

**ExxonMobil  
Environmental Services Company**

4096 Piedmont Avenue #194  
Oakland, California 94611  
510 547 8196 Telephone  
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**Jennifer C. Sedlachek**  
Project Manager

**ExxonMobil**

September 10, 2014

**RECEIVED**

By Alameda County Environmental Health at 10:02 am, Sep 11, 2014

Ms. Karel Detterman  
Alameda County Health Care Services Agency  
Department of Environmental Health  
1131 Harbor Bay Parkway, Room 250  
Alameda, California 94502-6577

**RE: Former Mobil RAS #99105/6301 San Pablo Avenue, Oakland, California.**

Dear Ms. Detterman:

Attached for your review and comment is a copy of the letter report entitled *Well Installation and Feasibility Study*, dated September 10, 2014, for the above-referenced site. The report was prepared by Cardno ERI of Petaluma, California, and details activities at the subject site.

I declare, under penalty of perjury, that the information and/or recommendations contained in the attached document or report is true and correct to the best of my knowledge.

If you have any questions or comments, please contact me at 510.547.8196.

Sincerely,



Jennifer C. Sedlachek  
Project Manager

Attachment: Cardno ERI's *Well Installation and Feasibility Study*, dated September 10, 2014

cc: w/ attachment  
Mr. Leroy Griffin, Oakland Fire Department  
Messrs. On Dan and Nathan Lam

w/o attachment  
Mr. Greg Gurss, Cardno ERI



Cardno ERI  
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[www.cardnoeri.com](http://www.cardnoeri.com)

September 10, 2014  
Cardno ERI 2783C.R03

Ms. Jennifer C. Sedlachek  
ExxonMobil Environmental Services Company  
4096 Piedmont Avenue #194  
Oakland, California 94611

**SUBJECT**      **Well Installation and Feasibility Study**  
Former Mobil Service Station 99105  
6301 San Pablo Avenue, Oakland, California

Ms. Sedlachek:

At the request of ExxonMobil Environmental Services (EMES), on behalf of ExxonMobil Oil Corporation, Cardno ERI prepared this well installation and feasibility study for the subject site (Plate 1). Cardno ERI submitted the *Site Conceptual Model Update, Low-Threat Closure Evaluation, and Feasibility Study/Corrective Action Plan (CAP)*, dated October 25, 2012 (Cardno ERI, 2012), and the *Corrective Action Plan Addendum (CAP Addendum)*, dated September 24, 2013 (Cardno ERI, 2013a), proposing the installation of a well (MW6) in the vicinity of the former dispenser islands and the performance of DPE testing on well MW5 and newly-installed well MW6 to remediation hydrocarbon concentrations at the site. The Alameda County Health Care Services (ACEH) approved the proposed work and requested an additional work plan to outline the strategy and schedule for performance monitoring in groundwater and soil vapor in a letter dated September 24, 2013 (Appendix A). Cardno ERI submitted the *Second Addendum to Corrective Action Plan (Second CAP Addendum)*, dated December 12, 2013 (Cardno ERI, 2013b), proposing the installation of two monitoring wells (MW7 and MW8) in addition to the work proposed in the CAP and CAP Addendum. The work was approved in electronic correspondence dated July 9, 2014 (Appendix A).

## **SITE DESCRIPTION**

The site (Assessor's Parcel Number 16-1455-10) is located at 6301 San Pablo Avenue, on the northwest corner of San Pablo Avenue and 63<sup>rd</sup> Street, in Oakland, California (Plate 1). The site was operated as a Mobil service station from 1951 to 1980, then used as a rental car lot, and is currently an automobile oil change facility. Four 2,000-gallon gasoline USTs and one 350-gallon used-oil UST were present on the property. The tanks were not used after 1980 and were removed in 1994. The locations of the former USTs, former dispenser islands, groundwater monitoring wells, and select site features are shown on Plate 2.

The site is located at an elevation of approximately 42 feet above msl. Properties in the site vicinity are occupied by mixed-use residential and commercial developments. An elementary school is located across San Pablo Avenue to the east, residential properties are located to the west and south, and Saint Paul Primitive Baptist Church is located adjacent to the site to the southwest (Plate 2).

Additional site information, including geology, hydrogeology, and previous work, is presented in the CAP (Cardno ERI, 2012) and CAP Addendum (Cardno ERI, 2013a).

## **FIELD ACTIVITIES**

Cardno ERI collected soil vapor samples in tedlar bags from vapor wells VW1, VW3, VW4, and VW5 for screening purposes; installed and sampled three wells (MW6 through MW8); and used a mobile DPE remediation system to extract soil vapor and groundwater from wells MW5 and MW6. Cardno ERI performed the fieldwork in accordance with the CAP, CAP Addendum, Second CAP Addendum, Cardno ERI's standard field protocol (Appendix B), a site-specific health and safety plan, and applicable regulatory guidelines under the advisement of a professional geologist.

### **Pre-Drilling Activities**

Prior to drilling activities, Cardno ERI obtained well installation permits from the Alameda County Public Works Agency (Appendix C), notified Underground Service Alert, and contracted a private utility-locating company to locate underground utilities at the site. On August 11 and 15, 2014, Cardno ERI observed Gregg Drilling & Testing, Inc. (Gregg) clear locations for monitoring wells MW6 through MW8 to a depth of 5 feet bgs using hand tools. The location of wells MW7 and MW8 were adjusted from the proposed locations based on conflicts with overhead and subsurface utilities.

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### **Groundwater Monitoring Well Installation and Sampling**

On August 11 and 15, 2014, Cardno ERI observed Gregg install wells MW6 through MW8. The installation of well MW8 was delayed due to the presence of an inactive water pipe within the concrete core at the original location. Well MW7 was completed as a 2-inch diameter, Schedule 40 PVC well. Wells MW6 and MW8 were completed as 4-inch diameter, schedule 40 PVC wells. Select soil samples were preserved for laboratory analysis. Well construction details are presented on the boring logs in Appendix D and in Table 2.

On August 14, 2014, Cardno ERI developed wells MW6 and MW7. Well MW8 was not developed due to the delays associated with the installation, the pending feasibility test, and the pending report deadline. On August 18, 2014, the existing groundwater monitoring wells were gauged and wells MW6 through MW8 were purged and sampled in accordance with the field protocol included in Appendix B. Field data sheets are included in Appendix E. A groundwater elevation map is included as Plate 3.

Cardno ERI submitted groundwater and soil samples for analysis to a state-certified laboratory for the analyses listed in Tables 1A and 1B and 3, respectively, using the methods listed in the respective tables. Laboratory analytical reports are included in Appendix F. Select groundwater and soil analytical results are illustrated on Plates 4 and 5, respectively.

### **Site Survey**

On August 18, 2014, Cardno ERI observed Morrow Surveying survey the locations and elevations of the newly-installed wells. Survey data is included in Appendix G.

### **Dual-Phase Extraction Feasibility Test**

From August 18 to 22, 2014, Cardno ERI conducted two 2-hour individual-well DPE tests and an 86-hour multi-well DPE test. Wells MW5 and MW6 were used as the extraction wells. A trailer-mounted DPE system was used during the test. The DPE system consisted of an LRP connected to an air-water separator, pressure gauges, temperature gauges, and flow gauges. A catalytic oxidizer was used for vapor-phase abatement.

Vacuum was applied to each extraction well for a minimum of two hours during the tests. Induced vacuum was measured in surrounding wells VW1, VW3 through VW5, MW2, MW3, and MW5 through MW8 (excluding the active extraction wells) a minimum of once every two hours during the tests. Groundwater levels were monitored in wells MW2, MW3, and MW5 through MW8 (excluding the active extraction wells) prior to initiating the tests and a minimum of every four hours during the tests.

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Soil vapor samples were collected from the influent vapor stream at the beginning and end of each individual well test and once every eight hours during the multi-well test. An effluent sample was collected at the beginning of the multi-well test. Grab groundwater samples were collected from wells MW5 through MW8 at the end of feasibility testing.

Results of the feasibility tests are summarized in Tables 4 through 9.

### **Soil Vapor Monitoring**

On August 1 and 18, 2014, prior to feasibility testing, and on August 22, 2014, at the end of the feasibility tests, soil vapor samples were collected in tedlar bags from vapor wells VW1, VW3, VW4, and VW5. The vapor samples were analyzed in the field using a PID. PID readings are summarized in the following table.

#### **PID Readings**

Date	VW1	VW2	VW3	VW4	VW5
08/01/14	559 ppm	118 ppm	146 ppm	>7,000 ppm	500 ppm
08/18/14	317 ppm	1.9 ppm	85.8 ppm	1,780 ppm	395 ppm
08/22/14	62.0 ppm	0.4 ppm	122 ppm	>9,000 ppm	473 ppm

### **Waste Management**

The decontamination rinsate water and drill cuttings were temporarily stored on site in DOT-approved, sealed 55-gallon drums. On August 22, 2014, 160 gallons of water processed during feasibility testing were transported for recycling to InStrat, Inc., of Rio Vista, California. On August 29, 2014, 5 gallons of purge and decon water generated during well development and 25 gallons of purge and decon water generated during groundwater sampling were transported for recycling to InStrat, Inc. Disposal documentation is included in Appendix H. Disposal documentation for the soil waste generated during drilling is not currently available and will be submitted under separate cover.

## **RESULTS OF INVESTIGATION**

### **Site Geology and Hydrogeology**

Sediments observed during well installation primarily consisted of sand and clay with lesser amounts of silt to 18 feet bgs, the maximum depth investigated. Groundwater was encountered at 9 feet bgs in boring MW8. Groundwater was not encountered in borings MW6 or MW7. Boring logs are included in Appendix D.

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The groundwater flow direction at the site has historically been to the west toward well MW3, but was previously based on three data points. The groundwater flow direction with the newly-installed wells was outward from well MW5 and primarily towards the southwest (Plate 3).

### **Groundwater**

Approximately 160 gallons of water were extracted during the combined 90 hours of testing, resulting in an average groundwater flow rate of approximately 0.03 gpm. The calculated rate and observed groundwater drawdown indicates that groundwater extraction alone is not an effective remedial technology and Cardno ERI did not further analyze the hydraulic data collected during the tests.

Maximum dissolved-phase concentrations were reported in well MW5. Concentrations of TPHd and TPHg in well MW5 following the testing were an order of magnitude lower than concentrations reported in the well during the July 2014 groundwater monitoring and sampling event (Cardno ERI, 2014); however, BTEX concentrations increased to near the maximum concentrations reported during the monitoring program. Concentrations of TPHd and TPHg were reported in wells MW6 and MW8 and BTEX constituents were reported in well MW8. Petroleum hydrocarbon concentrations were higher in well MW6 and lower in well MW8 in the samples collected at the end of feasibility testing. Petroleum hydrocarbons were not reported in well MW7 in the pre-testing sampling event; well MW7 was dry during the post-testing sampling event and was unable to be sampled. Each of the newly-installed wells had concentrations less than well MW5. Groundwater results, including the July 2014 sampling event, are summarized in Tables 1A, 1B, and 7, and select results are illustrated on Plate 4.

Cardno ERI estimates that approximately 0.063 pound each of TPHd and TPHg was removed from well MW5 and that approximately 0.001 pound each of TPHd and TPHg was removed from well MW6 in the dissolved phase (Table 9).

### **Soil**

Concentrations of TPHd, TPHg, BTEX, and naphthalene were reported in soil samples collected during this investigation. Maximum concentrations were reported between 5 and 10 feet bgs in borings MW6 and MW8. Maximum TPHg (22 mg/kg) and benzene (0.044 mg/kg) concentrations were reported in samples collected at 8 and 10 feet bgs, respectively, from boring MW8. Petroleum hydrocarbons were not reported in soil samples collected from boring MW7. Concentrations of benzene were not reported in boring MW6. Soil results are summarized in Table 3 and select soil results are illustrated on Plate 5.

## Vapor

Maximum PID readings were recorded in soil vapor well VW4, consistent with previous results. Baseline and post-testing PID readings were consistent in wells VW3 through VW5. PID readings decreased in wells VW1 and VW2 during testing.

Vapor-phase concentrations in soil vapor samples collected throughout the feasibility tests were generally consistent, with the exception of TPHg concentrations in the initial sample collected at the beginning of the multi-well test, which was an order of magnitude lower than the other concentrations. The concentration is likely related to the addition of dilution air to maintain effective operation of the equipment. MTBE was not reported in the samples. Total and individual mass removal rates are summarized in the following table and in Table 8. Cardno ERI's protocol for calculating mass removal is included in Appendix B.

### **Estimated Mass Removed**

Extraction Wells	Estimated Mass Removed (pounds)		
	TPHg	MTBE	Benzene
MW5 Test	0.845	<0.0001	0.001
MW6 Test	0.227	<0.0001	0.001
MW5 and MW6 Test	36.347	<0.002	0.041
Total	37.419	<0.002	0.042

## **Feasibility Results**

The system operated at a maximum flow rate of 37.5 scfm. Based on an induced vacuum of 0.1 inch of water column being effective, an ROI of up to approximately 31 (MW5) to 54 (MW6) feet was achieved during DPE testing (Plate 6 and Graphs 1 and 2). Influent concentrations were consistent at approximately 5,000 mg/m<sup>3</sup> with an average mass removal of approximately 0.44 pound of TPHg per hour or 10.4 pounds per day (Table 6). Maximum induced vacuum was observed in wells VW4 and VW5 at between approximately 2 and 6 inches of water (Table 5).

## **CONCLUSIONS**

Based on the current investigation and cumulative site data, Cardno ERI concludes that:

- Maximum dissolved-phase concentrations are localized near well MW5.
- Maximum soil vapor concentrations are present in wells VW4 and VW5.
- DPE events using wells MW5 and MW6 effect wells VW4 and VW5 as evidenced by the induced vacuum observed.
- DPE HIT events may be a feasible remedial technology at the site.

## **RECOMMENDATIONS**

Cardno ERI anticipated sampling soil vapor wells VW1, VW3, VW4, and VW5 during fourth quarter 2014 based on the CAP and CAP addendum recommendations. Based on the PID readings in well VW4 (over range of the PID following testing), the collection of vapor samples in Summa™ canisters may not be warranted as the results will likely continue to exceed screening levels. Cardno ERI proposes that vapor samples be collected in tedlar bags and field screened with a PID on a quarterly basis during fourth quarter 2014 and first quarter 2015 during the groundwater sampling events to further evaluate the need for additional HIT events. If the results of the quarterly vapor sampling indicate that additional DPE events do not appear to be warranted, an additional sampling event (using Summa™ canisters) will be conducted in accordance with the field protocol included in Appendix B. Results of the soil vapor screening will be included in the semi-annual monitoring and sampling reports.

Cardno ERI recommends developing well MW8, sampling the newly-installed groundwater monitoring wells on a quarterly basis, and gauging the existing wells to further evaluate the groundwater gradient.

## **CONTACT INFORMATION**

The responsible party contact is Ms. Jennifer C. Sedlachek, ExxonMobil Environmental Services Company, 4096 Piedmont Avenue #194, Oakland, California, 94611. The consultant contact is Mr. Greg Gurss, Cardno ERI, 601 North McDowell Boulevard, Petaluma, California, 94954. The agency contact is Ms. Karel Detterman Alameda County Health Care Services, Environmental Health Services, Environmental Protection, 1131 Harbor Bay Parkway, Suite 250, Alameda, California, 94502.

## **LIMITATIONS**

For documents cited that were not generated by Cardno ERI, the data taken from those documents is used "as is" and is assumed to be accurate. Cardno ERI does not guarantee the accuracy of this data and makes no warranties for the referenced work performed nor the inferences or conclusions stated in these documents.

This document and the work performed have been undertaken in good faith, with due diligence and with the expertise, experience, capability, and specialized knowledge necessary to perform the work in a good and workmanlike manner and within all accepted standards pertaining to providers of environmental services in California at the time of investigation. No soil engineering or geotechnical references are implied or should be inferred. The evaluation of the geologic conditions at the site for this investigation is made from a limited number of data points. Subsurface conditions may vary away from these data points.



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Please contact Mr. Greg Gurss, Cardno ERI's project manager for this site, at [greg.gurss@cardno.com](mailto:greg.gurss@cardno.com) or at (916) 692-3130 with any questions regarding this report.

Sincerely,

*Christine M. Capwell*  
SCANNED IMAGE

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Enclosures:

References

Acronym List

Plate 1	Site Vicinity Map
Plate 2	Generalized Site Plan
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Plate 4	Select Groundwater Analytical Results
Plate 5	Select Soil Analytical Results
Plate 6	Radii of Influence
Graph 1	Vacuum Radius of Influence – Well MW5
Graph 2	Vacuum Radius of Influence – Well MW6
Table 1A	Cumulative Groundwater Monitoring and Sampling Data
Table 1B	Additional Cumulative Groundwater Monitoring and Sampling Data
Table 2	Well Construction Details
Table 3	Cumulative Soil Analytical Results
Table 4	Dual-Phase Extraction Tests – Extraction Well Data
Table 5	Dual-Phase Extraction Tests – Observation Well Data
Table 6	Dual-Phase Extraction Tests – Soil Vapor Analytical Results
Table 7	Dual-Phase Extraction Tests – Groundwater Analytical Results
Table 8	Dual-Phase Extraction Tests – Vapor-Phase Hydrocarbon Removal
Table 9	Dual-Phase Extraction Tests – Dissolved-Phase Hydrocarbon Removal
Appendix A	Correspondence
Appendix B	Protocols
Appendix C	Permits
Appendix D	Boring Logs
Appendix E	Field Data Sheets
Appendix F	Laboratory Analytical Reports
Appendix G	Survey Data
Appendix H	Waste Disposal Documentation

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cc: Ms. Karel Detterman, Health Care Services Agency, Environmental Health Services, Environmental Protection, 1131 Harbor Bay Parkway, Second Floor, Alameda, California, 94502

Mr. Leroy Griffin, Oakland Fire Department, 250 Frank H. Ogawa, Suite 3341, Oakland, California, 94612

Messrs. On Dan and Nathan Lam, 200 El Dorado Terrace, San Francisco, California, 94112

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## REFERENCES

Cardno ERI. October 25, 2012. *Site Conceptual Model Update, Low-Threat Closure Evaluation, and Feasibility Study/Corrective Action Plan, Former Mobil Service Station 99105, 6301 San Pablo Avenue, Oakland, California.*

Cardno ERI. May 14, 2013a. *Corrective Action Plan Addendum, Former Mobil Service Station 99105, 6301 San Pablo Avenue, Oakland, California.*

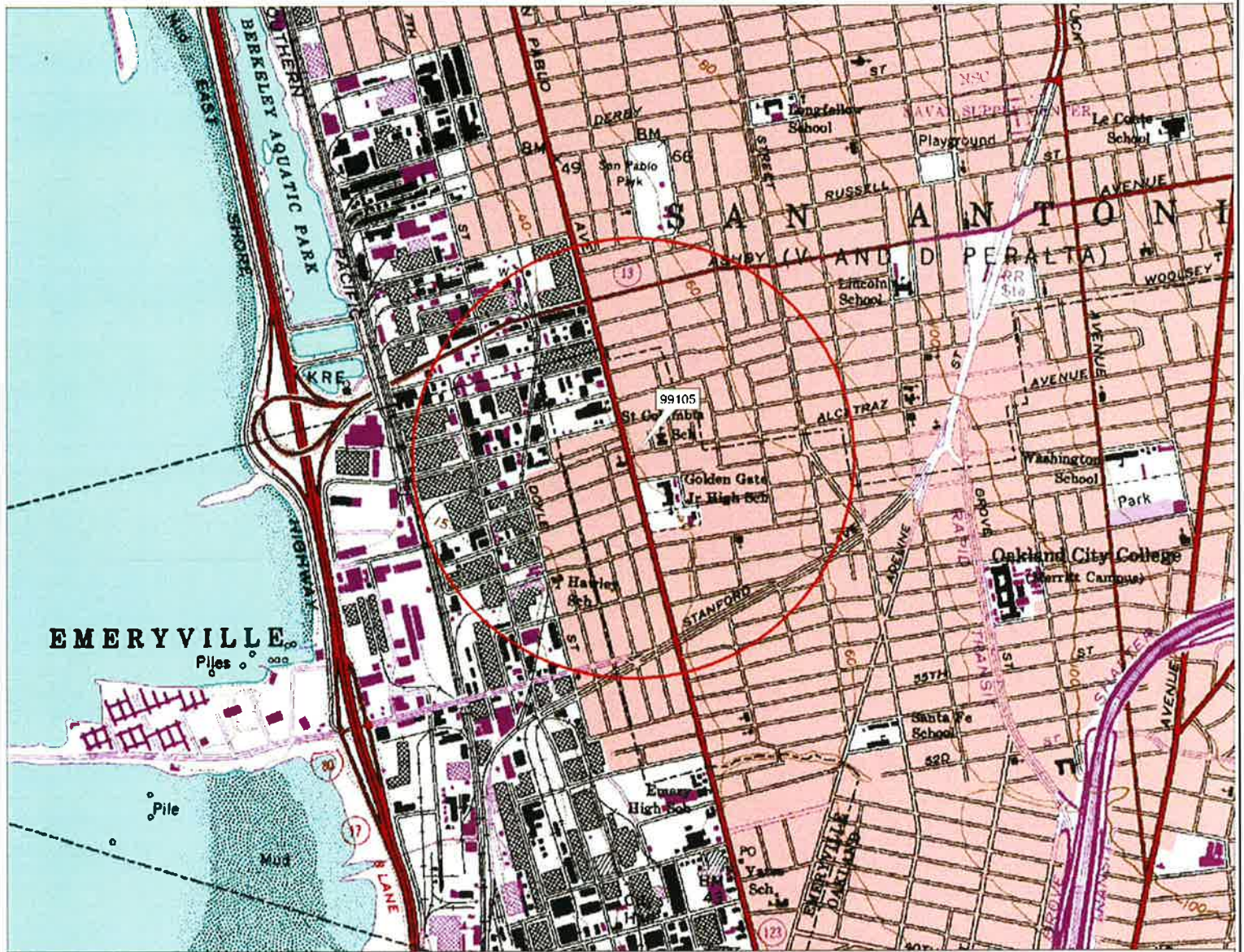
Cardno ERI. December 12, 2013b. *Second Addendum to Corrective Action Plan, Former Mobil Service Station 99105, 6301 San Pablo Avenue, Oakland, California.*

Cardno ERI. August 21, 2014. *Semi-Annual Groundwater Monitoring Report, Third Quarter 2014, Former Mobil Service Station 99105, 6301 San Pablo Avenue, Oakland, California.*

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## ACRONYM LIST

µg/L	Micrograms per liter	NEPA	National Environmental Policy Act
µs	Microsiemens	NGVD	National Geodetic Vertical Datum
1,2-DCA	1,2-dichloroethane	NPDES	National Pollutant Discharge Elimination System
acfm	Actual cubic feet per minute	O&M	Operations and Maintenance
AS	Air sparge	ORP	Oxidation-reduction potential
bgs	Below ground surface	OSHA	Occupational Safety and Health Administration
BTEX	Benzene, toluene, ethylbenzene, and total xylenes	OVA	Organic vapor analyzer
CEQA	California Environmental Quality Act	P&ID	Process & Instrumentation Diagram
cfm	Cubic feet per minute	PAH	Polycyclic aromatic hydrocarbon
COC	Chain of Custody	PCB	Polychlorinated biphenyl
CPT	Cone Penetration (Penetrometer) Test	PCE	Tetrachloroethene or perchloroethylene
DIPE	Di-isopropyl ether	PID	Photo-ionization detector
DO	Dissolved oxygen	PLC	Programmable logic control
DOT	Department of Transportation	POTW	Publicly owned treatment works
DPE	Dual-phase extraction	ppmv	Parts per million by volume
DTW	Depth to water	PQL	Practical quantitation limit
EDB	1,2-dibromoethane	psi	Pounds per square inch
EPA	Environmental Protection Agency	PVC	Polyvinyl chloride
ESL	Environmental screening level	QA/QC	Quality assurance/quality control
ETBE	Ethyl tertiary butyl ether	RBSL	Risk-based screening levels
FID	Flame-ionization detector	RCRA	Resource Conservation and Recovery Act
fpm	Feet per minute	RL	Reporting limit
GAC	Granular activated carbon	scfm	Standard cubic feet per minute
gpd	Gallons per day	SSTL	Site-specific target level
gpm	Gallons per minute	STLC	Soluble threshold limit concentration
GWPTS	Groundwater pump and treat system	SVE	Soil vapor extraction
HVOC	Halogenated volatile organic compound	SVOC	Semivolatile organic compound
J	Estimated value between MDL and PQL (RL)	TAME	Tertiary amyl methyl ether
LEL	Lower explosive limit	TBA	Tertiary butyl alcohol
LPC	Liquid-phase carbon	TCE	Trichloroethene
LRP	Liquid-ring pump	TOC	Top of well casing elevation; datum is msl
LUFT	Leaking underground fuel tank	TOG	Total oil and grease
LUST	Leaking underground storage tank	TPHd	Total petroleum hydrocarbons as diesel
MCL	Maximum contaminant level	TPHg	Total petroleum hydrocarbons as gasoline
MDL	Method detection limit	TPHmo	Total petroleum hydrocarbons as motor oil
mg/kg	Milligrams per kilogram	TPHs	Total petroleum hydrocarbons as stoddard solvent
mg/L	Milligrams per liter	TRPH	Total recoverable petroleum hydrocarbons
mg/m <sup>3</sup>	Milligrams per cubic meter	UCL	Upper confidence level
MPE	Multi-phase extraction	USCS	Unified Soil Classification System
MRL	Method reporting limit	USGS	United States Geologic Survey
msl	Mean sea level	UST	Underground storage tank
MTBE	Methyl tertiary butyl ether	VCP	Voluntary Cleanup Program
MTCA	Model Toxics Control Act	VOC	Volatile organic compound
NAI	Natural attenuation indicators	VPC	Vapor-phase carbon
NAPL	Non-aqueous phase liquid		



DELRORME

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FN 2783TOPO

**EXPLANATION**



1/2-mile radius circle



**APPROXIMATE SCALE**



SOURCE:  
Modified from a map  
provided by  
DeLorme 3-D TopoQuads



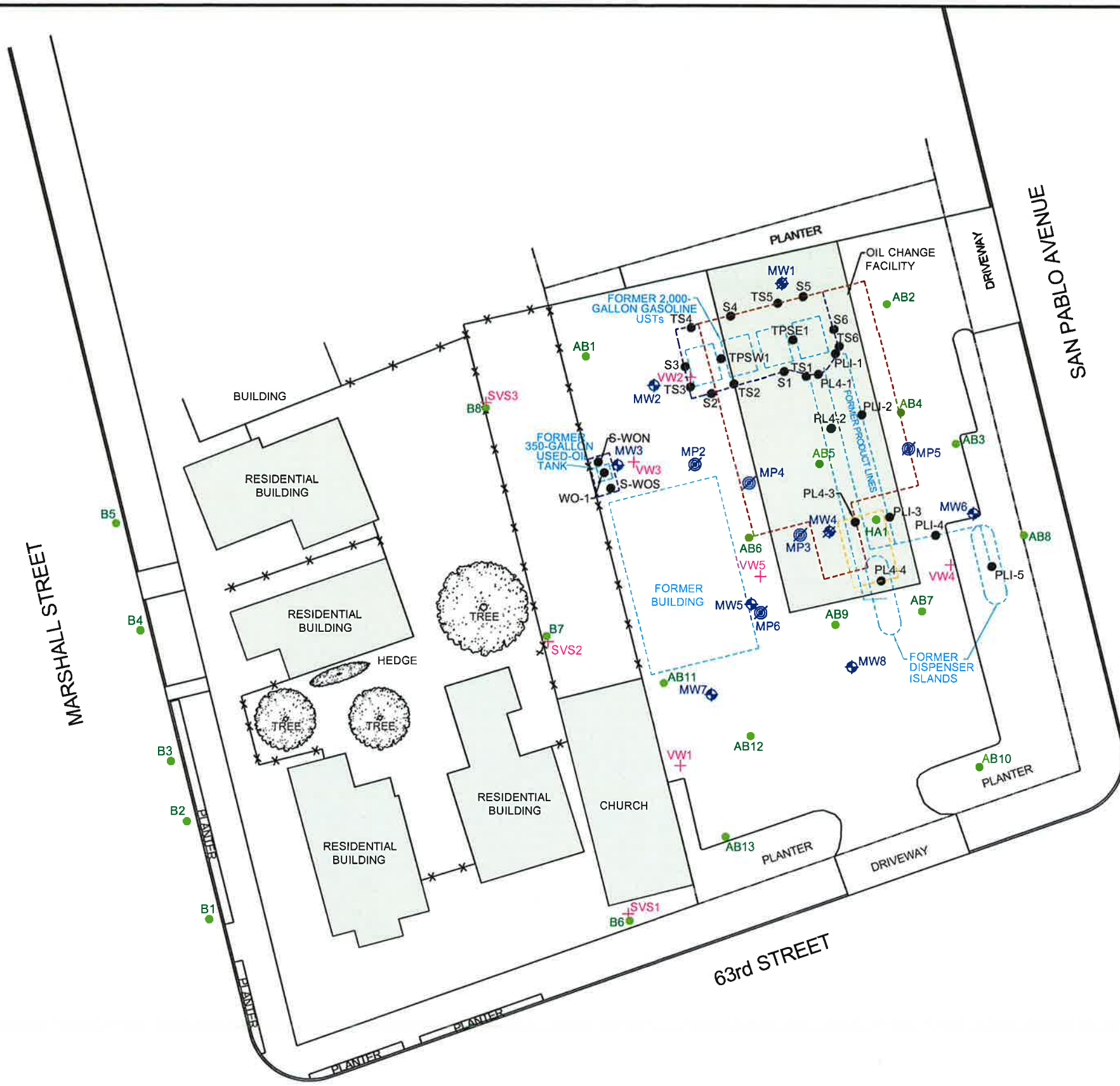
**SITE VICINITY MAP**  
FORMER MOBIL SERVICE STATION 99105  
6301 San Pablo Avenue  
Oakland, California

**PROJECT NO.**

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**PLATE**

1



FN 27830001 R03



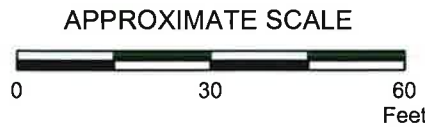
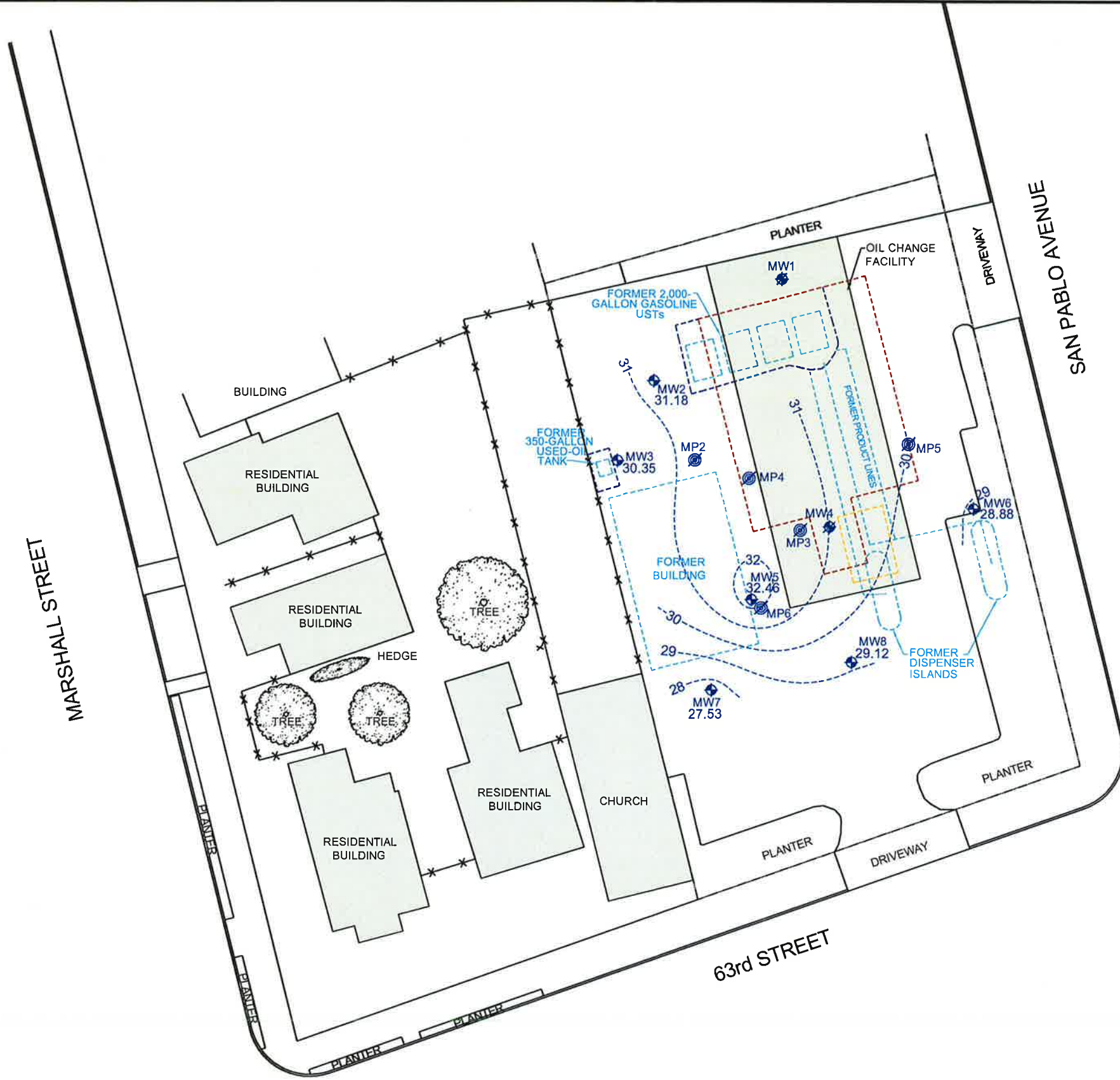
**GENERALIZED SITE PLAN**  
 FORMER MOBIL SERVICE STATION 99105  
 6301 San Pablo Avenue  
 Oakland, California

**EXPLANATION**

- MW8 Groundwater Monitoring Well
- AB13 Soil Boring
- VW5 Soil Vapor Sampling Well
- MW4 Destroyed Groundwater Monitoring Well
- MP6 Destroyed Observation Well
- PLI-5 Soil Boring by Others (Alisto Engineering Group and Tank Protect Engineering)
- 1994 Areas of Excavation
- - - - 1996 Area of Excavation
- - - - 1999 Area of Excavation

**PROJECT NO.**  
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**PLATE**  
2



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**GROUNDWATER ELEVATION MAP**  
**August 18, 2014**  
 FORMER MOBIL SERVICE STATION 99105  
 6301 San Pablo Avenue  
 Oakland, California

**EXPLANATION**

- MW8 Groundwater Monitoring Well
- 32.46 Groundwater elevation in feet; datum is NAVD 88
- 32----- Line of Equal Groundwater Elevation; datum is NAVD 88
- MW4 Destroyed Groundwater Monitoring Well
- MP6 Destroyed Observation Well
- 1994 Areas of Excavation
- - - - 1996 Area of Excavation
- 1999 Area of Excavation

**PROJECT NO.**  
2783

**PLATE**  
3



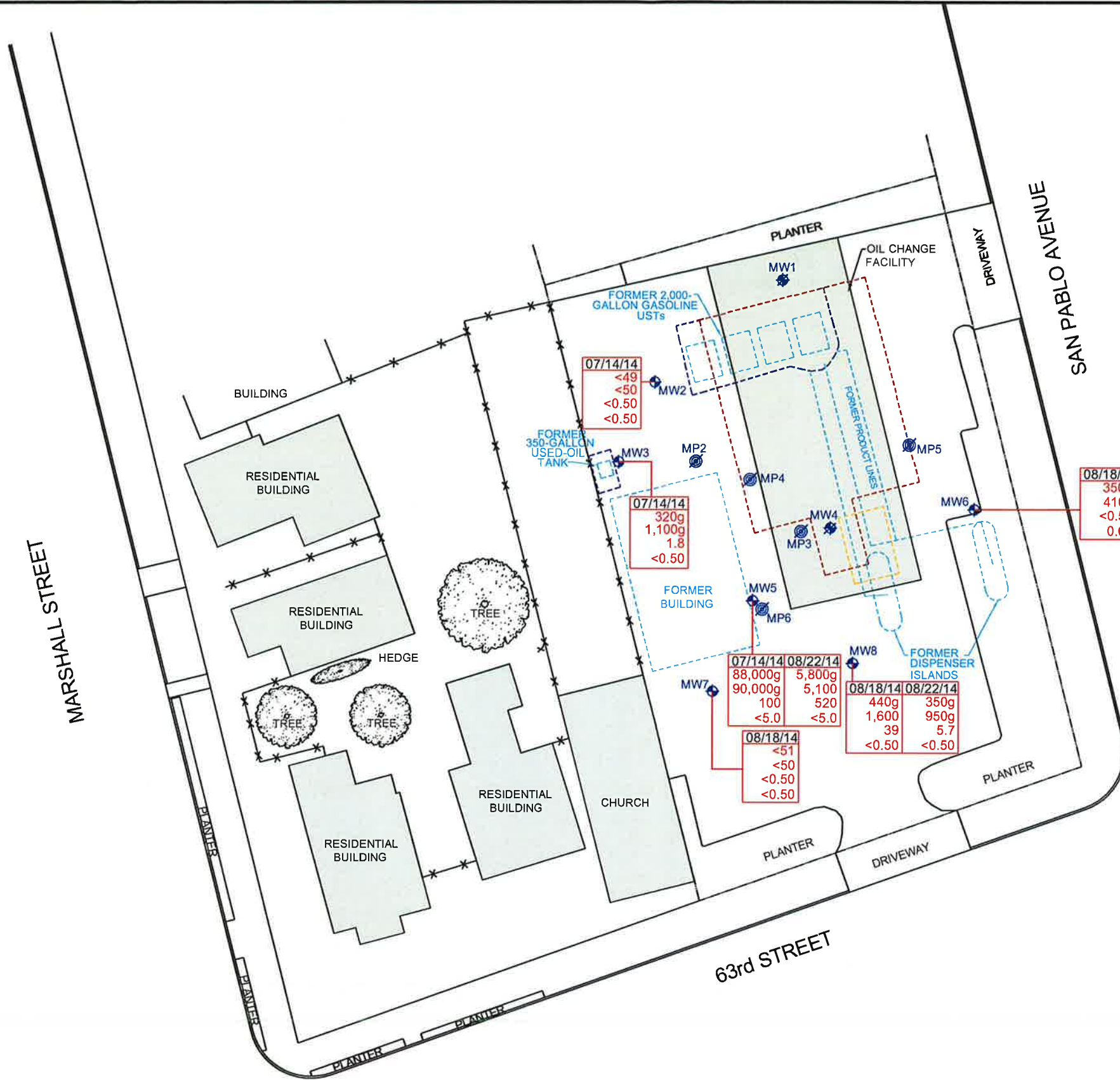
Analyte Concentrations in ug/L  
 Sampled July 14, August 18, and August 22, 2014

Sampling Date  
 Total Petroleum Hydrocarbons as diesel  
 Total Petroleum Hydrocarbons as gasoline  
 Benzene  
 Methyl Tertiary Butyl Ether

< Less Than the Stated Laboratory Reporting Limit

ug/L Micrograms per Liter

g Chromatographic pattern does not match that of the specified standard.



08/18/14	08/22/14
350g	1,000g
410g	1,500g
<0.50	<0.50
0.60	<0.50

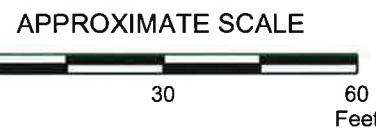
07/14/14
<49
<50
<0.50
<0.50

07/14/14
320g
1,100g
1.8
<0.50

07/14/14	08/22/14
88,000g	5,800g
90,000g	5,100
100	520
<5.0	<5.0

08/18/14	08/22/14
440g	350g
1,600	950g
39	5.7
<0.50	<0.50

08/18/14
<51
<50
<0.50
<0.50



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**SELECT GROUNDWATER ANALYTICAL RESULTS**  
**July 14, August 18, and August 22, 2014**  
 FORMER MOBIL SERVICE STATION 99105  
 6301 San Pablo Avenue  
 Oakland, California

**EXPLANATION**

- MW8 Groundwater Monitoring Well
- MW4 Destroyed Groundwater Monitoring Well
- MP6 Destroyed Observation Well
- 1994 Areas of Excavation
- - - 1996 Area of Excavation
- 1999 Area of Excavation

**PROJECT NO.**  
 2783  
**PLATE**  
 4

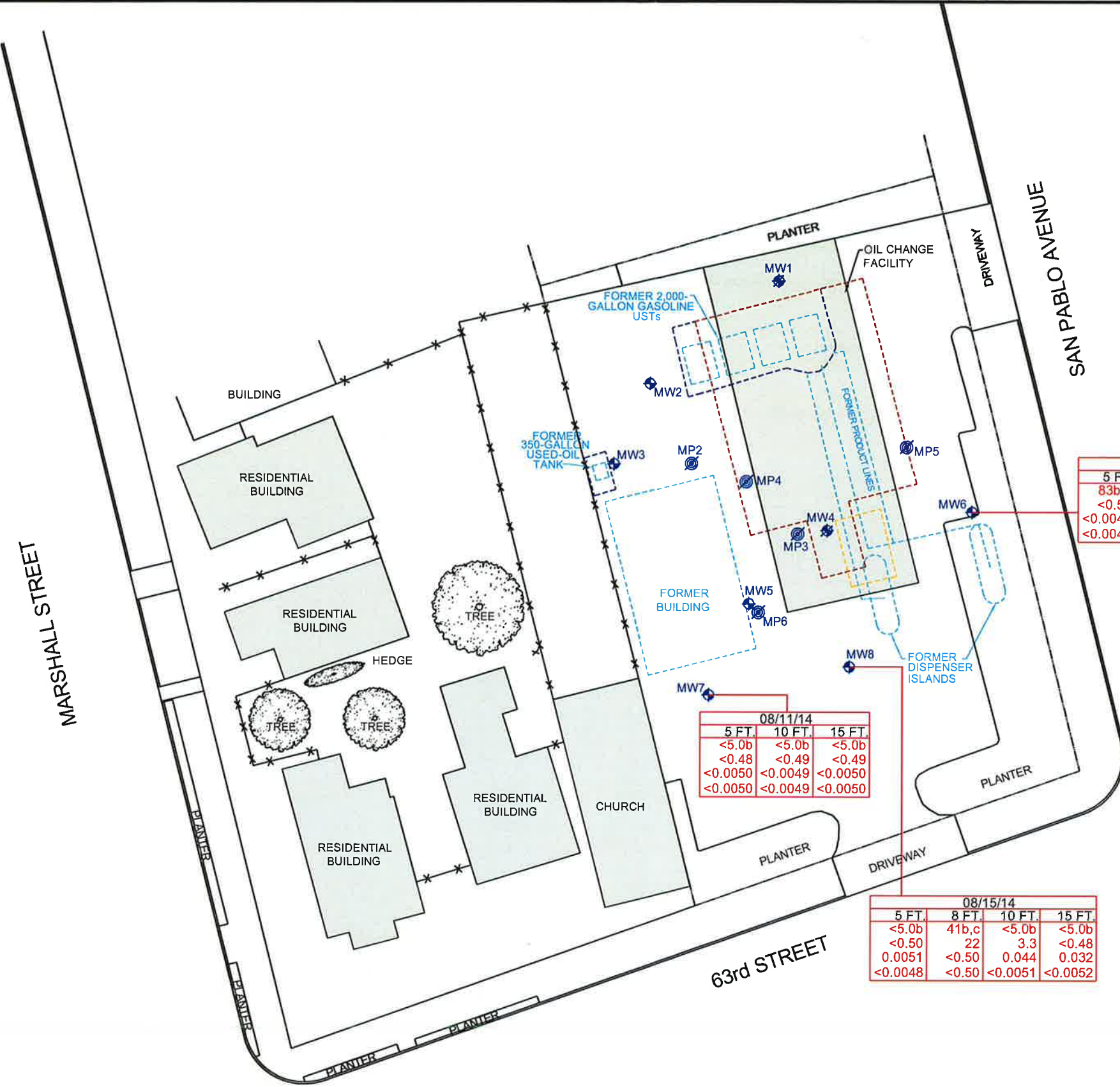
Analyte Concentrations in mg/kg

Sample Date
Sample Depth
Total Petroleum Hydrocarbons as diesel
Total Petroleum Hydrocarbons as gasoline
Benzene
Methyl Tertiary Butyl Ether

< Less Than the Stated Laboratory Reporting Limit

mg/kg Milligrams per kilogram

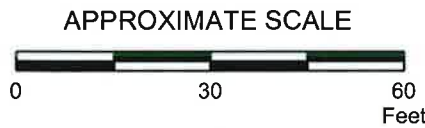
- b The sample extract was subjected to Silica Gel treatment prior to analyses.
- c Chromatographic pattern does not match that of the specified standard.



08/11/14			
5 FT.	10 FT.	15 FT.	
83b,c	47b,c	<4.9b	
<0.53	4.4c	2.2c	
<0.0049	<0.0052	<0.0048	
<0.0049	<0.0052	<0.0048	

08/11/14			
5 FT.	10 FT.	15 FT.	
<5.0b	<5.0b	<5.0b	
<0.48	<0.49	<0.49	
<0.0050	<0.0049	<0.0050	
<0.0050	<0.0049	<0.0050	

08/15/14				
5 FT.	8 FT.	10 FT.	15 FT.	
<5.0b	41b,c	<5.0b	<5.0b	
<0.50	22	3.3	<0.48	
0.0051	<0.50	0.044	0.032	
<0.0048	<0.50	<0.0051	<0.0052	



FN 27830001 R03

### SELECT SOIL ANALYTICAL RESULTS August 11 and 15, 2014

FORMER MOBIL SERVICE STATION 99105  
6301 San Pablo Avenue  
Oakland, California

#### EXPLANATION

- MW8 Groundwater Monitoring Well
- MW4 Destroyed Groundwater Monitoring Well
- MP6 Destroyed Observation Well
- 1994 Areas of Excavation
- 1996 Area of Excavation
- 1999 Area of Excavation

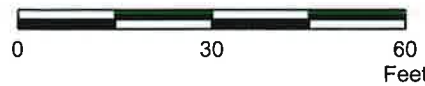


PROJECT NO.  
2783

PLATE  
5



APPROXIMATE SCALE



FN 27830001 R03



**RADI OF INFLUENCE**  
 FORMER MOBIL SERVICE STATION 99105  
 6301 San Pablo Avenue  
 Oakland, California

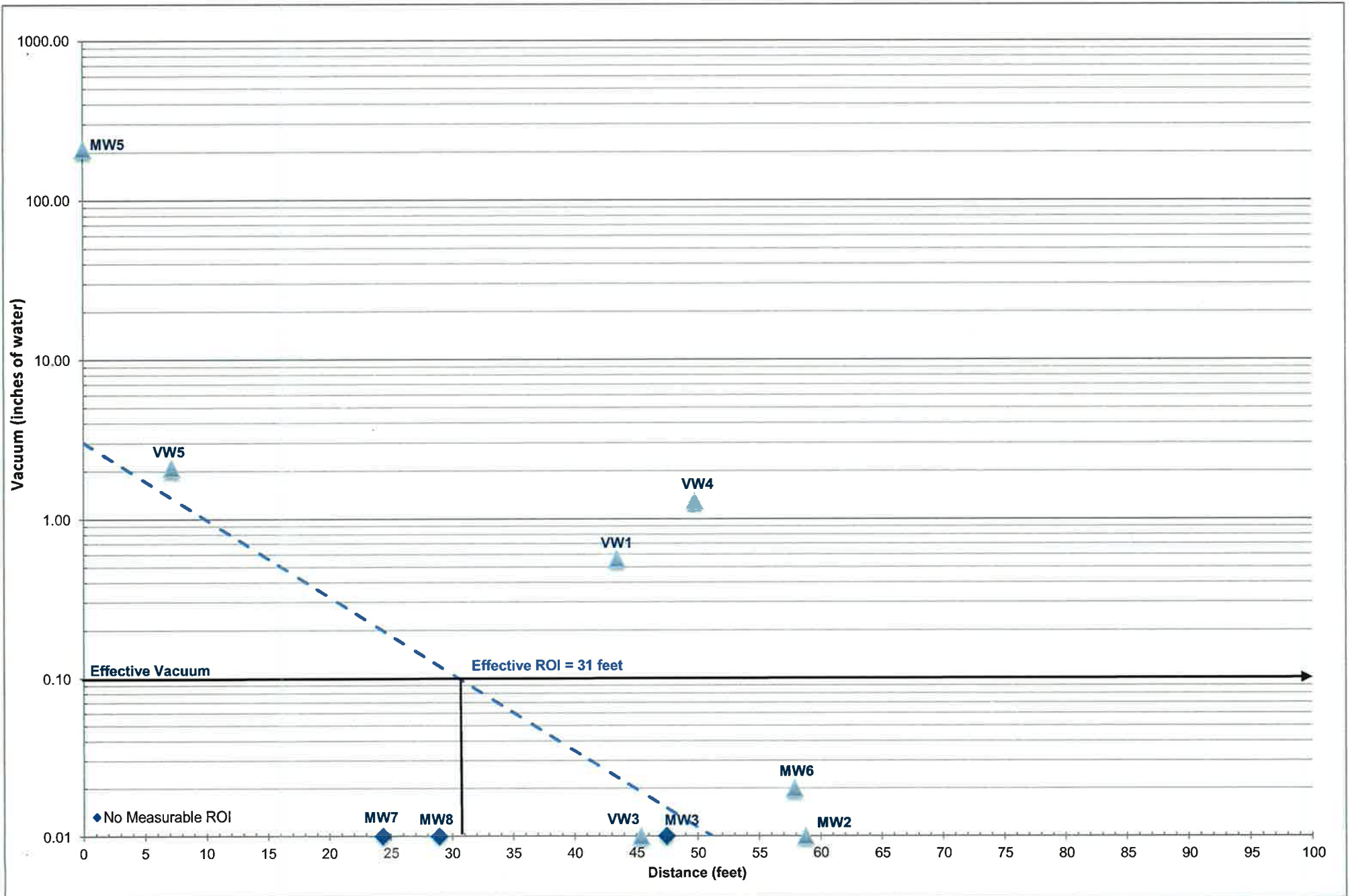
**EXPLANATION**

- MW8 Groundwater Monitoring Well
- AB13 Soil Boring
- VW5 Soil Vapor Sampling Well
- MW4 Destroyed Groundwater Monitoring Well
- MP6 Destroyed Observation Well
- PLI-5 Soil Boring by Others (Alisto Engineering Group and Tank Protect Engineering)
- 1994 Areas of Excavation
- 1996 Area of Excavation
- 1999 Area of Excavation

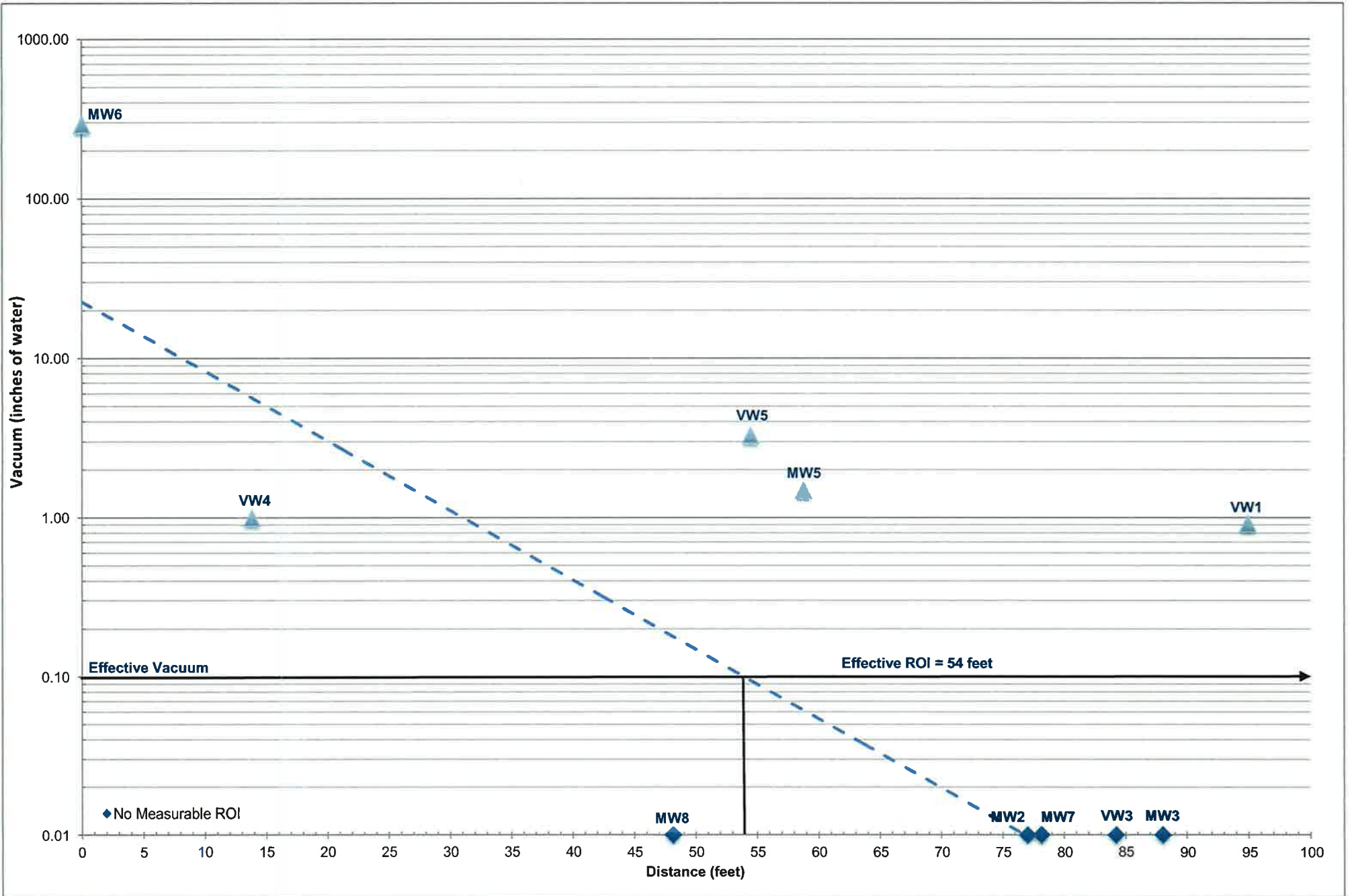
**PROJECT NO.**  
2783

**PLATE**  
6

GRAPH 1  
VACUUM RADIUS OF INFLUENCE - WELL MW5  
Former Mobil Service Station 99105  
6301 San Pablo Avenue  
Oakland, California  
(Page 1 of 1)



GRAPH 2  
VACUUM RADIUS OF INFLUENCE - WELL MW6  
Former Mobil Service Station 99105  
6301 San Pablo Avenue  
Oakland, California  
(Page 1 of 1)



**TABLE 1A**  
**CUMULATIVE GROUNDWATER MONITORING AND SAMPLING DATA**  
Former Mobil Service Station 99105  
6301 San Pablo Avenue  
Oakland, California  
(Page 1 of 6)

Well ID	Sampling Date	TOC Elev. (feet)	DTW (feet)	GW Elev. (feet)	NAPL (feet)	TPHd (µg/L)	TPHg (µg/L)	MTBE 8020/8021 (µg/L)	MTBE 8240/8260 (µg/L)	B (µg/L)	T (µg/L)	E (µg/L)	X (µg/L)
<b>Environmental Screening Levels, Groundwater is Current or Potential Drinking Water Source (December 2013)</b>													
Table F-1a		---	---	---	---	100	100	5	5	1	40	30	20
MW1	03/14/96	32.79	4.50	28.29	No	450	610	---	---	0.75	0.54	1.5	59
MW1	05/21/96	32.79	5.64	27.15	No	ND	ND	---	---	ND	ND	ND	ND
MW1	08/13/96	32.79	9.76	23.03	No	ND	ND	---	---	ND	ND	ND	ND
MW1	11/08/96	32.79	10.24	22.55	No	ND	ND	ND	---	ND	0.92	ND	2.1
MW1	01/31/97	32.79	3.83	28.96	No	ND	ND	2.6	ND	ND	0.85	ND	ND
MW1	04/22/97	32.79	9.14	23.65	No	ND	ND	ND	---	ND	ND	ND	ND
MW1	07/29/97	a 32.79	10.18	22.61	No	60e	ND	36	---	0.84	0.95	ND	1.6
MW1	10/09/97	a 32.79	10.46	22.33	No	56e	ND	ND	---	ND	ND	ND	ND
MW1	01/23/98	a 32.79	3.95	28.84	No	33	ND	ND	---	ND	ND	ND	ND
MW1	04/22/98	32.79	5.33	27.46	No	ND	ND	ND	---	ND	ND	ND	ND
MW1	07/21/98	32.79	9.17	23.62	No	---	ND	ND	---	ND	ND	ND	ND
MW1	10/20/98	32.79	10.41	22.38	No	---	ND	ND	---	ND	ND	ND	ND
MW1	01/27/99	32.79	5.51	27.28	No	---	ND	ND	---	ND	ND	ND	ND
MW1	Apr-99	Destroyed during construction activities.											
MW2	03/14/96	32.80	4.51	28.29	No	250	560	---	---	2.0	0.96	4.3	11
MW2	05/21/96	32.80	5.65	27.15	No	560	730	---	---	5.1	1.4	6.7	5.9
MW2	08/13/96	32.80	10.14	22.66	No	380b	490	---	---	25	3.5	7.2	13
MW2	11/08/96	32.80	10.70	22.10	No	160d	520	6.1	---	80	2.7	14	66
MW2	01/31/97	32.80	3.84	28.96	No	130b	74	ND	---	ND	ND	ND	ND
MW2	04/22/97	32.80	9.61	23.19	No	430	260	ND	---	2.7	ND	2.5	ND
MW2	07/29/97	a 32.80	10.53	22.27	No	150d	320	ND	---	28	1.2	10	ND
MW2	10/09/97	a 32.80	10.87	21.93	No	160b	460	2.6	---	43	2.8	2.0	2.6
MW2	01/23/98	a 32.80	3.75	29.05	No	54	ND	ND	---	ND	ND	ND	ND
MW2	04/22/98	32.80	5.36	27.44	No	540	180	ND	---	1.2	0.3	0.4	ND
MW2	07/21/98	32.80	9.55	23.25	No	---	80	ND	---	8.9	2.1	0.6	2.5
MW2	10/20/98	32.80	10.75	22.05	No	---	50	ND	---	0.8	0.7	ND	0.8
MW2	01/27/99	32.80	5.53	27.27	No	---	ND	ND	---	0.6	ND	ND	ND
MW2	07/27/99	32.80	6.20	26.60	No	---	ND	ND	---	ND	0.6	ND	ND
MW2	12/08/99	32.80	9.98	22.82	No	---	ND	ND	---	1.2	0.43	ND	ND
MW2	10/25/00	39.34	11.30	28.04	No	---	<20	<0.30	---	2.0	0.59	0.46	1.3
MW2	01/15/01	39.34	9.41	29.93	No	---	<20	<0.30	---	<0.20	0.46	<0.20	<0.60
MW2	04/10/01	39.34	6.16	33.18	No	---	23	<1.0	---	0.28	<0.20	<0.20	<0.60
MW2	07/24/01	39.34	10.70	28.64	No	---	<50	<0.30	---	<0.20	0.93	<0.20	0.82
MW2	11/27/01	39.34	10.15	29.19	No	---	<50	<0.30	---	1.2	0.22	<0.20	<0.60
MW2	01/18/02	41.99	5.46	36.53	No	---	<50.0	1.40	---	<0.50	<0.50	<0.50	<0.50
MW2	04/10/02	41.99	6.48	35.51	No	---	<50.0	1.80	---	<0.50	<0.50	<0.50	<0.50
MW2	07/12/02	41.99	10.45	31.54	No	---	<50.0	<0.50	---	<0.50	<0.50	<0.50	<0.50
MW2	10/14/02	41.99	11.46	30.53	No	---	<50.0	<0.5	---	<0.5	4.1	0.6	4.0
MW2	01/20/03	41.99	5.39	36.60	No	---	<50.0	0.6	---	<0.50	<0.50	<0.50	<0.50

**TABLE 1A**  
**CUMULATIVE GROUNDWATER MONITORING AND SAMPLING DATA**  
Former Mobil Service Station 99105  
6301 San Pablo Avenue  
Oakland, California  
(Page 2 of 6)

Well ID	Sampling Date	TOC Elev. (feet)	DTW (feet)	GW Elev. (feet)	NAPL (feet)	TPHd (µg/L)	TPHg (µg/L)	MTBE 8020/8021 (µg/L)	MTBE 8240/8260 (µg/L)	B (µg/L)	T (µg/L)	E (µg/L)	X (µg/L)
<b>Environmental Screening Levels, Groundwater is Current or Potential Drinking Water Source (December 2013)</b>													
Table F-1a		---	---	---	---	100	100	5	5	1	40	30	20
MW2	04/28/03	41.99	5.87	36.12	No	---	<50.0	<0.50	---	<0.50	<0.50	<0.50	<0.50
MW2	07/15/03	41.99	10.31	31.68	No	---	<50	<0.5	---	<0.5	<0.5	<0.5	<0.5
MW2	10/08/03	41.99	11.20	30.79	No	---	<50	<0.5	---	<0.5	<0.5	<0.5	<0.5
MW2	01/15/04	41.99	5.36	36.63	No	---	63.3	1.0	---	0.70	<0.5	<0.5	<0.5
MW2	Well not sampled from 2004 to 2010.												
MW2	09/17/10	41.99	10.72	31.27	No	<50	<50	---	<0.50	<0.50	<0.50	<0.50	<0.50
MW2	12/15/10	42.24	Well resurveyed.										
MW2	09/14/11	42.24	10.02	32.22	No	<b>110g</b>	<50	---	<0.50	<0.50	<0.50	<0.50	<0.50
MW2	01/18/12	42.24	11.24	31.00	No	---	<50	---	<0.50	<0.50	<0.50	<0.50	<0.50
MW2	01/27/12	42.24	9.65	32.59	No	<50	---	---	---	---	---	---	---
MW2	07/09/12	42.24	10.07	32.17	No	<50	<50	---	<0.50	<0.50	<0.50	<0.50	<0.50
MW2	01/25/13	42.24	5.62	36.62	No	<50	<50	---	<0.50	<0.50	<0.50	<0.50	<0.50
MW2	08/23/13	42.24	10.76	31.48	No	<50	<50	---	<0.50	<0.50	<0.50	<0.50	<0.50
MW2	01/10/14	42.24	11.42	30.82	No	<50	<50	---	<0.50	<0.50	<0.50	<0.50	<0.50
MW2	07/14/14	42.24	10.52	31.72	No	<49	<50	---	<0.50	<0.50	<0.50	<0.50	0.52
MW2	08/18/14	42.24	11.06	31.18	No	---	---	---	---	---	---	---	---
MW3	03/14/96	32.80	9.55	23.25	No	<b>1,200</b>	<b>4,200</b>	---	---	<b>220</b>	30	<b>140</b>	<b>520</b>
MW3	05/21/96	32.80	10.16	22.64	No	<b>2,800</b>	<b>8,500</b>	---	---	<b>710</b>	<b>110</b>	<b>440</b>	<b>1,700</b>
MW3	08/13/96	32.80	11.18	21.62	No	<b>2,300c</b>	<b>5,000</b>	---	---	<b>430</b>	ND	<b>200</b>	<b>360</b>
MW3	11/08/96	32.80	11.51	21.29	No	<b>2,900b</b>	<b>8,400</b>	<b>73</b>	ND	<b>890</b>	<b>82</b>	<b>790</b>	<b>1,700</b>
MW3	01/31/97	32.80	7.90	24.90	No	<b>7,500b</b>	<b>16,000</b>	ND	---	<b>660</b>	<b>85</b>	<b>960</b>	<b>1,800</b>
MW3	04/22/97	32.80	10.64	22.16	No	<b>2,700</b>	<b>8,000</b>	<b>200</b>	ND	<b>340</b>	33	<b>400</b>	<b>490</b>
MW3	07/29/97	a 32.80	11.36	21.44	No	<b>2,300b</b>	<b>9,800</b>	ND	---	<b>330</b>	ND	<b>530</b>	<b>530</b>
MW3	10/09/97	a 32.80	11.52	21.28	No	<b>2,600b</b>	<b>7,300</b>	<b>270</b>	ND	<b>300</b>	ND	<b>430</b>	<b>460</b>
MW3	01/23/98	a 32.80	7.50	25.30	No	<b>2,300</b>	<b>6,100</b>	ND	---	<b>190</b>	23	<b>330</b>	<b>320</b>
MW3	04/22/98	32.80	6.81	25.99	No	<b>2,600</b>	<b>4,900</b>	ND	ND	<b>140</b>	12	<b>250</b>	<b>230</b>
MW3	07/21/98	32.80	10.65	22.15	No	---	<b>7,400</b>	<b>74</b>	ND	<b>250</b>	16	<b>400</b>	<b>370</b>
MW3	10/20/98	32.80	11.57	21.23	No	---	<b>6,700</b>	ND	ND	<b>200</b>	18	<b>350</b>	<b>350</b>
MW3	01/27/99	32.80	9.11	23.69	No	---	<b>3,100</b>	<b>13</b>	---	<b>74</b>	4	<b>94</b>	<b>39</b>
MW3	07/27/99	32.80	7.27	25.53	No	---	<b>8,900</b>	ND	---	<b>170</b>	21	<b>360</b>	<b>440</b>
MW3	12/08/99	32.80	10.63	22.17	No	---	<b>4,800</b>	ND	---	<b>94</b>	13	<b>170</b>	<b>210</b>
MW3	10/25/00	39.27	12.08	27.19	No	---	<b>3,800</b>	<50	<5	<b>63</b>	2.9	<b>100</b>	<b>65</b>
MW3	01/15/01	39.27	10.29	28.98	No	---	<b>4,300</b>	<5.0	---	<b>76</b>	9.5	<b>47</b>	<b>76</b>
MW3	04/10/01	39.27	10.11	29.16	No	---	<b>2,700</b>	<20	---	<b>55</b>	4.4	<b>100</b>	<b>37</b>
MW3	07/24/01	39.27	11.57	27.70	No	---	<b>3,100</b>	<1.0	---	<b>110</b>	6.9	<b>110</b>	<b>81</b>
MW3	11/27/01	39.27	10.93	28.34	No	---	<b>2,400</b>	<0.30	---	<b>47</b>	8.9	25	<b>35</b>
MW3	01/18/02	41.71	9.47	32.24	No	---	<b>1,130</b>	<b>13.6</b>	---	<b>15.3</b>	2.30	<b>42.0</b>	<b>24.6</b>
MW3	04/10/02	41.71	10.14	31.57	No	---	<b>916</b>	<b>11.2</b>	---	<b>35.1</b>	3.00	22.5	13.8
MW3	07/12/02	41.71	11.34	30.37	No	---	<b>2,330</b>	<b>15.4</b>	---	<b>60.5</b>	2.90	<b>39.8</b>	<b>50.9</b>

**TABLE 1A**  
**CUMULATIVE GROUNDWATER MONITORING AND SAMPLING DATA**  
Former Mobil Service Station 99105  
6301 San Pablo Avenue  
Oakland, California  
(Page 3 of 6)

Well ID	Sampling Date	TOC Elev. (feet)	DTW (feet)	GW Elev. (feet)	NAPL (feet)	TPHd (µg/L)	TPHg (µg/L)	MTBE 8020/8021 (µg/L)	MTBE 8240/8260 (µg/L)	B (µg/L)	T (µg/L)	E (µg/L)	X (µg/L)
<b>Environmental Screening Levels, Groundwater is Current or Potential Drinking Water Source (December 2013)</b>													
Table F-1a		---	---	---	---	100	100	5	5	1	40	30	20
MW3	10/14/02	41.71	12.10	29.61	No	---	<b>2,550</b>	<0.5	---	<b>36.9</b>	3.8	20.3	<b>48.0</b>
MW3	01/20/03	41.71	9.20	32.51	No	---	<b>1,750</b>	<b>10.7</b>	---	<b>20.4</b>	<b>304.0</b>	<b>60.7</b>	<b>22.0</b>
MW3	04/28/03	41.71	9.37	32.34	No	---	<b>2,730</b>	<b>11.2</b>	---	<b>10.0</b>	2.7	<b>42.7</b>	<b>20.1</b>
MW3	07/15/03	41.71	11.15	30.56	No	---	<b>1,790</b>	<b>5.6</b>	---	<b>68.8</b>	3.6	<b>39.0</b>	<b>44.7</b>
MW3	10/08/03	41.71	11.89	29.82	No	---	<b>1,320</b>	<b>7.1</b>	---	<b>35.1</b>	4.0	23.6	<b>31.8</b>
MW3	01/15/04	41.71	9.16	32.55	No	---	<b>791</b>	3.4	---	<b>24.4</b>	1.3	<b>40.1</b>	14.7
MW3	Well not sampled from 2004 to 2010.												
MW3	09/17/10	41.71	11.46	30.25	No	99	<b>2,500</b>	---	<0.50	<b>2.6</b>	0.31f	1.8	1.8
MW3	12/15/10	42.18	Well resurveyed.										
MW3	09/14/11	42.18	11.37	30.81	No	<b>270g</b>	<b>1,200</b>	---	<0.50	<b>18</b>	0.95	1.7	1.3
MW3	01/18/12	42.18	12.11	30.07	No	---	<b>910g</b>	---	<0.50	0.89	<0.50	<0.50	0.88
MW3	01/27/12	42.18	10.18	32.00	No	<b>1,000g</b>	---	---	---	---	---	---	---
MW3	07/09/12	42.18	11.15	31.03	No	<b>420g</b>	<b>350g</b>	---	<0.50	<b>7.9</b>	<0.50	<0.50	<0.50
MW3	01/25/13	42.18	9.41	32.77	No	<b>120g</b>	<b>390g</b>	---	<0.50	<b>2.8</b>	<0.50	<0.50	<0.50
MW3	08/23/13	42.18	11.67	30.51	No	<b>310g</b>	<b>640</b>	---	<0.50	<b>1.1</b>	<0.50	<0.50	<0.50
MW3	01/10/14	42.18	12.13	30.05	No	<b>160g</b>	<b>720g</b>	---	<0.50	<0.50	<0.50	<0.50	<0.50
MW3	07/14/14	42.18	11.55	30.63	No	<b>320g</b>	<b>1,100g</b>	---	<0.50	<b>1.8</b>	<0.50	<0.50	0.53
MW3	08/18/14	42.18	11.83	30.35	No	---	---	---	---	---	---	---	---
MW4	03/14/96	31.50	4.92	26.58	No	<b>3,500</b>	<b>12,000</b>	---	---	<b>2,200</b>	<b>140</b>	<b>880</b>	<b>2,000</b>
MW4	05/21/96	31.50	8.60	22.90	No	<b>4,200</b>	<b>11,000</b>	---	---	<b>1,700</b>	ND	<b>930</b>	<b>470</b>
MW4	08/13/96	31.50	10.02	21.50	0.02	---	---	---	---	---	---	---	---
MW4	11/08/96	31.50	10.28	21.33	0.15	---	---	---	---	---	---	---	---
MW4	01/31/97	31.50	7.88	23.62	No	<b>8,200b</b>	<b>23,000</b>	ND	---	<b>980</b>	<b>68</b>	<b>1,100</b>	<b>1,400</b>
MW4	04/22/97	31.50	7.40	24.10	No	<b>4,500</b>	<b>8,800</b>	ND	---	<b>950</b>	ND	<b>610</b>	<b>130</b>
MW4	07/29/97	31.50	9.85	21.74	0.12	---	---	---	---	---	---	---	---
MW4	10/09/97	31.50	10.35	21.38	0.30	---	---	---	---	---	---	---	---
MW4	01/23/98	31.50	4.68	27.51	0.92	---	---	---	---	---	---	---	---
MW4	04/22/98	31.50	6.39	25.22	0.14	---	---	---	---	---	---	---	---
MW4	07/21/98	31.50	7.10	24.55	0.20	---	---	---	---	---	---	---	---
MW4	10/20/98	31.50	9.03	22.60	0.17	---	---	---	---	---	---	---	---
MW4	01/27/99	31.50	5.37	26.18	0.07	---	---	---	---	---	---	---	---
MW4	Apr-99	Destroyed during construction activities.											
MW5	10/25/00	39.18	10.92	28.26	No	---	<b>2,500</b>	<20	---	<b>79</b>	3.8	<b>66</b>	<20
MW5	01/15/01	39.18	8.32	30.86	No	---	<b>3,900</b>	<5.0	---	<b>120</b>	7.9	<b>280</b>	<b>52</b>
MW5	04/10/01	39.18	7.21	31.97	No	---	<b>8,000</b>	<50	<5	<b>280</b>	4.4	<b>410</b>	<b>100</b>
MW5	07/24/01	39.18	9.54	29.64	No	---	<b>7,000</b>	<1.0	---	<b>360</b>	7.4	<b>380</b>	<b>67</b>
MW5	11/27/01	39.18	8.84	30.34	No	---	<b>5,000</b>	<b>8.9</b>	<2	<b>64</b>	11	<b>340</b>	<b>52</b>
MW5	01/18/02	41.59	6.52	35.07	No	---	<b>6,330</b>	<b>21.8</b>	---	<b>99.1</b>	2.30	<b>103</b>	19.6



**TABLE 1A**  
**CUMULATIVE GROUNDWATER MONITORING AND SAMPLING DATA**  
Former Mobil Service Station 99105  
6301 San Pablo Avenue  
Oakland, California  
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Well ID	Sampling Date	TOC Elev. (feet)	DTW (feet)	GW Elev. (feet)	NAPL (feet)	TPHd (µg/L)	TPHg (µg/L)	MTBE 8020/8021 (µg/L)	MTBE 8240/8260 (µg/L)	B (µg/L)	T (µg/L)	E (µg/L)	X (µg/L)
<b>Environmental Screening Levels, Groundwater is Current or Potential Drinking Water Source (December 2013)</b>													
Table F-1a		---	---	---	---	100	100	5	5	1	40	30	20
MW5	04/10/02	41.59	7.20	34.39	No	---	2,140	<2.50	---	275	8.00	183	24.5
MW5	07/12/02	41.59	8.83	32.76	No	---	3,940	20	<0.50	350	<0.50	268	14
MW5	10/14/02	41.59	10.74	30.85	No	---	4,040	<2.5	---	98.5	9.0	169	29.0
MW5	01/20/03	41.59	6.45	35.14	No	---	7,660	59	<0.50	421	10.0	743	96.0
MW5	04/28/03	41.59	6.68	34.91	No	---	7,510	47	<0.50	403	5.5	524	50.5
MW5	07/15/03	41.59	8.68	32.91	No	---	6,080	52.9	<2.5	406	19.8	412	34.7
MW5	10/08/03	41.59	10.56	31.03	No	---	2,460	54.3	<0.5	160	12.8	173	31.7
MW5	01/15/04	41.59	6.56	35.03	No	---	4,630	37.4	<0.5	181	6.0	312	38.5
MW5	Well not sampled from 2004 to 2010.												
MW5	09/17/10	41.59	9.99	31.60	No	5,700	6,600	---	<5.0	19	<5.0	16	1.4f
MW5	12/15/10	41.86	Well resurveyed.										
MW5	09/14/11	41.86	7.33	34.53	No	1,600g	7,200	---	<2.0	23	<2.0	8.6	<2.0
MW5	01/18/12	41.86	9.46	32.40	No	---	3,600g	---	<1.0	14	<1.0	7.6	<1.0
MW5	01/27/12	41.86	8.81	33.05	No	3,100g	---	---	---	---	---	---	---
MW5	07/09/12	41.86	8.91	32.95	Sheen	29,000g	9,300g	---	<2.5	21	<2.5	6.9	<2.5
MW5	01/25/13	41.86	6.01	35.85	Sheen	22,000g	4,900g	---	<2.0	46	<2.0	4.5	<2.0
MW5	08/23/13	41.86	9.12	32.74	No	34,000g	17,000	---	<2.0	17	<2.0	6.3	<2.0
MW5	01/10/14	41.86	10.30	31.56	No	36,000g	62,000	---	<2.0	4.7	<2.0	3.5	<2.0
MW5	07/14/14	41.86	8.70	33.16	No	88,000g	90,000g	---	<5.0	100	<5.0	12	<5.0
MW5	08/18/14	41.86	9.40	32.46	No	---	---	---	---	---	---	---	---
MW5	08/22/14	41.86	9.60	32.26	No	5,800g	5,100	---	<5.0	520	<5.0	320	81
MW6	08/18/14	42.00	Well surveyed.										
MW6	08/18/14	42.00	13.12	28.88	No	350g	410g	---	0.60	<0.50	<0.50	<0.50	<0.50
MW6	08/22/14	42.00	11.20	30.80	No	1,000g	1,500g	---	<0.50	<0.50	<0.50	<0.50	<0.50
MW7	08/18/14	41.34	Well surveyed.										
MW7	08/18/14	41.34	13.81	27.53	No	<51	<50	---	<0.50	<0.50	<0.50	<0.50	<0.50
MW7	08/22/14	41.34	Dry					---	---	---	---	---	---
MW8	08/18/14	41.30	Well surveyed.										
MW8	08/18/14	41.30	12.18	29.12	No	440g	1,600	---	<0.50	39	<0.50	19	44
MW8	08/22/14	41.30	13.10	28.20	No	350g	950g	---	<0.50	5.7	<0.50	4.2	6.4

**TABLE 1A**  
**CUMULATIVE GROUNDWATER MONITORING AND SAMPLING DATA**  
Former Mobil Service Station 99105  
6301 San Pablo Avenue  
Oakland, California  
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Well ID	Sampling Date	TOC Elev. (feet)	DTW (feet)	GW Elev. (feet)	NAPL (feet)	TPHd (µg/L)	TPHg (µg/L)	MTBE 8020/8021 (µg/L)	MTBE 8240/8260 (µg/L)	B (µg/L)	T (µg/L)	E (µg/L)	X (µg/L)
<b>Environmental Screening Levels, Groundwater is Current or Potential Drinking Water Source (December 2013)</b>													
Table F-1a		---	---	---	---	100	100	5	5	1	40	30	20
<b>Grab Groundwater Samples</b>													
<i>Former Gasoline Tank Cavity</i>													
TW1	01/04/96	---	6.00	---	No	700	ND	---	---	ND	ND	ND	ND
<i>Used-Oil Tank Cavity</i>													
WW1	01/04/96	---	3.00	---	No	---	ND	---	---	ND	ND	ND	ND
AB1	03/05/98	---	4.5	---	No	---	1,600	ND	---	31	5.3	79	130
AB2	03/05/98	---	8.0	---	No	---	ND	ND	---	ND	2.9	0.9	5.7
AB3	03/05/98	---	5.5	---	No	---	6,800	230	---	680	100	1,500	2,300
AB4	03/05/98	---	4.0	---	No	---	8,500	ND	---	240	ND	260	720
AB6	03/05/98	---	4.5	---	No	---	12,000	ND	---	350	ND	310	100
AB9	03/05/98	---	6.0	---	No	---	1,000	ND	---	57	12	44	93
AB10	03/05/98	---	2.0	---	No	---	200	ND	---	3.0	1.2	3.2	2.8
AB11	03/05/98	---	8.5	---	No	---	ND	ND	---	ND	ND	ND	ND
AB12	03/05/98	---	6.0	---	No	---	8,800	37	---	660	50	630	940
AB13	03/05/98	---	8.0	---	No	---	210	ND	---	11	0.8	10	15
HA1	01/25/00	---	---	---	---	---	<500	<5.0	---	<0.3	<0.3	<0.3	<0.6
B1	11/18/10	---	Dry	---	---	---	---	---	---	---	---	---	---
B2	11/19/10	---	Dry	---	---	---	---	---	---	---	---	---	---
B3	11/19/10	---	8.45	---	---	<50	<50	---	<0.50	<0.50	<0.50	0.053f	0.21f
B4	11/19/10	---	Dry	---	---	---	---	---	---	---	---	---	---
B5	11/18/10	---	8.95	---	---	<50	<50	---	<0.50	<0.50	<0.50	0.047f	0.21f
W-15-B6	06/19/12	---	15	---	---	<50	<50	---	<0.50	<0.50	<0.50	<0.50	<0.50
W-15-B7	06/19/12	---	15	---	---	<50	<50	---	<0.50	<0.50	<0.50	<0.50	<0.50
W-9.5-B8	06/19/12	---	9.5	---	---	230g	<50	---	<0.50	<0.50	<0.50	<0.50	<0.50

**TABLE 1A**  
**CUMULATIVE GROUNDWATER MONITORING AND SAMPLING DATA**  
Former Mobil Service Station 99105  
6301 San Pablo Avenue  
Oakland, California  
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Notes:	Adapted from ETIC's <i>Report of Groundwater Monitoring, Third Quarter 2010</i> .
TOC Elev.	= Top of casing elevation.
DTW	= Depth to water.
GW Elev.	= Groundwater elevation.
NAPL	= Non-aqueous phase liquid.
TPHd	= Total petroleum hydrocarbons as diesel analyzed using EPA Method 8015B.
TPHg	= Total petroleum hydrocarbons as gasoline analyzed using EPA Method 8015B.
MTBE 8020/8021	= Methyl tertiary butyl ether analyzed using EPA Method 8020 or 8021B.
MTBE 8240/8260	= Methyl tertiary butyl ether analyzed using EPA Method 8260B or 8240.
BTEX	= Benzene, toluene, ethylbenzene, and total xylenes analyzed using EPA Method 8260B.
DIPE	= Di-isopropyl ether analyzed using EPA Method 8260B.
ETBE	= Ethyl tertiary butyl ether analyzed using EPA Method 8260B.
TAME	= Tertiary amyl methyl ether analyzed using EPA Method 8260B.
TBA	= Tertiary butyl alcohol analyzed using EPA Method 8260B.
1,2-DCA	= 1,2-dichloroethane analyzed using EPA Method 8260B.
EDB	= 1,2-dibromoethane analyzed using EPA Method 8260B.
Ethanol	= Ethanol analyzed using EPA Method 8260B.
ND	= Not detected at or above the laboratory reporting limit.
µg/L	= Micrograms per liter.
<	= Less than the stated laboratory reporting limit.
---	= Not analyzed/Not applicable.
a	= Well sampled using no-purge method.
b	= Diesel and unidentified hydrocarbons <C15.
c	= Diesel and unidentified hydrocarbons <C15>C25.
d	= Diesel and unidentified hydrocarbons >C20.
e	= Unidentified hydrocarbons >C18.
f	= Analyte was detected at a concentration below the reporting limit and above the laboratory method detection limit.
g	= Chromatographic pattern does not match that of the specified standard.

