	Element	Found (ug/L)	True (ug/L)	Recalculated %R	Reported %R	Acceptable (Y/N)
	ICP (Initial calibration)						
ICV (10:23)	ICP/MS (Initial calibration)	Pb	102.203	100	102	102	Y
	CVAA (Initial calibration)						
	ICP (Continuing calibration)						
CCV (11:05)	ICP/MS (Continuing calibration)	Pb	49.142	50	98.3	98.3	Y
	CVAA (Continuing calibration)						
	GFAA (Initial calibration)						
	GFAA (Continuing calibation)						

Comments: Refer to Calibration Verification findings worksheet for list of qualifications and associated samples when reported results do not agree within 10.0% of t recalculated results.

LDC #: 33725A4a

VALIDATION FINDINGS WORKSHEET
Level IV Recalculation Worksheet

Page: 1 of 1
Reviewer: KK
2nd Reviewer: [illegible]

METHOD: ~~Trace Metals~~ Pb (EPA SW 846 Method ~~6010/~~6020A/~~7000~~)

Percent recoveries (%R) for an ICP interference check sample, a laboratory control sample and a matrix spike sample were recalculated using the following formula:

$\%R = \frac{Found}{True} \times 100$

Where, Found = Concentration of each analyte measured in the analysis of the sample. For the matrix spike calculation, Found = SSR (spiked sample result) - SR (sample result).
True = Concentration of each analyte in the source.

A sample and duplicate relative percent difference (RPD) was recalculated using the following formula:

$RPD = \frac{|S-D|}{(S+D)/2} \times 100$

Where, S = Original sample concentration
D = Duplicate sample concentration

An ICP serial dilution percent difference (%D) was recalculated using the following formula:

$\%D = \frac{|I-SDR|}{I} \times 100$

Where, I = Initial Sample Result (mg/L)
SDR = Serial Dilution Result (mg/L) (Instrument Reading x 5)

Sample ID	Type of Analysis	Element	Found / S / I (units) Mg/L	True / D / SDR (units) Mg/L	Recalculated %R / RPD / %D	Reported %R / RPD / %D	Acceptable (Y/N)
ICSAB(11:36)	ICP interference check	Pb	94.872	100	94.9	94.9	Y
LCS	Laboratory control sample	↓	~~41.356~~ 45.95	50.0	92.0*	~~93.0~~ 92.0	↓
12/13	Matrix spike	↓	(SSR-SR) 44.773	50.0	89.5*	~~92.2~~ ~~91.2~~ 89.6	↓
12/13	Duplicate	↓	44.773	46.120	3.0*	~~2.0~~ 2.9	↓
10	ICP serial dilution	↓	ND	ND	NA	NA	↓

Comments: Refer to appropriate worksheet for list of qualifications and associated samples when reported results do not agree within 10.0% of the recalculated result
* Calculated from raw data

LDC #: 33725A4a

VALIDATION FINDINGS WORKSHEET
Sample Calculation Verification

Page: 1 of ____
Reviewer: KK
2nd reviewer: [illegible]

METHOD: Trace Metals (EPA SW 846 Method ~~6010~~/6020/~~7000~~) A

Please see qualifications below for all questions answered "N". Not applicable questions are identified as "N/A".

Y N N/A Have results been reported and calculated correctly?
Y N N/A Are results within the calibrated range of the instruments and within the linear range of the ICP?
Y N N/A Are all detection limits below the CRDL?

Detected analyte results for _____ were recalculated and verified using the following equation:

Concentration = (RD)(FV)(Dil) / (In. Vol.)

Recalculation:

RD = Raw data concentration
FV = Final volume (ml)
In. Vol. = Initial volume (ml) or weight (G)
Dil = Dilution factor

#	Sample ID	Analyte	Reported Concentration ( )	Calculated Concentration ( )	Acceptable (Y/N)
		all level 4 non-detect			

Note: _____

Laboratory Data Consultants, Inc.
Data Verification Report

Project/Site Name: MCBH UST KB-100

LDC Report Date: February 27, 2015

Parameters: Total Petroleum Hydrocarbons as Extractables

Validation Level: Standard & Full

Laboratory: APPL, Inc.

Sample Delivery Group (SDG): 75427

Sample Identification	Laboratory Sample Identification	Matrix	Collection Date
EKB100011	AZ09997	Water	01/20/15
EKB100012	AZ09998	Water	01/20/15
EKB100013	AZ09999	Water	01/20/15
EKB100014	AZ10000	Water	01/20/15
EKB100015**	AZ10001**	Water	01/20/15
EKB100016	AZ10002	Water	01/20/15
EKB100017	AZ10003	Water	01/20/15
EKB100018	AZ10004	Water	01/20/15
EKB100019	AZ10005	Water	01/20/15
EKB100020	AZ10006	Water	01/20/15
EKB100021	AZ10007	Water	01/20/15
EKB100020MS	AZ10006MS	Water	01/20/15
EKB100020MSD	AZ10006MSD	Water	01/20/15

**Indicates sample underwent Full validation

Introduction

This Data Validation Report (DVR) presents data validation findings and results for the associated samples listed on the cover page. Data validation was performed in accordance with the Final Work Plan for Site Investigation for UST-KB-100, Marine Corps Base Motor Pool, Marine Corps Base Hawaii, Kaneohe, Hawaii (June 2014), the Project Procedures Manual, U.S. Navy Environmental Restoration Program, NAVFAC Pacific (DON 2007), and the U.S. Department of Defense (DoD) Quality Systems Manual (QSM) for Environmental Laboratories, Version 5.0 (July 2013). Where specific guidance was not available, the data has been evaluated in a conservative manner consistent with industry standards using professional experience.

The analyses were performed by the following method:

Total Petroleum Hydrocarbons (TPH) as Extractables by Environmental Protection Agency (EPA) SW 846 Method 8015C

All sample results were subjected to Standard data validation, which comprises an evaluation of quality control (QC) summary results. Samples appended with a double asterisk on the cover page were subjected to Full data validation, which is comprised of the QC summary forms as well as the raw data, to confirm sample quantitation and identification.

The following are definitions of the data qualifiers utilized during data validation:

J (Estimated): The compound or analyte was analyzed for and positively identified by the laboratory; however the reported concentration is estimated due to non-conformances discovered during data validation.

U (Non-detect): The compound or analyte was analyzed for and positively identified by the laboratory; however the analyte should be considered non-detect at the reported concentration due to the presence of contaminants detected in the associated blank(s).

UJ (Non-detected estimated): The compound or analyte was reported as not detected by the laboratory; however the reported quantitation/detection limit is estimated due to non-conformances discovered during data validation.

R (Rejected): The sample results were rejected due to gross non-conformances discovered during data validation. Data qualified as rejected is not usable.

NA (Not Applicable): The non-conformance discovered during data validation demonstrates a high bias, while the affected compound in the associated sample(s) was reported as not detected by the laboratory and did not warrant the qualification of the data.

A qualification summary table is provided at the end of this report if data has been qualified. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

Qualification Code Reference

H	Holding times were exceeded.
S	Surrogate recovery was outside QC limits.
C	Calibration %RSD, r, r^2 or %D were noncompliant
R	Calibration RRF was <0.05.
B	Presumed contamination from preparation (method blank)
L	Laboratory Control Sample/Laboratory Control Sample Duplicate %R or RPD was not within control limits
Q	MS/MSD recovery was poor
E	MS/MSD or Duplicate RPD was high.
I	Internal standard performance was unsatisfactory
M	Instrument Performance Check (BFB or DFTPP) was noncompliant
T	Presumed contamination from trip blank.
F	Presumed contamination from FB or ER.
D	The analysis with this flag should not be used because another more technically sound analysis is available.
P	Instrument performance for pesticides was poor
*#	Unusual problems found with the data. The number following the asterisk (*) will indicate the section in the validation report where a description of the problem can be found.

I. Sample Receipt and Technical Holding Times

All samples were received in good condition and cooler temperatures upon receipt met validation criteria.

All technical holding time requirements were met.

II. Initial Calibration and Initial Calibration Verification

An initial calibration was performed as required by the method.

The percent relative standard deviations (%RSD) were less than or equal to 20.0% for all compounds.

The percent differences (%D) of the initial calibration verification (ICV) standard were less than or equal to 20.0% for all compounds.

III. Continuing Calibration

Continuing calibration was performed at required frequencies.

The percent differences (%D) were less than or equal to 20.0% for all compounds.

IV. Blanks

Laboratory blanks were analyzed as required by the method. No contaminants were found in the laboratory blanks.

V. Field Blanks

Sample EKB100021 was identified as an rinsate blank. No total petroleum hydrocarbons as extractables contaminants were found.

VI. Surrogates

Surrogates were added to all samples as required by the method. All surrogate recoveries (%R) were within QC limits.

VII. Matrix Spike/Matrix Spike Duplicates

Matrix spike (MS) and matrix spike duplicate (MSD) sample analysis performed on an associated project sample. Percent recoveries (%R) were within QC limits. Relative percent differences (RPD) were within QC limits.

VIII. Laboratory Control Samples

Laboratory control samples (LCS) were analyzed as required by the method. Percent recoveries (%R) were within QC limits with the following exceptions:

LCS ID	Compound	%R (Limits)	Associated Samples	Flag	A or P
150126A1-LCS	TPH as lubricant oil range organics (C24-C36)	120 (41-113)	All samples in SDG 75427	NA	-

IX. Field Duplicates

Samples EKB100013 and EKB100014 were identified as field duplicates. No results were detected in any of the samples.

X. Compound Quantitation

All compound quantitations met validation criteria for samples which underwent Full validation. Raw data were not evaluated for the samples reviewed by Standard validation.

XI. Target Compound Identification

All target compound identifications met validation criteria for samples which underwent Full validation. Raw data were not evaluated for the samples reviewed by Standard validation.

XII. Overall Assessment of Data

The analysis was conducted within all specifications of the method. No results were rejected in this SDG.

Due to LCS %R, data were qualified as estimated in eleven samples.

The quality control criteria reviewed, other than those discussed above, were met and are considered acceptable. Sample results that were found to be estimated (J) are usable for limited purposes only. Based upon the data validation all other results are considered valid and usable for all purposes.

MCBH UST KB-100
Total Petroleum Hydrocarbons as Extractables - Data Qualification Summary - SDG 75427

No Sample Data Qualified in this SDG

MCBH UST KB-100
Total Petroleum Hydrocarbons as Extractables - Laboratory Blank Data Qualification Summary - SDG 75427

No Sample Data Qualified in this SDG

MCBH UST KB-100
Total Petroleum Hydrocarbons as Extractables - Field Blank Data Qualification Summary - SDG 75427

No Sample Data Qualified in this SDG

LDC #: 33725A8
SDG #: 75427
Laboratory: APPL, Inc.

VALIDATION COMPLETENESS WORKSHEET
Standard/Full

Date: 2/19/15
Page: 1 of 1
Reviewer:
2nd Reviewer:

METHOD: GC TPH as Extractables (EPA SW 846 Method 8015~~B~~C)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Sample receipt/Technical holding times	A / Δ	
II.	Initial calibration/ICV	A / Δ	% RSD ≤ 20 ICV ≤ 20
III.	Continuing calibration	Δ	CCV ≤ 20
IV.	Laboratory Blanks	A	
V.	Field blanks	ND	RB = 11
VI.	Surrogate spikes	A	
VII.	Matrix spike/Matrix spike duplicates	A	
VIII.	Laboratory control samples	SW	LCS
IX.	Field duplicates	ND	D = 3, 4
X.	Compound quantitation RL/LOQ/LODs	Δ	Not reviewed for Standard validation.
XI.	Target compound identification	Δ	Not reviewed for Standard validation.
XII.	System performance	A	Not reviewed for Standard validation.
XIII.	Overall assessment of data	A	

Note: A = Acceptable; N = Not provided/applicable; SW = See worksheet; ND = No compounds detected; R = Rinsate; FB = Field blank; D = Duplicate; TB = Trip blank; EB = Equipment blank; SB=Source blank; OTHER:

** Indicates sample underwent Full validation

	Client ID	Lab ID	Matrix	Date
1	EKB100011	AZ09997	Water	01/20/15
2	EKB100012	AZ09998	Water	01/20/15
3	EKB100013	AZ09999	Water	01/20/15
4	EKB100014	AZ10000	Water	01/20/15
5	EKB100015**	AZ10001**	Water	01/20/15
6	EKB100016	AZ10002	Water	01/20/15
7	EKB100017	AZ10003	Water	01/20/15
8	EKB100018	AZ10004	Water	01/20/15
9	EKB100019	AZ10005	Water	01/20/15
10	EKB100020	AZ10006	Water	01/20/15
11	EKB100021 RB	AZ10007	Water	01/20/15
12	EKB100020MS	AZ10006MS	Water	01/20/15
13	EKB100020MSD	AZ10006MSD	Water	01/20/15
14				
15	150126 A1			
16				

LDC #: 33725A8

VALIDATION FINDINGS CHECKLIST

Reviewer: M
2nd Reviewer: A

Method: ✓ GC ____ HPLC

Validation Area	Yes	No	NA	Findings/Comments
I. Technical holding times				
All technical holding times were met.	✓			
Cooler temperature criteria was met.	✓			
II. Initial calibration				
Did the laboratory perform a 5 point calibration prior to sample analysis?	✓			
Was a linear fit used for evaluation? If yes, were all percent relative standard deviations (%RSD) < 20%?	✓			
Was a curve fit used for evaluation? If Yes, what was the acceptance criteria used?		✓		
Did the initial calibration meet the curve fit acceptance criteria?			✓	
Were the RT windows properly established?	✓			
IV. Continuing calibration				
What type of continuing calibration calculation was performed? ____%D or ____%R	✓			
Was a continuing calibration analyzed daily?	✓			
Were all percent differences (%D) < 20%.0 or percent recoveries 80-120%?	✓			
Were all the retention times within the acceptance windows?		✓		
V. Blanks				
Was a method blank associated with every sample in this SDG?	✓			
Was a method blank analyzed for each matrix and concentration?	✓			
Was there contamination in the method blanks? If yes, please see the Blanks validation completeness worksheet.		✓		
VI. Surrogate spikes				
Were all surrogate %R within the QC limits?	✓			
If the percent recovery (%R) of one or more surrogates was outside QC limits, was a reanalysis performed to confirm %R?			✓	
If any %R was less than 10 percent, was a reanalysis performed to confirm %R?			✓	
VII. Matrix spike/matrix spike duplicates				
Were a matrix spike (MS) and matrix spike duplicate (MSD) analyzed for each matrix in this SDG? If no, indicate which matrix does not have an associated MS/MSD. Soil / Water.	✓			
Was a MS/MSD analyzed every 20 samples of each matrix?	✓			
Were the MS/MSD percent recoveries (%R) and the relative percent differences (RPD) within the QC limits?	✓			
VIII. Laboratory control samples				
Was an LCS analyzed for this SDG?	✓			
Was an LCS analyzed per extraction batch?	✓			
Were the LCS percent recoveries (%R) and relative percent difference (RPD) within the QC limits?	✓			

LDC #: 33725 A8

VALIDATION FINDINGS CHECKLIST

Reviewer: FT
2nd Reviewer: [illegible]

Validation Area	Yes	No	NA	Findings/Comments
IX. Regional Quality Assurance and Quality Control				
Were performance evaluation (PE) samples performed?			✓	
Were the performance evaluation (PE) samples within the acceptance limits?			✓	
X. Target compound identification				
Were the retention times of reported detects within the RT windows?	✓			
XI. Compound quantitation/CRQLs				
Were compound quantitation and CRQLs adjusted to reflect all sample dilutions and dry weight factors applicable to level IV validation?	✓			
XII. System performance				
System performance was found to be acceptable.	✓			
XIII. Overall assessment of data				
Overall assessment of data was found to be acceptable.	✓			
XIV. Field duplicates				
Field duplicate pairs were identified in this SDG.	✓			
Target compounds were detected in the field duplicates.		✓		
XV. Field blanks				
Field blanks were identified in this SDG.	✓			
Target compounds were detected in the field blanks.		✓		

LDC #: 33725 A8

VALIDATION FINDINGS WORKSHEET
Laboratory Control Samples (LCS)

Page: 1 of 1
Reviewer: FT
2nd Reviewer: C

METHOD: GC/MS VOA (EPA SW 846 Method 8260C)

Please see qualifications below for all questions answered "N". Not applicable questions are identified as "N/A".

