Los Angeles County
Metropolitan Transportation Authority

Westside Purple Line Extension Project, Section 2

Contract C1120

Environmental Data Report - Century City Constellation Station

November 2, 2015

Metro

U.S. Department of Transportation
Federal Transit Administration

To **Parsons Brinckerhoff**
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Date **November 2, 2015**

Project No. **4953-11-1423**

Subject **Environmental Data Report for Century City Constellation Station**
Westside Purple Line Extension - Section 2
Los Angeles, California

This Environmental Data Report (EDR) for Century City Constellation Station has been prepared as part of the Advanced Preliminary Engineering (Adv. PE) phase of the Wilshire/La Cienega to Century City Constellation Station portion (Section 2) of the proposed Westside Purple Line Extension (WLPE) project for the Los Angeles County Metropolitan Transportation Authority (Metro).

The data presented herein are based on the results of the Advanced Conceptual Engineering (ACE) and Preliminary Engineering (PE) phase investigations performed for this project. Additional explorations are planned in the Adv. PE phase within the City of Beverly Hills portion of Section 2. A supplemental EDR is planned to incorporate the additional data when obtained. The preliminary recommendations and conclusions presented in this EDR may change when additional data from Adv. PE phase are evaluated.

It is our understanding that the EDR is for inclusion in the Request for Proposal Package being prepared for a Design-Build (D-B) Contract for Section 2. In case of any conflict between the interpretation of data or preliminary recommendations presented in this report and the Geotechnical Baseline Report (GBR), the data and preliminary recommendations presented in the GBR will prevail. The D-B contractor should perform an independent evaluation of the data and recommendations contained in this EDR

The data presented herein were established by considering available environmental data, together with past construction experience and anticipated construction methods in similar ground conditions. The data utilized in developing the report was obtained from various sources, including: published literature, environmental borings, field observations and laboratory tests, as well as consideration of information from previous construction projects completed in similar environmental conditions. While actual conditions encountered in the field are expected to be within the range of conditions discussed herein, the locations where specific ground and groundwater conditions are encountered may vary from those described in this report.

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The professional services have been performed using the degree of care and skill ordinarily exercised, under similar circumstances, by reputable geotechnical consultants practicing in this or similar localities. No other warranty, expressed or implied, is made as to the professional advice included in this report.

It is a pleasure to be of continuing professional service to you. Please call if you have any questions or if we can be of further assistance.

Sincerely,

Amec Foster Wheeler Environment & Infrastructure, Inc.

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LIST OF ACRONYMS

AA	Alternatives Analysis
ACE	Advanced Conceptual Engineering
Adv. PE	Advanced Preliminary Engineering
ATL	Advanced Technology Laboratories, Inc.
Belshire	Belshire Environmental Services, Inc.
bgs	below ground surface
BOD5	Biological Oxygen Demand
CCR	California Code of Regulation
CFR	Code of Federal Regulations
Cis-1, 2-DCE	cis-1,2-Dichloroethene
COC	Chemicals/Constituents of Concern
CPT	Cone Penetration Test
Cu.yd	cubic yard
DCE	Dichloroethene
DRO	Diesel Range Organics
EIR	Environmental Impact Report
EIS	Environmental Impact Statement
EDR	Environmental Data Report
EPA	Environmental Protection Agency
ESA	Environmental Site Assessment
EPB	Earth Pressure Balance
Fugro	Fugro Consultants, Inc.
GDR	Geotechnical Data Report
Gregg	Gregg Drilling & Testing, Inc.
GRO	Gasoline Range Organics
HASP	Health and Safety Plan
Kehoe	Kehoe Testing and Engineering, Inc.
LUST	Leaking Underground Storage Tank
LC_{50}	Lethal Concentration that kills 50% of exposed fish population
Martini	Martini Drilling Corporation
Metro	Los Angeles County Metropolitan Transportation Authority
mg/kg	milligrams per kilogram
mg/L	milligrams per liter
METRO	Metropolitan Transportation Authority
MTBE	Methyl Tertiary Butyl Ether
NA	Not Analyzed
na	Not Applicable
ND	Not Detected
Non-RCRA Waste	California Hazardous Waste
NPDES	National Pollutant Discharge Elimination System
NTU	Nephelometric turbidity unit
ORO	Oil Range Organics
Oxy	Oxygenates
PB	Parsons Brinckerhoff
PCBs	Polychlorinated Biphenyls

PE	Preliminary Engineering
PID	photoionization detector
ppm	parts per million
PQLs	Analytical laboratory practical quantitative limits
RCRA	Resource Conservation and Recovery Act
SLIC	Spills, Leaks, Investigations and Cleanups
STLC	(State of California) Soluble Threshold Limit Concentration
SVOCs	Semi volatile organic compounds
TCE	Trichloroethene
TCLP	Toxicity Characteristic Leaching Procedure
TMDL	Total Maximum Daily Load
TSS	Total Suspended Solids
TPH	Total Petroleum Hydrocarbons
TPH-g/d/o	TPH as gasoline/diesel/oil
TPH-g	TPH as gasoline range organics
TPH-d	TPH as diesel range organics
TPH-o	TPH as oil range organics
TTLC	Total threshold limit concentration
µg/kg	micrograms per kilogram
µg/L	micrograms per liter
USA	Underground Service Alert
UST	Underground Storage Tank
VOCs	volatile organic compounds
VOCs+Oxy	VOCs plus fuel oxygenates
WPLE	Westside Purple Line Extension

1.0 INTRODUCTION

Amec Foster Wheeler is the primary geotechnical consultant to the Parsons Brinckerhoff Team (PB Team), Los Angeles County Metropolitan Transportation Authority (Metro)'s design consultant. Amec Foster Wheeler's predecessor companies AMEC and MACTEC provided geotechnical and environmental services associated with the Alternatives Analysis (AA), Advanced Conceptual Engineering (ACE) phase and Preliminary Engineering (PE) phases of the project in support of preparation of a Final Environmental Impact Statement/Environmental Impact Report (FEIS/EIR). Amec Foster Wheeler also conducted additional investigations at the Century City Constellation Station; In addition, Amec Foster Wheeler is planning to conduct Advanced PE (Adv. PE) Phase investigations for the remainder of Section 2 (Wilshire/La Cienega to Century City Constellation) of the Westside Purple Line Extension (WPLE) Project.

This Environmental Data report (EDR) presents the results of professional environmental services during ACE, PE and Adv. PE investigation phases at the proposed Century City Constellation Station. This report is one of the following six data reports being prepared for the stations and tunnel reaches which together comprise Section 2 of the project:

1. Geotechnical Data Report (GDR), Wilshire/Rodeo Station
2. GDR, Century City Constellation Station
3. GDR, Tunnel Reaches 4 and 5
4. EDR, Wilshire/Rodeo Station
5. EDR, Century City Constellation Station (this report)
6. EDR, Tunnel Reaches 4 and 5

This report provides:

a) Background information about the potential suspect sites of contamination that were identified during the ACE phase study and in the FEIS/EIR document within Section 2;

b) Further details of the PE phase investigation performed to assess environmental impact of man-made contaminants in soil and/or groundwater at suspect sites along the Century City Constellation Station;

c) Further details of the Adv. PE phase study performed for the project;

d) Further details of environmental testing that was performed on groundwater as a part of securing National Pollutant Discharge Elimination System (NPDES) permits and groundwater characterization;

e) Environmental characterization of soil and groundwater using the data collected in ACE, PE and Adv. PE Phase investigation;

f) Estimated quantities of impacted soils at the Century City Constellation Station; for purposes of this report impacted soil means soil containing constituents of concern that, if excavated, could require special handling and disposal arrangements; and

g) Discussion on the disposal options that are available for the contractor for the disposal of impacted soil and groundwater at the Century City Constellation Station.

1.1 Report Structure

This report is organized as follows:

- Section 1.0 – Introduction
- Section 2.0 – Project description
- Section 3.0 – Environmental exploration activities
- Section 4.0 – Environmental exploration findings summary
- Section 5.0 – Statistical Analysis
- Section 6.0 – References

1.2 Limitations and Basis for Recommendations

The professional services have been performed using the degree of care and skill ordinarily exercised, under similar circumstances, by reputable geotechnical and environmental consultants practicing in this or similar localities. No other warranty, expressed or implied, is made as to the professional advice included in this report. This EDR has been prepared for Metro and its design consultants and contractors to be used solely for the evaluation for the Century City Constellation Station planned as part of the proposed WPLE project. The EDR has not been prepared for use by other parties, and may not contain sufficient information for purpose of other parties or other uses.

In developing interpretations and recommendations presented in this report, Amec Foster Wheeler (PB team member) relied on subsurface information obtained by its predecessor company AMEC and MACTEC in the AA, ACE, and PE phase studies and its other predecessor companies, Law/Crandall and LeRoy Crandall and Associates, as well as subsurface information obtained by other firms. Subsurface conditions are, by their nature, uncertain and may vary from those encountered at the locations where visual inspections, borings, surveys, or other explorations were made.

2.0 PROJECT DESCRIPTION

A general plan of the Century City Constellation Station is presented on Plate 1, Exploration Plan. . The Century City Constellation Station and associated double crossover structure No. 10 is about 1,225 feet long, from 85 feet west of the west edge of Century Park East to 365 feet west of the west edge of Avenue of the Stars, and extends to a depth of about 85 to 90 feet below Constellation Boulevard. It is noted that locations and plan dimensions may be adjusted in subsequent phases.

2.1 Objectives

The objectives of the PE and Adv. PE environmental investigation were to:

- Perform a site assessment study, during the PE Phase to evaluate man-made or naturally-occurring contaminants in soil and/or groundwater at the proposed Century City Constellation station. The exploration locations were selected based on the findings of environmental site assessment (ESA) reports from the ACE phase that identified the suspect sources of environmental concern with the highest likelihood to impact the station.
- Further assess the soil and/or groundwater impact at three of the previous (PE Phase) borings located around the proposed Century City Constellation Station, during the Adv. PE Phase, and obtain data from locations closer to previously identified suspect source(s) at these locations;
- Perform preliminary assessment of waste disposal options for wastes that will be generated during excavation of the proposed station.
- Estimate approximate quantities of impacted soils from station excavation that would need treatment or special handling.

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3.0 ENVIRONMENTAL EXPLORATION ACTIVITIES

The planning and execution of PE and Adv. PE for the Century City Constellation Station field explorations consisted of several steps including obtaining permits and approvals from appropriate government agencies, notifying the public of road closures at least one week prior to field work, and conducting field work to meet Metro's schedule.

3.1 Pre-field Activities

Prior to field work, the following activities were performed:

- Prepare and review a project-specific health and safety plan (HASP);
- Conduct site reconnaissance, mark boring locations, and notify Underground Service Alert (USA);
- Provide traffic control plans for each drilling location;
- Obtain necessary permits from appropriate agencies;
- Perform utility clearance in the areas of exploration; and
- Notify the public of the upcoming field work.

3.2 Field Exploration Activities

The scope of work included advancing a total of eight borings, three environmental borings (E-borings) in the PE Phase and five borings [four environmental and one geotechnical boring (G-boring)] in the Adv., PE Phase, at and in the vicinity of the proposed Century City Constellation Station. The PE Phase field sampling activities were conducted between June and September, 2011. Gregg Drilling & Testing, Inc. (Gregg), Kehoe Testing and Engineering, Inc. (Kehoe) and Fugro Consultants, Inc. (Fugro), environmental drilling subcontractors were retained to collect soil and grab groundwater samples from the three PE Phase environmental boring locations (E-132, E-133 and E-134) at the proposed Century City Constellation Station. The drilling subcontractors used direct-push sampling methodologies (30-ton cone penetrometer test rig) to collect soil and groundwater samples from discreet depths at each boring location. In some cases, Cone Penetration Test (CPT) rigs were used. Gregg was retained to provide a hollow-stem auger rig for exploration below the depth of refusal of the CPT rigs. CPT rigs were used only during the PE Phase.

The Adv. PE field sampling activities were conducted between February and March 2015, at a total of five boring locations (E-132A/M-407, E-132B, E-132C/M-408, E-133A/M-409 and G-414/M-410). M-borings are methane/groundwater monitoring wells, of which the main purpose is to monitor methane and soil gas in the soil, and second to measure groundwater levels if encountered. Amec Foster Wheeler retained Martini Drilling Corporation (Martini) of Huntington Beach, California to drill and collect soil samples from the borings, and to convert four of the borings into methane/groundwater monitoring wells (E-132A/M-407, E-132C/M-408, E-133A/M-409) and G-414/M-410 at and in the vicinity of the proposed Century City Constellation Station area. Martini was also retained to develop two of these methane/groundwater monitoring wells (M-409 and M-410); the other two wells (M-407 and M-408) were dry or did not produce enough water to be developed. Proper decontamination procedures were utilized followed drilling, sampling and development activities. All but one environmental boring (G-

412/E-132A/M-407) was drilled within the proposed station footprint. Boring G-412/E-132A/M-407 was drilled about 150 feet east of the station.

The locations of the environmental borings and borings performed for the methane investigation are shown on Plate 1. A summary of boring locations and suspect sources of potential contamination (all suspect sources at this station were associated with former oil exploration activities) that were identified are presented in Table 3-1.

Table 3-1: Summary of Suspect Sources for Environmental Site Assessment

Location	Boring No.	Suspect Source(s)
Century City Constellation Station	E-132 E-132A/M-407 E-132B E-132C/M-408	Former Oil Exploration Activities
	E-133 E-133A/M-409	Former Oil Exploration Activities
	E-134 G-414/M-410	Former Oil Exploration Activities

3.2.1 Drilling and Sampling: Soil and Grab Groundwater Samples from Borings

Prior to commencing drilling and sampling activities, the asphalt/concrete road surface was cored and each boring was hand-augered to a minimum of 6 feet below ground surface (bgs) to check for the presence of underground utilities. Borings were advanced to total depths ranging from approximately 85 to 90 feet in the PE Phase using direct push/hollow-stem auger drilling methods, and to depths of about 80 to 130 feet in the Adv. PE Phase using hollow-stem auger drilling method. Soil sampling was typically started at depths of approximately 10 feet in the borings located within the proposed Century City Constellation Station. Soil samples were collected using a California-modified split-spoon sampler lined with three 6-inch long stainless steel/brass sleeves. The hollow stem rig operator used the split-spoon sampling barrel to collect soil samples. Once the sampler was retrieved, the bottom sleeve was covered with Teflon® sheets and capped with plastic end-caps, labeled and placed into a chilled ice chest for potential laboratory analysis. Some of the soil in the upper sleeves was placed in a re-sealable plastic bag, so that soil headspace readings could be obtained using a photoionization detector (PID) field instrument calibrated with 100-parts per million (ppm) isobutylene standard for qualitatively measuring for the presence of volatile organic compounds (VOCs) in soil. Logs of borings with pertinent lithologic information are provided in Appendix A.

When CPT rigs were used (during the PE Phase), the CPT rig operator collected soil samples by pushing the stainless steel sampler, which was lined with two stainless steel sleeves, a distance of approximately 1 foot at the desired sampling depth.

Based on the presence of unusual discoloration/odors and PID readings, in most cases, three to six soil samples from each boring were selected for laboratory analyses. The remaining samples not scheduled to be analyzed were also stored in re-sealable plastic bags and placed in an ice chest for transport to the analytical laboratory. Those samples not scheduled for analysis were placed “on-hold” with the analytical laboratory for potential analysis depending on the results of selected soil samples.

If groundwater was encountered, a set of water samples were collected from the boring. A grab groundwater sample was collected (from E-133 and E-134) by lowering a disposable bailer into the borehole, then transferring groundwater from the bailer into laboratory-provided sample containers. The sample containers were labeled, placed in re-sealable plastic bags and stored in a chilled ice chest for transport to the analytical laboratory. Grab groundwater samples were only collected during the PE Phase. No grab groundwater samples were collected from the Adv. PE Phase, because no water was encountered during the drilling of the borings. Four borings from the Adv. PE Phase were converted to monitoring wells and normal groundwater samples were obtained subsequently after well development.

After completion of the field activities, the borings were backfilled with a cement-bentonite grout (or) approved monitoring well materials if monitoring well(s) were installed for long-term monitoring of gases and/or groundwater. The ground surface was then patched with a quick setting concrete mix that was typically dyed black to match the surrounding asphalt road surface.

Field exploration activities at each location are summarized inTable 3-2. Sampling depths for soil and groundwater samples are listed inTable 3-23.

3.2.2 Methane/Groundwater Monitoring Well Installation and Development

A total of six methane/groundwater monitoring wells were installed at and in the vicinity of the Century City Constellation Station. Monitoring well M-19 was installed in ACE phase and M-119 was installed in the PE phase; the remaining four monitoring wells (M-407 through M-410) were installed during the current Adv. PE phase. Monitoring wells M-19 and M-119 were originally installed to measure methane and other soil gas, and consisted of two nested soil gas probes and two PVC standpipes within a single boring. During the Adv. PE Phase, three environmental borings (E-132A, E-132C, and E-133A) in the proposed Century City Constellation Station area were converted into methane/groundwater monitoring wells (M-407, M-408, and M-409 respectively), after soil sampling was completed. The monitoring wells were installed to monitor methane, other soil gas, and groundwater for an extended period of time for use in future hydrogeologic analyses.

It is noted that well M-19 installed during the ACE phase was planned to be re-sampled during the current Adv. PE phase. However, the well could not be located in the field at the installed location and is likely covered with asphalt overlay; relatively new asphalt was seen at the approximate location of the well (see Plate 1). It is recommended that the well be uncovered so that further monitoring can be performed and so that the well can be properly abandoned prior to the construction of the station.

Each of the monitoring well typically consisted of two to four nested soil gas probes and one or two PVC standpipes installed in a boring. The PVC standpipes were one to two inches in diameter. The probes and standpipes were installed at depths ranging from 15 to 95 feet bgs. This configuration provided a means of measuring soil gas concentrations and pressures within the vadose zone, as well as concentrations of gases dissolved in groundwater at greater depths. The standpipes allowed relatively large quantities of groundwater to be purged prior to sample collection, as well as collection of large-volume water samples for analysis. The standpipes consisted of 2-inch diameter PVC casings with at least 5-foot long screened sections.

Table 3-2: Summary of Explorations with Environmental Sampling

Location	Boring No.	Notes	Field Findings
Century City Constellation Station	E-132	E-132 was advanced to assess potential impacts of former oil exploration activities located in the vicinity of Constellation Boulevard and Avenue of the Stars. The boring was drilled using a CPT rig to a depth of 40 feet bgs. A hollow-stem auger rig was subsequently used to drill down to a depth of 85 feet bgs. A groundwater sample was not collected from this boring.	No evidence of unusual soil discoloration or odors was documented during the field activities. The PID readings ranged from 0.0 to 1.0 ppm.
	E-132A/M-407	E-132A was advanced to assess potential impacts of former oil exploration activities located in the vicinity of Constellation Boulevard and Avenue of the Stars. A hollow-stem auger rig was used to drill down to a depth of 100 feet bgs. The boring was turned into a monitoring well M-407. Groundwater was not encountered during the advancement of this boring.	No evidence of unusual soil discoloration or odors was documented during the field activities. The PID readings ranged from 0.0 to 2.3 ppm.
	E-132B	E-132B was advanced to assess potential impacts of former oil exploration activities located in the vicinity of Constellation Boulevard and Avenue of the Stars. A hollow-stem auger rig was used to drill down to a depth of 100 feet bgs. Groundwater was not encountered during the advancement of this boring.	No evidence of unusual soil discoloration or odors was documented during the field activities. The PID readings ranged from 0.0 to 0.9 ppm
	E-132C/M-408	E-132C was advanced to assess potential impacts of former oil exploration activities located in the vicinity of Constellation Boulevard and Avenue of the Stars. A hollow-stem auger rig was used to drill down to a depth of 100 feet bgs. The boring was turned into a monitoring well M-408. Groundwater was not encountered during the advancement of this boring.	No evidence of unusual soil discoloration or odors was documented during the field activities. The PID readings ranged from 0.0 to 38.8 ppm
	E-133	E-133 was advanced to assess potential impacts of former oil exploration activities located in the vicinity of Constellation Boulevard and Avenue of the Stars. The boring was drilled using a CPT rig to a depth of 35 feet bgs. A hollow-stem auger rig was subsequently used to drill to a depth of 85 feet bgs. A grab groundwater sample was collected from this boring at a depth of approximately 25 feet bgs.	No evidence of unusual soil discoloration or odors was documented during the field activities. The PID readings ranged from 0.0 to 1.1 ppm.
	E-133A/M-409	E-133A was advanced to assess potential impacts of former oil exploration activities located in the vicinity of Constellation Boulevard and Avenue of the Stars. A hollow-stem auger rig was used to drill down to a depth of 110 feet bgs. The boring was turned into a monitoring well M-409; a grab groundwater sample was not collected from this boring.	No evidence of unusual soil discoloration but strong H_2S odors was documented during the field activities. The PID readings ranged from 0.0 to 2.3 ppm.
	E-134	E-134 was advanced to assess potential impacts of former oil exploration activities located in the vicinity of Constellation Boulevard and Avenue of the Stars. The boring was drilled using a CPT rig to a depth of 40 feet bgs. A hollow-stem auger rig was used to drill to a depth of 90 feet bgs. A grab groundwater sample was collected from this boring at a depth of approximately 85 feet bgs.	No evidence of unusual soil discoloration or odors was documented during the field activities. The PID readings ranged from 0.0 to 0.1 ppm.
	G-414/M-410	G-414 was a geotechnical boring located in the vicinity of Constellation Boulevard and Avenue of the Stars. . A hollow-stem auger rig was used to drill down to a depth of 130 feet bgs. No environmental samples were taken. The boring was turned into a monitoring well M-410; a grab groundwater sample was not collected from this boring.	No evidence of unusual soil discoloration but strong H_2S odors was documented during the field activities. The PID readings ranged from 0.0 to 17.5 ppm.

Note: M-19 and M-119 were methane monitoring wells only, no environmental samples were taken, and are therefore not included in table.

Table 3-3: Environmental Sampling Depth Summary

Location	Boring No.	Total Boring Depth (feet bgs)	Soil Sample Depths (feet bgs)	Grab Groundwater Sample Depth (feet bgs)
Century City Constellation Station	E-132	85	10, 15, 20, 25, 30, 35, 40, 45, 50, 55, 60, 65, 70, 75, 80, and 85	a
	E-132A/M-407	100	60, 65, 70, 75 and 80	a
	E-132B	100	25, 35, 45, 55, 65, 75, 85 and 90	a
	E-132C/M-408	100	25, 35, 45, 55, 65, 75, 85 and 95	a
	E-133	85	10, 15, 20, 30, 35, 40, 45, 50, 55, 60, 65, 70, 75, 80, 85 and 90	25
	E-133A/M-409	110	25, 35, 45, 55, 65, 75, 85 and 95	b
	E-134	90	10, 15, 20, 25, 30, 35, 40, 45, 50, 55, 60, 65, 70, 75, 80, 85 and 90	85
	G-414/M-410	130	None	b/c
	M-19	71	None	d
	M-119	76	None	d

Notes:
(a) Groundwater was not encountered.
(b) A grab groundwater sample was not collected because the boring was converted to a groundwater monitoring well. A groundwater sample was subsequently collected from the well after well development.
(c) G-414/M-410 was a geotechnical boring that was converted to a methane/groundwater monitoring well.
(d) M-19 and M-119 were methane monitoring wells only, no environmental samples were taken.

The methane/groundwater monitoring wells were installed in general accordance with requirements set forth in California Well Standards Bulletin 74-90. The monitoring wells were installed using the following procedures:

- The borings were over-drilled to the target depth for each well.
- Each monitoring well was constructed using 2-inch diameter, Schedule 40 PVC casing and 0.020-inch machine slotted Schedule-40 PVC well screen. Based on the target zone to monitor in each boring, 10-foot long screens were selected. Monitoring wells M-407, M-408, M-409 and M-410 were constructed with two well screens for monitoring the shallow and deep zones. The shallow zone depth interval ranged from approximately 50 to 75 feet and the deep zone depth interval ranged from approximately 80 to 100 feet. The monitoring well details are provided in Appendix B.
- Monterey #3 filter pack sand was placed in the annular space between the PVC casing and the soil to approximately two feet above the top of the screened depth interval. Bentonite chips were then placed in the annular space from the top of the filter pack sand up to the bottom depth of soil vapor probes installation.
- Each soil vapor probe was constructed using a 6-inch long stainless steel screen with ¼-inch diameter polyethylene tubing. Approximately 2 feet of filter pack sand was placed around each

vapor probe. The annular spaces between the filter packs for the vapor probes and the remaining annular space below ground surface were filled with bentonite chips hydrated in place.

- At each well location, the surface was completed with a flush-mounted, traffic-rated 12-inch diameter well box.

The groundwater measurements for the wells installed in the ACE, PE and Adv. PE phase wells are presented in Table 3-4. The well installation and construction details for monitoring wells are included in Appendix B.

Three weeks after installation, two of the four newly installed methane/groundwater monitoring wells [M-409 (deep screen), and M-410 (deep screen)] from the Adv. PE Phase, were developed on April 29, 2015 using a combination of purging, bailing, and pumping methods (on second and final day). Wells M-407 (shallow and deep screen), M-408 (shallow and deep screen), M-409 (shallow screen), and M-410 (shallow screen) did not produce sufficient water and/or were dry. The other wells M-409 (deep screen), and M-410 (deep screen) were developed until purged groundwater was relatively clear and free of suspended sediments. A minimum of 10 to 25 well casing volumes were removed from these wells.

3.2.3 Groundwater Sampling from Wells

Groundwater samples were obtained for (a) determination of dissolved gases and (b) analytical testing of groundwater for contaminants. The results of the laboratory testing for dissolved gases in groundwater are discussed in the GDR. The results of the analytical testing of groundwater samples are presented in this EDR.

Two weeks after well development on May 12, 2015, groundwater samples were collected from wells M-409 (deep screens) and M-410 (deep screens) for groundwater quality testing. Prior to purging and sampling, depth to water in each well was measured using an electric water level sounder. A minimum of three well-casing volumes were pumped out (purged) of each groundwater well using a submersible pump. The pump and the discharge tubing were decontaminated before and after use to prevent potential cross-contamination. During purging, a calibrated Horiba U-52 water quality meter was used to measure water quality indicator parameters. Groundwater quality indicator field parameters including temperature, pH, conductivity, and turbidity were monitored during pumping (purging), and a groundwater sample was collected from each well after these parameters were stabilized. Groundwater samples were collected into laboratory-provided sample containers. The sample containers were labeled and placed in an ice-cooled chest. Well screen depth intervals and depths to water are presented in Table 3-4.

Table 3-4: Groundwater Monitoring Well Data

Location	Well ID	Total Well Depth (feet bgs)	Screen Intervals (feet bgs)	Date of Measurement	Depth to Water (feet bgs)
Century City Constellation Station	M-19	71	65 to 70	8/19/2009	Dry
				5/20/2011	Dry
				3/30/2012	61.90
				5/24/2012	Dry
	M-119	112	45 to 50	6/22/2011	Dry
				3/30/2012	49.9
				5/24/2012	29.9
				5/13/2015	49.9
				5/28/2015	50.0
	M-119	112	70 to 75	6/22/2011	Dry
				3/30/2012	Dry
				5/24/2012	Dry
				5/13/2015	Dry
				5/28/2015	Dry
	M-407	90	50 to 60	4/9/2015	59.80
				5/13/2015	59.81
				5/28/2015	59.89
			80 to 90	4/9/2015	Dry
				5/13/2015	Dry
				5/28/2015	Dry
	M-408	95	50 to 60	4/9/2015	Dry
				5/13/2015	Dry
				5/28/2015	Dry
			80 to 90	4/9/2015	Dry
				5/13/2015	Dry
				5/28/2015	Dry
	M-409	98	75 to 85	4/9/2015	Dry
				5/12/2015	Dry
			90 to 100	4/9/2015	87.1
				5/12/2015	87.2
	M-410	94	65 to 75	4/9/2015	Dry
				5/12/2015	Dry
			80 to 90	4/9/2015	81.6
				5/12/2015	81.6

3.2.4 Waste Management

Amec Foster Wheeler retained Belshire Environmental Services, Inc. (Belshire) of Foothill Ranch, California and GreenClean of Anaheim, California to transport and dispose of the investigative-derived wastes generated during this investigation. Soil cuttings, well development water and decontamination rinse waste generated from each soil boring was contained in separate drums. The drums were removed from the drilling location at the end of each day to temporarily store at GreenClean and Belshire's yard pending waste characterization.

3.3 Laboratory Testing

The selected soil, grab groundwater samples (collected during the PE Phase), and groundwater samples collected from the monitoring wells during this field investigation were submitted under standard chain-of-custody protocol to Advanced Technology Laboratories (ATL), a laboratory certified by the California Department of Public Health-Environmental Laboratory Accreditation Program and located in Signal Hill, California. Laboratory testing was done to find and characterize chemical of concern depending on the suspect sources near each boring, to meet regulatory requirements and/or guidelines.

3.3.1 Analytical Laboratory Methods

Depending on the suspect source near where a boring was drilled, the soil samples were analyzed for one or more of the following constituents:

- Volatile organic compounds including fuel oxygenates (VOCs+Oxy) by Environmental Protection Agency (EPA) Method 8260B;
- Semi volatile organic compounds (SVOCs) by EPA Method 8270C;
- Total petroleum hydrocarbons as oil and grease (TPH) by EPA Method 1664
- Total petroleum hydrocarbons as gasoline/diesel/oil (TPH-g/d/o) by EPA Method 8015B; and
- Title 22 metals by EPA Methods 6010B/7471A.
- Acute Aquatic Toxicity Test (Bioassay Fish Kill Test).

In addition, grab groundwater samples and groundwater samples collected from monitoring wells were analyzed for the following:

- VOCs including fuel oxygenates by EPA Method 8260B; and
- TPH-g/d/o by EPA Method 8015B.

Additional analyses were also performed on selected groundwater samples collected from the monitoring wells for evaluation of NPDES and sanitary sewer discharge requirements.

Soil samples collected from the soil cutting drums for waste characterization were analyzed for the following:

- VOCs including fuel oxygenates by EPA Method 8260B;
- TPH-g/d/o by EPA Method 8015B;
- Title 22 metals by EPA Methods 6010B/7471A; and.

3.3.2 Analytical Laboratory Results

The soil sample analytical laboratory results are presented in Table 3-5 and Table 3-6, respectively. The groundwater sample analytical laboratory results (both grab groundwater samples collected from the borings and the groundwater samples collected from the monitoring wells) are presented in Table 3-7. The additional groundwater analytical results (NPDES and sewer discharge) are presented in Tables 3-8 and 3-9, respectively. Analytical laboratory reports are included in Appendix C.

3.3.2.1 Soil and Grab Groundwater Sample Results

Every analytical laboratory method has a detection limit based on the instrument and method used. The analytical laboratory practical quantitative limits (PQLs) are the minimum concentration of an analyte (substance) that can be measured with a high degree of confidence that the analyte is present at or above that concentration. The analytical results for the soil and grab groundwater samples for each boring are summarized below.

Boring E-132

The 15-, 30-, 60- and 80-foot soil samples were analyzed for VOCs+Oxy, SVOCs, and TPH-g/d/o, additionally, the 35-foot soil sample was analyzed for Title 22 Metals. A review of the analytical results showed the following:

- VOCs+Oxy, SVOCs, and TPH-g/d/o were not detected above the PQLs in the soil samples submitted for analysis except for low concentrations of TPH-d/o in the 80-foot sample.
- Title 22 Metals: Nine of the 17 metals were present with concentrations above the analytical laboratory PQLs. However, the reported concentrations are not elevated and are likely representative of typical background concentrations for soils in the vicinity of the boring location.

Boring E-132A

The 60-, 70- and 80-foot soil samples were analyzed for VOCs+Oxy, SVOCs, TPH, TPH-g/d/o, and Title 22 Metals. A review of the analytical results showed the following:

- VOCs+Oxy, SVOCs, TPH, and TPH-g/d/o were not detected above the PQLs in the soil samples submitted for analysis.
- Title 22 Metals: Nine of the 17 metals were present with concentrations above the analytical laboratory PQLs. However, the reported concentrations are not elevated and are likely representative of typical background concentrations for soils in the vicinity of the boring location.

Boring E-132B

The 35-, 55-, 65-, 75-, 85- and 90-foot soil samples were analyzed for VOCs+Oxy, SVOCs, TPH, TPH-g/d/o, and Title 22 Metals. A review of the analytical results showed the following:

- VOCs: Carbon disulfide was detected above the PQL in the 85- and 95-foot soil samples. The source of Carbon disulfide may come from reactions between methane and hydrogen sulfide from former oil exploration activities
- TPH: TPH was detected above the PQLs in 75-foot soil sample.
- SVOCs, TPH-g/d/o were not detected above the PQLs in the soil samples submitted for analysis.

- Title 22 Metals: Twelve of the 17 metals were present at concentrations above the PQLs in the soil samples. However, except for arsenic, the reported concentrations were representative of typical background concentrations for soils in the vicinity of the boring location. Elevated concentration of arsenic (52 mg/kg) was detected in the 85-foot soil sample, and the sample was analyzed for soluble arsenic to compare to the State of California Soluble Threshold Limit Concentration (STLC) for hazardous waste disposal criteria. The soil sample STLC value (1.0 mg/L) was below the arsenic concentration used for classification as a hazardous waste (25 mg/L), so this soil sample was classified as non-hazardous for metals.

- Aquatic toxicity (fish bioassay): The reported result of the aquatic toxicity (fish bioassay) analyses indicated a Lethal Concentration, 50 percent (LC_{50}) of >750 mg/L for all three samples. LC_{50} is defined as the lethal concentration at which 50 percent of the fishes die at a certain dilution level. According to California Title 22 Section 66261.24, the material is considered toxic and hazardous if it has an acute aquatic 96-hour LC_{50} less than 500 mg/l (i.e., 50 or more percent of the fish die at this dilution level after 96-hour test duration). The analytical test results indicate that less than 50 percent of fishes died at a lower dilution level of 750 mg/L (and much less at 500 mg/L dilution level) and therefore the result is considered non-hazardous.

Boring E-132C

The 25-, 45-, 55-, 75-, 85- and 95-foot soil samples were analyzed for VOCs+Oxy, SVOCs, TPH**,** TPH-g/d/o, and Title 22 Metals. A review of the analytical results showed the following:

- VOCs+Oxy, SVOCs, TPH, and TPH-g/d/o were not detected above the PQLs in the soil samples submitted for analysis.
- Title 22 Metals: Eleven of the 17 metals were present at concentrations above the PQLs in the soil samples. However, except for selenium, the reported concentrations were representative of typical background concentrations for soils in the vicinity of the boring location. Elevated concentration of selenium (11 mg/kg) was detected in the 75-foot soil sample, and the sample was analyzed for soluble selenium to compare to the State of California STLC for hazardous waste disposal criteria. The STLC value [ND(<1.0)mg/L] was below the selenium concentration used for classification as a hazardous waste (5 mg/L), so this soil sample was classified as non hazardous for metals.

Boring E-133

The 35-foot soil sample was analyzed for VOCs+Oxy, SVOCs, and TPH-g/d/o. The one groundwater sample was analyzed for VOCs+Oxy and TPH-g/d/o. A review of the analytical results showed the following:

- VOCs+Oxy, SVOCs, and TPH-g/d/o were not detected above the PQLs in the soil samples submitted for analysis. TPH-d/o was present above the respective laboratory PQLs in the groundwater sample that was submitted for analysis.
- Title 22 Metals: Seven of the 17 metals were present with concentrations above the analytical laboratory PQLs. However, the reported concentrations are not elevated and are likely representative of typical background concentrations for soils in the vicinity of the boring location.

Boring E-133A

The 35-, 55-, 65-, 75-, 85- and 95-foot soil samples were analyzed for VOCs+Oxy, SVOCs, TPH, TPH-g/d/o, and Title 22 Metals. A review of the analytical results showed the following:

- VOCs+Oxy, SVOCs, TPH, and TPH-g/d/o were not detected above the PQLs in the soil samples submitted for analysis.
- Title 22 Metals: Eleven of the 17 metals were present with concentrations above the analytical laboratory PQLs. However, the reported concentrations are not elevated and are likely representative of typical background concentrations for soils in the vicinity of the boring location.

Boring E-134

The 20-, and 40-foot soil samples, and the one groundwater sample, were analyzed for VOCs+Oxy and TPH-g/d/o while the 80-foot sample was analyzed for VOCs+Oxy, TPH-g/d/o and SVOCs. Additionally, the 25-foot soil sample was analyzed for Title 22 Metals. A review of the analytical results showed the following:

- VOCs+Oxy, TPH-g/d/o and SVOCs were not detected above the PQLs in the soil samples submitted for analysis. In the groundwater sample, two VOC's were detected above the PQLs.
- Title 22 Metals: Nine of the 17 metals were present with concentrations above the analytical laboratory PQLs. However, the reported concentrations are not elevated and are likely representative of typical background concentrations for soils in the vicinity of the boring location.

3.3.2.2 Groundwater Monitoring Well Sample Results

Groundwater samples collected from the monitoring wells were analyzed for VOCs and TPH-g/d/o in the PE Phase, and one sample for VOCs+Oxy, SVOCs, TPH-g/d, and dissolved gases in water (methane & hydrogen sulfide) and another sample for VOCs+Oxy, SVOCs, TPH-g/d, Alcohols, 1,4-Dioxane, Perchlorate, Polychlorinated Biphenyls (PCBs), Pesticides, and dissolved gases in water (methane & hydrogen sulfide) in the Adv. PE Phase. Additionally, one sample (M-410) was also analyzed for certain NPDES/sewer discharge criteria parameters (see next section). The analytical results of the groundwater monitoring well samples are summarized below.

Well E-133

One groundwater grab sample was analyzed for VOCs+Oxy and TPH-g/d/o. The groundwater grab sample was collected at around 25-ft bgs, a review of the analytical results showed the following:

- VOCs: VOCs were not detected above the PQL in the groundwater grab sample collected.
- TPH: TPH-d and TPH-o was present above the respective laboratory PQLs in the groundwater grab sample that was submitted for analysis.

Well E-134

One groundwater grab sample collected at around 87 feet bgs was analyzed for VOCs+Oxy and TPH-g/d/o, a review of the analytical results showed the following:

- VOCs: Two VOCs were detected above the PQL in the groundwater grab sample collected. Chloromethane and Cis-1, 2-Dichloroethene.

- TPH: TPH-g/d/o was not detected above the PQLs in the groundwater grab sample submitted for analysis.

Well M-407

No groundwater samples were collected from both shallow and deep well casings of well M-407. The shallow well was dry, and the deep well screen only had 2 inches of water column.

Well M-408

No groundwater samples were collected from both shallow and deep well casings of well M-408. Both wells were dry.

Well M-409

A groundwater sample was collected from the deep well screen of well M-409. The shallow well was dry. The groundwater sample was analyzed for VOCs, SVOCs, TPH-g/d/, Alcohols, 1, 4-Dioxane, Perchlorate, PCBs, Pesticides, and dissolved gases in water (methane & hydrogen sulfide). A duplicate sample for dissolved gases in water (methane & hydrogen sulfide) was also analyzed. A review of the analytical results showed the following:

- VOCs: VOCs were not detected above the respective laboratory PQLs
- SVOCs: SVOCs were not detected above the respective laboratory PQLs
- Alcohols: No methanol or ethanol were detected above the respective laboratory PQLs
- 1, 4-Dioxane: was not detected above the respective laboratory PQL
- PCBs: was not detected above the respective laboratory PQL
- Pesticides: was not detected above the respective laboratory PQL
- Dissolved gases in water: Methane and hydrogen sulfide were both detected above the PQLs in the original and duplicate groundwater samples.
- TPH: TPH-g/d/o was not detected above the PQLs in the groundwater sample submitted for analysis.

Well M-410

A groundwater sample was collected from the deep well screen of well M-410. The shallow well was dry. The groundwater sample was analyzed for VOCs, SVOCs, TPH-g/d, Alcohols, 1, 4-Dioxane, Perchlorate, PCBs, Pesticides, and dissolved gases in water (methane & hydrogen sulfide). A duplicate sample for dissolved gases in water (methane & hydrogen sulfide) was also analyzed. M-410 was also analyzed for certain NPDES/sewer discharge criteria parameters (see next section). A review of the analytical results showed the following:

- VOCs: VOCs were not detected above the respective laboratory PQLs
- SVOCs: SVOCs were not detected above the respective laboratory PQLs
- Alcohols: No methanol was detected above the laboratory PQL, but ethanol was detected above the respective laboratory PQL
- 1, 4-Dioxane: was not detected above the respective laboratory PQL

- PCBs: was not detected above the respective laboratory PQL
- Pesticides: was not detected above the respective laboratory PQL
- Dissolved gases in water: Methane and hydrogen sulfide were both detected above the PQLs in the original and duplicate groundwater samples, and the dissolved sulfides were also high at 88 mg/L.
- TPH: TPH-g/d/o was not detected above the PQLs in the groundwater sample submitted for analysis.

3.3.3 NPDES Characterization Results

One groundwater sample collected from the monitoring well M-410 was analyzed by ATL for the complete NPDES/sewer discharge criteria parameters, and one groundwater sample from the monitoring well M-409 was analyzed for certain NPDES/sewer discharge criteria parameters. The groundwater analytical results for NPDES and sewer discharge are presented in Tables 3-8 and 3-9, respectively. The analytical results of the groundwater monitoring well samples are summarized below.

Well M-409

This sample was analyzed for only certain NPDES/sewer discharge criteria parameters. Based on the limited analytical results of the groundwater sample in M-409, the NPDES Screening Level Requirements for discharge to surface waters and the specific constituents for Ballona Creek discharge limitations were all fine.

Well M-410

This sample was analyzed for the complete NPDES/sewer discharge criteria parameters. Based on the analytical results of the groundwater sample in M-410, only, one metal concentration (selenium) exceeded the NPDES Screening Level Requirements for discharge to surface waters and the same metal (selenium) exceeded specific effluent limitations for discharge into Ballona Creek. This sample also exceeded the Biochemical Oxygen Demand (BOD) limitations for discharge into Ballona Creek. It should be noted, that the Total Hardness (as calcium carbonate) was high at 2,400 mg/L.

The analytical results for the NPDES and sewer discharge criteria are summarized in Tables 3-8 and 3-9, respectively.

3.3.4 Waste Characterization Results

A soil sample was collected from each soil drum prior to removal for waste characterization analysis. Soil samples collected from the drums were composited by ATL at the laboratory. The composite soil sample for each boring location was then analyzed for VOCs, TPH-g/d/o, Title 22 Metals, and in some cases were high TPH results were obtained for the Acute Aquatic Toxicity Test [(Bioassay Fish Kill Test-Title 22 CCR 66261.24(a)(6)]. The Bioassay Fish Kill Test is a test used to prove that a waste is non-hazardous in California. Based on the waste characterization results obtained, it was determined that the investigative-derived wastes generated from all boring locations during this investigation were non-hazardous in accordance with California regulations Title 22 CCR 66261. The waste soil (soil cuttings) was disposed of by GreenClean to Safe Soil (formally TPST) in Adelanto, California, a licensed facility for thermal treatment and disposal, and the waste water to the Demenno Kerdoon facility in Compton, California.

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Table 3-5: Analytical Results for Soil Samples – VOCs, SVOCs and TPHs

Boring ID (Location)	Date Sampled	Sample ID	Depth (feet bgs)	Volatile Organic Compounds (VOCs) and Oxygenates via EPA Method 8260B and 8021B (micrograms/kg)		Total Petroleum Hydrocarbons (TPH) via EPA Method 1664(M) (mg/kg)	Semi-Volatile Organic Compounds via EPA Method 8270C (micrograms/kg)	Total Petroleum Hydrocarbons (TPH) via EPA Method 8015B(M) (mg/kg)			Bioassay Title 22 by Method CDFG P&M 1988 (mg/L)
				Carbon Disulfide	All Other VOCs	TPH	All SVOCs	GRO	DRO	ORO	LC_{50} > 500 mg/L = Non Hazardous LC_{50} < 500 mg/L = Hazardous
E-132	8/12/11	E-132-15	15	ND	ND	NA	ND	ND (<0.9)	ND (<10)	ND (<10)	NA
		E-132-30	30	ND	ND	NA	ND	ND (<1.1)	ND (<10)	ND (<10)	NA
	9/20/11	E-132-60	60	ND	ND	NA	ND	ND (<1.1)	ND (<10)	ND (<10)	NA
		E-132-80	80	ND	ND	NA	ND	ND (<0.97)	12	13	NA
E-132A	3/09/15	E-132A-60	60	ND (<5)	ND	ND (<50)	ND	ND (<1)	ND (<10)	ND (<10)	NA
		E-132A-70	70	ND (<5)	ND	ND (<50)	ND	ND (<1)	ND (<10)	ND (<10)	NA
	3/10/15	E-132A-80	80	ND (<5)	ND	ND (<50)	ND	ND (<1)	ND (<10)	ND (<10)	NA
E-132B	3/12/15	E-132B-35	35	ND (<5)	ND	ND (<50)	ND	ND (<1)	ND (<10)	ND (<10)	NA
		E-132B-55	55	ND (<5)	ND	ND (<50)	ND	ND (<1)	ND (<10)	ND (<10)	NA
		E-132B-65	65	ND (<5)	ND	ND (<50)	ND	ND (<1)	ND (<10)	ND (<10)	NA
		E-132B-75	75	ND (<5)	ND	120	ND	ND (<1)	ND (<10)	ND (<10)	LC_{50} >750
		E-132B-85	85	33	ND	ND (<50)	ND	ND (<1)	ND (<10)	ND (<10)	LC_{50} >750
		E-132B-90	90	43	ND	ND (<50)	ND	ND (<1)	ND (<10)	ND (<10)	LC_{50} >750
E-132C	3/19/15	E-132C-25'	25	ND (<5)	ND	ND (<50)	ND	ND (<1)	ND (<10)	ND (<10)	NA
		E-132C-45'	45	ND (<5)	ND	ND (<50)	ND	ND (<1)	ND (<10)	ND (<10)	NA
		E-132C-55'	55	ND (<5)	ND	ND (<50)	ND	ND (<1)	ND (<10)	ND (<10)	NA
	3/20/15	E-132C-75'	75	ND (<5)	ND	ND (<50)	ND	ND (<1)	ND (<10)	ND (<10)	NA
		E-132C-85'	85	ND (<5)	ND	ND (<50)	ND	ND (<1)	ND (<10)	ND (<10)	NA
		E-132C-95'	95	ND (<5)	ND	ND (<50)	ND	ND (<1)	ND (<10)	ND (<10)	NA

Abbreviations:
-- = sample not analyzed
µg/kg = micrograms per kilogram
mg/kg = milligrams per kilogram
mg/L = milligrams per liter
µg/L = micrograms per liter
NA = Not analyzed
ND = not detected above the laboratory practical quantitation limit (PQL). See analytical laboratory reports for detection limits of specific compounds.
LC_{50} = Lethal Concentration that will kill 50% of the fish population in mg/L

Table 3-5: Analytical Results for Soil Samples – VOCs, SVOCs and TPHs (continued)

Boring ID (Location)	Date Sampled	Sample ID	Depth (feet bgs)	Volatile Organic Compounds (VOCs)and Oxygenates via EPA Method 8260B and 8021B (micrograms/kg)		Total Petroleum Hydrocarbons (TPH) via EPA Method 1664(M) (mg/kg)	Semi-Volatile Organic Compounds via EPA Method 8270C (micrograms/kg)	Total Petroleum Hydrocarbons (TPH) via EPA Method 8015B(M) (mg/kg)			Bioassay Title 22 by Method CDFG P&M 1988 (mg/L)
				Carbon Disulfide	All Other VOCs	TPH	All SVOCs	GRO	DRO	ORO	LC_{50} > 500 mg/L = Non Hazardous LC_{50} < 500 mg/L = Hazardous
E-133	8/19/11	E-133-35	35	ND	ND	NA	ND	ND (<0.95)	ND (<10)	ND (<10)	NA
	9/21/11	E-133-55	55	ND	ND	NA	ND	ND (<0.93)	ND (<10)	ND (<10)	NA
		E-133-80	80	ND	ND	NA	ND	ND (<0.85)	ND (<10)	ND (<10)	NA
E-133A	3/16/15	E-133A-35	35	ND (<5)	ND	ND (<50)	ND	ND (<1)	ND (<10)	ND (<10)	NA
		E-133A-55	55	ND (<5)	ND	ND (<50)	ND	ND (<1)	ND (<10)	ND (<10)	NA
		E-133A-65	65	ND (<5)	ND	ND (<50)	ND	ND (<1)	ND (<10)	ND (<10)	NA
		E-133A-75	75	ND (<5)	ND	ND (<50)	ND	ND (<1)	ND (<10)	ND (<10)	NA
		E-133A-85	85	ND (<5)	ND	ND (<50)	ND	ND (<1)	ND (<10)	ND (<10)	NA
		E-133A-95	95	ND (<5)	ND	ND (<50)	ND	ND (<1)	ND (<10)	ND (<10)	NA
E-134	9/6/11	E-134-20	20	ND	ND	NA	NA	ND (<1)	ND (<10)	ND (<10)	NA
		E-134-40	40	ND	ND	NA	NA	ND (<1)	ND (<10)	ND (<10)	NA
	9/22/11	E-134-80	80	ND	ND	NA	ND	ND (<0.97)	ND (<10)	ND (<10)	NA

Abbreviations:
-- = sample not analyzed
µg/kg = micrograms per kilogram
mg/kg = milligrams per kilogram
mg/L = milligrams per liter

µg/L = micrograms per liter
NA = Not analyzed
ND = not detected above the laboratory practical quantitation limit (PQL). See analytical laboratory reports for detection limits of specific compounds.
LC_{50} = Lethal Concentration that will kill 50% of the fish population in mg/L

Table 3-6: Analytical Results for Soil Samples – Title 22 Metals

Location	Boring ID	DATE	SAMPLE ID	DEPTH (feet bgs)	Title 22 Metals via EPA METHOD 6010B/7471A (mg/kg)																Mercury via EPA Method 7471A (mg/kg)	STLC Via EPA 6010B (mg/L)	
					Antimony	Arsenic	Barium	Beryllium	Cadmium	Chromium	Cobalt	Copper	Lead	Molybdenum	Nickel	Selenium	Silver	Thallium	Vanadium	Zinc	Mercury	Arsenic	Selenium
					Threshold Limits (1)																		
TTLC (mg/kg)					500	500	10,000	75	100	2,500	8,000	2,500	1,000	3,500	2,000	100	500	700	2,400	5,000	20	-	-
STLC (mg/L)					15	5.0	100	0.75	1.0	5	80	25	5.0	350	20	1.0	5	7.0	24	250	0.2	25	5.0
Constellation Blvd	E-132	8/12/11	E-132-35'	35	ND (<2.0)	1.3	59	ND (<1.0)	ND (<1.0)	19	5.4	14	3.0	ND (<1.0)	17	ND (<1.0)	ND (<1.0)	ND (<1.0)	30	50	ND (<0.1)	NA	NA
Corner of Century Park E. & Constellation Blvd	E-132A	3/09/15	E-132A-60'	60	ND (<2.0)	ND (<1.0)	22	ND (<1.0)	ND (<1.0)	22	1.9	10	1.4	ND (<1.0)	5.6	ND (<1.0)	ND (<1.0)	ND (<1.0)	15	18	ND (<0.1)	NA	NA
			E-132A-70'	70	ND (<2.0)	1.2	17	ND (<1.0)	ND (<1.0)	10	2.6	5.4	1.9	ND (<1.0)	10	ND (<1.0)	ND (<1.0)	ND (<1.0)	7.3	20	ND (<0.1)	NA	NA
		3/10/15	E-132A-80'	80	ND (<2.0)	ND (<1.0)	48	ND (<1.0)	ND (<1.0)	9.5	1.2	4.6	2.2	ND (<1.0)	4.2	ND (<1.0)	ND (<1.0)	ND (<1.0)	7.8	11	ND (<0.1)	NA	NA
Constellation Blvd west of Century Park E	E-132B	3/12/15	E-132B-35'	35	ND (<2.0)	1.6	88	ND (<1.0)	2.2	22	9.1	32	4.9	ND (<1.0)	38	ND (<1.0)	ND (<1.0)	ND (<1.0)	42	60	ND (<0.1)	NA	NA
			E-132B-55'	55	ND (<2.0)	ND (<1.0)	14	ND (<1.0)	ND (<1.0)	7.8	ND (<1.0)	7.7	2.2	1.6	2.2	ND (<1.0)	ND (<1.0)	ND (<1.0)	6.2	5.8	ND (<0.1)	NA	NA
			E-132B-65'	65	ND (<2.0)	1.4	55	ND (<1.0)	ND (<1.0)	46	5.3	24	4.5	1.4	21	ND (<1.0)	ND (<1.0)	ND (<1.0)	26	34	ND (<0.1)	NA	NA
			E-132B-75'	75	ND (<2.0)	15	30	ND (<1.0)	ND (<1.0)	15	1.6	7.9	1.1	34	5.3	ND (<1.0)	ND (<1.0)	ND (<1.0)	12	14	ND (<0.1)	NA	NA
			E-132B-85'	85	ND (<2.0)	52	19	ND (<1.0)	1.7	22	2.8	6.5	1.1	140	9.9	ND (<1.0)	ND (<1.0)	1.6	20	26	ND (<0.1)	1.0	NA
			E-132B-90'	90	ND (<2.0)	20	26	ND (<1.0)	ND (<1.0)	19	2.8	20	1.4	200	11	ND (<1.0)	ND (<1.0)	1.1	22	28	ND (<0.1)	NA	NA
Constellation Blvd, east of Ave. of the Stars	E-132C	3/19/15	E-132C-25'	25	ND (<2.0)	5.7	40	ND (<1.0)	ND (<1.0)	14	4.1	30	2.7	1.9	17	ND (<1.0)	ND (<1.0)	ND (<1.0)	33	45	ND (<0.1)	NA	NA
			E-132C-45'	45	ND (<2.0)	1.1	72	ND (<1.0)	ND (<1.0)	8.9	ND (<0.1)	4.3	3.2	1.8	1.3	ND (<1.0)	ND (<1.0)	ND (<1.0)	27	7.0	ND (<0.1)	NA	NA
			E-132B-55'	55	ND (<2.0)	1.3	84	ND (<1.0)	ND (<1.0)	5.4	ND (<0.1)	5.9	1.6	8.2	2.4	ND (<1.0)	ND (<1.0)	ND (<1.0)	6.1	13	ND (<0.1)	NA	NA

Notes:
(1)Concentrations exceeding the total threshold limit concentration (TTLC) and/or ten times the soluble threshold limit concentration (10 x STLC) are classified under the Title 22 California Code of Regulations (CCR) as a hazardous waste.

Abbreviations:
bgs = below ground surface
mg/kg = milligrams per kilogram
mg/L = milligrams per liter
NA = not analyzed
ND = not detected above the laboratory practical quantitation limit (PQL). See analytical laboratory reports for detection limits of specific compounds.

Table 3-6: Analytical Results for Soil Samples – Title 22 Metals (continued)

Location	Boring ID	Date	Sample ID	Depth (feet bgs)	Title 22 Metals via EPA Method 6010B/7471A (mg/kg)																Mercury via EPA Method 7471A (mg/kg)	STLC via EPA Method 6010B (mg/L)	
					Antimony	Arsenic	Barium	Beryllium	Cadmium	Chromium	Cobalt	Copper	Lead	Molybdenum	Nickel	Selenium	Silver	Thallium	Vanadium	Zinc	Mercury	Arsenic	Selenium
					Threshold Limits (1)																		
TTLC (mg/kg)					500	500	10,000	75	100	2,500	8,000	2,500	1,000	3,500	2,000	100	500	700	2,400	5,000	20	-	-
STLC (mg/L)					15	5.0	100	0.75	1.0	5	80	25	5.0	350	20	1.0	5	7.0	24	250	0.2	25	5.0
Constellation Blvd, east of Ave. of the Stars	**E-132C**	3/20/15	E-132C-75'	75	ND (<2.0)	4.5	26	ND (<1.0)	ND (<1.0)	13	1.8	10	1.3	2.6	6.6	**11**	ND (<0.1)	ND (<0.1)	13	19	ND (<0.1)	NA	ND(<1.0)
			E-132C-85'	85	ND (<2.0)	3.1	14	ND (<1.0)	ND (<1.0)	25	1.2	9.9	1.2	4.7	5.9	ND (<1.0)	ND (<1.0)	ND (<1.0)	20	19	ND (<0.1)	NA	NA
			E-132B-95'	95	ND (<2.0)	ND (<1.0)	61	ND (<1.0)	ND (<1.0)	41	6.3	26	1.6	ND (<1.0)	23	ND (<1.0)	ND (<1.0)	ND (<1.0)	52	36	ND (<0.1)	NA	NA
Constellation Blvd	**E-133**	9/21/11	E-133-65'	65	ND (<4.0)	ND (<2.0)	27	ND (<2.0)	ND (<2.0)	14	7.9	7.7	ND (<2.0)	ND (<2.0)	15	ND (<2.0)	ND (<2.0)	ND (<2.0)	18	47	ND (<0.1)	NA	NA
Corner of Constellation Blvd, & f Ave. of the Stars	**E-133A**	3/16/15	E-133A-35	35	ND (<2.0)	7.2	89	ND (<1.0)	ND (<1.0)	20	5.3	27	3.8	ND (<1.0)	17	ND (<1.0)	ND (<1.0)	ND (<1.0)	34	54	ND (<0.1)	NA	NA
			E-133A-55	55	ND (<2.0)	14	43	ND (<1.0)	ND (<1.0)	17	4.4	6.7	1.8	2.4	16	ND (<1.0)	ND (<1.0)	ND (<1.0)	40	21	ND (<0.1)	NA	NA
			E-133A-65'	65	ND (<2.0)	2.5	40	ND (<1.0)	ND (<1.0)	27	8.6	17	2.8	ND (<1.0)	26	ND (<1.0)	ND (<1.0)	ND (<1.0)	28	41	ND (<0.1)	NA	NA
			E-133A-75'	75	ND (<2.0)	ND (<1.0)	38	ND (<1.0)	ND (<1.0)	13	ND (<1.0)	26	1.4	1.5	2.6	ND (<1.0)	ND (<1.0)	ND (<1.0)	7.9	33	ND (<0.1)	NA	NA
			E-133A-85'	85	ND (<2.0)	ND (<1.0)	10	ND (<1.0)	ND (<1.0)	12	ND (<1.0)	4.5	ND (<1.0)	ND (<1.0)	4.2	ND (<1.0)	ND (<1.0)	ND (<1.0)	6.4	14	0.11	NA	NA
			E-133A-95'	95	ND (<2.0)	2.7	71	ND (<1.0)	ND (<1.0)	18	3.6	34	1.5	1.9	15	ND (<1.0)	ND (<1.0)	ND (<1.0)	20	43	ND (<0.1)	NA	NA
Constellation Blvd, west of Ave. of the Stars	**E-134**	9/6/11	E-134-25	25	ND (<2.0)	7.2	85	ND (<1.0)	ND (<1.0)	24	6.7	14	4.8	ND (<1.0)	17	ND (<1.0)	ND (<1.0)	ND (<1.0)	45	36	ND (<0.10)	NA	NA

Notes:
(1)Concentrations exceeding the total threshold limit concentration (TTLC) and/or ten times the soluble threshold limit concentration (10 x STLC) are classified under the Title 22 California Code of Regulations (CCR) as a hazardous waste.
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Abbreviations:
bgs = below ground surface
mg/kg = milligrams per kilogram
mg/L = milligrams per liter
NA = not analyzed
ND = not detected above the laboratory practical quantitation limit (PQL). See analytical laboratory reports for detection limits of specific compounds.

Table 3-7: Analytical Results for Groundwater Samples

Location	Well ID	Date Sampled	Sample ID	Approximate Sample Depth (feet bgs)	Volatile Organic Compounds (VOCs) and Oxygenates via EPA Method 8260B/624 (micrograms/L)			Semi-Volatile Organic Compounds (SVOCs) via EPA Method 8270/625 (micrograms/L)	Dissolved Gases in Water via RSK175 (micrograms/L)	Total Sulfide via SM 4500-S=D (mg/L)	Alcohols via EPA Method 8015B (mg/L)		1, 4 –Dioxane via EPA Method 8270 (micrograms/L)	Perchlorate via EPA Method 314.0 (micrograms/L)	PCBs and Pesticides via EPA Method 608 (micrograms/L)	Total Petroleum Hydrocarbons (TPH) via EPA Method 8015B(M) (mg/L)		
					Chloromethane	Cis-1,2-Dichloroethene	All Other VOCs	All SVOCs	Methane	Hydrogen Sulfide	Ethanol	Methanol			All PCBs & Pesticides	GRO	DRO	ORO
Century City Constellation Station	E-133	8/19/11	E-133-GW	25	ND(<0.5)	ND(<0.5)	ND	NA	NA	NA	NA	NA	NA	NA	NA	ND(<0.2)	0.21	0.24
	E-134	9/22/11	E-134-GW	85	5.9	1.6	ND	NA	NA	NA	NA	NA	NA	NA	NA	ND(<0.2)	ND(<0.2)	ND(<0.2)
	M-407	Shallow well		-	No sample, shallow well had only 2 inches of water column													
		Deep Well		Dry	No sample, deep well was dry													
	M-408	Shallow well		Dry	No sample, shallow well was dry													
		Deep Well		Dry	No sample, deep well was dry													
	M-409	Shallow well		Dry	No sample, shallow well was dry													
		5/12/15	M-409-GW	90	ND(<0.5)	ND(<0.5)	ND	ND	600 240*	0.029 0.005*	NA	NA	NA	NA	NA	ND(<0.05)	ND(<0.05)	ND(<0.05)
	M-410	Shallow well		Dry	No sample, shallow well was dry													
		5/12/15	M-410-GW	80	ND(<0.5)	ND(<0.5)	ND	ND	400 370*	87 88*	1.4	ND(<1.0)	ND(<0.2)	ND(<40)	ND	ND(<0.05)	ND(<0.05)	ND(<0.05)

Explanations:
GRO = gasoline range organics
DRO = diesel range organics
ORO = oil range organics
PCBs= Polychlorinated Biphenyls
ND = not detected above the laboratory practical quantitation limit (PQL). See analytical laboratory reports for detection

µg/L = micrograms per liter
mg/L = milligrams per Liter
bgs = below ground surface
S = Shallow Well Screen
NA = Not tested or analyzed
" * " Duplicate sample

Table 3-8: Analytical Results Compared to NPDES Application Supplemental Requirements and Ballona Creek Selected Specific Constituents and Effluent Discharge Limitations as per Permit No. CAG994004

Constituents	Units	M-409	M-410	Screening Level	Daily Maximum	Monthly Average
Antimony	micrograms/L	0.07	0.22	14	--	--
Arsenic	micrograms/L	2.5	7.7	50	--	--
Barium	micrograms/L	140	89	--	--	--
Beryllium	micrograms/L	ND(<2.5)	ND(<1.0)	4	-	--
Cadmium	micrograms/L	0.05	0.04	2.4	--	--
Chromium (Total)	micrograms/L	1.3	0.81	50[1]	--	--
Chromium VI	micrograms/L	NA	ND(<1.0)	11	--	--
Cobalt	micrograms/L	0.48	0.77	--	--	--
Copper	micrograms/L	1.4	4.5	9.4	--	-
Cyanide	micrograms/L	NA	0.19	5.2	--	--
Lead	micrograms/L	0.13	ND(<1.0)	3.2	--	--
Mercury	micrograms/L	ND(<0.2)	ND(<0.2)	0.050	--	----
Molybdenum	micrograms/L	1.7	0.45	--	--	
Nickel	micrograms/L	4.6	12	52	--	--
Selenium	micrograms/L	4.8	**17**	5.0	--	--
Silver	micrograms/L	ND(<0.5)	ND(<0.5)	4	--	--
Thallium	micrograms/L	ND(<0.5)	ND(<0.5)	1.7	--	--
Vanadium	micrograms/L	ND(<0.5)	ND(<2.0)	--	--	--
Zinc	micrograms/L	6.2	9.8	122	--	--
Boron	mg/L	NA	160	na	na	na
VOCs	micrograms/L	ND	ND	--	--	--
SVOCs	micrograms/L	ND	ND	Varies	--	--
Pesticides and PCBs	micrograms/L	NA	ND	Varies	--	--
Oil & Grease	mg/L	NA	2.5	--	--	--
TPH-g	mg/L	ND(<0.05)	ND(<0.05)	--	--	--
TPH-d	mg/L	ND(<0.05)	ND(<0.05)	--	--	--
TPH-o	mg/L	ND(<0.05)	ND(<0.05)	--	--	--
Perchlorate	micrograms/L	NA	ND(<40)	4	--	--
1,4-Dioxane	micrograms/L	NA	ND(<0.2)	3	--	--
Total Hardness (as Calcium Carbonate)	mg/L	NA	2,400	na	na	na
pH	pH Unit	6.5*	7.3	na	na	na
Total Dissolved Solids	mg/L	NA	3,800	na	na	na
Total Suspended Solids	mg/L	NA	21	na	na	na
Settleable Solids	mL/L	NA	ND(<0.1)	na	na	na
Chlorides	mg/L	NA	870	na	na	na
Sulfates	mg/L	NA	1,000	na	na	na

Notes:
[1] NPDES Screening Level is for Chromium III, samples were analyzed for Total Chromium, which includes Chromium III
mg/L – milligrams per liter
mL/L – milliliters per liter

µg/L – micrograms per liter -
NTU – nephelometric turbidity unit
NA - Not Tested or Analyzed
ND - Not Detected above PQL
-- no screening level listed, daily maximum or monthly average

TPH = Total Petroleum Hydrocarbons
PCBs = Polychlorinated Biphenyls
Bold = exceeds screening level or effluent limitation
na = not applicable
Ballona Creek Heavy Metal Total Maximum Daily Load (TMDL)
* measured with an Horiba U52 in the field

Table 3-8: Analytical Results Compared to NPDES Application Supplemental Requirements and Ballona Creek Selected Specific Constituents and Effluent Discharge Limitations as per Permit No. CAG994004 **(continued)**

Constituents	Units	M-409	M-410	Screening Level	Daily Maximum	Monthly Average
Ethanol	mg/L	NA	1.4	--	--	--
Methanol	mg/L	NA	ND(<1.0)	--	--	--
Nitrates (as N)	mg/L	NA	ND(<2.0)	na	na	na
Nitrites (as N)	mg/L	NA	ND(<2.0)	--	na	na
Sulfides, total	mg/L	0.027 (0.041)*	82 (82)*	na	na	na
Hydrogen Sulfide, dissolved	mg/L	0.029 (0.005)*	87 (88)*	--	--	--
Methane, Dissolved	micrograms/L	240 (600)*	370 (400)*	--	--	--
Turbidity	NTU	20.5**	10	na	na	na
BOD5 20°C	mg/L	NA	92.8	na	na	na
Selected Specific Constituents for Ballona Creek Discharge						
Total Suspended Solids	mg/L	NA	21	--	150	50
Turbidity	NTU	20.5**	10	--	150	50
BOD5 20°C	mg/L	NA	**92.8**	--	30	20
Settleable Solids	mL/L	NA	ND(<0.1)	--	0.3	0.1
Copper	micrograms/L	1.4	4.5	--	24	12.5
Lead	micrograms/L	0.13	ND(<1.0)	--	13	6.5
Selenium	micrograms/L	4.8	**17**	--	5	2.5
Zinc	micrograms/L	6.2	9.8	--	304	152

Notes:
[1] NPDES Screening Level is for Chromium III, samples were analyzed for Total Chromium, which includes Chromium III
mg/L – milligrams per liter
mL/L – milliliters per liter
µg/L – micrograms per liter -
NTU – nephelometric turbidity unit
NA - Not Tested or Analyzed
ND - Not Detected above PQL
-- no screening level listed, daily maximum or monthly average
BOD5 = Biological Oxygen Demand
Bold = exceeds screening level or effluent limitation
na = not applicable
Ballona Creek Heavy Metal Total Maximum Daily Load (TMDL)
* duplicate
** measured with an Horiba U52 in the field

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Table 3-9: Local Discharge Limitations per City of Los Angeles Bureau of Sanitation

Constituent	M-409 (mg/L)	M-410 (mg/L)	Local Instantaneous Maximum (mg/L)
Arsenic	0.0025	0.0077	3.00
Cadmium	0.00005	0.00004	15.00
Chromium (Total)	0.0013	0.00081	10.00
Copper	0.0014	0.0045	15.00
Lead	0.00013	ND(<0.001)	5.00
Nickel	0.0046	0.012	12.00
Silver	ND(<0.0005)	ND(<0.0005)	5.00
Zinc	0.0062	0.0098	25.00
Cyanide (Total)	NA	0.00019	10.00
Cyanide (Free)	NA	NA	2.00
Sulfides (Hydrogen, Dissolved)	0.005	**88**	0.10
Oil & Grease (Dispersed)	NA	2.5	600.00
Oil & Grease (Floatable)	None Visible	None Visible	None Visible
pH (pH Units)	6.5*	7.3	5.50 - 11.00
SVOCs	ND	ND	1.00
VOCs	ND	ND	1.00
Biological Oxygen Demand	NA	92.8	--
Suspended Solids	NA	21	--

Notes:
mg/L – milligrams per liter
NA - Not Tested or Analyzed
ND - Not Detected above PQL
VOC = Volatile organic Compounds
SVOC = Semi-Volatile organic Compounds
Biochemical Oxygen Demand (BOD
-- no screening level listed, daily maximum or monthly average
* measured with an Horiba U52 in the field
Bold = exceeds screening level or effluent limitation

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4.0 ENVIRONMENTAL EXPLORATION FINDINGS

A review of the field observations and analytical laboratory results shows that suspect constituents of concern (VOCs, TPG-d/o and metals) were detected in the soil and/or the groundwater samples in several borings advanced during the PE and Adv. PE phase investigations. The constituents identified were related to Former Oil Exploration Activities and/or naturally-occurring petroleum compounds.

4.1 Findings and Discussion

The findings for soil and groundwater contamination are presented in Table 4-1 and Table 4-2, respectively and summarized below:

Contaminated Soil and Groundwater

Based on the results, all metals with concentrations reported above the respective laboratory PQLs were below both the total threshold limit concentration (TTLC) and ten times the STLC (10 x STLC) which are classification values listed in the Title 22 California Code of Regulations (CCR) for the characterization of hazardous waste. The only exceptions were arsenic which was found with elevated concentration (>10 x STLC) in boring E-132B at 85 feet bgs, and selenium which was found with elevated concentration (>10 x STLC) in boring E-132C at 75 feet bgs but the samples were later determined to be non-hazardous as they passed the STLC test for California. The reported metal concentrations are likely representative of typical background concentrations for soils in the area and would be therefore classified as non-hazardous.

The analytical test results for soil samples collected during the PE Phase showed that only TPH- d/o were present above the laboratory PQLs, in sample boring E-132 at 80 feet below bgs. During the Adv. PE Phase one VOC (carbon disulfide) was only detected in sample boring E-132B at 75 and 80 feet bgs, and TPH was detected in the same sample boring E-132B at 75 feet bgs. These samples were later analyzed for an aquatic toxicity (fish bioassay) Title 22 test. The reported results of the fish bioassay tests indicated a Lethal Concentration, 50 percent (LC_{50}) of >750 mg/L for all three samples. LC_{50} is defined as the lethal concentration at which 50 percent of the fishes die at a certain dilution level. According to California Title 22 Section 66261.24, the material is considered toxic and hazardous if it has an acute aquatic 96-hour LC_{50} less than 500 mg/l (i.e., 50 or more percent of the fish die at this dilution level after 96-hour test duration). The analytical test results indicate that less than 50 percent of fishes died at a lower dilution level of 750 mg/L (and much less at 500 mg/L dilution level) and therefore the result is considered non-hazardous.

Groundwater samples were collected during the PE Phase from two boring (E-133 and E-134) and from two wells (M-409 and M-410) during the Adv. PE Phase. The analytical test results of groundwater samples showed the presence of VOCs (chloromethane and cis-1. 2-dichloroethene) in E-133 and TPH-d/o in E-134. The analytical test results of the groundwater samples from M-409 and M-410 showed the presence of dissolved methane and hydrogen sulfide. A strong odor of hydrogen sulfide was present during the sampling activities of these wells. The suspect source consists of former oil exploration activities. A more substantial testing of groundwater was performed on M-410 for obtaining a National Pollutant Discharge Elimination System (NPDES) permit. Based on these test results and assessment of whether the groundwater meets the NPDES permit requirements are discussed in the next Section.

Table 4-1 presents a discussion of the borings where suspect metals, VOCs and TPH constituents were detected in the soil and groundwater samples and also provides a summary of the analytical laboratory findings with respect to the threshold as defined by the California Code of Regulation with regard to waste characterization for disposal. Table 4-2 presents a summary of boring locations drilled within the proposed station locations where impacted groundwater was identified.

NPDES Requirements Summary

Groundwater discharge would flow into Ballona Creek and would require a NPDES permit prior to discharge. As a comparison, Table 3-8 lists the constituents and results that should accompany the NPDES application for discharge of wastewaters to surface waters and the specific constituents and discharge limitations as required in the discharge requirements under the current MTA NPDES permit obtained for the pump test done on P-101 (Permit No. CAG994004, see Metro 2012).

Metals

Only one metal, selenium (17 ug/L) was detected above screening levels (5 ug/L) for discharges to surface waters in well M-410.

Volatile Organic Compounds (VOCs)

No VOCs were detected above the laboratory detection limits in any of the two groundwater wells (M-409 and M-410).

Semi-Volatile Organic Compounds (SVOCs)

No SVOC was detected above the laboratory detection limits in any of the two groundwater wells (M-409 and M-410).

Total Petroleum Hydrocarbons (TPH-g/d/o)

No TPH-g/d/o was detected above the laboratory detection limits in any of the two groundwater wells (M-409 and M-410).

Miscellaneous

Perchlorate, 1, 4-dioxane, Pesticides and PCBs were not detected above the laboratory detection limits. Ethanol (1.4 mg/L) was detected in well M-410, in addition to dissolved methane (400 and 370 micrograms /L) and dissolved hydrogen sulfide (87 and 88 mg/L). Dissolved methane (600 and 240 micrograms /L) and dissolved hydrogen sulfide (0.029 and 0.005 mg/L) was also found in well M-409.

Ballona Creek Specific Discharge Limitations

Based on the analytical results of the groundwater sample collected, selenium (17 micrograms/L) was detected above Ballona Creek Total Maximum Daily Load (TMDL) discharge limitations in well M-410. The daily maximum concentration of selenium permitted is 5 mg/L and the monthly average permitted is 2.5 mg/L.

One specific constituent was also detected above Ballona Creek discharge limitations: BOD. BOD was detected at 92.8 mg/L in well M-410. The daily maximum concentration of BOD permitted is 30 mg/L and the monthly average permitted is 20 mg/L.

NPDES Permit Application Summary

Based on the analytical results of the groundwater samples performed for a possible NPDES permit, only one metal exceed the effluent limitations for discharge into Ballona Creek, and also exceed screening levels for discharge of wastewater to surface waters. Therefore, a treatment system may be needed to treat selenium prior to discharge into the storm drain under an NPDES permit.

Two other approaches: sewer discharge (under a sewer discharge permit), or off-site disposal via trucking can be considered for disposal of dewatering effluent. Based on the analytical results, the metals are below any discharge limits to the sewer. A bag filter and flow meter/totalizer would likely be required treatment, prior to discharge, to address sediments. The groundwater could also be disposed of offsite at a permitted water treatment recycling facility. But the limiting factor would be the volume of water stored.

Based upon analytical data it appears that discharge to the sewer may be the most cost-effective since the treatment system would be less complex (i.e. metals are not an issue at this point) than would a system required to meet the NPDES criteria, however, disposal to the sewer is dependent on the review by the Bureau of Sanitation, and whether an accessible sewer can be located.

City of Los Angeles Bureau of Sanitation Industrial Water Permit (Sewer Collection System)

If an NPDES permit is not granted, and there is no practical option available to dispose of the groundwater, an application can be submitted for an Industrial Wastewater Permit to discharge to the sewer system.

The City of Los Angeles Bureau of Sanitation has Monitoring Requirements and Local Discharge Limitations. The analytical results of the groundwater testing are compared in Table 3-9 with the Local Discharge Limitations. Additional monitoring may be required by the Bureau of Sanitation.

Industrial Waste Permit Application Summary

Based on the analytical results of the groundwater samples, well M-410 had a Local Discharge Limitations problem. The Sulfide concentration exceeds the discharge limitation of 0.1 mg/L. In the groundwater sample collected, sulfide was detected at a concentration of 88 mg/L. The sulfides come from hydrogen sulfide (from former oil wells) dissolved in groundwater.

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Table 4-1: Boring Locations with Impacted Soil

Station	Boring No.	Phase	Location	Media Affected	Discussion	Constituents	Reported Concentration	Disposal Threshold Levels	Sample Exceeding Disposal Threshold Levels
Century City Constellation Station	E-132	PE	Constellation/Avenue of the Stars	Soil	The soil sample from the 80-foot depth from this boring contained detectable level of TPH-d/o. The suspect source consists of former oil exploration activities.	TPH-D	12 mg/kg (at 80')	<100 mg/kg (<100,000 micrograms/kg)[2]	none
						TPH-O	13 mg/kg (at 80')	<100 mg/kg (<100,000 micrograms/kg)[2]	none
	E-132B	Adv. PE	Constellation/Avenue of the Stars	Soil	Soil sample collected from this boring contained detectable concentration of one VOC (carbon disulfide), TPH, and one metal of concern (arsenic). A STLC test was done on the metal arsenic and it passed. A Fish Bioassay Test was done on these samples, and all passed. The suspect source consists of former oil exploration activities.	Carbon Disulfide	33 micrograms/kg (85') 43 micrograms/kg (90'))	<100 mg/kg (<100,000 micrograms/kg)[2]	none
						TPH	120 mg/kg (75')	<10,000 mg/kg[1]	none
						Arsenic	52 mg/kg (85') STLC = 1 mg/L	STLC >25 mg/L[3]	none
	E-132C	Adv. PE	Constellation/Avenue of the Stars	Soil	Soil sample collected from this boring contained detectable concentration of one metal of concern (selenium). A STLC test was done on the metal selenium and it passed. The suspect source consists of former oil exploration activities.	Selenium	11 mg/kg (75') STLC < 1 mg/L	STLC >5 mg/L[3]	none

Notes
µg/kg = micrograms per kilogram
mg/kg = milligrams per kilogram
mg/L = milligrams per Liter
TCLP = Toxicity Characteristic Leaching Procedure
[1] TPH is not regulated under the Federal or the California Code of Regulations. The maximum TPH values are dependent on the particular disposal facility accepting the waste. Maximum TPH values, independent of the organics range (i.e., gasoline, diesel or oil), generally range from 5,800 to 20,000 mg/kg in soil. However, additional testing (e.g., fish bioassay) may be required at lower levels depending on the source of contamination or at higher levels in order to better characterize the waste. Disposal Thresholds are based on McKittrick Class II Landfill

[2] Disposal Thresholds for Total VOCs <100 mg/kg, if higher a fish bioassay would be required. Based on McKittrick Class II Landfill.
[3] Disposal Thresholds based on Title 22 California Code of Regulations 66261.24
PE = Preliminary Engineering
Adv. PE = Advanced Preliminary Engineering

Table 4-2: Boring/Well Locations with Impacted Groundwater

Station	Boring No.	Phase	Location	Media Affected	Discussion	Constituents	Reported Concentration
Century City Constellation Station	E-133	PE	Constellation/Avenue of the Stars	Groundwater	The groundwater sample collected from this boring contained detectable concentration of TPH-d/o. The suspect source consists of former oil exploration activities.	TPH-d	0.21 mg/L
						TPH-o	0.24 mg/L
	E-134	PE	Constellation/Avenue of the Stars	Groundwater	The groundwater sample collected from this boring contained detectable concentrations of VOCs (cis-1,2 Dichloroethene and chloromethane). The suspect source consists of former oil exploration activities.	Chloromethane	5.9 micrograms/L
						Cis-1,2 Dichloroethene	1.6 micrograms/L
	M-409	Adv. PE	Constellation/Avenue of the Stars	Groundwater	The groundwater sample collected from this well contained detectable concentrations of methane and hydrogen sulfide. The suspect source consists of former oil exploration activities.	Methane	600 micrograms/L 240 micrograms/L
						Hydrogen Sulfide	0.029 mg/L 0.005 mg/L
	M-410	Adv. PE	Constellation/Avenue of the Stars)	Groundwater	A groundwater sample was collected as part of the NPDES sampling from a monitoring well install during the geotechnical investigation. The groundwater contained detectable concentrations of methane, hydrogen sulfide and ethanol. The suspect source consists of former oil exploration activities.	Methane	400 micrograms/L 370 micrograms/L
						Hydrogen Sulfide	87 mg/L 88 mg/L
						Ethanol	1.4 mg/L
						Selenium	17 micrograms/L
						Biological Oxygen Demand	92.8 mg/L

Notes
µg/L = milligrams per liter
mg/L = milligrams per liter

PE = Preliminary Engineering
Adv. PE = Advanced Preliminary Engineering

* The analytical laboratory results showed the presence of total petroleum hydrocarbons and some VOCs in the groundwater samples. The presence of such constituents may require pretreatment of the groundwater prior to discharge into the municipal storm drain system under a National Pollution Discharge Elimination System (NPDES) permit. A more comprehensive groundwater analytical testing program will be required as part of an NPDES permit application package if dewatering requires discharge into the municipal storm drain system.

5.0 STATISTICAL ANALYSIS

A statistical analysis was conducted in order to estimate the quantity of excavated material that will have a concentration of at least one measured constituent such that special handling and disposal options are assumed to be required (e.g., California Code of Regulations Title 22 values for metals and the presence of petroleum/volatile organic constituents or Class II landfill disposal) along with a measure of the confidence in that estimate.

The analytical information used in performing the analysis consisted of data from borings drilled within the proposed footprint of the Century City Constellation station. This consisted of seven borings with multiple depths sampled in each boring to give a total of 31 samples. The limits of the station footprint as shown on Plate 1 were used for the analyses.

5.1 Analyses

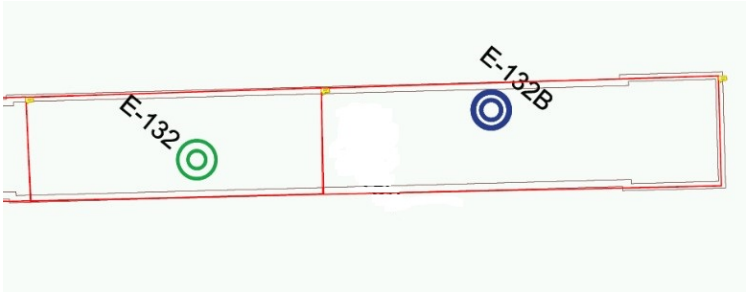
Station Footprint analysis

Because the hotspots found in the station footprint carry a high level of confidence of concentration exceedances (based on actual analyses), plus their physical location are known with some confidence (as is also the case for the location and analytical results from the step-out borings), these sample points can be used to represent discrete volumes of material with relatively high confidence.

If analyses from step-out borings associated with a particular hotspot do not exceed the specified concentration value, then the hotspot is adequately delineated. If one or more of the step-out borings do exceed the concentration criterion, then the hotspot boundary was extended to the nearest edge of the planned excavation or first clean boring. The hotspot would then be considered delineated for the purposes of this analysis.

Such a delineated hotspot (represented in plan view by a polygon connecting the clean step-out borings or other boundaries – see Figure 5-1 below) can then be multiplied by the summation of thicknesses of slices (sample intervals) where impacted areas were identified.

Figure 5-1: Station Footprint Sub-polygons



This analysis was completed for the station footprint and a sum of the volume of excavated material that might require special handling and disposal due to the presence of specified constituents of concern was calculated.

5.2 Results

Results of Station Footprint Analysis

Data for this analysis consisted of seven borings in the footprint of the proposed station as depicted on Plate 1.

Once the data was received, the individual samples for each boring were assigned a thickness (the difference in depth between a sample and the one immediately above it - first sample intervals were assigned a thickness equal to their depth). Then, the maximum detected value for each analyte reported in the data set was compared to established criteria. If none of the analyses exceeded the criteria, that analyte was dropped from further consideration. No Title 22 TTLC or STLC values for metals were exceeded. Several petroleum/volatile organic constituents were detected and were carried forward in the statistical analysis.

For each depth interval for a boring, if a constituent of interest sampled in that interval was above a level of concern for special disposal handling, the volume of each depth interval (thickness multiplied by polygon area) was determined. That volume was then included in the list of material exceeding criteria. The results of these calculations are presented in Table 5-1.

Based on the 31 sample intervals within station footprints, using raw counts (not weighted for thickness or area), and using the non-parametric confidence intervals, there is approximately a 3% chance a future sample within the footprint would exceed the current maximum detected values for a constituent. Since all maximum detections are generally well below Title 22 threshold values, an exceedance of current maximum values would not likely lead to an exceedance of Title 22 values. Most likely, a new highest value would be only marginally higher that current maximum values.

Table 5-1: Results of Station Footprint Analysis

	Boring with Detection of Concern	Sample Depth (feet)	Contaminant	Representative Sub-polygon Area (Square Feet)	Sample Thickness (feet)	Representative Sub-polygon Volume (Cubic Feet)
Century City Constellation Station	E132	80	TPH-D, TPH-O	10,150	20	203,000
	E-132B	85	Carbon Disulfide	14,160	10	141,600
	E-132B	90	Carbon Disulfide	14,160	5	70,800
	E-132B	75	TPH	14,160	10	141,600
	E-132B	85	Arsenic	14,160	10	--*
	E-132C	75	Selenium	8,350	20	167,000

* Volume already included for Carbon Disulfide in sample

Total Representative Sub-polygon Volume with COC (Cubic Feet)**	724,000
Total Volume to be Excavated for Station (Cubic Feet)	14,853,946
Percent of Total Volume to be Excavated that contains COC	5%

**With COC = Soil containing constituents of concern that, if excavated, could require special handling and disposal arrangements.

No adjustments to quantities due to bulking of soil are considered

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6.0 CONCLUSIONS AND RECOMMENDATIONS

A review of the field findings and analytical laboratory results show that suspect constituents of concern (VOCs and TPG-g/d/o) were detected in borings advanced and groundwater wells sampled during the PE Phase and Adv. PE Phase investigations. The constituents identified appeared to be related to releases/occurrences of naturally-occurring petroleum compounds.

The borings advanced during these assessments, and the soil and groundwater samples that were analyzed from the specific borings, are indicative of the conditions at a precise location. Considering the history of former Oil Exploration Activities around the Century City Constellation Station, combined with the findings of this investigation, it is apparent that some impacted soils and groundwater may be encountered in portions of the Century City Constellation Station excavation. A soil and groundwater management plan is recommended to address these issues.

Commentary on Disposal of Impacted Soils

Acceptance of hazardous waste at disposal facilities is governed by compliance with either State or Federal criteria. Acceptance usually depends upon the disposal facility (such as a landfill) and the source of the waste. To prove that a waste is Non-Hazardous is the responsibility of the generator. Normally landfills will ask the generator to perform analyses to determine the presence or not of regulated contaminants and prove it is Non-Hazardous. Landfills are typically classified as Class I, II or III using the following criteria:

- Class I Landfills: Receives any type of waste including Resource Conservation and Recovery Act ([RCRA] Federal Hazardous Waste) and Non-RCRA (California only Hazardous Waste) and non-hazardous waste. Class I Landfills include Kettleman Hills Landfill (operated by Waste Management Inc.) and Buttonwillow Landfill (operated by Clean Harbors). These are the only Class I Landfills in California; otherwise waste has to be sent to Arizona, Nevada or elsewhere.
- Class II Landfills: Receives waste soils impacted with oil, tar and/or petroleum, but not hazardous waste. All waste must be approved prior to acceptance. Each Class II Landfill will have specific criteria limits for accepting soils impacted with chemical of concern (but must be non hazardous waste). An example of a Class II Landfill is McKittrick Landfill (operated by Waste Management Inc.).
- Class III Landfills: Receives non-hazardous waste only (such as construction waste or non impacted soil). Examples are Bradley and Simi Valley Landfills (operated by Waste Management Inc.).

Characterization and Disposal of Excavated Soils from Century City Constellation Station

Based on the results of analytical testing performed during the PE and Adv. PE Phases, it is anticipated that the excavated soil from the Century City Constellation Station excavation can be considered non-hazardous as per CCR, Title 22, Division 4.5, Chapter 11, Article 3, Section 66261.24., and RCRA Chapter 40 of Code of Federal Regulations (CFR), Section 261; and the Acute Aquatic Toxicity Test [(Bioassay Fish Kill Test-Title 22 66261.24(a) (6)]. However, it is noted that a limited number of Fish Kill Tests were performed during the PE and Adv. PE phases. It is anticipated that a major portion (95%) of the excavated material from this location can be disposed of at a Class III Landfill facility, provided favorable test results are established during station excavation operations. If the results are unfavorable then the excavated material may require disposal at a Class II Landfill facility such as McKittrick Landfill.

Due to the presence of low levels of VOCs (< 100 ppm) and low levels of TPH from borings performed during this investigation, plus favorable Bioassay Fish Kill Tests results, 5% of the excavated materials from the Century City Constellation Station (see Table 5-1) are anticipated to be impacted and classified for disposal at a Class II Landfill facility.

Characterization and Disposal of Groundwater from Dewatering Operations at Station Excavations

For disposal of groundwater (as a result of dewatering during station excavation), each of the approaches, storm drain (under NPDES permit), sewer discharge (under a sewer discharge permit), or off-site disposal via trucking were considered.

- Based on the test data, direct untreated disposal of groundwater collected during dewatering of the station excavation to storm drains will not be permitted since some test results show constituents that are higher than the NPDES threshold limits for those constituents. Under NPDES requirements, prior to discharge into the storm drain, treatment of the groundwater would be necessary, and this would involve the design and construction of a treatment system. A treatment system may be designed to treat metals and VOCs prior to discharge into the storm drain under a NPDES permit.
- An application can be submitted to the City of Los Angeles for an industrial waste permit that would include the laboratory analytical reports for disposal to a sewer facility. Based on the analytical results, the metals are below discharge limits to the sewer. Sulfides would potentially be a consideration for sewer disposal. Injecting an oxidizing chemical such as household bleach or potassium permanganate followed up by filtration could reduce high concentrations of sulfides. A bag filter, clarifier and flow meter/totalizer, would likely be required treatment, prior to discharge, to address sediments.
- The groundwater could also be disposed of offsite at a permitted water treatment recycling facility. The analytical results of the groundwater sample must meet the acceptance requirements of the treatment facility. Groundwater pumped from the station excavations could be stored on site in a tank and periodically removed using a vacuum truck and transported to a water treatment recycling facility. A limitation would be the volume of water stored.
- Based upon analytical data it appears that discharge to the sewer system may be the most cost-effective method for disposal of pumped groundwater since the treatment system would be less complex than would a system designed to meet NPDES criteria. However, disposal to the sewer system is dependent on a review by the Los Angeles Bureau of Sanitation, and sufficiency of the capacity of an accessible sewer system.

7.0 BIBLIOGRAPHY

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APPENDIX A BORING LOGS

Appendix A

KEY TO SYMBOLS AND DESCRIPTIONS FOR GEOTECHNICAL EXPLORATION LOGS

MAJOR DIVISIONS			GROUP SYMBOLS	TYPICAL NAMES
COARSE GRAINED SOILS (More than 50% of material is LARGER than No. 200 sieve size)	GRAVELS (More than 50% of coarse fraction is LARGER than the No. 4 sieve size)	CLEAN GRAVELS (Little or no fines)	GW	Well graded gravels, gravel - sand mixtures, little or no fines.
			GP	Poorly graded gravels or grave - sand mixtures, little or no fines.
		GRAVELS WITH FINES (Appreciable amount of fines)	GM	Silty gravels, gravel - sand - silt mixtures.
			GC	Clayey gravels, gravel - sand - clay mixtures.
	SANDS (More than 50% of coarse fraction is SMALLER than the No. 4 Sieve Size)	CLEAN SANDS (Little or no fines)	SW	Well graded sands, gravelly sands, little or no fines.
			SP	Poorly graded sands or gravelly sands, little or no fines.
		SANDS WITH FINES (Appreciable amount of fines)	SM	Silty sands, sand - silt mixtures
			SC	Clayey sands, sand - clay mixtures.
FINE GRAINED SOILS (More than 50% of material is SMALLER than No. 200 sieve size)	SILTS AND CLAYS (Liquid limit LESS than 50)		ML	Inorganic silts and very fine sands, rock flour, silty of clayey fine sands or clayey silts and with slight plasticity.
			CL	Inorganic lays of low to medium plasticity, gravelly clays, sandy clays, silty clays, lean clays.
			OL	Organic silts and organic silty clays of low plasticity.
	SILTS AND CLAYS (Liquid limit GREATER than 50)		MH	Inorganic silts, micaceous or diatomaceous fine sandy or silty soils, elastic silts.
			CH	Inorganic clays of high plasticity, fat clays
TAR IMPACTED SOILS				

BOUNDARY CLASSIFICATIONS: Soils possessing characteristics of two groups are designated by combinations of group symbols.

SILT OR CLAY	SAND			GRAVEL		Cobbles	Boulders
	Fine	Medium	Coarse	Fine	Coarse		

No.200 No.40 No.10 No.4 3/4" 3" 12"

U.S. STANDARD SIEVE SIZE

Reference: The Unified Soil Classification System, Corps of Engineers, U.S. Army Technical Memorandum No. 3-357, Vol. 1, March, 1953 (Revised April, 1960)

Undisturbed Sample		Auger Cuttings	
Split Spoon Sample		Bulk Sample	
Rock Core		Crandall Sampler	
Dilatometer		PMT	Pressuremeter
NV	Noise/Vibration		No Recovery
Water Table at time of drilling		Water Table after drilling	

Correlation of Penetration Resistance with Relative Density and Consistency

SPT Sampler (140-lb hammer, 30-inch drop)

SAND & GRAVEL		SILT & CLAY	
No. of Blows	Relative Density	No. of Blows	Consistency
0 - 4	Very Loose	0 - 1	Very Soft
5 - 10	Loose	2 - 4	Soft
11 - 30	Medium Dense	5 - 8	Medium Stiff
31 - 50	Dense	9 - 15	Stiff
Over 50	Very Dense	16 - 30	Very Stiff
		Over 30	Hard

CRANDALL Sampler (140-lb hammer, 30-inch drop)[1]

SAND & GRAVEL		SILT & CLAY	
No. of Blows	Relative Density	No. of Blows	Consistency
0 - 7	Very Loose	0 - 2	Very Soft
8 - 16	Loose	3 - 7	Soft
17 - 47	Medium Dense	8 - 13	Medium Stiff
48 - 77	Dense	14 - 23	Stiff
Over 77	Very Dense	25 - 47	Very Stiff
		Over 47	Hard

Correlation of Penetration Resistance with Relative Density and Consistency (continued)

CRANDALL Sampler (300-lb hammer, 18-inch drop)[2]

SAND & GRAVEL		SILT & CLAY	
No. of Blows	Relative Density	No. of Blows	Consistency
0 - 5	Very Loose	0 - 2	Very Soft
6 - 12	Loose	3 - 5	Soft
13 - 36	Medium Dense	6 - 10	Medium Stiff
37 - 60	Dense	11 - 18	Stiff
Over 60	Very Dense	19 - 36	Very Stiff
		Over 36	Hard

CRANDALL Sampler (340-lb hammer, 18-inch drop)[3]

SAND & GRAVEL		SILT & CLAY	
No. of Blows	Relative Density	No. of Blows	Consistency
0 - 5	Very Loose	0 - 1	Very Soft
6 - 11	Loose	2 - 5	Soft
12 - 32	Medium Dense	6 - 9	Medium Stiff
33 - 53	Dense	10 - 16	Stiff
Over 53	Very Dense	17 - 32	Very Stiff
		Over 32	Hard

CRANDALL Sampler (380-lb hammer, 18-inch drop)[4]

SAND & GRAVEL		SILT & CLAY	
No. of Blows	Relative Density	No. of Blows	Consistency
0 - 4	Very Loose	0 - 1	Very Soft
5 - 10	Loose	2 - 4	Soft
11 - 29	Medium Dense	5 - 8	Medium Stiff
30- 47	Dense	9 - 14	Stiff
Over 47	Very Dense	15 - 29	Very Stiff
		Over 29	Hard

NOTES:

[1]For sampling performed by Tri-County and Fugro Rigs in 2011, C&L Rigs in 2012 and 2015, and Martini Rigs in 2015

[2]For sampling performed by C & L Rig #1

[3]For sampling performed by C & L Rig #2 prior to 3/8/2011

[4]For sampling performed by C & L Rig #2 after 3/8/2011

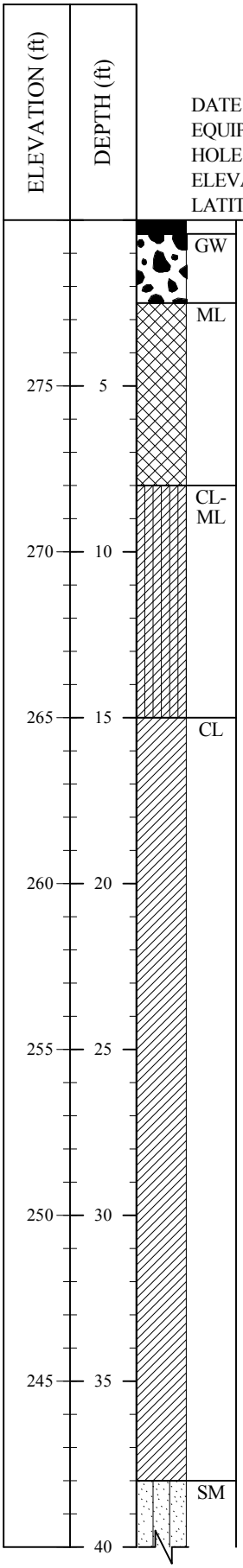
amec foster wheeler

Figure A-1.0

BORING M-19

DATE DRILLED: June 9, 2009
EQUIPMENT USED: Hollow Stem Auger
HOLE DIAMETER (in.):8
ELEVATION: 280 *
LATITUDE: 34.05894 ° LONGITUDE: -118.41602

THIS RECORD IS A REASONABLE INTERPRETATION OF SUBSURFACE CONDITIONS AT THE EXPLORATION LOCATION. SUBSURFACE CONDITIONS AT OTHER LOCATIONS AND AT OTHER TIMES MAY DIFFER. INTERFACES BETWEEN STRATA ARE APPROXIMATE. TRANSITIONS BETWEEN STRATA MAY BE GRADUAL.



5-inch thick Asphalt Concrete over 25-inch thick Base Course

FILL - CLAYEY SILT - moist, dark yellowish brown, some fine sand, no odor

SILTY CLAY - moist, dark brown, medium plasticity, no odor

Dark grayish brown

LEAN CLAY - moist, dark grayish brown, trace fine sand, no odor

Dark brown

SILTY SAND - moist, brown, fine, no odor

(CONTINUED ON FOLLOWING FIGURE)

Field Tech: PK
Prepared By: NH
Checked By:

MTA Westside Subway Extension
Los Angeles, California

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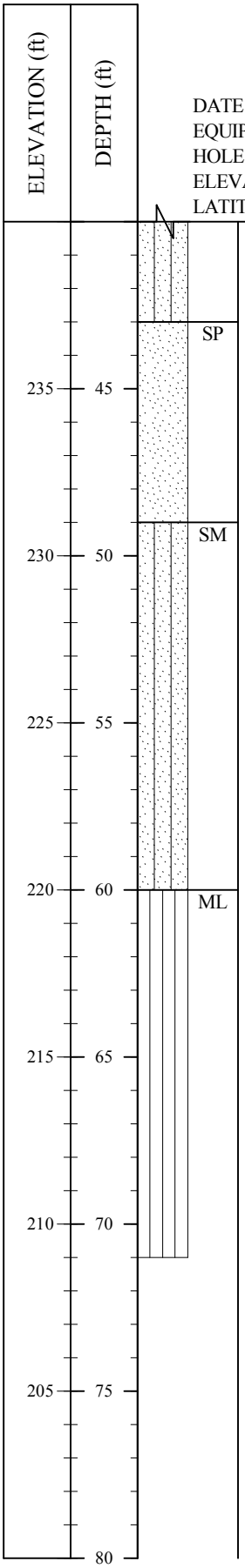
LOG OF BORING
Project: 4953-10-1561 Figure: A-1.1a

BORING M-19 (Continued)

DATE DRILLED: June 9, 2009
EQUIPMENT USED: Hollow Stem Auger
HOLE DIAMETER (in.):8
ELEVATION: 280 *
LATITUDE: 34.05894 ° LONGITUDE: -118.41602



POORLY GRADED SAND - moist, reddish brown, fine, trace silt, no odor

SILTY SAND - moist, dark reddish brown, no odor

Interbedded clay lenses

SANDY SILT - moist, dark brown, no odor

Shell fragments

END OF BORING AT 71 FEET

NOTES:

Soil logged from cuttings only.
Hand augered top 5 feet due to utilities.
Ground water not encountered at time of drilling.
Installed nested soil vapor probes at 15 feet (red), 40 feet (blue), and 70 feet (yellow). See well construction diagram for M-19.

Field Tech: PK
Prepared By: NH
Checked By:

THIS RECORD IS A REASONABLE INTERPRETATION OF SUBSURFACE CONDITIONS AT THE EXPLORATION LOCATION. SUBSURFACE CONDITIONS AT OTHER LOCATIONS AND AT OTHER TIMES MAY DIFFER. INTERFACES BETWEEN STRATA ARE APPROXIMATE. TRANSITIONS BETWEEN STRATA MAY BE GRADUAL.

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LOG OF BORING
Project: 4953-10-1561 Figure: A-1.1b

BORING M-119

DATE DRILLED: 1/18/2011 - 1/20/2011
EQUIPMENT USED: CME-75, Jet Drilling
HOLE DIAMETER (in.): 10
ELEVATION: N/A*

THIS RECORD IS A REASONABLE INTERPRETATION OF SUBSURFACE CONDITIONS AT THE EXPLORATION LOCATION. SUBSURFACE CONDITIONS AT OTHER LOCATIONS AND AT OTHER TIMES MAY DIFFER. INTERFACES BETWEEN STRATA ARE APPROXIMATE. TRANSITIONS BETWEEN STRATA MAY BE GRADUAL.

ELEVATION (ft)	DEPTH (ft)	SAMPLE ID	OVA(ppm)	SAMPLE LOC.		
	5				SM	0.5 feet of Asphalt FILL SILTY SAND with Asphalt (sm) - asphalt and gravel fragments present
	10	27	0.0			SILTY SAND with GRAVEL (sm) - (10YR, 3/3) dark brown, slightly moist, some asphalt fragments present, siltier zone at top of sampler
	15	20	0.0		ML	NATIVE ALLUVIUM (Qal) SILT (ml) - (10YR, 3/2) dark brown, slightly moist, mottled, oxidation staining
	20	16	0.0			Same as above, with caliche nodules present
	25	32	0.0			Becomes more dense
	30	24	0.0			SANDY SILT to SILT (sm/ml) - (10YR, 4/4) dark yellowish brown, slightly moist, fine sand, mottled with oxidation staining
	35	28	0.0			▽ LAKEWOOD FORMATION (Qlw) SILT (ml) - (2.5Y, 4/3) olive brown, wet, trace of sand, mottled with oxidation staining, micaceous
	40					

(CONTINUED ON FOLLOWING FIGURE)

Field Tech: RM
Prepared By: KP
Checked By:

MTA Westside Subway Extension
Los Angeles, California

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LOG OF BORING
Project: 4953-10-1561 Figure: A-1.2.1a

BORING M-119 (Continued)

DATE DRILLED: 1/18/2011 - 1/20/2011
EQUIPMENT USED: CME-75, Jet Drilling
HOLE DIAMETER (in.): 10
ELEVATION: N/A*

THIS RECORD IS A REASONABLE INTERPRETATION OF SUBSURFACE CONDITIONS AT THE EXPLORATION LOCATION. SUBSURFACE CONDITIONS AT OTHER LOCATIONS AND AT OTHER TIMES MAY DIFFER. INTERFACES BETWEEN STRATA ARE APPROXIMATE. TRANSITIONS BETWEEN STRATA MAY BE GRADUAL.