**TABLE 1B**  
**ADDITIONAL CUMULATIVE GROUNDWATER MONITORING AND SAMPLING DATA**  
Former Mobil Service Station 99105  
6301 San Pablo Avenue  
Oakland, California  
(Page 1 of 3)

Well ID	Sampling Date	DIPE (µg/L)	ETBE (µg/L)	TAME (µg/L)	TBA (µg/L)	1,2-DCA (µg/L)	EDB (µg/L)	Ethanol (µg/L)
<b>Environmental Screening Levels, Groundwater is Current or Potential Drinking Water Source (December 2013)</b>								
Table F-1a		---	---	---	12	0.50	0.05	---
MW1	03/14/96 - 01/27/99	Not analyzed for these analytes						
MW1	Apr-99	Destroyed during construction activities.						
MW2	03/14/96 - 01/15/04	Not analyzed for these analytes						
MW2	09/17/10	<0.50	<0.50	<0.50	<10	<0.50	<0.50	---
MW2	09/14/11	<0.50	<0.50	<0.50	<5.0	<0.50	<0.50	<50
MW2	01/18/12	<0.50	<0.50	<0.50	<5.0	<0.50	<0.50	<50
MW2	01/27/12	---	---	---	---	---	---	---
MW2	07/09/12	<0.50	<0.50	<0.50	<5.0	<0.50	<0.50	---
MW2	01/25/13	<0.50	<0.50	<0.50	<5.0	<0.50	<0.50	---
MW2	08/23/13	<0.50	<0.50	<0.50	<5.0	<0.50	<0.50	---
MW2	01/10/14	<0.50	<0.50	<0.50	<5.0	<0.50	<0.50	---
MW2	07/14/14	<0.50	<0.50	<0.50	<5.0	<0.50	<0.50	---
MW2	08/18/14	---	---	---	---	---	---	---
MW2	08/22/14	---	---	---	---	---	---	---
MW3	03/14/96 - 01/15/04	Not analyzed for these analytes						
MW3	09/17/10	0.17f	<0.50	<0.50	9.8f	1.9	<0.50	---
MW3	09/14/11	<0.50	<0.50	<0.50	<5.0	<0.50	<0.50	<50
MW3	01/18/12	<0.50	<0.50	<0.50	23	<0.50	<0.50	<50
MW3	01/27/12	---	---	---	---	---	---	---
MW3	07/09/12	<0.50	<0.50	<0.50	9.1	1.1	<0.50	---
MW3	01/25/13	<0.50	<0.50	<0.50	9.6	1.1	<0.50	---
MW3	08/23/13	<0.50	<0.50	<0.50	7.2	0.90	<0.50	---
MW3	01/10/14	<0.50	<0.50	<0.50	12	1.1	<0.50	---
MW3	07/14/14	<0.50	<0.50	<0.50	11	1.1	<0.50	---
MW3	08/18/14	---	---	---	---	---	---	---
MW3	08/22/14	---	---	---	---	---	---	---
MW4	03/14/96 - 01/27/99	Not analyzed for these analytes						
MW4	Apr-99	Destroyed during construction activities.						
MW5	10/25/00 - 01/15/04	Not analyzed for these analytes						
MW5	09/17/10	<5.0	<5.0	<5.0	<100	<5.0	<5.0	---
MW5	09/14/11	<2.0	<2.0	<2.0	25	<2.0	<2.0	<200
MW5	01/18/12	<1.0	<1.0	<1.0	37	<1.0	<1.0	<100
MW5	01/27/12	---	---	---	---	---	---	---
MW5	07/09/12	<2.5	<2.5	<2.5	36	<2.5	<2.5	---
MW5	01/25/13	<2.0	<2.0	<2.0	45	<2.0	<2.0	---
MW5	08/23/13	<2.0	<2.0	<2.0	42	<2.0	<2.0	---
MW5	01/10/14	<2.0	<2.0	<2.0	36	<2.0	<2.0	---

**TABLE 1B**  
**ADDITIONAL CUMULATIVE GROUNDWATER MONITORING AND SAMPLING DATA**  
Former Mobil Service Station 99105  
6301 San Pablo Avenue  
Oakland, California  
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Well ID	Sampling Date	DIPE (µg/L)	ETBE (µg/L)	TAME (µg/L)	TBA (µg/L)	1,2-DCA (µg/L)	EDB (µg/L)	Ethanol (µg/L)
<b>Environmental Screening Levels, Groundwater is Current or Potential Drinking Water Source (December 2013)</b>								
Table F-1a		---	---	---	12	0.50	0.05	---
MW5	07/14/14	<5.0	<5.0	<5.0	<50	<5.0	<5.0	---
MW5	08/18/14	---	---	---	---	---	---	---
MW5	08/22/14	<5.0	<5.0	<5.0	<50	<5.0	<5.0	---
MW6	08/18/14	<0.50	<0.50	<0.50	14	1.1	<0.50	---
MW6	08/22/14	<0.50	<0.50	<0.50	12	<0.50	<0.50	---
MW7	08/18/14	<0.50	<0.50	<0.50	21	3.1	<0.50	---
MW7	08/22/14	Dry	---	---	---	---	---	---
MW8	08/18/14	<0.50	<0.50	<0.50	20	0.78	<0.50	---
MW8	08/22/14	<0.50	<0.50	<0.50	31	<0.50	<0.50	---
<b>Grab Groundwater Samples</b>								
Not analyzed for these analytes prior to 2010.								
B1	11/18/10	---	---	---	---	---	---	---
B3	11/19/10	---	---	---	---	8.7	---	---
B4	11/19/10	---	---	---	---	---	---	---
B5	11/18/10	---	---	---	---	0.099f	---	---
W-15-B6	06/19/12	<0.50	<0.50	<0.50	<5.0	---	---	---
W-15-B7	06/19/12	<0.50	<0.50	<0.50	<5.0	---	---	---
W-9.5-B8	06/19/12	<0.50	<0.50	<0.50	<5.0	---	---	---

**TABLE 1B**  
**ADDITIONAL CUMULATIVE GROUNDWATER MONITORING AND SAMPLING DATA**

Former Mobil Service Station 99105

6301 San Pablo Avenue

Oakland, California

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Notes:	Adapted from ETIC's <i>Report of Groundwater Monitoring, Third Quarter 2010</i> .
TOC Elev.	= Top of casing elevation.
DTW	= Depth to water.
GW Elev.	= Groundwater elevation.
NAPL	= Non-aqueous phase liquid.
TPHd	= Total petroleum hydrocarbons as diesel analyzed using EPA Method 8015B.
TPHg	= Total petroleum hydrocarbons as gasoline analyzed using EPA Method 8015B.
MTBE 8020/8021	= Methyl tertiary butyl ether analyzed using EPA Method 8020 or 8021B.
MTBE 8240/8260	= Methyl tertiary butyl ether analyzed using EPA Method 8260B or 8240.
BTEX	= Benzene, toluene, ethylbenzene, and total xylenes analyzed using EPA Method 8260B.
DIPE	= Di-isopropyl ether analyzed using EPA Method 8260B.
ETBE	= Ethyl tertiary butyl ether analyzed using EPA Method 8260B.
TAME	= Tertiary amyl methyl ether analyzed using EPA Method 8260B.
TBA	= Tertiary butyl alcohol analyzed using EPA Method 8260B.
1,2-DCA	= 1,2-dichloroethane analyzed using EPA Method 8260B.
EDB	= 1,2-dibromoethane analyzed using EPA Method 8260B.
Ethanol	= Ethanol analyzed using EPA Method 8260B.
ND	= Not detected at or above the laboratory reporting limit.
µg/L	= Micrograms per liter.
<	= Less than the stated laboratory reporting limit.
---	= Not analyzed/Not applicable.
a	= Well sampled using no-purge method.
b	= Diesel and unidentified hydrocarbons <C15.
c	= Diesel and unidentified hydrocarbons <C15>C25.
d	= Diesel and unidentified hydrocarbons >C20.
e	= Unidentified hydrocarbons >C18.
f	= Analyte was detected at a concentration below the reporting limit and above the laboratory method detection limit.
g	= Chromatographic pattern does not match that of the specified standard.

**TABLE 2**  
**WELL CONSTRUCTION DETAILS**  
Former Mobil Service Station 99105  
6301 San Pablo Avenue  
Oakland, California  
(Page 1 of 1)

Well ID	Well Installation Date	Well Destruction Date	TOC Elevation (feet)	Well Casing Material	Total Depth (feet)	Well Depth (feet)	Borehole Diameter (inches)	Casing Diameter (inches)	Screened Interval (feet)	Slot Size (inches)	Filter Pack Interval (feet)	Filter Pack Material
MW1	03/01/96	Apr-99	32.79	PVC	21.5	21.5	10	4	5-20	0.010	4.5-21.5	#12 Sand
MW2	03/01/96	---	42.24	PVC	21.5	21.5	10	4	5-20	0.010	4.5-21.5	#12 Sand
MW3	03/01/96	---	42.18	PVC	21.5	21.5	10	4	5-20	0.010	4.5-21.5	#12 Sand
MW4	03/01/96	Apr-99	31.50	PVC	26.5	25	10	4	5-25	0.010	4.5-21.5	#12 Sand
MW5	09/06/00	---	41.86	PVC	21.5	21.5	10	4	5-20	0.010	4-21.5	#2/12 Sand
MW6	08/11/14	---	42.00	PVC	18	15	12	4	5-15	0.020	4-15	#2/12 Sand
MW7	08/11/14	---	41.34	PVC	16	15	10	2	5-15	0.020	4-15	#2/12 Sand
MW8	08/15/14	---	41.30	PVC	16	15	12	4	5-15	0.020	4-15	#2/12 Sand
VW1	11/01/10	---	---	Stainless Steel	6	6	4	0.25	5.25-5.75	0.0057	5-6	#2/12 Sand
VW2	11/02/10	---	---	Stainless Steel	6	6	4	0.25	5.25-5.75	0.0057	5-6	#2/12 Sand
VW3	11/01/10	---	---	Stainless Steel	6	6	4	0.25	5.25-5.75	0.0057	5-6	#2/12 Sand
VW4	11/02/10	---	---	Stainless Steel	6	6	4	0.25	5.25-5.75	0.0057	5-6	#2/12 Sand
VW5	11/02/10	---	---	Stainless Steel	6	6	4	0.25	5.25-5.75	0.0057	5-6	#2/12 Sand
MP1	11/16/98	1998	---	PVC	23	23	1.5	1	4-23	0.020	2.5-23	#3 Sand
MP2	11/16/98	1998	---	PVC	20	20	1.5	1	5-20	0.020	4-20	#3 Sand
MP3	11/16/98	1998	---	PVC	18	18	1.5	1	3-18	0.020	2-18	#3 Sand
MP4	11/16/98	1998	---	PVC	18	18	1.5	1	3-18	0.020	2-18	#3 Sand
MP5	11/16/98	1998	---	PVC	18	18	1.5	1	3-18	0.020	2-18	#3 Sand
MP6	11/16/98	1998	---	PVC	17.5	17.5	1.5	1	3.5-17.5	0.020	2.5-17.5	#3 Sand
SVS1	06/18/12	---	38.78	PVC/Stainless Steel	5.5	5	3.25	0.25	4.75-5	0.010	4.5-5	#3 Sand
SVS2	06/18/12	---	41.05	PVC/Stainless Steel	5.5	5	3.25	0.25	4.75-5	0.010	4.5-5	#3 Sand
SVS3	06/18/12	---	42.64	PVC/Stainless Steel	5.5	5	3.25	0.25	4.75-5	0.010	4.5-5	#3 Sand

Notes:  
TOC = Top of casing.  
PVC = Polyvinyl chloride.  
--- = Not applicable/Not available.

**TABLE 3**  
**CUMULATIVE SOIL ANALYTICAL DATA**  
Former Mobil Service Station 99105  
6301 San Pablo Avenue  
Oakland, California  
(Page 1 of 4)

Sample ID	Sample Date	Depth (feet bgs)	TPHd (mg/kg)	TPHg (mg/kg)	MTBE 8021 (mg/kg)	MTBE 8260B (mg/kg)	B (mg/kg)	T (mg/kg)	E (mg/kg)	X (mg/kg)	TBA (mg/kg)	DIPE (mg/kg)	ETBE (mg/kg)	TAME (mg/kg)	1,2-DCA (mg/kg)	EDB (mg/kg)	Naphthalene (mg/kg)	Lead (mg/kg)	TOG (mg/kg)
<b>Residential Environmental Screening Levels, Groundwater is Current or Potential Source of Drinking Water (December 2013)</b>																			
Shallow (<10 feet bgs) Soil (Table A-1)			100	100	0.023	0.023	0.044	2.9	3.3	2.3	0.075	---	---	---	0.0045	0.00033	1.2	80	---
Deep (≥10 feet bgs) Soil (Table C-1)			110	500	0.023	0.023	0.044	2.9	3.3	2.3	0.075	---	---	---	0.0045	0.00033	1.2	80	---
<b>Monitoring, Remediation, and Soil Vapor Well Samples</b>																			
MW1	03/01/96	5 - 5.5	3.4	<1.0	---	---	<0.0050	<0.0050	<0.0050	<0.0050	---	---	---	---	---	---	---	<2.5	---
MW1	03/01/96	10 - 10.5	<1.0	<1.0	---	---	<0.0050	<0.0050	<0.0050	<0.0050	---	---	---	---	---	---	---	<2.5	---
MW1	03/01/96	15 - 15.5	4.2	<1.0	---	---	<0.0050	<0.0050	<0.0050	<0.0050	---	---	---	---	---	---	---	<2.5	---
MW2	03/01/96	5 - 5.5	2.4	<1.0	---	---	<0.0050	<0.0050	<0.0050	<0.0050	---	---	---	---	---	---	---	<2.5	---
MW2	03/01/96	10 - 10.5	57	220	---	---	<b>1.2</b>	1.4	2.7	<b>14</b>	---	---	---	---	---	---	---	<2.5	---
MW2	03/01/96	15 - 15.5	<1.0	<1.0	---	---	<0.0050	<0.0050	0.0063	0.035	---	---	---	---	---	---	---	<2.5	---
MW3	03/01/96	5.5 - 6	1.1	<1.0	---	---	<0.0050	<0.0050	<0.0050	<0.0050	---	---	---	---	---	---	---	<2.5	9
MW3	03/01/96	10.5 - 11	72	53	---	---	0.032	0.43	0.65	0.93	---	---	---	---	---	---	---	<2.5	290
MW3	03/01/96	15.5 - 16	<1.0	<1.0	---	---	<0.0050	<0.0050	<0.0050	<0.0050	---	---	---	---	---	---	---	<2.5	10
MW4	03/01/96	5.5 - 6	34	280	---	---	1.2	1	4.1	19	---	---	---	---	---	---	---	<2.5	---
MW4	03/01/96	10.5 - 11	7.7	6	---	---	<b>0.11</b>	<0.0050	0.11	0.093	---	---	---	---	---	---	---	<2.5	---
MW4	03/01/96	15.5 - 16	2.1	6	---	---	<b>0.076</b>	0.023	0.083	0.07	---	---	---	---	---	---	---	<2.5	---
S-5-MW6	08/11/14	5	83b,c	<0.53	---	<0.0049	<0.0049	<0.0049	<0.0049	<0.0049	<0.049	<0.0099	<0.0099	<0.0099	<0.0049	<0.0049	<0.049	---	---
S-10-MW6	08/11/14	10	47b,c	4.4c	---	<0.0052	<0.0052	<0.0052	<0.0052	<0.0052	<0.052	<0.010	<0.010	<0.010	<0.0052	<0.0052	<0.052	---	---
S-15-MW6	08/11/14	15	<4.9b	2.2c	---	<0.0048	<0.0048	<0.0048	<0.0048	<0.0048	<0.048	<0.0095	<0.0095	<0.0095	<0.0048	<0.0048	---	---	---
S-5-MW7	08/11/14	5	<5.0b	<0.48	---	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.050	<0.010	<0.010	<0.010	<0.0050	<0.0050	<0.050	---	---
S-10-MW7	08/11/14	10	<5.0b	<0.49	---	<0.0049	<0.0049	<0.0049	<0.0049	<0.0049	<0.049	<0.0098	<0.0098	<0.0098	<0.0049	<0.0049	<0.049	---	---
S-15-MW7	08/11/14	15	<5.0b	<0.49	---	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.050	<0.010	<0.010	<0.010	<0.0050	<0.0050	---	---	---
S-5-MW8	08/15/14	5	<5.0b	<0.50	---	<0.0048	0.0051	<0.0048	<0.0048	<0.0048	<0.048	<0.0096	<0.0096	<0.0096	<0.0048	<0.0048	<0.048	---	---
S-8-MW8	08/15/14	8	41b,c	22	---	<0.50	<0.50	<0.50	3.4	2.1	<5.0	<0.99	<0.99	<0.99	<0.50	<0.50	<5.0	---	---
S-10-MW8	08/15/14	10	<5.0b	3.3	---	<0.0051	0.044	<0.0051	0.17	0.15	<0.051	<0.010	<0.010	<0.010	<0.0051	<0.0051	0.15	---	---
S-15-MW8	08/15/14	15	<5.0b	<0.48	---	<0.0052	0.032	<0.0052	<0.0052	<0.0052	<0.052	<0.010	<0.010	<0.010	<0.0052	<0.0052	<0.052	---	---
VW1	11/01/10	5.5-6	<5.0b	<0.50	---	<0.0050	<0.0050	<0.0050	<0.0050	<0.010	<0.050	<0.010	<0.010	<0.010	<0.0050	<0.0050	---	---	---
VW2	11/02/10	5.5-6	<5.0b	<0.50	---	<0.0050	<0.0050	<0.0050	<0.0050	<0.010	<0.050	<0.010	<0.010	<0.010	<0.0050	<0.0050	---	---	---
VW3	11/01/10	5.5-6	<5.0b	<0.50	---	<0.0050	<0.0050	<0.0050	<0.0050	<0.010	<0.050	<0.010	<0.010	<0.010	<0.0050	<0.0050	---	---	---
VW4	11/02/10	5.5-6	<5.0b	3.7c	---	<0.0050	<0.0050	<0.0050	0.0050	0.0050a	<0.050	<0.010	<0.010	<0.010	<0.0050	<0.0050	---	---	---
VW5	11/02/10	5.5-6	<5.0b	<0.50	---	<0.0050	<0.0050	<0.0050	<0.0050	<0.010	<0.050	<0.010	<0.010	<0.010	<0.0050	<0.0050	---	---	---
S-5-SVS1	06/18/12	5	<5.0b	<0.50	---	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.050	<0.010	<0.010	<0.010	---	---	---	---	---
S-5-SVS2	06/18/12	5	<5.0b	<0.50	---	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.050	<0.010	<0.010	<0.010	---	---	---	---	---
S-5-SVS3	06/18/12	5	<5.0b	<0.50	---	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.050	<0.010	<0.010	<0.010	---	---	---	---	---

Borings



**TABLE 3**  
**CUMULATIVE SOIL ANALYTICAL DATA**  
Former Mobil Service Station 99105  
6301 San Pablo Avenue  
Oakland, California  
(Page 2 of 4)

Sample ID	Sample Date	Depth (feet bgs)	TPHd (mg/kg)	TPHg (mg/kg)	MTBE 8021 (mg/kg)	MTBE 8260B (mg/kg)	B (mg/kg)	T (mg/kg)	E (mg/kg)	X (mg/kg)	TBA (mg/kg)	DIPE (mg/kg)	ETBE (mg/kg)	TAME (mg/kg)	1,2-DCA (mg/kg)	EDB (mg/kg)	Naphthalene (mg/kg)	Lead (mg/kg)	TOG (mg/kg)
<b>Residential Environmental Screening Levels, Groundwater is Current or Potential Source of Drinking Water (December 2013)</b>																			
Shallow (<10 feet bgs) Soil (Table A-1)			100	100	0.023	0.023	0.044	2.9	3.3	2.3	0.075	---	---	---	0.0045	0.00033	1.2	80	---
Deep (≥10 feet bgs) Soil (Table C-1)			110	500	0.023	0.023	0.044	2.9	3.3	2.3	0.075	---	---	---	0.0045	0.00033	1.2	80	---
AB-1	03/05/98	5 - 6	---	ND	ND	---	ND	ND	ND	ND	---	---	---	---	---	---	---	---	---
AB-2	03/05/98	4 - 5	---	ND	ND	---	ND	ND	ND	ND	---	---	---	---	---	---	---	---	---
AB-3	03/05/98	5.5	---	ND	ND	---	ND	ND	ND	ND	---	---	---	---	---	---	---	---	---
AB-4	03/05/98	5 - 6	---	18	ND	---	ND	ND	ND	ND	---	---	---	---	---	---	---	---	---
AB-5	03/05/98	3 - 4	---	170	ND	---	ND	ND	0.65	ND	---	---	---	---	---	---	---	---	---
AB-6	03/05/98	5	---	230	ND	---	ND	ND	ND	ND	---	---	---	---	---	---	---	---	---
AB-7	03/05/98	4-5	---	19	ND	---	ND	ND	0.032	ND	---	---	---	---	---	---	---	---	---
AB-8	03/05/98	5	---	ND	ND	---	ND	ND	ND	ND	---	---	---	---	---	---	---	---	---
AB-9	03/05/98	4	---	16	ND	---	0.006	ND	0.028	ND	---	---	---	---	---	---	---	---	---
AB-10	03/05/98	4	---	ND	ND	---	ND	ND	ND	ND	---	---	---	---	---	---	---	---	---
AB-11	03/05/98	5 - 6	---	3.9	ND	---	ND	ND	ND	ND	---	---	---	---	---	---	---	---	---
AB-12	03/16/98	5 - 6	---	ND	ND	---	ND	ND	ND	ND	---	---	---	---	---	---	---	---	---
AB-13	03/16/98	5 - 6	---	ND	ND	---	ND	ND	ND	ND	---	---	---	---	---	---	---	---	---
MP-1	11/16/98	7.5	---	10	ND	---	ND	0.007	0.013	ND	---	---	---	---	---	---	---	---	---
MP-2	11/16/98	7	---	270	ND	---	ND	0.03	0.29	2.1	---	---	---	---	---	---	---	---	---
MP-2	11/16/98	10.5	---	140	0.15	---	0.08	ND	0.31	ND	---	---	---	---	---	---	---	---	---
MP-3	11/16/98	7.5	---	230	0.28	---	ND	0.1	1.6	ND	---	---	---	---	---	---	---	---	---
MP-4	11/16/98	5	---	120	0.19	---	ND	ND	0.35	ND	---	---	---	---	---	---	---	---	---
MP-4	11/16/98	10	---	18	ND	---	ND	0.013	0.07	0.086	---	---	---	---	---	---	---	---	---
MP-5	11/16/98	6.5	---	6.4	ND	---	ND	ND	0.015	0.022	---	---	---	---	---	---	---	---	---
MP-5	11/16/98	10.5	---	220	0.52	---	ND	ND	1.4	3	---	---	---	---	---	---	---	---	---
MP-6	11/16/98	7	---	ND	ND	---	ND	ND	ND	ND	---	---	---	---	---	---	---	---	---
MP-6	11/16/98	10	---	240	0.92	ND	ND	ND	1.6	4.2	---	---	---	---	---	---	---	---	---
HA-1	01/25/00	5	---	<0.50	<0.025	---	<0.0050	<0.0050	<0.0050	<0.010	---	---	---	---	---	---	---	---	---
B1	11/17/10	5-5.5	<5.0b	<0.50	---	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.050	<0.010	<0.010	<0.010	<0.0050	<0.0050	---	---	---



**TABLE 3**  
**CUMULATIVE SOIL ANALYTICAL DATA**  
Former Mobil Service Station 99105  
6301 San Pablo Avenue  
Oakland, California  
(Page 4 of 4)

Sample ID	Sample Date	Depth (feet bgs)	TPHd (mg/kg)	TPHg (mg/kg)	MTBE 8021 (mg/kg)	MTBE 8260B (mg/kg)	B (mg/kg)	T (mg/kg)	E (mg/kg)	X (mg/kg)	TBA (mg/kg)	DIPE (mg/kg)	ETBE (mg/kg)	TAME (mg/kg)	1,2-DCA (mg/kg)	EDB (mg/kg)	Naphthalene (mg/kg)	Lead (mg/kg)	TOG (mg/kg)
<b>Residential Environmental Screening Levels, Groundwater is Current or Potential Source of Drinking Water (December 2013)</b>																			
Shallow (<10 feet bgs) Soil (Table A-1)			100	100	0.023	0.023	0.044	2.9	3.3	2.3	0.075	---	---	---	0.0045	0.00033	1.2	80	---
Deep (≥10 feet bgs) Soil (Table C-1)			110	500	0.023	0.023	0.044	2.9	3.3	2.3	0.075	---	---	---	0.0045	0.00033	1.2	80	---

**Product Line Samples**

PL1-1	02/14/96	3.0	14	<1.0	---	---	<0.0050	<0.0050	<0.005	<0.0050	---	---	---	---	---	---	---	---	11	---
PL1-2	02/14/96	2.5	<1.0	<1.0	---	---	<0.0050	<0.0050	<0.0050	<0.0050	---	---	---	---	---	---	---	---	5.0	---
PL1-3	02/15/96	2.5	37	240	---	---	0.24	0.59	1.1	1.3	---	---	---	---	---	---	---	---	6.5	---
PL1-5	02/15/96	2	4.9	63	---	---	0.30	0.42	0.31	0.41	---	---	---	---	---	---	---	---	8.2	---
PL4-1	02/14/96	3.0	7.7	1.4	---	---	0.056	0.078	0.0073	0.0420	---	---	---	---	---	---	---	---	9.9	---
PL4-2	02/15/96	2.5	<1.0	<1.0	---	---	<0.0050	<0.0050	<0.0050	<0.0050	---	---	---	---	---	---	---	---	5.5	---
PL4-3	02/15/96	5	3.0	4.3	---	---	0.0086	0.0075	0.040	0.058	---	---	---	---	---	---	---	---	6.3	---
PL4-4	02/15/96	5.0	3.2	<1.0	---	---	<0.0050	<0.0050	<0.0050	<0.0050	---	---	---	---	---	---	---	---	4.6	---

**Soil Stockpile Samples**

WO-(1-2) d	01/04/96	---	38	<1.0	---	---	<0.005	<0.005	<0.005	<0.005	---	---	---	---	---	---	---	---	20	240
SPPL4-(1-4)	03/01/96	---	11	9	---	---	0.013	0.03	0.13	0.054	---	---	---	---	---	---	---	---	<2.5	---
Comp-1	01/25/00	---	---	<0.50	<0.025	---	<0.0050	<0.0050	<0.0050	<0.010	---	---	---	---	---	---	---	---	8.04	---
S-SP1-1	06/19/12	---	<5.0	<0.50	---	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.050	<0.010	<0.010	<0.010	<0.0050	<0.0050	---	---	16.1	---
S-SP1-2	06/19/12	---	<5.0	<0.50	---	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.050	<0.010	<0.010	<0.010	<0.0050	<0.0050	---	---	24.4	---
S-SP1-3	06/19/12	---	5.7	<0.50	---	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.050	<0.010	<0.010	<0.010	<0.0050	<0.0050	---	---	12.7	---
S-SP1-4	06/19/12	---	<5.0	<0.50	---	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.050	<0.010	<0.010	<0.010	<0.0050	<0.0050	---	---	21.5	---
SP1	08/11/14	---	<4.9b	0.91c	---	<0.0049	<0.0049	<0.0049	<0.0049	<0.0049	<0.049	<0.0098	<0.0098	<0.0098	<0.0049	<0.0049	<0.049	<0.049	9.74	---

**Notes:**

TPHd	=	Total petroleum hydrocarbons as diesel analyzed using EPA Method 8015B.
TPHg	=	Total petroleum hydrocarbons as gasoline analyzed using EPA Method 8015B.
MTBE 8021	=	Methyl tertiary butyl ether analyzed using EPA Method 8020 or 8021B.
MTBE 8260B	=	Methyl tertiary butyl ether analyzed using EPA Method 8260B.
BTEX	=	Benzene, toluene, ethylbenzene, and total xylenes analyzed using EPA Method 8260B.
TBA	=	Tertiary butyl alcohol analyzed using EPA Method 8260B.
DIPE	=	Di-isopropyl ether analyzed using EPA Method 8260B.
ETBE	=	Ethyl tertiary butyl ether analyzed using EPA Method 8260B.
TAME	=	Tertiary amyl methyl ether analyzed using EPA Method 8260B.
1,2-DCA	=	1,2-dichloroethane analyzed using EPA Method 8260B.
EDB	=	1,2-dibromoethane analyzed using EPA Method 8260B.
TOG	=	Total oil and grease.
Green	=	Soil has been excavated.
ND	=	Not detected at or above the laboratory reporting limit.
feet bgs	=	Feet below ground surface.
mg/kg	=	Milligrams per kilogram.
<	=	Less than the stated laboratory reporting limit.
---	=	Not analyzed/Not sampled/Not applicable.
a	=	Analyte was detected at a concentration below the reporting limit and above the laboratory method detection limit. Reported value is estimated.
b	=	The sample extract was subjected to Silica Gel treatment prior to analysis.
c	=	The chromatographic pattern does not match that of the specified standard.
d	=	Additional analysis: cadmium (<0.0250 mg/kg), chromium (12 mg/kg), lead (4.3 mg/kg), nickel (38 mg/kg), and zinc (71 mg/kg).

**TABLE 4**  
**DUAL-PHASE EXTRACTION TESTS - EXTRACTION WELL DATA**  
Former Mobil Service Station 99105  
6301 San Pablo Avenue  
Oakland, California  
(Page 1 of 2)

Date	Time	LRP Hours	Elapsed Time	Blower Vacuum (in Hg)	Well Vacuum (in Hg)	Vapor Flow (fpm)	Vapor Flow (scfm)	Oxidizer Temp (deg C)	Oxidizer Temp (deg F)	Vapor Temp (deg F)	Vapor Pressure (in H <sub>2</sub> O)	PID Influent (ppm)	PID Effluent (ppm)	Totalizer Reading (gallons)
<b>Extraction Well MW5</b>														
08/18/14	15:30	34,232	0.0	18.0	15.0	1,120	24.4	458	856	75	---	860	2.3	26,100
08/18/14	16:00	34,232	0.5	18.0	15.0	1,720	37.5	424	795	75	---	895	2.1	26,100
08/18/14	16:30	34,233	1.0	18.0	16.0	1,586	34.9	414	777	75	3.5	795	4.0	26,100
08/18/14	17:30	34,234	1.5	18.5	16.0	1,460	32.1	419	786	75	3.0	870	4.5	26,100
<b>Extraction Well MW6</b>														
08/18/14	17:35	34,234	0.0	25.5	21.0	580	12.6	364	687	75	0.0	1,116	4.0	26,100
08/18/14	18:05	34,234	0.5	25.5	21.0	630	13.9	380	716	70	1.5	840	2.9	26,100
08/18/14	18:35	34,235	1.0	26.0	22.0	465	10.2	376	709	72	0.5	963	3.1	26,100
08/18/14	19:05	34,235	1.5	26.0	22.0	410	8.9	378	712	75	0.1	860	3.0	26,100
08/18/14	19:35	34,236	2.0	26.0	22.0	535	11.7	381	718	75	0.1	865	3.7	26,100
<b>Extraction Wells MW5 and MW6</b>														
08/18/14	20:30	34,237	0.0	19.0	16.5	1,500	33.2	435	815	70	2.6	961	2.3	26,100
08/18/14	21:30	34,238	1.0	20.5	17.5	1,300	28.7	432	810	70	2.1	1,079	3.3	26,100
08/18/14	22:30	34,239	2.0	22.5	21.5	1,100	24.2	433	811	70	0.8	1,301	2.3	26,100
08/18/14	23:30	34,240	3.0	23.5	19.5	1,125	24.8	448	838	70	1.25	1,350	2.7	26,100
08/19/14	0:30	34,241	4.0	23.0	19.0	1,150	25.4	444	831	70	1.2	1,286	2.2	26,100
08/19/14	1:30	34,242	5.0	23.0	18.5	1,150	25.4	436	817	70	1.2	1,305	2.1	26,100
08/19/14	2:30	34,243	6.0	24.0	20.0	1,000	22.1	483	901	70	1.2	1,505	1.3	26,100
08/19/14	3:30	34,244	7.0	24.0	20.0	950	21.0	489	912	70	1.2	1,569	2.0	26,100
08/19/14	4:30	34,245	8.0	24.0	20.0	935	20.6	487	909	70	1.2	1,655	1.7	26,100
08/19/14	5:30	34,246	9.0	24.0	20.0	950	21.0	480	896	70	1.2	1,523	1.3	26,100
08/19/14	6:30	34,247	10.0	24.5	20.0	1,050	23.2	472	882	70	1.5	1,535	3.4	26,100
08/19/14	7:30	34,248	11.0	24.0	20.0	1,050	23.2	468	874	70	1.2	1,530	3.1	26,100
08/19/14	8:30	34,249	12.0	24.0	20.0	975	21.5	460	860	70	1.2	1,482	3.3	26,140
08/19/14	9:30	34,250	13.0	24.0	20.0	1,070	23.4	453	847	75	1.2	1,505	3.7	26,140
08/19/14	10:30	34,251	14.0	24.0	20.5	1,010	22.1	448	838	75	1.1	1,474	3.9	26,140
08/19/14	11:30	34,252	15.0	23.5	20.5	1,045	22.6	441	826	80	1.1	1,441	4.2	26,140
08/19/14	12:30	34,253	16.0	23.5	21.0	1,025	22.2	433	811	80	1.1	1,354	4.3	26,140
08/19/14	13:30	34,254	17.0	23.5	22.0	1,010	21.9	430	806	80	1.1	1,373	4.5	26,140
08/19/14	14:30	34,255	18.0	23.0	21.5	1,090	23.6	447	837	80	1.0	1,440	3.0	26,140
08/19/14	15:30	34,256	19.0	23.0	21.5	1,090	23.6	445	833	80	1.0	1,395	1.4	26,140
08/19/14	16:30	34,257	20.0	23.0	21.5	1,070	23.2	453	847	80	1.0	1,482	1.8	26,140
08/19/14	17:30	34,258	21.0	23.0	21.5	1,095	23.8	457	855	78	1.0	1,512	1.1	26,140
08/19/14	18:30	34,259	22.0	22.5	20.5	1,160	25.1	450	842	80	1.0	1,490	2.0	26,140
08/19/14	19:30	34,260	23.0	23.5	20.5	1,155	25.0	464	867	81	1.0	1,520	3.7	26,140
08/19/14	20:30	34,261	24.0	23.5	20.5	1,120	24.2	466	871	80	1.0	1,561	2.9	26,140
08/19/14	21:30	34,262	25.0	23.5	20.5	1,065	23.1	471	880	80	1.0	1,660	2.5	26,140
08/19/14	22:30	34,263	26.0	23.5	19.5	990	21.8	470	878	70	1.0	1,561	2.5	26,140
08/19/14	23:30	34,264	27.0	23.5	19.5	945	20.8	469	876	70	1.0	1,531	2.7	26,140
08/20/14	0:30	34,265	28.0	23.5	19.5	930	20.5	467	873	70	1.0	1,501	2.7	26,140
08/20/14	1:30	34,266	29.0	23.5	19.5	950	21.0	466	871	70	1.0	1,542	2.6	26,140
08/20/14	2:30	34,267	30.0	23.5	20.0	950	21.0	467	873	70	1.0	1,572	2.9	26,140
08/20/14	3:30	34,268	31.0	23.5	20.0	1,000	22.1	467	873	70	1.0	1,542	2.8	26,140
08/20/14	4:30	34,269	32.0	23.5	19.5	975	21.5	468	874	70	1.0	1,716	2.5	26,140
08/20/14	5:30	34,270	33.0	23.5	19.5	975	21.5	467	873	70	1.0	1,591	2.6	26,140
08/20/14	6:30	34,271	34.0	23.5	20.0	990	21.8	468	874	70	1.1	1,595	2.4	26,140
08/20/14	7:30	34,272	35.0	23.5	20.0	1,035	22.8	470	878	70	1.1	1,625	2.4	26,140
08/20/14	8:30	34,273	36.0	23.5	20.0	1,085	23.9	472	882	70	1.2	1,682	2.3	26,140
08/20/14	9:30	34,274	37.0	23.5	20.0	1,030	22.7	473	883	70	1.3	1,670	2.4	26,140
08/20/14	10:30	34,275	38.0	23.5	20.5	1,050	23.2	478	892	70	1.0	1,644	2.0	26,140
08/20/14	11:30	34,276	39.0	23.5	20.5	1,095	24.2	479	894	70	1.2	1,674	2.0	26,140
08/20/14	12:30	34,277	40.0	23.5	21.0	1,025	22.4	482	900	75	1.7	1614	1.0	26,140
08/20/14	13:30	34,278	41.0	23.5	21.0	1,040	22.8	483	901	75	1.6	1,708	0.8	26,140
08/20/14	14:30	34,279	42.0	23.5	21.0	1,055	23.1	485	905	75	1.4	1,701	1.0	26,140
08/20/14	15:30	34,280	43.0	23.5	21.0	1,080	23.6	487	909	75	1.4	1,670	1.2	26,140
08/20/14	16:30	34,280	43.0	23.5	21.0	1,050	23.0	492	918	75	1.6	1,678	1.8	26,190

**TABLE 4**  
**DUAL-PHASE EXTRACTION TESTS - EXTRACTION WELL DATA**  
Former Mobil Service Station 99105  
6301 San Pablo Avenue  
Oakland, California  
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Date	Time	LRP Hours	Elapsed Time	Blower Vacuum (in Hg)	Well Vacuum (in Hg)	Vapor Flow (fpm)	Vapor Flow (scfm)	Oxidizer Temp (deg C)	Oxidizer Temp (deg F)	Vapor Temp (deg F)	Vapor Pressure (in H <sub>2</sub> O)	PID Influent (ppm)	PID Effluent (ppm)	Totalizer Reading (gallons)
08/20/14	17:30	34,281	44.0	23.0	22.0	1,055	23.1	497	927	75	1.4	1,712	1.5	26,190
08/20/14	18:30	34,282	45.0	23.0	22.0	1,040	22.7	493	919	75	1.4	1,704	1.0	26,190
08/20/14	19:30	34,283	46.0	23.0	21.0	1,025	22.4	484	903	75	1.3	1,742	1.5	26,190
08/20/14	20:30	34,284	47.0	23.0	20.0	1,055	23.1	485	905	75	1.6	1,701	1.3	26,190
08/20/14	21:30	34,286	49.0	23.0	20.0	1,015	22.4	484	903	70	1.2	1,670	1.8	26,200
08/20/14	22:30	34,286	49.0	23.5	19.5	1,025	22.6	484	903	70	1.2	1,825	1.4	26,200
08/20/14	23:30	34,287	50.0	23.5	19.5	1,025	22.6	486	907	70	1.2	1,806	1.4	26,200
08/21/14	0:30	34,288	51.0	23.5	19.5	1,000	22.1	489	912	68	1.2	1,753	1.3	26,200
08/21/14	1:30	34,289	52.0	23.5	19.5	1,025	22.7	491	916	68	1.2	1,753	1.2	26,200
08/21/14	2:30	34,290	53.0	23.5	19.5	1,025	22.7	495	923	68	1.2	2,231	1.2	26,200
08/21/14	3:30	34,291	54.0	23.5	19.5	1,100	24.4	498	928	68	1.2	1,968	1.1	26,200
08/21/14	4:30	34,292	55.0	23.5	19.5	1,050	23.3	500	932	68	1.2	1,983	1.1	26,200
08/21/14	5:30	34,293	56.0	23.5	19.5	1,100	24.4	504	939	68	1.2	1,870	1.1	26,200
08/21/14	6:30	34,294	57.0	23.0	19.5	1,060	23.5	491	916	68	1.9	1,889	1.0	26,200
08/21/14	7:30	34,295	58.0	23.0	19.5	1,140	25.3	501	934	68	2.0	1,949	1.1	26,200
08/21/14	8:30	34,297	60.0	23.0	20.0	1,185	26.3	505	941	70	3.2	1,930	0.5	26,200
08/21/14	9:30	34,297	60.0	23.0	20.0	1,155	25.6	505	941	72	3.9	1,844	0.6	26,200
08/21/14	10:30	34,298	61.0	22.5	20.5	1,160	25.6	506	943	75	5.6	1,836	0.5	26,200
08/21/14	11:30	34,299	62.0	22.5	20.5	1,155	25.5	509	948	75	5.8	1,848	0.7	26,200
08/21/14	12:30	34,300	63.0	22.5	21.0	1,130	24.9	514	957	77	5.6	1,863	0.6	26,200
08/21/14	13:30	34,301	64.0	22.0	20.5	1,160	25.5	517	963	77	5.7	1,870	0.9	26,200
08/21/14	14:30	---	---	---	---	---	---	---	---	---	---	---	---	---
08/21/14	15:30	34,302	65.0	22.5	20.5	1,190	26.0	468	874	75	1.2	1,897	1.1	26,230
08/21/14	16:30	34,303	66.0	22.5	20.5	1,185	25.8	529	984	77	1.2	1,704	1.0	26,230
08/21/14	17:30	34,304	67.0	22.0	18.0	1,370	30.0	447	837	75	2.0	1,400	0.8	26,230
08/21/14	18:30	34,305	68.0	22.0	21.5	1,060	23.2	449	840	75	1.4	1,814	0.7	26,230
08/21/14	19:30	34,306	69.0	22.5	20.0	1,095	23.9	472	882	75	1.2	1,980	0.6	26,230
08/21/14	20:30	34,307	70.0	22.5	20.0	1,150	25.4	475	887	70	1.5	1,795	0.8	26,230
08/21/14	21:30	34,308	71.0	22.5	20.0	1,110	24.5	480	896	70	1.4	2,020	1.2	26,230
08/21/14	22:30	34,309	72.0	22.5	19.0	1,155	25.8	484	903	70	6.3	2,009	0.9	26,230
08/21/14	23:30	34,310	73.0	22.5	19.0	1,183	26.4	486	907	70	6.0	1,987	1.1	26,230
08/22/14	0:30	34,311	74.0	22.5	19.0	1,137	25.4	486	907	70	6.5	2,034	1.1	26,230
08/22/14	1:30	34,312	75.0	23.0	19.0	1,135	25.5	487	909	68	6.4	1,964	0.7	26,230
08/22/14	2:30	34,313	76.0	23.0	19.0	1,145	25.7	489	912	67.5	6.8	1,968	1.0	26,230
08/22/14	3:30	34,314	77.0	22.5	19.0	1,177	26.3	490	914	70	6.5	1,991	1.1	26,230
08/22/14	4:30	34,315	78.0	22.5	19.0	1,225	27.4	492	918	70	6.5	1,915	0.8	26,230
08/22/14	5:30	34,316	79.0	22.5	19.0	1,180	26.4	494	921	70	6.5	1,938	1.1	26,240
08/22/14	6:30	34,317	80.0	22.5	19.0	1,155	25.8	495	923	70	5.6	1,915	2.2	26,240
08/22/14	7:30	34,318	81.0	22.5	19.0	1,115	24.8	496	925	70	5.3	1,949	0.5	26,240
08/22/14	8:30	34,319	82.0	22.5	19.5	1,140	25.4	498	928	70	5.8	1,897	0.7	26,240
08/22/14	9:30	34,320	83.0	22.5	19.5	1,150	25.8	501	934	72	9.4	1,870	0.5	26,240
08/22/14	10:30	34,321	84.0	22.5	20.0	1,135	25.3	513	955	75	9.7	1,930	0.3	26,240
08/22/14	11:30	34,322	85.0	22.5	20.5	1,150	25.6	513	955	77	9.6	1,897	0.5	26,240
08/22/14	12:00	34,323	86.0	22.5	21.0	1,135	24.7	516	961	80	2.8	1,885	0.5	26,260

**Total Gallons Extracted      160**  
**Average Groundwater Flow Rate (gpm)      0.03**

- Notes:
- Time = Time on a twenty-four hour clock.
  - Temp = Temperature
  - PID = Photo-ionization detector.
  - in Hg = Inches of mercury vacuum.
  - fpm = Feet per minute.
  - scfm = Standard cubic feet per minute.
  - deg C = Degrees Celsius.
  - deg F = Degrees Fahrenheit.
  - in H<sub>2</sub>O = Inches of water column.
  - ppm = Parts per million.
  - gpm = Gallons per minute.
  - = Reading not taken.

**TABLE 5**  
**DUAL-PHASE EXTRACTION TEST - OBSERVATION WELL DATA**  
Former Mobil Service Station 99105  
6301 San Pablo Avenue  
Oakland, California  
(Page 1 of 2)

Sampling Date	Time	MW2		MW3		MW5		MW6		MW7		MW8		VW1	VW2	VW3	VW4	VW5
		Vacuum (in H <sub>2</sub> O)	DTW (feet)	Vacuum (in H <sub>2</sub> O)	DTW (feet)	Vacuum (in H <sub>2</sub> O)	DTW (feet)	Vacuum (in H <sub>2</sub> O)	DTW (feet)	Vacuum (in H <sub>2</sub> O)	DTW (feet)	Vacuum (in H <sub>2</sub> O)	DTW (feet)	Vacuum (in H <sub>2</sub> O)	Vacuum (in H <sub>2</sub> O)	Vacuum (in H <sub>2</sub> O)	Vacuum (in H <sub>2</sub> O)	Vacuum (in H <sub>2</sub> O)
<b>Pre-Testing</b>																		
08/18/14	8:15	---	11.06	---	11.83	---	9.40	---	13.12	---	13.81	---	12.18	---	---	---	---	---
<b>Extraction Well MW5</b>																		
08/18/14	15:00	0.00	---	0.00	---	0.00	---	0.00	---	0.00	---	0.00	---	0.00	---	0.00	0.00	0.00
08/18/14	15:30	0.00	11.02	0.00	11.85	---	---	0.00	14.40	0.00	14.25	0.00	14.00	0.25	0.02	0.01	0.90	1.00
08/18/14	16:00	0.00	11.02	0.00	11.84	---	---	0.00	14.40	0.00	14.23	0.00	13.99	0.35	0.00	0.00	1.00	1.50
08/18/14	16:30	0.00	---	0.00	---	---	---	0.01	---	0.00	---	0.00	---	0.43	0.00	0.00	1.25	1.70
08/18/14	17:00	0.00	---	0.00	---	---	---	0.00	---	0.00	---	0.00	---	0.50	0.00	0.00	1.20	2.00
08/18/14	17:30	0.00	11.01	0.00	11.84	---	---	---	14.35	0.00	14.23	0.00	13.96	0.56	0.00	0.00	1.30	2.10
<b>Extraction Well MW6</b>																		
08/18/14	17:35	0.00	11.01	0.00	11.84	0.00	8.45	---	---	0.00	14.23	0.00	13.96	0.65	0.00	0.00	1.00	2.50
08/18/14	18:05	0.00	---	0.00	---	0.00	---	---	---	0.00	---	0.00	---	0.75	0.00	0.00	1.00	2.75
08/18/14	18:35	0.00	---	0.00	---	1.20	---	---	---	0.00	---	0.00	---	0.88	0.00	0.00	1.00	3.00
08/18/14	19:05	0.00	---	0.00	---	1.50	---	---	---	0.00	---	0.00	---	0.92	0.00	0.00	1.00	3.30
08/18/14	19:35	0.00	11.00	0.00	11.81	1.50	9.05	---	13.88	0.00	14.21	0.00	13.90	0.92	0.00	0.00	1.00	3.30
<b>Extraction Wells MW5 and MW6</b>																		
08/18/14	20:30	0.00	---	0.05	---	---	---	---	---	0.05	---	0.00	---	0.05	0.00	0.00	1.90	4.30
08/18/14	22:30	0.00	---	0.05	---	---	---	---	---	0.05	---	0.00	---	0.40	0.00	0.00	1.80	4.00
08/19/14	0:30	0.00	11.02	0.07	11.83	---	---	---	---	0.00	14.21	0.00	13.82	0.25	0.00	0.00	2.00	5.00
08/19/14	2:30	0.00	---	0.00	---	---	---	---	---	0.03	---	0.00	---	0.25	0.00	0.00	2.10	6.40
08/19/14	4:30	0.00	11.03	0.00	11.83	---	---	---	---	0.00	14.20	0.00	13.78	0.75	0.00	0.00	2.10	6.50
08/19/14	6:30	0.00	---	0.00	---	---	---	---	---	0.10	---	0.00	---	1.20	0.00	0.00	2.10	6.10
08/19/14	8:30	0.00	11.05	0.00	11.84	---	---	---	---	0.00	14.18	0.05	13.88	0.20	0.00	0.00	2.20	6.10
08/19/14	10:30	0.00	---	0.00	---	---	---	---	---	0.00	---	0.05	---	0.40	0.00	0.00	2.20	6.00
08/19/14	12:30	0.00	11.05	0.00	11.87	---	---	---	---	0.00	14.17	0.00	13.84	0.40	0.00	0.00	2.20	5.80
08/19/14	14:30	0.00	---	0.00	---	---	---	---	---	0.00	---	0.00	---	0.40	0.00	0.00	2.20	5.00
08/19/14	16:30	0.00	11.05	0.00	11.87	---	---	---	---	0.00	14.17	0.00	13.63	0.12	0.00	0.00	2.20	4.40
08/19/14	18:30	0.00	---	0.00	---	---	---	---	---	0.04	---	0.00	---	0.14	0.00	0.00	2.40	4.30
08/19/14	20:30	0.00	11.05	0.00	11.86	---	---	---	---	0.00	14.17	0.00	13.59	0.38	0.00	0.00	2.40	4.40
08/19/14	22:30	0.00	---	0.01	---	---	---	---	---	0.05	---	0.00	---	0.54	0.00	0.00	2.50	4.40
08/20/14	0:30	0.00	11.08	0.00	11.87	---	---	---	---	0.00	14.15	0.00	13.55	0.58	0.00	0.00	2.50	4.30
08/20/14	2:30	0.00	---	0.00	---	---	---	---	---	0.00	---	0.03	---	0.55	0.00	0.00	2.50	4.00
08/20/14	4:30	0.00	11.08	0.00	11.87	---	---	---	---	0.04	14.15	0.03	13.50	0.60	0.00	0.00	2.60	3.90
08/20/14	6:30	0.00	---	0.00	---	---	---	---	---	0.04	---	0.03	---	0.69	0.00	0.00	2.60	3.90
08/20/14	8:30	0.00	11.12	0.00	11.91	---	---	---	---	0.02	14.14	0.02	13.64	0.88	0.00	0.00	2.60	4.00
08/20/14	10:30	0.00	---	0.00	---	---	---	---	---	0.02	---	0.02	---	0.04	0.00	0.00	2.60	4.20
08/20/14	12:30	0.00	11.15	0.00	11.92	---	---	---	---	0.02	14.13	0.03	13.60	0.15	0.00	0.00	2.70	4.10
08/20/14	14:30	0.00	---	0.00	---	---	---	---	---	0.02	---	0.03	---	0.15	0.00	0.00	2.70	3.90
08/20/14	16:30	0.00	11.15	0.00	11.94	---	---	---	---	0.02	14.13	0.00	13.41	0.10	0.00	0.00	2.60	3.40
08/20/14	18:30	0.00	---	0.02	---	---	---	---	---	0.02	---	0.00	---	0.05	0.00	0.00	2.40	3.40
08/20/14	20:30	0.00	11.15	0.00	11.92	---	---	---	---	0.00	14.12	0.00	13.38	0.15	0.00	0.00	2.50	3.30

**TABLE 5**  
**DUAL-PHASE EXTRACTION TEST - OBSERVATION WELL DATA**  
Former Mobil Service Station 99105  
6301 San Pablo Avenue  
Oakland, California  
(Page 2 of 2)

Sampling Date	Time	MW2		MW3		MW5		MW6		MW7		MW8		VW1	VW2	VW3	VW4	VW5
		Vacuum (in H <sub>2</sub> O)	DTW (feet)	Vacuum (in H <sub>2</sub> O)	DTW (feet)	Vacuum (in H <sub>2</sub> O)	DTW (feet)	Vacuum (in H <sub>2</sub> O)	DTW (feet)	Vacuum (in H <sub>2</sub> O)	DTW (feet)	Vacuum (in H <sub>2</sub> O)	DTW (feet)	Vacuum (in H <sub>2</sub> O)	Vacuum (in H <sub>2</sub> O)	Vacuum (in H <sub>2</sub> O)	Vacuum (in H <sub>2</sub> O)	Vacuum (in H <sub>2</sub> O)
08/20/14	22:30	0.00	---	0.00	---	---	---	---	---	0.05	---	0.00	---	0.26	0.00	0.00	2.60	3.30
08/21/14	0:30	0.00	11.16	0.00	11.92	---	---	---	---	0.05	14.12	0.00	13.33	0.29	0.00	0.00	2.60	3.10
08/21/14	2:30	0.00	---	0.00	---	---	---	---	---	0.12	---	0.00	---	0.33	0.00	0.00	2.60	3.10
08/21/14	4:30	0.00	11.16	0.00	11.92	---	---	---	---	0.20	14.11	0.00	13.31	0.28	0.00	0.00	2.60	2.90
08/21/14	6:30	0.00	---	0.01	---	---	---	---	---	0.15	---	0.00	---	0.39	0.00	0.00	2.60	3.00
08/21/14	8:30	0.00	11.17	0.00	11.93	---	---	---	---	0.20	14.11	0.00	13.44	0.04	0.00	0.00	2.70	3.00
08/21/14	10:30	0.00	---	0.00	---	---	---	---	---	0.05	---	0.00	---	0.14	0.00	0.00	2.80	3.20
08/21/14	12:30	0.00	11.17	0.02	11.96	---	---	---	---	0.05	14.09	0.00	13.41	0.10	0.00	0.00	2.80	3.00
08/21/14	14:30	0.00	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
08/21/14	16:30	0.00	11.18	0.00	11.97	---	---	---	---	0.00	14.08	0.00	13.21	0.00	0.00	0.00	2.20	2.40
08/21/14	18:30	0.00	---	0.00	---	---	---	---	---	0.00	---	0.00	---	0.00	0.00	0.00	2.20	2.40
08/21/14	20:30	0.00	11.17	0.00	11.95	---	---	---	---	0.00	14.08	0.00	13.20	0.00	0.00	0.00	2.30	2.40
08/21/14	22:30	0.00	---	0.02	---	---	---	---	---	0.15	---	0.00	---	0.00	0.00	0.00	2.40	2.40
08/22/14	0:30	0.00	11.18	0.02	11.94	---	---	---	---	0.00	14.08	0.00	13.18	0.26	0.00	0.02	2.40	2.60
08/22/14	2:30	0.00	---	0.00	---	---	---	---	---	0.00	---	0.00	---	0.25	0.00	0.04	2.40	2.30
08/22/14	4:30	0.00	11.18	0.02	11.95	---	---	---	---	0.00	14.08	0.00	13.15	0.22	0.00	0.02	2.40	2.20
08/22/14	6:30	0.00	---	0.02	---	---	---	---	---	0.00	---	0.00	---	0.25	0.00	0.02	2.40	2.20
08/22/14	8:30	0.00	11.19	0.01	11.95	---	---	---	---	0.00	14.07	0.00	13.28	0.12	0.00	0.02	2.40	2.20
08/22/14	10:30	0.00	---	0.04	---	---	---	---	---	0.10	---	0.00	---	0.05	0.00	0.04	2.50	2.20
08/22/14	12:00	0.00	11.17	0.04	11.95	---	9.60	---	11.20	0.00	Dry	0.00	13.10	0.00	0.00	0.02	2.60	2.00

Notes:

- Time = Time presented using a 24-hour clock.
- DTW = Depth to water.
- mg/L = Milligrams per liter.
- = Reading not taken.

**TABLE 6**  
**DUAL-PHASE EXTRACTION TESTS - SOIL VAPOR ANALYTICAL RESULTS**  
Former Mobil Service Station 99105  
6301 San Pablo Avenue  
Oakland, California  
(Page 1 of 1)

Sample ID	Sampling Date	Sampling Time	TPHg (mg/m <sup>3</sup> )	MTBE (mg/m <sup>3</sup> )	B (mg/m <sup>3</sup> )	T (mg/m <sup>3</sup> )	E (mg/m <sup>3</sup> )	X (mg/m <sup>3</sup> )	TBA (mg/m <sup>3</sup> )	DIPE (mg/m <sup>3</sup> )	ETBE (mg/m <sup>3</sup> )	TAME (mg/m <sup>3</sup> )	EDB (mg/m <sup>3</sup> )	1,2-DCA (mg/m <sup>3</sup> )
<b>Extraction Well MW5</b>														
V-INF-MW5-1	08/18/14	15:30	5,000	<0.29	1.5	<0.75	0.21	<0.087	<0.61	<0.33	<0.33	<0.33	<0.15	<0.081
V-INF-MW5-2	08/18/14	17:30	3,000	<0.29	2.3	<0.75	0.33	<0.087	<0.61	<0.33	<0.33	<0.33	<0.15	<0.081
<b>Extraction Well MW6</b>														
V-INF-MW6-1	08/18/14	17:35	3,000	<0.29	0.20	<0.75	0.97	3.2	<0.61	<0.33	<0.33	<0.33	<0.15	<0.081
V-INF-MW6-2	08/18/14	19:35	2,000	<0.29	<0.064	<0.75	0.36	1.2	<0.61	<0.33	<0.33	<0.33	<0.15	<0.081
<b>Extraction Wells MW5 and MW6</b>														
V-INF-COMP-1	08/18/14	20:35	250	<0.072	2.0	<0.19	0.26	0.31	<0.15	<0.084	<0.084	<0.084	<0.038	<0.020
V-INF-COMP-1	08/19/14	4:30	5,200	<0.18	7.1	<0.47	3.0	0.24	<0.38	<0.21	<0.21	<0.21	<0.096	<0.051
V-INF-COMP-2	08/19/14	12:30	4,400	<0.18	6.2	<0.47	3.4	0.48	<0.38	<0.21	<0.21	<0.21	<0.096	<0.051
V-INF-COMP-3	08/19/14	20:35	5,200	<0.72	8.3	<1.9	5.1	<0.22	<1.5	<0.84	<0.84	<0.84	<0.38	<0.20
V-INF-COMP-4	08/20/14	4:30	4,800	<0.72	8.0	<1.9	4.8	<0.22	<1.5	<0.84	<0.84	<0.84	<0.38	<0.20
V-INF-COMP-5	08/20/14	12:30	4,800	<0.29a	5.6a	<0.75a	3.5a	0.38a	<0.61a	<0.33a	<0.33a	<0.33a	<0.15a	<0.081a
V-INF-COMP-6	08/20/14	20:35	4,900	<0.12a	4.2a	<0.30a	3.2a	0.39a	<0.24a	<0.13a	<0.13a	<0.13a	<0.061a	<0.032a
V-INF-COMP-7	08/21/14	4:30	5,200	<0.29a	6.0a	<0.75a	4.4a	0.53a	<0.61a	<0.33a	<0.33a	<0.33a	<0.15a	<0.081a
V-INF-COMP-8	08/21/14	12:30	5,300	<0.12a	3.4a	<0.30a	2.5a	0.37a	<0.24a	<0.13a	<0.13a	<0.13a	<0.061a	<0.032a
V-INF-COMP-9	08/21/14	20:30	5,000	<0.29a	5.2a	<0.75a	3.4a	0.47a	<0.61a	<0.33a	<0.33a	<0.33a	<0.15a	<0.081a
V-INF-COMP-10	08/22/14	4:30	4,600	<0.29a	3.2a	<0.75a	2.0a	<0.087	<0.61a	<0.33a	<0.33a	<0.33a	<0.15a	<0.081a
V-INF-COMP-11	08/22/14	12:00	5,200	<0.12a	2.7a	<0.30a	2.9a	0.55a	<0.24a	<0.13a	<0.13a	<0.13a	<0.061a	<0.032a
V-EFF-1	08/18/14	20:30	22	<0.0072	0.0052	<0.019	<0.0022	<0.0022	<0.015	<0.0084	<0.0084	<0.0084	<0.0038	<0.0020

**Notes:**

- TPHg = Total petroleum hydrocarbons as gasoline analyzed using EPA Method TO-3M.
- MTBE = Methyl tertiary butyl ether analyzed using EPA Method TO-15M.
- BTEX = Benzene, toluene, ethylbenzene, and total xylenes analyzed using EPA Method TO-15M.
- 1,2-DCA = 1,2-dibromoethane analyzed using EPA Method TO-15M.
- EDB = 1,2-dichloroethane analyzed using EPA Method TO-15M.
- TBA = Tertiary butyl alcohol analyzed using EPA Method TO-15M.
- DIPE = Di-isopropyl ether analyzed using EPA Method TO-15M.
- ETBE = Ethyl tertiary butyl ether analyzed using EPA Method TO-15M.
- TAME = Tertiary amyl methyl ether analyzed using EPA Method TO-15M.
- mg/m<sup>3</sup> = Milligrams per cubic meter.
- < = Less than the stated laboratory reporting limit.
- a = Analyzed outside of recommended holding time.



**TABLE 7**  
**DUAL-PHASE EXTRACTION TESTS - GROUNDWATER ANALYTICAL RESULTS**  
Former Mobil Service Station 99105  
6301 San Pablo Avenue  
Oakland, California  
(Page 1 of 1)

Extraction Well	Sample ID	Sampling Date	Sampling Time	TPHd (µg/L)	TPHg (µg/L)	MTBE (µg/L)	B (µg/L)	T (µg/L)	E (µg/L)	X (µg/L)	TBA (µg/L)	DIPE (µg/L)	ETBE (µg/L)	TAME (µg/L)	EDB (µg/L)	1,2-DCA (µg/L)
MW5	W-11-MW5	07/14/14	9:15	88,000a	90,000a	<5.0	100	<5.0	12	<5.0	<50	<5.0	<5.0	<5.0	<5.0	<5.0
MW5	W-9.60-MW5	08/22/14	14:35	5,800a	5,100	<5.0	520	<5.0	320	81	<50	<5.0	<5.0	<5.0	<5.0	<5.0
MW6	W-14-MW6	08/18/14	12:30	350a	410a	0.60	<0.50	<0.50	<0.50	<0.50	14	<0.50	<0.50	<0.50	<0.50	1.1
MW6	W-11.20-MW6	08/22/14	14:55	1,000a	1,500a	<0.50	<0.50	<0.50	<0.50	<0.50	12	<0.50	<0.50	<0.50	<0.50	<0.50
MW7	W-14-MW7	08/18/14	12:15	<51	<50	<0.50	<0.50	<0.50	<0.50	<0.50	21	<0.50	<0.50	<0.50	<0.50	3.1
MW7	---	08/22/14	---	Dry	---	---	---	---	---	---	---	---	---	---	---	---
MW8	W-13-MW8	08/18/14	13:00	440a	1,600	<0.50	39	<0.50	19	44	20	<0.50	<0.50	<0.50	<0.50	0.78
MW8	W-13.10-MW8	08/22/14	15:25	350a	950a	<0.50	5.7	<0.50	4.2	6.4	31	<0.50	<0.50	<0.50	<0.50	<0.50

Notes:

- TPHd = Total petroleum hydrocarbons as diesel analyzed using EPA Method 8015B.
- TPHg = Total petroleum hydrocarbons as gasoline analyzed using EPA Method 8015B.
- MTBE = Methyl tertiary butyl ether analyzed using EPA Method 8260B.
- BTEX = Benzene, toluene, ethylbenzene, and total xylenes analyzed using EPA Method 8260B.
- TBA = Tertiary butyl alcohol analyzed using EPA Method 8260B.
- DIPE = Di-isopropyl ether analyzed using EPA Method 8260B.
- ETBE = Ethyl tertiary butyl ether analyzed using EPA Method 8260B.
- TAME = Tertiary amyl methyl ether analyzed using EPA Method 8260B.
- EDB = 1,2-dibromoethane analyzed using EPA Method 8260B.
- 1,2-DCA = 1,2-dichloroethane analyzed using EPA Method 8260B.
- µg/L = Micrograms per liter.
- < = Less than the stated laboratory reporting limit.
- = Not sampled.
- a = Chromatographic pattern does not match that of the specified standard.

**TABLE 8**  
**DUAL-PHASE EXTRACTION TESTS - VAPOR-PHASE HYDROCARBON REMOVAL**  
Former Mobil Service Station 99105  
6301 San Pablo Avenue  
Oakland, California  
(Page 1 of 1)

Sample ID	Sampling Date	Sampling Time	Hours of Operation	Field Measurements				Laboratory Analytical Results			TPH <sub>g</sub> Removal		MTBE Removal		Benzene Removal	
				Temp (deg F)	Press ("H <sub>2</sub> O)	Flow (scfm)	PID (ppmv)	TPH <sub>g</sub> (mg/m <sup>3</sup> )	MTBE (mg/m <sup>3</sup> )	Benzene (mg/m <sup>3</sup> )	Period (pounds)	Cumulative (pounds)	Period (pounds)	Cumulative (pounds)	Period (pounds)	Cumulative (pounds)
<b>Extraction Well MW5</b>																
V-INF-MW5-1	08/18/14	15:30	0	75	---	24.4	860	5,000	<0.29	1.5	0.000	0.000	<0.000	<0.000	0.000	0.000
V-INF-MW5-2	08/18/14	17:30	2	75	3.0	32.1	870	3,000	<0.29	2.3	0.845	0.845	<0.000	<0.000	0.000	0.000
<b>Extraction Well MW6</b>																
V-INF-MW6-1	08/18/14	17:35	0	75	0.0	12.6	1,116	3,000	<0.29	0.20	0.000	0.000	<0.000	<0.000	0.000	0.000
V-INF-MW6-2	08/18/14	19:35	2	75	0.1	11.7	865	2,000	<0.29	<0.064	0.227	0.227	<0.000	<0.000	0.000	0.000
<b>Extraction Wells MW5 and MW6</b>																
V-INF-COMP-1	08/18/14	20:30	0	70	2.6	33.2	961	250	<0.072	2.0	0.000	0.000	<0.000	<0.000	0.000	0.000
V-INF-COMP-1	08/19/14	4:30	8	70	1.2	20.6	1,655	5,200	<0.18	7.1	2.195	2.195	<0.000	<0.000	0.004	0.004
V-INF-COMP-2	08/19/14	12:30	16	80	1.1	22.2	1,354	4,400	<0.18	6.2	3.075	5.270	<0.000	<0.000	0.004	0.008
V-INF-COMP-3	08/19/14	20:30	24	80	1.0	24.2	1,561	5,200	<0.72	8.3	3.335	8.605	<0.000	<0.001	0.005	0.013
V-INF-COMP-4	08/20/14	4:30	32	70	1.0	21.5	1,716	4,800	<0.72	8.0	3.422	12.026	<0.000	<0.001	0.006	0.019
V-INF-COMP-5	08/20/14	12:30	40	75	1.7	22.4	1,614	4,800	<0.29a	5.6a	3.155	15.181	<0.000	<0.001	0.004	0.023
V-INF-COMP-6	08/20/14	20:30	47	75	1.6	23.1	1,701	4,900	<0.12a	4.2a	2.890	18.071	<0.000	<0.001	0.003	0.026
V-INF-COMP-7	08/21/14	4:30	55	68	1.2	23.3	1,983	5,200	<0.29a	6.0a	3.501	21.572	<0.000	<0.002	0.004	0.029
V-INF-COMP-8	08/21/14	12:30	63	77	5.6	24.9	1,863	5,300	<0.12a	3.4a	3.780	25.352	<0.000	<0.002	0.003	0.033
V-INF-COMP-9	08/21/14	20:30	70	70	1.5	25.4	1,795	5,000	<0.29a	5.2a	3.389	28.741	<0.000	<0.002	0.003	0.036
V-INF-COMP-10	08/22/14	4:30	78	70	6.5	27.4	1,915	4,600	<0.29a	3.2a	3.790	32.531	<0.000	<0.002	0.003	0.039
V-INF-COMP-11	08/22/14	12:00	86	80	2.8	24.7	1,885	5,200	<0.12a	2.7a	3.816	36.347	<0.000	<0.002	0.002	0.041
<b>Total Removed:</b>												<b>37.419</b>		<b>&lt;0.002</b>		<b>0.042</b>

Notes: Removal rates are calculated using SOP-25: "Hydrocarbons Removed from A Vadose Well."  
TPH<sub>g</sub> = Total petroleum hydrocarbons as gasoline analyzed using EPA Method TO-3M.  
MTBE = Methyl tertiary butyl ether analyzed using EPA Method TO-15M.  
Benzene = Benzene analyzed using EPA Method TO-15M.  
deg F = Degrees Fahrenheit.  
psi = Pounds per square inch.  
in H<sub>2</sub>O = Inches of water column.  
scfm = Standard cubic feet per minute.  
mg/m<sup>3</sup> = Milligrams per cubic meter.  
ppmv = Parts per million by volume.  
< = Less than the stated laboratory reporting limit.  
a = Analyzed outside of recommended holding time.

**TABLE 9  
DUAL-PHASE EXTRACTION TESTS - DISSOLVED-PHASE HYDROCARBON REMOVAL**

Former Mobil Service Station 99105

6301 San Pablo Avenue

Oakland, California

(Page 1 of 1)

Sample ID	Sampling Date	Sampling Time	Hours of Operation (hours)	Totalizer Reading (gallons)	Gallons Pumped (gallons)	Average Flow Rate (gpm)	Laboratory Analytical Results				TPHd Removal		TPHg Removal		MTBE Removal		Benzene Removal	
							TPHd (µg/L)	TPHg (µg/L)	MTBE (µg/L)	Benzene (µg/L)	Per Period (pounds)	Cumulative (pounds)	Per Period (pounds)	Cumulative (pounds)	Per Period (pounds)	Cumulative (pounds)	Per Period (pounds)	Cumulative (pounds)
W-11-MW5	07/14/14	9:15	0	26,100	0	---	88,000a	90,000a	<5.0	100	0.000	0.000	0.000	0.000	<0.000	<0.000	0.000	0.000
W-9.60-MW5	08/22/14	14:35	90	26,260	160	0.03	5,800a	5,100	<5.0	520	0.063	0.063	0.063	0.063	<0.000	<0.000	0.000	0.000
W-14-MW6	08/18/14	12:30	0	26,100	0	---	350a	410a	0.60	<0.50	0.000	0.000	0.000	0.000	<0.000	<0.000	<0.000	<0.000
W-11.20-MW6	08/22/14	14:55	90	26,260	160	0.03	1,000a	1,500a	<0.50	<0.50	0.001	0.001	0.001	0.001	<0.000	<0.000	<0.000	<0.000
<b>Total Removed:</b>											<b>0.064</b>	<b>0.065</b>	<b>&lt;0.000</b>	<b>&lt;0.000</b>				

Notes:

- TPHd = Total petroleum hydrocarbons as diesel analyzed using EPA Method 8015B.
- TPHg = Total petroleum hydrocarbons as gasoline analyzed using EPA Method 8015B.
- MTBE = Methyl tertiary butyl ether analyzed using EPA Method 8260B.
- Benzene = Benzene analyzed using EPA Method 8260B.
- gpm = Gallons per minute.
- µg/L = Micrograms per liter.
- < = Less than the stated laboratory reporting limit.
- = Not measured.
- a = Chromatographic pattern does not match that of the specified standard.

**APPENDIX A**  
**CORRESPONDENCE**



ENVIRONMENTAL HEALTH SERVICES  
ENVIRONMENTAL PROTECTION  
1131 Harbor Bay Parkway, Suite 250  
Alameda, CA 94502-6577  
(510) 567-6700  
FAX (510) 337-9335

September 24, 2013

Jennifer Sedlachek  
ExxonMobil  
4096 Piedmont, Ave., #194  
Oakland, CA 94611 (Sent via e-mail to: [jennifer.c.sedlachek@exxonmobil.com](mailto:jennifer.c.sedlachek@exxonmobil.com))

On Dan and Nathan Lam  
200 El Dorado Terrace  
San Francisco, CA 94112

Subject: Fuel Leak Case No. RO0000445 and Geotracker Global ID T0600101855, Mobil#99-105 / Cars Rent A Car, 6301 San Pablo Avenue, Oakland, CA 94608

Dear Ms. Sedlachek and Messrs. Lam:

Thank you for the recently submitted report entitled, *Corrective Action Plan Addendum (CAP Addendum)* dated May 14, 2013 prepared by Cardno ERI for the subject site. Alameda County Environmental Health (ACEH) staff has reviewed the case file including the above-mentioned reports for the above-referenced site.

The above-mentioned report addresses ACEH's technical comments on the Site Conceptual Model Update, Low-Threat Closure Evaluation, and Feasibility Study/Corrective Action Plan (CAP) dated October 25, 2012. The CAP and CAP Addendum propose conducting dual-phase extraction (DPE) from source areas where newly observed free product is present (MW-5) and maximum concentration of soil vapor were observed. ACEH generally concurs with the proposed corrective action, however requests that you address the following technical comments and send us a Groundwater and Soil Vapor Performance Monitoring Work Plan that addresses the technical comments below.

#### **TECHNICAL COMMENTS**

1. **DPE Performance Monitoring** – The CAP and CAP Addendum recommend DPE extraction from existing well MW-5 and proposed well MW-6. ACEH notes that using the monitoring wells as groundwater extraction wells does not provide for an adequate groundwater monitoring network to evaluate the effectiveness of the remedial action. Obtaining a sample from a well that is being used in remediation will not be representative of static conditions.

In an email correspondence dated September 5, 2013, Cardno ERI states that soil borings installed and sampled in 2012 are representative of groundwater conditions with respect to the lateral distribution of dissolved-phase hydrocarbons and that a groundwater performance monitoring well network is not necessary. Our review of the rose diagram indicates that groundwater flow direction has varied from northwest to south during historic groundwater monitoring events. Although these borings previously identified the downgradient extent of the groundwater contaminant plume, they were advanced prior to the recent detection of sheen and increasing total petroleum hydrocarbon as diesel (TPHD) concentrations that are indicative of free product in monitoring well MW-5. This same rationale may apply to the vicinity of proposed monitoring well MW-6 in the vicinity of vapor well VW4 that had

significantly elevated levels of petroleum hydrocarbons in soil gas. Therefore, installation of performance monitoring wells downgradient of the extraction wells in the source area is necessary.

In addition, since soil vapor is the main concern at the site, ACEH recommends that performance monitoring include post remedial monitoring for vapor more than once as proposed. ACEH recommends that the vapor wells be sampled for verification monitoring for one year after DPE events are completed. At a minimum, soil vapor monitoring should include wells VW-1, VW-4 and VW-5.

Please present a strategy and schedule for performance monitoring of both groundwater and soil vapor in the area of remediation. Please include development and sampling of new monitoring and extraction wells to collect baseline conditions prior to start-up of the DPE system.

Please update the remedial costs as appropriate to incorporate the elements discussed above.

2. **Well Installation and Soil Sampling** – The Low-Threat Closure Policy uses soil concentrations from the 0 to 5 and 5 to 10 foot interval to assess direct contact and outdoor air, since TPHd has been detected in groundwater at the site and previously no naphthalene data has been collected in soil or groundwater, please collect naphthalene data from the proposed well boring(s) and add naphthalene to the groundwater analysis in wells with historical detections of TPHd on a one time basis. Use silica gel cleanup for TPHd analysis in groundwater.
3. **Groundwater Monitoring** – Please continue semi-annual groundwater monitoring in accordance with the approved groundwater monitoring plan until the CAP is approved for the site and submit groundwater monitoring report (GWM\_R) in accordance with the schedule below.

#### **TECHNICAL REPORT REQUEST**

Please submit technical reports to ACEH (Attention: Barbara Jakub), according to the following schedule:

- **September 30, 2013** – Groundwater Monitoring Report (2<sup>nd</sup> Semi-Annual) (File to be named: GWM\_R\_YYYY-mm-dd)
- **November 15, 2013** – Groundwater and Soil Vapor Performance Monitoring Work Plan (File to be named CAP\_R\_ADEND\_YYYY-mm-dd)
- **March 1, 2014** – Groundwater Monitoring Report (1st Semi-Annual) (File to be named: GWM\_R\_YYYY-mm-dd)

Ms. Sedlachek and Messrs. Lam  
RO0000445  
September 24, 2013, Page 3

Should you have any questions or concerns regarding this correspondence or your case, please contact Dilan Roe at (510) 567-6767 or send her an electronic mail message at [dilan.roe@acgov.org](mailto:dilan.roe@acgov.org) as I will be transferring out of the Local Oversight Program on September 27, 2013.

Sincerely,



Digitally signed by Barbara J. Jakub  
DN: cn=Barbara J. Jakub, o, ou,  
email=barbara.jakub@acgov.org,  
c=US  
Date: 2013.09.24 15:59:53 -07'00'

Barbara J. Jakub, P.G.  
Hazardous Materials Specialist

Enclosure: Responsible Party(ies) Legal Requirements/Obligations  
ACEH Electronic Report Upload (ftp) Instructions

cc: Rebekah Westrup, Cardno ERI, 601 North McDowell Blvd., Petaluma, CA 94954-2312 (*Sent via e-mail to: [rwestrup@ERI-US.com](mailto:rwestrup@ERI-US.com)*)  
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GeoTracker, File

**From:** [Detterman, Karel, Env. Health](#)  
**To:** ["Greg Gursts"; "david.daniels@cardno.com"](#)  
**Cc:** [Roe, Dilan, Env. Health](#); ["Sedlachek, Jennifer C"](#)  
**Subject:** RE: Fuel Leak Case RO0000445 and GeoTracker Global ID T0600102089, Mobil #99-105/Cars Rent a Car, 6301 San Pablo Avenue, Oakland, CA  
**Date:** Wednesday, July 09, 2014 4:37:41 PM

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Hello everyone:

Thank you for participating in our conference call today to discuss clarifications to the December 12, 2013 *Second Addendum to the Corrective Action Plan* (Second Addendum). Based on our discussion, the proposed scope of work is approved for implementation. Submittal of a revised work plan or a work plan addendum is not required unless an alternate scope of work outside that described in the work plan or these technical comments is proposed. We request that you perform the proposed work and send us the report described below. Please provide 72-hour advance written notification to this office (e-mail preferred to: [karel.detterman@acgov.org](mailto:karel.detterman@acgov.org)) prior to the start of field activities.

### **TECHNICAL REPORT REQUEST**

Please upload technical reports to the ACEH ftp site (Attention: Karel Detterman), and to the State Water Resources Control Board's Geotracker website, in accordance with the following specified file naming convention and schedule:

- **September 10, 2014 – Soil and Groundwater Investigation Report**  
File to be named: RO445\_SWI\_R\_yyyy-mm-dd

This report is being requested pursuant to California Health and Safety Code Section 25296.10. 23 CCR Sections 2652 through 2654, and 2721 through 2728 outline the responsibilities of a responsible party in response to an unauthorized release from a petroleum UST system, and require your compliance with this request.

Thank you for your cooperation. Should you have any questions or concerns regarding this correspondence or your case, please send me an e-mail message at [karel.detterman@acgov.org](mailto:karel.detterman@acgov.org) or call me at (510) 567-6708.

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PDF copies of case files can be downloaded at:

<http://www.acgov.org/aceh/lop/ust.htm>



**APPENDIX B**  
**PROTOCOLS**

**Cardno ERI**  
**Soil Boring and Well Installation**  
**Field Protocol**

**Preliminary Activities**

Prior to the onset of field activities at the site, Cardno ERI obtains the appropriate permit(s) from the governing agency(s). Advance notification is made as required by the agency(s) prior to the start of work. Cardno ERI marks the borehole locations and contacts the local one call utility locating service at least 48 hours prior to the start of work to mark buried utilities. Borehole locations may also be checked for buried utilities by a private geophysical surveyor. Prior to drilling, the borehole location is cleared in accordance with the client's procedures. Fieldwork is conducted under the advisement of a registered professional geologist and in accordance with an updated site-specific safety plan prepared for the project, which is available at the job site during field activities.

**Drilling and Soil Sampling Procedures**

Cardno ERI contracts a licensed driller to advance the boring and collect soil samples. The specific drilling method (e.g., hollow-stem auger, direct push method, or sonic drilling), sampling method [e.g., core barrel or California-modified split spoon sampler (CMSSS)] and sampling depths are documented on the boring log and may be specified in a work plan. Soil samples are typically collected at the capillary fringe and at 5-foot intervals to the total depth of the boring. To determine the depth of the capillary fringe prior to drilling, the static groundwater level is measured with a water level indicator in the closest monitoring well to the boring location, if available.

The borehole is advanced to just above the desired sampling depth. For CMSSSs, the sampler is placed inside the auger and driven to a depth of 18 inches past the bit of the auger. The sampler is driven into the soil with a standard 140-pound hammer repeatedly dropped from a height of 30 inches onto the sampler. The number of blows required to drive the sampler each 6-inch increment is recorded on the boring log. For core samplers (e.g., direct push), the core is driven 18 inches using the rig apparatus.

Soil samples are preserved in the metal or plastic sleeve used with the CMSSS or core sampler, in glass jars or other manner required by the local regulatory agency (e.g., Environmental Protection Agency Method 5035). Sleeves are removed from the sample barrel, and the lowermost sample sleeve is immediately sealed with Teflon™ tape, capped, labeled, placed in a cooler chilled to 4° Celsius and transported to a state-certified laboratory. The samples are transferred under chain-of-custody (COC) protocol.

**Field Screening Procedures**

Cardno ERI places the soil from the middle of the sampling interval into a plastic re-sealable bag. The bag is placed away from direct sunlight for a period of time which allows volatilization of chemical constituents, after which the tip of a photo-ionization detector (PID) or similar device is inserted through the plastic bag to measure organic vapor concentrations in the headspace. The PID measurement is recorded on the boring log. At a minimum, the PID or other device is calibrated on a daily basis in accordance with manufacturer's specifications using a hexane or isobutylene standard. The calibration gas and concentration are recorded on a calibration log. Instruments such as the PID are useful for evaluating relative concentrations of volatilized hydrocarbons, but they do not measure the concentration of petroleum hydrocarbons in the soil matrix with the same precision as laboratory analysis. Cardno ERI trained personnel describe the soil in the bag according to the Unified Soil Classification System and record the description on the boring log, which is included in the final report.

**Air Monitoring Procedures**

Cardno ERI performs a field evaluation for volatile hydrocarbon concentrations in the breathing zone using a calibrated photo-ionization detector or lower explosive level meter.

### **Groundwater Sampling**

A groundwater sample, if desired, is collected from the boring by using Hydropunch™ sampling technology or installing a well in the borehole. In the case of using Hydropunch™ technology, after collecting the capillary fringe soil sample, the boring is advanced to the top of the soil/groundwater interface and a sampling probe is pushed to approximately 2 feet below the top of the static water level. The probe is opened by partially withdrawing it and thereby exposing the screen. A new or decontaminated bailer is used to collect a water sample from the probe. The water sample is then emptied into laboratory-supplied containers constructed of the correct material and with the correct volume and preservative to comply with the proposed laboratory test. The container is slowly filled with the retrieved water sample until no headspace remains and then promptly sealed with a Teflon-lined cap, checked for the presence of bubbles, labeled, entered onto a COC record and placed in chilled storage at 4° Celsius. Laboratory-supplied trip blanks accompany the water samples as a quality assurance/quality control procedure. Equipment blanks may be collected as required. The samples are kept in chilled storage and transported under COC protocol to a client-approved, state-certified laboratory for analysis.

### **Backfilling of Soil Boring**

If a well is not installed, the boring is backfilled from total depth to approximately 5 feet below ground surface (bgs) with either neat cement or bentonite grout using a tremie pipe and either the boring is backfilled from 5 feet bgs to approximately 1 foot bgs with hydrated bentonite chips or backfill is continued to just below grade with neat cement grout. The borehole is completed to surface grade with material that best matches existing surface conditions and meets local agency requirements. Site-specific backfilling details are shown on the respective boring log.

### **Well Construction**

A well (if constructed) is completed using materials documented on the boring log or specified in a work plan. The well is constructed with slotted casing across the desired groundwater sampling depth(s) and completed with blank casing to within 6 inches of surface grade. No further construction is conducted on temporary wells. For permanent wells, the annular space of the well is backfilled with Monterey sand from the total depth to approximately 2 feet above the top of the screened casing. A hydrated granular bentonite seal is placed on top of the sand filter pack. Grout may be placed on top of the bentonite seal to the desired depth using a tremie pipe. The well may be completed to surface grade with a 1-foot thick concrete pad. A traffic-rated well vault and locking cap for the well casing may be installed to protect against surface-water infiltration and unauthorized entry. Site-specific well construction details including type of well, well depth, casing diameter, slot size, length of screen interval and sand size are documented on the boring log or specified in the work plan.

### **Well Development and Sampling**

If a permanent groundwater monitoring well is installed, the grout is allowed to cure a minimum of 48 hours before development. Cardno ERI personnel or a contracted driller use a submersible pump or surge block to develop the newly installed well. Prior to development, the pump is decontaminated by allowing it to run and re-circulate while immersed in a non-phosphate solution followed by successive immersions in potable water and de-ionized water baths. The well is developed until sufficient well casing volumes are removed so that turbidity is within allowable limits and pH, conductivity and temperature levels stabilize in the purge water. The volume of groundwater extracted is recorded on a log.

Following development, groundwater within the well is allowed to recharge until at least 80% of the drawdown is recovered. A new or decontaminated bailer is slowly lowered past the air/water interface in the well, and a water sample is collected and checked for the presence of non-aqueous phase liquid, sheen or emulsions. The water sample is then emptied into laboratory-supplied containers as discussed above.

**Surveying**

If required, wells are surveyed by a licensed land surveyor relative to an established benchmark of known elevation above mean sea level to an accuracy of +/- 0.01 foot. The casing is notched or marked on one side to identify a consistent surveying and measuring point.

**Decontamination Procedures**

Cardno ERI or the contracted driller decontaminates soil and water sampling equipment between each sampling event with a non-phosphate solution, followed by a minimum of two tap water rinses. De-ionized water may be used for the final rinse. Downhole drilling equipment is steam-cleaned prior to drilling the borehole and at completion of the borehole.

**Waste Treatment and Soil Disposal**

Soil cuttings generated from the drilling or sampling are stored on site in labeled, Department of Transportation-approved, 55-gallon drums or other appropriate storage container. The soil is removed from the site and transported under manifest to a client- and regulatory-approved facility for recycling or disposal. Decontamination fluids and purge water from well development and sampling activities, if conducted, are stored on site in labeled, regulatory-approved storage containers. Fluids are subsequently transported under manifest to a client- and regulatory-approved facility for disposal or treated with a permitted mobile or fixed-base carbon treatment system.

## GROUNDWATER SAMPLING PROTOCOL

The static water level and separate-phase product level, if present, in each well that contained water and/or separate-phase product are measured with a ORS Interface Probe, which is accurate to the nearest 0.01 foot. To calculate groundwater elevations and evaluate groundwater gradient, depth to water (DTW) levels are subtracted from top of casing elevations.