Y N N/A Was a LCS required?
Y N N/A Were the LCS percent recoveries (%R) and relative percent difference (RPD) within the QC limits?

code e = L

#	Date	LCS/LCSD ID	Compound	LCS %R (Limits)	LCSD %R (Limits)	RPD (Limits)	Associated Samples	Qualifications
		150126A1-LCS	TPH-LRO (C24-C36)	120 (41-113)	( )	( )	All	J/Pdet
				( )	( )	( )		
				( )	( )	( )		
				( )	( )	( )		
				( )	( )	( )		
				( )	( )	( )		
				( )	( )	( )		
				( )	( )	( )		
				( )	( )	( )		
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				( )	( )	( )		
				( )	( )	( )		
				( )	( )	( )		

LDC #: 33725A8

VALIDATION FINDINGS WORKSHEET
Initial Calibration Calculation Verification

Page: 1 of 1
Reviewer: FT
2nd Reviewer: [illegible]

METHOD: GC X HPLC _____

The calibration factors (CF), average CF, and relative standard deviation (%RSD) were recalculated for compounds identified below using the following calculations:

CF = A/C
average CF = sum of the CF/number of standards
%RSD = 100 * (S/X)

Where:
A = Area of compound
C = Concentration of compound
S = Standard deviation of calibration factors
X = Mean of calibration factors

#	Standard ID	Calibration Date	Compound	Reported (CF4 std=400)	Recalculated (CF4 std=400)	Reported Average CF (Initial)	Recalculated Average CF (Initial)	Reported %RSD	Recalculated %RSD
1	ICAL	1/21/2015	Diesel C10-C24	1223803	1223803	1257627	1257627	3.5	3.5
	Apollo								

LDC #: 33725A8

VALIDATION FINDINGS WORKSHEET
Continuing Calibration Results Verification

Page: 1 of 1
Reviewer: [illegible]
2nd Reviewer: [illegible]

METHOD: GC ✓ HPLC _____

The percent difference (%D) of the initial calibration average Calibration Factors (CF) and the continuing calibration CF were recalculated for the compounds identified below using the following calculation:

% Difference = 100 * (ave. CF -CF)/ave.CF

Where: ave. CF = initial calibration average CF
CF = continuing calibration CF
A = Area of compound
C = Concentration of compound

#	Standard ID	Calibration Date	Compound	Average CF(Ical)/ CCV Conc.	Reported CF/ Conc. CCV	Recalculated CF/ Conc. CCV	Reported %D	Recalculated %D
1	ccv 127115	1/29/15	Diesel C10-C24	1257630	1403690	1403690	12	12
2	ccv 127130	1/29/15	↓	↓	1363220	1363220	8.4	8.4
3								
4								

Comments: Refer to Continuing Calibration findings worksheet for list of qualifications and associated samples when reported results do not agree within 10.0% of the recalculated results.

LDC #: 33725A8

VALIDATION FINDINGS WORKSHEET
Surrogate Results Verification

Reviewer: [illegible]
2nd reviewer: [illegible]

METHOD: ✓ GC __ HPLC

The percent recoveries (%R) of surrogates were recalculated for the compounds identified below using the following calculation:

% Recovery: SF/SS * 100

Where: SF = Surrogate Found
SS = Surrogate Spiked

Sample ID: 5

Surrogate	Column/Detector	Surrogate Spiked	Surrogate Found	Percent Recovery	Percent Recovery	Percent Difference
				Reported	Recalculated	
octacosane	DB-5	150	156.939	105	105	0
o-terphenyl	✓	↓	113.772	75.9	75.9	0

Sample ID:

Surrogate	Column/Detector	Surrogate Spiked	Surrogate Found	Percent Recovery	Percent Recovery	Percent Difference
				Reported	Recalculated	

Sample ID:

Surrogate	Column/Detector	Surrogate Spiked	Surrogate Found	Percent Recovery	Percent Recovery	Percent Difference
				Reported	Recalculated	

LDC #: 33725A8

VALIDATION FINDINGS WORKSHEET
Matrix Spike/Matrix Spike Duplicates Results Verification

Reviewer: [illegible]
2nd Reviewer: [illegible]

METHOD: ___ GC ___ HPLC

The percent recoveries (%R) and relative percent differences (RPD) of the matrix spike and matrix spike duplicate were recalculated for the compounds identified below using the following calculation:

%Recovery = 100 * (SSC - SC)/SA

RPD =(({SSCMS - SSCMSD} * 2) / (SSCMS + SSCMSD))*100

Where SSC = Spiked sample concentration; SC = Sample concentration; SA = Spike added; MS = Matrix spike; MSD = Matrix spike duplicate

MS/MSD samples: 12 + 13

Compound	Spike Added (ug/L)		Sample Conc. (ug/L)	Spike Sample Concentration (ug/L)		Matrix spike Percent Recovery		Matrix Spike Duplicate Percent Recovery		MS/MSD RPD	
	MS	MSD	---	MS	MSD	Reported	Recalc.	Reported	Recalc.	Reported	Recalc.
Gasoline (8015)											
Diesel (8015)	2000	2000	ND	1750	1830	87.5	87.5	91.5	91.5	4.5	4.5
Benzene (8021B)											
Methane (RSK-175)											
2,4-D (8151)											
Dinoseb (8151)											
Naphthalene (8310)											
Anthracene (8310)											
HMX (8330)											
2,4,6-Trinitrotoluene (8330)											

Comments: Refer to Matrix Spike/Matrix Spike Duplicates findings worksheet for list of qualifications and associated samples when reported results do not agree within 10.0% of the recalculated results.

LDC #: 33725A8

VALIDATION FINDINGS WORKSHEET

Laboratory Control Sample/Laboratory Control Sample Duplicates Results Verification

Reviewer: FZ

2nd Reviewer: [illegible]

METHOD: (GC __HPLC

The percent recoveries (%R) and relative percent differences (RPD) of the laboratory control sample and laboratory control sample duplicate were recalculated for the compounds identified below using the following calculation:

%Recovery = 100 * (SSC/SA)
RPD =(({SSCLCS - SSCLCSD} * 2) / (SSCLCS + SSCLCSD))*100

Where SSC = Spiked sample concentration
LCS = Laboratory Control Sample
SA = Spike added
LCSD = Laboratory Control Sample duplicate

LCS/LCSD samples: 150126A / LCS

Compound	Spike Added (ug/L)		Spike Sample Concentration (ug/L)		LCS Percent Recovery		LCSD Percent Recovery		LCS/LCSD RPD	
	LCS	LCSD	LCS	LCSD	Reported	Recalc.	Reported	Recalc.	Reported	Recalc.
Gasoline (8015)										
Diesel (8015)	2000	NA	1810	NA	90.5	90.5	NA			
Benzene (8021B)										
Methane (RSK-175)										
2,4-D (8151)										
Dinoseb (8151)										
Naphthalene (8310)										
Anthracene (8310)										
HMX (8330)										
2,4,6-Trinitrotoluene (8330)										

Comments: Refer to Laboratory Control Sample/Laboratory Control Sample Duplicate findings worksheet for list of qualifications and associated samples when reported results do not agree within 10.0% of the recalculated results.

LDC #: 33725A7

VALIDATION FINDINGS WORKSHEET
Sample Calculation Verification

Reviewer: F7
2nd Reviewer: [illegible]

METHOD: ✓ GC __ HPLC

Y N N/A Were all reported results recalculated and verified for all level IV samples?
Y N N/A Were all recalculated results for detected target compounds within 10% of the reported results?

Concentration= (A)(Fv)(Df) / (RF)(Vs or Ws)(%S/100)

A= Area or height of the compound to be measured
Fv= Final Volume of extract
Df= Dilution Factor
RF= Average response factor of the compound In the initial calibration
Vs= Initial volume of the sample
Ws= Initial weight of the sample
%S= Percent Solid

Example:

Sample ID. LCS Compound Name DRO

Concentration = 911563423 (5) (1000) / 125 7627 (1000) (2)
= 1812 ug/L

#	Sample ID	Compound	Reported Concentrations ( )	Recalculated Results Concentrations ( )	Qualifications

Comments:

SAMPCAL Cnew.wpd

LABORATORY DATA CONSULTANTS, INC.
2701 Loker Ave. West, Suite 220, Carlsbad, CA 92010 Bus: 760-827-1100 Fax: 760-827-1099

Element Environmental LLC
98-030 Hekaha Street, Unit 9
Aiea, Hawaii 96701
ATTN: Mr. Marvin Heskett

April 22, 2015

SUBJECT: MCBH UST KB-100, Data Validation

Dear Mr. Heskett,

Enclosed is the final validation report for the fractions listed below. This SDG was received on April 7, 2015. Attachment 1 is a summary of the sample that was reviewed for the analysis.

LDC Project #34041:

SDG #	Fraction
75798	Volatiles, Lead, Total Petroleum Hydrocarbons as Extractables

The data validation was performed under Standard & Full Validation guidelines. The analyses were validated using the following documents, as applicable to each method:

- Final Work Plan for Site Investigation for UST-KB-100, Marine Corps Base Motor Pool, Marine Corps Base Hawaii, Kaneohe, Hawaii, June 2014
- Project Procedures Manual, U.S. Navy Environmental Restoration Program NAVFAC Pacific, DON 2007
- U.S. Department of Defense Quality Systems Manual for Environmental Laboratories, Version 5.0, July 2013
- EPA SW 846, Third Edition, Test Methods for Evaluating Solid Waste, update 1, July 1992; update IIA, August 1993; update II, September 1994; update IIB, January 1995; update III, December 1996; update IIIA, April 1998; IIIB, November 2004; Update IV, February 2007

Please feel free to contact us if you have any questions.

Sincerely,

Andrew Kong
Project Manager/Senior Chemist

HC

Attachment 1

90/10 EDD & NIRIS

LDC #34041 (Element Environmental, LLC, Aiea, HI / MCBH UST KB-100)

Project #130034

LDC	SDG#	DATE REC'D	(3) DATE DUE	VOA (8260B)		Pb (6020A)		TPH-E (8015C)																													
Matrix: Water/Soil				W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S
A	75798	04/07/15	04/28/15	2	0	1	0	1	0																												
A	75798	04/07/15	04/28/15	2	0	1	0	1	0																												
Total	A/AK			4	0	2	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	8

Shaded cells indicate Full validation (all other cells are Standard validation). These sample counts do not include MS/MSD, and DUPs

L:\Element\MCB Hawaii\34041ST.wpd

Laboratory Data Consultants, Inc.
Data Validation Report

Project/Site Name: MCBH UST KB-100

LDC Report Date: April 21, 2015

Parameters: Volatiles

Validation Level: Standard & Full

Laboratory: APPL, Inc.

Sample Delivery Group (SDG): 75798

Sample Identification	Laboratory Sample Identification	Matrix	Collection Date
EKB100022**	AZ12342**	Water	03/10/15
EKB100023	AZ12343	Water	03/10/15
TRIP BLANK-2	AZ12344	Water	03/10/15
EKB100022DL**	AZ12342DL**	Water	03/10/15

**Indicates sample underwent Full validation

Introduction

This Data Validation Report (DVR) presents data validation findings and results for the associated samples listed on the cover page. Data validation was performed in accordance with the Final Work Plan for Site Investigation for UST-KB-100, Marine Corps Base Motor Pool, Marine Corps Base Hawaii, Kaneohe, Hawaii (June 2014), the Project Procedures Manual, U.S. Navy Environmental Restoration Program, NAVFAC Pacific (DON 2007), and the U.S. Department of Defense (DoD) Quality Systems Manual (QSM) for Environmental Laboratories, Version 5.0 (July 2013). Where specific guidance was not available, the data has been evaluated in a conservative manner consistent with industry standards using professional experience.

The analyses were performed by the following method:

Volatile Organic Compounds (VOCs) by Environmental Protection Agency (EPA) SW 846 Method 8260B

All sample results were subjected to Standard data validation, which comprises an evaluation of quality control (QC) summary results. Samples appended with a double asterisk on the cover page were subjected to Full data validation, which is comprised of the QC summary forms as well as the raw data, to confirm sample quantitation and identification.

The following are definitions of the data qualifiers utilized during data validation:

J (Estimated): The compound or analyte was analyzed for and positively identified by the laboratory; however the reported concentration is estimated due to non-conformances discovered during data validation.

U (Non-detect): The compound or analyte was analyzed for and positively identified by the laboratory; however the analyte should be considered non-detect at the reported concentration due to the presence of contaminants detected in the associated blank(s).