ELEVATION (ft)	DEPTH (ft)	SAMPLE ID	OVA(ppm)	SAMPLE LOC.	
	45	75	0.0		SP — FINE SAND to SILTY FINE SAND (sp) - (GLEY1, 4/5GY) dark greenish gray, wet, micaceous
	50				
	55	50/6"	0.0		SILTY SAND with GRAVEL (sp) - greenish gray, mottled with rounded gravel and broken shale fragments, orthoclase, mottled with reddish brown silt, possible Basil scour zone
	60				
	65	80	0.0		FINE SAND (sp) - (GLEY1 4/10GY) dark greenish gray, wet, some gravel fragments, micaceous
	70				
	75	68	0.0		FINE SAND (sp) - (GLEY1, 4/10Y) dark greenish gray, wet
	80				

NOTES:
Total depth = 76 feet bgs
Groundwater encountered at 35 feet bgs
Hand augered to 6.5 feet bgs
The boring was drilled with 10-inch O.D. augers and later reamed with 11.25-inch O.D. augers.

Field Tech: RM
Prepared By: KP
Checked By:

(CONTINUED ON FOLLOWING FIGURE)

MTA Westside Subway Extension
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LOG OF BORING
Project: 4953-10-1561 Figure: A-1.2.1b

BORING M-119 (Continued)

DATE DRILLED: 1/18/2011 - 1/20/2011
EQUIPMENT USED: CME-75, Jet Drilling
HOLE DIAMETER (in.): 10
ELEVATION: N/A*

ELEVATION (ft)	DEPTH (ft)	SAMPLE ID	OVA(ppm)	SAMPLE LOC.
	85			
	90			
	95			
	100			
	105			
	110			
	115			
	120			

A nested well was installed. See well construction diagram for details.

THIS RECORD IS A REASONABLE INTERPRETATION OF SUBSURFACE CONDITIONS AT THE EXPLORATION LOCATION. SUBSURFACE CONDITIONS AT OTHER LOCATIONS AND AT OTHER TIMES MAY DIFFER. INTERFACES BETWEEN STRATA ARE APPROXIMATE. TRANSITIONS BETWEEN STRATA MAY BE GRADUAL.

Field Tech: RM
Prepared By: KP
Checked By:

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Los Angeles, California

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LOG OF BORING
Project: 4953-10-1561 Figure: A-1.2.1c

BORING E-132

DATE DRILLED: September 20, 2011
EQUIPMENT USED: Kehoe CPT Direct Push and HSA Rigs
HOLE DIAMETER (in.):2 and 8
ELEVATION: 270 feet *

THIS RECORD IS A REASONABLE INTERPRETATION OF SUBSURFACE CONDITIONS AT THE EXPLORATION LOCATION. SUBSURFACE CONDITIONS AT OTHER LOCATIONS AND AT OTHER TIMES MAY DIFFER. INTERFACES BETWEEN STRATA ARE APPROXIMATE. TRANSITIONS BETWEEN STRATA MAY BE GRADUAL.

ELEVATION (ft)	DEPTH (ft)		
	0	ML	**FILL [Af]** CLAYEY SILT - trace sand, some gravel-size rock fragments, dark yellowish brown (10YR 3/6), moist, no odor
	5		
	10	ML	Increasing clay content
	15	CL-ML	SILTY CLAY - dark olive brown (2.5Y 3/3), moist, very stiff, no odor
	20	CL	SILTY CLAY - dark olive brown (2.5Y 3/3), moist, very stiff, no odor
	25	ML	SILT - some clay, trace fine sand, dark yellowish brown (10YR 3/6), moist, hard, iron oxide staning, black stringers
	30	CL	SILTY CLAY - olive brown (2.5Y 4/4), moist, very stiff, no odor
	35	ML	CLAYEY SILT - olive brown (2.5Y 4/4), moist, very stiff, iron oxide staining, no odor Encountered gravel layer
	40		

Field Tech: PK
Prepared By: LH/APR/YN
Checked By:

(CONTINUED ON FOLLOWING FIGURE)

Metro Westside Subway Extension
Los Angeles, California

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LOG OF BORING
Project: 4951-10-1561 Figure: A-1.2.2a

BORING E-132 (Continued)

DATE DRILLED: September 20, 2011
EQUIPMENT USED: Kehoe CPT Direct Push and HSA Rigs
HOLE DIAMETER (in.):2 and 8
ELEVATION: 270 feet *

THIS RECORD IS A REASONABLE INTERPRETATION OF SUBSURFACE CONDITIONS AT THE EXPLORATION LOCATION. SUBSURFACE CONDITIONS AT OTHER LOCATIONS AND AT OTHER TIMES MAY DIFFER. INTERFACES BETWEEN STRATA ARE APPROXIMATE. TRANSITIONS BETWEEN STRATA MAY BE GRADUAL.

ELEVATION (ft)	DEPTH (ft)		
		ML	CLAYEY SILT - very stiff, moist, olive brown (2.5Y 4/4), no odor
	45	ML	SILT - trace clay, olive gray (5Y 5/1), moist, very stiff, no odor, yellowish brown discoloration
	50	SM	SILTY SAND - very fine grained, greenish gray (GLEY1 5/1), moist, very dense, no odor
	55	SM	SILTY SAND - very fine to fine grained, some medium grained sand, trace fine gravel, greenish gray (GLEY1 5/1), very moist, very dense, no odor
	60	SM	SANDY SILT - very fine grained, greenish gray (GLEY1 5/1), very moist to damp, hard, no odor
	65	SM	SILTY SAND - very fine to fine grained, greenish gray (GLEY1 5/1), very moist, dense, no odor
	70	SM	SILTY SAND - very fine to fine grained, greenish gray (GLEY1 5/1), moist, very dense, no odor, damp at bottom of sampler
	75	SM	SILTY SAND - very fine to fine grained, very dark greenish gray (GLEY1 3/1), moist, very dense, no odor, damp at bottom of sampler
	80		

Field Tech: PK
Prepared By: LH/APR/YN
Checked By:

(CONTINUED ON FOLLOWING FIGURE)

BORING E-132 (Continued)

DATE DRILLED: September 20, 2011
EQUIPMENT USED: Kehoe CPT Direct Push and HSA Rigs
HOLE DIAMETER (in.):2 and 8
ELEVATION: 270 feet *

ELEVATION (ft)	DEPTH (ft)		
		SP	SAND - poorly graded, very fine to fine, dark greenish gray (GLEY1 3/1), moist to damp, very dense, no odor
		SP	SAND - poorly graded, very fine to fine, dark greenish gray (GLEY1 3/1), saturated, very dense, no odor
	85		END OF BORING AT 85 FEET
	90		
	95		
	100		
	105		
	110		
	115		
	120		

NOTES:

Hand augered upper 7½ feet to avoid damage to utilities.
Ground-water sample not collected.
Borehole grouted with cement-bentonite slurry and patched with quick setting concrete.

THIS RECORD IS A REASONABLE INTERPRETATION OF SUBSURFACE CONDITIONS AT THE EXPLORATION LOCATION. SUBSURFACE CONDITIONS AT OTHER LOCATIONS AND AT OTHER TIMES MAY DIFFER. INTERFACES BETWEEN STRATA ARE APPROXIMATE. TRANSITIONS BETWEEN STRATA MAY BE GRADUAL.

Field Tech: PK
Prepared By: LH/APR/YN
Checked By:

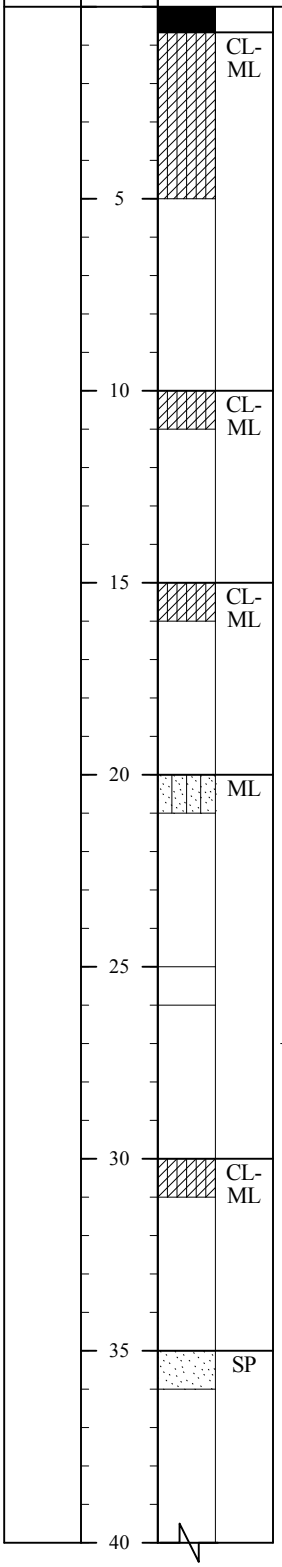
Metro Westside Subway Extension
Los Angeles, California

amec foster wheeler

LOG OF BORING
Project: 4951-10-1561 Figure: A-1.2.2c

BORING E-133

DATE DRILLED: August 19, 2011
EQUIPMENT USED: Kehoe CPT Direct Push Rig
HOLE DIAMETER (in.):2
ELEVATION: 271 feet *



	8-inch thick Asphalt Concrete
CL-ML	SILTY CLAY with SAND - moist, brown (10YR 4/3)
CL-ML	SILTY CLAY with SAND - brown, (10YR 4/3), moist, sand is medium grained, trace coarse grained sand
CL-ML	SILTY CLAY with SAND - very dark gray (10YR 3/1), moist, medium sand, trace coarse, trace gravel (up to 1½cm in size)
ML	SANDY SILT - very dark grayish brown (10YR 3/2), moist, some clay, crumbles easier than the above samples (gas meter not working for CO_2 reading)
	(No sample recovery)
▽	Installed hydropounch at approximately 23 to 27 feet, screened to collect grab ground water
CL-ML	SILTY CLAY with SAND - moist, very dark gray (10YR 3/1), trace gravel (up to 1 cm in size)
SP	POORLY GRADED SAND - brown (10YR 5/3), moist, fine to medium grained

THIS RECORD IS A REASONABLE INTERPRETATION OF SUBSURFACE CONDITIONS AT THE EXPLORATION LOCATION. SUBSURFACE CONDITIONS AT OTHER LOCATIONS AND AT OTHER TIMES MAY DIFFER. INTERFACES BETWEEN STRATA ARE APPROXIMATE. TRANSITIONS BETWEEN STRATA MAY BE GRADUAL.

Field Tech: RM
Prepared By: LH/APR/YN
Checked By:

(CONTINUED ON FOLLOWING FIGURE)

Metro Westside Subway Extension
Los Angeles, California

amec foster wheeler

LOG OF BORING
Project: 4951-10-1561 Figure: A-1.2.3a

BORING E-133 (Continued)

DATE DRILLED: August 19, 2011
EQUIPMENT USED: Kehoe CPT Direct Push Rig
HOLE DIAMETER (in.):2
ELEVATION: 271 feet *

THIS RECORD IS A REASONABLE INTERPRETATION OF SUBSURFACE CONDITIONS AT THE EXPLORATION LOCATION. SUBSURFACE CONDITIONS AT OTHER LOCATIONS AND AT OTHER TIMES MAY DIFFER. INTERFACES BETWEEN STRATA ARE APPROXIMATE. TRANSITIONS BETWEEN STRATA MAY BE GRADUAL.

ELEVATION (ft)	DEPTH (ft)		
	45	SP	POORLY GRADED SAND - very dense, very moist, brown (7.5YR 4/3), no odor
	50	SM	SILTY SAND with GRAVEL - very dense, very moist, brown (7.5YR 4/3), fine to medium-grained, fine gravel
	55	SM	SILTY SAND - very dense, very moist, yellowish brown (10YR4/4), trace coarse gravel
	60	SP	POORLY GRADED SAND - very dense, moist, brown (10YR 4/4) with olive gray discoloration, no odor
	65	SM	SILTY SAND - very dense, moist to wet, brown (7.5YR, 4/4), fine-grained
	70	SM	SILTY SAND - very dense, moist to wet, dark greenish gray (GLEY 4/1), fine-grained
	75	SP	POORLY GRADED SAND - dense, moist, greenish gray (GLEY 5/1)
	80		

(CONTINUED ON FOLLOWING FIGURE)

Field Tech: RM
Prepared By: LH/APR/YN
Checked By:

Metro Westside Subway Extension
Los Angeles, California

amec foster wheeler

LOG OF BORING
Project: 4951-10-1561 Figure: A-1.2.3b

BORING E-133 (Continued)

DATE DRILLED: August 19, 2011
EQUIPMENT USED: Kehoe CPT Direct Push Rig
HOLE DIAMETER (in.):2
ELEVATION: 271 feet *

THIS RECORD IS A REASONABLE INTERPRETATION OF SUBSURFACE CONDITIONS AT THE EXPLORATION LOCATION. SUBSURFACE CONDITIONS AT OTHER LOCATIONS AND AT OTHER TIMES MAY DIFFER. INTERFACES BETWEEN STRATA ARE APPROXIMATE. TRANSITIONS BETWEEN STRATA MAY BE GRADUAL.

ELEVATION (ft)	DEPTH (ft)		
	85	SP	POORLY GRADED SAND - dense, moist, greenish gray (GLEY 5/1), trace gravel
		SP	POORLY GRADED SAND - very dense, moist, greenish gray (GLEY 5/1), trace gravel
	90	SM	SILTY SAND - very dense, moist, dark greenish gray (GLEY 3/1), fine-grained
			END OF BORING AT 90 FEET
	95		NOTES:
			Hand augered to 5 feet bgs to avoid damage to utilities.
			Ground-water sample collected at the shallowest depth of 27 feet below the ground surface.
			Borehole grouted with cement-bentonite slurry and patched with quick setting concrete.
	100		
	105		
	110		
	115		
	120		

Field Tech: RM
Prepared By: LH/APR/YN
Checked By:

Metro Westside Subway Extension
Los Angeles, California

amec foster wheeler

LOG OF BORING
Project: 4951-10-1561 Figure: A-1.2.3c

BORING E-134

DATE DRILLED: 9/6/2011 and 9/22/2011
EQUIPMENT USED: Kehoe CPT Direct Push and HSA Rigs
HOLE DIAMETER (in.):2 and 8
ELEVATION: 277 feet *

THIS RECORD IS A REASONABLE INTERPRETATION OF SUBSURFACE CONDITIONS AT THE EXPLORATION LOCATION. SUBSURFACE CONDITIONS AT OTHER LOCATIONS AND AT OTHER TIMES MAY DIFFER. INTERFACES BETWEEN STRATA ARE APPROXIMATE. TRANSITIONS BETWEEN STRATA MAY BE GRADUAL.

ELEVATION (ft)	DEPTH (ft)			
	0			4-inch thick Asphalt Concrete over 3-inch thick Portland Cement Concrete
			CL	**FILL [Af]**
				GRAVELLY CLAY - moist, dark olive brown, mottled, fine gravel and rock fragments
	5			
	10		CL-ML	SILTY CLAY - stiff, moist, dark yellowish brown (10YR 3/6), no odor
	15		CL-ML	SILTY CLAY - stiff, moist, dark yellowish brown (10YR 3/6), no odor
	20		ML	SILT - very stiff, moist, dark yellowish brown, some clay and coarse sand, no odor
	25		ML	CLAYEY SILT - stiff, dark yellowish brown (10YR 3/6), with gray mottling, very moist, no odor
	30		ML	CLAYEY SILT - stiff, moist, dark yellowish brown (10YR 3/6), with gray mottling, no odor
	35		ML	CLAYEY SILT - hard, moist, dark yellowish brown (10YR 3/6)
	40			

(CONTINUED ON FOLLOWING FIGURE)

Field Tech: PK/AR
Prepared By: LH/APR/YN
Checked By:

Metro Westside Subway Extension
Los Angeles, California

amec foster wheeler

LOG OF BORING
Project: 4951-10-1561 Figure: A-1.2.4a

BORING E-134 (Continued)

DATE DRILLED: 9/6/2011 and 9/22/2011
EQUIPMENT USED: Kehoe CPT Direct Push and HSA Rigs
HOLE DIAMETER (in.):2 and 8
ELEVATION: 277 feet *

THIS RECORD IS A REASONABLE INTERPRETATION OF SUBSURFACE CONDITIONS AT THE EXPLORATION LOCATION. SUBSURFACE CONDITIONS AT OTHER LOCATIONS AND AT OTHER TIMES MAY DIFFER. INTERFACES BETWEEN STRATA ARE APPROXIMATE. TRANSITIONS BETWEEN STRATA MAY BE GRADUAL.

ELEVATION (ft)	DEPTH (ft)		
		ML	CLAYEY SILT - hard, moist, dark yellowish brown (10YR 3/6)
	45	ML	SILT - hard, moist, dark yellowish brown (10YR 3/6)
	50	SP	POORLY GRADED SAND - dense, moist, light gray with some iron stain, fine to medium sand, with some coarse sand
	55		Some gravel
			Trace gravel
	60	SM	SILTY SAND - moist, light to medium brown, fine to medium sand
		SP	POORLY GRADED SAND - very dense, moist, light brown, fine to medium sand
	65		
	70	SM	SILTY SAND - dense, light brown with some gray, moist, fine to medium sand, with some very thin layers of silt
	75		Becomes bluish gray
		SP	POORLY GRADED SAND - very dense, moist, bluish gray, fine to medium sand, some coarse sand, trace gravel
	80		

Field Tech: PK/AR
Prepared By: LH/APR/YN
Checked By:

(CONTINUED ON FOLLOWING FIGURE)

Metro Westside Subway Extension
Los Angeles, California

amec foster wheeler

LOG OF BORING
Project: 4951-10-1561 Figure: A-1.2.4b

BORING E-134 (Continued)

DATE DRILLED: 9/6/2011 and 9/22/2011
EQUIPMENT USED: Kehoe CPT Direct Push and HSA Rigs
HOLE DIAMETER (in.):2 and 8
ELEVATION: 277 feet *

ELEVATION (ft) | DEPTH (ft)

85
90
95
100
105
110
115
120

Thin layer of Silty Sand

END OF BORING AT 91½ FEET

NOTES:

Hand augered to 6½ feet bgs to avoid damage to utilities.
Ground-water sample collected at the shallowest depth of 85 feet below the ground surface.
Borehole grouted with cement-bentonite slurry and patched with quick setting concrete.

Field Tech: PK/AR
Prepared By: LH/APR/YN
Checked By:

THIS RECORD IS A REASONABLE INTERPRETATION OF SUBSURFACE CONDITIONS AT THE EXPLORATION LOCATION. SUBSURFACE CONDITIONS AT OTHER LOCATIONS AND AT OTHER TIMES MAY DIFFER. INTERFACES BETWEEN STRATA ARE APPROXIMATE. TRANSITIONS BETWEEN STRATA MAY BE GRADUAL.

Metro Westside Subway Extension
Los Angeles, California

amec foster wheeler

LOG OF BORING
Project: 4951-10-1561 Figure: A-1.2.4c

ENVIRONMENTAL (EMPTY W/USCS) C:\USERS\KYLE CRONIN\GOOGLE DRIVE\2015-105-010 PURPLE LINE EXTENSION\GINT\LIBRARY AMEC JUNE2012.GLB
C:\USERS\KYLE CRONIN\GOOGLE DRIVE\2015-105-010 PURPLE LINE EXTENSION\GINT\CONSTELLATION STATION GDR\METRO WESTSIDE EXT. ENVIRO LOGS.GPJ 5/29/15

DRILLING COMPANY/DRILLING EQUIPMENT		BORING NO.
Martini Drilling / CME-75		G-412/M-407/E-132A
DRILLING METHOD	**BOREHOLE LOCATION**	
Hollow-Stem Auger	Sta 703+81, Lt 107 feet	
DATES DRILLED	**HOLE DIAMETER**	**GROUND EL.**
3/9/2015 - 3/11/2015	9"	281.7 feet

GROUNDWATER READINGS
Groundwater not encountered to 100 feet during drilling. See monitoring data in GDR.

THIS RECORD IS AN INTERPRETATION OF SUBSURFACE CONDITIONS AT THE EXPLORATION LOCATION. LATITUDE AND LONGITUDE OF BORING LOCATION SHOWN ON LOGS ARE APPROXIMATE. SUBSURFACE CONDITIONS AT OTHER LOCATIONS AND AT OTHER TIMES MAY DIFFER. INTERFACES BETWEEN STRATA ARE APPROXIMATE. TRANSITIONS BETWEEN STRATA MAY BE GRADUAL.

ELEVATION (ft)	DEPTH (ft)	"N" VALUE STD.PEN.TEST	OVA (ppm)**	MOISTURE CONTENT (% of dry wt.)	DRY DENSITY (pcf)	BLOW COUNT* (blows/ft)	PERCENT PASSING No. 200 SIEVE	SAMPLE LOC.	DOWNHOLE TESTS		
280	0										8-inch thick Asphalt Concrete over 6-inch Base Coarse
											ARTIFICIAL FILL [Af]
										CL	Sandy LEAN CLAY with GRAVEL - moist, brown, fine to coarse grained sand
	5										grades increased gravel content
275				17.1	108	21					**QUATERNARY OLDER ALLUVIUM [Qalo]**
										CL	Sandy LEAN CLAY - stiff to very stiff, moist, brown to dark brown, predominantly fine to medium grained sand, trace coarse grained sand, trace gravel
	10	13		14.9	-		58				
270											
	15			14.6	115	17	78				(LL=43, PI=31)
265											
	20	20		12.5	-						trace subgangular to angular slate and shale gravel (up to 1" in size)
260											
										CH	FAT CLAY - very stiff, moist, mottled olive brown and grayish brown, trace fine grained sand
	25			25.0	99	28	97				(LL=71, PI=53)
255											
	30	19		18.7	-						dark grayish brown with brown mottles, trace medium to coarse sand, trace gravel (up to 1/4" in size)
250											
	35			17.6	111	27					olive gray to olive yellow, trace fine sand, trace iron-oxide stains
245											
	40										

(CONTINUED ON FOLLOWING FIGURE)

Field Tech: AR
Prepared/Date: KC 5/26/2015
Checked/Date: FW/DLP/HP 5/26/2015

MTA Westside Subway Extension
Los Angeles, California

amec foster wheeler

LOG OF BORING

Project No.: 4953-11-1423 Figure: A-1.3.1a

DRILLING COMPANY/DRILLING EQUIPMENT		BORING NO.
Martini Drilling / CME-75		G-412/M-407/E-132A (Continued)
DRILLING METHOD	**BOREHOLE LOCATION**	
Hollow-Stem Auger	Sta 703+81, Lt 107 feet	
DATES DRILLED	**HOLE DIAMETER**	**GROUND EL.**
3/9/2015 - 3/11/2015	9"	281.7 feet

GROUNDWATER READINGS
Groundwater not encountered to 100 feet during drilling. See monitoring data in GDR.

THIS RECORD IS AN INTERPRETATION OF SUBSURFACE CONDITIONS AT THE EXPLORATION LOCATION. LATITUDE AND LONGITUDE OF BORING LOCATION SHOWN ON LOGS ARE APPROXIMATE. SUBSURFACE CONDITIONS AT OTHER LOCATIONS AND AT OTHER TIMES MAY DIFFER. INTERFACES BETWEEN STRATA ARE APPROXIMATE. TRANSITIONS BETWEEN STRATA MAY BE GRADUAL.

ELEVATION (ft)	DEPTH (ft)	"N" VALUE STD.PEN.TEST	OVA (ppm)**	MOISTURE CONTENT (% of dry wt.)	DRY DENSITY (pcf)	BLOW COUNT* (blows/ft)	PERCENT PASSING No. 200 SIEVE	SAMPLE LOC.	DOWNHOLE TESTS		
240	45	17		20.7	-			☒			pale olive to olive yellow, trace iron-oxide stains
				18.2	108	33	92	⊠			(LL=60, PI=43)
235	50	22		15.4	-			☒		SC/CL	**LAKEWOOD FORMATION [Qlw]** CLAYEY SAND grades to Sandy LEAN CLAY - medium dense/very stiff, moist, olive gray, fine to medium grained sand
				18.0	111	27	51	⊠			light gray to pale yellow (LL=34, PI=26)
230	55	50/6"	2.3	4.6	-			☒		SP-SM	POORLY GRADED SAND with SILT - very dense, moist, light gray, fine grained sand
				5.0	105	80		⊠			pale yellow to pale olive, grades to fine to medium grained sand
225	60	66	1.6	5.1	-			☒			
				5.8	93	79	12	⊠		SW-SM	WELL GRADED SAND with SILT- very dense, moist, pale yellow to pale olive, fine to medium grained sand,
220	65	50/6"		2.9	-			☒			
				1.1	-	50/6"		⊠		SW	WELL GRADED SAND with GRAVEL - very dense, moist, pale yellow to grayish yellow green, fine to coarse grained sand, gravel up to 3/4"
											SAN PEDRO FORMATION [Qsp]
	70	92		1.2	-			☒		SP-SM	POORLY GRADED SAND with SILT - very dense, moist, grayish yellow green, fine to medium grained sand, trace gravel (up to 3/4" in size)
				7.9	86^	69	27	⊠		SM	SILTY SAND - very dense, moist, grayish yellow green, fine grained sand, slightly micaceous
	75	70		13.6	-			☒			
				19.0	106	85/9"		⊠			pale olive to dusty yellow green, some thin lenses of fine to coarse grained sand, trace slate gravel (up to 1/4" in size)
										ML	SILT with SAND - hard, moist, pale olive to dusty yellow green, fine to medium grained sand, iron oxide mottles
	80	39		25.4	-		84	☒		SP-SM	POORLY GRADED SAND with SILT - very dense, moist, pale olive, fine to medium grained sand, iron-oxide mottles
				5.4	98	84/10"		⊠			

Tunnel Zone

(CONTINUED ON FOLLOWING FIGURE)

Field Tech: AR
Prepared/Date: KC 5/26/2015
Checked/Date: FW/DLP/HP 5/26/2015

MTA Westside Subway Extension
Los Angeles, California

amec foster wheeler

LOG OF BORING

Project No.: 4953-11-1423 Figure: A-1.3.1b

DRILLING COMPANY/DRILLING EQUIPMENT		BORING NO.
Martini Drilling / CME-75		E-132B
DRILLING METHOD	**BOREHOLE LOCATION**	
Hollow-Stem Auger	Sta 706+23, Lt 19 feet	
DATES DRILLED	**HOLE DIAMETER**	**GROUND EL.**
3/12/2015 & 3/13/2015	9"	283.3 feet

GROUNDWATER READINGS
Groundwater encountered at 97.1' during initial drilling and at 97.2' the following day.

THIS RECORD IS AN INTERPRETATION OF SUBSURFACE CONDITIONS AT THE EXPLORATION LOCATION. LATITUDE AND LONGITUDE OF BORING LOCATION SHOWN ON LOGS ARE APPROXIMATE. SUBSURFACE CONDITIONS AT OTHER LOCATIONS AND AT OTHER TIMES MAY DIFFER. INTERFACES BETWEEN STRATA ARE APPROXIMATE. TRANSITIONS BETWEEN STRATA MAY BE GRADUAL.

ELEVATION (ft)	DEPTH (ft)	"N" VALUE STD.PEN.TEST	OVA (ppm)**	MOISTURE CONTENT (% of dry wt.)	DRY DENSITY (pcf)	BLOW COUNT* (blows/ft)	PERCENT PASSING No. 200 SIEVE	SAMPLE LOC.	DOWNHOLE TESTS		
Constellation Station	0										11.5-inch thick Asphalt Concrete over 4-inch Base Course
											FILL [Af]
										CL-ML	Sandy SILTY CLAY - brown, moist, fine to medium grained sand
											QUATERNARY OLDER ALLUVIUM [Qalo]
	5	27	0	10.1	-			☒		CL	Sandy LEAN CLAY - stiff to very stiff, moist, brown, fine to coarse grained sand, trace slate gravel (up to 3/4" in size)
	10		0	13.8	116	35	57	☒			trace gravel (5%), fragments of slate, minor shale from 1/4" to 2" in size (LL=36, PI=23)
	15	11	0	18.7	-			☒		CH	FAT CLAY with SAND - stiff to very stiff, moist, dark grayish brown, fine to medium grained sand seams, yellow brown
	20		0	26.3	97^	17	85	☒			grades to FAT CLAY (LL=53, PI=39)
	25	12	0	20.0	-			☒		CL	LEAN CLAY with SAND - stiff, moist, olive brown, about 15% fine to medium grained sand
	30		0	16.4	113	31	64	☒		CL	Sandy LEAN CLAY - very stiff, moist, mottled olive gray and yellow brown, fine to medium grained sand, trace to few gravel (up to 3/4" in size) (LL=44, PI=31)
	35	16	0.8	23.4	-			☒			olive gray
	40										

(CONTINUED ON FOLLOWING FIGURE)

Field Tech: AR
Prepared/Date: KC 5/26/2015
Checked/Date: FW/DLP/HP 5/29/2015

MTA Westside Subway Extension
Los Angeles, California

amec foster wheeler

LOG OF BORING

Project No.: 4953-11-1423 Figure: A-1.3.2a

DRILLING COMPANY/DRILLING EQUIPMENT		BORING NO.
Martini Drilling / CME-75		E-132B (Continued)
DRILLING METHOD	**BOREHOLE LOCATION**	
Hollow-Stem Auger	Sta 706+23, Lt 19 feet	
DATES DRILLED	**HOLE DIAMETER**	**GROUND EL.**
3/12/2015 & 3/13/2015	9"	283.3 feet

GROUNDWATER READINGS
Groundwater encountered at 97.1' during initial drilling and at 97.2' the following day.

THIS RECORD IS AN INTERPRETATION OF SUBSURFACE CONDITIONS AT THE EXPLORATION LOCATION. LATITUDE AND LONGITUDE OF BORING LOCATION SHOWN ON LOGS ARE APPROXIMATE. SUBSURFACE CONDITIONS AT OTHER LOCATIONS AND AT OTHER TIMES MAY DIFFER. INTERFACES BETWEEN STRATA ARE APPROXIMATE. TRANSITIONS BETWEEN STRATA MAY BE GRADUAL.

ELEVATION (ft)	DEPTH (ft)	"N" VALUE STD.PEN.TEST	OVA (ppm)**	MOISTURE CONTENT (% of dry wt.)	DRY DENSITY (pcf)	BLOW COUNT* (blows/ft)	PERCENT PASSING No. 200 SIEVE	SAMPLE LOC.	DOWNHOLE TESTS		
Constellation Station				20.2	106	33		⊠			trace fine grained sand
	45	41	0.8					☒		ML	**LAKEWOOD FORMATION [Qlw]** SILT - hard, moist, light gray, trace fine grained sand, with clay seams, calcium carbonate cement (strong reaction with HCl)
	50		0.7	4.5	93	69	9	⊠		SP-SM	POORLY GRADED SAND with SILT - very dense, moist, pale yellow, fine to medium grained sand
	55	77	0.8	4.1	-			☒			light olive gray coarse drilling from approximately 58' to 60' (potential gravel layer)
	60		0	8.8	104	92/9"	12	⊠		SP-SM	POORLY GRADED SAND with SILT and GRAVEL - very dense, moist, grayish yellow green, fine to coarse grained sand, fine to coarse gravel (up to 2" in size)
	65	73	0.9	5.7	-			☒		SP-SM	**SAN PEDRO FORMATION [Qsp]** POORLY GRADED SAND with SILT - very dense, moist, pale olive, fine grained sand, trace mica
	70		0.4	15.9	102	71	24	⊠		SM	SILTY SAND - very dense, moist, grayish yellow green, predominantly fine grained sand, trace medium grained sand
	75	44	0	14.6	-			☒			olive gray to olive
	80										

(CONTINUED ON FOLLOWING FIGURE)

Field Tech: AR
Prepared/Date: KC 5/26/2015
Checked/Date: FW/DLP/HP 5/29/2015

MTA Westside Subway Extension
Los Angeles, California

amec foster wheeler

LOG OF BORING

Project No.: 4953-11-1423 Figure: A-1.3.2b

DRILLING COMPANY/DRILLING EQUIPMENT		BORING NO.
Martini Drilling / CME-75		E-132B (Continued)
DRILLING METHOD	**BOREHOLE LOCATION**	
Hollow-Stem Auger	Sta 706+23, Lt 19 feet	
DATES DRILLED	**HOLE DIAMETER**	**GROUND EL.**
3/12/2015 & 3/13/2015	9"	283.3 feet

GROUNDWATER READINGS
Groundwater encountered at 97.1' during initial drilling and at 97.2' the following day.

THIS RECORD IS AN INTERPRETATION OF SUBSURFACE CONDITIONS AT THE EXPLORATION LOCATION. LATITUDE AND LONGITUDE OF BORING LOCATION SHOWN ON LOGS ARE APPROXIMATE. SUBSURFACE CONDITIONS AT OTHER LOCATIONS AND AT OTHER TIMES MAY DIFFER. INTERFACES BETWEEN STRATA ARE APPROXIMATE. TRANSITIONS BETWEEN STRATA MAY BE GRADUAL.

ELEVATION (ft)	DEPTH (ft)	"N" VALUE STD.PEN.TEST	OVA (ppm)**	MOISTURE CONTENT (% of dry wt.)	DRY DENSITY (pcf)	BLOW COUNT* (blows/ft)	PERCENT PASSING No. 200 SIEVE	SAMPLE LOC.	DOWNHOLE TESTS		
Constellation Station			0.7	10.9	93	74	31	⊠			SILTY SAND, fine grained sand, trace medium grains, dusky yellow green
195	85	50/6"	0.2	1.5	-			⊠		SP	POORLY GRADED SAND - very dense, moist, olive gray to dark greenish gray, fine to medium grained sand, trace mica
190	90	75		1.3	-			⊠		SP	POORLY GRADED SAND with GRAVEL - very dense, moist, olive gray to dark greenish gray, fine grained sand, fine to coarse gravel comprised of rounded to subangular slate, granitic, and shale fragments (up to 1" in size)
185	95			21.2	-	100/ 10"		⊠			wet ▽
180	100	50/4"		-	-			○			(Sample not recovered)
175	105										END OF BORING AT 100.5 FEET
170	110										
165	115										
	120										

NOTES:
Hand augered upper 6 feet to avoid damage to utilities.
Borehole backfilled with 100-E-100 slurry. Pavement patched with rapidset concrete colored with black oxide.

"N" Value Standard Penetration Test: Number of blows required to drive the SPT sampler 18 inches using a 140 pound automatic hammer falling 30 inches
*Number of blows required to drive the Crandall Sampler 12 inches using a 140 pound hammer falling 30 inches
Hammer Energy Transfer Ratio (ERi) = 70% (Calibrated 04/09/2015)

**Photo Ionization Detector used for OVA readings

^Average dry density for sample when multiple density tests performed.

Field Tech: AR
Prepared/Date: KC 5/26/2015
Checked/Date: FW/DLP/HP 5/29/2015

MTA Westside Subway Extension
Los Angeles, California

amec foster wheeler

LOG OF BORING

Project No.: 4953-11-1423 Figure: A-1.3.2c

LA METRO PB-TUNNEL ZONE C:\USERS\KYLE CRONIN\GOOGLE DRIVE\2015-105-010 PURPLE LINE EXTENSION\GINT\LIBRARY AMEC JUNE2012.GLB
C:\USERS\KYLE CRONIN\GOOGLE DRIVE\2015-105-010 PURPLE LINE EXTENSION\GINT\CONSTELLATION STATION GDR\4953-10-1561 (CONSTELLATION 20150528).GPJ 5/29/15

DRILLING COMPANY/DRILLING EQUIPMENT		BORING NO.
Martini Drilling / CME-75		
DRILLING METHOD	**BOREHOLE LOCATION**	**E-132C/M-408**
Hollow-Stem Auger	Sta 709+45, Lt 35 feet	
DATES DRILLED	**HOLE DIAMETER**	**GROUND EL.**
3/19/2015 - 3/23/2015	9"	287.1 feet

GROUNDWATER READINGS
Groundwater encountered at 90' with possible seepage at 63' during drilling. See monitoring data in GDR.

THIS RECORD IS AN INTERPRETATION OF SUBSURFACE CONDITIONS AT THE EXPLORATION LOCATION. LATITUDE AND LONGITUDE OF BORING LOCATION SHOWN ON LOGS ARE APPROXIMATE. SUBSURFACE CONDITIONS AT OTHER LOCATIONS AND AT OTHER TIMES MAY DIFFER. INTERFACES BETWEEN STRATA ARE APPROXIMATE. TRANSITIONS BETWEEN STRATA MAY BE GRADUAL.

Constellation Station

ELEVATION (ft)	DEPTH (ft)	"N" VALUE STD.PEN.TEST	OVA (ppm)**	MOISTURE CONTENT (% of dry wt.)	DRY DENSITY (pcf)	BLOW COUNT* (blows/ft)	PERCENT PASSING No. 200 SIEVE	SAMPLE LOC.	DOWNHOLE TESTS		
	0										11.5-inch thick Asphalt Concrete over 7-inch Base Course
										CL	**FILL [Af]** LEAN CLAY - very soft, moist, brown, fine to medium grained sand, trace to few gravel (up to 3/4" in size)
	5	1	0	19.3	-			☒			
	10		0	18.2	109^	5	43	⊠		SC	CLAYEY SAND - very loose, moist, brown, fine to coarse grained sand, trace to few gravel (up to 3/4" in size) (LL=37, PI=24)
	15	10	0.2	26.4	-			☒			medium dense
										CL	**QUATERNARY OLDER ALLUVIUM [Qalo]** LEAN CLAY - very stiff, moist, brown and gray, trace fine grained sand, seams with iron oxide staining
	20		0	32.6	100	26		⊠			
	25	10	2.2	19.9	-			☒			stiff, light yellow brown to pale olive, trace coarse sand and trace slate fragments (up to 1/4" in size)
	30		0.6	22.7	104	25	86	⊠		CH	FAT CLAY - very stiff, moist, brown and gray, trace fine grained sand, seams with iron oxide staining very stiff, olive gray to olive, trace to some fine sand (LL=52, PI=37)
	35	54	0.4	20.7	-			☒			**LAKEWOOD FORMATION [Qlw]**
										SM	SILTY SAND - dense to very dense, moist, pale olive, fine grained sand, trace clay, minor iron-oxide mottles
	40										

(CONTINUED ON FOLLOWING FIGURE)

Field Tech: AR
Prepared/Date: KC 5/26/2015
Checked/Date: FW/DLP/HP 5/29/2015

MTA Westside Subway Extension
Los Angeles, California

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LOG OF BORING

Project No.: 4953-11-1423 Figure: A-1.3.3a

LA METRO PB-TUNNEL ZONE C:\USERS\KYLE CRONIN\GOOGLE DRIVE\2015-105-010 PURPLE LINE EXTENSION\GINT\LIBRARY AMEC JUNE2012.GLB
C:\USERS\KYLE CRONIN\GOOGLE DRIVE\2015-105-010 PURPLE LINE EXTENSION\GINT\CONSTELLATION STATION GDR\4953-10-1561 (CONSTELLATION 20150528).GPJ 5/29/15

DRILLING COMPANY/DRILLING EQUIPMENT		BORING NO.
Martini Drilling / CME-75		E-132C/M-408 (Continued)
DRILLING METHOD	**BOREHOLE LOCATION**	
Hollow-Stem Auger	Sta 709+45, Lt 35 feet	
DATES DRILLED	**HOLE DIAMETER**	**GROUND EL.**
3/19/2015 - 3/23/2015	9"	287.1 feet

GROUNDWATER READINGS
Groundwater encountered at 90' with possible seepage at 63' during drilling. See monitoring data in GDR.

THIS RECORD IS AN INTERPRETATION OF SUBSURFACE CONDITIONS AT THE EXPLORATION LOCATION. LATITUDE AND LONGITUDE OF BORING LOCATION SHOWN ON LOGS ARE APPROXIMATE. SUBSURFACE CONDITIONS AT OTHER LOCATIONS AND AT OTHER TIMES MAY DIFFER. INTERFACES BETWEEN STRATA ARE APPROXIMATE. TRANSITIONS BETWEEN STRATA MAY BE GRADUAL.

Constellation Station

ELEVATION (ft)	DEPTH (ft)	"N" VALUE STD.PEN.TEST	OVA (ppm)**	MOISTURE CONTENT (% of dry wt.)	DRY DENSITY (pcf)	BLOW COUNT* (blows/ft)	PERCENT PASSING No. 200 SIEVE	SAMPLE LOC.	DOWNHOLE TESTS		
			0	11.8	105	43		⊠			SILTY SAND, pale yellow to pale olive, fine grained sand
	45	33	1.4	6.2	-			☒			grades slightly less silty
			0.1	8.2	116	93/11"		⊠		SW	WELL GRADED SAND with GRAVEL - very dense, moist, light brownish yellow, fine to coarse grained sand, gravel includes black slate fragments up to 2", trace silt
	50	44	0.3	14.9	-		24	☒		SM	SILTY SAND with GRAVEL - very dense, moist, brown, fine to coarse grained sand, gravel up to 1"
			0.2	8.0	95	42		⊠		SM	SILTY SAND - very dense, moist, pale yellow, fine grained sand
	55	57	1.0	6.8	-		16	☒			grades fine to coarse grained sand with few to little subrounded slate and quartzite gravel (up to 1" in size)
				10.9	101	68		⊠			pale yellow and brownish yellow mottling, grades fine to medium grained sand
	60	28	2.9	18.3	-			☒			dense, becomes olive yellow, grades to fine grained sand
			0.1	13.8	106	77	16	⊠		SM	**SAN PEDRO FORMATION [Qsp]** SILTY SAND - dense to very dense, moist, pale olive and brownish yellow, fine to medium sand
	65	28	0	-	-			☒		ML	SILT - moist, greenish gray
			0	6.8	94	72/11"	25	⊠		SM	SILTY SAND - dense to very dense, moist, light olive gray, few shell fragments, fine grained sand, trace mica
	70	32	1.7	7.8	-			☒			dark greenish gray to dusky yellow green, slightly micaceous
			0	12.9	107	75/9"		⊠			few shell fragments (coarse gravel in sampling shoe)
	75	50/5"	4.3	2.7	-			☒		SP-SM	POORLY GRADED SAND with SILT - very dense, moist, greenish gray, fine to coarse grained sand, few subrounded to subangular granitic and slate gravel up to 3/4", trace shell fragments
			0	7.7	91	85		⊠			
	80										

(CONTINUED ON FOLLOWING FIGURE)

Field Tech: AR
Prepared/Date: KC 5/26/2015
Checked/Date: FW/DLP/HP 5/29/2015

MTA Westside Subway Extension
Los Angeles, California

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LOG OF BORING

Project No.: 4953-11-1423 Figure: A-1.3.3b

DRILLING COMPANY/DRILLING EQUIPMENT		BORING NO.
Martini Drilling / CME-75		E-132C/M-408 (Continued)
DRILLING METHOD	**BOREHOLE LOCATION**	
Hollow-Stem Auger	Sta 709+45, Lt 35 feet	
DATES DRILLED	**HOLE DIAMETER**	**GROUND EL.**
3/19/2015 - 3/23/2015	9"	287.1 feet

GROUNDWATER READINGS
Groundwater encountered at 90' with possible seepage at 63' during drilling. See monitoring data in GDR.

THIS RECORD IS AN INTERPRETATION OF SUBSURFACE CONDITIONS AT THE EXPLORATION LOCATION. LATITUDE AND LONGITUDE OF BORING LOCATION SHOWN ON LOGS ARE APPROXIMATE. SUBSURFACE CONDITIONS AT OTHER LOCATIONS AND AT OTHER TIMES MAY DIFFER. INTERFACES BETWEEN STRATA ARE APPROXIMATE. TRANSITIONS BETWEEN STRATA MAY BE GRADUAL.

ELEVATION (ft)	DEPTH (ft)	"N" VALUE STD.PEN.TEST	OVA (ppm)**	MOISTURE CONTENT (% of dry wt.)	DRY DENSITY (pcf)	BLOW COUNT* (blows/ft)	PERCENT PASSING No. 200 SIEVE	SAMPLE LOC.	DOWNHOLE TESTS		
Constellation Station		55	0.6	5.9	-			☒			olive gray to dusky yellow green, grades fine to medium grained sand, trace subrounded to subangular gravel (up to 1" in size)
			0	6.0	92	77/11"	6	⊠			grades to predominantly fine grained sand with trace medium grains, some slate gravels (up to 1/4" in size)
200	85	72	0	4.9	-			☒			dusky yellow green
				7.9	110	41		⊠			wet, sand grades fine to coarse grained, trace fine gravel (up to 1/4" in size)
195	90									CL-ML	SILTY CLAY - saturated, dark gray, trace fine grained sand
		50/5"	3.1	17.7	-			☒		SM	SILTY SAND - very dense, moist, dark greenish gray to grayish black, fine to medium grained sand, trace gravel up to 3/4"
				13.1	120^	69	37	⊠			greenish black, increased silt content, few shell fragments
190	95	84	38.8	10.1	-			☒			dark greenish gray, grades less silty
			3.9	5.6	101	91/9"		⊠		SP-SM	POORLY GRADED SAND with SILT - very dense, moist, dark gray, fine to medium grained sand, trace fine gravel (up to 1/4" in size)
185	100										END OF BORING AT 100 FEET
180	105										
175	110										
170	115										
	120										

NOTES:
Hand augered upper 6 feet to avoid damage to utilities.
Borehole backfilled with bentonite, clean sand, and sand/gravel/cement slurry per well construction schedule.
Pavement patched with rapid set concrete colored with black oxide.

Groundwater monitoring wells installed with screen intervals at 50'-60' and 80'-90'. Vapor probes installed at 40', 70', and 95'. Refer to GDR for Well Construction Details.

"N" Value Standard Penetration Test: Number of blows required to drive the SPT sampler 18 inches using a 140 pound automatic hammer falling 30 inches
*Number of blows required to drive the Crandall Sampler 12 inches using a 140 pound hammer falling 30 inches
Hammer Energy Transfer Ratio (ERi) = 70% (Calibrated 04/09/2015)

**Photo Ionization Detector used for OVA readings

^Average dry density for sample when multiple density tests performed.set concrete colored with

Field Tech: AR
Prepared/Date: KC 5/26/2015
Checked/Date: FW/DLP/HP 5/29/2015

MTA Westside Subway Extension
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LOG OF BORING

Project No.: 4953-11-1423 Figure: A-1.3.3c

LA METRO PB-TUNNEL ZONE C:\USERS\KYLE CRONIN\GOOGLE DRIVE\2015-105-010 PURPLE LINE EXTENSION\GINT\LIBRARY AMEC JUNE2012.GLB
C:\USERS\KYLE CRONIN\GOOGLE DRIVE\2015-105-010 PURPLE LINE EXTENSION\GINT\CONSTELLATION STATION GDR\4953-10-1561 (CONSTELLATION 20150528).GPJ 5/29/15

DRILLING COMPANY/DRILLING EQUIPMENT		BORING NO.
Martini Drilling / CME-75		
DRILLING METHOD	**BOREHOLE LOCATION**	**E-133A/M-409**
Hollow-Stem Auger	Sta 714+19, Lt 30 feet	
DATES DRILLED	**HOLE DIAMETER**	**GROUND EL.**
3/16/2015 - 3/18/2015	9"	291.6 feet

GROUNDWATER READINGS
Groundwater encountered at 90.5' during initial drilling and at 90' after leaving open overnight. See monitoring data in GDR.

THIS RECORD IS AN INTERPRETATION OF SUBSURFACE CONDITIONS AT THE EXPLORATION LOCATION. LATITUDE AND LONGITUDE OF BORING LOCATION SHOWN ON LOGS ARE APPROXIMATE. SUBSURFACE CONDITIONS AT OTHER LOCATIONS AND AT OTHER TIMES MAY DIFFER. INTERFACES BETWEEN STRATA ARE APPROXIMATE. TRANSITIONS BETWEEN STRATA MAY BE GRADUAL.

Constellation Station

ELEVATION (ft)	DEPTH (ft)	"N" VALUE STD.PEN.TEST	OVA (ppm)**	MOISTURE CONTENT (% of dry wt.)	DRY DENSITY (pcf)	BLOW COUNT* (blows/ft)	PERCENT PASSING No. 200 SIEVE	SAMPLE LOC.	DOWNHOLE TESTS	
	5									22-inch thick Asphalt Concrete (No base)
										FILL [Af]
										CL — Sandy LEAN CLAY - stiff, moist, brown to very dark gray brown, fine to medium grained sand, trace gravel
		11	0	8.8	-			☒		
	10									
			0	13.8	118	16	58	⊠		fine to coarse grained sand, trace gravel (LL=38, PI=25)
	15									
		6	0	16.8	-			☒		medium stiff
	20									
			0	14.8	114^	11	51	⊠		(LL=36, PI=23)
	25									
		6	0	17.4	-			☒		trace fine gravels to 1/2" (subangular slate and shale fragments)
										QUATERNARY OLDER ALLUVIUM [Qalo]
										CL — Sandy LEAN CLAY - moist, very dark grayish brown, fine to medium grained sand, trace subangular slate gravel and fragments (up to 1/2" in size)
	30									SC — CLAYEY SAND - medium dense, moist, very dark grayish brown, fine to coarse grained sand, trace slate gravel (LL=33, PI=21)
			0	11.8	120	18	48	⊠		
	35									
		14	0	9.4	-			☒		dark brown to dark olive brown, increased angular fragments of slate and granitic gravels up to 15%
										LAKEWOOD FORMATION [Qlw]
										SM — SILTY SAND - medium dense, light olive brown, fine to medium grained sand
	40									

(CONTINUED ON FOLLOWING FIGURE)

Field Tech: AR
Prepared/Date: KC 5/26/2015
Checked/Date: FW/DLP/HP 5/29/2015

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LOG OF BORING

Project No.: 4953-11-1423 Figure: A-1.3.4a

LA METRO PB-TUNNEL ZONE C:\USERS\KYLE CRONIN\GOOGLE DRIVE\2015-105-010 PURPLE LINE EXTENSION\GINT\LIBRARY AMEC JUNE2012.GLB
C:\USERS\KYLE CRONIN\GOOGLE DRIVE\2015-105-010 PURPLE LINE EXTENSION\GINT\CONSTELLATION STATION GDR\4953-10-1561 (CONSTELLATION 20150528).GPJ 5/29/15

DRILLING COMPANY/DRILLING EQUIPMENT		BORING NO.
Martini Drilling / CME-75		E-133A/M-409 (Continued)
DRILLING METHOD	**BOREHOLE LOCATION**	
Hollow-Stem Auger	Sta 714+19, Lt 30 feet	
DATES DRILLED	**HOLE DIAMETER**	**GROUND EL.**
3/16/2015 - 3/18/2015	9"	291.6 feet

GROUNDWATER READINGS
Groundwater encountered at 90.5' during initial drilling and at 90' after leaving open overnight. See monitoring data in GDR.

THIS RECORD IS AN INTERPRETATION OF SUBSURFACE CONDITIONS AT THE EXPLORATION LOCATION. LATITUDE AND LONGITUDE OF BORING LOCATION SHOWN ON LOGS ARE APPROXIMATE. SUBSURFACE CONDITIONS AT OTHER LOCATIONS AND AT OTHER TIMES MAY DIFFER. INTERFACES BETWEEN STRATA ARE APPROXIMATE. TRANSITIONS BETWEEN STRATA MAY BE GRADUAL.

Constellation Station

ELEVATION (ft)	DEPTH (ft)	"N" VALUE STD.PEN.TEST	OVA (ppm)**	MOISTURE CONTENT (% of dry wt.)	DRY DENSITY (pcf)	BLOW COUNT* (blows/ft)	PERCENT PASSING No. 200 SIEVE	SAMPLE LOC.	DOWNHOLE TESTS		
			0	8.7	107^	31	19	⊠			SILTY SAND (continued from previous page)
	45	13	1.7	34.7	-			☒		CH	FAT CLAY - very stiff, moist, light brown and gray, trace fine grained sand (LL=94, PI=73)
	50		0	5.1	103	64		⊠		SM	SILTY SAND - dense to very dense, moist, light brownish yellow with some iron-oxide staining, fine to coarse grained sand, trace gravel coarse drilling from 52' to 54' (potential gravel layer)
	55	53	2.3	12.2	-		20	☒			light yellowish brown, trace subangular to angular slate fragments (up to 1" in size), very thin silt lenses light yellow brown and olive yellow, fine grained sand
	60		0	12.0	92	77	31	⊠			
	65	33	0.5	16.6	-			☒		SM	**SAN PEDRO FORMATION [Qsp]** SILTY SAND - dense, moist, light olive gray, fine grained sand, micaceous, trace clay
	70		0	14.1	110	41	36	⊠			moist to wet
	75	64	1.9	6.8	-			☒		SP-SM	POORLY GRADED SAND with SILT - medium dense to very dense, moist, olive gray, fine to coarse grained sand, trace gravel (up to 3/8" in size)
	80										

(CONTINUED ON FOLLOWING FIGURE)

Field Tech: AR
Prepared/Date: KC 5/26/2015
Checked/Date: FW/DLP/HP 5/29/2015

MTA Westside Subway Extension
Los Angeles, California

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LOG OF BORING

Project No.: 4953-11-1423 Figure: A-1.3.4b

LA METRO PB-TUNNEL ZONE C:\USERS\KYLE CRONIN\GOOGLE DRIVE\2015-105-010 PURPLE LINE EXTENSION\GINT\LIBRARY AMEC JUNE2012.GLB
C:\USERS\KYLE CRONIN\GOOGLE DRIVE\2015-105-010 PURPLE LINE EXTENSION\GINT\CONSTELLATION STATION GDR\4953-10-1561 (CONSTELLATION 20150528).GPJ 5/29/15

DRILLING COMPANY/DRILLING EQUIPMENT		BORING NO.
Martini Drilling / CME-75		E-133A/M-409 (Continued)
DRILLING METHOD	**BOREHOLE LOCATION**	
Hollow-Stem Auger	Sta 714+19, Lt 30 feet	
DATES DRILLED	**HOLE DIAMETER**	**GROUND EL.**
3/16/2015 - 3/18/2015	9"	291.6 feet

GROUNDWATER READINGS
Groundwater encountered at 90.5' during initial drilling and at 90' after leaving open overnight. See monitoring data in GDR.

THIS RECORD IS AN INTERPRETATION OF SUBSURFACE CONDITIONS AT THE EXPLORATION LOCATION. LATITUDE AND LONGITUDE OF BORING LOCATION SHOWN ON LOGS ARE APPROXIMATE. SUBSURFACE CONDITIONS AT OTHER LOCATIONS AND AT OTHER TIMES MAY DIFFER. INTERFACES BETWEEN STRATA ARE APPROXIMATE. TRANSITIONS BETWEEN STRATA MAY BE GRADUAL.

ELEVATION (ft)	DEPTH (ft)	"N" VALUE STD.PEN.TEST	OVA (ppm)**	MOISTURE CONTENT (% of dry wt.)	DRY DENSITY (pcf)	BLOW COUNT* (blows/ft)	PERCENT PASSING No. 200 SIEVE	SAMPLE LOC.	DOWNHOLE TESTS		
Constellation Station			0	4.9	95	48	8	⊠			few to little black colored sand particles POORLY GRADED SAND with SILT (continued from previous page)
	85	80	2.2	4.2	-			☒			trace gravel (up to 3/4" in size)
	90		0.2	22.6	102	25		⊠		CL	LEAN CLAY - moist to wet, grayish olive green to greenish black, fine grained sand
	95	50/6"		22.0	-			☒		SM	SILTY SAND - very dense, wet, dark gray, fine grained sand
190	100		0	27.3	95^	30	68	⊠		CL	Sandy LEAN CLAY - very stiff, dark greenish black, fine to medium grained sand with some peat fragments
185	105	35	0	24.6	-			☒			hard
180	110			15.8	107	50/5"	57	⊠			grayish olive green, trace slate fragments up to 1/4" in size (LL=40, PI=24)
175	115										END OF BORING AT 110.5 FEET
	120										

NOTES:
Hand augered upper 6 feet to avoid damage to utilities.
Borehole backfilled with bentonite, clean sand, and sand/gravel/cement slurry per well construction schedule.
Pavement patched with rapid set concrete colored with black oxide.

Groundwater monitoring wells installed with screen intervals at 75'-85' and 90'-100'. Vapor probes installed at 40', 70', and 105'. Refer to GDR for Well Construction Details.

"N" Value Standard Penetration Test: Number of blows required to drive the SPT sampler 18 inches using a

Field Tech: AR
Prepared/Date: KC 5/26/2015
Checked/Date: FW/DLP/HP 5/29/2015

(CONTINUED ON FOLLOWING FIGURE)

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LOG OF BORING

Project No.: 4953-11-1423 Figure: A-1.3.4c

DRILLING COMPANY/DRILLING EQUIPMENT		BORING NO.
Martini Drilling / CME-75		E-133A/M-409 (Continued)
DRILLING METHOD	**BOREHOLE LOCATION**	
Hollow-Stem Auger	Sta 714+19, Lt 30 feet	
DATES DRILLED	**HOLE DIAMETER**	**GROUND EL.**
3/16/2015 - 3/18/2015	9"	291.6 feet

GROUNDWATER READINGS
Groundwater encountered at 90.5' during initial drilling and at 90' after leaving open overnight. See monitoring data in GDR.

ELEVATION (ft)	DEPTH (ft)	"N" VALUE STD.PEN.TEST	OVA (ppm)**	MOISTURE CONTENT (% of dry wt.)	DRY DENSITY (pcf)	BLOW COUNT* (blows/ft)	PERCENT PASSING No. 200 SIEVE	SAMPLE LOC.	DOWNHOLE TESTS
170	0								
	5								
165									
	10								
160									
	15								
155									
	20								
150									
	25								
145									
	30								
140									
	35								
135									
	40								

140 pound automatic hammer falling 30 inches
*Number of blows required to drive the Crandall Sampler 12 inches using a 140 pound hammer falling 30 inches
Hammer Energy Transfer Ratio (ERi) = 70% (Calibrated 04/09/2015)

**Photo Ionization Detector used for OVA readings

^Average dry density for sample when multiple density tests performed.

THIS RECORD IS AN INTERPRETATION OF SUBSURFACE CONDITIONS AT THE EXPLORATION LOCATION. LATITUDE AND LONGITUDE OF BORING LOCATION SHOWN ON LOGS ARE APPROXIMATE. SUBSURFACE CONDITIONS AT OTHER LOCATIONS AND AT OTHER TIMES MAY DIFFER. INTERFACES BETWEEN STRATA ARE APPROXIMATE. TRANSITIONS BETWEEN STRATA MAY BE GRADUAL.

Field Tech: AR
Prepared/Date: KC 5/26/2015
Checked/Date: FW/DLP/HP 5/29/2015

MTA Westside Subway Extension
Los Angeles, California

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LOG OF BORING

Project No.: 4953-11-1423 Figure: A-1.3.4d

LA METRO PB-TUNNEL ZONE C:\USERS\KYLE CRONIN\GOOGLE DRIVE\2015-105-010 PURPLE LINE EXTENSION\GINT\LIBRARY AMEC JUNE2012.GLB
C:\USERS\KYLE CRONIN\GOOGLE DRIVE\2015-105-010 PURPLE LINE EXTENSION\GINT\CONSTELLATION STATION GDR\4953-10-1561 (CONSTELLATION 20150528).GPJ 5/29/15

DRILLING COMPANY/DRILLING EQUIPMENT		BORING NO.
Martini Drilling / CME-75		
DRILLING METHOD	**BOREHOLE LOCATION**	**G-414/M-410**
Hollow-Stem Auger	Sta 715+61, Lt 3 feet	
DATES DRILLED	**HOLE DIAMETER**	**GROUND EL.**
3/24/2015 - 3/26/2015	9"	287.5 feet

GROUNDWATER READINGS
Groundwater seepage encountered at 78.0' bgs with possible seepage zones between 60' to 70' and zones below 78' bgs. See monitoring data in GDR.

THIS RECORD IS AN INTERPRETATION OF SUBSURFACE CONDITIONS AT THE EXPLORATION LOCATION. LATITUDE AND LONGITUDE OF BORING LOCATION SHOWN ON LOGS ARE APPROXIMATE. SUBSURFACE CONDITIONS AT OTHER LOCATIONS AND AT OTHER TIMES MAY DIFFER. INTERFACES BETWEEN STRATA ARE APPROXIMATE. TRANSITIONS BETWEEN STRATA MAY BE GRADUAL.

ELEVATION (ft)	DEPTH (ft)	"N" VALUE STD.PEN.TEST	OVA (ppm)**	MOISTURE CONTENT (% of dry wt.)	DRY DENSITY (pcf)	BLOW COUNT* (blows/ft)	PERCENT PASSING No. 200 SIEVE	SAMPLE LOC.	DOWNHOLE TESTS	
Constellation Station	5									22-inch Asphalt Concrete over 4-inch Base Coarse **ARTIFICIAL FILL [Af]** Sandy LEAN CLAY - moist, dark brown with some gray, fine to coarse grained sand, trace gravel
			0	15.7	113	17		⊠		stiff
	10	4	0.4	13.6	-			☒		medium stiff
	15		0.7	10.7	118^	9	65	⊠		trace fine gravel (up to 3/8" in size) (LL=37, PI=25)
	20	14	1.2	14.9	-			☒		very stiff, brown to dark brown
	25		0	16.7	111	14	59	⊠		stiff, dark gray brown to dark brown, trace fine gravel (up to 3/8" in size) (LL=37, PI=25)
	30	27	0	5.8	-			☒		hard, slight organic smell **QUATERNARY OLDER ALLUVIUM [Qalo]** CLAYEY SAND - medium dense, moist, dark brown, predominantly fine grained sand, some medium and coarse grained sand, trace gravel
	35		0	13.3	117	24	48	⊠		(LL=27, PI=14)
	40									

CL

SC

(CONTINUED ON FOLLOWING FIGURE)

Field Tech: AR
Prepared/Date: KC 5/26/2015
Checked/Date: FW/DLP/HP 5/26/2015

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LOG OF BORING

Project No.: 4953-11-1423 Figure: A-1.3.5a

DRILLING COMPANY/DRILLING EQUIPMENT		BORING NO.
Martini Drilling / CME-75		G-414/M-410 (Continued)
DRILLING METHOD	**BOREHOLE LOCATION**	
Hollow-Stem Auger	Sta 715+61, Lt 3 feet	
DATES DRILLED	**HOLE DIAMETER**	**GROUND EL.**
3/24/2015 - 3/26/2015	9"	287.5 feet

GROUNDWATER READINGS
Groundwater seepage encountered at 78.0' bgs with possible seepage zones between 60' to 70' and zones below 78' bgs. See monitoring data in GDR.

THIS RECORD IS AN INTERPRETATION OF SUBSURFACE CONDITIONS AT THE EXPLORATION LOCATION. LATITUDE AND LONGITUDE OF BORING LOCATION SHOWN ON LOGS ARE APPROXIMATE. SUBSURFACE CONDITIONS AT OTHER LOCATIONS AND AT OTHER TIMES MAY DIFFER. INTERFACES BETWEEN STRATA ARE APPROXIMATE. TRANSITIONS BETWEEN STRATA MAY BE GRADUAL.

Constellation Station

ELEVATION (ft)	DEPTH (ft)	"N" VALUE STD.PEN.TEST	OVA (ppm)**	MOISTURE CONTENT (% of dry wt.)	DRY DENSITY (pcf)	BLOW COUNT* (blows/ft)	PERCENT PASSING No. 200 SIEVE	SAMPLE LOC.	DOWNHOLE TESTS		
	45	17	0	7.6	-			☒		SC	CLAYEY SAND with GRAVEL- medium dense, moist, brown and gray, fine to coarse grained sand, subangular to angular shale and slate gravel fragments (from 1/4" to 1" in size)
										ML	Sandy SILT - moist, dark yellowish brown, fine grained sand
			0	14.5	109	13	35	☒		SM	SILTY SAND - loose, moist, dark brown, fine to medium grained sand, trace fine gravel
										CL	Sandy LEAN CLAY with GRAVEL- medium stiff, moist, dark yellow brown, fine grained sand
		5	0	15.9	-			☒			2 to 3-inch layer of silty sand
	50		2.9	13.7	119	38	61	☒		CL	Sandy LEAN CLAY - very stiff to hard, moist, dark brown to dark yellow brown, sand is predominanly fine to medium grained (LL=34, PI=22)
		50/4.5"						☒			possible gravel and cobbles from 54' to 56' (No Recovery)
	55										**LAKEWOOD FORMATION [Qlw]**
		42	0	13.1	-			☒		SM	SILTY SAND - dense to very dense, moist, pale olive to olive, fine grained sand, some lenses of silt, trace gravel
	60		0	16.9	98	54	49	☒			olive yellow, trace iron and/or manganese-oxide coated grains
		40	0	16.4	-			☒			light olive gray (primary) with strong brown (secondary) iron oxide mottles
	65		0	18.9	104	69		☒			lenses of poorly graded sand with silt, pale olive with secondary strong brown iron-oxide zones
											SAN PEDRO FORMATION [Qsp]
	70	40	0	19.4	-			☒		SM	SILTY SAND - dense, moist, pale olive to olive, fine grained sand, slightly micaceous
			0	13.2	112	65	38	☒		SM	SILTY SAND with GRAVEL - dense to very dense, moist, pale olive, fine to medium grained sand, fine gravel (up to 1/2" in size), gravels are mostly rounded to subrounded slate and quartzite
	75										greenish gray, decreased gravel size
		49	0	9.1	-			☒			
			0	26.2	95	61		☒		SM	SILTY SAND - dense, wet, dusky yellow green, fine grained sand, few lenses of clean sands, trace gravel, slight groundwater seepage, gravels are mostly slate with some quartzite
	80										

(CONTINUED ON FOLLOWING FIGURE)

Field Tech: AR
Prepared/Date: K C 5/26/2015
Checked/Date: FW/DLP/HP 5/26/2015

MTA Westside Subway Extension
Los Angeles, California

amec foster wheeler

LOG OF BORING

Project No.: 4953-11-1423 Figure: A-1.3.5b

DRILLING COMPANY/DRILLING EQUIPMENT		BORING NO.
Martini Drilling / CME-75		G-414/M-410 (Continued)
DRILLING METHOD	**BOREHOLE LOCATION**	
Hollow-Stem Auger	Sta 715+61, Lt 3 feet	
DATES DRILLED	**HOLE DIAMETER**	**GROUND EL.**
3/24/2015 - 3/26/2015	9"	287.5 feet

GROUNDWATER READINGS
Groundwater seepage encountered at 78.0' bgs with possible seepage zones between 60' to 70' and zones below 78' bgs. See monitoring data in GDR.

THIS RECORD IS AN INTERPRETATION OF SUBSURFACE CONDITIONS AT THE EXPLORATION LOCATION. LATITUDE AND LONGITUDE OF BORING LOCATION SHOWN ON LOGS ARE APPROXIMATE. SUBSURFACE CONDITIONS AT OTHER LOCATIONS AND AT OTHER TIMES MAY DIFFER. INTERFACES BETWEEN STRATA ARE APPROXIMATE. TRANSITIONS BETWEEN STRATA MAY BE GRADUAL.

ELEVATION (ft)	DEPTH (ft)	"N" VALUE STD.PEN.TEST	OVA (ppm)**	MOISTURE CONTENT (% of dry wt.)	DRY DENSITY (pcf)	BLOW COUNT* (blows/ft)	PERCENT PASSING No. 200 SIEVE	SAMPLE LOC.	DOWNHOLE TESTS		
Constellation Station		60	0	4.1	-			☒		SP-SM	POORLY GRADED SAND with SILT - dense to very dense, moist, greenish yellow green to dark greenish gray, fine to medium grained sand
	85		0	17.1	108	58		⊠			wet, possible groundwater seepage
		22	0	17.5	-			☒		SM	SILTY SAND - medium dense, moist, fine to medium grained sand, trace fine gravel, trace clay, has hydrogen sulfide odor
	90		3.8	12.6	109	36	7	⊠		SP-SM	POORLY GRADED SAND with SILT - medium dense, moist, grayish olive to dusky yellow green, fine to medium sand, trace fine gravel, faint gas odor
195											possible thin gravel/cobble layer at 92'
		49	0	23.7	-			☒		SM	SILTY SAND - very dense, moist, grayish olive green to greenish black, fine grained sand, trace fine gravel, trace shell fragments, some thin lenses of interlayered clayey silt
	95										
190			17.5	20.3	106^	68		⊠			wet, greenish black and grayish olive green, with alternating layers/seams of poorly graded sand with silt and clayey silt
	100	50/6"	6.1	7.4	-		16	⊠			grayish olive green
185											
	105		0	15.1	111	60		⊠			trace gravel (up to 3/4" in size)
										CL-ML	SILTY CLAY - moist, grayish olive green
180										CL	Sandy LEAN CLAY - very stiff, moist, grayish olive green, some fine sandy silt seams
	110	21	0	24.6	-			⊠			(LL=47, PI=30)
175											
	115		0.4	14.7	109^	77/10"	46	⊠		SM	SILTY SAND - very dense, moist, dark greenish gray, fine to coarse grained sand, with clean sand seams, trace fine gravels (up to 1/4" in size)
170											
	120	50/5"	0.1	4.7	-			⊠		SP-SM	POORLY GRADED SAND with SILT - very dense, moist, blueish gray, fine to medium grained sand, trace fine gravel (up to 1/4" in size)

(CONTINUED ON FOLLOWING FIGURE)

Field Tech: AR
Prepared/Date: KC 5/26/2015
Checked/Date: FW/DLP/HP 5/26/2015

MTA Westside Subway Extension
Los Angeles, California

amec foster wheeler

LOG OF BORING

Project No.: 4953-11-1423 Figure: A-1.3.5c

DRILLING COMPANY/DRILLING EQUIPMENT		BORING NO.
Martini Drilling / CME-75		G-414/M-410 (Continued)
DRILLING METHOD	**BOREHOLE LOCATION**	
Hollow-Stem Auger	Sta 715+61, Lt 3 feet	
DATES DRILLED	**HOLE DIAMETER**	**GROUND EL.**
3/24/2015 - 3/26/2015	9"	287.5 feet

GROUNDWATER READINGS
Groundwater seepage encountered at 78.0' bgs with possible seepage zones between 60' to 70' and zones below 78' bgs. See monitoring data in GDR.

ELEVATION (ft)	DEPTH (ft)	"N" VALUE STD.PEN.TEST	OVA (ppm)**	MOISTURE CONTENT (% of dry wt.)	DRY DENSITY (pcf)	BLOW COUNT* (blows/ft)	PERCENT PASSING No. 200 SIEVE	SAMPLE LOC.	DOWNHOLE TESTS
165	125		0.5	11.1	95	76/9"		☒	
160	130	50/6"	0					☒	
155	135								
150	140								
145	145								
140	150								
135	155								
130	160								

POORLY GRADED SAND with SILT (continued from above)

SP POORLY GRADED SAND - very dense, moist, dark greenish gray, predominantly fine grained sand, some medium to coarse grained sand, trace fine gravels (up to 3/8" in size)

END OF BORING AT 130.0 FEET

NOTES:
Hand augered upper 6 feet to avoid damage to utilities.
Borehole backfilled with bentonite, clean sand, and sand/gravel/cement slurry per well construction schedule.
Pavement patched with rapid set concrete colored with black oxide.

Groundwater monitoring wells installed with screen intervals at 65'-75' and 80'-90'. Vapor probes installed at 40', 60', and 95'. Refer to GDR for Well Construction Details.

"N" Value Standard Penetration Test: Number of blows required to drive the SPT sampler 18 inches using a 140 pound automatic hammer falling 30 inches
*Number of blows required to drive the Crandall Sampler 12 inches using a 140 pound hammer falling 30 inches
Martini used two different CME-75 drill rigs to drill this boring. One rig drilled the upper 20.5' on 3/24/2015 and the other drilled the remained on 3/25/2014 and 3/26/3015.
Hammer Energy Transfer Ratio (ERi) = 79% (Calibrated 01/13/2014) for samples from 0' to 20.5'
Hammer Energy Transfer Ratio (ERi) = 70% (Calibrated 04/09/2015) for samples greater than 20.5'

**Photo Ionization Detector used for OVA readings

^Average dry density for sample when multiple density tests performed.

THIS RECORD IS AN INTERPRETATION OF SUBSURFACE CONDITIONS AT THE EXPLORATION LOCATION. LATITUDE AND LONGITUDE OF BORING LOCATION SHOWN ON LOGS ARE APPROXIMATE. SUBSURFACE CONDITIONS AT OTHER LOCATIONS AND AT OTHER TIMES MAY DIFFER. INTERFACES BETWEEN STRATA ARE APPROXIMATE. TRANSITIONS BETWEEN STRATA MAY BE GRADUAL.

Field Tech: AR
Prepared/Date: KC 5/26/2015
Checked/Date: FW/DLP/HP 5/26/2015

MTA Westside Subway Extension
Los Angeles, California

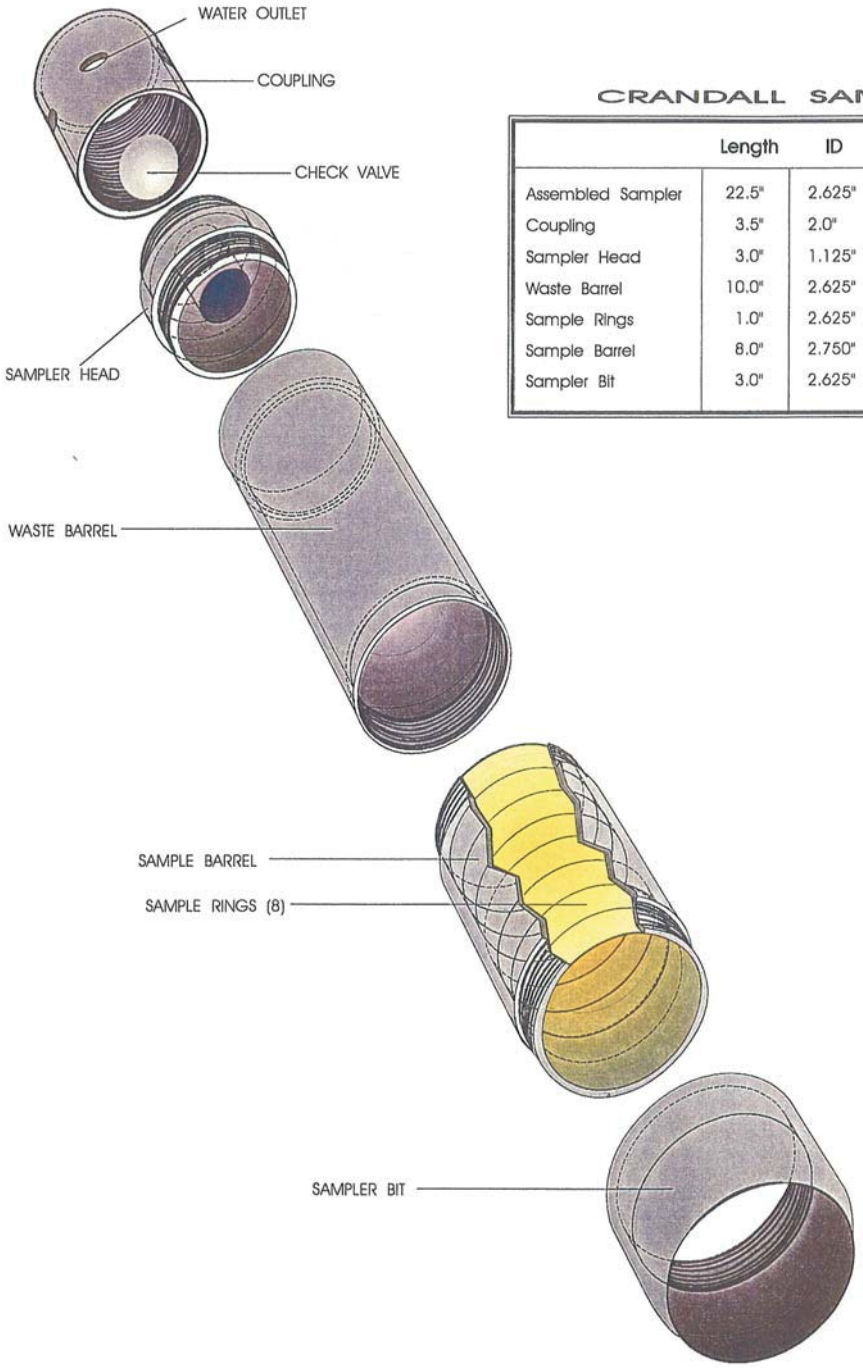
amec foster wheeler

LOG OF BORING

Project No.: 4953-11-1423 Figure: A-1.3.5d

LA METRO PB-TUNNEL ZONE C:\USERS\KYLE CRONIN\GOOGLE DRIVE\2015-105-010 PURPLE LINE EXTENSION\GINT\LIBRARY AMEC JUNE2012.GLB
C:\USERS\KYLE CRONIN\GOOGLE DRIVE\2015-105-010 PURPLE LINE EXTENSION\GINT\CONSTELLATION STATION GDR\4953-10-1561 (CONSTELLATION 20150528).GPJ 5/29/15

CRANDALL SAMPLER



CRANDALL SAMPLER

	Length	ID	OD
Assembled Sampler	22.5"	2.625"	3.187"
Coupling	3.5"	2.0"	3.0"
Sampler Head	3.0"	1.125"	3.125"
Waste Barrel	10.0"	2.625"	3.125"
Sample Rings	1.0"	2.625"	2.750"
Sample Barrel	8.0"	2.750"	3.125"
Sampler Bit	3.0"	2.625"	3.187"

Corel Draw • Drawn by Juliana M • Date August 7, 1995

amec
AMEC ENVIRONMENT & INFRASTRUCTURE
5628 E. SLAUSON AVE. ○ LOS ANGELES, CALIFORNIA 90040
(323) 889-5300 ○ fax (323) 889-5398

FIGURE A-2.0 - Crandall Sampler

JOB NO.: 4953-11-1421	REVISIONS:
DATE: 12-11-09	
SCALE:	
DRAWN BY: NH	
CHECKED BY: MKT	

APPENDIX B MONITORING WELL DIAGRAMS

Appendix B

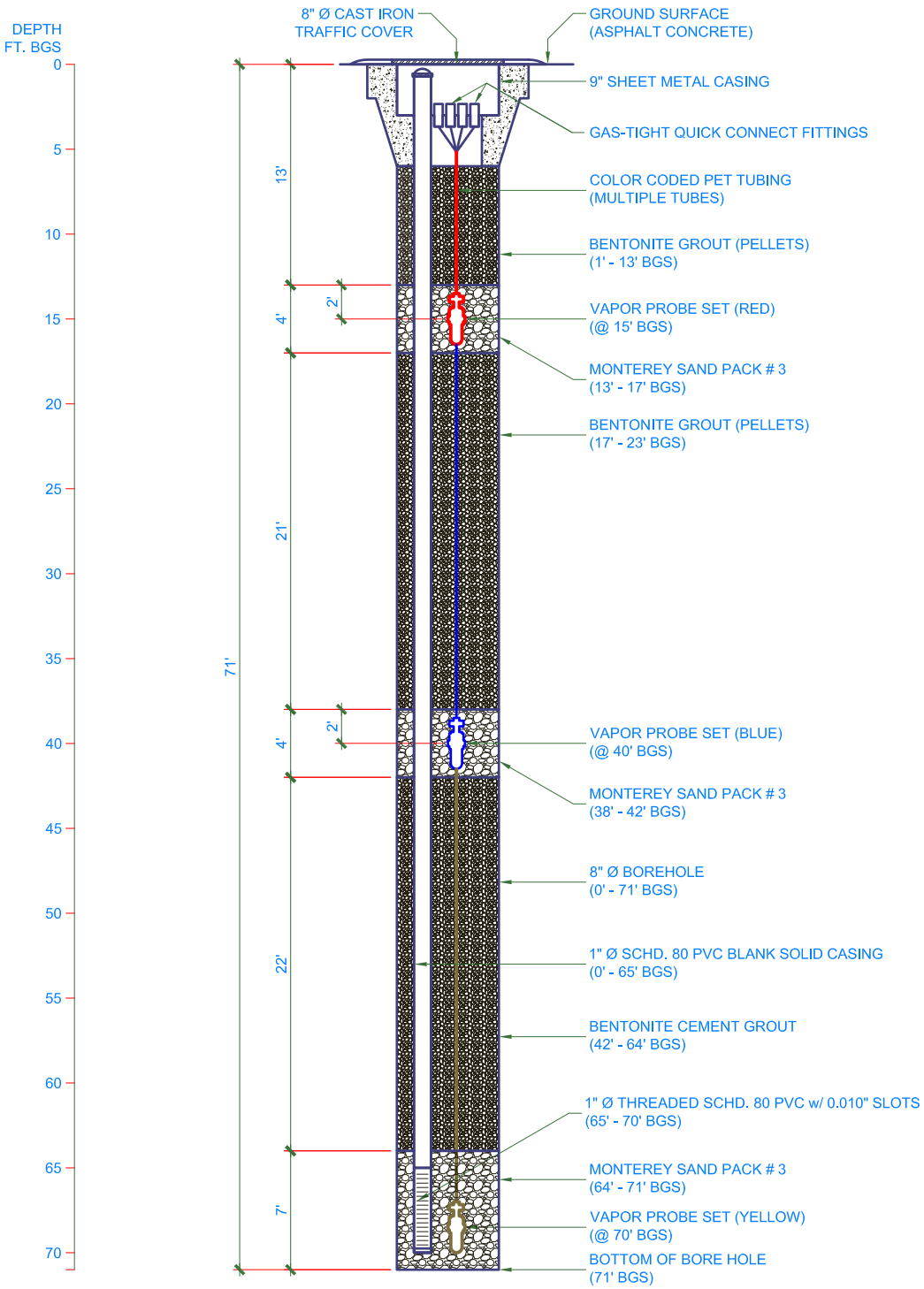
Figure B-1: Gas/Groundwater Monitoring Well Diagram (ACE Phase)

Figure B-2: Gas/Groundwater Monitoring Well Diagram (PE Phase)

Figure B-3.1 through B-3.6: Gas/Groundwater Monitoring Well Diagrams (Adv. PE Phase)

BORING M-19 MONITORING WELL DETAIL

METHANE



Vertical Scale: 1" = 10'-0"
Horizontal Scale Exaggerated

Key	
BGS	Below Ground Surface
TOC	Top Of Casing
'	Feet
"	Inches

AMEC Environment & Infrastructure
5628 E. Slauson Avenue, Los Angeles, California 90040
Phone (323) 889-5300 Fax (323) 889-5398

WELL NO.:	M-19	DRAWN:	L. Morley
INSTALLED:	06/09/2009	CHKD:	Jag
SCALE:	1" = 10' Vertical	DATE:	December 2, 2011
DRILL CO.:	Cascade Drilling	TECHNIQUE:	Hollow Stem
FIELD PERSONNEL:			Paul Kane
PROJECT NAME:			MTA Westside Subway Extension
WELL LOCATION:			Avenue of the Stars & Constellation

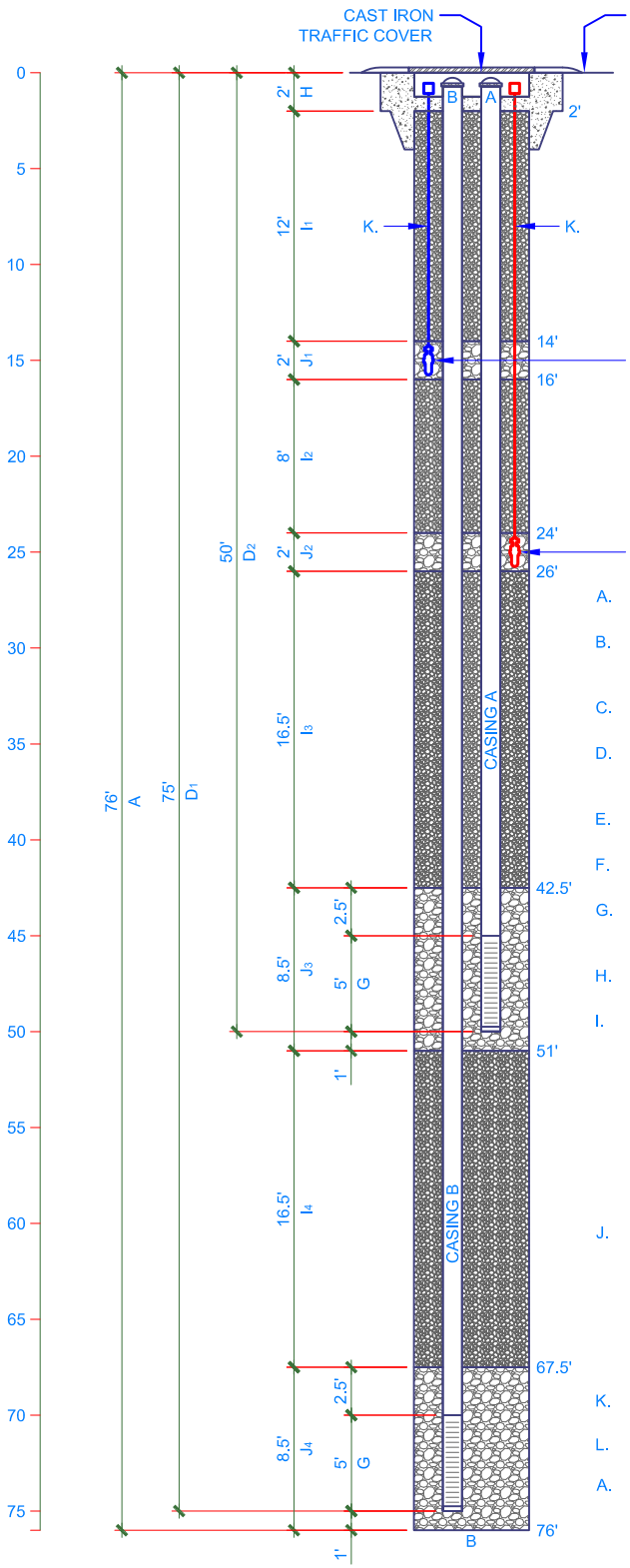
MTA WESTSIDE SUBWAY EXTENSION
Parsons Brinckerhoff

WELL CONSTRUCTION DETAIL
Methane Gas Monitoring Well

FIGURE NO.
B-1

PROJECT NO.
4953-11-1421

METHANE VAPOR MONITORING WELL M-119



A. TOTAL DEPTH OF BORING: 76' BGS

B. DIAMETER OF BORING: 10 1/2"Ø
DRILLING METHOD: HOLLOW STEM AUGER

C. TOP OF BOX ELEVATION: NA

D. CASING LENGTH: 50' (A), 75' (B)
MATERIAL: PVC

E. CASING DIAMETER: 2"Ø (EACH)

F. DEPTH TO TOP OF SCREEN: 45' (A) & 70' (B)

G. PERFORATION LENGTH: 5' (A), 5' (B)
PERFORATION SIZE: 0.020" SLOTS

H. SUBSURFACE SEAL: 2' CONCRETE, 6' GROUT

I. SEAL: 2-14', 16-24', 26-42.5', 51-67.5' (BGS)
MATERIAL: HYDRATED BENTONITE (CHIPS)
- I_1. 2'-14': BENTONITE CEMENT GROUT OVER 1' OF BENTONITE CHIPS HYDRATED
- I_2. 16'-24': BENTONITE CEMENT GROUT OVER 1' OF BENTONITE CHIPS HYDRATED
- I_3. 26-42.5': HYDRATED BENTONITE CHIPS
- I_4. 51-67.5': HYDRATED BENTONITE CHIPS

J. SAND PACK: 14'-16', 24'-26', 42.5'-51', 67.5'-76' (BGS)
MATERIAL: # 2/12 SAND PACK
w/ TRANSITION SAND AT TOP
- J_1. 14'-16'
- J_2. 24'-26'
- J_3. 42.5'-51'
- J_4. 67.5'-76'

K. ¼"Ø POLYETHYLENE TUBING

L. WATER LEVELS ON 1/20/2011 WERE AS FOLLOWS:
A. 35 FEET BELOW TOC

Vertical Scale: 1" = 10'-0"
Horizontal Scale Exaggerated

Key	
BGS	Below Ground Surface
TOC	Top Of Casing
'	Feet
"	Inches

AMEC Environment & Infrastructure
5628 E. Slauson Avenue, Los Angeles, California 90040
Phone (323) 889-5300 Fax (323) 889-5398

WELL NO.:	M-119	DRAWN:	L. Morley
INSTALLED:	01/20/2011	CHKD:	J. Neuhaus
SCALE:	1" = 10' Vertical	DATE:	December 2, 2011
DRILL CO.:	Jet Drilling	TECHNIQUE:	Hollow Stem
FIELD PERSONNEL:			Rachel Mills
PROJECT NAME:			MTA Westside Subway Extension
WELL LOCATION:			Wilshire W of Century Park, Los Angeles, CA

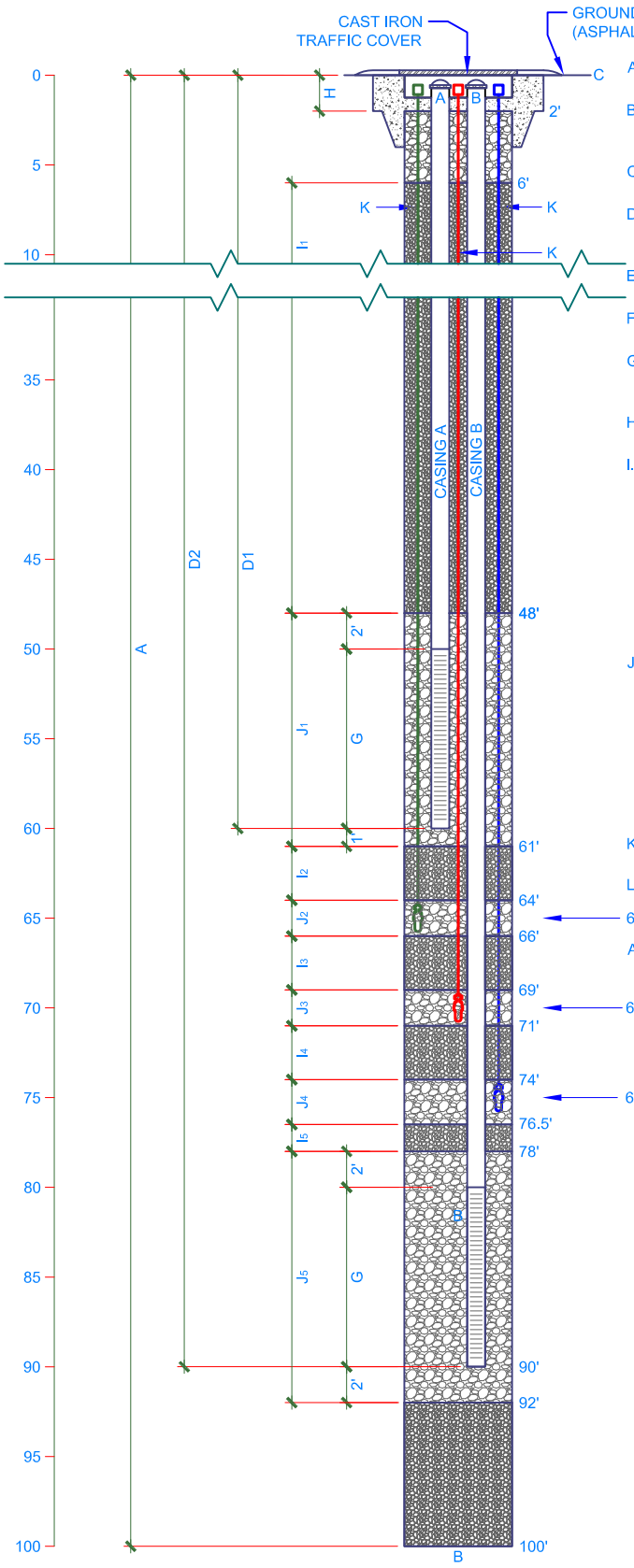
MTA WESTSIDE EXTENSION
Parsons Brinckerhoff

WELL CONSTRUCTION DETAIL
Methane Gas Monitoring Well

FIGURE NO.
B-2

PROJECT NO.
4953-11-1421

SOIL GAS/GROUND WATER MONITORING WELL M-407



A. TOTAL DEPTH OF BORING: 100' BGS

B. DIAMETER OF BORING: 11"Ø
DRILLING METHOD: HOLLOW STEM AUGER

C. TOP OF BOX ELEVATION: ELEV. 281.7'

D. CASING LENGTH: 60' (A), 90' (B)
MATERIAL: PVC

E. CASING DIAMETER: 2"Ø (EACH)

F. DEPTH TO TOP OF SCREEN: 50' (A) & 80' (B)

G. PERFORATION LENGTH: 10' (A), 10' (B)
PERFORATION SIZE: 0.020" SLOTS

H. SUBSURFACE SEAL: 2' CONCRETE, 6' GROUT

I. SEAL: 6'-48', 61'-64', 66'-69', 71'-74', 76.5'-78', (BGS)
MATERIAL: HYDRATED BENTONITE CHIPS
I_1. 6'-48': HYDRATED BENTONITE CHIPS
I_2. 61'-64': HYDRATED BENTONITE CHIPS
I_3. 66'-69': HYDRATED BENTONITE CHIPS
I_4. 71'-74': HYDRATED BENTONITE CHIPS
I_5. 76.5'-78': HYDRATED BENTONITE CHIPS

J. SAND PACK: 48'-61', 64'-66', 69'-71', 74'-76.5', 78'-92' (BGS)
MATERIAL: # 3 SAND PACK
J_1. 48'-61'
J_2. 64'-66'
J_3. 69'-71'
J_4. 74'-76.5'
J_5. 78'-92'

K. ¼"Ø POLYETHYLENE TUBING

L. WATER LEVELS ON 4/8/2015 WERE AS FOLLOWS:
6" LONG VAPOR PROBE (@ 65' BGS)(GREEN)
A. 59.8 FEET BELOW TOC IN CASING A AND DRY IN CASING B
6" LONG VAPOR PROBE (@ 70' BGS)(RED)
6" LONG VAPOR PROBE (@ 75' BGS)(BLUE)

Vertical Scale: 1" = 10'-0"
Horizontal Scale Exaggerated

Key	
BGS	Below Ground Surface
TOC	Top Of Casing
'	Feet
"	Inches

amec foster wheeler
Amec Foster Wheeler
Environment & Infrastructure, Inc.
6001 Rickenbacker Road
Los Angeles, CA 90040
Phone (323) 889-5300
Fax (323) 721-6700

WELL NO.:	M-407	PREPARED BY:	KO/KC
INSTALLED:	03/11/2015	CHKD:	F. WANG
SCALE:	1" = 10' vertical	DATE:	May 6, 2015
DRILL CO.:	Martini Drilling	TECHNIQUE:	Hollow Stem
FIELD PERSONNEL:			Ron Lopez/Angel Recio
PROJECT NAME:			MTA Westside Subway Extension
WELL LOCATION:			Constellation Blvd and Century Park East

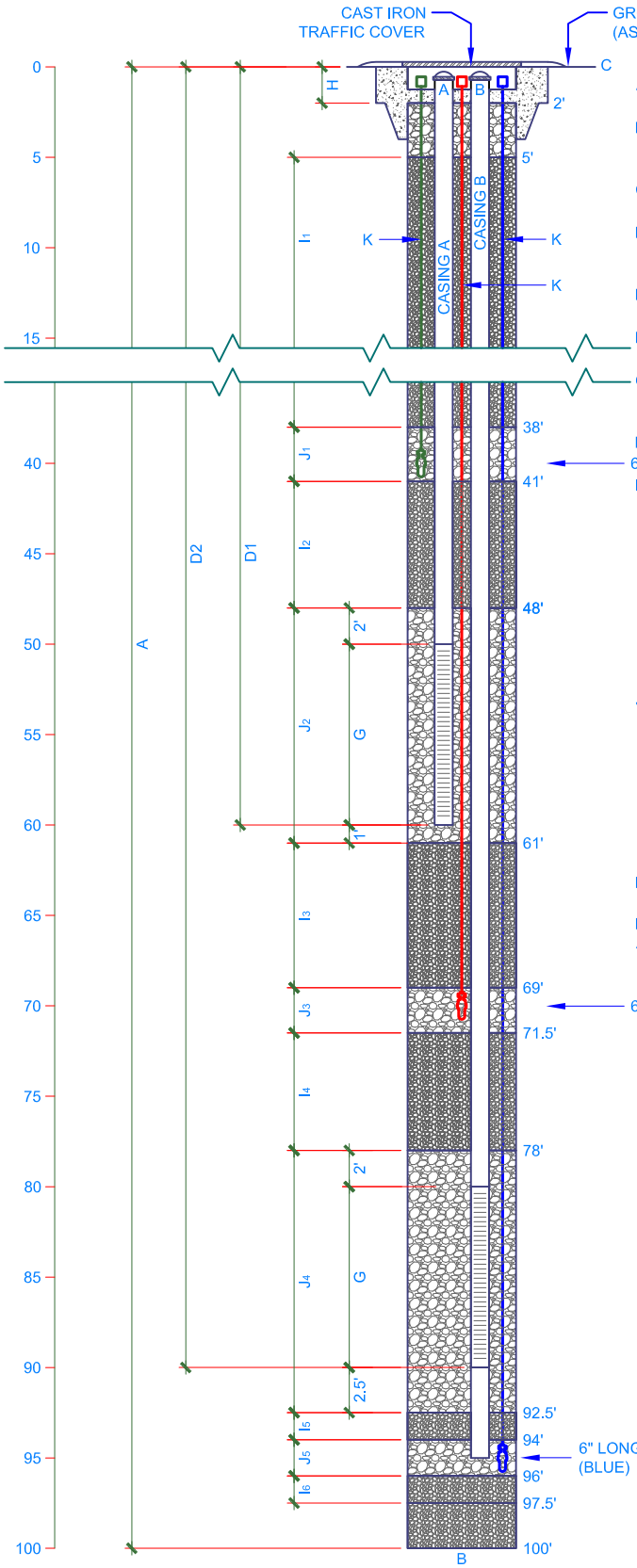
MTA WESTSIDE EXTENSION
Parsons Brinckerhoff

WELL CONSTRUCTION DETAIL
Soil Gas/Ground Water Monitoring Well

WELL NO.
B-3.1

PROJECT NO.
4953-11-1423

SOIL GAS/GROUND WATER MONITORING WELL M-408



A. TOTAL DEPTH OF BORING: 100' BGS

B. DIAMETER OF BORING: 11"Ø
DRILLING METHOD: HOLLOW STEM AUGER

C. TOP OF BOX ELEVATION: ELEV. 287.8'

D. CASING LENGTH: 60' (A), 95' (B)
MATERIAL: PVC

E. CASING DIAMETER: 2"Ø (EACH)

F. DEPTH TO TOP OF SCREEN: 50' (A) & 80' (B)

G. PERFORATION LENGTH: 10' (A), 10' (B)
PERFORATION SIZE: 0.020" SLOTS

H. SUBSURFACE SEAL: 2' CONCRETE, 6' GROUT

I. SEAL: 5'-38', 41'-48', 61'-69', 71.5'-78', 92.5'-94', 96'-97.5' (BGS)
MATERIAL: HYDRATED BENTONITE CHIPS
I_1. 5'-38': HYDRATED BENTONITE CHIPS
I_2. 41'-48': HYDRATED BENTONITE CHIPS
I_3. 61'-69': HYDRATED BENTONITE CHIPS
I_4. 71.5'-78': HYDRATED BENTONITE CHIPS
I_5. 92.5'-94': HYDRATED BENTONITE CHIPS
I_6. 96'-97.5': HYDRATED BENTONITE CHIPS

J. SAND PACK: 38'-41', 48'-61', 69'-71.5', 78'-92.5', 94'-96' (BGS)
MATERIAL: # 3 SAND PACK
J_1. 38'-41'
J_2. 48'-61'
J_3. 69'-71.5'
J_4. 78'-92.5'
J_5. 94'-96'

K. ¼"Ø POLYETHYLENE TUBING

L. WATER LEVELS ON 4/8/2015 WERE AS FOLLOWS:
A. DRY IN BOTH CASINGS.

Vertical Scale: 1" = 10'-0"
Horizontal Scale Exaggerated

Key	
BGS	Below Ground Surface
TOC	Top Of Casing
'	Feet
"	Inches

amec foster wheeler
Amec Foster Wheeler
Environment & Infrastructure, Inc.
6001 Rickenbacker Road
Los Angeles, CA 90040
Phone (323) 889-5300
Fax (323) 721-6700

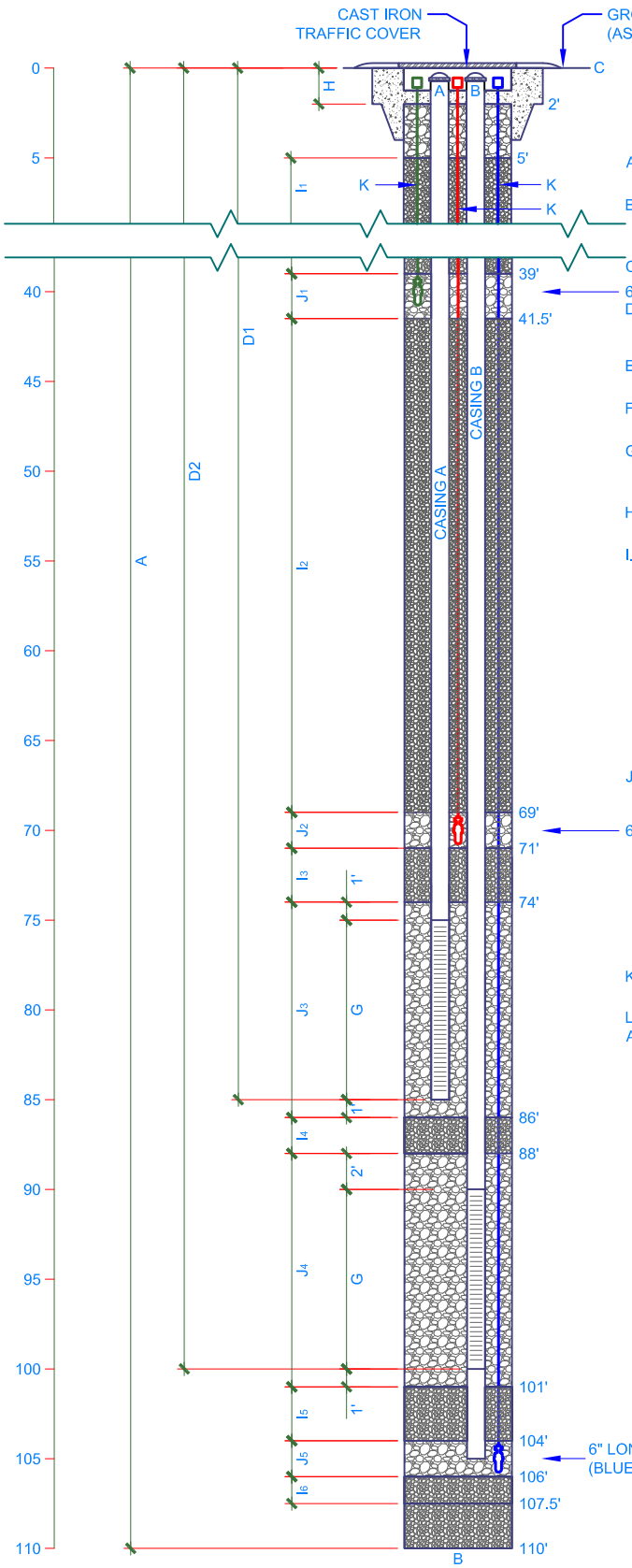
WELL NO.:	M-408	PREPARED BY:	KO/KC
INSTALLED:	03/23/2015	CHKD:	F. WANG
SCALE:	1" = 10' Vertical	DATE:	May 6, 2015
DRILL CO.:	Martini Drilling	TECHNIQUE:	Hollow Stem
FIELD PERSONNEL:			Ron Lopez/Angel Recio
PROJECT NAME:			MTA Westside Subway Extension
WELL LOCATION:	Constellation Blvd between Avenue of the Stars and Century Park East		

MTA WESTSIDE EXTENSION
Parsons Brinckerhoff

WELL CONSTRUCTION DETAIL
Soil Gas/Ground Water Monitoring Well

WELL NO.
B-3.2
PROJECT NO.
4953-11-1423

SOIL GAS/GROUND WATER MONITORING WELL M-409



A. TOTAL DEPTH OF BORING: 110' BGS

B. DIAMETER OF BORING: 11"Ø
DRILLING METHOD: HOLLOW STEM AUGER

C. TOP OF BOX ELEVATION: ELEV. 291.6'

6" LONG VAPOR PROBE (@ 40' BGS)(GREEN)

D. CASING LENGTH: 85' (A), 105' (B)
MATERIAL: PVC

E. CASING DIAMETER: 2"Ø (EACH)

F. DEPTH TO TOP OF SCREEN: 75' (A) & 90' (B)

G. PERFORATION LENGTH: 10' (A), 10' (B)
PERFORATION SIZE: 0.020" SLOTS

H. SUBSURFACE SEAL: 2' CONCRETE, 6' GROUT

I. SEAL: 5'-39', 41.5'-69', 71'-74', 86'-88', 101'-104', 106'-107.5' (BGS)
MATERIAL: HYDRATED BENTONITE CHIPS
I_1. 5'-39': HYDRATED BENTONITE CHIPS
I_2. 41.5'-69': HYDRATED BENTONITE CHIPS
I_3. 71'-74': HYDRATED BENTONITE CHIPS
I_4. 86'-88': HYDRATED BENTONITE CHIPS
I_5. 101'-104': HYDRATED BENTONITE CHIPS
I_6. 106'-107.5': HYDRATED BENTONITE CHIPS

J. SAND PACK: 39'-41.5', 69'-71', 74'-86', 88'-101', 104'-106' (BGS)
MATERIAL: # 3 SAND PACK

6" LONG VAPOR PROBE (@ 70' BGS)(RED)
J_1. 39'-41.5'
J_2. 69'-71'
J_3. 74'-86'
J_4. 88'-101'
J_5. 104'-106'

K. ¼"Ø POLYETHYLENE TUBING

L. WATER LEVELS ON 4/8/2015 WERE AS FOLLOWS:
A. DRY IN CASING A AND 87.06 FEET IN CASING B

6" LONG VAPOR PROBE (@ 105' BGS) (BLUE)

Vertical Scale: 1" = 10'-0"
Horizontal Scale Exaggerated

Key	
BGS	Below Ground Surface
TOC	Top Of Casing
'	Feet
"	Inches

amec foster wheeler
Amec Foster Wheeler
Environment & Infrastructure, Inc.
6001 Rickenbacker Road
Los Angeles, CA 90040
Phone (323) 889-5300
Fax (323) 721-6700

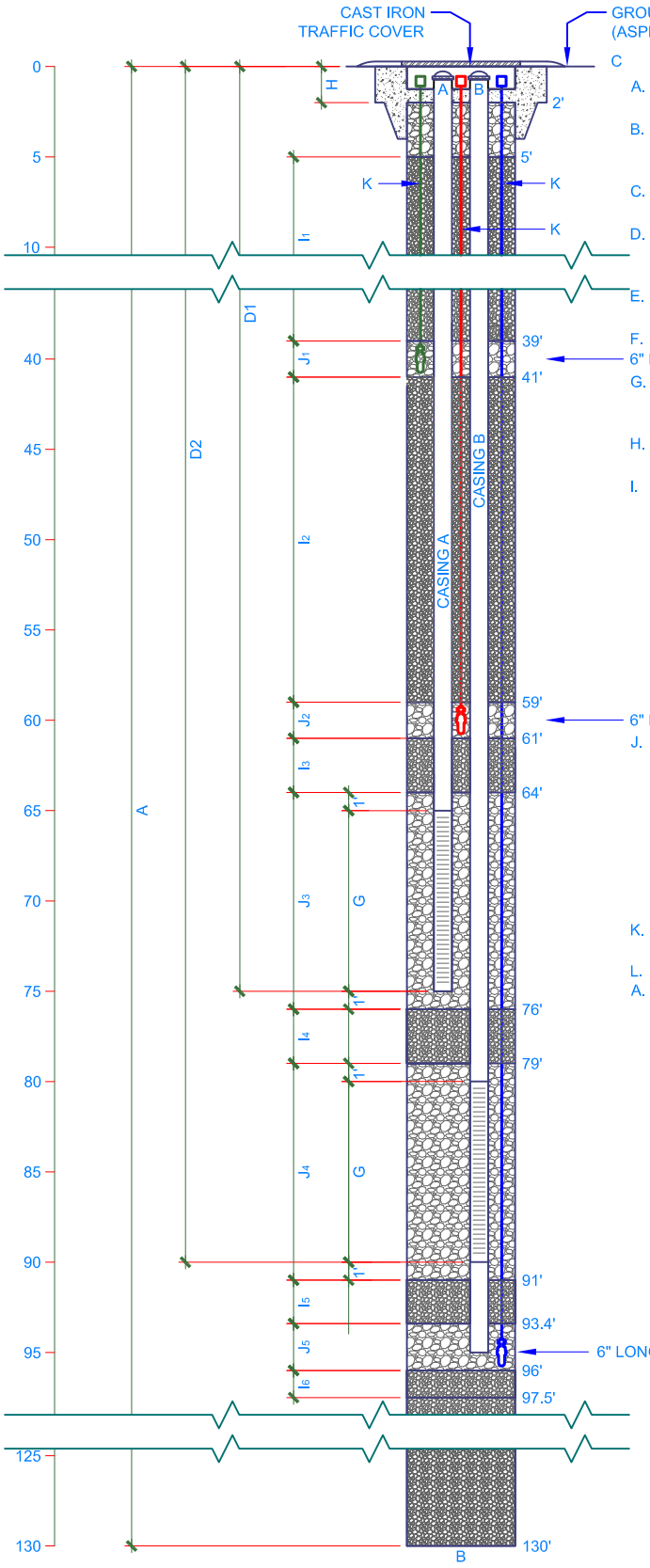
WELL NO.:	M-409	PREPARED BY:	KO/KC
INSTALLED:	03/18/2015	CHKD:	F. WANG
SCALE:	1" = 10' Vertical	DATE:	May 6, 2015
DRILL CO.:	Martini Drilling	TECHNIQUE:	Hollow Stem
FIELD PERSONNEL:			Ron Lopez/Angel Recio
PROJECT NAME:			MTA Westside Subway Extension
WELL LOCATION:			Constellation Blvd and West of Avenue of the Stars

MTA WESTSIDE EXTENSION
Parsons Brinckerhoff

WELL CONSTRUCTION DETAIL
Soil Gas/Ground Water Monitoring Well

WELL NO.
B-3.3
PROJECT NO.
4953-11-1423

SOIL GAS/GROUND WATER MONITORING WELL M-410



A. TOTAL DEPTH OF BORING: 130' BGS

B. DIAMETER OF BORING: 11"Ø
DRILLING METHOD: HOLLOW STEM AUGER

C. TOP OF BOX ELEVATION: ELEV. 286.3'

D. CASING LENGTH: 75' (A), 95' (B)
MATERIAL: PVC

E. CASING DIAMETER: 2"Ø (EACH)

F. DEPTH TO TOP OF SCREEN: 65' (A) & 80' (B)
6" LONG VAPOR PROBE (@ 40' BGS)(GREEN)

G. PERFORATION LENGTH: 10' (A), 10' (B)
PERFORATION SIZE: 0.020" SLOTS

H. SUBSURFACE SEAL: 2' CONCRETE, 6' GROUT

I. SEAL: 5'-39', 41'-59', 61'-64', 76'-79', 91'-93.4', 96'-97.5' (BGS)
MATERIAL: HYDRATED BENTONITE CHIPS
I_1. 5'-39': HYDRATED BENTONITE CHIPS
I_2. 41'-59': HYDRATED BENTONITE CHIPS
I_3. 61'-64': HYDRATED BENTONITE CHIPS
I_4. 76'-79': HYDRATED BENTONITE CHIPS
I_5. 91'-93.4': HYDRATED BENTONITE CHIPS
I_6. 96'-97.5': HYDRATED BENTONITE CHIPS

6" LONG VAPOR PROBE (@ 60' BGS)(RED)

J. SAND PACK: 39'-41', 59'-61', 64'-76', 79'-91', 93.4'-96' (BGS)
MATERIAL: # 3 SAND PACK
J_1. 39'-41'
J_2. 59'-61'
J_3. 64'-76'
J_4. 79'-91'
J_5. 93.4'-96'

K. ¼"Ø POLYETHYLENE TUBING

L. WATER LEVELS ON 4/8/2015 WERE AS FOLLOWS:
A. DRY IN CASING A AND 81.58 FEET IN CASING B

6" LONG VAPOR PROBE (@ 95' BGS)(BLUE)

Vertical Scale: 1" = 10'-0"
Horizontal Scale Exaggerated

Key	
BGS	Below Ground Surface
TOC	Top Of Casing
'	Feet
"	Inches

amec foster wheeler
Amec Foster Wheeler
Environment & Infrastructure, Inc.
6001 Rickenbacker Road
Los Angeles, CA 90040
Phone (323) 889-5300
Fax (323) 721-6700

WELL NO.:	M-410	PREPARED BY:	KO/KC
INSTALLED:	03/27/2015	CHKD:	F. WANG
SCALE:	1" = 10' Vertical	DATE:	May 6, 2015
DRILL CO.:	Martini Drilling	TECHNIQUE:	Hollow Stem
FIELD PERSONNEL:			Ron Lopez/Angel Recio
PROJECT NAME:			MTA Westside Subway Extension
WELL LOCATION:			Constellation Blvd between Avenue of the Stars and Solar Way (MGM Drive)

MTA WESTSIDE EXTENSION
Parsons Brinckerhoff

WELL CONSTRUCTION DETAIL
Soil Gas/Ground Water Monitoring Well

WELL NO.
B-3.4

PROJECT NO.
4953-11-1423

APPENDIX C ANALYTICAL LABORATORY REPORTS

Appendix C

Figure C-1: Analytical Laboratory Test Results of Soil Samples (PE Phase)

Figure C-2: Analytical Laboratory Test Results of Soil Samples (Adv. PE Phase)

Figure C-3: Analytical Laboratory Test Results of Groundwater Samples (Adv. PE Phase)

August 23, 2011

Matt Fraychineaud
Mactec
5628 E. Slauson Avenue,
Los Angeles, CA 90040-2922
TEL: (323) 889-5300
FAX:

ELAP No.: 1838
NELAP No.: 02107CA
CSDLAC No.: 10196
ORELAP No.: CA300003

Workorder No.: 119413

RE:

Attention: Matt Fraychineaud

Enclosed are the results for sample(s) received on August 15, 2011 by Advanced Technology Laboratories . The sample(s) are tested for the parameters as indicated in the enclosed chain of custody in accordance with the applicable laboratory certifications.