Groundwater samples collected for subjective evaluation are collected by gently lowering approximately half the length of a clean Teflon® or polypropylene bailer past the air-water interface (if possible) and collecting a sample from near the surface of the water in the well. The samples are checked for measurable free-phase hydrocarbons or sheen. If appropriate, free-phase hydrocarbons are removed from the well.

Before water samples are collected from the groundwater monitoring wells, the wells are purged until a minimum of three well casing volumes is purged and stabilization of the temperature, pH, and conductivity is obtained. Water samples from the wells that do not obtain stability of the temperature, pH, and conductivity are considered to be "grab samples." The quantity of water purged from each well is calculated as follows:

1 well casing volume =  $\pi r^2 h(7.48)$  where:

r	=	radius of the well casing in feet
h	=	column of water in the well in feet (depth to bottom - depth to water)
7.48	=	conversion constant from cubic feet to gallons
$\pi$	=	ratio of the circumference of a circle to its diameter

Gallons of water purged/gallons in 1 well casing volume = well casing volumes removed.

The wells are purged using a submersible pump. Prior to use at the site and between wells the pump is cleaned.

Five gallons of water are placed in three 15-gallon tubs. Liquinox detergent is added to the first tub of water. The pump and tubing are submerged in the first tub and the water is pumped through the pump. The process is repeated in the second and third tub.

After purging, each well is allowed to recharge to at least 80% of the initial water level. Water samples from wells that do not recover at least 80% (due to slow recharging of the well) between purging and sampling are considered to be "grab samples." Water samples are collected with a new, disposable Teflon® or polypropylene bailer. The groundwater is carefully poured into selected sample containers (40-milliliter [ml] glass vials, 1,000-ml glass amber bottles, etc.), which are filled so as to produce a positive meniscus.

Depending on the required analysis, each sample container is preserved with hydrochloric acid, nitric acid, etc., or it is preservative free. The type of preservative used for each sample is specified on the Chain-of-Custody record.

Each vial and glass amber bottle is sealed with a cap containing a Teflon® septum, and subsequently examined for air bubbles to avoid headspace, which would allow volatilization to occur. The samples are promptly transported in iced storage in a thermally-insulated ice chest, accompanied by a Chain-of-Custody record, to a California state-certified laboratory.

Water generated during purging and cleaning is contained and transported off site for treatment and disposal.

**Cardno ERI**  
**Dual-Phase Extraction Test**  
**Field Protocol**

Dual-phase extraction (DPE) consists of extracting vapor and liquid through the same conduit. If vapor phase, dissolved phase and separate phase contaminants are all present, the procedure is often referred to as multi-phase extraction. Testing procedures are the same for both.

**Objective**

The objective of a DPE test is often two-fold: 1) to determine the radius of influence (ROI) and obtain engineering data for evaluation of future remediation options at the site, and 2) to accomplish mass removal of hydrocarbons by removing both soil vapor and groundwater from one or more wells.

Cardno ERI utilizes a DPE mobile treatment system that has the capability of removing hydrocarbon-affected groundwater and soil vapor simultaneously. Vacuum may be provided by various types of blowers - a liquid ring pump (high vacuum for tight formations – 10 to 25 inches of mercury) or positive displacement or regenerative blowers (modest vacuum for sandy formations – 3 to 12 inches of mercury). Hydrocarbon vapor is treated on site with a thermal/catalytic oxidizer, which has been approved for operation by the local air pollution control agency. As an alternative, for sites with low soil vapor concentrations, Cardno ERI uses activated carbon to treat the extracted soil vapor.

**Phase I – DPE Test to Obtain Engineering Data**

For the extraction well, one groundwater well is selected near the center of the area to be tested. Usually this is a zone containing high levels of hydrocarbons. A wellhead assembly is installed as shown on Plate DPE-1 (attached). Vacuum is measured in three places: 1) at  $V_0$  to monitor the performance of the blower and to estimate flow from the pump curve, 2) at  $V_1$  to determine the vacuum being applied to the formation, and 3) at  $V_2$  to determine the line loss in the stinger and to be sure a standing head of water has not developed in the vacuum stinger tube. Vapor flow rates are measured and vapor samples are collected for analysis after vapor passes through the phase separator and blower.

Observation wells are selected at various distances from the extraction well. It may be necessary to drill additional observation wells if the existing wells are too far away from the extraction well to observe an induced vacuum and/or a water level decrease. If groundwater is present, the wells are equipped with a wellhead seal and a stinger tube as shown on Plate DPE-2 (Wells #3 and #4) (attached). The induced vacuum is periodically measured at  $V_3$  and  $V_4$  during the test using magnehelic gauges or other calibrated meters to determine the effective ROI for vapor extraction, and the values are recorded. The log of the induced vacuum is plotted against the distance from the extraction well to the observation well. The effective ROI is taken as the distance where the induced vacuum would be 0.5 inches of water.

The change in liquid level is measured in the stinger tube using a water level meter to an accuracy of 0.01 foot, and recorded to determine the hydraulic gradient and establish an ROI for groundwater capture. Various hydraulic models are used to determine a capture zone with respect to groundwater flow direction and gradient.

**Note:** Observation wells #1 and #2 on Plate DPE-2 are included for information to show the effect of removing only vapor from an extraction well. There would be an induced rise of the water level in the well due to vacuum, but the level in the stinger tube would not change because it is still under atmospheric pressure, indicating no hydraulic gradient and thus no net flow of groundwater toward the extraction well.

The test is run until the induced vacuum and depth to water in the observation wells stabilize – usually 4 to 8 hours. Stabilization is said to be reached when readings do not change more than 10% for three consecutive hourly

observations. The test for engineering data may be repeated on other extraction wells if there is an indication that the site stratigraphy may not be uniform.

Prior to starting Phase I of the DPE test, Cardno ERI performs the following tasks:

1. Collect groundwater samples from the extraction well(s).
2. Install a stinger tube in the extraction well, extending to approximately 1-2 feet above the total depth of each well. An aboveground hose, covered by a temporary ramp in traffic areas, is used to connect the wellhead assembly from the extraction well to the treatment system.
3. Install dip tubes in each observation well containing groundwater approximately 3 to 4 feet into groundwater.
4. Measure distances from each observation well to the extraction well.
5. Connect the extraction well to the phase separator on the unit.
6. Calibrate and install magnehelic gauges on all test wells to measure vacuum (in inches of water) and a flow meter [in cubic feet per minute (cfm)] at the extraction well.
7. Install a sample port after the phase separator and blower to sample the influent vapor stream.
8. Install a flow meter on the pressure side of the blower.

During Phase I of the DPE test, Cardno ERI performs the following tasks:

1. Check and change magnehelic gauges as needed to obtain readings in each gauge's scale range.
2. Record the following values:
  - Soil vapor influent concentrations at the unit on the pressure side of the blower
  - Vacuum readings at the extraction well
  - Vacuum readings at each observation well
  - Flow readings at the unit on the pressure side of the blower
  - Volume of groundwater extracted
  - Hour meter reading on the extraction unit
  - Water levels in each observation well containing groundwater

The soil vapor concentrations are measured using a photo-ionization detector or a lower explosive limit meter. The meter is calibrated on a daily basis using a hexane or isobutylene standard. The calibration gas and concentration, and the well and system influent measurements are recorded.

For very concentrated vapor streams, dilution air will be added and measured with a rotameter or pitot tube.

3. Pump water periodically from the phase separator into a holding tank.
4. Collect samples in a Tedlar<sup>®</sup> bag from the influent vapor stream for analysis by a client-approved, state-certified laboratory under proper storage, shipment and chain-of-custody (COC) protocol. Samples are always stored out of direct sunlight. No ice is placed in the cooler, and the COC is placed inside the cooler. At a minimum, samples are typically collected at the beginning and end of Phase I.

## **Phase II – DPE for Mass Removal**

For mass removal, one or more groundwater wells are selected near the center of the area containing the highest hydrocarbons. Wellhead fittings as shown on Plate DPE-1 are placed on each extraction well. If more than one well is used for extraction, the total vacuum will be reduced. Care is exercised to ensure that a reasonable ROI is maintained.

Total vapor flow is measured on the pressure side of the blower and the measured flow rate is checked against the blower curve. Vapor samples are collected periodically in a Tedlar<sup>®</sup> bag for analysis on the pressure side of the blower, usually at the beginning, middle and end of an extended test.

Water is collected in tank(s) for later off-site disposal or treated on site with carbon adsorption through a properly permitted unit. The water produced is measured with a totalizer or by recording the level in the tank(s).

The mass of constituents removed with the soil vapor is calculated and tabulated using vapor flow rates and constituent concentrations; the mass of constituents removed with groundwater is calculated and tabulated using water volume and constituent concentrations.

Prior to starting Phase II of the DPE test, Cardno ERI performs the same tasks involving the extraction well(s) and the unit as prior to Phase I with the following modifications:

1. Connect the extraction well(s) to a manifold to provide individual well control as necessary during this portion of the test.
2. Install a sample port at each extraction well to sample soil vapor at each wellhead.

During Phase II of the DPE test, Cardno ERI performs the following tasks:

1. Record the same values for the extraction well(s) and the unit with the following modification:
  - Record soil vapor concentrations at each extraction well, if feasible
2. Pump water periodically from the phase separator into a holding tank.
3. Collect influent vapor stream samples for laboratory analysis as described in Phase I.
4. Collect groundwater samples periodically and at the end of Phase II for analysis of constituents of concern or those required by the permit. Submit groundwater samples collected during Phases I and II to a client-approved, state-certified laboratory under proper storage, shipment and COC protocol.

## **Groundwater Disposal**

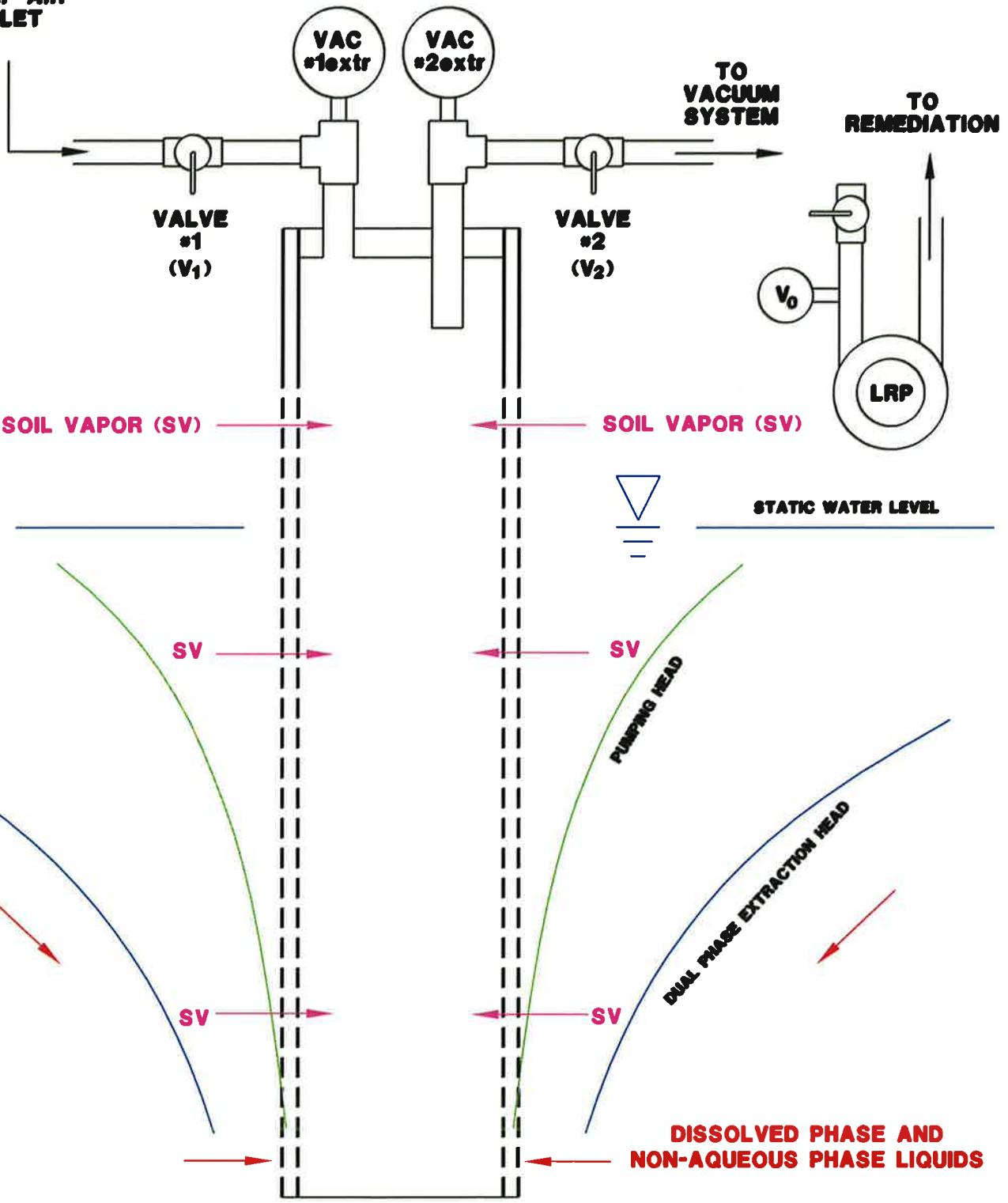
Extracted groundwater is treated at a client- and regulatory-approved facility, treated with a permitted mobile carbon treatment system, or transported off site in a truck or trailer-mounted tank and disposed of in accordance with regulatory requirements.

At the end of the DPE test and following receipt of the analytical results, Cardno ERI prepares a report summarizing the field and laboratory procedures, presenting the laboratory and feasibility testing results, providing mass removal calculations, and discussing conclusions and recommendations.

Attachments: Plate DPE-1 – Example Dual-Phase Extraction Wellhead Assembly  
Plate DPE-2 – Example Observation Well Responses



**BURP AIR INLET**



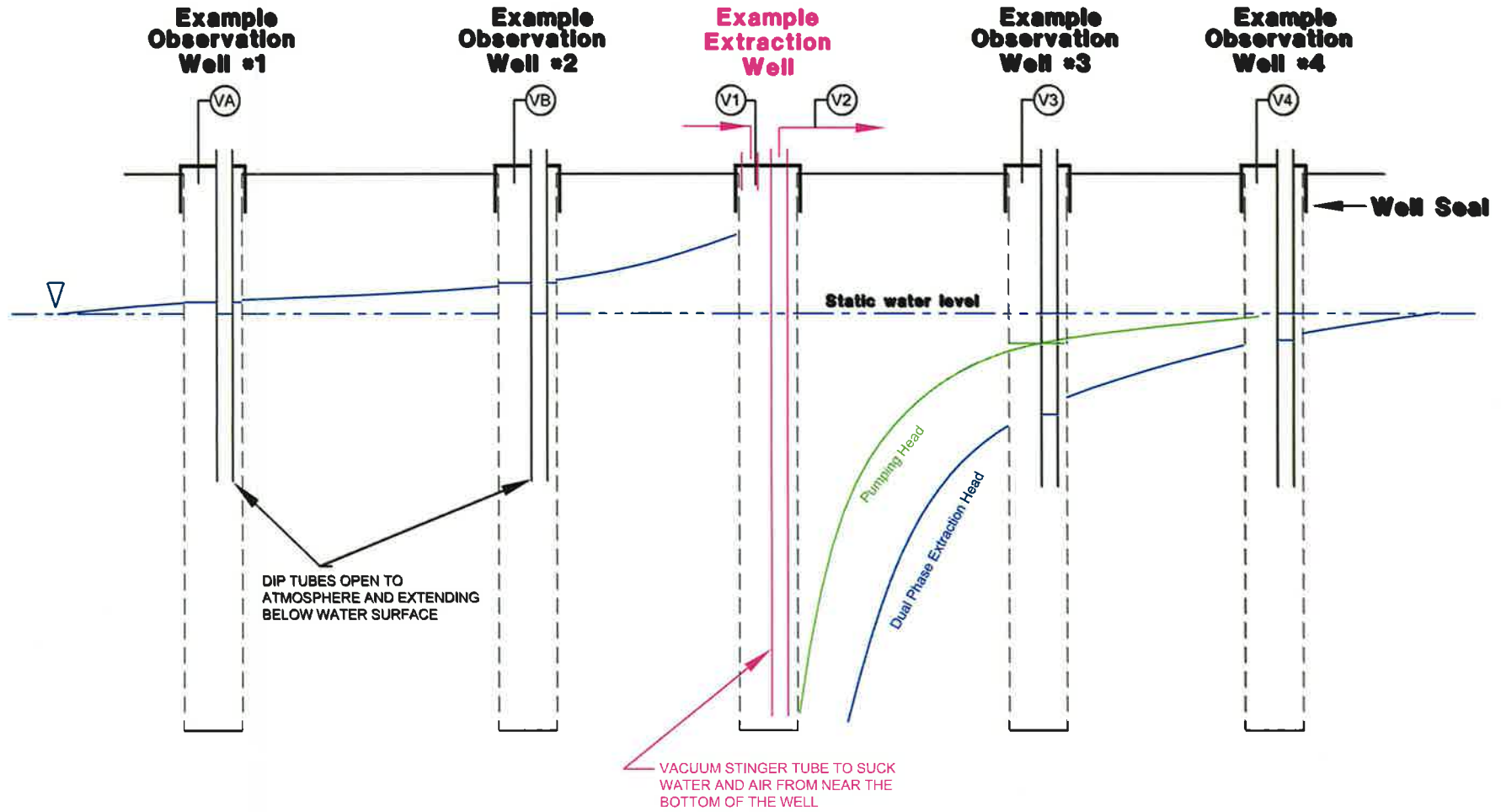
FN Example DPE-EXTR



### EXAMPLE DUAL-PHASE EXTRACTION WELLHEAD ASSEMBLY

Cardno ERI  
25371 Commercentre Drive, Suite 250  
Lake Forest, California 92630

**PROJECT NO.**  
DPE-1  
**PLATE**  
DPE-1  
DATE: 01/10/11



FN Example DPE-OBSER-2



## EXAMPLE OBSERVATION WELL RESPONSES

Cardno ERI  
 25371 Commercentre Drive, Suite 250  
 Lake Forest, California 92630

### EXPLANATION

- (V1) Vacuum applied at example extraction well
- (V2) Induced vacuum observed at example observation well #3

PROJECT NO.

DPE

PLATE

DPE-2

DATE: 01/10/11

**HYDROCARBON REMOVAL FROM A VADOSE WELL  
SOP-25**

Rev: JO'C

**POUNDS OF HYDROCARBON IN A VAPOR STREAM**

INPUT DATA:

- 1) Vapor flow rate acfm (usually by Pitot tube)
- 2) Vapor pressure at the flow measuring device (in inches of H<sub>2</sub>O) (use {-} for vacuum)
- 3) Vapor temperature at the flow-measuring device.
- 4) Hydrocarbon content of vapor (usually in mg/M<sup>3</sup>) for ppmv you need molecular weight.
- 5) Length of time (usually hours) over which flow rate occurred)

From periodic measurements, a calculation of total pounds of hydrocarbons removed from a well or from a system is calculated. The input data listed above are measured at a point in time. To calculate quantities removed, some assumptions must be made about what was happening between measurements. The following assumptions will be used for the sake of consistency:

ASSUMPTIONS:

- 1) Vapor flow for the period equals the average of the initial and final reading for the period.
- 2) Pressure and temperature for the entire period will be the final reading.
- 3) Hydrocarbon concentration for the period equals the average of the initial and final reading.
- 4) The hours of operation can be taken from an hour meter, an electric meter or will be assumed to be equal to the time between measurements.
- 5) If the unit is found down - try to determine how many hours it did operate and use the data taken for the previous period to make the calculations. Restart the unit and then take data to start the next period.

SAMPLE DATA AND CALCULATIONS

Date	Time	Temp deg F	Press in H <sub>2</sub> O	HC conc mg/M <sup>3</sup>	Vapor flow acfm	Calc. lb. rem.
1/6/95	11:00	70	-46	2000	120	
1/7/95	13:00	55	-50	1350	90	
1/8/95	10:00	80	-13	750	100	7.4

Calculate the pounds of hydrocarbon removed from the system during the basis period from 13:00 (1:00 pm) on the 7th to 10 am on the 8th. Pressure and temperature of the measurements (at the flow meter) must be corrected to the P and T used to report the HC concentration (which are P = 1 atm and T = 70 deg F). 1 atm = 14.7psia, 760 mm Hg, or 407 in H<sub>2</sub>O. T<sub>abs</sub> = 460 + T deg F

Hours of operation = 21, T = 80, P = -13, HC = (1350+750)/2 = 1050 mg/M<sup>3</sup>, Flow = 95

$$21 \times 60 \times 95 \times \frac{(460+70)}{(460+80)} \times \frac{(407-13)}{407} \times \frac{28.3}{1000} \times \frac{1050}{1000} \times \frac{1}{454} = 7.4 \text{ lb}$$

$$\frac{\text{hr}}{\text{basis}} \times \frac{\text{min}}{\text{hr}} \times \frac{\text{cu ft}}{\text{min}} \times T_{\text{Corr}} \times P_{\text{Corr}} \times \frac{\text{M}^3}{\text{cu ft}} \times \frac{\text{g}}{\text{M}^3} \times \frac{\text{lb}}{\text{g}} = \frac{\text{lb}}{\text{basis}}$$

$$21 \times 60 \times 95 \times 0.98 \times 0.97 \times 0.0283 \times 1.050 \times 1/454 = 7.4 \text{ lb.}$$

cumulative lbs. (the running total) = the sum of all the previous periods.

Note: If results are given in ppm, an assumption about the molecular weight of the hydrocarbon must be made to convert ppm into mg/M<sup>3</sup>. ppmv x molecular wt. /24.1 = mg/M<sup>3</sup>. (Use 102 for gasoline)

**Cardno ERI**  
**Soil Vapor Sampling Well Installation and Sampling Field Protocol**

**Preliminary Activities**

Prior to the onset of field activities at the site, Cardno ERI obtains the appropriate permit(s) from the governing agency(s). Advance notification is made as required by the agency(s) prior to the start of work. Cardno ERI marks the borehole locations and contacts the local one call utility locating service at least 48 hours prior to the start of work to mark buried utilities. Borehole locations may also be checked for buried utilities by a private geophysical surveyor. Prior to drilling, the borehole location is cleared in accordance with the client's procedures. Fieldwork is conducted under the advisement of a registered professional geologist and in accordance with an updated site-specific safety plan prepared for the project, which is available at the job site during field activities.

**Well Construction**

The borehole is advanced to the desired depth using either a direct-push rig, hand auger, or air vacuum rig. Lithologic conditions are recorded on a boring log during borehole advancement, and select soil matrix sampling may be conducted based on soil characteristics.

Each soil vapor sampling (SVS) well is constructed using inert screen material attached to  $\frac{1}{8}$ - to  $\frac{1}{4}$ -inch outer diameter inert tubing. A gas-tight vacuum fitting or valve is attached to the top of each length of tubing using a female compression fitting. Each screen is set within a minimum of a 12-inch thick appropriately sized sand pack, with a minimum of 3 inches of sand pack above the top of the screen. A minimum of 4 inches of dry granular bentonite is set above each screen and associated sand pack. In SVS wells with multiple and separate casings and screens, the annular space between the top of the dry granular bentonite above the deep screen and the bottom of the sand pack associated with the shallow screen is sealed with a minimum of 18 inches of hydrated bentonite. The remainder of the annular space of the well is sealed with hydrated bentonite to 1 foot below ground surface. Wellheads are finished with traffic-rated well boxes set in concrete flush with the surrounding grade. No glues, chemical cements, or solvents are used in well construction.

A boring log is completed with the construction details for each well, including the materials of construction, depth of the borehole, screen length, and annular seal thickness.

**Soil Vapor Sampling**

Samples are collected using a soil vapor purging and sampling manifold consisting of a flow regulator, vacuum gauges, vacuum pump, shroud, and laboratory-prepared, gas-tight, opaque containers such as Summa™ canisters. Samples may also be collected using a syringe and analyzed by a mobile laboratory. Prior to use, Summa™ canisters are checked to ensure they are under the laboratory induced vacuum between 31 and 25 inches of mercury (in. Hg). New inert tubing is used to purge and sample each well. Prior to purging and sampling each SVS well, the sampling manifold is connected to the gas-tight vacuum fitting or valve at the wellhead, and the downstream tubing and fittings are vacuum tested at approximately 24 to 28 in. Hg. Purging and sampling are conducted only on SVS wells when the tubing and fittings hold the applied vacuum for 5 minutes per vacuum gauge reading.

When required, Cardno ERI conducts a purge volume versus constituent concentration test on at least one SVS well prior to purging and sampling activities. The purge volume test well is selected based on the location of the anticipated source of chemical constituents at the site and on the location of anticipated maximum soil vapor concentrations based on lithologic conditions. If the SVS well has been in place for more than 1 week, it is assumed that soil vapor in the sand pack has equilibrated with the surrounding soil, and only the screen and tubing volumes are included in the purge volume calculation. If the SVS well has been in place for less than 1 week, the volume of the sand pack around the screen is included in the purge volume calculation. A photo-ionization detector (PID) or on-site mobile laboratory is used to evaluate concentrations of chemical constituents in the vapor stream after 1, 3, and 10 volumes of vapor have been purged from the SVS well. Purging is conducted at a rate of 100 to 200 milliliters per minute (ml/min). The purge volume exhibiting the highest concentration is the volume of vapor purged

from each SVS well prior to sampling. If the three separate purge volumes produce equal concentrations a default of 3 purge volumes is extracted prior to sampling.

Prior to sampling, a helium leak test is performed at each SVS well, including a summa canister and its fittings, to check for leaks in the SVS annulus. To assess the potential for leaks in the SVS well annulus, a shroud is placed over the SVS well and summa canister and the shroud is filled with a measured amount of helium. Helium screening is performed in the field by drawing soil gas into a Tedlar bag via a lung-box and screening the contents of the Tedlar bag with a helium meter. The concentration of helium in the sample divided by the concentration of helium in the shroud provides a measure of the proportion of the sample attributable to leakage. A leak that comprises less than 5% of the sample is insignificant. Helium screening is also performed using laboratory analysis of the contents of the summa canister collected under the shroud. Sampling is conducted at approximately the same rate of purging, at 100 to 200 ml/min. Soil vapor samples are submitted under chain-of-custody protocol for the specified laboratory analyses.

At a minimum, weather conditions (temperature, barometric pressure and precipitation), the sampling flow rate, the purge volume, the helium leak detection percentage results, the sample canister identification number, the method of sample collection, and the vacuum of the sampling canister at the start and end of sample collection (if applicable) are recorded on a log for each SVS well purged and sampled.

### **Decontamination Procedures**

If soil samples are collected, Cardno ERI or the contracted driller decontaminates the soil sampling equipment between each sampling interval using a non-phosphate solution, followed by a minimum of two tap water rinses. De-ionized water may be used for the final rinse. Downhole drilling equipment is steam-cleaned or triple-rinsed prior to advancing each borehole.

### **Waste Treatment and Disposal**

Soil cuttings generated from the well installation are stored on site in labeled, Department of Transportation-approved, 55-gallon drums or other appropriate storage container. The soil is removed from the site and transported under manifest to a client- and regulatory-approved facility for recycling or disposal. Decontamination water is stored on site in labeled, regulatory-approved storage containers, and is subsequently transported under manifest to a client- and regulatory-approved facility for disposal or treated with a permitted mobile or fixed-base carbon treatment system.

## **APPENDIX C**

### **PERMITS**

# Alameda County Public Works Agency - Water Resources Well Permit



399 Elmhurst Street  
Hayward, CA 94544-1395  
Telephone: (510)670-6633 Fax:(510)782-1939

Application Approved on: 07/28/2014 By jamesy

Permit Numbers: W2014-0702 to W2014-0704  
Permits Valid from 08/11/2014 to 08/11/2014

Application Id: 1406235284018  
Site Location: 6301 San Pablo Avenue, Oakland, CA  
Project Start Date: 08/11/2014  
Assigned Inspector: Contact Steve Miller at (510) 670-5517 or stevem@acpwa.org

City of Project Site:Oakland  
Completion Date:08/11/2014

Applicant: Cardno ERI - Greg Gurs  
601 N McDowell Blvd, Petaluma, CA 94954  
Property Owner: Connie Lam  
200 El Dorado Terr, San Francisco, CA 94112  
Client: ExxonMobil Oil Corp  
4096 Piedmont Ave #194, Oakland, CA 94611

Phone: 707-766-2000  
Phone: 510-654-5550  
Phone: 510-547-8196

Receipt Number: WR2014-0303 Total Due: \$1191.00  
Payer Name : Cardno ERI Total Amount Paid: \$1191.00  
Paid By: CHECK PAID IN FULL

## Works Requesting Permits:

Well Construction-Monitoring-Monitoring - 3 Wells  
Driller: Gregg - Lic #: 485165 - Method: hstem

Work Total: \$1191.00

### Specifications

Permit #	Issued Date	Expire Date	Owner Well Id	Hole Diam.	Casing Diam.	Seal Depth	Max. Depth
W2014-0702	07/28/2014	11/09/2014	MW6	10.00 in.	4.00 in.	5.00 ft	15.00 ft
W2014-0703	07/28/2014	11/09/2014	MW7	8.00 in.	2.00 in.	5.00 ft	15.00 ft
W2014-0704	07/28/2014	11/09/2014	MW8	10.00 in.	4.00 in.	5.00 ft	15.00 ft

### Specific Work Permit Conditions

1. Permittee shall assume entire responsibility for all activities and uses under this permit and shall indemnify, defend and save the Alameda County Public Works Agency, its officers, agents, and employees free and harmless from any and all expense, cost, liability in connection with or resulting from the exercise of this Permit including, but not limited to, properly damage, personal injury and wrongful death.
2. Permittee, permittee's contractors, consultants or agents shall be responsible to assure that all material or waters generated during drilling, boring destruction, and/or other activities associated with this Permit will be safely handled, properly managed, and disposed of according to all applicable federal, state, and local statutes regulating such. In no case shall these materials and/or waters be allowed to enter, or potentially enter, on or off-site storm sewers, dry wells, or waterways or be allowed to move off the property where work is being completed.
3. Prior to any drilling activities, it shall be the applicant's responsibility to contact and coordinate an Underground Service Alert (USA), obtain encroachment permit(s), excavation permit(s) or any other permits or agreements required for that Federal, State, County or City, and follow all City or County Ordinances. No work shall begin until all the permits and requirements have been approved or obtained. It shall also be the applicants responsibilities to provide to the Cities or to Alameda County an Traffic Safety Plan for any lane closures or detours planned. No work shall begin until all the permits and requirements have been approved or obtained.

## **Alameda County Public Works Agency - Water Resources Well Permit**

4. Compliance with the well-sealing specifications shall not exempt the well-sealing contractor from complying with appropriate State reporting-requirements related to well construction or destruction (Sections 13750 through 13755 (Division 7, Chapter 10, Article 3) of the California Water Code). Contractor must complete State DWR Form 188 and mail original to the Alameda County Public Works Agency, Water Resources Section, within 60 days. Include permit number and site map.
  5. Applicant shall contact assigned inspector listed on the top of the permit at least five (5) working days prior to starting, once the permit has been approved. Confirm the scheduled date(s) at least 24 hours prior to drilling.
  6. Wells shall have a Christy box or similar structure with a locking cap or cover. Well(s) shall be kept locked at all times. Well(s) that become damaged by traffic or construction shall be repaired in a timely manner or destroyed immediately (through permit process). No well(s) shall be left in a manner to act as a conduit at any time.
  7. Minimum surface seal thickness is two inches of cement grout placed by tremie.
  8. Minimum seal (Neat Cement seal) depth for monitoring wells is 5 feet below ground surface(BGS) or the maximum depth practicable or 20 feet.
  9. Copy of approved drilling permit must be on site at all times. Failure to present or show proof of the approved permit application on site shall result in a fine of \$500.00.
-



**APPENDIX D**  
**BORING LOGS**



# BORING LOG MW6

(Page 1 of 1)

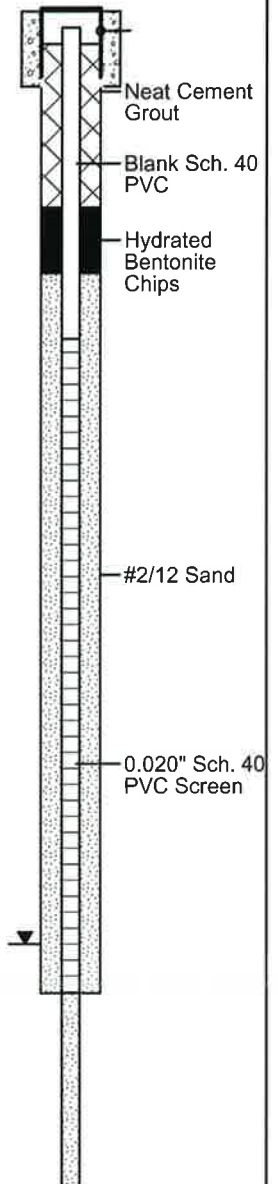
Date Drilled : 8/11/14  
 Drilling Co. : Gregg Drilling  
 Drilling Method : Hollow Stem Auger  
 Sampling Method : Direct-Push  
 Borehole Diameter : 12"  
 Casing Diameter : 4"  
 Location (N-S) : 37.845880  
 Location (E-W) : -122.2848764  
 Total Depth : 18' bgs  
 GW encountered : Not Encountered

Project No. : Former Mobil Service Station 99105  
 Site : 6301 San Pablo Ave, Oakland, California  
 Logged By: : Nadya M. Vicente  
 Reviewed By: : David R. Daniels, P.G.8737  
 Signature : *[Signature]*

Depth (ft)	Blow Count	OVM/PI/D (ppmv)	Sample	Column	ASTM	Sample Condition	Water Levels
						<input checked="" type="checkbox"/> No Recovery <input type="checkbox"/> Sampled Interval <input type="checkbox"/> Described Sample <input checked="" type="checkbox"/> Preserved Sample	▼ 14.00' bgs on 8/14/14 ▼ Not Encountered

Boring: MW6

DESCRIPTION					
0					6" Concrete. Cleared to 5' bgs using hand tools.
0.0				SW	SAND with Gravel: dark brown, dry, fine-to coarse-grained, subrounded, subangular gravel up to 0.5" diameter (0,0,85,15)
5.8				CL	CLAY: light gray, damp, medium plasticity, fine-grained sand (90,0,10,0)
1.7				CL	
5				CL	Sandy CLAY: dark green, dry, low plasticity, fine-to medium-grained sand, minor gravel (50,0,45,5)
0.8				CL	
7				SW-SC	SAND with Clay and Gravel: green, dry, fine-to coarse-grained, well graded, subangular gravel up to 1" diameter (10,0,65,25)
				SW	SAND with Gravel: brown, dry, fine-to coarse-grained, well graded, subangular gravel up to 0.5" diameter (0,0,70,30)
10				SW	
21.5				SW	
24				SC	Clayey SAND: dark green and brown, dry, fine-to coarse-grained, well graded, gravel up to 1" diameter (20,0,60,20)
15				CL	CLAY: mottled yellow brown and gray, damp, low to medium plasticity, fine-grained sand (80,10,10,0)
11.2				CL	
0.0					



TD = 18 feet bgs  
 No free groundwater encountered.



# BORING LOG MW7

(Page 1 of 1)

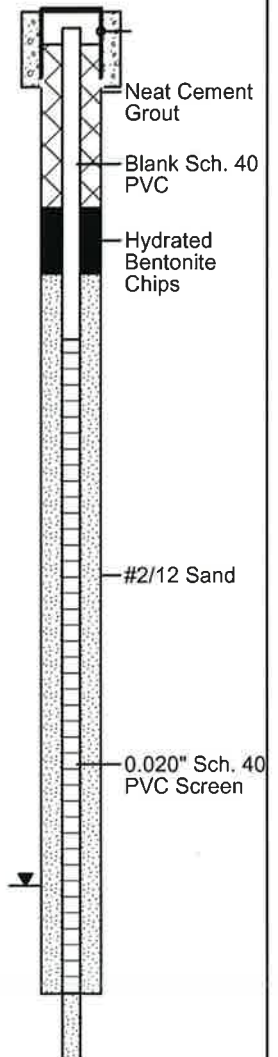
Date Drilled : 8/11/14  
 Drilling Co. : Gregg Drilling  
 Drilling Method : Hollow Stem Auger  
 Sampling Method : Direct-Push  
 Borehole Diameter : 10"  
 Casing Diameter : 2"  
 Location (N-S) : 37.8457611  
 Location (E-W) : -122.2850966  
 Total Depth : 16' bgs  
 GW encountered : Not Encountered

Project No. : Former Mobil Service Station 99105  
 Site : 6301 San Pablo Ave, Oakland, California  
 Logged By: : Nadya M. Vicente  
 Reviewed By: : David R. Daniels, P.G.8737  
 Signature : *[Signature]*

Depth (ft)	Blow Count	OVM/PIID (ppmv)	Sample	Column	ASTM	Sample Condition	Water Levels
						<input checked="" type="checkbox"/> No Recovery <input type="checkbox"/> Sampled Interval <input type="checkbox"/> Described Sample <input checked="" type="checkbox"/> Preserved Sample	▼ 13.10' bgs on 8/14/14 ▼ Not Encountered

Boring: MW7


DESCRIPTION					
0					5" Concrete. Cleared to 8' bgs using hand tools.
				SW	SAND with Gravel: dark brown, dry, fine-to coarse-grained, subrounded, subangular gravel up to 0.5" diameter (0,0,85,15)
	0.0			CL	Sandy CLAY: dark brown, moist, low plasticity, fine-to medium-grained sand (65,0,35,0)
5				CL	CLAY: yellow brown with iron oxide staining, moist, low plasticity, fine-grained sand (90,0,10,0)
	0.0				slight green mottling at 6.5' bgs
	0.0			CL	Sandy CLAY: light gray-brown, damp, low plasticity, fine-grained sand, iron oxide staining, minor subrounded gravel up to 0.5" diameter (85,0,10,5)
10	10			CL	Mottled green and gray-brown @ 11.5' bgs
	0.0				
	0.0				
15				CL	CLAY with Sand: mottled yellow brown and light gray, damp, low to medium plasticity, fine-grained sand, iron oxide staining (85,0,15,0)
	0.0				
	10				



TD = 16 feet bgs  
 No free groundwater encountered.

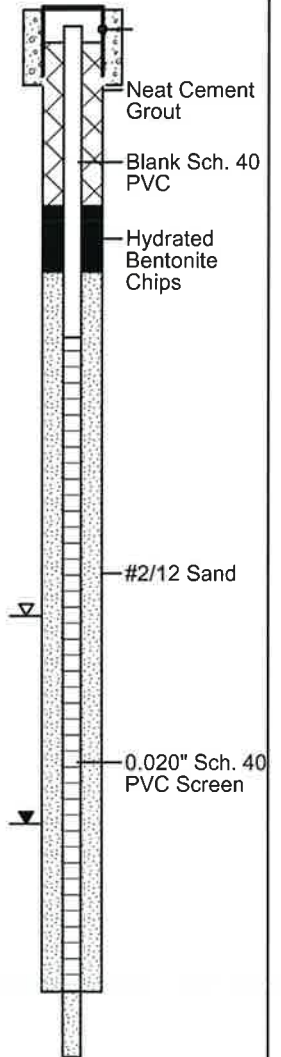
09-02-2014 \\Uspatermas01\data-pet\EXXONMOBIL\ExxonMobil Projects\1022783C (99105) Oakland\2783 Autocad\BORING LOGS\12783 MW7.bor

Date Drilled : 8/15/14  
 Drilling Co. : Gregg Drilling  
 Drilling Method : Hollow Stem Auger  
 Sampling Method : Direct-Push  
 Borehole Diameter : 12"  
 Casing Diameter : 4"  
 Location (N-S) : 37.8457820  
 Location (E-W) : -122.2849776  
 Total Depth : 16' bgs  
 GW encountered : 9' bgs

Project No. : Former Mobil Service Station 99105  
 Site : 6301 San Pablo Ave, Oakland, California  
 Logged By: : Nadya M. Vicente  
 Reviewed By: : David R. Daniels, P.G.8737  
 Signature : 

Depth (ft)	Blow Count	OVM/PIID (ppmv)	Sample	Column	ASTM	Sample Condition	Water Levels
						<input checked="" type="checkbox"/> No Recovery <input type="checkbox"/> Sampled Interval <input type="checkbox"/> Described Sample <input checked="" type="checkbox"/> Preserved Sample	▼ 12.18' bgs on 8/18/14 ▼ 9' bgs
DESCRIPTION							
0						4" Concrete. Cleared to 5' bgs using hand tools.	
0.8					SW	SAND with Gravel: dark brown, moist, fine-to coarse-grained, subangular, angular gravel up to 3" diameter (0,0,60,40)	
0.8					CL	CLAY: light gray, damp, medium plasticity, fine-grained sand (90,0,10,0)	
3.4					ML	SILT: dark yellow-brown, moist, medium plasticity, minor rock fragments (10,90,0,0)	
52					CL	Sandy CLAY: light brown, moist, low plasticity, fine-to coarse-grained sand, minor subangular gravel up to 1" diameter (60,0,35,5)	
100					CL	Sandy CLAY: dark green, moist, low plasticity, fine-to medium-grained sand, gravel up to 0.5" diameter (60,0,30,10)	
389					ML	SILT: mottled green and yellow-brown, moist, medium plasticity, minor rock fragments (white) (10,90,0,0)	
590					CL	Sandy CLAY: dark green, wet, low plasticity, fine-to medium-grained sand, gravel up to 0.5" diameter (60,0,30,10)	
+5000					CL	Sandy CLAY: dark green, saturated, low plasticity, fine-to coarse-grained sand, minor gravel up to 0.25" diameter (60,0,35,5)	
251					CL	CLAY with Sand: mottled dark yellow-brown and light gray, moist, medium plasticity, fine-grained sand (80,0,20,0)	
531					CL		
472					CL		
130					CL		
3.0					CL		
22					CL		

Boring: MW8



TD = 16 feet bgs  
 Free groundwater encountered at 9 feet bgs.

**APPENDIX E**  
**FIELD DATA SHEETS**



### Daily Field Report

Project ID #: 99105      ERI Job # 2783  
Subject: well Development      Date: 8-14-14  
Equipment Used: Disp. bailer, DTW/Tape      Sheet: 1 of 1  
Name(s): Darin Finelli  
Time Arrived On Site:      Time Departed Site:      Total Travel:

On Site	715
H+S Meeting	715 - 730
Opened wells	730 - 740
DTW on wells	740 - 750
Surged wells MW7, MW6	755 - 1235
Purged wells MW7, MW6	813 - 1237
off site	1245

Decon water - 0 gal.  
Purge water - 4.25 gal.  
Total water - 4.25 gal.

MW6 well had slow recharge.



# WATER SAMPLING SITE STATUS

Date: 8-14-14

Inspected by: Darin Einhell

Cardno ERI Job No.: 2783 Station No.: 99105

Site Address: 6301 San Pablo Ave, Oakland

Well ID	Well Head Screws		Rubber Gasket		Well Cap Locking		Lock on Well Cap		Concrete Well Seal		Well Head PVC		Water in Well Vault		Well Cover		Fence/Gate Condition		# Drums		Drum Contents		Building Condition		Site Appearance		Comments / Well Covers	
	N/R/ok	N/R/ok	N/R/ok	N/R/ok	N/R/ok	N/R/ok	Y/N	N/R/ok	N/R/ok	N/R/ok	N/R/ok	N/R/ok	s/w/e	g/v/o	N/R/ok	N/R/ok	N/R/ok	N/R/ok	N/R/ok	N/R/ok	N/R/ok	N/R/ok	N/R/ok	N/R/ok	N/R/ok	N/R/ok		
MW7	OK	OK	OK	N	OK	OK	N	OK	OK	NA	NA	NA	NA	OK	NO LOCK													
MW6	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	NO LOCK													

N = Not repairable in time available-see comments.  
 R = Repaired-see comments  
 ok = No action needed.

Y = Yes.  
 N = No.

s = Soil.  
 w = Water.  
 e = Empty.

g = Graffiti on walls.  
 v = Vagrants (or evidence of).  
 o = Open (not secured).



Cardno ERI Job# 2783 Quarter 3 Year 2014			Surging		
Client/Site: 49105			Start 755	Stop 810	
Location: 6301 San Pablo Ave Oakland, CA			Start 825	Stop 830	
Sample Tech.: Darin Einhell			Start 850	Stop 855	
DATE: 8-14-14			Start 920	Stop 925	
Weather: Cloudy			Start 950	Stop 955	
WELL ID MW 7					
TIME	PURGE VOLUME	Temp	COND	pH	Turbidity
hr:min	Gal	deg C F		unit	NTU
813	0.27	1 deg	10%	0.1	Less Than 5
814	0.25	20.1	554	7.25	34.67
832	0.25	20.3	571	7.20	123.5
858	0.25	20.1	624	7.34	9.52
926	0.25	20.3	621	7.22	11.41
928	0.25	20.5	653	7.23	8.93
1000	0.25	20.4	701	7.27	21.71
1002	0.25	20.1	691	7.22	10.28
Total Purge Volume			1.75 Gallons		
CASING VOL. FACTOR		WELL INFORMATION			
diameter		TD: 14.80			
2"-dia:		DTW <sub>i</sub> : 13.10			
4"-dia:		h: 1.7			
6"-dia:		csg vol: 0.27			
COMMENTS					
slow recharge.					

Cardno ERI Job# 2783 Quarter 3 Year 2014			Surging		
Client/Site: 49105			Start 1018	Stop 1022	
Location: 6301 San Pablo Ave, Oakland			Start 1046	Stop 1048	
Sample Tech.: Darin Einhell			Start 1125	Stop 1127	
DATE: 8-14-14			Start 1200	Stop 1205	
Weather: Sunny			Start 1230	Stop 1235	
WELL ID MW6					
TIME	PURGE VOLUME	Temp	COND	pH	Turbidity
hr:min	Gal	deg C F		unit	NTU
1024	0.52	1 deg	10%	0.1	Less Than 5
1026	0.50	19.6	708	7.25	690.6
1051	0.50	19.1	697	7.20	687.5
1130	0.50	19.3	683	7.18	651.5
1210	0.50	20.1	742	7.15	597.4
1237	0.50	22.0	728	7.12	582.9
Total Purge Volume			2.5 Gallons		
CASING VOL. FACTOR			WELL INFORMATION		
diameter			TD:	14.80	
2"-dia:			DTW <sub>i</sub> :	14.00	
4"-dia:			h:	0.80	
6"-dia:			csg vol:	0.52	
COMMENTS					
Had slow recharge, so I waited before I began surging again.					

# Daily Field Report



Project ID #: 99105

ERI Job # 2783

Subject: Monitoring and Sampling/DPE Test (separate DFR)

Date: 08/18/2014

Equipment Used: Sub. Pump, Disp. Bailers, DTW meter, DPE Trailer

Sheet: 1 of 1

Name(s): Azat R. Magdanov

Time Arrived On Site: 6:30

Time Departed Site: 18:30

## 08/18/2014

06:30 On site. H&S meeting, Permit.  
Parked DPE trailer, secured equipment.

07:00-07:15 Opened wells.

07:45-08:15 DTW

08:30-09:30 Purged: MW7, MW6, MW8.

12:00-13:00 Sampled: MW7, MW6, MW8.

Worked on DPE test.

18:30 Off Site

\* Very slow recharge in wells. Was able to sample set of VOAs and only 1 Amber from MW6, MW7.

Purge water - 6 gal.

Decon water - 19 gal.

Total water - 25 gal.



# WATER SAMPLING SITE STATUS

Date: 08/18/2014

Inspected by: Azot R. Magdonov

Cardno ERI Job No.: 2783 Station No.: 99105

Site Address: 6301 San Pablo Ave., Emeryville, CA.

Well ID	Well Head Screws	Rubber Gasket	Well Cap Locking	Lock on Well Cap	Concrete Well Seal	Well Head PVC	Water in Well Vault	Well Cover	Fence/Gate Condition	# Drums	Drum Contents	Building Condition	Site Appearance	Comments / Well Covers
	N/R/ok	N/R/ok	N/R/ok	N/R/ok	N/R/ok	N/R/ok	Y / N	N/R/ok	N/R/ok	N/R/ok		s/w/e	g/v/o	N/R/ok
MW2	NA	OK	OK	OK	OK	OK	N	OK	OK	NA	OK	S+W	OK	OK
MW3	NA		N	N										
MW5	OK													
MW6														
MW7														
MW8														

N = Not repairable in time available-see comments.      Y = Yes.      s = Soil.      g = Graffiti on walls.  
 R = Repaired-see comments      N = No.      w = Water.      v = Vagrants (or evidence of).  
 ok = No action needed.      e = Empty.      o = Open (not secured).

**GROUNDWATER SAMPLING FIELD LOG**

Client Name: EXXON MOBIL Cardno ERI Job #: 2783 Date: 08/18/14 Page 1 of 1  
 Location: 99105 Field Cleaning Performed: \_\_\_\_\_ Case Volume = (TD - DTW) x F where F =  
 Field Crew: Azot R. Magbanua Analysis: \_\_\_\_\_ 0.163 for 2" inside-diameter well casing  
 0.652 for 4" inside-diameter well casing  
 1.457 for 6" inside-diameter well casing

Well ID	Time	Case Volume	Purge Volume	Temp	Cond	pH	Post-Purge DTW	80% Recharge	BB	40mil	Amber	DO	ORP	Comments Well Box Condition
---------	------	-------------	--------------	------	------	----	----------------	--------------	----	-------	-------	----	-----	-----------------------------

MW7	0849	0.11	1				13.92	Y						Dry @ 0.2 gal. Only 1 amber sampled - not enough water
			1											
			2											
			3											
MW6	0859	0.88	1				14.18	N						Dry @ 1.5 gal. Only 1 amber (80% full)
	0900		1	18.9	610	7.61								
			2											
			3											
MW8	0913	1.36	2				12.63	N						Dry @ 4 gal.
	0915		2	21.1	681	8.24								
	0917		4	21.5	649	7.59								
			6											

W-14 - MW7 @ 1215

W-14 - MW6 @ 1230

W-13 - MW8 @ 1300







**APPENDIX F**  
**LABORATORY ANALYTICAL REPORTS**



**WORK ORDER NUMBER: 14-08-0939**

*The difference is service*



AIR | SOIL | WATER | MARINE CHEMISTRY

**Analytical Report For**

**Client:** Cardno ERI

**Client Project Name:** ExxonMobil 99105/022783C

**Attention:** Greg Gurss  
601 North McDowell Blvd.  
Petaluma, CA 94954-2312

*Cecile A. de Guia*

Approved for release on 08/25/2014 by:  
Cecile deGuia  
Project Manager

ResultLink ▶

Email your PM ▶



Eurofins Calscience, Inc. (Calscience) certifies that the test results provided in this report meet all NELAC requirements for parameters for which accreditation is required or available. Any exceptions to NELAC requirements are noted in the case narrative. The original report of subcontracted analyses, if any, is attached to this report. The results in this report are limited to the sample(s) tested and any reproduction thereof must be made in its entirety. The client or recipient of this report is specifically prohibited from making material changes to said report and, to the extent that such changes are made, Calscience is not responsible, legally or otherwise. The client or recipient agrees to indemnify Calscience for any defense to any litigation which may arise.

# Contents

Client Project Name: ExxonMobil 99105/022783C  
Work Order Number: 14-08-0939

1	Work Order Narrative. . . . .	3
2	Sample Summary. . . . .	4
3	Client Sample Data. . . . .	5
	3.1 EPA 8015B (M) TPH Diesel (Solid). . . . .	5
	3.2 EPA 8015B (M) TPH Gasoline (Solid). . . . .	6
	3.3 EPA 6010B ICP Metals (Solid). . . . .	7
	3.4 EPA 8260B Volatile Organics + Oxygenates (Solid). . . . .	8
4	Quality Control Sample Data. . . . .	10
	4.1 MS/MSD. . . . .	10
	4.2 LCS/LCSD. . . . .	14
5	Glossary of Terms and Qualifiers. . . . .	18
6	Chain-of-Custody/Sample Receipt Form. . . . .	19

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Work Order: 14-08-0939

Page 1 of 1

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**Condition Upon Receipt:**

Samples were received under Chain-of-Custody (COC) on 08/13/14. They were assigned to Work Order 14-08-0939.

Unless otherwise noted on the Sample Receiving forms all samples were received in good condition and within the recommended EPA temperature criteria for the methods noted on the COC. The COC and Sample Receiving Documents are integral elements of the analytical report and are presented at the back of the report.

**Holding Times:**

All samples were analyzed within prescribed holding times (HT) and/or in accordance with the Calscience Sample Acceptance Policy unless otherwise noted in the analytical report and/or comprehensive case narrative, if required.

Any parameter identified in 40CFR Part 136.3 Table II that is designated as "analyze immediately" with a holding time of  $\leq 15$  minutes (40CFR-136.3 Table II, footnote 4), is considered a "field" test and the reported results will be qualified as being received outside of the stated holding time unless received at the laboratory within 15 minutes of the collection time.

**Quality Control:**

All quality control parameters (QC) were within established control limits except where noted in the QC summary forms or described further within this report.

**Additional Comments:**

Air - Sorbent-extracted air methods (EPA TO-4A, EPA TO-10, EPA TO-13A, EPA TO-17): Analytical results are converted from mass/sample basis to mass/volume basis using client-supplied air volumes.

New York NELAP air certification does not certify for all reported methods and analytes, reference the accredited items here: [http://www.calscience.com/PDF/New\\_York.pdf](http://www.calscience.com/PDF/New_York.pdf)

Solid - Unless otherwise indicated, solid sample data is reported on a wet weight basis, not corrected for % moisture. All QC results are always reported on a wet weight basis.

**Subcontractor Information:**

Unless otherwise noted below (or on the subcontract form), no samples were subcontracted.

## Sample Summary

Client: Cardno ERI	Work Order:	14-08-0939
601 North McDowell Blvd.	Project Name:	ExxonMobil 99105/022783C
Petaluma, CA 94954-2312	PO Number:	022783C
	Date/Time Received:	08/13/14 10:15
	Number of Containers:	5

Attn: Greg Gurst

Sample Identification	Lab Number	Collection Date and Time	Number of Containers	Matrix
S-Profile-1	14-08-0939-1	08/11/14 13:45	1	Solid
S-Profile-2	14-08-0939-2	08/11/14 13:46	1	Solid
S-Profile-3	14-08-0939-3	08/11/14 13:48	1	Solid
S-Profile-4	14-08-0939-4	08/11/14 13:49	1	Solid
SP1	14-08-0939-5	08/11/14 00:00	1	Solid

## Analytical Report

Cardno ERI  
601 North McDowell Blvd.  
Petaluma, CA 94954-2312

Date Received: 08/13/14  
Work Order: 14-08-0939  
Preparation: EPA 3550B  
Method: EPA 8015B (M)  
Units: mg/kg

Project: ExxonMobil 99105/022783C

Page 1 of 1

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
SP1	14-08-0939-5-A	08/11/14 00:00	Solid	GC 47	08/14/14	08/14/14 23:28	140814B03
<u>Parameter</u>		<u>Result</u>	<u>RL</u>	<u>DF</u>	<u>Qualifiers</u>		
TPH as Diesel		ND	4.9	1.00	SG		
<u>Surrogate</u>		<u>Rec. (%)</u>	<u>Control Limits</u>	<u>Qualifiers</u>			
n-Octacosane		88	61-145				
Method Blank	099-15-422-1292	N/A	Solid	GC 47	08/14/14	08/14/14 16:49	140814B03
<u>Parameter</u>		<u>Result</u>	<u>RL</u>	<u>DF</u>	<u>Qualifiers</u>		
TPH as Diesel		ND	5.0	1.00			
<u>Surrogate</u>		<u>Rec. (%)</u>	<u>Control Limits</u>	<u>Qualifiers</u>			
n-Octacosane		96	61-145				

Return to Contents

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

**Analytical Report**

Cardno ERI  
601 North McDowell Blvd.  
Petaluma, CA 94954-2312

Date Received: 08/13/14  
Work Order: 14-08-0939  
Preparation: EPA 5030C  
Method: EPA 8015B (M)  
Units: mg/kg

Project: ExxonMobil 99105/022783C

Page 1 of 1

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
SP1	14-08-0939-5-A	08/11/14 00:00	Solid	GC 56	08/14/14	08/20/14 22:46	140820L053

Parameter	Result	RL	DF	Qualifiers
TPH as Gasoline	0.91	0.49	1.00	HD

Surrogate	Rec. (%)	Control Limits	Qualifiers
1,4-Bromofluorobenzene - FID	84	42-126	

Method Blank	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
Method Blank	099-14-571-1811	N/A	Solid	GC 56	08/20/14	08/20/14 10:35	140820L053

Parameter	Result	RL	DF	Qualifiers
TPH as Gasoline	ND	0.50	1.00	

Surrogate	Rec. (%)	Control Limits	Qualifiers
1,4-Bromofluorobenzene - FID	69	42-126	

Return to Contents

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

## Analytical Report

Cardno ERI  
 601 North McDowell Blvd.  
 Petaluma, CA 94954-2312

Date Received: 08/13/14  
 Work Order: 14-08-0939  
 Preparation: EPA 3050B  
 Method: EPA 6010B  
 Units: mg/kg

Project: ExxonMobil 99105/022783C

Page 1 of 1

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
SP1	14-08-0939-5-A	08/11/14 00:00	Solid	ICP 7300	08/14/14	08/15/14 20:26	140814L02A

<u>Parameter</u>	<u>Result</u>	<u>RL</u>	<u>DF</u>	<u>Qualifiers</u>
Lead	9.74	0.510	1.02	

Method Blank	097-01-002-18766	N/A	Solid	ICP 7300	08/14/14	08/19/14 12:51	140814L02A
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<u>Parameter</u>	<u>Result</u>	<u>RL</u>	<u>DF</u>	<u>Qualifiers</u>
Lead	ND	0.0100	0.0200	



## Analytical Report

Cardno ERI  
601 North McDowell Blvd.  
Petaluma, CA 94954-2312

Date Received: 08/13/14  
Work Order: 14-08-0939  
Preparation: EPA 5030C  
Method: EPA 8260B  
Units: mg/kg

Project: ExxonMobil 99105/022783C

Page 1 of 2

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
SP1	14-08-0939-5-A	08/11/14 00:00	Solid	GC/MS RR	08/14/14	08/15/14 14:12	140815L026

<u>Parameter</u>	<u>Result</u>	<u>RL</u>	<u>DF</u>	<u>Qualifiers</u>
Benzene	ND	0.0049	1.00	
Toluene	ND	0.0049	1.00	
Ethylbenzene	ND	0.0049	1.00	
o-Xylene	ND	0.0049	1.00	
p/m-Xylene	ND	0.0049	1.00	
Xylenes (total)	ND	0.0049	1.00	
Methyl-t-Butyl Ether (MTBE)	ND	0.0049	1.00	
Tert-Butyl Alcohol (TBA)	ND	0.049	1.00	
Diisopropyl Ether (DIPE)	ND	0.0098	1.00	
Ethyl-t-Butyl Ether (ETBE)	ND	0.0098	1.00	
Tert-Amyl-Methyl Ether (TAME)	ND	0.0098	1.00	
1,2-Dibromoethane	ND	0.0049	1.00	
1,2-Dichloroethane	ND	0.0049	1.00	
Naphthalene	ND	0.049	1.00	

<u>Surrogate</u>	<u>Rec. (%)</u>	<u>Control Limits</u>	<u>Qualifiers</u>
1,4-Bromofluorobenzene	102	60-132	
Dibromofluoromethane	106	63-141	
1,2-Dichloroethane-d4	107	62-146	
Toluene-d8	107	80-120	


 Return to Contents

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

## Analytical Report

Cardno ERI  
601 North McDowell Blvd.  
Petaluma, CA 94954-2312

Date Received: 08/13/14  
Work Order: 14-08-0939  
Preparation: EPA 5030C  
Method: EPA 8260B  
Units: mg/kg

Project: ExxonMobil 99105/022783C

Page 2 of 2

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
Method Blank	099-12-882-1656	N/A	Solid	GC/MS RR	08/15/14	08/15/14 13:16	140815L026

Parameter	Result	RL	DF	Qualifiers
Benzene	ND	0.0050	1.00	
Toluene	ND	0.0050	1.00	
Ethylbenzene	ND	0.0050	1.00	
o-Xylene	ND	0.0050	1.00	
p/m-Xylene	ND	0.0050	1.00	
Xylenes (total)	ND	0.0050	1.00	
Methyl-t-Butyl Ether (MTBE)	ND	0.0050	1.00	
Tert-Butyl Alcohol (TBA)	ND	0.050	1.00	
Diisopropyl Ether (DIPE)	ND	0.010	1.00	
Ethyl-t-Butyl Ether (ETBE)	ND	0.010	1.00	
Tert-Amyl-Methyl Ether (TAME)	ND	0.010	1.00	
1,2-Dibromoethane	ND	0.0050	1.00	
1,2-Dichloroethane	ND	0.0050	1.00	
Naphthalene	ND	0.050	1.00	
Surrogate	Rec. (%)	Control Limits	Qualifiers	
1,4-Bromofluorobenzene	96	60-132		
Dibromofluoromethane	104	63-141		
1,2-Dichloroethane-d4	104	62-146		
Toluene-d8	101	80-120		


Return to Contents

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

**Quality Control - Spike/Spike Duplicate**

Cardno ERI  
601 North McDowell Blvd.  
Petaluma, CA 94954-2312

Date Received: 08/13/14  
Work Order: 14-08-0939  
Preparation: EPA 3550B  
Method: EPA 8015B (M)

Project: ExxonMobil 99105/022783C

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Quality Control Sample ID	Type	Matrix	Instrument	Date Prepared	Date Analyzed	MS/MSD Batch Number
14-08-0923-2	Sample	Solid	GC 47	08/14/14	08/14/14 19:02	140814S03
14-08-0923-2	Matrix Spike	Solid	GC 47	08/14/14	08/14/14 17:39	140814S03
14-08-0923-2	Matrix Spike Duplicate	Solid	GC 47	08/14/14	08/14/14 17:56	140814S03

Parameter	<u>Sample Conc.</u>	<u>Spike Added</u>	<u>MS Conc.</u>	<u>MS %Rec.</u>	<u>MSD Conc.</u>	<u>MSD %Rec.</u>	<u>%Rec. CL</u>	<u>RPD</u>	<u>RPD CL</u>	<u>Qualifiers</u>
TPH as Diesel	ND	400.0	423.0	106	432.4	108	64-130	2	0-15	



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**Quality Control - Spike/Spike Duplicate**

Cardno ERI  
601 North McDowell Blvd.  
Petaluma, CA 94954-2312

Date Received: 08/13/14  
Work Order: 14-08-0939  
Preparation: EPA 5030C  
Method: EPA 8015B (M)

Project: ExxonMobil 99105/022783C

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Quality Control Sample ID	Type	Matrix	Instrument	Date Prepared	Date Analyzed	MS/MSD Batch Number
14-08-1424-1	Sample	Solid	GC 56	08/20/14	08/20/14 16:59	140820S020
14-08-1424-1	Matrix Spike	Solid	GC 56	08/20/14	08/20/14 14:31	140820S020
14-08-1424-1	Matrix Spike Duplicate	Solid	GC 56	08/20/14	08/20/14 15:03	140820S020

<u>Parameter</u>	<u>Sample Conc.</u>	<u>Spike Added</u>	<u>MS Conc.</u>	<u>MS %Rec.</u>	<u>MSD Conc.</u>	<u>MSD %Rec.</u>	<u>%Rec. CL</u>	<u>RPD</u>	<u>RPD CL</u>	<u>Qualifiers</u>
TPH as Gasoline	ND	10.00	6.389	64	6.825	68	48-114	7	0-23	

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RPD: Relative Percent Difference. CL: Control Limits



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## Quality Control - Spike/Spike Duplicate

Cardno ERI  
601 North McDowell Blvd.  
Petaluma, CA 94954-2312

Date Received: 08/13/14  
Work Order: 14-08-0939  
Preparation: EPA 3050B  
Method: EPA 6010B

Project: ExxonMobil 99105/022783C

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Quality Control Sample ID	Type	Matrix	Instrument	Date Prepared	Date Analyzed	MS/MSD Batch Number
14-08-0954-15	Sample	Solid	ICP 7300	08/14/14	08/15/14 19:30	140814S02
14-08-0954-15	Matrix Spike	Solid	ICP 7300	08/14/14	08/15/14 19:06	140814S02
14-08-0954-15	Matrix Spike Duplicate	Solid	ICP 7300	08/14/14	08/15/14 19:07	140814S02

Parameter	Sample Conc.	Spike Added	MS Conc.	MS %Rec.	MSD Conc.	MSD %Rec.	%Rec. CL	RPD	RPD CL	Qualifiers
Lead	1.461	25.00	28.09	107	29.01	110	75-125	3	0-20	

  
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RPD: Relative Percent Difference. CL: Control Limits



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## Quality Control - Spike/Spike Duplicate

Cardno ERI  
601 North McDowell Blvd.  
Petaluma, CA 94954-2312

Date Received: 08/13/14  
Work Order: 14-08-0939  
Preparation: EPA 5030C  
Method: EPA 8260B

Project: ExxonMobil 99105/022783C

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Quality Control Sample ID	Type	Matrix	Instrument	Date Prepared	Date Analyzed	MS/MSD Batch Number
SP1	Sample	Solid	GC/MS RR	08/14/14	08/15/14 14:12	140815S009
SP1	Matrix Spike	Solid	GC/MS RR	08/14/14	08/15/14 15:08	140815S009
SP1	Matrix Spike Duplicate	Solid	GC/MS RR	08/14/14	08/15/14 15:36	140815S009

Parameter	Sample Conc.	Spike Added	MS Conc.	MS %Rec.	MSD Conc.	MSD %Rec.	%Rec. CL	RPD	RPD CL	Qualifiers
Benzene	ND	0.05000	0.04680	94	0.05150	103	61-127	10	0-20	
Toluene	ND	0.05000	0.04767	95	0.05198	104	63-123	9	0-20	
Ethylbenzene	ND	0.05000	0.04525	90	0.04929	99	57-129	9	0-22	
o-Xylene	ND	0.05000	0.04672	93	0.05113	102	70-130	9	0-30	
p/m-Xylene	ND	0.1000	0.09188	92	0.1005	101	70-130	9	0-30	
Methyl-t-Butyl Ether (MTBE)	ND	0.05000	0.04204	84	0.04776	96	57-123	13	0-21	
Tert-Butyl Alcohol (TBA)	ND	0.2500	0.2178	87	0.2372	95	30-168	9	0-34	
Diisopropyl Ether (DIPE)	ND	0.05000	0.04986	100	0.05526	111	57-129	10	0-20	
Ethyl-t-Butyl Ether (ETBE)	ND	0.05000	0.04187	84	0.04729	95	55-127	12	0-20	
Tert-Amyl-Methyl Ether (TAME)	ND	0.05000	0.03743	75	0.04274	85	58-124	13	0-20	
1,2-Dibromoethane	ND	0.05000	0.04303	86	0.04770	95	64-124	10	0-20	
1,2-Dichloroethane	ND	0.05000	0.04740	95	0.05298	106	80-120	11	0-20	

  
Return to Contents

RPD: Relative Percent Difference. CL: Control Limits

## Quality Control - LCS

Cardno ERI	Date Received:	08/13/14
601 North McDowell Blvd.	Work Order:	14-08-0939
Petaluma, CA 94954-2312	Preparation:	EPA 3550B
	Method:	EPA 8015B (M)
Project: ExxonMobil 99105/022783C		Page 1 of 4

Quality Control Sample ID	Type	Matrix	Instrument	Date Prepared	Date Analyzed	LCS Batch Number
099-15-422-1292	LCS	Solid	GC 47	08/14/14	08/14/14 17:06	140814B03
<u>Parameter</u>		<u>Spike Added</u>	<u>Conc. Recovered</u>	<u>LCS %Rec.</u>	<u>%Rec. CL</u>	<u>Qualifiers</u>
TPH as Diesel		400.0	422.1	106	75-123	



Quality Control - LCS

Cardno ERI	Date Received:	08/13/14
601 North McDowell Blvd.	Work Order:	14-08-0939
Petaluma, CA 94954-2312	Preparation:	EPA 5030C
	Method:	EPA 8015B (M)
Project: ExxonMobil 99105/022783C		Page 2 of 4

Quality Control Sample ID	Type	Matrix	Instrument	Date Prepared	Date Analyzed	LCS Batch Number
099-14-571-1811	LCS	Solid	GC 56	08/20/14	08/20/14 11:54	140820L053
<u>Parameter</u>		<u>Spike Added</u>	<u>Conc. Recovered</u>	<u>LCS %Rec.</u>	<u>%Rec. CL</u>	<u>Qualifiers</u>
TPH as Gasoline		10.00	7.330	73	70-124	

Return to Contents

RPD: Relative Percent Difference. CL: Control Limits



**Quality Control - LCS**

Cardno ERI	Date Received:	08/13/14
601 North McDowell Blvd.	Work Order:	14-08-0939
Petaluma, CA 94954-2312	Preparation:	EPA 3050B
	Method:	EPA 6010B
Project: ExxonMobil 99105/022783C		Page 3 of 4

Quality Control Sample ID	Type	Matrix	Instrument	Date Prepared	Date Analyzed	LCS Batch Number
097-01-002-18766	LCS	Solid	ICP 7300	08/14/14	08/15/14 18:49	140814L02A
<u>Parameter</u>		<u>Spike Added</u>	<u>Conc. Recovered</u>	<u>LCS %Rec.</u>	<u>%Rec. CL</u>	<u>Qualifiers</u>
Lead		25.00	28.48	114	80-120	

Return to Contents 

RPD: Relative Percent Difference. CL: Control Limits



**Quality Control - LCS**

Cardno ERI  
601 North McDowell Blvd.  
Petaluma, CA 94954-2312

Date Received: 08/13/14  
Work Order: 14-08-0939  
Preparation: EPA 5030C  
Method: EPA 8260B

Project: ExxonMobil 99105/022783C

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Quality Control Sample ID	Type	Matrix	Instrument	Date Prepared	Date Analyzed	LCS Batch Number
099-12-882-1656	LCS	Solid	GC/MS RR	08/15/14	08/15/14 11:49	140815L026

<u>Parameter</u>	<u>Spike Added</u>	<u>Conc. Recovered</u>	<u>LCS %Rec.</u>	<u>%Rec. CL</u>	<u>ME CL</u>	<u>Qualifiers</u>
Benzene	0.05000	0.04460	89	78-120	71-127	
Toluene	0.05000	0.04521	90	77-120	70-127	
Ethylbenzene	0.05000	0.04358	87	76-120	69-127	
o-Xylene	0.05000	0.04574	91	75-125	67-133	
p/m-Xylene	0.1000	0.08987	90	75-125	67-133	
Methyl-t-Butyl Ether (MTBE)	0.05000	0.04229	85	77-120	70-127	
Tert-Butyl Alcohol (TBA)	0.2500	0.2037	81	68-122	59-131	
Diisopropyl Ether (DIPE)	0.05000	0.04827	97	78-120	71-127	
Ethyl-t-Butyl Ether (ETBE)	0.05000	0.04263	85	78-120	71-127	
Tert-Amyl-Methyl Ether (TAME)	0.05000	0.03804	76	75-120	68-128	
1,2-Dibromoethane	0.05000	0.04208	84	80-120	73-127	
1,2-Dichloroethane	0.05000	0.04643	93	80-120	73-127	

Total number of LCS compounds: 12  
 Total number of ME compounds: 0  
 Total number of ME compounds allowed: 1  
 LCS ME CL validation result: Pass

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RPD: Relative Percent Difference. CL: Control Limits

<u>Qualifiers</u>	<u>Definition</u>
AZ	Surrogate compound recovery was out of control due to matrix interference. The associated method blank surrogate spike compound was in control and, therefore, the sample data was reported without further clarification.
B	Analyte was present in the associated method blank.
BA	The MS/MSD RPD was out of control due to suspected matrix interference.
BB	Spike recovery and RPD control limits do not apply resulting from the parameter concentration in the sample exceeding the spike concentration by a factor of four or greater.
BU	Sample analyzed after holding time expired.
BV	Sample received after holding time expired.
DF	Reporting limits elevated due to matrix interferences.
E	Concentration exceeds the calibration range.
ET	Sample was extracted past end of recommended max. holding time.
GE	The PDS/PDSD or PES/PESD associated with this batch of samples was out of control due to suspected matrix interference.
HD	Chromat. profile inconsistent with pattern(s) of ref. fuel stdns.
HO	High concentration matrix spike recovery out of limits
HT	Analytical value calculated using results from associated tests.
HX	Recovery of the Matrix Spike (MS) or Matrix Spike Duplicate (MSD) compound was out of control due to matrix interference. The associated LCS was in control.
IL	Relative percent difference out of control.
J	Analyte was detected at a concentration below the reporting limit and above the laboratory method detection limit. Reported value is estimated.
JA	Analyte positively identified but quantitation is an estimate.
LD	Analyte presence was not confirmed by second column or GC/MS analysis.
LP	The LCS and/or LCSD recoveries for this analyte were above the upper control limit. The associated sample was non-detected. Therefore, the sample data was reported without further clarification.
LQ	LCS recovery above method control limits.
LR	LCS recovery below method control limits.
ND	Parameter not detected at the indicated reporting limit.
QO	Compound did not meet method-described identification guidelines. Identification was based on additional GC/MS characteristics.
RU	LCS Recovery Percentage is within Marginal Exceedance (ME) Control Limit range (+/- 4 SD from the mean).
SG	A silica gel cleanup procedure was performed.
SN	See applicable analysis comment.

Solid - Unless otherwise indicated, solid sample data is reported on a wet weight basis, not corrected for % moisture. All QC results are reported on a wet weight basis.

Any parameter identified in 40CFR Part 136.3 Table II that is designated as "analyze immediately" with a holding time of <= 15 minutes (40CFR-136.3 Table II, footnote 4), is considered a "field" test and the reported results will be qualified as being received outside of the stated holding time unless received at the laboratory within 15 minutes of the collection time.

A calculated total result (Example: Total Pesticides) is the summation of each component concentration and/or, if "J" flags are reported, estimated concentration. Component concentrations showing not detected (ND) are summed into the calculated total result as zero concentrations.



**Cecile L de Guia**

---

**From:** Nadya Vicente [nadya.vicente@cardno.com]  
**Sent:** Tuesday, August 12, 2014 6:03 PM  
**To:** Cecile L de Guia  
**Subject:** RE: ExxonMobil 99105

0939

Hi Cecile,  
Please label sample ID SP1  
Thank you

**Nadya Vicente**  
STAFF GEOLOGIST  
CARDNO ERI

Phone (+1) 707-766-2000 Fax (+1) 707-789-0414 Direct (+1) 707-766-2015 Mobile (+1) 707-280-7487  
Address 601 North McDowell Blvd., Petaluma, CA 94954-2312 USA  
Email [nadya.vicente@cardno.com](mailto:nadya.vicente@cardno.com) Web [www.cardno.com](http://www.cardno.com) [www.cardnoeri.com](http://www.cardnoeri.com)

**From:** Cecile L de Guia [<mailto:CecileLdeGuia@eurofinsUS.com>]  
**Sent:** Tuesday, August 12, 2014 5:06 PM  
**To:** Nadya Vicente  
**Cc:** Sandy Tat  
**Subject:** ExxonMobil 99105

Good Afternoon Nadya,

Please advise what should be the sample ID after we have composited the four samples? Please update the COC and email back to us.  
Thank you.

Best regards,  
Cecile de Guia  
Project Manager

Eurofins Calscience  
7440 Lincoln Way  
Garden Grove, CA 92841-1427  
(714) 895-5494  
Email: [ceciledeguia@eurofinsUS.com](mailto:ceciledeguia@eurofinsUS.com)  
Website: [www.eurofinsus.com](http://www.eurofinsus.com)

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0939



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200 COMMERCIAL CIRCLE #H  
CONCORD, CA 94520

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1040 LINCOLN WAY  
GARDEN GROVE, CA 92841

COD:  
NONE

Reference:  
REF ID: 9181

Delivery Instructions:

Signature Type:  
SIGNATURE REQUIRED

Tracking #: 525367282



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**LABEL INSTRUCTIONS:**

- Do not copy or reprint this label for additional shipments - each package must have a unique barcode.
- Use the "Send Label to Printer" button on this page to print the shipping label on a laser or inkjet printer.
- Fold this page in half.
- Securely attach this label to your package, do not cover the barcode.
- Request an on-call pickup for your package, if you do not have scheduled daily pickup service or Drop-off your package at the nearest GSO drop box. Locate nearest GSO dropbox locations using this link.

**ADDITIONAL OPTIONS:**

**TERMS AND CONDITIONS:**

When you ship your shipment to deliver, you agree to all the service terms and conditions described in this section.

Our liability for loss or damage to any package is limited to your actual damages or \$100 whichever is less, unless you pay for additional insurance. The highest declared value is \$500 unless you declare a higher value and pay the additional charge, our liability will be the actual declared value or the actual value of your loss or damage. In any event, we will not be liable for any damage, loss, cost, incidental, special or consequential, in excess of the declared value of a shipment whether or not we had notice of such damage might be incurred including but not limited to loss of income or profit. We will not be liable for loss or damage due to circumstances, including but not limited to improper or insufficient packaging, securing, marking or addressing. Also, we will not be liable if you or the recipient violates any of the terms of our agreement. We will not be liable for loss, damage or delay caused by events we cannot control, including but not limited to acts of God, perils of the air, weather conditions, act of war, terrorism, war, strikes, or civil commotion. The highest declared value for our GSO Priority Letter or GSO Priority Mail is \$500. For other shipments the highest declared value is \$10,000 unless your package contains items of "extraordinary value", in which case the highest declared value we allow is \$500. Items of "extraordinary value" include, but are not limited to, artwork, jewelry, furs, precious metals, tickets, negotiable instruments and other items with intrinsic value.

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WORK ORDER #: 14-08-0939

**SAMPLE RECEIPT FORM**

Cooler 1 of 1

CLIENT: Cardno EPA

DATE: 08/13/14

**TEMPERATURE:** Thermometer ID: SC1 (Criteria: 0.0°C – 6.0°C, not frozen except sediment/tissue)

Temperature 2.7 °C - 0.3°C (CF) = 2.4 °C  Blank  Sample

Sample(s) outside temperature criteria (PM/APM contacted by: \_\_\_\_\_)

Sample(s) outside temperature criteria but received on ice/chilled on same day of sampling.

Received at ambient temperature, placed on ice for transport by Courier.

Ambient Temperature:  Air  Filter

Checked by: 876

**CUSTODY SEALS INTACT:**

Cooler  \_\_\_\_\_  No (Not Intact)  Not Present  N/A

Sample  \_\_\_\_\_  No (Not Intact)  Not Present

Checked by: 876  
Checked by: 802

SAMPLE CONDITION:	Yes	No	N/A
Chain-Of-Custody (COC) document(s) received with samples.....	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
COC document(s) received complete.....	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/> Collection date/time, matrix, and/or # of containers logged in based on sample labels. <input type="checkbox"/> No analysis requested. <input type="checkbox"/> Not relinquished. <input type="checkbox"/> No date/time relinquished.			
Sampler's name indicated on COC.....	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Sample container label(s) consistent with COC.....	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Sample container(s) intact and good condition.....	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Proper containers and sufficient volume for analyses requested.....	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Analyses received within holding time.....	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Aqueous samples received within 15-minute holding time			
<input type="checkbox"/> pH <input type="checkbox"/> Residual Chlorine <input type="checkbox"/> Dissolved Sulfides <input type="checkbox"/> Dissolved Oxygen.....	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Proper preservation noted on COC or sample container.....	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
<input type="checkbox"/> Unpreserved vials received for Volatiles analysis			
Volatile analysis container(s) free of headspace.....	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Tedlar bag(s) free of condensation.....	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

**CONTAINER TYPE:**

**Solid:**  4ozCGJ  8ozCGJ  16ozCGJ  Sleeve (S)  EnCores®  TerraCores®  \_\_\_\_\_

**Aqueous:**  VOA  VOAh  VOAna<sub>2</sub>  125AGB  125AGBh  125AGBp  1AGB  1AGBna<sub>2</sub>  1AGBs

500AGB  500AGJ  500AGJs  250AGB  250CGB  250CGBs  1PB  1PBna  500PB

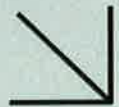
250PB  250PBn  125PB  125PBzanna  100PJ  100PJna<sub>2</sub>  \_\_\_\_\_  \_\_\_\_\_  \_\_\_\_\_

**Air:**  Tedlar®  Canister **Other:**  \_\_\_\_\_ **Trip Blank Lot#:** \_\_\_\_\_ **Labeled/Checked by:** 802

**Container:** C: Clear A: Amber P: Plastic G: Glass J: Jar B: Bottle Z: Ziploc/Resealable Bag E: Envelope **Reviewed by:** 876

**Preservative:** h: HCL n: HNO<sub>3</sub> na<sub>2</sub>: Na<sub>2</sub>S<sub>2</sub>O<sub>3</sub> na: NaOH p: H<sub>3</sub>PO<sub>4</sub> s: H<sub>2</sub>SO<sub>4</sub> u: Ultra-pure zanna: ZnAc<sub>2</sub>+NaOH f: Filtered **Scanned by:** 876

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**WORK ORDER NUMBER: 14-08-0938**

*The difference is service*



AIR | SOIL | WATER | MARINE CHEMISTRY

**Analytical Report For**

**Client:** Cardno ERI

**Client Project Name:** ExxonMobil 99105/022783C

**Attention:** Greg Gurss  
601 North McDowell Blvd.  
Petaluma, CA 94954-2312

**RECEIVED**  
AUG 25 2014

**BY:** .....

*Cecile de Guia*

Approved for release on 08/25/2014 by:  
Cecile deGuia  
Project Manager

ResultLink ▶

Email your PM ▶



Eurofins Calscience, Inc. (Calscience) certifies that the test results provided in this report meet all NELAC requirements for parameters for which accreditation is required or available. Any exceptions to NELAC requirements are noted in the case narrative. The original report of subcontracted analyses, if any, is attached to this report. The results in this report are limited to the sample(s) tested and any reproduction thereof must be made in its entirety. The client or recipient of this report is specifically prohibited from making material changes to said report and, to the extent that such changes are made, Calscience is not responsible, legally or otherwise. The client or recipient agrees to indemnify Calscience for any defense to any litigation which may arise.



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Work Order Number: 14-08-0938

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Work Order: 14-08-0938

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**Condition Upon Receipt:**

Samples were received under Chain-of-Custody (COC) on 08/13/14. They were assigned to Work Order 14-08-0938.

Unless otherwise noted on the Sample Receiving forms all samples were received in good condition and within the recommended EPA temperature criteria for the methods noted on the COC. The COC and Sample Receiving Documents are integral elements of the analytical report and are presented at the back of the report.

**Holding Times:**

All samples were analyzed within prescribed holding times (HT) and/or in accordance with the Calscience Sample Acceptance Policy unless otherwise noted in the analytical report and/or comprehensive case narrative, if required.

Any parameter identified in 40CFR Part 136.3 Table II that is designated as "analyze immediately" with a holding time of  $\leq 15$  minutes (40CFR-136.3 Table II, footnote 4), is considered a "field" test and the reported results will be qualified as being received outside of the stated holding time unless received at the laboratory within 15 minutes of the collection time.

**Quality Control:**

All quality control parameters (QC) were within established control limits except where noted in the QC summary forms or described further within this report.

**Additional Comments:**

Air - Sorbent-extracted air methods (EPA TO-4A, EPA TO-10, EPA TO-13A, EPA TO-17): Analytical results are converted from mass/sample basis to mass/volume basis using client-supplied air volumes.

New York NELAP air certification does not certify for all reported methods and analytes, reference the accredited items here: [http://www.calscience.com/PDF/New\\_York.pdf](http://www.calscience.com/PDF/New_York.pdf)

Solid - Unless otherwise indicated, solid sample data is reported on a wet weight basis, not corrected for % moisture. All QC results are always reported on a wet weight basis.

**Subcontractor Information:**

Unless otherwise noted below (or on the subcontract form), no samples were subcontracted.