UJ (Non-detected estimated): The compound or analyte was reported as not detected by the laboratory; however the reported quantitation/detection limit is estimated due to non-conformances discovered during data validation.

R (Rejected): The sample results were rejected due to gross non-conformances discovered during data validation. Data qualified as rejected is not usable.

NA (Not Applicable): The non-conformance discovered during data validation demonstrates a high bias, while the affected compound in the associated sample(s) was reported as not detected by the laboratory and did not warrant the qualification of the data.

A qualification summary table is provided at the end of this report if data has been qualified. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

Qualification Code Reference

H	Holding times were exceeded.
S	Surrogate recovery was outside QC limits.
C	Calibration %RSD, r, r^2 or %D were noncompliant
R	Calibration RRF was <0.05.
B	Presumed contamination from preparation (method blank)
L	Laboratory Control Sample/Laboratory Control Sample Duplicate %R or RPD was not within control limits
Q	MS/MSD recovery was poor
E	MS/MSD or Duplicate RPD was high.
I	Internal standard performance was unsatisfactory
M	Instrument Performance Check (BFB or DFTPP) was noncompliant
T	Presumed contamination from trip blank.
F	Presumed contamination from FB or ER.
D	The analysis with this flag should not be used because another more technically sound analysis is available.
P	Instrument performance for pesticides was poor
*#	Unusual problems found with the data. The number following the asterisk (*) will indicate the section in the validation report where a description of the problem can be found.

I. Sample Receipt and Technical Holding Times

All samples were received in good condition and cooler temperatures upon receipt met validation criteria.

All technical holding time requirements were met.

II. GC/MS Instrument Performance Check

A bromofluorobenzene (BFB) tune was performed at 12 hour intervals.

All ion abundance requirements were met.

III. Initial Calibration and Initial Calibration Verification

An initial calibration was performed as required by the method.

For compounds where average relative response factors (RRFs) were utilized, percent relative standard deviations (%RSD) were less than or equal to 15.0% for all compounds with the following exceptions:

Date	Compound	%RSD	Associated Samples	Flag	A or P
03/16/15	Vinyl chloride	17	EKB100022** EKB100023	J (all detects) UJ (all non-detects)	A
	Chloroform	30	TRIP BLANK-2	J (all detects) UJ (all non-detects)	

In the case where the laboratory used a calibration curve to evaluate the compounds, all coefficients of determination (r^2) were greater than or equal to 0.990.

Average relative response factors (RRF) for all compounds were within validation criteria.

The percent differences (%D) of the initial calibration verification (ICV) standard were less than or equal to 20.0% for all compounds.

IV. Continuing Calibration

Continuing calibration was performed at the required frequencies.

Percent differences (%D) were less than or equal to 20.0% for all compounds.

All of the continuing calibration relative response factors (RRF) were within validation criteria.

V. Laboratory Blanks

Laboratory blanks were analyzed as required by the method. No contaminants were found in the laboratory blanks.

VI. Field Blanks

Sample TRIP BLANK-2 was identified as a trip blank. No contaminants were found.

VII. Surrogates

Surrogates were added to all samples as required by the method. All surrogate recoveries (%R) were within QC limits.

VIII. Matrix Spike/Matrix Spike Duplicates

The laboratory has indicated that there were no matrix spike (MS) and matrix spike duplicate (MSD) analyses specified for the samples in this SDG, and therefore matrix spike and matrix spike duplicate analyses were not performed for this SDG.

IX. Laboratory Control Samples

Laboratory control samples (LCS) were analyzed as required by the method. Percent recoveries (%R) were within QC limits.

X. Field Duplicates

No field duplicates were identified in this SDG.

XI. Internal Standards

All internal standard areas and retention times were within QC limits.

XII. Compound Quantitation

All compound quantitations met validation criteria with the following exceptions:

Sample	Compound	Finding	Criteria	Flag	A or P
EKB100022**	cis-1,2-Dichloroethene	Sample result exceeded calibration range.	Reported result should be within calibration range.	J (all detects)	A

Raw data were not reviewed for Standard validation.

XIII. Target Compound Identifications

All target compound identifications met validation criteria for samples which underwent Full validation. Raw data were not reviewed for Standard validation.

XIV. System Performance

The system performance was acceptable for samples which underwent Full validation. Raw data were not reviewed for Standard validation.

XV. Overall Assessment of Data

The analysis was conducted within all specifications of the method. No results were rejected in this SDG.

In the case where more than one result was reported for an individual sample, the least technically acceptable results were deemed unusable as follows:

Sample	Compound	Flag	A or P
EKB100022**	cis-1,2-Dichloroethene	R	A

Due to initial calibration %RSD, data were qualified as estimated in three samples.

The quality control criteria reviewed, other than those discussed above, were met and are considered acceptable. Sample results that were found to be estimated (J) are usable for limited purposes only. Based upon the data validation all other results are considered valid and usable for all purposes.

MCBH UST KB-100
Volatiles - Data Qualification Summary - SDG 75798

Sample	Compound	Flag	A or P	Reason (Code)
EKB100022** EKB100023 TRIP BLANK-2	Vinyl chloride Chloroform	J (all detects) UJ (all non-detects) J (all detects) UJ (all non-detects)	A	Initial calibration (%RSD) (C)
EKB100022**	cis-1,2-Dichloroethene	R	A	Overall assessment of data (D)

MCBH UST KB-100
Volatiles - Laboratory Blank Data Qualification Summary - SDG 75798

No Sample Data Qualified in this SDG

MCBH UST KB-100
Volatiles - Field Blank Data Qualification Summary - SDG 75798

No Sample Data Qualified in this SDG

LDC #: 34041A1
SDG #: 75798
Laboratory: APPL, Inc.

VALIDATION COMPLETENESS WORKSHEET
Standard/Full

Date: 4/8/15
Page: 1 of 1
Reviewer: [illegible]
2nd Reviewer: [illegible]

METHOD: GC/MS Volatiles (EPA SW 846 Method 8260B)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Sample receipt/Technical holding times	A, A	
II.	GC/MS Instrument performance check	A	
III.	Initial calibration/ICV	SW, A	%RSD ≤ 15, r² ICV ≤ 20
IV.	Continuing calibration	A	CCV ≤ 20
V.	Laboratory Blanks	A	
VI.	Field blanks	ND	TB = 3
VII.	Surrogate spikes	A	
VIII.	Matrix spike/Matrix spike duplicates	N	client specified
IX.	Laboratory control samples	A	LCS
X.	Field duplicates	N	
XI.	Internal standards	A	
XII.	Compound quantitation RL/LOQ/LODs	SW	Not reviewed for Standard validation.
XIII.	Target compound identification	A	Not reviewed for Standard validation.
XIV.	System performance	A	Not reviewed for Standard validation.
XV.	Overall assessment of data	A	

Note: A = Acceptable; N = Not provided/applicable; SW = See worksheet; ND = No compounds detected; R = Rinsate; FB = Field blank; D = Duplicate; TB = Trip blank; EB = Equipment blank; SB=Source blank; OTHER:

** Indicates sample underwent Full validation

	Client ID	Lab ID	Matrix	Date
1	EKB200022**	AZ12342**	Water	03/10/15
2	EKB200023	AZ12343	Water	03/10/15
3	TRIP BLANK-2	AZ12344	Water	03/10/15
4	#1 DL			
5				
6				
7				
8				
9				
10	150316AT			
11	150317AT			
12				
13				

LDC #: 3404|A

VALIDATION FINDINGS CHECKLIST

Reviewer: FT
2nd Reviewer: A

Method: Volatiles (EPA SW 846 Method 8260B)

Validation Area	Yes	No	NA	Findings/Comments
I. Technical holding times				
All technical holding times were met.	✓			
Cooler temperature criteria was met.	✓			
II. GC/MS Instrument performance check				
Were the BFB performance results reviewed and found to be within the specified criteria?	✓			
Were all samples analyzed within the 12 hour clock criteria?	✓			
III. Initial calibration				
Did the laboratory perform a 5 point calibration prior to sample analysis?	✓			
Were all percent relative standard deviations (%RSD) and relative response factors (RRF) within method criteria for all CCCs and SPCCs?	✓			
Was a curve fit used for evaluation?		✓		
Did the initial calibration meet the curve fit acceptance criteria of ≥ 0.990?			✓	
Were all percent relative standard deviations (%RSD) ≤ 30%/15% and relative response factors (RRF) ≥ 0.05?	NA	✓		
IV. Continuing calibration				
Was a continuing calibration standard analyzed at least once every 12 hours for each instrument?	✓			
Were all percent differences (%D) and relative response factors (RRF) within method criteria for all CCCs and SPCCs?	✓			
Were all percent differences (%D) ≤ 20% and relative response factors (RRF) ≥ 0.05?	✓			
V. Blanks				
Was a method blank associated with every sample in this SDG?	✓			
Was a method blank analyzed at least once every 12 hours for each matrix and concentration?	✓			
Was there contamination in the method blanks? If yes, please see the Blanks validation completeness worksheet.			✓	
VI. Surrogate spikes				
Were all surrogate %R within QC limits?	✓			
If the percent recovery (%R) for one or more surrogates was out of QC limits, was a reanalysis performed to confirm samples with %R outside of criteria?			✓	
VII. Matrix spike/Matrix spike duplicates				
Were a matrix spike (MS) and matrix spike duplicate (MSD) analyzed for each matrix in this SDG? If no, indicate which matrix does not have an associated MS/MSD. Soil / Water.			✓	
Was a MS/MSD analyzed every 20 samples of each matrix?			✓	
Were the MS/MSD percent recoveries (%R) and the relative percent differences (RPD) within the QC limits?			✓	
VIII. Laboratory control samples				
Was an LCS analyzed for this SDG?	✓			

LDC #: 34041 A1

VALIDATION FINDINGS CHECKLIST

Reviewer: FT
2nd Reviewer: [illegible]

Validation Area	Yes	No	NA	Findings/Comments
Was an LCS analyzed per analytical batch?	✓			
Were the LCS percent recoveries (%R) and relative percent difference (RPD) within the QC limits?	✓			
IX. Regional Quality Assurance and Quality Control				
Were performance evaluation (PE) samples performed?			✓	
Were the performance evaluation (PE) samples within the acceptance limits?			✓	
X. Internal standards				
Were internal standard area counts within -50% or +100% of the associated calibration standard?	✓			
Were retention times within ± 30 seconds of the associated calibration standard?	✓			
XI. Target compound identification				
Were relative retention times (RRT's) within ± 0.06 RRT units of the standard?	✓			
Did compound spectra meet specified EPA "Functional Guidelines" criteria?	✓			
Were chromatogram peaks verified and accounted for?	✓			
XII. Compound quantitation/RLs				
Were the correct internal standard (IS), quantitation ion and relative response factor (RRF) used to quantitate the compound?	✓			
Were compound quantitation and RLs adjusted to reflect all sample dilutions and dry weight factors applicable to level IV validation?	✓			
XIII. Tentatively identified compounds (TICs)				
Were the major ions (> 10 percent relative intensity) in the reference spectrum evaluated in sample spectrum?			✓	
Were relative intensities of the major ions within ± 20% between the sample and the reference spectra?			✓	
Did the raw data indicate that the laboratory performed a library search for all required peaks in the chromatograms (samples and blanks)?			✓	
XIV. System performance				
System performance was found to be acceptable.		✓		
XV. Overall assessment of data				
Overall assessment of data was found to be acceptable.	✓			
XVI. Field duplicates				
Field duplicate pairs were identified in this SDG.		✓		
Target compounds were detected in the field duplicates.			✓	
XVII. Field blanks				
Field blanks were identified in this SDG.	✓			
Target compounds were detected in the field blanks.		✓		

TARGET COMPOUND WORKSHEET

METHOD: VOA

A. Chloromethane	U. 1,1,2-Trichloroethane	OO. 2,2-Dichloropropane	III. n-Butylbenzene	CCCC.1-Chlorohexane
B. Bromomethane	V. Benzene	PP. Bromochloromethane	JJJ. 1,2-Dichlorobenzene	DDDD. Isopropyl alcohol
C. Vinyl choride	W. trans-1,3-Dichloropropene	QQ. 1,1-Dichloropropene	KKK. 1,2,4-Trichlorobenzene	EEEE. Acetonitrile
D. Chloroethane	X. Bromoform	RR. Dibromomethane	LLL. Hexachlorobutadiene	FFFF. Acrolein
E. Methylene chloride	Y. 4-Methyl-2-pentanone	SS. 1,3-Dichloropropane	MMM. Naphthalene	GGGG. Acrylonitrile
F. Acetone	Z. 2-Hexanone	TT. 1,2-Dibromoethane	NNN. 1,2,3-Trichlorobenzene	HHHH. 1,4-Dioxane
G. Carbon disulfide	AA. Tetrachloroethene	UU. 1,1,1,2-Tetrachloroethane	OOO. 1,3,5-Trichlorobenzene	IIII. Isobutyl alcohol
H. 1,1-Dichloroethene	BB. 1,1,2,2-Tetrachloroethane	VV. Isopropylbenzene	PPP. trans-1,2-Dichloroethene	JJJJ. Methacrylonitrile
I. 1,1-Dichloroethane	CC. Toluene	WW. Bromobenzene	QQQ. cis-1,2-Dichloroethene	KKKK. Propionitrile
J. 1,2-Dichloroethene, total	DD. Chlorobenzene	XX. 1,2,3-Trichloropropane	RRR. m,p-Xylenes	LLLL. Ethyl ether
K. Chloroform	EE. Ethylbenzene	YY. n-Propylbenzene	SSS. o-Xylene	MMMM. Benzyl chloride
L. 1,2-Dichloroethane	FF. Styrene	ZZ. 2-Chlorotoluene	TTT. 1,1,2-Trichloro-1,2,2-trifluoroethane	NNNN. Iodomethane
M. 2-Butanone	GG. Xylenes, total	AAA. 1,3,5-Trimethylbenzene	UUU. 1,2-Dichlorotetrafluoroethane	OOOO.1,1-Difluoroethane
N. 1,1,1-Trichloroethane	HH. Vinyl acetate	BBB. 4-Chlorotoluene	VVV. 4-Ethyltoluene	PPPP.
O. Carbon tetrachloride	II. 2-Chloroethylvinyl ether	CCC. tert-Butylbenzene	WWW. Ethanol	QQQQ.
P. Bromodichloromethane	JJ. Dichlorodifluoromethane	DDD. 1,2,4-Trimethylbenzene	XXX. Di-isopropyl ether	RRRR.
Q. 1,2-Dichloropropane	KK. Trichlorofluoromethane	EEE. sec-Butylbenzene	YYY. tert-Butanol	SSSS.
R. cis-1,3-Dichloropropene	LL. Methyl-tert-butyl ether	FFF. 1,3-Dichlorobenzene	ZZZ. tert-Butyl alcohol	TTTT.
S. Trichloroethene	MM. 1,2-Dibromo-3-chloropropane	GGG. p-Isopropyltoluene	AAAA. Ethyl tert-butyl ether	UUUU.
T. Dibromochloromethane	NN. Methyl ethyl ketone	HHH. 1,4-Dichlorobenzene	BBBB. tert-Amyl methyl ether	VVVV.