Thank you for the opportunity to service the needs of your company.

Please feel free to call me at (562)989-4045 if I can be of further assistance to your company.

Sincerely,

Eddie F. Rodriguez
Laboratory Director

CLIENT: Mactec
Project:
Lab Order: 119413

CASE NARRATIVE

All volatile analyses were performed using 5035 preservation requirements. Any high level dilutions were performed on a preserved methanol sample unless otherwise noted.

Sample Receiving / General Comments

One sodium bisulfate preserved sample labeled as E-132-15' was found bagged together with the sample labelled as E-132-30'.

Analytical Comments for EPA 8015B(M) (GRO)

Samples 119407-003AMS and 119407-003AMSD, Matrix Spike (MS) and Matrix Spike Duplicate (MSD) are outside recovery criteria; however, the analytical batch was validated by the Laboratory Control Sample (LCS).

Sample 119407-003AMSD, RPD for Matrix Spike Duplicate (MSD) is outside criteria; however, the analytical batch was validated by the Laboratory Control Sample (LCS).

Advanced Technology Laboratories
3275 Walnut Avenue, Signal Hill, CA 90755 Tel: 562. 989.4045 Fax: 562.989.4040

Advanced Technology Laboratories

ANALYTICAL RESULTS

Print Date: *23-Aug-11*

CLIENT: Mactec
Lab Order: 119413
Project:
Lab ID: 119413-002A

Client Sample ID: E-132-15'
Collection Date: 8/12/2011 10:00:00 AM
Matrix: SOIL

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
DIESEL & MOTOR OIL RANGE ORGANICS BY GC/FID						
LUFT				**EPA 8015B(M)**		
RunID: GC16_110816G	QC Batch: 74985			PrepDate: 8/17/2011		Analyst: **CBR**
DRO	ND	10		mg/Kg	1	8/17/2011 10:46 PM
ORO	ND	10		mg/Kg	1	8/17/2011 10:46 PM
Surr: p-Terphenyl	87.2	63-152		%REC	1	8/17/2011 10:46 PM
SEMIVOLATILE ORGANIC COMPOUNDS BY GC/MS						
EPA 3550B				**EPA 8270C**		
RunID: MS 13_110822A	QC Batch: 75003			PrepDate: 8/18/2011		Analyst: **DMP**
1,2,4-Trichlorobenzene	ND	330		µg/Kg	1	8/22/2011 03:17 PM
1,2-Dichlorobenzene	ND	330		µg/Kg	1	8/22/2011 03:17 PM
1,3-Dichlorobenzene	ND	330		µg/Kg	1	8/22/2011 03:17 PM
1,4-Dichlorobenzene	ND	330		µg/Kg	1	8/22/2011 03:17 PM
2,4,5-Trichlorophenol	ND	330		µg/Kg	1	8/22/2011 03:17 PM
2,4,6-Trichlorophenol	ND	330		µg/Kg	1	8/22/2011 03:17 PM
2,4-Dichlorophenol	ND	1600		µg/Kg	1	8/22/2011 03:17 PM
2,4-Dimethylphenol	ND	330		µg/Kg	1	8/22/2011 03:17 PM
2,4-Dinitrophenol	ND	1600		µg/Kg	1	8/22/2011 03:17 PM
2,4-Dinitrotoluene	ND	330		µg/Kg	1	8/22/2011 03:17 PM
2,6-Dinitrotoluene	ND	330		µg/Kg	1	8/22/2011 03:17 PM
2-Chloronaphthalene	ND	330		µg/Kg	1	8/22/2011 03:17 PM
2-Chlorophenol	ND	330		µg/Kg	1	8/22/2011 03:17 PM
2-Methylnaphthalene	ND	330		µg/Kg	1	8/22/2011 03:17 PM
2-Methylphenol	ND	330		µg/Kg	1	8/22/2011 03:17 PM
2-Nitroaniline	ND	1600		µg/Kg	1	8/22/2011 03:17 PM
2-Nitrophenol	ND	330		µg/Kg	1	8/22/2011 03:17 PM
3,3´-Dichlorobenzidine	ND	660		µg/Kg	1	8/22/2011 03:17 PM
3-Nitroaniline	ND	1600		µg/Kg	1	8/22/2011 03:17 PM
4,6-Dinitro-2-methylphenol	ND	1600		µg/Kg	1	8/22/2011 03:17 PM
4-Bromophenyl-phenylether	ND	330		µg/Kg	1	8/22/2011 03:17 PM
4-Chloro-3-methylphenol	ND	660		µg/Kg	1	8/22/2011 03:17 PM
4-Chloroaniline	ND	660		µg/Kg	1	8/22/2011 03:17 PM
4-Chlorophenyl-phenylether	ND	330		µg/Kg	1	8/22/2011 03:17 PM
4-Methylphenol	ND	330		µg/Kg	1	8/22/2011 03:17 PM
4-Nitroaniline	ND	1600		µg/Kg	1	8/22/2011 03:17 PM
4-Nitrophenol	ND	1600		µg/Kg	1	8/22/2011 03:17 PM
Acenaphthene	ND	330		µg/Kg	1	8/22/2011 03:17 PM
Acenaphthylene	ND	330		µg/Kg	1	8/22/2011 03:17 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

Advanced Technology Laboratories
3275 Walnut Avenue, Signal Hill, CA 90755 Tel: 562. 989.4045 Fax: 562.989.4040

Figure C-1.3

CLIENT: Mactec
Lab Order: 119413
Project:
Lab ID: 119413-002A

Client Sample ID: E-132-15'
Collection Date: 8/12/2011 10:00:00 AM
Matrix: SOIL

SEMIVOLATILE ORGANIC COMPOUNDS BY GC/MS

EPA 3550B **EPA 8270C**

RunID: MS 13_110822A QC Batch: 75003 PrepDate: 8/18/2011 Analyst: **DMP**

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
Anthracene	ND	330		µg/Kg	1	8/22/2011 03:17 PM
Benzidine (M)	ND	1600		µg/Kg	1	8/22/2011 03:17 PM
Benzo(a)anthracene	ND	330		µg/Kg	1	8/22/2011 03:17 PM
Benzo(a)pyrene	ND	330		µg/Kg	1	8/22/2011 03:17 PM
Benzo(b)fluoranthene	ND	330		µg/Kg	1	8/22/2011 03:17 PM
Benzo(g,h,i)perylene	ND	330		µg/Kg	1	8/22/2011 03:17 PM
Benzo(k)fluoranthene	ND	330		µg/Kg	1	8/22/2011 03:17 PM
Benzoic acid	ND	1600		µg/Kg	1	8/22/2011 03:17 PM
Benzyl alcohol	ND	660		µg/Kg	1	8/22/2011 03:17 PM
Bis(2-chloroethoxy)methane	ND	330		µg/Kg	1	8/22/2011 03:17 PM
Bis(2-chloroethyl)ether	ND	330		µg/Kg	1	8/22/2011 03:17 PM
Bis(2-chloroisopropyl)ether	ND	330		µg/Kg	1	8/22/2011 03:17 PM
Bis(2-ethylhexyl)phthalate	ND	330		µg/Kg	1	8/22/2011 03:17 PM
Butylbenzylphthalate	ND	330		µg/Kg	1	8/22/2011 03:17 PM
Chrysene	ND	330		µg/Kg	1	8/22/2011 03:17 PM
Di-n-butylphthalate	ND	330		µg/Kg	1	8/22/2011 03:17 PM
Di-n-octylphthalate	ND	330		µg/Kg	1	8/22/2011 03:17 PM
Dibenz(a,h)anthracene	ND	330		µg/Kg	1	8/22/2011 03:17 PM
Dibenzofuran	ND	330		µg/Kg	1	8/22/2011 03:17 PM
Diethylphthalate	ND	330		µg/Kg	1	8/22/2011 03:17 PM
Dimethylphthalate	ND	330		µg/Kg	1	8/22/2011 03:17 PM
Fluoranthene	ND	330		µg/Kg	1	8/22/2011 03:17 PM
Fluorene	ND	330		µg/Kg	1	8/22/2011 03:17 PM
Hexachlorobenzene	ND	330		µg/Kg	1	8/22/2011 03:17 PM
Hexachlorobutadiene	ND	660		µg/Kg	1	8/22/2011 03:17 PM
Hexachlorocyclopentadiene	ND	660		µg/Kg	1	8/22/2011 03:17 PM
Hexachloroethane	ND	330		µg/Kg	1	8/22/2011 03:17 PM
Indeno(1,2,3-cd)pyrene	ND	330		µg/Kg	1	8/22/2011 03:17 PM
Isophorone	ND	330		µg/Kg	1	8/22/2011 03:17 PM
N-Nitrosodi-n-propylamine	ND	330		µg/Kg	1	8/22/2011 03:17 PM
N-Nitrosodiphenylamine	ND	330		µg/Kg	1	8/22/2011 03:17 PM
Naphthalene	ND	330		µg/Kg	1	8/22/2011 03:17 PM
Nitrobenzene	ND	330		µg/Kg	1	8/22/2011 03:17 PM
Pentachlorophenol	ND	1600		µg/Kg	1	8/22/2011 03:17 PM
Phenanthrene	ND	330		µg/Kg	1	8/22/2011 03:17 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
E	Value above quantitation range
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference
	Results are wet unless otherwise specified
DO	Surrogate Diluted Out

CLIENT: Mactec
Lab Order: 119413
Project:
Lab ID: 119413-002A

Client Sample ID: E-132-15'
Collection Date: 8/12/2011 10:00:00 AM
Matrix: SOIL

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
SEMIVOLATILE ORGANIC COMPOUNDS BY GC/MS						
EPA 3550B				**EPA 8270C**		
RunID: MS 13_110822A	QC Batch: 75003			PrepDate: 8/18/2011		Analyst: **DMP**
Phenol	ND	330		µg/Kg	1	8/22/2011 03:17 PM
Pyrene	ND	330		µg/Kg	1	8/22/2011 03:17 PM
Surr: 1,2-Dichlorobenzene-d4	80.6	45-105		%REC	1	8/22/2011 03:17 PM
Surr: 2,4,6-Tribromophenol	84.9	41-129		%REC	1	8/22/2011 03:17 PM
Surr: 2-Chlorophenol-d4	83.4	55-108		%REC	1	8/22/2011 03:17 PM
Surr: 2-Fluorobiphenyl	86.0	56-114		%REC	1	8/22/2011 03:17 PM
Surr: 2-Fluorophenol	85.5	50-108		%REC	1	8/22/2011 03:17 PM
Surr: 4-Terphenyl-d14	82.0	59-141		%REC	1	8/22/2011 03:17 PM
Surr: Nitrobenzene-d5	84.8	45-114		%REC	1	8/22/2011 03:17 PM
Surr: Phenol-d5	87.9	46-118		%REC	1	8/22/2011 03:17 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: Mactec
Lab Order: 119413
Project:
Lab ID: 119413-002B

Client Sample ID: E-132-15'
Collection Date: 8/12/2011 10:00:00 AM
Matrix: SOIL

VOLATILE ORGANIC COMPOUNDS BY GC/MS

EPA 8260B

RunID: MS5_110816A QC Batch: T11VS150 PrepDate: 8/12/2011 Analyst: **DDL**

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
1,1,1,2-Tetrachloroethane	ND	10		µg/Kg	1	8/16/2011 03:34 PM
1,1,1-Trichloroethane	ND	10		µg/Kg	1	8/16/2011 03:34 PM
1,1,2,2-Tetrachloroethane	ND	10		µg/Kg	1	8/16/2011 03:34 PM
1,1,2-Trichloroethane	ND	10		µg/Kg	1	8/16/2011 03:34 PM
1,1-Dichloroethane	ND	10		µg/Kg	1	8/16/2011 03:34 PM
1,1-Dichloroethene	ND	10		µg/Kg	1	8/16/2011 03:34 PM
1,1-Dichloropropene	ND	10		µg/Kg	1	8/16/2011 03:34 PM
1,2,3-Trichlorobenzene	ND	10		µg/Kg	1	8/16/2011 03:34 PM
1,2,3-Trichloropropane	ND	10		µg/Kg	1	8/16/2011 03:34 PM
1,2,4-Trichlorobenzene	ND	10		µg/Kg	1	8/16/2011 03:34 PM
1,2,4-Trimethylbenzene	ND	10		µg/Kg	1	8/16/2011 03:34 PM
1,2-Dibromo-3-chloropropane	ND	20		µg/Kg	1	8/16/2011 03:34 PM
1,2-Dibromoethane	ND	10		µg/Kg	1	8/16/2011 03:34 PM
1,2-Dichlorobenzene	ND	10		µg/Kg	1	8/16/2011 03:34 PM
1,2-Dichloroethane	ND	10		µg/Kg	1	8/16/2011 03:34 PM
1,2-Dichloropropane	ND	10		µg/Kg	1	8/16/2011 03:34 PM
1,3,5-Trimethylbenzene	ND	10		µg/Kg	1	8/16/2011 03:34 PM
1,3-Dichlorobenzene	ND	10		µg/Kg	1	8/16/2011 03:34 PM
1,3-Dichloropropane	ND	10		µg/Kg	1	8/16/2011 03:34 PM
1,4-Dichlorobenzene	ND	10		µg/Kg	1	8/16/2011 03:34 PM
2,2-Dichloropropane	ND	10		µg/Kg	1	8/16/2011 03:34 PM
2-Chlorotoluene	ND	10		µg/Kg	1	8/16/2011 03:34 PM
4-Chlorotoluene	ND	10		µg/Kg	1	8/16/2011 03:34 PM
4-Isopropyltoluene	ND	10		µg/Kg	1	8/16/2011 03:34 PM
Benzene	ND	10		µg/Kg	1	8/16/2011 03:34 PM
Bromobenzene	ND	10		µg/Kg	1	8/16/2011 03:34 PM
Bromodichloromethane	ND	10		µg/Kg	1	8/16/2011 03:34 PM
Bromoform	ND	10		µg/Kg	1	8/16/2011 03:34 PM
Bromomethane	ND	10		µg/Kg	1	8/16/2011 03:34 PM
Carbon tetrachloride	ND	10		µg/Kg	1	8/16/2011 03:34 PM
Chlorobenzene	ND	10		µg/Kg	1	8/16/2011 03:34 PM
Chloroethane	ND	10		µg/Kg	1	8/16/2011 03:34 PM
Chloroform	ND	10		µg/Kg	1	8/16/2011 03:34 PM
Chloromethane	ND	10		µg/Kg	1	8/16/2011 03:34 PM
cis-1,2-Dichloroethene	ND	10		µg/Kg	1	8/16/2011 03:34 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: Mactec
Lab Order: 119413
Project:
Lab ID: 119413-002B

Client Sample ID: E-132-15'
Collection Date: 8/12/2011 10:00:00 AM
Matrix: SOIL

VOLATILE ORGANIC COMPOUNDS BY GC/MS

EPA 8260B

RunID: MS5_110816A QC Batch: T11VS150 PrepDate: 8/12/2011 Analyst: **DDL**

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
cis-1,3-Dichloropropene	ND	10		µg/Kg	1	8/16/2011 03:34 PM
Di-isopropyl ether	ND	10		µg/Kg	1	8/16/2011 03:34 PM
Dibromochloromethane	ND	10		µg/Kg	1	8/16/2011 03:34 PM
Dibromomethane	ND	10		µg/Kg	1	8/16/2011 03:34 PM
Dichlorodifluoromethane	ND	10		µg/Kg	1	8/16/2011 03:34 PM
Ethyl Tert-butyl ether	ND	10		µg/Kg	1	8/16/2011 03:34 PM
Ethylbenzene	ND	10		µg/Kg	1	8/16/2011 03:34 PM
Hexachlorobutadiene	ND	10		µg/Kg	1	8/16/2011 03:34 PM
Isopropylbenzene	ND	10		µg/Kg	1	8/16/2011 03:34 PM
m,p-Xylene	ND	20		µg/Kg	1	8/16/2011 03:34 PM
Methylene chloride	ND	10		µg/Kg	1	8/16/2011 03:34 PM
MTBE	ND	10		µg/Kg	1	8/16/2011 03:34 PM
n-Butylbenzene	ND	10		µg/Kg	1	8/16/2011 03:34 PM
n-Propylbenzene	ND	10		µg/Kg	1	8/16/2011 03:34 PM
Naphthalene	ND	10		µg/Kg	1	8/16/2011 03:34 PM
o-Xylene	ND	10		µg/Kg	1	8/16/2011 03:34 PM
sec-Butylbenzene	ND	10		µg/Kg	1	8/16/2011 03:34 PM
Styrene	ND	10		µg/Kg	1	8/16/2011 03:34 PM
Tert-amyl methyl ether	ND	10		µg/Kg	1	8/16/2011 03:34 PM
Tert-Butanol	ND	200		µg/Kg	1	8/16/2011 03:34 PM
tert-Butylbenzene	ND	10		µg/Kg	1	8/16/2011 03:34 PM
Tetrachloroethene	ND	10		µg/Kg	1	8/16/2011 03:34 PM
Toluene	ND	10		µg/Kg	1	8/16/2011 03:34 PM
trans-1,2-Dichloroethene	ND	10		µg/Kg	1	8/16/2011 03:34 PM
Trichloroethene	ND	10		µg/Kg	1	8/16/2011 03:34 PM
Trichlorofluoromethane	ND	10		µg/Kg	1	8/16/2011 03:34 PM
Vinyl chloride	ND	10		µg/Kg	1	8/16/2011 03:34 PM
Surr: 1,2-Dichloroethane-d4	90.6	65-141		%REC	1	8/16/2011 03:34 PM
Surr: 4-Bromofluorobenzene	89.3	57-134		%REC	1	8/16/2011 03:34 PM
Surr: Dibromofluoromethane	99.5	70-128		%REC	1	8/16/2011 03:34 PM
Surr: Toluene-d8	94.5	72-123		%REC	1	8/16/2011 03:34 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
E	Value above quantitation range
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference
	Results are wet unless otherwise specified
DO	Surrogate Diluted Out

Advanced Technology Laboratories

ANALYTICAL RESULTS

Print Date: *23-Aug-11*

CLIENT:	Mactec	**Client Sample ID:**	E-132-15'
Lab Order:	119413	**Collection Date:**	8/12/2011 10:00:00 AM
Project:		**Matrix:**	SOIL
Lab ID:	119413-002E		

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
GASOLINE RANGE ORGANICS BY GC/FID						
		EPA 8015B(M)				
RunID: GC2_110816A	QC Batch: E11VS300			PrepDate: 8/12/2011		Analyst: **TP**
GRO	ND	0.90		mg/Kg	1	8/16/2011 03:07 PM
Surr: Bromofluorobenzene (FID)	109	51-161		%REC	1	8/16/2011 03:07 PM

Qualifiers:	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
	S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
	DO	Surrogate Diluted Out		

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Figure C-1.8

CLIENT: Mactec
Lab Order: 119413
Project:
Lab ID: 119413-005A

Client Sample ID: E-132-30'
Collection Date: 8/12/2011 10:20:00 AM
Matrix: SOIL

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
DIESEL & MOTOR OIL RANGE ORGANICS BY GC/FID						
LUFT				**EPA 8015B(M)**		
RunID: GC16_110816G	QC Batch: 74985			PrepDate: 8/17/2011		Analyst: **CBR**
DRO	ND	10		mg/Kg	1	8/17/2011 10:55 PM
ORO	ND	10		mg/Kg	1	8/17/2011 10:55 PM
Surr: p-Terphenyl	82.8	63-152		%REC	1	8/17/2011 10:55 PM
SEMIVOLATILE ORGANIC COMPOUNDS BY GC/MS						
EPA 3550B				**EPA 8270C**		
RunID: MS 13_110822A	QC Batch: 75003			PrepDate: 8/18/2011		Analyst: **DMP**
1,2,4-Trichlorobenzene	ND	330		µg/Kg	1	8/22/2011 03:48 PM
1,2-Dichlorobenzene	ND	330		µg/Kg	1	8/22/2011 03:48 PM
1,3-Dichlorobenzene	ND	330		µg/Kg	1	8/22/2011 03:48 PM
1,4-Dichlorobenzene	ND	330		µg/Kg	1	8/22/2011 03:48 PM
2,4,5-Trichlorophenol	ND	330		µg/Kg	1	8/22/2011 03:48 PM
2,4,6-Trichlorophenol	ND	330		µg/Kg	1	8/22/2011 03:48 PM
2,4-Dichlorophenol	ND	1600		µg/Kg	1	8/22/2011 03:48 PM
2,4-Dimethylphenol	ND	330		µg/Kg	1	8/22/2011 03:48 PM
2,4-Dinitrophenol	ND	1600		µg/Kg	1	8/22/2011 03:48 PM
2,4-Dinitrotoluene	ND	330		µg/Kg	1	8/22/2011 03:48 PM
2,6-Dinitrotoluene	ND	330		µg/Kg	1	8/22/2011 03:48 PM
2-Chloronaphthalene	ND	330		µg/Kg	1	8/22/2011 03:48 PM
2-Chlorophenol	ND	330		µg/Kg	1	8/22/2011 03:48 PM
2-Methylnaphthalene	ND	330		µg/Kg	1	8/22/2011 03:48 PM
2-Methylphenol	ND	330		µg/Kg	1	8/22/2011 03:48 PM
2-Nitroaniline	ND	1600		µg/Kg	1	8/22/2011 03:48 PM
2-Nitrophenol	ND	330		µg/Kg	1	8/22/2011 03:48 PM
3,3´-Dichlorobenzidine	ND	660		µg/Kg	1	8/22/2011 03:48 PM
3-Nitroaniline	ND	1600		µg/Kg	1	8/22/2011 03:48 PM
4,6-Dinitro-2-methylphenol	ND	1600		µg/Kg	1	8/22/2011 03:48 PM
4-Bromophenyl-phenylether	ND	330		µg/Kg	1	8/22/2011 03:48 PM
4-Chloro-3-methylphenol	ND	660		µg/Kg	1	8/22/2011 03:48 PM
4-Chloroaniline	ND	660		µg/Kg	1	8/22/2011 03:48 PM
4-Chlorophenyl-phenylether	ND	330		µg/Kg	1	8/22/2011 03:48 PM
4-Methylphenol	ND	330		µg/Kg	1	8/22/2011 03:48 PM
4-Nitroaniline	ND	1600		µg/Kg	1	8/22/2011 03:48 PM
4-Nitrophenol	ND	1600		µg/Kg	1	8/22/2011 03:48 PM
Acenaphthene	ND	330		µg/Kg	1	8/22/2011 03:48 PM
Acenaphthylene	ND	330		µg/Kg	1	8/22/2011 03:48 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT: Mactec
Lab Order: 119413
Project:
Lab ID: 119413-005A

Client Sample ID: E-132-30'
Collection Date: 8/12/2011 10:20:00 AM
Matrix: SOIL

SEMIVOLATILE ORGANIC COMPOUNDS BY GC/MS

EPA 3550B **EPA 8270C**

RunID: MS 13_110822A QC Batch: 75003 PrepDate: 8/18/2011 Analyst: **DMP**

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
Anthracene	ND	330		µg/Kg	1	8/22/2011 03:48 PM
Benzidine (M)	ND	1600		µg/Kg	1	8/22/2011 03:48 PM
Benzo(a)anthracene	ND	330		µg/Kg	1	8/22/2011 03:48 PM
Benzo(a)pyrene	ND	330		µg/Kg	1	8/22/2011 03:48 PM
Benzo(b)fluoranthene	ND	330		µg/Kg	1	8/22/2011 03:48 PM
Benzo(g,h,i)perylene	ND	330		µg/Kg	1	8/22/2011 03:48 PM
Benzo(k)fluoranthene	ND	330		µg/Kg	1	8/22/2011 03:48 PM
Benzoic acid	ND	1600		µg/Kg	1	8/22/2011 03:48 PM
Benzyl alcohol	ND	660		µg/Kg	1	8/22/2011 03:48 PM
Bis(2-chloroethoxy)methane	ND	330		µg/Kg	1	8/22/2011 03:48 PM
Bis(2-chloroethyl)ether	ND	330		µg/Kg	1	8/22/2011 03:48 PM
Bis(2-chloroisopropyl)ether	ND	330		µg/Kg	1	8/22/2011 03:48 PM
Bis(2-ethylhexyl)phthalate	ND	330		µg/Kg	1	8/22/2011 03:48 PM
Butylbenzylphthalate	ND	330		µg/Kg	1	8/22/2011 03:48 PM
Chrysene	ND	330		µg/Kg	1	8/22/2011 03:48 PM
Di-n-butylphthalate	ND	330		µg/Kg	1	8/22/2011 03:48 PM
Di-n-octylphthalate	ND	330		µg/Kg	1	8/22/2011 03:48 PM
Dibenz(a,h)anthracene	ND	330		µg/Kg	1	8/22/2011 03:48 PM
Dibenzofuran	ND	330		µg/Kg	1	8/22/2011 03:48 PM
Diethylphthalate	ND	330		µg/Kg	1	8/22/2011 03:48 PM
Dimethylphthalate	ND	330		µg/Kg	1	8/22/2011 03:48 PM
Fluoranthene	ND	330		µg/Kg	1	8/22/2011 03:48 PM
Fluorene	ND	330		µg/Kg	1	8/22/2011 03:48 PM
Hexachlorobenzene	ND	330		µg/Kg	1	8/22/2011 03:48 PM
Hexachlorobutadiene	ND	660		µg/Kg	1	8/22/2011 03:48 PM
Hexachlorocyclopentadiene	ND	660		µg/Kg	1	8/22/2011 03:48 PM
Hexachloroethane	ND	330		µg/Kg	1	8/22/2011 03:48 PM
Indeno(1,2,3-cd)pyrene	ND	330		µg/Kg	1	8/22/2011 03:48 PM
Isophorone	ND	330		µg/Kg	1	8/22/2011 03:48 PM
N-Nitrosodi-n-propylamine	ND	330		µg/Kg	1	8/22/2011 03:48 PM
N-Nitrosodiphenylamine	ND	330		µg/Kg	1	8/22/2011 03:48 PM
Naphthalene	ND	330		µg/Kg	1	8/22/2011 03:48 PM
Nitrobenzene	ND	330		µg/Kg	1	8/22/2011 03:48 PM
Pentachlorophenol	ND	1600		µg/Kg	1	8/22/2011 03:48 PM
Phenanthrene	ND	330		µg/Kg	1	8/22/2011 03:48 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	Mactec	**Client Sample ID:**	E-132-30'
Lab Order:	119413	**Collection Date:**	8/12/2011 10:20:00 AM
Project:		**Matrix:**	SOIL
Lab ID:	119413-005A		

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
SEMIVOLATILE ORGANIC COMPOUNDS BY GC/MS						
EPA 3550B				**EPA 8270C**		
RunID: MS 13_110822A	QC Batch: 75003			PrepDate: 8/18/2011		Analyst: **DMP**
Phenol	ND	330		µg/Kg	1	8/22/2011 03:48 PM
Pyrene	ND	330		µg/Kg	1	8/22/2011 03:48 PM
Surr: 1,2-Dichlorobenzene-d4	71.9	45-105		%REC	1	8/22/2011 03:48 PM
Surr: 2,4,6-Tribromophenol	90.2	41-129		%REC	1	8/22/2011 03:48 PM
Surr: 2-Chlorophenol-d4	76.7	55-108		%REC	1	8/22/2011 03:48 PM
Surr: 2-Fluorobiphenyl	80.3	56-114		%REC	1	8/22/2011 03:48 PM
Surr: 2-Fluorophenol	76.3	50-108		%REC	1	8/22/2011 03:48 PM
Surr: 4-Terphenyl-d14	81.2	59-141		%REC	1	8/22/2011 03:48 PM
Surr: Nitrobenzene-d5	76.6	45-114		%REC	1	8/22/2011 03:48 PM
Surr: Phenol-d5	82.1	46-118		%REC	1	8/22/2011 03:48 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT: Mactec
Lab Order: 119413
Project:
Lab ID: 119413-005B

Client Sample ID: E-132-30'
Collection Date: 8/12/2011 10:20:00 AM
Matrix: SOIL

VOLATILE ORGANIC COMPOUNDS BY GC/MS

EPA 8260B

RunID: MS5_110816A QC Batch: T11VS150 PrepDate: 8/12/2011 Analyst: **DDL**

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
1,1,1,2-Tetrachloroethane	ND	6.4		µg/Kg	1	8/16/2011 03:53 PM
1,1,1-Trichloroethane	ND	6.4		µg/Kg	1	8/16/2011 03:53 PM
1,1,2,2-Tetrachloroethane	ND	6.4		µg/Kg	1	8/16/2011 03:53 PM
1,1,2-Trichloroethane	ND	6.4		µg/Kg	1	8/16/2011 03:53 PM
1,1-Dichloroethane	ND	6.4		µg/Kg	1	8/16/2011 03:53 PM
1,1-Dichloroethene	ND	6.4		µg/Kg	1	8/16/2011 03:53 PM
1,1-Dichloropropene	ND	6.4		µg/Kg	1	8/16/2011 03:53 PM
1,2,3-Trichlorobenzene	ND	6.4		µg/Kg	1	8/16/2011 03:53 PM
1,2,3-Trichloropropane	ND	6.4		µg/Kg	1	8/16/2011 03:53 PM
1,2,4-Trichlorobenzene	ND	6.4		µg/Kg	1	8/16/2011 03:53 PM
1,2,4-Trimethylbenzene	ND	6.4		µg/Kg	1	8/16/2011 03:53 PM
1,2-Dibromo-3-chloropropane	ND	13		µg/Kg	1	8/16/2011 03:53 PM
1,2-Dibromoethane	ND	6.4		µg/Kg	1	8/16/2011 03:53 PM
1,2-Dichlorobenzene	ND	6.4		µg/Kg	1	8/16/2011 03:53 PM
1,2-Dichloroethane	ND	6.4		µg/Kg	1	8/16/2011 03:53 PM
1,2-Dichloropropane	ND	6.4		µg/Kg	1	8/16/2011 03:53 PM
1,3,5-Trimethylbenzene	ND	6.4		µg/Kg	1	8/16/2011 03:53 PM
1,3-Dichlorobenzene	ND	6.4		µg/Kg	1	8/16/2011 03:53 PM
1,3-Dichloropropane	ND	6.4		µg/Kg	1	8/16/2011 03:53 PM
1,4-Dichlorobenzene	ND	6.4		µg/Kg	1	8/16/2011 03:53 PM
2,2-Dichloropropane	ND	6.4		µg/Kg	1	8/16/2011 03:53 PM
2-Chlorotoluene	ND	6.4		µg/Kg	1	8/16/2011 03:53 PM
4-Chlorotoluene	ND	6.4		µg/Kg	1	8/16/2011 03:53 PM
4-Isopropyltoluene	ND	6.4		µg/Kg	1	8/16/2011 03:53 PM
Benzene	ND	6.4		µg/Kg	1	8/16/2011 03:53 PM
Bromobenzene	ND	6.4		µg/Kg	1	8/16/2011 03:53 PM
Bromodichloromethane	ND	6.4		µg/Kg	1	8/16/2011 03:53 PM
Bromoform	ND	6.4		µg/Kg	1	8/16/2011 03:53 PM
Bromomethane	ND	6.4		µg/Kg	1	8/16/2011 03:53 PM
Carbon tetrachloride	ND	6.4		µg/Kg	1	8/16/2011 03:53 PM
Chlorobenzene	ND	6.4		µg/Kg	1	8/16/2011 03:53 PM
Chloroethane	ND	6.4		µg/Kg	1	8/16/2011 03:53 PM
Chloroform	ND	6.4		µg/Kg	1	8/16/2011 03:53 PM
Chloromethane	ND	6.4		µg/Kg	1	8/16/2011 03:53 PM
cis-1,2-Dichloroethene	ND	6.4		µg/Kg	1	8/16/2011 03:53 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: Mactec
Lab Order: 119413
Project:
Lab ID: 119413-005B

Client Sample ID: E-132-30'
Collection Date: 8/12/2011 10:20:00 AM
Matrix: SOIL

VOLATILE ORGANIC COMPOUNDS BY GC/MS

EPA 8260B

RunID: MS5_110816A QC Batch: T11VS150 PrepDate: 8/12/2011 Analyst: **DDL**

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
cis-1,3-Dichloropropene	ND	6.4		µg/Kg	1	8/16/2011 03:53 PM
Di-isopropyl ether	ND	6.4		µg/Kg	1	8/16/2011 03:53 PM
Dibromochloromethane	ND	6.4		µg/Kg	1	8/16/2011 03:53 PM
Dibromomethane	ND	6.4		µg/Kg	1	8/16/2011 03:53 PM
Dichlorodifluoromethane	ND	6.4		µg/Kg	1	8/16/2011 03:53 PM
Ethyl Tert-butyl ether	ND	6.4		µg/Kg	1	8/16/2011 03:53 PM
Ethylbenzene	ND	6.4		µg/Kg	1	8/16/2011 03:53 PM
Hexachlorobutadiene	ND	6.4		µg/Kg	1	8/16/2011 03:53 PM
Isopropylbenzene	ND	6.4		µg/Kg	1	8/16/2011 03:53 PM
m,p-Xylene	ND	13		µg/Kg	1	8/16/2011 03:53 PM
Methylene chloride	ND	6.4		µg/Kg	1	8/16/2011 03:53 PM
MTBE	ND	6.4		µg/Kg	1	8/16/2011 03:53 PM
n-Butylbenzene	ND	6.4		µg/Kg	1	8/16/2011 03:53 PM
n-Propylbenzene	ND	6.4		µg/Kg	1	8/16/2011 03:53 PM
Naphthalene	ND	6.4		µg/Kg	1	8/16/2011 03:53 PM
o-Xylene	ND	6.4		µg/Kg	1	8/16/2011 03:53 PM
sec-Butylbenzene	ND	6.4		µg/Kg	1	8/16/2011 03:53 PM
Styrene	ND	6.4		µg/Kg	1	8/16/2011 03:53 PM
Tert-amyl methyl ether	ND	6.4		µg/Kg	1	8/16/2011 03:53 PM
Tert-Butanol	ND	130		µg/Kg	1	8/16/2011 03:53 PM
tert-Butylbenzene	ND	6.4		µg/Kg	1	8/16/2011 03:53 PM
Tetrachloroethene	ND	6.4		µg/Kg	1	8/16/2011 03:53 PM
Toluene	ND	6.4		µg/Kg	1	8/16/2011 03:53 PM
trans-1,2-Dichloroethene	ND	6.4		µg/Kg	1	8/16/2011 03:53 PM
Trichloroethene	ND	6.4		µg/Kg	1	8/16/2011 03:53 PM
Trichlorofluoromethane	ND	6.4		µg/Kg	1	8/16/2011 03:53 PM
Vinyl chloride	ND	6.4		µg/Kg	1	8/16/2011 03:53 PM
Surr: 1,2-Dichloroethane-d4	92.5	65-141		%REC	1	8/16/2011 03:53 PM
Surr: 4-Bromofluorobenzene	88.3	57-134		%REC	1	8/16/2011 03:53 PM
Surr: Dibromofluoromethane	96.4	70-128		%REC	1	8/16/2011 03:53 PM
Surr: Toluene-d8	92.6	72-123		%REC	1	8/16/2011 03:53 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

Advanced Technology Laboratories

ANALYTICAL RESULTS

Print Date: *23-Aug-11*

CLIENT:	Mactec	**Client Sample ID:**	E-132-30'
Lab Order:	119413	**Collection Date:**	8/12/2011 10:20:00 AM
Project:		**Matrix:**	SOIL
Lab ID:	119413-005E		

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
GASOLINE RANGE ORGANICS BY GC/FID						
		EPA 8015B(M)				
RunID: GC2_110816A	QC Batch: E11VS300			PrepDate: 8/12/2011		Analyst: **TP**
GRO	ND	1.1		mg/Kg	1	8/16/2011 03:23 PM
Surr: Bromofluorobenzene (FID)	95.6	51-161		%REC	1	8/16/2011 03:23 PM

Qualifiers:	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
	S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
	DO	Surrogate Diluted Out		

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Figure C-1.14

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ANALYTICAL RESULTS

Print Date: *23-Aug-11*

CLIENT: Mactec
Lab Order: 119413
Project:
Lab ID: 119413-006A

Client Sample ID: E-132-35'
Collection Date: 8/12/2011 10:35:00 AM
Matrix: SOIL

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
ICP METALS						
	EPA 3050B			**EPA 6010B**		
RunID: ICP8_110817B	QC Batch: 74967			PrepDate:	8/17/2011	Analyst: **IL**
Antimony	ND	2.0		mg/Kg	1	8/17/2011 01:49 PM
Arsenic	1.3	1.0		mg/Kg	1	8/17/2011 01:49 PM
Barium	59	1.0		mg/Kg	1	8/17/2011 01:49 PM
Beryllium	ND	1.0		mg/Kg	1	8/17/2011 01:49 PM
Cadmium	ND	1.0		mg/Kg	1	8/17/2011 01:49 PM
Chromium	19	1.0		mg/Kg	1	8/17/2011 01:49 PM
Cobalt	5.4	1.0		mg/Kg	1	8/17/2011 01:49 PM
Copper	14	2.0		mg/Kg	1	8/17/2011 01:49 PM
Lead	3.0	1.0		mg/Kg	1	8/17/2011 01:49 PM
Molybdenum	ND	1.0		mg/Kg	1	8/17/2011 01:49 PM
Nickel	17	1.0		mg/Kg	1	8/17/2011 01:49 PM
Selenium	ND	1.0		mg/Kg	1	8/17/2011 01:49 PM
Silver	ND	1.0		mg/Kg	1	8/17/2011 01:49 PM
Thallium	ND	1.0		mg/Kg	1	8/17/2011 01:49 PM
Vanadium	30	1.0		mg/Kg	1	8/17/2011 01:49 PM
Zinc	50	1.0		mg/Kg	1	8/17/2011 01:49 PM
MERCURY BY COLD VAPOR TECHNIQUE						
				EPA 7471A		
RunID: AA1_110817B	QC Batch: 74969			PrepDate:	8/17/2011	Analyst: **VV**
Mercury	ND	0.10		mg/Kg	1	8/17/2011 05:48 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

Advanced Technology Laboratories
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Figure C-1.15

CLIENT: Mactec
Work Order: 119413
Project:

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_S

Sample ID: **MB-74967** SampType: **MBLK** TestCode: **6010_S** Units: **mg/Kg** Prep Date: **8/17/2011** RunNo: **135882**
Client ID: **PBS** Batch ID: **74967** TestNo: **EPA 6010B** **EPA 3050B** Analysis Date: **8/17/2011** SeqNo: **2226294**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Antimony	ND	2.0									
Arsenic	ND	1.0									
Barium	ND	1.0									
Beryllium	ND	1.0									
Cadmium	ND	1.0									
Chromium	ND	1.0									
Cobalt	ND	1.0									
Copper	ND	2.0									
Lead	ND	1.0									
Molybdenum	ND	1.0									
Nickel	ND	1.0									
Selenium	ND	1.0									
Silver	ND	1.0									
Thallium	ND	1.0									
Vanadium	ND	1.0									
Zinc	ND	1.0									

Sample ID: **LCS-74967** SampType: **LCS** TestCode: **6010_S** Units: **mg/Kg** Prep Date: **8/17/2011** RunNo: **135882**
Client ID: **LCSS** Batch ID: **74967** TestNo: **EPA 6010B** **EPA 3050B** Analysis Date: **8/17/2011** SeqNo: **2226295**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Antimony	47.649	2.0	50.00	0	95.3	80	120				
Arsenic	47.241	1.0	50.00	0	94.5	80	120				
Barium	48.799	1.0	50.00	0	97.6	80	120				
Beryllium	48.168	1.0	50.00	0	96.3	80	120				
Cadmium	47.486	1.0	50.00	0	95.0	80	120				
Chromium	44.996	1.0	50.00	0	90.0	80	120				
Cobalt	48.955	1.0	50.00	0	97.9	80	120				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

Figure C-1.16

CLIENT: Mactec
Work Order: 119413
Project:

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_S

Sample ID: **LCS-74967** SampType: **LCS** TestCode: **6010_S** Units: **mg/Kg** Prep Date: **8/17/2011** RunNo: **135882**
Client ID: **LCSS** Batch ID: **74967** TestNo: **EPA 6010B** **EPA 3050B** Analysis Date: **8/17/2011** SeqNo: **2226295**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Copper	48.807	2.0	50.00	0	97.6	80	120				
Lead	48.948	1.0	50.00	0	97.9	80	120				
Molybdenum	51.030	1.0	50.00	0	102	80	120				
Nickel	47.829	1.0	50.00	0	95.7	80	120				
Selenium	45.544	1.0	50.00	0	91.1	80	120				
Silver	48.144	1.0	50.00	0	96.3	80	120				
Thallium	47.070	1.0	50.00	0	94.1	80	120				
Vanadium	48.442	1.0	50.00	0	96.9	80	120				
Zinc	48.690	1.0	50.00	0	97.4	80	120				

Sample ID: **119297-015A-MS** SampType: **MS** TestCode: **6010_S** Units: **mg/Kg** Prep Date: **8/17/2011** RunNo: **135882**
Client ID: **ZZZZZZ** Batch ID: **74967** TestNo: **EPA 6010B** **EPA 3050B** Analysis Date: **8/17/2011** SeqNo: **2226297**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Antimony	94.945	2.0	125.0	0.2939	75.7	32	105				
Arsenic	102.682	1.0	125.0	1.383	81.0	49	106				
Barium	162.464	1.0	125.0	59.09	82.7	31	133				
Beryllium	103.496	1.0	125.0	0	82.8	56	106				
Cadmium	97.177	1.0	125.0	0.8498	77.1	51	103				
Chromium	106.839	1.0	125.0	8.448	78.7	45	114				
Cobalt	109.113	1.0	125.0	3.916	84.2	52	106				
Copper	118.548	2.0	125.0	6.663	89.5	54	125				
Lead	106.293	1.0	125.0	4.707	81.3	34	126				
Molybdenum	105.089	1.0	125.0	0.5549	83.6	54	106				
Nickel	111.331	1.0	125.0	9.124	81.8	45	111				
Selenium	98.364	1.0	125.0	0	78.7	47	104				
Silver	105.481	1.0	125.0	0	84.4	56	112				
Thallium	97.613	1.0	125.0	0	78.1	46	101				
Vanadium	122.770	1.0	125.0	17.10	84.5	54	114				
Zinc	134.540	1.0	125.0	34.57	80.0	28	125				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: Mactec
Work Order: 119413
Project:

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_S

Sample ID: **119297-015A-MSD** SampType: **MSD** TestCode: **6010_S** Units: **mg/Kg** Prep Date: **8/17/2011** RunNo: **135882**
Client ID: **ZZZZZZ** Batch ID: **74967** TestNo: **EPA 6010B** **EPA 3050B** Analysis Date: **8/17/2011** SeqNo: **2226298**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Antimony	93.745	2.0	125.0	0.2939	74.8	32	105	94.95	1.27	20	
Arsenic	101.068	1.0	125.0	1.383	79.7	49	106	102.7	1.58	20	
Barium	163.866	1.0	125.0	59.09	83.8	31	133	162.5	0.860	20	
Beryllium	100.542	1.0	125.0	0	80.4	56	106	103.5	2.90	20	
Cadmium	96.231	1.0	125.0	0.8498	76.3	51	103	97.18	0.978	20	
Chromium	105.721	1.0	125.0	8.448	77.8	45	114	106.8	1.05	20	
Cobalt	108.061	1.0	125.0	3.916	83.3	52	106	109.1	0.968	20	
Copper	117.823	2.0	125.0	6.663	88.9	54	125	118.5	0.613	20	
Lead	104.105	1.0	125.0	4.707	79.5	34	126	106.3	2.08	20	
Molybdenum	105.724	1.0	125.0	0.5549	84.1	54	106	105.1	0.603	20	
Nickel	109.941	1.0	125.0	9.124	80.7	45	111	111.3	1.26	20	
Selenium	96.995	1.0	125.0	0	77.6	47	104	98.36	1.40	20	
Silver	104.433	1.0	125.0	0	83.5	56	112	105.5	0.998	20	
Thallium	95.917	1.0	125.0	0	76.7	46	101	97.61	1.75	20	
Vanadium	122.413	1.0	125.0	17.10	84.3	54	114	122.8	0.291	20	
Zinc	132.354	1.0	125.0	34.57	78.2	28	125	134.5	1.64	20	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

Figure C-1.18

CLIENT: Mactec
Work Order: 119413
Project:

ANALYTICAL QC SUMMARY REPORT

TestCode: 7471_S

Sample ID: **MB-74969**	SampType: **MBLK**	TestCode: **7471_S**	Units: **mg/Kg**	Prep Date: **8/17/2011**	RunNo: **135903**
Client ID: **PBS**	Batch ID: **74969**	TestNo: **EPA 7471A**		Analysis Date: **8/17/2011**	SeqNo: **2226838**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury	ND	0.10									

Sample ID: **LCS-74969**	SampType: **LCS**	TestCode: **7471_S**	Units: **mg/Kg**	Prep Date: **8/17/2011**	RunNo: **135903**
Client ID: **LCSS**	Batch ID: **74969**	TestNo: **EPA 7471A**		Analysis Date: **8/17/2011**	SeqNo: **2226839**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury	0.817	0.10	0.8300	0	98.4	80	120				

Sample ID: **119415-020A-MS**	SampType: **MS**	TestCode: **7471_S**	Units: **mg/Kg**	Prep Date: **8/17/2011**	RunNo: **135903**
Client ID: **ZZZZZZ**	Batch ID: **74969**	TestNo: **EPA 7471A**		Analysis Date: **8/17/2011**	SeqNo: **2226840**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury	0.793	0.10	0.8300	0.05109	89.3	70	130				

Sample ID: **119415-020A-MSD**	SampType: **MSD**	TestCode: **7471_S**	Units: **mg/Kg**	Prep Date: **8/17/2011**	RunNo: **135903**
Client ID: **ZZZZZZ**	Batch ID: **74969**	TestNo: **EPA 7471A**		Analysis Date: **8/17/2011**	SeqNo: **2226841**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury	0.835	0.10	0.8300	0.05109	94.5	70	130	0.7926	5.26	20	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

Figure C-1.19

CLIENT: Mactec
Work Order: 119413
Project:

ANALYTICAL QC SUMMARY REPORT

TestCode: 8015_S_DM H

Sample ID: **MB-74985**	SampType: **MBLK**	TestCode: **8015_S_DM H**	Units: **mg/Kg**	Prep Date: **8/17/2011**	RunNo: **135896**
Client ID: **PBS**	Batch ID: **74985**	TestNo: **EPA 8015B(M**	**LUFT**	Analysis Date: **8/17/2011**	SeqNo: **2226605**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
DRO	ND	10									
ORO	ND	10									
Surr: p-Terphenyl	72.230		80.00		90.3	63	152				

Sample ID: **LCS-74985**	SampType: **LCS**	TestCode: **8015_S_DM H**	Units: **mg/Kg**	Prep Date: **8/17/2011**	RunNo: **135896**
Client ID: **LCSS**	Batch ID: **74985**	TestNo: **EPA 8015B(M**	**LUFT**	Analysis Date: **8/17/2011**	SeqNo: **2226606**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
DRO	911.880	10	1000	0	91.2	76	139				
Surr: p-Terphenyl	87.200		80.00		109	63	152				

Sample ID: **119413-002AMS**	SampType: **MS**	TestCode: **8015_S_DM H**	Units: **mg/Kg**	Prep Date: **8/17/2011**	RunNo: **135896**
Client ID: **E-132-15'**	Batch ID: **74985**	TestNo: **EPA 8015B(M**	**LUFT**	Analysis Date: **8/17/2011**	SeqNo: **2226607**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
DRO	838.400	10	1000	0	83.8	60	158				
Surr: p-Terphenyl	81.050		80.00		101	63	152				

Sample ID: **119413-002AMSD**	SampType: **MSD**	TestCode: **8015_S_DM H**	Units: **mg/Kg**	Prep Date: **8/17/2011**	RunNo: **135896**
Client ID: **E-132-15'**	Batch ID: **74985**	TestNo: **EPA 8015B(M**	**LUFT**	Analysis Date: **8/17/2011**	SeqNo: **2226608**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
DRO	935.690	10	1000	0	93.6	60	158	838.4	11.0	20	
Surr: p-Terphenyl	77.650		80.00		97.1	63	152		0	0	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: Mactec
Work Order: 119413
Project:

ANALYTICAL QC SUMMARY REPORT

TestCode: 8015_S_G 5035P

Sample ID: **E110816LC1**	SampType: **LCS**	TestCode: **8015_S_G 50**	Units: **mg/Kg**	Prep Date:	RunNo: **135875**
Client ID: **LCSS**	Batch ID: **E11VS300**	TestNo: **EPA 8015B(M**		Analysis Date: **8/16/2011**	SeqNo: **2227661**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
GRO	5.016	1.0	5.000	0	100	70	130				
Surr: Bromofluorobenzene (FID)	114.972		100.0		115	51	161				

Sample ID: **E110816MB1MS**	SampType: **MS**	TestCode: **8015_S_G 50**	Units: **mg/Kg**	Prep Date:	RunNo: **135875**
Client ID: **ZZZZZZ**	Batch ID: **E11VS300**	TestNo: **EPA 8015B(M**		Analysis Date: **8/16/2011**	SeqNo: **2227662**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
GRO	4.927	1.0	5.000	0	98.5	41	146				
Surr: Bromofluorobenzene (FID)	104.726		100.0		105	51	161				

Sample ID: **E110816MB1MSD**	SampType: **MSD**	TestCode: **8015_S_G 50**	Units: **mg/Kg**	Prep Date:	RunNo: **135875**
Client ID: **ZZZZZZ**	Batch ID: **E11VS300**	TestNo: **EPA 8015B(M**		Analysis Date: **8/16/2011**	SeqNo: **2227663**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
GRO	4.786	1.0	5.000	0	95.7	41	146	4.927	2.90	20	
Surr: Bromofluorobenzene (FID)	114.614		100.0		115	51	161		0	0	

Sample ID: **E110816MB1**	SampType: **MBLK**	TestCode: **8015_S_G 50**	Units: **mg/Kg**	Prep Date:	RunNo: **135875**
Client ID: **PBS**	Batch ID: **E11VS300**	TestNo: **EPA 8015B(M**		Analysis Date: **8/16/2011**	SeqNo: **2227664**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
GRO	ND	1.0									
Surr: Bromofluorobenzene (FID)	81.205		100.0		81.2	51	161				

Sample ID: **119407-003AMS**	SampType: **MS**	TestCode: **8015_S_G 50**	Units: **mg/Kg**	Prep Date:	RunNo: **135875**
Client ID: **ZZZZZZ**	Batch ID: **E11VS300**	TestNo: **EPA 8015B(M**		Analysis Date: **8/16/2011**	SeqNo: **2227668**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
GRO	1.992	1.0	5.000	0.5100	29.6	41	146				S

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

Figure C-1.21

CLIENT: Mactec
Work Order: 119413
Project:

ANALYTICAL QC SUMMARY REPORT

TestCode: 8015_S_G 5035P

Sample ID: **119407-003AMS**	SampType: **MS**	TestCode: **8015_S_G 50**	Units: **mg/Kg**	Prep Date:	RunNo: **135875**
Client ID: **ZZZZZZ**	Batch ID: **E11VS300**	TestNo: **EPA 8015B(M**		Analysis Date: **8/16/2011**	SeqNo: **2227668**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Surr: Bromofluorobenzene (FID)	94.440		100.0		94.4	51	161				

Sample ID: **119407-003AMSD**	SampType: **MSD**	TestCode: **8015_S_G 50**	Units: **mg/Kg**	Prep Date:	RunNo: **135875**
Client ID: **ZZZZZZ**	Batch ID: **E11VS300**	TestNo: **EPA 8015B(M**		Analysis Date: **8/16/2011**	SeqNo: **2227669**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
GRO	1.187	1.0	5.000	0.5100	13.5	41	146	1.992	50.6	20	SR
Surr: Bromofluorobenzene (FID)	84.697		100.0		84.7	51	161		0	0	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: Mactec
Work Order: 119413
Project:

ANALYTICAL QC SUMMARY REPORT

TestCode: 8260_S_5035

Sample ID: **T110816LCS1** SampType: **LCS** TestCode: **8260_S_5035** Units: **µg/Kg** Prep Date: RunNo: **135848**
Client ID: **LCSS** Batch ID: **T11VS150** TestNo: **EPA 8260B** Analysis Date: **8/16/2011** SeqNo: **2226892**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
1,1-Dichloroethene	44.550	5.0	50.00	0	89.1	70	130				
Benzene	95.820	5.0	100.0	0	95.8	70	130				
Chlorobenzene	54.700	5.0	50.00	0	109	70	130				
MTBE	50.080	5.0	50.00	0	100	70	130				
Toluene	100.220	5.0	100.0	0	100	70	130				
Trichloroethene	51.650	5.0	50.00	0	103	70	130				
Surr: 1,2-Dichloroethane-d4	43.170		50.00		86.3	65	141				
Surr: 4-Bromofluorobenzene	44.400		50.00		88.8	57	134				
Surr: Dibromofluoromethane	49.740		50.00		99.5	70	128				
Surr: Toluene-d8	47.910		50.00		95.8	72	123				

Sample ID: **T110816MB1MS** SampType: **MS** TestCode: **8260_S_5035** Units: **µg/Kg** Prep Date: RunNo: **135848**
Client ID: **ZZZZZZ** Batch ID: **T11VS150** TestNo: **EPA 8260B** Analysis Date: **8/16/2011** SeqNo: **2226894**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
1,1-Dichloroethene	39.520	5.0	50.00	0	79.0	70	130				
Benzene	92.080	5.0	100.0	0	92.1	70	130				
Chlorobenzene	50.640	5.0	50.00	0	101	70	130				
MTBE	45.410	5.0	50.00	0	90.8	70	130				
Toluene	97.810	5.0	100.0	0	97.8	70	130				
Trichloroethene	48.590	5.0	50.00	0	97.2	70	130				
Surr: 1,2-Dichloroethane-d4	40.290		50.00		80.6	65	141				
Surr: 4-Bromofluorobenzene	42.850		50.00		85.7	57	134				
Surr: Dibromofluoromethane	45.370		50.00		90.7	70	128				
Surr: Toluene-d8	46.720		50.00		93.4	72	123				

Sample ID: **T110816MB1MSD** SampType: **MSD** TestCode: **8260_S_5035** Units: **µg/Kg** Prep Date: RunNo: **135848**
Client ID: **ZZZZZZ** Batch ID: **T11VS150** TestNo: **EPA 8260B** Analysis Date: **8/16/2011** SeqNo: **2226895**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: Mactec
Work Order: 119413
Project:

ANALYTICAL QC SUMMARY REPORT

TestCode: 8260_S_5035

Sample ID: **T110816MB1MSD** SampType: **MSD** TestCode: **8260_S_5035** Units: **µg/Kg** Prep Date: RunNo: **135848**
Client ID: **ZZZZZZ** Batch ID: **T11VS150** TestNo: **EPA 8260B** Analysis Date: **8/16/2011** SeqNo: **2226895**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
1,1-Dichloroethene	41.590	5.0	50.00	0	83.2	70	130	39.52	5.10	20	
Benzene	94.680	5.0	100.0	0	94.7	70	130	92.08	2.78	20	
Chlorobenzene	53.610	5.0	50.00	0	107	70	130	50.64	5.70	20	
MTBE	49.420	5.0	50.00	0	98.8	70	130	45.41	8.46	20	
Toluene	100.910	5.0	100.0	0	101	70	130	97.81	3.12	20	
Trichloroethene	49.200	5.0	50.00	0	98.4	70	130	48.59	1.25	20	
Surr: 1,2-Dichloroethane-d4	41.900		50.00		83.8	65	141		0	0	
Surr: 4-Bromofluorobenzene	43.200		50.00		86.4	57	134		0	0	
Surr: Dibromofluoromethane	46.670		50.00		93.3	70	128		0	0	
Surr: Toluene-d8	46.980		50.00		94.0	72	123		0	0	

Sample ID: **T110816MB1** SampType: **MBLK** TestCode: **8260_S_5035** Units: **µg/Kg** Prep Date: RunNo: **135848**
Client ID: **PBS** Batch ID: **T11VS150** TestNo: **EPA 8260B** Analysis Date: **8/16/2011** SeqNo: **2226896**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
1,1,1,2-Tetrachloroethane	ND	5.0									
1,1,1-Trichloroethane	ND	5.0									
1,1,2,2-Tetrachloroethane	ND	5.0									
1,1,2-Trichloroethane	ND	5.0									
1,1-Dichloroethane	ND	5.0									
1,1-Dichloroethene	ND	5.0									
1,1-Dichloropropene	ND	5.0									
1,2,3-Trichlorobenzene	ND	5.0									
1,2,3-Trichloropropane	ND	5.0									
1,2,4-Trichlorobenzene	ND	5.0									
1,2,4-Trimethylbenzene	ND	5.0									
1,2-Dibromo-3-chloropropane	ND	10									
1,2-Dibromoethane	ND	5.0									
1,2-Dichlorobenzene	ND	5.0									
1,2-Dichloroethane	ND	5.0									

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: Mactec
Work Order: 119413
Project:

ANALYTICAL QC SUMMARY REPORT

TestCode: 8260_S_5035

Sample ID: **T110816MB1** SampType: **MBLK** TestCode: **8260_S_5035** Units: **µg/Kg** Prep Date: RunNo: **135848**
Client ID: **PBS** Batch ID: **T11VS150** TestNo: **EPA 8260B** Analysis Date: **8/16/2011** SeqNo: **2226896**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
1,2-Dichloropropane	ND	5.0									
1,3,5-Trimethylbenzene	ND	5.0									
1,3-Dichlorobenzene	ND	5.0									
1,3-Dichloropropane	ND	5.0									
1,4-Dichlorobenzene	ND	5.0									
2,2-Dichloropropane	ND	5.0									
2-Chlorotoluene	ND	5.0									
4-Chlorotoluene	ND	5.0									
4-Isopropyltoluene	ND	5.0									
Benzene	ND	5.0									
Bromobenzene	ND	5.0									
Bromodichloromethane	ND	5.0									
Bromoform	ND	5.0									
Bromomethane	ND	5.0									
Carbon tetrachloride	ND	5.0									
Chlorobenzene	ND	5.0									
Chloroethane	ND	5.0									
Chloroform	ND	5.0									
Chloromethane	ND	5.0									
cis-1,2-Dichloroethene	ND	5.0									
cis-1,3-Dichloropropene	ND	5.0									
Di-isopropyl ether	ND	5.0									
Dibromochloromethane	ND	5.0									
Dibromomethane	ND	5.0									
Dichlorodifluoromethane	ND	5.0									
Ethyl Tert-butyl ether	ND	5.0									
Ethylbenzene	ND	5.0									
Hexachlorobutadiene	ND	5.0									
Isopropylbenzene	ND	5.0									
m,p-Xylene	ND	10									

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: Mactec
Work Order: 119413
Project:

ANALYTICAL QC SUMMARY REPORT

TestCode: 8260_S_5035

Sample ID: **T110816MB1** SampType: **MBLK** TestCode: **8260_S_5035** Units: **µg/Kg** Prep Date: RunNo: **135848**
Client ID: **PBS** Batch ID: **T11VS150** TestNo: **EPA 8260B** Analysis Date: **8/16/2011** SeqNo: **2226896**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Methylene chloride	ND	5.0									
MTBE	ND	5.0									
n-Butylbenzene	ND	5.0									
n-Propylbenzene	ND	5.0									
Naphthalene	ND	5.0									
o-Xylene	ND	5.0									
sec-Butylbenzene	ND	5.0									
Styrene	ND	5.0									
Tert-amyl methyl ether	ND	5.0									
Tert-Butanol	ND	100									
tert-Butylbenzene	ND	5.0									
Tetrachloroethene	ND	5.0									
Toluene	ND	5.0									
trans-1,2-Dichloroethene	ND	5.0									
Trichloroethene	ND	5.0									
Trichlorofluoromethane	ND	5.0									
Vinyl chloride	ND	5.0									
Surr: 1,2-Dichloroethane-d4	40.880		50.00		81.8	65	141				
Surr: 4-Bromofluorobenzene	42.440		50.00		84.9	57	134				
Surr: Dibromofluoromethane	45.750		50.00		91.5	70	128				
Surr: Toluene-d8	47.550		50.00		95.1	72	123				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: Mactec
Work Order: 119413
Project:

ANALYTICAL QC SUMMARY REPORT

TestCode: 8270_S_FULL

Sample ID: **MB-75003** SampType: **MBLK** TestCode: **8270_S_FULL** Units: **µg/Kg** Prep Date: **8/18/2011** RunNo: **135998**
Client ID: **PBS** Batch ID: **75003** TestNo: **EPA 8270C** **EPA 3550B** Analysis Date: **8/22/2011** SeqNo: **2228550**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
1,2,4-Trichlorobenzene	ND	330									
1,2-Dichlorobenzene	ND	330									
1,3-Dichlorobenzene	ND	330									
1,4-Dichlorobenzene	ND	330									
2,4,5-Trichlorophenol	ND	330									
2,4,6-Trichlorophenol	ND	330									
2,4-Dichlorophenol	ND	1600									
2,4-Dimethylphenol	ND	330									
2,4-Dinitrophenol	ND	1600									
2,4-Dinitrotoluene	ND	330									
2,6-Dinitrotoluene	ND	330									
2-Chloronaphthalene	ND	330									
2-Chlorophenol	ND	330									
2-Methylnaphthalene	ND	330									
2-Methylphenol	ND	330									
2-Nitroaniline	ND	1600									
2-Nitrophenol	ND	330									
3,3´-Dichlorobenzidine	ND	660									
3-Nitroaniline	ND	1600									
4,6-Dinitro-2-methylphenol	ND	1600									
4-Bromophenyl-phenylether	ND	330									
4-Chloro-3-methylphenol	ND	660									
4-Chloroaniline	ND	660									
4-Chlorophenyl-phenylether	ND	330									
4-Methylphenol	ND	330									
4-Nitroaniline	ND	1600									
4-Nitrophenol	ND	1600									
Acenaphthene	ND	330									
Acenaphthylene	ND	330									
Anthracene	ND	330									

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: Mactec
Work Order: 119413
Project:

ANALYTICAL QC SUMMARY REPORT

TestCode: 8270_S_FULL

Sample ID: **MB-75003** SampType: **MBLK** TestCode: **8270_S_FULL** Units: **µg/Kg** Prep Date: **8/18/2011** RunNo: **135998**
Client ID: **PBS** Batch ID: **75003** TestNo: **EPA 8270C** **EPA 3550B** Analysis Date: **8/22/2011** SeqNo: **2228550**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benzidine (M)	ND	1600									
Benzo(a)anthracene	ND	330									
Benzo(a)pyrene	ND	330									
Benzo(b)fluoranthene	ND	330									
Benzo(g,h,i)perylene	ND	330									
Benzo(k)fluoranthene	ND	330									
Benzoic acid	ND	1600									
Benzyl alcohol	ND	660									
Bis(2-chloroethoxy)methane	ND	330									
Bis(2-chloroethyl)ether	ND	330									
Bis(2-chloroisopropyl)ether	ND	330									
Bis(2-ethylhexyl)phthalate	ND	330									
Butylbenzylphthalate	ND	330									
Chrysene	ND	330									
Di-n-butylphthalate	ND	330									
Di-n-octylphthalate	ND	330									
Dibenz(a,h)anthracene	ND	330									
Dibenzofuran	ND	330									
Diethylphthalate	ND	330									
Dimethylphthalate	ND	330									
Fluoranthene	ND	330									
Fluorene	ND	330									
Hexachlorobenzene	ND	330									
Hexachlorobutadiene	ND	660									
Hexachlorocyclopentadiene	ND	660									
Hexachloroethane	ND	330									
Indeno(1,2,3-cd)pyrene	ND	330									
Isophorone	ND	330									
N-Nitrosodi-n-propylamine	ND	330									
N-Nitrosodiphenylamine	ND	330									

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: Mactec
Work Order: 119413
Project:

ANALYTICAL QC SUMMARY REPORT

TestCode: 8270_S_FULL

Sample ID: **MB-75003**	SampType: **MBLK**	TestCode: **8270_S_FULL**	Units: **µg/Kg**	Prep Date: **8/18/2011**	RunNo: **135998**
Client ID: **PBS**	Batch ID: **75003**	TestNo: **EPA 8270C**	**EPA 3550B**	Analysis Date: **8/22/2011**	SeqNo: **2228550**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Naphthalene	ND	330									
Nitrobenzene	ND	330									
Pentachlorophenol	ND	1600									
Phenanthrene	ND	330									
Phenol	ND	330									
Pyrene	ND	330									
Surr: 1,2-Dichlorobenzene-d4	2527.667		3330		75.9	45	105				
Surr: 2,4,6-Tribromophenol	2311.000		3330		69.4	41	129				
Surr: 2-Chlorophenol-d4	2615.667		3330		78.5	55	108				
Surr: 2-Fluorobiphenyl	2663.333		3330		80.0	56	114				
Surr: 2-Fluorophenol	2691.000		3330		80.8	50	108				
Surr: 4-Terphenyl-d14	2636.667		3330		79.2	59	141				
Surr: Nitrobenzene-d5	2642.000		3330		79.3	45	114				
Surr: Phenol-d5	2789.667		3330		83.8	46	118				

Sample ID: **LCS-75003**	SampType: **LCS**	TestCode: **8270_S_FULL**	Units: **µg/Kg**	Prep Date: **8/18/2011**	RunNo: **135998**
Client ID: **LCSS**	Batch ID: **75003**	TestNo: **EPA 8270C**	**EPA 3550B**	Analysis Date: **8/22/2011**	SeqNo: **2228551**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
1,2,4-Trichlorobenzene	2682.000	330	3330	0	80.5	67	107				
1,4-Dichlorobenzene	2667.333	330	3330	0	80.1	64	99				
2,4-Dinitrotoluene	3240.000	330	3330	0	97.3	81	122				
2-Chlorophenol	2624.333	330	3330	0	78.8	62	112				
4-Chloro-3-methylphenol	2986.000	660	3330	0	89.7	64	138				
4-Nitrophenol	3165.667	1600	3330	0	95.1	60	142				
Acenaphthene	2966.667	330	3330	0	89.1	70	116				
N-Nitrosodi-n-propylamine	2797.000	330	3330	0	84.0	73	115				
Pentachlorophenol	2518.333	1600	3330	0	75.6	59	135				
Phenol	2859.667	330	3330	0	85.9	61	120				
Pyrene	3235.000	330	3330	0	97.1	75	117				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

Figure C-1.29

CLIENT: Mactec
Work Order: 119413
Project:

ANALYTICAL QC SUMMARY REPORT

TestCode: 8270_S_FULL

Sample ID: **LCS-75003** SampType: **LCS** TestCode: **8270_S_FULL** Units: **µg/Kg** Prep Date: **8/18/2011** RunNo: **135998**
Client ID: **LCSS** Batch ID: **75003** TestNo: **EPA 8270C** **EPA 3550B** Analysis Date: **8/22/2011** SeqNo: **2228551**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Surr: 1,2-Dichlorobenzene-d4	2724.667		3330		81.8	45	105				
Surr: 2,4,6-Tribromophenol	3048.333		3330		91.5	41	129				
Surr: 2-Chlorophenol-d4	2906.667		3330		87.3	55	108				
Surr: 2-Fluorobiphenyl	2793.667		3330		83.9	56	114				
Surr: 2-Fluorophenol	2917.000		3330		87.6	50	108				
Surr: 4-Terphenyl-d14	2573.667		3330		77.3	59	141				
Surr: Nitrobenzene-d5	2943.333		3330		88.4	45	114				
Surr: Phenol-d5	3026.667		3330		90.9	46	118				

Sample ID: **119413-002AMS** SampType: **MS** TestCode: **8270_S_FULL** Units: **µg/Kg** Prep Date: **8/18/2011** RunNo: **135998**
Client ID: **E-132-15'** Batch ID: **75003** TestNo: **EPA 8270C** **EPA 3550B** Analysis Date: **8/22/2011** SeqNo: **2228552**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
1,2,4-Trichlorobenzene	2604.000	330	3330	0	78.2	62	109				
1,4-Dichlorobenzene	2535.667	330	3330	0	76.1	57	99				
2,4-Dinitrotoluene	3308.000	330	3330	0	99.3	76	126				
2-Chlorophenol	2547.667	330	3330	0	76.5	52	120				
4-Chloro-3-methylphenol	2943.000	660	3330	0	88.4	63	137				
4-Nitrophenol	3234.000	1600	3330	0	97.1	52	144				
Acenaphthene	2985.000	330	3330	0	89.6	61	121				
N-Nitrosodi-n-propylamine	2783.667	330	3330	0	83.6	67	116				
Pentachlorophenol	2647.000	1600	3330	0	79.5	47	143				
Phenol	2768.333	330	3330	0	83.1	54	126				
Pyrene	3316.333	330	3330	0	99.6	68	121				
Surr: 1,2-Dichlorobenzene-d4	2622.667		3330		78.8	45	105				
Surr: 2,4,6-Tribromophenol	3141.000		3330		94.3	41	129				
Surr: 2-Chlorophenol-d4	2801.667		3330		84.1	55	108				
Surr: 2-Fluorobiphenyl	2764.667		3330		83.0	56	114				
Surr: 2-Fluorophenol	2726.333		3330		81.9	50	108				
Surr: 4-Terphenyl-d14	2606.333		3330		78.3	59	141				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: Mactec
Work Order: 119413
Project:

ANALYTICAL QC SUMMARY REPORT

TestCode: 8270_S_FULL

Sample ID: **119413-002AMS**	SampType: **MS**	TestCode: **8270_S_FULL**	Units: **µg/Kg**	Prep Date: **8/18/2011**	RunNo: **135998**
Client ID: **E-132-15'**	Batch ID: **75003**	TestNo: **EPA 8270C**	**EPA 3550B**	Analysis Date: **8/22/2011**	SeqNo: **2228552**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Surr: Nitrobenzene-d5	2821.667		3330		84.7	45	114				
Surr: Phenol-d5	2919.000		3330		87.7	46	118				

Sample ID: **119413-002AMSD**	SampType: **MSD**	TestCode: **8270_S_FULL**	Units: **µg/Kg**	Prep Date: **8/18/2011**	RunNo: **135998**
Client ID: **E-132-15'**	Batch ID: **75003**	TestNo: **EPA 8270C**	**EPA 3550B**	Analysis Date: **8/22/2011**	SeqNo: **2228553**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
1,2,4-Trichlorobenzene	2595.667	330	3330	0	77.9	62	109	2604	0.321	20	
1,4-Dichlorobenzene	2481.000	330	3330	0	74.5	57	99	2536	2.18	20	
2,4-Dinitrotoluene	3426.333	330	3330	0	103	76	126	3308	3.51	20	
2-Chlorophenol	2462.333	330	3330	0	73.9	52	120	2548	3.41	20	
4-Chloro-3-methylphenol	3033.000	660	3330	0	91.1	63	137	2943	3.01	20	
4-Nitrophenol	3432.333	1600	3330	0	103	52	144	3234	5.95	20	
Acenaphthene	3110.667	330	3330	0	93.4	61	121	2985	4.12	20	
N-Nitrosodi-n-propylamine	2785.333	330	3330	0	83.6	67	116	2784	0.0599	20	
Pentachlorophenol	2587.667	1600	3330	0	77.7	47	143	2647	2.27	20	
Phenol	2720.000	330	3330	0	81.7	54	126	2768	1.76	20	
Pyrene	3415.000	330	3330	0	103	68	121	3316	2.93	20	
Surr: 1,2-Dichlorobenzene-d4	2563.333		3330		77.0	45	105		0	0	
Surr: 2,4,6-Tribromophenol	3262.000		3330		98.0	41	129		0	0	
Surr: 2-Chlorophenol-d4	2701.667		3330		81.1	55	108		0	0	
Surr: 2-Fluorobiphenyl	2826.000		3330		84.9	56	114		0	0	
Surr: 2-Fluorophenol	2654.667		3330		79.7	50	108		0	0	
Surr: 4-Terphenyl-d14	2648.667		3330		79.5	59	141		0	0	
Surr: Nitrobenzene-d5	2817.667		3330		84.6	45	114		0	0	
Surr: Phenol-d5	2830.667		3330		85.0	46	118		0	0	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CHAIN OF CUSTODY RECORD

Pg 1 of 1

ADVANCED TECHNOLOGY LABORATORIES
3275 Walnut Ave., Signal Hill, CA 90755
Tel: (562) 989-4045 • Fax: (562) 989-4040

P.O.#: 2011063774 Quote #: 1476
Logged By: Date: 8/16/11
NOTE: Please include your Quote No. to ensure proper pricing of your project.

FOR LABORATORY USE ONLY:

Method of Transport: ☐ Client ☑ ATL ☐ FedEx ☐ OnTrac ☐ GSO ☐ Other:

Sample Condition Upon Receipt:
1. CHILLED 4.7 Y ☐ N ☐ 4. SEALED Y ☐ N ☑
2. HEADSPACE (VOA) Y ☐ N/A ☐ 5. # OF SPLS MATCH COC Y ☑ N ☐
3. CONTAINER INTACT Y ☑ N ☐ 6. PRESERVED Y ☑ N ☑

Client: MACTEC
Attn: Matt Fraychineaud
Address: 5628 E. Slauson Ave
City LA State CA Zip Code 90040
TEL: 323-889-5300
FAX:

Project Name: Project #: Sampler: Paul Cane (Printed Name) Paul (Signature)

Relinquished by: (Signature and Printed Name) Paul	Date: 8/15/11	Time: 0730	Received by: (Signature and Printed Name) Matt Fraychineaud Matt Fraychineaud	Date: 8/15/11	Time: 0730
Relinquished by: (Signature and Printed Name) Matt Fraychineaud Matt Fraychineaud	Date: 8/15/11	Time: 1315	Received by: (Signature and Printed Name)	Date: 8/15/11	Time: 1315
Relinquished by: (Signature and Printed Name)	Date: 8/15/11	Time: 1650	Received by: (Signature and Printed Name) FEDEX	Date: 8/15/11	Time: 1650

I hereby authorize ATL to perform the work indicated below:
Project Mgr /Submitter:
Matt Fraychineaud 8/15/11
Print Name Date
Matt Fraychineaud
Signature

Send Report To:
Attn: Matt Fraychineaud
Co:
Addr:
City: State: Zip:

Bill To:
Attn:
Co:
Addr:
City: State: Zip:

Special Instructions/Comments:

Sample/Records - Archival & Disposal
Unless otherwise requested by client, all samples will be disposed 45 days after receipt and records will be disposed 1 year after submittal of final report.

Storage Fees (applies when storage is requested):
- Sample : $2.00 / sample / mo (after 45 days)
- Records : $1.00 / ATL workorder / mo (after 1 year)

Circle or Add Analysis(es) Requested: 8081A (Pesticides); 8082 (PCB); 8260B (Volatiles) + OXY; 8270C (PAHs) SVOCs; 6010B (Total Metal); 8015B (GRO) / ~~8021 (BTEX)~~; 8015B (DRO) (ORO); TITLE 22 / CAM 17 (6010 / 7000)

SPECIFY APPROPRIATE MATRIX: SEDIMENT; SOLID; SOIL; DRINKING WATER; GROUND WATER; WASTEWATER; STORMWATER; AQUEOUS

PRESERVATION

Q A / Q C: RTNE ☐ CT ☐ Legal ☐ SWRCB ☐ Logcode ____ OTHER ____

ITEM	LAB USE ONLY: Batch # / Lab No.	Sample Description: Sample I.D. / Location	Date	Time	TAT	Container(s) #	Container(s) Type	PRESERVATION	REMARKS
	119413-01	E-132-10'	8/12/11	0758		1	T		Hold
	02	E-132-15'		1000	E	7	T V	NaHSO4 MeOH	
	03	E-132-20'		1008		1	T		Hold
	04	E-132-25'		1015		1	T		"
	05	E-132-30'		1020	E	7	T V	NaHSO4 MeOH	
	06	E-132-35'		1035	E	1	T		
	07	E-132-40'		1045		1	T		Hold

• TAT starts 8 a.m. following day if samples received after 5 p.m.

TAT: ☐ A= Overnight ≤ 24 hrs ☐ B= Emergency Next workday ☐ C= Critical 2 Workdays ☐ D= Urgent 3 Workdays ☒ E= Routine 7 Workdays

Container Types: T=Tube V=VOA L=Liter P=Pint J=Jar B=Tedlar G=Glass P=Plastic M=Metal

Preservatives: H=Hcl N=HNO_3 S=H_2SO_4 C=4°C Z=$Zn(AC)_2$ O=NaOH T=$Na_2S_2O_3$

Rev. 2010-0325

DISTRIBUTION: **White** with report, **Yellow** to folder, **Pink** to submitter.

Figure C-1.32

August 26, 2011

Matt Fraychineaud
Mactec
5628 E. Slauson Avenue,
Los Angeles, CA 90040-2922
TEL: (323) 889-5300
FAX:

ELAP No.: 1838
NELAP No.: 02107CA
CSDLAC No.: 10196
ORELAP No.: CA300003

Workorder No.: 119469

RE: Metro Westside Extension, 4953101561

Attention: Matt Fraychineaud

Enclosed are the results for sample(s) received on August 19, 2011 by Advanced Technology Laboratories . The sample(s) are tested for the parameters as indicated in the enclosed chain of custody in accordance with the applicable laboratory certifications.

Thank you for the opportunity to service the needs of your company.

Please feel free to call me at (562)989-4045 if I can be of further assistance to your company.

Sincerely,

Eddie F. Rodriguez
Laboratory Director

Advanced Technology Laboratories
3275 Walnut Avenue Signal Hill, CA 90755 Tel: 562 989-4045 Fax: 562 989-4040

Figure C-1.33

CLIENT: Mactec
Project: Metro Westside Extension, 4953101561
Lab Order: 119469

CASE NARRATIVE

All volatile analyses were performed using 5035 preservation requirements. Any high level dilutions were performed on a preserved methanol sample unless otherwise noted.

Analytical Comments for EPA 8270C

Samples 119481-003GMS and 119481-003GMSD, Matrix Spike (MS) and Matrix Spike Duplicate (MSD) are outside recovery criteria; however, the analytical batch was validated by the Laboratory Control Sample (LCS).