## Sample Summary

Client: Cardno ERI	Work Order:	14-08-0938
601 North McDowell Blvd.	Project Name:	ExxonMobil 99105/022783C
Petaluma, CA 94954-2312	PO Number:	022783C
	Date/Time Received:	08/13/14 10:15
	Number of Containers:	6

Attn: Greg Gurss

Sample Identification	Lab Number	Collection Date and Time	Number of Containers	Matrix
S-5-MW6	14-08-0938-1	08/11/14 09:45	1	Solid
S-10-MW6	14-08-0938-2	08/11/14 09:55	1	Solid
S-15-MW6	14-08-0938-3	08/11/14 09:59	1	Solid
S-5-MW7	14-08-0938-4	08/11/14 12:25	1	Solid
S-10-MW7	14-08-0938-5	08/11/14 13:05	1	Solid
S-15-MW7	14-08-0938-6	08/11/14 13:10	1	Solid

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## Analytical Report

Cardno ERI  
601 North McDowell Blvd.  
Petaluma, CA 94954-2312

Date Received: 08/13/14  
Work Order: 14-08-0938  
Preparation: EPA 3550B  
Method: EPA 8015B (M)  
Units: mg/kg

Project: ExxonMobil 99105/022783C

Page 1 of 2

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
<b>S-5-MW6</b>	<b>14-08-0938-1-A</b>	<b>08/11/14 09:45</b>	<b>Solid</b>	<b>GC 48</b>	<b>08/15/14</b>	<b>08/15/14 20:45</b>	<b>140815B09</b>
<u>Parameter</u>		<u>Result</u>		<u>RL</u>		<u>DF</u>	<u>Qualifiers</u>
TPH as Diesel		83		25		5.00	SG,HD
<u>Surrogate</u>		<u>Rec. (%)</u>		<u>Control Limits</u>		<u>Qualifiers</u>	
n-Octacosane		62		61-145			
<b>S-10-MW6</b>	<b>14-08-0938-2-A</b>	<b>08/11/14 09:55</b>	<b>Solid</b>	<b>GC 48</b>	<b>08/15/14</b>	<b>08/15/14 21:01</b>	<b>140815B09</b>
<u>Parameter</u>		<u>Result</u>		<u>RL</u>		<u>DF</u>	<u>Qualifiers</u>
TPH as Diesel		47		25		5.00	SG,HD
<u>Surrogate</u>		<u>Rec. (%)</u>		<u>Control Limits</u>		<u>Qualifiers</u>	
n-Octacosane		67		61-145			
<b>S-15-MW6</b>	<b>14-08-0938-3-A</b>	<b>08/11/14 09:59</b>	<b>Solid</b>	<b>GC 48</b>	<b>08/15/14</b>	<b>08/15/14 21:17</b>	<b>140815B09</b>
<u>Parameter</u>		<u>Result</u>		<u>RL</u>		<u>DF</u>	<u>Qualifiers</u>
TPH as Diesel		ND		4.9		1.00	SG
<u>Surrogate</u>		<u>Rec. (%)</u>		<u>Control Limits</u>		<u>Qualifiers</u>	
n-Octacosane		80		61-145			
<b>S-5-MW7</b>	<b>14-08-0938-4-A</b>	<b>08/11/14 12:25</b>	<b>Solid</b>	<b>GC 48</b>	<b>08/15/14</b>	<b>08/15/14 22:04</b>	<b>140815B09</b>
<u>Parameter</u>		<u>Result</u>		<u>RL</u>		<u>DF</u>	<u>Qualifiers</u>
TPH as Diesel		ND		5.0		1.00	SG
<u>Surrogate</u>		<u>Rec. (%)</u>		<u>Control Limits</u>		<u>Qualifiers</u>	
n-Octacosane		75		61-145			
<b>S-10-MW7</b>	<b>14-08-0938-5-A</b>	<b>08/11/14 13:05</b>	<b>Solid</b>	<b>GC 48</b>	<b>08/15/14</b>	<b>08/15/14 22:21</b>	<b>140815B09</b>
<u>Parameter</u>		<u>Result</u>		<u>RL</u>		<u>DF</u>	<u>Qualifiers</u>
TPH as Diesel		ND		5.0		1.00	SG
<u>Surrogate</u>		<u>Rec. (%)</u>		<u>Control Limits</u>		<u>Qualifiers</u>	
n-Octacosane		79		61-145			

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RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

**Analytical Report**

Cardno ERI  
601 North McDowell Blvd.  
Petaluma, CA 94954-2312

Date Received: 08/13/14  
Work Order: 14-08-0938  
Preparation: EPA 3550B  
Method: EPA 8015B (M)  
Units: mg/kg

Project: ExxonMobil 99105/022783C

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Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
S-15-MW7	14-08-0938-6-A	08/11/14 13:10	Solid	GC 48	08/15/14	08/15/14 22:36	140815B09

<u>Parameter</u>	<u>Result</u>	<u>RL</u>	<u>DF</u>	<u>Qualifiers</u>
TPH as Diesel	ND	5.0	1.00	SG

<u>Surrogate</u>	<u>Rec. (%)</u>	<u>Control Limits</u>	<u>Qualifiers</u>
n-Octacosane	77	61-145	

Method Blank	099-15-422-1295	N/A	Solid	GC 48	08/15/14	08/15/14 17:18	140815B09
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<u>Parameter</u>	<u>Result</u>	<u>RL</u>	<u>DF</u>	<u>Qualifiers</u>
TPH as Diesel	ND	5.0	1.00	

<u>Surrogate</u>	<u>Rec. (%)</u>	<u>Control Limits</u>	<u>Qualifiers</u>
n-Octacosane	80	61-145	


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RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

## Analytical Report

Cardno ERI  
 601 North McDowell Blvd.  
 Petaluma, CA 94954-2312

Date Received: 08/13/14  
 Work Order: 14-08-0938  
 Preparation: EPA 5030C  
 Method: EPA 8015B (M)  
 Units: mg/kg

Project: ExxonMobil 99105/022783C

Page 1 of 2

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
S-5-MW6	14-08-0938-1-A	08/11/14 09:45	Solid	GC 42	08/13/14	08/19/14 16:45	140819L036
<u>Parameter</u>		<u>Result</u>	<u>RL</u>	<u>DF</u>	<u>Qualifiers</u>		
TPH as Gasoline		ND	0.53	1.00			
<u>Surrogate</u>		<u>Rec. (%)</u>	<u>Control Limits</u>	<u>Qualifiers</u>			
1,4-Bromofluorobenzene - FID		76	42-126				
S-10-MW6	14-08-0938-2-A	08/11/14 09:55	Solid	GC 42	08/13/14	08/19/14 17:20	140819L036
<u>Parameter</u>		<u>Result</u>	<u>RL</u>	<u>DF</u>	<u>Qualifiers</u>		
TPH as Gasoline		4.4	0.50	1.00	HD		
<u>Surrogate</u>		<u>Rec. (%)</u>	<u>Control Limits</u>	<u>Qualifiers</u>			
1,4-Bromofluorobenzene - FID		108	42-126				
S-15-MW6	14-08-0938-3-A	08/11/14 09:59	Solid	GC 42	08/13/14	08/19/14 17:55	140819L036
<u>Parameter</u>		<u>Result</u>	<u>RL</u>	<u>DF</u>	<u>Qualifiers</u>		
TPH as Gasoline		2.2	0.49	1.00	HD		
<u>Surrogate</u>		<u>Rec. (%)</u>	<u>Control Limits</u>	<u>Qualifiers</u>			
1,4-Bromofluorobenzene - FID		81	42-126				
S-5-MW7	14-08-0938-4-A	08/11/14 12:25	Solid	GC 42	08/13/14	08/19/14 15:00	140819L036
<u>Parameter</u>		<u>Result</u>	<u>RL</u>	<u>DF</u>	<u>Qualifiers</u>		
TPH as Gasoline		ND	0.48	1.00			
<u>Surrogate</u>		<u>Rec. (%)</u>	<u>Control Limits</u>	<u>Qualifiers</u>			
1,4-Bromofluorobenzene - FID		70	42-126				
S-10-MW7	14-08-0938-5-A	08/11/14 13:05	Solid	GC 42	08/13/14	08/19/14 18:30	140819L036
<u>Parameter</u>		<u>Result</u>	<u>RL</u>	<u>DF</u>	<u>Qualifiers</u>		
TPH as Gasoline		ND	0.49	1.00			
<u>Surrogate</u>		<u>Rec. (%)</u>	<u>Control Limits</u>	<u>Qualifiers</u>			
1,4-Bromofluorobenzene - FID		73	42-126				

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RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

**Analytical Report**

Cardno ERI  
601 North McDowell Blvd.  
Petaluma, CA 94954-2312

Date Received: 08/13/14  
Work Order: 14-08-0938  
Preparation: EPA 5030C  
Method: EPA 8015B (M)  
Units: mg/kg

Project: ExxonMobil 99105/022783C

Page 2 of 2

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
S-15-MW7	14-08-0938-6-A	08/11/14 13:10	Solid	GC 42	08/13/14	08/19/14 19:05	140819L036

<u>Parameter</u>	<u>Result</u>	<u>RL</u>	<u>DF</u>	<u>Qualifiers</u>
TPH as Gasoline	ND	0.49	1.00	

<u>Surrogate</u>	<u>Rec. (%)</u>	<u>Control Limits</u>	<u>Qualifiers</u>
1,4-Bromofluorobenzene - FID	78	42-126	

Method Blank	099-14-571-1805	N/A	Solid	GC 42	08/19/14	08/19/14 13:15	140819L036
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<u>Parameter</u>	<u>Result</u>	<u>RL</u>	<u>DF</u>	<u>Qualifiers</u>
TPH as Gasoline	ND	0.50	1.00	

<u>Surrogate</u>	<u>Rec. (%)</u>	<u>Control Limits</u>	<u>Qualifiers</u>
1,4-Bromofluorobenzene - FID	72	42-126	

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RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.



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## Analytical Report

Cardno ERI  
601 North McDowell Blvd.  
Petaluma, CA 94954-2312

Date Received: 08/13/14  
Work Order: 14-08-0938  
Preparation: EPA 5030C  
Method: EPA 8260B  
Units: mg/kg

Project: ExxonMobil 99105/022783C

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Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
S-15-MW6	14-08-0938-3-A	08/11/14 09:59	Solid	GC/MS RR	08/13/14	08/15/14 14:40	140815L010

Parameter	Result	RL	DF	Qualifiers
Benzene	ND	0.0048	1.00	
Toluene	ND	0.0048	1.00	
Ethylbenzene	ND	0.0048	1.00	
o-Xylene	ND	0.0048	1.00	
p/m-Xylene	ND	0.0048	1.00	
Xylenes (total)	ND	0.0048	1.00	
Methyl-t-Butyl Ether (MTBE)	ND	0.0048	1.00	
Tert-Butyl Alcohol (TBA)	ND	0.048	1.00	
Diisopropyl Ether (DIPE)	ND	0.0095	1.00	
Ethyl-t-Butyl Ether (ETBE)	ND	0.0095	1.00	
Tert-Amyl-Methyl Ether (TAME)	ND	0.0095	1.00	
1,2-Dibromoethane	ND	0.0048	1.00	
1,2-Dichloroethane	ND	0.0048	1.00	
Surrogate	Rec. (%)	Control Limits	Qualifiers	
1,4-Bromofluorobenzene	104	60-132		
Dibromofluoromethane	101	63-141		
1,2-Dichloroethane-d4	101	62-146		
Toluene-d8	111	80-120		

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RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.



## Analytical Report

Cardno ERI  
601 North McDowell Blvd.  
Petaluma, CA 94954-2312

Date Received: 08/13/14  
Work Order: 14-08-0938  
Preparation: EPA 5030C  
Method: EPA 8260B  
Units: mg/kg

Project: ExxonMobil 99105/022783C

Page 2 of 4

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
S-15-MW7	14-08-0938-6-A	08/11/14 13:10	Solid	GC/MS RR	08/13/14	08/14/14 21:14	140814L056

Parameter	Result	RL	DF	Qualifiers
Benzene	ND	0.0050	1.00	
Toluene	ND	0.0050	1.00	
Ethylbenzene	ND	0.0050	1.00	
o-Xylene	ND	0.0050	1.00	
p/m-Xylene	ND	0.0050	1.00	
Xylenes (total)	ND	0.0050	1.00	
Methyl-t-Butyl Ether (MTBE)	ND	0.0050	1.00	
Tert-Butyl Alcohol (TBA)	ND	0.050	1.00	
Diisopropyl Ether (DIPE)	ND	0.010	1.00	
Ethyl-t-Butyl Ether (ETBE)	ND	0.010	1.00	
Tert-Amyl-Methyl Ether (TAME)	ND	0.010	1.00	
1,2-Dibromoethane	ND	0.0050	1.00	
1,2-Dichloroethane	ND	0.0050	1.00	
Surrogate	Rec. (%)	Control Limits	Qualifiers	
1,4-Bromofluorobenzene	96	60-132		
Dibromofluoromethane	105	63-141		
1,2-Dichloroethane-d4	104	62-146		
Toluene-d8	101	80-120		


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RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

## Analytical Report

Cardno ERI  
601 North McDowell Blvd.  
Petaluma, CA 94954-2312

Date Received: 08/13/14  
Work Order: 14-08-0938  
Preparation: EPA 5030C  
Method: EPA 8260B  
Units: mg/kg

Project: ExxonMobil 99105/022783C

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Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
Method Blank	099-12-796-8796	N/A	Solid	GC/MS RR	08/14/14	08/14/14 12:24	140814L056

Parameter	Result	RL	DF	Qualifiers
Benzene	ND	0.0050	1.00	
Toluene	ND	0.0050	1.00	
Ethylbenzene	ND	0.0050	1.00	
o-Xylene	ND	0.0050	1.00	
p/m-Xylene	ND	0.0050	1.00	
Xylenes (total)	ND	0.0050	1.00	
Methyl-t-Butyl Ether (MTBE)	ND	0.0050	1.00	
Tert-Butyl Alcohol (TBA)	ND	0.050	1.00	
Diisopropyl Ether (DIPE)	ND	0.010	1.00	
Ethyl-t-Butyl Ether (ETBE)	ND	0.010	1.00	
Tert-Amyl-Methyl Ether (TAME)	ND	0.010	1.00	
1,2-Dibromoethane	ND	0.0050	1.00	
1,2-Dichloroethane	ND	0.0050	1.00	
Surrogate	Rec. (%)	Control Limits	Qualifiers	
1,4-Bromofluorobenzene	97	60-132		
Dibromofluoromethane	108	63-141		
1,2-Dichloroethane-d4	108	62-146		
Toluene-d8	102	80-120		

Return to Contents ↑

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

## Analytical Report

Cardno ERI  
601 North McDowell Blvd.  
Petaluma, CA 94954-2312

Date Received: 08/13/14  
Work Order: 14-08-0938  
Preparation: EPA 5030C  
Method: EPA 8260B  
Units: mg/kg

Project: ExxonMobil 99105/022783C

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Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
Method Blank	099-12-796-8788	N/A	Solid	GC/MS RR	08/15/14	08/15/14 13:16	140815L010

Parameter	Result	RL	DF	Qualifiers
Benzene	ND	0.0050	1.00	
Toluene	ND	0.0050	1.00	
Ethylbenzene	ND	0.0050	1.00	
o-Xylene	ND	0.0050	1.00	
p/m-Xylene	ND	0.0050	1.00	
Xylenes (total)	ND	0.0050	1.00	
Methyl-t-Butyl Ether (MTBE)	ND	0.0050	1.00	
Tert-Butyl Alcohol (TBA)	ND	0.050	1.00	
Diisopropyl Ether (DIPE)	ND	0.010	1.00	
Ethyl-t-Butyl Ether (ETBE)	ND	0.010	1.00	
Tert-Amyl-Methyl Ether (TAME)	ND	0.010	1.00	
1,2-Dibromoethane	ND	0.0050	1.00	
1,2-Dichloroethane	ND	0.0050	1.00	
Surrogate	Rec. (%)	Control Limits	Qualifiers	
1,4-Bromofluorobenzene	96	60-132		
Dibromofluoromethane	104	63-141		
1,2-Dichloroethane-d4	104	62-146		
Toluene-d8	101	80-120		

Return to Contents

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.



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## Analytical Report

Cardno ERI  
601 North McDowell Blvd.  
Petaluma, CA 94954-2312

Date Received: 08/13/14  
Work Order: 14-08-0938  
Preparation: EPA 5030C  
Method: EPA 8260B  
Units: mg/kg

Project: ExxonMobil 99105/022783C

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Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
S-5-MW6	14-08-0938-1-A	08/11/14 09:45	Solid	GC/MS RR	08/13/14	08/14/14 19:23	140814L005

Parameter	Result	RL	DF	Qualifiers
Benzene	ND	0.0049	1.00	
Toluene	ND	0.0049	1.00	
Ethylbenzene	ND	0.0049	1.00	
o-Xylene	ND	0.0049	1.00	
p/m-Xylene	ND	0.0049	1.00	
Xylenes (total)	ND	0.0049	1.00	
Methyl-t-Butyl Ether (MTBE)	ND	0.0049	1.00	
Tert-Butyl Alcohol (TBA)	ND	0.049	1.00	
Diisopropyl Ether (DIPE)	ND	0.0099	1.00	
Ethyl-t-Butyl Ether (ETBE)	ND	0.0099	1.00	
Tert-Amyl-Methyl Ether (TAME)	ND	0.0099	1.00	
1,2-Dibromoethane	ND	0.0049	1.00	
1,2-Dichloroethane	ND	0.0049	1.00	
Naphthalene	ND	0.049	1.00	

Surrogate	Rec. (%)	Control Limits	Qualifiers
1,4-Bromofluorobenzene	94	60-132	
Dibromofluoromethane	98	63-141	
1,2-Dichloroethane-d4	100	62-146	
Toluene-d8	100	80-120	

  
Return to Contents

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

## Analytical Report

Cardno ERI  
601 North McDowell Blvd.  
Petaluma, CA 94954-2312

Date Received: 08/13/14  
Work Order: 14-08-0938  
Preparation: EPA 5030C  
Method: EPA 8260B  
Units: mg/kg

Project: ExxonMobil 99105/022783C

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Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
S-10-MW6	14-08-0938-2-A	08/11/14 09:55	Solid	GC/MS RR	08/13/14	08/14/14 19:50	140814L005

Parameter	Result	RL	DF	Qualifiers
Benzene	ND	0.0052	1.00	
Toluene	ND	0.0052	1.00	
Ethylbenzene	ND	0.0052	1.00	
o-Xylene	ND	0.0052	1.00	
p/m-Xylene	ND	0.0052	1.00	
Xylenes (total)	ND	0.0052	1.00	
Methyl-t-Butyl Ether (MTBE)	ND	0.0052	1.00	
Tert-Butyl Alcohol (TBA)	ND	0.052	1.00	
Diisopropyl Ether (DIPE)	ND	0.010	1.00	
Ethyl-t-Butyl Ether (ETBE)	ND	0.010	1.00	
Tert-Amyl-Methyl Ether (TAME)	ND	0.010	1.00	
1,2-Dibromoethane	ND	0.0052	1.00	
1,2-Dichloroethane	ND	0.0052	1.00	
Naphthalene	ND	0.052	1.00	
Surrogate	Rec. (%)	Control Limits	Qualifiers	
1,4-Bromofluorobenzene	101	60-132		
Dibromofluoromethane	102	63-141		
1,2-Dichloroethane-d4	103	62-146		
Toluene-d8	107	80-120		


 Return to Contents

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

## Analytical Report

Cardno ERI  
 601 North McDowell Blvd.  
 Petaluma, CA 94954-2312

Date Received: 08/13/14  
 Work Order: 14-08-0938  
 Preparation: EPA 5030C  
 Method: EPA 8260B  
 Units: mg/kg

Project: ExxonMobil 99105/022783C

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Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
S-5-MW7	14-08-0938-4-A	08/11/14 12:25	Solid	GC/MS RR	08/13/14	08/14/14 12:52	140814L005

Parameter	Result	RL	DF	Qualifiers
Benzene	ND	0.0050	1.00	
Toluene	ND	0.0050	1.00	
Ethylbenzene	ND	0.0050	1.00	
o-Xylene	ND	0.0050	1.00	
p/m-Xylene	ND	0.0050	1.00	
Xylenes (total)	ND	0.0050	1.00	
Methyl-t-Butyl Ether (MTBE)	ND	0.0050	1.00	
Tert-Butyl Alcohol (TBA)	ND	0.050	1.00	
Diisopropyl Ether (DIPE)	ND	0.010	1.00	
Ethyl-t-Butyl Ether (ETBE)	ND	0.010	1.00	
Tert-Amyl-Methyl Ether (TAME)	ND	0.010	1.00	
1,2-Dibromoethane	ND	0.0050	1.00	
1,2-Dichloroethane	ND	0.0050	1.00	
Naphthalene	ND	0.050	1.00	

Surrogate	Rec. (%)	Control Limits	Qualifiers
1,4-Bromofluorobenzene	97	60-132	
Dibromofluoromethane	107	63-141	
1,2-Dichloroethane-d4	105	62-146	
Toluene-d8	102	80-120	


 Return to Contents

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.



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## Analytical Report

Cardno ERI  
601 North McDowell Blvd.  
Petaluma, CA 94954-2312

Date Received: 08/13/14  
Work Order: 14-08-0938  
Preparation: EPA 5030C  
Method: EPA 8260B  
Units: mg/kg

Project: ExxonMobil 99105/022783C

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Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
S-10-MW7	14-08-0938-5-A	08/11/14 13:05	Solid	GC/MS RR	08/13/14	08/14/14 20:46	140814L005

Parameter	Result	RL	DF	Qualifiers
Benzene	ND	0.0049	1.00	
Toluene	ND	0.0049	1.00	
Ethylbenzene	ND	0.0049	1.00	
o-Xylene	ND	0.0049	1.00	
p/m-Xylene	ND	0.0049	1.00	
Xylenes (total)	ND	0.0049	1.00	
Methyl-t-Butyl Ether (MTBE)	ND	0.0049	1.00	
Tert-Butyl Alcohol (TBA)	ND	0.049	1.00	
Diisopropyl Ether (DIPE)	ND	0.0098	1.00	
Ethyl-t-Butyl Ether (ETBE)	ND	0.0098	1.00	
Tert-Amyl-Methyl Ether (TAME)	ND	0.0098	1.00	
1,2-Dibromoethane	ND	0.0049	1.00	
1,2-Dichloroethane	ND	0.0049	1.00	
Naphthalene	ND	0.049	1.00	

Surrogate	Rec. (%)	Control Limits	Qualifiers
1,4-Bromofluorobenzene	98	60-132	
Dibromofluoromethane	103	63-141	
1,2-Dichloroethane-d4	105	62-146	
Toluene-d8	100	80-120	

Return to Contents ↑

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

## Analytical Report

Cardno ERI  
601 North McDowell Blvd.  
Petaluma, CA 94954-2312

Date Received: 08/13/14  
Work Order: 14-08-0938  
Preparation: EPA 5030C  
Method: EPA 8260B  
Units: mg/kg

Project: ExxonMobil 99105/022783C

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Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
Method Blank	099-12-882-1652	N/A	Solid	GC/MS RR	08/14/14	08/14/14 12:24	140814L005

Parameter	Result	RL	DF	Qualifiers
Benzene	ND	0.0050	1.00	
Toluene	ND	0.0050	1.00	
Ethylbenzene	ND	0.0050	1.00	
o-Xylene	ND	0.0050	1.00	
p/m-Xylene	ND	0.0050	1.00	
Xylenes (total)	ND	0.0050	1.00	
Methyl-t-Butyl Ether (MTBE)	ND	0.0050	1.00	
Tert-Butyl Alcohol (TBA)	ND	0.050	1.00	
Diisopropyl Ether (DIPE)	ND	0.010	1.00	
Ethyl-t-Butyl Ether (ETBE)	ND	0.010	1.00	
Tert-Amyl-Methyl Ether (TAME)	ND	0.010	1.00	
1,2-Dibromoethane	ND	0.0050	1.00	
1,2-Dichloroethane	ND	0.0050	1.00	
Naphthalene	ND	0.050	1.00	

Surrogate	Rec. (%)	Control Limits	Qualifiers
1,4-Bromofluorobenzene	97	60-132	
Dibromofluoromethane	108	63-141	
1,2-Dichloroethane-d4	108	62-146	
Toluene-d8	102	80-120	


 Return to Contents

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.





Calscience

## Quality Control - Spike/Spike Duplicate

Cardno ERI  
601 North McDowell Blvd.  
Petaluma, CA 94954-2312

Date Received: 08/13/14  
Work Order: 14-08-0938  
Preparation: EPA 3550B  
Method: EPA 8015B (M)

Project: ExxonMobil 99105/022783C

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Quality Control Sample ID	Type	Matrix	Instrument	Date Prepared	Date Analyzed	MS/MSD Batch Number				
S-10-MW7	Sample	Solid	GC 48	08/15/14	08/15/14 22:21	140815S09				
S-10-MW7	Matrix Spike	Solid	GC 48	08/15/14	08/15/14 18:06	140815S09				
S-10-MW7	Matrix Spike Duplicate	Solid	GC 48	08/15/14	08/15/14 18:22	140815S09				
<u>Parameter</u>	<u>Sample Conc.</u>	<u>Spike Added</u>	<u>MS Conc.</u>	<u>MS %Rec.</u>	<u>MSD Conc.</u>	<u>MSD %Rec.</u>	<u>%Rec. CL</u>	<u>RPD</u>	<u>RPD CL</u>	<u>Qualifiers</u>
TPH as Diesel	ND	400.0	322.2	81	350.0	87	64-130	8	0-15	

  
Return to Contents

RPD: Relative Percent Difference. CL: Control Limits



Calscience

## Quality Control - Spike/Spike Duplicate

Cardno ERI  
601 North McDowell Blvd.  
Petaluma, CA 94954-2312

Date Received: 08/13/14  
Work Order: 14-08-0938  
Preparation: EPA 5030C  
Method: EPA 8015B (M)

Project: ExxonMobil 99105/022783C

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Quality Control Sample ID	Type	Matrix	Instrument	Date Prepared	Date Analyzed	MS/MSD Batch Number
S-5-MW7	Sample	Solid	GC 42	08/13/14	08/19/14 15:00	140819S024
S-5-MW7	Matrix Spike	Solid	GC 42	08/13/14	08/19/14 15:35	140819S024
S-5-MW7	Matrix Spike Duplicate	Solid	GC 42	08/13/14	08/19/14 16:10	140819S024

Parameter	Sample Conc.	Spike Added	MS Conc.	MS %Rec.	MSD Conc.	MSD %Rec.	%Rec. CL	RPD	RPD CL	Qualifiers
TPH as Gasoline	ND	10.00	9.495	95	9.044	90	48-114	5	0-23	

  
Return to Contents

RPD: Relative Percent Difference. CL: Control Limits



Calscience

## Quality Control - Spike/Spike Duplicate

Cardno ERI  
601 North McDowell Blvd.  
Petaluma, CA 94954-2312

Date Received: 08/13/14  
Work Order: 14-08-0938  
Preparation: EPA 5030C  
Method: EPA 8260B

Project: ExxonMobil 99105/022783C

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Quality Control Sample ID	Type	Matrix	Instrument	Date Prepared	Date Analyzed	MS/MSD Batch Number
14-08-0939-5	Sample	Solid	GC/MS RR	08/14/14	08/15/14 14:12	140815S009
14-08-0939-5	Matrix Spike	Solid	GC/MS RR	08/14/14	08/15/14 15:08	140815S009
14-08-0939-5	Matrix Spike Duplicate	Solid	GC/MS RR	08/14/14	08/15/14 15:36	140815S009

Parameter	Sample Conc.	Spike Added	MS Conc.	MS %Rec.	MSD Conc.	MSD %Rec.	%Rec. CL	RPD	RPD CL	Qualifiers
Benzene	ND	0.05000	0.04680	94	0.05150	103	61-127	10	0-20	
Toluene	ND	0.05000	0.04767	95	0.05198	104	63-123	9	0-20	
Ethylbenzene	ND	0.05000	0.04525	90	0.04929	99	57-129	9	0-22	
o-Xylene	ND	0.05000	0.04672	93	0.05113	102	70-130	9	0-30	
p/m-Xylene	ND	0.1000	0.09188	92	0.1005	101	70-130	9	0-30	
Methyl-t-Butyl Ether (MTBE)	ND	0.05000	0.04204	84	0.04776	96	57-123	13	0-21	
Tert-Butyl Alcohol (TBA)	ND	0.2500	0.2178	87	0.2372	95	30-168	9	0-34	
Diisopropyl Ether (DIPE)	ND	0.05000	0.04986	100	0.05526	111	57-129	10	0-20	
Ethyl-t-Butyl Ether (ETBE)	ND	0.05000	0.04187	84	0.04729	95	55-127	12	0-20	
Tert-Amyl-Methyl Ether (TAME)	ND	0.05000	0.03743	75	0.04274	85	58-124	13	0-20	
1,2-Dibromoethane	ND	0.05000	0.04303	86	0.04770	95	64-124	10	0-20	
1,2-Dichloroethane	ND	0.05000	0.04740	95	0.05298	106	80-120	11	0-20	

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RPD: Relative Percent Difference. CL: Control Limits

## Quality Control - Spike/Spike Duplicate

Cardno ERI  
601 North McDowell Blvd.  
Petaluma, CA 94954-2312

Date Received: 08/13/14  
Work Order: 14-08-0938  
Preparation: EPA 5030C  
Method: EPA 8260B

Project: ExxonMobil 99105/022783C

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Quality Control Sample ID	Type	Matrix	Instrument	Date Prepared	Date Analyzed	MS/MSD Batch Number
S-5-MW7	Sample	Solid	GC/MS RR	08/13/14	08/14/14 12:52	140814S013
S-5-MW7	Matrix Spike	Solid	GC/MS RR	08/13/14	08/14/14 13:20	140814S013
S-5-MW7	Matrix Spike Duplicate	Solid	GC/MS RR	08/13/14	08/14/14 13:47	140814S013

Parameter	Sample Conc.	Spike Added	MS Conc.	MS %Rec.	MSD Conc.	MSD %Rec.	%Rec. CL	RPD	RPD CL	Qualifiers
Benzene	ND	0.05000	0.04470	89	0.05248	105	61-127	16	0-20	
Toluene	ND	0.05000	0.04455	89	0.05233	105	63-123	16	0-20	
Ethylbenzene	ND	0.05000	0.04332	87	0.04986	100	57-129	14	0-22	
o-Xylene	ND	0.05000	0.04491	90	0.05156	103	70-130	14	0-30	
p/m-Xylene	ND	0.1000	0.08869	89	0.1026	103	70-130	15	0-30	
Methyl-t-Butyl Ether (MTBE)	ND	0.05000	0.03753	75	0.04392	88	57-123	16	0-21	
Tert-Butyl Alcohol (TBA)	ND	0.2500	0.2135	85	0.2453	98	30-168	14	0-34	
Diisopropyl Ether (DIPE)	ND	0.05000	0.04663	93	0.05470	109	57-129	16	0-20	
Ethyl-t-Butyl Ether (ETBE)	ND	0.05000	0.03701	74	0.04357	87	55-127	16	0-20	
Tert-Amyl-Methyl Ether (TAME)	ND	0.05000	0.03246	65	0.03798	76	58-124	16	0-20	
1,2-Dibromoethane	ND	0.05000	0.04023	80	0.04541	91	64-124	12	0-20	
1,2-Dichloroethane	ND	0.05000	0.04477	90	0.05259	105	80-120	16	0-20	

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RPD: Relative Percent Difference. CL: Control Limits

**Quality Control - LCS**

Cardno ERI	Date Received:	08/13/14
601 North McDowell Blvd.	Work Order:	14-08-0938
Petaluma, CA 94954-2312	Preparation:	EPA 3550B
	Method:	EPA 8015B (M)
Project: ExxonMobil 99105/022783C		Page 1 of 5

Quality Control Sample ID	Type	Matrix	Instrument	Date Prepared	Date Analyzed	LCS Batch Number
099-15-422-1295	LCS	Solid	GC 48	08/15/14	08/15/14 17:34	140815B09
<u>Parameter</u>		<u>Spike Added</u>	<u>Conc. Recovered</u>	<u>LCS %Rec.</u>	<u>%Rec. CL</u>	<u>Qualifiers</u>
TPH as Diesel		400.0	357.8	89	75-123	

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RPD: Relative Percent Difference. CL: Control Limits

**Quality Control - LCS**

Cardno ERI  
601 North McDowell Blvd.  
Petaluma, CA 94954-2312

Date Received: 08/13/14  
Work Order: 14-08-0938  
Preparation: EPA 5030C  
Method: EPA 8015B (M)

Project: ExxonMobil 99105/022783C

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Quality Control Sample ID	Type	Matrix	Instrument	Date Prepared	Date Analyzed	LCS Batch Number
099-14-571-1805	LCS	Solid	GC 42	08/19/14	08/19/14 14:25	140819L036
<u>Parameter</u>		<u>Spike Added</u>	<u>Conc. Recovered</u>	<u>LCS %Rec.</u>	<u>%Rec. CL</u>	<u>Qualifiers</u>
TPH as Gasoline		10.00	8.576	86	70-124	

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RPD: Relative Percent Difference. CL: Control Limits

## Quality Control - LCS

Cardno ERI  
601 North McDowell Blvd.  
Petaluma, CA 94954-2312

Date Received: 08/13/14  
Work Order: 14-08-0938  
Preparation: EPA 5030C  
Method: EPA 8260B

Project: ExxonMobil 99105/022783C

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Quality Control Sample ID	Type	Matrix	Instrument	Date Prepared	Date Analyzed	LCS Batch Number	
099-12-796-8796	LCS	Solid	GC/MS RR	08/14/14	08/14/14 10:57	140814L056	
Parameter		Spike Added	Conc. Recovered	LCS %Rec.	%Rec. CL	ME CL	Qualifiers
Benzene		0.05000	0.04876	98	78-120	71-127	
Toluene		0.05000	0.04882	98	77-120	70-127	
Ethylbenzene		0.05000	0.04726	95	76-120	69-127	
o-Xylene		0.05000	0.04954	99	75-125	67-133	
p/m-Xylene		0.1000	0.09693	97	75-125	67-133	
Methyl-t-Butyl Ether (MTBE)		0.05000	0.04486	90	77-120	70-127	
Tert-Butyl Alcohol (TBA)		0.2500	0.2344	94	68-122	59-131	
Diisopropyl Ether (DIPE)		0.05000	0.05359	107	78-120	71-127	
Ethyl-t-Butyl Ether (ETBE)		0.05000	0.04436	89	78-120	71-127	
Tert-Amyl-Methyl Ether (TAME)		0.05000	0.03925	79	75-120	68-128	
1,2-Dibromoethane		0.05000	0.04578	92	80-120	73-127	
1,2-Dichloroethane		0.05000	0.05106	102	80-120	73-127	

Total number of LCS compounds: 12

Total number of ME compounds: 0

Total number of ME compounds allowed: 1

LCS ME CL validation result: Pass

Return to Contents 

RPD: Relative Percent Difference. CL: Control Limits

## Quality Control - LCS

Cardno ERI	Date Received:	08/13/14
601 North McDowell Blvd.	Work Order:	14-08-0938
Petaluma, CA 94954-2312	Preparation:	EPA 5030C
	Method:	EPA 8260B

Project: ExxonMobil 99105/022783C Page 4 of 5

Quality Control Sample ID	Type	Matrix	Instrument	Date Prepared	Date Analyzed	LCS Batch Number	
099-12-796-8788	LCS	Solid	GC/MS RR	08/15/14	08/15/14 11:49	140815L010	
<u>Parameter</u>		<u>Spike Added</u>	<u>Conc. Recovered</u>	<u>LCS %Rec.</u>	<u>%Rec. CL</u>	<u>ME CL</u>	<u>Qualifiers</u>
Benzene		0.05000	0.04460	89	78-120	71-127	
Toluene		0.05000	0.04521	90	77-120	70-127	
Ethylbenzene		0.05000	0.04358	87	76-120	69-127	
o-Xylene		0.05000	0.04574	91	75-125	67-133	
p/m-Xylene		0.1000	0.08987	90	75-125	67-133	
Methyl-t-Butyl Ether (MTBE)		0.05000	0.04229	85	77-120	70-127	
Tert-Butyl Alcohol (TBA)		0.2500	0.2037	81	68-122	59-131	
Diisopropyl Ether (DIPE)		0.05000	0.04827	97	78-120	71-127	
Ethyl-t-Butyl Ether (ETBE)		0.05000	0.04263	85	78-120	71-127	
Tert-Amyl-Methyl Ether (TAME)		0.05000	0.03804	76	75-120	68-128	
1,2-Dibromoethane		0.05000	0.04208	84	80-120	73-127	
1,2-Dichloroethane		0.05000	0.04643	93	80-120	73-127	

Total number of LCS compounds: 12  
 Total number of ME compounds: 0  
 Total number of ME compounds allowed: 1  
 LCS ME CL validation result: Pass


 Return to Contents

RPD: Relative Percent Difference. CL: Control Limits



## Quality Control - LCS

Cardno ERI  
 601 North McDowell Blvd.  
 Petaluma, CA 94954-2312

Date Received: 08/13/14  
 Work Order: 14-08-0938  
 Preparation: EPA 5030C  
 Method: EPA 8260B

Project: ExxonMobil 99105/022783C

Page 5 of 5

Quality Control Sample ID	Type	Matrix	Instrument	Date Prepared	Date Analyzed	LCS Batch Number	
099-12-882-1652	LCS	Solid	GC/MS RR	08/14/14	08/14/14 10:57	140814L005	
Parameter		Spike Added	Conc. Recovered	LCS %Rec.	%Rec. CL	ME CL	Qualifiers
Benzene		0.05000	0.04876	98	78-120	71-127	
Toluene		0.05000	0.04882	98	77-120	70-127	
Ethylbenzene		0.05000	0.04726	95	76-120	69-127	
o-Xylene		0.05000	0.04954	99	75-125	67-133	
p/m-Xylene		0.1000	0.09693	97	75-125	67-133	
Methyl-t-Butyl Ether (MTBE)		0.05000	0.04486	90	77-120	70-127	
Tert-Butyl Alcohol (TBA)		0.2500	0.2344	94	68-122	59-131	
Diisopropyl Ether (DIPE)		0.05000	0.05359	107	78-120	71-127	
Ethyl-t-Butyl Ether (ETBE)		0.05000	0.04436	89	78-120	71-127	
Tert-Amyl-Methyl Ether (TAME)		0.05000	0.03925	79	75-120	68-128	
1,2-Dibromoethane		0.05000	0.04578	92	80-120	73-127	
1,2-Dichloroethane		0.05000	0.05106	102	80-120	73-127	

Total number of LCS compounds: 12

Total number of ME compounds: 0

Total number of ME compounds allowed: 1

LCS ME CL validation result: Pass

Return to Contents ↑

RPD: Relative Percent Difference. CL: Control Limits

<u>Qualifiers</u>	<u>Definition</u>
AZ	Surrogate compound recovery was out of control due to matrix interference. The associated method blank surrogate spike compound was in control and, therefore, the sample data was reported without further clarification.
B	Analyte was present in the associated method blank.
BA	The MS/MSD RPD was out of control due to suspected matrix interference.
BB	Spike recovery and RPD control limits do not apply resulting from the parameter concentration in the sample exceeding the spike concentration by a factor of four or greater.
BU	Sample analyzed after holding time expired.
BV	Sample received after holding time expired.
DF	Reporting limits elevated due to matrix interferences.
E	Concentration exceeds the calibration range.
ET	Sample was extracted past end of recommended max. holding time.
GE	The PDS/PDSD or PES/PESD associated with this batch of samples was out of control due to suspected matrix interference.
HD	Chromat. profile inconsistent with pattern(s) of ref. fuel stnds.
HO	High concentration matrix spike recovery out of limits
HT	Analytical value calculated using results from associated tests.
HX	Recovery of the Matrix Spike (MS) or Matrix Spike Duplicate (MSD) compound was out of control due to matrix interference. The associated LCS was in control.
IL	Relative percent difference out of control.
J	Analyte was detected at a concentration below the reporting limit and above the laboratory method detection limit. Reported value is estimated.
JA	Analyte positively identified but quantitation is an estimate.
LD	Analyte presence was not confirmed by second column or GC/MS analysis.
LP	The LCS and/or LCSD recoveries for this analyte were above the upper control limit. The associated sample was non-detected. Therefore, the sample data was reported without further clarification.
LQ	LCS recovery above method control limits.
LR	LCS recovery below method control limits.
ND	Parameter not detected at the indicated reporting limit.
QO	Compound did not meet method-described identification guidelines. Identification was based on additional GC/MS characteristics.
RU	LCS Recovery Percentage is within Marginal Exceedance (ME) Control Limit range (+/- 4 SD from the mean).
SG	A silica gel cleanup procedure was performed.
SN	See applicable analysis comment.
	Solid - Unless otherwise indicated, solid sample data is reported on a wet weight basis, not corrected for % moisture. All QC results are reported on a wet weight basis.
	Any parameter identified in 40CFR Part 136.3 Table II that is designated as "analyze immediately" with a holding time of <= 15 minutes (40CFR-136.3 Table II, footnote 4), is considered a "field" test and the reported results will be qualified as being received outside of the stated holding time unless received at the laboratory within 15 minutes of the collection time.
	A calculated total result (Example: Total Pesticides) is the summation of each component concentration and/or, if "J" flags are reported, estimated concentration. Component concentrations showing not detected (ND) are summed into the calculated total result as zero concentrations.



0938



< WebShip > > > > >  
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GARDEN GROVE, CA 92841

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COD:  
318

Reference:  
CARD BLANKS

Delivery Instructions:

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SIGNATURE REQUIRED

Print Date: 08/12/14 14:54 PM

Package 1 of 1

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Edit Shipment

Finish

LABEL INSTRUCTIONS:

- Do not copy or reprint this label for additional shipments - each package must have a unique barcode.
- Click the "Send Label to Printer" button on this page to print the shipping label on a laser or inkjet printer.
- Print this page in half.
- REF # - Securely attach this label to your package, do not cover the barcode.
- REF # - Request an on-call pickup for your package; if you do not have scheduled daily pickup service or Drop-off your package at the nearest GSO drop box. Locate nearest GSO dropbox locations using this link.

ADDITIONAL OPTIONS:

Send Label Via Email

Create Return Label

TERMS AND CONDITIONS:

In order to use your shipment to deliver, you agree to all the service terms and conditions described in this section. Our liability for loss or damage to any package is limited to your actual damages or \$100 whichever is less, unless you pay for and declare a higher authorized value. If you declare a higher value and pay the additional charge, our liability will be the lesser of your declared value or the actual value of your loss or damage. In any event, we will not be liable for any damage, whether direct, incidental, special or consequential, in excess of the declared value of a shipment whether or not we had knowledge that such damage might be incurred including but not limited to loss of income or profit. We will not be liable for loss or damage, including but not limited to improper or insufficient packaging, securing, marking or addressing. Also, we will not be liable if you or the recipient violates any of the terms of our agreement. We will not be liable for loss, damage or delay caused by events we cannot control, including but not limited to acts of God, perils of the air, weather conditions, act of public enemies, war, strikes, or civil commotion. The highest declared value for our GSO Priority Letter or GSO Priority Package is \$500. For other shipments the highest declared value is \$10,000 unless your package contains items of "extraordinary value", in which case the highest declared value we allow is \$500. Items of "extraordinary value" include, but are not limited to, artwork, jewelry, furs, precious metals, tickets, negotiable instruments and other items with intrinsic value.

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Calscience

WORK ORDER #: 14-08-0938

**SAMPLE RECEIPT FORM**

Cooler 1 of 1

CLIENT: Cardno ERY

DATE: 08/13/14

**TEMPERATURE:** Thermometer ID: SC1 (Criteria: 0.0°C – 6.0°C, not frozen except sediment/tissue)

Temperature 2.6 °C - 0.3°C (CF) = 2.3 °C     Blank     Sample

Sample(s) outside temperature criteria (PM/APM contacted by: \_\_\_\_\_)

Sample(s) outside temperature criteria but received on ice/chilled on same day of sampling.

Received at ambient temperature, placed on ice for transport by Courier.

Ambient Temperature:  Air     Filter

Checked by: 826

**CUSTODY SEALS INTACT:**

Cooler     \_\_\_\_\_     No (Not Intact)     Not Present     N/A    Checked by: 826

Sample     \_\_\_\_\_     No (Not Intact)     Not Present    Checked by: 826

SAMPLE CONDITION:	Yes	No	N/A
Chain-Of-Custody (COC) document(s) received with samples.....	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
COC document(s) received complete.....	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/> Collection date/time, matrix, and/or # of containers logged in based on sample labels.			
<input type="checkbox"/> No analysis requested. <input type="checkbox"/> Not relinquished. <input type="checkbox"/> No date/time relinquished.			
Sampler's name indicated on COC.....	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Sample container label(s) consistent with COC.....	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Sample container(s) intact and good condition.....	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Proper containers and sufficient volume for analyses requested.....	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Analyses received within holding time.....	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Aqueous samples received within 15-minute holding time			
<input type="checkbox"/> pH <input type="checkbox"/> Residual Chlorine <input type="checkbox"/> Dissolved Sulfides <input type="checkbox"/> Dissolved Oxygen.....	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Proper preservation noted on COC or sample container.....	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
<input type="checkbox"/> Unpreserved vials received for Volatiles analysis			
Volatile analysis container(s) free of headspace.....	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Tedlar bag(s) free of condensation.....	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

**CONTAINER TYPE:**

Solid:  4ozCGJ     8ozCGJ     16ozCGJ     Sleeve (R/S)<sup>(u)</sup>     EnCores®     TerraCores®     \_\_\_\_\_

Aqueous:  VOA     VOAh     VOAna<sub>2</sub>     125AGB     125AGBh     125AGBp     1AGB     1AGBna<sub>2</sub>     1AGBs

500AGB     500AGJ     500AGJs     250AGB     250CGB     250CGBs     1PB     1PBna     500PB

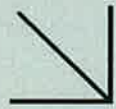
250PB     250PBn     125PB     125PBzanna     100PJ     100PJna<sub>2</sub>     \_\_\_\_\_     \_\_\_\_\_     \_\_\_\_\_

Air:  Tedlar®     Canister Other:  \_\_\_\_\_ Trip Blank Lot#: \_\_\_\_\_ Labeled/Checked by: 826

Container: C: Clear A: Amber P: Plastic G: Glass J: Jar B: Bottle Z: Ziploc/Resealable Bag E: Envelope Reviewed by: 826

Preservative: h: HCL n: HNO<sub>3</sub> na<sub>2</sub>: Na<sub>2</sub>S<sub>2</sub>O<sub>3</sub> na: NaOH p: H<sub>3</sub>PO<sub>4</sub> s: H<sub>2</sub>SO<sub>4</sub> u: Ultra-pure zna: ZnAc<sub>2</sub>+NaOH f: Filtered Scanned by: 826

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**WORK ORDER NUMBER: 14-08-1369**

*The difference is service*



AIR | SOIL | WATER | MARINE CHEMISTRY

**Analytical Report For**

**Client:** Cardno ERI

**Client Project Name:** ExxonMobil 99105/022783C

**Attention:** Greg Guss  
601 North McDowell Blvd.  
Petaluma, CA 94954-2312

**RECEIVED**  
AUG 29 2014

**BY:** .....

Approved for release on 08/29/2014 by:  
Cecile deGuia  
Project Manager

ResultLink ▶

Email your PM ▶



Eurofins Calscience, Inc. (Calscience) certifies that the test results provided in this report meet all NELAC requirements for parameters for which accreditation is required or available. Any exceptions to NELAC requirements are noted in the case narrative. The original report of subcontracted analyses, if any, is attached to this report. The results in this report are limited to the sample(s) tested and any reproduction thereof must be made in its entirety. The client or recipient of this report is specifically prohibited from making material changes to said report and, to the extent that such changes are made, Calscience is not responsible, legally or otherwise. The client or recipient agrees to indemnify Calscience for any defense to any litigation which may arise.

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Work Order Number: 14-08-1369

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Work Order: 14-08-1369

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**Condition Upon Receipt:**

Samples were received under Chain-of-Custody (COC) on 08/19/14. They were assigned to Work Order 14-08-1369.

Unless otherwise noted on the Sample Receiving forms all samples were received in good condition and within the recommended EPA temperature criteria for the methods noted on the COC. The COC and Sample Receiving Documents are integral elements of the analytical report and are presented at the back of the report.

**Holding Times:**

All samples were analyzed within prescribed holding times (HT) and/or in accordance with the Calscience Sample Acceptance Policy unless otherwise noted in the analytical report and/or comprehensive case narrative, if required.

Any parameter identified in 40CFR Part 136.3 Table II that is designated as "analyze immediately" with a holding time of  $\leq 15$  minutes (40CFR-136.3 Table II, footnote 4), is considered a "field" test and the reported results will be qualified as being received outside of the stated holding time unless received at the laboratory within 15 minutes of the collection time.

**Quality Control:**

All quality control parameters (QC) were within established control limits except where noted in the QC summary forms or described further within this report.

**Additional Comments:**

Air - Sorbent-extracted air methods (EPA TO-4A, EPA TO-10, EPA TO-13A, EPA TO-17): Analytical results are converted from mass/sample basis to mass/volume basis using client-supplied air volumes.

New York NELAP air certification does not certify for all reported methods and analytes, reference the accredited items here: [http://www.calscience.com/PDF/New\\_York.pdf](http://www.calscience.com/PDF/New_York.pdf)

Solid - Unless otherwise indicated, solid sample data is reported on a wet weight basis, not corrected for % moisture. All QC results are always reported on a wet weight basis.

**Subcontractor Information:**

Unless otherwise noted below (or on the subcontract form), no samples were subcontracted.



## Sample Summary

Client: Cardno ERI	Work Order:	14-08-1369
601 North McDowell Blvd.	Project Name:	ExxonMobil 99105/022783C
Petaluma, CA 94954-2312	PO Number:	022783C
	Date/Time Received:	08/19/14 12:55
	Number of Containers:	4

Attn: Greg Gurss

Sample Identification	Lab Number	Collection Date and Time	Number of Containers	Matrix
S-5-MW8	14-08-1369-1	08/15/14 08:35	1	Solid
S-8-MW8	14-08-1369-2	08/15/14 09:10	1	Solid
S-10-MW8	14-08-1369-3	08/15/14 08:43	1	Solid
S-15-MW8	14-08-1369-4	08/15/14 08:50	1	Solid

## Analytical Report

Cardno ERI  
601 North McDowell Blvd.  
Petaluma, CA 94954-2312

Date Received: 08/19/14  
Work Order: 14-08-1369  
Preparation: EPA 3550B  
Method: EPA 8015B (M)  
Units: mg/kg

Project: ExxonMobil 99105/022783C

Page 1 of 1

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
S-5-MW8	14-08-1369-1-A	08/15/14 08:35	Solid	GC 45	08/19/14	08/20/14 09:16	140819B10A
<u>Parameter</u>		<u>Result</u>		<u>RL</u>		<u>DF</u>	<u>Qualifiers</u>
TPH as Diesel		ND		5.0		1.00	SG
<u>Surrogate</u>		<u>Rec. (%)</u>		<u>Control Limits</u>		<u>Qualifiers</u>	
n-Octacosane		86		61-145			
S-8-MW8	14-08-1369-2-A	08/15/14 09:10	Solid	GC 45	08/19/14	08/20/14 09:34	140819B10A
<u>Parameter</u>		<u>Result</u>		<u>RL</u>		<u>DF</u>	<u>Qualifiers</u>
TPH as Diesel		41		5.0		1.00	SG,HD
<u>Surrogate</u>		<u>Rec. (%)</u>		<u>Control Limits</u>		<u>Qualifiers</u>	
n-Octacosane		86		61-145			
S-10-MW8	14-08-1369-3-A	08/15/14 08:43	Solid	GC 45	08/19/14	08/20/14 09:54	140819B10A
<u>Parameter</u>		<u>Result</u>		<u>RL</u>		<u>DF</u>	<u>Qualifiers</u>
TPH as Diesel		ND		5.0		1.00	SG
<u>Surrogate</u>		<u>Rec. (%)</u>		<u>Control Limits</u>		<u>Qualifiers</u>	
n-Octacosane		84		61-145			
S-15-MW8	14-08-1369-4-A	08/15/14 08:50	Solid	GC 45	08/19/14	08/20/14 10:13	140819B10A
<u>Parameter</u>		<u>Result</u>		<u>RL</u>		<u>DF</u>	<u>Qualifiers</u>
TPH as Diesel		ND		5.0		1.00	SG
<u>Surrogate</u>		<u>Rec. (%)</u>		<u>Control Limits</u>		<u>Qualifiers</u>	
n-Octacosane		87		61-145			
Method Blank	099-15-422-1303	N/A	Solid	GC 45	08/19/14	08/20/14 03:53	140819B10A
<u>Parameter</u>		<u>Result</u>		<u>RL</u>		<u>DF</u>	<u>Qualifiers</u>
TPH as Diesel		ND		5.0		1.00	
<u>Surrogate</u>		<u>Rec. (%)</u>		<u>Control Limits</u>		<u>Qualifiers</u>	
n-Octacosane		96		61-145			

Return to Contents

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.



Calscience

## Analytical Report

Cardno ERI  
601 North McDowell Blvd.  
Petaluma, CA 94954-2312

Date Received: 08/19/14  
Work Order: 14-08-1369  
Preparation: EPA 5030C  
Method: EPA 8015B (M)  
Units: mg/kg

Project: ExxonMobil 99105/022783C

Page 1 of 2

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
<b>S-5-MW8</b>	<b>14-08-1369-1-A</b>	<b>08/15/14 08:35</b>	<b>Solid</b>	<b>GC 56</b>	<b>08/19/14</b>	<b>08/22/14 17:01</b>	<b>140822L042</b>
<u>Parameter</u>		<u>Result</u>		<u>RL</u>		<u>DF</u>	<u>Qualifiers</u>
TPH as Gasoline		ND		0.50		1.00	
<u>Surrogate</u>		<u>Rec. (%)</u>		<u>Control Limits</u>		<u>Qualifiers</u>	
1,4-Bromofluorobenzene - FID		74		42-126			
<b>S-8-MW8</b>	<b>14-08-1369-2-A</b>	<b>08/15/14 09:10</b>	<b>Solid</b>	<b>GC 56</b>	<b>08/19/14</b>	<b>08/20/14 20:08</b>	<b>140820L053</b>
<u>Parameter</u>		<u>Result</u>		<u>RL</u>		<u>DF</u>	<u>Qualifiers</u>
TPH as Gasoline		22		0.49		1.00	
<u>Surrogate</u>		<u>Rec. (%)</u>		<u>Control Limits</u>		<u>Qualifiers</u>	
1,4-Bromofluorobenzene - FID		76		42-126			
<b>S-10-MW8</b>	<b>14-08-1369-3-A</b>	<b>08/15/14 08:43</b>	<b>Solid</b>	<b>GC 56</b>	<b>08/19/14</b>	<b>08/22/14 17:32</b>	<b>140822L042</b>
<u>Parameter</u>		<u>Result</u>		<u>RL</u>		<u>DF</u>	<u>Qualifiers</u>
TPH as Gasoline		3.3		0.52		1.00	
<u>Surrogate</u>		<u>Rec. (%)</u>		<u>Control Limits</u>		<u>Qualifiers</u>	
1,4-Bromofluorobenzene - FID		88		42-126			
<b>S-15-MW8</b>	<b>14-08-1369-4-A</b>	<b>08/15/14 08:50</b>	<b>Solid</b>	<b>GC 56</b>	<b>08/19/14</b>	<b>08/20/14 22:14</b>	<b>140820L053</b>
<u>Parameter</u>		<u>Result</u>		<u>RL</u>		<u>DF</u>	<u>Qualifiers</u>
TPH as Gasoline		ND		0.48		1.00	
<u>Surrogate</u>		<u>Rec. (%)</u>		<u>Control Limits</u>		<u>Qualifiers</u>	
1,4-Bromofluorobenzene - FID		76		42-126			
<b>Method Blank</b>	<b>099-14-571-1811</b>	<b>N/A</b>	<b>Solid</b>	<b>GC 56</b>	<b>08/20/14</b>	<b>08/20/14 10:35</b>	<b>140820L053</b>
<u>Parameter</u>		<u>Result</u>		<u>RL</u>		<u>DF</u>	<u>Qualifiers</u>
TPH as Gasoline		ND		0.50		1.00	
<u>Surrogate</u>		<u>Rec. (%)</u>		<u>Control Limits</u>		<u>Qualifiers</u>	
1,4-Bromofluorobenzene - FID		69		42-126			

Return to Contents

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

**Analytical Report**

Cardno ERI  
601 North McDowell Blvd.  
Petaluma, CA 94954-2312

Date Received: 08/19/14  
Work Order: 14-08-1369  
Preparation: EPA 5030C  
Method: EPA 8015B (M)  
Units: mg/kg

Project: ExxonMobil 99105/022783C

Page 2 of 2

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
Method Blank	099-14-571-1815	N/A	Solid	GC 56	08/22/14	08/22/14 11:10	140822L042

<u>Parameter</u>	<u>Result</u>	<u>RL</u>	<u>DF</u>	<u>Qualifiers</u>
TPH as Gasoline	ND	0.50	1.00	

<u>Surrogate</u>	<u>Rec. (%)</u>	<u>Control Limits</u>	<u>Qualifiers</u>
1,4-Bromofluorobenzene - FID	75	42-126	

## Analytical Report

Cardno ERI  
601 North McDowell Blvd.  
Petaluma, CA 94954-2312

Date Received: 08/19/14  
Work Order: 14-08-1369  
Preparation: EPA 5030C  
Method: EPA 8260B  
Units: mg/kg

Project: ExxonMobil 99105/022783C

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Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
S-5-MW8	14-08-1369-1-A	08/15/14 08:35	Solid	GC/MS LL	08/19/14	08/20/14 05:37	140819L055

Parameter	Result	RL	DF	Qualifiers
Benzene	0.0051	0.0048	1.00	
Toluene	ND	0.0048	1.00	
Ethylbenzene	ND	0.0048	1.00	
o-Xylene	ND	0.0048	1.00	
p/m-Xylene	ND	0.0048	1.00	
Xylenes (total)	ND	0.0048	1.00	
Methyl-t-Butyl Ether (MTBE)	ND	0.0048	1.00	
Tert-Butyl Alcohol (TBA)	ND	0.048	1.00	
Diisopropyl Ether (DIPE)	ND	0.0096	1.00	
Ethyl-t-Butyl Ether (ETBE)	ND	0.0096	1.00	
Tert-Amyl-Methyl Ether (TAME)	ND	0.0096	1.00	
1,2-Dibromoethane	ND	0.0048	1.00	
1,2-Dichloroethane	ND	0.0048	1.00	
Naphthalene	ND	0.048	1.00	
Surrogate	Rec. (%)	Control Limits	Qualifiers	
1,4-Bromofluorobenzene	98	60-132		
Dibromofluoromethane	97	63-141		
1,2-Dichloroethane-d4	100	62-146		
Toluene-d8	100	80-120		


 Return to Contents

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.



Calscience

## Analytical Report

Cardno ERI  
601 North McDowell Blvd.  
Petaluma, CA 94954-2312

Date Received: 08/19/14  
Work Order: 14-08-1369  
Preparation: EPA 5030C  
Method: EPA 8260B  
Units: mg/kg

Project: ExxonMobil 99105/022783C

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Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
S-8-MW8	14-08-1369-2-A	08/15/14 09:10	Solid	GC/MS LL	08/19/14	08/20/14 06:05	140819L056

Parameter	Result	RL	DF	Qualifiers
Benzene	ND	0.50	50.0	
Toluene	ND	0.50	50.0	
Ethylbenzene	3.4	0.50	50.0	
o-Xylene	ND	0.50	50.0	
p/m-Xylene	2.1	0.50	50.0	
Xylenes (total)	2.1	0.50	1.00	
Methyl-t-Butyl Ether (MTBE)	ND	0.50	50.0	
Tert-Butyl Alcohol (TBA)	ND	5.0	50.0	
Diisopropyl Ether (DIPE)	ND	0.99	50.0	
Ethyl-t-Butyl Ether (ETBE)	ND	0.99	50.0	
Tert-Amyl-Methyl Ether (TAME)	ND	0.99	50.0	
1,2-Dibromoethane	ND	0.50	50.0	
1,2-Dichloroethane	ND	0.50	50.0	
Naphthalene	ND	5.0	50.0	

Surrogate	Rec. (%)	Control Limits	Qualifiers
1,4-Bromofluorobenzene	103	60-132	
Dibromofluoromethane	95	63-141	
1,2-Dichloroethane-d4	94	62-146	
Toluene-d8	102	80-120	

Return to Contents ↑

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

## Analytical Report

Cardno ERI  
 601 North McDowell Blvd.  
 Petaluma, CA 94954-2312

Date Received: 08/19/14  
 Work Order: 14-08-1369  
 Preparation: EPA 5030C  
 Method: EPA 8260B  
 Units: mg/kg

Project: ExxonMobil 99105/022783C

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Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
S-10-MW8	14-08-1369-3-A	08/15/14 08:43	Solid	GC/MS LL	08/19/14	08/20/14 06:34	140819L055

Parameter	Result	RL	DF	Qualifiers
Benzene	0.044	0.0051	1.00	
Toluene	ND	0.0051	1.00	
Ethylbenzene	0.17	0.0051	1.00	
o-Xylene	ND	0.0051	1.00	
p/m-Xylene	0.15	0.0051	1.00	
Xylenes (total)	0.15	0.0051	1.00	
Methyl-t-Butyl Ether (MTBE)	ND	0.0051	1.00	
Tert-Butyl Alcohol (TBA)	ND	0.051	1.00	
Diisopropyl Ether (DIPE)	ND	0.010	1.00	
Ethyl-t-Butyl Ether (ETBE)	ND	0.010	1.00	
Tert-Amyl-Methyl Ether (TAME)	ND	0.010	1.00	
1,2-Dibromoethane	ND	0.0051	1.00	
1,2-Dichloroethane	ND	0.0051	1.00	
Naphthalene	0.15	0.051	1.00	
<u>Surrogate</u>	<u>Rec. (%)</u>	<u>Control Limits</u>	<u>Qualifiers</u>	
1,4-Bromofluorobenzene	102	60-132		
Dibromofluoromethane	100	63-141		
1,2-Dichloroethane-d4	100	62-146		
Toluene-d8	102	80-120		

Return to Contents

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

## Analytical Report

Cardno ERI  
601 North McDowell Blvd.  
Petaluma, CA 94954-2312

Date Received: 08/19/14  
Work Order: 14-08-1369  
Preparation: EPA 5030C  
Method: EPA 8260B  
Units: mg/kg

Project: ExxonMobil 99105/022783C

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Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
S-15-MW8	14-08-1369-4-A	08/15/14 08:50	Solid	GC/MS LL	08/19/14	08/20/14 07:02	140819L055
<u>Parameter</u>		<u>Result</u>		<u>RL</u>	<u>DF</u>		<u>Qualifiers</u>
Benzene		0.032		0.0052	1.00		
Toluene		ND		0.0052	1.00		
Ethylbenzene		ND		0.0052	1.00		
o-Xylene		ND		0.0052	1.00		
p/m-Xylene		ND		0.0052	1.00		
Xylenes (total)		ND		0.0052	1.00		
Methyl-t-Butyl Ether (MTBE)		ND		0.0052	1.00		
Tert-Butyl Alcohol (TBA)		ND		0.052	1.00		
Diisopropyl Ether (DIPE)		ND		0.010	1.00		
Ethyl-t-Butyl Ether (ETBE)		ND		0.010	1.00		
Tert-Amyl-Methyl Ether (TAME)		ND		0.010	1.00		
1,2-Dibromoethane		ND		0.0052	1.00		
1,2-Dichloroethane		ND		0.0052	1.00		
Naphthalene		ND		0.052	1.00		
<u>Surrogate</u>		<u>Rec. (%)</u>		<u>Control Limits</u>		<u>Qualifiers</u>	
1,4-Bromofluorobenzene		99		60-132			
Dibromofluoromethane		98		63-141			
1,2-Dichloroethane-d4		98		62-146			
Toluene-d8		97		80-120			


 Return to Contents

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.



## Analytical Report

Cardno ERI  
601 North McDowell Blvd.  
Petaluma, CA 94954-2312

Date Received: 08/19/14  
Work Order: 14-08-1369  
Preparation: EPA 5030C  
Method: EPA 8260B  
Units: mg/kg

Project: ExxonMobil 99105/022783C

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Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
Method Blank	099-12-882-1661	N/A	Solid	GC/MS LL	08/19/14	08/20/14 02:47	140819L055

Parameter	Result	RL	DF	Qualifiers
Benzene	ND	0.0050	1.00	
Toluene	ND	0.0050	1.00	
Ethylbenzene	ND	0.0050	1.00	
o-Xylene	ND	0.0050	1.00	
p/m-Xylene	ND	0.0050	1.00	
Xylenes (total)	ND	0.0050	1.00	
Methyl-t-Butyl Ether (MTBE)	ND	0.0050	1.00	
Tert-Butyl Alcohol (TBA)	ND	0.050	1.00	
Diisopropyl Ether (DIPE)	ND	0.010	1.00	
Ethyl-t-Butyl Ether (ETBE)	ND	0.010	1.00	
Tert-Amyl-Methyl Ether (TAME)	ND	0.010	1.00	
1,2-Dibromoethane	ND	0.0050	1.00	
1,2-Dichloroethane	ND	0.0050	1.00	
Naphthalene	ND	0.050	1.00	
Surrogate	Rec. (%)	Control Limits	Qualifiers	
1,4-Bromofluorobenzene	100	60-132		
Dibromofluoromethane	98	63-141		
1,2-Dichloroethane-d4	102	62-146		
Toluene-d8	99	80-120		


 Return to Contents

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

## Analytical Report

Cardno ERI  
601 North McDowell Blvd.  
Petaluma, CA 94954-2312

Date Received: 08/19/14  
Work Order: 14-08-1369  
Preparation: EPA 5030C  
Method: EPA 8260B  
Units: mg/kg

Project: ExxonMobil 99105/022783C

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Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
Method Blank	099-12-882-1662	N/A	Solid	GC/MS LL	08/19/14	08/20/14 03:15	140819L056

Parameter	Result	RL	DF	Qualifiers
Benzene	ND	0.50	50.0	
Toluene	ND	0.50	50.0	
Ethylbenzene	ND	0.50	50.0	
o-Xylene	ND	0.50	50.0	
p/m-Xylene	ND	0.50	50.0	
Xylenes (total)	ND	0.50	1.00	
Methyl-t-Butyl Ether (MTBE)	ND	0.50	50.0	
Tert-Butyl Alcohol (TBA)	ND	5.0	50.0	
Diisopropyl Ether (DIPE)	ND	1.0	50.0	
Ethyl-t-Butyl Ether (ETBE)	ND	1.0	50.0	
Tert-Amyl-Methyl Ether (TAME)	ND	1.0	50.0	
1,2-Dibromoethane	ND	0.50	50.0	
1,2-Dichloroethane	ND	0.50	50.0	
Naphthalene	ND	5.0	50.0	
Surrogate	Rec. (%)	Control Limits	Qualifiers	
1,4-Bromofluorobenzene	101	60-132		
Dibromofluoromethane	95	63-141		
1,2-Dichloroethane-d4	97	62-146		
Toluene-d8	100	80-120		


 Return to Contents

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.



Calscience

## Quality Control - Spike/Spike Duplicate

Cardno ERI  
601 North McDowell Blvd.  
Petaluma, CA 94954-2312

Date Received: 08/19/14  
Work Order: 14-08-1369  
Preparation: EPA 3550B  
Method: EPA 8015B (M)

Project: ExxonMobil 99105/022783C

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Quality Control Sample ID	Type	Matrix	Instrument	Date Prepared	Date Analyzed	MS/MSD Batch Number
14-08-1367-1	Sample	Solid	GC 45	08/19/14	08/20/14 06:05	140819S10
14-08-1367-1	Matrix Spike	Solid	GC 45	08/19/14	08/20/14 04:50	140819S10
14-08-1367-1	Matrix Spike Duplicate	Solid	GC 45	08/19/14	08/20/14 05:09	140819S10

Parameter	Sample Conc.	Spike Added	MS Conc.	MS %Rec.	MSD Conc.	MSD %Rec.	%Rec. CL	RPD	RPD CL	Qualifiers
TPH as Diesel	ND	400.0	429.6	107	457.5	114	71-125	6	0-12	

  
Return to Contents

RPD: Relative Percent Difference. CL: Control Limits



Calscience

## Quality Control - Spike/Spike Duplicate

Cardno ERI  
601 North McDowell Blvd.  
Petaluma, CA 94954-2312

Date Received: 08/19/14  
Work Order: 14-08-1369  
Preparation: EPA 5030C  
Method: EPA 8015B (M)

Project: ExxonMobil 99105/022783C

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Quality Control Sample ID	Type	Matrix	Instrument	Date Prepared	Date Analyzed	MS/MSD Batch Number
14-08-1424-1	Sample	Solid	GC 56	08/20/14	08/20/14 16:59	140820S020
14-08-1424-1	Matrix Spike	Solid	GC 56	08/20/14	08/20/14 14:31	140820S020
14-08-1424-1	Matrix Spike Duplicate	Solid	GC 56	08/20/14	08/20/14 15:03	140820S020

Parameter	<u>Sample Conc.</u>	<u>Spike Added</u>	<u>MS Conc.</u>	<u>MS %Rec.</u>	<u>MSD Conc.</u>	<u>MSD %Rec.</u>	<u>%Rec. CL</u>	<u>RPD</u>	<u>RPD CL</u>	<u>Qualifiers</u>
TPH as Gasoline	ND	10.00	6.389	64	6.825	68	48-114	7	0-23	

  
Return to Contents

RPD: Relative Percent Difference. CL: Control Limits



Calscience

## Quality Control - Spike/Spike Duplicate

Cardno ERI  
601 North McDowell Blvd.  
Petaluma, CA 94954-2312

Date Received: 08/19/14  
Work Order: 14-08-1369  
Preparation: EPA 5030C  
Method: EPA 8015B (M)

Project: ExxonMobil 99105/022783C

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Quality Control Sample ID	Type	Matrix	Instrument	Date Prepared	Date Analyzed	MS/MSD Batch Number
14-08-1641-1	Sample	Solid	GC 56	08/22/14	08/22/14 14:39	140822S024
14-08-1641-1	Matrix Spike	Solid	GC 56	08/22/14	08/22/14 15:10	140822S024
14-08-1641-1	Matrix Spike Duplicate	Solid	GC 56	08/22/14	08/22/14 15:42	140822S024

Parameter	Sample Conc.	Spike Added	MS Conc.	MS %Rec.	MSD Conc.	MSD %Rec.	%Rec. CL	RPD	RPD CL	Qualifiers
TPH as Gasoline	ND	10.00	6.633	66	5.992	60	48-114	10	0-23	

  
Return to Contents

RPD: Relative Percent Difference. CL: Control Limits



Calscience

## Quality Control - Spike/Spike Duplicate

Cardno ERI  
601 North McDowell Blvd.  
Petaluma, CA 94954-2312

Date Received: 08/19/14  
Work Order: 14-08-1369  
Preparation: EPA 5030C  
Method: EPA 8260B

Project: ExxonMobil 99105/022783C

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Quality Control Sample ID	Type	Matrix	Instrument	Date Prepared	Date Analyzed	MS/MSD Batch Number
14-08-1239-7	Sample	Solid	GC/MS LL	08/18/14	08/20/14 03:44	140819S036
14-08-1239-7	Matrix Spike	Solid	GC/MS LL	08/18/14	08/20/14 04:12	140819S036
14-08-1239-7	Matrix Spike Duplicate	Solid	GC/MS LL	08/18/14	08/20/14 04:40	140819S036

Parameter	Sample Conc.	Spike Added	MS Conc.	MS %Rec.	MSD Conc.	MSD %Rec.	%Rec. CL	RPD	RPD CL	Qualifiers
Benzene	3.862	5.000	8.551	94	8.466	92	61-127	1	0-20	
Toluene	11.51	5.000	15.73	84	15.62	82	63-123	1	0-20	
Ethylbenzene	4.070	5.000	8.719	93	8.749	94	57-129	0	0-22	
o-Xylene	5.585	5.000	10.40	96	10.32	95	70-130	1	0-30	
p/m-Xylene	14.69	10.00	23.44	87	23.50	88	70-130	0	0-30	
Methyl-t-Butyl Ether (MTBE)	ND	5.000	4.595	92	4.599	92	57-123	0	0-21	
Tert-Butyl Alcohol (TBA)	ND	25.00	25.11	100	24.59	98	30-168	2	0-34	
Diisopropyl Ether (DIPE)	ND	5.000	4.536	91	4.538	91	57-129	0	0-20	
Ethyl-t-Butyl Ether (ETBE)	ND	5.000	4.266	85	4.473	89	55-127	5	0-20	
Tert-Amyl-Methyl Ether (TAME)	ND	5.000	5.251	105	5.218	104	58-124	1	0-20	
1,2-Dibromoethane	ND	5.000	4.868	97	4.783	96	64-124	2	0-20	
1,2-Dichloroethane	ND	5.000	5.110	102	4.983	100	80-120	3	0-20	

  
Return to Contents

RPD: Relative Percent Difference. CL: Control Limits

## Quality Control - LCS

Cardno ERI	Date Received:	08/19/14
601 North McDowell Blvd.	Work Order:	14-08-1369
Petaluma, CA 94954-2312	Preparation:	EPA 3550B
Project: ExxonMobil 99105/022783C	Method:	EPA 8015B (M)
		Page 1 of 5

Quality Control Sample ID	Type	Matrix	Instrument	Date Prepared	Date Analyzed	LCS Batch Number
099-15-422-1303	LCS	Solid	GC 45	08/19/14	08/20/14 04:11	140819B10A
<u>Parameter</u>		<u>Spike Added</u>	<u>Conc. Recovered</u>	<u>LCS %Rec.</u>	<u>%Rec. CL</u>	<u>Qualifiers</u>
TPH as Diesel		400.0	368.8	92	75-123	

**Quality Control - LCS**

Cardno ERI  
601 North McDowell Blvd.  
Petaluma, CA 94954-2312

Date Received: 08/19/14  
Work Order: 14-08-1369  
Preparation: EPA 5030C  
Method: EPA 8015B (M)

Project: ExxonMobil 99105/022783C

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Quality Control Sample ID	Type	Matrix	Instrument	Date Prepared	Date Analyzed	LCS Batch Number
099-14-571-1811	LCS	Solid	GC 56	08/20/14	08/20/14 11:54	140820L053
Parameter		Spike Added	Conc. Recovered	LCS %Rec.	%Rec. CL	Qualifiers
TPH as Gasoline		10.00	7.330	73	70-124	

Return to Contents

RPD: Relative Percent Difference. CL: Control Limits



## Quality Control - LCS

Cardno ERI	Date Received:	08/19/14
601 North McDowell Blvd.	Work Order:	14-08-1369
Petaluma, CA 94954-2312	Preparation:	EPA 5030C
	Method:	EPA 8015B (M)
Project: ExxonMobil 99105/022783C		Page 3 of 5

Quality Control Sample ID	Type	Matrix	Instrument	Date Prepared	Date Analyzed	LCS Batch Number
099-14-571-1815	LCS	Solid	GC 56	08/22/14	08/22/14 11:42	140822L042
<u>Parameter</u>		<u>Spike Added</u>	<u>Conc. Recovered</u>	<u>LCS %Rec.</u>	<u>%Rec. CL</u>	<u>Qualifiers</u>
TPH as Gasoline		10.00	9.818	98	70-124	

## Quality Control - LCS

Cardno ERI  
601 North McDowell Blvd.  
Petaluma, CA 94954-2312

Date Received: 08/19/14  
Work Order: 14-08-1369  
Preparation: EPA 5030C  
Method: EPA 8260B

Project: ExxonMobil 99105/022783C

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Quality Control Sample ID	Type	Matrix	Instrument	Date Prepared	Date Analyzed	LCS Batch Number	
099-12-882-1661	LCS	Solid	GC/MS LL	08/19/14	08/20/14 01:50	140819L055	
Parameter		Spike Added	Conc. Recovered	LCS %Rec.	%Rec. CL	ME CL	Qualifiers
Benzene		0.05000	0.04833	97	78-120	71-127	
Toluene		0.05000	0.04935	99	77-120	70-127	
Ethylbenzene		0.05000	0.04832	97	76-120	69-127	
o-Xylene		0.05000	0.04850	97	75-125	67-133	
p/m-Xylene		0.1000	0.09742	97	75-125	67-133	
Methyl-t-Butyl Ether (MTBE)		0.05000	0.04429	89	77-120	70-127	
Tert-Butyl Alcohol (TBA)		0.2500	0.2164	87	68-122	59-131	
Diisopropyl Ether (DIPE)		0.05000	0.04449	89	78-120	71-127	
Ethyl-t-Butyl Ether (ETBE)		0.05000	0.04486	90	78-120	71-127	
Tert-Amyl-Methyl Ether (TAME)		0.05000	0.04611	92	75-120	68-128	
1,2-Dibromoethane		0.05000	0.04618	92	80-120	73-127	
1,2-Dichloroethane		0.05000	0.04757	95	80-120	73-127	

Total number of LCS compounds: 12

Total number of ME compounds: 0

Total number of ME compounds allowed: 1

LCS ME CL validation result: Pass


 Return to Contents

RPD: Relative Percent Difference. CL: Control Limits

## Quality Control - LCS

Cardno ERI	Date Received:	08/19/14
601 North McDowell Blvd.	Work Order:	14-08-1369
Petaluma, CA 94954-2312	Preparation:	EPA 5030C
	Method:	EPA 8260B

Project: ExxonMobil 99105/022783C Page 5 of 5

Quality Control Sample ID	Type	Matrix	Instrument	Date Prepared	Date Analyzed	LCS Batch Number	
099-12-882-1662	LCS	Solid	GC/MS LL	08/19/14	08/20/14 01:50	140819L056	
<u>Parameter</u>		<u>Spike Added</u>	<u>Conc. Recovered</u>	<u>LCS %Rec.</u>	<u>%Rec. CL</u>	<u>ME CL</u>	<u>Qualifiers</u>
Benzene		0.05000	0.04833	97	78-120	71-127	
Toluene		0.05000	0.04935	99	77-120	70-127	
Ethylbenzene		0.05000	0.04832	97	76-120	69-127	
o-Xylene		0.05000	0.04850	97	75-125	67-133	
p/m-Xylene		0.1000	0.09742	97	75-125	67-133	
Methyl-t-Butyl Ether (MTBE)		0.05000	0.04429	89	77-120	70-127	
Tert-Butyl Alcohol (TBA)		0.2500	0.2164	87	68-122	59-131	
Diisopropyl Ether (DIPE)		0.05000	0.04449	89	78-120	71-127	
Ethyl-t-Butyl Ether (ETBE)		0.05000	0.04486	90	78-120	71-127	
Tert-Amyl-Methyl Ether (TAME)		0.05000	0.04611	92	75-120	68-128	
1,2-Dibromoethane		0.05000	0.04618	92	80-120	73-127	
1,2-Dichloroethane		0.05000	0.04757	95	80-120	73-127	

Total number of LCS compounds: 12  
Total number of ME compounds: 0  
Total number of ME compounds allowed: 1  
LCS ME CL validation result: Pass


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<b>Qualifiers</b>	<b>Definition</b>
AZ	Surrogate compound recovery was out of control due to matrix interference. The associated method blank surrogate spike compound was in control and, therefore, the sample data was reported without further clarification.
B	Analyte was present in the associated method blank.
BA	The MS/MSD RPD was out of control due to suspected matrix interference.
BB	Spike recovery and RPD control limits do not apply resulting from the parameter concentration in the sample exceeding the spike concentration by a factor of four or greater.
BU	Sample analyzed after holding time expired.
BV	Sample received after holding time expired.
DF	Reporting limits elevated due to matrix interferences.
E	Concentration exceeds the calibration range.
ET	Sample was extracted past end of recommended max. holding time.
GE	The PDS/PDSD or PES/PESD associated with this batch of samples was out of control due to suspected matrix interference.
HD	Chromat. profile inconsistent with pattern(s) of ref. fuel stdns.
HO	High concentration matrix spike recovery out of limits
HT	Analytical value calculated using results from associated tests.
HX	Recovery of the Matrix Spike (MS) or Matrix Spike Duplicate (MSD) compound was out of control due to matrix interference. The associated LCS was in control.
IL	Relative percent difference out of control.
J	Analyte was detected at a concentration below the reporting limit and above the laboratory method detection limit. Reported value is estimated.
JA	Analyte positively identified but quantitation is an estimate.
LD	Analyte presence was not confirmed by second column or GC/MS analysis.
LP	The LCS and/or LCSD recoveries for this analyte were above the upper control limit. The associated sample was non-detected. Therefore, the sample data was reported without further clarification.
LQ	LCS recovery above method control limits.
LR	LCS recovery below method control limits.
ND	Parameter not detected at the indicated reporting limit.
QO	Compound did not meet method-described identification guidelines. Identification was based on additional GC/MS characteristics.
RU	LCS Recovery Percentage is within Marginal Exceedance (ME) Control Limit range (+/- 4 SD from the mean).
SG	A silica gel cleanup procedure was performed.
SN	See applicable analysis comment.

Solid - Unless otherwise indicated, solid sample data is reported on a wet weight basis, not corrected for % moisture. All QC results are reported on a wet weight basis.

Any parameter identified in 40CFR Part 136.3 Table II that is designated as "analyze immediately" with a holding time of <= 15 minutes (40CFR-136.3 Table II, footnote 4), is considered a "field" test and the reported results will be qualified as being received outside of the stated holding time unless received at the laboratory within 15 minutes of the collection time.

A calculated total result (Example: Total Pesticides) is the summation of each component concentration and/or, if "J" flags are reported, estimated concentration. Component concentrations showing not detected (ND) are summed into the calculated total result as zero concentrations.







Calscience

WORK ORDER #: 14-08-0309

SAMPLE RECEIPT FORM

Cooler 1 of 1

CLIENT: Cardno EPH

DATE: 08/19/14

TEMPERATURE: Thermometer ID: SC1 (Criteria: 0.0°C – 6.0°C, not frozen except sediment/tissue)

Temperature 2.8 °C - 0.3°C (CF) = 2.5 °C [X] Blank [ ] Sample

[ ] Sample(s) outside temperature criteria (PM/APM contacted by: \_\_\_\_\_)

[ ] Sample(s) outside temperature criteria but received on ice/chilled on same day of sampling.

[ ] Received at ambient temperature, placed on ice for transport by Courier.

Ambient Temperature: [ ] Air [ ] Filter

Checked by: S76

CUSTODY SEALS INTACT:

[X] Cooler [ ] \_\_\_\_\_ [ ] No (Not Intact) [ ] Not Present [ ] N/A Checked by: S76

[ ] Sample [ ] \_\_\_\_\_ [ ] No (Not Intact) [X] Not Present Checked by: S76

SAMPLE CONDITION:

	Yes	No	N/A
Chain-Of-Custody (COC) document(s) received with samples.....	[X]	[ ]	[ ]
COC document(s) received complete.....	[X]	[ ]	[ ]
[ ] Collection date/time, matrix, and/or # of containers logged in based on sample labels.			
[ ] No analysis requested. [ ] Not relinquished. [ ] No date/time relinquished.			
Sampler's name indicated on COC.....	[X]	[ ]	[ ]
Sample container label(s) consistent with COC.....	[X]	[ ]	[ ]
Sample container(s) intact and good condition.....	[X]	[ ]	[ ]
Proper containers and sufficient volume for analyses requested.....	[X]	[ ]	[ ]
Analyses received within holding time.....	[X]	[ ]	[ ]
Aqueous samples received within 15-minute holding time			
[ ] pH [ ] Residual Chlorine [ ] Dissolved Sulfides [ ] Dissolved Oxygen.....	[ ]	[ ]	[X]
Proper preservation noted on COC or sample container.....	[ ]	[ ]	[X]
[ ] Unpreserved vials received for Volatiles analysis			
Volatile analysis container(s) free of headspace.....	[ ]	[ ]	[X]
Tedlar bag(s) free of condensation.....	[ ]	[ ]	[X]

CONTAINER TYPE:

Solid: [ ] 4ozCGJ [ ] 8ozCGJ [ ] 16ozCGJ [X] Sleeve (P) [ ] EnCores® [ ] TerraCores® [ ] \_\_\_\_\_

Aqueous: [ ] VOA [ ] VOAh [ ] VOAna2 [ ] 125AGB [ ] 125AGBh [ ] 125AGBp [ ] 1AGB [ ] 1AGBna2 [ ] 1AGBs

[ ] 500AGB [ ] 500AGJ [ ] 500AGJs [ ] 250AGB [ ] 250CGB [ ] 250CGBs [ ] 1PB [ ] 1PBna [ ] 500PB

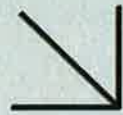
[ ] 250PB [ ] 250PBn [ ] 125PB [ ] 125PBzanna [ ] 100PJ [ ] 100PJna2 [ ] \_\_\_\_\_ [ ] \_\_\_\_\_ [ ] \_\_\_\_\_

Air: [ ] Tedlar® [ ] Canister Other: [ ] \_\_\_\_\_ Trip Blank Lot#: \_\_\_\_\_ Labeled/Checked by: S76

Container: C: Clear A: Amber P: Plastic G: Glass J: Jar B: Bottle Z: Ziploc/Resealable Bag E: Envelope Reviewed by: 739

Preservative: h: HCL n: HNO3 na2: Na2S2O3 na: NaOH p: H3PO4 s: H2SO4 u: Ultra-pure zanna: ZnAc2+NaOH f: Filtered Scanned by: 739

Return to Contents



**WORK ORDER NUMBER: 14-08-1899**

*The difference is service*



AIR | SOIL | WATER | MARINE CHEMISTRY

**Analytical Report For**

**Client:** Cardno ERI

**Client Project Name:** ExxonMobil 99105/022783C

**Attention:** Greg Gurs  
601 North McDowell Blvd.  
Petaluma, CA 94954-2312

*Cecile A. de Guia*

Approved for release on 09/02/2014 by:  
Cecile deGuia  
Project Manager

ResultLink ▶

Email your PM ▶



Eurofins Calscience, Inc. (Calscience) certifies that the test results provided in this report meet all NELAC requirements for parameters for which accreditation is required or available. Any exceptions to NELAC requirements are noted in the case narrative. The original report of subcontracted analyses, if any, is attached to this report. The results in this report are limited to the sample(s) tested and any reproduction thereof must be made in its entirety. The client or recipient of this report is specifically prohibited from making material changes to said report and, to the extent that such changes are made, Calscience is not responsible, legally or otherwise. The client or recipient agrees to indemnify Calscience for any defense to any litigation which may arise.