LDC #: 34041A1

VALIDATION FINDINGS WORKSHEET
Initial Calibration

Page: 1 of 1
Reviewer: FT
2nd Reviewer: [illegible]

METHOD: GC/MS VOA (EPA SW 846 Method 8260B)
Please see qualifications below for all questions answered "N". Not applicable questions are identified as "N/A".

Y N N/A Did the laboratory perform a 5 point calibration prior to sample analysis?
Y N N/A Were percent relative standard deviations (%RSD) and relative response factors (RRF) within method criteria for all CCC's and SPCC's?
Y N N/A Was a curve fit used for evaluation? If yes, what was the acceptance criteria used for evaluation?_____
Y N N/A Did the initial calibration meet the acceptance criteria?
Y N N/A Were all %RSDs and RRFs within the validation criteria of ≤30(15)%RSD and ≥0.05 RRF ?

code - C

#	Date	Standard ID	Compound	Finding %RSD (Limit: ≤30(15%))	Finding RRF (Limit: ≥0.05)	Associated Samples	Qualifications
	3/16/15	ICAL-Thor	C	17		~~all~~ 1-3	J/UJ/A (ND+Det)
			K	30		↓ 150316-AT	↓ ↓

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LDC #: 34044A1

VALIDATION FINDINGS WORKSHEET
Compound Quantitation and CRQLs

Page: 1 of 1
Reviewer: FT
2nd Reviewer: [illegible]

METHOD: GC/MS VOA (EPA SW 846 Method 8260B)

Please see qualifications below for all questions answered "N". Not applicable questions are identified as "N/A".

Y N N/A Were the correct internal standard (IS), quantitation ion and relative response factor (RRF) used to quantitate the compound?

Y N N/A Were compound quantitation and CRQLs adjusted to reflect all sample dilutions and dry weight factors applicable to level IV validation?

#	Date	Sample ID	Compound	Finding	Qualifications
		1	QQQ	> cal Range	J/A dil *X11

Comments: See sample calculation verification worksheet for recalculations

LDC #: 3404A1

VALIDATION FINDINGS WORKSHEET
Overall Assessment of Data

Page: 1 of 1
Reviewer: FT
2nd Reviewer: d

METHOD: GC/MS VOA (EPA SW 846 Method 8260B)

Please see qualifications below for all questions answered "N". Not applicable questions are identified as "N/A".

All available information pertaining to the data were reviewed using professional judgement to compliment the determination of the overall quality of the data.
Y N N/A Was the overall quality and usability of the data acceptable?

#	Date	Sample ID	Compound	Finding	Qualifications
		1	QQQ	> cal Range	R/A code = D

Comments:

LDC #: 34041A1

VALIDATION FINDINGS WORKSHEET
Initial Calibration Calculation Verification

Reviewer: FT
2nd Reviewer: [illegible]

METHOD: GCMS 8260B

The calibration factors (RRFF), average RRFF, and relative standard deviation (%RSD) were recalculated for compounds identified below using the following calculations:

RRF = (Ax)(Cis)/(Ais)(Cx)
average RRF = sum of the RRFs/number of standards
%RSD = 100 * (S/X)

Where:
Ax = Area of compound
Cx = Concentration of compound
S = Standard deviation of the RRFs
X = Mean of the RRFs
Ais = Area of associated internal standard
Cis = Concentration of internal Standard

#	Standard ID	Calibration Date	Compound	Reported (RRF 10 std)	Recalculated (RRF 10 std)	Reported AverageRRF (Initial)	Recalculated Average RRF (Initial)	Reported %RSD	Recalculated %RSD
	ICAL Thor	3/16/2015	C (IS 1)	0.4820	0.4820	0.5153	0.5153	17.00	17.00
			AA (IS 2)	0.5550	0.5550	0.5661	0.5661	11.00	11.00
			BB (IS 3)	0.9089	0.9089	0.9139	0.9139	7.40	7.40

LDC #: 34041A1

VALIDATION FINDINGS WORKSHEET
Continuing Calibration Results Verification

Reviewer: FT
2nd Reviewer: [illegible]

METHOD: GC/MS VOA (EPA SW 846 Method 8260B)

The percent difference (%D) of the initial calibration average Relative Response Factors (RRFs) and the continuing calibration RRFs were recalculated for the compounds identified below using the following calculation:

% Difference = 100 * (ave. RRF - RRF)/ave. RRF
RRF = $(A_x)(C_{is})/(A_{is})(C_x)$

Where: ave. RRF = initial calibration average RRF
RRF = continuing calibration RRF
A_x = Area of compound, A_{is} = Area of associated internal standard
C_x = Concentration of compound, C_{is} = Concentration of internal standard

#	Standard ID	Calibration Date	Compound (Reference internal Standard)	Average RRF (initial)	Reported RRF (CC)	Recalculated RRF (CC)	Reported %D	Recalculated %D
1	CCV	3/16/15	C (1st internal standard)	0.5153	0.4514	0.4514	12	12
			AA (2nd internal standard)	0.5661	0.5446	0.5446	3.8	3.8
			BB (3rd internal standard)	0.9139	0.8137	0.8137	11	11
			(4th internal standard)					
2	CCV	3/17/15	DQQ (1st internal standard)	0.4715	0.4743	0.4743	0.59	0.59
			(2nd internal standard)					
			(3rd internal standard)					
			(4th internal standard)					
3			(1st internal standard)					
			(2nd internal standard)					
			(3rd internal standard)					
			(4th internal standard)					
4			(1st internal standard)					
			(2nd internal standard)					
			(3rd internal standard)					
			(4th internal standard)					

Comments: Refer to Continuing Calibration findings worksheet for list of qualifications and associated samples when reported results do not agree within 10.0% of the recalculated results.

LDC #: 34041A1

VALIDATION FINDINGS WORKSHEET
Surrogate Results Verification

Reviewer: FT
2nd reviewer: C

METHOD: GC/MS VOA (EPA SW 846 Method 8260B)

The percent recoveries (%R) of surrogates were recalculated for the compounds identified below using the following calculation:

% Recovery: SF/SS * 100

Where: SF = Surrogate Found
SS = Surrogate Spiked

Sample ID: #01

	Surrogate Spiked	Surrogate Found	Percent Recovery Reported	Percent Recovery Recalculated	Percent Difference
Dibromofluoromethane	28.198	27.81428	98.6	98.6	0
1,2-Dichloroethane-d4	26.773	25.70118	96.0	96.0	
Toluene-d8	28.680	27.86136	97.1	97.1	
Bromofluorobenzene	27.316	26.43062	96.8	96.8	✓

Sample ID:

	Surrogate Spiked	Surrogate Found	Percent Recovery Reported	Percent Recovery Recalculated	Percent Difference
Dibromofluoromethane					
1,2-Dichloroethane-d4					
Toluene-d8					
Bromofluorobenzene					

Sample ID:

	Surrogate Spiked	Surrogate Found	Percent Recovery Reported	Percent Recovery Recalculated	Percent Difference
Dibromofluoromethane					
1,2-Dichloroethane-d4					
Toluene-d8					
Bromofluorobenzene					

Sample ID:

	Surrogate Spiked	Surrogate Found	Percent Recovery Reported	Percent Recovery Recalculated	Percent Difference
Dibromofluoromethane					
1,2-Dichloroethane-d4					
Toluene-d8					
Bromofluorobenzene					

Sample ID:

	Surrogate Spiked	Surrogate Found	Percent Recovery Reported	Percent Recovery Recalculated	Percent Difference
Dibromofluoromethane					
1,2-Dichloroethane-d4					
Toluene-d8					
Bromofluorobenzene					

LDC #: 34041A1

VALIDATION FINDINGS WORKSHEET
Laboratory Control Sample Results Verification

Reviewer: FT
2nd Reviewer: [illegible]

METHOD: GC/MS VOA (EPA SW 846 Method 8260B)

The percent recoveries (%R) and Relative Percent Difference (RPD) of the laboratoy control sample and laboratory control sample duplicate (if applicable) were recalculated for the compounds identified below using the following calculation:

% Recovery = 100 * SSC/SA Where: SSC = Spiked sample concentration
SA = Spike added

RPD = I LCSC - LCSDC I * 2/(LCSC + LCSDC) LCSC = Laboraotry control sample concentration LCSDC = Laboratory control sample duplicate concentration

LCS ID: 150316AT

Compound	Spike Added (ug/L)		Spiked Sample Concentration (ug/L)		LCS Percent Recovery		LCSD Percent Recovery		LCS/LCSD RPD	
	LCS	LCSD	LCS	LCSD	Reported	Recalc.	Reported	Recalc.	Reported	Recalculated
1,1-Dichloroethene	10.0	NA	9.99	NA	99.9	99.9				
Trichloroethene			10.6		106	106				
Benzene			9.93		99.3	99.3				
Toluene			9.63		96.3	96.3				
Chlorobenzene			9.58		95.8	95.8	NA			

Comments: Refer to Laboratory Control Sample findings worksheet for list of qualifications and associated samples when reported results do not agree within 10.0% of the recalculated results.

LDC #: 34041A

VALIDATION FINDINGS WORKSHEET
Sample Calculation Verification

Reviewer: FT
2nd reviewer: C

METHOD: GC/MS VOA (EPA SW 846 Method 8260B)

Y N N/A Were all reported results recalculated and verified for all level IV samples?

Y N N/A Were all recalculated results for detected target compounds agree within 10.0% of the reported results?

Concentration = $\frac{(A_x)(I_s)(DF)}{(A_{is})(RRF)(V_o)(\%S)}$

A_x	=	Area of the characteristic ion (EICP) for the compound to be measured
A_{is}	=	Area of the characteristic ion (EICP) for the specific internal standard
I_s	=	Amount of internal standard added in nanograms (ng)
RRF	=	Relative response factor of the calibration standard.
V_o	=	Volume or weight of sample pruged in milliliters (ml) or grams (g).
Df	=	Dilution factor.
%S	=	Percent solids, applicable to soils and solid matrices only.

Example:

Sample I.D. # , C :

Conc. = $\frac{(84526)(25.0)(\quad)(\quad)}{(66824)(0.5153)(\quad)(\quad)}$

= 61.96 ug/L

#	Sample ID	Compound	Reported Concentration ( )	Calculated Concentration ( )	Qualification

Laboratory Data Consultants, Inc.
Data Validation Report

Project/Site Name: MCBH UST KB-100

LDC Report Date: April 21, 2015

Parameters: Lead

Validation Level: Standard & Full

Laboratory: APPL, Inc.

Sample Delivery Group (SDG): 75798

Sample Identification	Laboratory Sample Identification	Matrix	Collection Date
EKB100022**	AZ12342**	Water	03/10/15
EKB100023	AZ12343	Water	03/10/15
EKB100022MS	AZ12342MS	Water	03/10/15
EKB100022MSD	AZ12342MSD	Water	03/10/15

**Indicates sample underwent Full validation

Introduction

This Data Validation Report (DVR) presents data validation findings and results for the associated samples listed on the cover page. Data validation was performed in accordance with the Final Work Plan for Site Investigation for UST-KB-100, Marine Corps Base Motor Pool, Marine Corps Base Hawaii, Kaneohe, Hawaii (June 2014), the Project Procedures Manual, U.S. Navy Environmental Restoration Program, NAVFAC Pacific (DON 2007), and the U.S. Department of Defense (DoD) Quality Systems Manual (QSM) for Environmental Laboratories, Version 5.0 (July 2013). Where specific guidance was not available, the data has been evaluated in a conservative manner consistent with industry standards using professional experience.

The analyses were performed by the following method:

Lead by Environmental Protection Agency (EPA) SW 846 Method 6020A

All sample results were subjected to Standard data validation, which comprises an evaluation of quality control (QC) summary results. Samples appended with a double asterisk on the cover page were subjected to Full data validation, which is comprised of the QC summary forms as well as the raw data, to confirm sample quantitation and identification.

The following are definitions of the data qualifiers utilized during data validation:

J (Estimated): The compound or analyte was analyzed for and positively identified by the laboratory; however the reported concentration is estimated due to non-conformances discovered during data validation.

U (Non-detect): The compound or analyte was analyzed for and positively identified by the laboratory; however the analyte should be considered non-detect at the reported concentration due to the presence of contaminants detected in the associated blank(s).

UJ (Non-detected estimated): The compound or analyte was reported as not detected by the laboratory; however the reported quantitation/detection limit is estimated due to non-conformances discovered during data validation.

R (Rejected): The sample results were rejected due to gross non-conformances discovered during data validation. Data qualified as rejected is not usable.

NA (Not Applicable): The non-conformance discovered during data validation demonstrates a high bias, while the affected compound in the associated sample(s) was reported as not detected by the laboratory and did not warrant the qualification of the data.

A qualification summary table is provided at the end of this report if data has been qualified. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

Qualification Code Reference

H	Holding times were exceeded.
S	The sequence or number of standards used for the calibration was incorrect.
C	Correlation coefficient is <0.995.
R	%R for calibration is not within control limits
B	Presumed contamination from preparation (method) blank or calibration blank
L	Laboratory Control Sample/Laboratory Control Sample Duplicate %R or RPD was not within control limits
Q	MS/MSD recovery was poor.
E	MS/MSD or Duplicate RPD or difference was high.
I	ICP ICS results were unsatisfactory.
A	ICP Serial Dilution %D were not within control limits
F	Presumed contamination from FB or ER.
D	The analysis with this flag should not be used because another more technically sound analysis is available.
P	Post Digestion Spike recovery was not within control limits
*#	Unusual problems found with the data. The number following the asterisk (*) will indicate the section in the validation report where a description of the problem can be found.