Advanced Technology Laboratories
3275 Walnut Avenue, Signal Hill, CA 90755 Tel: 562. 989.4045 Fax: 562.989.4040

Figure C-1.34

CLIENT:	Mactec	**Client Sample ID:**	E-133-GW @ 25'
Lab Order:	119469	**Collection Date:**	8/19/2011 11:30:00 AM
Project:	Metro Westside Extension, 4953101561	**Matrix:**	GROUNDWATER
Lab ID:	119469-001A		

VOLATILE ORGANIC COMPOUNDS BY GC/MS

EPA 8260B

RunID: MS2_110822A QC Batch: Q11VW159 PrepDate: Analyst: **BD**

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
1,1,1,2-Tetrachloroethane	ND	0.50		µg/L	1	8/22/2011 09:26 PM
1,1,1-Trichloroethane	ND	0.50		µg/L	1	8/22/2011 09:26 PM
1,1,2,2-Tetrachloroethane	ND	0.50		µg/L	1	8/22/2011 09:26 PM
1,1,2-Trichloroethane	ND	0.50		µg/L	1	8/22/2011 09:26 PM
1,1-Dichloroethane	ND	0.50		µg/L	1	8/22/2011 09:26 PM
1,1-Dichloroethene	ND	0.50		µg/L	1	8/22/2011 09:26 PM
1,1-Dichloropropene	ND	0.50		µg/L	1	8/22/2011 09:26 PM
1,2,3-Trichlorobenzene	ND	0.50		µg/L	1	8/22/2011 09:26 PM
1,2,3-Trichloropropane	ND	0.50		µg/L	1	8/22/2011 09:26 PM
1,2,4-Trichlorobenzene	ND	0.50		µg/L	1	8/22/2011 09:26 PM
1,2,4-Trimethylbenzene	ND	0.50		µg/L	1	8/22/2011 09:26 PM
1,2-Dibromo-3-chloropropane	ND	0.50		µg/L	1	8/22/2011 09:26 PM
1,2-Dibromoethane	ND	0.50		µg/L	1	8/22/2011 09:26 PM
1,2-Dichlorobenzene	ND	0.50		µg/L	1	8/22/2011 09:26 PM
1,2-Dichloroethane	ND	0.50		µg/L	1	8/22/2011 09:26 PM
1,2-Dichloropropane	ND	0.50		µg/L	1	8/22/2011 09:26 PM
1,3,5-Trimethylbenzene	ND	0.50		µg/L	1	8/22/2011 09:26 PM
1,3-Dichlorobenzene	ND	0.50		µg/L	1	8/22/2011 09:26 PM
1,3-Dichloropropane	ND	0.50		µg/L	1	8/22/2011 09:26 PM
1,4-Dichlorobenzene	ND	0.50		µg/L	1	8/22/2011 09:26 PM
2,2-Dichloropropane	ND	0.50		µg/L	1	8/22/2011 09:26 PM
2-Chlorotoluene	ND	0.50		µg/L	1	8/22/2011 09:26 PM
4-Chlorotoluene	ND	0.50		µg/L	1	8/22/2011 09:26 PM
4-Isopropyltoluene	ND	0.50		µg/L	1	8/22/2011 09:26 PM
Benzene	ND	0.50		µg/L	1	8/22/2011 09:26 PM
Bromobenzene	ND	0.50		µg/L	1	8/22/2011 09:26 PM
Bromodichloromethane	ND	0.50		µg/L	1	8/22/2011 09:26 PM
Bromoform	ND	0.50		µg/L	1	8/22/2011 09:26 PM
Bromomethane	ND	0.50		µg/L	1	8/22/2011 09:26 PM
Carbon tetrachloride	ND	0.50		µg/L	1	8/22/2011 09:26 PM
Chlorobenzene	ND	0.50		µg/L	1	8/22/2011 09:26 PM
Chloroethane	ND	0.50		µg/L	1	8/22/2011 09:26 PM
Chloroform	ND	0.50		µg/L	1	8/22/2011 09:26 PM
Chloromethane	ND	0.50		µg/L	1	8/22/2011 09:26 PM
cis-1,2-Dichloroethene	ND	0.50		µg/L	1	8/22/2011 09:26 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

Figure C-1.35

CLIENT:	Mactec	**Client Sample ID:**	E-133-GW @ 25'
Lab Order:	119469	**Collection Date:**	8/19/2011 11:30:00 AM
Project:	Metro Westside Extension, 4953101561	**Matrix:**	GROUNDWATER
Lab ID:	119469-001A		

VOLATILE ORGANIC COMPOUNDS BY GC/MS

EPA 8260B

RunID: MS2_110822A QC Batch: Q11VW159 PrepDate: Analyst: **BD**

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
cis-1,3-Dichloropropene	ND	0.50		µg/L	1	8/22/2011 09:26 PM
Di-isopropyl ether	ND	0.50		µg/L	1	8/22/2011 09:26 PM
Dibromochloromethane	ND	0.50		µg/L	1	8/22/2011 09:26 PM
Dibromomethane	ND	0.50		µg/L	1	8/22/2011 09:26 PM
Dichlorodifluoromethane	ND	0.50		µg/L	1	8/22/2011 09:26 PM
Ethyl tert-butyl ether	ND	0.50		µg/L	1	8/22/2011 09:26 PM
Ethylbenzene	ND	0.50		µg/L	1	8/22/2011 09:26 PM
Hexachlorobutadiene	ND	0.50		µg/L	1	8/22/2011 09:26 PM
Isopropylbenzene	ND	0.50		µg/L	1	8/22/2011 09:26 PM
m,p-Xylene	ND	1.0		µg/L	1	8/22/2011 09:26 PM
Methylene chloride	ND	1.0		µg/L	1	8/22/2011 09:26 PM
MTBE	ND	0.50		µg/L	1	8/22/2011 09:26 PM
n-Butylbenzene	ND	0.50		µg/L	1	8/22/2011 09:26 PM
n-Propylbenzene	ND	0.50		µg/L	1	8/22/2011 09:26 PM
Naphthalene	ND	0.50		µg/L	1	8/22/2011 09:26 PM
o-Xylene	ND	0.50		µg/L	1	8/22/2011 09:26 PM
sec-Butylbenzene	ND	0.50		µg/L	1	8/22/2011 09:26 PM
Styrene	ND	0.50		µg/L	1	8/22/2011 09:26 PM
Tert-amyl methyl ether	ND	0.50		µg/L	1	8/22/2011 09:26 PM
Tert-Butanol	ND	10		µg/L	1	8/22/2011 09:26 PM
tert-Butylbenzene	ND	0.50		µg/L	1	8/22/2011 09:26 PM
Tetrachloroethene	ND	0.50		µg/L	1	8/22/2011 09:26 PM
Toluene	ND	0.50		µg/L	1	8/22/2011 09:26 PM
trans-1,2-Dichloroethene	ND	0.50		µg/L	1	8/22/2011 09:26 PM
Trichloroethene	ND	0.50		µg/L	1	8/22/2011 09:26 PM
Trichlorofluoromethane	ND	0.50		µg/L	1	8/22/2011 09:26 PM
Vinyl chloride	ND	0.50		µg/L	1	8/22/2011 09:26 PM
Surr: 1,2-Dichloroethane-d4	87.8	70-130		%REC	1	8/22/2011 09:26 PM
Surr: 4-Bromofluorobenzene	98.3	70-130		%REC	1	8/22/2011 09:26 PM
Surr: Dibromofluoromethane	88.5	70-130		%REC	1	8/22/2011 09:26 PM
Surr: Toluene-d8	87.2	70-130		%REC	1	8/22/2011 09:26 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT:	Mactec	**Client Sample ID:**	E-133-GW @ 25'
Lab Order:	119469	**Collection Date:**	8/19/2011 11:30:00 AM
Project:	Metro Westside Extension, 4953101561	**Matrix:**	GROUNDWATER
Lab ID:	119469-001B		

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
GASOLINE RANGE ORGANICS BY GC/FID						
		EPA 8015B(M)				
RunID: GC19_110822A	QC Batch: M11VW162			PrepDate:		Analyst: **BB**
GRO	ND	0.20		mg/L	1	8/22/2011 02:42 PM
Surr: Bromofluorobenzene (FID)	89.0	70-130		%REC	1	8/22/2011 02:42 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

Figure C-1.37

CLIENT:	Mactec	**Client Sample ID:**	E-133-GW @ 25'
Lab Order:	119469	**Collection Date:**	8/19/2011 11:30:00 AM
Project:	Metro Westside Extension, 4953101561	**Matrix:**	GROUNDWATER
Lab ID:	119469-001C		

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
DIESEL & MOTOR OIL RANGE ORGANICS BY GC/FID						
EPA 3510C				**EPA 8015B(M)**		
RunID: GC16_110822B	QC Batch: 75038			PrepDate: 8/22/2011		Analyst: **CBR**
DRO	0.21	0.20		mg/L	1	8/22/2011 03:29 PM
ORO	0.24	0.20		mg/L	1	8/22/2011 03:29 PM
Surr: p-Terphenyl	68.2	36-126		%REC	1	8/22/2011 03:29 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

Figure C-1.38

CLIENT: Mactec
Lab Order: 119469
Project: Metro Westside Extension, 4953101561
Lab ID: 119469-002A

Client Sample ID: E-133-35'
Collection Date: 8/19/2011 1:20:00 PM
Matrix: SOIL

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
DIESEL & MOTOR OIL RANGE ORGANICS BY GC/FID						
LUFT				**EPA 8015B(M)**		
RunID: GC16_110822A	QC Batch: 75034			PrepDate: 8/22/2011		Analyst: **CBR**
DRO	ND	10		mg/Kg	1	8/22/2011 12:38 PM
ORO	ND	10		mg/Kg	1	8/22/2011 12:38 PM
Surr: p-Terphenyl	81.5	63-152		%REC	1	8/22/2011 12:38 PM
SEMIVOLATILE ORGANIC COMPOUNDS BY GC/MS						
EPA 3550B				**EPA 8270C**		
RunID: MS 13_110823A	QC Batch: 75073			PrepDate: 8/23/2011		Analyst: **DMP**
1,2,4-Trichlorobenzene	ND	330		µg/Kg	1	8/23/2011 12:35 PM
1,2-Dichlorobenzene	ND	330		µg/Kg	1	8/23/2011 12:35 PM
1,3-Dichlorobenzene	ND	330		µg/Kg	1	8/23/2011 12:35 PM
1,4-Dichlorobenzene	ND	330		µg/Kg	1	8/23/2011 12:35 PM
2,4,5-Trichlorophenol	ND	330		µg/Kg	1	8/23/2011 12:35 PM
2,4,6-Trichlorophenol	ND	330		µg/Kg	1	8/23/2011 12:35 PM
2,4-Dichlorophenol	ND	1600		µg/Kg	1	8/23/2011 12:35 PM
2,4-Dimethylphenol	ND	330		µg/Kg	1	8/23/2011 12:35 PM
2,4-Dinitrophenol	ND	1600		µg/Kg	1	8/23/2011 12:35 PM
2,4-Dinitrotoluene	ND	330		µg/Kg	1	8/23/2011 12:35 PM
2,6-Dinitrotoluene	ND	330		µg/Kg	1	8/23/2011 12:35 PM
2-Chloronaphthalene	ND	330		µg/Kg	1	8/23/2011 12:35 PM
2-Chlorophenol	ND	330		µg/Kg	1	8/23/2011 12:35 PM
2-Methylnaphthalene	ND	330		µg/Kg	1	8/23/2011 12:35 PM
2-Methylphenol	ND	330		µg/Kg	1	8/23/2011 12:35 PM
2-Nitroaniline	ND	1600		µg/Kg	1	8/23/2011 12:35 PM
2-Nitrophenol	ND	330		µg/Kg	1	8/23/2011 12:35 PM
3,3´-Dichlorobenzidine	ND	660		µg/Kg	1	8/23/2011 12:35 PM
3-Nitroaniline	ND	1600		µg/Kg	1	8/23/2011 12:35 PM
4,6-Dinitro-2-methylphenol	ND	1600		µg/Kg	1	8/23/2011 12:35 PM
4-Bromophenyl-phenylether	ND	330		µg/Kg	1	8/23/2011 12:35 PM
4-Chloro-3-methylphenol	ND	660		µg/Kg	1	8/23/2011 12:35 PM
4-Chloroaniline	ND	660		µg/Kg	1	8/23/2011 12:35 PM
4-Chlorophenyl-phenylether	ND	330		µg/Kg	1	8/23/2011 12:35 PM
4-Methylphenol	ND	330		µg/Kg	1	8/23/2011 12:35 PM
4-Nitroaniline	ND	1600		µg/Kg	1	8/23/2011 12:35 PM
4-Nitrophenol	ND	1600		µg/Kg	1	8/23/2011 12:35 PM
Acenaphthene	ND	330		µg/Kg	1	8/23/2011 12:35 PM
Acenaphthylene	ND	330		µg/Kg	1	8/23/2011 12:35 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	Mactec	**Client Sample ID:**	E-133-35'
Lab Order:	119469	**Collection Date:**	8/19/2011 1:20:00 PM
Project:	Metro Westside Extension, 4953101561	**Matrix:**	SOIL
Lab ID:	119469-002A		

SEMIVOLATILE ORGANIC COMPOUNDS BY GC/MS

EPA 3550B **EPA 8270C**

RunID: MS 13_110823A QC Batch: 75073 PrepDate: 8/23/2011 Analyst: **DMP**

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
Anthracene	ND	330		µg/Kg	1	8/23/2011 12:35 PM
Benzidine (M)	ND	1600		µg/Kg	1	8/23/2011 12:35 PM
Benzo(a)anthracene	ND	330		µg/Kg	1	8/23/2011 12:35 PM
Benzo(a)pyrene	ND	330		µg/Kg	1	8/23/2011 12:35 PM
Benzo(b)fluoranthene	ND	330		µg/Kg	1	8/23/2011 12:35 PM
Benzo(g,h,i)perylene	ND	330		µg/Kg	1	8/23/2011 12:35 PM
Benzo(k)fluoranthene	ND	330		µg/Kg	1	8/23/2011 12:35 PM
Benzoic acid	ND	1600		µg/Kg	1	8/23/2011 12:35 PM
Benzyl alcohol	ND	660		µg/Kg	1	8/23/2011 12:35 PM
Bis(2-chloroethoxy)methane	ND	330		µg/Kg	1	8/23/2011 12:35 PM
Bis(2-chloroethyl)ether	ND	330		µg/Kg	1	8/23/2011 12:35 PM
Bis(2-chloroisopropyl)ether	ND	330		µg/Kg	1	8/23/2011 12:35 PM
Bis(2-ethylhexyl)phthalate	ND	330		µg/Kg	1	8/23/2011 12:35 PM
Butylbenzylphthalate	ND	330		µg/Kg	1	8/23/2011 12:35 PM
Chrysene	ND	330		µg/Kg	1	8/23/2011 12:35 PM
Di-n-butylphthalate	ND	330		µg/Kg	1	8/23/2011 12:35 PM
Di-n-octylphthalate	ND	330		µg/Kg	1	8/23/2011 12:35 PM
Dibenz(a,h)anthracene	ND	330		µg/Kg	1	8/23/2011 12:35 PM
Dibenzofuran	ND	330		µg/Kg	1	8/23/2011 12:35 PM
Diethylphthalate	ND	330		µg/Kg	1	8/23/2011 12:35 PM
Dimethylphthalate	ND	330		µg/Kg	1	8/23/2011 12:35 PM
Fluoranthene	ND	330		µg/Kg	1	8/23/2011 12:35 PM
Fluorene	ND	330		µg/Kg	1	8/23/2011 12:35 PM
Hexachlorobenzene	ND	330		µg/Kg	1	8/23/2011 12:35 PM
Hexachlorobutadiene	ND	660		µg/Kg	1	8/23/2011 12:35 PM
Hexachlorocyclopentadiene	ND	660		µg/Kg	1	8/23/2011 12:35 PM
Hexachloroethane	ND	330		µg/Kg	1	8/23/2011 12:35 PM
Indeno(1,2,3-cd)pyrene	ND	330		µg/Kg	1	8/23/2011 12:35 PM
Isophorone	ND	330		µg/Kg	1	8/23/2011 12:35 PM
N-Nitrosodi-n-propylamine	ND	330		µg/Kg	1	8/23/2011 12:35 PM
N-Nitrosodiphenylamine	ND	330		µg/Kg	1	8/23/2011 12:35 PM
Naphthalene	ND	330		µg/Kg	1	8/23/2011 12:35 PM
Nitrobenzene	ND	330		µg/Kg	1	8/23/2011 12:35 PM
Pentachlorophenol	ND	1600		µg/Kg	1	8/23/2011 12:35 PM
Phenanthrene	ND	330		µg/Kg	1	8/23/2011 12:35 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

Figure C-1.40

CLIENT: Mactec
Lab Order: 119469
Project: Metro Westside Extension, 4953101561
Lab ID: 119469-002A

Client Sample ID: E-133-35'
Collection Date: 8/19/2011 1:20:00 PM
Matrix: SOIL

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
SEMIVOLATILE ORGANIC COMPOUNDS BY GC/MS						
EPA 3550B				**EPA 8270C**		
RunID: MS 13_110823A	QC Batch: 75073			PrepDate: 8/23/2011	Analyst: **DMP**	
Phenol	ND	330		µg/Kg	1	8/23/2011 12:35 PM
Pyrene	ND	330		µg/Kg	1	8/23/2011 12:35 PM
Surr: 1,2-Dichlorobenzene-d4	73.6	45-105		%REC	1	8/23/2011 12:35 PM
Surr: 2,4,6-Tribromophenol	69.3	41-129		%REC	1	8/23/2011 12:35 PM
Surr: 2-Chlorophenol-d4	78.3	55-108		%REC	1	8/23/2011 12:35 PM
Surr: 2-Fluorobiphenyl	82.2	56-114		%REC	1	8/23/2011 12:35 PM
Surr: 2-Fluorophenol	80.2	50-108		%REC	1	8/23/2011 12:35 PM
Surr: 4-Terphenyl-d14	89.2	59-141		%REC	1	8/23/2011 12:35 PM
Surr: Nitrobenzene-d5	75.1	45-114		%REC	1	8/23/2011 12:35 PM
Surr: Phenol-d5	84.1	46-118		%REC	1	8/23/2011 12:35 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: Mactec
Lab Order: 119469
Project: Metro Westside Extension, 4953101561
Lab ID: 119469-002B

Client Sample ID: E-133-35'
Collection Date: 8/19/2011 1:20:00 PM
Matrix: SOIL

VOLATILE ORGANIC COMPOUNDS BY GC/MS

EPA 8260B

RunID: MS5_110822A QC Batch: T11VS154 PrepDate: 8/19/2011 Analyst: **DDL**

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
1,1,1,2-Tetrachloroethane	ND	4.8		µg/Kg	1	8/22/2011 05:06 PM
1,1,1-Trichloroethane	ND	4.8		µg/Kg	1	8/22/2011 05:06 PM
1,1,2,2-Tetrachloroethane	ND	4.8		µg/Kg	1	8/22/2011 05:06 PM
1,1,2-Trichloroethane	ND	4.8		µg/Kg	1	8/22/2011 05:06 PM
1,1-Dichloroethane	ND	4.8		µg/Kg	1	8/22/2011 05:06 PM
1,1-Dichloroethene	ND	4.8		µg/Kg	1	8/22/2011 05:06 PM
1,1-Dichloropropene	ND	4.8		µg/Kg	1	8/22/2011 05:06 PM
1,2,3-Trichlorobenzene	ND	4.8		µg/Kg	1	8/22/2011 05:06 PM
1,2,3-Trichloropropane	ND	4.8		µg/Kg	1	8/22/2011 05:06 PM
1,2,4-Trichlorobenzene	ND	4.8		µg/Kg	1	8/22/2011 05:06 PM
1,2,4-Trimethylbenzene	ND	4.8		µg/Kg	1	8/22/2011 05:06 PM
1,2-Dibromo-3-chloropropane	ND	9.5		µg/Kg	1	8/22/2011 05:06 PM
1,2-Dibromoethane	ND	4.8		µg/Kg	1	8/22/2011 05:06 PM
1,2-Dichlorobenzene	ND	4.8		µg/Kg	1	8/22/2011 05:06 PM
1,2-Dichloroethane	ND	4.8		µg/Kg	1	8/22/2011 05:06 PM
1,2-Dichloropropane	ND	4.8		µg/Kg	1	8/22/2011 05:06 PM
1,3,5-Trimethylbenzene	ND	4.8		µg/Kg	1	8/22/2011 05:06 PM
1,3-Dichlorobenzene	ND	4.8		µg/Kg	1	8/22/2011 05:06 PM
1,3-Dichloropropane	ND	4.8		µg/Kg	1	8/22/2011 05:06 PM
1,4-Dichlorobenzene	ND	4.8		µg/Kg	1	8/22/2011 05:06 PM
2,2-Dichloropropane	ND	4.8		µg/Kg	1	8/22/2011 05:06 PM
2-Chlorotoluene	ND	4.8		µg/Kg	1	8/22/2011 05:06 PM
4-Chlorotoluene	ND	4.8		µg/Kg	1	8/22/2011 05:06 PM
4-Isopropyltoluene	ND	4.8		µg/Kg	1	8/22/2011 05:06 PM
Benzene	ND	4.8		µg/Kg	1	8/22/2011 05:06 PM
Bromobenzene	ND	4.8		µg/Kg	1	8/22/2011 05:06 PM
Bromodichloromethane	ND	4.8		µg/Kg	1	8/22/2011 05:06 PM
Bromoform	ND	4.8		µg/Kg	1	8/22/2011 05:06 PM
Bromomethane	ND	4.8		µg/Kg	1	8/22/2011 05:06 PM
Carbon tetrachloride	ND	4.8		µg/Kg	1	8/22/2011 05:06 PM
Chlorobenzene	ND	4.8		µg/Kg	1	8/22/2011 05:06 PM
Chloroethane	ND	4.8		µg/Kg	1	8/22/2011 05:06 PM
Chloroform	ND	4.8		µg/Kg	1	8/22/2011 05:06 PM
Chloromethane	ND	4.8		µg/Kg	1	8/22/2011 05:06 PM
cis-1,2-Dichloroethene	ND	4.8		µg/Kg	1	8/22/2011 05:06 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

Figure C-1.42

CLIENT: Mactec
Lab Order: 119469
Project: Metro Westside Extension, 4953101561
Lab ID: 119469-002B

Client Sample ID: E-133-35'
Collection Date: 8/19/2011 1:20:00 PM
Matrix: SOIL

VOLATILE ORGANIC COMPOUNDS BY GC/MS

EPA 8260B

RunID: MS5_110822A QC Batch: T11VS154 PrepDate: 8/19/2011 Analyst: **DDL**

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
cis-1,3-Dichloropropene	ND	4.8		µg/Kg	1	8/22/2011 05:06 PM
Di-isopropyl ether	ND	4.8		µg/Kg	1	8/22/2011 05:06 PM
Dibromochloromethane	ND	4.8		µg/Kg	1	8/22/2011 05:06 PM
Dibromomethane	ND	4.8		µg/Kg	1	8/22/2011 05:06 PM
Dichlorodifluoromethane	ND	4.8		µg/Kg	1	8/22/2011 05:06 PM
Ethyl Tert-butyl ether	ND	4.8		µg/Kg	1	8/22/2011 05:06 PM
Ethylbenzene	ND	4.8		µg/Kg	1	8/22/2011 05:06 PM
Hexachlorobutadiene	ND	4.8		µg/Kg	1	8/22/2011 05:06 PM
Isopropylbenzene	ND	4.8		µg/Kg	1	8/22/2011 05:06 PM
m,p-Xylene	ND	9.5		µg/Kg	1	8/22/2011 05:06 PM
Methylene chloride	ND	4.8		µg/Kg	1	8/22/2011 05:06 PM
MTBE	ND	4.8		µg/Kg	1	8/22/2011 05:06 PM
n-Butylbenzene	ND	4.8		µg/Kg	1	8/22/2011 05:06 PM
n-Propylbenzene	ND	4.8		µg/Kg	1	8/22/2011 05:06 PM
Naphthalene	ND	4.8		µg/Kg	1	8/22/2011 05:06 PM
o-Xylene	ND	4.8		µg/Kg	1	8/22/2011 05:06 PM
sec-Butylbenzene	ND	4.8		µg/Kg	1	8/22/2011 05:06 PM
Styrene	ND	4.8		µg/Kg	1	8/22/2011 05:06 PM
Tert-amyl methyl ether	ND	4.8		µg/Kg	1	8/22/2011 05:06 PM
Tert-Butanol	ND	95		µg/Kg	1	8/22/2011 05:06 PM
tert-Butylbenzene	ND	4.8		µg/Kg	1	8/22/2011 05:06 PM
Tetrachloroethene	ND	4.8		µg/Kg	1	8/22/2011 05:06 PM
Toluene	ND	4.8		µg/Kg	1	8/22/2011 05:06 PM
trans-1,2-Dichloroethene	ND	4.8		µg/Kg	1	8/22/2011 05:06 PM
Trichloroethene	ND	4.8		µg/Kg	1	8/22/2011 05:06 PM
Trichlorofluoromethane	ND	4.8		µg/Kg	1	8/22/2011 05:06 PM
Vinyl chloride	ND	4.8		µg/Kg	1	8/22/2011 05:06 PM
Surr: 1,2-Dichloroethane-d4	102	65-141		%REC	1	8/22/2011 05:06 PM
Surr: 4-Bromofluorobenzene	87.9	57-134		%REC	1	8/22/2011 05:06 PM
Surr: Dibromofluoromethane	112	70-128		%REC	1	8/22/2011 05:06 PM
Surr: Toluene-d8	96.2	72-123		%REC	1	8/22/2011 05:06 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

Figure C-1.43

CLIENT:	Mactec	**Client Sample ID:**	E-133-35'
Lab Order:	119469	**Collection Date:**	8/19/2011 1:20:00 PM
Project:	Metro Westside Extension, 4953101561	**Matrix:**	SOIL
Lab ID:	119469-002E		

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
GASOLINE RANGE ORGANICS BY GC/FID						
		EPA 8015B(M)				
RunID: GC2_110824A	QC Batch: E11VS307			PrepDate: 8/19/2011		Analyst: **TP**
GRO	ND	0.95		mg/Kg	1	8/24/2011 12:49 PM
Surr: Bromofluorobenzene (FID)	106	51-161		%REC	1	8/24/2011 12:49 PM

Qualifiers:				
	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
	S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
	DO	Surrogate Diluted Out		

Figure C-1.44

CLIENT: Mactec
Work Order: 119469
Project: Metro Westside Extension, 4953101561

ANALYTICAL QC SUMMARY REPORT

TestCode: 8015_S_DM H

Sample ID: **LCS-75034**	SampType: **LCS**	TestCode: **8015_S_DM H**	Units: **mg/Kg**	Prep Date: **8/22/2011**	RunNo: **135973**
Client ID: **LCSS**	Batch ID: **75034**	TestNo: **EPA 8015B(M**	**LUFT**	Analysis Date: **8/22/2011**	SeqNo: **2228122**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
DRO	928.390	10	1000	0	92.8	76	139				
Surr: p-Terphenyl	74.400		80.00		93.0	63	152				

Sample ID: **119466-001AMS**	SampType: **MS**	TestCode: **8015_S_DM H**	Units: **mg/Kg**	Prep Date: **8/22/2011**	RunNo: **135973**
Client ID: **ZZZZZZ**	Batch ID: **75034**	TestNo: **EPA 8015B(M**	**LUFT**	Analysis Date: **8/22/2011**	SeqNo: **2228123**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
DRO	860.860	10	1000	0	86.1	60	158				
Surr: p-Terphenyl	75.070		80.00		93.8	63	152				

Sample ID: **119466-001AMSD**	SampType: **MSD**	TestCode: **8015_S_DM H**	Units: **mg/Kg**	Prep Date: **8/22/2011**	RunNo: **135973**
Client ID: **ZZZZZZ**	Batch ID: **75034**	TestNo: **EPA 8015B(M**	**LUFT**	Analysis Date: **8/22/2011**	SeqNo: **2228124**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
DRO	847.470	10	1000	0	84.7	60	158	860.9	1.57	20	
Surr: p-Terphenyl	73.580		80.00		92.0	63	152		0	0	

Sample ID: **MB-75034**	SampType: **MBLK**	TestCode: **8015_S_DM H**	Units: **mg/Kg**	Prep Date: **8/22/2011**	RunNo: **135973**
Client ID: **PBS**	Batch ID: **75034**	TestNo: **EPA 8015B(M**	**LUFT**	Analysis Date: **8/22/2011**	SeqNo: **2228127**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
DRO	ND	10									
ORO	ND	10									
Surr: p-Terphenyl	63.660		80.00		79.6	63	152				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

Figure C-1.45

CLIENT: Mactec
Work Order: 119469
Project: Metro Westside Extension, 4953101561

ANALYTICAL QC SUMMARY REPORT

TestCode: 8015_S_G 5035P

Sample ID: **E110824LC1** SampType: **LCS** TestCode: **8015_S_G 50** Units: **mg/Kg** Prep Date: RunNo: **136058**
Client ID: **LCSS** Batch ID: **E11VS307** TestNo: **EPA 8015B(M** Analysis Date: **8/24/2011** SeqNo: **2229734**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
GRO	5.069	1.0	5.000	0	101	70	130				
Surr: Bromofluorobenzene (FID)	124.803		100.0		125	51	161				

Sample ID: **E110824MB1MS** SampType: **MS** TestCode: **8015_S_G 50** Units: **mg/Kg** Prep Date: RunNo: **136058**
Client ID: **ZZZZZZ** Batch ID: **E11VS307** TestNo: **EPA 8015B(M** Analysis Date: **8/24/2011** SeqNo: **2229735**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
GRO	5.182	1.0	5.000	0	104	41	146				
Surr: Bromofluorobenzene (FID)	106.662		100.0		107	51	161				

Sample ID: **E110824MB1MSD** SampType: **MSD** TestCode: **8015_S_G 50** Units: **mg/Kg** Prep Date: RunNo: **136058**
Client ID: **ZZZZZZ** Batch ID: **E11VS307** TestNo: **EPA 8015B(M** Analysis Date: **8/24/2011** SeqNo: **2229736**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
GRO	5.227	1.0	5.000	0	105	41	146	5.182	0.865	20	
Surr: Bromofluorobenzene (FID)	108.159		100.0		108	51	161		0	0	

Sample ID: **E110824MB1** SampType: **MBLK** TestCode: **8015_S_G 50** Units: **mg/Kg** Prep Date: RunNo: **136058**
Client ID: **PBS** Batch ID: **E11VS307** TestNo: **EPA 8015B(M** Analysis Date: **8/24/2011** SeqNo: **2229737**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
GRO	ND	1.0									
Surr: Bromofluorobenzene (FID)	89.530		100.0		89.5	51	161				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

Figure C-1.46

CLIENT: Mactec
Work Order: 119469
Project: Metro Westside Extension, 4953101561

ANALYTICAL QC SUMMARY REPORT

TestCode: 8015_W_DM

Sample ID: **MB-75038**	SampType: **MBLK**	TestCode: **8015_W_DM**	Units: **mg/L**	Prep Date: **8/22/2011**	RunNo: **135984**
Client ID: **PBW**	Batch ID: **75038**	TestNo: **EPA 8015B(M**	**EPA 3510C**	Analysis Date: **8/22/2011**	SeqNo: **2228373**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
DRO	ND	0.20									
ORO	ND	0.20									
Surr: p-Terphenyl	0.060		0.08000		75.2	36	126				

Sample ID: **LCS-75038**	SampType: **LCS**	TestCode: **8015_W_DM**	Units: **mg/L**	Prep Date: **8/22/2011**	RunNo: **135984**
Client ID: **LCSW**	Batch ID: **75038**	TestNo: **EPA 8015B(M**	**EPA 3510C**	Analysis Date: **8/22/2011**	SeqNo: **2228374**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
DRO	0.644	0.20	1.000	0	64.4	52	128				
Surr: p-Terphenyl	0.071		0.08000		88.7	36	126				

Sample ID: **MB-75038MS**	SampType: **MS**	TestCode: **8015_W_DM**	Units: **mg/L**	Prep Date: **8/22/2011**	RunNo: **135984**
Client ID: **ZZZZZZ**	Batch ID: **75038**	TestNo: **EPA 8015B(M**	**EPA 3510C**	Analysis Date: **8/22/2011**	SeqNo: **2228375**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
DRO	0.648	0.20	1.000	0	64.8	52	128				
Surr: p-Terphenyl	0.064		0.08000		79.5	36	126				

Sample ID: **MB-75038MSD**	SampType: **MSD**	TestCode: **8015_W_DM**	Units: **mg/L**	Prep Date: **8/22/2011**	RunNo: **135984**
Client ID: **ZZZZZZ**	Batch ID: **75038**	TestNo: **EPA 8015B(M**	**EPA 3510C**	Analysis Date: **8/22/2011**	SeqNo: **2228376**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
DRO	0.559	0.20	1.000	0	55.9	52	128	0.6478	14.6	20	
Surr: p-Terphenyl	0.064		0.08000		79.4	36	126		0	0	

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

Calculations are based on raw values

- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

Figure C-1.47

CLIENT: Mactec
Work Order: 119469
Project: Metro Westside Extension, 4953101561

ANALYTICAL QC SUMMARY REPORT

TestCode: 8015_W_G PRES

Sample ID: **M110822LCS2** SampType: **LCS** TestCode: **8015_W_G P** Units: **mg/L** Prep Date: RunNo: **135989**
Client ID: **LCSW** Batch ID: **M11VW162** TestNo: **EPA 8015B(M** Analysis Date: **8/22/2011** SeqNo: **2228492**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
GRO	1.009	0.20	1.000	0	101	70	130				
Surr: Bromofluorobenzene (FID)	91.309		100.0		91.3	70	130				

Sample ID: **M110822MB1MS** SampType: **MS** TestCode: **8015_W_G P** Units: **mg/L** Prep Date: RunNo: **135989**
Client ID: **ZZZZZZ** Batch ID: **M11VW162** TestNo: **EPA 8015B(M** Analysis Date: **8/22/2011** SeqNo: **2228494**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
GRO	1.035	0.20	1.000	0	104	70	130				
Surr: Bromofluorobenzene (FID)	92.408		100.0		92.4	70	130				

Sample ID: **M110822MB1MSD** SampType: **MSD** TestCode: **8015_W_G P** Units: **mg/L** Prep Date: RunNo: **135989**
Client ID: **ZZZZZZ** Batch ID: **M11VW162** TestNo: **EPA 8015B(M** Analysis Date: **8/22/2011** SeqNo: **2228495**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
GRO	1.039	0.20	1.000	0	104	70	130	1.035	0.386	20	
Surr: Bromofluorobenzene (FID)	93.112		100.0		93.1	70	130		0	0	

Sample ID: **M110822MB1** SampType: **MBLK** TestCode: **8015_W_G P** Units: **mg/L** Prep Date: RunNo: **135989**
Client ID: **PBW** Batch ID: **M11VW162** TestNo: **EPA 8015B(M** Analysis Date: **8/22/2011** SeqNo: **2228496**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
GRO	ND	0.20									
Surr: Bromofluorobenzene (FID)	89.015		100.0		89.0	70	130				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

Figure C-1.48

CLIENT: Mactec
Work Order: 119469
Project: Metro Westside Extension, 4953101561

ANALYTICAL QC SUMMARY REPORT

TestCode: 8260_S_5035

Sample ID: **T110822LCS1** SampType: **LCS** TestCode: **8260_S_5035** Units: **µg/Kg** Prep Date: RunNo: **135975**
Client ID: **LCSS** Batch ID: **T11VS154** TestNo: **EPA 8260B** Analysis Date: **8/22/2011** SeqNo: **2229081**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
1,1-Dichloroethene	41.470	5.0	50.00	0	82.9	70	130				
Benzene	90.530	5.0	100.0	0	90.5	70	130				
Chlorobenzene	51.970	5.0	50.00	0	104	70	130				
MTBE	50.710	5.0	50.00	0	101	70	130				
Toluene	96.040	5.0	100.0	0	96.0	70	130				
Trichloroethene	49.550	5.0	50.00	0	99.1	70	130				
Surr: 1,2-Dichloroethane-d4	45.040		50.00		90.1	65	141				
Surr: 4-Bromofluorobenzene	43.090		50.00		86.2	57	134				
Surr: Dibromofluoromethane	53.330		50.00		107	70	128				
Surr: Toluene-d8	47.020		50.00		94.0	72	123				

Sample ID: **T110822MB1MS** SampType: **MS** TestCode: **8260_S_5035** Units: **µg/Kg** Prep Date: RunNo: **135975**
Client ID: **ZZZZZZ** Batch ID: **T11VS154** TestNo: **EPA 8260B** Analysis Date: **8/22/2011** SeqNo: **2229082**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
1,1-Dichloroethene	44.950	5.0	50.00	0	89.9	70	130				
Benzene	96.580	5.0	100.0	0	96.6	70	130				
Chlorobenzene	53.450	5.0	50.00	0	107	70	130				
MTBE	53.630	5.0	50.00	0	107	70	130				
Toluene	104.210	5.0	100.0	0	104	70	130				
Trichloroethene	51.020	5.0	50.00	0	102	70	130				
Surr: 1,2-Dichloroethane-d4	43.770		50.00		87.5	65	141				
Surr: 4-Bromofluorobenzene	45.490		50.00		91.0	57	134				
Surr: Dibromofluoromethane	50.780		50.00		102	70	128				
Surr: Toluene-d8	48.890		50.00		97.8	72	123				

Sample ID: **T110822MB1MSD** SampType: **MSD** TestCode: **8260_S_5035** Units: **µg/Kg** Prep Date: RunNo: **135975**
Client ID: **ZZZZZZ** Batch ID: **T11VS154** TestNo: **EPA 8260B** Analysis Date: **8/22/2011** SeqNo: **2229083**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

Figure C-1.49

CLIENT: Mactec
Work Order: 119469
Project: Metro Westside Extension, 4953101561

ANALYTICAL QC SUMMARY REPORT

TestCode: 8260_S_5035

Sample ID: **T110822MB1MSD** SampType: **MSD** TestCode: **8260_S_5035** Units: **µg/Kg** Prep Date: RunNo: **135975**
Client ID: **ZZZZZZ** Batch ID: **T11VS154** TestNo: **EPA 8260B** Analysis Date: **8/22/2011** SeqNo: **2229083**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
1,1-Dichloroethene	44.180	5.0	50.00	0	88.4	70	130	44.95	1.73	20	
Benzene	92.160	5.0	100.0	0	92.2	70	130	96.58	4.68	20	
Chlorobenzene	52.680	5.0	50.00	0	105	70	130	53.45	1.45	20	
MTBE	51.200	5.0	50.00	0	102	70	130	53.63	4.64	20	
Toluene	98.630	5.0	100.0	0	98.6	70	130	104.2	5.50	20	
Trichloroethene	48.770	5.0	50.00	0	97.5	70	130	51.02	4.51	20	
Surr: 1,2-Dichloroethane-d4	45.840		50.00		91.7	65	141		0	0	
Surr: 4-Bromofluorobenzene	44.200		50.00		88.4	57	134		0	0	
Surr: Dibromofluoromethane	52.840		50.00		106	70	128		0	0	
Surr: Toluene-d8	46.850		50.00		93.7	72	123		0	0	

Sample ID: **T110822MB1** SampType: **MBLK** TestCode: **8260_S_5035** Units: **µg/Kg** Prep Date: RunNo: **135975**
Client ID: **PBS** Batch ID: **T11VS154** TestNo: **EPA 8260B** Analysis Date: **8/22/2011** SeqNo: **2229084**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
1,1,1,2-Tetrachloroethane	ND	5.0									
1,1,1-Trichloroethane	ND	5.0									
1,1,2,2-Tetrachloroethane	ND	5.0									
1,1,2-Trichloroethane	ND	5.0									
1,1-Dichloroethane	ND	5.0									
1,1-Dichloroethene	ND	5.0									
1,1-Dichloropropene	ND	5.0									
1,2,3-Trichlorobenzene	ND	5.0									
1,2,3-Trichloropropane	ND	5.0									
1,2,4-Trichlorobenzene	ND	5.0									
1,2,4-Trimethylbenzene	ND	5.0									
1,2-Dibromo-3-chloropropane	ND	10									
1,2-Dibromoethane	ND	5.0									
1,2-Dichlorobenzene	ND	5.0									
1,2-Dichloroethane	ND	5.0									

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

Figure C-1.50

CLIENT: Mactec
Work Order: 119469
Project: Metro Westside Extension, 4953101561

ANALYTICAL QC SUMMARY REPORT

TestCode: 8260_S_5035

Sample ID: **T110822MB1** SampType: **MBLK** TestCode: **8260_S_5035** Units: **µg/Kg** Prep Date: RunNo: **135975**
Client ID: **PBS** Batch ID: **T11VS154** TestNo: **EPA 8260B** Analysis Date: **8/22/2011** SeqNo: **2229084**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
1,2-Dichloropropane	ND	5.0									
1,3,5-Trimethylbenzene	ND	5.0									
1,3-Dichlorobenzene	ND	5.0									
1,3-Dichloropropane	ND	5.0									
1,4-Dichlorobenzene	ND	5.0									
2,2-Dichloropropane	ND	5.0									
2-Chlorotoluene	ND	5.0									
4-Chlorotoluene	ND	5.0									
4-Isopropyltoluene	ND	5.0									
Benzene	ND	5.0									
Bromobenzene	ND	5.0									
Bromodichloromethane	ND	5.0									
Bromoform	ND	5.0									
Bromomethane	ND	5.0									
Carbon tetrachloride	ND	5.0									
Chlorobenzene	ND	5.0									
Chloroethane	ND	5.0									
Chloroform	ND	5.0									
Chloromethane	ND	5.0									
cis-1,2-Dichloroethene	ND	5.0									
cis-1,3-Dichloropropene	ND	5.0									
Di-isopropyl ether	ND	5.0									
Dibromochloromethane	ND	5.0									
Dibromomethane	ND	5.0									
Dichlorodifluoromethane	ND	5.0									
Ethyl Tert-butyl ether	ND	5.0									
Ethylbenzene	ND	5.0									
Hexachlorobutadiene	ND	5.0									
Isopropylbenzene	ND	5.0									
m,p-Xylene	ND	10									

Qualifiers:

B Analyte detected in the associated Method Blank
ND Not Detected at the Reporting Limit
DO Surrogate Diluted Out
E Value above quantitation range
R RPD outside accepted recovery limits
Calculations are based on raw values
H Holding times for preparation or analysis exceeded
S Spike/Surrogate outside of limits due to matrix interference

Figure C-1.51

CLIENT: Mactec
Work Order: 119469
Project: Metro Westside Extension, 4953101561

ANALYTICAL QC SUMMARY REPORT

TestCode: 8260_S_5035

Sample ID: **T110822MB1** SampType: **MBLK** TestCode: **8260_S_5035** Units: **µg/Kg** Prep Date: RunNo: **135975**
Client ID: **PBS** Batch ID: **T11VS154** TestNo: **EPA 8260B** Analysis Date: **8/22/2011** SeqNo: **2229084**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Methylene chloride	ND	5.0									
MTBE	ND	5.0									
n-Butylbenzene	ND	5.0									
n-Propylbenzene	ND	5.0									
Naphthalene	ND	5.0									
o-Xylene	ND	5.0									
sec-Butylbenzene	ND	5.0									
Styrene	ND	5.0									
Tert-amyl methyl ether	ND	5.0									
Tert-Butanol	ND	100									
tert-Butylbenzene	ND	5.0									
Tetrachloroethene	ND	5.0									
Toluene	ND	5.0									
trans-1,2-Dichloroethene	ND	5.0									
Trichloroethene	ND	5.0									
Trichlorofluoromethane	ND	5.0									
Vinyl chloride	ND	5.0									
Surr: 1,2-Dichloroethane-d4	46.680		50.00		93.4	65	141				
Surr: 4-Bromofluorobenzene	42.270		50.00		84.5	57	134				
Surr: Dibromofluoromethane	49.940		50.00		99.9	70	128				
Surr: Toluene-d8	48.340		50.00		96.7	72	123				

Qualifiers:

B Analyte detected in the associated Method Blank
ND Not Detected at the Reporting Limit
DO Surrogate Diluted Out
E Value above quantitation range
R RPD outside accepted recovery limits
Calculations are based on raw values
H Holding times for preparation or analysis exceeded
S Spike/Surrogate outside of limits due to matrix interference

Figure C-1.52

CLIENT: Mactec
Work Order: 119469
Project: Metro Westside Extension, 4953101561

ANALYTICAL QC SUMMARY REPORT

TestCode: 8260_WP_LL

Sample ID: **Q110822LCS1** SampType: **LCS** TestCode: **8260_WP_LL** Units: **µg/L** Prep Date: RunNo: **136001**
Client ID: **LCSW** Batch ID: **Q11VW159** TestNo: **EPA 8260B** Analysis Date: **8/22/2011** SeqNo: **2228571**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
1,1-Dichloroethene	18.720	0.50	20.00	0	93.6	70	130				
Benzene	38.700	0.50	40.00	0	96.8	70	130				
Chlorobenzene	20.260	0.50	20.00	0	101	70	130				
MTBE	21.010	0.50	20.00	0	105	70	130				
Toluene	40.750	0.50	40.00	0	102	70	130				
Trichloroethene	20.000	0.50	20.00	0	100	70	130				
Surr: 1,2-Dichloroethane-d4	22.860		25.00		91.4	70	130				
Surr: 4-Bromofluorobenzene	25.080		25.00		100	70	130				
Surr: Dibromofluoromethane	22.740		25.00		91.0	70	130				
Surr: Toluene-d8	23.560		25.00		94.2	70	130				

Sample ID: **Q110822MB3MS** SampType: **MS** TestCode: **8260_WP_LL** Units: **µg/L** Prep Date: RunNo: **136001**
Client ID: **ZZZZZZ** Batch ID: **Q11VW159** TestNo: **EPA 8260B** Analysis Date: **8/22/2011** SeqNo: **2228572**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
1,1-Dichloroethene	19.750	0.50	20.00	0	98.8	70	130				
Benzene	39.700	0.50	40.00	0	99.2	70	130				
Chlorobenzene	21.000	0.50	20.00	0	105	70	130				
MTBE	22.790	0.50	20.00	0	114	70	130				
Toluene	41.640	0.50	40.00	0	104	70	130				
Trichloroethene	20.770	0.50	20.00	0	104	70	130				
Surr: 1,2-Dichloroethane-d4	23.520		25.00		94.1	70	130				
Surr: 4-Bromofluorobenzene	25.040		25.00		100	70	130				
Surr: Dibromofluoromethane	23.420		25.00		93.7	70	130				
Surr: Toluene-d8	23.170		25.00		92.7	70	130				

Sample ID: **Q110822MB3MSD** SampType: **MSD** TestCode: **8260_WP_LL** Units: **µg/L** Prep Date: RunNo: **136001**
Client ID: **ZZZZZZ** Batch ID: **Q11VW159** TestNo: **EPA 8260B** Analysis Date: **8/22/2011** SeqNo: **2228573**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

Figure C-1.53

CLIENT: Mactec
Work Order: 119469
Project: Metro Westside Extension, 4953101561

ANALYTICAL QC SUMMARY REPORT

TestCode: 8260_WP_LL

Sample ID: **Q110822MB3MSD** SampType: **MSD** TestCode: **8260_WP_LL** Units: **µg/L** Prep Date: RunNo: **136001**
Client ID: **ZZZZZZ** Batch ID: **Q11VW159** TestNo: **EPA 8260B** Analysis Date: **8/22/2011** SeqNo: **2228573**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
1,1-Dichloroethene	18.510	0.50	20.00	0	92.6	70	130	19.75	6.48	20	
Benzene	38.930	0.50	40.00	0	97.3	70	130	39.70	1.96	20	
Chlorobenzene	20.840	0.50	20.00	0	104	70	130	21.00	0.765	20	
MTBE	22.640	0.50	20.00	0	113	70	130	22.79	0.660	20	
Toluene	40.900	0.50	40.00	0	102	70	130	41.64	1.79	20	
Trichloroethene	19.990	0.50	20.00	0	100	70	130	20.77	3.83	20	
Surr: 1,2-Dichloroethane-d4	22.670		25.00		90.7	70	130		0	0	
Surr: 4-Bromofluorobenzene	25.210		25.00		101	70	130		0	0	
Surr: Dibromofluoromethane	23.030		25.00		92.1	70	130		0	0	
Surr: Toluene-d8	23.040		25.00		92.2	70	130		0	0	

Sample ID: **Q110822MB3** SampType: **MBLK** TestCode: **8260_WP_LL** Units: **µg/L** Prep Date: RunNo: **136001**
Client ID: **PBW** Batch ID: **Q11VW159** TestNo: **EPA 8260B** Analysis Date: **8/22/2011** SeqNo: **2228574**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
1,1,1,2-Tetrachloroethane	ND	0.50									
1,1,1-Trichloroethane	ND	0.50									
1,1,2,2-Tetrachloroethane	ND	0.50									
1,1,2-Trichloroethane	ND	0.50									
1,1-Dichloroethane	ND	0.50									
1,1-Dichloroethene	ND	0.50									
1,1-Dichloropropene	ND	0.50									
1,2,3-Trichlorobenzene	ND	0.50									
1,2,3-Trichloropropane	ND	0.50									
1,2,4-Trichlorobenzene	ND	0.50									
1,2,4-Trimethylbenzene	ND	0.50									
1,2-Dibromo-3-chloropropane	ND	0.50									
1,2-Dibromoethane	ND	0.50									
1,2-Dichlorobenzene	ND	0.50									
1,2-Dichloroethane	ND	0.50									

Qualifiers:

B Analyte detected in the associated Method Blank
ND Not Detected at the Reporting Limit
DO Surrogate Diluted Out
E Value above quantitation range
R RPD outside accepted recovery limits
Calculations are based on raw values
H Holding times for preparation or analysis exceeded
S Spike/Surrogate outside of limits due to matrix interference

Figure C-1.54

CLIENT: Mactec
Work Order: 119469
Project: Metro Westside Extension, 4953101561

ANALYTICAL QC SUMMARY REPORT

TestCode: 8260_WP_LL

Sample ID: **Q110822MB3** SampType: **MBLK** TestCode: **8260_WP_LL** Units: **µg/L** Prep Date: RunNo: **136001**
Client ID: **PBW** Batch ID: **Q11VW159** TestNo: **EPA 8260B** Analysis Date: **8/22/2011** SeqNo: **2228574**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
1,2-Dichloropropane	ND	0.50									
1,3,5-Trimethylbenzene	ND	0.50									
1,3-Dichlorobenzene	ND	0.50									
1,3-Dichloropropane	ND	0.50									
1,4-Dichlorobenzene	ND	0.50									
2,2-Dichloropropane	ND	0.50									
2-Chlorotoluene	ND	0.50									
4-Chlorotoluene	ND	0.50									
4-Isopropyltoluene	ND	0.50									
Benzene	ND	0.50									
Bromobenzene	ND	0.50									
Bromodichloromethane	ND	0.50									
Bromoform	ND	0.50									
Bromomethane	ND	0.50									
Carbon tetrachloride	ND	0.50									
Chlorobenzene	ND	0.50									
Chloroethane	ND	0.50									
Chloroform	ND	0.50									
Chloromethane	ND	0.50									
cis-1,2-Dichloroethene	ND	0.50									
cis-1,3-Dichloropropene	ND	0.50									
Di-isopropyl ether	ND	0.50									
Dibromochloromethane	ND	0.50									
Dibromomethane	ND	0.50									
Dichlorodifluoromethane	ND	0.50									
Ethyl tert-butyl ether	ND	0.50									
Ethylbenzene	ND	0.50									
Hexachlorobutadiene	ND	0.50									
Isopropylbenzene	ND	0.50									
m,p-Xylene	ND	1.0									

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

Figure C-1.55

CLIENT: Mactec
Work Order: 119469
Project: Metro Westside Extension, 4953101561

ANALYTICAL QC SUMMARY REPORT

TestCode: 8260_WP_LL

Sample ID: **Q110822MB3** SampType: **MBLK** TestCode: **8260_WP_LL** Units: **µg/L** Prep Date: RunNo: **136001**
Client ID: **PBW** Batch ID: **Q11VW159** TestNo: **EPA 8260B** Analysis Date: **8/22/2011** SeqNo: **2228574**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Methylene chloride	ND	1.0									
MTBE	ND	0.50									
n-Butylbenzene	ND	0.50									
n-Propylbenzene	ND	0.50									
Naphthalene	ND	0.50									
o-Xylene	ND	0.50									
sec-Butylbenzene	ND	0.50									
Styrene	ND	0.50									
Tert-amyl methyl ether	ND	0.50									
Tert-Butanol	ND	10									
tert-Butylbenzene	ND	0.50									
Tetrachloroethene	ND	0.50									
Toluene	ND	0.50									
trans-1,2-Dichloroethene	ND	0.50									
Trichloroethene	ND	0.50									
Trichlorofluoromethane	ND	0.50									
Vinyl chloride	ND	0.50									
Surr: 1,2-Dichloroethane-d4	27.030		25.00		108	70	130				
Surr: 4-Bromofluorobenzene	25.880		25.00		104	70	130				
Surr: Dibromofluoromethane	25.900		25.00		104	70	130				
Surr: Toluene-d8	22.700		25.00		90.8	70	130				

Qualifiers:

B Analyte detected in the associated Method Blank
ND Not Detected at the Reporting Limit
DO Surrogate Diluted Out
E Value above quantitation range
R RPD outside accepted recovery limits
Calculations are based on raw values
H Holding times for preparation or analysis exceeded
S Spike/Surrogate outside of limits due to matrix interference

Figure C-1.56

CLIENT: Mactec
Work Order: 119469
Project: Metro Westside Extension, 4953101561

ANALYTICAL QC SUMMARY REPORT

TestCode: 8270_S_FULL

Sample ID: **MB-75073** SampType: **MBLK** TestCode: **8270_S_FULL** Units: **µg/Kg** Prep Date: **8/23/2011** RunNo: **136040**
Client ID: **PBS** Batch ID: **75073** TestNo: **EPA 8270C** **EPA 3550B** Analysis Date: **8/23/2011** SeqNo: **2229226**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
1,2,4-Trichlorobenzene	ND	330									
1,2-Dichlorobenzene	ND	330									
1,3-Dichlorobenzene	ND	330									
1,4-Dichlorobenzene	ND	330									
2,4,5-Trichlorophenol	ND	330									
2,4,6-Trichlorophenol	ND	330									
2,4-Dichlorophenol	ND	1600									
2,4-Dimethylphenol	ND	330									
2,4-Dinitrophenol	ND	1600									
2,4-Dinitrotoluene	ND	330									
2,6-Dinitrotoluene	ND	330									
2-Chloronaphthalene	ND	330									
2-Chlorophenol	ND	330									
2-Methylnaphthalene	ND	330									
2-Methylphenol	ND	330									
2-Nitroaniline	ND	1600									
2-Nitrophenol	ND	330									
3,3´-Dichlorobenzidine	ND	660									
3-Nitroaniline	ND	1600									
4,6-Dinitro-2-methylphenol	ND	1600									
4-Bromophenyl-phenylether	ND	330									
4-Chloro-3-methylphenol	ND	660									
4-Chloroaniline	ND	660									
4-Chlorophenyl-phenylether	ND	330									
4-Methylphenol	ND	330									
4-Nitroaniline	ND	1600									
4-Nitrophenol	ND	1600									
Acenaphthene	ND	330									
Acenaphthylene	ND	330									
Anthracene	ND	330									

Qualifiers:

B Analyte detected in the associated Method Blank
ND Not Detected at the Reporting Limit
DO Surrogate Diluted Out
E Value above quantitation range
R RPD outside accepted recovery limits
Calculations are based on raw values
H Holding times for preparation or analysis exceeded
S Spike/Surrogate outside of limits due to matrix interference

Figure C-1.57

CLIENT: Mactec
Work Order: 119469
Project: Metro Westside Extension, 4953101561

ANALYTICAL QC SUMMARY REPORT

TestCode: 8270_S_FULL

Sample ID: **MB-75073** SampType: **MBLK** TestCode: **8270_S_FULL** Units: **µg/Kg** Prep Date: **8/23/2011** RunNo: **136040**
Client ID: **PBS** Batch ID: **75073** TestNo: **EPA 8270C** **EPA 3550B** Analysis Date: **8/23/2011** SeqNo: **2229226**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benzidine (M)	ND	1600									
Benzo(a)anthracene	ND	330									
Benzo(a)pyrene	ND	330									
Benzo(b)fluoranthene	ND	330									
Benzo(g,h,i)perylene	ND	330									
Benzo(k)fluoranthene	ND	330									
Benzoic acid	ND	1600									
Benzyl alcohol	ND	660									
Bis(2-chloroethoxy)methane	ND	330									
Bis(2-chloroethyl)ether	ND	330									
Bis(2-chloroisopropyl)ether	ND	330									
Bis(2-ethylhexyl)phthalate	ND	330									
Butylbenzylphthalate	ND	330									
Chrysene	ND	330									
Di-n-butylphthalate	ND	330									
Di-n-octylphthalate	ND	330									
Dibenz(a,h)anthracene	ND	330									
Dibenzofuran	ND	330									
Diethylphthalate	ND	330									
Dimethylphthalate	ND	330									
Fluoranthene	ND	330									
Fluorene	ND	330									
Hexachlorobenzene	ND	330									
Hexachlorobutadiene	ND	660									
Hexachlorocyclopentadiene	ND	660									
Hexachloroethane	ND	330									
Indeno(1,2,3-cd)pyrene	ND	330									
Isophorone	ND	330									
N-Nitrosodi-n-propylamine	ND	330									
N-Nitrosodiphenylamine	ND	330									

Qualifiers:

B Analyte detected in the associated Method Blank
ND Not Detected at the Reporting Limit
DO Surrogate Diluted Out
E Value above quantitation range
R RPD outside accepted recovery limits
Calculations are based on raw values
H Holding times for preparation or analysis exceeded
S Spike/Surrogate outside of limits due to matrix interference

Figure C-1.58

CLIENT: Mactec
Work Order: 119469
Project: Metro Westside Extension, 4953101561

ANALYTICAL QC SUMMARY REPORT

TestCode: 8270_S_FULL

Sample ID: **MB-75073** SampType: **MBLK** TestCode: **8270_S_FULL** Units: **µg/Kg** Prep Date: **8/23/2011** RunNo: **136040**
Client ID: **PBS** Batch ID: **75073** TestNo: **EPA 8270C** **EPA 3550B** Analysis Date: **8/23/2011** SeqNo: **2229226**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Naphthalene	ND	330									
Nitrobenzene	ND	330									
Pentachlorophenol	ND	1600									
Phenanthrene	ND	330									
Phenol	ND	330									
Pyrene	ND	330									
Surr: 1,2-Dichlorobenzene-d4	2826.667		3330		84.9	45	105				
Surr: 2,4,6-Tribromophenol	1658.000		3330		49.8	41	129				
Surr: 2-Chlorophenol-d4	2927.333		3330		87.9	55	108				
Surr: 2-Fluorobiphenyl	3009.333		3330		90.4	56	114				
Surr: 2-Fluorophenol	2936.667		3330		88.2	50	108				
Surr: 4-Terphenyl-d14	3045.667		3330		91.5	59	141				
Surr: Nitrobenzene-d5	2806.000		3330		84.3	45	114				
Surr: Phenol-d5	3038.000		3330		91.2	46	118				

Sample ID: **LCS-75073** SampType: **LCS** TestCode: **8270_S_FULL** Units: **µg/Kg** Prep Date: **8/23/2011** RunNo: **136040**
Client ID: **LCSS** Batch ID: **75073** TestNo: **EPA 8270C** **EPA 3550B** Analysis Date: **8/23/2011** SeqNo: **2229227**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
1,2,4-Trichlorobenzene	2795.333	330	3330	0	83.9	67	107				
1,4-Dichlorobenzene	2732.000	330	3330	0	82.0	64	99				
2,4-Dinitrotoluene	3352.333	330	3330	0	101	81	122				
2-Chlorophenol	2691.333	330	3330	0	80.8	62	112				
4-Chloro-3-methylphenol	3116.000	660	3330	0	93.6	64	138				
4-Nitrophenol	3074.000	1600	3330	0	92.3	60	142				
Acenaphthene	3334.000	330	3330	0	100	70	116				
N-Nitrosodi-n-propylamine	2953.000	330	3330	0	88.7	73	115				
Pentachlorophenol	2173.000	1600	3330	0	65.3	59	135				
Phenol	2904.333	330	3330	0	87.2	61	120				
Pyrene	3581.000	330	3330	0	108	75	117				

Qualifiers:

B Analyte detected in the associated Method Blank
ND Not Detected at the Reporting Limit
DO Surrogate Diluted Out
E Value above quantitation range
R RPD outside accepted recovery limits
Calculations are based on raw values
H Holding times for preparation or analysis exceeded
S Spike/Surrogate outside of limits due to matrix interference

Figure C-1.59

CLIENT: Mactec
Work Order: 119469
Project: Metro Westside Extension, 4953101561

ANALYTICAL QC SUMMARY REPORT

TestCode: 8270_S_FULL

Sample ID: **LCS-75073** SampType: **LCS** TestCode: **8270_S_FULL** Units: **µg/Kg** Prep Date: **8/23/2011** RunNo: **136040**
Client ID: **LCSS** Batch ID: **75073** TestNo: **EPA 8270C** **EPA 3550B** Analysis Date: **8/23/2011** SeqNo: **2229227**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Surr: 1,2-Dichlorobenzene-d4	2851.667		3330		85.6	45	105				
Surr: 2,4,6-Tribromophenol	3310.000		3330		99.4	41	129				
Surr: 2-Chlorophenol-d4	2967.000		3330		89.1	55	108				
Surr: 2-Fluorobiphenyl	3197.667		3330		96.0	56	114				
Surr: 2-Fluorophenol	3008.000		3330		90.3	50	108				
Surr: 4-Terphenyl-d14	3107.000		3330		93.3	59	141				
Surr: Nitrobenzene-d5	2980.333		3330		89.5	45	114				
Surr: Phenol-d5	3106.667		3330		93.3	46	118				

Sample ID: **119481-003GMS** SampType: **MS** TestCode: **8270_S_FULL** Units: **µg/Kg** Prep Date: **8/23/2011** RunNo: **136040**
Client ID: **ZZZZZZ** Batch ID: **75073** TestNo: **EPA 8270C** **EPA 3550B** Analysis Date: **8/23/2011** SeqNo: **2229229**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
1,2,4-Trichlorobenzene	2340.000	1600	3330	0	70.3	62	109				
1,4-Dichlorobenzene	2288.333	1600	3330	0	68.7	57	99				
2,4-Dinitrotoluene	1978.333	1600	3330	0	59.4	76	126				S
2-Chlorophenol	2170.000	1600	3330	0	65.2	52	120				
4-Chloro-3-methylphenol	2675.000	3300	3330	0	80.3	63	137				
4-Nitrophenol	1561.667	8200	3330	0	46.9	52	144				S
Acenaphthene	3143.333	1600	3330	0	94.4	61	121				
N-Nitrosodi-n-propylamine	2541.667	1600	3330	0	76.3	67	116				
Pentachlorophenol	ND	8200	3330	0	0	47	143				S
Phenol	2521.667	1600	3330	0	75.7	54	126				
Pyrene	3336.667	1600	3330	0	100	68	121				
Surr: 1,2-Dichlorobenzene-d4	2306.667		3330		69.3	45	105				
Surr: 2,4,6-Tribromophenol	2036.667		3330		61.2	41	129				
Surr: 2-Chlorophenol-d4	2230.000		3330		67.0	55	108				
Surr: 2-Fluorobiphenyl	2790.000		3330		83.8	56	114				
Surr: 2-Fluorophenol	2233.333		3330		67.1	50	108				
Surr: 4-Terphenyl-d14	2685.000		3330		80.6	59	141				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

Figure C-1.60

CLIENT: Mactec
Work Order: 119469
Project: Metro Westside Extension, 4953101561

ANALYTICAL QC SUMMARY REPORT

TestCode: 8270_S_FULL

Sample ID: **119481-003GMS** SampType: **MS** TestCode: **8270_S_FULL** Units: **µg/Kg** Prep Date: **8/23/2011** RunNo: **136040**
Client ID: **ZZZZZZ** Batch ID: **75073** TestNo: **EPA 8270C** **EPA 3550B** Analysis Date: **8/23/2011** SeqNo: **2229229**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Surr: Nitrobenzene-d5	2113.333		3330		63.5	45	114				
Surr: Phenol-d5	2473.333		3330		74.3	46	118				

Sample ID: **119481-003GMSD** SampType: **MSD** TestCode: **8270_S_FULL** Units: **µg/Kg** Prep Date: **8/23/2011** RunNo: **136040**
Client ID: **ZZZZZZ** Batch ID: **75073** TestNo: **EPA 8270C** **EPA 3550B** Analysis Date: **8/23/2011** SeqNo: **2229230**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
1,2,4-Trichlorobenzene	2316.667	1600	3330	0	69.6	62	109	2340	1.00	20	
1,4-Dichlorobenzene	2235.000	1600	3330	0	67.1	57	99	2288	2.36	20	
2,4-Dinitrotoluene	1918.333	1600	3330	0	57.6	76	126	1978	3.08	20	S
2-Chlorophenol	2110.000	1600	3330	0	63.4	52	120	2170	2.80	20	
4-Chloro-3-methylphenol	2725.000	3300	3330	0	81.8	63	137	2675	0	20	
4-Nitrophenol	1560.000	8200	3330	0	46.8	52	144	1562	0	20	S
Acenaphthene	3186.667	1600	3330	0	95.7	61	121	3143	1.37	20	
N-Nitrosodi-n-propylamine	2536.667	1600	3330	0	76.2	67	116	2542	0.197	20	
Pentachlorophenol	ND	8200	3330	0	0	47	143	0	0	20	S
Phenol	2540.000	1600	3330	0	76.3	54	126	2522	0.724	20	
Pyrene	3416.667	1600	3330	0	103	68	121	3337	2.37	20	
Surr: 1,2-Dichlorobenzene-d4	2275.000		3330		68.3	45	105		0	0	
Surr: 2,4,6-Tribromophenol	1978.333		3330		59.4	41	129		0	0	
Surr: 2-Chlorophenol-d4	2221.667		3330		66.7	55	108		0	0	
Surr: 2-Fluorobiphenyl	2781.667		3330		83.5	56	114		0	0	
Surr: 2-Fluorophenol	2193.333		3330		65.9	50	108		0	0	
Surr: 4-Terphenyl-d14	2650.000		3330		79.6	59	141		0	0	
Surr: Nitrobenzene-d5	2091.667		3330		62.8	45	114		0	0	
Surr: Phenol-d5	2521.667		3330		75.7	46	118		0	0	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

Figure C-1.61

CHAIN OF CUSTODY RECORD

Pg 1 of

ADVANCED TECHNOLOGY LABORATORIES
3275 Walnut Ave., Signal Hill, CA 90755
Tel: (562) 989-4045 • Fax: (562) 989-4040

P.O.#: 2011063774 Quote #:
Logged By: Date: 8/19/11
NOTE: Please include your Quote No. to ensure proper pricing of your project.

FOR LABORATORY USE ONLY:

Method of Transport: ☒ Client ☐ ATL ☐ FedEx ☐ OnTrac ☐ GSO ☐ Other:

Sample Condition Upon Receipt:
1. CHILLED Y☑ N☐ 4. SEALED Y☐ N☑
2. HEADSPACE (VOA) Y☐ N☑ 5. # OF SPLS MATCH COC Y☑ N☐
3. CONTAINER INTACT Y☑ N☐ 6. PRESERVED Y☑ N☑

Client: MACTEC
Attn: Matt Fraychineaud
Address: 5628 E. Slauson Ave
City LA State CA Zip Code 90040
TEL: 323-889-5300 FAX:

Project Name: Metro Westside Extension Project #: 49531056I
Sampler: (Printed Name) Paul Kane (Signature) Paul Kane

Relinquished by: (Signature and Printed Name) Rachel Mills Date 8/19/11 Time 16:21
Received by: (Signature and Printed Name) Mayo Date 8/19/11 Time 1621
Relinquished by: (Signature and Printed Name) Date: Time:
Received by: (Signature and Printed Name) Date: Time:
Relinquished by: (Signature and Printed Name) Date: Time:
Received by: (Signature and Printed Name) Date: Time:

I hereby authorize ATL to perform the work indicated below:
Project Mgr /Submitter:
Rachel Mills 8/19/11
Print Name Date
Rachel Mills
Signature

Send Report To:
Attn: Matt Fraychineaud
Co:
Addr:
City: State: Zip:

Bill To:
Attn: Same as
Co: above
Addr:
City: State: Zip:

Special Instructions/Comments:

Sample/Records - Archival & Disposal
Unless otherwise requested by client, all samples will be disposed 45 days after receipt and records will be disposed 1 year after submittal of final report.

Storage Fees (applies when storage is requested):
- Sample : $2.00 / sample / mo (after 45 days)
- Records : $1.00 / ATL workorder / mo (after 1 year)

Circle or Add Analysis(es) Requested

SPECIFY APPROPRIATE MATRIX

PRESERVATION

Q A / Q C
RTNE ☐ CT ☐ Legal ☐ SWRCB ☐ Logcode ____ OTHER ____

ITEM	LAB USE ONLY: Batch # / Lab No.	Sample Description: Sample I.D. / Location	Date	Time	8081A (Pesticides)	8082 (PCB)	8260B (Volatiles) +OXYs	8270C (SVOCs)	6010B (Total Metal)	8015B (GRO) / 8021 (BTEX)	8015B (DRO) (O&G)	TITLE 22 / CAM 17 (6010 / 7000)	SEDIMENT	SOLID	SOIL	DRINKING WATER	GROUND WATER	WASTEWATER	STORMWATER	AQUEOUS	TAT	Container(s) #	Container(s) Type	REMARKS
	119469-001	E-133-GW @25'	8/19/11	11:30	X	X	X	X	X	X	X					X					E	9	VOA SH IL	
2		E-133-35'		13:20	X	X	X	X	X	X	X			X							E	6	VOAs	HOLD
3		E-133-10'		9:55										X										HOLD
4		E-133-15'		10:20										X										HOLD
5		E-133-20'		10:30										X										HOLD
6		E-133-30'		1230										X										HOLD

• TAT starts 8 a.m. following day if samples received after 5 p.m.

TAT: ☐A= Overnight ≤ 24 hrs ☐B= Emergency Next workday ☐C= Critical 2 Workdays ☐D= Urgent 3 Workdays ☒E= Routine 7 Workdays

Container Types: T=Tube V=VOA L=Liter P=Pint J=Jar B=Tedlar G=Glass P=Plastic M=Metal

Preservatives: H=Hcl N=HNO_3 S=H_2SO_4 C=4°C Z=$Zn(AC)_2$ O=NaOH T=$Na_2S_2O_3$

Rev. 2010-0325

DISTRIBUTION: **White** with report, **Yellow** to folder, **Pink** to submitter.

Figure C-1.62

October 17, 2011

Matt Fraychineaud
Mactec
5628 E. Slauson Avenue,
Los Angeles, CA 90040-2922
TEL: (323) 889-5300
FAX:

ELAP No.: 1838
NELAP No.: 02107CA
CSDLAC No.: 10196
ORELAP No.: CA300003

Workorder No.: 119976

RE: Metro Westside Extension, 4953101561

Attention: Matt Fraychineaud

Enclosed are the results for sample(s) received on September 22, 2011 by Advanced Technology Laboratories . The sample(s) are tested for the parameters as indicated in the enclosed chain of custody in accordance with the applicable laboratory certifications.

This is an addendum report. Please incorporate with documentation previously submitted.

Thank you for the opportunity to service the needs of your company.

Please feel free to call me at (562)989-4045 if I can be of further assistance to your company.

Sincerely,

Eddie F. Rodriguez
Laboratory Director

Advanced Technology Laboratories
3275 Walnut Avenue Signal Hill, CA 90755 Tel: 562 989-4045 Fax: 562 989-4040

Figure C-1.63

CLIENT: Mactec
Project: Metro Westside Extension, 4953101561
Lab Order: 119976

CASE NARRATIVE

Analytical Comments for EPA 6010B

Samples 120205-001A-MS and 120205-001A-MSD, Matrix Spike (MS) and Matrix Spike Duplicate (MSD) are outside recovery criteria; however, the analytical batch was validated by the Laboratory Control Sample (LCS).

Advanced Technology Laboratories
3275 Walnut Avenue, Signal Hill, CA 90755 Tel: 562. 989.4045 Fax: 562.989.4040

Figure C-1.64

CLIENT: Mactec
Lab Order: 119976
Project: Metro Westside Extension, 4953101561
Lab ID: 119976-006A

Client Sample ID: E-133-65'
Collection Date: 9/21/2011 11:58:00 AM
Matrix: SOIL

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
ICP METALS						
	EPA 3050B			**EPA 6010B**		
RunID: ICP8_111012B	QC Batch: 76147			PrepDate: 10/12/2011		Analyst: **CBB**
Antimony	ND	4.0		mg/Kg	2	10/12/2011 02:35 PM
Arsenic	ND	2.0		mg/Kg	2	10/12/2011 02:35 PM
Barium	27	2.0		mg/Kg	2	10/12/2011 02:35 PM
Beryllium	ND	2.0		mg/Kg	2	10/12/2011 02:35 PM
Cadmium	ND	2.0		mg/Kg	2	10/12/2011 02:35 PM
Chromium	14	2.0		mg/Kg	2	10/12/2011 02:35 PM
Cobalt	7.9	2.0		mg/Kg	2	10/12/2011 02:35 PM
Copper	7.7	4.0		mg/Kg	2	10/12/2011 02:35 PM
Lead	ND	2.0		mg/Kg	2	10/12/2011 02:35 PM
Molybdenum	ND	2.0		mg/Kg	2	10/12/2011 02:35 PM
Nickel	15	2.0		mg/Kg	2	10/12/2011 02:35 PM
Selenium	ND	2.0		mg/Kg	2	10/12/2011 02:35 PM
Silver	ND	2.0		mg/Kg	2	10/12/2011 02:35 PM
Thallium	ND	2.0		mg/Kg	2	10/12/2011 02:35 PM
Vanadium	18	2.0		mg/Kg	2	10/12/2011 02:35 PM
Zinc	47	2.0		mg/Kg	2	10/12/2011 02:35 PM
MERCURY BY COLD VAPOR TECHNIQUE						
				EPA 7471A		
RunID: AA1_111012C	QC Batch: 76159			PrepDate: 10/12/2011		Analyst: **VV**
Mercury	ND	0.10		mg/Kg	1	10/12/2011 02:31 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

Figure C-1.65

CLIENT: Mactec
Work Order: 119976
Project: Metro Westside Extension, 4953101561

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_S

Sample ID: **MB-76147** SampType: **MBLK** TestCode: **6010_S** Units: **mg/Kg** Prep Date: **10/12/2011** RunNo: **137432**
Client ID: **PBS** Batch ID: **76147** TestNo: **EPA 6010B** **EPA 3050B** Analysis Date: **10/12/2011** SeqNo: **2257137**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Antimony	0.167	2.0									
Arsenic	ND	1.0									
Barium	0.027	1.0									
Beryllium	ND	1.0									
Cadmium	ND	1.0									
Chromium	ND	1.0									
Cobalt	ND	1.0									
Copper	0.373	2.0									
Lead	ND	1.0									
Molybdenum	ND	1.0									
Nickel	0.037	1.0									
Selenium	ND	1.0									
Silver	ND	1.0									
Thallium	ND	1.0									
Vanadium	ND	1.0									
Zinc	ND	1.0									

Sample ID: **LCS-76147** SampType: **LCS** TestCode: **6010_S** Units: **mg/Kg** Prep Date: **10/12/2011** RunNo: **137432**
Client ID: **LCSS** Batch ID: **76147** TestNo: **EPA 6010B** **EPA 3050B** Analysis Date: **10/12/2011** SeqNo: **2257138**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Antimony	48.361	2.0	50.00	0.1671	96.4	80	120				
Arsenic	45.399	1.0	50.00	0	90.8	80	120				
Barium	48.516	1.0	50.00	0.02682	97.0	80	120				
Beryllium	47.174	1.0	50.00	0	94.3	80	120				
Cadmium	45.935	1.0	50.00	0	91.9	80	120				
Chromium	45.486	1.0	50.00	0	91.0	80	120				
Cobalt	48.522	1.0	50.00	0	97.0	80	120				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

Figure C-1.66

CLIENT: Mactec
Work Order: 119976
Project: Metro Westside Extension, 4953101561

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_S

Sample ID: **LCS-76147** SampType: **LCS** TestCode: **6010_S** Units: **mg/Kg** Prep Date: **10/12/2011** RunNo: **137432**
Client ID: **LCSS** Batch ID: **76147** TestNo: **EPA 6010B** **EPA 3050B** Analysis Date: **10/12/2011** SeqNo: **2257138**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Copper	47.591	2.0	50.00	0.3728	94.4	80	120				
Lead	48.750	1.0	50.00	0	97.5	80	120				
Molybdenum	48.768	1.0	50.00	0	97.5	80	120				
Nickel	46.852	1.0	50.00	0.03734	93.6	80	120				
Selenium	44.636	1.0	50.00	0	89.3	80	120				
Silver	46.291	1.0	50.00	0	92.6	80	120				
Thallium	47.308	1.0	50.00	0	94.6	80	120				
Vanadium	49.550	1.0	50.00	0	99.1	80	120				
Zinc	45.850	1.0	50.00	0	91.7	80	120				

Sample ID: **120205-001A-MS** SampType: **MS** TestCode: **6010_S** Units: **mg/Kg** Prep Date: **10/12/2011** RunNo: **137432**
Client ID: **ZZZZZZ** Batch ID: **76147** TestNo: **EPA 6010B** **EPA 3050B** Analysis Date: **10/12/2011** SeqNo: **2257153**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Antimony	109.158	2.0	125.0	0.4767	86.9	44	105				
Arsenic	115.556	1.0	125.0	2.799	90.2	57	103				
Beryllium	112.913	1.0	125.0	0	90.3	64	106				
Cadmium	107.361	1.0	125.0	0.3825	85.6	58	102				
Chromium	114.113	1.0	125.0	7.466	85.3	55	105				
Cobalt	118.672	1.0	125.0	4.861	91.0	59	105				
Copper	138.019	2.0	125.0	14.98	98.4	64	117				
Lead	123.092	1.0	125.0	12.69	88.3	46	116				
Molybdenum	116.203	1.0	125.0	0.5385	92.5	59	108				
Nickel	117.526	1.0	125.0	8.539	87.2	52	109				
Selenium	108.803	1.0	125.0	0	87.0	56	100				
Silver	115.185	1.0	125.0	0	92.1	65	107				
Thallium	104.200	1.0	125.0	0	83.4	47	100				
Vanadium	132.993	1.0	125.0	14.16	95.1	64	110				
Zinc	129.566	1.0	125.0	24.33	84.2	37	123				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

Figure C-1.67

CLIENT: Mactec
Work Order: 119976
Project: Metro Westside Extension, 4953101561

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_S

Sample ID: **120205-001A-MS**	SampType: **MS**	TestCode: **6010_S**	Units: **mg/Kg**	Prep Date: **10/12/2011**	RunNo: **137432**
Client ID: **ZZZZZZ**	Batch ID: **76147**	TestNo: **EPA 6010B**	**EPA 3050B**	Analysis Date: **10/12/2011**	SeqNo: **2257159**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Barium	4575.367	10	125.0	3204	1100	36	134				S

Sample ID: **120205-001A-MSD**	SampType: **MSD**	TestCode: **6010_S**	Units: **mg/Kg**	Prep Date: **10/12/2011**	RunNo: **137432**
Client ID: **ZZZZZZ**	Batch ID: **76147**	TestNo: **EPA 6010B**	**EPA 3050B**	Analysis Date: **10/12/2011**	SeqNo: **2257160**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Barium	4670.798	10	125.0	3204	1170	36	134	3894	18.1	20	S

Sample ID: **120205-001A-MSD**	SampType: **MSD**	TestCode: **6010_S**	Units: **mg/Kg**	Prep Date: **10/12/2011**	RunNo: **137432**
Client ID: **ZZZZZZ**	Batch ID: **76147**	TestNo: **EPA 6010B**	**EPA 3050B**	Analysis Date: **10/12/2011**	SeqNo: **2257161**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Antimony	110.959	2.0	125.0	0.4767	88.4	44	105	109.2	1.64	20	
Arsenic	117.176	1.0	125.0	2.799	91.5	57	103	115.6	1.39	20	
Beryllium	114.091	1.0	125.0	0	91.3	64	106	112.9	1.04	20	
Cadmium	107.533	1.0	125.0	0.3825	85.7	58	102	107.4	0.160	20	
Chromium	114.879	1.0	125.0	7.466	85.9	55	105	114.1	0.669	20	
Cobalt	118.771	1.0	125.0	4.861	91.1	59	105	118.7	0.0829	20	
Copper	138.674	2.0	125.0	14.98	99.0	64	117	138.0	0.473	20	
Lead	124.420	1.0	125.0	12.69	89.4	46	116	123.1	1.07	20	
Molybdenum	117.690	1.0	125.0	0.5385	93.7	59	108	116.2	1.27	20	
Nickel	117.923	1.0	125.0	8.539	87.5	52	109	117.5	0.337	20	
Selenium	110.022	1.0	125.0	0	88.0	56	100	108.8	1.11	20	
Silver	116.153	1.0	125.0	0	92.9	65	107	115.2	0.837	20	
Thallium	105.521	1.0	125.0	0	84.4	47	100	104.2	1.26	20	
Vanadium	133.061	1.0	125.0	14.16	95.1	64	110	133.0	0.0509	20	
Zinc	129.718	1.0	125.0	24.33	84.3	37	123	129.6	0.117	20	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

Figure C-1.68

CLIENT: Mactec
Work Order: 119976
Project: Metro Westside Extension, 4953101561

ANALYTICAL QC SUMMARY REPORT

TestCode: 7471_S

Sample ID: **MB-76159**	SampType: **MBLK**	TestCode: **7471_S**	Units: **mg/Kg**	Prep Date: **10/12/2011**	RunNo: **137436**
Client ID: **PBS**	Batch ID: **76159**	TestNo: **EPA 7471A**		Analysis Date: **10/12/2011**	SeqNo: **2257200**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury	ND	0.10									

Sample ID: **LCS-76159**	SampType: **LCS**	TestCode: **7471_S**	Units: **mg/Kg**	Prep Date: **10/12/2011**	RunNo: **137436**
Client ID: **LCSS**	Batch ID: **76159**	TestNo: **EPA 7471A**		Analysis Date: **10/12/2011**	SeqNo: **2257201**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury	0.853	0.10	0.8300	0	103	80	120				

Sample ID: **120209-001A-MS**	SampType: **MS**	TestCode: **7471_S**	Units: **mg/Kg**	Prep Date: **10/12/2011**	RunNo: **137436**
Client ID: **ZZZZZZ**	Batch ID: **76159**	TestNo: **EPA 7471A**		Analysis Date: **10/12/2011**	SeqNo: **2257202**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury	0.919	0.10	0.8300	0.08699	100	70	130				

Sample ID: **120209-001A-MSD**	SampType: **MSD**	TestCode: **7471_S**	Units: **mg/Kg**	Prep Date: **10/12/2011**	RunNo: **137436**
Client ID: **ZZZZZZ**	Batch ID: **76159**	TestNo: **EPA 7471A**		Analysis Date: **10/12/2011**	SeqNo: **2257203**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury	0.958	0.10	0.8300	0.08699	105	70	130	0.9185	4.18	20	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

Advanced Technology Laboratories
3275 Walnut Avenue, Signal Hill, CA 90755 Tel: 562. 989.4045 Fax: 562.989.4040

Figure C-1.69

Rachelle Arada

From: Carmen Aguila
Sent: Monday, October 10, 2011 2:17 PM
To: Fraychineaud, Matt
Cc: Rachelle Arada
Subject: RE: Additional Analysis Request

Hi Matt,

I received your request.

Thank you,
Carmen

From: Fraychineaud, Matt [mailto:MFRAYCHINEAUD@mactec.com]
Sent: Monday, October 10, 2011 2:15 PM
To: Carmen Aguila
Subject: Additional Analysis Request

Hi Carmen:

Can you analyze one additional sample from your Project No. 119976 for Title 22 Metals? It's lab no. 119976-6 (Our Sample ID No. E-133-65). I would have attached a scanned copy of the COC but our new copiers/scanners are sending TIF images, not PDF.

Thanks.

Matt

Matt Fraychineaud
Principal Geologist
AMEC E&I, Inc.
5628 East Slauson Avenue
Los Angeles, CA 90040
(323) 889-5310
Matt.Fraychineaud@amec.com

Figure C-1.70

Rachelle Arada

From: Carmen Aguila
Sent: Tuesday, October 11, 2011 10:54 AM
To: Diane Galvan; Rachelle Arada; Sing-Ling Liu
Cc: Ed Caballero; Eddie Rodriguez; Edgar Morrison
Subject: FW: Metals Analysis
Attachments: RE: Additional Analysis Request

From: Fraychineaud, Matt [mailto:MFRAYCHINEAUD@mactec.com]
Sent: Tuesday, October 11, 2011 10:46 AM
To: Carmen Aguila
Subject: Metals Analysis

Carmen:

Is it possible to get the metal results for the one sample I requested yesterday by tomorrow or Thursday?

Matt

Matt Fraychineaud
Principal Geologist
AMEC E&I, Inc.
5628 East Slauson Avenue
Los Angeles, CA 90040
(323) 889-5310
Matt.Fraychineaud@amec.com

Figure C-1.71

September 14, 2011

Matt Fraychineaud
Mactec
5628 E. Slauson Avenue,
Los Angeles, CA 90040-2922
TEL: (323) 889-5300
FAX:

ELAP No.: 1838
NELAP No.: 02107CA
CSDLAC No.: 10196
ORELAP No.: CA300003

Workorder No.: 119710

RE: Metro Westside Extention, 4953101567

Attention: Matt Fraychineaud

Enclosed are the results for sample(s) received on September 07, 2011 by Advanced Technology Laboratories . The sample(s) are tested for the parameters as indicated in the enclosed chain of custody in accordance with the applicable laboratory certifications.

Thank you for the opportunity to service the needs of your company.

Please feel free to call me at (562)989-4045 if I can be of further assistance to your company.

Sincerely,

Eddie F. Rodriguez
Laboratory Director

Advanced Technology Laboratories
3275 Walnut Avenue Signal Hill, CA 90755 Tel: 562 989-4045 Fax: 562 989-4040

Figure C-1.72

CLIENT: Mactec
Project: Metro Westside Extention, 4953101567
Lab Order: 119710

CASE NARRATIVE

Analytical Comments for EPA 6010B

Samples 119704-001A-MS and 119704-001A-MSD, Matrix Spike (MS) and Matrix Spike Duplicate (MSD) are outside recovery criteria; however, the analytical batch was validated by the Laboratory Control Sample (LCS).

Analytical Comments for EPA 7471A

Samples 119706-001A-MS and 119706-001A-MSD, are specific samples that belong to a different work order were used as Matrix Spike (MS) and Matrix Spike Duplicate (MSD) and were analyzed beyond hold time.

Advanced Technology Laboratories
3275 Walnut Avenue, Signal Hill, CA 90755 Tel: 562. 989.4045 Fax: 562.989.4040

Figure C-1.73

CLIENT: Mactec
Lab Order: 119710
Project: Metro Westside Extention, 4953101567
Lab ID: 119710-003A

Client Sample ID: E-134-20'
Collection Date: 9/6/2011 12:05:00 PM
Matrix: SOIL

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
DIESEL & MOTOR OIL RANGE ORGANICS BY GC/FID						
LUFT				**EPA 8015B(M)**		
RunID: GC16_110913B	QC Batch: 75465			PrepDate: 9/12/2011		Analyst: **CBR**
DRO	ND	10		mg/Kg	1	9/13/2011 10:30 AM
ORO	ND	10		mg/Kg	1	9/13/2011 10:30 AM
Surr: p-Terphenyl	71.0	63-152		%REC	1	9/13/2011 10:30 AM
GASOLINE RANGE ORGANICS BY GC/FID						
				EPA 8015B(M)		
RunID: GC2_110908A	QC Batch: E11VS320			PrepDate:		Analyst: **TP**
GRO	ND	1.0		mg/Kg	1	9/8/2011 01:03 PM
Surr: Bromofluorobenzene (FID)	83.5	62-153		%REC	1	9/8/2011 01:03 PM
VOLATILE ORGANIC COMPOUNDS BY GC/MS						
				EPA 8260B		
RunID: MS4_110908A	QC Batch: K11VS212			PrepDate:		Analyst: **DDL**
1,1,1,2-Tetrachloroethane	ND	5.0		µg/Kg	1	9/8/2011 09:19 PM
1,1,1-Trichloroethane	ND	5.0		µg/Kg	1	9/8/2011 09:19 PM
1,1,2,2-Tetrachloroethane	ND	5.0		µg/Kg	1	9/8/2011 09:19 PM
1,1,2-Trichloroethane	ND	5.0		µg/Kg	1	9/8/2011 09:19 PM
1,1-Dichloroethane	ND	5.0		µg/Kg	1	9/8/2011 09:19 PM
1,1-Dichloroethene	ND	5.0		µg/Kg	1	9/8/2011 09:19 PM
1,1-Dichloropropene	ND	5.0		µg/Kg	1	9/8/2011 09:19 PM
1,2,3-Trichlorobenzene	ND	5.0		µg/Kg	1	9/8/2011 09:19 PM
1,2,3-Trichloropropane	ND	5.0		µg/Kg	1	9/8/2011 09:19 PM
1,2,4-Trichlorobenzene	ND	5.0		µg/Kg	1	9/8/2011 09:19 PM
1,2,4-Trimethylbenzene	ND	5.0		µg/Kg	1	9/8/2011 09:19 PM
1,2-Dibromo-3-chloropropane	ND	10		µg/Kg	1	9/8/2011 09:19 PM
1,2-Dibromoethane	ND	5.0		µg/Kg	1	9/8/2011 09:19 PM
1,2-Dichlorobenzene	ND	5.0		µg/Kg	1	9/8/2011 09:19 PM
1,2-Dichloroethane	ND	5.0		µg/Kg	1	9/8/2011 09:19 PM
1,2-Dichloropropane	ND	5.0		µg/Kg	1	9/8/2011 09:19 PM
1,3,5-Trimethylbenzene	ND	5.0		µg/Kg	1	9/8/2011 09:19 PM
1,3-Dichlorobenzene	ND	5.0		µg/Kg	1	9/8/2011 09:19 PM
1,3-Dichloropropane	ND	5.0		µg/Kg	1	9/8/2011 09:19 PM
1,4-Dichlorobenzene	ND	5.0		µg/Kg	1	9/8/2011 09:19 PM
2,2-Dichloropropane	ND	5.0		µg/Kg	1	9/8/2011 09:19 PM
2-Chlorotoluene	ND	5.0		µg/Kg	1	9/8/2011 09:19 PM
4-Chlorotoluene	ND	5.0		µg/Kg	1	9/8/2011 09:19 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

Figure C-1.74

CLIENT:	Mactec	**Client Sample ID:**	E-134-20'
Lab Order:	119710	**Collection Date:**	9/6/2011 12:05:00 PM
Project:	Metro Westside Extention, 4953101567	**Matrix:**	SOIL
Lab ID:	119710-003A		

VOLATILE ORGANIC COMPOUNDS BY GC/MS

EPA 8260B

RunID: MS4_110908A QC Batch: K11VS212 PrepDate: Analyst: **DDL**

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
4-Isopropyltoluene	ND	5.0		µg/Kg	1	9/8/2011 09:19 PM
Benzene	ND	5.0		µg/Kg	1	9/8/2011 09:19 PM
Bromobenzene	ND	5.0		µg/Kg	1	9/8/2011 09:19 PM
Bromodichloromethane	ND	5.0		µg/Kg	1	9/8/2011 09:19 PM
Bromoform	ND	5.0		µg/Kg	1	9/8/2011 09:19 PM
Bromomethane	ND	5.0		µg/Kg	1	9/8/2011 09:19 PM
Carbon tetrachloride	ND	5.0		µg/Kg	1	9/8/2011 09:19 PM
Chlorobenzene	ND	5.0		µg/Kg	1	9/8/2011 09:19 PM
Chloroethane	ND	5.0		µg/Kg	1	9/8/2011 09:19 PM
Chloroform	ND	5.0		µg/Kg	1	9/8/2011 09:19 PM
Chloromethane	ND	5.0		µg/Kg	1	9/8/2011 09:19 PM
cis-1,2-Dichloroethene	ND	5.0		µg/Kg	1	9/8/2011 09:19 PM
cis-1,3-Dichloropropene	ND	5.0		µg/Kg	1	9/8/2011 09:19 PM
Di-isopropyl ether	ND	5.0		µg/Kg	1	9/8/2011 09:19 PM
Dibromochloromethane	ND	5.0		µg/Kg	1	9/8/2011 09:19 PM
Dibromomethane	ND	5.0		µg/Kg	1	9/8/2011 09:19 PM
Dichlorodifluoromethane	ND	5.0		µg/Kg	1	9/8/2011 09:19 PM
Ethyl Tert-butyl ether	ND	5.0		µg/Kg	1	9/8/2011 09:19 PM
Ethylbenzene	ND	5.0		µg/Kg	1	9/8/2011 09:19 PM
Hexachlorobutadiene	ND	5.0		µg/Kg	1	9/8/2011 09:19 PM
Isopropylbenzene	ND	5.0		µg/Kg	1	9/8/2011 09:19 PM
m,p-Xylene	ND	10		µg/Kg	1	9/8/2011 09:19 PM
Methylene chloride	ND	5.0		µg/Kg	1	9/8/2011 09:19 PM
MTBE	ND	5.0		µg/Kg	1	9/8/2011 09:19 PM
n-Butylbenzene	ND	5.0		µg/Kg	1	9/8/2011 09:19 PM
n-Propylbenzene	ND	5.0		µg/Kg	1	9/8/2011 09:19 PM
Naphthalene	ND	5.0		µg/Kg	1	9/8/2011 09:19 PM
o-Xylene	ND	5.0		µg/Kg	1	9/8/2011 09:19 PM
sec-Butylbenzene	ND	5.0		µg/Kg	1	9/8/2011 09:19 PM
Styrene	ND	5.0		µg/Kg	1	9/8/2011 09:19 PM
Tert-amyl methyl ether	ND	5.0		µg/Kg	1	9/8/2011 09:19 PM
Tert-Butanol	ND	100		µg/Kg	1	9/8/2011 09:19 PM
tert-Butylbenzene	ND	5.0		µg/Kg	1	9/8/2011 09:19 PM
Tetrachloroethene	ND	5.0		µg/Kg	1	9/8/2011 09:19 PM
Toluene	ND	5.0		µg/Kg	1	9/8/2011 09:19 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

Figure C-1.75

CLIENT:	Mactec	**Client Sample ID:**	E-134-20'
Lab Order:	119710	**Collection Date:**	9/6/2011 12:05:00 PM
Project:	Metro Westside Extention, 4953101567	**Matrix:**	SOIL
Lab ID:	119710-003A		

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
VOLATILE ORGANIC COMPOUNDS BY GC/MS						
		EPA 8260B				
RunID: MS4_110908A	QC Batch: K11VS212			PrepDate:		Analyst: **DDL**
trans-1,2-Dichloroethene	ND	5.0		µg/Kg	1	9/8/2011 09:19 PM
Trichloroethene	ND	5.0		µg/Kg	1	9/8/2011 09:19 PM
Trichlorofluoromethane	ND	5.0		µg/Kg	1	9/8/2011 09:19 PM
Vinyl chloride	ND	5.0		µg/Kg	1	9/8/2011 09:19 PM
Surr: 1,2-Dichloroethane-d4	96.7	70-130		%REC	1	9/8/2011 09:19 PM
Surr: 4-Bromofluorobenzene	91.8	70-130		%REC	1	9/8/2011 09:19 PM
Surr: Dibromofluoromethane	93.7	70-130		%REC	1	9/8/2011 09:19 PM
Surr: Toluene-d8	94.9	70-130		%REC	1	9/8/2011 09:19 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

Figure C-1.76

CLIENT: Mactec
Lab Order: 119710
Project: Metro Westside Extention, 4953101567
Lab ID: 119710-004A

Client Sample ID: E-134-25'
Collection Date: 9/6/2011 12:17:00 PM
Matrix: SOIL

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
ICP METALS						
	EPA 3050B			**EPA 6010B**		
RunID: ICP8_110912A	QC Batch: 75418			PrepDate:	9/9/2011	Analyst: **SRB**
Antimony	ND	2.0		mg/Kg	1	9/12/2011 02:01 PM
Arsenic	7.2	1.0		mg/Kg	1	9/12/2011 02:01 PM
Barium	85	1.0		mg/Kg	1	9/12/2011 02:01 PM
Beryllium	ND	1.0		mg/Kg	1	9/12/2011 02:01 PM
Cadmium	ND	1.0		mg/Kg	1	9/12/2011 02:01 PM
Chromium	24	1.0		mg/Kg	1	9/12/2011 02:01 PM
Cobalt	6.7	1.0		mg/Kg	1	9/12/2011 02:01 PM
Copper	14	2.0		mg/Kg	1	9/12/2011 02:01 PM
Lead	4.8	1.0		mg/Kg	1	9/12/2011 02:01 PM
Molybdenum	ND	1.0		mg/Kg	1	9/12/2011 02:01 PM
Nickel	17	1.0		mg/Kg	1	9/12/2011 02:01 PM
Selenium	ND	1.0		mg/Kg	1	9/12/2011 02:01 PM
Silver	ND	1.0		mg/Kg	1	9/12/2011 02:01 PM
Thallium	ND	1.0		mg/Kg	1	9/12/2011 02:01 PM
Vanadium	45	1.0		mg/Kg	1	9/12/2011 02:01 PM
Zinc	36	1.0		mg/Kg	1	9/12/2011 02:01 PM
MERCURY BY COLD VAPOR TECHNIQUE						
				EPA 7471A		
RunID: AA1_110912A	QC Batch: 75419			PrepDate:	9/9/2011	Analyst: **VV**
Mercury	ND	0.10		mg/Kg	1	9/12/2011 11:32 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

Figure C-1.77

CLIENT: Mactec
Lab Order: 119710
Project: Metro Westside Extention, 4953101567
Lab ID: 119710-007A

Client Sample ID: E-134-40'
Collection Date: 9/6/2011 12:57:00 PM
Matrix: SOIL

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
DIESEL & MOTOR OIL RANGE ORGANICS BY GC/FID						
LUFT				**EPA 8015B(M)**		
RunID: GC16_110913B	QC Batch: 75465			PrepDate: 9/12/2011		Analyst: **CBR**
DRO	ND	10		mg/Kg	1	9/13/2011 10:40 AM
ORO	ND	10		mg/Kg	1	9/13/2011 10:40 AM
Surr: p-Terphenyl	70.8	63-152		%REC	1	9/13/2011 10:40 AM
GASOLINE RANGE ORGANICS BY GC/FID						
				EPA 8015B(M)		
RunID: GC2_110908A	QC Batch: E11VS320			PrepDate:		Analyst: **TP**
GRO	ND	1.0		mg/Kg	1	9/8/2011 01:19 PM
Surr: Bromofluorobenzene (FID)	95.6	62-153		%REC	1	9/8/2011 01:19 PM
VOLATILE ORGANIC COMPOUNDS BY GC/MS						
				EPA 8260B		
RunID: MS4_110908A	QC Batch: K11VS212			PrepDate:		Analyst: **DDL**
1,1,1,2-Tetrachloroethane	ND	5.0		µg/Kg	1	9/8/2011 09:37 PM
1,1,1-Trichloroethane	ND	5.0		µg/Kg	1	9/8/2011 09:37 PM
1,1,2,2-Tetrachloroethane	ND	5.0		µg/Kg	1	9/8/2011 09:37 PM
1,1,2-Trichloroethane	ND	5.0		µg/Kg	1	9/8/2011 09:37 PM
1,1-Dichloroethane	ND	5.0		µg/Kg	1	9/8/2011 09:37 PM
1,1-Dichloroethene	ND	5.0		µg/Kg	1	9/8/2011 09:37 PM
1,1-Dichloropropene	ND	5.0		µg/Kg	1	9/8/2011 09:37 PM
1,2,3-Trichlorobenzene	ND	5.0		µg/Kg	1	9/8/2011 09:37 PM
1,2,3-Trichloropropane	ND	5.0		µg/Kg	1	9/8/2011 09:37 PM
1,2,4-Trichlorobenzene	ND	5.0		µg/Kg	1	9/8/2011 09:37 PM
1,2,4-Trimethylbenzene	ND	5.0		µg/Kg	1	9/8/2011 09:37 PM
1,2-Dibromo-3-chloropropane	ND	10		µg/Kg	1	9/8/2011 09:37 PM
1,2-Dibromoethane	ND	5.0		µg/Kg	1	9/8/2011 09:37 PM
1,2-Dichlorobenzene	ND	5.0		µg/Kg	1	9/8/2011 09:37 PM
1,2-Dichloroethane	ND	5.0		µg/Kg	1	9/8/2011 09:37 PM
1,2-Dichloropropane	ND	5.0		µg/Kg	1	9/8/2011 09:37 PM
1,3,5-Trimethylbenzene	ND	5.0		µg/Kg	1	9/8/2011 09:37 PM
1,3-Dichlorobenzene	ND	5.0		µg/Kg	1	9/8/2011 09:37 PM
1,3-Dichloropropane	ND	5.0		µg/Kg	1	9/8/2011 09:37 PM
1,4-Dichlorobenzene	ND	5.0		µg/Kg	1	9/8/2011 09:37 PM
2,2-Dichloropropane	ND	5.0		µg/Kg	1	9/8/2011 09:37 PM
2-Chlorotoluene	ND	5.0		µg/Kg	1	9/8/2011 09:37 PM
4-Chlorotoluene	ND	5.0		µg/Kg	1	9/8/2011 09:37 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

Figure C-1.78

CLIENT:	Mactec	**Client Sample ID:**	E-134-40'
Lab Order:	119710	**Collection Date:**	9/6/2011 12:57:00 PM
Project:	Metro Westside Extention, 4953101567	**Matrix:**	SOIL
Lab ID:	119710-007A		

VOLATILE ORGANIC COMPOUNDS BY GC/MS

EPA 8260B

RunID: MS4_110908A QC Batch: K11VS212 PrepDate: Analyst: **DDL**

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
4-Isopropyltoluene	ND	5.0		µg/Kg	1	9/8/2011 09:37 PM
Benzene	ND	5.0		µg/Kg	1	9/8/2011 09:37 PM
Bromobenzene	ND	5.0		µg/Kg	1	9/8/2011 09:37 PM
Bromodichloromethane	ND	5.0		µg/Kg	1	9/8/2011 09:37 PM
Bromoform	ND	5.0		µg/Kg	1	9/8/2011 09:37 PM
Bromomethane	ND	5.0		µg/Kg	1	9/8/2011 09:37 PM
Carbon tetrachloride	ND	5.0		µg/Kg	1	9/8/2011 09:37 PM
Chlorobenzene	ND	5.0		µg/Kg	1	9/8/2011 09:37 PM
Chloroethane	ND	5.0		µg/Kg	1	9/8/2011 09:37 PM
Chloroform	ND	5.0		µg/Kg	1	9/8/2011 09:37 PM
Chloromethane	ND	5.0		µg/Kg	1	9/8/2011 09:37 PM
cis-1,2-Dichloroethene	ND	5.0		µg/Kg	1	9/8/2011 09:37 PM
cis-1,3-Dichloropropene	ND	5.0		µg/Kg	1	9/8/2011 09:37 PM
Di-isopropyl ether	ND	5.0		µg/Kg	1	9/8/2011 09:37 PM
Dibromochloromethane	ND	5.0		µg/Kg	1	9/8/2011 09:37 PM
Dibromomethane	ND	5.0		µg/Kg	1	9/8/2011 09:37 PM
Dichlorodifluoromethane	ND	5.0		µg/Kg	1	9/8/2011 09:37 PM
Ethyl Tert-butyl ether	ND	5.0		µg/Kg	1	9/8/2011 09:37 PM
Ethylbenzene	ND	5.0		µg/Kg	1	9/8/2011 09:37 PM
Hexachlorobutadiene	ND	5.0		µg/Kg	1	9/8/2011 09:37 PM
Isopropylbenzene	ND	5.0		µg/Kg	1	9/8/2011 09:37 PM
m,p-Xylene	ND	10		µg/Kg	1	9/8/2011 09:37 PM
Methylene chloride	ND	5.0		µg/Kg	1	9/8/2011 09:37 PM
MTBE	ND	5.0		µg/Kg	1	9/8/2011 09:37 PM
n-Butylbenzene	ND	5.0		µg/Kg	1	9/8/2011 09:37 PM
n-Propylbenzene	ND	5.0		µg/Kg	1	9/8/2011 09:37 PM
Naphthalene	ND	5.0		µg/Kg	1	9/8/2011 09:37 PM
o-Xylene	ND	5.0		µg/Kg	1	9/8/2011 09:37 PM
sec-Butylbenzene	ND	5.0		µg/Kg	1	9/8/2011 09:37 PM
Styrene	ND	5.0		µg/Kg	1	9/8/2011 09:37 PM
Tert-amyl methyl ether	ND	5.0		µg/Kg	1	9/8/2011 09:37 PM
Tert-Butanol	ND	100		µg/Kg	1	9/8/2011 09:37 PM
tert-Butylbenzene	ND	5.0		µg/Kg	1	9/8/2011 09:37 PM
Tetrachloroethene	ND	5.0		µg/Kg	1	9/8/2011 09:37 PM
Toluene	ND	5.0		µg/Kg	1	9/8/2011 09:37 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
E	Value above quantitation range
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference
	Results are wet unless otherwise specified
DO	Surrogate Diluted Out

Figure C-1.79

CLIENT:	Mactec	**Client Sample ID:**	E-134-40'
Lab Order:	119710	**Collection Date:**	9/6/2011 12:57:00 PM
Project:	Metro Westside Extention, 4953101567	**Matrix:**	SOIL
Lab ID:	119710-007A		

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
VOLATILE ORGANIC COMPOUNDS BY GC/MS						
		EPA 8260B				
RunID: MS4_110908A	QC Batch: K11VS212			PrepDate:		Analyst: **DDL**
trans-1,2-Dichloroethene	ND	5.0		µg/Kg	1	9/8/2011 09:37 PM
Trichloroethene	ND	5.0		µg/Kg	1	9/8/2011 09:37 PM
Trichlorofluoromethane	ND	5.0		µg/Kg	1	9/8/2011 09:37 PM
Vinyl chloride	ND	5.0		µg/Kg	1	9/8/2011 09:37 PM
Surr: 1,2-Dichloroethane-d4	94.5	70-130		%REC	1	9/8/2011 09:37 PM
Surr: 4-Bromofluorobenzene	94.0	70-130		%REC	1	9/8/2011 09:37 PM
Surr: Dibromofluoromethane	94.2	70-130		%REC	1	9/8/2011 09:37 PM
Surr: Toluene-d8	93.8	70-130		%REC	1	9/8/2011 09:37 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

Figure C-1.80

CLIENT: Mactec
Work Order: 119710
Project: Metro Westside Extention, 4953101567

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_S

Sample ID: **MB-75418** SampType: **MBLK** TestCode: **6010_S** Units: **mg/Kg** Prep Date: **9/9/2011** RunNo: **136534**
Client ID: **PBS** Batch ID: **75418** TestNo: **EPA 6010B** **EPA 3050B** Analysis Date: **9/12/2011** SeqNo: **2238701**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Antimony	ND	2.0									
Arsenic	ND	1.0									
Barium	0.121	1.0									
Beryllium	ND	1.0									
Cadmium	ND	1.0									
Chromium	ND	1.0									
Cobalt	ND	1.0									
Copper	ND	2.0									
Lead	ND	1.0									
Molybdenum	ND	1.0									
Nickel	ND	1.0									
Selenium	ND	1.0									
Silver	ND	1.0									
Thallium	ND	1.0									
Vanadium	ND	1.0									
Zinc	ND	1.0									

Sample ID: **LCS-75418** SampType: **LCS** TestCode: **6010_S** Units: **mg/Kg** Prep Date: **9/9/2011** RunNo: **136534**
Client ID: **LCSS** Batch ID: **75418** TestNo: **EPA 6010B** **EPA 3050B** Analysis Date: **9/12/2011** SeqNo: **2238702**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Antimony	46.070	2.0	50.00	0	92.1	80	120				
Arsenic	44.984	1.0	50.00	0	90.0	80	120				
Barium	47.452	1.0	50.00	0.1215	94.7	80	120				
Beryllium	46.558	1.0	50.00	0	93.1	80	120				
Cadmium	45.572	1.0	50.00	0	91.1	80	120				
Chromium	43.696	1.0	50.00	0	87.4	80	120				
Cobalt	46.977	1.0	50.00	0	94.0	80	120				

Qualifiers:

B Analyte detected in the associated Method Blank
ND Not Detected at the Reporting Limit
DO Surrogate Diluted Out
E Value above quantitation range
R RPD outside accepted recovery limits
Calculations are based on raw values
H Holding times for preparation or analysis exceeded
S Spike/Surrogate outside of limits due to matrix interference

Figure C-1.81

CLIENT: Mactec
Work Order: 119710
Project: Metro Westside Extention, 4953101567

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_S

Sample ID: **LCS-75418** SampType: **LCS** TestCode: **6010_S** Units: **mg/Kg** Prep Date: **9/9/2011** RunNo: **136534**
Client ID: **LCSS** Batch ID: **75418** TestNo: **EPA 6010B** **EPA 3050B** Analysis Date: **9/12/2011** SeqNo: **2238702**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Copper	46.761	2.0	50.00	0	93.5	80	120				
Lead	47.051	1.0	50.00	0	94.1	80	120				
Molybdenum	48.585	1.0	50.00	0	97.2	80	120				
Nickel	46.501	1.0	50.00	0	93.0	80	120				
Selenium	43.067	1.0	50.00	0	86.1	80	120				
Silver	46.126	1.0	50.00	0	92.3	80	120				
Thallium	44.603	1.0	50.00	0	89.2	80	120				
Vanadium	47.253	1.0	50.00	0	94.5	80	120				
Zinc	45.706	1.0	50.00	0	91.4	80	120				

Sample ID: **119704-001A-MS** SampType: **MS** TestCode: **6010_S** Units: **mg/Kg** Prep Date: **9/9/2011** RunNo: **136534**
Client ID: **ZZZZZZ** Batch ID: **75418** TestNo: **EPA 6010B** **EPA 3050B** Analysis Date: **9/12/2011** SeqNo: **2238705**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Antimony	83.831	2.0	125.0	0.1776	66.9	32	105				
Arsenic	94.608	1.0	125.0	2.051	74.0	49	106				
Barium	233.157	1.0	125.0	210.1	18.5	31	133				S
Beryllium	98.335	1.0	125.0	0.1592	78.5	56	106				
Cadmium	92.095	1.0	125.0	0.1944	73.5	51	103				
Chromium	97.724	1.0	125.0	4.854	74.3	45	114				
Cobalt	100.283	1.0	125.0	3.841	77.2	52	106				
Copper	108.650	2.0	125.0	5.454	82.6	54	125				
Lead	97.500	1.0	125.0	4.073	74.7	34	126				
Molybdenum	94.712	1.0	125.0	0	75.8	54	106				
Nickel	96.432	1.0	125.0	2.157	75.4	45	111				
Selenium	89.764	1.0	125.0	0	71.8	47	104				
Silver	98.164	1.0	125.0	0	78.5	56	112				
Thallium	91.215	1.0	125.0	0	73.0	46	101				
Vanadium	116.818	1.0	125.0	17.32	79.6	54	114				
Zinc	114.271	1.0	125.0	15.16	79.3	28	125				

Qualifiers:

B Analyte detected in the associated Method Blank
ND Not Detected at the Reporting Limit
DO Surrogate Diluted Out
E Value above quantitation range
R RPD outside accepted recovery limits
Calculations are based on raw values
H Holding times for preparation or analysis exceeded
S Spike/Surrogate outside of limits due to matrix interference

Figure C-1.82

CLIENT: Mactec
Work Order: 119710
Project: Metro Westside Extention, 4953101567

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_S

Sample ID: **119704-001A-MSD** SampType: **MSD** TestCode: **6010_S** Units: **mg/Kg** Prep Date: **9/9/2011** RunNo: **136534**
Client ID: **ZZZZZZ** Batch ID: **75418** TestNo: **EPA 6010B** **EPA 3050B** Analysis Date: **9/12/2011** SeqNo: **2238706**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Antimony	86.429	2.0	125.0	0.1776	69.0	32	105	83.83	3.05	20	
Arsenic	99.197	1.0	125.0	2.051	77.7	49	106	94.61	4.74	20	
Barium	219.804	1.0	125.0	210.1	7.78	31	133	233.2	5.90	20	S
Beryllium	102.434	1.0	125.0	0.1592	81.8	56	106	98.33	4.08	20	
Cadmium	95.706	1.0	125.0	0.1944	76.4	51	103	92.09	3.85	20	
Chromium	102.226	1.0	125.0	4.854	77.9	45	114	97.72	4.50	20	
Cobalt	104.625	1.0	125.0	3.841	80.6	52	106	100.3	4.24	20	
Copper	114.850	2.0	125.0	5.454	87.5	54	125	108.7	5.55	20	
Lead	102.249	1.0	125.0	4.073	78.5	34	126	97.50	4.75	20	
Molybdenum	99.285	1.0	125.0	0	79.4	54	106	94.71	4.71	20	
Nickel	100.906	1.0	125.0	2.157	79.0	45	111	96.43	4.53	20	
Selenium	93.205	1.0	125.0	0	74.6	47	104	89.76	3.76	20	
Silver	102.510	1.0	125.0	0	82.0	56	112	98.16	4.33	20	
Thallium	95.317	1.0	125.0	0	76.3	46	101	91.22	4.40	20	
Vanadium	124.036	1.0	125.0	17.32	85.4	54	114	116.8	5.99	20	
Zinc	118.215	1.0	125.0	15.16	82.4	28	125	114.3	3.39	20	

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits
- Calculations are based on raw values
- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

Figure C-1.83

CLIENT: Mactec
Work Order: 119710
Project: Metro Westside Extention, 4953101567

ANALYTICAL QC SUMMARY REPORT

TestCode: 7471_S

Sample ID: **MB-75419**	SampType: **MBLK**	TestCode: **7471_S**	Units: **mg/Kg**	Prep Date: **9/9/2011**	RunNo: **136528**
Client ID: **PBS**	Batch ID: **75419**	TestNo: **EPA 7471A**		Analysis Date: **9/12/2011**	SeqNo: **2238486**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury	ND	0.10									

Sample ID: **LCS-75419**	SampType: **LCS**	TestCode: **7471_S**	Units: **mg/Kg**	Prep Date: **9/9/2011**	RunNo: **136528**
Client ID: **LCSS**	Batch ID: **75419**	TestNo: **EPA 7471A**		Analysis Date: **9/12/2011**	SeqNo: **2238487**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury	0.909	0.10	0.8300	0	110	80	120				

Sample ID: **119706-001A-MS**	SampType: **MS**	TestCode: **7471_S**	Units: **mg/Kg**	Prep Date: **9/9/2011**	RunNo: **136528**
Client ID: **ZZZZZZ**	Batch ID: **75419**	TestNo: **EPA 7471A**		Analysis Date: **9/12/2011**	SeqNo: **2238488**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury	0.957	0.10	0.8300	0.06439	107	70	130				H

Sample ID: **119706-001A-MSD**	SampType: **MSD**	TestCode: **7471_S**	Units: **mg/Kg**	Prep Date: **9/9/2011**	RunNo: **136528**
Client ID: **ZZZZZZ**	Batch ID: **75419**	TestNo: **EPA 7471A**		Analysis Date: **9/12/2011**	SeqNo: **2238489**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury	0.954	0.10	0.8300	0.06439	107	70	130	0.9565	0.311	20	H

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

Figure C-1.84

CLIENT: Mactec
Work Order: 119710
Project: Metro Westside Extention, 4953101567

ANALYTICAL QC SUMMARY REPORT

TestCode: 8015_S_DM H

Sample ID: **MB-75465**	SampType: **MBLK**	TestCode: **8015_S_DM H**	Units: **mg/Kg**	Prep Date: **9/12/2011**	RunNo: **136567**
Client ID: **PBS**	Batch ID: **75465**	TestNo: **EPA 8015B(M**	**LUFT**	Analysis Date: **9/13/2011**	SeqNo: **2239313**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
DRO	ND	10									
ORO	ND	10									
Surr: p-Terphenyl	66.520		80.00		83.2	63	152				

Sample ID: **LCS-75465**	SampType: **LCS**	TestCode: **8015_S_DM H**	Units: **mg/Kg**	Prep Date: **9/12/2011**	RunNo: **136567**
Client ID: **LCSS**	Batch ID: **75465**	TestNo: **EPA 8015B(M**	**LUFT**	Analysis Date: **9/13/2011**	SeqNo: **2239314**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
DRO	924.970	10	1000	0	92.5	76	139				
Surr: p-Terphenyl	74.270		80.00		92.8	63	152				

Sample ID: **119787-003AMS**	SampType: **MS**	TestCode: **8015_S_DM H**	Units: **mg/Kg**	Prep Date: **9/12/2011**	RunNo: **136567**
Client ID: **ZZZZZZ**	Batch ID: **75465**	TestNo: **EPA 8015B(M**	**LUFT**	Analysis Date: **9/13/2011**	SeqNo: **2239315**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
DRO	890.520	10	1000	0	89.1	60	158				
Surr: p-Terphenyl	64.730		80.00		80.9	63	152				

Sample ID: **119787-003AMSD**	SampType: **MSD**	TestCode: **8015_S_DM H**	Units: **mg/Kg**	Prep Date: **9/12/2011**	RunNo: **136567**
Client ID: **ZZZZZZ**	Batch ID: **75465**	TestNo: **EPA 8015B(M**	**LUFT**	Analysis Date: **9/13/2011**	SeqNo: **2239316**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
DRO	890.670	10	1000	0	89.1	60	158	890.5	0.0168	20	
Surr: p-Terphenyl	65.530		80.00		81.9	63	152		0	0	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

Figure C-1.85

CLIENT: Mactec
Work Order: 119710
Project: Metro Westside Extention, 4953101567

ANALYTICAL QC SUMMARY REPORT

TestCode: 8015_S_GAS

Sample ID: **E110908LC1** SampType: **LCS** TestCode: **8015_S_GAS** Units: **mg/Kg** Prep Date: RunNo: **136458**
Client ID: **LCSS** Batch ID: **E11VS320** TestNo: **EPA 8015B(M** Analysis Date: **9/8/2011** SeqNo: **2237189**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
GRO	5.337	1.0	5.000	0	107	70	130				
Surr: Bromofluorobenzene (FID)	124.921		100.0		125	62	153				

Sample ID: **E110908MB1MS** SampType: **MS** TestCode: **8015_S_GAS** Units: **mg/Kg** Prep Date: RunNo: **136458**
Client ID: **ZZZZZZ** Batch ID: **E11VS320** TestNo: **EPA 8015B(M** Analysis Date: **9/8/2011** SeqNo: **2237190**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
GRO	5.014	1.0	5.000	0	100	49	131				
Surr: Bromofluorobenzene (FID)	113.395		100.0		113	62	153				

Sample ID: **E110908MB1MSD** SampType: **MSD** TestCode: **8015_S_GAS** Units: **mg/Kg** Prep Date: RunNo: **136458**
Client ID: **ZZZZZZ** Batch ID: **E11VS320** TestNo: **EPA 8015B(M** Analysis Date: **9/8/2011** SeqNo: **2237191**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
GRO	4.933	1.0	5.000	0	98.7	49	131	5.014	1.63	20	
Surr: Bromofluorobenzene (FID)	113.815		100.0		114	62	153		0	0	

Sample ID: **E110908MB1** SampType: **MBLK** TestCode: **8015_S_GAS** Units: **mg/Kg** Prep Date: RunNo: **136458**
Client ID: **PBS** Batch ID: **E11VS320** TestNo: **EPA 8015B(M** Analysis Date: **9/8/2011** SeqNo: **2237192**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
GRO	ND	1.0									
Surr: Bromofluorobenzene (FID)	81.015		100.0		81.0	62	153				

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

Calculations are based on raw values

- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

Figure C-1.86

CLIENT: Mactec
Work Order: 119710
Project: Metro Westside Extention, 4953101567

ANALYTICAL QC SUMMARY REPORT

TestCode: 8260_S

Sample ID: **K110908LCS2** SampType: **LCS** TestCode: **8260_S** Units: **µg/Kg** Prep Date: RunNo: **136478**
Client ID: **LCSS** Batch ID: **K11VS212** TestNo: **EPA 8260B** Analysis Date: **9/8/2011** SeqNo: **2237595**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
1,1-Dichloroethene	45.180	5.0	50.00	0	90.4	70	130				
Benzene	102.300	5.0	100.0	0	102	70	130				
Chlorobenzene	53.630	5.0	50.00	0	107	82	130				
MTBE	52.140	5.0	50.00	0	104	70	130				
Toluene	105.530	5.0	100.0	0	106	70	130				
Trichloroethene	51.990	5.0	50.00	0	104	77	130				
Surr: 1,2-Dichloroethane-d4	42.070		50.00		84.1	70	130				
Surr: 4-Bromofluorobenzene	47.850		50.00		95.7	70	130				
Surr: Dibromofluoromethane	43.790		50.00		87.6	70	130				
Surr: Toluene-d8	46.280		50.00		92.6	70	130				

Sample ID: **K110908MB1MS** SampType: **MS** TestCode: **8260_S** Units: **µg/Kg** Prep Date: RunNo: **136478**
Client ID: **ZZZZZZ** Batch ID: **K11VS212** TestNo: **EPA 8260B** Analysis Date: **9/8/2011** SeqNo: **2237597**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
1,1-Dichloroethene	43.710	5.0	50.00	0	87.4	70	130				
Benzene	100.470	5.0	100.0	0	100	70	130				
Chlorobenzene	53.520	5.0	50.00	0	107	70	130				
MTBE	50.030	5.0	50.00	0	100	70	130				
Toluene	103.400	5.0	100.0	0	103	70	130				
Trichloroethene	51.420	5.0	50.00	0	103	70	130				
Surr: 1,2-Dichloroethane-d4	41.390		50.00		82.8	70	130				
Surr: 4-Bromofluorobenzene	47.950		50.00		95.9	70	130				
Surr: Dibromofluoromethane	43.460		50.00		86.9	70	130				
Surr: Toluene-d8	46.640		50.00		93.3	70	130				

Sample ID: **K110908MB1MSD** SampType: **MSD** TestCode: **8260_S** Units: **µg/Kg** Prep Date: RunNo: **136478**
Client ID: **ZZZZZZ** Batch ID: **K11VS212** TestNo: **EPA 8260B** Analysis Date: **9/8/2011** SeqNo: **2237598**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

Calculations are based on raw values

- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

Figure C-1.87

CLIENT: Mactec
Work Order: 119710
Project: Metro Westside Extention, 4953101567

ANALYTICAL QC SUMMARY REPORT

TestCode: 8260_S

Sample ID: **K110908MB1MSD** SampType: **MSD** TestCode: **8260_S** Units: **µg/Kg** Prep Date: RunNo: **136478**
Client ID: **ZZZZZZ** Batch ID: **K11VS212** TestNo: **EPA 8260B** Analysis Date: **9/8/2011** SeqNo: **2237598**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
1,1-Dichloroethene	42.370	5.0	50.00	0	84.7	70	130	43.71	3.11	20	
Benzene	97.910	5.0	100.0	0	97.9	70	130	100.5	2.58	20	
Chlorobenzene	51.940	5.0	50.00	0	104	70	130	53.52	3.00	20	
MTBE	50.360	5.0	50.00	0	101	70	130	50.03	0.657	20	
Toluene	101.250	5.0	100.0	0	101	70	130	103.4	2.10	20	
Trichloroethene	49.940	5.0	50.00	0	99.9	70	130	51.42	2.92	20	
Surr: 1,2-Dichloroethane-d4	41.400		50.00		82.8	70	130		0	0	
Surr: 4-Bromofluorobenzene	47.350		50.00		94.7	70	130		0	0	
Surr: Dibromofluoromethane	43.830		50.00		87.7	70	130		0	0	
Surr: Toluene-d8	46.730		50.00		93.5	70	130		0	0	

Sample ID: **K110908MB1** SampType: **MBLK** TestCode: **8260_S** Units: **µg/Kg** Prep Date: RunNo: **136478**
Client ID: **PBS** Batch ID: **K11VS212** TestNo: **EPA 8260B** Analysis Date: **9/8/2011** SeqNo: **2237599**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
1,1,1,2-Tetrachloroethane	ND	5.0									
1,1,1-Trichloroethane	ND	5.0									
1,1,2,2-Tetrachloroethane	ND	5.0									
1,1,2-Trichloroethane	ND	5.0									
1,1-Dichloroethane	ND	5.0									
1,1-Dichloroethene	ND	5.0									
1,1-Dichloropropene	ND	5.0									
1,2,3-Trichlorobenzene	ND	5.0									
1,2,3-Trichloropropane	ND	5.0									
1,2,4-Trichlorobenzene	ND	5.0									
1,2,4-Trimethylbenzene	ND	5.0									
1,2-Dibromo-3-chloropropane	ND	10									
1,2-Dibromoethane	ND	5.0									
1,2-Dichlorobenzene	ND	5.0									
1,2-Dichloroethane	ND	5.0									

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

Figure C-1.88

CLIENT: Mactec
Work Order: 119710
Project: Metro Westside Extention, 4953101567

ANALYTICAL QC SUMMARY REPORT

TestCode: 8260_S

Sample ID: **K110908MB1** SampType: **MBLK** TestCode: **8260_S** Units: **µg/Kg** Prep Date: RunNo: **136478**
Client ID: **PBS** Batch ID: **K11VS212** TestNo: **EPA 8260B** Analysis Date: **9/8/2011** SeqNo: **2237599**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
1,2-Dichloropropane	ND	5.0									
1,3,5-Trimethylbenzene	ND	5.0									
1,3-Dichlorobenzene	ND	5.0									
1,3-Dichloropropane	ND	5.0									
1,4-Dichlorobenzene	ND	5.0									
2,2-Dichloropropane	ND	5.0									
2-Chlorotoluene	ND	5.0									
4-Chlorotoluene	ND	5.0									
4-Isopropyltoluene	ND	5.0									
Benzene	ND	5.0									
Bromobenzene	ND	5.0									
Bromodichloromethane	ND	5.0									
Bromoform	ND	5.0									
Bromomethane	ND	5.0									
Carbon tetrachloride	ND	5.0									
Chlorobenzene	ND	5.0									
Chloroethane	ND	5.0									
Chloroform	ND	5.0									
Chloromethane	ND	5.0									
cis-1,2-Dichloroethene	ND	5.0									
cis-1,3-Dichloropropene	ND	5.0									
Di-isopropyl ether	ND	5.0									
Dibromochloromethane	ND	5.0									
Dibromomethane	ND	5.0									
Dichlorodifluoromethane	ND	5.0									
Ethyl Tert-butyl ether	ND	5.0									
Ethylbenzene	ND	5.0									
Hexachlorobutadiene	ND	5.0									
Isopropylbenzene	ND	5.0									
m,p-Xylene	ND	10									

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

Figure C-1.89

CLIENT: Mactec
Work Order: 119710
Project: Metro Westside Extention, 4953101567

ANALYTICAL QC SUMMARY REPORT

TestCode: 8260_S

Sample ID: **K110908MB1** SampType: **MBLK** TestCode: **8260_S** Units: **µg/Kg** Prep Date: RunNo: **136478**
Client ID: **PBS** Batch ID: **K11VS212** TestNo: **EPA 8260B** Analysis Date: **9/8/2011** SeqNo: **2237599**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Methylene chloride	ND	5.0									
MTBE	ND	5.0									
n-Butylbenzene	ND	5.0									
n-Propylbenzene	ND	5.0									
Naphthalene	ND	5.0									
o-Xylene	ND	5.0									
sec-Butylbenzene	ND	5.0									
Styrene	ND	5.0									
Tert-amyl methyl ether	ND	5.0									
Tert-Butanol	ND	100									
tert-Butylbenzene	ND	5.0									
Tetrachloroethene	ND	5.0									
Toluene	ND	5.0									
trans-1,2-Dichloroethene	ND	5.0									
Trichloroethene	ND	5.0									
Trichlorofluoromethane	ND	5.0									
Vinyl chloride	ND	5.0									
Surr: 1,2-Dichloroethane-d4	43.120		50.00		86.2	70	130				
Surr: 4-Bromofluorobenzene	46.390		50.00		92.8	70	130				
Surr: Dibromofluoromethane	43.620		50.00		87.2	70	130				
Surr: Toluene-d8	46.810		50.00		93.6	70	130				

Qualifiers:

B Analyte detected in the associated Method Blank
ND Not Detected at the Reporting Limit
DO Surrogate Diluted Out
E Value above quantitation range
R RPD outside accepted recovery limits
Calculations are based on raw values
H Holding times for preparation or analysis exceeded
S Spike/Surrogate outside of limits due to matrix interference

Figure C-1.90

CHAIN OF CUSTODY RECORD

Pg 1 of 1

ADVANCED TECHNOLOGY LABORATORIES
3275 Walnut Ave., Signal Hill, CA 90755
Tel: (562) 989-4045 • Fax: (562) 989-4040

P.O.#: 2011063 74 Quote #: _____
Logged By: _____ Date: 9/7/11
NOTE: Please include your Quote No. to ensure proper pricing of your project.