Client Project Name: ExxonMobil 99105/022783C  
 Work Order Number: 14-08-1899

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**Condition Upon Receipt:**

Samples were received under Chain-of-Custody (COC) on 08/26/14. They were assigned to Work Order 14-08-1899.

Unless otherwise noted on the Sample Receiving forms all samples were received in good condition and within the recommended EPA temperature criteria for the methods noted on the COC. The COC and Sample Receiving Documents are integral elements of the analytical report and are presented at the back of the report.

**Holding Times:**

All samples were analyzed within prescribed holding times (HT) and/or in accordance with the Calscience Sample Acceptance Policy unless otherwise noted in the analytical report and/or comprehensive case narrative, if required.

Any parameter identified in 40CFR Part 136.3 Table II that is designated as "analyze immediately" with a holding time of  $\leq 15$  minutes (40CFR-136.3 Table II, footnote 4), is considered a "field" test and the reported results will be qualified as being received outside of the stated holding time unless received at the laboratory within 15 minutes of the collection time.

**Quality Control:**

All quality control parameters (QC) were within established control limits except where noted in the QC summary forms or described further within this report.

**Additional Comments:**

Air - Sorbent-extracted air methods (EPA TO-4A, EPA TO-10, EPA TO-13A, EPA TO-17): Analytical results are converted from mass/sample basis to mass/volume basis using client-supplied air volumes.

New York NELAP air certification does not certify for all reported methods and analytes, reference the accredited items here: [http://www.calscience.com/PDF/New\\_York.pdf](http://www.calscience.com/PDF/New_York.pdf)

Solid - Unless otherwise indicated, solid sample data is reported on a wet weight basis, not corrected for % moisture. All QC results are always reported on a wet weight basis.

**Subcontractor Information:**

Unless otherwise noted below (or on the subcontract form), no samples were subcontracted.



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## Sample Summary

Client: Cardno ERI	Work Order:	14-08-1899
601 North McDowell Blvd.	Project Name:	ExxonMobil 99105/022783C
Petaluma, CA 94954-2312	PO Number:	
	Date/Time Received:	08/26/14 10:10
	Number of Containers:	24

Attn: Greg Gurs

Sample Identification	Lab Number	Collection Date and Time	Number of Containers	Matrix
W-9.60-MW5	14-08-1899-1	08/22/14 14:35	8	Aqueous
W-11.20-MW6	14-08-1899-2	08/22/14 14:55	8	Aqueous
W-13.10-MW8	14-08-1899-3	08/22/14 15:25	8	Aqueous



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## Analytical Report

Cardno ERI  
601 North McDowell Blvd.  
Petaluma, CA 94954-2312

Date Received: 08/26/14  
Work Order: 14-08-1899  
Preparation: EPA 3510C  
Method: EPA 8015B (M)  
Units: ug/L

Project: ExxonMobil 99105/022783C

Page 1 of 1

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
<b>W-9.60-MW5</b>	<b>14-08-1899-1-H</b>	<b>08/22/14 14:35</b>	<b>Aqueous</b>	<b>GC 45</b>	<b>08/27/14</b>	<b>08/28/14 06:20</b>	<b>140827B14</b>
<u>Parameter</u>		<u>Result</u>		<u>RL</u>		<u>DF</u>	<u>Qualifiers</u>
TPH as Diesel		5800		50		1.00	HD,SG
<u>Surrogate</u>		<u>Rec. (%)</u>		<u>Control Limits</u>		<u>Qualifiers</u>	
n-Octacosane		80		68-140			
<b>W-11.20-MW6</b>	<b>14-08-1899-2-H</b>	<b>08/22/14 14:55</b>	<b>Aqueous</b>	<b>GC 45</b>	<b>08/27/14</b>	<b>08/28/14 06:39</b>	<b>140827B14</b>
<u>Parameter</u>		<u>Result</u>		<u>RL</u>		<u>DF</u>	<u>Qualifiers</u>
TPH as Diesel		1000		50		1.00	HD,SG
<u>Surrogate</u>		<u>Rec. (%)</u>		<u>Control Limits</u>		<u>Qualifiers</u>	
n-Octacosane		80		68-140			
<b>W-13.10-MW8</b>	<b>14-08-1899-3-H</b>	<b>08/22/14 15:25</b>	<b>Aqueous</b>	<b>GC 45</b>	<b>08/27/14</b>	<b>08/28/14 06:56</b>	<b>140827B14</b>
<u>Parameter</u>		<u>Result</u>		<u>RL</u>		<u>DF</u>	<u>Qualifiers</u>
TPH as Diesel		350		50		1.00	HD,SG
<u>Surrogate</u>		<u>Rec. (%)</u>		<u>Control Limits</u>		<u>Qualifiers</u>	
n-Octacosane		70		68-140			
<b>Method Blank</b>	<b>099-15-304-806</b>	<b>N/A</b>	<b>Aqueous</b>	<b>GC 45</b>	<b>08/27/14</b>	<b>08/28/14 05:25</b>	<b>140827B14</b>
<u>Parameter</u>		<u>Result</u>		<u>RL</u>		<u>DF</u>	<u>Qualifiers</u>
TPH as Diesel		ND		50		1.00	
<u>Surrogate</u>		<u>Rec. (%)</u>		<u>Control Limits</u>		<u>Qualifiers</u>	
n-Octacosane		71		68-140			

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.



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## Analytical Report

Cardno ERI  
601 North McDowell Blvd.  
Petaluma, CA 94954-2312

Date Received: 08/26/14  
Work Order: 14-08-1899  
Preparation: EPA 5030C  
Method: EPA 8015B (M)  
Units: ug/L

Project: ExxonMobil 99105/022783C

Page 1 of 1

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
<b>W-9.60-MW5</b>	<b>14-08-1899-1-E</b>	<b>08/22/14 14:35</b>	<b>Aqueous</b>	<b>GC 25</b>	<b>08/28/14</b>	<b>08/28/14 17:21</b>	<b>140828L044</b>
<u>Parameter</u>		<u>Result</u>		<u>RL</u>		<u>DF</u>	<u>Qualifiers</u>
TPH as Gasoline		5100		2500		50.0	
<u>Surrogate</u>		<u>Rec. (%)</u>		<u>Control Limits</u>		<u>Qualifiers</u>	
1,4-Bromofluorobenzene		68		38-134			
<b>W-11.20-MW6</b>	<b>14-08-1899-2-E</b>	<b>08/22/14 14:55</b>	<b>Aqueous</b>	<b>GC 25</b>	<b>08/28/14</b>	<b>08/28/14 17:54</b>	<b>140828L044</b>
<u>Parameter</u>		<u>Result</u>		<u>RL</u>		<u>DF</u>	<u>Qualifiers</u>
TPH as Gasoline		1500		50		1.00	HD
<u>Surrogate</u>		<u>Rec. (%)</u>		<u>Control Limits</u>		<u>Qualifiers</u>	
1,4-Bromofluorobenzene		97		38-134			
<b>W-13.10-MW8</b>	<b>14-08-1899-3-E</b>	<b>08/22/14 15:25</b>	<b>Aqueous</b>	<b>GC 25</b>	<b>08/28/14</b>	<b>08/28/14 18:28</b>	<b>140828L044</b>
<u>Parameter</u>		<u>Result</u>		<u>RL</u>		<u>DF</u>	<u>Qualifiers</u>
TPH as Gasoline		950		50		1.00	HD
<u>Surrogate</u>		<u>Rec. (%)</u>		<u>Control Limits</u>		<u>Qualifiers</u>	
1,4-Bromofluorobenzene		73		38-134			
<b>Method Blank</b>	<b>099-12-436-9523</b>	<b>N/A</b>	<b>Aqueous</b>	<b>GC 25</b>	<b>08/28/14</b>	<b>08/28/14 12:51</b>	<b>140828L044</b>
<u>Parameter</u>		<u>Result</u>		<u>RL</u>		<u>DF</u>	<u>Qualifiers</u>
TPH as Gasoline		ND		50		1.00	
<u>Surrogate</u>		<u>Rec. (%)</u>		<u>Control Limits</u>		<u>Qualifiers</u>	
1,4-Bromofluorobenzene		72		38-134			

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.



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## Analytical Report

Cardno ERI  
601 North McDowell Blvd.  
Petaluma, CA 94954-2312

Date Received: 08/26/14  
Work Order: 14-08-1899  
Preparation: EPA 5030C  
Method: EPA 8260B  
Units: ug/L

Project: ExxonMobil 99105/022783C

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Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
W-9.60-MW5	14-08-1899-1-A	08/22/14 14:35	Aqueous	GC/MS L	08/27/14	08/28/14 01:10	140827L047

Parameter	Result	RL	DF	Qualifiers
Toluene	ND	5.0	10.0	
Ethylbenzene	320	5.0	10.0	
o-Xylene	ND	5.0	10.0	
p/m-Xylene	81	5.0	10.0	
Xylenes (total)	81	5.0	1.00	
Methyl-t-Butyl Ether (MTBE)	ND	5.0	10.0	
Tert-Butyl Alcohol (TBA)	ND	50	10.0	
Diisopropyl Ether (DIPE)	ND	5.0	10.0	
Ethyl-t-Butyl Ether (ETBE)	ND	5.0	10.0	
Tert-Amyl-Methyl Ether (TAME)	ND	5.0	10.0	
1,2-Dibromoethane	ND	5.0	10.0	
1,2-Dichloroethane	ND	5.0	10.0	

Surrogate	Rec. (%)	Control Limits	Qualifiers
1,4-Bromofluorobenzene	98	68-120	
Dibromofluoromethane	89	80-127	
1,2-Dichloroethane-d4	95	80-128	
Toluene-d8	99	80-120	

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
W-9.60-MW5	14-08-1899-1-B	08/22/14 14:35	Aqueous	GC/MS L	08/28/14	08/28/14 16:42	140828L018

Parameter	Result	RL	DF	Qualifiers
Benzene	520	10	20.0	

Surrogate	Rec. (%)	Control Limits	Qualifiers
1,4-Bromofluorobenzene	93	68-120	
Dibromofluoromethane	101	80-127	
1,2-Dichloroethane-d4	103	80-128	
Toluene-d8	102	80-120	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.



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## Analytical Report

Cardno ERI  
601 North McDowell Blvd.  
Petaluma, CA 94954-2312

Date Received: 08/26/14  
Work Order: 14-08-1899  
Preparation: EPA 5030C  
Method: EPA 8260B  
Units: ug/L

Project: ExxonMobil 99105/022783C

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Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
W-11.20-MW6	14-08-1899-2-A	08/22/14 14:55	Aqueous	GC/MS L	08/27/14	08/28/14 00:42	140827L047

Parameter	Result	RL	DF	Qualifiers
Benzene	ND	0.50	1.00	
Toluene	ND	0.50	1.00	
Ethylbenzene	ND	0.50	1.00	
o-Xylene	ND	0.50	1.00	
p/m-Xylene	ND	0.50	1.00	
Xylenes (total)	ND	0.50	1.00	
Methyl-t-Butyl Ether (MTBE)	ND	0.50	1.00	
Tert-Butyl Alcohol (TBA)	12	5.0	1.00	
Diisopropyl Ether (DIPE)	ND	0.50	1.00	
Ethyl-t-Butyl Ether (ETBE)	ND	0.50	1.00	
Tert-Amyl-Methyl Ether (TAME)	ND	0.50	1.00	
1,2-Dibromoethane	ND	0.50	1.00	
1,2-Dichloroethane	ND	0.50	1.00	

Surrogate	Rec. (%)	Control Limits	Qualifiers
1,4-Bromofluorobenzene	94	68-120	
Dibromofluoromethane	88	80-127	
1,2-Dichloroethane-d4	93	80-128	
Toluene-d8	116	80-120	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.



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## Analytical Report

Cardno ERI  
601 North McDowell Blvd.  
Petaluma, CA 94954-2312

Date Received: 08/26/14  
Work Order: 14-08-1899  
Preparation: EPA 5030C  
Method: EPA 8260B  
Units: ug/L

Project: ExxonMobil 99105/022783C

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Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
W-13.10-MW8	14-08-1899-3-B	08/22/14 15:25	Aqueous	GC/MS L	08/28/14	08/28/14 17:11	140828L018

Parameter	Result	RL	DF	Qualifiers
Benzene	5.7	0.50	1.00	
Toluene	ND	0.50	1.00	
Ethylbenzene	4.2	0.50	1.00	
o-Xylene	1.4	0.50	1.00	
p/m-Xylene	5.0	0.50	1.00	
Xylenes (total)	6.4	0.50	1.00	
Methyl-t-Butyl Ether (MTBE)	ND	0.50	1.00	
Tert-Butyl Alcohol (TBA)	31	5.0	1.00	
Diisopropyl Ether (DIPE)	ND	0.50	1.00	
Ethyl-t-Butyl Ether (ETBE)	ND	0.50	1.00	
Tert-Amyl-Methyl Ether (TAME)	ND	0.50	1.00	
1,2-Dibromoethane	ND	0.50	1.00	
1,2-Dichloroethane	ND	0.50	1.00	

Surrogate	Rec. (%)	Control Limits	Qualifiers
1,4-Bromofluorobenzene	97	68-120	
Dibromofluoromethane	92	80-127	
1,2-Dichloroethane-d4	98	80-128	
Toluene-d8	103	80-120	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.





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## Analytical Report

Cardno ERI  
601 North McDowell Blvd.  
Petaluma, CA 94954-2312

Date Received: 08/26/14  
Work Order: 14-08-1899  
Preparation: EPA 5030C  
Method: EPA 8260B  
Units: ug/L

Project: ExxonMobil 99105/022783C

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Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
Method Blank	099-12-884-1192	N/A	Aqueous	GC/MS L	08/27/14	08/28/14 00:13	140827L047

<u>Parameter</u>	<u>Result</u>	<u>RL</u>	<u>DF</u>	<u>Qualifiers</u>
Benzene	ND	0.50	1.00	
Toluene	ND	0.50	1.00	
Ethylbenzene	ND	0.50	1.00	
o-Xylene	ND	0.50	1.00	
p/m-Xylene	ND	0.50	1.00	
Xylenes (total)	ND	0.50	1.00	
Methyl-t-Butyl Ether (MTBE)	ND	0.50	1.00	
Tert-Butyl Alcohol (TBA)	ND	5.0	1.00	
Diisopropyl Ether (DIPE)	ND	0.50	1.00	
Ethyl-t-Butyl Ether (ETBE)	ND	0.50	1.00	
Tert-Amyl-Methyl Ether (TAME)	ND	0.50	1.00	
1,2-Dibromoethane	ND	0.50	1.00	
1,2-Dichloroethane	ND	0.50	1.00	

<u>Surrogate</u>	<u>Rec. (%)</u>	<u>Control Limits</u>	<u>Qualifiers</u>
1,4-Bromofluorobenzene	86	68-120	
Dibromofluoromethane	109	80-127	
1,2-Dichloroethane-d4	110	80-128	
Toluene-d8	104	80-120	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.



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## Analytical Report

Cardno ERI  
601 North McDowell Blvd.  
Petaluma, CA 94954-2312

Date Received: 08/26/14  
Work Order: 14-08-1899  
Preparation: EPA 5030C  
Method: EPA 8260B  
Units: ug/L

Project: ExxonMobil 99105/022783C

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Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
Method Blank	099-12-884-1193	N/A	Aqueous	GC/MS L	08/28/14	08/28/14 11:58	140828L018

<u>Parameter</u>	<u>Result</u>	<u>RL</u>	<u>DF</u>	<u>Qualifiers</u>
Benzene	ND	0.50	1.00	
Toluene	ND	0.50	1.00	
Ethylbenzene	ND	0.50	1.00	
o-Xylene	ND	0.50	1.00	
p/m-Xylene	ND	0.50	1.00	
Xylenes (total)	ND	0.50	1.00	
Methyl-t-Butyl Ether (MTBE)	ND	0.50	1.00	
Tert-Butyl Alcohol (TBA)	ND	5.0	1.00	
Diisopropyl Ether (DIPE)	ND	0.50	1.00	
Ethyl-t-Butyl Ether (ETBE)	ND	0.50	1.00	
Tert-Amyl-Methyl Ether (TAME)	ND	0.50	1.00	
1,2-Dibromoethane	ND	0.50	1.00	
1,2-Dichloroethane	ND	0.50	1.00	

<u>Surrogate</u>	<u>Rec. (%)</u>	<u>Control Limits</u>	<u>Qualifiers</u>
1,4-Bromofluorobenzene	89	68-120	
Dibromofluoromethane	108	80-127	
1,2-Dichloroethane-d4	108	80-128	
Toluene-d8	102	80-120	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.



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## Quality Control - Spike/Spike Duplicate

Cardno ERI  
601 North McDowell Blvd.  
Petaluma, CA 94954-2312

Date Received: 08/26/14  
Work Order: 14-08-1899  
Preparation: EPA 5030C  
Method: EPA 8015B (M)

Project: ExxonMobil 99105/022783C

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Quality Control Sample ID	Type	Matrix	Instrument	Date Prepared	Date Analyzed	MS/MSD Batch Number
14-08-1633-1	Sample	Aqueous	GC 25	08/28/14	08/28/14 13:59	140828S020
14-08-1633-1	Matrix Spike	Aqueous	GC 25	08/28/14	08/28/14 14:32	140828S020
14-08-1633-1	Matrix Spike Duplicate	Aqueous	GC 25	08/28/14	08/28/14 15:05	140828S020

<u>Parameter</u>	<u>Sample Conc.</u>	<u>Spike Added</u>	<u>MS Conc.</u>	<u>MS %Rec.</u>	<u>MSD Conc.</u>	<u>MSD %Rec.</u>	<u>%Rec. CL</u>	<u>RPD</u>	<u>RPD CL</u>	<u>Qualifiers</u>
TPH as Gasoline	ND	2000	1681	84	1620	81	68-122	4	0-18	

RPD: Relative Percent Difference. CL: Control Limits



Calscience

## Quality Control - Spike/Spike Duplicate

Cardno ERI  
601 North McDowell Blvd.  
Petaluma, CA 94954-2312

Date Received: 08/26/14  
Work Order: 14-08-1899  
Preparation: EPA 5030C  
Method: EPA 8260B

Project: ExxonMobil 99105/022783C

Page 2 of 3

Quality Control Sample ID	Type	Matrix	Instrument	Date Prepared	Date Analyzed	MS/MSD Batch Number				
W-11.20-MW6	Sample	Aqueous	GC/MS L	08/27/14	08/28/14 00:42	140827S027				
W-11.20-MW6	Matrix Spike	Aqueous	GC/MS L	08/27/14	08/28/14 02:35	140827S027				
W-11.20-MW6	Matrix Spike Duplicate	Aqueous	GC/MS L	08/27/14	08/28/14 03:03	140827S027				
Parameter	Sample Conc.	Spike Added	MS Conc.	MS %Rec.	MSD Conc.	MSD %Rec.	%Rec. CL	RPD	RPD CL	Qualifiers
Benzene	ND	10.00	10.73	107	10.60	106	75-125	1	0-20	
Toluene	ND	10.00	11.48	115	11.04	110	75-125	4	0-20	
Ethylbenzene	ND	10.00	11.18	112	11.14	111	75-125	0	0-20	
o-Xylene	ND	10.00	11.34	113	11.34	113	75-127	0	0-20	
p/m-Xylene	ND	20.00	22.61	113	22.11	111	75-125	2	0-20	
Methyl-t-Butyl Ether (MTBE)	ND	10.00	11.13	111	11.37	114	71-131	2	0-20	
Tert-Butyl Alcohol (TBA)	12.37	50.00	61.76	99	57.14	90	20-180	8	0-40	
Diisopropyl Ether (DIPE)	ND	10.00	11.17	112	11.28	113	64-136	1	0-20	
Ethyl-t-Butyl Ether (ETBE)	ND	10.00	10.44	104	10.74	107	73-133	3	0-20	
Tert-Amyl-Methyl Ether (TAME)	ND	10.00	9.216	92	9.218	92	75-125	0	0-20	
1,2-Dibromoethane	ND	10.00	10.06	101	10.25	102	75-126	2	0-20	
1,2-Dichloroethane	ND	10.00	10.52	105	10.29	103	75-127	2	0-20	

RPD: Relative Percent Difference. CL: Control Limits



Calscience

## Quality Control - Spike/Spike Duplicate

Cardno ERI  
601 North McDowell Blvd.  
Petaluma, CA 94954-2312

Date Received: 08/26/14  
Work Order: 14-08-1899  
Preparation: EPA 5030C  
Method: EPA 8260B

Project: ExxonMobil 99105/022783C

Page 3 of 3

Quality Control Sample ID	Type	Matrix	Instrument	Date Prepared	Date Analyzed	MS/MSD Batch Number				
14-08-2042-2	Sample	Aqueous	GC/MS L	08/28/14	08/28/14 12:55	140828S005				
14-08-2042-2	Matrix Spike	Aqueous	GC/MS L	08/28/14	08/28/14 14:48	140828S005				
14-08-2042-2	Matrix Spike Duplicate	Aqueous	GC/MS L	08/28/14	08/28/14 15:17	140828S005				
Parameter	Sample Conc.	Spike Added	MS Conc.	MS %Rec.	MSD Conc.	MSD %Rec.	%Rec. CL	RPD	RPD CL	Qualifiers
Benzene	ND	10.00	11.21	112	11.00	110	77-121	2	0-21	
Toluene	ND	10.00	11.18	112	10.93	109	78-120	2	0-25	
Ethylbenzene	ND	10.00	10.88	109	10.90	109	78-120	0	0-23	
o-Xylene	ND	10.00	11.27	113	11.32	113	74-122	1	0-24	
p/m-Xylene	ND	20.00	22.66	113	22.50	112	74-122	1	0-23	
Methyl-t-Butyl Ether (MTBE)	ND	10.00	9.380	94	9.658	97	57-144	3	0-31	
Tert-Butyl Alcohol (TBA)	ND	50.00	61.75	123	50.62	101	43-170	20	0-38	
Diisopropyl Ether (DIPE)	ND	10.00	10.68	107	11.03	110	70-130	3	0-35	
Ethyl-t-Butyl Ether (ETBE)	ND	10.00	9.357	94	9.569	96	70-130	2	0-35	
Tert-Amyl-Methyl Ether (TAME)	ND	10.00	8.761	88	8.770	88	70-130	0	0-35	
1,2-Dibromoethane	ND	10.00	10.36	104	10.26	103	74-130	1	0-22	
1,2-Dichloroethane	ND	10.00	10.62	106	10.56	106	72-130	1	0-25	

RPD: Relative Percent Difference. CL: Control Limits



Calscience

## Quality Control - LCS/LCSD

Cardno ERI  
601 North McDowell Blvd.  
Petaluma, CA 94954-2312

Date Received: 08/26/14  
Work Order: 14-08-1899  
Preparation: EPA 3510C  
Method: EPA 8015B (M)

Project: ExxonMobil 99105/022783C

Page 1 of 4

Quality Control Sample ID	Type	Matrix	Instrument	Date Prepared	Date Analyzed	LCS/LCSD Batch Number
099-15-304-806	LCS	Aqueous	GC 45	08/27/14	08/28/14 05:44	140827B14
099-15-304-806	LCSD	Aqueous	GC 45	08/27/14	08/28/14 06:01	140827B14

Parameter	Spike Added	LCS Conc.	LCS %Rec.	LCSD Conc.	LCSD %Rec.	%Rec. CL	RPD	RPD CL	Qualifiers
TPH as Diesel	2000	1927	96	1822	91	75-117	6	0-13	

RPD: Relative Percent Difference. CL: Control Limits



Calscience

## Quality Control - LCS

Cardno ERI	Date Received:	08/26/14
601 North McDowell Blvd.	Work Order:	14-08-1899
Petaluma, CA 94954-2312	Preparation:	EPA 5030C
	Method:	EPA 8015B (M)
Project: ExxonMobil 99105/022783C		Page 2 of 4

Quality Control Sample ID	Type	Matrix	Instrument	Date Prepared	Date Analyzed	LCS Batch Number
099-12-436-9523	LCS	Aqueous	GC 25	08/28/14	08/28/14 13:25	140828L044
<u>Parameter</u>		<u>Spike Added</u>	<u>Conc. Recovered</u>	<u>LCS %Rec.</u>	<u>%Rec. CL</u>	<u>Qualifiers</u>
TPH as Gasoline		2000	1934	97	78-120	

RPD: Relative Percent Difference. CL: Control Limits



Calscience

## Quality Control - LCS

Cardno ERI  
601 North McDowell Blvd.  
Petaluma, CA 94954-2312

Date Received: 08/26/14  
Work Order: 14-08-1899  
Preparation: EPA 5030C  
Method: EPA 8260B

Project: ExxonMobil 99105/022783C

Page 3 of 4

Quality Control Sample ID	Type	Matrix	Instrument	Date Prepared	Date Analyzed	LCS Batch Number	
099-12-884-1192	LCS	Aqueous	GC/MS L	08/27/14	08/27/14 23:17	140827L047	
Parameter		Spike Added	Conc. Recovered	LCS %Rec.	%Rec. CL	ME CL	Qualifiers
Benzene		10.00	10.19	102	80-120	73-127	
Toluene		10.00	10.19	102	80-120	73-127	
Ethylbenzene		10.00	10.07	101	80-120	73-127	
o-Xylene		10.00	10.66	107	80-120	73-127	
p/m-Xylene		20.00	21.13	106	80-120	73-127	
Methyl-t-Butyl Ether (MTBE)		10.00	9.117	91	75-123	67-131	
Tert-Butyl Alcohol (TBA)		50.00	49.78	100	80-120	73-127	
Diisopropyl Ether (DIPE)		10.00	10.20	102	73-121	65-129	
Ethyl-t-Butyl Ether (ETBE)		10.00	8.892	89	76-124	68-132	
Tert-Amyl-Methyl Ether (TAME)		10.00	8.156	82	80-120	73-127	
1,2-Dibromoethane		10.00	9.637	96	80-120	73-127	
1,2-Dichloroethane		10.00	9.930	99	80-122	73-129	

Total number of LCS compounds: 12

Total number of ME compounds: 0

Total number of ME compounds allowed: 1

LCS ME CL validation result: Pass

RPD: Relative Percent Difference. CL: Control Limits





Calscience

## Quality Control - LCS

Cardno ERI  
601 North McDowell Blvd.  
Petaluma, CA 94954-2312

Date Received: 08/26/14  
Work Order: 14-08-1899  
Preparation: EPA 5030C  
Method: EPA 8260B

Project: ExxonMobil 99105/022783C

Page 4 of 4

Quality Control Sample ID	Type	Matrix	Instrument	Date Prepared	Date Analyzed	LCS Batch Number
099-12-884-1193	LCS	Aqueous	GC/MS L	08/28/14	08/28/14 10:47	140828L018
Parameter	Spike Added	Conc. Recovered	LCS %Rec.	%Rec. CL	ME CL	Qualifiers
Benzene	10.00	10.27	103	80-120	73-127	
Toluene	10.00	10.36	104	80-120	73-127	
Ethylbenzene	10.00	10.51	105	80-120	73-127	
o-Xylene	10.00	10.90	109	80-120	73-127	
p/m-Xylene	20.00	22.10	111	80-120	73-127	
Methyl-t-Butyl Ether (MTBE)	10.00	8.673	87	75-123	67-131	
Tert-Butyl Alcohol (TBA)	50.00	49.76	100	80-120	73-127	
Diisopropyl Ether (DIPE)	10.00	10.16	102	73-121	65-129	
Ethyl-t-Butyl Ether (ETBE)	10.00	8.956	90	76-124	68-132	
Tert-Amyl-Methyl Ether (TAME)	10.00	8.097	81	80-120	73-127	
1,2-Dibromoethane	10.00	9.612	96	80-120	73-127	
1,2-Dichloroethane	10.00	9.372	94	80-122	73-129	

Total number of LCS compounds: 12

Total number of ME compounds: 0

Total number of ME compounds allowed: 1

LCS ME CL validation result: Pass

RPD: Relative Percent Difference. CL: Control Limits

<u>Qualifiers</u>	<u>Definition</u>
AZ	Surrogate compound recovery was out of control due to matrix interference. The associated method blank surrogate spike compound was in control and, therefore, the sample data was reported without further clarification.
B	Analyte was present in the associated method blank.
BA	The MS/MSD RPD was out of control due to suspected matrix interference.
BB	Spike recovery and RPD control limits do not apply resulting from the parameter concentration in the sample exceeding the spike concentration by a factor of four or greater.
BU	Sample analyzed after holding time expired.
BV	Sample received after holding time expired.
DF	Reporting limits elevated due to matrix interferences.
E	Concentration exceeds the calibration range.
ET	Sample was extracted past end of recommended max. holding time.
GE	The PDS/PDSD or PES/PESD associated with this batch of samples was out of control due to suspected matrix interference.
HD	Chromat. profile inconsistent with pattern(s) of ref. fuel stnds.
HO	High concentration matrix spike recovery out of limits
HT	Analytical value calculated using results from associated tests.
HX	Recovery of the Matrix Spike (MS) or Matrix Spike Duplicate (MSD) compound was out of control due to matrix interference. The associated LCS was in control.
IL	Relative percent difference out of control.
J	Analyte was detected at a concentration below the reporting limit and above the laboratory method detection limit. Reported value is estimated.
JA	Analyte positively identified but quantitation is an estimate.
LD	Analyte presence was not confirmed by second column or GC/MS analysis.
LP	The LCS and/or LCSD recoveries for this analyte were above the upper control limit. The associated sample was non-detected. Therefore, the sample data was reported without further clarification.
LQ	LCS recovery above method control limits.
LR	LCS recovery below method control limits.
ND	Parameter not detected at the indicated reporting limit.
QO	Compound did not meet method-described identification guidelines. Identification was based on additional GC/MS characteristics.
RU	LCS Recovery Percentage is within Marginal Exceedance (ME) Control Limit range (+/- 4 SD from the mean).
SG	A silica gel cleanup procedure was performed.
SN	See applicable analysis comment.

Solid - Unless otherwise indicated, solid sample data is reported on a wet weight basis, not corrected for % moisture. All QC results are reported on a wet weight basis.

Any parameter identified in 40CFR Part 136.3 Table II that is designated as "analyze immediately" with a holding time of  $\leq$  15 minutes (40CFR-136.3 Table II, footnote 4), is considered a "field" test and the reported results will be qualified as being received outside of the stated holding time unless received at the laboratory within 15 minutes of the collection time.

A calculated total result (Example: Total Pesticides) is the summation of each component concentration and/or, if "J" flags are reported, estimated concentration. Component concentrations showing not detected (ND) are summed into the calculated total result as zero concentrations.

**Sandy Tat**

---

**From:** David R. Daniels <david.daniels@cardno.com>  
**Sent:** Wednesday, August 27, 2014 5:03 PM  
**To:** Sandy Tat  
**Subject:** RE: Change TAT on submitted samples  
**Attachments:** 14-08-1899 Revised.pdf; 14-08-1907 Revised.pdf

Revised COCs attached. Thank You

David R. Daniels, PG 8737

PROJECT GEOLOGIST  
CARDNO ERI

Phone (+1) 707-766-2000 Fax (+1) 707-789-0414 Direct (+1) 707-766-2024 Mobile (+1) 707-338-6997  
Address 601 North McDowell Blvd., Petaluma, CA 94954-2312 USA  
Email [david.daniels@cardno.com](mailto:david.daniels@cardno.com) Web [www.cardno.com](http://www.cardno.com) [www.cardnoeri.com](http://www.cardnoeri.com)

---

**From:** Sandy Tat [<mailto:SandyTat@eurofinsUS.com>]  
**Sent:** Wednesday, August 27, 2014 4:41 PM  
**To:** David R. Daniels  
**Subject:** RE: Change TAT on submitted samples

Here you go. Please revise the TAT.

Thanks!

Sandy Tat  
*Project Manager Assistant*

---

**From:** David R. Daniels [<mailto:david.daniels@cardno.com>]  
**Sent:** Wednesday, August 27, 2014 4:00 PM  
**To:** Cecile L de Guia; Sandy Tat  
**Subject:** RE: Change TAT on submitted samples

I should have mentioned that we will want 5-day TAT.

David R. Daniels, PG 8737

PROJECT GEOLOGIST  
CARDNO ERI

Phone (+1) 707-766-2000 Fax (+1) 707-789-0414 Direct (+1) 707-766-2024 Mobile (+1) 707-338-6997  
Address 601 North McDowell Blvd., Petaluma, CA 94954-2312 USA  
Email [david.daniels@cardno.com](mailto:david.daniels@cardno.com) Web [www.cardno.com](http://www.cardno.com) [www.cardnoeri.com](http://www.cardnoeri.com)

---

**From:** David R. Daniels  
**Sent:** Wednesday, August 27, 2014 3:55 PM  
**To:** Cecile L de Guia ([CecileLdeGuia@eurofinsUS.com](mailto:CecileLdeGuia@eurofinsUS.com)); Sandy Tat ([SandyTat@eurofinsUS.com](mailto:SandyTat@eurofinsUS.com))  
**Subject:** Change TAT on submitted samples

We would like to change the TAT on some samples. I believe they arrived in Garden Grove yesterday. And should be on two COCs. They are for ExxonMobil site 99105. One of them is work order 14-08-1907. I'm not sure of the other one but

it is water samples for the same site. I'll revise the COCs if you can send them to me. We have a report due September 10<sup>th</sup>.

Thanks,

**David R. Daniels, PG 8737**  
PROJECT GEOLOGIST  
CARDNO ERI



Phone (+1) 707-766-2000 Fax (+1) 707-789-0414 Direct (+1) 707-766-2024 Mobile (+1) 707-338-6997  
Address 601 North McDowell Blvd., Petaluma, CA 94954-2312 USA  
Email [david.daniels@cardno.com](mailto:david.daniels@cardno.com) Web [www.cardno.com](http://www.cardno.com) [www.cardnoeri.com](http://www.cardnoeri.com)

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Eurofins  
Calscience, Inc.

7440 Lincoln Way  
Garden Grove, CA 92841

Phone: 714-895-5494  
Fax: 714-894-7501

**ExxonMobil**  
**14-08-1899**

Consultant Name: Cardno ERI Account #: NA PO#: Direct Bill Cardno ERI  
 Consultant Address: 601 N McDowell Invoice To: Direct Bill Cardno ERI  
 Consultant City/State/Zip: Petaluma, CA 94954 Report To: Greg Gurrus  
 ExxonMobil Project Mgr: Jennifer Sedachek Project Name: 02 2783 CX  
 Consultant Project Mgr: Greg Gurrus ExxonMobil Site #: 99105 Major Project (AFE #):  
 Consultant Telephone Number: (707) 766-2000 Fax No.: Site Address: 5301 San Pablo Avenue  
 Sampler Name (Print): JOE D. LEWIS Site City, State, Zip: Oakland, CA  
 Sampler Signature: Joe D. Lewis Oversight Agency: Alameda County Environmental Health

Sample ID	Field Point Name	Date Sampled	Time Sampled	No. of Containers Shipped	Grab	Composite	Field Filtered	Preservative											Matrix			Analyze For:			RUSH TAT (Pre-Schedule)	5-day TAT	Standard 10-day TAT	Due Date of Report										
								Methanol	Sodium Bisulfite	HCl	NaOH	H <sub>2</sub> O, Plastic	H <sub>2</sub> O, Glass	H <sub>2</sub> O <sub>2</sub>	Ice	Other	Nona	Groundwater	Wastewater	Drinking Water	Sludge	Soil	Air	Other (Specify):					Distilled Water	TPHd 8015 B	TPHg 8015 B	*Oxygenates 8260B*						
W-9.60-MW5	MW5	8/22	1435	6	X					X												X				X												
W-9.60-MW5	MW5	8/22	1435	2	X																				X													
W-11.20-MW6	MW6	8/22	1435	6	X					X															X	X												
W-11.20-MW6	MW6	8/22	1435	2	X																				X													
[REDACTED SECTION]																																						
W-13.10-MW8	MW8	8/22	1525	6	X					X																X	X											
W-13.10-MW8	MW8	8/22	1525	2	X																					X												

Comments/Special Instructions: Oxygenates by 8260B to include BTEX, MTBE, DIPE, ETBE, TAME, TBA 1,2-DCA, and EDB.

PLEASE E-MAIL ALL PDF FILES TO norcallabs@eri-us.com

GLOBAL ID # T0600101855

Relinquished by: Joe D. Lewis Date: 8/25/14 Time: 1250 Received by: T. Connolly Date: 8/25/14 Time: 1250

Relinquished by: T. Connolly Date: 8/25/14 Time: 1730 Received by: J. Lewis Date: 8/26/14 Time: 1400

Laboratory Comments:  
 Temperature Upon Receipt: Y N  
 Sample Containers Intact? Y N  
 VOCs Free of Headspace? Y N  
 QC Deliverables (please circle one)  
 Level 2  
 Level 3  
 Level 4  
 Site Specific - if yes, please attach pre-schedule w/ Calscience Project Manager or attach specific instructions

## Sandy Tat

---

**From:** David R. Daniels [david.daniels@cardno.com]  
**Sent:** Tuesday, August 26, 2014 3:39 PM  
**To:** Sandy Tat  
**Cc:** Azat Magdanov (Petaluma)  
**Subject:** RE: 14-08-1899  
**Attachments:** 14-08-1899 Revised.pdf

Revised COC attached.

Thank You

### David R. Daniels, PG 8737

PROJECT GEOLOGIST  
CARDNO. ERI

**Phone** (+1) 707-766-2000 **Fax** (+1) 707-789-0414 **Direct** (+1) 707-766-2024 **Mobile** (+1) 707-338-6997  
**Address** 601 North McDowell Blvd., Petaluma, CA 94954-2312 USA  
**Email** [david.daniels@cardno.com](mailto:david.daniels@cardno.com) **Web** [www.cardno.com](http://www.cardno.com) [www.cardnoeri.com](http://www.cardnoeri.com)

---

**From:** Sandy Tat [<mailto:SandyTat@eurofinsUS.com>]  
**Sent:** Tuesday, August 26, 2014 3:30 PM  
**To:** David R. Daniels; Azat Magdanov (Petaluma)  
**Subject:** 14-08-1899

Hi David / Azat,

Please fill in the depth for all the sample IDs. Please see attached Sample Anomaly Form.

Thanks!

Sandy Tat  
*Project Manager Assistant*

**Eurofins Calscience, Inc.**  
7440 Lincoln Way  
Garden Grove, CA 92841-1427  
USA  
Phone: (714) 895-5494  
Fax: (714) 894-7501

Email: [Sandytat@eurofinsUS.com](mailto:Sandytat@eurofinsUS.com)  
Website: [www.Calscience.com](http://www.Calscience.com)

Click [here](#) to report this email as spam.

Eurofins 7440 Lincoln Way  
Calscience, Inc. Garden Grove, CA 92841

Phone: 714-895-5494  
Fax: 714-894-7501



Consultant Name: Cardno ERI Account #: NA PO#: Direct Bill Cardno ERI  
Consultant Address: 601 N McDowell Invoice To: Direct Bill Cardno ERI  
Consultant City/State/Zip: Petaluma, CA 94954 Report To: Greg Gurs  
ExxonMobil Project Mgr: Jennifer Sedlachek Project Name: 02 2783 CX  
Consultant Project Mgr: Greg Gurs ExxonMobil Site #: 99105 Major Project (AFE #):  
Consultant Telephone Number: (707) 766-2000 Fax No.: Site Address: 6301 San Pablo Avenue  
Sampler Name (Print): JOE D. LEWIS Site City, State, Zip: Oakland, CA  
Sampler Signature: [Signature] Oversight Agency: Alameda County Environmental Health

Sample ID	Field Point Name	Date Sampled	Time Sampled	No. of Containers Shipped	Grab	Composite	Field Filtered	Preservative											Matrix			Analyze For:											RUSH TAT (Pre-Schedule)	5-day TAT	Standard 10-day TAT	Due Date of Report
								Methanol	Sodium Bisulfate	HCl	NaOH	H <sub>2</sub> SO <sub>4</sub> , Plastic	H <sub>2</sub> SO <sub>4</sub> , Glass	HNO <sub>3</sub>	Ice	Other	None	Groundwater	Wastewater	Drinking Water	Sediment	Soil	Air	Other (specify): Distilled Water	TPHd 8015 B	TPHg 8015 B	*Oxygenates 8260B*	TPHd 8015 B	TPHg 8015 B	*Oxygenates 8260B*	TPHd 8015 B	TPHg 8015 B				
1 W-9.60-MW5	MW5	8/22	1435	6	X					X					X		X						X	X							X					
W-9.60-MW5	MW5	8/22	1435	2	X										X		X					X	X								X					
2 W-11.20-MW6	MW6	8/22	1435	6	X					X					X		X							X	X						X					
W-11.20-MW6	MW6	8/22	1435	2	X										X		X					X	X								X					
<del>W-11.20-MW6</del>																																				
<del>W-11.20-MW6</del>																																				
<del>W-11.20-MW6</del>																																				
<del>W-11.20-MW6</del>																																				
<del>W-11.20-MW6</del>																																				
<del>W-11.20-MW6</del>																																				
3 W-13.10-MW8	MW8	8/22	1525	6	X					X					X		X							X	X						X					
W-13.10-MW8	MW8	8/22	1525	2	X										X		X					X	X								X					

Comments/Special Instructions: Oxygenates by 8260B to include BTEX, MTBE, DIPE, ETBE, TAME, TBA 1,2-DCA, and EDB.  
GLOBAL ID # T0600101855  
Relinquished by: [Signature] Date: 8/25/14 Time: 1250  
Received by: [Signature] Date: 8/25/14 Time: 1250  
Relinquished by: [Signature] Date: 8/25/14 Time: 1730  
Received by: [Signature] Date: 8/26/14 Time: 1440

Laboratory Comments:  
Temperature Upon Receipt: Y N  
Sample Containers Intact? Y N  
VOCs Free of Headspace? Y N  
QC Deliverables (please circle one)  
Level 2  
Level 3  
Level 4  
Site Specific - if yes, please attach pre-schedule w/ Calscience  
Project Manager or attach specific instructions







< WebShip > > > > >

800-322-5555 www.gso.com

1849

Ship From:  
ALAN KEMP  
CAL SCIENCE- CONCORD  
3083 COMMERCIAL CIRCLE #H  
CONCORD, CA 94520

Tracking #: 525470193



NPS

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7440 LINCOLN WAY  
GARDEN GROVE, CA 92841

ORC  
GARDEN GROVE

A

COD:  
\$0.00

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27970035

Reference:  
PACIFIC ECORISK, CARDNO ERI, PORT COSTA

Delivery Instructions:

Signature Type:  
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Print Date : 03/25/14 15:29 PM

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Edit Shipment

Finish

**LABEL INSTRUCTIONS:**

Do not copy or reprint this label for additional shipments - each package must have a unique barcode.

STEP 1 - Use the "Send Label to Printer" button on this page to print the shipping label on a laser or inkjet printer.

STEP 2 - Fold this page in half.

STEP 3 - Securely attach this label to your package, do not cover the barcode.

STEP 4 - Request an on-call pickup for your package, if you do not have scheduled daily pickup service or Drop-off your package at the nearest GSO drop box. Locate nearest GSO dropbox locations using this link.

**ADDITIONAL OPTIONS:**

Send Label Via Email

Create Return Label

**TERMS AND CONDITIONS:**

By giving us your shipment to deliver, you agree to all the service terms and conditions described in this section. Our liability for loss or damage to any package is limited to your actual damages or \$100 whichever is less, unless you pay for and declare a higher authorized value. If you declare a higher value and pay the additional charge, our liability will be the lesser of your declared value or the actual value of your loss or damage. In any event, we will not be liable for any damage, whether direct, incidental, special or consequential, in excess of the declared value of a shipment whether or not we had knowledge that such damage might be incurred including but not limited to loss of income or profit. We will not be liable for your acts or omissions, including but not limited to improper or insufficient packaging, securing, marking or addressing. Also, we will not be liable if you or the recipient violates any of the terms of our agreement. We will not be liable for loss, damage or delay caused by events we cannot control, including but not limited to acts of God, perils of the air, weather conditions, act of public enemies, war, strikes, or civil commotion. The highest declared value for our GSO Priority Letter or GSO Priority Package is \$500. For other shipments the highest declared value is \$10,000 unless your package contains items of "extraordinary value", in which case the highest declared value we allow is \$500. Items of "extraordinary value" include, but are not limited to, artwork, jewelry, furs, precious metals, tickets, negotiable instruments and other items with intrinsic value.

Calscience

WORK ORDER #: 14-08-11899

**SAMPLE RECEIPT FORM**

Cooler 1 of 1

CLIENT: Carduo EPI

DATE: 08/26/14

**TEMPERATURE:** Thermometer ID: SC1 (Criteria: 0.0°C – 6.0°C, not frozen except sediment/tissue)

Temperature 2.6 °C - 0.3°C (CF) = 2.3 °C  Blank  Sample

Sample(s) outside temperature criteria (PM/APM contacted by: \_\_\_\_\_)

Sample(s) outside temperature criteria but received on ice/chilled on same day of sampling.

Received at ambient temperature, placed on ice for transport by Courier.

Ambient Temperature:  Air  Filter

Checked by: 876

**CUSTODY SEALS INTACT:**

Cooler  \_\_\_\_\_  No (Not Intact)  Not Present  N/A Checked by: 876

Sample  \_\_\_\_\_  No (Not Intact)  Not Present Checked by: 862

SAMPLE CONDITION:	Yes	No	N/A
Chain-Of-Custody (COC) document(s) received with samples.....	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
COC document(s) received complete.....	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/> Collection date/time, matrix, and/or # of containers logged in based on sample labels. <input type="checkbox"/> No analysis requested. <input type="checkbox"/> Not relinquished. <input type="checkbox"/> No date/time relinquished.			
Sampler's name indicated on COC.....	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Sample container label(s) consistent with COC.....	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Sample container(s) intact and good condition.....	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Proper containers and sufficient volume for analyses requested.....	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Analyses received within holding time.....	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Aqueous samples received within 15-minute holding time			
<input type="checkbox"/> pH <input type="checkbox"/> Residual Chlorine <input type="checkbox"/> Dissolved Sulfides <input type="checkbox"/> Dissolved Oxygen.....	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Proper preservation noted on COC or sample container.....	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/> Unpreserved vials received for Volatiles analysis			
Volatile analysis container(s) free of headspace.....	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Tedlar bag(s) free of condensation.....	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

**CONTAINER TYPE:**

Solid:  4ozCGJ  8ozCGJ  16ozCGJ  Sleeve (\_\_\_\_)  EnCores®  TerraCores®  \_\_\_\_\_

Aqueous:  VOA  VOA  VOAna<sub>2</sub>  125AGB  125AGBh  125AGBp  1AGB  1AGBna<sub>2</sub>  1AGBs

500AGB  500AGJ  500AGJs  250AGB  250CGB  250CGBs  1PB  1PBna  500PB

250PB  250PBn  125PB  125PBzanna  100PJ  100PJna<sub>2</sub>  \_\_\_\_\_  \_\_\_\_\_  \_\_\_\_\_

Air:  Tedlar®  Canister Other:  \_\_\_\_\_ Trip Blank Lot#: \_\_\_\_\_ Labeled/Checked by: 862

Container: C: Clear A: Amber P: Plastic G: Glass J: Jar B: Bottle Z: Ziploc/Resealable Bag E: Envelope Reviewed by: 001

Preservative: h: HCL n: HNO<sub>3</sub> na<sub>2</sub>:Na<sub>2</sub>S<sub>2</sub>O<sub>3</sub> na: NaOH p: H<sub>3</sub>PO<sub>4</sub> s: H<sub>2</sub>SO<sub>4</sub> u: Ultra-pure zanna: ZnAc<sub>2</sub>+NaOH f: Filtered Scanned by: 001



Calscience

WORK ORDER #: 14-08-1 8 9 9

**SAMPLE ANOMALY FORM**

**SAMPLES - CONTAINERS & LABELS:**

**Comments:**

- Sample(s) NOT RECEIVED but listed on COC
- Sample(s) received but NOT LISTED on COC
- Holding time expired – list sample ID(s) and test
- Insufficient quantities for analysis – list test
- Improper container(s) used – list test
- Improper preservative used – list test
- No preservative noted on COC or label – list test & notify lab
- Sample labels illegible – note test/container type
- Sample label(s) do not match COC – Note in comments
  - Sample ID
  - Date and/or Time Collected
  - Project Information
  - # of Container(s)
  - Analysis
- Sample container(s) compromised – Note in comments
  - Water present in sample container
  - Broken
- Sample container(s) not labeled
- Air sample container(s) compromised – Note in comments
  - Flat
  - Very low in volume
  - Leaking (Not transferred - duplicate bag submitted)
  - Leaking (transferred into Calscience Tedlar® Bag\*)
  - Leaking (transferred into Client's Tedlar® Bag\*)
- Other: \_\_\_\_\_

\_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_

Labelled as:

(-1) W-9.60-MW5

(-2) W-11.20-MW6

(-3) W-13.10-MW8

(All collection dates and times match C.O.C.)

\_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_

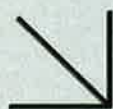
**HEADSPACE – Containers with Bubble > 6mm or ¼ inch:**

Sample #	Container ID(s)	# of Vials Received	Sample #	Container ID(s)	# of Vials Received	Sample #	Container ID(s)	# of Cont. received	Analysis

Comments: \_\_\_\_\_

\*Transferred at Client's request.

Initial / Date: Jo2 08 12/14



**WORK ORDER NUMBER: 14-08-1455**

*The difference is service*



AIR | SOIL | WATER | MARINE CHEMISTRY

**Analytical Report For**

**Client:** Cardno ERI

**Client Project Name:** ExxonMobil 99105/022783C

**Attention:** Greg Gurss  
601 North McDowell Blvd.  
Petaluma, CA 94954-2312

*Cecile A. de Guia*

Approved for release on 09/02/2014 by:  
Cecile deGuia  
Project Manager

ResultLink ▶

Email your PM ▶



Eurofins Calscience, Inc. (Calscience) certifies that the test results provided in this report meet all NELAC requirements for parameters for which accreditation is required or available. Any exceptions to NELAC requirements are noted in the case narrative. The original report of subcontracted analyses, if any, is attached to this report. The results in this report are limited to the sample(s) tested and any reproduction thereof must be made in its entirety. The client or recipient of this report is specifically prohibited from making material changes to said report and, to the extent that such changes are made, Calscience is not responsible, legally or otherwise. The client or recipient agrees to indemnify Calscience for any defense to any litigation which may arise.

# Contents

Client Project Name: ExxonMobil 99105/022783C  
Work Order Number: 14-08-1455

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**Condition Upon Receipt:**

Samples were received under Chain-of-Custody (COC) on 08/20/14. They were assigned to Work Order 14-08-1455.

Unless otherwise noted on the Sample Receiving forms all samples were received in good condition and within the recommended EPA temperature criteria for the methods noted on the COC. The COC and Sample Receiving Documents are integral elements of the analytical report and are presented at the back of the report.

**Holding Times:**

All samples were analyzed within prescribed holding times (HT) and/or in accordance with the Calscience Sample Acceptance Policy unless otherwise noted in the analytical report and/or comprehensive case narrative, if required.

Any parameter identified in 40CFR Part 136.3 Table II that is designated as "analyze immediately" with a holding time of  $\leq 15$  minutes (40CFR-136.3 Table II, footnote 4), is considered a "field" test and the reported results will be qualified as being received outside of the stated holding time unless received at the laboratory within 15 minutes of the collection time.

**Quality Control:**

All quality control parameters (QC) were within established control limits except where noted in the QC summary forms or described further within this report.

**Additional Comments:**

Air - Sorbent-extracted air methods (EPA TO-4A, EPA TO-10, EPA TO-13A, EPA TO-17): Analytical results are converted from mass/sample basis to mass/volume basis using client-supplied air volumes.

New York NELAP air certification does not certify for all reported methods and analytes, reference the accredited items here: [http://www.calscience.com/PDF/New\\_York.pdf](http://www.calscience.com/PDF/New_York.pdf)

Solid - Unless otherwise indicated, solid sample data is reported on a wet weight basis, not corrected for % moisture. All QC results are always reported on a wet weight basis.

**Subcontractor Information:**

Unless otherwise noted below (or on the subcontract form), no samples were subcontracted.

## Sample Summary

Client: Cardno ERI	Work Order:	14-08-1455
601 North McDowell Blvd.	Project Name:	ExxonMobil 99105/022783C
Petaluma, CA 94954-2312	PO Number:	022783C
	Date/Time Received:	08/20/14 09:30
	Number of Containers:	22

Attn: Greg Gurst

Sample Identification	Lab Number	Collection Date and Time	Number of Containers	Matrix
W-14-MW6	14-08-1455-1	08/18/14 12:30	7	Aqueous
W-14-MW7	14-08-1455-2	08/18/14 12:15	7	Aqueous
W-13-MW8	14-08-1455-3	08/18/14 13:00	8	Aqueous

## Analytical Report

Cardno ERI  
601 North McDowell Blvd.  
Petaluma, CA 94954-2312

Date Received: 08/20/14  
Work Order: 14-08-1455  
Preparation: EPA 3510C  
Method: EPA 8015B (M)  
Units: ug/L

Project: ExxonMobil 99105/022783C

Page 1 of 1

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
W-14-MW6	14-08-1455-1-G	08/18/14 12:30	Aqueous	GC 45	08/21/14	08/22/14 03:36	140821B01A
<u>Parameter</u>		<u>Result</u>		<u>RL</u>		<u>DF</u>	<u>Qualifiers</u>
TPH as Diesel		350		50		1.00	SG,HD
<u>Surrogate</u>		<u>Rec. (%)</u>		<u>Control Limits</u>		<u>Qualifiers</u>	
n-Octacosane		77		68-140			
W-14-MW7	14-08-1455-2-G	08/18/14 12:15	Aqueous	GC 45	08/21/14	08/22/14 03:56	140821B01A
<u>Parameter</u>		<u>Result</u>		<u>RL</u>		<u>DF</u>	<u>Qualifiers</u>
TPH as Diesel		ND		51		1.00	SG
<u>Surrogate</u>		<u>Rec. (%)</u>		<u>Control Limits</u>		<u>Qualifiers</u>	
n-Octacosane		71		68-140			
W-13-MW8	14-08-1455-3-G	08/18/14 13:00	Aqueous	GC 45	08/21/14	08/22/14 04:14	140821B01A
<u>Parameter</u>		<u>Result</u>		<u>RL</u>		<u>DF</u>	<u>Qualifiers</u>
TPH as Diesel		440		48		1.00	SG,HD
<u>Surrogate</u>		<u>Rec. (%)</u>		<u>Control Limits</u>		<u>Qualifiers</u>	
n-Octacosane		69		68-140			
Method Blank	099-15-304-796	N/A	Aqueous	GC 45	08/21/14	08/21/14 09:32	140821B01A
<u>Parameter</u>		<u>Result</u>		<u>RL</u>		<u>DF</u>	<u>Qualifiers</u>
TPH as Diesel		ND		50		1.00	
<u>Surrogate</u>		<u>Rec. (%)</u>		<u>Control Limits</u>		<u>Qualifiers</u>	
n-Octacosane		77		68-140			

Return to Contents

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.



## Analytical Report

Cardno ERI  
601 North McDowell Blvd.  
Petaluma, CA 94954-2312

Date Received: 08/20/14  
Work Order: 14-08-1455  
Preparation: EPA 5030C  
Method: EPA 8015B (M)  
Units: ug/L

Project: ExxonMobil 99105/022783C

Page 1 of 1

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
<b>W-14-MW6</b>	<b>14-08-1455-1-E</b>	<b>08/18/14 12:30</b>	<b>Aqueous</b>	<b>GC 42</b>	<b>08/25/14</b>	<b>08/25/14 19:42</b>	<b>140825L045</b>
<u>Parameter</u>		<u>Result</u>		<u>RL</u>		<u>DF</u>	<u>Qualifiers</u>
TPH as Gasoline		410		50		1.00	HD
<u>Surrogate</u>		<u>Rec. (%)</u>		<u>Control Limits</u>		<u>Qualifiers</u>	
1,4-Bromofluorobenzene		81		38-134			
<b>W-14-MW7</b>	<b>14-08-1455-2-E</b>	<b>08/18/14 12:15</b>	<b>Aqueous</b>	<b>GC 42</b>	<b>08/25/14</b>	<b>08/25/14 20:17</b>	<b>140825L045</b>
<u>Parameter</u>		<u>Result</u>		<u>RL</u>		<u>DF</u>	<u>Qualifiers</u>
TPH as Gasoline		ND		50		1.00	
<u>Surrogate</u>		<u>Rec. (%)</u>		<u>Control Limits</u>		<u>Qualifiers</u>	
1,4-Bromofluorobenzene		69		38-134			
<b>W-13-MW8</b>	<b>14-08-1455-3-E</b>	<b>08/18/14 13:00</b>	<b>Aqueous</b>	<b>GC 42</b>	<b>08/21/14</b>	<b>08/21/14 23:01</b>	<b>140821L038</b>
<u>Parameter</u>		<u>Result</u>		<u>RL</u>		<u>DF</u>	<u>Qualifiers</u>
TPH as Gasoline		1600		50		1.00	
<u>Surrogate</u>		<u>Rec. (%)</u>		<u>Control Limits</u>		<u>Qualifiers</u>	
1,4-Bromofluorobenzene		97		38-134			
<b>Method Blank</b>	<b>099-12-436-9511</b>	<b>N/A</b>	<b>Aqueous</b>	<b>GC 42</b>	<b>08/21/14</b>	<b>08/21/14 21:51</b>	<b>140821L038</b>
<u>Parameter</u>		<u>Result</u>		<u>RL</u>		<u>DF</u>	<u>Qualifiers</u>
TPH as Gasoline		ND		50		1.00	
<u>Surrogate</u>		<u>Rec. (%)</u>		<u>Control Limits</u>		<u>Qualifiers</u>	
1,4-Bromofluorobenzene		70		38-134			
<b>Method Blank</b>	<b>099-12-436-9516</b>	<b>N/A</b>	<b>Aqueous</b>	<b>GC 42</b>	<b>08/25/14</b>	<b>08/25/14 13:16</b>	<b>140825L045</b>
<u>Parameter</u>		<u>Result</u>		<u>RL</u>		<u>DF</u>	<u>Qualifiers</u>
TPH as Gasoline		ND		50		1.00	
<u>Surrogate</u>		<u>Rec. (%)</u>		<u>Control Limits</u>		<u>Qualifiers</u>	
1,4-Bromofluorobenzene		69		38-134			

Return to Contents ↑

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

## Analytical Report

Cardno ERI  
601 North McDowell Blvd.  
Petaluma, CA 94954-2312

Date Received: 08/20/14  
Work Order: 14-08-1455  
Preparation: EPA 5030C  
Method: EPA 8260B  
Units: ug/L

Project: ExxonMobil 99105/022783C

Page 1 of 4

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
W-14-MW6	14-08-1455-1-B	08/18/14 12:30	Aqueous	GC/MS L	08/22/14	08/22/14 19:51	140822L004

Parameter	Result	RL	DF	Qualifiers
Benzene	ND	0.50	1.00	
Toluene	ND	0.50	1.00	
Ethylbenzene	ND	0.50	1.00	
o-Xylene	ND	0.50	1.00	
p/m-Xylene	ND	0.50	1.00	
Xylenes (total)	ND	0.50	1.00	
Methyl-t-Butyl Ether (MTBE)	0.60	0.50	1.00	
Tert-Butyl Alcohol (TBA)	14	5.0	1.00	
Diisopropyl Ether (DIPE)	ND	0.50	1.00	
Ethyl-t-Butyl Ether (ETBE)	ND	0.50	1.00	
Tert-Amyl-Methyl Ether (TAME)	ND	0.50	1.00	
1,2-Dibromoethane	ND	0.50	1.00	
1,2-Dichloroethane	1.1	0.50	1.00	

Surrogate	Rec. (%)	Control Limits	Qualifiers
1,4-Bromofluorobenzene	93	68-120	
Dibromofluoromethane	101	80-127	
1,2-Dichloroethane-d4	104	80-128	
Toluene-d8	109	80-120	


  
Return to Contents

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

## Analytical Report

Cardno ERI  
601 North McDowell Blvd.  
Petaluma, CA 94954-2312

Date Received: 08/20/14  
Work Order: 14-08-1455  
Preparation: EPA 5030C  
Method: EPA 8260B  
Units: ug/L

Project: ExxonMobil 99105/022783C

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Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
W-14-MW7	14-08-1455-2-B	08/18/14 12:15	Aqueous	GC/MS L	08/22/14	08/22/14 20:20	140822L004

<u>Parameter</u>	<u>Result</u>	<u>RL</u>	<u>DF</u>	<u>Qualifiers</u>
Benzene	ND	0.50	1.00	
Toluene	ND	0.50	1.00	
Ethylbenzene	ND	0.50	1.00	
o-Xylene	ND	0.50	1.00	
p/m-Xylene	ND	0.50	1.00	
Xylenes (total)	ND	0.50	1.00	
Methyl-t-Butyl Ether (MTBE)	ND	0.50	1.00	
Tert-Butyl Alcohol (TBA)	21	5.0	1.00	
Diisopropyl Ether (DIPE)	ND	0.50	1.00	
Ethyl-t-Butyl Ether (ETBE)	ND	0.50	1.00	
Tert-Amyl-Methyl Ether (TAME)	ND	0.50	1.00	
1,2-Dibromoethane	ND	0.50	1.00	
1,2-Dichloroethane	3.1	0.50	1.00	

<u>Surrogate</u>	<u>Rec. (%)</u>	<u>Control Limits</u>	<u>Qualifiers</u>
1,4-Bromofluorobenzene	90	68-120	
Dibromofluoromethane	103	80-127	
1,2-Dichloroethane-d4	103	80-128	
Toluene-d8	103	80-120	


 Return to Contents

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

## Analytical Report

Cardno ERI  
 601 North McDowell Blvd.  
 Petaluma, CA 94954-2312

Date Received: 08/20/14  
 Work Order: 14-08-1455  
 Preparation: EPA 5030C  
 Method: EPA 8260B  
 Units: ug/L

Project: ExxonMobil 99105/022783C

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Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
W-13-MW8	14-08-1455-3-B	08/18/14 13:00	Aqueous	GC/MS L	08/22/14	08/22/14 20:48	140822L004

Parameter	Result	RL	DF	Qualifiers
Toluene	ND	0.50	1.00	
Ethylbenzene	19	0.50	1.00	
o-Xylene	2.6	0.50	1.00	
p/m-Xylene	41	0.50	1.00	
Xylenes (total)	44	0.50	1.00	
Methyl-t-Butyl Ether (MTBE)	ND	0.50	1.00	
Tert-Butyl Alcohol (TBA)	20	5.0	1.00	
Diisopropyl Ether (DIPE)	ND	0.50	1.00	
Ethyl-t-Butyl Ether (ETBE)	ND	0.50	1.00	
Tert-Amyl-Methyl Ether (TAME)	ND	0.50	1.00	
1,2-Dibromoethane	ND	0.50	1.00	
1,2-Dichloroethane	0.78	0.50	1.00	

Surrogate	Rec. (%)	Control Limits	Qualifiers
1,4-Bromofluorobenzene	98	68-120	
Dibromofluoromethane	92	80-127	
1,2-Dichloroethane-d4	93	80-128	
Toluene-d8	105	80-120	

W-13-MW8	14-08-1455-3-B	08/18/14 13:00	Aqueous	GC/MS L	08/22/14	08/22/14 21:16	140822L004
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Parameter	Result	RL	DF	Qualifiers
Benzene	39	1.0	2.00	

Surrogate	Rec. (%)	Control Limits	Qualifiers
1,4-Bromofluorobenzene	96	68-120	
Dibromofluoromethane	93	80-127	
1,2-Dichloroethane-d4	95	80-128	
Toluene-d8	101	80-120	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

## Analytical Report

Cardno ERI  
 601 North McDowell Blvd.  
 Petaluma, CA 94954-2312

Date Received: 08/20/14  
 Work Order: 14-08-1455  
 Preparation: EPA 5030C  
 Method: EPA 8260B  
 Units: ug/L

Project: ExxonMobil 99105/022783C

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Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
Method Blank	099-12-884-1190	N/A	Aqueous	GC/MS L	08/22/14	08/22/14 11:48	140822L004

<u>Parameter</u>	<u>Result</u>	<u>RL</u>	<u>DF</u>	<u>Qualifiers</u>
Benzene	ND	0.50	1.00	
Toluene	ND	0.50	1.00	
Ethylbenzene	ND	0.50	1.00	
o-Xylene	ND	0.50	1.00	
p/m-Xylene	ND	0.50	1.00	
Xylenes (total)	ND	0.50	1.00	
Methyl-t-Butyl Ether (MTBE)	ND	0.50	1.00	
Tert-Butyl Alcohol (TBA)	ND	5.0	1.00	
Diisopropyl Ether (DIPE)	ND	0.50	1.00	
Ethyl-t-Butyl Ether (ETBE)	ND	0.50	1.00	
Tert-Amyl-Methyl Ether (TAME)	ND	0.50	1.00	
1,2-Dibromoethane	ND	0.50	1.00	
1,2-Dichloroethane	ND	0.50	1.00	

<u>Surrogate</u>	<u>Rec. (%)</u>	<u>Control Limits</u>	<u>Qualifiers</u>
1,4-Bromofluorobenzene	89	68-120	
Dibromofluoromethane	109	80-127	
1,2-Dichloroethane-d4	109	80-128	
Toluene-d8	103	80-120	

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RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

**Quality Control - Spike/Spike Duplicate**

Cardno ERI  
601 North McDowell Blvd.  
Petaluma, CA 94954-2312

Date Received: 08/20/14  
Work Order: 14-08-1455  
Preparation: EPA 5030C  
Method: EPA 8015B (M)

Project: ExxonMobil 99105/022783C

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Quality Control Sample ID	Type	Matrix	Instrument	Date Prepared	Date Analyzed	MS/MSD Batch Number
W-13-MW8	Sample	Aqueous	GC 42	08/21/14	08/21/14 23:01	140821S023
W-13-MW8	Matrix Spike	Aqueous	GC 42	08/21/14	08/21/14 23:36	140821S023
W-13-MW8	Matrix Spike Duplicate	Aqueous	GC 42	08/21/14	08/22/14 00:11	140821S023

<u>Parameter</u>	<u>Sample Conc.</u>	<u>Spike Added</u>	<u>MS Conc.</u>	<u>MS %Rec.</u>	<u>MSD Conc.</u>	<u>MSD %Rec.</u>	<u>%Rec. CL</u>	<u>RPD</u>	<u>RPD CL</u>	<u>Qualifiers</u>
TPH as Gasoline	1558	2000	3406	92	3442	94	68-122	1	0-18	

**Quality Control - Spike/Spike Duplicate**

Cardno ERI  
601 North McDowell Blvd.  
Petaluma, CA 94954-2312

Date Received: 08/20/14  
Work Order: 14-08-1455  
Preparation: EPA 5030C  
Method: EPA 8015B (M)

Project: ExxonMobil 99105/022783C

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Quality Control Sample ID	Type	Matrix	Instrument	Date Prepared	Date Analyzed	MS/MSD Batch Number
14-08-1650-6	Sample	Aqueous	GC 42	08/25/14	08/25/14 14:26	140825S046
14-08-1650-6	Matrix Spike	Aqueous	GC 42	08/25/14	08/25/14 15:01	140825S046
14-08-1650-6	Matrix Spike Duplicate	Aqueous	GC 42	08/25/14	08/25/14 15:36	140825S046

<u>Parameter</u>	<u>Sample Conc.</u>	<u>Spike Added</u>	<u>MS Conc.</u>	<u>MS %Rec.</u>	<u>MSD Conc.</u>	<u>MSD %Rec.</u>	<u>%Rec. CL</u>	<u>RPD</u>	<u>RPD CL</u>	<u>Qualifiers</u>
TPH as Gasoline	437.1	2000	2362	96	2207	89	68-122	7	0-18	



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## Quality Control - Spike/Spike Duplicate

Cardno ERI  
601 North McDowell Blvd.  
Petaluma, CA 94954-2312

Date Received: 08/20/14  
Work Order: 14-08-1455  
Preparation: EPA 5030C  
Method: EPA 8260B

Project: ExxonMobil 99105/022783C

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Quality Control Sample ID	Type	Matrix	Instrument	Date Prepared	Date Analyzed	MS/MSD Batch Number
14-08-1510-1	Sample	Aqueous	GC/MS L	08/22/14	08/22/14 12:16	140822S002
14-08-1510-1	Matrix Spike	Aqueous	GC/MS L	08/22/14	08/22/14 13:41	140822S002
14-08-1510-1	Matrix Spike Duplicate	Aqueous	GC/MS L	08/22/14	08/22/14 14:10	140822S002

Parameter	Sample Conc.	Spike Added	MS Conc.	MS %Rec.	MSD Conc.	MSD %Rec.	%Rec. CL	RPD	RPD CL	Qualifiers
Benzene	ND	10.00	10.81	108	10.55	106	77-121	2	0-21	
Toluene	ND	10.00	10.96	110	10.53	105	78-120	4	0-25	
Ethylbenzene	ND	10.00	10.74	107	10.33	103	78-120	4	0-23	
o-Xylene	ND	10.00	11.05	110	10.85	108	74-122	2	0-24	
p/m-Xylene	ND	20.00	22.35	112	21.56	108	74-122	4	0-23	
Methyl-t-Butyl Ether (MTBE)	ND	10.00	9.253	93	10.22	102	57-144	10	0-31	
Tert-Butyl Alcohol (TBA)	ND	50.00	71.10	142	60.09	120	43-170	17	0-38	
Diisopropyl Ether (DIPE)	ND	10.00	10.41	104	11.00	110	70-130	6	0-35	
Ethyl-t-Butyl Ether (ETBE)	ND	10.00	9.232	92	10.03	100	70-130	8	0-35	
Tert-Amyl-Methyl Ether (TAME)	ND	10.00	8.554	86	8.892	89	70-130	4	0-35	
1,2-Dibromoethane	ND	10.00	9.999	100	10.19	102	74-130	2	0-22	
1,2-Dichloroethane	ND	10.00	10.00	100	10.33	103	72-130	3	0-25	

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RPD: Relative Percent Difference. CL: Control Limits





**Quality Control - LCS/LCSD**

Cardno ERI  
601 North McDowell Blvd.  
Petaluma, CA 94954-2312

Date Received: 08/20/14  
Work Order: 14-08-1455  
Preparation: EPA 3510C  
Method: EPA 8015B (M)

Project: ExxonMobil 99105/022783C

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Quality Control Sample ID	Type	Matrix	Instrument	Date Prepared	Date Analyzed	LCS/LCSD Batch Number
099-15-304-796	LCS	Aqueous	GC 45	08/21/14	08/21/14 09:51	140821B01A
099-15-304-796	LCSD	Aqueous	GC 45	08/21/14	08/21/14 10:09	140821B01A

<u>Parameter</u>	<u>Spike Added</u>	<u>LCS Conc.</u>	<u>LCS %Rec.</u>	<u>LCSD Conc.</u>	<u>LCSD %Rec.</u>	<u>%Rec. CL</u>	<u>RPD</u>	<u>RPD CL</u>	<u>Qualifiers</u>
TPH as Diesel	2000	1669	83	1728	86	75-117	3	0-13	

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RPD: Relative Percent Difference. CL: Control Limits

## Quality Control - LCS

Cardno ERI  
601 North McDowell Blvd.  
Petaluma, CA 94954-2312

Date Received: 08/20/14  
Work Order: 14-08-1455  
Preparation: EPA 5030C  
Method: EPA 8015B (M)

Project: ExxonMobil 99105/022783C

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Quality Control Sample ID	Type	Matrix	Instrument	Date Prepared	Date Analyzed	LCS Batch Number
099-12-436-9511	LCS	Aqueous	GC 42	08/21/14	08/21/14 22:26	140821L038
<u>Parameter</u>		<u>Spike Added</u>	<u>Conc. Recovered</u>	<u>LCS %Rec.</u>	<u>%Rec. CL</u>	<u>Qualifiers</u>
TPH as Gasoline		2000	1959	98	78-120	

## Quality Control - LCS

Cardno ERI  
601 North McDowell Blvd.  
Petaluma, CA 94954-2312

Date Received: 08/20/14  
Work Order: 14-08-1455  
Preparation: EPA 5030C  
Method: EPA 8015B (M)

Project: ExxonMobil 99105/022783C

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Quality Control Sample ID	Type	Matrix	Instrument	Date Prepared	Date Analyzed	LCS Batch Number
099-12-436-9516	LCS	Aqueous	GC 42	08/25/14	08/25/14 13:51	140825L045
<u>Parameter</u>		<u>Spike Added</u>	<u>Conc. Recovered</u>	<u>LCS %Rec.</u>	<u>%Rec. CL</u>	<u>Qualifiers</u>
TPH as Gasoline		2000	2057	103	78-120	

## Quality Control - LCS

Cardno ERI  
601 North McDowell Blvd.  
Petaluma, CA 94954-2312

Date Received: 08/20/14  
Work Order: 14-08-1455  
Preparation: EPA 5030C  
Method: EPA 8260B

Project: ExxonMobil 99105/022783C

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Quality Control Sample ID	Type	Matrix	Instrument	Date Prepared	Date Analyzed	LCS Batch Number	
<b>099-12-884-1190</b>	<b>LCS</b>	<b>Aqueous</b>	<b>GC/MS L</b>	<b>08/22/14</b>	<b>08/22/14 10:42</b>	<b>140822L004</b>	
<u>Parameter</u>		<u>Spike Added</u>	<u>Conc. Recovered</u>	<u>LCS %Rec.</u>	<u>%Rec. CL</u>	<u>ME CL</u>	<u>Qualifiers</u>
Benzene		10.00	10.82	108	80-120	73-127	
Toluene		10.00	10.88	109	80-120	73-127	
Ethylbenzene		10.00	10.73	107	80-120	73-127	
o-Xylene		10.00	11.21	112	80-120	73-127	
p/m-Xylene		20.00	22.67	113	80-120	73-127	
Methyl-t-Butyl Ether (MTBE)		10.00	9.440	94	75-123	67-131	
Tert-Butyl Alcohol (TBA)		50.00	47.06	94	80-120	73-127	
Diisopropyl Ether (DIPE)		10.00	10.54	105	73-121	65-129	
Ethyl-t-Butyl Ether (ETBE)		10.00	9.486	95	76-124	68-132	
Tert-Amyl-Methyl Ether (TAME)		10.00	8.610	86	80-120	73-127	
1,2-Dibromoethane		10.00	9.957	100	80-120	73-127	
1,2-Dichloroethane		10.00	10.08	101	80-122	73-129	

Total number of LCS compounds: 12

Total number of ME compounds: 0

Total number of ME compounds allowed: 1

LCS ME CL validation result: Pass

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RPD: Relative Percent Difference, CL: Control Limits

<u>Qualifiers</u>	<u>Definition</u>
AZ	Surrogate compound recovery was out of control due to matrix interference. The associated method blank surrogate spike compound was in control and, therefore, the sample data was reported without further clarification.
B	Analyte was present in the associated method blank.
BA	The MS/MSD RPD was out of control due to suspected matrix interference.
BB	Spike recovery and RPD control limits do not apply resulting from the parameter concentration in the sample exceeding the spike concentration by a factor of four or greater.
BU	Sample analyzed after holding time expired.
BV	Sample received after holding time expired.
DF	Reporting limits elevated due to matrix interferences.
E	Concentration exceeds the calibration range.
ET	Sample was extracted past end of recommended max. holding time.
GE	The PDS/PDSD or PES/PESD associated with this batch of samples was out of control due to suspected matrix interference.
HD	Chromat. profile inconsistent with pattern(s) of ref. fuel stdns.
HO	High concentration matrix spike recovery out of limits
HT	Analytical value calculated using results from associated tests.
HX	Recovery of the Matrix Spike (MS) or Matrix Spike Duplicate (MSD) compound was out of control due to matrix interference. The associated LCS was in control.
IL	Relative percent difference out of control.
J	Analyte was detected at a concentration below the reporting limit and above the laboratory method detection limit. Reported value is estimated.
JA	Analyte positively identified but quantitation is an estimate.
LD	Analyte presence was not confirmed by second column or GC/MS analysis.
LP	The LCS and/or LCSD recoveries for this analyte were above the upper control limit. The associated sample was non-detected. Therefore, the sample data was reported without further clarification.
LQ	LCS recovery above method control limits.
LR	LCS recovery below method control limits.
ND	Parameter not detected at the indicated reporting limit.
QO	Compound did not meet method-described identification guidelines. Identification was based on additional GC/MS characteristics.
RU	LCS Recovery Percentage is within Marginal Exceedance (ME) Control Limit range (+/- 4 SD from the mean).
SG	A silica gel cleanup procedure was performed.
SN	See applicable analysis comment.

Solid - Unless otherwise indicated, solid sample data is reported on a wet weight basis, not corrected for % moisture. All QC results are reported on a wet weight basis.

Any parameter identified in 40CFR Part 136.3 Table II that is designated as "analyze immediately" with a holding time of <= 15 minutes (40CFR-136.3 Table II, footnote 4), is considered a "field" test and the reported results will be qualified as being received outside of the stated holding time unless received at the laboratory within 15 minutes of the collection time.

A calculated total result (Example: Total Pesticides) is the summation of each component concentration and/or, if "J" flags are reported, estimated concentration. Component concentrations showing not detected (ND) are summed into the calculated total result as zero concentrations.



**GSO**  
1993-09-22 09:00:00

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800-322-5555 www.gso.com

<p><b>Ship From:</b> ALAN KEMP CAL SCIENCE- CONCORD 3063 COMMERCIAL CIRCLE #H CONCORD, CA 94520</p>	<p><b>Tracking #:</b> 525423326 </p>	<p><b>NPS</b></p>
<p><b>Ship To:</b> SAMPLE RECEIVING CEL 7440 LINCOLN WAY GARDEN GROVE, CA 92841</p>	<p><b>ORC</b> (1455) <b>A</b> <b>GARDEN GROVE</b></p>	
<p><b>COD:</b> \$0.00</p>	<p><b>D92845A</b>  27780394</p>	
<p><b>Reference:</b> CARDNO ERI, PHILLIPS 66, EKI</p> <p><b>Delivery Instructions:</b></p> <p><b>Signature Type:</b> SIGNATURE REQUIRED</p>	<p>Print Date: 06/19/14 14:52 PM</p>	

Package 1 of 1

Print All

**LABEL INSTRUCTIONS:**

- Do not copy or reprint this label for additional shipments - each package must have a unique barcode.
- STEP 1 - Use the "Send Label to Printer" button on this page to print the shipping label on a laser or inkjet printer.
- STEP 2 - Fold this page in half.
- STEP 3 - Securely attach this label to your package, do not cover the barcode.
- STEP 4 - Request an on-call pickup for your package, if you do not have scheduled daily pickup service or Drop-off your package at the nearest GSO drop box. Locate nearest GSO dropbox locations using this link.

**ADDITIONAL OPTIONS:**

**TERMS AND CONDITIONS:**

By giving us your shipment to deliver, you agree to all the service terms and conditions described in this section. Our liability for loss or damage to any package is limited to your actual damages or \$100 whichever is less, unless you pay for and declare a higher authorized value. If you declare a higher value and pay the additional charge, our liability will be the lesser of your declared value or the actual value of your loss or damage. In any event, we will not be liable for any damage, whether direct, incidental, special or consequential, in excess of the declared value of a shipment whether or not we had knowledge that such damage might be incurred including but not limited to loss of income or profit. We will not be liable for your acts or omissions, including but not limited to improper or insufficient packaging, securing, marking or addressing. Also, we will not be liable if you or the recipient violates any of the terms of our agreement. We will not be liable for loss, damage or delay caused by events we cannot control, including but not limited to acts of God, perils of the air, weather conditions, act of public enemies, war, strikes, or civil commotion. The highest declared value for our GSO Priority Letter or GSO Priority Package is \$500. For other shipments the highest declared value is \$10,000 unless your package contains items of "extraordinary value", in which case the highest declared value we allow is \$500. Items of "extraordinary value" include, but not limited to, artwork, jewelry, furs, precious metals, tickets, negotiable instruments and other items with intrinsic value.

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WORK ORDER #: 14-08-1455

SAMPLE RECEIPT FORM

Cooler 1 of 1

CLIENT: Cardno EPI

DATE: 08/20/14

TEMPERATURE: Thermometer ID: SC1 (Criteria: 0.0°C - 6.0°C, not frozen except sediment/tissue)

Temperature 3.6°C - 0.3°C (CF) = 3.3°C [X] Blank [ ] Sample

[ ] Sample(s) outside temperature criteria (PM/APM contacted by: \_\_\_\_\_)

[ ] Sample(s) outside temperature criteria but received on ice/chilled on same day of sampling.

[ ] Received at ambient temperature, placed on ice for transport by Courier.

Ambient Temperature: [ ] Air [ ] Filter

Checked by: [Signature]

CUSTODY SEALS INTACT:

[X] Cooler [ ] \_\_\_\_\_ [ ] No (Not Intact) [ ] Not Present [ ] N/A

Checked by: [Signature]

[ ] Sample [ ] \_\_\_\_\_ [ ] No (Not Intact) [X] Not Present

Checked by: 778

SAMPLE CONDITION:

Table with 4 columns: Item, Yes, No, N/A. Rows include Chain-Of-Custody (COC) document(s) received with samples, COC document(s) received complete, Sampler's name indicated on COC, Sample container label(s) consistent with COC, Sample container(s) intact and good condition, Proper containers and sufficient volume for analyses requested, Analyses received within holding time, Aqueous samples received within 15-minute holding time, Proper preservation noted on COC or sample container, Volatile analysis container(s) free of headspace, Tedlar bag(s) free of condensation.

CONTAINER TYPE:

Solid: [ ] 4ozCGJ [ ] 8ozCGJ [ ] 16ozCGJ [ ] Sleeve (\_\_\_\_) [ ] EnCores® [ ] TerraCores® [ ] \_\_\_\_\_

Aqueous: [ ] VOA [X] VOAh [ ] VOAna2 [ ] 125AGB [ ] 125AGBh [ ] 125AGBp [ ] 1AGB [ ] 1AGBna2 [ ] 1AGBs

[ ] 500AGB [X] 500AGJ [ ] 500AGJs [ ] 250AGB [ ] 250CGB [ ] 250CGBs [ ] 1PB [ ] 1PBna [ ] 500PB

[ ] 250PB [ ] 250PBn [ ] 125PB [ ] 125PBzanna [ ] 100PJ [ ] 100PJna2 [ ] \_\_\_\_\_ [ ] \_\_\_\_\_ [ ] \_\_\_\_\_

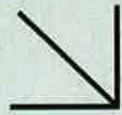
Air: [ ] Tedlar® [ ] Canister Other: [ ] \_\_\_\_\_ Trip Blank Lot#: \_\_\_\_\_ Labeled/Checked by: 778

Container: C: Clear A: Amber P: Plastic G: Glass J: Jar B: Bottle Z: Ziploc/Resealable Bag E: Envelope Reviewed by: [Signature]

Preservative: h: HCL n: HNO3 na2: Na2S2O3 na: NaOH p: H3PO4 s: H2SO4 u: Ultra-pure zna: ZnAc2+NaOH f: Filtered Scanned by: [Signature]

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**WORK ORDER NUMBER: 14-08-1447**

*The difference is service*



AIR | SOIL | WATER | MARINE CHEMISTRY

**Analytical Report For**

**Client:** Cardno ERI

**Client Project Name:** ExxonMobil 99105/022783C

**Attention:** Greg Gurss  
601 North McDowell Blvd.  
Petaluma, CA 94954-2312

*Cecile de Guia*

Approved for release on 09/03/2014 by:  
Cecile deGuia  
Project Manager

ResultLink ▶

Email your PM ▶



Eurofins Calscience, Inc. (Calscience) certifies that the test results provided in this report meet all NELAC requirements for parameters for which accreditation is required or available. Any exceptions to NELAC requirements are noted in the case narrative. The original report of subcontracted analyses, if any, is attached to this report. The results in this report are limited to the sample(s) tested and any reproduction thereof must be made in its entirety. The client or recipient of this report is specifically prohibited from making material changes to said report and, to the extent that such changes are made, Calscience is not responsible, legally or otherwise. The client or recipient agrees to indemnify Calscience for any defense to any litigation which may arise.