I. Sample Receipt and Technical Holding Times

All samples were received in good condition.

All technical holding time requirements were met.

II. ICPMS Tune

The mass calibration was within 0.1 AMU and the percent relative standard deviation (%RSD) was less than or equal to 5%.

III. Instrument Calibration

Initial and continuing calibrations were performed as required by the method.

The initial calibration verification (ICV) and continuing calibration verification (CCV) standards were within QC limits.

IV. ICP Interference Check Sample (ICS) Analysis

The frequency of ICS analysis was met. All criteria were within QC limits.

V. Laboratory Blanks

Laboratory blanks were analyzed as required by the method. No contaminants were found in the laboratory blanks.

VI. Field Blanks

No field blanks were identified in this SDG.

VII. Matrix Spike/Matrix Spike Duplicates

Matrix spike (MS) and matrix spike duplicate (MSD) sample analysis was performed on an associated project sample. Percent recoveries (%R) were within QC limits. Relative percent differences (RPD) were within QC limits.

VIII. Duplicate Sample Analysis

The laboratory has indicated that there were no duplicate (DUP) analyses specified for the samples in this SDG, and therefore duplicate analyses were not performed for this SDG.

IX. ICP Serial Dilution

ICP serial dilution analysis was performed on an associated project sample. The analysis criteria were met.

X. Laboratory Control Samples (LCS)

Laboratory control samples (LCS) were analyzed as required by the method. Percent recoveries (%R) were within QC limits.

XI. Field Duplicates

No field duplicates were identified in this SDG.

XII. Internal Standards (ICP-MS)

All internal standard percent recoveries (%R) were within QC limits for samples which underwent Full validation. Raw data were not reviewed for Standard validation.

XIII. Sample Result Verification

All sample result verifications were acceptable for samples which underwent Full validation. Raw data were not reviewed for Standard validation.

XIV. Overall Assessment of Data

The analysis was conducted within all specifications of the method. No results were rejected in this SDG.

The quality control criteria reviewed were met and are considered acceptable. Based upon the data validation all results are considered valid and usable for all purposes.

MCBH UST KB-100
Lead - Data Qualification Summary - SDG 75798

No Sample Data Qualified in this SDG

MCBH UST KB-100
Lead - Laboratory Blank Data Qualification Summary - SDG 75798

No Sample Data Qualified in this SDG

MCBH UST KB-100
Lead - Field Blank Data Qualification Summary - SDG 75798

No Sample Data Qualified in this SDG

LDC #: 34041A4a
SDG #: 75798
Laboratory: APPL, Inc.

VALIDATION COMPLETENESS WORKSHEET
Standard/Full

Date: 4/14/15
Page: 1 of 1
Reviewer: JD
2nd Reviewer: a

METHOD: Lead (EPA SW 846 Method 6020A)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Sample receipt/Technical holding times	A	3/10/15
II.	ICP/MS Tune	A	
III.	Instrument Calibration	A	
IV.	ICP Interference Check Sample (ICS) Analysis	A	
V.	Laboratory Blanks	A	
VI.	Field Blanks	N	
VII.	Matrix Spike/Matrix Spike Duplicates	A	MSD=(3,4)
VIII.	Duplicate sample analysis	N	
IX.	ICP Serial Dilution	A	
X.	Laboratory control samples	A	LCS
XI.	Field Duplicates	N	
XII.	Internal Standard (ICP-MS)	A	Not reviewed for Standard Validation
XIII.	Sample Result Verification	A	Not reviewed for Standard validation.
XIV	Overall Assessment of Data	A	

Note: A = Acceptable; N = Not provided/applicable; SW = See worksheet; ND = No compounds detected; R = Rinsate; FB = Field blank; D = Duplicate; TB = Trip blank; EB = Equipment blank; SB=Source blank; OTHER:

** Indicates sample underwent Full validation

	Client ID	Lab ID	Matrix	Date
1	EKB200022**	AZ12342**	Water	03/10/15
2	EKB200023	AZ12343	Water	03/10/15
3	#1 MS			
4	#1 MSD			
5				
6				
7				
8				
9				
10				

Notes:

LDC #: 34041A4a

VALIDATION FINDINGS CHECKLIST

Reviewer: SD
2nd Reviewer: 2

Method: Metals (EPA SW 846 Method 6010B/7000/6020)

Validation Area	Yes	No	NA	Findings/Comments
I. Technical holding times				
All technical holding times were met.	✓			
Cooler temperature criteria was met.	✓			
II. ICP/MS Tune				
Were all isotopes in the tuning solution mass resolution within 0.1 amu?	✓			
Were %RSD of isotopes in the tuning solution ≤5%?	✓			
III. Calibration				
Were all instruments calibrated daily, each set-up time?	✓			
Were the proper number of standards used?	✓			
Were all initial and continuing calibration verification %Rs within the 90-110% (80-120% for mercury) QC limits?	✓			
Were all initial calibration correlation coefficients ≥ 0.995?	✓			
IV. Blanks				
Was a method blank associated with every sample in this SDG?	✓			
Was there contamination in the method blanks? If yes, please see the Blanks validation completeness worksheet.		✓		
V. ICP Interference Check Sample				
Were ICP interference check samples performed daily?	✓			
Were the AB solution percent recoveries (%R) with the 80-120% QC limits?	✓			
VI. Matrix spike/Matrix spike duplicates				
Were a matrix spike (MS) and duplicate (DUP) analyzed for each matrix in this SDG? If no, indicate which matrix does not have an associated MS/MSD or MS/DUP. Soil / Water.	✓			
Were the MS/MSD percent recoveries (%R) and the relative percent differences (RPD) within the ~~75-125~~ QC limits? If the sample concentration exceeded the spike concentration by a factor of 4 or more, no action was taken.	✓			
Were the MS/MSD or duplicate relative percent differences (RPD) ≤ 20% for waters and ≤ 35% for soil samples? A control limit of +/- RL(+/-2X RL for soil) was used for samples that were ≤ 5X the RL, including when only one of the duplicate sample values were ≤ 5X the RL.	✓			
VII. Laboratory control samples				
Was an LCS anaylzed for this SDG?	✓			
Was an LCS analyzed per extraction batch?	✓			
Were the LCS percent recoveries (%R) and relative percent difference (RPD) within the ~~80-120~~% QC limits for water samples and laboratory established QC limits for soils?	✓			

LDC #: 34041P4

VALIDATION FINDINGS CHECKLIST

Reviewer: JD
2nd Reviewer: a

Validation Area	Yes	No	NA	Findings/Comments
VIII. Internal Standards (EPA SW 846 Method 6020/EPA 200.8)				
Were all the percent recoveries (%R) within the 30-120% (6020)/60-125% (200.8) of the intensity of the internal standard in the associated initial calibration?	✓			
If the %Rs were outside the criteria, was a reanalysis performed?	✓			
IX. ICP Serial Dilution				
Was an ICP serial dilution analyzed if analyte concentrations were > 50X the MDL (ICP)/>100X the MDL(ICP/MS)?	✓			
Were all percent differences (%Ds) < 10%?	✓			
Was there evidence of negative interference? If yes, professional judgement will be used to qualify the data.		✓		
X. Sample Result Verification				
Were RLs adjusted to reflect all sample dilutions and dry weight factors applicable to level IV validation?	✓			
XI. Overall assessment of data				
Overall assessment of data was found to be acceptable.	✓			
XII. Field duplicates				
Field duplicate pairs were identified in this SDG.		✓		
Target analytes were detected in the field duplicates.			✓	
XIII. Field blanks				
Field blanks were identified in this SDG.		✓		
Target analytes were detected in the field blanks.			✓	

LDC #: 34041A4a

VALIDATION FINDINGS WORKSHEET
Initial and Continuing Calibration Calculation Verification

Reviewer: JD
2nd Reviewer: g

METHOD: Trace Metals (See cover)

An initial and continuing calibration verification percent recovery (%R) was recalculated for each type of analysis using the following formula:

%R = Found / True x 100 Where, Found = concentration (in ug/L) of each analyte measured in the analysis of the ICV or CCV solution
True = concentration (in ug/L) of each analyte in the ICV or CCV source

Standard ID	Type of Analysis	Element	Found (ug/L)	True (ug/L)	Recalculated %R	Reported %R	Acceptable (Y/N)
	ICP (Initial calibration)						
ICV 16:48	ICP/MS (Initial calibration)	Pb	100.241 ug/L	100 ug/L	100%R	100%R	Y
	CVAA (Initial calibration)						
	ICP (Continuing calibration)						
CCV 19:14	ICP/MS (Continuing calibration)	Pb	49.982 ug/L	50 ug/L	100%R	100%R	Y
	CVAA (Contining calibration)						
	GFAA (Initial calibration)						
	GFAA (Continuing calibation)						

Comments:

LDC #: 34041A4a

VALIDATION FINDINGS WORKSHEET
Level IV Recalculation Worksheet

Page: 1 of 1
Reviewer: SD
2nd Reviewer: G

METHOD: Trace Metals (EPA SW 846 Method 6010/6020/7000)

Percent recoveries (%R) for an ICP interference check sample, a laboratory control sample and a matrix spike sample were recalculated using the following formula:

$\%R = \frac{Found}{True} \times 100$

Where, Found = Concentration of each analyte measured in the analysis of the sample. For the matrix spike calculation, Found = SSR (spiked sample result) - SR (sample result).
True = Concentration of each analyte in the source.

A sample and duplicate relative percent difference (RPD) was recalculated using the following formula:

$RPD = \frac{|S-D|}{(S+D)/2} \times 100$

Where, S = Original sample concentration
D = Duplicate sample concentration

An ICP serial dilution percent difference (%D) was recalculated using the following formula:

$\%D = \frac{|I-SDR|}{I} \times 100$

Where, I = Initial Sample Result (mg/L)
SDR = Serial Dilution Result (mg/L) (Instrument Reading x 5)

Sample ID	Type of Analysis	Element	Found / S / I (units)	True / D / SDR (units)	Recalculated %R / RPD / %D	Reported %R / RPD / %D	Acceptable (Y/N)
ICS AB 18:01	ICP interference check	Pb	95.88 ug/L	100 ug/L	95.9%R	95.9%R	Y
LCS 19:38	Laboratory control sample	Pb	48.~~97~~ 797.30 ug/L	50 ug/L	97.6%R	97.6%R	↓
MS 19:56	Matrix spike	Pb	(SSR-SR) 47.83 ug/L	50 ug/L	95.7%R	95.6%R	Y*
MSD 20:02	Duplicate	Pb	48.43 ug/L	47.83 ug/L	1.2%RPD	1.2%RPD	Y
SER	ICP serial dilution	Pb	ND	ND	0%D	N/A	n/a

Comments: * Rounding

TOTCLC.4SW

LDC #: 34041A4a

VALIDATION FINDINGS WORKSHEET
Sample Calculation Verification

Reviewer: SD
2nd reviewer: a

METHOD: Trace Metals (EPA SW 846 Method 6010/6020/7000)

Please see qualifications below for all questions answered "N". Not applicable questions are identified as "N/A".

Y N N/A Have results been reported and calculated correctly?
Y N N/A Are results within the calibrated range of the instruments and within the linear range of the ICP?
Y N N/A Are all detection limits below the CRDL?

Detected analyte results for (1) Pb=ND were recalculated and verified using the following equation:

Concentration = $\frac{(RD)(FV)(Dil)}{(In.\ Vol.)}$

Recalculation:

ND

RD = Raw data concentration
FV = Final volume (ml)
In. Vol. = Initial volume (ml) or weight (G)
Dil = Dilution factor

#	Sample ID	Analyte	Reported Concentration ( )	Calculated Concentration ( )	Acceptable (Y/N)
		ND			

Note:

Laboratory Data Consultants, Inc.
Data Validation Report

Project/Site Name: MCBH UST KB-100

LDC Report Date: April 21, 2015

Parameters: Total Petroleum Hydrocarbons as Extractables

Validation Level: Standard & Full

Laboratory: APPL, Inc.

Sample Delivery Group (SDG): 75798

Sample Identification	Laboratory Sample Identification	Matrix	Collection Date
EKB100022**	AZ12342**	Water	03/10/15
EKB100023	AZ12343	Water	03/10/15

**Indicates sample underwent Full validation

Introduction

This Data Validation Report (DVR) presents data validation findings and results for the associated samples listed on the cover page. Data validation was performed in accordance with the Final Work Plan for Site Investigation for UST-KB-100, Marine Corps Base Motor Pool, Marine Corps Base Hawaii, Kaneohe, Hawaii (June 2014), the Project Procedures Manual, U.S. Navy Environmental Restoration Program, NAVFAC Pacific (DON 2007), and the U.S. Department of Defense (DoD) Quality Systems Manual (QSM) for Environmental Laboratories, Version 5.0 (July 2013). Where specific guidance was not available, the data has been evaluated in a conservative manner consistent with industry standards using professional experience.

The analyses were performed by the following method:

Total Petroleum Hydrocarbons (TPH) as Extractables by Environmental Protection Agency (EPA) SW 846 Method 8015C

All sample results were subjected to Standard data validation, which comprises an evaluation of quality control (QC) summary results. Samples appended with a double asterisk on the cover page were subjected to Full data validation, which is comprised of the QC summary forms as well as the raw data, to confirm sample quantitation and identification.

The following are definitions of the data qualifiers utilized during data validation:

J (Estimated): The compound or analyte was analyzed for and positively identified by the laboratory; however the reported concentration is estimated due to non-conformances discovered during data validation.

U (Non-detect): The compound or analyte was analyzed for and positively identified by the laboratory; however the analyte should be considered non-detect at the reported concentration due to the presence of contaminants detected in the associated blank(s).

UJ (Non-detected estimated): The compound or analyte was reported as not detected by the laboratory; however the reported quantitation/detection limit is estimated due to non-conformances discovered during data validation.

R (Rejected): The sample results were rejected due to gross non-conformances discovered during data validation. Data qualified as rejected is not usable.

NA (Not Applicable): The non-conformance discovered during data validation demonstrates a high bias, while the affected compound in the associated sample(s) was reported as not detected by the laboratory and did not warrant the qualification of the data.