FOR LABORATORY USE ONLY:

Method of Transport: ☐ Client ☑ ATL ☐ FedEx ☐ OnTrac ☐ GSO ☐ Other: _____

Sample Condition Upon Receipt: 2.0
1. CHILLED Y☑ N☐ 4. SEALED Y☐ N☑
2. HEADSPACE (VOA) Y☐ N☐ (N/A) 5. # OF SPLS MATCH COC Y☑ N☐
3. CONTAINER INTACT Y☑ N☐ 6. PRESERVED Y☐ N☑

Client: MACTEC
Attn: Matt Frayschineaud
Address: 5628 E. Slauson Ave
City: LA State: CA Zip Code: 90040
TEL: 323-889-5300 FAX:

Project Name: Metro Westside Extension Project #: 4453101561
Sampler: (Printed Name) Paul Kane (Signature) Paul

Relinquished by: (Signature and Printed Name) Paul Kane	Date: 9/7/11	Time: 1020	Received by: (Signature and Printed Name) Matt Frayschineaud	Date: 9/7/11	Time: 1020
Relinquished by: (Signature and Printed Name) Matt Frayschineaud	Date: 9/7/11	Time: 1130	Received by: (Signature and Printed Name)	Date: 9/7/11	Time: 1130
Relinquished by: (Signature and Printed Name)	Date: 9/7/11	Time: 1156	Received by: (Signature and Printed Name)	Date: 9/7/11	Time: 1156

I hereby authorize ATL to perform the work indicated below:
Project Mgr./Submitter: Matt Frayschineaud 9/7/11
Print Name Date
Matt Frayschineaud
Signature

Send Report To: Attn: _____ Co: _____ Addr: _____ City: State: Zip:

Bill To: Attn: _____ Co: _____ Addr: _____ City: State: Zip:

Special Instructions/Comments:

Sample/Records - Archival & Disposal
Unless otherwise requested by client, all samples will be disposed 45 days after receipt and records will be disposed 1 year after submittal of final report.

Storage Fees (applies when storage is requested):
- Sample : $2.00 / sample / mo (after 45 days)
- Records : $1.00 / ATL workorder / mo (after 1 year)

Circle or Add Analysis(es) Requested

SPECIFY APPROPRIATE MATRIX

PRESERVATION

Q A / Q C
RTNE ☐ CT ☐ Legal ☐ SWRCB ☐ Logcode _____ OTHER _____

ITEM	LAB USE ONLY: Batch #: / Lab No.	Sample Description: Sample I.D. / Location	Date	Time	8081A (Pesticides)	8082 (PCB)	8260B (Volatiles) + OXY	8270C (BNA)	6010B (Total Metal)	8015B (GRO) / 8021 (BTEX)	8015B (DRO) (ORO)	TITLE 22 / CAM 17 (6010 / 7000)	SEDIMENT	SOLID	SOIL	DRINKING WATER	GROUND WATER	WASTEWATER	STORMWATER	AQUEOUS	TAT	Container(s) #	Container(s) Type	REMARKS
	119710-007	E-134-10'	9/6/11	1145										X								1	T	Hold
	2	E-134-15'		1155										X										"
	3	E-134-20'		1205			X		X	X				X										
	4	E-134-25'		1217							X			X										
	5	E-134-30'		1230										X										Hold
	6	E-134-35'		1245										X										"
	7	E-134-40'		1257			X		X	X				X										
	8	E-134-45'		1330										X										Hold

• TAT starts 8 a.m. following day if samples received after 5 p.m.

TAT: ☐A= Overnight ≤ 24 hrs ☐B= Emergency Next workday ☐C= Critical 2 Workdays ☐D= Urgent 3 Workdays ☒E= Routine 7 Workdays

Container Types: T=Tube V=VOA L=Liter P=Pint J=Jar B=Tedlar G=Glass P=Plastic M=Metal

Preservatives: H=Hcl N=HNO_3 S=H_2SO_4 C=4°C Z=$Zn(AC)_2$ O=NaOH T=$Na_2S_2O_3$

Figure C-1.91

Rev. 2010-0325

DISTRIBUTION: **White** with report, **Yellow** to folder, **Pink** to submitter.

March 20, 2015

Ron Lopez
Amec Foster Wheeler
6001 Rickenbacker Road
Los Angeles, CA 90040
Tel: (323) 889-5300
Fax:(323) 721-6700

ELAP No.: 1838
CSDLAC No.: 10196
ORELAP No.: CA300003
TCEQ No. : T104704502

Re: ATL Work Order Number : 1500887
Client Reference : MTA WESTSIDE, 4953-11-1423

Enclosed are the results for sample(s) received on March 10, 2015 by Advanced Technology Laboratories. The sample(s) are tested for the parameters as indicated on the enclosed chain of custody in accordance with applicable laboratory certifications. The laboratory results contained in this report specifically pertains to the sample(s) submitted.

Thank you for the opportunity to serve the needs of your company. If you have any questions, please feel free to contact me or your Project Manager.

Sincerely,

Eddie Rodriguez
Laboratory Director

Figure C-2.1

Certificate of Analysis

Amec Foster Wheeler		Project Number :	MTA WESTSIDE, 4953-11-1423
6001 Rickenbacker Road		Report To :	Ron Lopez
Los Angeles , CA 90040		Reported :	03/20/2015

SUMMARY OF SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
E132A - 60	1500887-01	Soil	3/09/15 13:55	3/10/15 12:19
E132A - 70	1500887-03	Soil	3/09/15 14:35	3/10/15 12:19
E132A - 80	1500887-05	Soil	3/10/15 10:37	3/10/15 12:19

Figure C-2.2

Certificate of Analysis

Amec Foster Wheeler	Project Number : MTA WESTSIDE, 4953-11-1423
6001 Rickenbacker Road	Report To : Ron Lopez
Los Angeles , CA 90040	Reported : 03/20/2015

Client Sample ID E132A - 60

Lab ID: 1500887-01

Total Petroleum Hydrocarbons, HEM/SGT EPA 1664 (Modified) — **Analyst: la**

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Total Petroleum Hydrocarbons	ND	50	1	B5C0280	03/11/2015	03/11/15 11:10	

Title 22 Metals by ICP-AES EPA 6010B — **Analyst: RR**

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Antimony	ND	2.0	1	B5C0328	03/13/2015	03/16/15 09:57	
Arsenic	ND	1.0	1	B5C0328	03/13/2015	03/16/15 09:57	
Barium	**22**	1.0	1	B5C0328	03/13/2015	03/16/15 09:57	
Beryllium	ND	1.0	1	B5C0328	03/13/2015	03/16/15 09:57	
Cadmium	ND	1.0	1	B5C0328	03/13/2015	03/16/15 09:57	
Chromium	**22**	1.0	1	B5C0328	03/13/2015	03/16/15 09:57	
Cobalt	**1.9**	1.0	1	B5C0328	03/13/2015	03/16/15 09:57	
Copper	**10**	2.0	1	B5C0328	03/13/2015	03/16/15 09:57	
Lead	**1.4**	1.0	1	B5C0328	03/13/2015	03/16/15 09:57	
Molybdenum	ND	1.0	1	B5C0328	03/13/2015	03/16/15 09:57	
Nickel	**5.6**	1.0	1	B5C0328	03/13/2015	03/16/15 09:57	
Selenium	ND	1.0	1	B5C0328	03/13/2015	03/16/15 09:57	
Silver	ND	1.0	1	B5C0328	03/13/2015	03/16/15 09:57	
Thallium	ND	1.0	1	B5C0328	03/13/2015	03/16/15 09:57	
Vanadium	**15**	1.0	1	B5C0328	03/13/2015	03/16/15 09:57	
Zinc	**18**	1.0	1	B5C0328	03/13/2015	03/16/15 09:57	

Mercury by AA (Cold Vapor) EPA 7471A — **Analyst: VV**

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Mercury	ND	0.10	1	B5C0329	03/13/2015	03/16/15 12:02	

Gasoline Range Organics by EPA 8015B (Modified) — **Analyst: BT/**

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Gasoline Range Organics	ND	1.0	1	B5C0269	03/09/2015	03/11/15 12:18	
Surrogate: 4-Bromofluorobenzene	*112 %*	*37 - 153*		B5C0269	03/09/2015	*03/11/15 12:18*	

Figure C-2.3

Certificate of Analysis

Amec Foster Wheeler	Project Number : MTA WESTSIDE, 4953-11-1423
6001 Rickenbacker Road	Report To : Ron Lopez
Los Angeles , CA 90040	Reported : 03/20/2015

Client Sample ID E132A - 60

Lab ID: 1500887-01

Diesel Range Organics by EPA 8015B

Analyst: CR

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
DRO	ND	10	1	B5C0352	03/13/2015	03/14/15 20:23	
ORO	ND	10	1	B5C0352	03/13/2015	03/14/15 20:23	
Surrogate: p-Terphenyl	*96.1 %*	*49 - 142*		B5C0352	03/13/2015	*03/14/15 20:23*	

Volatile Organic Compounds by EPA 8260B

Analyst: AG

Analyte	Result (ug/kg)	PQL (ug/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
1,1,1,2-Tetrachloroethane	ND	5.0	1	B5C0264	03/11/2015	03/11/15 10:01	
1,1,1-Trichloroethane	ND	5.0	1	B5C0264	03/11/2015	03/11/15 10:01	
1,1,2,2-Tetrachloroethane	ND	5.0	1	B5C0264	03/11/2015	03/11/15 10:01	
1,1,2-Trichloroethane	ND	5.0	1	B5C0264	03/11/2015	03/11/15 10:01	
1,1-Dichloroethane	ND	5.0	1	B5C0264	03/11/2015	03/11/15 10:01	
1,1-Dichloroethene	ND	5.0	1	B5C0264	03/11/2015	03/11/15 10:01	
1,1-Dichloropropene	ND	5.0	1	B5C0264	03/11/2015	03/11/15 10:01	
1,2,3-Trichloropropane	ND	5.0	1	B5C0264	03/11/2015	03/11/15 10:01	
1,2,3-Trichlorobenzene	ND	5.0	1	B5C0264	03/11/2015	03/11/15 10:01	
1,2,4-Trichlorobenzene	ND	5.0	1	B5C0264	03/11/2015	03/11/15 10:01	
1,2,4-Trimethylbenzene	ND	5.0	1	B5C0264	03/11/2015	03/11/15 10:01	
1,2-Dibromo-3-chloropropane	ND	10	1	B5C0264	03/11/2015	03/11/15 10:01	
1,2-Dibromoethane	ND	5.0	1	B5C0264	03/11/2015	03/11/15 10:01	
1,2-Dichlorobenzene	ND	5.0	1	B5C0264	03/11/2015	03/11/15 10:01	
1,2-Dichloroethane	ND	5.0	1	B5C0264	03/11/2015	03/11/15 10:01	
1,2-Dichloropropane	ND	5.0	1	B5C0264	03/11/2015	03/11/15 10:01	
1,3,5-Trimethylbenzene	ND	5.0	1	B5C0264	03/11/2015	03/11/15 10:01	
1,3-Dichlorobenzene	ND	5.0	1	B5C0264	03/11/2015	03/11/15 10:01	
1,3-Dichloropropane	ND	5.0	1	B5C0264	03/11/2015	03/11/15 10:01	
1,4-Dichlorobenzene	ND	5.0	1	B5C0264	03/11/2015	03/11/15 10:01	
2,2-Dichloropropane	ND	5.0	1	B5C0264	03/11/2015	03/11/15 10:01	
2-Chlorotoluene	ND	5.0	1	B5C0264	03/11/2015	03/11/15 10:01	
4-Chlorotoluene	ND	5.0	1	B5C0264	03/11/2015	03/11/15 10:01	
4-Isopropyltoluene	ND	5.0	1	B5C0264	03/11/2015	03/11/15 10:01	
Benzene	ND	5.0	1	B5C0264	03/11/2015	03/11/15 10:01	
Bromobenzene	ND	5.0	1	B5C0264	03/11/2015	03/11/15 10:01	
Bromochloromethane	ND	5.0	1	B5C0264	03/11/2015	03/11/15 10:01	
Bromodichloromethane	ND	5.0	1	B5C0264	03/11/2015	03/11/15 10:01	
Bromoform	ND	5.0	1	B5C0264	03/11/2015	03/11/15 10:01	

Certificate of Analysis

Amec Foster Wheeler	Project Number : MTA WESTSIDE, 4953-11-1423
6001 Rickenbacker Road	Report To : Ron Lopez
Los Angeles , CA 90040	Reported : 03/20/2015

Client Sample ID E132A - 60

Lab ID: 1500887-01

Volatile Organic Compounds by EPA 8260B **Analyst: AG**

Analyte	Result (ug/kg)	PQL (ug/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Bromomethane	ND	5.0	1	B5C0264	03/11/2015	03/11/15 10:01	
Carbon disulfide	ND	5.0	1	B5C0264	03/11/2015	03/11/15 10:01	
Carbon tetrachloride	ND	5.0	1	B5C0264	03/11/2015	03/11/15 10:01	
Chlorobenzene	ND	5.0	1	B5C0264	03/11/2015	03/11/15 10:01	
Chloroethane	ND	5.0	1	B5C0264	03/11/2015	03/11/15 10:01	
Chloroform	ND	5.0	1	B5C0264	03/11/2015	03/11/15 10:01	
Chloromethane	ND	5.0	1	B5C0264	03/11/2015	03/11/15 10:01	
cis-1,2-Dichloroethene	ND	5.0	1	B5C0264	03/11/2015	03/11/15 10:01	
cis-1,3-Dichloropropene	ND	5.0	1	B5C0264	03/11/2015	03/11/15 10:01	
Di-isopropyl ether	ND	5.0	1	B5C0264	03/11/2015	03/11/15 10:01	
Dibromochloromethane	ND	5.0	1	B5C0264	03/11/2015	03/11/15 10:01	
Dibromomethane	ND	5.0	1	B5C0264	03/11/2015	03/11/15 10:01	
Dichlorodifluoromethane	ND	5.0	1	B5C0264	03/11/2015	03/11/15 10:01	
Ethyl Acetate	ND	50	1	B5C0264	03/11/2015	03/11/15 10:01	
Ethyl Ether	ND	50	1	B5C0264	03/11/2015	03/11/15 10:01	
Ethyl tert-butyl ether	ND	5.0	1	B5C0264	03/11/2015	03/11/15 10:01	
Ethylbenzene	ND	5.0	1	B5C0264	03/11/2015	03/11/15 10:01	
Freon-113	ND	5.0	1	B5C0264	03/11/2015	03/11/15 10:01	
Hexachlorobutadiene	ND	5.0	1	B5C0264	03/11/2015	03/11/15 10:01	
Isopropylbenzene	ND	5.0	1	B5C0264	03/11/2015	03/11/15 10:01	
m,p-Xylene	ND	10	1	B5C0264	03/11/2015	03/11/15 10:01	
Methylene chloride	ND	5.0	1	B5C0264	03/11/2015	03/11/15 10:01	
MTBE	ND	5.0	1	B5C0264	03/11/2015	03/11/15 10:01	
n-Butylbenzene	ND	5.0	1	B5C0264	03/11/2015	03/11/15 10:01	
n-Propylbenzene	ND	5.0	1	B5C0264	03/11/2015	03/11/15 10:01	
Naphthalene	ND	5.0	1	B5C0264	03/11/2015	03/11/15 10:01	
o-Xylene	ND	5.0	1	B5C0264	03/11/2015	03/11/15 10:01	
sec-Butylbenzene	ND	5.0	1	B5C0264	03/11/2015	03/11/15 10:01	
Styrene	ND	5.0	1	B5C0264	03/11/2015	03/11/15 10:01	
tert-Amyl methyl ether	ND	5.0	1	B5C0264	03/11/2015	03/11/15 10:01	
tert-Butanol	ND	100	1	B5C0264	03/11/2015	03/11/15 10:01	
tert-Butylbenzene	ND	5.0	1	B5C0264	03/11/2015	03/11/15 10:01	
Tetrachloroethene	ND	5.0	1	B5C0264	03/11/2015	03/11/15 10:01	
Toluene	ND	5.0	1	B5C0264	03/11/2015	03/11/15 10:01	
trans-1,2-Dichloroethene	ND	5.0	1	B5C0264	03/11/2015	03/11/15 10:01	
trans-1,3-Dichloropropene	ND	5.0	1	B5C0264	03/11/2015	03/11/15 10:01	
Trichloroethene	ND	5.0	1	B5C0264	03/11/2015	03/11/15 10:01	

Certificate of Analysis

Amec Foster Wheeler	Project Number : MTA WESTSIDE, 4953-11-1423
6001 Rickenbacker Road	Report To : Ron Lopez
Los Angeles , CA 90040	Reported : 03/20/2015

Client Sample ID E132A - 60

Lab ID: 1500887-01

Volatile Organic Compounds by EPA 8260B

Analyst: AG

Analyte	Result (ug/kg)	PQL (ug/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Trichlorofluoromethane	ND	5.0	1	B5C0264	03/11/2015	03/11/15 10:01	
Vinyl acetate	ND	50	1	B5C0264	03/11/2015	03/11/15 10:01	
Vinyl chloride	ND	5.0	1	B5C0264	03/11/2015	03/11/15 10:01	
Surrogate: 1,2-Dichloroethane-d4	*104 %*	*20 - 189*		B5C0264	03/11/2015	*03/11/15 10:01*	
Surrogate: 4-Bromofluorobenzene	*89.9 %*	*20 - 173*		B5C0264	03/11/2015	*03/11/15 10:01*	
Surrogate: Dibromofluoromethane	*102 %*	*26 - 178*		B5C0264	03/11/2015	*03/11/15 10:01*	
Surrogate: Toluene-d8	*98.0 %*	*31 - 166*		B5C0264	03/11/2015	*03/11/15 10:01*	

Semivolatile Organic Compounds by EPA 8270C

Analyst: BD

Analyte	Result (ug/kg)	PQL (ug/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
1,2,4-Trichlorobenzene	ND	330	1	B5C0386	03/16/2015	03/17/15 04:11	
1,2-Dichlorobenzene	ND	330	1	B5C0386	03/16/2015	03/17/15 04:11	
1,3-Dichlorobenzene	ND	330	1	B5C0386	03/16/2015	03/17/15 04:11	
1,4-Dichlorobenzene	ND	330	1	B5C0386	03/16/2015	03/17/15 04:11	
2,4,5-Trichlorophenol	ND	330	1	B5C0386	03/16/2015	03/17/15 04:11	
2,4,6-Trichlorophenol	ND	330	1	B5C0386	03/16/2015	03/17/15 04:11	
2,4-Dichlorophenol	ND	1600	1	B5C0386	03/16/2015	03/17/15 04:11	
2,4-Dimethylphenol	ND	330	1	B5C0386	03/16/2015	03/17/15 04:11	
2,4-Dinitrophenol	ND	1600	1	B5C0386	03/16/2015	03/17/15 04:11	
2,4-Dinitrotoluene	ND	330	1	B5C0386	03/16/2015	03/17/15 04:11	
2,6-Dinitrotoluene	ND	330	1	B5C0386	03/16/2015	03/17/15 04:11	
2-Chloronaphthalene	ND	330	1	B5C0386	03/16/2015	03/17/15 04:11	
2-Chlorophenol	ND	330	1	B5C0386	03/16/2015	03/17/15 04:11	
2-Methylnaphthalene	ND	330	1	B5C0386	03/16/2015	03/17/15 04:11	
2-Methylphenol	ND	330	1	B5C0386	03/16/2015	03/17/15 04:11	
2-Nitroaniline	ND	1600	1	B5C0386	03/16/2015	03/17/15 04:11	
2-Nitrophenol	ND	330	1	B5C0386	03/16/2015	03/17/15 04:11	
3,3´-Dichlorobenzidine	ND	660	1	B5C0386	03/16/2015	03/17/15 04:11	
3-Nitroaniline	ND	1600	1	B5C0386	03/16/2015	03/17/15 04:11	
4,6-Dinitro-2-methyphenol	ND	1600	1	B5C0386	03/16/2015	03/17/15 04:11	
4-Bromophenyl-phenylether	ND	330	1	B5C0386	03/16/2015	03/17/15 04:11	
4-Chloro-3-methylphenol	ND	660	1	B5C0386	03/16/2015	03/17/15 04:11	
4-Chloroaniline	ND	660	1	B5C0386	03/16/2015	03/17/15 04:11	
4-Chlorophenyl-phenylether	ND	330	1	B5C0386	03/16/2015	03/17/15 04:11	
4-Methylphenol	ND	330	1	B5C0386	03/16/2015	03/17/15 04:11	

Certificate of Analysis

Amec Foster Wheeler	Project Number : MTA WESTSIDE, 4953-11-1423
6001 Rickenbacker Road	Report To : Ron Lopez
Los Angeles , CA 90040	Reported : 03/20/2015

Client Sample ID E132A - 60

Lab ID: 1500887-01

Semivolatile Organic Compounds by EPA 8270C **Analyst: BD**

Analyte	Result (ug/kg)	PQL (ug/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
4-Nitroaniline	ND	1600	1	B5C0386	03/16/2015	03/17/15 04:11	
4-Nitrophenol	ND	330	1	B5C0386	03/16/2015	03/17/15 04:11	
Acenaphthene	ND	330	1	B5C0386	03/16/2015	03/17/15 04:11	
Acenaphthylene	ND	330	1	B5C0386	03/16/2015	03/17/15 04:11	
Anthracene	ND	330	1	B5C0386	03/16/2015	03/17/15 04:11	
Benzidine (M)	ND	1600	1	B5C0386	03/16/2015	03/17/15 04:11	
Benzo(a)anthracene	ND	330	1	B5C0386	03/16/2015	03/17/15 04:11	
Benzo(a)pyrene	ND	330	1	B5C0386	03/16/2015	03/17/15 04:11	
Benzo(b)fluoranthene	ND	330	1	B5C0386	03/16/2015	03/17/15 04:11	
Benzo(g,h,i)perylene	ND	330	1	B5C0386	03/16/2015	03/17/15 04:11	
Benzo(k)fluoranthene	ND	330	1	B5C0386	03/16/2015	03/17/15 04:11	
Benzoic acid	ND	1600	1	B5C0386	03/16/2015	03/17/15 04:11	
Benzyl alcohol	ND	660	1	B5C0386	03/16/2015	03/17/15 04:11	
bis(2-chloroethoxy)methane	ND	330	1	B5C0386	03/16/2015	03/17/15 04:11	
bis(2-Chloroethyl)ether	ND	330	1	B5C0386	03/16/2015	03/17/15 04:11	
bis(2-chloroisopropyl)ether	ND	330	1	B5C0386	03/16/2015	03/17/15 04:11	
bis(2-ethylhexyl)phthalate	ND	330	1	B5C0386	03/16/2015	03/17/15 04:11	
Butylbenzylphthalate	ND	330	1	B5C0386	03/16/2015	03/17/15 04:11	
Chrysene	ND	330	1	B5C0386	03/16/2015	03/17/15 04:11	
Di-n-butylphthalate	ND	330	1	B5C0386	03/16/2015	03/17/15 04:11	
Di-n-octylphthalate	ND	330	1	B5C0386	03/16/2015	03/17/15 04:11	
Dibenz(a,h)anthracene	ND	330	1	B5C0386	03/16/2015	03/17/15 04:11	
Dibenzofuran	ND	330	1	B5C0386	03/16/2015	03/17/15 04:11	
Diethyl phthalate	ND	330	1	B5C0386	03/16/2015	03/17/15 04:11	
Dimethyl phthalate	ND	330	1	B5C0386	03/16/2015	03/17/15 04:11	
Fluoranthene	ND	330	1	B5C0386	03/16/2015	03/17/15 04:11	
Fluorene	ND	330	1	B5C0386	03/16/2015	03/17/15 04:11	
Hexachlorobenzene	ND	330	1	B5C0386	03/16/2015	03/17/15 04:11	
Hexachlorobutadiene	ND	660	1	B5C0386	03/16/2015	03/17/15 04:11	
Hexachlorocyclopentadiene	ND	660	1	B5C0386	03/16/2015	03/17/15 04:11	
Hexachloroethane	ND	330	1	B5C0386	03/16/2015	03/17/15 04:11	
Indeno(1,2,3-cd)pyrene	ND	330	1	B5C0386	03/16/2015	03/17/15 04:11	
Isophorone	ND	330	1	B5C0386	03/16/2015	03/17/15 04:11	
N-Nitroso-di-n propylamine	ND	330	1	B5C0386	03/16/2015	03/17/15 04:11	
N-Nitrosodiphenylamine	ND	330	1	B5C0386	03/16/2015	03/17/15 04:11	
Naphthalene	ND	330	1	B5C0386	03/16/2015	03/17/15 04:11	
Nitrobenzene	ND	330	1	B5C0386	03/16/2015	03/17/15 04:11	

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Lab ID: 1500887-01

Semivolatile Organic Compounds by EPA 8270C **Analyst: BD**

Analyte		Result (ug/kg)	PQL (ug/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Pentachlorophenol		ND	1600	1	B5C0386	03/16/2015	03/17/15 04:11	
Phenanthrene		ND	330	1	B5C0386	03/16/2015	03/17/15 04:11	
Phenol		ND	330	1	B5C0386	03/16/2015	03/17/15 04:11	
Pyrene		ND	330	1	B5C0386	03/16/2015	03/17/15 04:11	
Pyridine		ND	1600	1	B5C0386	03/16/2015	03/17/15 04:11	
Surrogate: 1,2-Dichlorobenzene-d4	*63.2 %*		*24 - 114*		B5C0386	03/16/2015	*03/17/15 04:11*	
Surrogate: 2,4,6-Tribromophenol	*82.8 %*		*0 - 189*		B5C0386	03/16/2015	*03/17/15 04:11*	
Surrogate: 2-Chlorophenol-d4	*74.2 %*		*23 - 123*		B5C0386	03/16/2015	*03/17/15 04:11*	
Surrogate: 2-Fluorobiphenyl	*69.9 %*		*28 - 128*		B5C0386	03/16/2015	*03/17/15 04:11*	
Surrogate: 2-Fluorophenol	*73.5 %*		*8 - 138*		B5C0386	03/16/2015	*03/17/15 04:11*	
Surrogate: 4-Terphenyl-d14	*84.2 %*		*27 - 154*		B5C0386	03/16/2015	*03/17/15 04:11*	
Surrogate: Nitrobenzene-d5	*63.9 %*		*19 - 129*		B5C0386	03/16/2015	*03/17/15 04:11*	
Surrogate: Phenol-d5	*77.4 %*		*20 - 126*		B5C0386	03/16/2015	*03/17/15 04:11*	

Figure C-2.8

Certificate of Analysis

Amec Foster Wheeler	Project Number : MTA WESTSIDE, 4953-11-1423
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Lab ID: 1500887-03

Total Petroleum Hydrocarbons, HEM/SGT EPA 1664 (Modified) — **Analyst: la**

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Total Petroleum Hydrocarbons	ND	50	1	B5C0280	03/11/2015	03/11/15 11:10	

Title 22 Metals by ICP-AES EPA 6010B — **Analyst: RR**

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Antimony	ND	2.0	1	B5C0328	03/13/2015	03/16/15 10:16	
Arsenic	**1.2**	1.0	1	B5C0328	03/13/2015	03/16/15 10:16	
Barium	**17**	1.0	1	B5C0328	03/13/2015	03/16/15 10:16	
Beryllium	ND	1.0	1	B5C0328	03/13/2015	03/16/15 10:16	
Cadmium	ND	1.0	1	B5C0328	03/13/2015	03/16/15 10:16	
Chromium	**10**	1.0	1	B5C0328	03/13/2015	03/16/15 10:16	
Cobalt	**2.6**	1.0	1	B5C0328	03/13/2015	03/16/15 10:16	
Copper	**5.4**	2.0	1	B5C0328	03/13/2015	03/16/15 10:16	
Lead	**1.9**	1.0	1	B5C0328	03/13/2015	03/16/15 10:16	
Molybdenum	ND	1.0	1	B5C0328	03/13/2015	03/16/15 10:16	
Nickel	**10**	1.0	1	B5C0328	03/13/2015	03/16/15 10:16	
Selenium	ND	1.0	1	B5C0328	03/13/2015	03/16/15 10:16	
Silver	ND	1.0	1	B5C0328	03/13/2015	03/16/15 10:16	
Thallium	ND	1.0	1	B5C0328	03/13/2015	03/16/15 10:16	
Vanadium	**7.3**	1.0	1	B5C0328	03/13/2015	03/16/15 10:16	
Zinc	**20**	1.0	1	B5C0328	03/13/2015	03/16/15 10:16	

Mercury by AA (Cold Vapor) EPA 7471A — **Analyst: VV**

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Mercury	ND	0.10	1	B5C0329	03/13/2015	03/16/15 12:04	

Gasoline Range Organics by EPA 8015B (Modified) — **Analyst: BT/**

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Gasoline Range Organics	ND	1.0	1	B5C0269	03/09/2015	03/11/15 12:34	
Surrogate: 4-Bromofluorobenzene	*109 %*	*37 - 153*		B5C0269	03/09/2015	*03/11/15 12:34*	

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Diesel Range Organics by EPA 8015B **Analyst: CR**

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
DRO	ND	10	1	B5C0352	03/13/2015	03/14/15 20:39	
ORO	ND	10	1	B5C0352	03/13/2015	03/14/15 20:39	
Surrogate: p-Terphenyl	*97.4 %*	*49 - 142*		B5C0352	03/13/2015	*03/14/15 20:39*	

Volatile Organic Compounds by EPA 8260B **Analyst: AG**

Analyte	Result (ug/kg)	PQL (ug/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
1,1,1,2-Tetrachloroethane	ND	5.0	1	B5C0264	03/11/2015	03/11/15 10:20	
1,1,1-Trichloroethane	ND	5.0	1	B5C0264	03/11/2015	03/11/15 10:20	
1,1,2,2-Tetrachloroethane	ND	5.0	1	B5C0264	03/11/2015	03/11/15 10:20	
1,1,2-Trichloroethane	ND	5.0	1	B5C0264	03/11/2015	03/11/15 10:20	
1,1-Dichloroethane	ND	5.0	1	B5C0264	03/11/2015	03/11/15 10:20	
1,1-Dichloroethene	ND	5.0	1	B5C0264	03/11/2015	03/11/15 10:20	
1,1-Dichloropropene	ND	5.0	1	B5C0264	03/11/2015	03/11/15 10:20	
1,2,3-Trichloropropane	ND	5.0	1	B5C0264	03/11/2015	03/11/15 10:20	
1,2,3-Trichlorobenzene	ND	5.0	1	B5C0264	03/11/2015	03/11/15 10:20	
1,2,4-Trichlorobenzene	ND	5.0	1	B5C0264	03/11/2015	03/11/15 10:20	
1,2,4-Trimethylbenzene	ND	5.0	1	B5C0264	03/11/2015	03/11/15 10:20	
1,2-Dibromo-3-chloropropane	ND	10	1	B5C0264	03/11/2015	03/11/15 10:20	
1,2-Dibromoethane	ND	5.0	1	B5C0264	03/11/2015	03/11/15 10:20	
1,2-Dichlorobenzene	ND	5.0	1	B5C0264	03/11/2015	03/11/15 10:20	
1,2-Dichloroethane	ND	5.0	1	B5C0264	03/11/2015	03/11/15 10:20	
1,2-Dichloropropane	ND	5.0	1	B5C0264	03/11/2015	03/11/15 10:20	
1,3,5-Trimethylbenzene	ND	5.0	1	B5C0264	03/11/2015	03/11/15 10:20	
1,3-Dichlorobenzene	ND	5.0	1	B5C0264	03/11/2015	03/11/15 10:20	
1,3-Dichloropropane	ND	5.0	1	B5C0264	03/11/2015	03/11/15 10:20	
1,4-Dichlorobenzene	ND	5.0	1	B5C0264	03/11/2015	03/11/15 10:20	
2,2-Dichloropropane	ND	5.0	1	B5C0264	03/11/2015	03/11/15 10:20	
2-Chlorotoluene	ND	5.0	1	B5C0264	03/11/2015	03/11/15 10:20	
4-Chlorotoluene	ND	5.0	1	B5C0264	03/11/2015	03/11/15 10:20	
4-Isopropyltoluene	ND	5.0	1	B5C0264	03/11/2015	03/11/15 10:20	
Benzene	ND	5.0	1	B5C0264	03/11/2015	03/11/15 10:20	
Bromobenzene	ND	5.0	1	B5C0264	03/11/2015	03/11/15 10:20	
Bromochloromethane	ND	5.0	1	B5C0264	03/11/2015	03/11/15 10:20	
Bromodichloromethane	ND	5.0	1	B5C0264	03/11/2015	03/11/15 10:20	
Bromoform	ND	5.0	1	B5C0264	03/11/2015	03/11/15 10:20	

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Lab ID: 1500887-03

Volatile Organic Compounds by EPA 8260B **Analyst: AG**

Analyte	Result (ug/kg)	PQL (ug/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Bromomethane	ND	5.0	1	B5C0264	03/11/2015	03/11/15 10:20	
Carbon disulfide	ND	5.0	1	B5C0264	03/11/2015	03/11/15 10:20	
Carbon tetrachloride	ND	5.0	1	B5C0264	03/11/2015	03/11/15 10:20	
Chlorobenzene	ND	5.0	1	B5C0264	03/11/2015	03/11/15 10:20	
Chloroethane	ND	5.0	1	B5C0264	03/11/2015	03/11/15 10:20	
Chloroform	ND	5.0	1	B5C0264	03/11/2015	03/11/15 10:20	
Chloromethane	ND	5.0	1	B5C0264	03/11/2015	03/11/15 10:20	
cis-1,2-Dichloroethene	ND	5.0	1	B5C0264	03/11/2015	03/11/15 10:20	
cis-1,3-Dichloropropene	ND	5.0	1	B5C0264	03/11/2015	03/11/15 10:20	
Di-isopropyl ether	ND	5.0	1	B5C0264	03/11/2015	03/11/15 10:20	
Dibromochloromethane	ND	5.0	1	B5C0264	03/11/2015	03/11/15 10:20	
Dibromomethane	ND	5.0	1	B5C0264	03/11/2015	03/11/15 10:20	
Dichlorodifluoromethane	ND	5.0	1	B5C0264	03/11/2015	03/11/15 10:20	
Ethyl Acetate	ND	50	1	B5C0264	03/11/2015	03/11/15 10:20	
Ethyl Ether	ND	50	1	B5C0264	03/11/2015	03/11/15 10:20	
Ethyl tert-butyl ether	ND	5.0	1	B5C0264	03/11/2015	03/11/15 10:20	
Ethylbenzene	ND	5.0	1	B5C0264	03/11/2015	03/11/15 10:20	
Freon-113	ND	5.0	1	B5C0264	03/11/2015	03/11/15 10:20	
Hexachlorobutadiene	ND	5.0	1	B5C0264	03/11/2015	03/11/15 10:20	
Isopropylbenzene	ND	5.0	1	B5C0264	03/11/2015	03/11/15 10:20	
m,p-Xylene	ND	10	1	B5C0264	03/11/2015	03/11/15 10:20	
Methylene chloride	ND	5.0	1	B5C0264	03/11/2015	03/11/15 10:20	
MTBE	ND	5.0	1	B5C0264	03/11/2015	03/11/15 10:20	
n-Butylbenzene	ND	5.0	1	B5C0264	03/11/2015	03/11/15 10:20	
n-Propylbenzene	ND	5.0	1	B5C0264	03/11/2015	03/11/15 10:20	
Naphthalene	ND	5.0	1	B5C0264	03/11/2015	03/11/15 10:20	
o-Xylene	ND	5.0	1	B5C0264	03/11/2015	03/11/15 10:20	
sec-Butylbenzene	ND	5.0	1	B5C0264	03/11/2015	03/11/15 10:20	
Styrene	ND	5.0	1	B5C0264	03/11/2015	03/11/15 10:20	
tert-Amyl methyl ether	ND	5.0	1	B5C0264	03/11/2015	03/11/15 10:20	
tert-Butanol	ND	100	1	B5C0264	03/11/2015	03/11/15 10:20	
tert-Butylbenzene	ND	5.0	1	B5C0264	03/11/2015	03/11/15 10:20	
Tetrachloroethene	ND	5.0	1	B5C0264	03/11/2015	03/11/15 10:20	
Toluene	ND	5.0	1	B5C0264	03/11/2015	03/11/15 10:20	
trans-1,2-Dichloroethene	ND	5.0	1	B5C0264	03/11/2015	03/11/15 10:20	
trans-1,3-Dichloropropene	ND	5.0	1	B5C0264	03/11/2015	03/11/15 10:20	
Trichloroethene	ND	5.0	1	B5C0264	03/11/2015	03/11/15 10:20	

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Lab ID: 1500887-03

Volatile Organic Compounds by EPA 8260B

Analyst: AG

Analyte	Result (ug/kg)	PQL (ug/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Trichlorofluoromethane	ND	5.0	1	B5C0264	03/11/2015	03/11/15 10:20	
Vinyl acetate	ND	50	1	B5C0264	03/11/2015	03/11/15 10:20	
Vinyl chloride	ND	5.0	1	B5C0264	03/11/2015	03/11/15 10:20	
Surrogate: 1,2-Dichloroethane-d4	*108 %*	*20 - 189*		B5C0264	03/11/2015	*03/11/15 10:20*	
Surrogate: 4-Bromofluorobenzene	*92.5 %*	*20 - 173*		B5C0264	03/11/2015	*03/11/15 10:20*	
Surrogate: Dibromofluoromethane	*107 %*	*26 - 178*		B5C0264	03/11/2015	*03/11/15 10:20*	
Surrogate: Toluene-d8	*96.8 %*	*31 - 166*		B5C0264	03/11/2015	*03/11/15 10:20*	

Semivolatile Organic Compounds by EPA 8270C

Analyst: BD

Analyte	Result (ug/kg)	PQL (ug/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
1,2,4-Trichlorobenzene	ND	330	1	B5C0386	03/16/2015	03/17/15 04:38	
1,2-Dichlorobenzene	ND	330	1	B5C0386	03/16/2015	03/17/15 04:38	
1,3-Dichlorobenzene	ND	330	1	B5C0386	03/16/2015	03/17/15 04:38	
1,4-Dichlorobenzene	ND	330	1	B5C0386	03/16/2015	03/17/15 04:38	
2,4,5-Trichlorophenol	ND	330	1	B5C0386	03/16/2015	03/17/15 04:38	
2,4,6-Trichlorophenol	ND	330	1	B5C0386	03/16/2015	03/17/15 04:38	
2,4-Dichlorophenol	ND	1600	1	B5C0386	03/16/2015	03/17/15 04:38	
2,4-Dimethylphenol	ND	330	1	B5C0386	03/16/2015	03/17/15 04:38	
2,4-Dinitrophenol	ND	1600	1	B5C0386	03/16/2015	03/17/15 04:38	
2,4-Dinitrotoluene	ND	330	1	B5C0386	03/16/2015	03/17/15 04:38	
2,6-Dinitrotoluene	ND	330	1	B5C0386	03/16/2015	03/17/15 04:38	
2-Chloronaphthalene	ND	330	1	B5C0386	03/16/2015	03/17/15 04:38	
2-Chlorophenol	ND	330	1	B5C0386	03/16/2015	03/17/15 04:38	
2-Methylnaphthalene	ND	330	1	B5C0386	03/16/2015	03/17/15 04:38	
2-Methylphenol	ND	330	1	B5C0386	03/16/2015	03/17/15 04:38	
2-Nitroaniline	ND	1600	1	B5C0386	03/16/2015	03/17/15 04:38	
2-Nitrophenol	ND	330	1	B5C0386	03/16/2015	03/17/15 04:38	
3,3´-Dichlorobenzidine	ND	660	1	B5C0386	03/16/2015	03/17/15 04:38	
3-Nitroaniline	ND	1600	1	B5C0386	03/16/2015	03/17/15 04:38	
4,6-Dinitro-2-methyphenol	ND	1600	1	B5C0386	03/16/2015	03/17/15 04:38	
4-Bromophenyl-phenylether	ND	330	1	B5C0386	03/16/2015	03/17/15 04:38	
4-Chloro-3-methylphenol	ND	660	1	B5C0386	03/16/2015	03/17/15 04:38	
4-Chloroaniline	ND	660	1	B5C0386	03/16/2015	03/17/15 04:38	
4-Chlorophenyl-phenylether	ND	330	1	B5C0386	03/16/2015	03/17/15 04:38	
4-Methylphenol	ND	330	1	B5C0386	03/16/2015	03/17/15 04:38	

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Lab ID: 1500887-03

Semivolatile Organic Compounds by EPA 8270C **Analyst: BD**

Analyte	Result (ug/kg)	PQL (ug/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
4-Nitroaniline	ND	1600	1	B5C0386	03/16/2015	03/17/15 04:38	
4-Nitrophenol	ND	330	1	B5C0386	03/16/2015	03/17/15 04:38	
Acenaphthene	ND	330	1	B5C0386	03/16/2015	03/17/15 04:38	
Acenaphthylene	ND	330	1	B5C0386	03/16/2015	03/17/15 04:38	
Anthracene	ND	330	1	B5C0386	03/16/2015	03/17/15 04:38	
Benzidine (M)	ND	1600	1	B5C0386	03/16/2015	03/17/15 04:38	
Benzo(a)anthracene	ND	330	1	B5C0386	03/16/2015	03/17/15 04:38	
Benzo(a)pyrene	ND	330	1	B5C0386	03/16/2015	03/17/15 04:38	
Benzo(b)fluoranthene	ND	330	1	B5C0386	03/16/2015	03/17/15 04:38	
Benzo(g,h,i)perylene	ND	330	1	B5C0386	03/16/2015	03/17/15 04:38	
Benzo(k)fluoranthene	ND	330	1	B5C0386	03/16/2015	03/17/15 04:38	
Benzoic acid	ND	1600	1	B5C0386	03/16/2015	03/17/15 04:38	
Benzyl alcohol	ND	660	1	B5C0386	03/16/2015	03/17/15 04:38	
bis(2-chloroethoxy)methane	ND	330	1	B5C0386	03/16/2015	03/17/15 04:38	
bis(2-Chloroethyl)ether	ND	330	1	B5C0386	03/16/2015	03/17/15 04:38	
bis(2-chloroisopropyl)ether	ND	330	1	B5C0386	03/16/2015	03/17/15 04:38	
bis(2-ethylhexyl)phthalate	ND	330	1	B5C0386	03/16/2015	03/17/15 04:38	
Butylbenzylphthalate	ND	330	1	B5C0386	03/16/2015	03/17/15 04:38	
Chrysene	ND	330	1	B5C0386	03/16/2015	03/17/15 04:38	
Di-n-butylphthalate	ND	330	1	B5C0386	03/16/2015	03/17/15 04:38	
Di-n-octylphthalate	ND	330	1	B5C0386	03/16/2015	03/17/15 04:38	
Dibenz(a,h)anthracene	ND	330	1	B5C0386	03/16/2015	03/17/15 04:38	
Dibenzofuran	ND	330	1	B5C0386	03/16/2015	03/17/15 04:38	
Diethyl phthalate	ND	330	1	B5C0386	03/16/2015	03/17/15 04:38	
Dimethyl phthalate	ND	330	1	B5C0386	03/16/2015	03/17/15 04:38	
Fluoranthene	ND	330	1	B5C0386	03/16/2015	03/17/15 04:38	
Fluorene	ND	330	1	B5C0386	03/16/2015	03/17/15 04:38	
Hexachlorobenzene	ND	330	1	B5C0386	03/16/2015	03/17/15 04:38	
Hexachlorobutadiene	ND	660	1	B5C0386	03/16/2015	03/17/15 04:38	
Hexachlorocyclopentadiene	ND	660	1	B5C0386	03/16/2015	03/17/15 04:38	
Hexachloroethane	ND	330	1	B5C0386	03/16/2015	03/17/15 04:38	
Indeno(1,2,3-cd)pyrene	ND	330	1	B5C0386	03/16/2015	03/17/15 04:38	
Isophorone	ND	330	1	B5C0386	03/16/2015	03/17/15 04:38	
N-Nitroso-di-n propylamine	ND	330	1	B5C0386	03/16/2015	03/17/15 04:38	
N-Nitrosodiphenylamine	ND	330	1	B5C0386	03/16/2015	03/17/15 04:38	
Naphthalene	ND	330	1	B5C0386	03/16/2015	03/17/15 04:38	
Nitrobenzene	ND	330	1	B5C0386	03/16/2015	03/17/15 04:38	

Figure C-2.13

Certificate of Analysis

Amec Foster Wheeler	Project Number : MTA WESTSIDE, 4953-11-1423
6001 Rickenbacker Road	Report To : Ron Lopez
Los Angeles , CA 90040	Reported : 03/20/2015

Client Sample ID E132A - 70

Lab ID: 1500887-03

Semivolatile Organic Compounds by EPA 8270C **Analyst: BD**

Analyte		Result (ug/kg)	PQL (ug/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Pentachlorophenol		ND	1600	1	B5C0386	03/16/2015	03/17/15 04:38	
Phenanthrene		ND	330	1	B5C0386	03/16/2015	03/17/15 04:38	
Phenol		ND	330	1	B5C0386	03/16/2015	03/17/15 04:38	
Pyrene		ND	330	1	B5C0386	03/16/2015	03/17/15 04:38	
Pyridine		ND	1600	1	B5C0386	03/16/2015	03/17/15 04:38	
Surrogate: 1,2-Dichlorobenzene-d4	*64.2 %*		*24 - 114*		B5C0386	03/16/2015	*03/17/15 04:38*	
Surrogate: 2,4,6-Tribromophenol	*82.3 %*		*0 - 189*		B5C0386	03/16/2015	*03/17/15 04:38*	
Surrogate: 2-Chlorophenol-d4	*74.5 %*		*23 - 123*		B5C0386	03/16/2015	*03/17/15 04:38*	
Surrogate: 2-Fluorobiphenyl	*71.7 %*		*28 - 128*		B5C0386	03/16/2015	*03/17/15 04:38*	
Surrogate: 2-Fluorophenol	*73.7 %*		*8 - 138*		B5C0386	03/16/2015	*03/17/15 04:38*	
Surrogate: 4-Terphenyl-d14	*80.7 %*		*27 - 154*		B5C0386	03/16/2015	*03/17/15 04:38*	
Surrogate: Nitrobenzene-d5	*64.0 %*		*19 - 129*		B5C0386	03/16/2015	*03/17/15 04:38*	
Surrogate: Phenol-d5	*75.8 %*		*20 - 126*		B5C0386	03/16/2015	*03/17/15 04:38*	

Figure C-2.14

Certificate of Analysis

Amec Foster Wheeler	Project Number : MTA WESTSIDE, 4953-11-1423
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Los Angeles , CA 90040	Reported : 03/20/2015

Client Sample ID E132A - 80

Lab ID: 1500887-05

Total Petroleum Hydrocarbons, HEM/SGT EPA 1664 (Modified) — **Analyst: la**

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Total Petroleum Hydrocarbons	ND	50	1	B5C0280	03/11/2015	03/11/15 11:10	

Title 22 Metals by ICP-AES EPA 6010B — **Analyst: RR**

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Antimony	ND	2.0	1	B5C0328	03/13/2015	03/16/15 10:05	
Arsenic	ND	1.0	1	B5C0328	03/13/2015	03/16/15 10:05	
Barium	**48**	1.0	1	B5C0328	03/13/2015	03/16/15 10:05	
Beryllium	ND	1.0	1	B5C0328	03/13/2015	03/16/15 10:05	
Cadmium	ND	1.0	1	B5C0328	03/13/2015	03/16/15 10:05	
Chromium	**9.5**	1.0	1	B5C0328	03/13/2015	03/16/15 10:05	
Cobalt	**1.2**	1.0	1	B5C0328	03/13/2015	03/16/15 10:05	
Copper	**4.6**	2.0	1	B5C0328	03/13/2015	03/16/15 10:05	
Lead	**2.2**	1.0	1	B5C0328	03/13/2015	03/16/15 10:05	
Molybdenum	ND	1.0	1	B5C0328	03/13/2015	03/16/15 10:05	
Nickel	**4.2**	1.0	1	B5C0328	03/13/2015	03/16/15 10:05	
Selenium	ND	1.0	1	B5C0328	03/13/2015	03/16/15 10:05	
Silver	ND	1.0	1	B5C0328	03/13/2015	03/16/15 10:05	
Thallium	ND	1.0	1	B5C0328	03/13/2015	03/16/15 10:05	
Vanadium	**7.8**	1.0	1	B5C0328	03/13/2015	03/16/15 10:05	
Zinc	**11**	1.0	1	B5C0328	03/13/2015	03/16/15 10:05	

Mercury by AA (Cold Vapor) EPA 7471A — **Analyst: VV**

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Mercury	ND	0.10	1	B5C0329	03/13/2015	03/16/15 12:06	

Gasoline Range Organics by EPA 8015B (Modified) — **Analyst: BT/**

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Gasoline Range Organics	ND	1.0	1	B5C0269	03/10/2015	03/11/15 12:50	
Surrogate: 4-Bromofluorobenzene	*113 %*	*37 - 153*		B5C0269	03/10/2015	*03/11/15 12:50*	

Certificate of Analysis

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Los Angeles , CA 90040	Reported : 03/20/2015

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Lab ID: 1500887-05

Diesel Range Organics by EPA 8015B — **Analyst: CR**

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
DRO	ND	10	1	B5C0352	03/13/2015	03/14/15 20:56	
ORO	ND	10	1	B5C0352	03/13/2015	03/14/15 20:56	
Surrogate: p-Terphenyl	*101 %*	*49 - 142*		B5C0352	03/13/2015	*03/14/15 20:56*	

Volatile Organic Compounds by EPA 8260B — **Analyst: AG**

Analyte	Result (ug/kg)	PQL (ug/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
1,1,1,2-Tetrachloroethane	ND	5.0	1	B5C0264	03/11/2015	03/11/15 10:38	
1,1,1-Trichloroethane	ND	5.0	1	B5C0264	03/11/2015	03/11/15 10:38	
1,1,2,2-Tetrachloroethane	ND	5.0	1	B5C0264	03/11/2015	03/11/15 10:38	
1,1,2-Trichloroethane	ND	5.0	1	B5C0264	03/11/2015	03/11/15 10:38	
1,1-Dichloroethane	ND	5.0	1	B5C0264	03/11/2015	03/11/15 10:38	
1,1-Dichloroethene	ND	5.0	1	B5C0264	03/11/2015	03/11/15 10:38	
1,1-Dichloropropene	ND	5.0	1	B5C0264	03/11/2015	03/11/15 10:38	
1,2,3-Trichloropropane	ND	5.0	1	B5C0264	03/11/2015	03/11/15 10:38	
1,2,3-Trichlorobenzene	ND	5.0	1	B5C0264	03/11/2015	03/11/15 10:38	
1,2,4-Trichlorobenzene	ND	5.0	1	B5C0264	03/11/2015	03/11/15 10:38	
1,2,4-Trimethylbenzene	ND	5.0	1	B5C0264	03/11/2015	03/11/15 10:38	
1,2-Dibromo-3-chloropropane	ND	10	1	B5C0264	03/11/2015	03/11/15 10:38	
1,2-Dibromoethane	ND	5.0	1	B5C0264	03/11/2015	03/11/15 10:38	
1,2-Dichlorobenzene	ND	5.0	1	B5C0264	03/11/2015	03/11/15 10:38	
1,2-Dichloroethane	ND	5.0	1	B5C0264	03/11/2015	03/11/15 10:38	
1,2-Dichloropropane	ND	5.0	1	B5C0264	03/11/2015	03/11/15 10:38	
1,3,5-Trimethylbenzene	ND	5.0	1	B5C0264	03/11/2015	03/11/15 10:38	
1,3-Dichlorobenzene	ND	5.0	1	B5C0264	03/11/2015	03/11/15 10:38	
1,3-Dichloropropane	ND	5.0	1	B5C0264	03/11/2015	03/11/15 10:38	
1,4-Dichlorobenzene	ND	5.0	1	B5C0264	03/11/2015	03/11/15 10:38	
2,2-Dichloropropane	ND	5.0	1	B5C0264	03/11/2015	03/11/15 10:38	
2-Chlorotoluene	ND	5.0	1	B5C0264	03/11/2015	03/11/15 10:38	
4-Chlorotoluene	ND	5.0	1	B5C0264	03/11/2015	03/11/15 10:38	
4-Isopropyltoluene	ND	5.0	1	B5C0264	03/11/2015	03/11/15 10:38	
Benzene	ND	5.0	1	B5C0264	03/11/2015	03/11/15 10:38	
Bromobenzene	ND	5.0	1	B5C0264	03/11/2015	03/11/15 10:38	
Bromochloromethane	ND	5.0	1	B5C0264	03/11/2015	03/11/15 10:38	
Bromodichloromethane	ND	5.0	1	B5C0264	03/11/2015	03/11/15 10:38	
Bromoform	ND	5.0	1	B5C0264	03/11/2015	03/11/15 10:38	

Figure C-2.16

Certificate of Analysis

Amec Foster Wheeler	Project Number : MTA WESTSIDE, 4953-11-1423
6001 Rickenbacker Road	Report To : Ron Lopez
Los Angeles , CA 90040	Reported : 03/20/2015

Client Sample ID E132A - 80

Lab ID: 1500887-05

Volatile Organic Compounds by EPA 8260B **Analyst: AG**

Analyte	Result (ug/kg)	PQL (ug/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Bromomethane	ND	5.0	1	B5C0264	03/11/2015	03/11/15 10:38	
Carbon disulfide	ND	5.0	1	B5C0264	03/11/2015	03/11/15 10:38	
Carbon tetrachloride	ND	5.0	1	B5C0264	03/11/2015	03/11/15 10:38	
Chlorobenzene	ND	5.0	1	B5C0264	03/11/2015	03/11/15 10:38	
Chloroethane	ND	5.0	1	B5C0264	03/11/2015	03/11/15 10:38	
Chloroform	ND	5.0	1	B5C0264	03/11/2015	03/11/15 10:38	
Chloromethane	ND	5.0	1	B5C0264	03/11/2015	03/11/15 10:38	
cis-1,2-Dichloroethene	ND	5.0	1	B5C0264	03/11/2015	03/11/15 10:38	
cis-1,3-Dichloropropene	ND	5.0	1	B5C0264	03/11/2015	03/11/15 10:38	
Di-isopropyl ether	ND	5.0	1	B5C0264	03/11/2015	03/11/15 10:38	
Dibromochloromethane	ND	5.0	1	B5C0264	03/11/2015	03/11/15 10:38	
Dibromomethane	ND	5.0	1	B5C0264	03/11/2015	03/11/15 10:38	
Dichlorodifluoromethane	ND	5.0	1	B5C0264	03/11/2015	03/11/15 10:38	
Ethyl Acetate	ND	50	1	B5C0264	03/11/2015	03/11/15 10:38	
Ethyl Ether	ND	50	1	B5C0264	03/11/2015	03/11/15 10:38	
Ethyl tert-butyl ether	ND	5.0	1	B5C0264	03/11/2015	03/11/15 10:38	
Ethylbenzene	ND	5.0	1	B5C0264	03/11/2015	03/11/15 10:38	
Freon-113	ND	5.0	1	B5C0264	03/11/2015	03/11/15 10:38	
Hexachlorobutadiene	ND	5.0	1	B5C0264	03/11/2015	03/11/15 10:38	
Isopropylbenzene	ND	5.0	1	B5C0264	03/11/2015	03/11/15 10:38	
m,p-Xylene	ND	10	1	B5C0264	03/11/2015	03/11/15 10:38	
Methylene chloride	ND	5.0	1	B5C0264	03/11/2015	03/11/15 10:38	
MTBE	ND	5.0	1	B5C0264	03/11/2015	03/11/15 10:38	
n-Butylbenzene	ND	5.0	1	B5C0264	03/11/2015	03/11/15 10:38	
n-Propylbenzene	ND	5.0	1	B5C0264	03/11/2015	03/11/15 10:38	
Naphthalene	ND	5.0	1	B5C0264	03/11/2015	03/11/15 10:38	
o-Xylene	ND	5.0	1	B5C0264	03/11/2015	03/11/15 10:38	
sec-Butylbenzene	ND	5.0	1	B5C0264	03/11/2015	03/11/15 10:38	
Styrene	ND	5.0	1	B5C0264	03/11/2015	03/11/15 10:38	
tert-Amyl methyl ether	ND	5.0	1	B5C0264	03/11/2015	03/11/15 10:38	
tert-Butanol	ND	100	1	B5C0264	03/11/2015	03/11/15 10:38	
tert-Butylbenzene	ND	5.0	1	B5C0264	03/11/2015	03/11/15 10:38	
Tetrachloroethene	ND	5.0	1	B5C0264	03/11/2015	03/11/15 10:38	
Toluene	ND	5.0	1	B5C0264	03/11/2015	03/11/15 10:38	
trans-1,2-Dichloroethene	ND	5.0	1	B5C0264	03/11/2015	03/11/15 10:38	
trans-1,3-Dichloropropene	ND	5.0	1	B5C0264	03/11/2015	03/11/15 10:38	
Trichloroethene	ND	5.0	1	B5C0264	03/11/2015	03/11/15 10:38	

Certificate of Analysis

Amec Foster Wheeler	Project Number : MTA WESTSIDE, 4953-11-1423
6001 Rickenbacker Road	Report To : Ron Lopez
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Client Sample ID E132A - 80

Lab ID: 1500887-05

Volatile Organic Compounds by EPA 8260B

Analyst: AG

Analyte	Result (ug/kg)	PQL (ug/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Trichlorofluoromethane	ND	5.0	1	B5C0264	03/11/2015	03/11/15 10:38	
Vinyl acetate	ND	50	1	B5C0264	03/11/2015	03/11/15 10:38	
Vinyl chloride	ND	5.0	1	B5C0264	03/11/2015	03/11/15 10:38	
Surrogate: 1,2-Dichloroethane-d4	*105 %*	*20 - 189*		B5C0264	03/11/2015	*03/11/15 10:38*	
Surrogate: 4-Bromofluorobenzene	*91.5 %*	*20 - 173*		B5C0264	03/11/2015	*03/11/15 10:38*	
Surrogate: Dibromofluoromethane	*106 %*	*26 - 178*		B5C0264	03/11/2015	*03/11/15 10:38*	
Surrogate: Toluene-d8	*101 %*	*31 - 166*		B5C0264	03/11/2015	*03/11/15 10:38*	

Semivolatile Organic Compounds by EPA 8270C

Analyst: MFR

Analyte	Result (ug/kg)	PQL (ug/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
1,2,4-Trichlorobenzene	ND	330	1	B5C0386	03/16/2015	03/20/15 05:05	
1,2-Dichlorobenzene	ND	330	1	B5C0386	03/16/2015	03/20/15 05:05	
1,3-Dichlorobenzene	ND	330	1	B5C0386	03/16/2015	03/20/15 05:05	
1,4-Dichlorobenzene	ND	330	1	B5C0386	03/16/2015	03/20/15 05:05	
2,4,5-Trichlorophenol	ND	330	1	B5C0386	03/16/2015	03/20/15 05:05	
2,4,6-Trichlorophenol	ND	330	1	B5C0386	03/16/2015	03/20/15 05:05	
2,4-Dichlorophenol	ND	1600	1	B5C0386	03/16/2015	03/20/15 05:05	
2,4-Dimethylphenol	ND	330	1	B5C0386	03/16/2015	03/20/15 05:05	
2,4-Dinitrophenol	ND	1600	1	B5C0386	03/16/2015	03/20/15 05:05	
2,4-Dinitrotoluene	ND	330	1	B5C0386	03/16/2015	03/20/15 05:05	
2,6-Dinitrotoluene	ND	330	1	B5C0386	03/16/2015	03/20/15 05:05	
2-Chloronaphthalene	ND	330	1	B5C0386	03/16/2015	03/20/15 05:05	
2-Chlorophenol	ND	330	1	B5C0386	03/16/2015	03/20/15 05:05	
2-Methylnaphthalene	ND	330	1	B5C0386	03/16/2015	03/20/15 05:05	
2-Methylphenol	ND	330	1	B5C0386	03/16/2015	03/20/15 05:05	
2-Nitroaniline	ND	1600	1	B5C0386	03/16/2015	03/20/15 05:05	
2-Nitrophenol	ND	330	1	B5C0386	03/16/2015	03/20/15 05:05	
3,3´-Dichlorobenzidine	ND	660	1	B5C0386	03/16/2015	03/20/15 05:05	
3-Nitroaniline	ND	1600	1	B5C0386	03/16/2015	03/20/15 05:05	
4,6-Dinitro-2-methyphenol	ND	1600	1	B5C0386	03/16/2015	03/20/15 05:05	
4-Bromophenyl-phenylether	ND	330	1	B5C0386	03/16/2015	03/20/15 05:05	
4-Chloro-3-methylphenol	ND	660	1	B5C0386	03/16/2015	03/20/15 05:05	
4-Chloroaniline	ND	660	1	B5C0386	03/16/2015	03/20/15 05:05	
4-Chlorophenyl-phenylether	ND	330	1	B5C0386	03/16/2015	03/20/15 05:05	
4-Methylphenol	ND	330	1	B5C0386	03/16/2015	03/20/15 05:05	

Certificate of Analysis

Amec Foster Wheeler	Project Number : MTA WESTSIDE, 4953-11-1423
6001 Rickenbacker Road	Report To : Ron Lopez
Los Angeles , CA 90040	Reported : 03/20/2015

Client Sample ID E132A - 80

Lab ID: 1500887-05

Semivolatile Organic Compounds by EPA 8270C **Analyst: MFR**

Analyte	Result (ug/kg)	PQL (ug/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
4-Nitroaniline	ND	1600	1	B5C0386	03/16/2015	03/20/15 05:05	
4-Nitrophenol	ND	330	1	B5C0386	03/16/2015	03/20/15 05:05	
Acenaphthene	ND	330	1	B5C0386	03/16/2015	03/20/15 05:05	
Acenaphthylene	ND	330	1	B5C0386	03/16/2015	03/20/15 05:05	
Anthracene	ND	330	1	B5C0386	03/16/2015	03/20/15 05:05	
Benzidine (M)	ND	1600	1	B5C0386	03/16/2015	03/20/15 05:05	
Benzo(a)anthracene	ND	330	1	B5C0386	03/16/2015	03/20/15 05:05	
Benzo(a)pyrene	ND	330	1	B5C0386	03/16/2015	03/20/15 05:05	
Benzo(b)fluoranthene	ND	330	1	B5C0386	03/16/2015	03/20/15 05:05	
Benzo(g,h,i)perylene	ND	330	1	B5C0386	03/16/2015	03/20/15 05:05	
Benzo(k)fluoranthene	ND	330	1	B5C0386	03/16/2015	03/20/15 05:05	
Benzoic acid	ND	1600	1	B5C0386	03/16/2015	03/20/15 05:05	
Benzyl alcohol	ND	660	1	B5C0386	03/16/2015	03/20/15 05:05	
bis(2-chloroethoxy)methane	ND	330	1	B5C0386	03/16/2015	03/20/15 05:05	
bis(2-Chloroethyl)ether	ND	330	1	B5C0386	03/16/2015	03/20/15 05:05	
bis(2-chloroisopropyl)ether	ND	330	1	B5C0386	03/16/2015	03/20/15 05:05	
bis(2-ethylhexyl)phthalate	ND	330	1	B5C0386	03/16/2015	03/20/15 05:05	
Butylbenzylphthalate	ND	330	1	B5C0386	03/16/2015	03/20/15 05:05	
Chrysene	ND	330	1	B5C0386	03/16/2015	03/20/15 05:05	
Di-n-butylphthalate	ND	330	1	B5C0386	03/16/2015	03/20/15 05:05	
Di-n-octylphthalate	ND	330	1	B5C0386	03/16/2015	03/20/15 05:05	
Dibenz(a,h)anthracene	ND	330	1	B5C0386	03/16/2015	03/20/15 05:05	
Dibenzofuran	ND	330	1	B5C0386	03/16/2015	03/20/15 05:05	
Diethyl phthalate	ND	330	1	B5C0386	03/16/2015	03/20/15 05:05	
Dimethyl phthalate	ND	330	1	B5C0386	03/16/2015	03/20/15 05:05	
Fluoranthene	ND	330	1	B5C0386	03/16/2015	03/20/15 05:05	
Fluorene	ND	330	1	B5C0386	03/16/2015	03/20/15 05:05	
Hexachlorobenzene	ND	330	1	B5C0386	03/16/2015	03/20/15 05:05	
Hexachlorobutadiene	ND	660	1	B5C0386	03/16/2015	03/20/15 05:05	
Hexachlorocyclopentadiene	ND	660	1	B5C0386	03/16/2015	03/20/15 05:05	
Hexachloroethane	ND	330	1	B5C0386	03/16/2015	03/20/15 05:05	
Indeno(1,2,3-cd)pyrene	ND	330	1	B5C0386	03/16/2015	03/20/15 05:05	
Isophorone	ND	330	1	B5C0386	03/16/2015	03/20/15 05:05	
N-Nitroso-di-n propylamine	ND	330	1	B5C0386	03/16/2015	03/20/15 05:05	
N-Nitrosodiphenylamine	ND	330	1	B5C0386	03/16/2015	03/20/15 05:05	
Naphthalene	ND	330	1	B5C0386	03/16/2015	03/20/15 05:05	
Nitrobenzene	ND	330	1	B5C0386	03/16/2015	03/20/15 05:05	

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Client Sample ID E132A - 80

Lab ID: 1500887-05

Semivolatile Organic Compounds by EPA 8270C **Analyst: MFR**

Analyte		Result (ug/kg)	PQL (ug/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Pentachlorophenol		ND	1600	1	B5C0386	03/16/2015	03/20/15 05:05	
Phenanthrene		ND	330	1	B5C0386	03/16/2015	03/20/15 05:05	
Phenol		ND	330	1	B5C0386	03/16/2015	03/20/15 05:05	
Pyrene		ND	330	1	B5C0386	03/16/2015	03/20/15 05:05	
Pyridine		ND	1600	1	B5C0386	03/16/2015	03/20/15 05:05	
Surrogate: 1,2-Dichlorobenzene-d4	*60.6 %*		*24 - 114*		B5C0386	03/16/2015	*03/20/15 05:05*	
Surrogate: 2,4,6-Tribromophenol	*81.6 %*		*0 - 189*		B5C0386	03/16/2015	*03/20/15 05:05*	
Surrogate: 2-Chlorophenol-d4	*70.4 %*		*23 - 123*		B5C0386	03/16/2015	*03/20/15 05:05*	
Surrogate: 2-Fluorobiphenyl	*69.1 %*		*28 - 128*		B5C0386	03/16/2015	*03/20/15 05:05*	
Surrogate: 2-Fluorophenol	*67.6 %*		*8 - 138*		B5C0386	03/16/2015	*03/20/15 05:05*	
Surrogate: 4-Terphenyl-d14	*78.2 %*		*27 - 154*		B5C0386	03/16/2015	*03/20/15 05:05*	
Surrogate: Nitrobenzene-d5	*60.8 %*		*19 - 129*		B5C0386	03/16/2015	*03/20/15 05:05*	
Surrogate: Phenol-d5	*71.5 %*		*20 - 126*		B5C0386	03/16/2015	*03/20/15 05:05*	

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QUALITY CONTROL SECTION

Total Petroleum Hydrocarbons, HEM/SGT EPA 1664 (Modified) - Quality Control

Analyte	Result (mg/kg)	PQL (mg/kg)	Spike Level	Source Result	% Rec	% Rec Limits	RPD	RPD Limit	Notes
Batch B5C0280 - Prep_WC2_S									
Blank (B5C0280-BLK1)				Prepared: 3/11/2015 Analyzed: 3/11/2015					
Total Petroleum Hydrocarbons	ND	50			NR				
LCS (B5C0280-BS1)				Prepared: 3/11/2015 Analyzed: 3/11/2015					
Total Petroleum Hydrocarbons	2090.00	50	2000.00		104	80 - 120			
Matrix Spike (B5C0280-MS1)		**Source: 1500831-01**		Prepared: 3/11/2015 Analyzed: 3/11/2015					
Total Petroleum Hydrocarbons	1910.00	50	2000.00	ND	95.5	80 - 120			
Matrix Spike Dup (B5C0280-MSD1)		**Source: 1500831-01**		Prepared: 3/11/2015 Analyzed: 3/11/2015					
Total Petroleum Hydrocarbons	2090.00	50	2000.00	ND	104	80 - 120	9.00	20	

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Title 22 Metals by ICP-AES EPA 6010B - Quality Control

Analyte	Result (mg/kg)	PQL (mg/kg)	Spike Level	Source Result	% Rec	% Rec Limits	RPD	RPD Limit	Notes
Batch B5C0328 - EPA 3050B_S									
Blank (B5C0328-BLK1)				Prepared: 3/13/2015 Analyzed: 3/16/2015					
Antimony	ND	2.0			NR				
Arsenic	ND	1.0			NR				
Barium	ND	1.0			NR				
Beryllium	ND	1.0			NR				
Cadmium	ND	1.0			NR				
Chromium	ND	1.0			NR				
Cobalt	ND	1.0			NR				
Copper	ND	2.0			NR				
Lead	ND	1.0			NR				
Molybdenum	ND	1.0			NR				
Nickel	ND	1.0			NR				
Selenium	ND	1.0			NR				
Silver	ND	1.0			NR				
Thallium	ND	1.0			NR				
Vanadium	ND	1.0			NR				
Zinc	ND	1.0			NR				
LCS (B5C0328-BS1)				Prepared: 3/13/2015 Analyzed: 3/16/2015					
Antimony	48.0476	2.0	50.0000		96.1	80 - 120			
Arsenic	46.2942	1.0	50.0000		92.6	80 - 120			
Barium	49.5107	1.0	50.0000		99.0	80 - 120			
Beryllium	48.0321	1.0	50.0000		96.1	80 - 120			
Cadmium	46.6698	1.0	50.0000		93.3	80 - 120			
Chromium	50.3298	1.0	50.0000		101	80 - 120			
Cobalt	50.1713	1.0	50.0000		100	80 - 120			
Copper	50.5791	2.0	50.0000		101	80 - 120			
Lead	48.6114	1.0	50.0000		97.2	80 - 120			
Molybdenum	50.1282	1.0	50.0000		100	80 - 120			
Nickel	47.6039	1.0	50.0000		95.2	80 - 120			
Selenium	44.7757	1.0	50.0000		89.6	80 - 120			
Silver	46.7116	1.0	50.0000		93.4	80 - 120			
Thallium	49.0088	1.0	50.0000		98.0	80 - 120			
Vanadium	49.5839	1.0	50.0000		99.2	80 - 120			
Zinc	44.5223	1.0	50.0000		89.0	80 - 120			
Matrix Spike (B5C0328-MS1)		**Source: 1500910-02**		Prepared: 3/13/2015 Analyzed: 3/16/2015					
Antimony	443.557	8.0	500.000	ND	88.7	28 - 106			
Arsenic	459.854	4.0	500.000	ND	92.0	57 - 109			
Barium	494.005	4.0	500.000	72.2500	84.4	18 - 159			
Beryllium	466.968	4.0	500.000	ND	93.4	61 - 107			
Cadmium	408.913	4.0	500.000	ND	81.8	53 - 104			
Chromium	449.623	4.0	500.000	3.81680	89.2	53 - 121			

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Title 22 Metals by ICP-AES EPA 6010B - Quality Control (cont'd)

Analyte	Result (mg/kg)	PQL (mg/kg)	Spike Level	Source Result	% Rec	% Rec Limits	RPD	RPD Limit	Notes
Batch B5C0328 - EPA 3050B_S (continued)									
Matrix Spike (B5C0328-MS1) - Continued		**Source: 1500910-02**		Prepared: 3/13/2015 Analyzed: 3/16/2015					
Cobalt	423.941	4.0	500.000	ND	84.8	55 - 109			
Copper	523.750	8.0	500.000	39.8026	96.8	58 - 124			
Lead	437.622	4.0	500.000	10.6865	85.4	35 - 129			
Molybdenum	449.909	4.0	500.000	1.34488	89.7	57 - 108			
Nickel	408.944	4.0	500.000	1.97504	81.4	44 - 122			
Selenium	446.508	4.0	500.000	ND	89.3	54 - 104			
Silver	481.516	4.0	500.000	1.47724	96.0	60 - 112			
Thallium	371.223	4.0	500.000	ND	74.2	50 - 103			
Vanadium	452.892	4.0	500.000	2.58935	90.1	54 - 123			
Zinc	454.996	4.0	500.000	86.7632	73.6	29 - 132			
Matrix Spike Dup (B5C0328-MSD1)		**Source: 1500910-02**		Prepared: 3/13/2015 Analyzed: 3/16/2015					
Antimony	425.427	8.0	500.000	ND	85.1	28 - 106	4.17	20	
Arsenic	432.629	4.0	500.000	ND	86.5	57 - 109	6.10	20	
Barium	453.337	4.0	500.000	72.2500	76.2	18 - 159	8.59	20	
Beryllium	439.735	4.0	500.000	ND	87.9	61 - 107	6.01	20	
Cadmium	390.265	4.0	500.000	ND	78.1	53 - 104	4.67	20	
Chromium	429.066	4.0	500.000	3.81680	85.0	53 - 121	4.68	20	
Cobalt	403.425	4.0	500.000	ND	80.7	55 - 109	4.96	20	
Copper	495.388	8.0	500.000	39.8026	91.1	58 - 124	5.57	20	
Lead	413.283	4.0	500.000	10.6865	80.5	35 - 129	5.72	20	
Molybdenum	425.314	4.0	500.000	1.34488	84.8	57 - 108	5.62	20	
Nickel	391.801	4.0	500.000	1.97504	78.0	44 - 122	4.28	20	
Selenium	422.781	4.0	500.000	ND	84.6	54 - 104	5.46	20	
Silver	458.512	4.0	500.000	1.47724	91.4	60 - 112	4.89	20	
Thallium	351.180	4.0	500.000	ND	70.2	50 - 103	5.55	20	
Vanadium	432.445	4.0	500.000	2.58935	86.0	54 - 123	4.62	20	
Zinc	428.436	4.0	500.000	86.7632	68.3	29 - 132	6.01	20	

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Mercury by AA (Cold Vapor) EPA 7471A - Quality Control

Analyte	Result (mg/kg)	PQL (mg/kg)	Spike Level	Source Result	% Rec	% Rec Limits	RPD	RPD Limit	Notes
Batch B5C0329 - EPA 7471_S									
Blank (B5C0329-BLK1)				Prepared: 3/13/2015 Analyzed: 3/16/2015					
Mercury	ND	0.10			NR				
LCS (B5C0329-BS1)				Prepared: 3/13/2015 Analyzed: 3/16/2015					
Mercury	0.763740	0.10	0.833333		91.6	80 - 120			
Matrix Spike (B5C0329-MS1)		**Source: 1500873-03**		Prepared: 3/13/2015 Analyzed: 3/16/2015					
Mercury	0.993488	0.10	0.833333	0.109994	106	70 - 130			
Matrix Spike Dup (B5C0329-MSD1)		**Source: 1500873-03**		Prepared: 3/13/2015 Analyzed: 3/16/2015					
Mercury	0.921385	0.10	0.833333	0.109994	97.4	70 - 130	7.53	20	
Post Spike (B5C0329-PS1)		**Source: 1500873-03**		Prepared: 3/13/2015 Analyzed: 3/16/2015					
Mercury	0.006781		5.00000E-3	0.001320	109	85 - 115			

Figure C-2.24

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Gasoline Range Organics by EPA 8015B (Modified) - Quality Control

Analyte	Result (mg/kg)	PQL (mg/kg)	Spike Level	Source Result	% Rec	% Rec Limits	RPD	RPD Limit	Notes
Batch B5C0269 - GCVOA_S									
Blank (B5C0269-BLK1)				Prepared: 3/11/2015 Analyzed: 3/11/2015					
Gasoline Range Organics	ND	1.0			NR				
Surrogate: 4-Bromofluorobenzene	*0.2253*		*0.200000*		*113*	*37 - 153*			
LCS (B5C0269-BS1)				Prepared: 3/11/2015 Analyzed: 3/11/2015					
Gasoline Range Organics	4.82300	1.0	5.00000		96.5	70 - 130			
Surrogate: 4-Bromofluorobenzene	*0.2220*		*0.200000*		*111*	*37 - 153*			
Duplicate (B5C0269-DUP1)		**Source: 1500878-03**		Prepared: 3/11/2015 Analyzed: 3/11/2015					
Gasoline Range Organics	ND	1.0		ND	NR			20	
Surrogate: 4-Bromofluorobenzene	*0.2326*		*0.200000*		*116*	*37 - 153*			
Matrix Spike (B5C0269-MS1)		**Source: 1500887-01**		Prepared: 3/11/2015 Analyzed: 3/11/2015					
Gasoline Range Organics	4.60700	1.0	5.00000	ND	92.1	20 - 130			
Surrogate: 4-Bromofluorobenzene	*0.2220*		*0.200000*		*111*	*37 - 153*			
Matrix Spike Dup (B5C0269-MSD1)		**Source: 1500887-01**		Prepared: 3/11/2015 Analyzed: 3/11/2015					
Gasoline Range Organics	4.40400	1.0	5.00000	ND	88.1	20 - 130	4.51	20	
Surrogate: 4-Bromofluorobenzene	*0.2317*		*0.200000*		*116*	*37 - 153*			

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Amec Foster Wheeler	Project Number : MTA WESTSIDE, 4953-11-1423
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Diesel Range Organics by EPA 8015B - Quality Control

Analyte	Result (mg/kg)	PQL (mg/kg)	Spike Level	Source Result	% Rec	% Rec Limits	RPD	RPD Limit	Notes
Batch B5C0352 - GCSEMI_DRO_S									
Blank (B5C0352-BLK1)					Prepared: 3/13/2015 Analyzed: 3/14/2015				
DRO	ND	10			NR				
ORO	ND	10			NR				
Surrogate: p-Terphenyl	*77.33*		*80.0000*		*96.7*	*49 - 142*			
LCS (B5C0352-BS1)					Prepared: 3/13/2015 Analyzed: 3/14/2015				
DRO	742.670	10	1000.00		74.3	48 - 155			
Surrogate: p-Terphenyl	*92.61*		*80.0000*		*116*	*49 - 142*			
Matrix Spike (B5C0352-MS1)		**Source: 1500884-05**			Prepared: 3/13/2015 Analyzed: 3/14/2015				
DRO	783.440	10	1000.00	ND	78.3	30 - 173			
Surrogate: p-Terphenyl	*73.99*		*80.0000*		*92.5*	*49 - 142*			
Matrix Spike Dup (B5C0352-MSD1)		**Source: 1500884-05**			Prepared: 3/13/2015 Analyzed: 3/14/2015				
DRO	761.210	10	1000.00	ND	76.1	30 - 173	2.88	20	
Surrogate: p-Terphenyl	*73.66*		*80.0000*		*92.1*	*49 - 142*			

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Volatile Organic Compounds by EPA 8260B - Quality Control

Analyte	Result (ug/kg)	PQL (ug/kg)	Spike Level	Source Result	% Rec	% Rec Limits	RPD	RPD Limit	Notes
Batch B5C0264 - MSVOA_S									
Blank (B5C0264-BLK1)				Prepared: 3/11/2015 Analyzed: 3/11/2015					
1,1,1,2-Tetrachloroethane	ND	5.0			NR				
1,1,1-Trichloroethane	ND	5.0			NR				
1,1,2,2-Tetrachloroethane	ND	5.0			NR				
1,1,2-Trichloroethane	ND	5.0			NR				
1,1-Dichloroethane	ND	5.0			NR				
1,1-Dichloroethene	ND	5.0			NR				
1,1-Dichloropropene	ND	5.0			NR				
1,2,3-Trichloropropane	ND	5.0			NR				
1,2,3-Trichlorobenzene	ND	5.0			NR				
1,2,4-Trichlorobenzene	ND	5.0			NR				
1,2,4-Trimethylbenzene	ND	5.0			NR				
1,2-Dibromo-3-chloropropane	ND	10			NR				
1,2-Dibromoethane	ND	5.0			NR				
1,2-Dichlorobenzene	ND	5.0			NR				
1,2-Dichloroethane	ND	5.0			NR				
1,2-Dichloropropane	ND	5.0			NR				
1,3,5-Trimethylbenzene	ND	5.0			NR				
1,3-Dichlorobenzene	ND	5.0			NR				
1,3-Dichloropropane	ND	5.0			NR				
1,4-Dichlorobenzene	ND	5.0			NR				
2,2-Dichloropropane	ND	5.0			NR				
2-Chlorotoluene	ND	5.0			NR				
4-Chlorotoluene	ND	5.0			NR				
4-Isopropyltoluene	ND	5.0			NR				
Benzene	ND	5.0			NR				
Bromobenzene	ND	5.0			NR				
Bromochloromethane	ND	5.0			NR				
Bromodichloromethane	ND	5.0			NR				
Bromoform	ND	5.0			NR				
Bromomethane	ND	5.0			NR				
Carbon disulfide	ND	5.0			NR				
Carbon tetrachloride	ND	5.0			NR				
Chlorobenzene	ND	5.0			NR				
Chloroethane	ND	5.0			NR				
Chloroform	ND	5.0			NR				
Chloromethane	ND	5.0			NR				
cis-1,2-Dichloroethene	ND	5.0			NR				
cis-1,3-Dichloropropene	ND	5.0			NR				
Di-isopropyl ether	ND	5.0			NR				
Dibromochloromethane	ND	5.0			NR				
Dibromomethane	ND	5.0			NR				

Figure C-2.27

Certificate of Analysis

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Volatile Organic Compounds by EPA 8260B - Quality Control (cont'd)

Analyte	Result (ug/kg)	PQL (ug/kg)	Spike Level	Source Result	% Rec	% Rec Limits	RPD	RPD Limit	Notes
Batch B5C0264 - MSVOA_S (continued)									
Blank (B5C0264-BLK1) - Continued					Prepared: 3/11/2015 Analyzed: 3/11/2015				
Dichlorodifluoromethane	ND	5.0			NR				
Ethyl Acetate	ND	50			NR				
Ethyl Ether	ND	50			NR				
Ethyl tert-butyl ether	ND	5.0			NR				
Ethylbenzene	ND	5.0			NR				
Freon-113	ND	5.0			NR				
Hexachlorobutadiene	ND	5.0			NR				
Isopropylbenzene	ND	5.0			NR				
m,p-Xylene	ND	10			NR				
Methylene chloride	ND	5.0			NR				
MTBE	ND	5.0			NR				
n-Butylbenzene	ND	5.0			NR				
n-Propylbenzene	ND	5.0			NR				
Naphthalene	ND	5.0			NR				
o-Xylene	ND	5.0			NR				
sec-Butylbenzene	ND	5.0			NR				
Styrene	ND	5.0			NR				
tert-Amyl methyl ether	ND	5.0			NR				
tert-Butanol	ND	100			NR				
tert-Butylbenzene	ND	5.0			NR				
Tetrachloroethene	ND	5.0			NR				
Toluene	ND	5.0			NR				
trans-1,2-Dichloroethene	ND	5.0			NR				
trans-1,3-Dichloropropene	ND	5.0			NR				
Trichloroethene	ND	5.0			NR				
Trichlorofluoromethane	ND	5.0			NR				
Vinyl acetate	ND	50			NR				
Vinyl chloride	ND	5.0			NR				
Surrogate: 1,2-Dichloroethane-d4	*47.20*		*50.0000*		*94.4*	*20 - 189*			
Surrogate: 4-Bromofluorobenzene	*45.15*		*50.0000*		*90.3*	*20 - 173*			
Surrogate: Dibromofluoromethane	*47.65*		*50.0000*		*95.3*	*26 - 178*			
Surrogate: Toluene-d8	*49.47*		*50.0000*		*98.9*	*31 - 166*			
LCS (B5C0264-BS1)					Prepared: 3/11/2015 Analyzed: 3/11/2015				
1,1,1,2-Tetrachloroethane	49.1100	5.0	50.0000		98.2	74 - 117			
1,1,1-Trichloroethane	47.5100	5.0	50.0000		95.0	65 - 130			
1,1,2,2-Tetrachloroethane	53.3500	5.0	50.0000		107	63 - 123			
1,1,2-Trichloroethane	48.5700	5.0	50.0000		97.1	66 - 122			
1,1-Dichloroethane	49.1800	5.0	50.0000		98.4	65 - 124			
1,1-Dichloroethene	33.7100	5.0	50.0000		67.4	60 - 130			
1,1-Dichloropropene	46.9000	5.0	50.0000		93.8	75 - 121			

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Los Angeles , CA 90040	Reported : 03/20/2015

Volatile Organic Compounds by EPA 8260B - Quality Control (cont'd)

Analyte	Result (ug/kg)	PQL (ug/kg)	Spike Level	Source Result	% Rec	% Rec Limits	RPD	RPD Limit	Notes
Batch B5C0264 - MSVOA_S (continued)									
LCS (B5C0264-BS1) - Continued				Prepared: 3/11/2015 Analyzed: 3/11/2015					
1,2,3-Trichloropropane	51.7600	5.0	50.0000		104	62 - 126			
1,2,3-Trichlorobenzene	48.4600	5.0	50.0000		96.9	72 - 120			
1,2,4-Trichlorobenzene	49.9900	5.0	50.0000		100	75 - 121			
1,2,4-Trimethylbenzene	53.4800	5.0	50.0000		107	82 - 118			
1,2-Dibromo-3-chloropropane	55.3900	10	50.0000		111	67 - 121			
1,2-Dibromoethane	50.4400	5.0	50.0000		101	69 - 123			
1,2-Dichlorobenzene	54.8000	5.0	50.0000		110	81 - 114			
1,2-Dichloroethane	50.3400	5.0	50.0000		101	71 - 119			
1,2-Dichloropropane	48.4000	5.0	50.0000		96.8	71 - 118			
1,3,5-Trimethylbenzene	53.6000	5.0	50.0000		107	81 - 120			
1,3-Dichlorobenzene	53.7600	5.0	50.0000		108	80 - 115			
1,3-Dichloropropane	48.7100	5.0	50.0000		97.4	77 - 117			
1,4-Dichlorobenzene	53.2000	5.0	50.0000		106	80 - 115			
2,2-Dichloropropane	49.9200	5.0	50.0000		99.8	58 - 141			
2-Chlorotoluene	53.4400	5.0	50.0000		107	78 - 120			
4-Chlorotoluene	54.4200	5.0	50.0000		109	79 - 119			
4-Isopropyltoluene	55.1200	5.0	50.0000		110	81 - 125			
Benzene	91.5500	5.0	100.000		91.6	73 - 116			
Bromobenzene	52.4400	5.0	50.0000		105	78 - 115			
Bromochloromethane	47.8100	5.0	50.0000		95.6	66 - 121			
Bromodichloromethane	49.1900	5.0	50.0000		98.4	73 - 120			
Bromoform	50.1000	5.0	50.0000		100	68 - 124			
Bromomethane	47.8800	5.0	50.0000		95.8	26 - 163			
Carbon disulfide	42.8400	5.0	50.0000		85.7	43 - 142			
Carbon tetrachloride	48.0700	5.0	50.0000		96.1	67 - 130			
Chlorobenzene	50.0600	5.0	50.0000		100	82 - 114			
Chloroethane	36.5100	5.0	50.0000		73.0	40 - 151			
Chloroform	48.4200	5.0	50.0000		96.8	68 - 124			
Chloromethane	40.1900	5.0	50.0000		80.4	18 - 144			
cis-1,2-Dichloroethene	49.0800	5.0	50.0000		98.2	66 - 125			
cis-1,3-Dichloropropene	54.2600	5.0	50.0000		109	77 - 120			
Di-isopropyl ether	49.6700	5.0	50.0000		99.3	56 - 132			
Dibromochloromethane	48.2800	5.0	50.0000		96.6	76 - 118			
Dibromomethane	50.1900	5.0	50.0000		100	69 - 122			
Dichlorodifluoromethane	42.9700	5.0	50.0000		85.9	0 - 155			
Ethyl Acetate	493.370	50	500.000		98.7	31 - 137			
Ethyl Ether	474.820	50	500.000		95.0	47 - 150			
Ethyl tert-butyl ether	49.8900	5.0	50.0000		99.8	63 - 134			
Ethylbenzene	98.4900	5.0	100.000		98.5	79 - 115			
Freon-113	37.3000	5.0	50.0000		74.6	62 - 134			
Hexachlorobutadiene	52.0400	5.0	50.0000		104	71 - 121			
Isopropylbenzene	54.1800	5.0	50.0000		108	78 - 126			

Figure C-2.29

Certificate of Analysis

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Volatile Organic Compounds by EPA 8260B - Quality Control (cont'd)

Analyte	Result (ug/kg)	PQL (ug/kg)	Spike Level	Source Result	% Rec	% Rec Limits	RPD	RPD Limit	Notes
Batch B5C0264 - MSVOA_S (continued)									
LCS (B5C0264-BS1) - Continued					Prepared: 3/11/2015 Analyzed: 3/11/2015				
m,p-Xylene	107.380	10	100.000		107	80 - 119			
Methylene chloride	53.6300	5.0	50.0000		107	56 - 129			
MTBE	47.7000	5.0	50.0000		95.4	61 - 124			
n-Butylbenzene	54.1000	5.0	50.0000		108	78 - 127			
n-Propylbenzene	55.0000	5.0	50.0000		110	77 - 128			
Naphthalene	61.2700	5.0	50.0000		123	61 - 141			
o-Xylene	103.910	5.0	100.000		104	81 - 116			
sec-Butylbenzene	54.7400	5.0	50.0000		109	81 - 125			
Styrene	54.0800	5.0	50.0000		108	82 - 120			
tert-Amyl methyl ether	48.2200	5.0	50.0000		96.4	52 - 149			
tert-Butanol	276.150	100	250.000		110	26 - 160			
tert-Butylbenzene	55.1200	5.0	50.0000		110	80 - 123			
Tetrachloroethene	47.9500	5.0	50.0000		95.9	75 - 123			
Toluene	99.0300	5.0	100.000		99.0	75 - 119			
trans-1,2-Dichloroethene	47.7400	5.0	50.0000		95.5	62 - 127			
trans-1,3-Dichloropropene	52.8700	5.0	50.0000		106	68 - 121			
Trichloroethene	48.9100	5.0	50.0000		97.8	73 - 119			
Trichlorofluoromethane	42.4900	5.0	50.0000		85.0	47 - 157			
Vinyl acetate	470.610	50	500.000		94.1	20 - 136			
Vinyl chloride	41.0400	5.0	50.0000		82.1	27 - 147			
Surrogate: 1,2-Dichloroethane-d4	*53.19*		*50.0000*		*106*	*20 - 189*			
Surrogate: 4-Bromofluorobenzene	*52.67*		*50.0000*		*105*	*20 - 173*			
Surrogate: Dibromofluoromethane	*50.81*		*50.0000*		*102*	*26 - 178*			
Surrogate: Toluene-d8	*52.69*		*50.0000*		*105*	*31 - 166*			
Matrix Spike (B5C0264-MS1)		**Source: 1500887-01**			Prepared: 3/11/2015 Analyzed: 3/11/2015				
1,1,1,2-Tetrachloroethane	45.6000	5.0	50.0000	ND	91.2	45 - 122			
1,1,1-Trichloroethane	45.7100	5.0	50.0000	ND	91.4	46 - 131			
1,1,2,2-Tetrachloroethane	41.8900	5.0	50.0000	ND	83.8	34 - 133			
1,1,2-Trichloroethane	45.5200	5.0	50.0000	ND	91.0	40 - 133			
1,1-Dichloroethane	45.7800	5.0	50.0000	ND	91.6	50 - 120			
1,1-Dichloroethene	30.1900	5.0	50.0000	ND	60.4	42 - 130			
1,1-Dichloropropene	44.4800	5.0	50.0000	ND	89.0	49 - 125			
1,2,3-Trichloropropane	44.4700	5.0	50.0000	ND	88.9	42 - 130			
1,2,3-Trichlorobenzene	49.1900	5.0	50.0000	ND	98.4	2 - 136			
1,2,4-Trichlorobenzene	50.0800	5.0	50.0000	ND	100	6 - 137			
1,2,4-Trimethylbenzene	50.5100	5.0	50.0000	ND	101	37 - 129			
1,2-Dibromo-3-chloropropane	46.6900	10	50.0000	ND	93.4	36 - 135			
1,2-Dibromoethane	44.1000	5.0	50.0000	ND	88.2	43 - 129			
1,2-Dichlorobenzene	48.8100	5.0	50.0000	ND	97.6	31 - 129			
1,2-Dichloroethane	46.5600	5.0	50.0000	ND	93.1	50 - 122			