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 Work Order Number: 14-08-1447

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**Condition Upon Receipt:**

Samples were received under Chain-of-Custody (COC) on 08/20/14. They were assigned to Work Order 14-08-1447.

Unless otherwise noted on the Sample Receiving forms all samples were received in good condition and within the recommended EPA temperature criteria for the methods noted on the COC. The COC and Sample Receiving Documents are integral elements of the analytical report and are presented at the back of the report.

**Holding Times:**

All samples were analyzed within prescribed holding times (HT) and/or in accordance with the Calscience Sample Acceptance Policy unless otherwise noted in the analytical report and/or comprehensive case narrative, if required.

Any parameter identified in 40CFR Part 136.3 Table II that is designated as "analyze immediately" with a holding time of  $\leq 15$  minutes (40CFR-136.3 Table II, footnote 4), is considered a "field" test and the reported results will be qualified as being received outside of the stated holding time unless received at the laboratory within 15 minutes of the collection time.

**Quality Control:**

All quality control parameters (QC) were within established control limits except where noted in the QC summary forms or described further within this report.

**Additional Comments:**

Air - Sorbent-extracted air methods (EPA TO-4A, EPA TO-10, EPA TO-13A, EPA TO-17): Analytical results are converted from mass/sample basis to mass/volume basis using client-supplied air volumes.

New York NELAP air certification does not certify for all reported methods and analytes, reference the accredited items here: [http://www.calscience.com/PDF/New\\_York.pdf](http://www.calscience.com/PDF/New_York.pdf)

Solid - Unless otherwise indicated, solid sample data is reported on a wet weight basis, not corrected for % moisture. All QC results are always reported on a wet weight basis.

**Subcontractor Information:**

Unless otherwise noted below (or on the subcontract form), no samples were subcontracted.



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## Sample Summary

Client: Cardno ERI	Work Order:	14-08-1447
601 North McDowell Blvd.	Project Name:	ExxonMobil 99105/022783C
Petaluma, CA 94954-2312	PO Number:	022783C
	Date/Time Received:	08/20/14 09:50
	Number of Containers:	3

Attn: Greg Gurst

Sample Identification	Lab Number	Collection Date and Time	Number of Containers	Matrix
V-INF-MW6-2	14-08-1447-1	08/18/14 19:35	1	Air
V-INF-COMP-1	14-08-1447-2	08/18/14 20:35	1	Air
V-EFF-1	14-08-1447-3	08/18/14 20:30	1	Air



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## Analytical Report

Cardno ERI  
601 North McDowell Blvd.  
Petaluma, CA 94954-2312

Date Received: 08/20/14  
Work Order: 14-08-1447  
Preparation: N/A  
Method: EPA TO-15M  
Units: mg/m3

Project: ExxonMobil 99105/022783C

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Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
V-INF-MW6-2	14-08-1447-1-A	08/18/14 19:35	Air	GC/MS KKK	N/A	08/21/14 13:35	140820L01

Comment(s): - The method has been modified to use Tedlar Bags instead of Summa canisters and is not NY NELAC accredited.

Parameter	Result	RL	DF	Qualifiers
Acetone	ND	4.8	40.0	
Benzene	ND	0.064	40.0	
Benzyl Chloride	ND	0.31	40.0	
Bromodichloromethane	ND	0.13	40.0	
Bromoform	ND	0.21	40.0	
Bromomethane	ND	0.078	40.0	
2-Butanone	ND	0.18	40.0	
Carbon Disulfide	ND	1.2	40.0	
Carbon Tetrachloride	ND	0.13	40.0	
Chlorobenzene	ND	0.092	40.0	
Chloroethane	ND	0.053	40.0	
Chloroform	ND	0.098	40.0	
Chloromethane	ND	0.041	40.0	
Dibromochloromethane	ND	0.17	40.0	
Dichlorodifluoromethane	ND	0.099	40.0	
Diisopropyl Ether (DIPE)	ND	0.33	40.0	
1,1-Dichloroethane	ND	0.081	40.0	
1,1-Dichloroethene	ND	0.079	40.0	
1,2-Dibromoethane	ND	0.15	40.0	
Dichlorotetrafluoroethane	ND	0.56	40.0	
1,2-Dichlorobenzene	ND	0.12	40.0	
1,2-Dichloroethane	ND	0.081	40.0	
1,2-Dichloropropane	ND	0.092	40.0	
1,3-Dichlorobenzene	ND	0.12	40.0	
1,4-Dichlorobenzene	ND	0.12	40.0	
c-1,3-Dichloropropene	ND	0.091	40.0	
c-1,2-Dichloroethene	ND	0.079	40.0	
t-1,2-Dichloroethene	ND	0.079	40.0	
t-1,3-Dichloropropene	ND	0.18	40.0	
Ethyl-t-Butyl Ether (ETBE)	ND	0.33	40.0	
Ethylbenzene	0.36	0.087	40.0	
4-Ethyltoluene	0.10	0.098	40.0	
Hexachloro-1,3-Butadiene	ND	0.64	40.0	
2-Hexanone	ND	0.25	40.0	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.



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## Analytical Report

Cardno ERI  
601 North McDowell Blvd.  
Petaluma, CA 94954-2312

Date Received: 08/20/14  
Work Order: 14-08-1447  
Preparation: N/A  
Method: EPA TO-15M  
Units: mg/m3

Project: ExxonMobil 99105/022783C

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<u>Parameter</u>	<u>Result</u>	<u>RL</u>	<u>DF</u>	<u>Qualifiers</u>
Methyl-t-Butyl Ether (MTBE)	ND	0.29	40.0	
Methylene Chloride	ND	0.69	40.0	
4-Methyl-2-Pentanone	ND	0.25	40.0	
Naphthalene	ND	1.0	40.0	
o-Xylene	0.33	0.087	40.0	
p/m-Xylene	0.83	0.35	40.0	
Xylenes (total)	1.2	0.087	1.00	
Styrene	ND	0.26	40.0	
Tert-Amyl-Methyl Ether (TAME)	ND	0.33	40.0	
Tert-Butyl Alcohol (TBA)	ND	0.61	40.0	
Tetrachloroethene	ND	0.14	40.0	
Toluene	ND	0.75	40.0	
Trichloroethene	ND	0.11	40.0	
Trichlorofluoromethane	ND	0.22	40.0	
1,1,2-Trichloro-1,2,2-Trifluoroethane	ND	0.46	40.0	
1,1,1-Trichloroethane	ND	0.11	40.0	
1,1,2-Trichloroethane	ND	0.11	40.0	
1,3,5-Trimethylbenzene	0.11	0.098	40.0	
1,1,2,2-Tetrachloroethane	ND	0.27	40.0	
1,2,4-Trimethylbenzene	ND	0.29	40.0	
1,2,4-Trichlorobenzene	ND	0.59	40.0	
Vinyl Acetate	ND	0.28	40.0	
Vinyl Chloride	ND	0.051	40.0	

<u>Surrogate</u>	<u>Rec. (%)</u>	<u>Control Limits</u>	<u>Qualifiers</u>
1,4-Bromofluorobenzene	118	57-129	
1,2-Dichloroethane-d4	100	47-137	
Toluene-d8	89	78-156	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.



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Date Received: 08/20/14  
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Preparation: N/A  
Method: EPA TO-15M  
Units: mg/m3

Project: ExxonMobil 99105/022783C

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Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
V-INF-COMP-1	14-08-1447-2-A	08/18/14 20:35	Air	GC/MS II	N/A	08/21/14 11:36	140820L01

Comment(s): - The method has been modified to use Tedlar Bags instead of Summa canisters and is not NY NELAC accredited.

Parameter	Result	RL	DF	Qualifiers
Acetone	ND	1.2	10.0	
Benzene	2.0	0.016	10.0	
Benzyl Chloride	ND	0.078	10.0	
Bromodichloromethane	ND	0.034	10.0	
Bromoform	ND	0.052	10.0	
Bromomethane	ND	0.019	10.0	
2-Butanone	0.12	0.044	10.0	
Carbon Disulfide	ND	0.31	10.0	
Carbon Tetrachloride	ND	0.031	10.0	
Chlorobenzene	ND	0.023	10.0	
Chloroethane	ND	0.013	10.0	
Chloroform	ND	0.024	10.0	
Chloromethane	ND	0.010	10.0	
Dibromochloromethane	ND	0.043	10.0	
Dichlorodifluoromethane	ND	0.025	10.0	
Diisopropyl Ether (DIPE)	ND	0.084	10.0	
1,1-Dichloroethane	ND	0.020	10.0	
1,1-Dichloroethene	ND	0.020	10.0	
1,2-Dibromoethane	ND	0.038	10.0	
Dichlorotetrafluoroethane	ND	0.14	10.0	
1,2-Dichlorobenzene	ND	0.030	10.0	
1,2-Dichloroethane	ND	0.020	10.0	
1,2-Dichloropropane	ND	0.023	10.0	
1,3-Dichlorobenzene	ND	0.030	10.0	
1,4-Dichlorobenzene	ND	0.030	10.0	
c-1,3-Dichloropropene	ND	0.023	10.0	
c-1,2-Dichloroethene	ND	0.020	10.0	
t-1,2-Dichloroethene	ND	0.020	10.0	
t-1,3-Dichloropropene	ND	0.045	10.0	
Ethyl-t-Butyl Ether (ETBE)	ND	0.084	10.0	
Ethylbenzene	0.26	0.022	10.0	
4-Ethyltoluene	ND	0.025	10.0	
Hexachloro-1,3-Butadiene	ND	0.16	10.0	
2-Hexanone	ND	0.061	10.0	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.



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Petaluma, CA 94954-2312

Date Received: 08/20/14  
Work Order: 14-08-1447  
Preparation: N/A  
Method: EPA TO-15M  
Units: mg/m3

Project: ExxonMobil 99105/022783C

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<u>Parameter</u>	<u>Result</u>	<u>RL</u>	<u>DF</u>	<u>Qualifiers</u>
Methyl-t-Butyl Ether (MTBE)	ND	0.072	10.0	
Methylene Chloride	ND	0.17	10.0	
4-Methyl-2-Pentanone	ND	0.061	10.0	
Naphthalene	ND	0.26	10.0	
o-Xylene	0.083	0.022	10.0	
p/m-Xylene	0.23	0.087	10.0	
Xylenes (total)	0.31	0.022	1.00	
Styrene	ND	0.064	10.0	
Tert-Amyl-Methyl Ether (TAME)	ND	0.084	10.0	
Tert-Butyl Alcohol (TBA)	ND	0.15	10.0	
Tetrachloroethene	ND	0.034	10.0	
Toluene	ND	0.19	10.0	
Trichloroethene	ND	0.027	10.0	
Trichlorofluoromethane	ND	0.056	10.0	
1,1,2-Trichloro-1,2,2-Trifluoroethane	ND	0.11	10.0	
1,1,1-Trichloroethane	ND	0.027	10.0	
1,1,2-Trichloroethane	ND	0.027	10.0	
1,3,5-Trimethylbenzene	ND	0.025	10.0	
1,1,2,2-Tetrachloroethane	ND	0.069	10.0	
1,2,4-Trimethylbenzene	ND	0.074	10.0	
1,2,4-Trichlorobenzene	ND	0.15	10.0	
Vinyl Acetate	ND	0.070	10.0	
Vinyl Chloride	ND	0.013	10.0	
<u>Surrogate</u>	<u>Rec. (%)</u>	<u>Control Limits</u>	<u>Qualifiers</u>	
1,4-Bromofluorobenzene	107	57-129		
1,2-Dichloroethane-d4	85	47-137		
Toluene-d8	75	78-156		AZ

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.





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Petaluma, CA 94954-2312

Date Received: 08/20/14  
Work Order: 14-08-1447  
Preparation: N/A  
Method: EPA TO-15M  
Units: mg/m3

Project: ExxonMobil 99105/022783C

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Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
V-EFF-1	14-08-1447-3-A	08/18/14 20:30	Air	GC/MS II	N/A	08/20/14 17:34	140820L01

Comment(s): - The method has been modified to use Tedlar Bags instead of Summa canisters and is not NY NELAC accredited.

Parameter	Result	RL	DF	Qualifiers
Acetone	ND	0.12	1.00	
Benzene	0.0052	0.0016	1.00	
Benzyl Chloride	ND	0.0078	1.00	
Bromodichloromethane	ND	0.0034	1.00	
Bromoform	ND	0.0052	1.00	
Bromomethane	ND	0.0019	1.00	
2-Butanone	ND	0.0044	1.00	
Carbon Disulfide	ND	0.031	1.00	
Carbon Tetrachloride	ND	0.0031	1.00	
Chlorobenzene	ND	0.0023	1.00	
Chloroethane	ND	0.0013	1.00	
Chloroform	ND	0.0024	1.00	
Chloromethane	0.0011	0.0010	1.00	
Dibromochloromethane	ND	0.0043	1.00	
Dichlorodifluoromethane	ND	0.0025	1.00	
Diisopropyl Ether (DIPE)	ND	0.0084	1.00	
1,1-Dichloroethane	ND	0.0020	1.00	
1,1-Dichloroethene	ND	0.0020	1.00	
1,2-Dibromoethane	ND	0.0038	1.00	
Dichlorotetrafluoroethane	ND	0.014	1.00	
1,2-Dichlorobenzene	ND	0.0030	1.00	
1,2-Dichloroethane	ND	0.0020	1.00	
1,2-Dichloropropane	ND	0.0023	1.00	
1,3-Dichlorobenzene	ND	0.0030	1.00	
1,4-Dichlorobenzene	ND	0.0030	1.00	
c-1,3-Dichloropropene	ND	0.0023	1.00	
c-1,2-Dichloroethene	ND	0.0020	1.00	
t-1,2-Dichloroethene	ND	0.0020	1.00	
t-1,3-Dichloropropene	ND	0.0045	1.00	
Ethyl-t-Butyl Ether (ETBE)	ND	0.0084	1.00	
Ethylbenzene	ND	0.0022	1.00	
4-Ethyltoluene	ND	0.0025	1.00	
Hexachloro-1,3-Butadiene	ND	0.016	1.00	
2-Hexanone	ND	0.0061	1.00	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.



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## Analytical Report

Cardno ERI  
601 North McDowell Blvd.  
Petaluma, CA 94954-2312

Date Received: 08/20/14  
Work Order: 14-08-1447  
Preparation: N/A  
Method: EPA TO-15M  
Units: mg/m3

Project: ExxonMobil 99105/022783C

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<u>Parameter</u>	<u>Result</u>	<u>RL</u>	<u>DF</u>	<u>Qualifiers</u>
Methyl-t-Butyl Ether (MTBE)	ND	0.0072	1.00	
Methylene Chloride	ND	0.017	1.00	
4-Methyl-2-Pentanone	ND	0.0061	1.00	
Naphthalene	ND	0.026	1.00	
o-Xylene	ND	0.0022	1.00	
p/m-Xylene	ND	0.0087	1.00	
Xylenes (total)	ND	0.0022	1.00	
Styrene	ND	0.0064	1.00	
Tert-Amyl-Methyl Ether (TAME)	ND	0.0084	1.00	
Tert-Butyl Alcohol (TBA)	ND	0.015	1.00	
Tetrachloroethene	ND	0.0034	1.00	
Toluene	ND	0.019	1.00	
Trichloroethene	ND	0.0027	1.00	
Trichlorofluoromethane	ND	0.0056	1.00	
1,1,2-Trichloro-1,2,2-Trifluoroethane	ND	0.011	1.00	
1,1,1-Trichloroethane	ND	0.0027	1.00	
1,1,2-Trichloroethane	ND	0.0027	1.00	
1,3,5-Trimethylbenzene	ND	0.0025	1.00	
1,1,2,2-Tetrachloroethane	ND	0.0069	1.00	
1,2,4-Trimethylbenzene	ND	0.0074	1.00	
1,2,4-Trichlorobenzene	ND	0.015	1.00	
Vinyl Acetate	ND	0.0070	1.00	
Vinyl Chloride	ND	0.0013	1.00	

<u>Surrogate</u>	<u>Rec. (%)</u>	<u>Control Limits</u>	<u>Qualifiers</u>
1,4-Bromofluorobenzene	98	57-129	
1,2-Dichloroethane-d4	103	47-137	
Toluene-d8	97	78-156	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.



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Petaluma, CA 94954-2312

Date Received: 08/20/14  
Work Order: 14-08-1447  
Preparation: N/A  
Method: EPA TO-15M  
Units: mg/m3

Project: ExxonMobil 99105/022783C

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Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
Method Blank	099-12-981-4659	N/A	Air	GC/MS II	N/A	08/20/14 16:44	140820L01

Parameter	Result	RL	DF	Qualifiers
Acetone	ND	0.12	1.00	
Benzene	ND	0.0016	1.00	
Benzyl Chloride	ND	0.0078	1.00	
Bromodichloromethane	ND	0.0034	1.00	
Bromoform	ND	0.0052	1.00	
Bromomethane	ND	0.0019	1.00	
2-Butanone	ND	0.0044	1.00	
Carbon Disulfide	ND	0.031	1.00	
Carbon Tetrachloride	ND	0.0031	1.00	
Chlorobenzene	ND	0.0023	1.00	
Chloroethane	ND	0.0013	1.00	
Chloroform	ND	0.0024	1.00	
Chloromethane	ND	0.0010	1.00	
Dibromochloromethane	ND	0.0043	1.00	
Dichlorodifluoromethane	ND	0.0025	1.00	
Diisopropyl Ether (DIPE)	ND	0.0084	1.00	
1,1-Dichloroethane	ND	0.0020	1.00	
1,1-Dichloroethene	ND	0.0020	1.00	
1,2-Dibromoethane	ND	0.0038	1.00	
Dichlorotetrafluoroethane	ND	0.014	1.00	
1,2-Dichlorobenzene	ND	0.0030	1.00	
1,2-Dichloroethane	ND	0.0020	1.00	
1,2-Dichloropropane	ND	0.0023	1.00	
1,3-Dichlorobenzene	ND	0.0030	1.00	
1,4-Dichlorobenzene	ND	0.0030	1.00	
c-1,3-Dichloropropene	ND	0.0023	1.00	
c-1,2-Dichloroethene	ND	0.0020	1.00	
t-1,2-Dichloroethene	ND	0.0020	1.00	
t-1,3-Dichloropropene	ND	0.0045	1.00	
Ethyl-t-Butyl Ether (ETBE)	ND	0.0084	1.00	
Ethylbenzene	ND	0.0022	1.00	
4-Ethyltoluene	ND	0.0025	1.00	
Hexachloro-1,3-Butadiene	ND	0.016	1.00	
2-Hexanone	ND	0.0061	1.00	
Methyl-t-Butyl Ether (MTBE)	ND	0.0072	1.00	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

## Analytical Report

Cardno ERI  
601 North McDowell Blvd.  
Petaluma, CA 94954-2312

Date Received: 08/20/14  
Work Order: 14-08-1447  
Preparation: N/A  
Method: EPA TO-15M  
Units: mg/m3

Project: ExxonMobil 99105/022783C

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<u>Parameter</u>	<u>Result</u>	<u>RL</u>	<u>DF</u>	<u>Qualifiers</u>
Methylene Chloride	ND	0.017	1.00	
4-Methyl-2-Pentanone	ND	0.0061	1.00	
Naphthalene	ND	0.026	1.00	
o-Xylene	ND	0.0022	1.00	
p/m-Xylene	ND	0.0087	1.00	
Xylenes (total)	ND	0.0022	1.00	
Styrene	ND	0.0064	1.00	
Tert-Amyl-Methyl Ether (TAME)	ND	0.0084	1.00	
Tert-Butyl Alcohol (TBA)	ND	0.015	1.00	
Tetrachloroethene	ND	0.0034	1.00	
Toluene	ND	0.019	1.00	
Trichloroethene	ND	0.0027	1.00	
Trichlorofluoromethane	ND	0.0056	1.00	
1,1,2-Trichloro-1,2,2-Trifluoroethane	ND	0.011	1.00	
1,1,1-Trichloroethane	ND	0.0027	1.00	
1,1,2-Trichloroethane	ND	0.0027	1.00	
1,3,5-Trimethylbenzene	ND	0.0025	1.00	
1,1,2,2-Tetrachloroethane	ND	0.0069	1.00	
1,2,4-Trimethylbenzene	ND	0.0074	1.00	
1,2,4-Trichlorobenzene	ND	0.015	1.00	
Vinyl Acetate	ND	0.0070	1.00	
Vinyl Chloride	ND	0.0013	1.00	
<u>Surrogate</u>	<u>Rec. (%)</u>	<u>Control Limits</u>	<u>Qualifiers</u>	
1,4-Bromofluorobenzene	95	57-129		
1,2-Dichloroethane-d4	109	47-137		
Toluene-d8	96	78-156		

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.



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Date Received: 08/20/14  
Work Order: 14-08-1447  
Preparation: N/A  
Method: EPA TO-15M  
Units: mg/m3

Project: ExxonMobil 99105/022783C

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Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
Method Blank	099-12-981-4660	N/A	Air	GC/MS KKK	N/A	08/21/14 02:55	140820L01

Parameter	Result	RL	DF	Qualifiers
Acetone	ND	0.12	1.00	
Benzene	ND	0.0016	1.00	
Benzyl Chloride	ND	0.0078	1.00	
Bromodichloromethane	ND	0.0034	1.00	
Bromoform	ND	0.0052	1.00	
Bromomethane	ND	0.0019	1.00	
2-Butanone	ND	0.0044	1.00	
Carbon Disulfide	ND	0.031	1.00	
Carbon Tetrachloride	ND	0.0031	1.00	
Chlorobenzene	ND	0.0023	1.00	
Chloroethane	ND	0.0013	1.00	
Chloroform	ND	0.0024	1.00	
Chloromethane	ND	0.0010	1.00	
Dibromochloromethane	ND	0.0043	1.00	
Dichlorodifluoromethane	ND	0.0025	1.00	
Diisopropyl Ether (DIPE)	ND	0.0084	1.00	
1,1-Dichloroethane	ND	0.0020	1.00	
1,1-Dichloroethene	ND	0.0020	1.00	
1,2-Dibromoethane	ND	0.0038	1.00	
Dichlorotetrafluoroethane	ND	0.014	1.00	
1,2-Dichlorobenzene	ND	0.0030	1.00	
1,2-Dichloroethane	ND	0.0020	1.00	
1,2-Dichloropropane	ND	0.0023	1.00	
1,3-Dichlorobenzene	ND	0.0030	1.00	
1,4-Dichlorobenzene	ND	0.0030	1.00	
c-1,3-Dichloropropene	ND	0.0023	1.00	
c-1,2-Dichloroethene	ND	0.0020	1.00	
t-1,2-Dichloroethene	ND	0.0020	1.00	
t-1,3-Dichloropropene	ND	0.0045	1.00	
Ethyl-t-Butyl Ether (ETBE)	ND	0.0084	1.00	
Ethylbenzene	ND	0.0022	1.00	
4-Ethyltoluene	ND	0.0025	1.00	
Hexachloro-1,3-Butadiene	ND	0.016	1.00	
2-Hexanone	ND	0.0061	1.00	
Methyl-t-Butyl Ether (MTBE)	ND	0.0072	1.00	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.



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Petaluma, CA 94954-2312

Date Received: 08/20/14  
Work Order: 14-08-1447  
Preparation: N/A  
Method: EPA TO-15M  
Units: mg/m3

Project: ExxonMobil 99105/022783C

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<u>Parameter</u>	<u>Result</u>	<u>RL</u>	<u>DF</u>	<u>Qualifiers</u>
Methylene Chloride	ND	0.017	1.00	
4-Methyl-2-Pentanone	ND	0.0061	1.00	
Naphthalene	ND	0.026	1.00	
o-Xylene	ND	0.0022	1.00	
p/m-Xylene	ND	0.0087	1.00	
Xylenes (total)	ND	0.0022	1.00	
Styrene	ND	0.0064	1.00	
Tert-Amyl-Methyl Ether (TAME)	ND	0.0084	1.00	
Tert-Butyl Alcohol (TBA)	ND	0.015	1.00	
Tetrachloroethene	ND	0.0034	1.00	
Toluene	ND	0.019	1.00	
Trichloroethene	ND	0.0027	1.00	
Trichlorofluoromethane	ND	0.0056	1.00	
1,1,2-Trichloro-1,2,2-Trifluoroethane	ND	0.011	1.00	
1,1,1-Trichloroethane	ND	0.0027	1.00	
1,1,2-Trichloroethane	ND	0.0027	1.00	
1,3,5-Trimethylbenzene	ND	0.0025	1.00	
1,1,2,2-Tetrachloroethane	ND	0.0069	1.00	
1,2,4-Trimethylbenzene	ND	0.0074	1.00	
1,2,4-Trichlorobenzene	ND	0.015	1.00	
Vinyl Acetate	ND	0.0070	1.00	
Vinyl Chloride	ND	0.0013	1.00	

<u>Surrogate</u>	<u>Rec. (%)</u>	<u>Control Limits</u>	<u>Qualifiers</u>
1,4-Bromofluorobenzene	99	57-129	
1,2-Dichloroethane-d4	104	47-137	
Toluene-d8	101	78-156	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.



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## Analytical Report

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Petaluma, CA 94954-2312

Date Received: 08/20/14  
Work Order: 14-08-1447  
Preparation: N/A  
Method: EPA TO-3M  
Units: mg/m3

Project: ExxonMobil 99105/022783C

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Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
V-INF-MW6-2	14-08-1447-1-A	08/18/14 19:35	Air	GC 60	N/A	08/20/14 13:49	140820L01
<u>Parameter</u>		<u>Result</u>		<u>RL</u>		<u>DF</u>	<u>Qualifiers</u>
TPH as Gasoline		2000		17		2.50	
V-INF-COMP-1	14-08-1447-2-A	08/18/14 20:35	Air	GC 60	N/A	08/20/14 12:18	140820L01
<u>Parameter</u>		<u>Result</u>		<u>RL</u>		<u>DF</u>	<u>Qualifiers</u>
TPH as Gasoline		250		7.0		1.00	
V-EFF-1	14-08-1447-3-A	08/18/14 20:30	Air	GC 60	N/A	08/20/14 11:43	140820L01
<u>Parameter</u>		<u>Result</u>		<u>RL</u>		<u>DF</u>	<u>Qualifiers</u>
TPH as Gasoline		22		7.0		1.00	
Method Blank	098-01-005-5749	N/A	Air	GC 60	N/A	08/20/14 09:50	140820L01
<u>Parameter</u>		<u>Result</u>		<u>RL</u>		<u>DF</u>	<u>Qualifiers</u>
TPH as Gasoline		ND		7.0		1.00	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.



Calscience

## Quality Control - Sample Duplicate

Cardno ERI  
601 North McDowell Blvd.  
Petaluma, CA 94954-2312

Date Received: 08/20/14  
Work Order: 14-08-1447  
Preparation: N/A  
Method: EPA TO-3M

Project: ExxonMobil 99105/022783C

Page 1 of 1

Quality Control Sample ID	Type	Matrix	Instrument	Date Prepared	Date Analyzed	Duplicate Batch Number
V-INF-MW6-2	Sample	Air	GC 60	N/A	08/20/14 13:49	140820D01
V-INF-MW6-2	Sample Duplicate	Air	GC 60	N/A	08/20/14 14:01	140820D01

<u>Parameter</u>	<u>Sample Conc.</u>	<u>DUP Conc.</u>	<u>RPD</u>	<u>RPD CL</u>	<u>Qualifiers</u>
TPH as Gasoline	1987	1969	1	0-20	

RPD: Relative Percent Difference. CL: Control Limits





Calscience

## Quality Control - LCS/LCSD

Cardno ERI  
601 North McDowell Blvd.  
Petaluma, CA 94954-2312

Date Received: 08/20/14  
Work Order: 14-08-1447  
Preparation: N/A  
Method: EPA TO-15M

Project: ExxonMobil 99105/022783C

Page 1 of 5

Quality Control Sample ID	Type	Matrix	Instrument	Date Prepared	Date Analyzed	LCS/LCSD Batch Number				
099-12-981-4659	LCS	Air	GC/MS II	N/A	08/20/14 14:12	140820L01				
099-12-981-4659	LCSD	Air	GC/MS II	N/A	08/20/14 15:03	140820L01				
Parameter	Spike Added	LCS Conc.	LCS %Rec.	LCSD Conc.	LCSD %Rec.	%Rec. CL	ME CL	RPD	RPD CL	Qualifiers
Acetone	0.05939	0.05961	100	0.05601	94	50-150	33-167	6	0-35	
Benzene	0.07987	0.08996	113	0.09041	113	60-156	44-172	0	0-40	
Benzyl Chloride	0.1294	0.1644	127	0.1618	125	50-150	33-167	2	0-35	
Bromodichloromethane	0.1675	0.1800	107	0.1815	108	50-150	33-167	1	0-35	
Bromoform	0.2584	0.3138	121	0.3074	119	50-150	33-167	2	0-38	
Bromomethane	0.09708	0.09476	98	0.09222	95	50-150	33-167	3	0-35	
2-Butanone	0.07373	0.07814	106	0.07874	107	50-150	33-167	1	0-35	
Carbon Disulfide	0.07785	0.07688	99	0.07715	99	50-150	33-167	0	0-35	
Carbon Tetrachloride	0.1573	0.1650	105	0.1671	106	64-154	49-169	1	0-32	
Chlorobenzene	0.1151	0.1370	119	0.1338	116	50-150	33-167	2	0-35	
Chloroethane	0.06596	0.06484	98	0.06254	95	50-150	33-167	4	0-35	
Chloroform	0.1221	0.1192	98	0.1202	98	50-150	33-167	1	0-35	
Chloromethane	0.05163	0.05052	98	0.04976	96	50-150	33-167	2	0-35	
Dibromochloromethane	0.2130	0.2577	121	0.2533	119	50-150	33-167	2	0-35	
Dichlorodifluoromethane	0.1236	0.1182	96	0.1206	98	50-150	33-167	2	0-35	
Diisopropyl Ether (DIPE)	0.1045	0.1034	99	0.1050	100	60-140	47-153	1	0-30	
1,1-Dichloroethane	0.1012	0.1020	101	0.1019	101	50-150	33-167	0	0-35	
1,1-Dichloroethene	0.09912	0.09955	100	0.09399	95	50-150	33-167	6	0-35	
1,2-Dibromoethane	0.1921	0.2415	126	0.2365	123	54-144	39-159	2	0-36	
Dichlorotetrafluoroethane	0.1748	0.1689	97	0.1659	95	50-150	33-167	2	0-35	
1,2-Dichlorobenzene	0.1503	0.1798	120	0.1770	118	34-160	13-181	2	0-47	
1,2-Dichloroethane	0.1012	0.1034	102	0.1039	103	69-153	55-167	0	0-35	
1,2-Dichloropropane	0.1155	0.1264	109	0.1274	110	67-157	52-172	1	0-35	
1,3-Dichlorobenzene	0.1503	0.1857	124	0.1823	121	50-150	33-167	2	0-35	
1,4-Dichlorobenzene	0.1503	0.1894	126	0.1856	124	36-156	16-176	2	0-47	
c-1,3-Dichloropropene	0.1135	0.1392	123	0.1397	123	61-157	45-173	0	0-35	
c-1,2-Dichloroethene	0.09912	0.1074	108	0.1080	109	50-150	33-167	1	0-35	
t-1,2-Dichloroethene	0.09912	0.1046	106	0.1044	105	50-150	33-167	0	0-35	
t-1,3-Dichloropropene	0.1135	0.1464	129	0.1465	129	50-150	33-167	0	0-35	
Ethyl-t-Butyl Ether (ETBE)	0.1045	0.1091	104	0.1099	105	60-140	47-153	1	0-30	
Ethylbenzene	0.1086	0.1435	132	0.1404	129	52-154	35-171	2	0-38	
4-Ethyltoluene	0.1229	0.1603	130	0.1572	128	50-150	33-167	2	0-35	
Hexachloro-1,3-Butadiene	0.2666	0.2723	102	0.2662	100	50-150	33-167	2	0-35	
2-Hexanone	0.1024	0.1208	118	0.1177	115	50-150	33-167	3	0-35	
Methyl-t-Butyl Ether (MTBE)	0.09013	0.09479	105	0.09483	105	50-150	33-167	0	0-35	
Methylene Chloride	0.08684	0.08019	92	0.07730	89	50-150	33-167	4	0-35	

RPD: Relative Percent Difference. CL: Control Limits



Calscience

## Quality Control - LCS/LCSD

Cardno ERI  
601 North McDowell Blvd.  
Petaluma, CA 94954-2312

Date Received: 08/20/14  
Work Order: 14-08-1447  
Preparation: N/A  
Method: EPA TO-15M

Project: ExxonMobil 99105/022783C

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Parameter	Spike Added	LCS Conc.	LCS %Rec.	LCSD Conc.	LCSD %Rec.	%Rec. CL	ME CL	RPD	RPD CL	Qualifiers
4-Methyl-2-Pentanone	0.1024	0.1109	108	0.1113	109	50-150	33-167	0	0-35	
Naphthalene	0.1311	0.1455	111	0.1452	111	40-190	15-215	0	0-30	
o-Xylene	0.1086	0.1357	125	0.1337	123	52-148	36-164	1	0-38	
p/m-Xylene	0.2171	0.2771	128	0.2697	124	42-156	23-175	3	0-41	
Styrene	0.1065	0.1355	127	0.1326	124	50-150	33-167	2	0-35	
Tert-Amyl-Methyl Ether (TAME)	0.1045	0.1167	112	0.1170	112	60-140	47-153	0	0-30	
Tert-Butyl Alcohol (TBA)	0.1516	0.1607	106	0.1339	88	60-140	47-153	18	0-30	
Tetrachloroethene	0.1696	0.2028	120	0.1999	118	56-152	40-168	1	0-40	
Toluene	0.09421	0.1164	124	0.1143	121	56-146	41-161	2	0-43	
Trichloroethene	0.1343	0.1517	113	0.1527	114	63-159	47-175	1	0-34	
Trichlorofluoromethane	0.1405	0.1400	100	0.1270	90	50-150	33-167	10	0-35	
1,1,2-Trichloro-1,2,2-Trifluoroethane	0.1916	0.1928	101	0.1942	101	50-150	33-167	1	0-35	
1,1,1-Trichloroethane	0.1364	0.1373	101	0.1379	101	50-150	33-167	0	0-35	
1,1,2-Trichloroethane	0.1364	0.1494	110	0.1493	109	65-149	51-163	0	0-37	
1,3,5-Trimethylbenzene	0.1229	0.1528	124	0.1506	123	50-150	33-167	1	0-35	
1,1,2,2-Tetrachloroethane	0.1716	0.2017	118	0.1996	116	50-150	33-167	1	0-35	
1,2,4-Trimethylbenzene	0.1229	0.1448	118	0.1417	115	50-150	33-167	2	0-35	
1,2,4-Trichlorobenzene	0.1855	0.2220	120	0.2197	118	50-150	33-167	1	0-35	
Vinyl Acetate	0.08803	0.09447	107	0.09465	108	50-150	33-167	0	0-35	
Vinyl Chloride	0.06391	0.06243	98	0.06181	97	45-177	23-199	1	0-36	

Total number of LCS compounds: 56

Total number of ME compounds: 0

Total number of ME compounds allowed: 3

LCS ME CL validation result: Pass

RPD: Relative Percent Difference. CL: Control Limits



Calscience

## Quality Control - LCS/LCSD

Cardno ERI  
601 North McDowell Blvd.  
Petaluma, CA 94954-2312

Date Received: 08/20/14  
Work Order: 14-08-1447  
Preparation: N/A  
Method: EPA TO-15M

Project: ExxonMobil 99105/022783C

Page 3 of 5

Quality Control Sample ID	Type	Matrix	Instrument	Date Prepared	Date Analyzed	LCS/LCSD Batch Number				
099-12-981-4660	LCS	Air	GC/MS KKK	N/A	08/20/14 23:33	140820L01				
099-12-981-4660	LCSD	Air	GC/MS KKK	N/A	08/21/14 00:24	140820L01				
Parameter	Spike Added	LCS Conc.	LCS %Rec.	LCSD Conc.	LCSD %Rec.	%Rec. CL	ME CL	RPD	RPD CL	Qualifiers
Acetone	0.05939	0.05859	99	0.05417	91	50-150	33-167	8	0-35	
Benzene	0.07987	0.08406	105	0.07616	95	60-156	44-172	10	0-40	
Benzyl Chloride	0.1294	0.1203	93	0.1107	86	50-150	33-167	8	0-35	
Bromodichloromethane	0.1675	0.1742	104	0.1604	96	50-150	33-167	8	0-35	
Bromoform	0.2584	0.2995	116	0.2780	108	50-150	33-167	7	0-38	
Bromomethane	0.09708	0.08950	92	0.08553	88	50-150	33-167	5	0-35	
2-Butanone	0.07373	0.07471	101	0.06927	94	50-150	33-167	8	0-35	
Carbon Disulfide	0.07785	0.08085	104	0.07556	97	50-150	33-167	7	0-35	
Carbon Tetrachloride	0.1573	0.1658	105	0.1505	96	64-154	49-169	10	0-32	
Chlorobenzene	0.1151	0.1157	101	0.1071	93	50-150	33-167	8	0-35	
Chloroethane	0.06596	0.05819	88	0.05481	83	50-150	33-167	6	0-35	
Chloroform	0.1221	0.1170	96	0.1097	90	50-150	33-167	6	0-35	
Chloromethane	0.05163	0.04598	89	0.05076	98	50-150	33-167	10	0-35	
Dibromochloromethane	0.2130	0.2283	107	0.2101	99	50-150	33-167	8	0-35	
Dichlorodifluoromethane	0.1236	0.1095	89	0.1047	85	50-150	33-167	4	0-35	
Diisopropyl Ether (DIPE)	0.1045	0.09254	89	0.08813	84	60-140	47-153	5	0-30	
1,1-Dichloroethane	0.1012	0.1014	100	0.09299	92	50-150	33-167	9	0-35	
1,1-Dichloroethene	0.09912	0.1006	101	0.09290	94	50-150	33-167	8	0-35	
1,2-Dibromoethane	0.1921	0.2023	105	0.1858	97	54-144	39-159	8	0-36	
Dichlorotetrafluoroethane	0.1748	0.1251	72	0.1240	71	50-150	33-167	1	0-35	
1,2-Dichlorobenzene	0.1503	0.1311	87	0.1194	79	34-160	13-181	9	0-47	
1,2-Dichloroethane	0.1012	0.09815	97	0.09143	90	69-153	55-167	7	0-35	
1,2-Dichloropropane	0.1155	0.1195	103	0.1088	94	67-157	52-172	9	0-35	
1,3-Dichlorobenzene	0.1503	0.1453	97	0.1331	89	50-150	33-167	9	0-35	
1,4-Dichlorobenzene	0.1503	0.1420	94	0.1301	87	36-156	16-176	9	0-47	
c-1,3-Dichloropropene	0.1135	0.1225	108	0.1117	98	61-157	45-173	9	0-35	
c-1,2-Dichloroethene	0.09912	0.09857	99	0.09007	91	50-150	33-167	9	0-35	
t-1,2-Dichloroethene	0.09912	0.09543	96	0.08682	88	50-150	33-167	9	0-35	
t-1,3-Dichloropropene	0.1135	0.1326	117	0.1214	107	50-150	33-167	9	0-35	
Ethyl-t-Butyl Ether (ETBE)	0.1045	0.09477	91	0.08833	85	60-140	47-153	7	0-30	
Ethylbenzene	0.1086	0.1126	104	0.1039	96	52-154	35-171	8	0-38	
4-Ethyltoluene	0.1229	0.1245	101	0.1155	94	50-150	33-167	7	0-35	
Hexachloro-1,3-Butadiene	0.2666	0.3379	127	0.2970	111	50-150	33-167	13	0-35	
2-Hexanone	0.1024	0.1073	105	0.09935	97	50-150	33-167	8	0-35	
Methyl-t-Butyl Ether (MTBE)	0.09013	0.08936	99	0.08258	92	50-150	33-167	8	0-35	
Methylene Chloride	0.08684	0.08078	93	0.07426	86	50-150	33-167	8	0-35	

RPD: Relative Percent Difference. CL: Control Limits



Calscience

## Quality Control - LCS/LCSD

Cardno ERI  
601 North McDowell Blvd.  
Petaluma, CA 94954-2312

Date Received: 08/20/14  
Work Order: 14-08-1447  
Preparation: N/A  
Method: EPA TO-15M

Project: ExxonMobil 99105/022783C

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<u>Parameter</u>	<u>Spike Added</u>	<u>LCS Conc.</u>	<u>LCS %Rec.</u>	<u>LCSD Conc.</u>	<u>LCSD %Rec.</u>	<u>%Rec. CL</u>	<u>ME CL</u>	<u>RPD</u>	<u>RPD CL</u>	<u>Qualifiers</u>
4-Methyl-2-Pentanone	0.1024	0.1072	105	0.09930	97	50-150	33-167	8	0-35	
Naphthalene	0.1311	0.1416	108	0.1201	92	40-190	15-215	16	0-30	
o-Xylene	0.1086	0.1109	102	0.1040	96	52-148	36-164	6	0-38	
p/m-Xylene	0.2171	0.2326	107	0.2186	101	42-156	23-175	6	0-41	
Styrene	0.1065	0.1013	95	0.09327	88	50-150	33-167	8	0-35	
Tert-Amyl-Methyl Ether (TAME)	0.1045	0.09557	91	0.08730	84	60-140	47-153	9	0-30	
Tert-Butyl Alcohol (TBA)	0.1516	0.1519	100	0.1410	93	60-140	47-153	7	0-30	
Tetrachloroethene	0.1696	0.1847	109	0.1685	99	56-152	40-168	9	0-40	
Toluene	0.09421	0.09847	105	0.09071	96	56-146	41-161	8	0-43	
Trichloroethene	0.1343	0.1365	102	0.1260	94	63-159	47-175	8	0-34	
Trichlorofluoromethane	0.1405	0.1332	95	0.1234	88	50-150	33-167	8	0-35	
1,1,2-Trichloro-1,2,2-Trifluoroethane	0.1916	0.2004	105	0.1875	98	50-150	33-167	7	0-35	
1,1,1-Trichloroethane	0.1364	0.1271	93	0.1184	87	50-150	33-167	7	0-35	
1,1,2-Trichloroethane	0.1364	0.1437	105	0.1322	97	65-149	51-163	8	0-37	
1,3,5-Trimethylbenzene	0.1229	0.1180	96	0.1090	89	50-150	33-167	8	0-35	
1,1,2,2-Tetrachloroethane	0.1716	0.1670	97	0.1562	91	50-150	33-167	7	0-35	
1,2,4-Trimethylbenzene	0.1229	0.1212	99	0.1129	92	50-150	33-167	7	0-35	
1,2,4-Trichlorobenzene	0.1855	0.2145	116	0.1802	97	50-150	33-167	17	0-35	
Vinyl Acetate	0.08803	0.08061	92	0.07479	85	50-150	33-167	7	0-35	
Vinyl Chloride	0.06391	0.05671	89	0.05517	86	45-177	23-199	3	0-36	

Total number of LCS compounds: 56

Total number of ME compounds: 0

Total number of ME compounds allowed: 3

LCS ME CL validation result: Pass

RPD: Relative Percent Difference. CL: Control Limits

## Quality Control - LCS

Cardno ERI	Date Received:	08/20/14
601 North McDowell Blvd.	Work Order:	14-08-1447
Petaluma, CA 94954-2312	Preparation:	N/A
	Method:	EPA TO-3M
Project: ExxonMobil 99105/022783C		Page 5 of 5

Quality Control Sample ID	Type	Matrix	Instrument	Date Prepared	Date Analyzed	LCS Batch Number
098-01-005-5749	LCS	Air	GC 60	N/A	08/20/14 09:28	140820L01
<u>Parameter</u>		<u>Spike Added</u>	<u>Conc. Recovered</u>	<u>LCS %Rec.</u>	<u>%Rec. CL</u>	<u>Qualifiers</u>
TPH as Gasoline		932.5	949.0	102	80-120	

RPD: Relative Percent Difference. CL: Control Limits

<u>Qualifiers</u>	<u>Definition</u>
AZ	Surrogate compound recovery was out of control due to matrix interference. The associated method blank surrogate spike compound was in control and, therefore, the sample data was reported without further clarification.
B	Analyte was present in the associated method blank.
BA	The MS/MSD RPD was out of control due to suspected matrix interference.
BB	Spike recovery and RPD control limits do not apply resulting from the parameter concentration in the sample exceeding the spike concentration by a factor of four or greater.
BU	Sample analyzed after holding time expired.
BV	Sample received after holding time expired.
DF	Reporting limits elevated due to matrix interferences.
E	Concentration exceeds the calibration range.
ET	Sample was extracted past end of recommended max. holding time.
GE	The PDS/PDSD or PES/PESD associated with this batch of samples was out of control due to suspected matrix interference.
HD	Chromat. profile inconsistent with pattern(s) of ref. fuel stnds.
HO	High concentration matrix spike recovery out of limits
HT	Analytical value calculated using results from associated tests.
HX	Recovery of the Matrix Spike (MS) or Matrix Spike Duplicate (MSD) compound was out of control due to matrix interference. The associated LCS was in control.
IL	Relative percent difference out of control.
J	Analyte was detected at a concentration below the reporting limit and above the laboratory method detection limit. Reported value is estimated.
JA	Analyte positively identified but quantitation is an estimate.
LD	Analyte presence was not confirmed by second column or GC/MS analysis.
LP	The LCS and/or LCSD recoveries for this analyte were above the upper control limit. The associated sample was non-detected. Therefore, the sample data was reported without further clarification.
LQ	LCS recovery above method control limits.
LR	LCS recovery below method control limits.
ND	Parameter not detected at the indicated reporting limit.
QO	Compound did not meet method-described identification guidelines. Identification was based on additional GC/MS characteristics.
RU	LCS Recovery Percentage is within Marginal Exceedance (ME) Control Limit range (+/- 4 SD from the mean).
SG	A silica gel cleanup procedure was performed.
SN	See applicable analysis comment.

Solid - Unless otherwise indicated, solid sample data is reported on a wet weight basis, not corrected for % moisture. All QC results are reported on a wet weight basis.

Any parameter identified in 40CFR Part 136.3 Table II that is designated as "analyze immediately" with a holding time of  $\leq$  15 minutes (40CFR-136.3 Table II, footnote 4), is considered a "field" test and the reported results will be qualified as being received outside of the stated holding time unless received at the laboratory within 15 minutes of the collection time.

A calculated total result (Example: Total Pesticides) is the summation of each component concentration and/or, if "J" flags are reported, estimated concentration. Component concentrations showing not detected (ND) are summed into the calculated total result as zero concentrations.





**< WebShip > > > >**

800-322-5555 www.gso.com

1447

Ship From:  
ALAN KEMP  
CAL SCIENCE- CONCORD  
5563 COMMERCIAL CIRCLE #H  
CONCORD, CA 94520

Ship To:  
SAMPLE RECEIVING  
CEL  
7440 LINCOLN WAY  
GARDEN GROVE, CA 92841

COD:  
\$0.00

Reference:  
CARDNO ERI, CRA, STANTEC

Delivery instructions:

Signature Type:  
SIGNATURE REQUIRED

Tracking #: 525423352



NPS

**ORC**  
GARDEN GROVE

**A**

**D92845A**



27780432

Print Date : 08/19/14 14:52 PM

Package 1 of 1

Send Label To Printer

Print All

Edit Shipment

Finish

**LABEL INSTRUCTIONS:**

Do not copy or reprint this label for additional shipments - each package must have a unique barcode.

STEP 1 - Use the "Send Label to Printer" button on this page to print the shipping label on a laser or inkjet printer.

STEP 2 - Fold this page in half.

STEP 3 - Securely attach this label to your package, do not cover the barcode.

STEP 4 - Request an on-call pickup for your package, if you do not have scheduled daily pickup service or Drop-off your package at the nearest GSO drop box. Locate nearest GSO dropbox locations using this link.

**ADDITIONAL OPTIONS:**

Send Label Via Email

Create Return Label

**TERMS AND CONDITIONS:**

By giving us your shipment to deliver, you agree to all the service terms and conditions described in this section. Our liability for loss or damage to any package is limited to your actual damages or \$100 whichever is less, unless you pay for and declare a higher authorized value. If you declare a higher value and pay the additional charge, our liability will be the lesser of your declared value or the actual value of your loss or damage. In any event, we will not be liable for any damage, whether direct, incidental, special or consequential, in excess of the declared value of a shipment whether or not we had knowledge that such damage might be incurred including but not limited to loss of income or profit. We will not be liable for your acts or omissions, including but not limited to improper or insufficient packaging, securing, marking or addressing. Also, we will not be liable if you or the recipient violates any of the terms of our agreement. We will not be liable for loss, damage or delay caused by events we cannot control, including but not limited to acts of God, perils of the air, weather conditions, act of public enemies, war, strikes, or civil commotion. The highest declared value for our GSO Priority Letter or GSO Priority Package is \$500. For other shipments the highest declared value is \$10,000 unless your package contains items of "extraordinary value", in which case the highest declared value we allow is \$500. Items of "extraordinary value" include, but are not limited to, artwork, jewelry, furs, precious metals, tickets, negotiable instruments and other items with intrinsic value.



Calscience

WORK ORDER #: 14-08-01447

**SAMPLE RECEIPT FORM**

Box 1 of 1

CLIENT: Cardno ERI

DATE: 08/20/14

**TEMPERATURE:** Thermometer ID: SC1 (Criteria: 0.0 °C – 6.0 °C, not frozen except sediment/tissue)

Temperature \_\_\_\_\_ °C - 0.3 °C (CF) = \_\_\_\_\_ °C     Blank     Sample

Sample(s) outside temperature criteria (PM/APM contacted by: \_\_\_\_\_)

Sample(s) outside temperature criteria but received on ice/chilled on same day of sampling.

Received at ambient temperature, placed on ice for transport by Courier.

Ambient Temperature:  Air     Filter

Checked by: 300

**CUSTODY SEALS INTACT:**

Box     \_\_\_\_\_

No (Not Intact)

Not Present

N/A

Checked by: 300

Sample     \_\_\_\_\_

No (Not Intact)

Not Present

Checked by: 300

**SAMPLE CONDITION:**

	Yes	No	N/A
Chain-Of-Custody (COC) document(s) received with samples.....	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
COC document(s) received complete.....	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Collection date/time, matrix, and/or # of containers logged in based on sample labels.

No analysis requested.     Not relinquished.     No date/time relinquished.

Sampler's name indicated on COC.....	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Sample container label(s) consistent with COC.....	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Sample container(s) intact and good condition.....	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Proper containers and sufficient volume for analyses requested.....	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Analyses received within holding time.....	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Aqueous samples received within 15-minute holding time

pH     Residual Chlorine     Dissolved Sulfides     Dissolved Oxygen.....           

Proper preservation noted on COC or sample container.....	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
<input type="checkbox"/> Unpreserved vials received for Volatiles analysis			
Volatile analysis container(s) free of headspace.....	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Tedlar bag(s) free of condensation.....	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

**CONTAINER TYPE:**

Solid:  4ozCGJ     8ozCGJ     16ozCGJ     Sleeve (\_\_\_\_)     EnCores®     TerraCores®     \_\_\_\_\_

Aqueous:  VOA     VOAh     VOAna<sub>2</sub>     125AGB     125AGBh     125AGBp     1AGB     1AGBna<sub>2</sub>     1AGBs

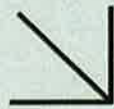
500AGB     500AGJ     500AGJs     250AGB     250CGB     250CGBs     1PB     1PBna     500PB

250PB     250PBn     125PB     125PBzanna     100PJ     100PJna<sub>2</sub>     \_\_\_\_\_     \_\_\_\_\_     \_\_\_\_\_

Air:  Tedlar®     Canister    Other:  \_\_\_\_\_    Trip Blank Lot#: \_\_\_\_\_    Labeled/Checked by: 300

Container: C: Clear A: Amber P: Plastic G: Glass J: Jar B: Bottle Z: Ziploc/Resealable Bag E: Envelope    Reviewed by: 300

Preservative: h: HCL n: HNO<sub>3</sub> na<sub>2</sub>: Na<sub>2</sub>S<sub>2</sub>O<sub>3</sub> na: NaOH p: H<sub>3</sub>PO<sub>4</sub> s: H<sub>2</sub>SO<sub>4</sub> u: Ultra-pure zanna: ZnAc<sub>2</sub>+NaOH f: Filtered    Scanned by: 300



**WORK ORDER NUMBER: 14-08-1448**

*The difference is service*



AIR | SOIL | WATER | MARINE CHEMISTRY

**Analytical Report For**

**Client:** Cardno ERI

**Client Project Name:** ExxonMobil 99105/022783C

**Attention:** Greg Gurr  
601 North McDowell Blvd.  
Petaluma, CA 94954-2312

*Cecile de Guia*

Approved for release on 09/03/2014 by:  
Cecile deGuia  
Project Manager

ResultLink ▶

Email your PM ▶



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Client Project Name: ExxonMobil 99105/022783C  
Work Order Number: 14-08-1448

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Work Order: 14-08-1448

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**Condition Upon Receipt:**

Samples were received under Chain-of-Custody (COC) on 08/20/14. They were assigned to Work Order 14-08-1448.

Unless otherwise noted on the Sample Receiving forms all samples were received in good condition and within the recommended EPA temperature criteria for the methods noted on the COC. The COC and Sample Receiving Documents are integral elements of the analytical report and are presented at the back of the report.

**Holding Times:**

All samples were analyzed within prescribed holding times (HT) and/or in accordance with the Calscience Sample Acceptance Policy unless otherwise noted in the analytical report and/or comprehensive case narrative, if required.

Any parameter identified in 40CFR Part 136.3 Table II that is designated as "analyze immediately" with a holding time of  $\leq 15$  minutes (40CFR-136.3 Table II, footnote 4), is considered a "field" test and the reported results will be qualified as being received outside of the stated holding time unless received at the laboratory within 15 minutes of the collection time.

**Quality Control:**

All quality control parameters (QC) were within established control limits except where noted in the QC summary forms or described further within this report.

**Additional Comments:**

Air - Sorbent-extracted air methods (EPA TO-4A, EPA TO-10, EPA TO-13A, EPA TO-17): Analytical results are converted from mass/sample basis to mass/volume basis using client-supplied air volumes.

New York NELAP air certification does not certify for all reported methods and analytes, reference the accredited items here: [http://www.calscience.com/PDF/New\\_York.pdf](http://www.calscience.com/PDF/New_York.pdf)

Solid - Unless otherwise indicated, solid sample data is reported on a wet weight basis, not corrected for % moisture. All QC results are always reported on a wet weight basis.

**Subcontractor Information:**

Unless otherwise noted below (or on the subcontract form), no samples were subcontracted.

## Sample Summary

<b>Client:</b> Cardno ERI	<b>Work Order:</b>	14-08-1448
601 North McDowell Blvd.	<b>Project Name:</b>	ExxonMobil 99105/022783C
Petaluma, CA 94954-2312	<b>PO Number:</b>	022783C
	<b>Date/Time Received:</b>	08/20/14 09:50
	<b>Number of Containers:</b>	3

**Attn:** Greg Gurst

Sample Identification	Lab Number	Collection Date and Time	Number of Containers	Matrix
V-INF-MW5-1	14-08-1448-1	08/18/14 15:30	1	Air
V-INF-MW5-2	14-08-1448-2	08/18/14 17:30	1	Air
V-INF-MW6-1	14-08-1448-3	08/18/14 17:35	1	Air

## Analytical Report

Cardno ERI  
601 North McDowell Blvd.  
Petaluma, CA 94954-2312

Date Received: 08/20/14  
Work Order: 14-08-1448  
Preparation: N/A  
Method: EPA TO-15M  
Units: mg/m3

Project: ExxonMobil 99105/022783C

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Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
V-INF-MW5-1	14-08-1448-1-A	08/18/14 15:30	Air	GC/MS KKK	N/A	08/21/14 11:08	140820L01

Comment(s): - The method has been modified to use Tedlar Bags instead of Summa canisters and is not NY NELAC accredited.

<u>Parameter</u>	<u>Result</u>	<u>RL</u>	<u>DF</u>	<u>Qualifiers</u>
Acetone	ND	4.8	40.0	
Benzene	1.5	0.064	40.0	
Benzyl Chloride	ND	0.31	40.0	
Bromodichloromethane	ND	0.13	40.0	
Bromoform	ND	0.21	40.0	
Bromomethane	ND	0.078	40.0	
2-Butanone	ND	0.18	40.0	
Carbon Disulfide	ND	1.2	40.0	
Carbon Tetrachloride	ND	0.13	40.0	
Chlorobenzene	ND	0.092	40.0	
Chloroethane	ND	0.053	40.0	
Chloroform	ND	0.098	40.0	
Chloromethane	ND	0.041	40.0	
Dibromochloromethane	ND	0.17	40.0	
Dichlorodifluoromethane	ND	0.099	40.0	
Diisopropyl Ether (DIPE)	ND	0.33	40.0	
1,1-Dichloroethane	ND	0.081	40.0	
1,1-Dichloroethene	ND	0.079	40.0	
1,2-Dibromoethane	ND	0.15	40.0	
Dichlorotetrafluoroethane	ND	0.56	40.0	
1,2-Dichlorobenzene	ND	0.12	40.0	
1,2-Dichloroethane	ND	0.081	40.0	
1,2-Dichloropropane	ND	0.092	40.0	
1,3-Dichlorobenzene	ND	0.12	40.0	
1,4-Dichlorobenzene	ND	0.12	40.0	
c-1,3-Dichloropropene	ND	0.091	40.0	
c-1,2-Dichloroethene	ND	0.079	40.0	
t-1,2-Dichloroethene	ND	0.079	40.0	
t-1,3-Dichloropropene	ND	0.18	40.0	
Ethyl-t-Butyl Ether (ETBE)	ND	0.33	40.0	
Ethylbenzene	0.21	0.087	40.0	
4-Ethyltoluene	ND	0.098	40.0	
Hexachloro-1,3-Butadiene	ND	0.64	40.0	
2-Hexanone	ND	0.25	40.0	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

## Analytical Report

Cardno ERI  
601 North McDowell Blvd.  
Petaluma, CA 94954-2312

Date Received: 08/20/14  
Work Order: 14-08-1448  
Preparation: N/A  
Method: EPA TO-15M  
Units: mg/m3

Project: ExxonMobil 99105/022783C

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<u>Parameter</u>	<u>Result</u>	<u>RL</u>	<u>DF</u>	<u>Qualifiers</u>
Methyl-t-Butyl Ether (MTBE)	ND	0.29	40.0	
Methylene Chloride	ND	0.69	40.0	
4-Methyl-2-Pentanone	ND	0.25	40.0	
Naphthalene	ND	1.0	40.0	
o-Xylene	ND	0.087	40.0	
p/m-Xylene	ND	0.35	40.0	
Xylenes (total)	ND	0.087	1.00	
Styrene	ND	0.26	40.0	
Tert-Amyl-Methyl Ether (TAME)	ND	0.33	40.0	
Tert-Butyl Alcohol (TBA)	ND	0.61	40.0	
Tetrachloroethene	ND	0.14	40.0	
Toluene	ND	0.75	40.0	
Trichloroethene	ND	0.11	40.0	
Trichlorofluoromethane	ND	0.22	40.0	
1,1,2-Trichloro-1,2,2-Trifluoroethane	ND	0.46	40.0	
1,1,1-Trichloroethane	ND	0.11	40.0	
1,1,2-Trichloroethane	ND	0.11	40.0	
1,3,5-Trimethylbenzene	ND	0.098	40.0	
1,1,2,2-Tetrachloroethane	ND	0.27	40.0	
1,2,4-Trimethylbenzene	ND	0.29	40.0	
1,2,4-Trichlorobenzene	ND	0.59	40.0	
Vinyl Acetate	ND	0.28	40.0	
Vinyl Chloride	ND	0.051	40.0	
<u>Surrogate</u>	<u>Rec. (%)</u>	<u>Control Limits</u>	<u>Qualifiers</u>	
1,4-Bromofluorobenzene	112	57-129		
1,2-Dichloroethane-d4	99	47-137		
Toluene-d8	100	78-156		

Return to Contents

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

## Analytical Report

Cardno ERI  
601 North McDowell Blvd.  
Petaluma, CA 94954-2312

Date Received: 08/20/14  
Work Order: 14-08-1448  
Preparation: N/A  
Method: EPA TO-15M  
Units: mg/m3

Project: ExxonMobil 99105/022783C

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Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
V-INF-MW5-2	14-08-1448-2-A	08/18/14 17:30	Air	GC/MS KKK	N/A	08/21/14 11:56	140820L01

Comment(s): - The method has been modified to use Tedlar Bags instead of Summa canisters and is not NY NELAC accredited.

Parameter	Result	RL	DF	Qualifiers
Acetone	ND	4.8	40.0	
Benzene	2.3	0.064	40.0	
Benzyl Chloride	ND	0.31	40.0	
Bromodichloromethane	ND	0.13	40.0	
Bromoform	ND	0.21	40.0	
Bromomethane	ND	0.078	40.0	
2-Butanone	ND	0.18	40.0	
Carbon Disulfide	ND	1.2	40.0	
Carbon Tetrachloride	ND	0.13	40.0	
Chlorobenzene	ND	0.092	40.0	
Chloroethane	ND	0.053	40.0	
Chloroform	ND	0.098	40.0	
Chloromethane	ND	0.041	40.0	
Dibromochloromethane	ND	0.17	40.0	
Dichlorodifluoromethane	ND	0.099	40.0	
Diisopropyl Ether (DIPE)	ND	0.33	40.0	
1,1-Dichloroethane	ND	0.081	40.0	
1,1-Dichloroethene	ND	0.079	40.0	
1,2-Dibromoethane	ND	0.15	40.0	
Dichlorotetrafluoroethane	ND	0.56	40.0	
1,2-Dichlorobenzene	ND	0.12	40.0	
1,2-Dichloroethane	ND	0.081	40.0	
1,2-Dichloropropane	ND	0.092	40.0	
1,3-Dichlorobenzene	ND	0.12	40.0	
1,4-Dichlorobenzene	ND	0.12	40.0	
c-1,3-Dichloropropene	ND	0.091	40.0	
c-1,2-Dichloroethene	ND	0.079	40.0	
t-1,2-Dichloroethene	ND	0.079	40.0	
t-1,3-Dichloropropene	ND	0.18	40.0	
Ethyl-t-Butyl Ether (ETBE)	ND	0.33	40.0	
Ethylbenzene	0.33	0.087	40.0	
4-Ethyltoluene	ND	0.098	40.0	
Hexachloro-1,3-Butadiene	ND	0.64	40.0	
2-Hexanone	ND	0.25	40.0	


  
 Return to Contents

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.



## Analytical Report

Cardno ERI  
601 North McDowell Blvd.  
Petaluma, CA 94954-2312

Date Received: 08/20/14  
Work Order: 14-08-1448  
Preparation: N/A  
Method: EPA TO-15M  
Units: mg/m3

Project: ExxonMobil 99105/022783C

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<u>Parameter</u>	<u>Result</u>	<u>RL</u>	<u>DF</u>	<u>Qualifiers</u>
Methyl-t-Butyl Ether (MTBE)	ND	0.29	40.0	
Methylene Chloride	ND	0.69	40.0	
4-Methyl-2-Pentanone	ND	0.25	40.0	
Naphthalene	ND	1.0	40.0	
o-Xylene	ND	0.087	40.0	
p/m-Xylene	ND	0.35	40.0	
Xylenes (total)	ND	0.087	1.00	
Styrene	ND	0.26	40.0	
Tert-Amyl-Methyl Ether (TAME)	ND	0.33	40.0	
Tert-Butyl Alcohol (TBA)	ND	0.61	40.0	
Tetrachloroethene	ND	0.14	40.0	
Toluene	ND	0.75	40.0	
Trichloroethene	ND	0.11	40.0	
Trichlorofluoromethane	ND	0.22	40.0	
1,1,2-Trichloro-1,2,2-Trifluoroethane	ND	0.46	40.0	
1,1,1-Trichloroethane	ND	0.11	40.0	
1,1,2-Trichloroethane	ND	0.11	40.0	
1,3,5-Trimethylbenzene	ND	0.098	40.0	
1,1,2,2-Tetrachloroethane	ND	0.27	40.0	
1,2,4-Trimethylbenzene	ND	0.29	40.0	
1,2,4-Trichlorobenzene	ND	0.59	40.0	
Vinyl Acetate	ND	0.28	40.0	
Vinyl Chloride	ND	0.051	40.0	
<u>Surrogate</u>	<u>Rec. (%)</u>	<u>Control Limits</u>	<u>Qualifiers</u>	
1,4-Bromofluorobenzene	108	57-129		
1,2-Dichloroethane-d4	98	47-137		
Toluene-d8	99	78-156		

Return to Contents

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

## Analytical Report

Cardno ERI  
 601 North McDowell Blvd.  
 Petaluma, CA 94954-2312

Date Received: 08/20/14  
 Work Order: 14-08-1448  
 Preparation: N/A  
 Method: EPA TO-15M  
 Units: mg/m3

Project: ExxonMobil 99105/022783C

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Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
V-INF-MW6-1	14-08-1448-3-A	08/18/14 17:35	Air	GC/MS KKK	N/A	08/21/14 12:47	140820L01

Comment(s): - The method has been modified to use Tedlar Bags instead of Summa canisters and is not NY NELAC accredited.

Parameter	Result	RL	DF	Qualifiers
Acetone	ND	4.8	40.0	
Benzene	0.20	0.064	40.0	
Benzyl Chloride	ND	0.31	40.0	
Bromodichloromethane	ND	0.13	40.0	
Bromoform	ND	0.21	40.0	
Bromomethane	ND	0.078	40.0	
2-Butanone	ND	0.18	40.0	
Carbon Disulfide	ND	1.2	40.0	
Carbon Tetrachloride	ND	0.13	40.0	
Chlorobenzene	ND	0.092	40.0	
Chloroethane	ND	0.053	40.0	
Chloroform	ND	0.098	40.0	
Chloromethane	ND	0.041	40.0	
Dibromochloromethane	ND	0.17	40.0	
Dichlorodifluoromethane	ND	0.099	40.0	
Diisopropyl Ether (DIPE)	ND	0.33	40.0	
1,1-Dichloroethane	ND	0.081	40.0	
1,1-Dichloroethene	ND	0.079	40.0	
1,2-Dibromoethane	ND	0.15	40.0	
Dichlorotetrafluoroethane	ND	0.56	40.0	
1,2-Dichlorobenzene	ND	0.12	40.0	
1,2-Dichloroethane	ND	0.081	40.0	
1,2-Dichloropropane	ND	0.092	40.0	
1,3-Dichlorobenzene	ND	0.12	40.0	
1,4-Dichlorobenzene	ND	0.12	40.0	
c-1,3-Dichloropropene	ND	0.091	40.0	
c-1,2-Dichloroethene	ND	0.079	40.0	
t-1,2-Dichloroethene	ND	0.079	40.0	
t-1,3-Dichloropropene	ND	0.18	40.0	
Ethyl-t-Butyl Ether (ETBE)	ND	0.33	40.0	
Ethylbenzene	0.97	0.087	40.0	
4-Ethyltoluene	0.26	0.098	40.0	
Hexachloro-1,3-Butadiene	ND	0.64	40.0	
2-Hexanone	ND	0.25	40.0	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

**Analytical Report**

Cardno ERI  
601 North McDowell Blvd.  
Petaluma, CA 94954-2312

Date Received: 08/20/14  
Work Order: 14-08-1448  
Preparation: N/A  
Method: EPA TO-15M  
Units: mg/m3

Project: ExxonMobil 99105/022783C

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<u>Parameter</u>	<u>Result</u>	<u>RL</u>	<u>DF</u>	<u>Qualifiers</u>
Methyl-t-Butyl Ether (MTBE)	ND	0.29	40.0	
Methylene Chloride	ND	0.69	40.0	
4-Methyl-2-Pentanone	0.57	0.25	40.0	
Naphthalene	ND	1.0	40.0	
o-Xylene	0.89	0.087	40.0	
p/m-Xylene	2.3	0.35	40.0	
Xylenes (total)	3.2	0.087	1.00	
Styrene	ND	0.26	40.0	
Tert-Amyl-Methyl Ether (TAME)	ND	0.33	40.0	
Tert-Butyl Alcohol (TBA)	ND	0.61	40.0	
Tetrachloroethene	ND	0.14	40.0	
Toluene	ND	0.75	40.0	
Trichloroethene	ND	0.11	40.0	
Trichlorofluoromethane	ND	0.22	40.0	
1,1,2-Trichloro-1,2,2-Trifluoroethane	ND	0.46	40.0	
1,1,1-Trichloroethane	ND	0.11	40.0	
1,1,2-Trichloroethane	ND	0.11	40.0	
1,3,5-Trimethylbenzene	0.26	0.098	40.0	
1,1,2,2-Tetrachloroethane	ND	0.27	40.0	
1,2,4-Trimethylbenzene	0.72	0.29	40.0	
1,2,4-Trichlorobenzene	ND	0.59	40.0	
Vinyl Acetate	ND	0.28	40.0	
Vinyl Chloride	ND	0.051	40.0	
<u>Surrogate</u>	<u>Rec. (%)</u>	<u>Control Limits</u>	<u>Qualifiers</u>	
1,4-Bromofluorobenzene	126	57-129		
1,2-Dichloroethane-d4	103	47-137		
Toluene-d8	76	78-156	AZ	


 Return to Contents

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

## Analytical Report

Cardno ERI  
 601 North McDowell Blvd.  
 Petaluma, CA 94954-2312

Date Received: 08/20/14  
 Work Order: 14-08-1448  
 Preparation: N/A  
 Method: EPA TO-15M  
 Units: mg/m3

Project: ExxonMobil 99105/022783C

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Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
Method Blank	099-12-981-4660	N/A	Air	GC/MS KKK	N/A	08/21/14 02:55	140820L01

Parameter	Result	RL	DF	Qualifiers
Acetone	ND	0.12	1.00	
Benzene	ND	0.0016	1.00	
Benzyl Chloride	ND	0.0078	1.00	
Bromodichloromethane	ND	0.0034	1.00	
Bromoform	ND	0.0052	1.00	
Bromomethane	ND	0.0019	1.00	
2-Butanone	ND	0.0044	1.00	
Carbon Disulfide	ND	0.031	1.00	
Carbon Tetrachloride	ND	0.0031	1.00	
Chlorobenzene	ND	0.0023	1.00	
Chloroethane	ND	0.0013	1.00	
Chloroform	ND	0.0024	1.00	
Chloromethane	ND	0.0010	1.00	
Dibromochloromethane	ND	0.0043	1.00	
Dichlorodifluoromethane	ND	0.0025	1.00	
Diisopropyl Ether (DIPE)	ND	0.0084	1.00	
1,1-Dichloroethane	ND	0.0020	1.00	
1,1-Dichloroethene	ND	0.0020	1.00	
1,2-Dibromoethane	ND	0.0038	1.00	
Dichlorotetrafluoroethane	ND	0.014	1.00	
1,2-Dichlorobenzene	ND	0.0030	1.00	
1,2-Dichloroethane	ND	0.0020	1.00	
1,2-Dichloropropane	ND	0.0023	1.00	
1,3-Dichlorobenzene	ND	0.0030	1.00	
1,4-Dichlorobenzene	ND	0.0030	1.00	
c-1,3-Dichloropropene	ND	0.0023	1.00	
c-1,2-Dichloroethene	ND	0.0020	1.00	
t-1,2-Dichloroethene	ND	0.0020	1.00	
t-1,3-Dichloropropene	ND	0.0045	1.00	
Ethyl-t-Butyl Ether (ETBE)	ND	0.0084	1.00	
Ethylbenzene	ND	0.0022	1.00	
4-Ethyltoluene	ND	0.0025	1.00	
Hexachloro-1,3-Butadiene	ND	0.016	1.00	
2-Hexanone	ND	0.0061	1.00	
Methyl-t-Butyl Ether (MTBE)	ND	0.0072	1.00	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

**Analytical Report**

Cardno ERI  
601 North McDowell Blvd.  
Petaluma, CA 94954-2312

Date Received: 08/20/14  
Work Order: 14-08-1448  
Preparation: N/A  
Method: EPA TO-15M  
Units: mg/m3

Project: ExxonMobil 99105/022783C

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<u>Parameter</u>	<u>Result</u>	<u>RL</u>	<u>DF</u>	<u>Qualifiers</u>
Methylene Chloride	ND	0.017	1.00	
4-Methyl-2-Pentanone	ND	0.0061	1.00	
Naphthalene	ND	0.026	1.00	
o-Xylene	ND	0.0022	1.00	
p/m-Xylene	ND	0.0087	1.00	
Xylenes (total)	ND	0.0022	1.00	
Styrene	ND	0.0064	1.00	
Tert-Amyl-Methyl Ether (TAME)	ND	0.0084	1.00	
Tert-Butyl Alcohol (TBA)	ND	0.015	1.00	
Tetrachloroethene	ND	0.0034	1.00	
Toluene	ND	0.019	1.00	
Trichloroethene	ND	0.0027	1.00	
Trichlorofluoromethane	ND	0.0056	1.00	
1,1,2-Trichloro-1,2,2-Trifluoroethane	ND	0.011	1.00	
1,1,1-Trichloroethane	ND	0.0027	1.00	
1,1,2-Trichloroethane	ND	0.0027	1.00	
1,3,5-Trimethylbenzene	ND	0.0025	1.00	
1,1,2,2-Tetrachloroethane	ND	0.0069	1.00	
1,2,4-Trimethylbenzene	ND	0.0074	1.00	
1,2,4-Trichlorobenzene	ND	0.015	1.00	
Vinyl Acetate	ND	0.0070	1.00	
Vinyl Chloride	ND	0.0013	1.00	
<u>Surrogate</u>	<u>Rec. (%)</u>	<u>Control Limits</u>	<u>Qualifiers</u>	
1,4-Bromofluorobenzene	99	57-129		
1,2-Dichloroethane-d4	104	47-137		
Toluene-d8	101	78-156		


  
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RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

## Analytical Report

Cardno ERI  
601 North McDowell Blvd.  
Petaluma, CA 94954-2312

Date Received: 08/20/14  
Work Order: 14-08-1448  
Preparation: N/A  
Method: EPA TO-3M  
Units: mg/m3

Project: ExxonMobil 99105/022783C

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Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
V-INF-MW5-1	14-08-1448-1-A	08/18/14 15:30	Air	GC 60	N/A	08/20/14 14:34	140820L01
<u>Parameter</u>		<u>Result</u>		<u>RL</u>		<u>DF</u>	<u>Qualifiers</u>
TPH as Gasoline		5000		35		5.00	
V-INF-MW5-2	14-08-1448-2-A	08/18/14 17:30	Air	GC 60	N/A	08/20/14 14:24	140820L01
<u>Parameter</u>		<u>Result</u>		<u>RL</u>		<u>DF</u>	<u>Qualifiers</u>
TPH as Gasoline		3000		17		2.50	
V-INF-MW6-1	14-08-1448-3-A	08/18/14 17:35	Air	GC 60	N/A	08/20/14 14:15	140820L01
<u>Parameter</u>		<u>Result</u>		<u>RL</u>		<u>DF</u>	<u>Qualifiers</u>
TPH as Gasoline		3000		17		2.50	
Method Blank	098-01-005-5749	N/A	Air	GC 60	N/A	08/20/14 09:50	140820L01
<u>Parameter</u>		<u>Result</u>		<u>RL</u>		<u>DF</u>	<u>Qualifiers</u>
TPH as Gasoline		ND		7.0		1.00	

Return to Contents

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

## Quality Control - Sample Duplicate

Cardno ERI  
601 North McDowell Blvd.  
Petaluma, CA 94954-2312

Date Received: 08/20/14  
Work Order: 14-08-1448  
Preparation: N/A  
Method: EPA TO-3M

Project: ExxonMobil 99105/022783C

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Quality Control Sample ID	Type	Matrix	Instrument	Date Prepared	Date Analyzed	Duplicate Batch Number
14-08-1447-1	Sample	Air	GC 60	N/A	08/20/14 13:49	140820D01
14-08-1447-1	Sample Duplicate	Air	GC 60	N/A	08/20/14 14:01	140820D01
<u>Parameter</u>		<u>Sample Conc.</u>	<u>DUP Conc.</u>	<u>RPD</u>	<u>RPD CL</u>	<u>Qualifiers</u>
TPH as Gasoline		1987	1969	1	0-20	

**Quality Control - LCS/LCSD**

 Cardno ERI  
 601 North McDowell Blvd.  
 Petaluma, CA 94954-2312

 Date Received: 08/20/14  
 Work Order: 14-08-1448  
 Preparation: N/A  
 Method: EPA TO-15M

Project: ExxonMobil 99105/022783C

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Quality Control Sample ID	Type	Matrix	Instrument	Date Prepared	Date Analyzed	LCS/LCSD Batch Number
099-12-981-4660	LCS	Air	GC/MS KKK	N/A	08/20/14 23:33	140820L01
099-12-981-4660	LCSD	Air	GC/MS KKK	N/A	08/21/14 00:24	140820L01

Parameter	Spike Added	LCS Conc.	LCS %Rec.	LCSD Conc.	LCSD %Rec.	%Rec. CL	ME CL	RPD	RPD CL	Qualifiers
Acetone	0.05939	0.05859	99	0.05417	91	50-150	33-167	8	0-35	
Benzene	0.07987	0.08406	105	0.07616	95	60-156	44-172	10	0-40	
Benzyl Chloride	0.1294	0.1203	93	0.1107	86	50-150	33-167	8	0-35	
Bromodichloromethane	0.1675	0.1742	104	0.1604	96	50-150	33-167	8	0-35	
Bromoform	0.2584	0.2995	116	0.2780	108	50-150	33-167	7	0-38	
Bromomethane	0.09708	0.08950	92	0.08553	88	50-150	33-167	5	0-35	
2-Butanone	0.07373	0.07471	101	0.06927	94	50-150	33-167	8	0-35	
Carbon Disulfide	0.07785	0.08085	104	0.07556	97	50-150	33-167	7	0-35	
Carbon Tetrachloride	0.1573	0.1658	105	0.1505	96	64-154	49-169	10	0-32	
Chlorobenzene	0.1151	0.1157	101	0.1071	93	50-150	33-167	8	0-35	
Chloroethane	0.06596	0.05819	88	0.05481	83	50-150	33-167	6	0-35	
Chloroform	0.1221	0.1170	96	0.1097	90	50-150	33-167	6	0-35	
Chloromethane	0.05163	0.04598	89	0.05076	98	50-150	33-167	10	0-35	
Dibromochloromethane	0.2130	0.2283	107	0.2101	99	50-150	33-167	8	0-35	
Dichlorodifluoromethane	0.1236	0.1095	89	0.1047	85	50-150	33-167	4	0-35	
Diisopropyl Ether (DIPE)	0.1045	0.09254	89	0.08813	84	60-140	47-153	5	0-30	
1,1-Dichloroethane	0.1012	0.1014	100	0.09299	92	50-150	33-167	9	0-35	
1,1-Dichloroethene	0.09912	0.1006	101	0.09290	94	50-150	33-167	8	0-35	
1,2-Dibromoethane	0.1921	0.2023	105	0.1858	97	54-144	39-159	8	0-36	
Dichlorotetrafluoroethane	0.1748	0.1251	72	0.1240	71	50-150	33-167	1	0-35	
1,2-Dichlorobenzene	0.1503	0.1311	87	0.1194	79	34-160	13-181	9	0-47	
1,2-Dichloroethane	0.1012	0.09815	97	0.09143	90	69-153	55-167	7	0-35	
1,2-Dichloropropane	0.1155	0.1195	103	0.1088	94	67-157	52-172	9	0-35	
1,3-Dichlorobenzene	0.1503	0.1453	97	0.1331	89	50-150	33-167	9	0-35	
1,4-Dichlorobenzene	0.1503	0.1420	94	0.1301	87	36-156	16-176	9	0-47	
c-1,3-Dichloropropene	0.1135	0.1225	108	0.1117	98	61-157	45-173	9	0-35	
c-1,2-Dichloroethene	0.09912	0.09857	99	0.09007	91	50-150	33-167	9	0-35	
t-1,2-Dichloroethene	0.09912	0.09543	96	0.08682	88	50-150	33-167	9	0-35	
t-1,3-Dichloropropene	0.1135	0.1326	117	0.1214	107	50-150	33-167	9	0-35	
Ethyl-t-Butyl Ether (ETBE)	0.1045	0.09477	91	0.08833	85	60-140	47-153	7	0-30	
Ethylbenzene	0.1086	0.1126	104	0.1039	96	52-154	35-171	8	0-38	
4-Ethyltoluene	0.1229	0.1245	101	0.1155	94	50-150	33-167	7	0-35	
Hexachloro-1,3-Butadiene	0.2666	0.3379	127	0.2970	111	50-150	33-167	13	0-35	
2-Hexanone	0.1024	0.1073	105	0.09935	97	50-150	33-167	8	0-35	
Methyl-t-Butyl Ether (MTBE)	0.09013	0.08936	99	0.08258	92	50-150	33-167	8	0-35	
Methylene Chloride	0.08684	0.08078	93	0.07426	86	50-150	33-167	8	0-35	

RPD: Relative Percent Difference. CL: Control Limits



## Quality Control - LCS/LCSD

Cardno ERI  
601 North McDowell Blvd.  
Petaluma, CA 94954-2312

Date Received: 08/20/14  
Work Order: 14-08-1448  
Preparation: N/A  
Method: EPA TO-15M

Project: ExxonMobil 99105/022783C

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Parameter	Spike Added	LCS Conc.	LCS %Rec.	LCSD Conc.	LCSD %Rec.	%Rec. CL	ME CL	RPD	RPD CL	Qualifiers
4-Methyl-2-Pentanone	0.1024	0.1072	105	0.09930	97	50-150	33-167	8	0-35	
Naphthalene	0.1311	0.1416	108	0.1201	92	40-190	15-215	16	0-30	
o-Xylene	0.1086	0.1109	102	0.1040	96	52-148	36-164	6	0-38	
p/m-Xylene	0.2171	0.2326	107	0.2186	101	42-156	23-175	6	0-41	
Styrene	0.1065	0.1013	95	0.09327	88	50-150	33-167	8	0-35	
Tert-Amyl-Methyl Ether (TAME)	0.1045	0.09557	91	0.08730	84	60-140	47-153	9	0-30	
Tert-Butyl Alcohol (TBA)	0.1516	0.1519	100	0.1410	93	60-140	47-153	7	0-30	
Tetrachloroethene	0.1696	0.1847	109	0.1685	99	56-152	40-168	9	0-40	
Toluene	0.09421	0.09847	105	0.09071	96	56-146	41-161	8	0-43	
Trichloroethene	0.1343	0.1365	102	0.1260	94	63-159	47-175	8	0-34	
Trichlorofluoromethane	0.1405	0.1332	95	0.1234	88	50-150	33-167	8	0-35	
1,1,2-Trichloro-1,2,2-Trifluoroethane	0.1916	0.2004	105	0.1875	98	50-150	33-167	7	0-35	
1,1,1-Trichloroethane	0.1364	0.1271	93	0.1184	87	50-150	33-167	7	0-35	
1,1,2-Trichloroethane	0.1364	0.1437	105	0.1322	97	65-149	51-163	8	0-37	
1,3,5-Trimethylbenzene	0.1229	0.1180	96	0.1090	89	50-150	33-167	8	0-35	
1,1,2,2-Tetrachloroethane	0.1716	0.1670	97	0.1562	91	50-150	33-167	7	0-35	
1,2,4-Trimethylbenzene	0.1229	0.1212	99	0.1129	92	50-150	33-167	7	0-35	
1,2,4-Trichlorobenzene	0.1855	0.2145	116	0.1802	97	50-150	33-167	17	0-35	
Vinyl Acetate	0.08803	0.08061	92	0.07479	85	50-150	33-167	7	0-35	
Vinyl Chloride	0.06391	0.05671	89	0.05517	86	45-177	23-199	3	0-36	

Total number of LCS compounds: 56

Total number of ME compounds: 0

Total number of ME compounds allowed: 3

LCS ME CL validation result: Pass

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RPD: Relative Percent Difference. CL: Control Limits

## Quality Control - LCS

Cardno ERI  
601 North McDowell Blvd.  
Petaluma, CA 94954-2312

Date Received: 08/20/14  
Work Order: 14-08-1448  
Preparation: N/A  
Method: EPA TO-3M

Project: ExxonMobil 99105/022783C

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Quality Control Sample ID	Type	Matrix	Instrument	Date Prepared	Date Analyzed	LCS Batch Number
098-01-005-5749	LCS	Air	GC 60	N/A	08/20/14 09:28	140820L01
Parameter		Spike Added	Conc. Recovered	LCS %Rec.	%Rec. CL	Qualifiers
TPH as Gasoline		932.5	949.0	102	80-120	

<u>Qualifiers</u>	<u>Definition</u>
AZ	Surrogate compound recovery was out of control due to matrix interference. The associated method blank surrogate spike compound was in control and, therefore, the sample data was reported without further clarification.
B	Analyte was present in the associated method blank.
BA	The MS/MSD RPD was out of control due to suspected matrix interference.
BB	Spike recovery and RPD control limits do not apply resulting from the parameter concentration in the sample exceeding the spike concentration by a factor of four or greater.
BU	Sample analyzed after holding time expired.
BV	Sample received after holding time expired.
DF	Reporting limits elevated due to matrix interferences.
E	Concentration exceeds the calibration range.
ET	Sample was extracted past end of recommended max. holding time.
GE	The PDS/PDSD or PES/PESD associated with this batch of samples was out of control due to suspected matrix interference.
HD	Chromat. profile inconsistent with pattern(s) of ref. fuel stds.
HO	High concentration matrix spike recovery out of limits
HT	Analytical value calculated using results from associated tests.
HX	Recovery of the Matrix Spike (MS) or Matrix Spike Duplicate (MSD) compound was out of control due to matrix interference. The associated LCS was in control.
IL	Relative percent difference out of control.
J	Analyte was detected at a concentration below the reporting limit and above the laboratory method detection limit. Reported value is estimated.
JA	Analyte positively identified but quantitation is an estimate.
LD	Analyte presence was not confirmed by second column or GC/MS analysis.
LP	The LCS and/or LCSD recoveries for this analyte were above the upper control limit. The associated sample was non-detected. Therefore, the sample data was reported without further clarification.
LQ	LCS recovery above method control limits.
LR	LCS recovery below method control limits.
ND	Parameter not detected at the indicated reporting limit.
QO	Compound did not meet method-described identification guidelines. Identification was based on additional GC/MS characteristics.
RU	LCS Recovery Percentage is within Marginal Exceedance (ME) Control Limit range (+/- 4 SD from the mean).
SG	A silica gel cleanup procedure was performed.
SN	See applicable analysis comment.