A qualification summary table is provided at the end of this report if data has been qualified. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

Qualification Code Reference

H	Holding times were exceeded.
S	Surrogate recovery was outside QC limits.
C	Calibration %RSD, r, r^2 or %D were noncompliant
R	Calibration RRF was <0.05.
B	Presumed contamination from preparation (method blank)
L	Laboratory Control Sample/Laboratory Control Sample Duplicate %R or RPD was not within control limits
Q	MS/MSD recovery was poor
E	MS/MSD or Duplicate RPD was high.
I	Internal standard performance was unsatisfactory
M	Instrument Performance Check (BFB or DFTPP) was noncompliant
T	Presumed contamination from trip blank.
F	Presumed contamination from FB or ER.
D	The analysis with this flag should not be used because another more technically sound analysis is available.
P	Instrument performance for pesticides was poor
*#	Unusual problems found with the data. The number following the asterisk (*) will indicate the section in the validation report where a description of the problem can be found.

I. Sample Receipt and Technical Holding Times

All samples were received in good condition and cooler temperatures upon receipt met validation criteria.

All technical holding time requirements were met.

II. Initial Calibration and Initial Calibration Verification

An initial calibration was performed as required by the method.

The percent relative standard deviations (%RSD) were less than or equal to 20.0% for all compounds.

The percent differences (%D) of the initial calibration verification (ICV) standard were less than or equal to 20.0% for all compounds.

III. Continuing Calibration

Continuing calibration was performed at the required frequencies.

Percent differences (%D) were less than or equal to 20.0% for all compounds.

IV. Laboratory Blanks

Laboratory blanks were analyzed as required by the method. No contaminants were found in the laboratory blanks.

V. Field Blanks

No field blanks were identified in this SDG.

VI. Surrogates

Surrogates were added to all samples as required by the method. All surrogate recoveries (%R) were within QC limits.

VII. Matrix Spike/Matrix Spike Duplicates

The laboratory has indicated that there were no matrix spike (MS) and matrix spike duplicate (MSD) analyses specified for the samples in this SDG, and therefore matrix spike and matrix spike duplicate analyses were not performed for this SDG.

VIII. Laboratory Control Samples

Laboratory control samples (LCS) were analyzed as required by the method. Percent recoveries (%R) were within QC limits.

IX. Field Duplicates

No field duplicates were identified in this SDG.

X. Compound Quantitation

All compound quantitations met validation criteria for samples which underwent Full validation. Raw data were not reviewed for Standard validation.

XI. Target Compound Identifications

All target compound identifications met validation criteria for samples which underwent Full validation. Raw data were not reviewed for Standard validation.

XII. Overall Assessment of Data

The analysis was conducted within all specifications of the method. No results were rejected in this SDG.

The quality control criteria reviewed were met and are considered acceptable. Based upon the data validation all results are considered valid and usable for all purposes.

MCBH UST KB-100
Total Petroleum Hydrocarbons as Extractables - Data Qualification Summary - SDG 75798

No Sample Data Qualified in this SDG

MCBH UST KB-100
Total Petroleum Hydrocarbons as Extractables - Laboratory Blank Data Qualification Summary - SDG 75798

No Sample Data Qualified in this SDG

MCBH UST KB-100
Total Petroleum Hydrocarbons as Extractables - Field Blank Data Qualification Summary - SDG 75798

No Sample Data Qualified in this SDG

LDC #: 34041A8
SDG #: 75798
Laboratory: APPL, Inc.

VALIDATION COMPLETENESS WORKSHEET
Standard/Full

Date: 4/6/15
Page: 1 of 1
Reviewer: D
2nd Reviewer: A

METHOD: GC TPH as Extractables (EPA SW 846 Method 8015~~B~~C)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Sample receipt/Technical holding times	A / A	
II.	Initial calibration/ICV	A / A	% RSD / ICV ≤ 20
III.	Continuing calibration	A	CCV ≤ 20
IV.	Laboratory Blanks	A	
V.	Field blanks	N	
VI.	Surrogate spikes	A	
VII.	Matrix spike/Matrix spike duplicates	N	client specified
VIII.	Laboratory control samples	A	LCS
IX.	Field duplicates	N	
X.	Compound quantitation RL/LOQ/LODs	A	Not reviewed for Standard validation.
XI.	Target compound identification	A	Not reviewed for Standard validation.
XII.	System performance	A	Not reviewed for Standard validation.
XIII.	Overall assessment of data	A	

Note: A = Acceptable; N = Not provided/applicable; SW = See worksheet; ND = No compounds detected; R = Rinsate; FB = Field blank; D = Duplicate; TB = Trip blank; EB = Equipment blank; SB=Source blank; OTHER:

** Indicates sample underwent Full validation

	Client ID	Lab ID	Matrix	Date
1	EKB200022**	AZ12342**	Water	03/10/15
2	EKB200023	AZ12343	Water	03/10/15
3	1			
4				
5				
6				
7				
8				
9				
10				

Notes:

	150317A						

LDC #: 34041A8

VALIDATION FINDINGS CHECKLIST

Reviewer: FT
2nd Reviewer: [illegible]

Method: ✓ GC ____ HPLC

Validation Area	Yes	No	NA	Findings/Comments
I. Technical holding times				
All technical holding times were met.	✓			
Cooler temperature criteria was met.	✓			
II. Initial calibration				
Did the laboratory perform a 5 point calibration prior to sample analysis?	✓			
Was a linear fit used for evaluation? If yes, were all percent relative standard deviations (%RSD) ≤ 20%?	✓			
Was a curve fit used for evaluation? If Yes, what was the acceptance criteria used?		✓		
Did the initial calibration meet the curve fit acceptance criteria?			✓	
Were the RT windows properly established?	✓			
IV. Initial calibration verification				
What type of initial calibration verification calculation was performed? ____%D or ____%R	✓			
Was an initial calibration verification standard analyzed after each ICAL for each instrument?	✓			
Were all percent differences (%D) ≤ 20%.0 or percent recoveries 80-120%?	✓			
V. Continuing calibration				
What type of continuing calibration calculation was performed? ____%D or ____%R	✓			
Was a continuing calibration analyzed daily?	✓			
Were all percent differences (%D) ≤ 20%.0 or percent recoveries 80-120%?	✓			
Were all the retention times within the acceptance windows?	✓			
VI. Blanks				
Was a method blank associated with every sample in this SDG?	✓			
Was a method blank analyzed for each matrix and concentration?	✓			
Was there contamination in the method blanks? If yes, please see the Blanks validation completeness worksheet.		✓		
VII. Surrogate spikes				
Were all surrogate %R within the QC limits?	✓			
If the percent recovery (%R) of one or more surrogates was outside QC limits, was a reanalysis performed to confirm %R?			✓	
If any %R was less than 10 percent, was a reanalysis performed to confirm %R?			✓	
VIII. Matrix spike/Matrix spike duplicates				
Were a matrix spike (MS) and matrix spike duplicate (MSD) analyzed for each matrix in this SDG? If no, indicate which matrix does not have an associated MS/MSD. Soil / Water.			✓	
Was a MS/MSD analyzed every 20 samples of each matrix?			✓	
Were the MS/MSD percent recoveries (%R) and the relative percent differences (RPD) within the QC limits?			✓	

LDC #: 34041A3

VALIDATION FINDINGS CHECKLIST

Reviewer: FT
2nd Reviewer: [illegible]

Validation Area	Yes	No	NA	Findings/Comments
IX. Laboratory control samples				
Was an LCS analyzed for this SDG?	✓			
Was an LCS analyzed per extraction batch?	✓			
Were the LCS percent recoveries (%R) and relative percent difference (RPD) within the QC limits?	✓			
X. Regional Quality Assurance and Quality Control				
Were performance evaluation (PE) samples performed?			✓	
Were the performance evaluation (PE) samples within the acceptance limits?			✓	
XI. Target compound identification				
Were the retention times of reported detects within the RT windows?	✓			
XII. Compound quantitation/CRQLs				
Were compound quantitation and CRQLs adjusted to reflect all sample dilutions and dry weight factors applicable to level IV validation?	✓			
XIII. System performance				
System performance was found to be acceptable.	✓			
XIV. Overall assessment of data				
Overall assessment of data was found to be acceptable.	✓			
XVI. Field duplicates				
Field duplicate pairs were identified in this SDG.		✓		
Target compounds were detected in the field duplicates.			✓	
XVII. Field blanks				
Field blanks were identified in this SDG.		✓		
Target compounds were detected in the field blanks.			✓	

LDC #: 34041A8

VALIDATION FINDINGS WORKSHEET
Initial Calibration Calculation Verification

Reviewer: FT
2nd Reviewer: [illegible]

METHOD: GC X HPLC _____

The calibration factors (CF), average CF, and relative standard deviation (%RSD) were recalculated for compounds identified below using the following calculations:

CF = A/C
average CF = sum of the CF/number of standards
%RSD = 100 * (S/X)

Where:
A = Area of compound
C = Concentration of compound
S = Standard deviation of calibration factors
X = Mean of calibration factors

#	Standard ID	Calibration Date	Compound	Reported (CF4 std=400)	Recalculated (CF4 std=400)	Reported Average CF (Initial)	Recalculated Average CF (Initial)	Reported %RSD	Recalculated %RSD
1	ICAL	1/21/2015	Diesel C10-C24	1223803	1223803	1257627	1257627	3.5	3.5
	Apollo								

LDC #: 34041A8

VALIDATION FINDINGS WORKSHEET
Continuing Calibration Results Verification

Page: 1 of 1
Reviewer: [illegible]
2nd Reviewer: [illegible]

METHOD: GC ✓ HPLC ____

The percent difference (%D) of the initial calibration average Calibration Factors (CF) and the continuing calibration CF were recalculated for the compounds identified below using the following calculation:

% Difference = 100 * (ave. CF -CF)/ave.CF

Where: ave. CF = initial calibration average CF
CF = continuing calibration CF
A = Area of compound
C = Concentration of compound

#	Standard ID	Calibration Date	Compound	Average CF(Ical)/ CCV Conc.	Reported CF/ Conc. CCV	Recalculated CF/ Conc. CCV	Reported %D	Recalculated %D
1	CCV	3/18/15	Diesel	1257630	1302090	1302090	3.5	3.5
2								
3								
4								

Comments: Refer to Continuing Calibration findings worksheet for list of qualifications and associated samples when reported results do not agree within 10.0% of the recalculated results.

LDC #: 34041A8

VALIDATION FINDINGS WORKSHEET
Surrogate Results Verification

Reviewer: [illegible]
2nd reviewer: [illegible]

METHOD: ✓ GC ___ HPLC

The percent recoveries (%R) of surrogates were recalculated for the compounds identified below using the following calculation:

% Recovery: SF/SS * 100

Where: SF = Surrogate Found
SS = Surrogate Spiked

Sample ID: # 1

Surrogate	Column/Detector	Surrogate Spiked	Surrogate Found	Percent Recovery	Percent Recovery	Percent Difference
				Reported	Recalculated	
octacosane		150.0	130.75 J	87.2	87.2	0
o-Terphenyl		↓	93.968	62.7	62.7	0

Sample ID: _____

Surrogate	Column/Detector	Surrogate Spiked	Surrogate Found	Percent Recovery	Percent Recovery	Percent Difference
				Reported	Recalculated	

Sample ID: _____

Surrogate	Column/Detector	Surrogate Spiked	Surrogate Found	Percent Recovery	Percent Recovery	Percent Difference
				Reported	Recalculated	

LDC #: 3404 1A8

VALIDATION FINDINGS WORKSHEET

Laboratory Control Sample/Laboratory Control Sample Duplicates Results Verification

Reviewer: FZ

2nd Reviewer: [illegible]

METHOD: ✓ GC __HPLC

The percent recoveries (%R) and relative percent differences (RPD) of the laboratory control sample and laboratory control sample duplicate were recalculated for the compounds identified below using the following calculation:

%Recovery = 100 * (SSC/SA)
RPD =(({SSCLCS - SSCLCSD} * 2) / (SSCLCS + SSCLCSD))*100

Where SSC = Spiked sample concentration
LCS = Laboratory Control Sample
SA = Spike added
LCSD = Laboratory Control Sample duplicate

LCS/LCSD samples: 150317A LCS

Compound	Spike Added (ug/L)		Spike Sample Concentration (ug/L)		LCS Percent Recovery		LCSD Percent Recovery		LCS/LCSD RPD	
	LCS	LCSD	LCS	LCSD	Reported	Recalc.	Reported	Recalc.	Reported	Recalc.
Gasoline (8015)										
Diesel (8015)	2000	NA	1850	NA	92.5	92.5				
Benzene (8021B)										
Methane (RSK-175)										
2,4-D (8151)										
Dinoseb (8151)										
Naphthalene (8310)										
Anthracene (8310)										
HMX (8330)										
2,4,6-Trinitrotoluene (8330)										

Comments: Refer to Laboratory Control Sample/Laboratory Control Sample Duplicate findings worksheet for list of qualifications and associated samples when reported results do not agree within 10.0% of the recalculated results.

LDC #: 34041A8

VALIDATION FINDINGS WORKSHEET
Sample Calculation Verification

Reviewer: F7
2nd Reviewer: ✓

METHOD: ✓ GC __ HPLC

Y N N/A Were all reported results recalculated and verified for all level IV samples?
Y N N/A Were all recalculated results for detected target compounds within 10% of the reported results?

Concentration= (A)(Fv)(Df) / (RF)(Vs or Ws)(%S/100)

A= Area or height of the compound to be measured
Fv= Final Volume of extract
Df= Dilution Factor
RF= Average response factor of the compound In the initial calibration
Vs= Initial volume of the sample
Ws= Initial weight of the sample
%S= Percent Solid

Example:

Sample ID. LCS Compound Name TPH-DRU

Concentration = 837955285 (5) (1000) / 1257627 (1000)(2)

= 1670 ug/L

#	Sample ID	Compound	Reported Concentrations ( )	Recalculated Results Concentrations ( )	Qualifications

Comments:

Appendix L

Data Quality Assessment Report

LABORATORY DATA CONSULTANTS, INC.
2701 Loker Ave. West, Suite 220, Carlsbad, CA 92010 Bus: 760-827-1100 Fax: 760-827-1099

Element Environmental LLC
98-030 Hekaha Street, Unit 9
Aiea, Hawaii 96701
ATTN: Mr. Marvin Heskett

June 2, 2015

SUBJECT: **Data Quality Assessment Report**
Site Inspection for
Underground Storage Tank (UST) KB-100
Marine Corps Base Motor Pool
Marine Corps Base Hawaii (MCBH)
Kaneohe, Hawaii

Dear Mr. Heskett,

Enclosed is the Data Quality Assessment Report, Site Inspection for Underground Storage Tank (UST) KB-100, Marine Corps Base Motor Pool, Marine Corps Base Hawaii (MCBH), Kaneohe, Hawaii.