Figure C-2.30

Certificate of Analysis

Amec Foster Wheeler	Project Number : MTA WESTSIDE, 4953-11-1423
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Volatile Organic Compounds by EPA 8260B - Quality Control (cont'd)

Analyte	Result (ug/kg)	PQL (ug/kg)	Spike Level	Source Result	% Rec	% Rec Limits	RPD	RPD Limit	Notes
Batch B5C0264 - MSVOA_S (continued)									
Matrix Spike (B5C0264-MS1) - Continued		**Source: 1500887-01**		Prepared: 3/11/2015 Analyzed: 3/11/2015					
1,2-Dichloropropane	44.8800	5.0	50.0000	ND	89.8	51 - 119			
1,3,5-Trimethylbenzene	49.8900	5.0	50.0000	ND	99.8	38 - 130			
1,3-Dichlorobenzene	48.4900	5.0	50.0000	ND	97.0	31 - 128			
1,3-Dichloropropane	46.0400	5.0	50.0000	ND	92.1	52 - 122			
1,4-Dichlorobenzene	48.2000	5.0	50.0000	ND	96.4	31 - 128			
2,2-Dichloropropane	47.5900	5.0	50.0000	ND	95.2	42 - 140			
2-Chlorotoluene	49.1200	5.0	50.0000	ND	98.2	38 - 129			
4-Chlorotoluene	49.6300	5.0	50.0000	ND	99.3	38 - 128			
4-Isopropyltoluene	52.3600	5.0	50.0000	ND	105	31 - 137			
Benzene	86.0100	5.0	100.000	ND	86.0	51 - 117			
Bromobenzene	47.0300	5.0	50.0000	ND	94.1	41 - 125			
Bromochloromethane	44.3400	5.0	50.0000	ND	88.7	47 - 123			
Bromodichloromethane	45.5700	5.0	50.0000	ND	91.1	50 - 122			
Bromoform	44.1800	5.0	50.0000	ND	88.4	39 - 131			
Bromomethane	44.1800	5.0	50.0000	ND	88.4	10 - 154			
Carbon disulfide	34.3200	5.0	50.0000	ND	68.6	24 - 138			
Carbon tetrachloride	44.5400	5.0	50.0000	ND	89.1	44 - 131			
Chlorobenzene	46.1700	5.0	50.0000	ND	92.3	46 - 123			
Chloroethane	35.7800	5.0	50.0000	ND	71.6	27 - 143			
Chloroform	45.4100	5.0	50.0000	ND	90.8	50 - 124			
Chloromethane	42.9600	5.0	50.0000	ND	85.9	8 - 139			
cis-1,2-Dichloroethene	46.2300	5.0	50.0000	ND	92.5	48 - 125			
cis-1,3-Dichloropropene	48.5400	5.0	50.0000	ND	97.1	51 - 123			
Di-isopropyl ether	47.2900	5.0	50.0000	ND	94.6	45 - 125			
Dibromochloromethane	45.1800	5.0	50.0000	ND	90.4	48 - 124			
Dibromomethane	45.9100	5.0	50.0000	ND	91.8	48 - 124			
Dichlorodifluoromethane	44.4700	5.0	50.0000	ND	88.9	0 - 150			
Ethyl Acetate	463.010	50	500.000	ND	92.6	0 - 140			
Ethyl Ether	465.550	50	500.000	ND	93.1	36 - 142			
Ethyl tert-butyl ether	48.2100	5.0	50.0000	ND	96.4	46 - 133			
Ethylbenzene	93.1400	5.0	100.000	ND	93.1	46 - 123			
Freon-113	32.6000	5.0	50.0000	ND	65.2	38 - 137			
Hexachlorobutadiene	49.7500	5.0	50.0000	ND	99.5	5 - 132			
Isopropylbenzene	50.6000	5.0	50.0000	ND	101	43 - 132			
m,p-Xylene	99.1300	10	100.000	ND	99.1	45 - 128			
Methylene chloride	48.2300	5.0	50.0000	ND	96.5	37 - 126			
MTBE	45.6800	5.0	50.0000	ND	91.4	46 - 125			
n-Butylbenzene	52.4900	5.0	50.0000	ND	105	24 - 138			
n-Propylbenzene	51.6100	5.0	50.0000	ND	103	40 - 133			
Naphthalene	61.0200	5.0	50.0000	ND	122	10 - 149			
o-Xylene	96.6000	5.0	100.000	ND	96.6	45 - 125			
sec-Butylbenzene	51.7800	5.0	50.0000	ND	104	33 - 136			

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Volatile Organic Compounds by EPA 8260B - Quality Control (cont'd)

Analyte	Result (ug/kg)	PQL (ug/kg)	Spike Level	Source Result	% Rec	% Rec Limits	RPD	RPD Limit	Notes
Batch B5C0264 - MSVOA_S (continued)									
Matrix Spike (B5C0264-MS1) - Continued		**Source: 1500887-01**		Prepared: 3/11/2015 Analyzed: 3/11/2015					
Styrene	48.8500	5.0	50.0000	ND	97.7	43 - 128			
tert-Amyl methyl ether	45.8100	5.0	50.0000	ND	91.6	35 - 147			
tert-Butanol	212.380	100	250.000	ND	85.0	0 - 208			
tert-Butylbenzene	52.4900	5.0	50.0000	ND	105	36 - 133			
Tetrachloroethene	46.1500	5.0	50.0000	ND	92.3	41 - 129			
Toluene	92.1500	5.0	100.000	ND	92.2	49 - 124			
trans-1,2-Dichloroethene	45.1400	5.0	50.0000	ND	90.3	44 - 126			
trans-1,3-Dichloropropene	48.5800	5.0	50.0000	ND	97.2	42 - 125			
Trichloroethene	50.2400	5.0	50.0000	ND	100	38 - 139			
Trichlorofluoromethane	40.3000	5.0	50.0000	ND	80.6	30 - 157			
Vinyl acetate	380.990	50	500.000	ND	76.2	0 - 132			
Vinyl chloride	41.9900	5.0	50.0000	ND	84.0	19 - 142			
Surrogate: 1,2-Dichloroethane-d4	*50.09*		*50.0000*		*100*	*20 - 189*			
Surrogate: 4-Bromofluorobenzene	*50.59*		*50.0000*		*101*	*20 - 173*			
Surrogate: Dibromofluoromethane	*49.89*		*50.0000*		*99.8*	*26 - 178*			
Surrogate: Toluene-d8	*50.77*		*50.0000*		*102*	*31 - 166*			
Matrix Spike Dup (B5C0264-MSD1)		**Source: 1500887-01**		Prepared: 3/11/2015 Analyzed: 3/11/2015					
1,1,1,2-Tetrachloroethane	45.8300	5.0	50.0000	ND	91.7	45 - 122	0.503	20	
1,1,1-Trichloroethane	43.8900	5.0	50.0000	ND	87.8	46 - 131	4.06	20	
1,1,2,2-Tetrachloroethane	41.3600	5.0	50.0000	ND	82.7	34 - 133	1.27	20	
1,1,2-Trichloroethane	46.9600	5.0	50.0000	ND	93.9	40 - 133	3.11	20	
1,1-Dichloroethane	44.6700	5.0	50.0000	ND	89.3	50 - 120	2.45	20	
1,1-Dichloroethene	30.2500	5.0	50.0000	ND	60.5	42 - 130	0.199	20	
1,1-Dichloropropene	44.7400	5.0	50.0000	ND	89.5	49 - 125	0.583	20	
1,2,3-Trichloropropane	47.6500	5.0	50.0000	ND	95.3	42 - 130	6.90	20	
1,2,3-Trichlorobenzene	50.1200	5.0	50.0000	ND	100	2 - 136	1.87	20	
1,2,4-Trichlorobenzene	50.2100	5.0	50.0000	ND	100	6 - 137	0.259	20	
1,2,4-Trimethylbenzene	50.5200	5.0	50.0000	ND	101	37 - 129	0.0198	20	
1,2-Dibromo-3-chloropropane	48.4000	10	50.0000	ND	96.8	36 - 135	3.60	20	
1,2-Dibromoethane	47.7200	5.0	50.0000	ND	95.4	43 - 129	7.88	20	
1,2-Dichlorobenzene	49.3100	5.0	50.0000	ND	98.6	31 - 129	1.02	20	
1,2-Dichloroethane	47.4000	5.0	50.0000	ND	94.8	50 - 122	1.79	20	
1,2-Dichloropropane	45.8700	5.0	50.0000	ND	91.7	51 - 119	2.18	20	
1,3,5-Trimethylbenzene	50.0300	5.0	50.0000	ND	100	38 - 130	0.280	20	
1,3-Dichlorobenzene	48.8000	5.0	50.0000	ND	97.6	31 - 128	0.637	20	
1,3-Dichloropropane	47.7600	5.0	50.0000	ND	95.5	52 - 122	3.67	20	
1,4-Dichlorobenzene	48.2700	5.0	50.0000	ND	96.5	31 - 128	0.145	20	
2,2-Dichloropropane	46.0200	5.0	50.0000	ND	92.0	42 - 140	3.35	20	
2-Chlorotoluene	49.4400	5.0	50.0000	ND	98.9	38 - 129	0.649	20	
4-Chlorotoluene	50.2800	5.0	50.0000	ND	101	38 - 128	1.30	20	

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Volatile Organic Compounds by EPA 8260B - Quality Control (cont'd)

Analyte	Result (ug/kg)	PQL (ug/kg)	Spike Level	Source Result	% Rec	% Rec Limits	RPD	RPD Limit	Notes
Batch B5C0264 - MSVOA_S (continued)									
Matrix Spike Dup (B5C0264-MSD1) - Continued		**Source: 1500887-01**		Prepared: 3/11/2015 Analyzed: 3/11/2015					
4-Isopropyltoluene	52.1900	5.0	50.0000	ND	104	31 - 137	0.325	20	
Benzene	86.4300	5.0	100.000	ND	86.4	51 - 117	0.487	20	
Bromobenzene	47.2300	5.0	50.0000	ND	94.5	41 - 125	0.424	20	
Bromochloromethane	43.6600	5.0	50.0000	ND	87.3	47 - 123	1.55	20	
Bromodichloromethane	46.0600	5.0	50.0000	ND	92.1	50 - 122	1.07	20	
Bromoform	46.4800	5.0	50.0000	ND	93.0	39 - 131	5.07	20	
Bromomethane	41.3800	5.0	50.0000	ND	82.8	10 - 154	6.55	20	
Carbon disulfide	27.7600	5.0	50.0000	ND	55.5	24 - 138	21.1	20	R
Carbon tetrachloride	44.7400	5.0	50.0000	ND	89.5	44 - 131	0.448	20	
Chlorobenzene	45.2300	5.0	50.0000	ND	90.5	46 - 123	2.06	20	
Chloroethane	33.9700	5.0	50.0000	ND	67.9	27 - 143	5.19	20	
Chloroform	44.6700	5.0	50.0000	ND	89.3	50 - 124	1.64	20	
Chloromethane	44.0200	5.0	50.0000	ND	88.0	8 - 139	2.44	20	
cis-1,2-Dichloroethene	44.7700	5.0	50.0000	ND	89.5	48 - 125	3.21	20	
cis-1,3-Dichloropropene	50.5700	5.0	50.0000	ND	101	51 - 123	4.10	20	
Di-isopropyl ether	46.4400	5.0	50.0000	ND	92.9	45 - 125	1.81	20	
Dibromochloromethane	46.5000	5.0	50.0000	ND	93.0	48 - 124	2.88	20	
Dibromomethane	47.2500	5.0	50.0000	ND	94.5	48 - 124	2.88	20	
Dichlorodifluoromethane	42.5000	5.0	50.0000	ND	85.0	0 - 150	4.53	20	
Ethyl Acetate	497.430	50	500.000	ND	99.5	0 - 140	7.17	20	
Ethyl Ether	494.220	50	500.000	ND	98.8	36 - 142	5.97	20	
Ethyl tert-butyl ether	48.7900	5.0	50.0000	ND	97.6	46 - 133	1.20	20	
Ethylbenzene	92.3900	5.0	100.000	ND	92.4	46 - 123	0.808	20	
Freon-113	31.7600	5.0	50.0000	ND	63.5	38 - 137	2.61	20	
Hexachlorobutadiene	49.1800	5.0	50.0000	ND	98.4	5 - 132	1.15	20	
Isopropylbenzene	50.7500	5.0	50.0000	ND	102	43 - 132	0.296	20	
m,p-Xylene	99.1800	10	100.000	ND	99.2	45 - 128	0.0504	20	
Methylene chloride	46.5500	5.0	50.0000	ND	93.1	37 - 126	3.55	20	
MTBE	47.5200	5.0	50.0000	ND	95.0	46 - 125	3.95	20	
n-Butylbenzene	52.5500	5.0	50.0000	ND	105	24 - 138	0.114	20	
n-Propylbenzene	51.3300	5.0	50.0000	ND	103	40 - 133	0.544	20	
Naphthalene	63.0500	5.0	50.0000	ND	126	10 - 149	3.27	20	
o-Xylene	95.5300	5.0	100.000	ND	95.5	45 - 125	1.11	20	
sec-Butylbenzene	51.8200	5.0	50.0000	ND	104	33 - 136	0.0772	20	
Styrene	48.4600	5.0	50.0000	ND	96.9	43 - 128	0.802	20	
tert-Amyl methyl ether	47.0400	5.0	50.0000	ND	94.1	35 - 147	2.65	20	
tert-Butanol	250.060	100	250.000	ND	100	0 - 208	16.3	20	
tert-Butylbenzene	52.0100	5.0	50.0000	ND	104	36 - 133	0.919	20	
Tetrachloroethene	45.7600	5.0	50.0000	ND	91.5	41 - 129	0.849	20	
Toluene	92.2700	5.0	100.000	ND	92.3	49 - 124	0.130	20	
trans-1,2-Dichloroethene	43.7200	5.0	50.0000	ND	87.4	44 - 126	3.20	20	
trans-1,3-Dichloropropene	49.6400	5.0	50.0000	ND	99.3	42 - 125	2.16	20	

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Volatile Organic Compounds by EPA 8260B - Quality Control (cont'd)

Analyte	Result (ug/kg)	PQL (ug/kg)	Spike Level	Source Result	% Rec	% Rec Limits	RPD	RPD Limit	Notes
Batch B5C0264 - MSVOA_S (continued)									
Matrix Spike Dup (B5C0264-MSD1) - Continued		**Source: 1500887-01**		Prepared: 3/11/2015 Analyzed: 3/11/2015					
Trichloroethene	52.3600	5.0	50.0000	ND	105	38 - 139	4.13	20	
Trichlorofluoromethane	38.8600	5.0	50.0000	ND	77.7	30 - 157	3.64	20	
Vinyl acetate	291.150	50	500.000	ND	58.2	0 - 132	26.7	20	R
Vinyl chloride	43.1600	5.0	50.0000	ND	86.3	19 - 142	2.75	20	
Surrogate: 1,2-Dichloroethane-d4	*54.76*		*50.0000*		*110*	*20 - 189*			
Surrogate: 4-Bromofluorobenzene	*51.21*		*50.0000*		*102*	*20 - 173*			
Surrogate: Dibromofluoromethane	*50.64*		*50.0000*		*101*	*26 - 178*			
Surrogate: Toluene-d8	*51.58*		*50.0000*		*103*	*31 - 166*			

Figure C-2.34

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Semivolatile Organic Compounds by EPA 8270C - Quality Control

Analyte	Result (ug/kg)	PQL (ug/kg)	Spike Level	Source Result	% Rec	% Rec Limits	RPD	RPD Limit	Notes
Batch B5C0386 - MSSEMI_ISOTOPEDILN									
Blank (B5C0386-BLK1)				Prepared: 3/16/2015 Analyzed: 3/17/2015					
1,2,4-Trichlorobenzene	ND	330			NR				
1,2-Dichlorobenzene	ND	330			NR				
1,3-Dichlorobenzene	ND	330			NR				
1,4-Dichlorobenzene	ND	330			NR				
2,4,5-Trichlorophenol	ND	330			NR				
2,4,6-Trichlorophenol	ND	330			NR				
2,4-Dichlorophenol	ND	1600			NR				
2,4-Dimethylphenol	ND	330			NR				
2,4-Dinitrophenol	ND	1600			NR				
2,4-Dinitrotoluene	ND	330			NR				
2,6-Dinitrotoluene	ND	330			NR				
2-Chloronaphthalene	ND	330			NR				
2-Chlorophenol	ND	330			NR				
2-Methylnaphthalene	ND	330			NR				
2-Methylphenol	ND	330			NR				
2-Nitroaniline	ND	1600			NR				
2-Nitrophenol	ND	330			NR				
3,3´-Dichlorobenzidine	ND	660			NR				
3-Nitroaniline	ND	1600			NR				
4,6-Dinitro-2-methyphenol	ND	1600			NR				
4-Bromophenyl-phenylether	ND	330			NR				
4-Chloro-3-methylphenol	ND	660			NR				
4-Chloroaniline	ND	660			NR				
4-Chlorophenyl-phenylether	ND	330			NR				
4-Methylphenol	ND	330			NR				
4-Nitroaniline	ND	1600			NR				
4-Nitrophenol	ND	330			NR				
Acenaphthene	ND	330			NR				
Acenaphthylene	ND	330			NR				
Anthracene	ND	330			NR				
Benzidine (M)	ND	1600			NR				
Benzo(a)anthracene	ND	330			NR				
Benzo(a)pyrene	ND	330			NR				
Benzo(b)fluoranthene	ND	330			NR				
Benzo(g,h,i)perylene	ND	330			NR				
Benzo(k)fluoranthene	ND	330			NR				
Benzoic acid	ND	1600			NR				
Benzyl alcohol	ND	660			NR				
bis(2-chloroethoxy)methane	ND	330			NR				
bis(2-Chloroethyl)ether	ND	330			NR				
bis(2-chloroisopropyl)ether	ND	330			NR				

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Semivolatile Organic Compounds by EPA 8270C - Quality Control (cont'd)

Analyte	Result (ug/kg)	PQL (ug/kg)	Spike Level	Source Result	% Rec	% Rec Limits	RPD	RPD Limit	Notes
Batch B5C0386 - MSSEMI_ISOTOPEDILN (continued)									
Blank (B5C0386-BLK1) - Continued				Prepared: 3/16/2015 Analyzed: 3/17/2015					
bis(2-ethylhexyl)phthalate	ND	330			NR				
Butylbenzylphthalate	ND	330			NR				
Chrysene	ND	330			NR				
Di-n-butylphthalate	ND	330			NR				
Di-n-octylphthalate	ND	330			NR				
Dibenz(a,h)anthracene	ND	330			NR				
Dibenzofuran	ND	330			NR				
Diethyl phthalate	ND	330			NR				
Dimethyl phthalate	ND	330			NR				
Fluoranthene	ND	330			NR				
Fluorene	ND	330			NR				
Hexachlorobenzene	ND	330			NR				
Hexachlorobutadiene	ND	660			NR				
Hexachlorocyclopentadiene	ND	660			NR				
Hexachloroethane	ND	330			NR				
Indeno(1,2,3-cd)pyrene	ND	330			NR				
Isophorone	ND	330			NR				
N-Nitroso-di-n propylamine	ND	330			NR				
N-Nitrosodiphenylamine	ND	330			NR				
Naphthalene	ND	330			NR				
Nitrobenzene	ND	330			NR				
Pentachlorophenol	ND	1600			NR				
Phenanthrene	ND	330			NR				
Phenol	ND	330			NR				
Pyrene	ND	330			NR				
Pyridine	ND	1600			NR				
Surrogate: 1,2-Dichlorobenzene-d4	*2215*		*3333.33*		*66.5*	*24 - 114*			
Surrogate: 2,4,6-Tribromophenol	*2558*		*3333.33*		*76.8*	*0 - 189*			
Surrogate: 2-Chlorophenol-d4	*2598*		*3333.33*		*78.0*	*23 - 123*			
Surrogate: 2-Fluorobiphenyl	*2364*		*3333.33*		*70.9*	*28 - 128*			
Surrogate: 2-Fluorophenol	*2588*		*3333.33*		*77.6*	*8 - 138*			
Surrogate: 4-Terphenyl-d14	*2614*		*3333.33*		*78.4*	*27 - 154*			
Surrogate: Nitrobenzene-d5	*2186*		*3333.33*		*65.6*	*19 - 129*			
Surrogate: Phenol-d5	*2614*		*3333.33*		*78.4*	*20 - 126*			

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Semivolatile Organic Compounds by EPA 8270C - Quality Control (cont'd)

Analyte	Result (ug/kg)	PQL (ug/kg)	Spike Level	Source Result	% Rec	% Rec Limits	RPD	RPD Limit	Notes
Batch B5C0386 - MSSEMI_ISOTOPEDILN (continued)									
LCS (B5C0386-BS1)				Prepared: 3/16/2015 Analyzed: 3/17/2015					
1,2,4-Trichlorobenzene	2796.33	330	3333.33		83.9	67 - 110			
1,2-Dichlorobenzene	2579.67	330	3333.33		77.4	64 - 104			
1,3-Dichlorobenzene	2589.33	330	3333.33		77.7	63 - 104			
1,4-Dichlorobenzene	2351.00	330	3333.33		70.5	62 - 102			
2,4,5-Trichlorophenol	3300.67	330	3333.33		99.0	69 - 129			
2,4,6-Trichlorophenol	3155.00	330	3333.33		94.7	66 - 127			
2,4-Dichlorophenol	2951.33	1600	3333.33		88.5	64 - 116			
2,4-Dimethylphenol	2721.67	330	3333.33		81.7	61 - 111			
2,4-Dinitrophenol	2744.67	1600	3333.33		82.3	33 - 138			
2,4-Dinitrotoluene	3517.00	330	3333.33		106	76 - 137			
2,6-Dinitrotoluene	3396.33	330	3333.33		102	76 - 132			
2-Chloronaphthalene	3000.00	330	3333.33		90.0	67 - 126			
2-Chlorophenol	2608.67	330	3333.33		78.3	65 - 105			
2-Methylnaphthalene	2950.33	330	3333.33		88.5	68 - 121			
2-Methylphenol	2786.33	330	3333.33		83.6	66 - 103			
2-Nitroaniline	3395.00	1600	3333.33		102	62 - 137			
2-Nitrophenol	2882.33	330	3333.33		86.5	60 - 122			
3,3´-Dichlorobenzidine	2925.00	660	3333.33		87.8	61 - 128			
3-Nitroaniline	3140.67	1600	3333.33		94.2	61 - 118			
4,6-Dinitro-2-methyphenol	3071.67	1600	3333.33		92.2	57 - 146			
4-Bromophenyl-phenylether	3303.33	330	3333.33		99.1	71 - 135			
4-Chloro-3-methylphenol	3120.67	660	3333.33		93.6	72 - 124			
4-Chloroaniline	2754.00	660	3333.33		82.6	59 - 108			
4-Chlorophenyl-phenylether	3241.33	330	3333.33		97.2	71 - 135			
4-Methylphenol	2925.33	330	3333.33		87.8	72 - 113			
4-Nitroaniline	3550.33	1600	3333.33		107	70 - 130			
4-Nitrophenol	3059.33	330	3333.33		91.8	55 - 146			
Acenaphthene	3009.00	330	3333.33		90.3	66 - 112			
Acenaphthylene	3022.00	330	3333.33		90.7	66 - 114			
Anthracene	3315.00	330	3333.33		99.5	72 - 123			
Benzidine (M)	2933.33	1600	3333.33		88.0	43 - 155			
Benzo(a)anthracene	3325.33	330	3333.33		99.8	73 - 115			
Benzo(a)pyrene	3449.33	330	3333.33		103	78 - 125			
Benzo(b)fluoranthene	3392.33	330	3333.33		102	71 - 127			
Benzo(g,h,i)perylene	3310.67	330	3333.33		99.3	73 - 120			
Benzo(k)fluoranthene	3239.33	330	3333.33		97.2	72 - 121			
Benzoic acid	2625.00	1600	3333.33		78.8	19 - 133			
Benzyl alcohol	3015.00	660	3333.33		90.5	65 - 119			
bis(2-chloroethoxy)methane	2794.67	330	3333.33		83.8	62 - 118			
bis(2-Chloroethyl)ether	2610.33	330	3333.33		78.3	55 - 111			
bis(2-chloroisopropyl)ether	2620.33	330	3333.33		78.6	34 - 131			

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Semivolatile Organic Compounds by EPA 8270C - Quality Control (cont'd)

Analyte	Result (ug/kg)	PQL (ug/kg)	Spike Level	Source Result	% Rec	% Rec Limits	RPD	RPD Limit	Notes
Batch B5C0386 - MSSEMI_ISOTOPEDILN (continued)									
LCS (B5C0386-BS1) - Continued				Prepared: 3/16/2015 Analyzed: 3/17/2015					
bis(2-ethylhexyl)phthalate	3169.67	330	3333.33		95.1	51 - 165			
Butylbenzylphthalate	3554.67	330	3333.33		107	54 - 155			
Chrysene	3138.33	330	3333.33		94.2	70 - 110			
Di-n-butylphthalate	3534.00	330	3333.33		106	65 - 155			
Di-n-octylphthalate	3233.67	330	3333.33		97.0	59 - 151			
Dibenz(a,h)anthracene	3342.67	330	3333.33		100	72 - 132			
Dibenzofuran	3116.67	330	3333.33		93.5	67 - 124			
Diethyl phthalate	3298.00	330	3333.33		98.9	66 - 138			
Dimethyl phthalate	3296.00	330	3333.33		98.9	70 - 136			
Fluoranthene	3296.33	330	3333.33		98.9	69 - 122			
Fluorene	3115.00	330	3333.33		93.5	67 - 120			
Hexachlorobenzene	3312.00	330	3333.33		99.4	71 - 130			
Hexachlorobutadiene	2557.00	660	3333.33		76.7	57 - 111			
Hexachlorocyclopentadiene	3004.00	660	3333.33		90.1	63 - 135			
Hexachloroethane	2529.33	330	3333.33		75.9	60 - 107			
Indeno(1,2,3-cd)pyrene	3539.33	330	3333.33		106	76 - 136			
Isophorone	3225.67	330	3333.33		96.8	63 - 137			
N-Nitroso-di-n propylamine	2877.00	330	3333.33		86.3	59 - 127			
N-Nitrosodiphenylamine	3473.33	330	3333.33		104	70 - 137			
Naphthalene	2721.33	330	3333.33		81.6	62 - 104			
Nitrobenzene	2782.00	330	3333.33		83.5	57 - 127			
Pentachlorophenol	2797.33	1600	3333.33		83.9	51 - 135			
Phenanthrene	3244.67	330	3333.33		97.3	70 - 121			
Phenol	2785.67	330	3333.33		83.6	63 - 112			
Pyrene	3270.33	330	3333.33		98.1	67 - 123			
Pyridine	2012.67	1600	3333.33		60.4	18 - 106			
Surrogate: 1,2-Dichlorobenzene-d4	*1984*		*3333.33*		*59.5*	*24 - 114*			
Surrogate: 2,4,6-Tribromophenol	*2956*		*3333.33*		*88.7*	*0 - 189*			
Surrogate: 2-Chlorophenol-d4	*2439*		*3333.33*		*73.2*	*23 - 123*			
Surrogate: 2-Fluorobiphenyl	*2390*		*3333.33*		*71.7*	*28 - 128*			
Surrogate: 2-Fluorophenol	*2379*		*3333.33*		*71.4*	*8 - 138*			
Surrogate: 4-Terphenyl-d14	*2689*		*3333.33*		*80.7*	*27 - 154*			
Surrogate: Nitrobenzene-d5	*2304*		*3333.33*		*69.1*	*19 - 129*			
Surrogate: Phenol-d5	*2495*		*3333.33*		*74.9*	*20 - 126*			

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Semivolatile Organic Compounds by EPA 8270C - Quality Control (cont'd)

Analyte	Result (ug/kg)	PQL (ug/kg)	Spike Level	Source Result	% Rec	% Rec Limits	RPD	RPD Limit	Notes
Batch B5C0386 - MSSEMI_ISOTOPEDILN (continued)									
Matrix Spike (B5C0386-MS1)		**Source: 1500887-05**		Prepared: 3/16/2015 Analyzed: 3/17/2015					
1,2,4-Trichlorobenzene	2761.00	330	3333.33	ND	82.8	56 - 112			
1,2-Dichlorobenzene	2554.00	330	3333.33	ND	76.6	52 - 105			
1,3-Dichlorobenzene	2576.00	330	3333.33	ND	77.3	51 - 105			
1,4-Dichlorobenzene	2359.33	330	3333.33	ND	70.8	50 - 104			
2,4,5-Trichlorophenol	3148.67	330	3333.33	ND	94.5	41 - 145			
2,4,6-Trichlorophenol	3076.33	330	3333.33	ND	92.3	35 - 147			
2,4-Dichlorophenol	2861.33	1600	3333.33	ND	85.8	50 - 120			
2,4-Dimethylphenol	2637.00	330	3333.33	ND	79.1	56 - 108			
2,4-Dinitrophenol	2085.00	1600	3333.33	ND	62.6	0 - 167			
2,4-Dinitrotoluene	3288.67	330	3333.33	ND	98.7	60 - 146			
2,6-Dinitrotoluene	3235.67	330	3333.33	ND	97.1	65 - 138			
2-Chloronaphthalene	2930.00	330	3333.33	ND	87.9	62 - 127			
2-Chlorophenol	2580.00	330	3333.33	ND	77.4	48 - 112			
2-Methylnaphthalene	2859.67	330	3333.33	ND	85.8	61 - 120			
2-Methylphenol	2772.00	330	3333.33	ND	83.2	53 - 107			
2-Nitroaniline	3235.33	1600	3333.33	ND	97.1	53 - 140			
2-Nitrophenol	2826.33	330	3333.33	ND	84.8	43 - 127			
3,3´-Dichlorobenzidine	2836.33	660	3333.33	ND	85.1	39 - 149			
3-Nitroaniline	3106.33	1600	3333.33	ND	93.2	47 - 127			
4,6-Dinitro-2-methyphenol	2843.00	1600	3333.33	ND	85.3	28 - 158			
4-Bromophenyl-phenylether	3068.00	330	3333.33	ND	92.0	67 - 137			
4-Chloro-3-methylphenol	3007.00	660	3333.33	ND	90.2	38 - 120			
4-Chloroaniline	2597.00	660	3333.33	ND	77.9	53 - 104			
4-Chlorophenyl-phenylether	3083.67	330	3333.33	ND	92.5	58 - 143			
4-Methylphenol	2885.00	330	3333.33	ND	86.6	59 - 116			
4-Nitroaniline	3351.67	1600	3333.33	ND	101	49 - 142			
4-Nitrophenol	2782.33	330	3333.33	ND	83.5	30 - 155			
Acenaphthene	2861.67	330	3333.33	ND	85.9	56 - 116			
Acenaphthylene	2903.00	330	3333.33	ND	87.1	57 - 118			
Anthracene	3110.00	330	3333.33	ND	93.3	63 - 129			
Benzidine (M)	2725.33	1600	3333.33	ND	81.8	29 - 127			
Benzo(a)anthracene	3112.67	330	3333.33	ND	93.4	69 - 114			
Benzo(a)pyrene	3202.00	330	3333.33	ND	96.1	67 - 127			
Benzo(b)fluoranthene	3178.00	330	3333.33	ND	95.3	68 - 122			
Benzo(g,h,i)perylene	3076.00	330	3333.33	ND	92.3	50 - 138			
Benzo(k)fluoranthene	3006.33	330	3333.33	ND	90.2	60 - 125			
Benzoic acid	6944.67	1600	3333.33	ND	208	0 - 215			
Benzyl alcohol	2973.33	660	3333.33	ND	89.2	54 - 117			
bis(2-chloroethoxy)methane	2730.00	330	3333.33	ND	81.9	54 - 119			
bis(2-Chloroethyl)ether	2622.67	330	3333.33	ND	78.7	41 - 118			
bis(2-chloroisopropyl)ether	2634.00	330	3333.33	ND	79.0	33 - 123			

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Semivolatile Organic Compounds by EPA 8270C - Quality Control (cont'd)

Analyte	Result (ug/kg)	PQL (ug/kg)	Spike Level	Source Result	% Rec	% Rec Limits	RPD	RPD Limit	Notes
Batch B5C0386 - MSSEMI_ISOTOPEDILN (continued)									
Matrix Spike (B5C0386-MS1) - Continued		**Source: 1500887-05**		Prepared: 3/16/2015 Analyzed: 3/17/2015					
bis(2-ethylhexyl)phthalate	2983.00	330	3333.33	ND	89.5	53 - 158			
Butylbenzylphthalate	3399.33	330	3333.33	ND	102	53 - 152			
Chrysene	2967.00	330	3333.33	ND	89.0	62 - 113			
Di-n-butylphthalate	3306.33	330	3333.33	ND	99.2	57 - 158			
Di-n-octylphthalate	3029.00	330	3333.33	ND	90.9	38 - 166			
Dibenz(a,h)anthracene	3119.33	330	3333.33	ND	93.6	52 - 142			
Dibenzofuran	2982.00	330	3333.33	ND	89.5	54 - 134			
Diethyl phthalate	3145.00	330	3333.33	ND	94.4	61 - 140			
Dimethyl phthalate	3125.33	330	3333.33	ND	93.8	63 - 137			
Fluoranthene	3077.33	330	3333.33	ND	92.3	55 - 133			
Fluorene	2962.00	330	3333.33	ND	88.9	54 - 131			
Hexachlorobenzene	3116.67	330	3333.33	ND	93.5	65 - 134			
Hexachlorobutadiene	2529.33	660	3333.33	ND	75.9	48 - 114			
Hexachlorocyclopentadiene	2953.67	660	3333.33	ND	88.6	50 - 142			
Hexachloroethane	2495.33	330	3333.33	ND	74.9	43 - 119			
Indeno(1,2,3-cd)pyrene	3288.00	330	3333.33	ND	98.6	56 - 149			
Isophorone	3115.33	330	3333.33	ND	93.5	56 - 136			
N-Nitroso-di-n propylamine	2775.00	330	3333.33	ND	83.3	47 - 130			
N-Nitrosodiphenylamine	3258.33	330	3333.33	ND	97.8	70 - 137			
Naphthalene	2662.67	330	3333.33	ND	79.9	54 - 105			
Nitrobenzene	2770.67	330	3333.33	ND	83.1	47 - 130			
Pentachlorophenol	2519.67	1600	3333.33	ND	75.6	18 - 160			
Phenanthrene	3075.00	330	3333.33	ND	92.3	50 - 140			
Phenol	2742.67	330	3333.33	ND	82.3	55 - 112			
Pyrene	3076.33	330	3333.33	ND	92.3	54 - 135			
Pyridine	2084.67	1600	3333.33	ND	62.5	0 - 139			
Surrogate: 1,2-Dichlorobenzene-d4	*2001*		*3333.33*		*60.0*	*24 - 114*			
Surrogate: 2,4,6-Tribromophenol	*2812*		*3333.33*		*84.4*	*0 - 189*			
Surrogate: 2-Chlorophenol-d4	*2429*		*3333.33*		*72.9*	*23 - 123*			
Surrogate: 2-Fluorobiphenyl	*2313*		*3333.33*		*69.4*	*28 - 128*			
Surrogate: 2-Fluorophenol	*2356*		*3333.33*		*70.7*	*8 - 138*			
Surrogate: 4-Terphenyl-d14	*2535*		*3333.33*		*76.0*	*27 - 154*			
Surrogate: Nitrobenzene-d5	*2104*		*3333.33*		*63.1*	*19 - 129*			
Surrogate: Phenol-d5	*2487*		*3333.33*		*74.6*	*20 - 126*			

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Analyte	Result (ug/kg)	PQL (ug/kg)	Spike Level	Source Result	% Rec	% Rec Limits	RPD	RPD Limit	Notes
Batch B5C0386 - MSSEMI_ISOTOPEDILN (continued)									
Matrix Spike Dup (B5C0386-MSD1)		**Source: 1500887-05**		Prepared: 3/16/2015 Analyzed: 3/17/2015					
1,2,4-Trichlorobenzene	3032.67	330	3333.33	ND	91.0	56 - 112	9.38	20	
1,2-Dichlorobenzene	2826.00	330	3333.33	ND	84.8	52 - 105	10.1	20	
1,3-Dichlorobenzene	2862.00	330	3333.33	ND	85.9	51 - 105	10.5	20	
1,4-Dichlorobenzene	2623.67	330	3333.33	ND	78.7	50 - 104	10.6	20	
2,4,5-Trichlorophenol	3468.67	330	3333.33	ND	104	41 - 145	9.67	20	
2,4,6-Trichlorophenol	3336.00	330	3333.33	ND	100	35 - 147	8.10	20	
2,4-Dichlorophenol	3131.67	1600	3333.33	ND	94.0	50 - 120	9.02	20	
2,4-Dimethylphenol	2855.67	330	3333.33	ND	85.7	56 - 108	7.96	20	
2,4-Dinitrophenol	2100.33	1600	3333.33	ND	63.0	0 - 167	0.733	20	
2,4-Dinitrotoluene	3543.33	330	3333.33	ND	106	60 - 146	7.46	20	
2,6-Dinitrotoluene	3529.67	330	3333.33	ND	106	65 - 138	8.69	20	
2-Chloronaphthalene	3223.33	330	3333.33	ND	96.7	62 - 127	9.53	20	
2-Chlorophenol	2881.00	330	3333.33	ND	86.4	48 - 112	11.0	20	
2-Methylnaphthalene	3162.67	330	3333.33	ND	94.9	61 - 120	10.1	20	
2-Methylphenol	3067.67	330	3333.33	ND	92.0	53 - 107	10.1	20	
2-Nitroaniline	3526.33	1600	3333.33	ND	106	53 - 140	8.61	20	
2-Nitrophenol	3166.67	330	3333.33	ND	95.0	43 - 127	11.4	20	
3,3´-Dichlorobenzidine	3111.00	660	3333.33	ND	93.3	39 - 149	9.24	20	
3-Nitroaniline	3365.33	1600	3333.33	ND	101	47 - 127	8.00	20	
4,6-Dinitro-2-methyphenol	3093.67	1600	3333.33	ND	92.8	28 - 158	8.44	20	
4-Bromophenyl-phenylether	3362.33	330	3333.33	ND	101	67 - 137	9.15	20	
4-Chloro-3-methylphenol	3259.67	660	3333.33	ND	97.8	38 - 120	8.06	20	
4-Chloroaniline	2744.00	660	3333.33	ND	82.3	53 - 104	5.50	20	
4-Chlorophenyl-phenylether	3383.33	330	3333.33	ND	102	58 - 143	9.27	20	
4-Methylphenol	3227.00	330	3333.33	ND	96.8	59 - 116	11.2	20	
4-Nitroaniline	3621.33	1600	3333.33	ND	109	49 - 142	7.73	20	
4-Nitrophenol	3043.00	330	3333.33	ND	91.3	30 - 155	8.95	20	
Acenaphthene	3103.33	330	3333.33	ND	93.1	56 - 116	8.10	20	
Acenaphthylene	3183.67	330	3333.33	ND	95.5	57 - 118	9.22	20	
Anthracene	3372.33	330	3333.33	ND	101	63 - 129	8.09	20	
Benzidine (M)	3013.00	1600	3333.33	ND	90.4	29 - 127	10.0	20	
Benzo(a)anthracene	3364.33	330	3333.33	ND	101	69 - 114	7.77	20	
Benzo(a)pyrene	3512.00	330	3333.33	ND	105	67 - 127	9.23	20	
Benzo(b)fluoranthene	3530.33	330	3333.33	ND	106	68 - 122	10.5	20	
Benzo(g,h,i)perylene	3395.67	330	3333.33	ND	102	50 - 138	9.88	20	
Benzo(k)fluoranthene	3291.00	330	3333.33	ND	98.7	60 - 125	9.04	20	
Benzoic acid	7407.00	1600	3333.33	ND	222	0 - 215	6.44	20	M2
Benzyl alcohol	3366.33	660	3333.33	ND	101	54 - 117	12.4	20	
bis(2-chloroethoxy)methane	2980.33	330	3333.33	ND	89.4	54 - 119	8.77	20	
bis(2-Chloroethyl)ether	2975.00	330	3333.33	ND	89.3	41 - 118	12.6	20	
bis(2-chloroisopropyl)ether	2931.67	330	3333.33	ND	88.0	33 - 123	10.7	20	

Certificate of Analysis

Amec Foster Wheeler	Project Number : MTA WESTSIDE, 4953-11-1423
6001 Rickenbacker Road	Report To : Ron Lopez
Los Angeles , CA 90040	Reported : 03/20/2015

Semivolatile Organic Compounds by EPA 8270C - Quality Control (cont'd)

Analyte	Result (ug/kg)	PQL (ug/kg)	Spike Level	Source Result	% Rec	% Rec Limits	RPD	RPD Limit	Notes
Batch B5C0386 - MSSEMI_ISOTOPEDILN (continued)									
Matrix Spike Dup (B5C0386-MSD1) - Continued		**Source: 1500887-05**		Prepared: 3/16/2015 Analyzed: 3/17/2015					
bis(2-ethylhexyl)phthalate	3343.67	330	3333.33	ND	100	53 - 158	11.4	20	
Butylbenzylphthalate	3752.67	330	3333.33	ND	113	53 - 152	9.88	20	
Chrysene	3216.33	330	3333.33	ND	96.5	62 - 113	8.06	20	
Di-n-butylphthalate	3622.33	330	3333.33	ND	109	57 - 158	9.12	20	
Di-n-octylphthalate	3317.67	330	3333.33	ND	99.5	38 - 166	9.10	20	
Dibenz(a,h)anthracene	3433.67	330	3333.33	ND	103	52 - 142	9.59	20	
Dibenzofuran	3239.67	330	3333.33	ND	97.2	54 - 134	8.28	20	
Diethyl phthalate	3389.33	330	3333.33	ND	102	61 - 140	7.48	20	
Dimethyl phthalate	3440.00	330	3333.33	ND	103	63 - 137	9.59	20	
Fluoranthene	3324.67	330	3333.33	ND	99.7	55 - 133	7.73	20	
Fluorene	3198.33	330	3333.33	ND	96.0	54 - 131	7.67	20	
Hexachlorobenzene	3359.00	330	3333.33	ND	101	65 - 134	7.48	20	
Hexachlorobutadiene	2770.33	660	3333.33	ND	83.1	48 - 114	9.09	20	
Hexachlorocyclopentadiene	3257.00	660	3333.33	ND	97.7	50 - 142	9.77	20	
Hexachloroethane	2756.33	330	3333.33	ND	82.7	43 - 119	9.94	20	
Indeno(1,2,3-cd)pyrene	3615.33	330	3333.33	ND	108	56 - 149	9.48	20	
Isophorone	3431.00	330	3333.33	ND	103	56 - 136	9.64	20	
N-Nitroso-di-n propylamine	3134.67	330	3333.33	ND	94.0	47 - 130	12.2	20	
N-Nitrosodiphenylamine	3576.33	330	3333.33	ND	107	70 - 137	9.31	20	
Naphthalene	2915.67	330	3333.33	ND	87.5	54 - 105	9.07	20	
Nitrobenzene	3013.00	330	3333.33	ND	90.4	47 - 130	8.38	20	
Pentachlorophenol	2726.33	1600	3333.33	ND	81.8	18 - 160	7.88	20	
Phenanthrene	3326.00	330	3333.33	ND	99.8	50 - 140	7.84	20	
Phenol	3084.67	330	3333.33	ND	92.5	55 - 112	11.7	20	
Pyrene	3289.67	330	3333.33	ND	98.7	54 - 135	6.70	20	
Pyridine	2330.33	1600	3333.33	ND	69.9	0 - 139	11.1	20	
Surrogate: 1,2-Dichlorobenzene-d4	*2192*		*3333.33*		*65.8*	*24 - 114*			
Surrogate: 2,4,6-Tribromophenol	*2948*		*3333.33*		*88.4*	*0 - 189*			
Surrogate: 2-Chlorophenol-d4	*2665*		*3333.33*		*80.0*	*23 - 123*			
Surrogate: 2-Fluorobiphenyl	*2512*		*3333.33*		*75.4*	*28 - 128*			
Surrogate: 2-Fluorophenol	*2557*		*3333.33*		*76.7*	*8 - 138*			
Surrogate: 4-Terphenyl-d14	*2775*		*3333.33*		*83.3*	*27 - 154*			
Surrogate: Nitrobenzene-d5	*2240*		*3333.33*		*67.2*	*19 - 129*			
Surrogate: Phenol-d5	*2737*		*3333.33*		*82.1*	*20 - 126*			

Certificate of Analysis

Amec Foster Wheeler		Project Number :	MTA WESTSIDE, 4953-11-1423
6001 Rickenbacker Road		Report To :	Ron Lopez
Los Angeles , CA 90040		Reported :	03/20/2015

Notes and Definitions

R	RPD value outside acceptance criteria. Calculation is based on raw values.
M2	Matrix spike recovery outside of acceptance limit due to possible matrix interference. The analytical batch was validated by the laboratory control sample.
ND	Analyte is not detected at or above the Practical Quantitation Limit (PQL). When client requests quantitation against MDL, analyte is not detected at or above the Method Detection Limit (MDL)
PQL	Practical Quantitation Limit
MDL	Method Detection Limit
NR	Not Reported
RPD	Relative Percent Difference
CA2	CA-ELAP (CDPH)
OR1	OR-NELAP (OSPHL)
TX1	TX-NELAP (TCEQ)

Notes:
(1) The reported MDL and PQL are based on prep ratio variation and analytical dilution.
(2) The suffix [2C] of specific analytes signifies that the reported result is taken from the instrument's second column.
(3) Results are wet unless otherwise specified.

ADVANCED TECHNOLOGY LABORATORIES
3275 Walnut Ave., Signal Hill, CA 90755
Tel: (562) 989-4045 • Fax: (562) 989-4040

CHAIN OF CUSTODY RECORD

Page 1 of 1

Instruction: Complete all shaded areas.

For Laboratory Use Only — ATLCOC Ver: 20130715

Method of Transport	Sample Conditions Upon Receipt					
	Condition	Y	N	Condition	Y	N
☑ Client ☐ ATL	1. CHILLED	☑	☐	5. # OF SAMPLES MATCH COC	☑	☐
☐ FedEx ☐ OnTrac	2. HEADSPACE (VOA)	☐	☐	6. PRESERVED	☐	☑
☐ GSO	3. CONTAINER INTACT	☑	☐	7. COOLER TEMP, deg C:	5.6	
☐ Other: _____	4. SEALED	☐	☑			

CUSTOMER

Company: AMEC FOSTER WHEELER
Address: 6001 RICKENBAKER Rd
City: LOS ANGELES State: CA Zip: 90040
Tel: 323-889-5300 Fax: 323-889-6700

SEND REPORT TO:
Attn: RON LOPEZ Email: RON.R.LOPEZ@AMEC.COM
Company: AMEC FOSTER WHEELER
Address: SAME
City: State: Zip:

SEND INVOICE TO: ☒ same as SEND REPORT TO
Attn: Email:
Company: AMEC
Address: SAME
City: State: Zip:

PROJECT SAMPLES

Project Name: MTA WESTSIDE
Project No.: 4953-11-1423
Sampler: RON LOPEZ
Quote No:
PO #:
Special Instructions/Comments:

ITEM	Lab No.	Sample Description: Sample ID / Location	Date	Time	8260 / 624 (Volatiles)	8015(GRO)	8015(DRO)/ 1664 ORO	8270(Semi-volatiles)	8081(Organochlorine Pesticides)	8082(PCBs)	6010 / 7000(Title 22 Metals)	TO-15	1664 TRPH	SOIL / SEDIMENT / SLUDGE	SOLIDS / WIPE/ FILTER	WATER - DRINKING / GROUND	WATER - STORM / WASTE	AQUEOUS / LAYERED - OIL	TAT	Container #	Container Type	Container Material	Preservative	QA/QC REMARKS
1	1500887 - 1	E132A-60	3-9-15	1:55pm	X	X	X	X			X	X		X					5	1	1	3		
2	- 2	E132A-65	3-9-15	2:13																				HOLD
3	- 3	E132A-70	3-9-15	2:35	X	X	X	X			X	X		X					5	1	1	3		
4	- 4	E132A-75	3-10-15	10:15																				HOLD
5	- 5	E132A-80	3-10-15	10:37	X	X	X	X			X	X		X					5	1	1	3		
6																								
7																								
8																								
9																								
10																								

Encircle or Write Requested Analysis
Encircle Sample Matrix
Container: # | Type: 1=Tube; 2=VOA; 3=Liter; 4=Pint; 5=Jar; 6=Tedlar; 7 = Canister | Material: 1=Glass; 2=Plastic; 3=Metal
Preservative: 1=HCl; 2=HNO3; 3=H2SO4; 4 = 4C; 5=Zn (Ac)2; 6=NaOH; 7=NA2S2O3
QA/QC: ☐ Routine ☐ Caltrans ☐ Legal ☐ RWQCB ☐ Level IV

TERMS

1. Sample receiving hours: 7:30 AM to 7:30 PM Monday - Friday; Saturday 8:00 AM to 12:00 PM.
2. Samples Submitted AFTER 3:00 PM, are considered received the following Business day at 8:00 AM.
3. The following turnaround time conditions apply:
   TAT = 0 : 300% Surcharge SAME BUSINESS DAY if received by 9:00 AM
   TAT = 1 : 100% Surcharge NEXT BUSINESS DAY (COB 5:00 PM)
   TAT = 2 : 50% Surcharge 2ND BUSINESS DAY (COB 5:00 PM)
   TAT = 3 : 30% Surcharge 3RD BUSINESS DAY (COB 5:00 PM)
   TAT = 4 : 20% Surcharge 4TH BUSINESS DAY (COB 5:00 PM)
   TAT = 5 : NO SURCHARGE 5th BUSINESS DAY (COB 5:00 PM)
4. Weekend, holiday, after-hours work - ask for quote.
5. Subcontract TAT is 10 - 15 business days. Projects requiring shorter TATs will incur a surcharge respective to the subcontract lab --- ask for quote.
6. Liquid and solid samples will be disposed of after 45 calendar days from receipt of samples; air samples will be disposed of after 14 calendar days after receipt of samples.
7. Electronic records maintained for five (5) years from report date.
8. Hard copy reports will be disposed of after 45 calendar days from report date.
9. Storage and Report Fees:
   - Liquid & solid samples: Complimentary storage for forty-five (45) calendar days from receipt of samples; $2/sample/month if extended storage or hold is requested.
   - Air samples: Complimentary storage for ten (10) calendar days from receipt of samples; $20/ sample/week if extended storage is requested.
   - Hard copy and regenerated reports/EDDs: $17.50 per hard copy report requested; $50.00 per regenerated/reformatted report; $35 per reprocessed EDD.
10. Rush TCLP/STLC samples: add 2 days to analysis TAT for extraction on procedure.
11. Unanalyzed samples will incur a disposal fee of $7 per sample.

As the authorized agent of the company above, I hereby purchase laboratory services from ATL as shown above and hereby guarantee payment as quoted.

RON LOPEZ — Submitter Print Name
Signature

CUSTODY

Relinquished by: (Signature and Printed Name)	Date	Time	Received by: (Signature and Printed Name)	Date	Time
RON LOPEZ	3-10-15	12:19	FEDEX	3/10/15	1219

Figure C-2.44

March 23, 2015

Ron Lopez
Amec Foster Wheeler
6001 Rickenbacker Road
Los Angeles, CA 90040
Tel: (323) 889-5300
Fax:(323) 721-6700

ELAP No.: 1838
CSDLAC No.: 10196
ORELAP No.: CA300003
TCEQ No. : T104704502

Re: ATL Work Order Number : 1500919
Client Reference : MTA WES, 4953-11-1423

Enclosed are the results for sample(s) received on March 12, 2015 by Advanced Technology Laboratories. The sample(s) are tested for the parameters as indicated on the enclosed chain of custody in accordance with applicable laboratory certifications. The laboratory results contained in this report specifically pertains to the sample(s) submitted.

Thank you for the opportunity to serve the needs of your company. If you have any questions, please feel free to contact me or your Project Manager.

Sincerely,

Eddie Rodriguez
Laboratory Director

Figure C-2.45

Certificate of Analysis

Amec Foster Wheeler		Project Number :	MTA WES, 4953-11-1423
6001 Rickenbacker Road		Report To :	Ron Lopez
Los Angeles , CA 90040		Reported :	03/23/2015

SUMMARY OF SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
E132B-35	1500919-02	Soil	3/12/15 10:51	3/12/15 14:04
E132B-55	1500919-04	Soil	3/12/15 11:23	3/12/15 14:04
E132B-65	1500919-05	Soil	3/12/15 11:47	3/12/15 14:04
E132B-75	1500919-06	Soil	3/12/15 12:08	3/12/15 14:04
E132B-85	1500919-07	Soil	3/12/15 12:30	3/12/15 14:04
E132B-90	1500919-08	Soil	3/12/15 12:43	3/12/15 14:04

Certificate of Analysis

Amec Foster Wheeler	Project Number : MTA WES, 4953-11-1423
6001 Rickenbacker Road	Report To : Ron Lopez
Los Angeles , CA 90040	Reported : 03/23/2015

Client Sample ID E132B-35

Lab ID: 1500919-02

Total Petroleum Hydrocarbons, HEM/SGT EPA 1664 (Modified) — **Analyst: la**

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Total Petroleum Hydrocarbons	ND	50	1	B5C0509	03/19/2015	03/19/15 18:45	

Title 22 Metals by ICP-AES EPA 6010B — **Analyst: RR**

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Antimony	ND	2.0	1	B5C0447	03/18/2015	03/19/15 09:47	
Arsenic	**1.6**	1.0	1	B5C0447	03/18/2015	03/19/15 09:47	
Barium	**88**	1.0	1	B5C0447	03/18/2015	03/19/15 09:47	
Beryllium	ND	1.0	1	B5C0447	03/18/2015	03/19/15 09:47	
Cadmium	**2.2**	1.0	1	B5C0447	03/18/2015	03/19/15 09:47	
Chromium	**22**	1.0	1	B5C0447	03/18/2015	03/19/15 09:47	
Cobalt	**9.1**	1.0	1	B5C0447	03/18/2015	03/19/15 09:47	
Copper	**32**	2.0	1	B5C0447	03/18/2015	03/19/15 09:47	
Lead	**4.9**	1.0	1	B5C0447	03/18/2015	03/19/15 09:47	
Molybdenum	ND	1.0	1	B5C0447	03/18/2015	03/19/15 09:47	
Nickel	**38**	1.0	1	B5C0447	03/18/2015	03/19/15 09:47	
Selenium	ND	1.0	1	B5C0447	03/18/2015	03/19/15 09:47	
Silver	ND	1.0	1	B5C0447	03/18/2015	03/19/15 09:47	
Thallium	ND	1.0	1	B5C0447	03/18/2015	03/19/15 09:47	
Vanadium	**42**	1.0	1	B5C0447	03/18/2015	03/19/15 09:47	
Zinc	**60**	1.0	1	B5C0447	03/18/2015	03/19/15 09:47	

Mercury by AA (Cold Vapor) EPA 7471A — **Analyst: SB**

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Mercury	ND	0.10	1	B5C0451	03/18/2015	03/18/15 16:41	

Gasoline Range Organics by EPA 8015B (Modified) — **Analyst: BT/**

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Gasoline Range Organics	ND	1.0	1	B5C0325	03/12/2015	03/13/15 13:34	
Surrogate: 4-Bromofluorobenzene	*99.8 %*	*37 - 153*		B5C0325	03/12/2015	*03/13/15 13:34*	

Certificate of Analysis

Amec Foster Wheeler	Project Number : MTA WES, 4953-11-1423
6001 Rickenbacker Road	Report To : Ron Lopez
Los Angeles , CA 90040	Reported : 03/23/2015

Client Sample ID E132B-35

Lab ID: 1500919-02

Diesel Range Organics by EPA 8015B — **Analyst: CR**

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
DRO	ND	10	1	B5C0436	03/17/2015	03/18/15 22:22	
ORO	ND	10	1	B5C0436	03/17/2015	03/18/15 22:22	
Surrogate: p-Terphenyl	*91.8 %*	*49 - 142*		B5C0436	03/17/2015	*03/18/15 22:22*	

Volatile Organic Compounds by EPA 8260B — **Analyst: AG**

Analyte	Result (ug/kg)	PQL (ug/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
1,1,1,2-Tetrachloroethane	ND	5.0	1	B5C0440	03/17/2015	03/17/15 19:51	
1,1,1-Trichloroethane	ND	5.0	1	B5C0440	03/17/2015	03/17/15 19:51	
1,1,2,2-Tetrachloroethane	ND	5.0	1	B5C0440	03/17/2015	03/17/15 19:51	
1,1,2-Trichloroethane	ND	5.0	1	B5C0440	03/17/2015	03/17/15 19:51	
1,1-Dichloroethane	ND	5.0	1	B5C0440	03/17/2015	03/17/15 19:51	
1,1-Dichloroethene	ND	5.0	1	B5C0440	03/17/2015	03/17/15 19:51	
1,1-Dichloropropene	ND	5.0	1	B5C0440	03/17/2015	03/17/15 19:51	
1,2,3-Trichloropropane	ND	5.0	1	B5C0440	03/17/2015	03/17/15 19:51	
1,2,3-Trichlorobenzene	ND	5.0	1	B5C0440	03/17/2015	03/17/15 19:51	
1,2,4-Trichlorobenzene	ND	5.0	1	B5C0440	03/17/2015	03/17/15 19:51	
1,2,4-Trimethylbenzene	ND	5.0	1	B5C0440	03/17/2015	03/17/15 19:51	
1,2-Dibromo-3-chloropropane	ND	10	1	B5C0440	03/17/2015	03/17/15 19:51	
1,2-Dibromoethane	ND	5.0	1	B5C0440	03/17/2015	03/17/15 19:51	
1,2-Dichlorobenzene	ND	5.0	1	B5C0440	03/17/2015	03/17/15 19:51	
1,2-Dichloroethane	ND	5.0	1	B5C0440	03/17/2015	03/17/15 19:51	
1,2-Dichloropropane	ND	5.0	1	B5C0440	03/17/2015	03/17/15 19:51	
1,3,5-Trimethylbenzene	ND	5.0	1	B5C0440	03/17/2015	03/17/15 19:51	
1,3-Dichlorobenzene	ND	5.0	1	B5C0440	03/17/2015	03/17/15 19:51	
1,3-Dichloropropane	ND	5.0	1	B5C0440	03/17/2015	03/17/15 19:51	
1,4-Dichlorobenzene	ND	5.0	1	B5C0440	03/17/2015	03/17/15 19:51	
2,2-Dichloropropane	ND	5.0	1	B5C0440	03/17/2015	03/17/15 19:51	
2-Chlorotoluene	ND	5.0	1	B5C0440	03/17/2015	03/17/15 19:51	
4-Chlorotoluene	ND	5.0	1	B5C0440	03/17/2015	03/17/15 19:51	
4-Isopropyltoluene	ND	5.0	1	B5C0440	03/17/2015	03/17/15 19:51	
Benzene	ND	5.0	1	B5C0440	03/17/2015	03/17/15 19:51	
Bromobenzene	ND	5.0	1	B5C0440	03/17/2015	03/17/15 19:51	
Bromochloromethane	ND	5.0	1	B5C0440	03/17/2015	03/17/15 19:51	
Bromodichloromethane	ND	5.0	1	B5C0440	03/17/2015	03/17/15 19:51	
Bromoform	ND	5.0	1	B5C0440	03/17/2015	03/17/15 19:51	

Certificate of Analysis

Amec Foster Wheeler	Project Number : MTA WES, 4953-11-1423
6001 Rickenbacker Road	Report To : Ron Lopez
Los Angeles , CA 90040	Reported : 03/23/2015

Client Sample ID E132B-35

Lab ID: 1500919-02

Volatile Organic Compounds by EPA 8260B **Analyst: AG**

Analyte	Result (ug/kg)	PQL (ug/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Bromomethane	ND	5.0	1	B5C0440	03/17/2015	03/17/15 19:51	
Carbon disulfide	ND	5.0	1	B5C0440	03/17/2015	03/17/15 19:51	
Carbon tetrachloride	ND	5.0	1	B5C0440	03/17/2015	03/17/15 19:51	
Chlorobenzene	ND	5.0	1	B5C0440	03/17/2015	03/17/15 19:51	
Chloroethane	ND	5.0	1	B5C0440	03/17/2015	03/17/15 19:51	
Chloroform	ND	5.0	1	B5C0440	03/17/2015	03/17/15 19:51	
Chloromethane	ND	5.0	1	B5C0440	03/17/2015	03/17/15 19:51	
cis-1,2-Dichloroethene	ND	5.0	1	B5C0440	03/17/2015	03/17/15 19:51	
cis-1,3-Dichloropropene	ND	5.0	1	B5C0440	03/17/2015	03/17/15 19:51	
Di-isopropyl ether	ND	5.0	1	B5C0440	03/17/2015	03/17/15 19:51	
Dibromochloromethane	ND	5.0	1	B5C0440	03/17/2015	03/17/15 19:51	
Dibromomethane	ND	5.0	1	B5C0440	03/17/2015	03/17/15 19:51	
Dichlorodifluoromethane	ND	5.0	1	B5C0440	03/17/2015	03/17/15 19:51	
Ethyl Acetate	ND	50	1	B5C0440	03/17/2015	03/17/15 19:51	
Ethyl Ether	ND	50	1	B5C0440	03/17/2015	03/17/15 19:51	
Ethyl tert-butyl ether	ND	5.0	1	B5C0440	03/17/2015	03/17/15 19:51	
Ethylbenzene	ND	5.0	1	B5C0440	03/17/2015	03/17/15 19:51	
Freon-113	ND	5.0	1	B5C0440	03/17/2015	03/17/15 19:51	
Hexachlorobutadiene	ND	5.0	1	B5C0440	03/17/2015	03/17/15 19:51	
Isopropylbenzene	ND	5.0	1	B5C0440	03/17/2015	03/17/15 19:51	
m,p-Xylene	ND	10	1	B5C0440	03/17/2015	03/17/15 19:51	
Methylene chloride	ND	5.0	1	B5C0440	03/17/2015	03/17/15 19:51	
MTBE	ND	5.0	1	B5C0440	03/17/2015	03/17/15 19:51	
n-Butylbenzene	ND	5.0	1	B5C0440	03/17/2015	03/17/15 19:51	
n-Propylbenzene	ND	5.0	1	B5C0440	03/17/2015	03/17/15 19:51	
Naphthalene	ND	5.0	1	B5C0440	03/17/2015	03/17/15 19:51	
o-Xylene	ND	5.0	1	B5C0440	03/17/2015	03/17/15 19:51	
sec-Butylbenzene	ND	5.0	1	B5C0440	03/17/2015	03/17/15 19:51	
Styrene	ND	5.0	1	B5C0440	03/17/2015	03/17/15 19:51	
tert-Amyl methyl ether	ND	5.0	1	B5C0440	03/17/2015	03/17/15 19:51	
tert-Butanol	ND	100	1	B5C0440	03/17/2015	03/17/15 19:51	
tert-Butylbenzene	ND	5.0	1	B5C0440	03/17/2015	03/17/15 19:51	
Tetrachloroethene	ND	5.0	1	B5C0440	03/17/2015	03/17/15 19:51	
Toluene	ND	5.0	1	B5C0440	03/17/2015	03/17/15 19:51	
trans-1,2-Dichloroethene	ND	5.0	1	B5C0440	03/17/2015	03/17/15 19:51	
trans-1,3-Dichloropropene	ND	5.0	1	B5C0440	03/17/2015	03/17/15 19:51	
Trichloroethene	ND	5.0	1	B5C0440	03/17/2015	03/17/15 19:51	

Certificate of Analysis

Amec Foster Wheeler	Project Number : MTA WES, 4953-11-1423
6001 Rickenbacker Road	Report To : Ron Lopez
Los Angeles , CA 90040	Reported : 03/23/2015

Client Sample ID E132B-35

Lab ID: 1500919-02

Volatile Organic Compounds by EPA 8260B

Analyst: AG

Analyte	Result (ug/kg)	PQL (ug/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Trichlorofluoromethane	ND	5.0	1	B5C0440	03/17/2015	03/17/15 19:51	
Vinyl acetate	ND	50	1	B5C0440	03/17/2015	03/17/15 19:51	
Vinyl chloride	ND	5.0	1	B5C0440	03/17/2015	03/17/15 19:51	
Surrogate: 1,2-Dichloroethane-d4	*103 %*	*20 - 189*		B5C0440	03/17/2015	*03/17/15 19:51*	
Surrogate: 4-Bromofluorobenzene	*88.0 %*	*20 - 173*		B5C0440	03/17/2015	*03/17/15 19:51*	
Surrogate: Dibromofluoromethane	*104 %*	*26 - 178*		B5C0440	03/17/2015	*03/17/15 19:51*	
Surrogate: Toluene-d8	*97.2 %*	*31 - 166*		B5C0440	03/17/2015	*03/17/15 19:51*	

Semivolatile Organic Compounds by EPA 8270C

Analyst: BD

Analyte	Result (ug/kg)	PQL (ug/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
1,2,4-Trichlorobenzene	ND	330	1	B5C0386	03/16/2015	03/22/15 22:21	
1,2-Dichlorobenzene	ND	330	1	B5C0386	03/16/2015	03/22/15 22:21	
1,3-Dichlorobenzene	ND	330	1	B5C0386	03/16/2015	03/22/15 22:21	
1,4-Dichlorobenzene	ND	330	1	B5C0386	03/16/2015	03/22/15 22:21	
2,4,5-Trichlorophenol	ND	330	1	B5C0386	03/16/2015	03/22/15 22:21	
2,4,6-Trichlorophenol	ND	330	1	B5C0386	03/16/2015	03/22/15 22:21	
2,4-Dichlorophenol	ND	1600	1	B5C0386	03/16/2015	03/22/15 22:21	
2,4-Dimethylphenol	ND	330	1	B5C0386	03/16/2015	03/22/15 22:21	
2,4-Dinitrophenol	ND	1600	1	B5C0386	03/16/2015	03/22/15 22:21	
2,4-Dinitrotoluene	ND	330	1	B5C0386	03/16/2015	03/22/15 22:21	
2,6-Dinitrotoluene	ND	330	1	B5C0386	03/16/2015	03/22/15 22:21	
2-Chloronaphthalene	ND	330	1	B5C0386	03/16/2015	03/22/15 22:21	
2-Chlorophenol	ND	330	1	B5C0386	03/16/2015	03/22/15 22:21	
2-Methylnaphthalene	ND	330	1	B5C0386	03/16/2015	03/22/15 22:21	
2-Methylphenol	ND	330	1	B5C0386	03/16/2015	03/22/15 22:21	
2-Nitroaniline	ND	1600	1	B5C0386	03/16/2015	03/22/15 22:21	
2-Nitrophenol	ND	330	1	B5C0386	03/16/2015	03/22/15 22:21	
3,3´-Dichlorobenzidine	ND	660	1	B5C0386	03/16/2015	03/22/15 22:21	
3-Nitroaniline	ND	1600	1	B5C0386	03/16/2015	03/22/15 22:21	
4,6-Dinitro-2-methyphenol	ND	1600	1	B5C0386	03/16/2015	03/22/15 22:21	
4-Bromophenyl-phenylether	ND	330	1	B5C0386	03/16/2015	03/22/15 22:21	
4-Chloro-3-methylphenol	ND	660	1	B5C0386	03/16/2015	03/22/15 22:21	
4-Chloroaniline	ND	660	1	B5C0386	03/16/2015	03/22/15 22:21	
4-Chlorophenyl-phenylether	ND	330	1	B5C0386	03/16/2015	03/22/15 22:21	
4-Methylphenol	ND	330	1	B5C0386	03/16/2015	03/22/15 22:21	

Figure C-2.50

Certificate of Analysis

Amec Foster Wheeler	Project Number : MTA WES, 4953-11-1423
6001 Rickenbacker Road	Report To : Ron Lopez
Los Angeles , CA 90040	Reported : 03/23/2015

Client Sample ID E132B-35

Lab ID: 1500919-02

Semivolatile Organic Compounds by EPA 8270C **Analyst: BD**

Analyte	Result (ug/kg)	PQL (ug/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
4-Nitroaniline	ND	1600	1	B5C0386	03/16/2015	03/22/15 22:21	
4-Nitrophenol	ND	330	1	B5C0386	03/16/2015	03/22/15 22:21	
Acenaphthene	ND	330	1	B5C0386	03/16/2015	03/22/15 22:21	
Acenaphthylene	ND	330	1	B5C0386	03/16/2015	03/22/15 22:21	
Anthracene	ND	330	1	B5C0386	03/16/2015	03/22/15 22:21	
Benzidine (M)	ND	1600	1	B5C0386	03/16/2015	03/22/15 22:21	
Benzo(a)anthracene	ND	330	1	B5C0386	03/16/2015	03/22/15 22:21	
Benzo(a)pyrene	ND	330	1	B5C0386	03/16/2015	03/22/15 22:21	
Benzo(b)fluoranthene	ND	330	1	B5C0386	03/16/2015	03/22/15 22:21	
Benzo(g,h,i)perylene	ND	330	1	B5C0386	03/16/2015	03/22/15 22:21	
Benzo(k)fluoranthene	ND	330	1	B5C0386	03/16/2015	03/22/15 22:21	
Benzoic acid	ND	1600	1	B5C0386	03/16/2015	03/22/15 22:21	
Benzyl alcohol	ND	660	1	B5C0386	03/16/2015	03/22/15 22:21	
bis(2-chloroethoxy)methane	ND	330	1	B5C0386	03/16/2015	03/22/15 22:21	
bis(2-Chloroethyl)ether	ND	330	1	B5C0386	03/16/2015	03/22/15 22:21	
bis(2-chloroisopropyl)ether	ND	330	1	B5C0386	03/16/2015	03/22/15 22:21	
bis(2-ethylhexyl)phthalate	ND	330	1	B5C0386	03/16/2015	03/22/15 22:21	
Butylbenzylphthalate	ND	330	1	B5C0386	03/16/2015	03/22/15 22:21	
Chrysene	ND	330	1	B5C0386	03/16/2015	03/22/15 22:21	
Di-n-butylphthalate	ND	330	1	B5C0386	03/16/2015	03/22/15 22:21	
Di-n-octylphthalate	ND	330	1	B5C0386	03/16/2015	03/22/15 22:21	
Dibenz(a,h)anthracene	ND	330	1	B5C0386	03/16/2015	03/22/15 22:21	
Dibenzofuran	ND	330	1	B5C0386	03/16/2015	03/22/15 22:21	
Diethyl phthalate	ND	330	1	B5C0386	03/16/2015	03/22/15 22:21	
Dimethyl phthalate	ND	330	1	B5C0386	03/16/2015	03/22/15 22:21	
Fluoranthene	ND	330	1	B5C0386	03/16/2015	03/22/15 22:21	
Fluorene	ND	330	1	B5C0386	03/16/2015	03/22/15 22:21	
Hexachlorobenzene	ND	330	1	B5C0386	03/16/2015	03/22/15 22:21	
Hexachlorobutadiene	ND	660	1	B5C0386	03/16/2015	03/22/15 22:21	
Hexachlorocyclopentadiene	ND	660	1	B5C0386	03/16/2015	03/22/15 22:21	
Hexachloroethane	ND	330	1	B5C0386	03/16/2015	03/22/15 22:21	
Indeno(1,2,3-cd)pyrene	ND	330	1	B5C0386	03/16/2015	03/22/15 22:21	
Isophorone	ND	330	1	B5C0386	03/16/2015	03/22/15 22:21	
N-Nitroso-di-n propylamine	ND	330	1	B5C0386	03/16/2015	03/22/15 22:21	
N-Nitrosodiphenylamine	ND	330	1	B5C0386	03/16/2015	03/22/15 22:21	
Naphthalene	ND	330	1	B5C0386	03/16/2015	03/22/15 22:21	
Nitrobenzene	ND	330	1	B5C0386	03/16/2015	03/22/15 22:21	

Certificate of Analysis

Amec Foster Wheeler	Project Number : MTA WES, 4953-11-1423
6001 Rickenbacker Road	Report To : Ron Lopez
Los Angeles , CA 90040	Reported : 03/23/2015

Client Sample ID E132B-35

Lab ID: 1500919-02

Semivolatile Organic Compounds by EPA 8270C **Analyst: BD**

Analyte		Result (ug/kg)	PQL (ug/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Pentachlorophenol		ND	1600	1	B5C0386	03/16/2015	03/22/15 22:21	
Phenanthrene		ND	330	1	B5C0386	03/16/2015	03/22/15 22:21	
Phenol		ND	330	1	B5C0386	03/16/2015	03/22/15 22:21	
Pyrene		ND	330	1	B5C0386	03/16/2015	03/22/15 22:21	
Pyridine		ND	1600	1	B5C0386	03/16/2015	03/22/15 22:21	
Surrogate: 1,2-Dichlorobenzene-d4	*49.9 %*		*24 - 114*		B5C0386	03/16/2015	*03/22/15 22:21*	
Surrogate: 2,4,6-Tribromophenol	*71.5 %*		*0 - 189*		B5C0386	03/16/2015	*03/22/15 22:21*	
Surrogate: 2-Chlorophenol-d4	*62.4 %*		*23 - 123*		B5C0386	03/16/2015	*03/22/15 22:21*	
Surrogate: 2-Fluorobiphenyl	*55.2 %*		*28 - 128*		B5C0386	03/16/2015	*03/22/15 22:21*	
Surrogate: 2-Fluorophenol	*59.6 %*		*8 - 138*		B5C0386	03/16/2015	*03/22/15 22:21*	
Surrogate: 4-Terphenyl-d14	*65.3 %*		*27 - 154*		B5C0386	03/16/2015	*03/22/15 22:21*	
Surrogate: Nitrobenzene-d5	*53.0 %*		*19 - 129*		B5C0386	03/16/2015	*03/22/15 22:21*	
Surrogate: Phenol-d5	*63.5 %*		*20 - 126*		B5C0386	03/16/2015	*03/22/15 22:21*	

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Amec Foster Wheeler	Project Number : MTA WES, 4953-11-1423
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Los Angeles , CA 90040	Reported : 03/23/2015

Client Sample ID E132B-55

Lab ID: 1500919-04

Total Petroleum Hydrocarbons, HEM/SGT EPA 1664 (Modified) — **Analyst: la**

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Total Petroleum Hydrocarbons	ND	50	1	B5C0509	03/19/2015	03/19/15 18:45	

Title 22 Metals by ICP-AES EPA 6010B — **Analyst: RR**

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Antimony	ND	2.0	1	B5C0447	03/18/2015	03/19/15 09:48	
Arsenic	ND	1.0	1	B5C0447	03/18/2015	03/19/15 09:48	
Barium	**14**	1.0	1	B5C0447	03/18/2015	03/19/15 09:48	
Beryllium	ND	1.0	1	B5C0447	03/18/2015	03/19/15 09:48	
Cadmium	ND	1.0	1	B5C0447	03/18/2015	03/19/15 09:48	
Chromium	**7.8**	1.0	1	B5C0447	03/18/2015	03/19/15 09:48	
Cobalt	ND	1.0	1	B5C0447	03/18/2015	03/19/15 09:48	
Copper	**7.7**	2.0	1	B5C0447	03/18/2015	03/19/15 09:48	
Lead	**2.2**	1.0	1	B5C0447	03/18/2015	03/19/15 09:48	
Molybdenum	**1.6**	1.0	1	B5C0447	03/18/2015	03/19/15 09:48	
Nickel	**2.2**	1.0	1	B5C0447	03/18/2015	03/19/15 09:48	
Selenium	ND	1.0	1	B5C0447	03/18/2015	03/19/15 09:48	
Silver	ND	1.0	1	B5C0447	03/18/2015	03/19/15 09:48	
Thallium	ND	1.0	1	B5C0447	03/18/2015	03/19/15 09:48	
Vanadium	**6.2**	1.0	1	B5C0447	03/18/2015	03/19/15 09:48	
Zinc	**5.8**	1.0	1	B5C0447	03/18/2015	03/19/15 09:48	

Mercury by AA (Cold Vapor) EPA 7471A — **Analyst: SB**

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Mercury	ND	0.10	1	B5C0451	03/18/2015	03/18/15 16:53	

Gasoline Range Organics by EPA 8015B (Modified) — **Analyst: BT/**

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Gasoline Range Organics	ND	1.0	1	B5C0325	03/12/2015	03/13/15 13:49	
Surrogate: 4-Bromofluorobenzene	*95.1 %*	*37 - 153*		B5C0325	03/12/2015	*03/13/15 13:49*	

Figure C-2.53

Certificate of Analysis

Amec Foster Wheeler	Project Number : MTA WES, 4953-11-1423
6001 Rickenbacker Road	Report To : Ron Lopez
Los Angeles , CA 90040	Reported : 03/23/2015

Client Sample ID E132B-55

Lab ID: 1500919-04

Diesel Range Organics by EPA 8015B — **Analyst: CR**

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
DRO	ND	10	1	B5C0436	03/17/2015	03/18/15 22:12	
ORO	ND	10	1	B5C0436	03/17/2015	03/18/15 22:12	
Surrogate: p-Terphenyl	*101 %*	*49 - 142*		B5C0436	03/17/2015	*03/18/15 22:12*	

Volatile Organic Compounds by EPA 8260B — **Analyst: AG**

Analyte	Result (ug/kg)	PQL (ug/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
1,1,1,2-Tetrachloroethane	ND	5.0	1	B5C0440	03/17/2015	03/17/15 20:10	
1,1,1-Trichloroethane	ND	5.0	1	B5C0440	03/17/2015	03/17/15 20:10	
1,1,2,2-Tetrachloroethane	ND	5.0	1	B5C0440	03/17/2015	03/17/15 20:10	
1,1,2-Trichloroethane	ND	5.0	1	B5C0440	03/17/2015	03/17/15 20:10	
1,1-Dichloroethane	ND	5.0	1	B5C0440	03/17/2015	03/17/15 20:10	
1,1-Dichloroethene	ND	5.0	1	B5C0440	03/17/2015	03/17/15 20:10	
1,1-Dichloropropene	ND	5.0	1	B5C0440	03/17/2015	03/17/15 20:10	
1,2,3-Trichloropropane	ND	5.0	1	B5C0440	03/17/2015	03/17/15 20:10	
1,2,3-Trichlorobenzene	ND	5.0	1	B5C0440	03/17/2015	03/17/15 20:10	
1,2,4-Trichlorobenzene	ND	5.0	1	B5C0440	03/17/2015	03/17/15 20:10	
1,2,4-Trimethylbenzene	ND	5.0	1	B5C0440	03/17/2015	03/17/15 20:10	
1,2-Dibromo-3-chloropropane	ND	10	1	B5C0440	03/17/2015	03/17/15 20:10	
1,2-Dibromoethane	ND	5.0	1	B5C0440	03/17/2015	03/17/15 20:10	
1,2-Dichlorobenzene	ND	5.0	1	B5C0440	03/17/2015	03/17/15 20:10	
1,2-Dichloroethane	ND	5.0	1	B5C0440	03/17/2015	03/17/15 20:10	
1,2-Dichloropropane	ND	5.0	1	B5C0440	03/17/2015	03/17/15 20:10	
1,3,5-Trimethylbenzene	ND	5.0	1	B5C0440	03/17/2015	03/17/15 20:10	
1,3-Dichlorobenzene	ND	5.0	1	B5C0440	03/17/2015	03/17/15 20:10	
1,3-Dichloropropane	ND	5.0	1	B5C0440	03/17/2015	03/17/15 20:10	
1,4-Dichlorobenzene	ND	5.0	1	B5C0440	03/17/2015	03/17/15 20:10	
2,2-Dichloropropane	ND	5.0	1	B5C0440	03/17/2015	03/17/15 20:10	
2-Chlorotoluene	ND	5.0	1	B5C0440	03/17/2015	03/17/15 20:10	
4-Chlorotoluene	ND	5.0	1	B5C0440	03/17/2015	03/17/15 20:10	
4-Isopropyltoluene	ND	5.0	1	B5C0440	03/17/2015	03/17/15 20:10	
Benzene	ND	5.0	1	B5C0440	03/17/2015	03/17/15 20:10	
Bromobenzene	ND	5.0	1	B5C0440	03/17/2015	03/17/15 20:10	
Bromochloromethane	ND	5.0	1	B5C0440	03/17/2015	03/17/15 20:10	
Bromodichloromethane	ND	5.0	1	B5C0440	03/17/2015	03/17/15 20:10	
Bromoform	ND	5.0	1	B5C0440	03/17/2015	03/17/15 20:10	

Figure C-2.54

Certificate of Analysis

Amec Foster Wheeler	Project Number : MTA WES, 4953-11-1423
6001 Rickenbacker Road	Report To : Ron Lopez
Los Angeles , CA 90040	Reported : 03/23/2015

Client Sample ID E132B-55

Lab ID: 1500919-04

Volatile Organic Compounds by EPA 8260B **Analyst: AG**

Analyte	Result (ug/kg)	PQL (ug/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Bromomethane	ND	5.0	1	B5C0440	03/17/2015	03/17/15 20:10	
Carbon disulfide	ND	5.0	1	B5C0440	03/17/2015	03/17/15 20:10	
Carbon tetrachloride	ND	5.0	1	B5C0440	03/17/2015	03/17/15 20:10	
Chlorobenzene	ND	5.0	1	B5C0440	03/17/2015	03/17/15 20:10	
Chloroethane	ND	5.0	1	B5C0440	03/17/2015	03/17/15 20:10	
Chloroform	ND	5.0	1	B5C0440	03/17/2015	03/17/15 20:10	
Chloromethane	ND	5.0	1	B5C0440	03/17/2015	03/17/15 20:10	
cis-1,2-Dichloroethene	ND	5.0	1	B5C0440	03/17/2015	03/17/15 20:10	
cis-1,3-Dichloropropene	ND	5.0	1	B5C0440	03/17/2015	03/17/15 20:10	
Di-isopropyl ether	ND	5.0	1	B5C0440	03/17/2015	03/17/15 20:10	
Dibromochloromethane	ND	5.0	1	B5C0440	03/17/2015	03/17/15 20:10	
Dibromomethane	ND	5.0	1	B5C0440	03/17/2015	03/17/15 20:10	
Dichlorodifluoromethane	ND	5.0	1	B5C0440	03/17/2015	03/17/15 20:10	
Ethyl Acetate	ND	50	1	B5C0440	03/17/2015	03/17/15 20:10	
Ethyl Ether	ND	50	1	B5C0440	03/17/2015	03/17/15 20:10	
Ethyl tert-butyl ether	ND	5.0	1	B5C0440	03/17/2015	03/17/15 20:10	
Ethylbenzene	ND	5.0	1	B5C0440	03/17/2015	03/17/15 20:10	
Freon-113	ND	5.0	1	B5C0440	03/17/2015	03/17/15 20:10	
Hexachlorobutadiene	ND	5.0	1	B5C0440	03/17/2015	03/17/15 20:10	
Isopropylbenzene	ND	5.0	1	B5C0440	03/17/2015	03/17/15 20:10	
m,p-Xylene	ND	10	1	B5C0440	03/17/2015	03/17/15 20:10	
Methylene chloride	ND	5.0	1	B5C0440	03/17/2015	03/17/15 20:10	
MTBE	ND	5.0	1	B5C0440	03/17/2015	03/17/15 20:10	
n-Butylbenzene	ND	5.0	1	B5C0440	03/17/2015	03/17/15 20:10	
n-Propylbenzene	ND	5.0	1	B5C0440	03/17/2015	03/17/15 20:10	
Naphthalene	ND	5.0	1	B5C0440	03/17/2015	03/17/15 20:10	
o-Xylene	ND	5.0	1	B5C0440	03/17/2015	03/17/15 20:10	
sec-Butylbenzene	ND	5.0	1	B5C0440	03/17/2015	03/17/15 20:10	
Styrene	ND	5.0	1	B5C0440	03/17/2015	03/17/15 20:10	
tert-Amyl methyl ether	ND	5.0	1	B5C0440	03/17/2015	03/17/15 20:10	
tert-Butanol	ND	100	1	B5C0440	03/17/2015	03/17/15 20:10	
tert-Butylbenzene	ND	5.0	1	B5C0440	03/17/2015	03/17/15 20:10	
Tetrachloroethene	ND	5.0	1	B5C0440	03/17/2015	03/17/15 20:10	
Toluene	ND	5.0	1	B5C0440	03/17/2015	03/17/15 20:10	
trans-1,2-Dichloroethene	ND	5.0	1	B5C0440	03/17/2015	03/17/15 20:10	
trans-1,3-Dichloropropene	ND	5.0	1	B5C0440	03/17/2015	03/17/15 20:10	
Trichloroethene	ND	5.0	1	B5C0440	03/17/2015	03/17/15 20:10	

Figure C-2.55

Certificate of Analysis

Amec Foster Wheeler	Project Number : MTA WES, 4953-11-1423
6001 Rickenbacker Road	Report To : Ron Lopez
Los Angeles , CA 90040	Reported : 03/23/2015

Client Sample ID E132B-55

Lab ID: 1500919-04

Volatile Organic Compounds by EPA 8260B **Analyst: AG**

Analyte	Result (ug/kg)	PQL (ug/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Trichlorofluoromethane	ND	5.0	1	B5C0440	03/17/2015	03/17/15 20:10	
Vinyl acetate	ND	50	1	B5C0440	03/17/2015	03/17/15 20:10	
Vinyl chloride	ND	5.0	1	B5C0440	03/17/2015	03/17/15 20:10	
Surrogate: 1,2-Dichloroethane-d4	*104 %*	*20 - 189*		B5C0440	03/17/2015	*03/17/15 20:10*	
Surrogate: 4-Bromofluorobenzene	*90.5 %*	*20 - 173*		B5C0440	03/17/2015	*03/17/15 20:10*	
Surrogate: Dibromofluoromethane	*110 %*	*26 - 178*		B5C0440	03/17/2015	*03/17/15 20:10*	
Surrogate: Toluene-d8	*101 %*	*31 - 166*		B5C0440	03/17/2015	*03/17/15 20:10*	

Semivolatile Organic Compounds by EPA 8270C **Analyst: BD**

Analyte	Result (ug/kg)	PQL (ug/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
1,2,4-Trichlorobenzene	ND	330	1	B5C0386	03/16/2015	03/22/15 22:48	
1,2-Dichlorobenzene	ND	330	1	B5C0386	03/16/2015	03/22/15 22:48	
1,3-Dichlorobenzene	ND	330	1	B5C0386	03/16/2015	03/22/15 22:48	
1,4-Dichlorobenzene	ND	330	1	B5C0386	03/16/2015	03/22/15 22:48	
2,4,5-Trichlorophenol	ND	330	1	B5C0386	03/16/2015	03/22/15 22:48	
2,4,6-Trichlorophenol	ND	330	1	B5C0386	03/16/2015	03/22/15 22:48	
2,4-Dichlorophenol	ND	1600	1	B5C0386	03/16/2015	03/22/15 22:48	
2,4-Dimethylphenol	ND	330	1	B5C0386	03/16/2015	03/22/15 22:48	
2,4-Dinitrophenol	ND	1600	1	B5C0386	03/16/2015	03/22/15 22:48	
2,4-Dinitrotoluene	ND	330	1	B5C0386	03/16/2015	03/22/15 22:48	
2,6-Dinitrotoluene	ND	330	1	B5C0386	03/16/2015	03/22/15 22:48	
2-Chloronaphthalene	ND	330	1	B5C0386	03/16/2015	03/22/15 22:48	
2-Chlorophenol	ND	330	1	B5C0386	03/16/2015	03/22/15 22:48	
2-Methylnaphthalene	ND	330	1	B5C0386	03/16/2015	03/22/15 22:48	
2-Methylphenol	ND	330	1	B5C0386	03/16/2015	03/22/15 22:48	
2-Nitroaniline	ND	1600	1	B5C0386	03/16/2015	03/22/15 22:48	
2-Nitrophenol	ND	330	1	B5C0386	03/16/2015	03/22/15 22:48	
3,3´-Dichlorobenzidine	ND	660	1	B5C0386	03/16/2015	03/22/15 22:48	
3-Nitroaniline	ND	1600	1	B5C0386	03/16/2015	03/22/15 22:48	
4,6-Dinitro-2-methyphenol	ND	1600	1	B5C0386	03/16/2015	03/22/15 22:48	
4-Bromophenyl-phenylether	ND	330	1	B5C0386	03/16/2015	03/22/15 22:48	
4-Chloro-3-methylphenol	ND	660	1	B5C0386	03/16/2015	03/22/15 22:48	
4-Chloroaniline	ND	660	1	B5C0386	03/16/2015	03/22/15 22:48	
4-Chlorophenyl-phenylether	ND	330	1	B5C0386	03/16/2015	03/22/15 22:48	
4-Methylphenol	ND	330	1	B5C0386	03/16/2015	03/22/15 22:48	

Certificate of Analysis

Amec Foster Wheeler	Project Number : MTA WES, 4953-11-1423
6001 Rickenbacker Road	Report To : Ron Lopez
Los Angeles , CA 90040	Reported : 03/23/2015

Client Sample ID E132B-55

Lab ID: 1500919-04

Semivolatile Organic Compounds by EPA 8270C **Analyst: BD**

Analyte	Result (ug/kg)	PQL (ug/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
4-Nitroaniline	ND	1600	1	B5C0386	03/16/2015	03/22/15 22:48	
4-Nitrophenol	ND	330	1	B5C0386	03/16/2015	03/22/15 22:48	
Acenaphthene	ND	330	1	B5C0386	03/16/2015	03/22/15 22:48	
Acenaphthylene	ND	330	1	B5C0386	03/16/2015	03/22/15 22:48	
Anthracene	ND	330	1	B5C0386	03/16/2015	03/22/15 22:48	
Benzidine (M)	ND	1600	1	B5C0386	03/16/2015	03/22/15 22:48	
Benzo(a)anthracene	ND	330	1	B5C0386	03/16/2015	03/22/15 22:48	
Benzo(a)pyrene	ND	330	1	B5C0386	03/16/2015	03/22/15 22:48	
Benzo(b)fluoranthene	ND	330	1	B5C0386	03/16/2015	03/22/15 22:48	
Benzo(g,h,i)perylene	ND	330	1	B5C0386	03/16/2015	03/22/15 22:48	
Benzo(k)fluoranthene	ND	330	1	B5C0386	03/16/2015	03/22/15 22:48	
Benzoic acid	ND	1600	1	B5C0386	03/16/2015	03/22/15 22:48	
Benzyl alcohol	ND	660	1	B5C0386	03/16/2015	03/22/15 22:48	
bis(2-chloroethoxy)methane	ND	330	1	B5C0386	03/16/2015	03/22/15 22:48	
bis(2-Chloroethyl)ether	ND	330	1	B5C0386	03/16/2015	03/22/15 22:48	
bis(2-chloroisopropyl)ether	ND	330	1	B5C0386	03/16/2015	03/22/15 22:48	
bis(2-ethylhexyl)phthalate	ND	330	1	B5C0386	03/16/2015	03/22/15 22:48	
Butylbenzylphthalate	ND	330	1	B5C0386	03/16/2015	03/22/15 22:48	
Chrysene	ND	330	1	B5C0386	03/16/2015	03/22/15 22:48	
Di-n-butylphthalate	ND	330	1	B5C0386	03/16/2015	03/22/15 22:48	
Di-n-octylphthalate	ND	330	1	B5C0386	03/16/2015	03/22/15 22:48	
Dibenz(a,h)anthracene	ND	330	1	B5C0386	03/16/2015	03/22/15 22:48	
Dibenzofuran	ND	330	1	B5C0386	03/16/2015	03/22/15 22:48	
Diethyl phthalate	ND	330	1	B5C0386	03/16/2015	03/22/15 22:48	
Dimethyl phthalate	ND	330	1	B5C0386	03/16/2015	03/22/15 22:48	
Fluoranthene	ND	330	1	B5C0386	03/16/2015	03/22/15 22:48	
Fluorene	ND	330	1	B5C0386	03/16/2015	03/22/15 22:48	
Hexachlorobenzene	ND	330	1	B5C0386	03/16/2015	03/22/15 22:48	
Hexachlorobutadiene	ND	660	1	B5C0386	03/16/2015	03/22/15 22:48	
Hexachlorocyclopentadiene	ND	660	1	B5C0386	03/16/2015	03/22/15 22:48	
Hexachloroethane	ND	330	1	B5C0386	03/16/2015	03/22/15 22:48	
Indeno(1,2,3-cd)pyrene	ND	330	1	B5C0386	03/16/2015	03/22/15 22:48	
Isophorone	ND	330	1	B5C0386	03/16/2015	03/22/15 22:48	
N-Nitroso-di-n propylamine	ND	330	1	B5C0386	03/16/2015	03/22/15 22:48	
N-Nitrosodiphenylamine	ND	330	1	B5C0386	03/16/2015	03/22/15 22:48	
Naphthalene	ND	330	1	B5C0386	03/16/2015	03/22/15 22:48	
Nitrobenzene	ND	330	1	B5C0386	03/16/2015	03/22/15 22:48	

Certificate of Analysis

Amec Foster Wheeler	Project Number : MTA WES, 4953-11-1423
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Los Angeles , CA 90040	Reported : 03/23/2015

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Lab ID: 1500919-04

Semivolatile Organic Compounds by EPA 8270C **Analyst: BD**

Analyte	Result (ug/kg)	PQL (ug/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Pentachlorophenol	ND	1600	1	B5C0386	03/16/2015	03/22/15 22:48	
Phenanthrene	ND	330	1	B5C0386	03/16/2015	03/22/15 22:48	
Phenol	ND	330	1	B5C0386	03/16/2015	03/22/15 22:48	
Pyrene	ND	330	1	B5C0386	03/16/2015	03/22/15 22:48	
Pyridine	ND	1600	1	B5C0386	03/16/2015	03/22/15 22:48	
Surrogate: 1,2-Dichlorobenzene-d4	*58.1 %*	*24 - 114*		B5C0386	03/16/2015	*03/22/15 22:48*	
Surrogate: 2,4,6-Tribromophenol	*74.8 %*	*0 - 189*		B5C0386	03/16/2015	*03/22/15 22:48*	
Surrogate: 2-Chlorophenol-d4	*67.8 %*	*23 - 123*		B5C0386	03/16/2015	*03/22/15 22:48*	
Surrogate: 2-Fluorobiphenyl	*64.3 %*	*28 - 128*		B5C0386	03/16/2015	*03/22/15 22:48*	
Surrogate: 2-Fluorophenol	*64.9 %*	*8 - 138*		B5C0386	03/16/2015	*03/22/15 22:48*	
Surrogate: 4-Terphenyl-d14	*72.5 %*	*27 - 154*		B5C0386	03/16/2015	*03/22/15 22:48*	
Surrogate: Nitrobenzene-d5	*59.1 %*	*19 - 129*		B5C0386	03/16/2015	*03/22/15 22:48*	
Surrogate: Phenol-d5	*67.6 %*	*20 - 126*		B5C0386	03/16/2015	*03/22/15 22:48*	

Figure C-2.58

Certificate of Analysis

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Client Sample ID E132B-65

Lab ID: 1500919-05

Total Petroleum Hydrocarbons, HEM/SGT EPA 1664 (Modified) — **Analyst: la**

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Total Petroleum Hydrocarbons	ND	50	1	B5C0509	03/19/2015	03/19/15 18:45	

Title 22 Metals by ICP-AES EPA 6010B — **Analyst: RR**

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Antimony	ND	2.0	1	B5C0447	03/18/2015	03/19/15 09:51	
Arsenic	**1.4**	1.0	1	B5C0447	03/18/2015	03/19/15 09:51	
Barium	**55**	1.0	1	B5C0447	03/18/2015	03/19/15 09:51	
Beryllium	ND	1.0	1	B5C0447	03/18/2015	03/19/15 09:51	
Cadmium	ND	1.0	1	B5C0447	03/18/2015	03/19/15 09:51	
Chromium	**46**	1.0	1	B5C0447	03/18/2015	03/19/15 09:51	
Cobalt	**5.3**	1.0	1	B5C0447	03/18/2015	03/19/15 09:51	
Copper	**24**	2.0	1	B5C0447	03/18/2015	03/19/15 09:51	
Lead	**4.5**	1.0	1	B5C0447	03/18/2015	03/19/15 09:51	
Molybdenum	**1.4**	1.0	1	B5C0447	03/18/2015	03/19/15 09:51	
Nickel	**21**	1.0	1	B5C0447	03/18/2015	03/19/15 09:51	
Selenium	ND	1.0	1	B5C0447	03/18/2015	03/19/15 09:51	
Silver	ND	1.0	1	B5C0447	03/18/2015	03/19/15 09:51	
Thallium	ND	1.0	1	B5C0447	03/18/2015	03/19/15 09:51	
Vanadium	**26**	1.0	1	B5C0447	03/18/2015	03/19/15 09:51	
Zinc	**34**	1.0	1	B5C0447	03/18/2015	03/19/15 09:51	

Mercury by AA (Cold Vapor) EPA 7471A — **Analyst: SB**

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Mercury	ND	0.10	1	B5C0451	03/18/2015	03/18/15 16:55	

Gasoline Range Organics by EPA 8015B (Modified) — **Analyst: BT/**

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Gasoline Range Organics	ND	1.0	1	B5C0365	03/12/2015	03/16/15 16:20	
Surrogate: 4-Bromofluorobenzene	*96.6 %*	*37 - 153*		B5C0365	03/12/2015	*03/16/15 16:20*	

Figure C-2.59

Certificate of Analysis

Amec Foster Wheeler	Project Number : MTA WES, 4953-11-1423
6001 Rickenbacker Road	Report To : Ron Lopez
Los Angeles , CA 90040	Reported : 03/23/2015

Client Sample ID E132B-65

Lab ID: 1500919-05

Diesel Range Organics by EPA 8015B

Analyst: CR

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
DRO	ND	10	1	B5C0436	03/17/2015	03/18/15 22:02	
ORO	ND	10	1	B5C0436	03/17/2015	03/18/15 22:02	
Surrogate: p-Terphenyl	*100 %*	*49 - 142*		B5C0436	03/17/2015	*03/18/15 22:02*	

Volatile Organic Compounds by EPA 8260B

Analyst: AG

Analyte	Result (ug/kg)	PQL (ug/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
1,1,1,2-Tetrachloroethane	ND	5.0	1	B5C0440	03/17/2015	03/17/15 20:29	
1,1,1-Trichloroethane	ND	5.0	1	B5C0440	03/17/2015	03/17/15 20:29	
1,1,2,2-Tetrachloroethane	ND	5.0	1	B5C0440	03/17/2015	03/17/15 20:29	
1,1,2-Trichloroethane	ND	5.0	1	B5C0440	03/17/2015	03/17/15 20:29	
1,1-Dichloroethane	ND	5.0	1	B5C0440	03/17/2015	03/17/15 20:29	
1,1-Dichloroethene	ND	5.0	1	B5C0440	03/17/2015	03/17/15 20:29	
1,1-Dichloropropene	ND	5.0	1	B5C0440	03/17/2015	03/17/15 20:29	
1,2,3-Trichloropropane	ND	5.0	1	B5C0440	03/17/2015	03/17/15 20:29	
1,2,3-Trichlorobenzene	ND	5.0	1	B5C0440	03/17/2015	03/17/15 20:29	
1,2,4-Trichlorobenzene	ND	5.0	1	B5C0440	03/17/2015	03/17/15 20:29	
1,2,4-Trimethylbenzene	ND	5.0	1	B5C0440	03/17/2015	03/17/15 20:29	
1,2-Dibromo-3-chloropropane	ND	10	1	B5C0440	03/17/2015	03/17/15 20:29	
1,2-Dibromoethane	ND	5.0	1	B5C0440	03/17/2015	03/17/15 20:29	
1,2-Dichlorobenzene	ND	5.0	1	B5C0440	03/17/2015	03/17/15 20:29	
1,2-Dichloroethane	ND	5.0	1	B5C0440	03/17/2015	03/17/15 20:29	
1,2-Dichloropropane	ND	5.0	1	B5C0440	03/17/2015	03/17/15 20:29	
1,3,5-Trimethylbenzene	ND	5.0	1	B5C0440	03/17/2015	03/17/15 20:29	
1,3-Dichlorobenzene	ND	5.0	1	B5C0440	03/17/2015	03/17/15 20:29	
1,3-Dichloropropane	ND	5.0	1	B5C0440	03/17/2015	03/17/15 20:29	
1,4-Dichlorobenzene	ND	5.0	1	B5C0440	03/17/2015	03/17/15 20:29	
2,2-Dichloropropane	ND	5.0	1	B5C0440	03/17/2015	03/17/15 20:29	
2-Chlorotoluene	ND	5.0	1	B5C0440	03/17/2015	03/17/15 20:29	
4-Chlorotoluene	ND	5.0	1	B5C0440	03/17/2015	03/17/15 20:29	
4-Isopropyltoluene	ND	5.0	1	B5C0440	03/17/2015	03/17/15 20:29	
Benzene	ND	5.0	1	B5C0440	03/17/2015	03/17/15 20:29	
Bromobenzene	ND	5.0	1	B5C0440	03/17/2015	03/17/15 20:29	
Bromochloromethane	ND	5.0	1	B5C0440	03/17/2015	03/17/15 20:29	
Bromodichloromethane	ND	5.0	1	B5C0440	03/17/2015	03/17/15 20:29	
Bromoform	ND	5.0	1	B5C0440	03/17/2015	03/17/15 20:29	

Figure C-2.60

Certificate of Analysis

Amec Foster Wheeler	Project Number : MTA WES, 4953-11-1423
6001 Rickenbacker Road	Report To : Ron Lopez
Los Angeles , CA 90040	Reported : 03/23/2015

Client Sample ID E132B-65

Lab ID: 1500919-05

Volatile Organic Compounds by EPA 8260B **Analyst: AG**

Analyte	Result (ug/kg)	PQL (ug/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Bromomethane	ND	5.0	1	B5C0440	03/17/2015	03/17/15 20:29	
Carbon disulfide	ND	5.0	1	B5C0440	03/17/2015	03/17/15 20:29	
Carbon tetrachloride	ND	5.0	1	B5C0440	03/17/2015	03/17/15 20:29	
Chlorobenzene	ND	5.0	1	B5C0440	03/17/2015	03/17/15 20:29	
Chloroethane	ND	5.0	1	B5C0440	03/17/2015	03/17/15 20:29	
Chloroform	ND	5.0	1	B5C0440	03/17/2015	03/17/15 20:29	
Chloromethane	ND	5.0	1	B5C0440	03/17/2015	03/17/15 20:29	
cis-1,2-Dichloroethene	ND	5.0	1	B5C0440	03/17/2015	03/17/15 20:29	
cis-1,3-Dichloropropene	ND	5.0	1	B5C0440	03/17/2015	03/17/15 20:29	
Di-isopropyl ether	ND	5.0	1	B5C0440	03/17/2015	03/17/15 20:29	
Dibromochloromethane	ND	5.0	1	B5C0440	03/17/2015	03/17/15 20:29	
Dibromomethane	ND	5.0	1	B5C0440	03/17/2015	03/17/15 20:29	
Dichlorodifluoromethane	ND	5.0	1	B5C0440	03/17/2015	03/17/15 20:29	
Ethyl Acetate	ND	50	1	B5C0440	03/17/2015	03/17/15 20:29	
Ethyl Ether	ND	50	1	B5C0440	03/17/2015	03/17/15 20:29	
Ethyl tert-butyl ether	ND	5.0	1	B5C0440	03/17/2015	03/17/15 20:29	
Ethylbenzene	ND	5.0	1	B5C0440	03/17/2015	03/17/15 20:29	
Freon-113	ND	5.0	1	B5C0440	03/17/2015	03/17/15 20:29	
Hexachlorobutadiene	ND	5.0	1	B5C0440	03/17/2015	03/17/15 20:29	
Isopropylbenzene	ND	5.0	1	B5C0440	03/17/2015	03/17/15 20:29	
m,p-Xylene	ND	10	1	B5C0440	03/17/2015	03/17/15 20:29	
Methylene chloride	ND	5.0	1	B5C0440	03/17/2015	03/17/15 20:29	
MTBE	ND	5.0	1	B5C0440	03/17/2015	03/17/15 20:29	
n-Butylbenzene	ND	5.0	1	B5C0440	03/17/2015	03/17/15 20:29	
n-Propylbenzene	ND	5.0	1	B5C0440	03/17/2015	03/17/15 20:29	
Naphthalene	ND	5.0	1	B5C0440	03/17/2015	03/17/15 20:29	
o-Xylene	ND	5.0	1	B5C0440	03/17/2015	03/17/15 20:29	
sec-Butylbenzene	ND	5.0	1	B5C0440	03/17/2015	03/17/15 20:29	
Styrene	ND	5.0	1	B5C0440	03/17/2015	03/17/15 20:29	
tert-Amyl methyl ether	ND	5.0	1	B5C0440	03/17/2015	03/17/15 20:29	
tert-Butanol	ND	100	1	B5C0440	03/17/2015	03/17/15 20:29	
tert-Butylbenzene	ND	5.0	1	B5C0440	03/17/2015	03/17/15 20:29	
Tetrachloroethene	ND	5.0	1	B5C0440	03/17/2015	03/17/15 20:29	
Toluene	ND	5.0	1	B5C0440	03/17/2015	03/17/15 20:29	
trans-1,2-Dichloroethene	ND	5.0	1	B5C0440	03/17/2015	03/17/15 20:29	
trans-1,3-Dichloropropene	ND	5.0	1	B5C0440	03/17/2015	03/17/15 20:29	
Trichloroethene	ND	5.0	1	B5C0440	03/17/2015	03/17/15 20:29	