Solid - Unless otherwise indicated, solid sample data is reported on a wet weight basis, not corrected for % moisture. All QC results are reported on a wet weight basis.

Any parameter identified in 40CFR Part 136.3 Table II that is designated as "analyze immediately" with a holding time of <= 15 minutes (40CFR-136.3 Table II, footnote 4), is considered a "field" test and the reported results will be qualified as being received outside of the stated holding time unless received at the laboratory within 15 minutes of the collection time.

A calculated total result (Example: Total Pesticides) is the summation of each component concentration and/or, if "J" flags are reported, estimated concentration. Component concentrations showing not detected (ND) are summed into the calculated total result as zero concentrations.

Consultant Name: Cardno ERI Account #: NA PO#: Direct Bill Cardno ERI  
Consultant Address: 601 N McDowell Invoice To: Direct Bill Cardno ERI  
Consultant City/State/Zip: Petaluma, CA 94954 Report To: Greg Gurs  
ExxonMobil Project Mgr: Jonnifor Sodlachok Project Name: 02 2783 QX  
Consultant Project Mgr: Greg Gurs ExxonMobil Site #: 99105 Major Project (AFE #):  
Consultant Telephone Number: (707) 766-2000 Fax No.:  Site Address: 6301 San Pablo Avenue  
Sampler Name (Print): Alex R. Magdonov Site City, State, Zip: Oakland, CA  
Sampler Signature: [Signature] Oversight Agency: Alameda County Environmental Health

Sample ID	Field Point Name	Date Sampled	Time Sampled	No. of Containers Shipped	Grab	Composite	Field Filtered	Preservative										Matrix					Analyze For:					RUSH TAT. (Pre-Schedule)	5-day TAT	Standard 10-day TAT	Due Date of Report					
								Methanol	Sodium Bisulfate	HCl	NaOH	H <sub>2</sub> SO <sub>4</sub> Plastic	H <sub>2</sub> SO <sub>4</sub> Glass	HNO <sub>3</sub>	Ice	Other	None	Groundwater	Wastewater	Drinking Water	Sludge	Soil	Air	Other (specify): Distilled Water	*TPHd 8015 B	TPHg TO-3	Full List VOCs TO-15					Oxygenates 8260B	Methanol 8015B	Motor Oil by 8015B	Kerosene by 8015B	
1 V-INF-MW5-1	EVENT-INF	08/19/14	1530	1													1																X			
2 V-INF-MW5-2	EVENT-INF	08/19/14	1730	1													1																X			
3 V-INF-MW6-1	EVENT-INF	08/19/14	1735	1													1															X				
V-INF-MW6-2	EVENT-INF			1													1															X				
V-INF-COMP-	EVENT-INF			1													1															X				
V-INF-COMP-	EVENT-INF			1													1															X				
V-INF-COMP-	EVENT-INF			1													1															X				
V-INF-COMP-	EVENT-INF			1													1															X				
V-INF-COMP-	EVENT-INF			1													1															X				
V-INF-COMP-	EVENT-INF			1													1															X				
V-INF-COMP-	EVENT-INF			1													1															X				
V-EFF-1	EVENT-EFF			1													1															X				

Comments/Special Instructions: TO-15 to include Full Scan VOCs, including BTEX, fuel oxygenates, 1,2 DCA, EDB, and naphthalene.


PLEASE E-MAIL ALL PDF FILES TO norcallabs@eri-us.com

GLOBAL ID # T0600101855

Relinquished by: <u>Alex R. Magdonov</u>	Date: <u>8/19/14</u>	Time: <u>1115</u>	Received by: <u>Jar O'Malley ECI</u>	Date: <u>8/19/14</u>	Time: <u>1115</u>
Relinquished by: <u>Jar O'Malley TO GSO</u>	Date: <u>8/19/14</u>	Time: <u>1730</u>	Received by (Lab personnel): <u>[Signature] ECI</u>	Date: <u>8/20/14</u>	Time: <u>0950</u>

Laboratory Comments:  
Temperature Upon Receipt: Y N  
Sample Containers Intact? Y N  
VOCs Free of Headspace? Y N  
QC Deliverables (please circle one)  
Level 2  
Level 3  
Level 4  
Site Specific - if yes, please attach pre-schedule w/ Calscience Project Manager or attach specific instructions

1448

		<b>&lt; WebShip &gt; &gt; &gt; &gt;</b> 800-322-5555 www.gso.com	
<p>RECORD SERIAL CIRCLE #H A-4320</p>		Tracking #: 525423352 	NPS
SAMPLE RECEIVING GARDEN GROVE, CA 92841		<b>ORC</b> GARDEN GROVE <b>A</b>	
Signature Type: SIGNATURE REQUIRED		Print Date : 08/19/14 14:52 PM	

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Package 1 of 1



Calscience

WORK ORDER #: 14-08-1448

SAMPLE RECEIPT FORM

Box 1 of 1

CLIENT: Cardno ELS

DATE: 08/20/14

**TEMPERATURE:** Thermometer ID: SC1 (Criteria: 0.0°C – 6.0°C, not frozen except sediment/tissue)

Temperature \_\_\_\_ °C - 0.3°C (CF) = \_\_\_\_ °C  Blank  Sample

Sample(s) outside temperature criteria (PM/APM contacted by: \_\_\_\_)

Sample(s) outside temperature criteria but received on ice/chilled on same day of sampling.

Received at ambient temperature, placed on ice for transport by Courier.

Ambient Temperature:  Air  Filter Checked by: 300

**CUSTODY SEALS INTACT:**

Box  \_\_\_\_\_  No (Not Intact)  Not Present  N/A Checked by: 300

Sample  \_\_\_\_\_  No (Not Intact)  Not Present Checked by: 300

SAMPLE CONDITION:	Yes	No	N/A
Chain-Of-Custody (COC) document(s) received with samples.....	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
COC document(s) received complete.....	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/> Collection date/time, matrix, and/or # of containers logged in based on sample labels. <input type="checkbox"/> No analysis requested. <input type="checkbox"/> Not relinquished. <input type="checkbox"/> No date/time relinquished.			
Sampler's name indicated on COC.....	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Sample container label(s) consistent with COC.....	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Sample container(s) intact and good condition.....	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Proper containers and sufficient volume for analyses requested.....	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Analyses received within holding time.....	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Aqueous samples received within 15-minute holding time			
<input type="checkbox"/> pH <input type="checkbox"/> Residual Chlorine <input type="checkbox"/> Dissolved Sulfides <input type="checkbox"/> Dissolved Oxygen.....	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Proper preservation noted on COC or sample container.....	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
<input type="checkbox"/> Unpreserved vials received for Volatiles analysis			
Volatile analysis container(s) free of headspace.....	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Tedlar bag(s) free of condensation.....	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

**CONTAINER TYPE:**

Solid:  4ozCGJ  8ozCGJ  16ozCGJ  Sleeve (\_\_\_\_)  EnCores®  TerraCores®  \_\_\_\_\_

Aqueous:  VOA  VOA<sub>h</sub>  VOA<sub>na2</sub>  125AGB  125AGB<sub>h</sub>  125AGB<sub>p</sub>  1AGB  1AGB<sub>na2</sub>  1AGB<sub>s</sub>

500AGB  500AGJ  500AGJ<sub>s</sub>  250AGB  250CGB  250CGB<sub>s</sub>  1PB  1PB<sub>na</sub>  500PB

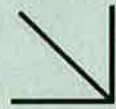
250PB  250PB<sub>n</sub>  125PB  125PB<sub>zanna</sub>  100PJ  100PJ<sub>na2</sub>  \_\_\_\_\_  \_\_\_\_\_  \_\_\_\_\_

Air:  Tedlar®  Canister Other:  \_\_\_\_\_ Trip Blank Lot#: \_\_\_\_\_ Labeled/Checked by: 300

Container: C: Clear A: Amber P: Plastic G: Glass J: Jar B: Bottle Z: Ziploc/Resealable Bag E: Envelope Reviewed by: 300

Preservative: h: HCL n: HNO<sub>3</sub> na<sub>2</sub>: Na<sub>2</sub>S<sub>2</sub>O<sub>3</sub> na: NaOH p: H<sub>3</sub>PO<sub>4</sub> s: H<sub>2</sub>SO<sub>4</sub> u: Ultra-pure zanna: ZnAc<sub>2</sub>+NaOH f: Filtered Scanned by: 300

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**WORK ORDER NUMBER: 14-08-1569**

*The difference is service*



AIR | SOIL | WATER | MARINE CHEMISTRY

**Analytical Report For**

**Client:** Cardno ERI

**Client Project Name:** ExxonMobil 99105/022783C

**Attention:** Greg Guss  
601 North McDowell Blvd.  
Petaluma, CA 94954-2312

**RECEIVED**  
SEP 04 2014

**BY:** .....

*Cecile de Guia*

Approved for release on 09/03/2014 by:  
Cecile deGuia  
Project Manager

ResultLink ▶

Email your PM ▶



Eurofins Calscience, Inc. (Calscience) certifies that the test results provided in this report meet all NELAC requirements for parameters for which accreditation is required or available. Any exceptions to NELAC requirements are noted in the case narrative. The original report of subcontracted analyses, if any, is attached to this report. The results in this report are limited to the sample(s) tested and any reproduction thereof must be made in its entirety. The client or recipient of this report is specifically prohibited from making material changes to said report and, to the extent that such changes are made, Calscience is not responsible, legally or otherwise. The client or recipient agrees to indemnify Calscience for any defense to any litigation which may arise.

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Work Order Number: 14-08-1569

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**Condition Upon Receipt:**

Samples were received under Chain-of-Custody (COC) on 08/21/14. They were assigned to Work Order 14-08-1569.

Unless otherwise noted on the Sample Receiving forms all samples were received in good condition and within the recommended EPA temperature criteria for the methods noted on the COC. The COC and Sample Receiving Documents are integral elements of the analytical report and are presented at the back of the report.

**Holding Times:**

All samples were analyzed within prescribed holding times (HT) and/or in accordance with the Calscience Sample Acceptance Policy unless otherwise noted in the analytical report and/or comprehensive case narrative, if required.

Any parameter identified in 40CFR Part 136.3 Table II that is designated as "analyze immediately" with a holding time of  $\leq 15$  minutes (40CFR-136.3 Table II, footnote 4), is considered a "field" test and the reported results will be qualified as being received outside of the stated holding time unless received at the laboratory within 15 minutes of the collection time.

**Quality Control:**

All quality control parameters (QC) were within established control limits except where noted in the QC summary forms or described further within this report.

**Additional Comments:**

Air - Sorbent-extracted air methods (EPA TO-4A, EPA TO-10, EPA TO-13A, EPA TO-17): Analytical results are converted from mass/sample basis to mass/volume basis using client-supplied air volumes.

New York NELAP air certification does not certify for all reported methods and analytes, reference the accredited items here: [http://www.calscience.com/PDF/New\\_York.pdf](http://www.calscience.com/PDF/New_York.pdf)

Solid - Unless otherwise indicated, solid sample data is reported on a wet weight basis, not corrected for % moisture. All QC results are always reported on a wet weight basis.

**Subcontractor Information:**

Unless otherwise noted below (or on the subcontract form), no samples were subcontracted.

## Sample Summary

Client: Cardno ERI	Work Order:	14-08-1569
601 North McDowell Blvd.	Project Name:	ExxonMobil 99105/022783C
Petaluma, CA 94954-2312	PO Number:	022783C
	Date/Time Received:	08/21/14 10:10
	Number of Containers:	4

Attn: Greg Gurss

Sample Identification	Lab Number	Collection Date and Time	Number of Containers	Matrix
V-INF-COMP-1	14-08-1569-1	08/19/14 04:30	1	Air
V-INF-COMP-2	14-08-1569-2	08/19/14 12:30	1	Air
V-INF-COMP-3	14-08-1569-3	08/19/14 20:35	1	Air
V-INF-COMP-4	14-08-1569-4	08/20/14 04:30	1	Air

## Analytical Report

Cardno ERI  
601 North McDowell Blvd.  
Petaluma, CA 94954-2312

Date Received: 08/21/14  
Work Order: 14-08-1569  
Preparation: N/A  
Method: EPA TO-15M  
Units: mg/m3

Project: ExxonMobil 99105/022783C

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Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
V-INF-COMP-1	14-08-1569-1-A	08/19/14 04:30	Air	GC/MS II	N/A	08/22/14 06:05	140821L03

Comment(s): - The method has been modified to use Tedlar Bags instead of Summa canisters and is not NY NELAC accredited.

Parameter	Result	RL	DF	Qualifiers
Acetone	ND	3.0	25.0	
Benzene	7.1	0.040	25.0	
Benzyl Chloride	ND	0.19	25.0	
Bromodichloromethane	ND	0.084	25.0	
Bromoform	ND	0.13	25.0	
Bromomethane	ND	0.049	25.0	
2-Butanone	ND	0.11	25.0	
Carbon Disulfide	ND	0.78	25.0	
Carbon Tetrachloride	ND	0.079	25.0	
Chlorobenzene	ND	0.058	25.0	
Chloroethane	ND	0.033	25.0	
Chloroform	ND	0.061	25.0	
Chloromethane	ND	0.026	25.0	
Dibromochloromethane	ND	0.11	25.0	
Dichlorodifluoromethane	ND	0.062	25.0	
Diisopropyl Ether (DIPE)	ND	0.21	25.0	
1,1-Dichloroethane	ND	0.051	25.0	
1,1-Dichloroethene	ND	0.050	25.0	
1,2-Dibromoethane	ND	0.096	25.0	
Dichlorotetrafluoroethane	ND	0.35	25.0	
1,2-Dichlorobenzene	ND	0.075	25.0	
1,2-Dichloroethane	ND	0.051	25.0	
1,2-Dichloropropane	ND	0.058	25.0	
1,3-Dichlorobenzene	ND	0.075	25.0	
1,4-Dichlorobenzene	ND	0.075	25.0	
c-1,3-Dichloropropene	ND	0.057	25.0	
c-1,2-Dichloroethene	ND	0.050	25.0	
t-1,2-Dichloroethene	ND	0.050	25.0	
t-1,3-Dichloropropene	ND	0.11	25.0	
Ethyl-t-Butyl Ether (ETBE)	ND	0.21	25.0	
Ethylbenzene	3.0	0.054	25.0	
4-Ethyltoluene	ND	0.061	25.0	
Hexachloro-1,3-Butadiene	ND	0.40	25.0	
2-Hexanone	ND	0.15	25.0	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

## Analytical Report

Cardno ERI  
601 North McDowell Blvd.  
Petaluma, CA 94954-2312

Date Received: 08/21/14  
Work Order: 14-08-1569  
Preparation: N/A  
Method: EPA TO-15M  
Units: mg/m3

Project: ExxonMobil 99105/022783C

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<u>Parameter</u>	<u>Result</u>	<u>RL</u>	<u>DF</u>	<u>Qualifiers</u>
Methyl-t-Butyl Ether (MTBE)	ND	0.18	25.0	
Methylene Chloride	ND	0.43	25.0	
4-Methyl-2-Pentanone	ND	0.15	25.0	
Naphthalene	ND	0.66	25.0	
o-Xylene	ND	0.054	25.0	
p/m-Xylene	0.24	0.22	25.0	
Xylenes (total)	0.24	0.054	1.00	
Styrene	ND	0.16	25.0	
Tert-Amyl-Methyl Ether (TAME)	ND	0.21	25.0	
Tert-Butyl Alcohol (TBA)	ND	0.38	25.0	
Tetrachloroethene	ND	0.085	25.0	
Toluene	ND	0.47	25.0	
Trichloroethene	ND	0.067	25.0	
Trichlorofluoromethane	ND	0.14	25.0	
1,1,2-Trichloro-1,2,2-Trifluoroethane	ND	0.29	25.0	
1,1,1-Trichloroethane	ND	0.068	25.0	
1,1,2-Trichloroethane	ND	0.068	25.0	
1,3,5-Trimethylbenzene	ND	0.061	25.0	
1,1,2,2-Tetrachloroethane	ND	0.17	25.0	
1,2,4-Trimethylbenzene	ND	0.18	25.0	
1,2,4-Trichlorobenzene	ND	0.37	25.0	
Vinyl Acetate	ND	0.18	25.0	
Vinyl Chloride	ND	0.032	25.0	
<u>Surrogate</u>	<u>Rec. (%)</u>	<u>Control Limits</u>	<u>Qualifiers</u>	
1,4-Bromofluorobenzene	99	57-129		
1,2-Dichloroethane-d4	78	47-137		
Toluene-d8	79	78-156		


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RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

## Analytical Report

Cardno ERI  
601 North McDowell Blvd.  
Petaluma, CA 94954-2312

Date Received: 08/21/14  
Work Order: 14-08-1569  
Preparation: N/A  
Method: EPA TO-15M  
Units: mg/m3

Project: ExxonMobil 99105/022783C

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Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
V-INF-COMP-2	14-08-1569-2-A	08/19/14 12:30	Air	GC/MS II	N/A	08/22/14 19:44	140822L02

Comment(s): - The method has been modified to use Tedlar Bags instead of Summa canisters and is not NY NELAC accredited.

Parameter	Result	RL	DF	Qualifiers
Acetone	ND	3.0	25.0	
Benzene	6.2	0.040	25.0	
Benzyl Chloride	ND	0.19	25.0	
Bromodichloromethane	ND	0.084	25.0	
Bromoform	ND	0.13	25.0	
Bromomethane	ND	0.049	25.0	
2-Butanone	ND	0.11	25.0	
Carbon Disulfide	ND	0.78	25.0	
Carbon Tetrachloride	ND	0.079	25.0	
Chlorobenzene	ND	0.058	25.0	
Chloroethane	ND	0.033	25.0	
Chloroform	ND	0.061	25.0	
Chloromethane	ND	0.026	25.0	
Dibromochloromethane	ND	0.11	25.0	
Dichlorodifluoromethane	ND	0.062	25.0	
Diisopropyl Ether (DIPE)	ND	0.21	25.0	
1,1-Dichloroethane	ND	0.051	25.0	
1,1-Dichloroethene	ND	0.050	25.0	
1,2-Dibromoethane	ND	0.096	25.0	
Dichlorotetrafluoroethane	ND	0.35	25.0	
1,2-Dichlorobenzene	ND	0.075	25.0	
1,2-Dichloroethane	ND	0.051	25.0	
1,2-Dichloropropane	ND	0.058	25.0	
1,3-Dichlorobenzene	ND	0.075	25.0	
1,4-Dichlorobenzene	ND	0.075	25.0	
c-1,3-Dichloropropene	ND	0.057	25.0	
c-1,2-Dichloroethene	ND	0.050	25.0	
t-1,2-Dichloroethene	ND	0.050	25.0	
t-1,3-Dichloropropene	ND	0.11	25.0	
Ethyl-t-Butyl Ether (ETBE)	ND	0.21	25.0	
Ethylbenzene	3.4	0.054	25.0	
4-Ethyltoluene	0.062	0.061	25.0	
Hexachloro-1,3-Butadiene	ND	0.40	25.0	
2-Hexanone	ND	0.15	25.0	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

## Analytical Report

Cardno ERI  
601 North McDowell Blvd.  
Petaluma, CA 94954-2312

Date Received: 08/21/14  
Work Order: 14-08-1569  
Preparation: N/A  
Method: EPA TO-15M  
Units: mg/m3

Project: ExxonMobil 99105/022783C

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<u>Parameter</u>	<u>Result</u>	<u>RL</u>	<u>DF</u>	<u>Qualifiers</u>
Methyl-t-Butyl Ether (MTBE)	ND	0.18	25.0	
Methylene Chloride	ND	0.43	25.0	
4-Methyl-2-Pentanone	ND	0.15	25.0	
Naphthalene	ND	0.66	25.0	
o-Xylene	0.093	0.054	25.0	
p/m-Xylene	0.38	0.22	25.0	
Xylenes (total)	0.48	0.054	1.00	
Styrene	ND	0.16	25.0	
Tert-Amyl-Methyl Ether (TAME)	ND	0.21	25.0	
Tert-Butyl Alcohol (TBA)	ND	0.38	25.0	
Tetrachloroethene	ND	0.085	25.0	
Toluene	ND	0.47	25.0	
Trichloroethene	ND	0.067	25.0	
Trichlorofluoromethane	ND	0.14	25.0	
1,1,2-Trichloro-1,2,2-Trifluoroethane	ND	0.29	25.0	
1,1,1-Trichloroethane	ND	0.068	25.0	
1,1,2-Trichloroethane	ND	0.068	25.0	
1,3,5-Trimethylbenzene	ND	0.061	25.0	
1,1,2,2-Tetrachloroethane	ND	0.17	25.0	
1,2,4-Trimethylbenzene	ND	0.18	25.0	
1,2,4-Trichlorobenzene	ND	0.37	25.0	
Vinyl Acetate	ND	0.18	25.0	
Vinyl Chloride	ND	0.032	25.0	
<u>Surrogate</u>	<u>Rec. (%)</u>	<u>Control Limits</u>	<u>Qualifiers</u>	
1,4-Bromofluorobenzene	102	57-129		
1,2-Dichloroethane-d4	82	47-137		
Toluene-d8	79	78-156		


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RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

## Analytical Report

Cardno ERI  
601 North McDowell Blvd.  
Petaluma, CA 94954-2312

Date Received: 08/21/14  
Work Order: 14-08-1569  
Preparation: N/A  
Method: EPA TO-15M  
Units: mg/m3

Project: ExxonMobil 99105/022783C

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Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
V-INF-COMP-3	14-08-1569-3-A	08/19/14 20:35	Air	GC/MS II	N/A	08/22/14 20:34	140822L02

Comment(s): - The method has been modified to use Tedlar Bags instead of Summa canisters and is not NY NELAC accredited.

Parameter	Result	RL	DF	Qualifiers
Acetone	ND	12	100	
Benzene	8.3	0.16	100	
Benzyl Chloride	ND	0.78	100	
Bromodichloromethane	ND	0.34	100	
Bromoform	ND	0.52	100	
Bromomethane	ND	0.19	100	
2-Butanone	ND	0.44	100	
Carbon Disulfide	ND	3.1	100	
Carbon Tetrachloride	ND	0.31	100	
Chlorobenzene	ND	0.23	100	
Chloroethane	ND	0.13	100	
Chloroform	ND	0.24	100	
Chloromethane	ND	0.10	100	
Dibromochloromethane	ND	0.43	100	
Dichlorodifluoromethane	ND	0.25	100	
Diisopropyl Ether (DIPE)	ND	0.84	100	
1,1-Dichloroethane	ND	0.20	100	
1,1-Dichloroethene	ND	0.20	100	
1,2-Dibromoethane	ND	0.38	100	
Dichlorotetrafluoroethane	ND	1.4	100	
1,2-Dichlorobenzene	ND	0.30	100	
1,2-Dichloroethane	ND	0.20	100	
1,2-Dichloropropane	ND	0.23	100	
1,3-Dichlorobenzene	ND	0.30	100	
1,4-Dichlorobenzene	ND	0.30	100	
c-1,3-Dichloropropene	ND	0.23	100	
c-1,2-Dichloroethene	ND	0.20	100	
t-1,2-Dichloroethene	ND	0.20	100	
t-1,3-Dichloropropene	ND	0.45	100	
Ethyl-t-Butyl Ether (ETBE)	ND	0.84	100	
Ethylbenzene	5.1	0.22	100	
4-Ethyltoluene	ND	0.25	100	
Hexachloro-1,3-Butadiene	ND	1.6	100	
2-Hexanone	ND	0.61	100	

Return to Contents ↑

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

## Analytical Report

Cardno ERI  
601 North McDowell Blvd.  
Petaluma, CA 94954-2312

Date Received: 08/21/14  
Work Order: 14-08-1569  
Preparation: N/A  
Method: EPA TO-15M  
Units: mg/m3

Project: ExxonMobil 99105/022783C

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<u>Parameter</u>	<u>Result</u>	<u>RL</u>	<u>DF</u>	<u>Qualifiers</u>
Methyl-t-Butyl Ether (MTBE)	ND	0.72	100	
Methylene Chloride	ND	1.7	100	
4-Methyl-2-Pentanone	ND	0.61	100	
Naphthalene	ND	2.6	100	
o-Xylene	ND	0.22	100	
p/m-Xylene	ND	0.87	100	
Xylenes (total)	ND	0.22	1.00	
Styrene	ND	0.64	100	
Tert-Amyl-Methyl Ether (TAME)	ND	0.84	100	
Tert-Butyl Alcohol (TBA)	ND	1.5	100	
Tetrachloroethene	ND	0.34	100	
Toluene	ND	1.9	100	
Trichloroethene	ND	0.27	100	
Trichlorofluoromethane	ND	0.56	100	
1,1,2-Trichloro-1,2,2-Trifluoroethane	ND	1.1	100	
1,1,1-Trichloroethane	ND	0.27	100	
1,1,2-Trichloroethane	ND	0.27	100	
1,3,5-Trimethylbenzene	ND	0.25	100	
1,1,2,2-Tetrachloroethane	ND	0.69	100	
1,2,4-Trimethylbenzene	ND	0.74	100	
1,2,4-Trichlorobenzene	ND	1.5	100	
Vinyl Acetate	ND	0.70	100	
Vinyl Chloride	ND	0.13	100	
<u>Surrogate</u>	<u>Rec. (%)</u>	<u>Control Limits</u>	<u>Qualifiers</u>	
1,4-Bromofluorobenzene	93	57-129		
1,2-Dichloroethane-d4	79	47-137		
Toluene-d8	85	78-156		

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RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.



## Analytical Report

Cardno ERI  
601 North McDowell Blvd.  
Petaluma, CA 94954-2312

Date Received: 08/21/14  
Work Order: 14-08-1569  
Preparation: N/A  
Method: EPA TO-15M  
Units: mg/m3

Project: ExxonMobil 99105/022783C

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Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
<b>V-INF-COMP-4</b>	<b>14-08-1569-4-A</b>	<b>08/20/14 04:30</b>	<b>Air</b>	<b>GC/MS II</b>	<b>N/A</b>	<b>08/23/14 01:18</b>	<b>140822L02</b>

Comment(s): - The method has been modified to use Tedlar Bags instead of Summa canisters and is not NY NELAC accredited.

Parameter	Result	RL	DF	Qualifiers
Acetone	ND	12	100	
Benzene	8.0	0.16	100	
Benzyl Chloride	ND	0.78	100	
Bromodichloromethane	ND	0.34	100	
Bromoform	ND	0.52	100	
Bromomethane	ND	0.19	100	
2-Butanone	ND	0.44	100	
Carbon Disulfide	ND	3.1	100	
Carbon Tetrachloride	ND	0.31	100	
Chlorobenzene	ND	0.23	100	
Chloroethane	ND	0.13	100	
Chloroform	ND	0.24	100	
Chloromethane	ND	0.10	100	
Dibromochloromethane	ND	0.43	100	
Dichlorodifluoromethane	ND	0.25	100	
Diisopropyl Ether (DIPE)	ND	0.84	100	
1,1-Dichloroethane	ND	0.20	100	
1,1-Dichloroethene	ND	0.20	100	
1,2-Dibromoethane	ND	0.38	100	
Dichlorotetrafluoroethane	ND	1.4	100	
1,2-Dichlorobenzene	ND	0.30	100	
1,2-Dichloroethane	ND	0.20	100	
1,2-Dichloropropane	ND	0.23	100	
1,3-Dichlorobenzene	ND	0.30	100	
1,4-Dichlorobenzene	ND	0.30	100	
c-1,3-Dichloropropene	ND	0.23	100	
c-1,2-Dichloroethene	ND	0.20	100	
t-1,2-Dichloroethene	ND	0.20	100	
t-1,3-Dichloropropene	ND	0.45	100	
Ethyl-t-Butyl Ether (ETBE)	ND	0.84	100	
Ethylbenzene	4.8	0.22	100	
4-Ethyltoluene	ND	0.25	100	
Hexachloro-1,3-Butadiene	ND	1.6	100	
2-Hexanone	ND	0.61	100	


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RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

## Analytical Report

Cardno ERI  
601 North McDowell Blvd.  
Petaluma, CA 94954-2312

Date Received: 08/21/14  
Work Order: 14-08-1569  
Preparation: N/A  
Method: EPA TO-15M  
Units: mg/m3

Project: ExxonMobil 99105/022783C

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<u>Parameter</u>	<u>Result</u>	<u>RL</u>	<u>DF</u>	<u>Qualifiers</u>
Methyl-t-Butyl Ether (MTBE)	ND	0.72	100	
Methylene Chloride	ND	1.7	100	
4-Methyl-2-Pentanone	ND	0.61	100	
Naphthalene	ND	2.6	100	
o-Xylene	ND	0.22	100	
p/m-Xylene	ND	0.87	100	
Xylenes (total)	ND	0.22	1.00	
Styrene	ND	0.64	100	
Tert-Amyl-Methyl Ether (TAME)	ND	0.84	100	
Tert-Butyl Alcohol (TBA)	ND	1.5	100	
Tetrachloroethene	ND	0.34	100	
Toluene	ND	1.9	100	
Trichloroethene	ND	0.27	100	
Trichlorofluoromethane	ND	0.56	100	
1,1,2-Trichloro-1,2,2-Trifluoroethane	ND	1.1	100	
1,1,1-Trichloroethane	ND	0.27	100	
1,1,2-Trichloroethane	ND	0.27	100	
1,3,5-Trimethylbenzene	ND	0.25	100	
1,1,2,2-Tetrachloroethane	ND	0.69	100	
1,2,4-Trimethylbenzene	ND	0.74	100	
1,2,4-Trichlorobenzene	ND	1.5	100	
Vinyl Acetate	ND	0.70	100	
Vinyl Chloride	ND	0.13	100	
<u>Surrogate</u>	<u>Rec. (%)</u>	<u>Control Limits</u>	<u>Qualifiers</u>	
1,4-Bromofluorobenzene	89	57-129		
1,2-Dichloroethane-d4	97	47-137		
Toluene-d8	97	78-156		


  
Return to Contents

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.



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## Analytical Report

Cardno ERI  
601 North McDowell Blvd.  
Petaluma, CA 94954-2312

Date Received: 08/21/14  
Work Order: 14-08-1569  
Preparation: N/A  
Method: EPA TO-15M  
Units: mg/m3

Project: ExxonMobil 99105/022783C

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Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
Method Blank	099-12-981-4678	N/A	Air	GC/MS II	N/A	08/21/14 17:49	140821L03

Parameter	Result	RL	DF	Qualifiers
Acetone	ND	0.12	1.00	
Benzene	ND	0.0016	1.00	
Benzyl Chloride	ND	0.0078	1.00	
Bromodichloromethane	ND	0.0034	1.00	
Bromoform	ND	0.0052	1.00	
Bromomethane	ND	0.0019	1.00	
2-Butanone	ND	0.0044	1.00	
Carbon Disulfide	ND	0.031	1.00	
Carbon Tetrachloride	ND	0.0031	1.00	
Chlorobenzene	ND	0.0023	1.00	
Chloroethane	ND	0.0013	1.00	
Chloroform	ND	0.0024	1.00	
Chloromethane	ND	0.0010	1.00	
Dibromochloromethane	ND	0.0043	1.00	
Dichlorodifluoromethane	ND	0.0025	1.00	
Diisopropyl Ether (DIPE)	ND	0.0084	1.00	
1,1-Dichloroethane	ND	0.0020	1.00	
1,1-Dichloroethene	ND	0.0020	1.00	
1,2-Dibromoethane	ND	0.0038	1.00	
Dichlorotetrafluoroethane	ND	0.014	1.00	
1,2-Dichlorobenzene	ND	0.0030	1.00	
1,2-Dichloroethane	ND	0.0020	1.00	
1,2-Dichloropropane	ND	0.0023	1.00	
1,3-Dichlorobenzene	ND	0.0030	1.00	
1,4-Dichlorobenzene	ND	0.0030	1.00	
c-1,3-Dichloropropene	ND	0.0023	1.00	
c-1,2-Dichloroethene	ND	0.0020	1.00	
t-1,2-Dichloroethene	ND	0.0020	1.00	
t-1,3-Dichloropropene	ND	0.0045	1.00	
Ethyl-t-Butyl Ether (ETBE)	ND	0.0084	1.00	
Ethylbenzene	ND	0.0022	1.00	
4-Ethyltoluene	ND	0.0025	1.00	
Hexachloro-1,3-Butadiene	ND	0.016	1.00	
2-Hexanone	ND	0.0061	1.00	
Methyl-t-Butyl Ether (MTBE)	ND	0.0072	1.00	

Return to Contents ↑

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

## Analytical Report

Cardno ERI  
601 North McDowell Blvd.  
Petaluma, CA 94954-2312

Date Received: 08/21/14  
Work Order: 14-08-1569  
Preparation: N/A  
Method: EPA TO-15M  
Units: mg/m3

Project: ExxonMobil 99105/022783C

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<u>Parameter</u>	<u>Result</u>	<u>RL</u>	<u>DF</u>	<u>Qualifiers</u>
Methylene Chloride	ND	0.017	1.00	
4-Methyl-2-Pentanone	ND	0.0061	1.00	
Naphthalene	ND	0.026	1.00	
o-Xylene	ND	0.0022	1.00	
p/m-Xylene	ND	0.0087	1.00	
Xylenes (total)	ND	0.0022	1.00	
Styrene	ND	0.0064	1.00	
Tert-Amyl-Methyl Ether (TAME)	ND	0.0084	1.00	
Tert-Butyl Alcohol (TBA)	ND	0.015	1.00	
Tetrachloroethene	ND	0.0034	1.00	
Toluene	ND	0.019	1.00	
Trichloroethene	ND	0.0027	1.00	
Trichlorofluoromethane	ND	0.0056	1.00	
1,1,2-Trichloro-1,2,2-Trifluoroethane	ND	0.011	1.00	
1,1,1-Trichloroethane	ND	0.0027	1.00	
1,1,2-Trichloroethane	ND	0.0027	1.00	
1,3,5-Trimethylbenzene	ND	0.0025	1.00	
1,1,2,2-Tetrachloroethane	ND	0.0069	1.00	
1,2,4-Trimethylbenzene	ND	0.0074	1.00	
1,2,4-Trichlorobenzene	ND	0.015	1.00	
Vinyl Acetate	ND	0.0070	1.00	
Vinyl Chloride	ND	0.0013	1.00	
<u>Surrogate</u>	<u>Rec. (%)</u>	<u>Control Limits</u>	<u>Qualifiers</u>	
1,4-Bromofluorobenzene	90	57-129		
1,2-Dichloroethane-d4	102	47-137		
Toluene-d8	97	78-156		

Return to Contents

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

## Analytical Report

Cardno ERI  
601 North McDowell Blvd.  
Petaluma, CA 94954-2312

Date Received: 08/21/14  
Work Order: 14-08-1569  
Preparation: N/A  
Method: EPA TO-15M  
Units: mg/m3

Project: ExxonMobil 99105/022783C

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Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
Method Blank	099-12-981-4694	N/A	Air	GC/MS II	N/A	08/22/14 17:25	140822L02

Parameter	Result	RL	DF	Qualifiers
Acetone	ND	0.12	1.00	
Benzene	ND	0.0016	1.00	
Benzyl Chloride	ND	0.0078	1.00	
Bromodichloromethane	ND	0.0034	1.00	
Bromoform	ND	0.0052	1.00	
Bromomethane	ND	0.0019	1.00	
2-Butanone	ND	0.0044	1.00	
Carbon Disulfide	ND	0.031	1.00	
Carbon Tetrachloride	ND	0.0031	1.00	
Chlorobenzene	ND	0.0023	1.00	
Chloroethane	ND	0.0013	1.00	
Chloroform	ND	0.0024	1.00	
Chloromethane	ND	0.0010	1.00	
Dibromochloromethane	ND	0.0043	1.00	
Dichlorodifluoromethane	ND	0.0025	1.00	
Diisopropyl Ether (DIPE)	ND	0.0084	1.00	
1,1-Dichloroethane	ND	0.0020	1.00	
1,1-Dichloroethene	ND	0.0020	1.00	
1,2-Dibromoethane	ND	0.0038	1.00	
Dichlorotetrafluoroethane	ND	0.014	1.00	
1,2-Dichlorobenzene	ND	0.0030	1.00	
1,2-Dichloroethane	ND	0.0020	1.00	
1,2-Dichloropropane	ND	0.0023	1.00	
1,3-Dichlorobenzene	ND	0.0030	1.00	
1,4-Dichlorobenzene	ND	0.0030	1.00	
c-1,3-Dichloropropene	ND	0.0023	1.00	
c-1,2-Dichloroethene	ND	0.0020	1.00	
t-1,2-Dichloroethene	ND	0.0020	1.00	
t-1,3-Dichloropropene	ND	0.0045	1.00	
Ethyl-t-Butyl Ether (ETBE)	ND	0.0084	1.00	
Ethylbenzene	ND	0.0022	1.00	
4-Ethyltoluene	ND	0.0025	1.00	
Hexachloro-1,3-Butadiene	ND	0.016	1.00	
2-Hexanone	ND	0.0061	1.00	
Methyl-t-Butyl Ether (MTBE)	ND	0.0072	1.00	

Return to Contents ↑

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

## Analytical Report

Cardno ERI  
601 North McDowell Blvd.  
Petaluma, CA 94954-2312

Date Received: 08/21/14  
Work Order: 14-08-1569  
Preparation: N/A  
Method: EPA TO-15M  
Units: mg/m3

Project: ExxonMobil 99105/022783C

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<u>Parameter</u>	<u>Result</u>	<u>RL</u>	<u>DF</u>	<u>Qualifiers</u>
Methylene Chloride	ND	0.017	1.00	
4-Methyl-2-Pentanone	ND	0.0061	1.00	
Naphthalene	ND	0.026	1.00	
o-Xylene	ND	0.0022	1.00	
p/m-Xylene	ND	0.0087	1.00	
Xylenes (total)	ND	0.0022	1.00	
Styrene	ND	0.0064	1.00	
Tert-Amyl-Methyl Ether (TAME)	ND	0.0084	1.00	
Tert-Butyl Alcohol (TBA)	ND	0.015	1.00	
Tetrachloroethene	ND	0.0034	1.00	
Toluene	ND	0.019	1.00	
Trichloroethene	ND	0.0027	1.00	
Trichlorofluoromethane	ND	0.0056	1.00	
1,1,2-Trichloro-1,2,2-Trifluoroethane	ND	0.011	1.00	
1,1,1-Trichloroethane	ND	0.0027	1.00	
1,1,2-Trichloroethane	ND	0.0027	1.00	
1,3,5-Trimethylbenzene	ND	0.0025	1.00	
1,1,2,2-Tetrachloroethane	ND	0.0069	1.00	
1,2,4-Trimethylbenzene	ND	0.0074	1.00	
1,2,4-Trichlorobenzene	ND	0.015	1.00	
Vinyl Acetate	ND	0.0070	1.00	
Vinyl Chloride	ND	0.0013	1.00	
<u>Surrogate</u>	<u>Rec. (%)</u>	<u>Control Limits</u>	<u>Qualifiers</u>	
1,4-Bromofluorobenzene	94	57-129		
1,2-Dichloroethane-d4	93	47-137		
Toluene-d8	99	78-156		

Return to Contents ↑

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

## Analytical Report

Cardno ERI  
601 North McDowell Blvd.  
Petaluma, CA 94954-2312

Date Received: 08/21/14  
Work Order: 14-08-1569  
Preparation: N/A  
Method: EPA TO-3M  
Units: mg/m3

Project: ExxonMobil 99105/022783C

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Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
V-INF-COMP-1	14-08-1569-1-A	08/19/14 04:30	Air	GC 60	N/A	08/21/14 14:18	140821L01
<u>Parameter</u>		<u>Result</u>	<u>RL</u>		<u>DF</u>	<u>Qualifiers</u>	
TPH as Gasoline		5200	35		5.00		
V-INF-COMP-2	14-08-1569-2-A	08/19/14 12:30	Air	GC 60	N/A	08/21/14 14:07	140821L01
<u>Parameter</u>		<u>Result</u>	<u>RL</u>		<u>DF</u>	<u>Qualifiers</u>	
TPH as Gasoline		4400	35		5.00		
V-INF-COMP-3	14-08-1569-3-A	08/19/14 20:35	Air	GC 60	N/A	08/21/14 14:28	140821L01
<u>Parameter</u>		<u>Result</u>	<u>RL</u>		<u>DF</u>	<u>Qualifiers</u>	
TPH as Gasoline		5200	35		5.00		
V-INF-COMP-4	14-08-1569-4-A	08/20/14 04:30	Air	GC 60	N/A	08/21/14 14:37	140821L01
<u>Parameter</u>		<u>Result</u>	<u>RL</u>		<u>DF</u>	<u>Qualifiers</u>	
TPH as Gasoline		4800	35		5.00		
Method Blank	098-01-005-5746	N/A	Air	GC 60	N/A	08/21/14 13:31	140821L01
<u>Parameter</u>		<u>Result</u>	<u>RL</u>		<u>DF</u>	<u>Qualifiers</u>	
TPH as Gasoline		ND	7.0		1.00		

Return to Contents

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.



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**Quality Control - Sample Duplicate**

Cardno ERI  
 601 North McDowell Blvd.  
 Petaluma, CA 94954-2312

Date Received: 08/21/14  
 Work Order: 14-08-1569  
 Preparation: N/A  
 Method: EPA TO-3M

Project: ExxonMobil 99105/022783C

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Quality Control Sample ID	Type	Matrix	Instrument	Date Prepared	Date Analyzed	Duplicate Batch Number
V-INF-COMP-4	Sample	Air	GC 60	N/A	08/21/14 14:37	140821D01
V-INF-COMP-4	Sample Duplicate	Air	GC 60	N/A	08/21/14 15:28	140821D01

<u>Parameter</u>	<u>Sample Conc.</u>	<u>DUP Conc.</u>	<u>RPD</u>	<u>RPD CL</u>	<u>Qualifiers</u>
TPH as Gasoline	4841	4818	0	0-20	

Return to Contents

RPD: Relative Percent Difference. CL: Control Limits





Calscience

## Quality Control - LCS/LCSD

Cardno ERI  
601 North McDowell Blvd.  
Petaluma, CA 94954-2312

Date Received: 08/21/14  
Work Order: 14-08-1569  
Preparation: N/A  
Method: EPA TO-15M

Project: ExxonMobil 99105/022783C

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Quality Control Sample ID	Type	Matrix	Instrument	Date Prepared	Date Analyzed	LCS/LCSD Batch Number				
099-12-981-4678	LCS	Air	GC/MS II	N/A	08/21/14 15:18	140821L03				
099-12-981-4678	LCSD	Air	GC/MS II	N/A	08/21/14 16:09	140821L03				
Parameter	Spike Added	LCS Conc.	LCS %Rec.	LCSD Conc.	LCSD %Rec.	%Rec. CL	ME CL	RPD	RPD CL	Qualifiers
Acetone	0.05939	0.05188	87	0.05402	91	50-150	33-167	4	0-35	
Benzene	0.07987	0.09187	115	0.09259	116	60-156	44-172	1	0-40	
Benzyl Chloride	0.1294	0.1328	103	0.1390	107	50-150	33-167	5	0-35	
Bromodichloromethane	0.1675	0.1597	95	0.1693	101	50-150	33-167	6	0-35	
Bromoform	0.2584	0.2451	95	0.2607	101	50-150	33-167	6	0-38	
Bromomethane	0.09708	0.08525	88	0.09132	94	50-150	33-167	7	0-35	
2-Butanone	0.07373	0.07872	107	0.08082	110	50-150	33-167	3	0-35	
Carbon Disulfide	0.07785	0.07889	101	0.08210	105	50-150	33-167	4	0-35	
Carbon Tetrachloride	0.1573	0.1352	86	0.1459	93	64-154	49-169	8	0-32	
Chlorobenzene	0.1151	0.1232	107	0.1251	109	50-150	33-167	1	0-35	
Chloroethane	0.06596	0.05753	87	0.05919	90	50-150	33-167	3	0-35	
Chloroform	0.1221	0.1083	89	0.1149	94	50-150	33-167	6	0-35	
Chloromethane	0.05163	0.04688	91	0.05066	98	50-150	33-167	8	0-35	
Dibromochloromethane	0.2130	0.2061	97	0.2170	102	50-150	33-167	5	0-35	
Dichlorodifluoromethane	0.1236	0.1002	81	0.1127	91	50-150	33-167	12	0-35	
Diisopropyl Ether (DIPE)	0.1045	0.09547	91	0.09933	95	60-140	47-153	4	0-30	
1,1-Dichloroethane	0.1012	0.1016	100	0.1043	103	50-150	33-167	3	0-35	
1,1-Dichloroethene	0.09912	0.08537	86	0.09390	95	50-150	33-167	10	0-35	
1,2-Dibromoethane	0.1921	0.2048	107	0.2127	111	54-144	39-159	4	0-36	
Dichlorotetrafluoroethane	0.1748	0.1171	67	0.1304	75	50-150	33-167	11	0-35	
1,2-Dichlorobenzene	0.1503	0.1471	98	0.1526	102	34-160	13-181	4	0-47	
1,2-Dichloroethane	0.1012	0.09028	89	0.09753	96	69-153	55-167	8	0-35	
1,2-Dichloropropane	0.1155	0.1259	109	0.1277	110	67-157	52-172	1	0-35	
1,3-Dichlorobenzene	0.1503	0.1516	101	0.1579	105	50-150	33-167	4	0-35	
1,4-Dichlorobenzene	0.1503	0.1575	105	0.1626	108	36-156	16-176	3	0-47	
c-1,3-Dichloropropene	0.1135	0.1331	117	0.1375	121	61-157	45-173	3	0-35	
c-1,2-Dichloroethene	0.09912	0.1105	111	0.1113	112	50-150	33-167	1	0-35	
t-1,2-Dichloroethene	0.09912	0.1049	106	0.1065	107	50-150	33-167	2	0-35	
t-1,3-Dichloropropene	0.1135	0.1430	126	0.1503	132	50-150	33-167	5	0-35	
Ethyl-t-Butyl Ether (ETBE)	0.1045	0.1024	98	0.1055	101	60-140	47-153	3	0-30	
Ethylbenzene	0.1086	0.1257	116	0.1291	119	52-154	35-171	3	0-38	
4-Ethyltoluene	0.1229	0.1360	111	0.1416	115	50-150	33-167	4	0-35	
Hexachloro-1,3-Butadiene	0.2666	0.2035	76	0.2185	82	50-150	33-167	7	0-35	
2-Hexanone	0.1024	0.1078	105	0.1101	107	50-150	33-167	2	0-35	
Methyl-t-Butyl Ether (MTBE)	0.09013	0.09859	109	0.1014	113	50-150	33-167	3	0-35	
Methylene Chloride	0.08684	0.08046	93	0.08152	94	50-150	33-167	1	0-35	

RPD: Relative Percent Difference. CL: Control Limits



Calscience

## Quality Control - LCS/LCSD

Cardno ERI  
601 North McDowell Blvd.  
Petaluma, CA 94954-2312

Date Received: 08/21/14  
Work Order: 14-08-1569  
Preparation: N/A  
Method: EPA TO-15M

Project: ExxonMobil 99105/022783C

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Parameter	Spike Added	LCS Conc.	LCS %Rec.	LCSD Conc.	LCSD %Rec.	%Rec. CL	ME CL	RPD	RPD CL	Qualifiers
4-Methyl-2-Pentanone	0.1024	0.1066	104	0.1100	107	50-150	33-167	3	0-35	
Naphthalene	0.1311	0.1166	89	0.1179	90	40-190	15-215	1	0-30	
o-Xylene	0.1086	0.1132	104	0.1175	108	52-148	36-164	4	0-38	
p/m-Xylene	0.2171	0.2287	105	0.2398	110	42-156	23-175	5	0-41	
Styrene	0.1065	0.1105	104	0.1124	106	50-150	33-167	2	0-35	
Tert-Amyl-Methyl Ether (TAME)	0.1045	0.1077	103	0.1091	104	60-140	47-153	1	0-30	
Tert-Butyl Alcohol (TBA)	0.1516	0.1430	94	0.1460	96	60-140	47-153	2	0-30	
Tetrachloroethene	0.1696	0.1787	105	0.1833	108	56-152	40-168	3	0-40	
Toluene	0.09421	0.1093	116	0.1120	119	56-146	41-161	2	0-43	
Trichloroethene	0.1343	0.1403	104	0.1465	109	63-159	47-175	4	0-34	
Trichlorofluoromethane	0.1405	0.1111	79	0.1212	86	50-150	33-167	9	0-35	
1,1,2-Trichloro-1,2,2-Trifluoroethane	0.1916	0.1813	95	0.1917	100	50-150	33-167	6	0-35	
1,1,1-Trichloroethane	0.1364	0.1175	86	0.1270	93	50-150	33-167	8	0-35	
1,1,2-Trichloroethane	0.1364	0.1384	101	0.1442	106	65-149	51-163	4	0-37	
1,3,5-Trimethylbenzene	0.1229	0.1249	102	0.1308	106	50-150	33-167	5	0-35	
1,1,2,2-Tetrachloroethane	0.1716	0.1661	97	0.1713	100	50-150	33-167	3	0-35	
1,2,4-Trimethylbenzene	0.1229	0.1155	94	0.1220	99	50-150	33-167	5	0-35	
1,2,4-Trichlorobenzene	0.1855	0.1740	94	0.1790	96	50-150	33-167	3	0-35	
Vinyl Acetate	0.08803	0.08602	98	0.08854	101	50-150	33-167	3	0-35	
Vinyl Chloride	0.06391	0.05584	87	0.06069	95	45-177	23-199	8	0-36	

Total number of LCS compounds: 56

Total number of ME compounds: 0

Total number of ME compounds allowed: 3

LCS ME CL validation result: Pass

Return to Contents

RPD: Relative Percent Difference. CL: Control Limits

## Quality Control - LCS/LCSD

Cardno ERI  
601 North McDowell Blvd.  
Petaluma, CA 94954-2312

Date Received: 08/21/14  
Work Order: 14-08-1569  
Preparation: N/A  
Method: EPA TO-15M

Project: ExxonMobil 99105/022783C

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Quality Control Sample ID	Type	Matrix	Instrument	Date Prepared	Date Analyzed	LCS/LCSD Batch Number				
099-12-981-4694	LCS	Air	GC/MS II	N/A	08/22/14 13:19	140822L02				
099-12-981-4694	LCSD	Air	GC/MS II	N/A	08/22/14 14:10	140822L02				
Parameter	Spike Added	LCS Conc.	LCS %Rec.	LCSD Conc.	LCSD %Rec.	%Rec. CL	ME CL	RPD	RPD CL	Qualifiers
Acetone	0.05939	0.05086	86	0.05108	86	50-150	33-167	0	0-35	
Benzene	0.07987	0.08440	106	0.08480	106	60-156	44-172	0	0-40	
Benzyl Chloride	0.1294	0.1265	98	0.1303	101	50-150	33-167	3	0-35	
Bromodichloromethane	0.1675	0.1489	89	0.1540	92	50-150	33-167	3	0-35	
Bromoform	0.2584	0.2287	88	0.2391	93	50-150	33-167	4	0-38	
Bromomethane	0.09708	0.08218	85	0.08295	85	50-150	33-167	1	0-35	
2-Butanone	0.07373	0.07010	95	0.07095	96	50-150	33-167	1	0-35	
Carbon Disulfide	0.07785	0.07021	90	0.07121	91	50-150	33-167	1	0-35	
Carbon Tetrachloride	0.1573	0.1281	81	0.1328	84	64-154	49-169	4	0-32	
Chlorobenzene	0.1151	0.1112	97	0.1137	99	50-150	33-167	2	0-35	
Chloroethane	0.06596	0.05693	86	0.05752	87	50-150	33-167	1	0-35	
Chloroform	0.1221	0.1021	84	0.1044	86	50-150	33-167	2	0-35	
Chloromethane	0.05163	0.04610	89	0.04570	89	50-150	33-167	1	0-35	
Dibromochloromethane	0.2130	0.1900	89	0.1977	93	50-150	33-167	4	0-35	
Dichlorodifluoromethane	0.1236	0.09998	81	0.1014	82	50-150	33-167	1	0-35	
Diisopropyl Ether (DIPE)	0.1045	0.09381	90	0.09490	91	60-140	47-153	1	0-30	
1,1-Dichloroethane	0.1012	0.09423	93	0.09454	93	50-150	33-167	0	0-35	
1,1-Dichloroethene	0.09912	0.08421	85	0.08506	86	50-150	33-167	1	0-35	
1,2-Dibromoethane	0.1921	0.1874	98	0.1936	101	54-144	39-159	3	0-36	
Dichlorotetrafluoroethane	0.1748	0.1452	83	0.1468	84	50-150	33-167	1	0-35	
1,2-Dichlorobenzene	0.1503	0.1389	92	0.1440	96	34-160	13-181	4	0-47	
1,2-Dichloroethane	0.1012	0.08660	86	0.08953	88	69-153	55-167	3	0-35	
1,2-Dichloropropane	0.1155	0.1156	100	0.1157	100	67-157	52-172	0	0-35	
1,3-Dichlorobenzene	0.1503	0.1417	94	0.1453	97	50-150	33-167	3	0-35	
1,4-Dichlorobenzene	0.1503	0.1459	97	0.1507	100	36-156	16-176	3	0-47	
c-1,3-Dichloropropene	0.1135	0.1226	108	0.1246	110	61-157	45-173	2	0-35	
c-1,2-Dichloroethene	0.09912	0.1022	103	0.1024	103	50-150	33-167	0	0-35	
t-1,2-Dichloroethene	0.09912	0.1000	101	0.1005	101	50-150	33-167	0	0-35	
t-1,3-Dichloropropene	0.1135	0.1220	108	0.1251	110	50-150	33-167	2	0-35	
Ethyl-t-Butyl Ether (ETBE)	0.1045	0.1022	98	0.1015	97	60-140	47-153	1	0-30	
Ethylbenzene	0.1086	0.1148	106	0.1176	108	52-154	35-171	2	0-38	
4-Ethyltoluene	0.1229	0.1237	101	0.1272	104	50-150	33-167	3	0-35	
Hexachloro-1,3-Butadiene	0.2666	0.1920	72	0.2052	77	50-150	33-167	7	0-35	
2-Hexanone	0.1024	0.09797	96	0.1015	99	50-150	33-167	3	0-35	
Methyl-t-Butyl Ether (MTBE)	0.09013	0.08942	99	0.08906	99	50-150	33-167	0	0-35	
Methylene Chloride	0.08684	0.07168	83	0.07274	84	50-150	33-167	1	0-35	

RPD: Relative Percent Difference. CL: Control Limits

## Quality Control - LCS/LCSD

Cardno ERI  
601 North McDowell Blvd.  
Petaluma, CA 94954-2312

Date Received: 08/21/14  
Work Order: 14-08-1569  
Preparation: N/A  
Method: EPA TO-15M

Project: ExxonMobil 99105/022783C

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Parameter	Spike Added	LCS Conc.	LCS %Rec.	LCSD Conc.	LCSD %Rec.	%Rec. CL	ME CL	RPD	RPD CL	Qualifiers
4-Methyl-2-Pentanone	0.1024	0.09776	95	0.1007	98	50-150	33-167	3	0-35	
Naphthalene	0.1311	0.1141	87	0.1201	92	40-190	15-215	5	0-30	
o-Xylene	0.1086	0.1053	97	0.1085	100	52-148	36-164	3	0-38	
p/m-Xylene	0.2171	0.2129	98	0.2194	101	42-156	23-175	3	0-41	
Styrene	0.1065	0.1081	101	0.1098	103	50-150	33-167	2	0-35	
Tert-Amyl-Methyl Ether (TAME)	0.1045	0.1072	103	0.1069	102	60-140	47-153	0	0-30	
Tert-Butyl Alcohol (TBA)	0.1516	0.1353	89	0.1365	90	60-140	47-153	1	0-30	
Tetrachloroethene	0.1696	0.1620	96	0.1668	98	56-152	40-168	3	0-40	
Toluene	0.09421	0.09763	104	0.1002	106	56-146	41-161	3	0-43	
Trichloroethene	0.1343	0.1323	98	0.1347	100	63-159	47-175	2	0-34	
Trichlorofluoromethane	0.1405	0.1150	82	0.1186	84	50-150	33-167	3	0-35	
1,1,2-Trichloro-1,2,2-Trifluoroethane	0.1916	0.1664	87	0.1690	88	50-150	33-167	2	0-35	
1,1,1-Trichloroethane	0.1364	0.1156	85	0.1176	86	50-150	33-167	2	0-35	
1,1,2-Trichloroethane	0.1364	0.1300	95	0.1330	98	65-149	51-163	2	0-37	
1,3,5-Trimethylbenzene	0.1229	0.1173	95	0.1214	99	50-150	33-167	3	0-35	
1,1,2,2-Tetrachloroethane	0.1716	0.1564	91	0.1609	94	50-150	33-167	3	0-35	
1,2,4-Trimethylbenzene	0.1229	0.1088	89	0.1128	92	50-150	33-167	4	0-35	
1,2,4-Trichlorobenzene	0.1855	0.1701	92	0.1797	97	50-150	33-167	5	0-35	
Vinyl Acetate	0.08803	0.08722	99	0.08810	100	50-150	33-167	1	0-35	
Vinyl Chloride	0.06391	0.05625	88	0.05595	88	45-177	23-199	1	0-36	

Total number of LCS compounds: 56

Total number of ME compounds: 0

Total number of ME compounds allowed: 3

LCS ME CL validation result: Pass

Return to Contents 

RPD: Relative Percent Difference. CL: Control Limits

## Quality Control - LCS

Cardno ERI	Date Received:	08/21/14
601 North McDowell Blvd.	Work Order:	14-08-1569
Petaluma, CA 94954-2312	Preparation:	N/A
Project: ExxonMobil 99105/022783C	Method:	EPA TO-3M

Page 5 of 5

Quality Control Sample ID	Type	Matrix	Instrument	Date Prepared	Date Analyzed	LCS Batch Number
098-01-005-5746	LCS	Air	GC 60	N/A	08/21/14 13:12	140821L01
<u>Parameter</u>		<u>Spike Added</u>	<u>Conc. Recovered</u>	<u>LCS %Rec.</u>	<u>%Rec. CL</u>	<u>Qualifiers</u>
TPH as Gasoline		932.5	968.7	104	80-120	



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1569

<b>Ship From:</b> ALAN KEMP CAL SCIENCE- CONCORD 3063 COMMERCIAL CIRCLE #H CONCORD, CA 94520	<b>Tracking #:</b> 525436988 	<b>NPS</b>
<b>Ship To:</b> SAMPLE RECEIVING CEL 7440 LINCOLN WAY GARDEN GROVE, CA 92841	<div style="display: flex; justify-content: space-between;"> <span data-bbox="722 441 941 525"><b>ORC</b></span> <span data-bbox="1242 441 1323 525"><b>A</b></span> </div> <b>GARDEN GROVE</b>	
<b>COD:</b> \$0.00	<div style="text-align: center;"> <b>D92845A</b>            27834403       </div>	
<b>Reference:</b> CARDNO ERI, CRA, STANTEC <b>Delivery Instructions:</b>  <b>Signature Type:</b> SIGNATURE REQUIRED	Print Date : 09/20/14 15:48 PM	

Package 1 of 1

Print All

**LABEL INSTRUCTIONS:**

- Do not copy or reprint this label for additional shipments - each package must have a unique barcode.
- STEP 1 - Use the "Send Label to Printer" button on this page to print the shipping label on a laser or inkjet printer.
- STEP 2 - Fold this page in half.
- STEP 3 - Securely attach this label to your package, do not cover the barcode.
- STEP 4 - Request an on-call pickup for your package, if you do not have scheduled daily pickup service or Drop-off your package at the nearest GSO drop box. Locate nearest GSO dropbox locations using this link.

**ADDITIONAL OPTIONS:**

**TERMS AND CONDITIONS:**

By giving us your shipment to deliver, you agree to all the service terms and conditions described in this section. Our liability for loss or damage to any package is limited to your actual damages or \$100 whichever is less, unless you pay for and declare a higher authorized value. If you declare a higher value and pay the additional charge, our liability will be the lesser of your declared value or the actual value of your loss or damage. In any event, we will not be liable for any damage, whether direct, incidental, special or consequential, in excess of the declared value of a shipment whether or not we had knowledge that such damage might be incurred including but not limited to loss of income or profit. We will not be liable for your acts or omissions, including but not limited to improper or insufficient packaging, securing, marking or addressing. Also, we will not be liable if you or the recipient violates any of the terms of our agreement. We will not be liable for loss, damage or delay caused by events we cannot control, including but not limited to acts of God, perils of the air, weather conditions, act of public enemies, war, strikes, or civil commotion. The highest declared value for our GSO Priority Letter or GSO Priority Package is \$500. For other shipments the highest declared value is \$10,000 unless your package contains items of "extraordinary value", in which case the highest declared value we allow is \$500. Items of "extraordinary value" include, but not limited to, artwork, jewelry, furs, precious metals, tickets, negotiable instruments and other items with intrinsic value.



<u>Qualifiers</u>	<u>Definition</u>
AZ	Surrogate compound recovery was out of control due to matrix interference. The associated method blank surrogate spike compound was in control and, therefore, the sample data was reported without further clarification.
B	Analyte was present in the associated method blank.
BA	The MS/MSD RPD was out of control due to suspected matrix interference.
BB	Spike recovery and RPD control limits do not apply resulting from the parameter concentration in the sample exceeding the spike concentration by a factor of four or greater.
BU	Sample analyzed after holding time expired.
BV	Sample received after holding time expired.
DF	Reporting limits elevated due to matrix interferences.
E	Concentration exceeds the calibration range.
ET	Sample was extracted past end of recommended max. holding time.
GE	The PDS/PDSD or PES/PESD associated with this batch of samples was out of control due to suspected matrix interference.
HD	Chromat. profile inconsistent with pattern(s) of ref. fuel stnds.
HO	High concentration matrix spike recovery out of limits
HT	Analytical value calculated using results from associated tests.
HX	Recovery of the Matrix Spike (MS) or Matrix Spike Duplicate (MSD) compound was out of control due to matrix interference. The associated LCS was in control.
IL	Relative percent difference out of control.
J	Analyte was detected at a concentration below the reporting limit and above the laboratory method detection limit. Reported value is estimated.
JA	Analyte positively identified but quantitation is an estimate.
LD	Analyte presence was not confirmed by second column or GC/MS analysis.
LP	The LCS and/or LCSD recoveries for this analyte were above the upper control limit. The associated sample was non-detected. Therefore, the sample data was reported without further clarification.
LQ	LCS recovery above method control limits.
LR	LCS recovery below method control limits.
ND	Parameter not detected at the indicated reporting limit.
QO	Compound did not meet method-described identification guidelines. Identification was based on additional GC/MS characteristics.
RU	LCS Recovery Percentage is within Marginal Exceedance (ME) Control Limit range (+/- 4 SD from the mean).
SG	A silica gel cleanup procedure was performed.
SN	See applicable analysis comment.

Solid - Unless otherwise indicated, solid sample data is reported on a wet weight basis, not corrected for % moisture. All QC results are reported on a wet weight basis.

Any parameter identified in 40CFR Part 136.3 Table II that is designated as "analyze immediately" with a holding time of <= 15 minutes (40CFR-136.3 Table II, footnote 4), is considered a "field" test and the reported results will be qualified as being received outside of the stated holding time unless received at the laboratory within 15 minutes of the collection time.

A calculated total result (Example: Total Pesticides) is the summation of each component concentration and/or, if "J" flags are reported, estimated concentration. Component concentrations showing not detected (ND) are summed into the calculated total result as zero concentrations.



Calscience

WORK ORDER #: **14-08-1569**

**SAMPLE RECEIPT FORM**

Cooler 1 of 1

CLIENT: Cardno ERI

DATE: 08/21/14

**TEMPERATURE:** Thermometer ID: SC1 (Criteria: 0.0°C – 6.0°C, not frozen except sediment/tissue)

Temperature \_\_\_\_\_ °C - 0.3°C (CF) = \_\_\_\_\_ °C     Blank     Sample

Sample(s) outside temperature criteria (PM/APM contacted by: \_\_\_\_\_)

Sample(s) outside temperature criteria but received on ice/chilled on same day of sampling.

Received at ambient temperature, placed on ice for transport by Courier.

Ambient Temperature:  Air     Filter    Checked by: IS

**CUSTODY SEALS INTACT:**

Cooler     \_\_\_\_\_     No (Not Intact)     Not Present     N/A    Checked by: IS

Sample     \_\_\_\_\_     No (Not Intact)     Not Present    Checked by: SM

SAMPLE CONDITION:	Yes	No	N/A
Chain-Of-Custody (COC) document(s) received with samples.....	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
COC document(s) received complete.....	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/> Collection date/time, matrix, and/or # of containers logged in based on sample labels.			
<input type="checkbox"/> No analysis requested. <input type="checkbox"/> Not relinquished. <input type="checkbox"/> No date/time relinquished.			
Sampler's name indicated on COC.....	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Sample container label(s) consistent with COC.....	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Sample container(s) intact and good condition.....	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Proper containers and sufficient volume for analyses requested.....	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Analyses received within holding time.....	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Aqueous samples received within 15-minute holding time			
<input type="checkbox"/> pH <input type="checkbox"/> Residual Chlorine <input type="checkbox"/> Dissolved Sulfides <input type="checkbox"/> Dissolved Oxygen.....			
Proper preservation noted on COC or sample container.....	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
<input type="checkbox"/> Unpreserved vials received for Volatiles analysis			
Volatile analysis container(s) free of headspace.....	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Tedlar bag(s) free of condensation.....	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

**CONTAINER TYPE:**

**Solid:**  4ozCGJ     8ozCGJ     16ozCGJ     Sleeve (\_\_\_\_)     EnCores®     TerraCores®     \_\_\_\_\_

**Aqueous:**  VOA     VOAh     VOAna<sub>2</sub>     125AGB     125AGBh     125AGBp     1AGB     1AGBna<sub>2</sub>     1AGBs

500AGB     500AGJ     500AGJs     250AGB     250CGB     250CGBs     1PB     1PBna     500PB

250PB     250PBn     125PB     125PBzanna     100PJ     100PJna<sub>2</sub>     \_\_\_\_\_     \_\_\_\_\_     \_\_\_\_\_

**Air:**  Tedlar®     Canister    **Other:**  \_\_\_\_\_    **Trip Blank Lot#:** \_\_\_\_\_    **Labeled/Checked by:** SM

**Container:** C: Clear A: Amber P: Plastic G: Glass J: Jar B: Bottle Z: Ziploc/Resealable Bag E: Envelope    **Reviewed by:** SM

**Preservative:** h: HCL n: HNO<sub>3</sub> na<sub>2</sub>:Na<sub>2</sub>S<sub>2</sub>O<sub>3</sub> na: NaOH p: H<sub>3</sub>PO<sub>4</sub> s: H<sub>2</sub>SO<sub>4</sub> u: Ultra-pure zanna: ZnAc<sub>2</sub>+NaOH f: Filtered    **Scanned by:** SM

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**WORK ORDER NUMBER: 14-08-1907**

*The difference is service*



AIR | SOIL | WATER | MARINE CHEMISTRY

**Analytical Report For**

**Client:** Cardno ERI

**Client Project Name:** ExxonMobil 99105/022783C

**Attention:** Greg Gurss  
601 North McDowell Blvd.  
Petaluma, CA 94954-2312

**RECEIVED**  
SEP 04 2014

**BY:** .....

*Cecile L. de Guia*

Approved for release on 09/03/2014 by:  
Cecile deGuia  
Project Manager

ResultLink ▶

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Eurofins Calscience, Inc. (Calscience) certifies that the test results provided in this report meet all NELAC requirements for parameters for which accreditation is required or available. Any exceptions to NELAC requirements are noted in the case narrative. The original report of subcontracted analyses, if any, is attached to this report. The results in this report are limited to the sample(s) tested and any reproduction thereof must be made in its entirety. The client or recipient of this report is specifically prohibited from making material changes to said report and, to the extent that such changes are made, Calscience is not responsible, legally or otherwise. The client or recipient agrees to indemnify Calscience for any defense to any litigation which may arise.

# Contents

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Work Order Number: 14-08-1907

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**Condition Upon Receipt:**

Samples were received under Chain-of-Custody (COC) on 08/26/14. They were assigned to Work Order 14-08-1907.

Unless otherwise noted on the Sample Receiving forms all samples were received in good condition and within the recommended EPA temperature criteria for the methods noted on the COC. The COC and Sample Receiving Documents are integral elements of the analytical report and are presented at the back of the report.

**Holding Times:**

All samples were analyzed within prescribed holding times (HT) and/or in accordance with the Calscience Sample Acceptance Policy unless otherwise noted in the analytical report and/or comprehensive case narrative, if required.

Any parameter identified in 40CFR Part 136.3 Table II that is designated as "analyze immediately" with a holding time of  $\leq 15$  minutes (40CFR-136.3 Table II, footnote 4), is considered a "field" test and the reported results will be qualified as being received outside of the stated holding time unless received at the laboratory within 15 minutes of the collection time.

**Quality Control:**

All quality control parameters (QC) were within established control limits except where noted in the QC summary forms or described further within this report.

**Additional Comments:**

Air - Sorbent-extracted air methods (EPA TO-4A, EPA TO-10, EPA TO-13A, EPA TO-17): Analytical results are converted from mass/sample basis to mass/volume basis using client-supplied air volumes.

New York NELAP air certification does not certify for all reported methods and analytes, reference the accredited items here: [http://www.calscience.com/PDF/New\\_York.pdf](http://www.calscience.com/PDF/New_York.pdf)

Solid - Unless otherwise indicated, solid sample data is reported on a wet weight basis, not corrected for % moisture. All QC results are always reported on a wet weight basis.

**Subcontractor Information:**

Unless otherwise noted below (or on the subcontract form), no samples were subcontracted.

## Sample Summary

Client: Cardno ERI	Work Order:	14-08-1907
601 North McDowell Blvd.	Project Name:	ExxonMobil 99105/022783C
Petaluma, CA 94954-2312	PO Number:	
	Date/Time Received:	08/26/14 10:10
	Number of Containers:	7

Attn: Greg Gurst

Sample Identification	Lab Number	Collection Date and Time	Number of Containers	Matrix
V-INF-COMP-5	14-08-1907-1	08/20/14 12:30	1	Air
V-INF-COMP-6	14-08-1907-2	08/20/14 20:35	1	Air
V-INF-COMP-7	14-08-1907-3	08/21/14 04:30	1	Air
V-INF-COMP-8	14-08-1907-4	08/21/14 12:30	1	Air
V-INF-COMP-9	14-08-1907-5	08/21/14 20:30	1	Air
V-INF-COMP-10	14-08-1907-6	08/22/14 04:30	1	Air
V-INF-COMP-11	14-08-1907-7	08/22/14 12:05	1	Air



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## Analytical Report

Cardno ERI  
601 North McDowell Blvd.  
Petaluma, CA 94954-2312

Date Received: 08/26/14  
Work Order: 14-08-1907  
Preparation: N/A  
Method: EPA TO-15M  
Units: mg/m3

Project: ExxonMobil 99105/022783C

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Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
V-INF-COMP-5	14-08-1907-1-A	08/20/14 12:30	Air	GC/MS II	N/A	09/02/14 19:28	140902L02

Comment(s): - The method has been modified to use Tedlar Bags instead of Summa canisters and is not NY NELAC accredited.

Parameter	Result	RL	DF	Qualifiers
Acetone	ND	4.8	40.0	BV,BU
Benzene	5.6	0.064	40.0	BV,BU
Benzyl Chloride	ND	0.31	40.0	BV,BU
Bromodichloromethane	ND	0.13	40.0	BV,BU
Bromoform	ND	0.21	40.0	BV,BU
Bromomethane	ND	0.078	40.0	BV,BU
2-Butanone	ND	0.18	40.0	BV,BU
Carbon Disulfide	ND	1.2	40.0	BV,BU
Carbon Tetrachloride	ND	0.13	40.0	BV,BU
Chlorobenzene	ND	0.092	40.0	BV,BU
Chloroethane	ND	0.053	40.0	BV,BU
Chloroform	ND	0.098	40.0	BV,BU
Chloromethane	ND	0.041	40.0	BV,BU
Dibromochloromethane	ND	0.17	40.0	BV,BU
Dichlorodifluoromethane	ND	0.099	40.0	BV,BU
Diisopropyl Ether (DIPE)	ND	0.33	40.0	BV,BU
1,1-Dichloroethane	ND	0.081	40.0	BV,BU
1,1-Dichloroethene	ND	0.079	40.0	BV,BU
1,2-Dibromoethane	ND	0.15	40.0	BV,BU
Dichlorotetrafluoroethane	ND	0.56	40.0	BV,BU
1,2-Dichlorobenzene	ND	0.12	40.0	BV,BU
1,2-Dichloroethane	ND	0.081	40.0	BV,BU
1,2-Dichloropropane	ND	0.092	40.0	BV,BU
1,3-Dichlorobenzene	ND	0.12	40.0	BV,BU
1,4-Dichlorobenzene	ND	0.12	40.0	BV,BU
c-1,3-Dichloropropene	ND	0.091	40.0	BV,BU
c-1,2-Dichloroethene	ND	0.079	40.0	BV,BU
t-1,2-Dichloroethene	ND	0.079	40.0	BV,BU
t-1,3-Dichloropropene	ND	0.18	40.0	BV,BU
Ethyl-t-Butyl Ether (ETBE)	ND	0.33	40.0	BV,BU
Ethylbenzene	3.5	0.087	40.0	BV,BU
4-Ethyltoluene	ND	0.098	40.0	BV,BU
Hexachloro-1,3-Butadiene	ND	0.64	40.0	BV,BU
2-Hexanone	ND	0.25	40.0	BV,BU

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

## Analytical Report

Cardno ERI  
601 North McDowell Blvd.  
Petaluma, CA 94954-2312

Date Received: 08/26/14  
Work Order: 14-08-1907  
Preparation: N/A  
Method: EPA TO-15M  
Units: mg/m3

Project: ExxonMobil 99105/022783C

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<u>Parameter</u>	<u>Result</u>	<u>RL</u>	<u>DF</u>	<u>Qualifiers</u>
Methyl-t-Butyl Ether (MTBE)	ND	0.29	40.0	BV,BU
Methylene Chloride	ND	0.69	40.0	BV,BU
4-Methyl-2-Pentanone	ND	0.25	40.0	BV,BU
Naphthalene	ND	1.0	40.0	BV,BU
o-Xylene	ND	0.087	40.0	BV,BU
p/m-Xylene	0.38	0.35	40.0	BV,BU
Xylenes (total)	0.38	0.087	1.00	BV,BU
Styrene	ND	0.26	40.0	BV,BU
Tert-Amyl-Methyl Ether (TAME)	ND	0.33	40.0	BV,BU
Tert-Butyl Alcohol (TBA)	ND	0.61	40.0	BV,BU
Tetrachloroethene	ND	0.14	40.0	BV,BU
Toluene	ND	0.75	40.0	BV,BU
Trichloroethene	ND	0.11	40.0	BV,BU
Trichlorofluoromethane	ND	0.22	40.0	BV,BU
1,1,2-Trichloro-1,2,2-Trifluoroethane	ND	0.46	40.0	BV,BU
1,1,1-Trichloroethane	ND	0.11	40.0	BV,BU
1,1,2-Trichloroethane	ND	0.11	40.0	BV,BU
1,3,5-Trimethylbenzene	ND	0.098	40.0	BV,BU
1,1,1,2-Tetrachloroethane	ND	0.27	40.0	BV,BU
1,2,4-Trimethylbenzene	ND	0.29	40.0	BV,BU
1,2,4-Trichlorobenzene	ND	0.59	40.0	BV,BU
Vinyl Acetate	ND	0.28	40.0	BV,BU
Vinyl Chloride	ND	0.051	40.0	BV,BU

<u>Surrogate</u>	<u>Rec. (%)</u>	<u>Control Limits</u>	<u>Qualifiers</u>
1,4-Bromofluorobenzene	116	57-129	
1,2-Dichloroethane-d4	80	47-137	
Toluene-d8	88	78-156	


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RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

## Analytical Report

Cardno ERI  
601 North McDowell Blvd.  
Petaluma, CA 94954-2312

Date Received: 08/26/14  
Work Order: 14-08-1907  
Preparation: N/A  
Method: EPA TO-15M  
Units: mg/m3

Project: ExxonMobil 99105/022783C

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Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
V-INF-COMP-6	14-08-1907-2-A	08/20/14 20:35	Air	GC/MS II	N/A	09/01/14 02:50	140831L01

Comment(s): - The method has been modified to use Tedlar Bags instead of Summa canisters and is not NY NELAC accredited.

Parameter	Result	RL	DF	Qualifiers
Acetone	ND	1.9	16.0	BV,BU
Benzene	4.2	0.026	16.0	BV,BU
Benzyl Chloride	ND	0.12	16.0	BV,BU
Bromodichloromethane	ND	0.054	16.0	BV,BU
Bromoform	ND	0.083	16.0	BV,BU
Bromomethane	ND	0.031	16.0	BV,BU
2-Butanone	ND	0.071	16.0	BV,BU
Carbon Disulfide	ND	0.50	16.0	BV,BU
Carbon Tetrachloride	ND	0.050	16.0	BV,BU
Chlorobenzene	ND	0.037	16.0	BV,BU
Chloroethane	ND	0.021	16.0	BV,BU
Chloroform	ND	0.039	16.0	BV,BU
Chloromethane	ND	0.017	16.0	BV,BU
Dibromochloromethane	ND	0.068	16.0	BV,BU
Dichlorodifluoromethane	ND	0.040	16.0	BV,BU
Diisopropyl Ether (DIPE)	ND	0.13	16.0	BV,BU
1,1-Dichloroethane	ND	0.032	16.0	BV,BU
1,1-Dichloroethene	ND	0.032	16.0	BV,BU
1,2-Dibromoethane	ND	0.061	16.0	BV,BU
Dichlorotetrafluoroethane	ND	0.22	16.0	BV,BU
1,2-Dichlorobenzene	ND	0.048	16.0	BV,BU
1,2-Dichloroethane	ND	0.032	16.0	BV,BU
1,2-Dichloropropane	ND	0.037	16.0	BV,BU
1,3-Dichlorobenzene	ND	0.048	16.0	BV,BU
1,4-Dichlorobenzene	ND	0.048	16.0	BV,BU
c-1,3-Dichloropropene	ND	0.036	16.0	BV,BU
c-1,2-Dichloroethene	ND	0.032	16.0	BV,BU
t-1,2-Dichloroethene	ND	0.032	16.0	BV,BU
t-1,3-Dichloropropene	ND	0.073	16.0	BV,BU
Ethyl-t-Butyl Ether (ETBE)	ND	0.13	16.0	BV,BU
Ethylbenzene	3.2	0.035	16.0	BV,BU
4-Ethyltoluene	0.11	0.039	16.0	BV,BU
Hexachloro-1,3-Butadiene	ND	0.26	16.0	BV,BU
2-Hexanone	ND	0.098	16.0	BV,BU

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.



## Analytical Report

Cardno ERI  
601 North McDowell Blvd.  
Petaluma, CA 94954-2312

Date Received: 08/26/14  
Work Order: 14-08-1907  
Preparation: N/A  
Method: EPA TO-15M  
Units: mg/m3

Project: ExxonMobil 99105/022783C

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<u>Parameter</u>	<u>Result</u>	<u>RL</u>	<u>DF</u>	<u>Qualifiers</u>
Methyl-t-Butyl Ether (MTBE)	ND	0.12	16.0	BV,BU
Methylene Chloride	ND	0.28	16.0	BV,BU
4-Methyl-2-Pentanone	ND	0.098	16.0	BV,BU
Naphthalene	ND	0.42	16.0	BV,BU
o-Xylene	ND	0.035	16.0	BV,BU
p/m-Xylene	0.39	0.14	16.0	BV,BU
Xylenes (total)	0.39	0.035	1.00	BV,BU
Styrene	ND	0.10	16.0	BV,BU
Tert-Amyl-Methyl Ether (TAME)	ND	0.13	16.0	BV,BU
Tert-Butyl Alcohol (TBA)	ND	0.24	16.0	BV,BU
Tetrachloroethene	ND	0.054	16.0	BV,BU
Toluene	ND	0.30	16.0	BV,BU
Trichloroethene	ND	0.043	16.0	BV,BU
Trichlorofluoromethane	ND	0.090	16.0	BV,BU
1,1,2-Trichloro-1,2,2-Trifluoroethane	ND	0.18	16.0	BV,BU
1,1,1-Trichloroethane	ND	0.044	16.0	BV,BU
1,1,2-Trichloroethane	ND	0.044	16.0	BV,BU
1,3,5-Trimethylbenzene	0.046	0.039	16.0	BV,BU
1,1,2,2-Tetrachloroethane	ND	0.11	16.0	BV,BU
1,2,4-Trimethylbenzene	ND	0.12	16.0	BV,BU
1,2,4-Trichlorobenzene	ND	0.24	16.0	BV,BU
Vinyl Acetate	ND	0.11	16.0	BV,BU
Vinyl Chloride	ND	0.020	16.0	BV,BU
<u>Surrogate</u>	<u>Rec. (%)</u>	<u>Control Limits</u>	<u>Qualifiers</u>	
1,4-Bromofluorobenzene	117	57-129		
1,2-Dichloroethane-d4	75	47-137		
Toluene-d8	78	78-156		

Return to Contents

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.



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## Analytical Report

Cardno ERI  
601 North McDowell Blvd.  
Petaluma, CA 94954-2312

Date Received: 08/26/14  
Work Order: 14-08-1907  
Preparation: N/A  
Method: EPA TO-15M  
Units: mg/m3

Project: ExxonMobil 99105/022783C

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Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
V-INF-COMP-7	14-08-1907-3-A	08/21/14 04:30	Air	GC/MS II	N/A	09/02/14 20:17	140902L02

Comment(s): - The method has been modified to use Tedlar Bags instead of Summa canisters and is not NY NELAC accredited.