We appreciate this opportunity to support Element Environmental in the performance of this project. Please feel free to call me at (760) 827-1100 if you have any questions.

Please feel free to contact us if you have any questions.

Sincerely,

Andrew Kong
Project Manager/Senior Chemist

DATA QUALITY ASSESSMENT REPORT

SITE INSPECTION FOR
UNDERGROUND STORAGE TANK (UST) KB-100
MARINE CORPS BASE MOTOR POOL
MARINE CORPS BASE HAWAII (MCBH)
KANEOHE, HAWAII

June 2, 2015

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GLOSSARY

CTO	Contract Task Order
DL	Detection Limit
DOD	Department of Defense
DQAR	Data Quality Assessment Report
DRO	Diesel Range Organics
DUP	Duplicate
EB	Equipment Blank
FD	Field Duplicate
ICB/CCB	Initial and Continuing Calibration Blanks
LCS/LCSD	Laboratory Control Sample / Laboratory Control Sample Duplicate
LDC	Laboratory Data Consultants, Inc
LOD	Limit of Detection
LOQ	Limit of Quantitation
MS/MSD	Matrix Spike / Matrix Spike Duplicate
ORO	Oil Range Organics
PARCCS	Precision, Accuracy, Representativeness, Comparability, Completeness, Sensitivity
PE	Performance Evaluation Sample
PQO	Project Quality Objectives
QAPP	Quality Assurance Project Plan
QA/QC	Quality Assurance/Quality Control
QSM	Quality Systems Manual
RB	Rinsate Blank
RPD	Relative Percent Difference
RRF	Relative Response Factor
SDG	Sample Delivery Group
SOW	Statement of Work
TPH	Total Petroleum Hydrocarbons
VOC	Volatile Organic Compound
%D	Percent Difference
%R	Percent Recovery
%RSD	Percent Relative Standard Deviation
mg/Kg	Milligrams per Kilogram
ug/L	Micrograms per Liter

1.0 INTRODUCTION

A site inspection was conducted at the Underground Storage Tank (UST) KB-100 on Marine Corps Base Hawaii (MCBH) Motor Pool, in Kaneohe,, Hawaii. This part of the site inspection included the collection and analyses of 28 environmental and quality control (QC) samples. The analyses were performed by the following methods:

Volatile Organic Compounds (VOCs) by US Environmental Protection Agency (EPA) SW-846 Method 8260B
Total Petroleum Hydrocarbons (TPH) as Extractables by EPA SW-846 Method 8015C
Lead by EPA SW-846 Method 6020A

Analytical services were provided by APPL, Inc. The samples were grouped into sample delivery groups (SDGs) as received by the laboratory. The environmental samples are associated with quality assurance and quality control (QA/QC) samples designed to document the data quality of the entire SDG or a sub-group of samples within a SDG. Table I is a cross-reference table listing each sample, analysis, SDG, collection date, laboratory sample number, matrix, and validation level.

Approximately ten percent of the analytical data were validated according to the Naval Facilities Engineering Command (NAVFAC) Pacific Full data validation procedures and ninety percent of the analytical data were validated according to NAVFAC Pacific Standard data validation procedures. The analytical data were evaluated QA/QC based on the *Final Work Plan (WP) for Site Inspection (SI) for Underground Storage Tank* (UST) *KB-100, Marine Corps Base Hawaii Motor Pool, Marine Corps Base Hawaii, Kaneohe, Hawaii* (June 2014), the *NAVFAC Pacific Environmental Restoration (ER) Program Data Validation Procedures (2007),* and the *Department of Defense Quality Systems Manual (DoD QSM) for Environmental Laboratories, Version 5.0 (DoD 2013).*

This data quality assessment report (DQAR) summarizes the QA/QC evaluation of the data according to precision, accuracy, representativeness, completeness, comparability, and sensitivity (PARCCS) relative to the project quality objectives (PQOs). This report provides a quantitative and qualitative assessment of the data and identifies potential sources of error, uncertainty, and bias that may affect the overall usability.

The DQAR evaluates and summarizes the results of QA/QC data validation for the entire sampling program. Each analytical fraction has a separate section for each of the PARCCS criteria. These sections interpret specific QC deviations and their effects on both individual data points and the analyses as a whole. Section 6 presents a summary of the PARCCS criteria by comparing quantitative parameters with acceptability criteria defined in the PQOs. Qualitative PARCCS criteria are also summarized in this section.

Precision and Accuracy of Environmental Data
Environmental data quality depends on sample collection procedures, analytical methods and instrumentation, documentation, and sample matrix properties. Both sampling procedures and laboratory analyses contain potential sources of uncertainty, error, and/or bias, which affect the overall quality of a measurement. Errors in sample data may result from incomplete equipment decontamination, inappropriate sampling techniques, sample heterogeneity, improper filtering, and improper preservation. The accuracy of analytical results is dependent on selecting appropriate analytical methods, maintaining equipment properly, and complying with QC requirements. The sample matrix also is an important factor in the ability to obtain precise and accurate results within a given media.

Environmental and laboratory QA/QC samples assess the effects of sampling procedures and evaluate laboratory contamination, laboratory performance, and matrix effects. QA/QC samples include: trip blanks (TBs), equipment blanks (EBs), rinsate blanks (RBs), method blanks, laboratory control samples (LCSs), surrogate spikes, matrix spike/matrix spike duplicates (MS/MSDs), and field duplicates (FDs).

Before conducting the PARCCS evaluation, the analytical data were validated according to the NAVFAC Pacific Data Validation Procedures and the DoD QSM. Samples not meeting the Project Procedures Manual acceptance criteria were qualified with a flag, an abbreviation indicating a deficiency with the data. The following are flags used in data validation.

J — Estimated The associated numerical value is an estimated quantity. The analyte was detected but the reported value may not be accurate or precise. The "J" qualification indicates the data fell outside the QC limits, but the exceedance was not sufficient to cause rejection of the data.

R — Rejected The data is unusable (the compound or analyte may or may not be present). Use of the "R" qualifier indicates a significant variance from functional guideline acceptance criteria. Either resampling or reanalysis is necessary to determine the presence or absence of the rejected analyte.

U — Nondetected Analyses were performed for the compound or analyte, but it was not detected. The "U" designation is also applied to suspected blank contamination. The "U" flag is used to qualify any result detected in an environmental sample at a concentration less than 10 times the value of the concentration in any associated blank for common laboratory contaminants and less than 5 times the concentration in any associated blank for all other contaminants.

UJ — Estimated/Nondetected Analyses were performed for the compound or analyte, but it was not detected and the sample quantitation or detection limit is an estimated quantity due to poor accuracy or precision. This qualification is also used to flag possible false negative results in the case where low bias in the analytical system is indicated by low calibration response, surrogate, internal standard, or other spike recovery.

Once the data are reviewed and qualified according to the NAVFAC Pacific Data Validation Procedures and the DoD QSM, the data set is then evaluated using PARCCS criteria. PARCCS criteria provide an evaluation of overall data usability. The following is a discussion of PARCCS criteria as related to the PQOs.

Precision is a measure of the agreement or reproducibility of analytical results under a given set of conditions. It is a quantity that cannot be measured directly but is calculated from percent recovery data.

Precision is expressed as the relative percent difference (RPD):

$$RPD = (D1-D2)/\{1/2(D1+D2)\} \times 100$$

Where:
D1 and D2 = the reported concentrations for sample and duplicate analyses.

Precision is primarily assessed by calculating a RPD from the percent recoveries of the spiked compounds for each sample in the MS/MSD pair. In the absence of a MS/MSD pair, a laboratory duplicate or LCS/LCSD pair can be analyzed as an alternative means of assessing precision. In some cases, samples from multiple SDGs were within one QC batch and therefore are associated with the same laboratory QC samples. An additional measure of sampling precision was obtained by collecting and analyzing field triplicate samples, which were compared using the %RSD result as the evaluation criteria.

MS and MSD samples are field samples spiked by the laboratory with target analytes prior to preparation and analysis. These samples measure the overall efficiency of the analytical method in recovering target analytes from an environmental matrix. A LCS is similar to a MS/MSD sample in that the LCS is spiked with the same target analytes prior to preparation and analysis. However, the LCS is prepared using a controlled interference-free matrix instead of a field sample aliquot. Laboratory reagent water is used to prepare aqueous LCS. The LCS measures laboratory efficiency in recovering target analytes from either a solid or aqueous matrix in the absence of matrix interferences.

Laboratory and field sampling precision are further evaluated by calculating RPDs for field duplicate samples. The sampler collects two field samples at the same location and under identically controlled conditions. The laboratory then analyzes the samples under identical conditions.

An RPD outside the numerical QC limit in either MS/MSD, LCS/LCSD, or field duplicate samples indicates imprecision. Imprecision is the variance in the consistency with which the laboratory arrives at a particular reported result. Thus, the actual analyte concentration may be higher or lower than the reported result.

Possible causes of poor precision include sample matrix interference, improper sample collection or handling, inconsistent sample preparation, and poor instrument stability. In some duplicate sets, results maybe reported at levels below the reporting limit or non-detected. Since these values are considered to be estimates, RPD exceedances from these duplicates, do not suggest a significant impact on the data quality.

Accuracy is a measure of the agreement of an experimental determination and the true value of the parameter being measured. It is used to identify bias in a given measurement system. Recoveries outside acceptable QC limits may be caused by factors such as instrumentation, analyst error, or matrix interference. Accuracy is assessed through the analysis of MS, MSD, LCS, and samples containing surrogate spikes. In some cases, samples from multiple SDGs were within one QC batch and therefore are associated with the same laboratory QC samples. Surrogate spikes are either isotopically labeled compounds or compounds that are not typically detected in the samples. Surrogate spikes are added to every blank, environmental sample, MS/MSD, and standard, for all applicable organic analyses. Accuracy of inorganic analyses is determined using the percent recoveries of MS and LCS analyses.

Percent recovery (%R) is calculated using the following equation:

$$\%R = (A-B)/C \times 100$$

Where:
A = measured concentration in the spiked sample
B = measured concentration of the spike compound in the unspiked sample
C = concentration of the spike

The percent recovery of each analyte spiked in MS/MSD samples, LCS, and surrogate compounds added to environmental samples is evaluated against the acceptance criteria specified by the previously noted documents. Spike recoveries outside the acceptable QC accuracy limits provide an indication of bias, where the reported data may overestimate or underestimate the actual concentration of compounds detected or quantitation limits reported for environmental samples.

Representativeness is a qualitative parameter that expresses the degree to which the sample data are characteristic of a population and is evaluated by reviewing the QC results of blank samples and holding times. Positive detects of compounds in the blank samples identify compounds that may have been introduced into the samples during sample collection, transport, preparation, or analysis. The QA/QC blanks collected and analyzed are method blanks, initial and continuing calibration blanks (ICB/CCBs),

TBs, EBs, and RBs.

A method blank is a laboratory grade water or solid matrix that contains the method reagents and has undergone the same preparation and analysis as the environmental samples. The method blank provides a measure of the combined contamination derived from the laboratory source water, glassware, instruments, reagents, and sample preparation steps. Method blanks are prepared for each sample of a similar matrix extracted by the same method at a similar concentration level.

For inorganic analyses, ICB/CCBs consist of acidified laboratory grade water, which are injected at the beginning and at a regular frequency during each 12 - hour sample analysis run. These blanks estimate residual contaminants from the previous sample or standards analysis and measure baseline shifts that commonly occur in emission and absorption spectroscopy.

Trip blanks are used to identify possible volatile organic contamination introduced into the sample during transport. A trip blank is a sample bottle filled in the laboratory with reagent-grade water and preserved to a pH less than 2 with hydrochloric acid. It is transported to the site, stored with the sample containers, and returned unopened to the laboratory for analysis.

Equipment blanks consist of analyte-free water poured over or through the sample collection equipment. The water is collected in a sample container for laboratory analysis. These blanks are collected after the sampling equipment is decontaminated and measure efficiency of the decontamination procedure.

Rinsate blanks consist of analyte-free source water stored at the sample collection site. The water is collected from each source water used during each sampling event.

Contaminants found in both the environmental sample and a blank sample are assumed to be laboratory artifacts if the concentration in the environmental sample is less than 10 times the blank value for common laboratory contaminants; methylene chloride, acetone, and 2-butanone or 5 times the blank value for other laboratory contaminants.

Holding times are evaluated to assure that the sample integrity is intact for accurate sample preparation and analysis. Holding times will be specific for each method and matrix analyzed. Holding time exceedances can cause loss of sample constituents due to biodegradation, precipitation, volatization, and chemical degradation.

Comparability is a qualitative expression of the confidence with which one data set may be compared to another. It provides an assessment of the equivalence of the analytical results to data obtained from other analyses. It is important that data sets be comparable if they are used in conjunction with other data sets. The factors affecting comparability include the following: sample collection and handling techniques, matrix type, and analytical method. If these aspects of sampling and analysis are carried out according to standard analytical procedures, the data are considered comparable. Comparability is also dependent upon other PARCCS criteria, because only when precision, accuracy, and representativeness are known can data sets be compared with confidence.

Completeness is defined as the percentage of acceptable sample results compared to the total number of sample results. Completeness is evaluated to determine if an acceptable amount of usable data were obtained so that a valid scientific site assessment can be completed. Completeness equals the total number of sample results for each fraction minus the total number of rejected sample results divided by the total number of sample results multiplied by 100. As specified in the PQOs, the goal for completeness for target analytes in each analytical fraction is 90 percent.

Percent completeness is calculated using the following equation:

$\%C = (T - R)/T \times 100$

Where:
%C = percent completeness
T = total number of sample results
R = total number of rejected sample results

Completeness is also determined by comparing the planned number of samples per method and matrix as specified in the project planning document, with the number determined above.

Sensitivity is the ability of an analytical method or instrument to discriminate between measurement responses representing different concentrations. This capability is established during the planning phase to meet the DQOs. It is important that calibration requirements, detection limits (DLs), and LOQs presented in the QAPP are achieved and that target analytes can be detected at concentrations necessary to support the DQOs. In addition, sample results are compared to method blank, TB, EB, and RB results to identify potential effects of laboratory background and field procedures on sensitivity.

The following sections present a review of QC data for each analytical method.