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Lab ID: 1500919-05

Volatile Organic Compounds by EPA 8260B

Analyst: AG

Analyte	Result (ug/kg)	PQL (ug/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Trichlorofluoromethane	ND	5.0	1	B5C0440	03/17/2015	03/17/15 20:29	
Vinyl acetate	ND	50	1	B5C0440	03/17/2015	03/17/15 20:29	
Vinyl chloride	ND	5.0	1	B5C0440	03/17/2015	03/17/15 20:29	
Surrogate: 1,2-Dichloroethane-d4	*107 %*	*20 - 189*		B5C0440	03/17/2015	*03/17/15 20:29*	
Surrogate: 4-Bromofluorobenzene	*91.9 %*	*20 - 173*		B5C0440	03/17/2015	*03/17/15 20:29*	
Surrogate: Dibromofluoromethane	*111 %*	*26 - 178*		B5C0440	03/17/2015	*03/17/15 20:29*	
Surrogate: Toluene-d8	*99.9 %*	*31 - 166*		B5C0440	03/17/2015	*03/17/15 20:29*	

Semivolatile Organic Compounds by EPA 8270C

Analyst: BD

Analyte	Result (ug/kg)	PQL (ug/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
1,2,4-Trichlorobenzene	ND	330	1	B5C0386	03/16/2015	03/22/15 23:16	
1,2-Dichlorobenzene	ND	330	1	B5C0386	03/16/2015	03/22/15 23:16	
1,3-Dichlorobenzene	ND	330	1	B5C0386	03/16/2015	03/22/15 23:16	
1,4-Dichlorobenzene	ND	330	1	B5C0386	03/16/2015	03/22/15 23:16	
2,4,5-Trichlorophenol	ND	330	1	B5C0386	03/16/2015	03/22/15 23:16	
2,4,6-Trichlorophenol	ND	330	1	B5C0386	03/16/2015	03/22/15 23:16	
2,4-Dichlorophenol	ND	1600	1	B5C0386	03/16/2015	03/22/15 23:16	
2,4-Dimethylphenol	ND	330	1	B5C0386	03/16/2015	03/22/15 23:16	
2,4-Dinitrophenol	ND	1600	1	B5C0386	03/16/2015	03/22/15 23:16	
2,4-Dinitrotoluene	ND	330	1	B5C0386	03/16/2015	03/22/15 23:16	
2,6-Dinitrotoluene	ND	330	1	B5C0386	03/16/2015	03/22/15 23:16	
2-Chloronaphthalene	ND	330	1	B5C0386	03/16/2015	03/22/15 23:16	
2-Chlorophenol	ND	330	1	B5C0386	03/16/2015	03/22/15 23:16	
2-Methylnaphthalene	ND	330	1	B5C0386	03/16/2015	03/22/15 23:16	
2-Methylphenol	ND	330	1	B5C0386	03/16/2015	03/22/15 23:16	
2-Nitroaniline	ND	1600	1	B5C0386	03/16/2015	03/22/15 23:16	
2-Nitrophenol	ND	330	1	B5C0386	03/16/2015	03/22/15 23:16	
3,3´-Dichlorobenzidine	ND	660	1	B5C0386	03/16/2015	03/22/15 23:16	
3-Nitroaniline	ND	1600	1	B5C0386	03/16/2015	03/22/15 23:16	
4,6-Dinitro-2-methyphenol	ND	1600	1	B5C0386	03/16/2015	03/22/15 23:16	
4-Bromophenyl-phenylether	ND	330	1	B5C0386	03/16/2015	03/22/15 23:16	
4-Chloro-3-methylphenol	ND	660	1	B5C0386	03/16/2015	03/22/15 23:16	
4-Chloroaniline	ND	660	1	B5C0386	03/16/2015	03/22/15 23:16	
4-Chlorophenyl-phenylether	ND	330	1	B5C0386	03/16/2015	03/22/15 23:16	
4-Methylphenol	ND	330	1	B5C0386	03/16/2015	03/22/15 23:16	

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Lab ID: 1500919-05

Semivolatile Organic Compounds by EPA 8270C **Analyst: BD**

Analyte	Result (ug/kg)	PQL (ug/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
4-Nitroaniline	ND	1600	1	B5C0386	03/16/2015	03/22/15 23:16	
4-Nitrophenol	ND	330	1	B5C0386	03/16/2015	03/22/15 23:16	
Acenaphthene	ND	330	1	B5C0386	03/16/2015	03/22/15 23:16	
Acenaphthylene	ND	330	1	B5C0386	03/16/2015	03/22/15 23:16	
Anthracene	ND	330	1	B5C0386	03/16/2015	03/22/15 23:16	
Benzidine (M)	ND	1600	1	B5C0386	03/16/2015	03/22/15 23:16	
Benzo(a)anthracene	ND	330	1	B5C0386	03/16/2015	03/22/15 23:16	
Benzo(a)pyrene	ND	330	1	B5C0386	03/16/2015	03/22/15 23:16	
Benzo(b)fluoranthene	ND	330	1	B5C0386	03/16/2015	03/22/15 23:16	
Benzo(g,h,i)perylene	ND	330	1	B5C0386	03/16/2015	03/22/15 23:16	
Benzo(k)fluoranthene	ND	330	1	B5C0386	03/16/2015	03/22/15 23:16	
Benzoic acid	ND	1600	1	B5C0386	03/16/2015	03/22/15 23:16	
Benzyl alcohol	ND	660	1	B5C0386	03/16/2015	03/22/15 23:16	
bis(2-chloroethoxy)methane	ND	330	1	B5C0386	03/16/2015	03/22/15 23:16	
bis(2-Chloroethyl)ether	ND	330	1	B5C0386	03/16/2015	03/22/15 23:16	
bis(2-chloroisopropyl)ether	ND	330	1	B5C0386	03/16/2015	03/22/15 23:16	
bis(2-ethylhexyl)phthalate	ND	330	1	B5C0386	03/16/2015	03/22/15 23:16	
Butylbenzylphthalate	ND	330	1	B5C0386	03/16/2015	03/22/15 23:16	
Chrysene	ND	330	1	B5C0386	03/16/2015	03/22/15 23:16	
Di-n-butylphthalate	ND	330	1	B5C0386	03/16/2015	03/22/15 23:16	
Di-n-octylphthalate	ND	330	1	B5C0386	03/16/2015	03/22/15 23:16	
Dibenz(a,h)anthracene	ND	330	1	B5C0386	03/16/2015	03/22/15 23:16	
Dibenzofuran	ND	330	1	B5C0386	03/16/2015	03/22/15 23:16	
Diethyl phthalate	ND	330	1	B5C0386	03/16/2015	03/22/15 23:16	
Dimethyl phthalate	ND	330	1	B5C0386	03/16/2015	03/22/15 23:16	
Fluoranthene	ND	330	1	B5C0386	03/16/2015	03/22/15 23:16	
Fluorene	ND	330	1	B5C0386	03/16/2015	03/22/15 23:16	
Hexachlorobenzene	ND	330	1	B5C0386	03/16/2015	03/22/15 23:16	
Hexachlorobutadiene	ND	660	1	B5C0386	03/16/2015	03/22/15 23:16	
Hexachlorocyclopentadiene	ND	660	1	B5C0386	03/16/2015	03/22/15 23:16	
Hexachloroethane	ND	330	1	B5C0386	03/16/2015	03/22/15 23:16	
Indeno(1,2,3-cd)pyrene	ND	330	1	B5C0386	03/16/2015	03/22/15 23:16	
Isophorone	ND	330	1	B5C0386	03/16/2015	03/22/15 23:16	
N-Nitroso-di-n propylamine	ND	330	1	B5C0386	03/16/2015	03/22/15 23:16	
N-Nitrosodiphenylamine	ND	330	1	B5C0386	03/16/2015	03/22/15 23:16	
Naphthalene	ND	330	1	B5C0386	03/16/2015	03/22/15 23:16	
Nitrobenzene	ND	330	1	B5C0386	03/16/2015	03/22/15 23:16	

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Lab ID: 1500919-05

Semivolatile Organic Compounds by EPA 8270C **Analyst: BD**

Analyte		Result (ug/kg)	PQL (ug/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Pentachlorophenol		ND	1600	1	B5C0386	03/16/2015	03/22/15 23:16	
Phenanthrene		ND	330	1	B5C0386	03/16/2015	03/22/15 23:16	
Phenol		ND	330	1	B5C0386	03/16/2015	03/22/15 23:16	
Pyrene		ND	330	1	B5C0386	03/16/2015	03/22/15 23:16	
Pyridine		ND	1600	1	B5C0386	03/16/2015	03/22/15 23:16	
Surrogate: 1,2-Dichlorobenzene-d4	*56.0 %*		*24 - 114*		B5C0386	03/16/2015	*03/22/15 23:16*	
Surrogate: 2,4,6-Tribromophenol	*73.3 %*		*0 - 189*		B5C0386	03/16/2015	*03/22/15 23:16*	
Surrogate: 2-Chlorophenol-d4	*67.2 %*		*23 - 123*		B5C0386	03/16/2015	*03/22/15 23:16*	
Surrogate: 2-Fluorobiphenyl	*63.2 %*		*28 - 128*		B5C0386	03/16/2015	*03/22/15 23:16*	
Surrogate: 2-Fluorophenol	*63.6 %*		*8 - 138*		B5C0386	03/16/2015	*03/22/15 23:16*	
Surrogate: 4-Terphenyl-d14	*70.4 %*		*27 - 154*		B5C0386	03/16/2015	*03/22/15 23:16*	
Surrogate: Nitrobenzene-d5	*58.0 %*		*19 - 129*		B5C0386	03/16/2015	*03/22/15 23:16*	
Surrogate: Phenol-d5	*66.4 %*		*20 - 126*		B5C0386	03/16/2015	*03/22/15 23:16*	

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Lab ID: 1500919-06

Total Petroleum Hydrocarbons, HEM/SGT EPA 1664 (Modified) — **Analyst: la**

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Total Petroleum Hydrocarbons	**120**	50	1	B5C0509	03/19/2015	03/19/15 18:45	

Title 22 Metals by ICP-AES EPA 6010B — **Analyst: RR**

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Antimony	ND	2.0	1	B5C0447	03/18/2015	03/19/15 09:52	
Arsenic	**15**	1.0	1	B5C0447	03/18/2015	03/19/15 09:52	
Barium	**30**	1.0	1	B5C0447	03/18/2015	03/19/15 09:52	
Beryllium	ND	1.0	1	B5C0447	03/18/2015	03/19/15 09:52	
Cadmium	ND	1.0	1	B5C0447	03/18/2015	03/19/15 09:52	
Chromium	**15**	1.0	1	B5C0447	03/18/2015	03/19/15 09:52	
Cobalt	**1.6**	1.0	1	B5C0447	03/18/2015	03/19/15 09:52	
Copper	**7.9**	2.0	1	B5C0447	03/18/2015	03/19/15 09:52	
Lead	**1.1**	1.0	1	B5C0447	03/18/2015	03/19/15 09:52	
Molybdenum	**34**	1.0	1	B5C0447	03/18/2015	03/19/15 09:52	
Nickel	**5.3**	1.0	1	B5C0447	03/18/2015	03/19/15 09:52	
Selenium	ND	1.0	1	B5C0447	03/18/2015	03/19/15 09:52	
Silver	ND	1.0	1	B5C0447	03/18/2015	03/19/15 09:52	
Thallium	ND	1.0	1	B5C0447	03/18/2015	03/19/15 09:52	
Vanadium	**12**	1.0	1	B5C0447	03/18/2015	03/19/15 09:52	
Zinc	**14**	1.0	1	B5C0447	03/18/2015	03/19/15 09:52	

Mercury by AA (Cold Vapor) EPA 7471A — **Analyst: SB**

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Mercury	ND	0.10	1	B5C0451	03/18/2015	03/18/15 16:57	

Gasoline Range Organics by EPA 8015B (Modified) — **Analyst: BT/**

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Gasoline Range Organics	ND	1.0	1	B5C0325	03/12/2015	03/13/15 14:21	
Surrogate: 4-Bromofluorobenzene	*102 %*	*37 - 153*		B5C0325	03/12/2015	*03/13/15 14:21*	

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Diesel Range Organics by EPA 8015B

Analyst: CR

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
DRO	ND	10	1	B5C0436	03/17/2015	03/18/15 22:32	
ORO	ND	10	1	B5C0436	03/17/2015	03/18/15 22:32	
Surrogate: p-Terphenyl	*97.3 %*	*49 - 142*		B5C0436	03/17/2015	*03/18/15 22:32*	

Volatile Organic Compounds by EPA 8260B

Analyst: AG

Analyte	Result (ug/kg)	PQL (ug/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
1,1,1,2-Tetrachloroethane	ND	5.0	1	B5C0440	03/17/2015	03/17/15 20:47	
1,1,1-Trichloroethane	ND	5.0	1	B5C0440	03/17/2015	03/17/15 20:47	
1,1,2,2-Tetrachloroethane	ND	5.0	1	B5C0440	03/17/2015	03/17/15 20:47	
1,1,2-Trichloroethane	ND	5.0	1	B5C0440	03/17/2015	03/17/15 20:47	
1,1-Dichloroethane	ND	5.0	1	B5C0440	03/17/2015	03/17/15 20:47	
1,1-Dichloroethene	ND	5.0	1	B5C0440	03/17/2015	03/17/15 20:47	
1,1-Dichloropropene	ND	5.0	1	B5C0440	03/17/2015	03/17/15 20:47	
1,2,3-Trichloropropane	ND	5.0	1	B5C0440	03/17/2015	03/17/15 20:47	
1,2,3-Trichlorobenzene	ND	5.0	1	B5C0440	03/17/2015	03/17/15 20:47	
1,2,4-Trichlorobenzene	ND	5.0	1	B5C0440	03/17/2015	03/17/15 20:47	
1,2,4-Trimethylbenzene	ND	5.0	1	B5C0440	03/17/2015	03/17/15 20:47	
1,2-Dibromo-3-chloropropane	ND	10	1	B5C0440	03/17/2015	03/17/15 20:47	
1,2-Dibromoethane	ND	5.0	1	B5C0440	03/17/2015	03/17/15 20:47	
1,2-Dichlorobenzene	ND	5.0	1	B5C0440	03/17/2015	03/17/15 20:47	
1,2-Dichloroethane	ND	5.0	1	B5C0440	03/17/2015	03/17/15 20:47	
1,2-Dichloropropane	ND	5.0	1	B5C0440	03/17/2015	03/17/15 20:47	
1,3,5-Trimethylbenzene	ND	5.0	1	B5C0440	03/17/2015	03/17/15 20:47	
1,3-Dichlorobenzene	ND	5.0	1	B5C0440	03/17/2015	03/17/15 20:47	
1,3-Dichloropropane	ND	5.0	1	B5C0440	03/17/2015	03/17/15 20:47	
1,4-Dichlorobenzene	ND	5.0	1	B5C0440	03/17/2015	03/17/15 20:47	
2,2-Dichloropropane	ND	5.0	1	B5C0440	03/17/2015	03/17/15 20:47	
2-Chlorotoluene	ND	5.0	1	B5C0440	03/17/2015	03/17/15 20:47	
4-Chlorotoluene	ND	5.0	1	B5C0440	03/17/2015	03/17/15 20:47	
4-Isopropyltoluene	ND	5.0	1	B5C0440	03/17/2015	03/17/15 20:47	
Benzene	ND	5.0	1	B5C0440	03/17/2015	03/17/15 20:47	
Bromobenzene	ND	5.0	1	B5C0440	03/17/2015	03/17/15 20:47	
Bromochloromethane	ND	5.0	1	B5C0440	03/17/2015	03/17/15 20:47	
Bromodichloromethane	ND	5.0	1	B5C0440	03/17/2015	03/17/15 20:47	
Bromoform	ND	5.0	1	B5C0440	03/17/2015	03/17/15 20:47	

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Volatile Organic Compounds by EPA 8260B **Analyst: AG**

Analyte	Result (ug/kg)	PQL (ug/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Bromomethane	ND	5.0	1	B5C0440	03/17/2015	03/17/15 20:47	
Carbon disulfide	ND	5.0	1	B5C0440	03/17/2015	03/17/15 20:47	
Carbon tetrachloride	ND	5.0	1	B5C0440	03/17/2015	03/17/15 20:47	
Chlorobenzene	ND	5.0	1	B5C0440	03/17/2015	03/17/15 20:47	
Chloroethane	ND	5.0	1	B5C0440	03/17/2015	03/17/15 20:47	
Chloroform	ND	5.0	1	B5C0440	03/17/2015	03/17/15 20:47	
Chloromethane	ND	5.0	1	B5C0440	03/17/2015	03/17/15 20:47	
cis-1,2-Dichloroethene	ND	5.0	1	B5C0440	03/17/2015	03/17/15 20:47	
cis-1,3-Dichloropropene	ND	5.0	1	B5C0440	03/17/2015	03/17/15 20:47	
Di-isopropyl ether	ND	5.0	1	B5C0440	03/17/2015	03/17/15 20:47	
Dibromochloromethane	ND	5.0	1	B5C0440	03/17/2015	03/17/15 20:47	
Dibromomethane	ND	5.0	1	B5C0440	03/17/2015	03/17/15 20:47	
Dichlorodifluoromethane	ND	5.0	1	B5C0440	03/17/2015	03/17/15 20:47	
Ethyl Acetate	ND	50	1	B5C0440	03/17/2015	03/17/15 20:47	
Ethyl Ether	ND	50	1	B5C0440	03/17/2015	03/17/15 20:47	
Ethyl tert-butyl ether	ND	5.0	1	B5C0440	03/17/2015	03/17/15 20:47	
Ethylbenzene	ND	5.0	1	B5C0440	03/17/2015	03/17/15 20:47	
Freon-113	ND	5.0	1	B5C0440	03/17/2015	03/17/15 20:47	
Hexachlorobutadiene	ND	5.0	1	B5C0440	03/17/2015	03/17/15 20:47	
Isopropylbenzene	ND	5.0	1	B5C0440	03/17/2015	03/17/15 20:47	
m,p-Xylene	ND	10	1	B5C0440	03/17/2015	03/17/15 20:47	
Methylene chloride	ND	5.0	1	B5C0440	03/17/2015	03/17/15 20:47	
MTBE	ND	5.0	1	B5C0440	03/17/2015	03/17/15 20:47	
n-Butylbenzene	ND	5.0	1	B5C0440	03/17/2015	03/17/15 20:47	
n-Propylbenzene	ND	5.0	1	B5C0440	03/17/2015	03/17/15 20:47	
Naphthalene	ND	5.0	1	B5C0440	03/17/2015	03/17/15 20:47	
o-Xylene	ND	5.0	1	B5C0440	03/17/2015	03/17/15 20:47	
sec-Butylbenzene	ND	5.0	1	B5C0440	03/17/2015	03/17/15 20:47	
Styrene	ND	5.0	1	B5C0440	03/17/2015	03/17/15 20:47	
tert-Amyl methyl ether	ND	5.0	1	B5C0440	03/17/2015	03/17/15 20:47	
tert-Butanol	ND	100	1	B5C0440	03/17/2015	03/17/15 20:47	
tert-Butylbenzene	ND	5.0	1	B5C0440	03/17/2015	03/17/15 20:47	
Tetrachloroethene	ND	5.0	1	B5C0440	03/17/2015	03/17/15 20:47	
Toluene	ND	5.0	1	B5C0440	03/17/2015	03/17/15 20:47	
trans-1,2-Dichloroethene	ND	5.0	1	B5C0440	03/17/2015	03/17/15 20:47	
trans-1,3-Dichloropropene	ND	5.0	1	B5C0440	03/17/2015	03/17/15 20:47	
Trichloroethene	ND	5.0	1	B5C0440	03/17/2015	03/17/15 20:47	

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Client Sample ID E132B-75

Lab ID: 1500919-06

Volatile Organic Compounds by EPA 8260B

Analyst: AG

Analyte	Result (ug/kg)	PQL (ug/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Trichlorofluoromethane	ND	5.0	1	B5C0440	03/17/2015	03/17/15 20:47	
Vinyl acetate	ND	50	1	B5C0440	03/17/2015	03/17/15 20:47	
Vinyl chloride	ND	5.0	1	B5C0440	03/17/2015	03/17/15 20:47	
Surrogate: 1,2-Dichloroethane-d4	*109 %*	*20 - 189*		B5C0440	03/17/2015	*03/17/15 20:47*	
Surrogate: 4-Bromofluorobenzene	*85.5 %*	*20 - 173*		B5C0440	03/17/2015	*03/17/15 20:47*	
Surrogate: Dibromofluoromethane	*111 %*	*26 - 178*		B5C0440	03/17/2015	*03/17/15 20:47*	
Surrogate: Toluene-d8	*97.2 %*	*31 - 166*		B5C0440	03/17/2015	*03/17/15 20:47*	

Semivolatile Organic Compounds by EPA 8270C

Analyst: BD

Analyte	Result (ug/kg)	PQL (ug/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
1,2,4-Trichlorobenzene	ND	330	1	B5C0386	03/16/2015	03/22/15 23:43	
1,2-Dichlorobenzene	ND	330	1	B5C0386	03/16/2015	03/22/15 23:43	
1,3-Dichlorobenzene	ND	330	1	B5C0386	03/16/2015	03/22/15 23:43	
1,4-Dichlorobenzene	ND	330	1	B5C0386	03/16/2015	03/22/15 23:43	
2,4,5-Trichlorophenol	ND	330	1	B5C0386	03/16/2015	03/22/15 23:43	
2,4,6-Trichlorophenol	ND	330	1	B5C0386	03/16/2015	03/22/15 23:43	
2,4-Dichlorophenol	ND	1600	1	B5C0386	03/16/2015	03/22/15 23:43	
2,4-Dimethylphenol	ND	330	1	B5C0386	03/16/2015	03/22/15 23:43	
2,4-Dinitrophenol	ND	1600	1	B5C0386	03/16/2015	03/22/15 23:43	
2,4-Dinitrotoluene	ND	330	1	B5C0386	03/16/2015	03/22/15 23:43	
2,6-Dinitrotoluene	ND	330	1	B5C0386	03/16/2015	03/22/15 23:43	
2-Chloronaphthalene	ND	330	1	B5C0386	03/16/2015	03/22/15 23:43	
2-Chlorophenol	ND	330	1	B5C0386	03/16/2015	03/22/15 23:43	
2-Methylnaphthalene	ND	330	1	B5C0386	03/16/2015	03/22/15 23:43	
2-Methylphenol	ND	330	1	B5C0386	03/16/2015	03/22/15 23:43	
2-Nitroaniline	ND	1600	1	B5C0386	03/16/2015	03/22/15 23:43	
2-Nitrophenol	ND	330	1	B5C0386	03/16/2015	03/22/15 23:43	
3,3´-Dichlorobenzidine	ND	660	1	B5C0386	03/16/2015	03/22/15 23:43	
3-Nitroaniline	ND	1600	1	B5C0386	03/16/2015	03/22/15 23:43	
4,6-Dinitro-2-methyphenol	ND	1600	1	B5C0386	03/16/2015	03/22/15 23:43	
4-Bromophenyl-phenylether	ND	330	1	B5C0386	03/16/2015	03/22/15 23:43	
4-Chloro-3-methylphenol	ND	660	1	B5C0386	03/16/2015	03/22/15 23:43	
4-Chloroaniline	ND	660	1	B5C0386	03/16/2015	03/22/15 23:43	
4-Chlorophenyl-phenylether	ND	330	1	B5C0386	03/16/2015	03/22/15 23:43	
4-Methylphenol	ND	330	1	B5C0386	03/16/2015	03/22/15 23:43	

Certificate of Analysis

Amec Foster Wheeler	Project Number : MTA WES, 4953-11-1423
6001 Rickenbacker Road	Report To : Ron Lopez
Los Angeles , CA 90040	Reported : 03/23/2015

Client Sample ID E132B-75

Lab ID: 1500919-06

Semivolatile Organic Compounds by EPA 8270C **Analyst: BD**

Analyte	Result (ug/kg)	PQL (ug/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
4-Nitroaniline	ND	1600	1	B5C0386	03/16/2015	03/22/15 23:43	
4-Nitrophenol	ND	330	1	B5C0386	03/16/2015	03/22/15 23:43	
Acenaphthene	ND	330	1	B5C0386	03/16/2015	03/22/15 23:43	
Acenaphthylene	ND	330	1	B5C0386	03/16/2015	03/22/15 23:43	
Anthracene	ND	330	1	B5C0386	03/16/2015	03/22/15 23:43	
Benzidine (M)	ND	1600	1	B5C0386	03/16/2015	03/22/15 23:43	
Benzo(a)anthracene	ND	330	1	B5C0386	03/16/2015	03/22/15 23:43	
Benzo(a)pyrene	ND	330	1	B5C0386	03/16/2015	03/22/15 23:43	
Benzo(b)fluoranthene	ND	330	1	B5C0386	03/16/2015	03/22/15 23:43	
Benzo(g,h,i)perylene	ND	330	1	B5C0386	03/16/2015	03/22/15 23:43	
Benzo(k)fluoranthene	ND	330	1	B5C0386	03/16/2015	03/22/15 23:43	
Benzoic acid	ND	1600	1	B5C0386	03/16/2015	03/22/15 23:43	
Benzyl alcohol	ND	660	1	B5C0386	03/16/2015	03/22/15 23:43	
bis(2-chloroethoxy)methane	ND	330	1	B5C0386	03/16/2015	03/22/15 23:43	
bis(2-Chloroethyl)ether	ND	330	1	B5C0386	03/16/2015	03/22/15 23:43	
bis(2-chloroisopropyl)ether	ND	330	1	B5C0386	03/16/2015	03/22/15 23:43	
bis(2-ethylhexyl)phthalate	ND	330	1	B5C0386	03/16/2015	03/22/15 23:43	
Butylbenzylphthalate	ND	330	1	B5C0386	03/16/2015	03/22/15 23:43	
Chrysene	ND	330	1	B5C0386	03/16/2015	03/22/15 23:43	
Di-n-butylphthalate	ND	330	1	B5C0386	03/16/2015	03/22/15 23:43	
Di-n-octylphthalate	ND	330	1	B5C0386	03/16/2015	03/22/15 23:43	
Dibenz(a,h)anthracene	ND	330	1	B5C0386	03/16/2015	03/22/15 23:43	
Dibenzofuran	ND	330	1	B5C0386	03/16/2015	03/22/15 23:43	
Diethyl phthalate	ND	330	1	B5C0386	03/16/2015	03/22/15 23:43	
Dimethyl phthalate	ND	330	1	B5C0386	03/16/2015	03/22/15 23:43	
Fluoranthene	ND	330	1	B5C0386	03/16/2015	03/22/15 23:43	
Fluorene	ND	330	1	B5C0386	03/16/2015	03/22/15 23:43	
Hexachlorobenzene	ND	330	1	B5C0386	03/16/2015	03/22/15 23:43	
Hexachlorobutadiene	ND	660	1	B5C0386	03/16/2015	03/22/15 23:43	
Hexachlorocyclopentadiene	ND	660	1	B5C0386	03/16/2015	03/22/15 23:43	
Hexachloroethane	ND	330	1	B5C0386	03/16/2015	03/22/15 23:43	
Indeno(1,2,3-cd)pyrene	ND	330	1	B5C0386	03/16/2015	03/22/15 23:43	
Isophorone	ND	330	1	B5C0386	03/16/2015	03/22/15 23:43	
N-Nitroso-di-n propylamine	ND	330	1	B5C0386	03/16/2015	03/22/15 23:43	
N-Nitrosodiphenylamine	ND	330	1	B5C0386	03/16/2015	03/22/15 23:43	
Naphthalene	ND	330	1	B5C0386	03/16/2015	03/22/15 23:43	
Nitrobenzene	ND	330	1	B5C0386	03/16/2015	03/22/15 23:43	

Certificate of Analysis

Amec Foster Wheeler	Project Number : MTA WES, 4953-11-1423
6001 Rickenbacker Road	Report To : Ron Lopez
Los Angeles , CA 90040	Reported : 03/23/2015

Client Sample ID E132B-75

Lab ID: 1500919-06

Semivolatile Organic Compounds by EPA 8270C **Analyst: BD**

Analyte	Result (ug/kg)	PQL (ug/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Pentachlorophenol	ND	1600	1	B5C0386	03/16/2015	03/22/15 23:43	
Phenanthrene	ND	330	1	B5C0386	03/16/2015	03/22/15 23:43	
Phenol	ND	330	1	B5C0386	03/16/2015	03/22/15 23:43	
Pyrene	ND	330	1	B5C0386	03/16/2015	03/22/15 23:43	
Pyridine	ND	1600	1	B5C0386	03/16/2015	03/22/15 23:43	
Surrogate: 1,2-Dichlorobenzene-d4	*58.1 %*	*24 - 114*		B5C0386	03/16/2015	*03/22/15 23:43*	
Surrogate: 2,4,6-Tribromophenol	*80.3 %*	*0 - 189*		B5C0386	03/16/2015	*03/22/15 23:43*	
Surrogate: 2-Chlorophenol-d4	*71.1 %*	*23 - 123*		B5C0386	03/16/2015	*03/22/15 23:43*	
Surrogate: 2-Fluorobiphenyl	*67.7 %*	*28 - 128*		B5C0386	03/16/2015	*03/22/15 23:43*	
Surrogate: 2-Fluorophenol	*69.0 %*	*8 - 138*		B5C0386	03/16/2015	*03/22/15 23:43*	
Surrogate: 4-Terphenyl-d14	*71.3 %*	*27 - 154*		B5C0386	03/16/2015	*03/22/15 23:43*	
Surrogate: Nitrobenzene-d5	*61.5 %*	*19 - 129*		B5C0386	03/16/2015	*03/22/15 23:43*	
Surrogate: Phenol-d5	*71.3 %*	*20 - 126*		B5C0386	03/16/2015	*03/22/15 23:43*	

Certificate of Analysis

Amec Foster Wheeler	Project Number : MTA WES, 4953-11-1423
6001 Rickenbacker Road	Report To : Ron Lopez
Los Angeles , CA 90040	Reported : 03/23/2015

Client Sample ID E132B-85

Lab ID: 1500919-07

Total Petroleum Hydrocarbons, HEM/SGT EPA 1664 (Modified) — **Analyst: la**

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Total Petroleum Hydrocarbons	ND	50	1	B5C0509	03/19/2015	03/19/15 18:45	

Title 22 Metals by ICP-AES EPA 6010B — **Analyst: RR**

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Antimony	ND	2.0	1	B5C0447	03/18/2015	03/19/15 09:54	
Arsenic	**52**	1.0	1	B5C0447	03/18/2015	03/19/15 09:54	
Barium	**19**	1.0	1	B5C0447	03/18/2015	03/19/15 09:54	
Beryllium	ND	1.0	1	B5C0447	03/18/2015	03/19/15 09:54	
Cadmium	**1.7**	1.0	1	B5C0447	03/18/2015	03/19/15 09:54	
Chromium	**22**	1.0	1	B5C0447	03/18/2015	03/19/15 09:54	
Cobalt	**2.8**	1.0	1	B5C0447	03/18/2015	03/19/15 09:54	
Copper	**6.5**	2.0	1	B5C0447	03/18/2015	03/19/15 09:54	
Lead	**1.1**	1.0	1	B5C0447	03/18/2015	03/19/15 09:54	
Molybdenum	**140**	1.0	1	B5C0447	03/18/2015	03/19/15 09:54	
Nickel	**9.9**	1.0	1	B5C0447	03/18/2015	03/19/15 09:54	
Selenium	ND	1.0	1	B5C0447	03/18/2015	03/19/15 09:54	
Silver	ND	1.0	1	B5C0447	03/18/2015	03/19/15 09:54	
Thallium	**1.6**	1.0	1	B5C0447	03/18/2015	03/19/15 09:54	
Vanadium	**20**	1.0	1	B5C0447	03/18/2015	03/19/15 09:54	
Zinc	**26**	1.0	1	B5C0447	03/18/2015	03/19/15 09:54	

Mercury by AA (Cold Vapor) EPA 7471A — **Analyst: SB**

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Mercury	ND	0.10	1	B5C0451	03/18/2015	03/18/15 16:59	

Gasoline Range Organics by EPA 8015B (Modified) — **Analyst: BT/**

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Gasoline Range Organics	ND	1.0	1	B5C0325	03/12/2015	03/13/15 14:37	
Surrogate: 4-Bromofluorobenzene	*98.7 %*	*37 - 153*		B5C0325	03/12/2015	*03/13/15 14:37*	

Certificate of Analysis

Amec Foster Wheeler	Project Number : MTA WES, 4953-11-1423
6001 Rickenbacker Road	Report To : Ron Lopez
Los Angeles , CA 90040	Reported : 03/23/2015

Client Sample ID E132B-85

Lab ID: 1500919-07

Diesel Range Organics by EPA 8015B

Analyst: CR

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
DRO	ND	10	1	B5C0436	03/17/2015	03/18/15 21:52	
ORO	ND	10	1	B5C0436	03/17/2015	03/18/15 21:52	
Surrogate: p-Terphenyl	*97.1 %*	*49 - 142*		B5C0436	03/17/2015	*03/18/15 21:52*	

Volatile Organic Compounds by EPA 8260B

Analyst: AG

Analyte	Result (ug/kg)	PQL (ug/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
1,1,1,2-Tetrachloroethane	ND	5.0	1	B5C0440	03/17/2015	03/17/15 21:06	
1,1,1-Trichloroethane	ND	5.0	1	B5C0440	03/17/2015	03/17/15 21:06	
1,1,2,2-Tetrachloroethane	ND	5.0	1	B5C0440	03/17/2015	03/17/15 21:06	
1,1,2-Trichloroethane	ND	5.0	1	B5C0440	03/17/2015	03/17/15 21:06	
1,1-Dichloroethane	ND	5.0	1	B5C0440	03/17/2015	03/17/15 21:06	
1,1-Dichloroethene	ND	5.0	1	B5C0440	03/17/2015	03/17/15 21:06	
1,1-Dichloropropene	ND	5.0	1	B5C0440	03/17/2015	03/17/15 21:06	
1,2,3-Trichloropropane	ND	5.0	1	B5C0440	03/17/2015	03/17/15 21:06	
1,2,3-Trichlorobenzene	ND	5.0	1	B5C0440	03/17/2015	03/17/15 21:06	
1,2,4-Trichlorobenzene	ND	5.0	1	B5C0440	03/17/2015	03/17/15 21:06	
1,2,4-Trimethylbenzene	ND	5.0	1	B5C0440	03/17/2015	03/17/15 21:06	
1,2-Dibromo-3-chloropropane	ND	10	1	B5C0440	03/17/2015	03/17/15 21:06	
1,2-Dibromoethane	ND	5.0	1	B5C0440	03/17/2015	03/17/15 21:06	
1,2-Dichlorobenzene	ND	5.0	1	B5C0440	03/17/2015	03/17/15 21:06	
1,2-Dichloroethane	ND	5.0	1	B5C0440	03/17/2015	03/17/15 21:06	
1,2-Dichloropropane	ND	5.0	1	B5C0440	03/17/2015	03/17/15 21:06	
1,3,5-Trimethylbenzene	ND	5.0	1	B5C0440	03/17/2015	03/17/15 21:06	
1,3-Dichlorobenzene	ND	5.0	1	B5C0440	03/17/2015	03/17/15 21:06	
1,3-Dichloropropane	ND	5.0	1	B5C0440	03/17/2015	03/17/15 21:06	
1,4-Dichlorobenzene	ND	5.0	1	B5C0440	03/17/2015	03/17/15 21:06	
2,2-Dichloropropane	ND	5.0	1	B5C0440	03/17/2015	03/17/15 21:06	
2-Chlorotoluene	ND	5.0	1	B5C0440	03/17/2015	03/17/15 21:06	
4-Chlorotoluene	ND	5.0	1	B5C0440	03/17/2015	03/17/15 21:06	
4-Isopropyltoluene	ND	5.0	1	B5C0440	03/17/2015	03/17/15 21:06	
Benzene	ND	5.0	1	B5C0440	03/17/2015	03/17/15 21:06	
Bromobenzene	ND	5.0	1	B5C0440	03/17/2015	03/17/15 21:06	
Bromochloromethane	ND	5.0	1	B5C0440	03/17/2015	03/17/15 21:06	
Bromodichloromethane	ND	5.0	1	B5C0440	03/17/2015	03/17/15 21:06	
Bromoform	ND	5.0	1	B5C0440	03/17/2015	03/17/15 21:06	

Certificate of Analysis

Amec Foster Wheeler	Project Number : MTA WES, 4953-11-1423
6001 Rickenbacker Road	Report To : Ron Lopez
Los Angeles , CA 90040	Reported : 03/23/2015

Client Sample ID E132B-85

Lab ID: 1500919-07

Volatile Organic Compounds by EPA 8260B **Analyst: AG**

Analyte	Result (ug/kg)	PQL (ug/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Bromomethane	ND	5.0	1	B5C0440	03/17/2015	03/17/15 21:06	
Carbon disulfide	**33**	5.0	1	B5C0440	03/17/2015	03/17/15 21:06	
Carbon tetrachloride	ND	5.0	1	B5C0440	03/17/2015	03/17/15 21:06	
Chlorobenzene	ND	5.0	1	B5C0440	03/17/2015	03/17/15 21:06	
Chloroethane	ND	5.0	1	B5C0440	03/17/2015	03/17/15 21:06	
Chloroform	ND	5.0	1	B5C0440	03/17/2015	03/17/15 21:06	
Chloromethane	ND	5.0	1	B5C0440	03/17/2015	03/17/15 21:06	
cis-1,2-Dichloroethene	ND	5.0	1	B5C0440	03/17/2015	03/17/15 21:06	
cis-1,3-Dichloropropene	ND	5.0	1	B5C0440	03/17/2015	03/17/15 21:06	
Di-isopropyl ether	ND	5.0	1	B5C0440	03/17/2015	03/17/15 21:06	
Dibromochloromethane	ND	5.0	1	B5C0440	03/17/2015	03/17/15 21:06	
Dibromomethane	ND	5.0	1	B5C0440	03/17/2015	03/17/15 21:06	
Dichlorodifluoromethane	ND	5.0	1	B5C0440	03/17/2015	03/17/15 21:06	
Ethyl Acetate	ND	50	1	B5C0440	03/17/2015	03/17/15 21:06	
Ethyl Ether	ND	50	1	B5C0440	03/17/2015	03/17/15 21:06	
Ethyl tert-butyl ether	ND	5.0	1	B5C0440	03/17/2015	03/17/15 21:06	
Ethylbenzene	ND	5.0	1	B5C0440	03/17/2015	03/17/15 21:06	
Freon-113	ND	5.0	1	B5C0440	03/17/2015	03/17/15 21:06	
Hexachlorobutadiene	ND	5.0	1	B5C0440	03/17/2015	03/17/15 21:06	
Isopropylbenzene	ND	5.0	1	B5C0440	03/17/2015	03/17/15 21:06	
m,p-Xylene	ND	10	1	B5C0440	03/17/2015	03/17/15 21:06	
Methylene chloride	ND	5.0	1	B5C0440	03/17/2015	03/17/15 21:06	
MTBE	ND	5.0	1	B5C0440	03/17/2015	03/17/15 21:06	
n-Butylbenzene	ND	5.0	1	B5C0440	03/17/2015	03/17/15 21:06	
n-Propylbenzene	ND	5.0	1	B5C0440	03/17/2015	03/17/15 21:06	
Naphthalene	ND	5.0	1	B5C0440	03/17/2015	03/17/15 21:06	
o-Xylene	ND	5.0	1	B5C0440	03/17/2015	03/17/15 21:06	
sec-Butylbenzene	ND	5.0	1	B5C0440	03/17/2015	03/17/15 21:06	
Styrene	ND	5.0	1	B5C0440	03/17/2015	03/17/15 21:06	
tert-Amyl methyl ether	ND	5.0	1	B5C0440	03/17/2015	03/17/15 21:06	
tert-Butanol	ND	100	1	B5C0440	03/17/2015	03/17/15 21:06	
tert-Butylbenzene	ND	5.0	1	B5C0440	03/17/2015	03/17/15 21:06	
Tetrachloroethene	ND	5.0	1	B5C0440	03/17/2015	03/17/15 21:06	
Toluene	ND	5.0	1	B5C0440	03/17/2015	03/17/15 21:06	
trans-1,2-Dichloroethene	ND	5.0	1	B5C0440	03/17/2015	03/17/15 21:06	
trans-1,3-Dichloropropene	ND	5.0	1	B5C0440	03/17/2015	03/17/15 21:06	
Trichloroethene	ND	5.0	1	B5C0440	03/17/2015	03/17/15 21:06	

Certificate of Analysis

Amec Foster Wheeler	Project Number : MTA WES, 4953-11-1423
6001 Rickenbacker Road	Report To : Ron Lopez
Los Angeles , CA 90040	Reported : 03/23/2015

Client Sample ID E132B-85

Lab ID: 1500919-07

Volatile Organic Compounds by EPA 8260B

Analyst: AG

Analyte	Result (ug/kg)	PQL (ug/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Trichlorofluoromethane	ND	5.0	1	B5C0440	03/17/2015	03/17/15 21:06	
Vinyl acetate	ND	50	1	B5C0440	03/17/2015	03/17/15 21:06	
Vinyl chloride	ND	5.0	1	B5C0440	03/17/2015	03/17/15 21:06	
Surrogate: 1,2-Dichloroethane-d4	*107 %*	*20 - 189*		B5C0440	03/17/2015	*03/17/15 21:06*	
Surrogate: 4-Bromofluorobenzene	*89.4 %*	*20 - 173*		B5C0440	03/17/2015	*03/17/15 21:06*	
Surrogate: Dibromofluoromethane	*110 %*	*26 - 178*		B5C0440	03/17/2015	*03/17/15 21:06*	
Surrogate: Toluene-d8	*104 %*	*31 - 166*		B5C0440	03/17/2015	*03/17/15 21:06*	

Semivolatile Organic Compounds by EPA 8270C

Analyst: BD

Analyte	Result (ug/kg)	PQL (ug/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
1,2,4-Trichlorobenzene	ND	330	1	B5C0386	03/16/2015	03/23/15 00:10	
1,2-Dichlorobenzene	ND	330	1	B5C0386	03/16/2015	03/23/15 00:10	
1,3-Dichlorobenzene	ND	330	1	B5C0386	03/16/2015	03/23/15 00:10	
1,4-Dichlorobenzene	ND	330	1	B5C0386	03/16/2015	03/23/15 00:10	
2,4,5-Trichlorophenol	ND	330	1	B5C0386	03/16/2015	03/23/15 00:10	
2,4,6-Trichlorophenol	ND	330	1	B5C0386	03/16/2015	03/23/15 00:10	
2,4-Dichlorophenol	ND	1600	1	B5C0386	03/16/2015	03/23/15 00:10	
2,4-Dimethylphenol	ND	330	1	B5C0386	03/16/2015	03/23/15 00:10	
2,4-Dinitrophenol	ND	1600	1	B5C0386	03/16/2015	03/23/15 00:10	
2,4-Dinitrotoluene	ND	330	1	B5C0386	03/16/2015	03/23/15 00:10	
2,6-Dinitrotoluene	ND	330	1	B5C0386	03/16/2015	03/23/15 00:10	
2-Chloronaphthalene	ND	330	1	B5C0386	03/16/2015	03/23/15 00:10	
2-Chlorophenol	ND	330	1	B5C0386	03/16/2015	03/23/15 00:10	
2-Methylnaphthalene	ND	330	1	B5C0386	03/16/2015	03/23/15 00:10	
2-Methylphenol	ND	330	1	B5C0386	03/16/2015	03/23/15 00:10	
2-Nitroaniline	ND	1600	1	B5C0386	03/16/2015	03/23/15 00:10	
2-Nitrophenol	ND	330	1	B5C0386	03/16/2015	03/23/15 00:10	
3,3´-Dichlorobenzidine	ND	660	1	B5C0386	03/16/2015	03/23/15 00:10	
3-Nitroaniline	ND	1600	1	B5C0386	03/16/2015	03/23/15 00:10	
4,6-Dinitro-2-methyphenol	ND	1600	1	B5C0386	03/16/2015	03/23/15 00:10	
4-Bromophenyl-phenylether	ND	330	1	B5C0386	03/16/2015	03/23/15 00:10	
4-Chloro-3-methylphenol	ND	660	1	B5C0386	03/16/2015	03/23/15 00:10	
4-Chloroaniline	ND	660	1	B5C0386	03/16/2015	03/23/15 00:10	
4-Chlorophenyl-phenylether	ND	330	1	B5C0386	03/16/2015	03/23/15 00:10	
4-Methylphenol	ND	330	1	B5C0386	03/16/2015	03/23/15 00:10	

Figure C-2.74

Certificate of Analysis

Amec Foster Wheeler	Project Number : MTA WES, 4953-11-1423
6001 Rickenbacker Road	Report To : Ron Lopez
Los Angeles , CA 90040	Reported : 03/23/2015

Client Sample ID E132B-85

Lab ID: 1500919-07

Semivolatile Organic Compounds by EPA 8270C **Analyst: BD**

Analyte	Result (ug/kg)	PQL (ug/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
4-Nitroaniline	ND	1600	1	B5C0386	03/16/2015	03/23/15 00:10	
4-Nitrophenol	ND	330	1	B5C0386	03/16/2015	03/23/15 00:10	
Acenaphthene	ND	330	1	B5C0386	03/16/2015	03/23/15 00:10	
Acenaphthylene	ND	330	1	B5C0386	03/16/2015	03/23/15 00:10	
Anthracene	ND	330	1	B5C0386	03/16/2015	03/23/15 00:10	
Benzidine (M)	ND	1600	1	B5C0386	03/16/2015	03/23/15 00:10	
Benzo(a)anthracene	ND	330	1	B5C0386	03/16/2015	03/23/15 00:10	
Benzo(a)pyrene	ND	330	1	B5C0386	03/16/2015	03/23/15 00:10	
Benzo(b)fluoranthene	ND	330	1	B5C0386	03/16/2015	03/23/15 00:10	
Benzo(g,h,i)perylene	ND	330	1	B5C0386	03/16/2015	03/23/15 00:10	
Benzo(k)fluoranthene	ND	330	1	B5C0386	03/16/2015	03/23/15 00:10	
Benzoic acid	ND	1600	1	B5C0386	03/16/2015	03/23/15 00:10	
Benzyl alcohol	ND	660	1	B5C0386	03/16/2015	03/23/15 00:10	
bis(2-chloroethoxy)methane	ND	330	1	B5C0386	03/16/2015	03/23/15 00:10	
bis(2-Chloroethyl)ether	ND	330	1	B5C0386	03/16/2015	03/23/15 00:10	
bis(2-chloroisopropyl)ether	ND	330	1	B5C0386	03/16/2015	03/23/15 00:10	
bis(2-ethylhexyl)phthalate	ND	330	1	B5C0386	03/16/2015	03/23/15 00:10	
Butylbenzylphthalate	ND	330	1	B5C0386	03/16/2015	03/23/15 00:10	
Chrysene	ND	330	1	B5C0386	03/16/2015	03/23/15 00:10	
Di-n-butylphthalate	ND	330	1	B5C0386	03/16/2015	03/23/15 00:10	
Di-n-octylphthalate	ND	330	1	B5C0386	03/16/2015	03/23/15 00:10	
Dibenz(a,h)anthracene	ND	330	1	B5C0386	03/16/2015	03/23/15 00:10	
Dibenzofuran	ND	330	1	B5C0386	03/16/2015	03/23/15 00:10	
Diethyl phthalate	ND	330	1	B5C0386	03/16/2015	03/23/15 00:10	
Dimethyl phthalate	ND	330	1	B5C0386	03/16/2015	03/23/15 00:10	
Fluoranthene	ND	330	1	B5C0386	03/16/2015	03/23/15 00:10	
Fluorene	ND	330	1	B5C0386	03/16/2015	03/23/15 00:10	
Hexachlorobenzene	ND	330	1	B5C0386	03/16/2015	03/23/15 00:10	
Hexachlorobutadiene	ND	660	1	B5C0386	03/16/2015	03/23/15 00:10	
Hexachlorocyclopentadiene	ND	660	1	B5C0386	03/16/2015	03/23/15 00:10	
Hexachloroethane	ND	330	1	B5C0386	03/16/2015	03/23/15 00:10	
Indeno(1,2,3-cd)pyrene	ND	330	1	B5C0386	03/16/2015	03/23/15 00:10	
Isophorone	ND	330	1	B5C0386	03/16/2015	03/23/15 00:10	
N-Nitroso-di-n propylamine	ND	330	1	B5C0386	03/16/2015	03/23/15 00:10	
N-Nitrosodiphenylamine	ND	330	1	B5C0386	03/16/2015	03/23/15 00:10	
Naphthalene	ND	330	1	B5C0386	03/16/2015	03/23/15 00:10	
Nitrobenzene	ND	330	1	B5C0386	03/16/2015	03/23/15 00:10	

Certificate of Analysis

Amec Foster Wheeler	Project Number : MTA WES, 4953-11-1423
6001 Rickenbacker Road	Report To : Ron Lopez
Los Angeles , CA 90040	Reported : 03/23/2015

Client Sample ID E132B-85

Lab ID: 1500919-07

Semivolatile Organic Compounds by EPA 8270C **Analyst: BD**

Analyte	Result (ug/kg)	PQL (ug/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Pentachlorophenol	ND	1600	1	B5C0386	03/16/2015	03/23/15 00:10	
Phenanthrene	ND	330	1	B5C0386	03/16/2015	03/23/15 00:10	
Phenol	ND	330	1	B5C0386	03/16/2015	03/23/15 00:10	
Pyrene	ND	330	1	B5C0386	03/16/2015	03/23/15 00:10	
Pyridine	ND	1600	1	B5C0386	03/16/2015	03/23/15 00:10	
Surrogate: 1,2-Dichlorobenzene-d4	*61.4 %*	*24 - 114*		B5C0386	03/16/2015	*03/23/15 00:10*	
Surrogate: 2,4,6-Tribromophenol	*80.1 %*	*0 - 189*		B5C0386	03/16/2015	*03/23/15 00:10*	
Surrogate: 2-Chlorophenol-d4	*72.9 %*	*23 - 123*		B5C0386	03/16/2015	*03/23/15 00:10*	
Surrogate: 2-Fluorobiphenyl	*68.6 %*	*28 - 128*		B5C0386	03/16/2015	*03/23/15 00:10*	
Surrogate: 2-Fluorophenol	*68.8 %*	*8 - 138*		B5C0386	03/16/2015	*03/23/15 00:10*	
Surrogate: 4-Terphenyl-d14	*73.8 %*	*27 - 154*		B5C0386	03/16/2015	*03/23/15 00:10*	
Surrogate: Nitrobenzene-d5	*61.7 %*	*19 - 129*		B5C0386	03/16/2015	*03/23/15 00:10*	
Surrogate: Phenol-d5	*72.2 %*	*20 - 126*		B5C0386	03/16/2015	*03/23/15 00:10*	

Certificate of Analysis

Amec Foster Wheeler	Project Number : MTA WES, 4953-11-1423
6001 Rickenbacker Road	Report To : Ron Lopez
Los Angeles , CA 90040	Reported : 03/23/2015

Client Sample ID E132B-90

Lab ID: 1500919-08

Total Petroleum Hydrocarbons, HEM/SGT EPA 1664 (Modified) — **Analyst: la**

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Total Petroleum Hydrocarbons	ND	50	1	B5C0509	03/19/2015	03/19/15 18:45	

Title 22 Metals by ICP-AES EPA 6010B — **Analyst: RR**

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Antimony	ND	2.0	1	B5C0447	03/18/2015	03/19/15 09:56	
Arsenic	**20**	1.0	1	B5C0447	03/18/2015	03/19/15 09:56	
Barium	**26**	1.0	1	B5C0447	03/18/2015	03/19/15 09:56	
Beryllium	ND	1.0	1	B5C0447	03/18/2015	03/19/15 09:56	
Cadmium	ND	1.0	1	B5C0447	03/18/2015	03/19/15 09:56	
Chromium	**19**	1.0	1	B5C0447	03/18/2015	03/19/15 09:56	
Cobalt	**2.8**	1.0	1	B5C0447	03/18/2015	03/19/15 09:56	
Copper	**20**	2.0	1	B5C0447	03/18/2015	03/19/15 09:56	
Lead	**1.4**	1.0	1	B5C0447	03/18/2015	03/19/15 09:56	
Molybdenum	**200**	1.0	1	B5C0447	03/18/2015	03/19/15 09:56	
Nickel	**11**	1.0	1	B5C0447	03/18/2015	03/19/15 09:56	
Selenium	ND	1.0	1	B5C0447	03/18/2015	03/19/15 09:56	
Silver	ND	1.0	1	B5C0447	03/18/2015	03/19/15 09:56	
Thallium	**1.1**	1.0	1	B5C0447	03/18/2015	03/19/15 09:56	
Vanadium	**22**	1.0	1	B5C0447	03/18/2015	03/19/15 09:56	
Zinc	**28**	1.0	1	B5C0447	03/18/2015	03/19/15 09:56	

Mercury by AA (Cold Vapor) EPA 7471A — **Analyst: SB**

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Mercury	ND	0.10	1	B5C0451	03/18/2015	03/18/15 17:01	

Gasoline Range Organics by EPA 8015B (Modified) — **Analyst: BT/**

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Gasoline Range Organics	ND	1.0	1	B5C0325	03/12/2015	03/13/15 14:52	
Surrogate: 4-Bromofluorobenzene	*94.6 %*	*37 - 153*		B5C0325	03/12/2015	*03/13/15 14:52*	

Figure C-2.77

Certificate of Analysis

Amec Foster Wheeler	Project Number : MTA WES, 4953-11-1423
6001 Rickenbacker Road	Report To : Ron Lopez
Los Angeles , CA 90040	Reported : 03/23/2015

Client Sample ID E132B-90

Lab ID: 1500919-08

Diesel Range Organics by EPA 8015B — **Analyst: CR**

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
DRO	ND	10	1	B5C0436	03/17/2015	03/18/15 21:31	
ORO	ND	10	1	B5C0436	03/17/2015	03/18/15 21:31	
Surrogate: p-Terphenyl	*89.0 %*	*49 - 142*		B5C0436	03/17/2015	*03/18/15 21:31*	

Volatile Organic Compounds by EPA 8260B — **Analyst: AG**

Analyte	Result (ug/kg)	PQL (ug/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
1,1,1,2-Tetrachloroethane	ND	5.0	1	B5C0440	03/17/2015	03/17/15 19:33	
1,1,1-Trichloroethane	ND	5.0	1	B5C0440	03/17/2015	03/17/15 19:33	
1,1,2,2-Tetrachloroethane	ND	5.0	1	B5C0440	03/17/2015	03/17/15 19:33	
1,1,2-Trichloroethane	ND	5.0	1	B5C0440	03/17/2015	03/17/15 19:33	
1,1-Dichloroethane	ND	5.0	1	B5C0440	03/17/2015	03/17/15 19:33	
1,1-Dichloroethene	ND	5.0	1	B5C0440	03/17/2015	03/17/15 19:33	
1,1-Dichloropropene	ND	5.0	1	B5C0440	03/17/2015	03/17/15 19:33	
1,2,3-Trichloropropane	ND	5.0	1	B5C0440	03/17/2015	03/17/15 19:33	
1,2,3-Trichlorobenzene	ND	5.0	1	B5C0440	03/17/2015	03/17/15 19:33	
1,2,4-Trichlorobenzene	ND	5.0	1	B5C0440	03/17/2015	03/17/15 19:33	
1,2,4-Trimethylbenzene	ND	5.0	1	B5C0440	03/17/2015	03/17/15 19:33	
1,2-Dibromo-3-chloropropane	ND	10	1	B5C0440	03/17/2015	03/17/15 19:33	
1,2-Dibromoethane	ND	5.0	1	B5C0440	03/17/2015	03/17/15 19:33	
1,2-Dichlorobenzene	ND	5.0	1	B5C0440	03/17/2015	03/17/15 19:33	
1,2-Dichloroethane	ND	5.0	1	B5C0440	03/17/2015	03/17/15 19:33	
1,2-Dichloropropane	ND	5.0	1	B5C0440	03/17/2015	03/17/15 19:33	
1,3,5-Trimethylbenzene	ND	5.0	1	B5C0440	03/17/2015	03/17/15 19:33	
1,3-Dichlorobenzene	ND	5.0	1	B5C0440	03/17/2015	03/17/15 19:33	
1,3-Dichloropropane	ND	5.0	1	B5C0440	03/17/2015	03/17/15 19:33	
1,4-Dichlorobenzene	ND	5.0	1	B5C0440	03/17/2015	03/17/15 19:33	
2,2-Dichloropropane	ND	5.0	1	B5C0440	03/17/2015	03/17/15 19:33	
2-Chlorotoluene	ND	5.0	1	B5C0440	03/17/2015	03/17/15 19:33	
4-Chlorotoluene	ND	5.0	1	B5C0440	03/17/2015	03/17/15 19:33	
4-Isopropyltoluene	ND	5.0	1	B5C0440	03/17/2015	03/17/15 19:33	
Benzene	ND	5.0	1	B5C0440	03/17/2015	03/17/15 19:33	
Bromobenzene	ND	5.0	1	B5C0440	03/17/2015	03/17/15 19:33	
Bromochloromethane	ND	5.0	1	B5C0440	03/17/2015	03/17/15 19:33	
Bromodichloromethane	ND	5.0	1	B5C0440	03/17/2015	03/17/15 19:33	
Bromoform	ND	5.0	1	B5C0440	03/17/2015	03/17/15 19:33	

Figure C-2.78

Certificate of Analysis

Amec Foster Wheeler	Project Number : MTA WES, 4953-11-1423
6001 Rickenbacker Road	Report To : Ron Lopez
Los Angeles , CA 90040	Reported : 03/23/2015

Client Sample ID E132B-90

Lab ID: 1500919-08

Volatile Organic Compounds by EPA 8260B **Analyst: AG**

Analyte	Result (ug/kg)	PQL (ug/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Bromomethane	ND	5.0	1	B5C0440	03/17/2015	03/17/15 19:33	
Carbon disulfide	**43**	5.0	1	B5C0440	03/17/2015	03/17/15 19:33	
Carbon tetrachloride	ND	5.0	1	B5C0440	03/17/2015	03/17/15 19:33	
Chlorobenzene	ND	5.0	1	B5C0440	03/17/2015	03/17/15 19:33	
Chloroethane	ND	5.0	1	B5C0440	03/17/2015	03/17/15 19:33	
Chloroform	ND	5.0	1	B5C0440	03/17/2015	03/17/15 19:33	
Chloromethane	ND	5.0	1	B5C0440	03/17/2015	03/17/15 19:33	
cis-1,2-Dichloroethene	ND	5.0	1	B5C0440	03/17/2015	03/17/15 19:33	
cis-1,3-Dichloropropene	ND	5.0	1	B5C0440	03/17/2015	03/17/15 19:33	
Di-isopropyl ether	ND	5.0	1	B5C0440	03/17/2015	03/17/15 19:33	
Dibromochloromethane	ND	5.0	1	B5C0440	03/17/2015	03/17/15 19:33	
Dibromomethane	ND	5.0	1	B5C0440	03/17/2015	03/17/15 19:33	
Dichlorodifluoromethane	ND	5.0	1	B5C0440	03/17/2015	03/17/15 19:33	
Ethyl Acetate	ND	50	1	B5C0440	03/17/2015	03/17/15 19:33	
Ethyl Ether	ND	50	1	B5C0440	03/17/2015	03/17/15 19:33	
Ethyl tert-butyl ether	ND	5.0	1	B5C0440	03/17/2015	03/17/15 19:33	
Ethylbenzene	ND	5.0	1	B5C0440	03/17/2015	03/17/15 19:33	
Freon-113	ND	5.0	1	B5C0440	03/17/2015	03/17/15 19:33	
Hexachlorobutadiene	ND	5.0	1	B5C0440	03/17/2015	03/17/15 19:33	
Isopropylbenzene	ND	5.0	1	B5C0440	03/17/2015	03/17/15 19:33	
m,p-Xylene	ND	10	1	B5C0440	03/17/2015	03/17/15 19:33	
Methylene chloride	ND	5.0	1	B5C0440	03/17/2015	03/17/15 19:33	
MTBE	ND	5.0	1	B5C0440	03/17/2015	03/17/15 19:33	
n-Butylbenzene	ND	5.0	1	B5C0440	03/17/2015	03/17/15 19:33	
n-Propylbenzene	ND	5.0	1	B5C0440	03/17/2015	03/17/15 19:33	
Naphthalene	ND	5.0	1	B5C0440	03/17/2015	03/17/15 19:33	
o-Xylene	ND	5.0	1	B5C0440	03/17/2015	03/17/15 19:33	
sec-Butylbenzene	ND	5.0	1	B5C0440	03/17/2015	03/17/15 19:33	
Styrene	ND	5.0	1	B5C0440	03/17/2015	03/17/15 19:33	
tert-Amyl methyl ether	ND	5.0	1	B5C0440	03/17/2015	03/17/15 19:33	
tert-Butanol	ND	100	1	B5C0440	03/17/2015	03/17/15 19:33	
tert-Butylbenzene	ND	5.0	1	B5C0440	03/17/2015	03/17/15 19:33	
Tetrachloroethene	ND	5.0	1	B5C0440	03/17/2015	03/17/15 19:33	
Toluene	ND	5.0	1	B5C0440	03/17/2015	03/17/15 19:33	
trans-1,2-Dichloroethene	ND	5.0	1	B5C0440	03/17/2015	03/17/15 19:33	
trans-1,3-Dichloropropene	ND	5.0	1	B5C0440	03/17/2015	03/17/15 19:33	
Trichloroethene	ND	5.0	1	B5C0440	03/17/2015	03/17/15 19:33	

Certificate of Analysis

Amec Foster Wheeler	Project Number : MTA WES, 4953-11-1423
6001 Rickenbacker Road	Report To : Ron Lopez
Los Angeles , CA 90040	Reported : 03/23/2015

Client Sample ID E132B-90

Lab ID: 1500919-08

Volatile Organic Compounds by EPA 8260B — **Analyst: AG**

Analyte	Result (ug/kg)	PQL (ug/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Trichlorofluoromethane	ND	5.0	1	B5C0440	03/17/2015	03/17/15 19:33	
Vinyl acetate	ND	50	1	B5C0440	03/17/2015	03/17/15 19:33	
Vinyl chloride	ND	5.0	1	B5C0440	03/17/2015	03/17/15 19:33	
Surrogate: 1,2-Dichloroethane-d4	*105 %*	*20 - 189*		B5C0440	03/17/2015	*03/17/15 19:33*	
Surrogate: 4-Bromofluorobenzene	*91.4 %*	*20 - 173*		B5C0440	03/17/2015	*03/17/15 19:33*	
Surrogate: Dibromofluoromethane	*106 %*	*26 - 178*		B5C0440	03/17/2015	*03/17/15 19:33*	
Surrogate: Toluene-d8	*101 %*	*31 - 166*		B5C0440	03/17/2015	*03/17/15 19:33*	

Semivolatile Organic Compounds by EPA 8270C — **Analyst: BD**

Analyte	Result (ug/kg)	PQL (ug/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
1,2,4-Trichlorobenzene	ND	330	1	B5C0386	03/16/2015	03/23/15 00:37	
1,2-Dichlorobenzene	ND	330	1	B5C0386	03/16/2015	03/23/15 00:37	
1,3-Dichlorobenzene	ND	330	1	B5C0386	03/16/2015	03/23/15 00:37	
1,4-Dichlorobenzene	ND	330	1	B5C0386	03/16/2015	03/23/15 00:37	
2,4,5-Trichlorophenol	ND	330	1	B5C0386	03/16/2015	03/23/15 00:37	
2,4,6-Trichlorophenol	ND	330	1	B5C0386	03/16/2015	03/23/15 00:37	
2,4-Dichlorophenol	ND	1600	1	B5C0386	03/16/2015	03/23/15 00:37	
2,4-Dimethylphenol	ND	330	1	B5C0386	03/16/2015	03/23/15 00:37	
2,4-Dinitrophenol	ND	1600	1	B5C0386	03/16/2015	03/23/15 00:37	
2,4-Dinitrotoluene	ND	330	1	B5C0386	03/16/2015	03/23/15 00:37	
2,6-Dinitrotoluene	ND	330	1	B5C0386	03/16/2015	03/23/15 00:37	
2-Chloronaphthalene	ND	330	1	B5C0386	03/16/2015	03/23/15 00:37	
2-Chlorophenol	ND	330	1	B5C0386	03/16/2015	03/23/15 00:37	
2-Methylnaphthalene	ND	330	1	B5C0386	03/16/2015	03/23/15 00:37	
2-Methylphenol	ND	330	1	B5C0386	03/16/2015	03/23/15 00:37	
2-Nitroaniline	ND	1600	1	B5C0386	03/16/2015	03/23/15 00:37	
2-Nitrophenol	ND	330	1	B5C0386	03/16/2015	03/23/15 00:37	
3,3´-Dichlorobenzidine	ND	660	1	B5C0386	03/16/2015	03/23/15 00:37	
3-Nitroaniline	ND	1600	1	B5C0386	03/16/2015	03/23/15 00:37	
4,6-Dinitro-2-methyphenol	ND	1600	1	B5C0386	03/16/2015	03/23/15 00:37	
4-Bromophenyl-phenylether	ND	330	1	B5C0386	03/16/2015	03/23/15 00:37	
4-Chloro-3-methylphenol	ND	660	1	B5C0386	03/16/2015	03/23/15 00:37	
4-Chloroaniline	ND	660	1	B5C0386	03/16/2015	03/23/15 00:37	
4-Chlorophenyl-phenylether	ND	330	1	B5C0386	03/16/2015	03/23/15 00:37	
4-Methylphenol	ND	330	1	B5C0386	03/16/2015	03/23/15 00:37	

Certificate of Analysis

Amec Foster Wheeler		Project Number :	MTA WES, 4953-11-1423
6001 Rickenbacker Road		Report To :	Ron Lopez
Los Angeles , CA 90040		Reported :	03/23/2015

Client Sample ID E132B-90

Lab ID: 1500919-08

Semivolatile Organic Compounds by EPA 8270C **Analyst: BD**

Analyte	Result (ug/kg)	PQL (ug/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
4-Nitroaniline	ND	1600	1	B5C0386	03/16/2015	03/23/15 00:37	
4-Nitrophenol	ND	330	1	B5C0386	03/16/2015	03/23/15 00:37	
Acenaphthene	ND	330	1	B5C0386	03/16/2015	03/23/15 00:37	
Acenaphthylene	ND	330	1	B5C0386	03/16/2015	03/23/15 00:37	
Anthracene	ND	330	1	B5C0386	03/16/2015	03/23/15 00:37	
Benzidine (M)	ND	1600	1	B5C0386	03/16/2015	03/23/15 00:37	
Benzo(a)anthracene	ND	330	1	B5C0386	03/16/2015	03/23/15 00:37	
Benzo(a)pyrene	ND	330	1	B5C0386	03/16/2015	03/23/15 00:37	
Benzo(b)fluoranthene	ND	330	1	B5C0386	03/16/2015	03/23/15 00:37	
Benzo(g,h,i)perylene	ND	330	1	B5C0386	03/16/2015	03/23/15 00:37	
Benzo(k)fluoranthene	ND	330	1	B5C0386	03/16/2015	03/23/15 00:37	
Benzoic acid	ND	1600	1	B5C0386	03/16/2015	03/23/15 00:37	
Benzyl alcohol	ND	660	1	B5C0386	03/16/2015	03/23/15 00:37	
bis(2-chloroethoxy)methane	ND	330	1	B5C0386	03/16/2015	03/23/15 00:37	
bis(2-Chloroethyl)ether	ND	330	1	B5C0386	03/16/2015	03/23/15 00:37	
bis(2-chloroisopropyl)ether	ND	330	1	B5C0386	03/16/2015	03/23/15 00:37	
bis(2-ethylhexyl)phthalate	ND	330	1	B5C0386	03/16/2015	03/23/15 00:37	
Butylbenzylphthalate	ND	330	1	B5C0386	03/16/2015	03/23/15 00:37	
Chrysene	ND	330	1	B5C0386	03/16/2015	03/23/15 00:37	
Di-n-butylphthalate	ND	330	1	B5C0386	03/16/2015	03/23/15 00:37	
Di-n-octylphthalate	ND	330	1	B5C0386	03/16/2015	03/23/15 00:37	
Dibenz(a,h)anthracene	ND	330	1	B5C0386	03/16/2015	03/23/15 00:37	
Dibenzofuran	ND	330	1	B5C0386	03/16/2015	03/23/15 00:37	
Diethyl phthalate	ND	330	1	B5C0386	03/16/2015	03/23/15 00:37	
Dimethyl phthalate	ND	330	1	B5C0386	03/16/2015	03/23/15 00:37	
Fluoranthene	ND	330	1	B5C0386	03/16/2015	03/23/15 00:37	
Fluorene	ND	330	1	B5C0386	03/16/2015	03/23/15 00:37	
Hexachlorobenzene	ND	330	1	B5C0386	03/16/2015	03/23/15 00:37	
Hexachlorobutadiene	ND	660	1	B5C0386	03/16/2015	03/23/15 00:37	
Hexachlorocyclopentadiene	ND	660	1	B5C0386	03/16/2015	03/23/15 00:37	
Hexachloroethane	ND	330	1	B5C0386	03/16/2015	03/23/15 00:37	
Indeno(1,2,3-cd)pyrene	ND	330	1	B5C0386	03/16/2015	03/23/15 00:37	
Isophorone	ND	330	1	B5C0386	03/16/2015	03/23/15 00:37	
N-Nitroso-di-n propylamine	ND	330	1	B5C0386	03/16/2015	03/23/15 00:37	
N-Nitrosodiphenylamine	ND	330	1	B5C0386	03/16/2015	03/23/15 00:37	
Naphthalene	ND	330	1	B5C0386	03/16/2015	03/23/15 00:37	
Nitrobenzene	ND	330	1	B5C0386	03/16/2015	03/23/15 00:37	

Certificate of Analysis

Amec Foster Wheeler	Project Number : MTA WES, 4953-11-1423
6001 Rickenbacker Road	Report To : Ron Lopez
Los Angeles , CA 90040	Reported : 03/23/2015

Client Sample ID E132B-90

Lab ID: 1500919-08

Semivolatile Organic Compounds by EPA 8270C **Analyst: BD**

Analyte		Result (ug/kg)	PQL (ug/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Pentachlorophenol		ND	1600	1	B5C0386	03/16/2015	03/23/15 00:37	
Phenanthrene		ND	330	1	B5C0386	03/16/2015	03/23/15 00:37	
Phenol		ND	330	1	B5C0386	03/16/2015	03/23/15 00:37	
Pyrene		ND	330	1	B5C0386	03/16/2015	03/23/15 00:37	
Pyridine		ND	1600	1	B5C0386	03/16/2015	03/23/15 00:37	
Surrogate: 1,2-Dichlorobenzene-d4	*59.7 %*		*24 - 114*		B5C0386	03/16/2015	*03/23/15 00:37*	
Surrogate: 2,4,6-Tribromophenol	*77.3 %*		*0 - 189*		B5C0386	03/16/2015	*03/23/15 00:37*	
Surrogate: 2-Chlorophenol-d4	*71.7 %*		*23 - 123*		B5C0386	03/16/2015	*03/23/15 00:37*	
Surrogate: 2-Fluorobiphenyl	*64.0 %*		*28 - 128*		B5C0386	03/16/2015	*03/23/15 00:37*	
Surrogate: 2-Fluorophenol	*68.9 %*		*8 - 138*		B5C0386	03/16/2015	*03/23/15 00:37*	
Surrogate: 4-Terphenyl-d14	*67.1 %*		*27 - 154*		B5C0386	03/16/2015	*03/23/15 00:37*	
Surrogate: Nitrobenzene-d5	*60.3 %*		*19 - 129*		B5C0386	03/16/2015	*03/23/15 00:37*	
Surrogate: Phenol-d5	*71.5 %*		*20 - 126*		B5C0386	03/16/2015	*03/23/15 00:37*	

Certificate of Analysis

Amec Foster Wheeler	Project Number : MTA WES, 4953-11-1423
6001 Rickenbacker Road	Report To : Ron Lopez
Los Angeles , CA 90040	Reported : 03/23/2015

QUALITY CONTROL SECTION

Total Petroleum Hydrocarbons, HEM/SGT EPA 1664 (Modified) - Quality Control

Analyte	Result (mg/kg)	PQL (mg/kg)	Spike Level	Source Result	% Rec	% Rec Limits	RPD	RPD Limit	Notes
Batch B5C0509 - Prep_WC2_S									
Blank (B5C0509-BLK1)				Prepared: 3/19/2015 Analyzed: 3/19/2015					
Total Petroleum Hydrocarbons	ND	50			NR				
LCS (B5C0509-BS1)				Prepared: 3/19/2015 Analyzed: 3/19/2015					
Total Petroleum Hydrocarbons	1910.00	50	2000.00		95.5	80 - 120			
Matrix Spike (B5C0509-MS1)		**Source: 1500919-02**		Prepared: 3/19/2015 Analyzed: 3/19/2015					
Total Petroleum Hydrocarbons	1920.00	50	2000.00	ND	96.0	80 - 120			
Matrix Spike Dup (B5C0509-MSD1)		**Source: 1500919-02**		Prepared: 3/19/2015 Analyzed: 3/19/2015					
Total Petroleum Hydrocarbons	1930.00	50	2000.00	ND	96.5	80 - 120	0.519	20	

Certificate of Analysis

Amec Foster Wheeler	Project Number : MTA WES, 4953-11-1423
6001 Rickenbacker Road	Report To : Ron Lopez
Los Angeles , CA 90040	Reported : 03/23/2015

Title 22 Metals by ICP-AES EPA 6010B - Quality Control

Analyte	Result (mg/kg)	PQL (mg/kg)	Spike Level	Source Result	% Rec	% Rec Limits	RPD	RPD Limit	Notes
Batch B5C0447 - EPA 3050B_S									
Blank (B5C0447-BLK1)				Prepared: 3/18/2015 Analyzed: 3/19/2015					
Antimony	ND	2.0			NR				
Arsenic	ND	1.0			NR				
Barium	ND	1.0			NR				
Beryllium	ND	1.0			NR				
Cadmium	ND	1.0			NR				
Chromium	ND	1.0			NR				
Cobalt	ND	1.0			NR				
Copper	ND	2.0			NR				
Lead	ND	1.0			NR				
Molybdenum	ND	1.0			NR				
Nickel	ND	1.0			NR				
Selenium	ND	1.0			NR				
Silver	ND	1.0			NR				
Thallium	ND	1.0			NR				
Vanadium	ND	1.0			NR				
Zinc	ND	1.0			NR				
LCS (B5C0447-BS1)				Prepared: 3/18/2015 Analyzed: 3/19/2015					
Antimony	47.2752	2.0	50.0000		94.6	80 - 120			
Arsenic	45.3956	1.0	50.0000		90.8	80 - 120			
Barium	49.3445	1.0	50.0000		98.7	80 - 120			
Beryllium	48.2160	1.0	50.0000		96.4	80 - 120			
Cadmium	46.8729	1.0	50.0000		93.7	80 - 120			
Chromium	49.9811	1.0	50.0000		100	80 - 120			
Cobalt	49.1592	1.0	50.0000		98.3	80 - 120			
Copper	49.1279	2.0	50.0000		98.3	80 - 120			
Lead	48.1952	1.0	50.0000		96.4	80 - 120			
Molybdenum	49.5317	1.0	50.0000		99.1	80 - 120			
Nickel	47.7433	1.0	50.0000		95.5	80 - 120			
Selenium	43.4922	1.0	50.0000		87.0	80 - 120			
Silver	46.7354	1.0	50.0000		93.5	80 - 120			
Thallium	47.2698	1.0	50.0000		94.5	80 - 120			
Vanadium	48.8226	1.0	50.0000		97.6	80 - 120			
Zinc	45.6554	1.0	50.0000		91.3	80 - 120			
Matrix Spike (B5C0447-MS1)		**Source: 1500774-01**		Prepared: 3/18/2015 Analyzed: 3/19/2015					
Antimony	80.6043	2.0	125.000	0.310678	64.2	28 - 106			
Arsenic	93.2300	1.0	125.000	0.281731	74.4	57 - 109			
Barium	194.826	1.0	125.000	99.9829	75.9	18 - 159			
Beryllium	96.3354	1.0	125.000	0.321342	76.8	61 - 107			
Cadmium	89.6826	1.0	125.000	0.439634	71.4	53 - 104			
Chromium	104.595	1.0	125.000	9.34792	76.2	53 - 121			

Amec Foster Wheeler	Project Number : MTA WES, 4953-11-1423
6001 Rickenbacker Road	Report To : Ron Lopez
Los Angeles , CA 90040	Reported : 03/23/2015

Title 22 Metals by ICP-AES EPA 6010B - Quality Control (cont'd)

Analyte	Result (mg/kg)	PQL (mg/kg)	Spike Level	Source Result	% Rec	% Rec Limits	RPD	RPD Limit	Notes
Batch B5C0447 - EPA 3050B_S (continued)									
Matrix Spike (B5C0447-MS1) - Continued		**Source: 1500774-01**		Prepared: 3/18/2015 Analyzed: 3/19/2015					
Cobalt	97.6476	1.0	125.000	4.95420	74.2	55 - 109			
Copper	109.212	2.0	125.000	7.30520	81.5	58 - 124			
Lead	94.3173	1.0	125.000	3.71623	72.5	35 - 129			
Molybdenum	94.1516	1.0	125.000	ND	75.3	57 - 108			
Nickel	96.9160	1.0	125.000	6.10516	72.6	44 - 122			
Selenium	88.0250	1.0	125.000	ND	70.4	54 - 104			
Silver	96.1484	1.0	125.000	ND	76.9	60 - 112			
Thallium	86.8912	1.0	125.000	ND	69.5	50 - 103			
Vanadium	119.104	1.0	125.000	38.4742	64.5	54 - 123			
Zinc	113.339	1.0	125.000	34.9346	62.7	29 - 132			
Matrix Spike Dup (B5C0447-MSD1)		**Source: 1500774-01**		Prepared: 3/18/2015 Analyzed: 3/19/2015					
Antimony	79.6408	2.0	125.000	0.310678	63.5	28 - 106	1.20	20	
Arsenic	92.3130	1.0	125.000	0.281731	73.6	57 - 109	0.988	20	
Barium	203.197	1.0	125.000	99.9829	82.6	18 - 159	4.21	20	
Beryllium	96.3666	1.0	125.000	0.321342	76.8	61 - 107	0.0323	20	
Cadmium	88.4828	1.0	125.000	0.439634	70.4	53 - 104	1.35	20	
Chromium	102.545	1.0	125.000	9.34792	74.6	53 - 121	1.98	20	
Cobalt	93.5347	1.0	125.000	4.95420	70.9	55 - 109	4.30	20	
Copper	108.226	2.0	125.000	7.30520	80.7	58 - 124	0.908	20	
Lead	94.2940	1.0	125.000	3.71623	72.5	35 - 129	0.0247	20	
Molybdenum	93.8580	1.0	125.000	ND	75.1	57 - 108	0.312	20	
Nickel	94.2944	1.0	125.000	6.10516	70.6	44 - 122	2.74	20	
Selenium	87.2152	1.0	125.000	ND	69.8	54 - 104	0.924	20	
Silver	93.5032	1.0	125.000	ND	74.8	60 - 112	2.79	20	
Thallium	85.5998	1.0	125.000	ND	68.5	50 - 103	1.50	20	
Vanadium	120.870	1.0	125.000	38.4742	65.9	54 - 123	1.47	20	
Zinc	113.324	1.0	125.000	34.9346	62.7	29 - 132	0.0128	20	

Certificate of Analysis

Amec Foster Wheeler	Project Number : MTA WES, 4953-11-1423
6001 Rickenbacker Road	Report To : Ron Lopez
Los Angeles , CA 90040	Reported : 03/23/2015

Mercury by AA (Cold Vapor) EPA 7471A - Quality Control

Analyte	Result (mg/kg)	PQL (mg/kg)	Spike Level	Source Result	% Rec	% Rec Limits	RPD	RPD Limit	Notes
Batch B5C0451 - EPA 7471_S									
Blank (B5C0451-BLK1)				Prepared: 3/18/2015 Analyzed: 3/18/2015					
Mercury	ND	0.10			NR				
LCS (B5C0451-BS1)				Prepared: 3/18/2015 Analyzed: 3/18/2015					
Mercury	0.817366	0.10	0.833333		98.1	80 - 120			
Matrix Spike (B5C0451-MS1)		**Source: 1500919-02**		Prepared: 3/18/2015 Analyzed: 3/18/2015					
Mercury	0.818047	0.10	0.833333	0.017054	96.1	70 - 130			
Matrix Spike Dup (B5C0451-MSD1)		**Source: 1500919-02**		Prepared: 3/18/2015 Analyzed: 3/18/2015					
Mercury	0.827106	0.10	0.833333	0.017054	97.2	70 - 130	1.10	20	
Post Spike (B5C0451-PS1)		**Source: 1500919-02**		Prepared: 3/18/2015 Analyzed: 3/18/2015					
Mercury	0.005917		5.00000E-3	0.000205	114	85 - 115			

Figure C-2.86

Certificate of Analysis

Amec Foster Wheeler	Project Number : MTA WES, 4953-11-1423
6001 Rickenbacker Road	Report To : Ron Lopez
Los Angeles , CA 90040	Reported : 03/23/2015

Gasoline Range Organics by EPA 8015B (Modified) - Quality Control

Analyte	Result (mg/kg)	PQL (mg/kg)	Spike Level	Source Result	% Rec	% Rec Limits	RPD	RPD Limit	Notes
Batch B5C0325 - GCVOA_S									
Blank (B5C0325-BLK1)					Prepared: 3/13/2015 Analyzed: 3/13/2015				
Gasoline Range Organics	ND	1.0			NR				
Surrogate: 4-Bromofluorobenzene	*0.1953*		*0.200000*		*97.7*	*37 - 153*			
LCS (B5C0325-BS1)					Prepared: 3/13/2015 Analyzed: 3/13/2015				
Gasoline Range Organics	4.48700	1.0	5.00000		89.7	70 - 130			
Surrogate: 4-Bromofluorobenzene	*0.1980*		*0.200000*		*99.0*	*37 - 153*			
Duplicate (B5C0325-DUP1)		**Source: 1500894-13**			Prepared: 3/13/2015 Analyzed: 3/13/2015				
Gasoline Range Organics	ND	1.0		ND	NR			20	
Surrogate: 4-Bromofluorobenzene	*0.1923*		*0.200000*		*96.2*	*37 - 153*			
Matrix Spike (B5C0325-MS1)		**Source: 1500918-03**			Prepared: 3/13/2015 Analyzed: 3/13/2015				
Gasoline Range Organics	3.20700	1.0	5.00000	ND	64.1	20 - 130			
Surrogate: 4-Bromofluorobenzene	*0.1908*		*0.200000*		*95.4*	*37 - 153*			
Matrix Spike Dup (B5C0325-MSD1)		**Source: 1500918-03**			Prepared: 3/13/2015 Analyzed: 3/13/2015				
Gasoline Range Organics	3.12500	1.0	5.00000	ND	62.5	20 - 130	2.59	20	
Surrogate: 4-Bromofluorobenzene	*0.1958*		*0.200000*		*97.9*	*37 - 153*			
Batch B5C0365 - GCVOA_S									
Blank (B5C0365-BLK1)					Prepared: 3/16/2015 Analyzed: 3/16/2015				
Gasoline Range Organics	ND	1.0			NR				
Surrogate: 4-Bromofluorobenzene	*0.1898*		*0.200000*		*94.9*	*37 - 153*			
LCS (B5C0365-BS1)					Prepared: 3/16/2015 Analyzed: 3/16/2015				
Gasoline Range Organics	4.14600	1.0	5.00000		82.9	70 - 130			
Surrogate: 4-Bromofluorobenzene	*0.2115*		*0.200000*		*106*	*37 - 153*			
Matrix Spike (B5C0365-MS1)		**Source: 1500929-03**			Prepared: 3/16/2015 Analyzed: 3/16/2015				
Gasoline Range Organics	3.69600	1.0	5.00000	ND	73.9	20 - 130			
Surrogate: 4-Bromofluorobenzene	*0.1952*		*0.200000*		*97.6*	*37 - 153*			
Matrix Spike Dup (B5C0365-MSD1)		**Source: 1500929-03**			Prepared: 3/16/2015 Analyzed: 3/16/2015				
Gasoline Range Organics	3.71200	1.0	5.00000	ND	74.2	20 - 130	0.432	20	
Surrogate: 4-Bromofluorobenzene	*0.1936*		*0.200000*		*96.8*	*37 - 153*			

Certificate of Analysis

Amec Foster Wheeler	Project Number : MTA WES, 4953-11-1423
6001 Rickenbacker Road	Report To : Ron Lopez
Los Angeles , CA 90040	Reported : 03/23/2015

Diesel Range Organics by EPA 8015B - Quality Control

Analyte	Result (mg/kg)	PQL (mg/kg)	Spike Level	Source Result	% Rec	% Rec Limits	RPD	RPD Limit	Notes
Batch B5C0436 - GCSEMI_DRO_S									
Blank (B5C0436-BLK1)					Prepared: 3/17/2015 Analyzed: 3/18/2015				
DRO	ND	10			NR				
ORO	ND	10			NR				
Surrogate: p-Terphenyl	*78.11*		*80.0000*		*97.6*	*49 - 142*			
LCS (B5C0436-BS1)					Prepared: 3/17/2015 Analyzed: 3/18/2015				
DRO	826.510	10	1000.00		82.7	48 - 155			
Surrogate: p-Terphenyl	*87.02*		*80.0000*		*109*	*49 - 142*			
Matrix Spike (B5C0436-MS1)		**Source: 1500919-04**			Prepared: 3/17/2015 Analyzed: 3/18/2015				
DRO	776.670	10	1000.00	ND	77.7	30 - 173			
Surrogate: p-Terphenyl	*79.27*		*80.0000*		*99.1*	*49 - 142*			
Matrix Spike Dup (B5C0436-MSD1)		**Source: 1500919-04**			Prepared: 3/17/2015 Analyzed: 3/18/2015				
DRO	781.560	10	1000.00	ND	78.2	30 - 173	0.628	20	
Surrogate: p-Terphenyl	*83.85*		*80.0000*		*105*	*49 - 142*			

Figure C-2.88

Certificate of Analysis

Amec Foster Wheeler	Project Number : MTA WES, 4953-11-1423
6001 Rickenbacker Road	Report To : Ron Lopez
Los Angeles , CA 90040	Reported : 03/23/2015

Volatile Organic Compounds by EPA 8260B - Quality Control

Analyte	Result (ug/kg)	PQL (ug/kg)	Spike Level	Source Result	% Rec	% Rec Limits	RPD	RPD Limit	Notes
Batch B5C0440 - MSVOA_S									
Blank (B5C0440-BLK1)				Prepared: 3/17/2015 Analyzed: 3/17/2015					
1,1,1,2-Tetrachloroethane	ND	5.0			NR				
1,1,1-Trichloroethane	ND	5.0			NR				
1,1,2,2-Tetrachloroethane	ND	5.0			NR				
1,1,2-Trichloroethane	ND	5.0			NR				
1,1-Dichloroethane	ND	5.0			NR				
1,1-Dichloroethene	ND	5.0			NR				
1,1-Dichloropropene	ND	5.0			NR				
1,2,3-Trichloropropane	ND	5.0			NR				
1,2,3-Trichlorobenzene	ND	5.0			NR				
1,2,4-Trichlorobenzene	ND	5.0			NR				
1,2,4-Trimethylbenzene	ND	5.0			NR				
1,2-Dibromo-3-chloropropane	ND	10			NR				
1,2-Dibromoethane	ND	5.0			NR				
1,2-Dichlorobenzene	ND	5.0			NR				
1,2-Dichloroethane	ND	5.0			NR				
1,2-Dichloropropane	ND	5.0			NR				
1,3,5-Trimethylbenzene	ND	5.0			NR				
1,3-Dichlorobenzene	ND	5.0			NR				
1,3-Dichloropropane	ND	5.0			NR				
1,4-Dichlorobenzene	ND	5.0			NR				
2,2-Dichloropropane	ND	5.0			NR				
2-Chlorotoluene	ND	5.0			NR				
4-Chlorotoluene	ND	5.0			NR				
4-Isopropyltoluene	ND	5.0			NR				
Benzene	ND	5.0			NR				
Bromobenzene	ND	5.0			NR				
Bromochloromethane	ND	5.0			NR				
Bromodichloromethane	ND	5.0			NR				
Bromoform	ND	5.0			NR				
Bromomethane	ND	5.0			NR				
Carbon disulfide	ND	5.0			NR				
Carbon tetrachloride	ND	5.0			NR				
Chlorobenzene	ND	5.0			NR				
Chloroethane	ND	5.0			NR				
Chloroform	ND	5.0			NR				
Chloromethane	ND	5.0			NR				
cis-1,2-Dichloroethene	ND	5.0			NR				
cis-1,3-Dichloropropene	ND	5.0			NR				
Di-isopropyl ether	ND	5.0			NR				
Dibromochloromethane	ND	5.0			NR				
Dibromomethane	ND	5.0			NR				

Figure C-2.89

Certificate of Analysis

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Los Angeles , CA 90040	Reported : 03/23/2015

Volatile Organic Compounds by EPA 8260B - Quality Control (cont'd)

Analyte	Result (ug/kg)	PQL (ug/kg)	Spike Level	Source Result	% Rec	% Rec Limits	RPD	RPD Limit	Notes
Batch B5C0440 - MSVOA_S (continued)									
Blank (B5C0440-BLK1) - Continued				Prepared: 3/17/2015 Analyzed: 3/17/2015					
Dichlorodifluoromethane	ND	5.0			NR				
Ethyl Acetate	ND	50			NR				
Ethyl Ether	ND	50			NR				
Ethyl tert-butyl ether	ND	5.0			NR				
Ethylbenzene	ND	5.0			NR				
Freon-113	ND	5.0			NR				
Hexachlorobutadiene	ND	5.0			NR				
Isopropylbenzene	ND	5.0			NR				
m,p-Xylene	ND	10			NR				
Methylene chloride	ND	5.0			NR				
MTBE	ND	5.0			NR				
n-Butylbenzene	ND	5.0			NR				
n-Propylbenzene	ND	5.0			NR				
Naphthalene	ND	5.0			NR				
o-Xylene	ND	5.0			NR				
sec-Butylbenzene	ND	5.0			NR				
Styrene	ND	5.0			NR				
tert-Amyl methyl ether	ND	5.0			NR				
tert-Butanol	ND	100			NR				
tert-Butylbenzene	ND	5.0			NR				
Tetrachloroethene	ND	5.0			NR				
Toluene	ND	5.0			NR				
trans-1,2-Dichloroethene	ND	5.0			NR				
trans-1,3-Dichloropropene	ND	5.0			NR				
Trichloroethene	ND	5.0			NR				
Trichlorofluoromethane	ND	5.0			NR				
Vinyl acetate	ND	50			NR				
Vinyl chloride	ND	5.0			NR				
Surrogate: 1,2-Dichloroethane-d4	*52.40*		*50.0000*		*105*	*20 - 189*			
Surrogate: 4-Bromofluorobenzene	*44.40*		*50.0000*		*88.8*	*20 - 173*			
Surrogate: Dibromofluoromethane	*51.80*		*50.0000*		*104*	*26 - 178*			
Surrogate: Toluene-d8	*48.54*		*50.0000*		*97.1*	*31 - 166*			

Figure C-2.90

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Volatile Organic Compounds by EPA 8260B - Quality Control (cont'd)

Analyte	Result (ug/kg)	PQL (ug/kg)	Spike Level	Source Result	% Rec	% Rec Limits	RPD	RPD Limit	Notes
Batch B5C0440 - MSVOA_S (continued)									
LCS (B5C0440-BS1)				Prepared: 3/17/2015 Analyzed: 3/17/2015					
1,1,1,2-Tetrachloroethane	51.2200	5.0	50.0000		102	74 - 117			
1,1,1-Trichloroethane	48.1100	5.0	50.0000		96.2	65 - 130			
1,1,2,2-Tetrachloroethane	51.5000	5.0	50.0000		103	63 - 123			
1,1,2-Trichloroethane	50.6900	5.0	50.0000		101	66 - 122			
1,1-Dichloroethane	49.3800	5.0	50.0000		98.8	65 - 124			
1,1-Dichloroethene	59.4800	5.0	50.0000		119	60 - 130			
1,1-Dichloropropene	46.0300	5.0	50.0000		92.1	75 - 121			
1,2,3-Trichloropropane	50.8200	5.0	50.0000		102	62 - 126			
1,2,3-Trichlorobenzene	52.7700	5.0	50.0000		106	72 - 120			
1,2,4-Trichlorobenzene	53.9200	5.0	50.0000		108	75 - 121			
1,2,4-Trimethylbenzene	54.0200	5.0	50.0000		108	82 - 118			
1,2-Dibromo-3-chloropropane	50.5300	10	50.0000		101	67 - 121			
1,2-Dibromoethane	50.5000	5.0	50.0000		101	69 - 123			
1,2-Dichlorobenzene	53.3000	5.0	50.0000		107	81 - 114			
1,2-Dichloroethane	49.6300	5.0	50.0000		99.3	71 - 119			
1,2-Dichloropropane	49.3600	5.0	50.0000		98.7	71 - 118			
1,3,5-Trimethylbenzene	53.1000	5.0	50.0000		106	81 - 120			
1,3-Dichlorobenzene	53.3700	5.0	50.0000		107	80 - 115			
1,3-Dichloropropane	51.2700	5.0	50.0000		103	77 - 117			
1,4-Dichlorobenzene	53.9700	5.0	50.0000		108	80 - 115			
2,2-Dichloropropane	48.1100	5.0	50.0000		96.2	58 - 141			
2-Chlorotoluene	52.7000	5.0	50.0000		105	78 - 120			
4-Chlorotoluene	53.4900	5.0	50.0000		107	79 - 119			
4-Isopropyltoluene	55.5300	5.0	50.0000		111	81 - 125			
Benzene	89.5800	5.0	100.000		89.6	73 - 116			
Bromobenzene	50.9900	5.0	50.0000		102	78 - 115			
Bromochloromethane	48.1500	5.0	50.0000		96.3	66 - 121			
Bromodichloromethane	50.0800	5.0	50.0000		100	73 - 120			
Bromoform	50.5900	5.0	50.0000		101	68 - 124			
Bromomethane	53.5100	5.0	50.0000		107	26 - 163			
Carbon disulfide	42.7900	5.0	50.0000		85.6	43 - 142			
Carbon tetrachloride	46.8100	5.0	50.0000		93.6	67 - 130			
Chlorobenzene	49.8100	5.0	50.0000		99.6	82 - 114			
Chloroethane	44.4800	5.0	50.0000		89.0	40 - 151			
Chloroform	51.9300	5.0	50.0000		104	68 - 124			
Chloromethane	36.9400	5.0	50.0000		73.9	18 - 144			
cis-1,2-Dichloroethene	50.3000	5.0	50.0000		101	66 - 125			
cis-1,3-Dichloropropene	52.8400	5.0	50.0000		106	77 - 120			
Di-isopropyl ether	49.6800	5.0	50.0000		99.4	56 - 132			
Dibromochloromethane	50.2500	5.0	50.0000		100	76 - 118			
Dibromomethane	51.5400	5.0	50.0000		103	69 - 122			

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Volatile Organic Compounds by EPA 8260B - Quality Control (cont'd)

Analyte	Result (ug/kg)	PQL (ug/kg)	Spike Level	Source Result	% Rec	% Rec Limits	RPD	RPD Limit	Notes
Batch B5C0440 - MSVOA_S (continued)									
LCS (B5C0440-BS1) - Continued					Prepared: 3/17/2015 Analyzed: 3/17/2015				
Dichlorodifluoromethane	38.6300	5.0	50.0000		77.3	0 - 155			
Ethyl Acetate	514.740	50	500.000		103	31 - 137			
Ethyl Ether	507.320	50	500.000		101	47 - 150			
Ethyl tert-butyl ether	50.2100	5.0	50.0000		100	63 - 134			
Ethylbenzene	98.9700	5.0	100.000		99.0	79 - 115			
Freon-113	50.2500	5.0	50.0000		100	62 - 134			
Hexachlorobutadiene	54.0100	5.0	50.0000		108	71 - 121			
Isopropylbenzene	52.6200	5.0	50.0000		105	78 - 126			
m,p-Xylene	102.690	10	100.000		103	80 - 119			
Methylene chloride	52.0200	5.0	50.0000		104	56 - 129			
MTBE	46.3200	5.0	50.0000		92.6	61 - 124			
n-Butylbenzene	57.2900	5.0	50.0000		115	78 - 127			
n-Propylbenzene	54.0600	5.0	50.0000		108	77 - 128			
Naphthalene	50.2700	5.0	50.0000		101	61 - 141			
o-Xylene	98.7100	5.0	100.000		98.7	81 - 116			
sec-Butylbenzene	54.8800	5.0	50.0000		110	81 - 125			
Styrene	53.5900	5.0	50.0000		107	82 - 120			
tert-Amyl methyl ether	48.0700	5.0	50.0000		96.1	52 - 149			
tert-Butanol	230.730	100	250.000		92.3	26 - 160			
tert-Butylbenzene	54.0300	5.0	50.0000		108	80 - 123			
Tetrachloroethene	47.7000	5.0	50.0000		95.4	75 - 123			
Toluene	94.4900	5.0	100.000		94.5	75 - 119			
trans-1,2-Dichloroethene	45.7800	5.0	50.0000		91.6	62 - 127			
trans-1,3-Dichloropropene	54.2900	5.0	50.0000		109	68 - 121			
Trichloroethene	50.4400	5.0	50.0000		101	73 - 119			
Trichlorofluoromethane	42.2900	5.0	50.0000		84.6	47 - 157			
Vinyl acetate	475.430	50	500.000		95.1	20 - 136			
Vinyl chloride	38.7300	5.0	50.0000		77.5	27 - 147			
Surrogate: 1,2-Dichloroethane-d4	*58.16*		*50.0000*		*116*	*20 - 189*			
Surrogate: 4-Bromofluorobenzene	*50.31*		*50.0000*		*101*	*20 - 173*			
Surrogate: Dibromofluoromethane	*55.22*		*50.0000*		*110*	*26 - 178*			
Surrogate: Toluene-d8	*50.38*		*50.0000*		*101*	*31 - 166*			

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Volatile Organic Compounds by EPA 8260B - Quality Control (cont'd)

Analyte	Result (ug/kg)	PQL (ug/kg)	Spike Level	Source Result	% Rec	% Rec Limits	RPD	RPD Limit	Notes
Batch B5C0440 - MSVOA_S (continued)									
Matrix Spike (B5C0440-MS1)		**Source: 1500919-08**		Prepared: 3/17/2015 Analyzed: 3/17/2015					
1,1,1,2-Tetrachloroethane	44.1800	5.0	50.0000	ND	88.4	45 - 122			
1,1,1-Trichloroethane	41.9300	5.0	50.0000	ND	83.9	46 - 131			
1,1,2,2-Tetrachloroethane	46.3300	5.0	50.0000	ND	92.7	34 - 133			
1,1,2-Trichloroethane	43.7500	5.0	50.0000	ND	87.5	40 - 133			
1,1-Dichloroethane	41.3300	5.0	50.0000	ND	82.7	50 - 120			
1,1-Dichloroethene	51.6700	5.0	50.0000	ND	103	42 - 130			
1,1-Dichloropropene	42.3800	5.0	50.0000	ND	84.8	49 - 125			
1,2,3-Trichloropropane	45.0300	5.0	50.0000	ND	90.1	42 - 130			
1,2,3-Trichlorobenzene	30.2300	5.0	50.0000	ND	60.5	2 - 136			
1,2,4-Trichlorobenzene	31.1700	5.0	50.0000	ND	62.3	6 - 137			
1,2,4-Trimethylbenzene	44.4800	5.0	50.0000	ND	89.0	37 - 129			
1,2-Dibromo-3-chloropropane	42.7700	10	50.0000	ND	85.5	36 - 135			
1,2-Dibromoethane	42.2500	5.0	50.0000	ND	84.5	43 - 129			
1,2-Dichlorobenzene	39.6800	5.0	50.0000	ND	79.4	31 - 129			
1,2-Dichloroethane	43.0600	5.0	50.0000	ND	86.1	50 - 122			
1,2-Dichloropropane	43.0200	5.0	50.0000	ND	86.0	51 - 119			
1,3,5-Trimethylbenzene	44.2400	5.0	50.0000	ND	88.5	38 - 130			
1,3-Dichlorobenzene	40.2400	5.0	50.0000	ND	80.5	31 - 128			
1,3-Dichloropropane	44.1500	5.0	50.0000	ND	88.3	52 - 122			
1,4-Dichlorobenzene	40.7400	5.0	50.0000	ND	81.5	31 - 128			
2,2-Dichloropropane	41.3300	5.0	50.0000	ND	82.7	42 - 140			
2-Chlorotoluene	43.5600	5.0	50.0000	ND	87.1	38 - 129			
4-Chlorotoluene	42.6600	5.0	50.0000	ND	85.3	38 - 128			
4-Isopropyltoluene	42.7000	5.0	50.0000	ND	85.4	31 - 137			
Benzene	81.4000	5.0	100.000	ND	81.4	51 - 117			
Bromobenzene	41.9600	5.0	50.0000	ND	83.9	41 - 125			
Bromochloromethane	38.6600	5.0	50.0000	ND	77.3	47 - 123			
Bromodichloromethane	43.0200	5.0	50.0000	ND	86.0	50 - 122			
Bromoform	42.0300	5.0	50.0000	ND	84.1	39 - 131			
Bromomethane	41.0000	5.0	50.0000	ND	82.0	10 - 154			
Carbon disulfide	40.7700	5.0	50.0000	43.2900	-5.04	24 - 138			M1
Carbon tetrachloride	42.5000	5.0	50.0000	ND	85.0	44 - 131			
Chlorobenzene	42.6300	5.0	50.0000	ND	85.3	46 - 123			
Chloroethane	38.0500	5.0	50.0000	ND	76.1	27 - 143			
Chloroform	44.1700	5.0	50.0000	ND	88.3	50 - 124			
Chloromethane	35.2700	5.0	50.0000	ND	70.5	8 - 139			
cis-1,2-Dichloroethene	42.4000	5.0	50.0000	ND	84.8	48 - 125			
cis-1,3-Dichloropropene	42.9600	5.0	50.0000	ND	85.9	51 - 123			
Di-isopropyl ether	41.9900	5.0	50.0000	ND	84.0	45 - 125			
Dibromochloromethane	42.4600	5.0	50.0000	ND	84.9	48 - 124			
Dibromomethane	42.2300	5.0	50.0000	ND	84.5	48 - 124			