Parameter	Result	RL	DF	Qualifiers
Acetone	ND	4.8	40.0	BV,BU
Benzene	6.0	0.064	40.0	BV,BU
Benzyl Chloride	ND	0.31	40.0	BV,BU
Bromodichloromethane	ND	0.13	40.0	BV,BU
Bromoform	ND	0.21	40.0	BV,BU
Bromomethane	ND	0.078	40.0	BV,BU
2-Butanone	ND	0.18	40.0	BV,BU
Carbon Disulfide	ND	1.2	40.0	BV,BU
Carbon Tetrachloride	ND	0.13	40.0	BV,BU
Chlorobenzene	ND	0.092	40.0	BV,BU
Chloroethane	ND	0.053	40.0	BV,BU
Chloroform	ND	0.098	40.0	BV,BU
Chloromethane	ND	0.041	40.0	BV,BU
Dibromochloromethane	ND	0.17	40.0	BV,BU
Dichlorodifluoromethane	ND	0.099	40.0	BV,BU
Diisopropyl Ether (DIPE)	ND	0.33	40.0	BV,BU
1,1-Dichloroethane	ND	0.081	40.0	BV,BU
1,1-Dichloroethene	ND	0.079	40.0	BV,BU
1,2-Dibromoethane	ND	0.15	40.0	BV,BU
Dichlorotetrafluoroethane	ND	0.56	40.0	BV,BU
1,2-Dichlorobenzene	ND	0.12	40.0	BV,BU
1,2-Dichloroethane	ND	0.081	40.0	BV,BU
1,2-Dichloropropane	ND	0.092	40.0	BV,BU
1,3-Dichlorobenzene	ND	0.12	40.0	BV,BU
1,4-Dichlorobenzene	ND	0.12	40.0	BV,BU
c-1,3-Dichloropropene	ND	0.091	40.0	BV,BU
c-1,2-Dichloroethene	ND	0.079	40.0	BV,BU
t-1,2-Dichloroethene	ND	0.079	40.0	BV,BU
t-1,3-Dichloropropene	ND	0.18	40.0	BV,BU
Ethyl-t-Butyl Ether (ETBE)	ND	0.33	40.0	BV,BU
Ethylbenzene	4.4	0.087	40.0	BV,BU
4-Ethyltoluene	0.13	0.098	40.0	BV,BU
Hexachloro-1,3-Butadiene	ND	0.64	40.0	BV,BU
2-Hexanone	ND	0.25	40.0	BV,BU

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

## Analytical Report

Cardno ERI  
601 North McDowell Blvd.  
Petaluma, CA 94954-2312

Date Received: 08/26/14  
Work Order: 14-08-1907  
Preparation: N/A  
Method: EPA TO-15M  
Units: mg/m3

Project: ExxonMobil 99105/022783C

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<u>Parameter</u>	<u>Result</u>	<u>RL</u>	<u>DF</u>	<u>Qualifiers</u>
Methyl-t-Butyl Ether (MTBE)	ND	0.29	40.0	BV,BU
Methylene Chloride	ND	0.69	40.0	BV,BU
4-Methyl-2-Pentanone	ND	0.25	40.0	BV,BU
Naphthalene	ND	1.0	40.0	BV,BU
o-Xylene	ND	0.087	40.0	BV,BU
p/m-Xylene	0.53	0.35	40.0	BV,BU
Xylenes (total)	0.53	0.087	1.00	BV,BU
Styrene	ND	0.26	40.0	BV,BU
Tert-Amyl-Methyl Ether (TAME)	ND	0.33	40.0	BV,BU
Tert-Butyl Alcohol (TBA)	ND	0.61	40.0	BV,BU
Tetrachloroethene	ND	0.14	40.0	BV,BU
Toluene	ND	0.75	40.0	BV,BU
Trichloroethene	ND	0.11	40.0	BV,BU
Trichlorofluoromethane	ND	0.22	40.0	BV,BU
1,1,2-Trichloro-1,2,2-Trifluoroethane	ND	0.46	40.0	BV,BU
1,1,1-Trichloroethane	ND	0.11	40.0	BV,BU
1,1,2-Trichloroethane	ND	0.11	40.0	BV,BU
1,3,5-Trimethylbenzene	ND	0.098	40.0	BV,BU
1,1,1,2-Tetrachloroethane	ND	0.27	40.0	BV,BU
1,2,4-Trimethylbenzene	ND	0.29	40.0	BV,BU
1,2,4-Trichlorobenzene	ND	0.59	40.0	BV,BU
Vinyl Acetate	ND	0.28	40.0	BV,BU
Vinyl Chloride	ND	0.051	40.0	BV,BU

<u>Surrogate</u>	<u>Rec. (%)</u>	<u>Control Limits</u>	<u>Qualifiers</u>
1,4-Bromofluorobenzene	118	57-129	
1,2-Dichloroethane-d4	79	47-137	
Toluene-d8	87	78-156	


Return to Contents

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.



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## Analytical Report

Cardno ERI  
601 North McDowell Blvd.  
Petaluma, CA 94954-2312

Date Received: 08/26/14  
Work Order: 14-08-1907  
Preparation: N/A  
Method: EPA TO-15M  
Units: mg/m3

Project: ExxonMobil 99105/022783C

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Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
V-INF-COMP-8	14-08-1907-4-A	08/21/14 12:30	Air	GC/MS II	N/A	09/01/14 04:30	140831L01

Comment(s): - The method has been modified to use Tedlar Bags instead of Summa canisters and is not NY NELAC accredited.

Parameter	Result	RL	DF	Qualifiers
Acetone	ND	1.9	16.0	BV,BU
Benzene	3.4	0.026	16.0	BV,BU
Benzyl Chloride	ND	0.12	16.0	BV,BU
Bromodichloromethane	ND	0.054	16.0	BV,BU
Bromoform	ND	0.083	16.0	BV,BU
Bromomethane	ND	0.031	16.0	BV,BU
2-Butanone	ND	0.071	16.0	BV,BU
Carbon Disulfide	ND	0.50	16.0	BV,BU
Carbon Tetrachloride	ND	0.050	16.0	BV,BU
Chlorobenzene	ND	0.037	16.0	BV,BU
Chloroethane	ND	0.021	16.0	BV,BU
Chloroform	ND	0.039	16.0	BV,BU
Chloromethane	ND	0.017	16.0	BV,BU
Dibromochloromethane	ND	0.068	16.0	BV,BU
Dichlorodifluoromethane	ND	0.040	16.0	BV,BU
Diisopropyl Ether (DIPE)	ND	0.13	16.0	BV,BU
1,1-Dichloroethane	ND	0.032	16.0	BV,BU
1,1-Dichloroethene	ND	0.032	16.0	BV,BU
1,2-Dibromoethane	ND	0.061	16.0	BV,BU
Dichlorotetrafluoroethane	ND	0.22	16.0	BV,BU
1,2-Dichlorobenzene	ND	0.048	16.0	BV,BU
1,2-Dichloroethane	ND	0.032	16.0	BV,BU
1,2-Dichloropropane	ND	0.037	16.0	BV,BU
1,3-Dichlorobenzene	ND	0.048	16.0	BV,BU
1,4-Dichlorobenzene	ND	0.048	16.0	BV,BU
c-1,3-Dichloropropene	ND	0.036	16.0	BV,BU
c-1,2-Dichloroethene	ND	0.032	16.0	BV,BU
t-1,2-Dichloroethene	ND	0.032	16.0	BV,BU
t-1,3-Dichloropropene	ND	0.073	16.0	BV,BU
Ethyl-t-Butyl Ether (ETBE)	ND	0.13	16.0	BV,BU
Ethylbenzene	2.5	0.035	16.0	BV,BU
4-Ethyltoluene	0.094	0.039	16.0	BV,BU
Hexachloro-1,3-Butadiene	ND	0.26	16.0	BV,BU
2-Hexanone	ND	0.098	16.0	BV,BU

Return to Contents ↑

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

## Analytical Report

Cardno ERI  
601 North McDowell Blvd.  
Petaluma, CA 94954-2312

Date Received: 08/26/14  
Work Order: 14-08-1907  
Preparation: N/A  
Method: EPA TO-15M  
Units: mg/m3

Project: ExxonMobil 99105/022783C

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<u>Parameter</u>	<u>Result</u>	<u>RL</u>	<u>DF</u>	<u>Qualifiers</u>
Methyl-t-Butyl Ether (MTBE)	ND	0.12	16.0	BV,BU
Methylene Chloride	ND	0.28	16.0	BV,BU
4-Methyl-2-Pentanone	ND	0.098	16.0	BV,BU
Naphthalene	ND	0.42	16.0	BV,BU
o-Xylene	ND	0.035	16.0	BV,BU
p/m-Xylene	0.37	0.14	16.0	BV,BU
Xylenes (total)	0.37	0.035	1.00	BV,BU
Styrene	ND	0.10	16.0	BV,BU
Tert-Amyl-Methyl Ether (TAME)	ND	0.13	16.0	BV,BU
Tert-Butyl Alcohol (TBA)	ND	0.24	16.0	BV,BU
Tetrachloroethene	ND	0.054	16.0	BV,BU
Toluene	ND	0.30	16.0	BV,BU
Trichloroethene	ND	0.043	16.0	BV,BU
Trichlorofluoromethane	ND	0.090	16.0	BV,BU
1,1,2-Trichloro-1,2,2-Trifluoroethane	ND	0.18	16.0	BV,BU
1,1,1-Trichloroethane	ND	0.044	16.0	BV,BU
1,1,2-Trichloroethane	ND	0.044	16.0	BV,BU
1,3,5-Trimethylbenzene	0.047	0.039	16.0	BV,BU
1,1,2,2-Tetrachloroethane	ND	0.11	16.0	BV,BU
1,2,4-Trimethylbenzene	ND	0.12	16.0	BV,BU
1,2,4-Trichlorobenzene	ND	0.24	16.0	BV,BU
Vinyl Acetate	ND	0.11	16.0	BV,BU
Vinyl Chloride	ND	0.020	16.0	BV,BU
<u>Surrogate</u>	<u>Rec. (%)</u>	<u>Control Limits</u>	<u>Qualifiers</u>	
1,4-Bromofluorobenzene	109	57-129		
1,2-Dichloroethane-d4	74	47-137		
Toluene-d8	82	78-156		


  
 Return to Contents

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

## Analytical Report

Cardno ERI  
601 North McDowell Blvd.  
Petaluma, CA 94954-2312

Date Received: 08/26/14  
Work Order: 14-08-1907  
Preparation: N/A  
Method: EPA TO-15M  
Units: mg/m3

Project: ExxonMobil 99105/022783C

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Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
V-INF-COMP-9	14-08-1907-5-A	08/21/14 20:30	Air	GC/MS II	N/A	09/02/14 22:58	140902L02

Comment(s): - The method has been modified to use Tedlar Bags instead of Summa canisters and is not NY NELAC accredited.

Parameter	Result	RL	DF	Qualifiers
Acetone	ND	4.8	40.0	BV,BU
Benzene	5.2	0.064	40.0	BV,BU
Benzyl Chloride	ND	0.31	40.0	BV,BU
Bromodichloromethane	ND	0.13	40.0	BV,BU
Bromoform	ND	0.21	40.0	BV,BU
Bromomethane	ND	0.078	40.0	BV,BU
2-Butanone	ND	0.18	40.0	BV,BU
Carbon Disulfide	ND	1.2	40.0	BV,BU
Carbon Tetrachloride	ND	0.13	40.0	BV,BU
Chlorobenzene	ND	0.092	40.0	BV,BU
Chloroethane	ND	0.053	40.0	BV,BU
Chloroform	ND	0.098	40.0	BV,BU
Chloromethane	ND	0.041	40.0	BV,BU
Dibromochloromethane	ND	0.17	40.0	BV,BU
Dichlorodifluoromethane	ND	0.099	40.0	BV,BU
Diisopropyl Ether (DIPE)	ND	0.33	40.0	BV,BU
1,1-Dichloroethane	ND	0.081	40.0	BV,BU
1,1-Dichloroethene	ND	0.079	40.0	BV,BU
1,2-Dibromoethane	ND	0.15	40.0	BV,BU
Dichlorotetrafluoroethane	ND	0.56	40.0	BV,BU
1,2-Dichlorobenzene	ND	0.12	40.0	BV,BU
1,2-Dichloroethane	ND	0.081	40.0	BV,BU
1,2-Dichloropropane	ND	0.092	40.0	BV,BU
1,3-Dichlorobenzene	ND	0.12	40.0	BV,BU
1,4-Dichlorobenzene	ND	0.12	40.0	BV,BU
c-1,3-Dichloropropene	ND	0.091	40.0	BV,BU
c-1,2-Dichloroethene	ND	0.079	40.0	BV,BU
t-1,2-Dichloroethene	ND	0.079	40.0	BV,BU
t-1,3-Dichloropropene	ND	0.18	40.0	BV,BU
Ethyl-t-Butyl Ether (ETBE)	ND	0.33	40.0	BV,BU
Ethylbenzene	3.4	0.087	40.0	BV,BU
4-Ethyltoluene	0.11	0.098	40.0	BV,BU
Hexachloro-1,3-Butadiene	ND	0.64	40.0	BV,BU
2-Hexanone	ND	0.25	40.0	BV,BU

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.



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## Analytical Report

Cardno ERI  
601 North McDowell Blvd.  
Petaluma, CA 94954-2312

Date Received: 08/26/14  
Work Order: 14-08-1907  
Preparation: N/A  
Method: EPA TO-15M  
Units: mg/m3

Project: ExxonMobil 99105/022783C

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<u>Parameter</u>	<u>Result</u>	<u>RL</u>	<u>DF</u>	<u>Qualifiers</u>
Methyl-t-Butyl Ether (MTBE)	ND	0.29	40.0	BV,BU
Methylene Chloride	ND	0.69	40.0	BV,BU
4-Methyl-2-Pentanone	ND	0.25	40.0	BV,BU
Naphthalene	ND	1.0	40.0	BV,BU
o-Xylene	ND	0.087	40.0	BV,BU
p/m-Xylene	0.47	0.35	40.0	BV,BU
Xylenes (total)	0.47	0.087	1.00	BV,BU
Styrene	ND	0.26	40.0	BV,BU
Tert-Amyl-Methyl Ether (TAME)	ND	0.33	40.0	BV,BU
Tert-Butyl Alcohol (TBA)	ND	0.61	40.0	BV,BU
Tetrachloroethene	ND	0.14	40.0	BV,BU
Toluene	ND	0.75	40.0	BV,BU
Trichloroethene	ND	0.11	40.0	BV,BU
Trichlorofluoromethane	ND	0.22	40.0	BV,BU
1,1,2-Trichloro-1,2,2-Trifluoroethane	ND	0.46	40.0	BV,BU
1,1,1-Trichloroethane	ND	0.11	40.0	BV,BU
1,1,2-Trichloroethane	ND	0.11	40.0	BV,BU
1,3,5-Trimethylbenzene	ND	0.098	40.0	BV,BU
1,1,2,2-Tetrachloroethane	ND	0.27	40.0	BV,BU
1,2,4-Trimethylbenzene	ND	0.29	40.0	BV,BU
1,2,4-Trichlorobenzene	ND	0.59	40.0	BV,BU
Vinyl Acetate	ND	0.28	40.0	BV,BU
Vinyl Chloride	ND	0.051	40.0	BV,BU

<u>Surrogate</u>	<u>Rec. (%)</u>	<u>Control Limits</u>	<u>Qualifiers</u>
1,4-Bromofluorobenzene	117	57-129	
1,2-Dichloroethane-d4	80	47-137	
Toluene-d8	87	78-156	

Return to Contents 

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.



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## Analytical Report

Cardno ERI  
601 North McDowell Blvd.  
Petaluma, CA 94954-2312

Date Received: 08/26/14  
Work Order: 14-08-1907  
Preparation: N/A  
Method: EPA TO-15M  
Units: mg/m3

Project: ExxonMobil 99105/022783C

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Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
V-INF-COMP-10	14-08-1907-6-A	08/22/14 04:30	Air	GC/MS II	N/A	09/02/14 23:46	140902L02

Comment(s): - The method has been modified to use Tedlar Bags instead of Summa canisters and is not NY NELAC accredited.

Parameter	Result	RL	DF	Qualifiers
Acetone	ND	4.8	40.0	BV,BU
Benzene	3.2	0.064	40.0	BV,BU
Benzyl Chloride	ND	0.31	40.0	BV,BU
Bromodichloromethane	ND	0.13	40.0	BV,BU
Bromoform	ND	0.21	40.0	BV,BU
Bromomethane	ND	0.078	40.0	BV,BU
2-Butanone	ND	0.18	40.0	BV,BU
Carbon Disulfide	ND	1.2	40.0	BV,BU
Carbon Tetrachloride	ND	0.13	40.0	BV,BU
Chlorobenzene	ND	0.092	40.0	BV,BU
Chloroethane	ND	0.053	40.0	BV,BU
Chloroform	ND	0.098	40.0	BV,BU
Chloromethane	ND	0.041	40.0	BV,BU
Dibromochloromethane	ND	0.17	40.0	BV,BU
Dichlorodifluoromethane	ND	0.099	40.0	BV,BU
Diisopropyl Ether (DIPE)	ND	0.33	40.0	BV,BU
1,1-Dichloroethane	ND	0.081	40.0	BV,BU
1,1-Dichloroethene	ND	0.079	40.0	BV,BU
1,2-Dibromoethane	ND	0.15	40.0	BV,BU
Dichlorotetrafluoroethane	ND	0.56	40.0	BV,BU
1,2-Dichlorobenzene	ND	0.12	40.0	BV,BU
1,2-Dichloroethane	ND	0.081	40.0	BV,BU
1,2-Dichloropropane	ND	0.092	40.0	BV,BU
1,3-Dichlorobenzene	ND	0.12	40.0	BV,BU
1,4-Dichlorobenzene	ND	0.12	40.0	BV,BU
c-1,3-Dichloropropene	ND	0.091	40.0	BV,BU
c-1,2-Dichloroethene	ND	0.079	40.0	BV,BU
t-1,2-Dichloroethene	ND	0.079	40.0	BV,BU
t-1,3-Dichloropropene	ND	0.18	40.0	BV,BU
Ethyl-t-Butyl Ether (ETBE)	ND	0.33	40.0	BV,BU
Ethylbenzene	2.0	0.087	40.0	BV,BU
4-Ethyltoluene	ND	0.098	40.0	BV,BU
Hexachloro-1,3-Butadiene	ND	0.64	40.0	BV,BU
2-Hexanone	ND	0.25	40.0	BV,BU

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.





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## Analytical Report

Cardno ERI  
601 North McDowell Blvd.  
Petaluma, CA 94954-2312

Date Received: 08/26/14  
Work Order: 14-08-1907  
Preparation: N/A  
Method: EPA TO-15M  
Units: mg/m3

Project: ExxonMobil 99105/022783C

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<u>Parameter</u>	<u>Result</u>	<u>RL</u>	<u>DF</u>	<u>Qualifiers</u>
Methyl-t-Butyl Ether (MTBE)	ND	0.29	40.0	BV,BU
Methylene Chloride	ND	0.69	40.0	BV,BU
4-Methyl-2-Pentanone	ND	0.25	40.0	BV,BU
Naphthalene	ND	1.0	40.0	BV,BU
o-Xylene	ND	0.087	40.0	BV,BU
p/m-Xylene	ND	0.35	40.0	BV,BU
Xylenes (total)	ND	0.087	1.00	BV,BU
Styrene	ND	0.26	40.0	BV,BU
Tert-Amyl-Methyl Ether (TAME)	ND	0.33	40.0	BV,BU
Tert-Butyl Alcohol (TBA)	ND	0.61	40.0	BV,BU
Tetrachloroethene	ND	0.14	40.0	BV,BU
Toluene	ND	0.75	40.0	BV,BU
Trichloroethene	ND	0.11	40.0	BV,BU
Trichlorofluoromethane	ND	0.22	40.0	BV,BU
1,1,2-Trichloro-1,2,2-Trifluoroethane	ND	0.46	40.0	BV,BU
1,1,1-Trichloroethane	ND	0.11	40.0	BV,BU
1,1,2-Trichloroethane	ND	0.11	40.0	BV,BU
1,3,5-Trimethylbenzene	ND	0.098	40.0	BV,BU
1,1,2,2-Tetrachloroethane	ND	0.27	40.0	BV,BU
1,2,4-Trimethylbenzene	ND	0.29	40.0	BV,BU
1,2,4-Trichlorobenzene	ND	0.59	40.0	BV,BU
Vinyl Acetate	ND	0.28	40.0	BV,BU
Vinyl Chloride	ND	0.051	40.0	BV,BU
<u>Surrogate</u>	<u>Rec. (%)</u>	<u>Control Limits</u>	<u>Qualifiers</u>	
1,4-Bromofluorobenzene	111	57-129		
1,2-Dichloroethane-d4	81	47-137		
Toluene-d8	92	78-156		

Return to Contents 

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

## Analytical Report

Cardno ERI  
 601 North McDowell Blvd.  
 Petaluma, CA 94954-2312

Date Received: 08/26/14  
 Work Order: 14-08-1907  
 Preparation: N/A  
 Method: EPA TO-15M  
 Units: mg/m3

Project: ExxonMobil 99105/022783C

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Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
V-INF-COMP-11	14-08-1907-7-A	08/22/14 12:05	Air	GC/MS II	N/A	09/01/14 06:56	140831L01

Comment(s): - The method has been modified to use Tedlar Bags instead of Summa canisters and is not NY NELAC accredited.

Parameter	Result	RL	DF	Qualifiers
Acetone	ND	1.9	16.0	BV,BU
Benzene	2.7	0.026	16.0	BV,BU
Benzyl Chloride	ND	0.12	16.0	BV,BU
Bromodichloromethane	ND	0.054	16.0	BV,BU
Bromoform	ND	0.083	16.0	BV,BU
Bromomethane	ND	0.031	16.0	BV,BU
2-Butanone	ND	0.071	16.0	BV,BU
Carbon Disulfide	ND	0.50	16.0	BV,BU
Carbon Tetrachloride	ND	0.050	16.0	BV,BU
Chlorobenzene	ND	0.037	16.0	BV,BU
Chloroethane	ND	0.021	16.0	BV,BU
Chloroform	ND	0.039	16.0	BV,BU
Chloromethane	ND	0.017	16.0	BV,BU
Dibromochloromethane	ND	0.068	16.0	BV,BU
Dichlorodifluoromethane	ND	0.040	16.0	BV,BU
Diisopropyl Ether (DIPE)	ND	0.13	16.0	BV,BU
1,1-Dichloroethane	ND	0.032	16.0	BV,BU
1,1-Dichloroethene	ND	0.032	16.0	BV,BU
1,2-Dibromoethane	ND	0.061	16.0	BV,BU
Dichlorotetrafluoroethane	ND	0.22	16.0	BV,BU
1,2-Dichlorobenzene	ND	0.048	16.0	BV,BU
1,2-Dichloroethane	ND	0.032	16.0	BV,BU
1,2-Dichloropropane	ND	0.037	16.0	BV,BU
1,3-Dichlorobenzene	ND	0.048	16.0	BV,BU
1,4-Dichlorobenzene	ND	0.048	16.0	BV,BU
c-1,3-Dichloropropene	ND	0.036	16.0	BV,BU
c-1,2-Dichloroethene	ND	0.032	16.0	BV,BU
t-1,2-Dichloroethene	ND	0.032	16.0	BV,BU
t-1,3-Dichloropropene	ND	0.073	16.0	BV,BU
Ethyl-t-Butyl Ether (ETBE)	ND	0.13	16.0	BV,BU
Ethylbenzene	2.9	0.035	16.0	BV,BU
4-Ethyltoluene	0.19	0.039	16.0	BV,BU
Hexachloro-1,3-Butadiene	ND	0.26	16.0	BV,BU
2-Hexanone	ND	0.098	16.0	BV,BU

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.



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## Analytical Report

Cardno ERI  
601 North McDowell Blvd.  
Petaluma, CA 94954-2312

Date Received: 08/26/14  
Work Order: 14-08-1907  
Preparation: N/A  
Method: EPA TO-15M  
Units: mg/m3

Project: ExxonMobil 99105/022783C

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<u>Parameter</u>	<u>Result</u>	<u>RL</u>	<u>DF</u>	<u>Qualifiers</u>
Methyl-t-Butyl Ether (MTBE)	ND	0.12	16.0	BV,BU
Methylene Chloride	ND	0.28	16.0	BV,BU
4-Methyl-2-Pentanone	ND	0.098	16.0	BV,BU
Naphthalene	ND	0.42	16.0	BV,BU
o-Xylene	ND	0.035	16.0	BV,BU
p/m-Xylene	0.55	0.14	16.0	BV,BU
Xylenes (total)	0.55	0.035	1.00	BV,BU
Styrene	ND	0.10	16.0	BV,BU
Tert-Amyl-Methyl Ether (TAME)	ND	0.13	16.0	BV,BU
Tert-Butyl Alcohol (TBA)	ND	0.24	16.0	BV,BU
Tetrachloroethene	ND	0.054	16.0	BV,BU
Toluene	ND	0.30	16.0	BV,BU
Trichloroethene	ND	0.043	16.0	BV,BU
Trichlorofluoromethane	ND	0.090	16.0	BV,BU
1,1,2-Trichloro-1,2,2-Trifluoroethane	ND	0.18	16.0	BV,BU
1,1,1-Trichloroethane	ND	0.044	16.0	BV,BU
1,1,2-Trichloroethane	ND	0.044	16.0	BV,BU
1,3,5-Trimethylbenzene	0.097	0.039	16.0	BV,BU
1,1,2,2-Tetrachloroethane	ND	0.11	16.0	BV,BU
1,2,4-Trimethylbenzene	ND	0.12	16.0	BV,BU
1,2,4-Trichlorobenzene	ND	0.24	16.0	BV,BU
Vinyl Acetate	ND	0.11	16.0	BV,BU
Vinyl Chloride	ND	0.020	16.0	BV,BU

<u>Surrogate</u>	<u>Rec. (%)</u>	<u>Control Limits</u>	<u>Qualifiers</u>
1,4-Bromofluorobenzene	111	57-129	
1,2-Dichloroethane-d4	77	47-137	
Toluene-d8	84	78-156	

  
Return to Contents

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

## Analytical Report

Cardno ERI  
601 North McDowell Blvd.  
Petaluma, CA 94954-2312

Date Received: 08/26/14  
Work Order: 14-08-1907  
Preparation: N/A  
Method: EPA TO-15M  
Units: mg/m3

Project: ExxonMobil 99105/022783C

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Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
Method Blank	099-12-981-4713	N/A	Air	GC/MS II	N/A	08/31/14 23:36	140831L01

Parameter	Result	RL	DF	Qualifiers
Acetone	ND	0.12	1.00	
Benzene	ND	0.0016	1.00	
Benzyl Chloride	ND	0.0078	1.00	
Bromodichloromethane	ND	0.0034	1.00	
Bromoform	ND	0.0052	1.00	
Bromomethane	ND	0.0019	1.00	
2-Butanone	ND	0.0044	1.00	
Carbon Disulfide	ND	0.031	1.00	
Carbon Tetrachloride	ND	0.0031	1.00	
Chlorobenzene	ND	0.0023	1.00	
Chloroethane	ND	0.0013	1.00	
Chloroform	ND	0.0024	1.00	
Chloromethane	ND	0.0010	1.00	
Dibromochloromethane	ND	0.0043	1.00	
Dichlorodifluoromethane	ND	0.0025	1.00	
Diisopropyl Ether (DIPE)	ND	0.0084	1.00	
1,1-Dichloroethane	ND	0.0020	1.00	
1,1-Dichloroethene	ND	0.0020	1.00	
1,2-Dibromoethane	ND	0.0038	1.00	
Dichlorotetrafluoroethane	ND	0.014	1.00	
1,2-Dichlorobenzene	ND	0.0030	1.00	
1,2-Dichloroethane	ND	0.0020	1.00	
1,2-Dichloropropane	ND	0.0023	1.00	
1,3-Dichlorobenzene	ND	0.0030	1.00	
1,4-Dichlorobenzene	ND	0.0030	1.00	
c-1,3-Dichloropropene	ND	0.0023	1.00	
c-1,2-Dichloroethene	ND	0.0020	1.00	
t-1,2-Dichloroethene	ND	0.0020	1.00	
t-1,3-Dichloropropene	ND	0.0045	1.00	
Ethyl-t-Butyl Ether (ETBE)	ND	0.0084	1.00	
Ethylbenzene	ND	0.0022	1.00	
4-Ethyltoluene	ND	0.0025	1.00	
Hexachloro-1,3-Butadiene	ND	0.016	1.00	
2-Hexanone	ND	0.0061	1.00	
Methyl-t-Butyl Ether (MTBE)	ND	0.0072	1.00	


 Return to Contents

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

## Analytical Report

Cardno ERI  
601 North McDowell Blvd.  
Petaluma, CA 94954-2312

Date Received: 08/26/14  
Work Order: 14-08-1907  
Preparation: N/A  
Method: EPA TO-15M  
Units: mg/m3

Project: ExxonMobil 99105/022783C

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<u>Parameter</u>	<u>Result</u>	<u>RL</u>	<u>DF</u>	<u>Qualifiers</u>
Methylene Chloride	ND	0.017	1.00	
4-Methyl-2-Pentanone	ND	0.0061	1.00	
Naphthalene	ND	0.026	1.00	
o-Xylene	ND	0.0022	1.00	
p/m-Xylene	ND	0.0087	1.00	
Xylenes (total)	ND	0.0022	1.00	
Styrene	ND	0.0064	1.00	
Tert-Amyl-Methyl Ether (TAME)	ND	0.0084	1.00	
Tert-Butyl Alcohol (TBA)	ND	0.015	1.00	
Tetrachloroethene	ND	0.0034	1.00	
Toluene	ND	0.019	1.00	
Trichloroethene	ND	0.0027	1.00	
Trichlorofluoromethane	ND	0.0056	1.00	
1,1,2-Trichloro-1,2,2-Trifluoroethane	ND	0.011	1.00	
1,1,1-Trichloroethane	ND	0.0027	1.00	
1,1,2-Trichloroethane	ND	0.0027	1.00	
1,3,5-Trimethylbenzene	ND	0.0025	1.00	
1,1,2,2-Tetrachloroethane	ND	0.0069	1.00	
1,2,4-Trimethylbenzene	ND	0.0074	1.00	
1,2,4-Trichlorobenzene	ND	0.015	1.00	
Vinyl Acetate	ND	0.0070	1.00	
Vinyl Chloride	ND	0.0013	1.00	

<u>Surrogate</u>	<u>Rec. (%)</u>	<u>Control Limits</u>	<u>Qualifiers</u>
1,4-Bromofluorobenzene	91	57-129	
1,2-Dichloroethane-d4	90	47-137	
Toluene-d8	101	78-156	

Return to Contents ↑

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

## Analytical Report

Cardno ERI  
601 North McDowell Blvd.  
Petaluma, CA 94954-2312

Date Received: 08/26/14  
Work Order: 14-08-1907  
Preparation: N/A  
Method: EPA TO-15M  
Units: mg/m3

Project: ExxonMobil 99105/022783C

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Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
Method Blank	099-12-981-4714	N/A	Air	GC/MS II	N/A	09/02/14 14:00	140902L02

Parameter	Result	RL	DF	Qualifiers
Acetone	ND	0.12	1.00	
Benzene	ND	0.0016	1.00	
Benzyl Chloride	ND	0.0078	1.00	
Bromodichloromethane	ND	0.0034	1.00	
Bromoform	ND	0.0052	1.00	
Bromomethane	ND	0.0019	1.00	
2-Butanone	ND	0.0044	1.00	
Carbon Disulfide	ND	0.031	1.00	
Carbon Tetrachloride	ND	0.0031	1.00	
Chlorobenzene	ND	0.0023	1.00	
Chloroethane	ND	0.0013	1.00	
Chloroform	ND	0.0024	1.00	
Chloromethane	ND	0.0010	1.00	
Dibromochloromethane	ND	0.0043	1.00	
Dichlorodifluoromethane	ND	0.0025	1.00	
Diisopropyl Ether (DIPE)	ND	0.0084	1.00	
1,1-Dichloroethane	ND	0.0020	1.00	
1,1-Dichloroethene	ND	0.0020	1.00	
1,2-Dibromoethane	ND	0.0038	1.00	
Dichlorotetrafluoroethane	ND	0.014	1.00	
1,2-Dichlorobenzene	ND	0.0030	1.00	
1,2-Dichloroethane	ND	0.0020	1.00	
1,2-Dichloropropane	ND	0.0023	1.00	
1,3-Dichlorobenzene	ND	0.0030	1.00	
1,4-Dichlorobenzene	ND	0.0030	1.00	
c-1,3-Dichloropropene	ND	0.0023	1.00	
c-1,2-Dichloroethene	ND	0.0020	1.00	
t-1,2-Dichloroethene	ND	0.0020	1.00	
t-1,3-Dichloropropene	ND	0.0045	1.00	
Ethyl-t-Butyl Ether (ETBE)	ND	0.0084	1.00	
Ethylbenzene	ND	0.0022	1.00	
4-Ethyltoluene	ND	0.0025	1.00	
Hexachloro-1,3-Butadiene	ND	0.016	1.00	
2-Hexanone	ND	0.0061	1.00	
Methyl-t-Butyl Ether (MTBE)	ND	0.0072	1.00	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.



Calscience

## Analytical Report

Cardno ERI  
601 North McDowell Blvd.  
Petaluma, CA 94954-2312

Date Received: 08/26/14  
Work Order: 14-08-1907  
Preparation: N/A  
Method: EPA TO-15M  
Units: mg/m3

Project: ExxonMobil 99105/022783C

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<u>Parameter</u>	<u>Result</u>	<u>RL</u>	<u>DF</u>	<u>Qualifiers</u>
Methylene Chloride	ND	0.017	1.00	
4-Methyl-2-Pentanone	ND	0.0061	1.00	
Naphthalene	ND	0.026	1.00	
o-Xylene	ND	0.0022	1.00	
p/m-Xylene	ND	0.0087	1.00	
Xylenes (total)	ND	0.0022	1.00	
Styrene	ND	0.0064	1.00	
Tert-Amyl-Methyl Ether (TAME)	ND	0.0084	1.00	
Tert-Butyl Alcohol (TBA)	ND	0.015	1.00	
Tetrachloroethene	ND	0.0034	1.00	
Toluene	ND	0.019	1.00	
Trichloroethene	ND	0.0027	1.00	
Trichlorofluoromethane	ND	0.0056	1.00	
1,1,2-Trichloro-1,2,2-Trifluoroethane	ND	0.011	1.00	
1,1,1-Trichloroethane	ND	0.0027	1.00	
1,1,2-Trichloroethane	ND	0.0027	1.00	
1,3,5-Trimethylbenzene	ND	0.0025	1.00	
1,1,2,2-Tetrachloroethane	ND	0.0069	1.00	
1,2,4-Trimethylbenzene	ND	0.0074	1.00	
1,2,4-Trichlorobenzene	ND	0.015	1.00	
Vinyl Acetate	ND	0.0070	1.00	
Vinyl Chloride	ND	0.0013	1.00	

<u>Surrogate</u>	<u>Rec. (%)</u>	<u>Control Limits</u>	<u>Qualifiers</u>
1,4-Bromofluorobenzene	100	57-129	
1,2-Dichloroethane-d4	96	47-137	
Toluene-d8	98	78-156	

Return to Contents ↑

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

## Analytical Report

Cardno ERI  
601 North McDowell Blvd.  
Petaluma, CA 94954-2312

Date Received: 08/26/14  
Work Order: 14-08-1907  
Preparation: N/A  
Method: EPA TO-3M  
Units: mg/m3

Project: ExxonMobil 99105/022783C

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Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
<b>V-INF-COMP-5</b>	<b>14-08-1907-1-A</b>	<b>08/20/14 12:30</b>	<b>Air</b>	<b>GC 13</b>	<b>N/A</b>	<b>08/26/14 13:18</b>	<b>140826L01</b>
<u>Parameter</u>		<u>Result</u>		<u>RL</u>		<u>DF</u>	<u>Qualifiers</u>
TPH as Gasoline		4800		35		5.00	
<b>V-INF-COMP-6</b>	<b>14-08-1907-2-A</b>	<b>08/20/14 20:35</b>	<b>Air</b>	<b>GC 13</b>	<b>N/A</b>	<b>08/26/14 13:43</b>	<b>140826L01</b>
<u>Parameter</u>		<u>Result</u>		<u>RL</u>		<u>DF</u>	<u>Qualifiers</u>
TPH as Gasoline		4900		35		5.00	
<b>V-INF-COMP-7</b>	<b>14-08-1907-3-A</b>	<b>08/21/14 04:30</b>	<b>Air</b>	<b>GC 13</b>	<b>N/A</b>	<b>08/26/14 13:54</b>	<b>140826L01</b>
<u>Parameter</u>		<u>Result</u>		<u>RL</u>		<u>DF</u>	<u>Qualifiers</u>
TPH as Gasoline		5200		35		5.00	
<b>V-INF-COMP-8</b>	<b>14-08-1907-4-A</b>	<b>08/21/14 12:30</b>	<b>Air</b>	<b>GC 13</b>	<b>N/A</b>	<b>08/26/14 14:07</b>	<b>140826L01</b>
<u>Parameter</u>		<u>Result</u>		<u>RL</u>		<u>DF</u>	<u>Qualifiers</u>
TPH as Gasoline		5300		35		5.00	
<b>V-INF-COMP-9</b>	<b>14-08-1907-5-A</b>	<b>08/21/14 20:30</b>	<b>Air</b>	<b>GC 13</b>	<b>N/A</b>	<b>08/26/14 14:19</b>	<b>140826L01</b>
<u>Parameter</u>		<u>Result</u>		<u>RL</u>		<u>DF</u>	<u>Qualifiers</u>
TPH as Gasoline		5000		35		5.00	
<b>V-INF-COMP-10</b>	<b>14-08-1907-6-A</b>	<b>08/22/14 04:30</b>	<b>Air</b>	<b>GC 13</b>	<b>N/A</b>	<b>08/26/14 14:31</b>	<b>140826L01</b>
<u>Parameter</u>		<u>Result</u>		<u>RL</u>		<u>DF</u>	<u>Qualifiers</u>
TPH as Gasoline		4600		35		5.00	
<b>V-INF-COMP-11</b>	<b>14-08-1907-7-A</b>	<b>08/22/14 12:05</b>	<b>Air</b>	<b>GC 13</b>	<b>N/A</b>	<b>08/26/14 14:43</b>	<b>140826L01</b>
<u>Parameter</u>		<u>Result</u>		<u>RL</u>		<u>DF</u>	<u>Qualifiers</u>
TPH as Gasoline		5200		35		5.00	
<b>Method Blank</b>	<b>098-01-005-5761</b>	<b>N/A</b>	<b>Air</b>	<b>GC 13</b>	<b>N/A</b>	<b>08/26/14 09:46</b>	<b>140826L01</b>
<u>Parameter</u>		<u>Result</u>		<u>RL</u>		<u>DF</u>	<u>Qualifiers</u>
TPH as Gasoline		ND		7.0		1.00	

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RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.



## Quality Control - Sample Duplicate

Cardno ERI	Date Received:	08/26/14
601 North McDowell Blvd.	Work Order:	14-08-1907
Petaluma, CA 94954-2312	Preparation:	N/A
	Method:	EPA TO-3M
Project: ExxonMobil 99105/022783C		Page 1 of 1

Quality Control Sample ID	Type	Matrix	Instrument	Date Prepared	Date Analyzed	Duplicate Batch Number
V-INF-COMP-5	Sample	Air	GC 13	N/A	08/26/14 13:18	140826D01
V-INF-COMP-5	Sample Duplicate	Air	GC 13	N/A	08/26/14 13:30	140826D01
<u>Parameter</u>		<u>Sample Conc.</u>	<u>DUP Conc.</u>	<u>RPD</u>	<u>RPD CL</u>	<u>Qualifiers</u>
TPH as Gasoline		4847	4831	0	0-20	



Calscience

## Quality Control - LCS/LCSD

Cardno ERI  
601 North McDowell Blvd.  
Petaluma, CA 94954-2312

Date Received: 08/26/14  
Work Order: 14-08-1907  
Preparation: N/A  
Method: EPA TO-15M

Project: ExxonMobil 99105/022783C

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Quality Control Sample ID	Type	Matrix	Instrument	Date Prepared	Date Analyzed	LCS/LCSD Batch Number				
099-12-981-4713	LCS	Air	GC/MS II	N/A	08/31/14 20:14	140831L01				
099-12-981-4713	LCSD	Air	GC/MS II	N/A	08/31/14 21:06	140831L01				
Parameter	Spike Added	LCS Conc.	LCS %Rec.	LCSD Conc.	LCSD %Rec.	%Rec. CL	ME CL	RPD	RPD CL	Qualifiers
Acetone	0.05939	0.05785	97	0.05825	98	50-150	33-167	1	0-35	
Benzene	0.07987	0.08819	110	0.08955	112	60-156	44-172	2	0-40	
Benzyl Chloride	0.1294	0.1397	108	0.1432	111	50-150	33-167	2	0-35	
Bromodichloromethane	0.1675	0.1674	100	0.1690	101	50-150	33-167	1	0-35	
Bromoform	0.2584	0.2490	96	0.2544	98	50-150	33-167	2	0-38	
Bromomethane	0.09708	0.09414	97	0.09501	98	50-150	33-167	1	0-35	
2-Butanone	0.07373	0.08112	110	0.08153	111	50-150	33-167	1	0-35	
Carbon Disulfide	0.07785	0.08196	105	0.08289	106	50-150	33-167	1	0-35	
Carbon Tetrachloride	0.1573	0.1464	93	0.1481	94	64-154	49-169	1	0-32	
Chlorobenzene	0.1151	0.1203	104	0.1227	107	50-150	33-167	2	0-35	
Chloroethane	0.06596	0.06625	100	0.06680	101	50-150	33-167	1	0-35	
Chloroform	0.1221	0.1216	100	0.1225	100	50-150	33-167	1	0-35	
Chloromethane	0.05163	0.05048	98	0.05450	106	50-150	33-167	8	0-35	
Dibromochloromethane	0.2130	0.2050	96	0.2100	99	50-150	33-167	2	0-35	
Dichlorodifluoromethane	0.1236	0.1219	99	0.1231	100	50-150	33-167	1	0-35	
Diisopropyl Ether (DIPE)	0.1045	0.1119	107	0.1127	108	60-140	47-153	1	0-30	
1,1-Dichloroethane	0.1012	0.1058	105	0.1069	106	50-150	33-167	1	0-35	
1,1-Dichloroethene	0.09912	0.09261	93	0.09385	95	50-150	33-167	1	0-35	
1,2-Dibromoethane	0.1921	0.1998	104	0.2045	106	54-144	39-159	2	0-36	
Dichlorotetrafluoroethane	0.1748	0.1665	95	0.1724	99	50-150	33-167	3	0-35	
1,2-Dichlorobenzene	0.1503	0.1533	102	0.1574	105	34-160	13-181	3	0-47	
1,2-Dichloroethane	0.1012	0.09807	97	0.09910	98	69-153	55-167	1	0-35	
1,2-Dichloropropane	0.1155	0.1252	108	0.1276	110	67-157	52-172	2	0-35	
1,3-Dichlorobenzene	0.1503	0.1522	101	0.1562	104	50-150	33-167	3	0-35	
1,4-Dichlorobenzene	0.1503	0.1557	104	0.1599	106	36-156	16-176	3	0-47	
c-1,3-Dichloropropene	0.1135	0.1265	111	0.1286	113	61-157	45-173	2	0-35	
c-1,2-Dichloroethene	0.09912	0.1096	111	0.1103	111	50-150	33-167	1	0-35	
t-1,2-Dichloroethene	0.09912	0.1072	108	0.1083	109	50-150	33-167	1	0-35	
t-1,3-Dichloropropene	0.1135	0.1272	112	0.1286	113	50-150	33-167	1	0-35	
Ethyl-t-Butyl Ether (ETBE)	0.1045	0.1159	111	0.1156	111	60-140	47-153	0	0-30	
Ethylbenzene	0.1086	0.1121	103	0.1151	106	52-154	35-171	3	0-38	
4-Ethyltoluene	0.1229	0.1285	105	0.1322	108	50-150	33-167	3	0-35	
Hexachloro-1,3-Butadiene	0.2666	0.2423	91	0.2468	93	50-150	33-167	2	0-35	
2-Hexanone	0.1024	0.1155	113	0.1189	116	50-150	33-167	3	0-35	
Methyl-t-Butyl Ether (MTBE)	0.09013	0.09797	109	0.09875	110	50-150	33-167	1	0-35	
Methylene Chloride	0.08684	0.08628	99	0.08704	100	50-150	33-167	1	0-35	

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RPD: Relative Percent Difference. CL: Control Limits

## Quality Control - LCS/LCSD

Cardno ERI  
601 North McDowell Blvd.  
Petaluma, CA 94954-2312

Date Received: 08/26/14  
Work Order: 14-08-1907  
Preparation: N/A  
Method: EPA TO-15M

Project: ExxonMobil 99105/022783C

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Parameter	Spike Added	LCS Conc.	LCS %Rec.	LCSD Conc.	LCSD %Rec.	%Rec. CL	ME CL	RPD	RPD CL	Qualifiers
4-Methyl-2-Pentanone	0.1024	0.1157	113	0.1174	115	50-150	33-167	1	0-35	
Naphthalene	0.1311	0.1338	102	0.1355	103	40-190	15-215	1	0-30	
o-Xylene	0.1086	0.1075	99	0.1105	102	52-148	36-164	3	0-38	
p/m-Xylene	0.2171	0.2155	99	0.2201	101	42-156	23-175	2	0-41	
Styrene	0.1065	0.1137	107	0.1178	111	50-150	33-167	3	0-35	
Tert-Amyl-Methyl Ether (TAME)	0.1045	0.1168	112	0.1168	112	60-140	47-153	0	0-30	
Tert-Butyl Alcohol (TBA)	0.1516	0.1609	106	0.1626	107	60-140	47-153	1	0-30	
Tetrachloroethene	0.1696	0.1684	99	0.1721	101	56-152	40-168	2	0-40	
Toluene	0.09421	0.09776	104	0.1008	107	56-146	41-161	3	0-43	
Trichloroethene	0.1343	0.1407	105	0.1428	106	63-159	47-175	1	0-34	
Trichlorofluoromethane	0.1405	0.1243	88	0.1245	89	50-150	33-167	0	0-35	
1,1,2-Trichloro-1,2,2-Trifluoroethane	0.1916	0.1997	104	0.2016	105	50-150	33-167	1	0-35	
1,1,1-Trichloroethane	0.1364	0.1304	96	0.1326	97	50-150	33-167	2	0-35	
1,1,2-Trichloroethane	0.1364	0.1477	108	0.1502	110	65-149	51-163	2	0-37	
1,3,5-Trimethylbenzene	0.1229	0.1226	100	0.1261	103	50-150	33-167	3	0-35	
1,1,2,2-Tetrachloroethane	0.1716	0.1771	103	0.1810	105	50-150	33-167	2	0-35	
1,2,4-Trimethylbenzene	0.1229	0.1235	100	0.1270	103	50-150	33-167	3	0-35	
1,2,4-Trichlorobenzene	0.1855	0.1935	104	0.1964	106	50-150	33-167	1	0-35	
Vinyl Acetate	0.08803	0.09530	108	0.09643	110	50-150	33-167	1	0-35	
Vinyl Chloride	0.06391	0.06392	100	0.06600	103	45-177	23-199	3	0-36	

Total number of LCS compounds: 56

Total number of ME compounds: 0

Total number of ME compounds allowed: 3

LCS ME CL validation result: Pass

Return to Contents 

RPD: Relative Percent Difference. CL: Control Limits



Calscience

## Quality Control - LCS/LCSD

Cardno ERI  
601 North McDowell Blvd.  
Petaluma, CA 94954-2312

Date Received: 08/26/14  
Work Order: 14-08-1907  
Preparation: N/A  
Method: EPA TO-15M

Project: ExxonMobil 99105/022783C

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Quality Control Sample ID	Type	Matrix	Instrument	Date Prepared	Date Analyzed	LCS/LCSD Batch Number				
099-12-981-4714	LCS	Air	GC/MS II	N/A	09/02/14 11:31	140902L02				
099-12-981-4714	LCSD	Air	GC/MS II	N/A	09/02/14 12:23	140902L02				
Parameter	Spike Added	LCS Conc.	LCS %Rec.	LCSD Conc.	LCSD %Rec.	%Rec. CL	ME CL	RPD	RPD CL	Qualifiers
Acetone	0.05939	0.05350	90	0.05280	89	50-150	33-167	1	0-35	
Benzene	0.07987	0.08541	107	0.08529	107	60-156	44-172	0	0-40	
Benzyl Chloride	0.1294	0.1498	116	0.1455	112	50-150	33-167	3	0-35	
Bromodichloromethane	0.1675	0.1687	101	0.1682	100	50-150	33-167	0	0-35	
Bromoform	0.2584	0.2672	103	0.2638	102	50-150	33-167	1	0-38	
Bromomethane	0.09708	0.09466	98	0.09442	97	50-150	33-167	0	0-35	
2-Butanone	0.07373	0.07414	101	0.07320	99	50-150	33-167	1	0-35	
Carbon Disulfide	0.07785	0.08067	104	0.08035	103	50-150	33-167	0	0-35	
Carbon Tetrachloride	0.1573	0.1547	98	0.1546	98	64-154	49-169	0	0-32	
Chlorobenzene	0.1151	0.1203	104	0.1198	104	50-150	33-167	0	0-35	
Chloroethane	0.06596	0.06302	96	0.06191	94	50-150	33-167	2	0-35	
Chloroform	0.1221	0.1220	100	0.1225	100	50-150	33-167	0	0-35	
Chloromethane	0.05163	0.04802	93	0.04897	95	50-150	33-167	2	0-35	
Dibromochloromethane	0.2130	0.2159	101	0.2136	100	50-150	33-167	1	0-35	
Dichlorodifluoromethane	0.1236	0.1271	103	0.1279	103	50-150	33-167	1	0-35	
Diisopropyl Ether (DIPE)	0.1045	0.1027	98	0.1033	99	60-140	47-153	1	0-30	
1,1-Dichloroethane	0.1012	0.1012	100	0.1007	100	50-150	33-167	0	0-35	
1,1-Dichloroethene	0.09912	0.08868	89	0.08850	89	50-150	33-167	0	0-35	
1,2-Dibromoethane	0.1921	0.2013	105	0.1999	104	54-144	39-159	1	0-36	
Dichlorotetrafluoroethane	0.1748	0.1712	98	0.1739	100	50-150	33-167	2	0-35	
1,2-Dichlorobenzene	0.1503	0.1587	106	0.1564	104	34-160	13-181	1	0-47	
1,2-Dichloroethane	0.1012	0.09796	97	0.09789	97	69-153	55-167	0	0-35	
1,2-Dichloropropane	0.1155	0.1161	101	0.1165	101	67-157	52-172	0	0-35	
1,3-Dichlorobenzene	0.1503	0.1603	107	0.1578	105	50-150	33-167	2	0-35	
1,4-Dichlorobenzene	0.1503	0.1628	108	0.1602	107	36-156	16-176	2	0-47	
c-1,3-Dichloropropene	0.1135	0.1234	109	0.1229	108	61-157	45-173	0	0-35	
c-1,2-Dichloroethene	0.09912	0.1089	110	0.1070	108	50-150	33-167	2	0-35	
t-1,2-Dichloroethene	0.09912	0.1070	108	0.1057	107	50-150	33-167	1	0-35	
t-1,3-Dichloropropene	0.1135	0.1260	111	0.1264	111	50-150	33-167	0	0-35	
Ethyl-t-Butyl Ether (ETBE)	0.1045	0.1138	109	0.1128	108	60-140	47-153	1	0-30	
Ethylbenzene	0.1086	0.1119	103	0.1108	102	52-154	35-171	1	0-38	
4-Ethyltoluene	0.1229	0.1332	108	0.1317	107	50-150	33-167	1	0-35	
Hexachloro-1,3-Butadiene	0.2666	0.2510	94	0.2535	95	50-150	33-167	1	0-35	
2-Hexanone	0.1024	0.1057	103	0.1036	101	50-150	33-167	2	0-35	
Methyl-t-Butyl Ether (MTBE)	0.09013	0.09917	110	0.09809	109	50-150	33-167	1	0-35	
Methylene Chloride	0.08684	0.08350	96	0.07433	86	50-150	33-167	12	0-35	

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RPD: Relative Percent Difference. CL: Control Limits

## Quality Control - LCS/LCSD

Cardno ERI  
601 North McDowell Blvd.  
Petaluma, CA 94954-2312

Date Received: 08/26/14  
Work Order: 14-08-1907  
Preparation: N/A  
Method: EPA TO-15M

Project: ExxonMobil 99105/022783C

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Parameter	Spike Added	LCS Conc.	LCS %Rec.	LCSD Conc.	LCSD %Rec.	%Rec. CL	ME CL	RPD	RPD CL	Qualifiers
4-Methyl-2-Pentanone	0.1024	0.1070	104	0.1063	104	50-150	33-167	1	0-35	
Naphthalene	0.1311	0.1280	98	0.1286	98	40-190	15-215	0	0-30	
o-Xylene	0.1086	0.1085	100	0.1079	99	52-148	36-164	0	0-38	
p/m-Xylene	0.2171	0.2194	101	0.2168	100	42-156	23-175	1	0-41	
Styrene	0.1065	0.1133	106	0.1127	106	50-150	33-167	1	0-35	
Tert-Amyl-Methyl Ether (TAME)	0.1045	0.1181	113	0.1180	113	60-140	47-153	0	0-30	
Tert-Butyl Alcohol (TBA)	0.1516	0.1609	106	0.1304	86	60-140	47-153	21	0-30	
Tetrachloroethene	0.1696	0.1764	104	0.1740	103	56-152	40-168	1	0-40	
Toluene	0.09421	0.09690	103	0.09595	102	56-146	41-161	1	0-43	
Trichloroethene	0.1343	0.1420	106	0.1417	105	63-159	47-175	0	0-34	
Trichlorofluoromethane	0.1405	0.1263	90	0.1237	88	50-150	33-167	2	0-35	
1,1,2-Trichloro-1,2,2-Trifluoroethane	0.1916	0.2061	108	0.2055	107	50-150	33-167	0	0-35	
1,1,1-Trichloroethane	0.1364	0.1357	99	0.1356	99	50-150	33-167	0	0-35	
1,1,2-Trichloroethane	0.1364	0.1437	105	0.1436	105	65-149	51-163	0	0-37	
1,3,5-Trimethylbenzene	0.1229	0.1259	102	0.1252	102	50-150	33-167	1	0-35	
1,1,2,2-Tetrachloroethane	0.1716	0.1717	100	0.1710	100	50-150	33-167	0	0-35	
1,2,4-Trimethylbenzene	0.1229	0.1283	104	0.1272	103	50-150	33-167	1	0-35	
1,2,4-Trichlorobenzene	0.1855	0.1902	103	0.1907	103	50-150	33-167	0	0-35	
Vinyl Acetate	0.08803	0.08950	102	0.08845	100	50-150	33-167	1	0-35	
Vinyl Chloride	0.06391	0.06172	97	0.06271	98	45-177	23-199	2	0-36	

Total number of LCS compounds: 56

Total number of ME compounds: 0

Total number of ME compounds allowed: 3

LCS ME CL validation result: Pass

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RPD: Relative Percent Difference. CL: Control Limits

**Quality Control - LCS**

Cardno ERI  
601 North McDowell Blvd.  
Petaluma, CA 94954-2312

Date Received: 08/26/14  
Work Order: 14-08-1907  
Preparation: N/A  
Method: EPA TO-3M

Project: ExxonMobil 99105/022783C

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Quality Control Sample ID	Type	Matrix	Instrument	Date Prepared	Date Analyzed	LCS Batch Number
098-01-005-5761	LCS	Air	GC 13	N/A	08/26/14 09:29	140826L01
<u>Parameter</u>		<u>Spike Added</u>	<u>Conc. Recovered</u>	<u>LCS %Rec.</u>	<u>%Rec. CL</u>	<u>Qualifiers</u>
TPH as Gasoline		932.5	1011	108	80-120	

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RPD: Relative Percent Difference. CL: Control Limits



## Glossary of Terms and Qualifiers

Work Order: 14-08-1907

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<u>Qualifiers</u>	<u>Definition</u>
AZ	Surrogate compound recovery was out of control due to matrix interference. The associated method blank surrogate spike compound was in control and, therefore, the sample data was reported without further clarification.
B	Analyte was present in the associated method blank.
BA	The MS/MSD RPD was out of control due to suspected matrix interference.
BB	Spike recovery and RPD control limits do not apply resulting from the parameter concentration in the sample exceeding the spike concentration by a factor of four or greater.
BU	Sample analyzed after holding time expired.
BV	Sample received after holding time expired.
DF	Reporting limits elevated due to matrix interferences.
E	Concentration exceeds the calibration range.
ET	Sample was extracted past end of recommended max. holding time.
GE	The PDS/PDSD or PES/PESD associated with this batch of samples was out of control due to suspected matrix interference.
HD	Chromat. profile inconsistent with pattern(s) of ref. fuel stnds.
HO	High concentration matrix spike recovery out of limits
HT	Analytical value calculated using results from associated tests.
HX	Recovery of the Matrix Spike (MS) or Matrix Spike Duplicate (MSD) compound was out of control due to matrix interference. The associated LCS was in control.
IL	Relative percent difference out of control.
J	Analyte was detected at a concentration below the reporting limit and above the laboratory method detection limit. Reported value is estimated.
JA	Analyte positively identified but quantitation is an estimate.
LD	Analyte presence was not confirmed by second column or GC/MS analysis.
LP	The LCS and/or LCSD recoveries for this analyte were above the upper control limit. The associated sample was non-detected. Therefore, the sample data was reported without further clarification.
LQ	LCS recovery above method control limits.
LR	LCS recovery below method control limits.
ND	Parameter not detected at the indicated reporting limit.
QO	Compound did not meet method-described identification guidelines. Identification was based on additional GC/MS characteristics.
RU	LCS Recovery Percentage is within Marginal Exceedance (ME) Control Limit range (+/- 4 SD from the mean).
SG	A silica gel cleanup procedure was performed.
SN	See applicable analysis comment.

Solid - Unless otherwise indicated, solid sample data is reported on a wet weight basis, not corrected for % moisture. All QC results are reported on a wet weight basis.

Any parameter identified in 40CFR Part 136.3 Table II that is designated as "analyze immediately" with a holding time of <= 15 minutes (40CFR-136.3 Table II, footnote 4), is considered a "field" test and the reported results will be qualified as being received outside of the stated holding time unless received at the laboratory within 15 minutes of the collection time.

A calculated total result (Example: Total Pesticides) is the summation of each component concentration and/or, if "J" flags are reported, estimated concentration. Component concentrations showing not detected (ND) are summed into the calculated total result as zero concentrations.

## Sandy Tat

---

**From:** David R. Daniels <david.daniels@cardno.com>  
**Sent:** Wednesday, August 27, 2014 5:03 PM  
**To:** Sandy Tat  
**Subject:** RE: Change TAT on submitted samples  
**Attachments:** 14-08-1899 Revised.pdf; 14-08-1907 Revised.pdf

Revised COCs attached. Thank You

David R. Daniels, PG 8737  
PROJECT GEOLOGIST  
CARDNO ERI

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Address 601 North McDowell Blvd., Petaluma, CA 94954-2312 USA  
Email [david.daniels@cardno.com](mailto:david.daniels@cardno.com) Web [www.cardno.com](http://www.cardno.com) [www.cardnoeri.com](http://www.cardnoeri.com)

**From:** Sandy Tat [<mailto:SandyTat@eurofinsUS.com>]  
**Sent:** Wednesday, August 27, 2014 4:41 PM  
**To:** David R. Daniels  
**Subject:** RE: Change TAT on submitted samples

Here you go. Please revise the TAT.

Thanks!

Sandy Tat  
*Project Manager Assistant*

**From:** David R. Daniels [<mailto:david.daniels@cardno.com>]  
**Sent:** Wednesday, August 27, 2014 4:00 PM  
**To:** Cecile L de Guia; Sandy Tat  
**Subject:** RE: Change TAT on submitted samples

I should have mentioned that we will want 5-day TAT.

David R. Daniels, PG 8737  
PROJECT GEOLOGIST  
CARDNO ERI

Phone (+1) 707-766-2000 Fax (+1) 707-789-0414 Direct (+1) 707-766-2024 Mobile (+1) 707-338-6997  
Address 601 North McDowell Blvd., Petaluma, CA 94954-2312 USA  
Email [david.daniels@cardno.com](mailto:david.daniels@cardno.com) Web [www.cardno.com](http://www.cardno.com) [www.cardnoeri.com](http://www.cardnoeri.com)

**From:** David R. Daniels  
**Sent:** Wednesday, August 27, 2014 3:55 PM  
**To:** Cecile L de Guia ([CecileLdeGuia@eurofinsUS.com](mailto:CecileLdeGuia@eurofinsUS.com)); Sandy Tat ([SandyTat@eurofinsUS.com](mailto:SandyTat@eurofinsUS.com))  
**Subject:** Change TAT on submitted samples

We would like to change the TAT on some samples. I believe they arrived in Garden Grove yesterday. And should be on two COCs. They are for ExxonMobil site 99105. One of them is work order 14-08-1907. I'm not sure of the other one but



it is water samples for the same site. I'll revise the COCs if you can send them to me. We have a report due September 10<sup>th</sup>.

Thanks,

David R. Daniels, PG 8737  
PROJECT GEOLOGIST  
CARDNO ERI



Phone (+1) 707-766-2000 Fax (+1) 707-789-0414 Direct (+1) 707-766-2024 Mobile (+1) 707-338-6997  
Address 601 North McDowell Blvd., Petaluma, CA 94954-2312 USA  
Email [david.daniels@cardno.com](mailto:david.daniels@cardno.com) Web [www.cardno.com](http://www.cardno.com) [www.cardnoeri.com](http://www.cardnoeri.com)

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↑  
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## Cecile L de Guia

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**From:** Azat Magdanov (Petaluma) [azat.magdanov@cardno.com]  
**Sent:** Tuesday, August 26, 2014 12:38 PM  
**To:** Cecile L de Guia  
**Cc:** David R. Daniels; Greg Gurss; Sandy Tat  
**Subject:** Re: COC for vapor samples taken from site 99105

Please proceed, Cecile.

Sent from my iPhone

On Aug 26, 2014, at 12:08 PM, "Cecile L de Guia" <[CecileLdeGuia@eurofinsUS.com](mailto:CecileLdeGuia@eurofinsUS.com)> wrote:

Good Afternoon Azat/David,

The attached COC was received today and all the tedlar bags were past the specified holding time. Please let me know if you would like to proceed with the analysis?  
Thank you.

Best regards,  
Cecile de Guia  
Project Manager

Eurofins Calscience  
7440 Lincoln Way  
Garden Grove, CA 92841-1427  
(714) 895-5494  
Email: [ceciledeguia@eurofinsUS.com](mailto:ceciledeguia@eurofinsUS.com)  
Website: [www.eurofinsus.com](http://www.eurofinsus.com)

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<14081907.pdf>

Click [here](#) to report this email as spam.



**GSO**  
 800-322-5555 [www.gso.com](http://www.gso.com)

**< WebShip > > > >**  
 800-322-5555 [www.gso.com](http://www.gso.com)

1907

<b>Ship From:</b> ALAN KEMP CAL SCIENCE- CONCORD 5063 COMMERCIAL CIRCLE #H CONCORD, CA 94520	<b>Tracking #:</b> 525470207 	<b>NPS</b>
	<b>Ship To:</b> SAMPLE RECEIVING CEL 7440 LINCOLN WAY GARDEN GROVE, CA 92841	<b>ORC</b> <b>A</b> <b>GARDEN GROVE</b>
<b>COD:</b> \$0.00	<b>D92845A</b>  27970055	
<b>Reference:</b> CARDNO ERI	Print Date: 09/25/14 15:29 PM	
<b>Delivery Instructions:</b>	<b>Package 1 of 1</b>	
<b>Signature Type:</b> SIGNATURE REQUIRED		

Print All

**LABEL INSTRUCTIONS:**

- Do not copy or reprint this label for additional shipments - each package must have a unique barcode.
- STEP 1 - Use the "Send Label to Printer" button on this page to print the shipping label on a laser or inkjet printer.
- STEP 2 - Fold this page in half.
- STEP 3 - Securely attach this label to your package, do not cover the barcode.
- STEP 4 - Request an on-call pickup for your package, if you do not have scheduled daily pickup service or Drop-off your package at the nearest GSO drop box. Locate nearest GSO dropbox locations using this link.

**ADDITIONAL OPTIONS:**

**TERMS AND CONDITIONS:**

By giving us your shipment to deliver, you agree to all the service terms and conditions described in this section. Our liability for loss or damage to any package is limited to your actual damages or \$100 whichever is less, unless you pay for and declare a higher authorized value. If you declare a higher value and pay the additional charge, our liability will be the lesser of your declared value or the actual value of your loss or damage. In any event, we will not be liable for any damage, whether direct, incidental, special or consequential, in excess of the declared value of a shipment whether or not we had knowledge that such damage might be incurred including but not limited to loss of income or profit. We will not be liable for your acts or omissions, including but not limited to improper or insufficient packaging, securing, marking or addressing. Also, we will not be liable if you or the recipient violates any of the terms of our agreement. We will not be liable for loss, damage or delay caused by events we cannot control, including but not limited to acts of God, perils of the air, weather conditions, act of public enemies, war, strikes, or civil commotion. The highest declared value for our GSO Priority Letter or GSO Priority Package is \$500. For other shipments the highest declared value is \$10,000 unless your package contains items of "extraordinary value", in which case the highest declared value we allow is \$500. Items of "extraordinary value" include, but are not limited to, artwork, jewelry, furs, precious metals, tickets, negotiable instruments and other items with intrinsic value.

**Calscience**

**WORK ORDER #: 14-08-  9  0  7**

**SAMPLE RECEIPT FORM**

<sup>Box</sup> Cooler 1 of 1  
15 8/26/14

**CLIENT:** Carduo EM

**DATE:** 08/26/14

**TEMPERATURE:** Thermometer ID: SC1 (Criteria: 0.0°C – 6.0°C, not frozen except sediment/tissue)

Temperature \_\_\_\_\_ °C - 0.3°C (CF) = \_\_\_\_\_ °C     Blank     Sample

Sample(s) outside temperature criteria (PM/APM contacted by: \_\_\_\_\_)

Sample(s) outside temperature criteria but received on ice/chilled on same day of sampling.

Received at ambient temperature, placed on ice for transport by Courier.

Ambient Temperature:  Air     Filter    Checked by: 8/6

**CUSTODY SEALS INTACT:**

Cooler     Box     No (Not Intact)     Not Present     N/A    Checked by: 8/6

Sample     \_\_\_\_\_     No (Not Intact)     Not Present    Checked by: 8/6

<b>SAMPLE CONDITION:</b>	Yes	No	N/A
Chain-Of-Custody (COC) document(s) received with samples.....	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
COC document(s) received complete.....	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/> Collection date/time, matrix, and/or # of containers logged in based on sample labels. <input type="checkbox"/> No analysis requested. <input type="checkbox"/> Not relinquished. <input type="checkbox"/> No date/time relinquished.			
Sampler's name indicated on COC.....	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Sample container label(s) consistent with COC.....	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Sample container(s) intact and good condition.....	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Proper containers and sufficient volume for analyses requested.....	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Analyses received within holding time.....	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Aqueous samples received within 15-minute holding time			
<input type="checkbox"/> pH <input type="checkbox"/> Residual Chlorine <input type="checkbox"/> Dissolved Sulfides <input type="checkbox"/> Dissolved Oxygen.....	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Proper preservation noted on COC or sample container.....	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
<input type="checkbox"/> Unpreserved vials received for Volatiles analysis			
Volatile analysis container(s) free of headspace.....	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Tedlar bag(s) free of condensation.....	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

**CONTAINER TYPE:**

**Solid:**  4ozCGJ     8ozCGJ     16ozCGJ     Sleeve (\_\_\_\_)     EnCores®     TerraCores®     \_\_\_\_\_

**Aqueous:**  VOA     VOAh     VOAna<sub>2</sub>     125AGB     125AGBh     125AGBp     1AGB     1AGBna<sub>2</sub>     1AGBs

500AGB     500AGJ     500AGJs     250AGB     250CGB     250CGBs     1PB     1PBna     500PB

250PB     250PBn     125PB     125PBzanna     100PJ     100PJna<sub>2</sub>     \_\_\_\_\_     \_\_\_\_\_     \_\_\_\_\_

**Air:**  Tedlar®     Canister    **Other:**  \_\_\_\_\_    **Trip Blank Lot#:** \_\_\_\_\_    **Labeled/Checked by:** 8/6

Container: C: Clear A: Amber P: Plastic G: Glass J: Jar B: Bottle Z: Ziploc/Resealable Bag E: Envelope    **Reviewed by:** 778

Preservative: h: HCL n: HNO<sub>3</sub> na<sub>2</sub>: Na<sub>2</sub>S<sub>2</sub>O<sub>3</sub> na: NaOH p: H<sub>3</sub>PO<sub>4</sub> s: H<sub>2</sub>SO<sub>4</sub> u: Ultra-pure zanna: ZnAc<sub>2</sub>+NaOH f: Filtered    **Scanned by:** 778

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Calscience

WORK ORDER #: 14-08-7 9 0 7

## SAMPLE ANOMALY FORM

**SAMPLES - CONTAINERS & LABELS:**

**Comments:**

- Sample(s) NOT RECEIVED but listed on COC
- Sample(s) received but NOT LISTED on COC
- Holding time expired – list sample ID(s) and test
- Insufficient quantities for analysis – list test
- Improper container(s) used – list test
- Improper preservative used – list test
- No preservative noted on COC or label – list test & notify lab
- Sample labels illegible – note test/container type
- Sample label(s) do not match COC – Note in comments
  - Sample ID
  - Date and/or Time Collected
  - Project Information
  - # of Container(s)
  - Analysis
- Sample container(s) compromised – Note in comments
  - Water present in sample container
  - Broken
- Sample container(s) not labeled
- Air sample container(s) compromised – Note in comments
  - Flat
  - Very low in volume
  - Leaking (Not transferred - duplicate bag submitted)
  - Leaking (transferred into Calscience Tedlar® Bag\*)
  - Leaking (transferred into Client's Tedlar® Bag\*)
- Other: \_\_\_\_\_

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(1-7) All analyses past holding time.

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**HEADSPACE – Containers with Bubble > 6mm or 1/4 inch:**

Sample #	Container ID(s)	# of Vials Received	Sample #	Container ID(s)	# of Vials Received	Sample #	Container ID(s)	# of Cont. received	Analysis

Comments: \_\_\_\_\_

\*Transferred at Client's request. Initial / Date:   826   08/26/14

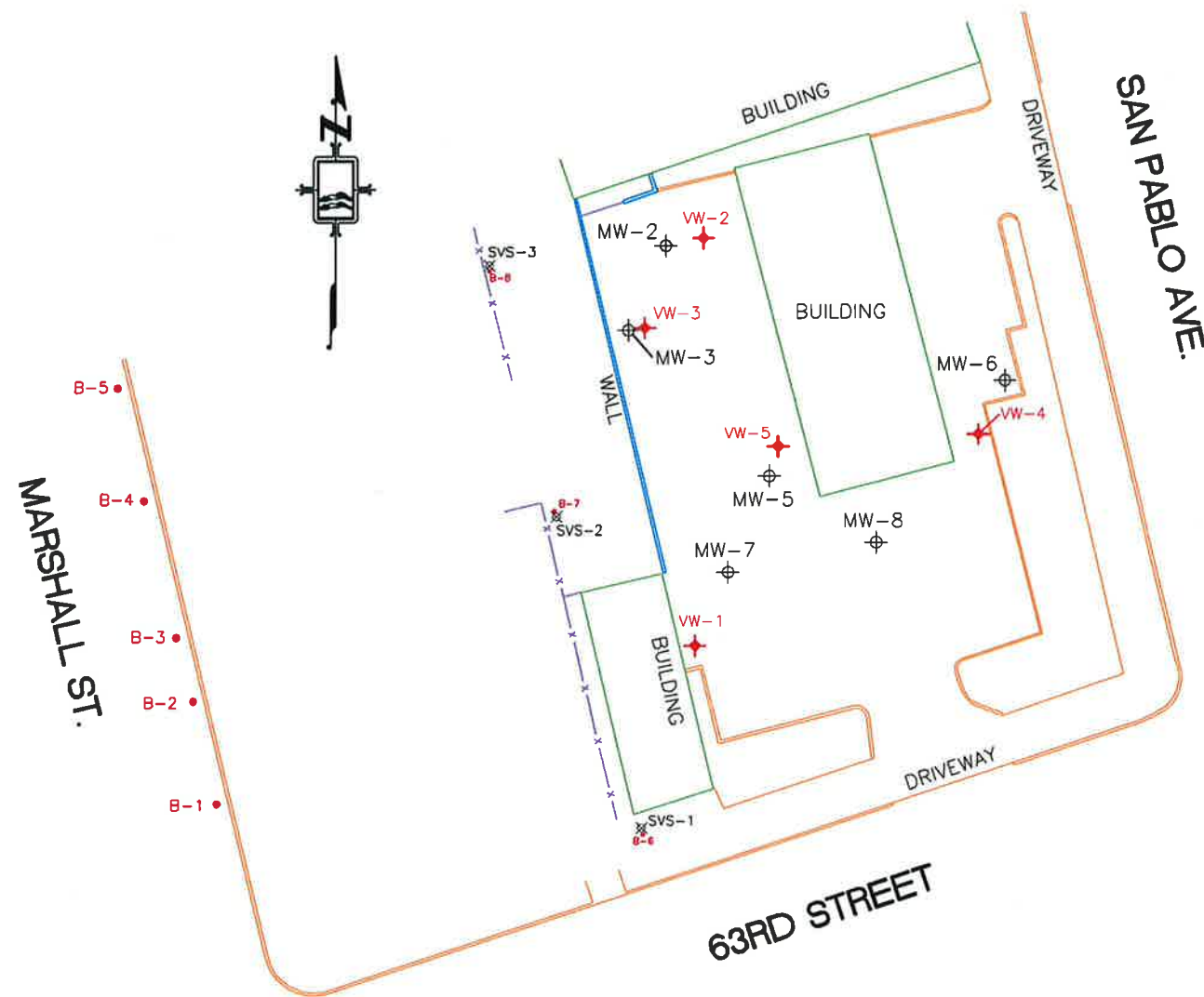


**APPENDIX G**  
**SURVEY DATA**



# Monitoring Well Exhibit

Prepared For:  
**Cardno, ERI**



**BASIS OF COORDINATES AND ELEVATIONS:**

COORDINATES ARE CALIFORNIA STATE PLANE ZONE 3 COORDINATES FROM GPS OBSERVATIONS USING CSDS VIRTUAL SURVEY NETWORK.

COORDINATE DATUM IS NAD 83.

REFERENCE GEOID IS GEOID03.

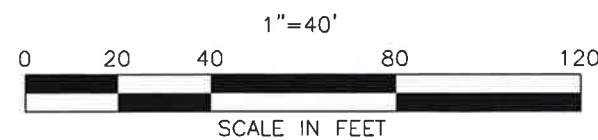
VERTICAL DATUM IS NAVD 88 FROM GPS OBSERVATIONS.

DESC.	NORTHING	EASTING	LATITUDE	LONGITUDE	EL. PVC	EL. RIM
MW-2	2135415.1	6046243.7	37.8459707	-122.2851518	42.24	42.54
MW-3	2135395.2	6046234.9	37.8459157	-122.2851810	42.18	42.44
MW-5	2135361.0	6046267.8	37.8458234	-122.2850651	41.86	42.21
MW-6	2135383.5	6046322.7	37.8458880	-122.2848764	42.00	42.37
MW-7	2135338.5	6046258.2	37.8457611	-122.2850966	41.34	41.72
MW-8	2135345.4	6046292.7	37.8457820	-122.2849776	41.30	41.75
SVS-1	2135278.6	6046237.8	37.8455955	-122.2851633		38.78
SVS-2	2135351.6	6046218.1	37.8457949	-122.2852363		41.05
SVS-3	2135410.4	6046202.7	37.8459556	-122.2852938		42.64
VW-1	2135321.4	6046250.4	37.8457136	-122.2851225		41.03
VW-2	2135416.9	6046252.6	37.8459762	-122.2851214		42.49
VW-3	2135395.9	6046238.8	37.8459177	-122.2851677		42.38
VW-4	2135370.9	6046316.5	37.8458532	-122.2848969		42.44
VW-5	2135367.9	6046269.8	37.8458426	-122.2850585		42.29
B-1	2135284.3	6046139.2	37.8456062	-122.2855053		
B-2	2135308.4	6046133.7	37.8456721	-122.2855259		
B-3	2135323.3	6046129.8	37.8457127	-122.2855402		
B-4	2135355.4	6046122.4	37.8458004	-122.2855681		
B-5	2135381.7	6046116.4	37.8458724	-122.2855905		
B-6	2135277.0	6046238.2	37.8455913	-122.2851619		
B-7	2135353.0	6046217.7	37.8457987	-122.2852379		
B-8	2135409.1	6046202.7	37.8459522	-122.2852936		

\*\*NOTE: SITE FEATURES AND POINTS MW-2, MW-3, MW-5, VW-1 THRU VW-5, AND B-1 THRU B-5 WERE SURVEYED ON 12-15-10 FOR ETIC

POINTS B-6, B-7, B-8, SVS-1, SVS-2, AND SVS-3 WERE SURVEYED ON 6-25-12 FOR CARDNO ERI.

MW-6, MW-7, MW-8 SURVEYED ON 8-18-14



Former Mobile Station 99105  
6301 San Pablo Ave.  
Oakland  
Alameda County  
California



1255 Starboard Drive  
West Sacramento  
California 95691  
(916) 372-8124  
mark@morrowsurveying.com

Date: December, 2010  
Scale: 1"=40'  
Field: 12-15-10, 8-18-14  
Revised: 7-3-12, 8-22-14  
Field Book: MW-52,58  
Dwg. No. 1876-156 MAM  
Ref: 1893-070 mam

**APPENDIX H**  
**WASTE DISPOSAL DOCUMENTATION**



# NON-HAZARDOUS WASTE MANIFEST

Please print or type (Form designed for use on elite (12 pitch) typewriter)

<b>NON-HAZARDOUS WASTE MANIFEST</b>		1. Generator's US EPA ID No.		Manifest Document No. <b>ERI2783</b>	2. Page 1 of 1
3. Generator's Name and Mailing Address <b>EM # 99105 6301 SAN PABLO AVE OAKLAND, CA</b>		CARDNO ERI			
4. Generator's Phone ( )					
6. Transporter 1 Company Name <b>INSTRAT INC</b>		6. US EPA ID Number		A. State Transporter's ID	
7. Transporter 2 Company Name		8. US EPA ID Number		B. Transporter 1 Phone	
9. Designated Facility Name and Site Address <b>INSTRAT, INC. 1105 C AIRPORT RD. RIO VISTA, CA 94571</b>		10. US EPA ID Number		C. State Transporter's ID	
				D. Transporter 2 Phone	
				E. State Facility's ID	
				F. Facility's Phone <b>(707) 374-3834</b>	
11. WASTE DESCRIPTION		12. Containers		13. Total Quantity	
		No. Type		Unit	
a. <b>NON-HAZ PURGE WATER</b>		1 POLY		160 GAL	
b.					
c.					
d.					
G. Additional Descriptions for Materials Listed Above		H. Handling Codes for Wastes Listed Above			
15. Special Handling Instructions and Additional Information					
16. GENERATOR'S CERTIFICATION: I hereby certify that the contents of this shipment are fully and accurately described and are in all respects in proper condition for transport. The materials described on this manifest are not subject to federal hazardous waste regulations.					
Printed/Typed Name		Signature		Date	
				Month Day Year	
17. Transporter 1 Acknowledgement of Receipt of Materials					
Printed/Typed Name		Signature		Date	
				Month Day Year	
18. Transporter 2 Acknowledgement of Receipt of Materials					
Printed/Typed Name <b>Richard Spangler</b>		Signature <i>Richard Spangler</i>		Date 8 28 14	
19. Discrepancy Indication Space					
20. Facility Owner or Operator: Certification of receipt of the waste materials covered by this manifest, except as noted in item 19.					
Printed/Typed Name <b>MICHAEL WHITEHEAD</b>		Signature <i>Michael Whitehead</i>		Date 8 28 14	

NON-HAZARDOUS WASTE

GENERATOR

TRANSPORTER

FACILITY



# NON-HAZARDOUS WASTE MANIFEST

Please print or type (Form designed for use on elite (12 pitch) typewriter)

<b>NON-HAZARDOUS WASTE MANIFEST</b>		1. Generator's US EPA ID No.		Manifest Document No. <b>ER12783</b>	2. Page 1 of 1
3. Generator's Name and Mailing Address <b>EM # 99105 6301 SAN PABLO AVE OAKLAND, CA</b>		<b>CARDNO ERI</b>			
4. Generator's Phone ( )		6. US EPA ID Number		A. State Transporter's ID	
<b>CARDNO ERI</b>				B. Transporter 1 Phone	
7. Transporter 2 Company Name		8. US EPA ID Number		C. State Transporter's ID	
				D. Transporter 2 Phone	
9. Designated Facility Name and Site Address <b>INSTRAT, INC. 1186 G AIRPORT RD. RFO VISITA, CA 94671</b>		10. US EPA ID Number		E. State Facility's ID	
				F. Facility's Phone <b>(707) 274-8884</b>	
11. WASTE DESCRIPTION			12. Containers		13. Total Quantity
			No.	Type	14. Unit Wt./Vol.
a. <b>NON-HAZ PURGE WATER</b>			1	POLY	5 GAL
b.					
c.					
d.					
G. Additional Descriptions for Materials Listed Above <b>BROWN, <sup>NO</sup> FINES, NO ODOR</b>			H. Handling Codes for Wastes Listed Above		
15. Special Handling Instructions and Additional Information					
<b>16. GENERATOR'S CERTIFICATION:</b> I hereby certify that the contents of this shipment are fully and accurately described and are in all respects in proper condition for transport. The materials described on this manifest are not subject to federal hazardous waste regulations.					
Printed/Typed Name				Signature	
17. Transporter 1 Acknowledgement of Receipt of Materials				Date	
Printed/Typed Name <b>Darin Einkel</b>		Signature <i>Darin Einkel</i>		Month	Day Year
				8	29 14
18. Transporter 2 Acknowledgement of Receipt of Materials				Date	
Printed/Typed Name		Signature		Month	Day Year
19. Discrepancy Indication Space					
20. Facility Owner or Operator; Certification of receipt of the waste materials covered by this manifest, except as noted in item 19.					
Printed/Typed Name <b>MICHAEL WHITEHEAD</b>				Signature <i>MW</i>	
				Date Month Day Year <b>8 29 14</b>	

**NON-HAZARDOUS WASTE**

**GENERATOR**

**TRANSPORTER**

**FACILITY**



# NON-HAZARDOUS WASTE MANIFEST

Please print or type (Form designed for use on elite (12 pitch) typewriter)

<b>NON-HAZARDOUS WASTE MANIFEST</b>		1. Generator's US EPA ID No.		Manifest Document No. <b>ERI 2783</b>	2. Page 1 of 1
3. Generator's Name and Mailing Address <b>EM# 99105 6301 SAN PABLO AVE OAKLAND, CA</b>				<b>CARDNO ERI</b>	
4. Generator's Phone ( )					
5. Transporter 1 Company Name <b>CARDNO ERI</b>		6. US EPA ID Number		A. State Transporter's ID	
7. Transporter 2 Company Name		8. US EPA ID Number		C. State Transporter's ID	
				D. Transporter 2 Phone	
9. Designated Facility Name and Site Address <b>INSTRAT, INC. 1108 C AIRPORT RD. RIO VISTA, CA 94571</b>		10. US EPA ID Number		E. State Facility's ID	
				F. Facility's Phone <b>(707) 374-3534</b>	
11. WASTE DESCRIPTION			12. Containers	13. Total Quantity	14. Unit Wt./Vol.
a.			No.	Type	
<b>NON-HAZ PURGE WATER</b>			<b>1</b>	<b>Poly</b>	<b>25 GAL</b>
b.					
c.					
d.					
G. Additional Descriptions for Materials Listed Above <b>BROWN, No ODOR, No SOLID</b>			H. Handling Codes for Wastes Listed Above		
15. Special Handling Instructions and Additional Information					
16. GENERATOR'S CERTIFICATION: I hereby certify that the contents of this shipment are fully and accurately described and are in all respects in proper condition for transport. The materials described on this manifest are not subject to federal hazardous waste regulations.					
Printed/Typed Name		Signature		Date	
				Month	Day Year
17. Transporter 1 Acknowledgement of Receipt of Materials					
Printed/Typed Name		Signature		Date	
				Month	Day Year
18. Transporter 2 Acknowledgement of Receipt of Materials					
Printed/Typed Name		Signature		Date	
				Month	Day Year
19. Discrepancy Indication Space					
20. Facility Owner or Operator; Certification of receipt of the waste materials covered by this manifest, except as noted in item 19.					
Printed/Typed Name <b>MICHAEL WHITEHEAD</b>		Signature <i>[Signature]</i>		Date	
				Month	Day Year
				<b>8</b>	<b>29</b> <b>14</b>

**NON-HAZARDOUS WASTE GENERATOR**

**TRANSPORTER FACILITY**