2.0 VOLATILE ORGANIC COMPOUNDS

A total of 8 soil and 20 water samples were analyzed for VOCs by EPA SW-846 Method 8260B. All VOC data were assessed to be valid since none of the 952 total results were rejected due to holding time or QC exceedances. This section discusses the QA/QC supporting documentation as defined by the PARCCS criteria and evaluated based on the PQOs.

2.1 Precision and Accuracy

2.1.1 Instrument Calibration

Initial and continuing calibration results provide a means of evaluating accuracy within a particular SDG. Relative response factor (RRF), percent relative standard deviation (%RSD), and percent difference (%D) are the three major parameters used to measure the effectiveness of instrument calibration. RRF is a measure of the relative spectral response of an analyte compared to its internal standard. %RSD is an expression of the linearity of instrument response. %D is a comparison of a continuing calibration instrumental response with its initial response. %RSD and %D exceedances suggest routine instrumental anomalies, which typically impact all sample results for the affected compounds.

The coefficient of determination (r^2) in the initial calibration met the acceptance criteria of ≥ 0.990. The %Ds met the acceptance criteria of 20 percent in the initial and continuing calibration verification standards. The relative response factors met the acceptance criteria of 0.05 in the initial and continuing calibration standards.

As a result of %RSDs in the initial calibration outside of the acceptance criteria of 15 percent, the chloroform and vinyl chloride results in samples EKB100022, EKB100023, and TRIP BLANK-2 were qualified as detected estimated (J) or non-detected estimated (UJ). The details regarding the qualification of results are provided in the data validation reports.

2.1.2 Surrogates

No data were qualified based on surrogate non-conformances. The %Rs were evaluated against the acceptance criteria.

2.1.3 MS/MSD Samples

As a result of non-compliant MS/MSD %Rs and RPDs, the chloromethane, cis-1,3-dichloropropene, styrene, and vinyl chloride results in sample EKB100008 and the cis-1,2-dichloroethene, trans-1,2-dichloroethene, and vinyl chloride results in sample EKB100020 were qualified as detected estimated (J) or non-detected estimated (UJ). The details regarding the qualification of results are provided in the data validation reports.

2.1.4 LCS Samples

No data were qualified based on LCS non-conformances. The %Rs were evaluated against the acceptance criteria.

2.1.5 Internal Standards

No data were qualified based on internal standard non-conformances. The areas and retention times were evaluated against the acceptance criteria.

2.1.6 FD Samples

The field duplicate samples were evaluated for acceptable precision with RPDs for the compounds. The associated data validation narratives provided details regarding criteria exceeded. Sample data were not qualified on the basis of field duplicate precision.

2.1.7 Performance Evaluation Samples

Performance Evaluation (PE) samples were not performed for the sampling event.

2.1.8 Compound Quantitation and Target Identification

All compound quantitation and target identifications were found to be acceptable.

In instances where data exceeded the calibration range and was subsequently diluted by the laboratory, data was qualified as unusable by the validators in order to yield only one complete set of data for a given sample.

2.2 Representativeness

2.2.1 Holding Times

The evaluation of holding times to verify compliance with the method was conducted. All holding times were met.

2.2.2 Blanks

Method blanks, TBs, EBs, and RBs were analyzed to evaluate representativeness. The concentration for an individual target compound in any of the types of QA/QC was used for data qualification.

If contaminants were detected in a blank, corrective actions were made for the chemical analytical data during data validation. The corrective action consisted of amending the laboratory reported results for organic compounds based on the following criteria. The validation qualifier codes used in the blank summary tables are described below.

Results Below or Above the LOQ If a sample result for the blank contaminant was less than the LOQ or greater than the sample LOQ and less than 10 times the blank value for common contaminants or 5 times the blank value for other contaminants, the sample result for the blank contaminant was amended as an estimated non-detect at the concentration reported in the sample results.

No Action If a sample result for the blank contaminant was greater than 10 times the blank value for common contaminants or 5 times the blank value for other contaminants, the result was not amended.

2.2.2.1 Method Blanks

No contaminants were detected in the method blanks for this analysis.

2.2.2.2 TBs

No contaminants were detected in the trip blanks for this analysis.

2.2.2.3 EBs and RBs

No contaminants were detected in the equipment or rinsate blanks for this analysis.

2.3 Comparability

The laboratory used standard analytical methods for all of the analyses. In all cases, the detection limits (DLs) attained were below the LOQs. Target compounds detected below the LOQs flagged (J) by the laboratory should be considered estimated. The comparability of the data is regarded as acceptable.

2.4 Completeness

The completeness level attained for VOC field samples was 100 percent. This percentage was calculated as the total number of accepted sample results divided by the total number of sample results multiplied by 100.

2.5 Sensitivity

The calibration was evaluated for instrument sensitivity and was determined to be technically acceptable. All laboratory DLs and LOQs met the specified requirements described in the QAPP.

3.0 TOTAL PETROLEUM HYDROCARBONS AS EXTRACTABLES

A total of 8 soil and 15 water samples were analyzed for Diesel Range Organics (DRO) and Oil Range Organics (ORO) by EPA SW-846 Method 8015C. All TPH as extractables data were assessed to be valid since none of the 46 total results were rejected based on holding time or QC exceedances. This section discusses the QA/QC supporting documentation as defined by the PARCCS criteria and evaluated based on the PQOs.

3.1 Precision and Accuracy

3.1.1 Instrument Calibration

As previously discussed in Section 2.1.1, initial and continuing calibration results provide a means of evaluating accuracy.

The %RSDs in the initial calibration and the %Ds in the initial and continuing calibration verifications met the acceptance criteria of 20 percent.

3.1.2 Surrogates

No data were qualified based on surrogate non-conformances. The %Rs were evaluated against the acceptance criteria.

3.1.3 MS/MSD Samples

No data were qualified based on MS/MSD non-conformances. The %Rs and RPDs were evaluated against the acceptance criteria.

3.1.4 LCS Samples

No data were qualified due to non-compliant LCS %Rs. In instances of high LCS %Rs, the associated results were reported as non-detected.

3.1.5 FD Samples

No TPH as extractables were detected in the field duplicates. The field duplicates are identified in the data validation reports.

3.1.6 Performance Evaluation Samples

PE samples were not performed for the sampling event.

3.1.7 Compound Quantitation and Target Identification

All compound quantitation and target identifications were found to be acceptable.

3.2 Representativeness

3.2.1 Holding Times

The evaluation of holding times to verify compliance with the method was conducted. All holding times were met.

3.2.2 Blanks

As previously discussed in Section 2.2.2, method blanks, EBs, and RBs were analyzed to evaluate representativeness.

3.2.2.1 Method Blanks

No contaminants were detected in the method blanks for this analysis.

3.2.2.2 EBs and RBs

No contaminants were detected in the equipment or rinsate blanks for this analysis.

3.3 Comparability

The laboratory used standard analytical methods for all of the analyses. In all cases, the DLs attained were below the LOQs. Target compounds detected below the LOQs flagged (J) by the laboratory should be considered estimated. The comparability of the data is regarded as acceptable.

3.4 Completeness

The completeness level attained for TPH as extractable field samples was 100 percent. This percentage was calculated as the total number of accepted sample results divided by the total number of sample results multiplied by 100.

3.5 Sensitivity

The calibration was evaluated for instrument sensitivity and was determined to be technically acceptable. All laboratory DLs and LOQs met the specified requirements described in the QAPP.

4.0 LEAD

A total of 8 soil and 15 water samples were analyzed for lead by EPA SW-846 Method 6020A. All metals data were assessed to be valid since none of the 23 total results were rejected based on holding time or QC exceedances. This section discusses the QA/QC supporting documentation as defined by the PARCCS criteria and evaluated based on the DQOs.

4.1 Precision and Accuracy

4.1.1 Instrument Calibration

Initial and continuing calibration verification results provide a means of evaluating accuracy within a particular SDG. Correlation coefficient (r) and percent recovery (%R) are the two major parameters used to measure the effectiveness of instrument calibration. The correlation coefficient indicates the linearity of the calibration curve. %R is used to verify the ongoing calibration acceptability of the analytical system. The most critical of the two calibration parameters, r, has the potential to affect data accuracy across an SDG when it is outside the acceptable QC limits. %R exceedances suggest more routine instrumental anomalies, which typically impact all sample results for the affected analytes.

The correlation coefficients in the initial calibrations and percent recoveries in the continuing calibration verifications were within the acceptance criteria of $\geq$ 0.995 and 90-110 percent, respectively.

4.1.2 MS/MSD Samples

No data were qualified based on MS/MSD non-conformances. The %Rs and RPDs were evaluated against the acceptance criteria.

4.1.3 LCS Samples

No data were qualified based on LCS non-conformances. The %Rs were evaluated against the acceptance criteria.

4.1.4 Internal Standards

No data were qualified based on internal standard non-conformances. The %Rs were evaluated against the acceptance criteria for samples which underwent Full validation.

4.1.5 ICP Serial Dilution

No data were qualified based on ICP serial dilution non-conformances. The %Ds were evaluated against the acceptance criteria.

4.1.6 FD Samples

The field duplicate samples were evaluated for acceptable precision with RPDs for the compounds. All RPDs were within acceptance criteria.

4.1.7 Performance Evaluation Samples

PE samples were not performed for the sampling event.

4.1.8 Sample Result Verification

All sample results were found to be acceptable.

4.2 Representativeness

4.2.1 Holding Times

The evaluation of holding times to verify compliance with the method was conducted. All holding times were met.

4.2.2 Blanks

As previously discussed in Section 2.2.2, method blanks, ICB/CCBs, EBs, and RBs were analyzed to evaluate representativeness.

4.2.2.1 Method and Calibration Blanks

No contaminants were detected in the method or calibration blanks for this analysis.

4.2.2.2 EBs and RBs

No contaminants were detected in the equipment or rinsate blanks for this analysis.

4.3 Comparability

The laboratory used standard analytical methods for all of the analyses. In all cases, the DLs attained were below the LOQs. Target compounds detected below the LOQs flagged (J) by the laboratory should be considered estimated. The comparability of the data is regarded as acceptable.

4.4 Completeness

The completeness level attained for metal field samples was 100 percent. This percentage was calculated as the total number of accepted sample results divided by the total number of sample results multiplied by 100.

4.5 Sensitivity

The calibration was evaluated for instrument sensitivity and was determined to be technically acceptable. All laboratory DLs and LOQs met the specified requirements described in the QAPP.

5.0 VARIANCES IN ANALYTICAL PERFORMANCE

The laboratory used standard analytical methods for all of the analyses throughout the project. No systematic variances in analytical performance were noted according to the laboratory SOW.

6.0 SUMMARY OF PARCCS CRITERIA

The validation reports present the PARCCS results for all SDGs. Each PARCCS criterion is discussed in detail in the following sections.

6.1 Precision and Accuracy

Precision and accuracy were evaluated using data quality indicators such as calibration, MS/MSD, LCS, and surrogates. The precision and accuracy of the data set were considered acceptable with the exceptions noted in Sections 2.1.1 and 2.1.3.

6.2 Representativeness

All samples for each method and matrix were evaluated for holding time compliance. All samples were associated with a method blank in each individual SDG. The representativeness of the project data is considered acceptable.

6.3 Comparability

Sampling frequency requirements were met. The laboratory used standard analytical methods for their analyses. The analytical results were reported in correct standard units. Holding times, sample preservation, and sample integrity were within QC criteria. The overall comparability is considered acceptable.

6.4 Completeness

Of the 1,021 total analytes reported, none of the sample results were rejected. The completeness for all SDGs is as follows:

Parameter	Total Analytes	No. of Rejects	% Completeness
VOCs	952	0	100
TPH as Extractables	46	0	100
Lead	23	0	100
Total	**1,021**	**0**	**100**

The completeness percentage based on rejected data met the 90 percent PQO goal.

6.5 Sensitivity

Sensitivity was achieved by the laboratory to support the DQOs. Calibration concentrations, DLs, and LOQs met the project requirements.

Table I

Validation Sample Table

SDG	Client Sample ID	Lab Sample ID	Matrix	QC Type	Sample Date	Validation Level	VOCs (8260B)	Pb (6020A)	TPH-E (8015C)
75351	EKB100001	AZ09545	Soil		20150113	Standard	X	X	X
75351	EKB100002	AZ09546	Soil		20150113	Standard	X	X	X
75351	EKB100003	AZ09547	Soil		20150113	Full	X	X	X
75351	EKB100004	AZ09548	Soil		20150113	Standard	X	X	X
75351	EKB100005	AZ09549	Soil	FD1	20150113	Standard	X	X	X
75351	EKB100006	AZ09550	Soil	FD1	20150113	Standard	X	X	X
75351	EKB100007	AZ09551	Soil		20150113	Standard	X	X	X
75351	EKB100008	AZ09552	Soil		20150113	Standard	X	X	X
75351	EKB100009	AZ09553	Water	EB	20150113	Standard	X	X	X
75351	EKB100010	AZ09554	Water	RB	20150113	Standard	X	X	X
75351	TRIP BLANK-01	AZ09555	Water	TB	20150113	Standard	X		
75427	EKB100011	AZ09997	Water		20150120	Standard	X	X	X
75427	EKB100012	AZ09998	Water		20150120	Standard	X	X	X
75427	EKB100013	AZ09999	Water	FD2	20150120	Standard	X	X	X
75427	EKB100014	AZ10000	Water	FD2	20150120	Standard	X	X	X
75427	EKB100015	AZ10001	Water		20150120	Full	X	X	X
75427	EKB100016	AZ10002	Water		20150120	Standard	X	X	X
75427	EKB100017	AZ10003	Water		20150120	Standard	X	X	X
75427	EKB100018	AZ10004	Water		20150120	Standard	X	X	X
75427	EKB100019	AZ10005	Water		20150120	Standard	X	X	X
75427	EKB100020	AZ10006	Water		20150120	Standard	X	X	X
75427	EKB100021	AZ10007	Water	RB	20150120	Standard	X	X	X
75427	Trip Blank - 02	AZ10008	Water	TB	20150122	Standard	X		
75427	Trip Blank - 03	AZ10009	Water	TB	20150122	Standard	X		
75427	Trip Blank - 04	AZ10010	Water	TB	20150122	Standard	X		
75798	EKB100022	AZ12342	Water		20150310	Full	X	X	X
75798	EKB100023	AZ12343	Water		20150310	Standard	X	X	X
75798	TRIP BLANK-2	AZ12344	Water	TB	20150310	Standard	X		