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Volatile Organic Compounds by EPA 8260B - Quality Control (cont'd)

Analyte	Result (ug/kg)	PQL (ug/kg)	Spike Level	Source Result	% Rec	% Rec Limits	RPD	RPD Limit	Notes
Batch B5C0440 - MSVOA_S (continued)									
Matrix Spike (B5C0440-MS1) - Continued		**Source: 1500919-08**		Prepared: 3/17/2015 Analyzed: 3/17/2015					
Dichlorodifluoromethane	36.6300	5.0	50.0000	ND	73.3	0 - 150			
Ethyl Acetate	430.320	50	500.000	ND	86.1	0 - 140			
Ethyl Ether	421.760	50	500.000	ND	84.4	36 - 142			
Ethyl tert-butyl ether	43.0900	5.0	50.0000	ND	86.2	46 - 133			
Ethylbenzene	87.0600	5.0	100.000	ND	87.1	46 - 123			
Freon-113	44.1900	5.0	50.0000	ND	88.4	38 - 137			
Hexachlorobutadiene	33.2200	5.0	50.0000	ND	66.4	5 - 132			
Isopropylbenzene	46.0600	5.0	50.0000	ND	92.1	43 - 132			
m,p-Xylene	90.4400	10	100.000	ND	90.4	45 - 128			
Methylene chloride	42.0200	5.0	50.0000	ND	84.0	37 - 126			
MTBE	39.7600	5.0	50.0000	ND	79.5	46 - 125			
n-Butylbenzene	40.3100	5.0	50.0000	ND	80.6	24 - 138			
n-Propylbenzene	44.3900	5.0	50.0000	ND	88.8	40 - 133			
Naphthalene	34.4300	5.0	50.0000	ND	68.9	10 - 149			
o-Xylene	89.3800	5.0	100.000	ND	89.4	45 - 125			
sec-Butylbenzene	42.9900	5.0	50.0000	ND	86.0	33 - 136			
Styrene	42.9200	5.0	50.0000	ND	85.8	43 - 128			
tert-Amyl methyl ether	41.2500	5.0	50.0000	ND	82.5	35 - 147			
tert-Butanol	194.750	100	250.000	ND	77.9	0 - 208			
tert-Butylbenzene	44.6200	5.0	50.0000	ND	89.2	36 - 133			
Tetrachloroethene	42.0900	5.0	50.0000	ND	84.2	41 - 129			
Toluene	85.7000	5.0	100.000	ND	85.7	49 - 124			
trans-1,2-Dichloroethene	39.5700	5.0	50.0000	ND	79.1	44 - 126			
trans-1,3-Dichloropropene	45.5800	5.0	50.0000	ND	91.2	42 - 125			
Trichloroethene	42.7800	5.0	50.0000	ND	85.6	38 - 139			
Trichlorofluoromethane	37.4500	5.0	50.0000	ND	74.9	30 - 157			
Vinyl acetate	409.070	50	500.000	ND	81.8	0 - 132			
Vinyl chloride	35.5200	5.0	50.0000	ND	71.0	19 - 142			
Surrogate: 1,2-Dichloroethane-d4	*53.49*		*50.0000*		*107*	*20 - 189*			
Surrogate: 4-Bromofluorobenzene	*49.82*		*50.0000*		*99.6*	*20 - 173*			
Surrogate: Dibromofluoromethane	*51.90*		*50.0000*		*104*	*26 - 178*			
Surrogate: Toluene-d8	*49.87*		*50.0000*		*99.7*	*31 - 166*			

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Volatile Organic Compounds by EPA 8260B - Quality Control (cont'd)

Analyte	Result (ug/kg)	PQL (ug/kg)	Spike Level	Source Result	% Rec	% Rec Limits	RPD	RPD Limit	Notes
Batch B5C0440 - MSVOA_S (continued)									
Matrix Spike Dup (B5C0440-MSD1)		**Source: 1500919-08**		Prepared: 3/17/2015 Analyzed: 3/17/2015					
1,1,1,2-Tetrachloroethane	41.9000	5.0	50.0000	ND	83.8	45 - 122	5.30	20	
1,1,1-Trichloroethane	41.1700	5.0	50.0000	ND	82.3	46 - 131	1.83	20	
1,1,2,2-Tetrachloroethane	44.2700	5.0	50.0000	ND	88.5	34 - 133	4.55	20	
1,1,2-Trichloroethane	43.0100	5.0	50.0000	ND	86.0	40 - 133	1.71	20	
1,1-Dichloroethane	41.8000	5.0	50.0000	ND	83.6	50 - 120	1.13	20	
1,1-Dichloroethene	50.7000	5.0	50.0000	ND	101	42 - 130	1.90	20	
1,1-Dichloropropene	37.9300	5.0	50.0000	ND	75.9	49 - 125	11.1	20	
1,2,3-Trichloropropane	45.2800	5.0	50.0000	ND	90.6	42 - 130	0.554	20	
1,2,3-Trichlorobenzene	21.5000	5.0	50.0000	ND	43.0	2 - 136	33.8	20	R
1,2,4-Trichlorobenzene	22.0100	5.0	50.0000	ND	44.0	6 - 137	34.4	20	R
1,2,4-Trimethylbenzene	37.5800	5.0	50.0000	ND	75.2	37 - 129	16.8	20	
1,2-Dibromo-3-chloropropane	39.5700	10	50.0000	ND	79.1	36 - 135	7.77	20	
1,2-Dibromoethane	40.0000	5.0	50.0000	ND	80.0	43 - 129	5.47	20	
1,2-Dichlorobenzene	32.8200	5.0	50.0000	ND	65.6	31 - 129	18.9	20	
1,2-Dichloroethane	43.4400	5.0	50.0000	ND	86.9	50 - 122	0.879	20	
1,2-Dichloropropane	42.2100	5.0	50.0000	ND	84.4	51 - 119	1.90	20	
1,3,5-Trimethylbenzene	37.5600	5.0	50.0000	ND	75.1	38 - 130	16.3	20	
1,3-Dichlorobenzene	33.5000	5.0	50.0000	ND	67.0	31 - 128	18.3	20	
1,3-Dichloropropane	43.3300	5.0	50.0000	ND	86.7	52 - 122	1.87	20	
1,4-Dichlorobenzene	33.6900	5.0	50.0000	ND	67.4	31 - 128	18.9	20	
2,2-Dichloropropane	41.7500	5.0	50.0000	ND	83.5	42 - 140	1.01	20	
2-Chlorotoluene	37.5900	5.0	50.0000	ND	75.2	38 - 129	14.7	20	
4-Chlorotoluene	36.2500	5.0	50.0000	ND	72.5	38 - 128	16.2	20	
4-Isopropyltoluene	35.7100	5.0	50.0000	ND	71.4	31 - 137	17.8	20	
Benzene	77.4200	5.0	100.000	ND	77.4	51 - 117	5.01	20	
Bromobenzene	37.7300	5.0	50.0000	ND	75.5	41 - 125	10.6	20	
Bromochloromethane	40.3300	5.0	50.0000	ND	80.7	47 - 123	4.23	20	
Bromodichloromethane	41.9600	5.0	50.0000	ND	83.9	50 - 122	2.49	20	
Bromoform	39.9100	5.0	50.0000	ND	79.8	39 - 131	5.17	20	
Bromomethane	39.2700	5.0	50.0000	ND	78.5	10 - 154	4.31	20	
Carbon disulfide	39.9800	5.0	50.0000	43.2900	-6.62	24 - 138	1.96	20	M1
Carbon tetrachloride	39.6800	5.0	50.0000	ND	79.4	44 - 131	6.86	20	
Chlorobenzene	38.4300	5.0	50.0000	ND	76.9	46 - 123	10.4	20	
Chloroethane	36.2300	5.0	50.0000	ND	72.5	27 - 143	4.90	20	
Chloroform	43.1300	5.0	50.0000	ND	86.3	50 - 124	2.38	20	
Chloromethane	32.7300	5.0	50.0000	ND	65.5	8 - 139	7.47	20	
cis-1,2-Dichloroethene	43.0100	5.0	50.0000	ND	86.0	48 - 125	1.43	20	
cis-1,3-Dichloropropene	42.3800	5.0	50.0000	ND	84.8	51 - 123	1.36	20	
Di-isopropyl ether	42.5000	5.0	50.0000	ND	85.0	45 - 125	1.21	20	
Dibromochloromethane	39.8600	5.0	50.0000	ND	79.7	48 - 124	6.32	20	
Dibromomethane	41.5900	5.0	50.0000	ND	83.2	48 - 124	1.53	20	

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Volatile Organic Compounds by EPA 8260B - Quality Control (cont'd)

Analyte	Result (ug/kg)	PQL (ug/kg)	Spike Level	Source Result	% Rec	% Rec Limits	RPD	RPD Limit	Notes
Batch B5C0440 - MSVOA_S (continued)									
Matrix Spike Dup (B5C0440-MSD1) - Continued		**Source: 1500919-08**		Prepared: 3/17/2015 Analyzed: 3/17/2015					
Dichlorodifluoromethane	33.1700	5.0	50.0000	ND	66.3	0 - 150	9.91	20	
Ethyl Acetate	452.320	50	500.000	ND	90.5	0 - 140	4.99	20	
Ethyl Ether	428.610	50	500.000	ND	85.7	36 - 142	1.61	20	
Ethyl tert-butyl ether	43.9600	5.0	50.0000	ND	87.9	46 - 133	2.00	20	
Ethylbenzene	76.6700	5.0	100.000	ND	76.7	46 - 123	12.7	20	
Freon-113	42.7700	5.0	50.0000	ND	85.5	38 - 137	3.27	20	
Hexachlorobutadiene	26.0300	5.0	50.0000	ND	52.1	5 - 132	24.3	20	R
Isopropylbenzene	40.5700	5.0	50.0000	ND	81.1	43 - 132	12.7	20	
m,p-Xylene	78.5000	10	100.000	ND	78.5	45 - 128	14.1	20	
Methylene chloride	42.5600	5.0	50.0000	ND	85.1	37 - 126	1.28	20	
MTBE	40.7700	5.0	50.0000	ND	81.5	46 - 125	2.51	20	
n-Butylbenzene	31.7000	5.0	50.0000	ND	63.4	24 - 138	23.9	20	R
n-Propylbenzene	38.0200	5.0	50.0000	ND	76.0	40 - 133	15.5	20	
Naphthalene	27.5900	5.0	50.0000	ND	55.2	10 - 149	22.1	20	R
o-Xylene	77.1100	5.0	100.000	ND	77.1	45 - 125	14.7	20	
sec-Butylbenzene	35.9100	5.0	50.0000	ND	71.8	33 - 136	17.9	20	
Styrene	37.0400	5.0	50.0000	ND	74.1	43 - 128	14.7	20	
tert-Amyl methyl ether	41.7200	5.0	50.0000	ND	83.4	35 - 147	1.13	20	
tert-Butanol	216.070	100	250.000	ND	86.4	0 - 208	10.4	20	
tert-Butylbenzene	39.6200	5.0	50.0000	ND	79.2	36 - 133	11.9	20	
Tetrachloroethene	37.2400	5.0	50.0000	ND	74.5	41 - 129	12.2	20	
Toluene	77.7000	5.0	100.000	ND	77.7	49 - 124	9.79	20	
trans-1,2-Dichloroethene	38.4400	5.0	50.0000	ND	76.9	44 - 126	2.90	20	
trans-1,3-Dichloropropene	41.2700	5.0	50.0000	ND	82.5	42 - 125	9.93	20	
Trichloroethene	40.4800	5.0	50.0000	ND	81.0	38 - 139	5.52	20	
Trichlorofluoromethane	36.7000	5.0	50.0000	ND	73.4	30 - 157	2.02	20	
Vinyl acetate	423.270	50	500.000	ND	84.7	0 - 132	3.41	20	
Vinyl chloride	33.0500	5.0	50.0000	ND	66.1	19 - 142	7.20	20	
Surrogate: 1,2-Dichloroethane-d4	*54.98*		*50.0000*		*110*	*20 - 189*			
Surrogate: 4-Bromofluorobenzene	*50.64*		*50.0000*		*101*	*20 - 173*			
Surrogate: Dibromofluoromethane	*55.71*		*50.0000*		*111*	*26 - 178*			
Surrogate: Toluene-d8	*49.86*		*50.0000*		*99.7*	*31 - 166*			

Figure C-2.96

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Semivolatile Organic Compounds by EPA 8270C - Quality Control

Analyte	Result (ug/kg)	PQL (ug/kg)	Spike Level	Source Result	% Rec	% Rec Limits	RPD	RPD Limit	Notes
Batch B5C0386 - MSSEMI_ISOTOPEDILN									
Blank (B5C0386-BLK1)				Prepared: 3/16/2015 Analyzed: 3/17/2015					
1,2,4-Trichlorobenzene	ND	330			NR				
1,2-Dichlorobenzene	ND	330			NR				
1,3-Dichlorobenzene	ND	330			NR				
1,4-Dichlorobenzene	ND	330			NR				
2,4,5-Trichlorophenol	ND	330			NR				
2,4,6-Trichlorophenol	ND	330			NR				
2,4-Dichlorophenol	ND	1600			NR				
2,4-Dimethylphenol	ND	330			NR				
2,4-Dinitrophenol	ND	1600			NR				
2,4-Dinitrotoluene	ND	330			NR				
2,6-Dinitrotoluene	ND	330			NR				
2-Chloronaphthalene	ND	330			NR				
2-Chlorophenol	ND	330			NR				
2-Methylnaphthalene	ND	330			NR				
2-Methylphenol	ND	330			NR				
2-Nitroaniline	ND	1600			NR				
2-Nitrophenol	ND	330			NR				
3,3´-Dichlorobenzidine	ND	660			NR				
3-Nitroaniline	ND	1600			NR				
4,6-Dinitro-2-methyphenol	ND	1600			NR				
4-Bromophenyl-phenylether	ND	330			NR				
4-Chloro-3-methylphenol	ND	660			NR				
4-Chloroaniline	ND	660			NR				
4-Chlorophenyl-phenylether	ND	330			NR				
4-Methylphenol	ND	330			NR				
4-Nitroaniline	ND	1600			NR				
4-Nitrophenol	ND	330			NR				
Acenaphthene	ND	330			NR				
Acenaphthylene	ND	330			NR				
Anthracene	ND	330			NR				
Benzidine (M)	ND	1600			NR				
Benzo(a)anthracene	ND	330			NR				
Benzo(a)pyrene	ND	330			NR				
Benzo(b)fluoranthene	ND	330			NR				
Benzo(g,h,i)perylene	ND	330			NR				
Benzo(k)fluoranthene	ND	330			NR				
Benzoic acid	ND	1600			NR				
Benzyl alcohol	ND	660			NR				
bis(2-chloroethoxy)methane	ND	330			NR				
bis(2-Chloroethyl)ether	ND	330			NR				
bis(2-chloroisopropyl)ether	ND	330			NR				

Figure C-2.97

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Semivolatile Organic Compounds by EPA 8270C - Quality Control (cont'd)

Analyte	Result (ug/kg)	PQL (ug/kg)	Spike Level	Source Result	% Rec	% Rec Limits	RPD	RPD Limit	Notes
Batch B5C0386 - MSSEMI_ISOTOPEDILN (continued)									
Blank (B5C0386-BLK1) - Continued				Prepared: 3/16/2015 Analyzed: 3/17/2015					
bis(2-ethylhexyl)phthalate	ND	330			NR				
Butylbenzylphthalate	ND	330			NR				
Chrysene	ND	330			NR				
Di-n-butylphthalate	ND	330			NR				
Di-n-octylphthalate	ND	330			NR				
Dibenz(a,h)anthracene	ND	330			NR				
Dibenzofuran	ND	330			NR				
Diethyl phthalate	ND	330			NR				
Dimethyl phthalate	ND	330			NR				
Fluoranthene	ND	330			NR				
Fluorene	ND	330			NR				
Hexachlorobenzene	ND	330			NR				
Hexachlorobutadiene	ND	660			NR				
Hexachlorocyclopentadiene	ND	660			NR				
Hexachloroethane	ND	330			NR				
Indeno(1,2,3-cd)pyrene	ND	330			NR				
Isophorone	ND	330			NR				
N-Nitroso-di-n propylamine	ND	330			NR				
N-Nitrosodiphenylamine	ND	330			NR				
Naphthalene	ND	330			NR				
Nitrobenzene	ND	330			NR				
Pentachlorophenol	ND	1600			NR				
Phenanthrene	ND	330			NR				
Phenol	ND	330			NR				
Pyrene	ND	330			NR				
Pyridine	ND	1600			NR				
Surrogate: 1,2-Dichlorobenzene-d4	*2215*		*3333.33*		*66.5*	*24 - 114*			
Surrogate: 2,4,6-Tribromophenol	*2558*		*3333.33*		*76.8*	*0 - 189*			
Surrogate: 2-Chlorophenol-d4	*2598*		*3333.33*		*78.0*	*23 - 123*			
Surrogate: 2-Fluorobiphenyl	*2364*		*3333.33*		*70.9*	*28 - 128*			
Surrogate: 2-Fluorophenol	*2588*		*3333.33*		*77.6*	*8 - 138*			
Surrogate: 4-Terphenyl-d14	*2614*		*3333.33*		*78.4*	*27 - 154*			
Surrogate: Nitrobenzene-d5	*2186*		*3333.33*		*65.6*	*19 - 129*			
Surrogate: Phenol-d5	*2614*		*3333.33*		*78.4*	*20 - 126*			

Figure C-2.98

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Semivolatile Organic Compounds by EPA 8270C - Quality Control (cont'd)

Analyte	Result (ug/kg)	PQL (ug/kg)	Spike Level	Source Result	% Rec	% Rec Limits	RPD	RPD Limit	Notes
Batch B5C0386 - MSSEMI_ISOTOPEDILN (continued)									
LCS (B5C0386-BS1)				Prepared: 3/16/2015 Analyzed: 3/17/2015					
1,2,4-Trichlorobenzene	2796.33	330	3333.33		83.9	67 - 110			
1,2-Dichlorobenzene	2579.67	330	3333.33		77.4	64 - 104			
1,3-Dichlorobenzene	2589.33	330	3333.33		77.7	63 - 104			
1,4-Dichlorobenzene	2351.00	330	3333.33		70.5	62 - 102			
2,4,5-Trichlorophenol	3300.67	330	3333.33		99.0	69 - 129			
2,4,6-Trichlorophenol	3155.00	330	3333.33		94.7	66 - 127			
2,4-Dichlorophenol	2951.33	1600	3333.33		88.5	64 - 116			
2,4-Dimethylphenol	2721.67	330	3333.33		81.7	61 - 111			
2,4-Dinitrophenol	2744.67	1600	3333.33		82.3	33 - 138			
2,4-Dinitrotoluene	3517.00	330	3333.33		106	76 - 137			
2,6-Dinitrotoluene	3396.33	330	3333.33		102	76 - 132			
2-Chloronaphthalene	3000.00	330	3333.33		90.0	67 - 126			
2-Chlorophenol	2608.67	330	3333.33		78.3	65 - 105			
2-Methylnaphthalene	2950.33	330	3333.33		88.5	68 - 121			
2-Methylphenol	2786.33	330	3333.33		83.6	66 - 103			
2-Nitroaniline	3395.00	1600	3333.33		102	62 - 137			
2-Nitrophenol	2882.33	330	3333.33		86.5	60 - 122			
3,3´-Dichlorobenzidine	2925.00	660	3333.33		87.8	61 - 128			
3-Nitroaniline	3140.67	1600	3333.33		94.2	61 - 118			
4,6-Dinitro-2-methyphenol	3071.67	1600	3333.33		92.2	57 - 146			
4-Bromophenyl-phenylether	3303.33	330	3333.33		99.1	71 - 135			
4-Chloro-3-methylphenol	3120.67	660	3333.33		93.6	72 - 124			
4-Chloroaniline	2754.00	660	3333.33		82.6	59 - 108			
4-Chlorophenyl-phenylether	3241.33	330	3333.33		97.2	71 - 135			
4-Methylphenol	2925.33	330	3333.33		87.8	72 - 113			
4-Nitroaniline	3550.33	1600	3333.33		107	70 - 130			
4-Nitrophenol	3059.33	330	3333.33		91.8	55 - 146			
Acenaphthene	3009.00	330	3333.33		90.3	66 - 112			
Acenaphthylene	3022.00	330	3333.33		90.7	66 - 114			
Anthracene	3315.00	330	3333.33		99.5	72 - 123			
Benzidine (M)	2933.33	1600	3333.33		88.0	43 - 155			
Benzo(a)anthracene	3325.33	330	3333.33		99.8	73 - 115			
Benzo(a)pyrene	3449.33	330	3333.33		103	78 - 125			
Benzo(b)fluoranthene	3392.33	330	3333.33		102	71 - 127			
Benzo(g,h,i)perylene	3310.67	330	3333.33		99.3	73 - 120			
Benzo(k)fluoranthene	3239.33	330	3333.33		97.2	72 - 121			
Benzoic acid	2625.00	1600	3333.33		78.8	19 - 133			
Benzyl alcohol	3015.00	660	3333.33		90.5	65 - 119			
bis(2-chloroethoxy)methane	2794.67	330	3333.33		83.8	62 - 118			
bis(2-Chloroethyl)ether	2610.33	330	3333.33		78.3	55 - 111			
bis(2-chloroisopropyl)ether	2620.33	330	3333.33		78.6	34 - 131			

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Semivolatile Organic Compounds by EPA 8270C - Quality Control (cont'd)

Analyte	Result (ug/kg)	PQL (ug/kg)	Spike Level	Source Result	% Rec	% Rec Limits	RPD	RPD Limit	Notes
Batch B5C0386 - MSSEMI_ISOTOPEDILN (continued)									
LCS (B5C0386-BS1) - Continued				Prepared: 3/16/2015 Analyzed: 3/17/2015					
bis(2-ethylhexyl)phthalate	3169.67	330	3333.33		95.1	51 - 165			
Butylbenzylphthalate	3554.67	330	3333.33		107	54 - 155			
Chrysene	3138.33	330	3333.33		94.2	70 - 110			
Di-n-butylphthalate	3534.00	330	3333.33		106	65 - 155			
Di-n-octylphthalate	3233.67	330	3333.33		97.0	59 - 151			
Dibenz(a,h)anthracene	3342.67	330	3333.33		100	72 - 132			
Dibenzofuran	3116.67	330	3333.33		93.5	67 - 124			
Diethyl phthalate	3298.00	330	3333.33		98.9	66 - 138			
Dimethyl phthalate	3296.00	330	3333.33		98.9	70 - 136			
Fluoranthene	3296.33	330	3333.33		98.9	69 - 122			
Fluorene	3115.00	330	3333.33		93.5	67 - 120			
Hexachlorobenzene	3312.00	330	3333.33		99.4	71 - 130			
Hexachlorobutadiene	2557.00	660	3333.33		76.7	57 - 111			
Hexachlorocyclopentadiene	3004.00	660	3333.33		90.1	63 - 135			
Hexachloroethane	2529.33	330	3333.33		75.9	60 - 107			
Indeno(1,2,3-cd)pyrene	3539.33	330	3333.33		106	76 - 136			
Isophorone	3225.67	330	3333.33		96.8	63 - 137			
N-Nitroso-di-n propylamine	2877.00	330	3333.33		86.3	59 - 127			
N-Nitrosodiphenylamine	3473.33	330	3333.33		104	70 - 137			
Naphthalene	2721.33	330	3333.33		81.6	62 - 104			
Nitrobenzene	2782.00	330	3333.33		83.5	57 - 127			
Pentachlorophenol	2797.33	1600	3333.33		83.9	51 - 135			
Phenanthrene	3244.67	330	3333.33		97.3	70 - 121			
Phenol	2785.67	330	3333.33		83.6	63 - 112			
Pyrene	3270.33	330	3333.33		98.1	67 - 123			
Pyridine	2012.67	1600	3333.33		60.4	18 - 106			
Surrogate: 1,2-Dichlorobenzene-d4	*1984*		*3333.33*		*59.5*	*24 - 114*			
Surrogate: 2,4,6-Tribromophenol	*2956*		*3333.33*		*88.7*	*0 - 189*			
Surrogate: 2-Chlorophenol-d4	*2439*		*3333.33*		*73.2*	*23 - 123*			
Surrogate: 2-Fluorobiphenyl	*2390*		*3333.33*		*71.7*	*28 - 128*			
Surrogate: 2-Fluorophenol	*2379*		*3333.33*		*71.4*	*8 - 138*			
Surrogate: 4-Terphenyl-d14	*2689*		*3333.33*		*80.7*	*27 - 154*			
Surrogate: Nitrobenzene-d5	*2304*		*3333.33*		*69.1*	*19 - 129*			
Surrogate: Phenol-d5	*2495*		*3333.33*		*74.9*	*20 - 126*			

Figure C-2.100

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Semivolatile Organic Compounds by EPA 8270C - Quality Control (cont'd)

Analyte	Result (ug/kg)	PQL (ug/kg)	Spike Level	Source Result	% Rec	% Rec Limits	RPD	RPD Limit	Notes
Batch B5C0386 - MSSEMI_ISOTOPEDILN (continued)									
Matrix Spike (B5C0386-MS1)		**Source: 1500887-05**		Prepared: 3/16/2015 Analyzed: 3/17/2015					
1,2,4-Trichlorobenzene	2761.00	330	3333.33	ND	82.8	56 - 112			
1,2-Dichlorobenzene	2554.00	330	3333.33	ND	76.6	52 - 105			
1,3-Dichlorobenzene	2576.00	330	3333.33	ND	77.3	51 - 105			
1,4-Dichlorobenzene	2359.33	330	3333.33	ND	70.8	50 - 104			
2,4,5-Trichlorophenol	3148.67	330	3333.33	ND	94.5	41 - 145			
2,4,6-Trichlorophenol	3076.33	330	3333.33	ND	92.3	35 - 147			
2,4-Dichlorophenol	2861.33	1600	3333.33	ND	85.8	50 - 120			
2,4-Dimethylphenol	2637.00	330	3333.33	ND	79.1	56 - 108			
2,4-Dinitrophenol	2085.00	1600	3333.33	ND	62.6	0 - 167			
2,4-Dinitrotoluene	3288.67	330	3333.33	ND	98.7	60 - 146			
2,6-Dinitrotoluene	3235.67	330	3333.33	ND	97.1	65 - 138			
2-Chloronaphthalene	2930.00	330	3333.33	ND	87.9	62 - 127			
2-Chlorophenol	2580.00	330	3333.33	ND	77.4	48 - 112			
2-Methylnaphthalene	2859.67	330	3333.33	ND	85.8	61 - 120			
2-Methylphenol	2772.00	330	3333.33	ND	83.2	53 - 107			
2-Nitroaniline	3235.33	1600	3333.33	ND	97.1	53 - 140			
2-Nitrophenol	2826.33	330	3333.33	ND	84.8	43 - 127			
3,3´-Dichlorobenzidine	2836.33	660	3333.33	ND	85.1	39 - 149			
3-Nitroaniline	3106.33	1600	3333.33	ND	93.2	47 - 127			
4,6-Dinitro-2-methyphenol	2843.00	1600	3333.33	ND	85.3	28 - 158			
4-Bromophenyl-phenylether	3068.00	330	3333.33	ND	92.0	67 - 137			
4-Chloro-3-methylphenol	3007.00	660	3333.33	ND	90.2	38 - 120			
4-Chloroaniline	2597.00	660	3333.33	ND	77.9	53 - 104			
4-Chlorophenyl-phenylether	3083.67	330	3333.33	ND	92.5	58 - 143			
4-Methylphenol	2885.00	330	3333.33	ND	86.6	59 - 116			
4-Nitroaniline	3351.67	1600	3333.33	ND	101	49 - 142			
4-Nitrophenol	2782.33	330	3333.33	ND	83.5	30 - 155			
Acenaphthene	2861.67	330	3333.33	ND	85.9	56 - 116			
Acenaphthylene	2903.00	330	3333.33	ND	87.1	57 - 118			
Anthracene	3110.00	330	3333.33	ND	93.3	63 - 129			
Benzidine (M)	2725.33	1600	3333.33	ND	81.8	29 - 127			
Benzo(a)anthracene	3112.67	330	3333.33	ND	93.4	69 - 114			
Benzo(a)pyrene	3202.00	330	3333.33	ND	96.1	67 - 127			
Benzo(b)fluoranthene	3178.00	330	3333.33	ND	95.3	68 - 122			
Benzo(g,h,i)perylene	3076.00	330	3333.33	ND	92.3	50 - 138			
Benzo(k)fluoranthene	3006.33	330	3333.33	ND	90.2	60 - 125			
Benzoic acid	6944.67	1600	3333.33	ND	208	0 - 215			
Benzyl alcohol	2973.33	660	3333.33	ND	89.2	54 - 117			
bis(2-chloroethoxy)methane	2730.00	330	3333.33	ND	81.9	54 - 119			
bis(2-Chloroethyl)ether	2622.67	330	3333.33	ND	78.7	41 - 118			
bis(2-chloroisopropyl)ether	2634.00	330	3333.33	ND	79.0	33 - 123			

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Semivolatile Organic Compounds by EPA 8270C - Quality Control (cont'd)

Analyte	Result (ug/kg)	PQL (ug/kg)	Spike Level	Source Result	% Rec	% Rec Limits	RPD	RPD Limit	Notes
Batch B5C0386 - MSSEMI_ISOTOPEDILN (continued)									
Matrix Spike (B5C0386-MS1) - Continued		**Source: 1500887-05**		Prepared: 3/16/2015 Analyzed: 3/17/2015					
bis(2-ethylhexyl)phthalate	2983.00	330	3333.33	ND	89.5	53 - 158			
Butylbenzylphthalate	3399.33	330	3333.33	ND	102	53 - 152			
Chrysene	2967.00	330	3333.33	ND	89.0	62 - 113			
Di-n-butylphthalate	3306.33	330	3333.33	ND	99.2	57 - 158			
Di-n-octylphthalate	3029.00	330	3333.33	ND	90.9	38 - 166			
Dibenz(a,h)anthracene	3119.33	330	3333.33	ND	93.6	52 - 142			
Dibenzofuran	2982.00	330	3333.33	ND	89.5	54 - 134			
Diethyl phthalate	3145.00	330	3333.33	ND	94.4	61 - 140			
Dimethyl phthalate	3125.33	330	3333.33	ND	93.8	63 - 137			
Fluoranthene	3077.33	330	3333.33	ND	92.3	55 - 133			
Fluorene	2962.00	330	3333.33	ND	88.9	54 - 131			
Hexachlorobenzene	3116.67	330	3333.33	ND	93.5	65 - 134			
Hexachlorobutadiene	2529.33	660	3333.33	ND	75.9	48 - 114			
Hexachlorocyclopentadiene	2953.67	660	3333.33	ND	88.6	50 - 142			
Hexachloroethane	2495.33	330	3333.33	ND	74.9	43 - 119			
Indeno(1,2,3-cd)pyrene	3288.00	330	3333.33	ND	98.6	56 - 149			
Isophorone	3115.33	330	3333.33	ND	93.5	56 - 136			
N-Nitroso-di-n propylamine	2775.00	330	3333.33	ND	83.3	47 - 130			
N-Nitrosodiphenylamine	3258.33	330	3333.33	ND	97.8	70 - 137			
Naphthalene	2662.67	330	3333.33	ND	79.9	54 - 105			
Nitrobenzene	2770.67	330	3333.33	ND	83.1	47 - 130			
Pentachlorophenol	2519.67	1600	3333.33	ND	75.6	18 - 160			
Phenanthrene	3075.00	330	3333.33	ND	92.3	50 - 140			
Phenol	2742.67	330	3333.33	ND	82.3	55 - 112			
Pyrene	3076.33	330	3333.33	ND	92.3	54 - 135			
Pyridine	2084.67	1600	3333.33	ND	62.5	0 - 139			
Surrogate: 1,2-Dichlorobenzene-d4	*2001*		*3333.33*		*60.0*	*24 - 114*			
Surrogate: 2,4,6-Tribromophenol	*2812*		*3333.33*		*84.4*	*0 - 189*			
Surrogate: 2-Chlorophenol-d4	*2429*		*3333.33*		*72.9*	*23 - 123*			
Surrogate: 2-Fluorobiphenyl	*2313*		*3333.33*		*69.4*	*28 - 128*			
Surrogate: 2-Fluorophenol	*2356*		*3333.33*		*70.7*	*8 - 138*			
Surrogate: 4-Terphenyl-d14	*2535*		*3333.33*		*76.0*	*27 - 154*			
Surrogate: Nitrobenzene-d5	*2104*		*3333.33*		*63.1*	*19 - 129*			
Surrogate: Phenol-d5	*2487*		*3333.33*		*74.6*	*20 - 126*			

Figure C-2.102

Amec Foster Wheeler	Project Number : MTA WES, 4953-11-1423
6001 Rickenbacker Road	Report To : Ron Lopez
Los Angeles , CA 90040	Reported : 03/23/2015

Semivolatile Organic Compounds by EPA 8270C - Quality Control (cont'd)

Analyte	Result (ug/kg)	PQL (ug/kg)	Spike Level	Source Result	% Rec	% Rec Limits	RPD	RPD Limit	Notes
Batch B5C0386 - MSSEMI_ISOTOPEDILN (continued)									
Matrix Spike Dup (B5C0386-MSD1)		**Source: 1500887-05**		Prepared: 3/16/2015 Analyzed: 3/17/2015					
1,2,4-Trichlorobenzene	3032.67	330	3333.33	ND	91.0	56 - 112	9.38	20	
1,2-Dichlorobenzene	2826.00	330	3333.33	ND	84.8	52 - 105	10.1	20	
1,3-Dichlorobenzene	2862.00	330	3333.33	ND	85.9	51 - 105	10.5	20	
1,4-Dichlorobenzene	2623.67	330	3333.33	ND	78.7	50 - 104	10.6	20	
2,4,5-Trichlorophenol	3468.67	330	3333.33	ND	104	41 - 145	9.67	20	
2,4,6-Trichlorophenol	3336.00	330	3333.33	ND	100	35 - 147	8.10	20	
2,4-Dichlorophenol	3131.67	1600	3333.33	ND	94.0	50 - 120	9.02	20	
2,4-Dimethylphenol	2855.67	330	3333.33	ND	85.7	56 - 108	7.96	20	
2,4-Dinitrophenol	2100.33	1600	3333.33	ND	63.0	0 - 167	0.733	20	
2,4-Dinitrotoluene	3543.33	330	3333.33	ND	106	60 - 146	7.46	20	
2,6-Dinitrotoluene	3529.67	330	3333.33	ND	106	65 - 138	8.69	20	
2-Chloronaphthalene	3223.33	330	3333.33	ND	96.7	62 - 127	9.53	20	
2-Chlorophenol	2881.00	330	3333.33	ND	86.4	48 - 112	11.0	20	
2-Methylnaphthalene	3162.67	330	3333.33	ND	94.9	61 - 120	10.1	20	
2-Methylphenol	3067.67	330	3333.33	ND	92.0	53 - 107	10.1	20	
2-Nitroaniline	3526.33	1600	3333.33	ND	106	53 - 140	8.61	20	
2-Nitrophenol	3166.67	330	3333.33	ND	95.0	43 - 127	11.4	20	
3,3´-Dichlorobenzidine	3111.00	660	3333.33	ND	93.3	39 - 149	9.24	20	
3-Nitroaniline	3365.33	1600	3333.33	ND	101	47 - 127	8.00	20	
4,6-Dinitro-2-methyphenol	3093.67	1600	3333.33	ND	92.8	28 - 158	8.44	20	
4-Bromophenyl-phenylether	3362.33	330	3333.33	ND	101	67 - 137	9.15	20	
4-Chloro-3-methylphenol	3259.67	660	3333.33	ND	97.8	38 - 120	8.06	20	
4-Chloroaniline	2744.00	660	3333.33	ND	82.3	53 - 104	5.50	20	
4-Chlorophenyl-phenylether	3383.33	330	3333.33	ND	102	58 - 143	9.27	20	
4-Methylphenol	3227.00	330	3333.33	ND	96.8	59 - 116	11.2	20	
4-Nitroaniline	3621.33	1600	3333.33	ND	109	49 - 142	7.73	20	
4-Nitrophenol	3043.00	330	3333.33	ND	91.3	30 - 155	8.95	20	
Acenaphthene	3103.33	330	3333.33	ND	93.1	56 - 116	8.10	20	
Acenaphthylene	3183.67	330	3333.33	ND	95.5	57 - 118	9.22	20	
Anthracene	3372.33	330	3333.33	ND	101	63 - 129	8.09	20	
Benzidine (M)	3013.00	1600	3333.33	ND	90.4	29 - 127	10.0	20	
Benzo(a)anthracene	3364.33	330	3333.33	ND	101	69 - 114	7.77	20	
Benzo(a)pyrene	3512.00	330	3333.33	ND	105	67 - 127	9.23	20	
Benzo(b)fluoranthene	3530.33	330	3333.33	ND	106	68 - 122	10.5	20	
Benzo(g,h,i)perylene	3395.67	330	3333.33	ND	102	50 - 138	9.88	20	
Benzo(k)fluoranthene	3291.00	330	3333.33	ND	98.7	60 - 125	9.04	20	
Benzoic acid	7407.00	1600	3333.33	ND	222	0 - 215	6.44	20	M2
Benzyl alcohol	3366.33	660	3333.33	ND	101	54 - 117	12.4	20	
bis(2-chloroethoxy)methane	2980.33	330	3333.33	ND	89.4	54 - 119	8.77	20	
bis(2-Chloroethyl)ether	2975.00	330	3333.33	ND	89.3	41 - 118	12.6	20	
bis(2-chloroisopropyl)ether	2931.67	330	3333.33	ND	88.0	33 - 123	10.7	20	

Certificate of Analysis

Amec Foster Wheeler	Project Number : MTA WES, 4953-11-1423
6001 Rickenbacker Road	Report To : Ron Lopez
Los Angeles , CA 90040	Reported : 03/23/2015

Semivolatile Organic Compounds by EPA 8270C - Quality Control (cont'd)

Analyte	Result (ug/kg)	PQL (ug/kg)	Spike Level	Source Result	% Rec	% Rec Limits	RPD	RPD Limit	Notes
Batch B5C0386 - MSSEMI_ISOTOPEDILN (continued)									
Matrix Spike Dup (B5C0386-MSD1) - Continued		**Source: 1500887-05**		Prepared: 3/16/2015 Analyzed: 3/17/2015					
bis(2-ethylhexyl)phthalate	3343.67	330	3333.33	ND	100	53 - 158	11.4	20	
Butylbenzylphthalate	3752.67	330	3333.33	ND	113	53 - 152	9.88	20	
Chrysene	3216.33	330	3333.33	ND	96.5	62 - 113	8.06	20	
Di-n-butylphthalate	3622.33	330	3333.33	ND	109	57 - 158	9.12	20	
Di-n-octylphthalate	3317.67	330	3333.33	ND	99.5	38 - 166	9.10	20	
Dibenz(a,h)anthracene	3433.67	330	3333.33	ND	103	52 - 142	9.59	20	
Dibenzofuran	3239.67	330	3333.33	ND	97.2	54 - 134	8.28	20	
Diethyl phthalate	3389.33	330	3333.33	ND	102	61 - 140	7.48	20	
Dimethyl phthalate	3440.00	330	3333.33	ND	103	63 - 137	9.59	20	
Fluoranthene	3324.67	330	3333.33	ND	99.7	55 - 133	7.73	20	
Fluorene	3198.33	330	3333.33	ND	96.0	54 - 131	7.67	20	
Hexachlorobenzene	3359.00	330	3333.33	ND	101	65 - 134	7.48	20	
Hexachlorobutadiene	2770.33	660	3333.33	ND	83.1	48 - 114	9.09	20	
Hexachlorocyclopentadiene	3257.00	660	3333.33	ND	97.7	50 - 142	9.77	20	
Hexachloroethane	2756.33	330	3333.33	ND	82.7	43 - 119	9.94	20	
Indeno(1,2,3-cd)pyrene	3615.33	330	3333.33	ND	108	56 - 149	9.48	20	
Isophorone	3431.00	330	3333.33	ND	103	56 - 136	9.64	20	
N-Nitroso-di-n propylamine	3134.67	330	3333.33	ND	94.0	47 - 130	12.2	20	
N-Nitrosodiphenylamine	3576.33	330	3333.33	ND	107	70 - 137	9.31	20	
Naphthalene	2915.67	330	3333.33	ND	87.5	54 - 105	9.07	20	
Nitrobenzene	3013.00	330	3333.33	ND	90.4	47 - 130	8.38	20	
Pentachlorophenol	2726.33	1600	3333.33	ND	81.8	18 - 160	7.88	20	
Phenanthrene	3326.00	330	3333.33	ND	99.8	50 - 140	7.84	20	
Phenol	3084.67	330	3333.33	ND	92.5	55 - 112	11.7	20	
Pyrene	3289.67	330	3333.33	ND	98.7	54 - 135	6.70	20	
Pyridine	2330.33	1600	3333.33	ND	69.9	0 - 139	11.1	20	
Surrogate: 1,2-Dichlorobenzene-d4	*2192*		*3333.33*		*65.8*	*24 - 114*			
Surrogate: 2,4,6-Tribromophenol	*2948*		*3333.33*		*88.4*	*0 - 189*			
Surrogate: 2-Chlorophenol-d4	*2665*		*3333.33*		*80.0*	*23 - 123*			
Surrogate: 2-Fluorobiphenyl	*2512*		*3333.33*		*75.4*	*28 - 128*			
Surrogate: 2-Fluorophenol	*2557*		*3333.33*		*76.7*	*8 - 138*			
Surrogate: 4-Terphenyl-d14	*2775*		*3333.33*		*83.3*	*27 - 154*			
Surrogate: Nitrobenzene-d5	*2240*		*3333.33*		*67.2*	*19 - 129*			
Surrogate: Phenol-d5	*2737*		*3333.33*		*82.1*	*20 - 126*			

Figure C-2.104

Certificate of Analysis

Amec Foster Wheeler	Project Number : MTA WES, 4953-11-1423
6001 Rickenbacker Road	Report To : Ron Lopez
Los Angeles , CA 90040	Reported : 03/23/2015

Notes and Definitions

R	RPD value outside acceptance criteria. Calculation is based on raw values.
M2	Matrix spike recovery outside of acceptance limit due to possible matrix interference. The analytical batch was validated by the laboratory control sample.
M1	Matrix spike recovery outside of acceptance limit. The analytical batch was validated by the laboratory control sample.
ND	Analyte is not detected at or above the Practical Quantitation Limit (PQL). When client requests quantitation against MDL, analyte is not detected at or above the Method Detection Limit (MDL)
PQL	Practical Quantitation Limit
MDL	Method Detection Limit
NR	Not Reported
RPD	Relative Percent Difference
CA2	CA-ELAP (CDPH)
OR1	OR-NELAP (OSPHL)
TX1	TX-NELAP (TCEQ)

Notes:
(1) The reported MDL and PQL are based on prep ratio variation and analytical dilution.
(2) The suffix [2C] of specific analytes signifies that the reported result is taken from the instrument's second column.
(3) Results are wet unless otherwise specified.

Figure C-2.105

ADVANCED TECHNOLOGY LABORATORIES
3275 Walnut Ave., Signal Hill, CA 90755
Tel: (562) 989-4045 • Fax: (562) 989-4040

CHAIN OF CUSTODY RECORD

Page 1 of 1

Instruction: Complete all shaded areas.

For Laboratory Use Only — ATLCOC Ver: 20130715

Method of Transport	Sample Conditions Upon Receipt					
	Condition	Y	N	Condition	Y	N
☑ Client ☐ ATL	1. CHILLED	☑	☐	5. # OF SAMPLES MATCH COC	☑	☐
☐ FedEx ☐ OnTrac	2. HEADSPACE (VOA)	☐	☐	6. PRESERVED	☐	☑
☐ GSO	3. CONTAINER INTACT	☑	☐	7. COOLER TEMP, deg C:	—	
☐ Other:	4. SEALED	☐	☑			

CUSTOMER

Company: AMEC FOSTER WHEELER
Address: 6001 RICKENBAKER Rd.
City: LOS ANGELES State: CA Zip: 90040
Tel: 323-889-5300 Fax: 323-889-6700

SEND REPORT TO:
Attn: RON LOPEZ Email: RON.R.LOPEZ@AMEC.com
Company: AMEC FOSTER WHEELER
Address: SAME
City: State: Zip:

SEND INVOICE TO: ☐ same as SEND REPORT TO
Attn: Email:
Company: AMEC FOSTER WHEELER
Address: SAME
City: State: Zip:

PROJECT SAMPLES

Project Name: MTA WES
Project No.: 4953-11-1423
Sampler: RON LOPEZ
Quote No:
PO #: CO2206204
Special Instructions/Comments:

ITEM	Lab No.	Sample Description: Sample ID / Location	Date	Time	8260 / 624 (Volatiles)	8015(GRO)	8015(DRO) / ORO	8270(Semi-volatiles)	8081(Organochlorine Pesticides)	8082(PCBs)	6010 / 7000(Title 22 Metals)	TO-15	1664 TRPH	Encircle Sample Matrix: SOIL / SEDIMENT / SLUDGE	SOLIDS / WIPE / FILTER	WATER - DRINKING / GROUND	WATER - STORM / WASTE	AQUEOUS / LAYERED - OIL	TAT	Container: #	Type: 1=Tube; 2=VOA; 3=Liter; 4=Pint; 5=Jar; 6=Tedlar; 7=Canister	Material: 1=Glass; 2=Plastic; 3=Metal	Preservative: 1=HCl; 2=HNO3; 3=H2SO4; 4=4C; 5=Zn ((Ac)2; 6=NaOH; 7=NA2S2O3	REMARKS
1	1500919-1	E132B-25	3-12-15	10:36																				HOLD
2	-2	E132B-35		10:51	X	X	X	X		X	X			X					5	1	1	3		
3	-3	E132B-45		11:06																				HOLD
4	-4	E132B-55		11:23	X	X	X	X		X	X			X										
5	-5	E132B-65		11:47	X	X	X	X		X	X			X					5	1	1	3		
6	-6	E132B-75		12:08	X	X	X	X		X	X			X					5	1	1	3		
7	-7	E132B-85		12:30	X	X	X	X		X	X			X					5	1	1	3		
8	-8	E132B-90		12:43	X	X	X	X		X	X			X					5	1	1	3		
9																								
10																								

QA/QC: ☐ Routine ☐ Caltrans ☐ Legal ☐ RWQCB ☐ Level IV

TERMS

1. Sample receiving hours: 7:30 AM to 7:30 PM Monday - Friday; Saturday 8:00 AM to 12:00 PM.
2. Samples Submitted AFTER 3:00 PM, are considered received the following Business day at 8:00 AM.
3. The following turnaround time conditions apply:
   - TAT = 0 : 300% Surcharge SAME BUSINESS DAY if received by 9:00 AM
   - TAT = 1 : 100% Surcharge NEXT BUSINESS DAY (COB 5:00 PM)
   - TAT = 2 : 50% Surcharge 2ND BUSINESS DAY (COB 5:00 PM)
   - TAT = 3 : 30% Surcharge 3RD BUSINESS DAY (COB 5:00 PM)
   - TAT = 4 : 20% Surcharge 4TH BUSINESS DAY (COB 5:00 PM)
   - TAT = 5 : NO SURCHARGE 5th BUSINESS DAY (COB 5:00 PM)
4. Weekend, holiday, after-hours work - ask for quote.
5. Subcontract TAT is 10 - 15 business days. Projects requiring shorter TATs will incur a surcharge respective to the subcontract lab --- ask for quote.
6. Liquid and solid samples will be disposed of after 45 calendar days from receipt of samples; air samples will be disposed of after 14 calendar days after receipt of samples.
7. Electronic records maintained for fi ve (5) years from report date.
8. Hard copy reports will be disposed of after 45 calendar days from report date.
9. Storage and Report Fees:
   - Liquid & solid samples: Complimentary storage for forty-fi ve (45) calendar days from receipt of samples; $2/sample/month if extended storage or hold is requested.
   - Air samples: Complimentary storage for ten (10) calendar days from receipt of samples; $20/ sample/week if extended storage is requested.
   - Hard copy and regenerated reports/EDDs: $17.50 per hard copy report requested; $50.00 per regenerated/reforma? ed report; $35 per reprocessed EDD.
10. Rush TCLP/STLC samples: add 2 days to analysis TAT for extraction on procedure.
11. Unanalyzed samples will incur a disposal fee of $7 per sample.

As the authorized agent of the company above, I hereby purchase laboratory services from ATL as shown above and hereby guarantee payment as quoted.

RON LOPEZ — Submitter Print Name
Signature

CUSTODY

Relinquished by: (Signature and Printed Name)	Date:	Time:	Received by: (Signature and Printed Name)	Date:	Time:
	3-12-15	2:04	FEDEX	3/12/15	1404
Relinquished by: (Signature and Printed Name)	Date:	Time:	Received by: (Signature and Printed Name)	Date:	Time:
Relinquished by: (Signature and Printed Name)	Date:	Time:	Received by: (Signature and Printed Name)	Date:	Time:

Figure C-2.106

ADVANCED TECHNOLOGY LABORATORIES

June 01, 2015

Ron Lopez
Amec Foster Wheeler
6001 Rickenbacker Road
Los Angeles, CA 90040
Tel: (323) 889-5300
Fax:(323) 721-6700

ELAP No.: 1838
CSDLAC No.: 10196
ORELAP No.: CA300003
TCEQ No. : T104704502

Re: ATL Work Order Number : 1500919
Client Reference : MTA WES, 4953-11-1423

Enclosed are the results for sample(s) received on March 12, 2015 by Advanced Technology Laboratories. The sample(s) are tested for the parameters as indicated on the enclosed chain of custody in accordance with applicable laboratory certifications. The laboratory results contained in this report specifically pertains to the sample(s) submitted.

Thank you for the opportunity to serve the needs of your company. If you have any questions, please feel free to contact me or your Project Manager.

Sincerely,

Eddie Rodriguez
Laboratory Director

Figure C-2.107

Certificate of Analysis

Amec Foster Wheeler		Project Number :	MTA WES, 4953-11-1423
6001 Rickenbacker Road		Report To :	Ron Lopez
Los Angeles , CA 90040		Reported :	06/01/2015

SUMMARY OF SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
E132B-75	1500919-06	Soil	3/12/15 12:08	3/12/15 14:04
E132B-85	1500919-07	Soil	3/12/15 12:30	3/12/15 14:04
E132B-90	1500919-08	Soil	3/12/15 12:43	3/12/15 14:04

CASE NARRATIVE

The samples for Fish Bioassay analysis were subcontracted to Associated Laboratory with ELAP Cert .#1338.

Certificate of Analysis

Amec Foster Wheeler	Project Number : MTA WES, 4953-11-1423
6001 Rickenbacker Road	Report To : Ron Lopez
Los Angeles , CA 90040	Reported : 06/01/2015

Client Sample ID E132B-85

Lab ID: 1500919-07

STLC Metals by ICP-AES by EPA 6010B **Analyst: RR**

Analyte	Result (mg/L)	PQL (mg/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Arsenic	**1.0**	1.0	20	B5E0726	05/28/2015	05/28/15 10:19	

QUALITY CONTROL SECTION

STLC Metals by ICP-AES by EPA 6010B - Quality Control

Analyte	Result (mg/L)	PQL (mg/L)	Spike Level	Source Result	% Rec	% Rec Limits	RPD	RPD Limit	Notes
Batch B5E0726 - STLC_S Extraction									
Blank (B5E0726-BLK1)				Prepared: 5/28/2015 Analyzed: 5/28/2015					
Arsenic	ND	1.0			NR				
LCS (B5E0726-BS1)				Prepared: 5/28/2015 Analyzed: 5/28/2015					
Arsenic	1.90462		2.00000		95.2	80 - 120			
Duplicate (B5E0726-DUP1)		**Source: 1500919-07**		Prepared: 5/28/2015 Analyzed: 5/28/2015					
Arsenic	0.933546	1.0		1.02631	NR		9.47	20	
Matrix Spike (B5E0726-MS1)		**Source: 1500919-07**		Prepared: 5/28/2015 Analyzed: 5/28/2015					
Arsenic	3.37183		2.50000	1.02631	93.8	90 - 110			
Matrix Spike Dup (B5E0726-MSD1)		**Source: 1500919-07**		Prepared: 5/28/2015 Analyzed: 5/28/2015					
Arsenic	3.47572		2.50000	1.02631	98.0	90 - 110	3.03	20	

Certificate of Analysis

Amec Foster Wheeler		Project Number :	MTA WES, 4953-11-1423
6001 Rickenbacker Road		Report To :	Ron Lopez
Los Angeles , CA 90040		Reported :	06/01/2015

Notes and Definitions

ND	Analyte is not detected at or above the Practical Quantitation Limit (PQL). When client requests quantitation against MDL, analyte is not detected at or above the Method Detection Limit (MDL)
PQL	Practical Quantitation Limit
MDL	Method Detection Limit
NR	Not Reported
RPD	Relative Percent Difference
CA2	CA-ELAP (CDPH)
OR1	OR-NELAP (OSPHL)
TX1	TX-NELAP (TCEQ)

Notes:
(1) The reported MDL and PQL are based on prep ratio variation and analytical dilution.
(2) The suffix [2C] of specific analytes signifies that the reported result is taken from the instrument's second column.
(3) Results are wet unless otherwise specified.

Associated Laboratories
806 N. Batavia - Orange, CA 92868
Tel: (714)771-6900 Fax: (714)538-1209
www.associatedlabs.com
info@associatedlabs.com

MONTROSE

Client: Advanced Technology Labs
Address: 3275 Walnut Avenue
Signal Hill, CA 90755

Attn: Rachelle Arada

Comments: Work Order:1500919
PO #:SC09632

LC50 > 750 mg/L = Non Hazardous

Lab Request: 356443
Report Date: 05/29/2015
Date Received: 05/22/2015
Client ID: 5153

This laboratory request covers the following listed samples which were analyzed for the parameters indicated on the attached Analytical Result Report. All analyses were conducted using the appropriate methods. Methods accredited by NELAC are indicated on the report. This cover letter is an integral part of the final report.

Sample #	Client Sample ID
356443-001	1500919-06/ E132B-75
356443-002	1500919-07/ E132B-85
356443-003	1500919-08/ E132B-90

Thank you for the opportunity to be of service to your company. Please feel free to call if there are any questions regarding this report or if we can be of further service.

Approved By:

Helene Gardner, Ph.D. / Technical Director or
Hongling Cao / District Manager

NOTE: Unless notified in writing, all samples will be discarded by appropriate disposal protocol 45 days from date reported.

Figure C-2.111

Matrix: Solid	**Client:** Advanced Technology Labs		**Collector:** Client
Sampled: 03/12/2015 12:08	**Site:**		
Sample #: 356443-001	**Client Sample #:** 1500919-06/ E132B-75		**Sample Type:**

Analyte	Result	DF	RDL	Units	Analyzed	By	Notes
Method: CDFG P&M 1988	**Prep Method:** Method					**QCBatchID:**	
LC50	**>750**	1		mg/L	05/22/15	quang	

Matrix: Solid	**Client:** Advanced Technology Labs		**Collector:** Client
Sampled: 03/12/2015 12:30	**Site:**		
Sample #: 356443-002	**Client Sample #:** 1500919-07/ E132B-85		**Sample Type:**

Analyte	Result	DF	RDL	Units	Analyzed	By	Notes
Method: CDFG P&M 1988	**Prep Method:** Method					**QCBatchID:**	
LC50	**>750**	1		mg/L	05/22/15	quang	

Matrix: Solid	**Client:** Advanced Technology Labs		**Collector:** Client
Sampled: 03/12/2015 12:43	**Site:**		
Sample #: 356443-003	**Client Sample #:** 1500919-08/ E132B-90		**Sample Type:**

Analyte	Result	DF	RDL	Units	Analyzed	By	Notes
Method: CDFG P&M 1988	**Prep Method:** Method					**QCBatchID:**	
LC50	**>750**	1		mg/L	05/22/15	quang	

Figure C-2.112

Data Qualifiers and Definitions

Qualifiers

B	Analyte was present in an associated method blank. Associated sample data was reported with qualifier.
B1	Analyte was present in an sample and associated method blank greater than MDL but less than DRL. Associated sample data was reported with qualifier.
BQ1	No valid test replicates. Result may be greater. Best result was reported with qualifier. Sample toxicity possible.
BQ2	No valid test replicates.
BQ3	Minimum DO is less than 1.0 mg/L. Result may be greater and reported with qualifier.
C	Laboratory Contamination.
D	RPD was not within control limits, the sample data was reported without further clarification.
D1	Lesser amount of sample was used due to insufficient amount of sample supplied
DW	Sample result is calculated on a dry weigh basis
J	Reported value is estimated
L	The laboratory control sample (LCS) or laboratory control sample duplicate (LCSD) was out of control limits. Associated sample data was reported with qualifier.
M	The matrix spike (MS) or matrix spike duplicate (MSD) was not within control limits due to matrix interference. The associated LCS and/or LCSD was within control limits and the sample data was reported without further clarification.
NC	The analyte concentration in the sample exceeded the spike level by a factor of four or greater, spike recovery and limits do not apply.
P	Sample was received without proper preservation according to EPA guidelines.
P1	Temperature of refrigerator was out of acceptance limit due to technical difficulty.
Q1	Analyte Calibration Verification exceeds criteria and the result was reported with qualifier.
Q2	Analyte calibration was not verified and the result was estimated and reported with qualifier.
Q3	Analyte initial calibration was not available or exceeds criteria. The result was estimated and reported with qualifier.
Q4	Analyte result out of calibration range and was reported with qualifier
S	The surrogate recovery was out of control limits due to matrix interference. The associated method blank surrogate recovery was within control limits and the sample data was reported without further clarification.
T	Sample was extracted/analyzed past the holding time.
T1	Reanalysis was reported past hold time due to failing replicates in the original analysis (BOD only).
T2	Sample was analyzed ASAP but received and analyzed past the 15 minute holding time.
T3	Sample received and analyzed out of hold time per client's request
T4	Sample was analyzed out of hold time per client's request
T5	Reanalysis was reported past hold time. The original analysis was within hold time, but not reportable.
T6	Hold time is indeterminable due to unspecified sampling time.

Definitions

DF	Dilution Factor
MDL	Method Detection Limit. Result is reported ND when it is less than or equal to MDL.
ND	Analyte was not detected or was less than the detection limit.
RDL	Reporting Detection Limit
TIC	Tentatively Identified Compounds

Figure C-2.113

Lab. No. 356443-1

Date Received: 05/22/2015
Date Reported: 05/26/15

LABORATORY WORKSHEET

Bioassay Type
Static V Continuous ____ Renewal ____
Screening V Definitive ____

Report To: Advanced Technology Labs.
402

Sample Description Soil # 1500919-06/E132B-75.
Test Organism: Pimephales Promelas Source: Thomas Fish Farm Acclimatization: 22 Days 20 deg. C (FB-1)
Aquaria Volume: 10 liter(s) Aquaria Depth: 5 inch(es) No. Fish/Concentration: 10 Total Chlorine Residual: n/D Sample Conductivity: 260 µmhos/cm
Organism Characteristics - Length (mm): Min: 35 mm Max: 43 mm Avg: 39 mm Weigh (gm): Min: 0.45 gm Max: 0.54 gm Avg: 0.49 gm
Dilution water - Source: Soft Water Hardness – Initial: 40 mg/l Final: 60 mg/l Alkaline – Initial: 30 mg/l Final: 40 mg/l
Aeration: N/A Control Hardness Initial: 40 mg/l . Final: 50 mg/l . Control Alkaline Initial: 30 mg/l . Final 35 mg/l . Control Conductivity 205 µmhos/cm
Aeration Rate: N/A Aeration Duration: ____ Tanks: ____

Bioassay Conditions	Date Time	Control		Dilution											
				750		400		DUP 750		DUP 400					
		No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
Organisms Surviving	05/22	10	100	10	100	10	100	10	100	10	100	10	100	10	100
	05/23	10	100	10	100	10	100	10	100	10	100				
	05/24	10	100	10	100	10	100	10	100	10	100				
	05/25	10	100	10	100	10	100	10	100	10	100				
	05/26	10	100	10	100	10	100	10	100	10	100				
Dissolved Oxygen mg/L	16:20	6.4		6.5		6.5		6.5		6.5					
	11:35	7.3		6.8		6.6		6.8		6.6					
	13:00	7.5		7.2		6.9		7.2		6.9					
	12:10	7.0		7.4		7.0		7.4		7.0					
	11:20	7.2		7.1		7.2		7.1		7.2					
pH / Temp	Start	6.9	20.1 °C	7.3	20.1 °C	7.2	20.1 °C	7.3	20.1 °C	7.2	20.1 °C		°C		°C
	24 Hr	7.1	20.0 °C	7.2	20.0 °C	7.0	20.0 °C	7.2	20.0 °C	7.0	20.0 °C		°C		°C
	48 Hr	7.0	20.2 °C	7.3	20.2 °C	7.1	20.2 °C	7.3	20.2 °C	7.1	20.2 °C		°C		°C
	72 Hr	7.1	20.0 °C	7.3	20.0 °C	7.2	20.0 °C	7.3	20.0 °C	7.2	20.0 °C		°C		°C
	96 Hr	7.0	20.3 °C	7.2	20.3 °C	7.1	20.3 °C	7.2	20.3 °C	7.1	20.3 °C		°C		°C

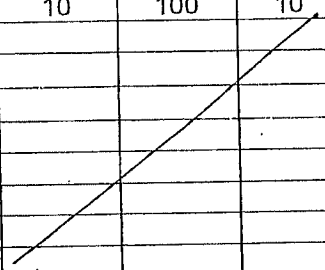

Figure C-2.114

Results - LC_{50} = > 750 mg/l
> 750 mg/l
% Survival N/A (QP.)
Toxic Units T.U. N/A
Observation/Remarks ____

Method of Calculations N/A.
95% Confidence Limits ____
LC50 Method ____

Laboratory Supervisor ✓

Lab. No. 356443-2

Date Received: 05/22/2015
Date Reported: 05/26/15

LABORATORY WORKSHEET

Bioassay Type
Static V Continuous ____ Renewal ____
Screening V Definitive ____

Report To: Advanced Technology Labs.
402

Sample Description Soil # 1500919-07/E132B-85.
Test Organism: Pimephales Promelas Source: Thomas Fish Farm Acclimatization: 22 Days 20 deg. C (F B - 1)
Aquaria Volume: 10 liter(s) Aquaria Depth: 5 inch(es) No. Fish/Concentration: 10 Total Chlorine Residual: n/D Sample Conductivity: 270 µmhos/cm
Organism Characteristics - Length (mm): Min: 35 mm Max: 43 mm Avg: 39 mm Weigh (gm): Min: 0.45 gm Max: 0.54 gm Avg: 0.49 gm
Dilution water - Source: Soft Water Hardness – Initial: 40 mg/l Final: 65 mg/l Alkaline – Initial: 30 mg/l Final: 45 mg/l
Aeration: N/A Control Hardness Initial: 40 mg/l. Final: 50 mg/l. Control Alkaline Initial: 30 mg/l. Final 35 mg/l. Control Conductivity 205 µmhos/cm
Aeration Rate: N/A Aeration Duration: ____ Tanks: ____

Bioassay Conditions	Date Time	Control		Dilution 750		400		DUP 750		DUP 400					
		No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
												10	100	10	100
Organisms Surviving	05/22	10	100	10	100	10	100	10	100	10	100				
	05/23	10	100	10	100	10	100	10	100	10	100				
	05/24	10	100	10	100	10	100	10	100	10	100				
	05/25	10	100	10	100	10	100	10	100	10	100				
	05/26	10	100	10	100	10	100	10	100	10	100				
Dissolved Oxygen mg/L	16:30	6.4		6.2		6.2		6.2		6.2					
	11:45	7.3		6.5		6.8		6.5		6.8					
	13:10	7.5		6.9		7.2		6.9		7.2					
	12:20	7.0		6.7		7.1		6.7		7.1					
	11:30	7.2		7.0		7.4		7.0		7.4					
													°C		°C
pH	Start	6.9	20.1 °C	7.3	20.1 °C	7.3	20.1 °C	7.3	20.1 °C	7.3	20.1 °C		°C		°C
	24 Hr	7.1	20.0 °C	7.4	20.0 °C	7.3	20.0 °C	7.4	20.0 °C	7.3	20.0 °C		°C		°C
	48 Hr	7.0	20.2 °C	7.2	20.2 °C	7.2	20.2 °C	7.2	20.2 °C	7.2	20.2 °C		°C		°C
Temp	72 Hr	7.1	20.0 °C	7.3	20.0 °C	7.2	20.0 °C	7.3	20.0 °C	7.2	20.0 °C		°C		°C
	96 Hr	7.0	20.3 °C	7.4	20.3 °C	7.3	20.3 °C	7.4	20.3 °C	7.3	20.3 °C				

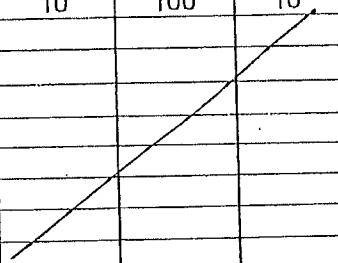

Figure C-2.115

Results - LC_{50} = > 750 mg/l
> 750 mg/l
% Survival N/A (QP)
Toxic Units T.U. N/A
Observation/Remarks ____

Method of Calculations N/A.
95% Confidence Limits ____
LC50 Method ____
Laboratory Supervisor ____

Lab. No. 356443-3

Date Received: 05/22/2015
Date Reported: 05/26/15

LABORATORY WORKSHEET

Bioassay Type
Static V Continuous ____ Renewal ____
Screening V Definitive ____

Report To: Advanced Technology Labs.
402

Sample Description Soil # 1500919-08/E132B-90.
Test Organism: Pimephales Promelas Source: Thomas Fish Farm Acclimatization: 22 Days 20 deg. C (F B - 1)
Aquaria Volume: 10 liter(s) Aquaria Depth: 5 inch(es) No. Fish/Concentration: 10 Total Chlorine Residual: n/D Sample Conductivity: 265 µmhos/cm
Organism Characteristics - Length (mm): Min: 35 mm Max: 43 mm Avg: 39 mm Weigh (gm): Min: 0.45 gm Max: 0.54 gm Avg: 0.49 gm
Dilution water - Source: Soft Water Hardness – Initial: 40 mg/l Final: 65 mg/l Alkaline – Initial: 30 mg/l Final: 45 mg/l
Aeration: N/A Control Hardness Initial: 40 mg/l . Final: 50 mg/l . Control Alkaline Initial: 30 mg/l . Final 35 mg/l . Control Conductivity 205 µmhos/cm
Aeration Rate: N/A Aeration Duration: ____ Tanks: ____

Bioassay Conditions	Date Time	Control		Dilution 750		400		DUP 750		DUP 400					
		No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
										10	100	10	100	10	100
Organisms Surviving	05/22	10	100	10	100	10	100	10	100	10	100				
	05/23	10	100	10	100	10	100	10	100	10	100				
	05/24	10	100	10	100	10	100	10	100	10	100				
	05/25	10	100	10	100	10	100	10	100	10	100				
	05/26	10	100	10	100	10	100	10	100	10	100				
Dissolved Oxygen mg/L	16:40	6.4		6.3		6.3		6.3		6.3					
	11:55	7.3		6.6		6.7		6.6		6.7					
	13:20	7.5		6.7		7.0		6.7		7.0					
	12:30	7.0		6.9		7.3		6.9		7.3					
	11:40	7.2		7.2		6.8		7.2		6.8					
pH / Temp	Start	6.9	20.1 °C	7.3	20.1 °C	7.3	20.1 °C	7.3	20.1 °C	7.3	20.1 °C		°C		°C
	24 Hr	7.1	20.0 °C	7.5	20.0 °C	7.4	20.0 °C	7.5	20.0 °C	7.4	20.0 °C		°C		°C
	48 Hr	7.0	20.2 °C	7.4	20.2 °C	7.3	20.2 °C	7.4	20.2 °C	7.3	20.2 °C		°C		°C
	72 Hr	7.1	20.0 °C	7.3	20.0 °C	7.2	20.0 °C	7.3	20.0 °C	7.2	20.0 °C		°C		°C
	96 Hr	7.0	20.3 °C	7.4	20.3 °C	7.3	20.3 °C	7.4	20.3 °C	7.3	20.3 °C				

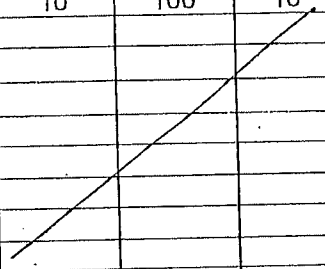

Figure C-2.116

Results - LC_{50} = > 750 mg/l
> 750 mg/l

% Survival N/A (QP)

Toxic Units T.U. N/A

Observation/Remarks ____

Method of Calculations N/A.

95% Confidence Limits ____

LC50 Method ____

Laboratory Supervisor /

MONTROSE ENVIRONMENTAL

Associated Laboratories
Environmental Analytical Services

SAMPLE ACCEPTANCE CHECKLIST

Section 1

Client: ATL

Project: #1500919

Date Received: 5/22/15

Sampler's Signature Present: Yes (No)

Sample temperature: _____

Sample(s) received in cooler: Yes No (Skip Section 2)

Shipping Information: _____

Section 2

Was the cooler packed with: ____ Ice ___U___ Ice Packs ___ Bubble Wrap ___ Styrofoam ____ Paper ____None ___ Other_____

Cooler 1Temperature: 2°C Cooler 2Temperature:_____ Cooler 3 Temperature:_____ *(Acceptance range is 0 to 6 Deg. C. or arrival on ice; For Microbiology sample ≤ 10 Deg. C or arrival on ice)*

Section 3	YES	NO	N/A
Was a COC received?	—		
Were IDs present?	—		
Were sampling dates & times present?	—		
Was a signature present?	—		
Were tests clearly indicated?	—		
Were custody seals present?		—	
If Yes – were they intact?			—
Were all samples sealed in plastic bags?	—		
Did all samples arrive intact? If no, indicate below.	—		
Did all bottle labels agree with COC? (ID, dates and times)	—		
Were correct containers used for the tests required?	—		
Was a sufficient amount of sample sent for tests indicated?	—		
Was there headspace in VOA vials?			—
Were the containers labeled with correct preservatives?			—
Was total residual chlorine measured (Fish Bioassay samples only)? * **If the answer is no, please inform Fish Bioassay Dept. immediately.*			—

Section 4

Explanations/Comments

Section 5

Was Project Manager notified of discrepancies: Y / N (N/A)

Project Manager's response:_____

Completed By: _____ Date: 5/22/15

Associated Laboratories of Montrose Environmental Group ,Inc.
806 N. Batavia Street, Orange, CA 92868 • T: (714) 771-6900 • F: (714) 771-9933
www.associatedlabs.com

Figure C-2.117

ADVANCED TECHNOLOGY LABORATORIES

SUBCONTRACT ORDER

Work Order: 1500919

356443

SENDING LABORATORY:

Advanced Technology Laboratories
3275 Walnut Avenue
Signal Hill, CA 90755
Phone: 562.989.4045
Fax: 562.989.6348
Project Manager: Rachelle Arada (Rachelle@atlglobal.com)

RECEIVING LABORATORY:

Associated Laboratories
806 North Batavia
Orange, CA 92868
Phone :(714) 771-6900
Fax: (714) 771-9933
PO#: SC09632-STANDARD TAT

IMPORTANT : Please include Work Order # and PO # in your invoice.

Analysis	Due	Expires	Sampled	Comments
ATL Lab#: 1500919-06 / E132B-75		**Soil**	**03/12/15 12:08**	
Bioassay_Title22_SUB [Bioassay (Title 22)] Glass Jar - 4 oz	**06/02/15 17:00**	03/11/16 12:08		
ATL Lab#: 1500919-07 / E132B-85		**Soil**	**03/12/15 12:30**	
Bioassay_Title22_SUB [Bioassay (Title 22)] Glass Jar - 4 oz	**06/02/15 17:00**	03/11/16 12:30		
ATL Lab#: 1500919-08 / E132B-90		**Soil**	**03/12/15 12:43**	
Bioassay_Title22_SUB [Bioassay (Title 22)] Glass Jar - 4 oz	**06/02/15 17:00**	03/11/16 12:43		

Released By	Date	Received By	Date
[illegible]	5/22/15	[signature]	5-22-15 840
[signature]	5-22-15 9:35	[signature]	5/22/15 9:35

Figure C-2.118

Rachelle Arada

From: Lopez, Ron R (Los Angeles) [ron.lopez@amecfw.com]
Sent: Tuesday, May 19, 2015 10:05 AM
To: Rachelle Arada
Subject: Run STLC for MTA Westside Soil Samples

Hi Rachelle,

Is it possible to run the following soil samples for STLC

- Lab ID 1501023-06 (E-132C-75) run STLC for Selenium
- Lab ID 1500919-07 (E-132B-85) run STLC for Arsenic

These are from the MTA Westside Project (4953-11-142)

Thanks,

Ronald Lopez
Senior Engineer
AMEC Foster Wheeler
Environment & Infrastructure
6001 Rickenbacker Road | Los Angeles, CA 90040
Office (323) 889-5300 x286 | **Cell** (818) 472-1875 | **Fax** (323) 721-6700
Email: ron.r.lopez@amecfw.com | **Web:** www.amecfw.com

amec
foster
wheeler

Figure C-2.119

Rachelle Arada

From: Lopez, Ron R (Los Angeles) [ron.lopez@amecfw.com]
Sent: Wednesday, May 20, 2015 2:21 PM
To: Rachelle Arada
Subject: Run Fish Kill Test for MTA Westside Soil Samples

Hi Rachelle,

Is it possible to run the following soil samples for Fish Kill Test

- Lab ID 1500919-06 (E-132B-75) run Fish Kill Test
- Lab ID 1500919-07 (E-132B-85) run Fish Kill Test
- Lab ID 1500919-08 (E-132B-90) run Fish Kill Test

These are from the MTA Westside Project (4953-11-1423)

Thanks,

Ronald Lopez
Senior Engineer
AMEC Foster Wheeler
Environment & Infrastructure
6001 Rickenbacker Road | Los Angeles, CA 90040
Office (323) 889-5300 x286 | **Cell** (818) 472-1875 | **Fax** (323) 721-6700
Email: ron.r.lopez@amecfw.com | **Web:** www.amecfw.com

amec
foster
wheeler

Figure C-2.120

March 23, 2015

Ron Lopez
Amec Foster Wheeler
6001 Rickenbacker Road
Los Angeles, CA 90040
Tel: (323) 889-5300
Fax:(323) 721-6700

ELAP No.: 1838
CSDLAC No.: 10196
ORELAP No.: CA300003
TCEQ No. : T104704502

Re: ATL Work Order Number : 1500960
Client Reference : MTA WESTSIDE, 4953-11-1423

Enclosed are the results for sample(s) received on March 16, 2015 by Advanced Technology Laboratories. The sample(s) are tested for the parameters as indicated on the enclosed chain of custody in accordance with applicable laboratory certifications. The laboratory results contained in this report specifically pertains to the sample(s) submitted.

Thank you for the opportunity to serve the needs of your company. If you have any questions, please feel free to contact me or your Project Manager.

Sincerely,

Eddie Rodriguez
Laboratory Director

Figure C-2.121

Certificate of Analysis

Amec Foster Wheeler		Project Number :	MTA WESTSIDE, 4953-11-1423
6001 Rickenbacker Road		Report To :	Ron Lopez
Los Angeles , CA 90040		Reported :	03/23/2015

SUMMARY OF SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
E133A-35	1500960-02	Soil	3/16/15 11:06	3/16/15 14:50
E133A-55	1500960-04	Soil	3/16/15 11:41	3/16/15 14:50
E133A-65	1500960-05	Soil	3/16/15 12:00	3/16/15 14:50
E133A-75	1500960-06	Soil	3/16/15 12:21	3/16/15 14:50
E133A-85	1500960-07	Soil	3/16/15 12:56	3/16/15 14:50
E133A-95	1500960-08	Soil	3/16/15 13:21	3/16/15 14:50

Certificate of Analysis

Amec Foster Wheeler	Project Number : MTA WESTSIDE, 4953-11-1423
6001 Rickenbacker Road	Report To : Ron Lopez
Los Angeles , CA 90040	Reported : 03/23/2015

Client Sample ID E133A-35

Lab ID: 1500960-02

Total Petroleum Hydrocarbons, HEM/SGT EPA 1664 (Modified) — **Analyst: la**

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Total Petroleum Hydrocarbons	ND	50	1	B5C0509	03/19/2015	03/19/15 18:45	

Title 22 Metals by ICP-AES EPA 6010B — **Analyst: RR**

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Antimony	ND	2.0	1	B5C0537	03/20/2015	03/20/15 16:38	
Arsenic	**7.2**	1.0	1	B5C0537	03/20/2015	03/20/15 16:38	
Barium	**89**	1.0	1	B5C0537	03/20/2015	03/20/15 16:38	
Beryllium	ND	1.0	1	B5C0537	03/20/2015	03/20/15 16:37	
Cadmium	ND	1.0	1	B5C0537	03/20/2015	03/20/15 16:38	
Chromium	**20**	1.0	1	B5C0537	03/20/2015	03/20/15 16:38	
Cobalt	**5.3**	1.0	1	B5C0537	03/20/2015	03/20/15 16:38	
Copper	**27**	2.0	1	B5C0537	03/20/2015	03/20/15 16:38	
Lead	**3.8**	1.0	1	B5C0537	03/20/2015	03/20/15 16:38	
Molybdenum	ND	1.0	1	B5C0537	03/20/2015	03/20/15 16:38	
Nickel	**17**	1.0	1	B5C0537	03/20/2015	03/20/15 16:38	
Selenium	ND	1.0	1	B5C0537	03/20/2015	03/20/15 16:38	
Silver	ND	1.0	1	B5C0537	03/20/2015	03/20/15 16:38	
Thallium	ND	1.0	1	B5C0537	03/20/2015	03/20/15 16:38	
Vanadium	**34**	1.0	1	B5C0537	03/20/2015	03/20/15 16:38	
Zinc	**54**	1.0	1	B5C0537	03/20/2015	03/20/15 16:38	

Mercury by AA (Cold Vapor) EPA 7471A — **Analyst: SB**

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Mercury	ND	0.10	1	B5C0538	03/20/2015	03/20/15 15:55	

Gasoline Range Organics by EPA 8015B (Modified) — **Analyst: BT/**

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Gasoline Range Organics	ND	1.0	1	B5C0445	03/16/2015	03/18/15 10:35	
Surrogate: 4-Bromofluorobenzene	*97.3 %*	*37 - 153*		B5C0445	03/16/2015	*03/18/15 10:35*	

Certificate of Analysis

Amec Foster Wheeler	Project Number : MTA WESTSIDE, 4953-11-1423
6001 Rickenbacker Road	Report To : Ron Lopez
Los Angeles , CA 90040	Reported : 03/23/2015

Client Sample ID E133A-35

Lab ID: 1500960-02

Diesel Range Organics by EPA 8015B

Analyst: CR

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
DRO	ND	10	1	B5C0473	03/18/2015	03/18/15 18:53	
ORO	ND	10	1	B5C0473	03/18/2015	03/18/15 18:53	
Surrogate: p-Terphenyl	*88.5 %*	*49 - 142*		B5C0473	03/18/2015	*03/18/15 18:53*	

Volatile Organic Compounds by EPA 8260B

Analyst: AG

Analyte	Result (ug/kg)	PQL (ug/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
1,1,1,2-Tetrachloroethane	ND	5.0	1	B5C0443	03/18/2015	03/18/15 12:54	
1,1,1-Trichloroethane	ND	5.0	1	B5C0443	03/18/2015	03/18/15 12:54	
1,1,2,2-Tetrachloroethane	ND	5.0	1	B5C0443	03/18/2015	03/18/15 12:54	
1,1,2-Trichloroethane	ND	5.0	1	B5C0443	03/18/2015	03/18/15 12:54	
1,1-Dichloroethane	ND	5.0	1	B5C0443	03/18/2015	03/18/15 12:54	
1,1-Dichloroethene	ND	5.0	1	B5C0443	03/18/2015	03/18/15 12:54	
1,1-Dichloropropene	ND	5.0	1	B5C0443	03/18/2015	03/18/15 12:54	
1,2,3-Trichloropropane	ND	5.0	1	B5C0443	03/18/2015	03/18/15 12:54	
1,2,3-Trichlorobenzene	ND	5.0	1	B5C0443	03/18/2015	03/18/15 12:54	
1,2,4-Trichlorobenzene	ND	5.0	1	B5C0443	03/18/2015	03/18/15 12:54	
1,2,4-Trimethylbenzene	ND	5.0	1	B5C0443	03/18/2015	03/18/15 12:54	
1,2-Dibromo-3-chloropropane	ND	10	1	B5C0443	03/18/2015	03/18/15 12:54	
1,2-Dibromoethane	ND	5.0	1	B5C0443	03/18/2015	03/18/15 12:54	
1,2-Dichlorobenzene	ND	5.0	1	B5C0443	03/18/2015	03/18/15 12:54	
1,2-Dichloroethane	ND	5.0	1	B5C0443	03/18/2015	03/18/15 12:54	
1,2-Dichloropropane	ND	5.0	1	B5C0443	03/18/2015	03/18/15 12:54	
1,3,5-Trimethylbenzene	ND	5.0	1	B5C0443	03/18/2015	03/18/15 12:54	
1,3-Dichlorobenzene	ND	5.0	1	B5C0443	03/18/2015	03/18/15 12:54	
1,3-Dichloropropane	ND	5.0	1	B5C0443	03/18/2015	03/18/15 12:54	
1,4-Dichlorobenzene	ND	5.0	1	B5C0443	03/18/2015	03/18/15 12:54	
2,2-Dichloropropane	ND	5.0	1	B5C0443	03/18/2015	03/18/15 12:54	
2-Chlorotoluene	ND	5.0	1	B5C0443	03/18/2015	03/18/15 12:54	
4-Chlorotoluene	ND	5.0	1	B5C0443	03/18/2015	03/18/15 12:54	
4-Isopropyltoluene	ND	5.0	1	B5C0443	03/18/2015	03/18/15 12:54	
Benzene	ND	5.0	1	B5C0443	03/18/2015	03/18/15 12:54	
Bromobenzene	ND	5.0	1	B5C0443	03/18/2015	03/18/15 12:54	
Bromochloromethane	ND	5.0	1	B5C0443	03/18/2015	03/18/15 12:54	
Bromodichloromethane	ND	5.0	1	B5C0443	03/18/2015	03/18/15 12:54	
Bromoform	ND	5.0	1	B5C0443	03/18/2015	03/18/15 12:54	

Certificate of Analysis

Amec Foster Wheeler	Project Number : MTA WESTSIDE, 4953-11-1423
6001 Rickenbacker Road	Report To : Ron Lopez
Los Angeles , CA 90040	Reported : 03/23/2015

Client Sample ID E133A-35

Lab ID: 1500960-02

Volatile Organic Compounds by EPA 8260B **Analyst: AG**

Analyte	Result (ug/kg)	PQL (ug/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Bromomethane	ND	5.0	1	B5C0443	03/18/2015	03/18/15 12:54	
Carbon disulfide	ND	5.0	1	B5C0443	03/18/2015	03/18/15 12:54	
Carbon tetrachloride	ND	5.0	1	B5C0443	03/18/2015	03/18/15 12:54	
Chlorobenzene	ND	5.0	1	B5C0443	03/18/2015	03/18/15 12:54	
Chloroethane	ND	5.0	1	B5C0443	03/18/2015	03/18/15 12:54	
Chloroform	ND	5.0	1	B5C0443	03/18/2015	03/18/15 12:54	
Chloromethane	ND	5.0	1	B5C0443	03/18/2015	03/18/15 12:54	
cis-1,2-Dichloroethene	ND	5.0	1	B5C0443	03/18/2015	03/18/15 12:54	
cis-1,3-Dichloropropene	ND	5.0	1	B5C0443	03/18/2015	03/18/15 12:54	
Di-isopropyl ether	ND	5.0	1	B5C0443	03/18/2015	03/18/15 12:54	
Dibromochloromethane	ND	5.0	1	B5C0443	03/18/2015	03/18/15 12:54	
Dibromomethane	ND	5.0	1	B5C0443	03/18/2015	03/18/15 12:54	
Dichlorodifluoromethane	ND	5.0	1	B5C0443	03/18/2015	03/18/15 12:54	
Ethyl Acetate	ND	50	1	B5C0443	03/18/2015	03/18/15 12:54	
Ethyl Ether	ND	50	1	B5C0443	03/18/2015	03/18/15 12:54	
Ethyl tert-butyl ether	ND	5.0	1	B5C0443	03/18/2015	03/18/15 12:54	
Ethylbenzene	ND	5.0	1	B5C0443	03/18/2015	03/18/15 12:54	
Freon-113	ND	5.0	1	B5C0443	03/18/2015	03/18/15 12:54	
Hexachlorobutadiene	ND	5.0	1	B5C0443	03/18/2015	03/18/15 12:54	
Isopropylbenzene	ND	5.0	1	B5C0443	03/18/2015	03/18/15 12:54	
m,p-Xylene	ND	10	1	B5C0443	03/18/2015	03/18/15 12:54	
Methylene chloride	ND	5.0	1	B5C0443	03/18/2015	03/18/15 12:54	
MTBE	ND	5.0	1	B5C0443	03/18/2015	03/18/15 12:54	
n-Butylbenzene	ND	5.0	1	B5C0443	03/18/2015	03/18/15 12:54	
n-Propylbenzene	ND	5.0	1	B5C0443	03/18/2015	03/18/15 12:54	
Naphthalene	ND	5.0	1	B5C0443	03/18/2015	03/18/15 12:54	
o-Xylene	ND	5.0	1	B5C0443	03/18/2015	03/18/15 12:54	
sec-Butylbenzene	ND	5.0	1	B5C0443	03/18/2015	03/18/15 12:54	
Styrene	ND	5.0	1	B5C0443	03/18/2015	03/18/15 12:54	
tert-Amyl methyl ether	ND	5.0	1	B5C0443	03/18/2015	03/18/15 12:54	
tert-Butanol	ND	100	1	B5C0443	03/18/2015	03/18/15 12:54	
tert-Butylbenzene	ND	5.0	1	B5C0443	03/18/2015	03/18/15 12:54	
Tetrachloroethene	ND	5.0	1	B5C0443	03/18/2015	03/18/15 12:54	
Toluene	ND	5.0	1	B5C0443	03/18/2015	03/18/15 12:54	
trans-1,2-Dichloroethene	ND	5.0	1	B5C0443	03/18/2015	03/18/15 12:54	
trans-1,3-Dichloropropene	ND	5.0	1	B5C0443	03/18/2015	03/18/15 12:54	
Trichloroethene	ND	5.0	1	B5C0443	03/18/2015	03/18/15 12:54	

Certificate of Analysis

Amec Foster Wheeler	Project Number : MTA WESTSIDE, 4953-11-1423
6001 Rickenbacker Road	Report To : Ron Lopez
Los Angeles , CA 90040	Reported : 03/23/2015

Client Sample ID E133A-35

Lab ID: 1500960-02

Volatile Organic Compounds by EPA 8260B

Analyst: AG

Analyte	Result (ug/kg)	PQL (ug/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Trichlorofluoromethane	ND	5.0	1	B5C0443	03/18/2015	03/18/15 12:54	
Vinyl acetate	ND	50	1	B5C0443	03/18/2015	03/18/15 12:54	
Vinyl chloride	ND	5.0	1	B5C0443	03/18/2015	03/18/15 12:54	
Surrogate: 1,2-Dichloroethane-d4	*108 %*	*20 - 189*		B5C0443	03/18/2015	*03/18/15 12:54*	
Surrogate: 4-Bromofluorobenzene	*88.6 %*	*20 - 173*		B5C0443	03/18/2015	*03/18/15 12:54*	
Surrogate: Dibromofluoromethane	*109 %*	*26 - 178*		B5C0443	03/18/2015	*03/18/15 12:54*	
Surrogate: Toluene-d8	*96.8 %*	*31 - 166*		B5C0443	03/18/2015	*03/18/15 12:54*	

Semivolatile Organic Compounds by EPA 8270C

Analyst: BD

Analyte	Result (ug/kg)	PQL (ug/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
1,2,4-Trichlorobenzene	ND	330	1	B5C0472	03/18/2015	03/23/15 12:17	
1,2-Dichlorobenzene	ND	330	1	B5C0472	03/18/2015	03/23/15 12:17	
1,3-Dichlorobenzene	ND	330	1	B5C0472	03/18/2015	03/23/15 12:17	
1,4-Dichlorobenzene	ND	330	1	B5C0472	03/18/2015	03/23/15 12:17	
2,4,5-Trichlorophenol	ND	330	1	B5C0472	03/18/2015	03/23/15 12:17	
2,4,6-Trichlorophenol	ND	330	1	B5C0472	03/18/2015	03/23/15 12:17	
2,4-Dichlorophenol	ND	1600	1	B5C0472	03/18/2015	03/23/15 12:17	
2,4-Dimethylphenol	ND	330	1	B5C0472	03/18/2015	03/23/15 12:17	
2,4-Dinitrophenol	ND	1600	1	B5C0472	03/18/2015	03/23/15 12:17	
2,4-Dinitrotoluene	ND	330	1	B5C0472	03/18/2015	03/23/15 12:17	
2,6-Dinitrotoluene	ND	330	1	B5C0472	03/18/2015	03/23/15 12:17	
2-Chloronaphthalene	ND	330	1	B5C0472	03/18/2015	03/23/15 12:17	
2-Chlorophenol	ND	330	1	B5C0472	03/18/2015	03/23/15 12:17	
2-Methylnaphthalene	ND	330	1	B5C0472	03/18/2015	03/23/15 12:17	
2-Methylphenol	ND	330	1	B5C0472	03/18/2015	03/23/15 12:17	
2-Nitroaniline	ND	1600	1	B5C0472	03/18/2015	03/23/15 12:17	
2-Nitrophenol	ND	330	1	B5C0472	03/18/2015	03/23/15 12:17	
3,3´-Dichlorobenzidine	ND	660	1	B5C0472	03/18/2015	03/23/15 12:17	
3-Nitroaniline	ND	1600	1	B5C0472	03/18/2015	03/23/15 12:17	
4,6-Dinitro-2-methyphenol	ND	1600	1	B5C0472	03/18/2015	03/23/15 12:17	
4-Bromophenyl-phenylether	ND	330	1	B5C0472	03/18/2015	03/23/15 12:17	
4-Chloro-3-methylphenol	ND	660	1	B5C0472	03/18/2015	03/23/15 12:17	
4-Chloroaniline	ND	660	1	B5C0472	03/18/2015	03/23/15 12:17	
4-Chlorophenyl-phenylether	ND	330	1	B5C0472	03/18/2015	03/23/15 12:17	
4-Methylphenol	ND	330	1	B5C0472	03/18/2015	03/23/15 12:17	

Certificate of Analysis

Amec Foster Wheeler	Project Number : MTA WESTSIDE, 4953-11-1423
6001 Rickenbacker Road	Report To : Ron Lopez
Los Angeles , CA 90040	Reported : 03/23/2015

Client Sample ID E133A-35

Lab ID: 1500960-02

Semivolatile Organic Compounds by EPA 8270C **Analyst: BD**

Analyte	Result (ug/kg)	PQL (ug/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
4-Nitroaniline	ND	1600	1	B5C0472	03/18/2015	03/23/15 12:17	
4-Nitrophenol	ND	330	1	B5C0472	03/18/2015	03/23/15 12:17	
Acenaphthene	ND	330	1	B5C0472	03/18/2015	03/23/15 12:17	
Acenaphthylene	ND	330	1	B5C0472	03/18/2015	03/23/15 12:17	
Anthracene	ND	330	1	B5C0472	03/18/2015	03/23/15 12:17	
Benzidine (M)	ND	1600	1	B5C0472	03/18/2015	03/23/15 12:17	
Benzo(a)anthracene	ND	330	1	B5C0472	03/18/2015	03/23/15 12:17	
Benzo(a)pyrene	ND	330	1	B5C0472	03/18/2015	03/23/15 12:17	
Benzo(b)fluoranthene	ND	330	1	B5C0472	03/18/2015	03/23/15 12:17	
Benzo(g,h,i)perylene	ND	330	1	B5C0472	03/18/2015	03/23/15 12:17	
Benzo(k)fluoranthene	ND	330	1	B5C0472	03/18/2015	03/23/15 12:17	
Benzoic acid	ND	1600	1	B5C0472	03/18/2015	03/23/15 12:17	
Benzyl alcohol	ND	660	1	B5C0472	03/18/2015	03/23/15 12:17	
bis(2-chloroethoxy)methane	ND	330	1	B5C0472	03/18/2015	03/23/15 12:17	
bis(2-Chloroethyl)ether	ND	330	1	B5C0472	03/18/2015	03/23/15 12:17	
bis(2-chloroisopropyl)ether	ND	330	1	B5C0472	03/18/2015	03/23/15 12:17	
bis(2-ethylhexyl)phthalate	ND	330	1	B5C0472	03/18/2015	03/23/15 12:17	
Butylbenzylphthalate	ND	330	1	B5C0472	03/18/2015	03/23/15 12:17	
Chrysene	ND	330	1	B5C0472	03/18/2015	03/23/15 12:17	
Di-n-butylphthalate	ND	330	1	B5C0472	03/18/2015	03/23/15 12:17	
Di-n-octylphthalate	ND	330	1	B5C0472	03/18/2015	03/23/15 12:17	
Dibenz(a,h)anthracene	ND	330	1	B5C0472	03/18/2015	03/23/15 12:17	
Dibenzofuran	ND	330	1	B5C0472	03/18/2015	03/23/15 12:17	
Diethyl phthalate	ND	330	1	B5C0472	03/18/2015	03/23/15 12:17	
Dimethyl phthalate	ND	330	1	B5C0472	03/18/2015	03/23/15 12:17	
Fluoranthene	ND	330	1	B5C0472	03/18/2015	03/23/15 12:17	
Fluorene	ND	330	1	B5C0472	03/18/2015	03/23/15 12:17	
Hexachlorobenzene	ND	330	1	B5C0472	03/18/2015	03/23/15 12:17	
Hexachlorobutadiene	ND	660	1	B5C0472	03/18/2015	03/23/15 12:17	
Hexachlorocyclopentadiene	ND	660	1	B5C0472	03/18/2015	03/23/15 12:17	
Hexachloroethane	ND	330	1	B5C0472	03/18/2015	03/23/15 12:17	
Indeno(1,2,3-cd)pyrene	ND	330	1	B5C0472	03/18/2015	03/23/15 12:17	
Isophorone	ND	330	1	B5C0472	03/18/2015	03/23/15 12:17	
N-Nitroso-di-n propylamine	ND	330	1	B5C0472	03/18/2015	03/23/15 12:17	
N-Nitrosodiphenylamine	ND	330	1	B5C0472	03/18/2015	03/23/15 12:17	
Naphthalene	ND	330	1	B5C0472	03/18/2015	03/23/15 12:17	
Nitrobenzene	ND	330	1	B5C0472	03/18/2015	03/23/15 12:17	

Certificate of Analysis

Amec Foster Wheeler	Project Number : MTA WESTSIDE, 4953-11-1423
6001 Rickenbacker Road	Report To : Ron Lopez
Los Angeles , CA 90040	Reported : 03/23/2015

Client Sample ID E133A-35

Lab ID: 1500960-02

Semivolatile Organic Compounds by EPA 8270C **Analyst: BD**

Analyte		Result (ug/kg)	PQL (ug/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Pentachlorophenol		ND	1600	1	B5C0472	03/18/2015	03/23/15 12:17	
Phenanthrene		ND	330	1	B5C0472	03/18/2015	03/23/15 12:17	
Phenol		ND	330	1	B5C0472	03/18/2015	03/23/15 12:17	
Pyrene		ND	330	1	B5C0472	03/18/2015	03/23/15 12:17	
Pyridine		ND	1600	1	B5C0472	03/18/2015	03/23/15 12:17	
Surrogate: 1,2-Dichlorobenzene-d4	*51.6 %*		*24 - 114*		B5C0472	03/18/2015	*03/23/15 12:17*	
Surrogate: 2,4,6-Tribromophenol	*76.0 %*		*0 - 189*		B5C0472	03/18/2015	*03/23/15 12:17*	
Surrogate: 2-Chlorophenol-d4	*64.6 %*		*23 - 123*		B5C0472	03/18/2015	*03/23/15 12:17*	
Surrogate: 2-Fluorobiphenyl	*55.1 %*		*28 - 128*		B5C0472	03/18/2015	*03/23/15 12:17*	
Surrogate: 2-Fluorophenol	*62.0 %*		*8 - 138*		B5C0472	03/18/2015	*03/23/15 12:17*	
Surrogate: 4-Terphenyl-d14	*71.4 %*		*27 - 154*		B5C0472	03/18/2015	*03/23/15 12:17*	
Surrogate: Nitrobenzene-d5	*55.6 %*		*19 - 129*		B5C0472	03/18/2015	*03/23/15 12:17*	
Surrogate: Phenol-d5	*64.9 %*		*20 - 126*		B5C0472	03/18/2015	*03/23/15 12:17*	

Certificate of Analysis

Amec Foster Wheeler	Project Number : MTA WESTSIDE, 4953-11-1423
6001 Rickenbacker Road	Report To : Ron Lopez
Los Angeles , CA 90040	Reported : 03/23/2015

Client Sample ID E133A-55

Lab ID: 1500960-04

Total Petroleum Hydrocarbons, HEM/SGT EPA 1664 (Modified) — **Analyst: la**

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Total Petroleum Hydrocarbons	ND	50	1	B5C0509	03/19/2015	03/19/15 18:45	

Title 22 Metals by ICP-AES EPA 6010B — **Analyst: RR**

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Antimony	ND	2.0	1	B5C0537	03/20/2015	03/20/15 16:41	
Arsenic	**14**	1.0	1	B5C0537	03/20/2015	03/20/15 16:41	
Barium	**43**	1.0	1	B5C0537	03/20/2015	03/20/15 16:41	
Beryllium	ND	1.0	1	B5C0537	03/20/2015	03/20/15 16:40	
Cadmium	ND	1.0	1	B5C0537	03/20/2015	03/20/15 16:41	
Chromium	**17**	1.0	1	B5C0537	03/20/2015	03/20/15 16:41	
Cobalt	**4.4**	1.0	1	B5C0537	03/20/2015	03/20/15 16:41	
Copper	**6.7**	2.0	1	B5C0537	03/20/2015	03/20/15 16:41	
Lead	**1.8**	1.0	1	B5C0537	03/20/2015	03/20/15 16:41	
Molybdenum	**2.4**	1.0	1	B5C0537	03/20/2015	03/20/15 16:41	
Nickel	**16**	1.0	1	B5C0537	03/20/2015	03/20/15 16:41	
Selenium	ND	1.0	1	B5C0537	03/20/2015	03/20/15 16:41	
Silver	ND	1.0	1	B5C0537	03/20/2015	03/20/15 16:41	
Thallium	ND	1.0	1	B5C0537	03/20/2015	03/20/15 16:41	
Vanadium	**40**	1.0	1	B5C0537	03/20/2015	03/20/15 16:41	
Zinc	**21**	1.0	1	B5C0537	03/20/2015	03/20/15 16:41	

Mercury by AA (Cold Vapor) EPA 7471A — **Analyst: SB**

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Mercury	ND	0.10	1	B5C0538	03/20/2015	03/20/15 15:56	

Gasoline Range Organics by EPA 8015B (Modified) — **Analyst: BT/**

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Gasoline Range Organics	ND	1.0	1	B5C0445	03/16/2015	03/18/15 11:08	
Surrogate: 4-Bromofluorobenzene *105 %*		*37 - 153*		B5C0445	03/16/2015	*03/18/15 11:08*	

Certificate of Analysis

Amec Foster Wheeler	Project Number : MTA WESTSIDE, 4953-11-1423
6001 Rickenbacker Road	Report To : Ron Lopez
Los Angeles , CA 90040	Reported : 03/23/2015

Client Sample ID E133A-55

Lab ID: 1500960-04

Diesel Range Organics by EPA 8015B

Analyst: CR

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
DRO	ND	10	1	B5C0473	03/18/2015	03/18/15 19:10	
ORO	ND	10	1	B5C0473	03/18/2015	03/18/15 19:10	
Surrogate: p-Terphenyl	*89.0 %*	*49 - 142*		B5C0473	03/18/2015	*03/18/15 19:10*	

Volatile Organic Compounds by EPA 8260B

Analyst: AG

Analyte	Result (ug/kg)	PQL (ug/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
1,1,1,2-Tetrachloroethane	ND	5.0	1	B5C0480	03/19/2015	03/19/15 19:21	
1,1,1-Trichloroethane	ND	5.0	1	B5C0480	03/19/2015	03/19/15 19:21	
1,1,2,2-Tetrachloroethane	ND	5.0	1	B5C0480	03/19/2015	03/19/15 19:21	
1,1,2-Trichloroethane	ND	5.0	1	B5C0480	03/19/2015	03/19/15 19:21	
1,1-Dichloroethane	ND	5.0	1	B5C0480	03/19/2015	03/19/15 19:21	
1,1-Dichloroethene	ND	5.0	1	B5C0480	03/19/2015	03/19/15 19:21	
1,1-Dichloropropene	ND	5.0	1	B5C0480	03/19/2015	03/19/15 19:21	
1,2,3-Trichloropropane	ND	5.0	1	B5C0480	03/19/2015	03/19/15 19:21	
1,2,3-Trichlorobenzene	ND	5.0	1	B5C0480	03/19/2015	03/19/15 19:21	
1,2,4-Trichlorobenzene	ND	5.0	1	B5C0480	03/19/2015	03/19/15 19:21	
1,2,4-Trimethylbenzene	ND	5.0	1	B5C0480	03/19/2015	03/19/15 19:21	
1,2-Dibromo-3-chloropropane	ND	10	1	B5C0480	03/19/2015	03/19/15 19:21	
1,2-Dibromoethane	ND	5.0	1	B5C0480	03/19/2015	03/19/15 19:21	
1,2-Dichlorobenzene	ND	5.0	1	B5C0480	03/19/2015	03/19/15 19:21	
1,2-Dichloroethane	ND	5.0	1	B5C0480	03/19/2015	03/19/15 19:21	
1,2-Dichloropropane	ND	5.0	1	B5C0480	03/19/2015	03/19/15 19:21	
1,3,5-Trimethylbenzene	ND	5.0	1	B5C0480	03/19/2015	03/19/15 19:21	
1,3-Dichlorobenzene	ND	5.0	1	B5C0480	03/19/2015	03/19/15 19:21	
1,3-Dichloropropane	ND	5.0	1	B5C0480	03/19/2015	03/19/15 19:21	
1,4-Dichlorobenzene	ND	5.0	1	B5C0480	03/19/2015	03/19/15 19:21	
2,2-Dichloropropane	ND	5.0	1	B5C0480	03/19/2015	03/19/15 19:21	
2-Chlorotoluene	ND	5.0	1	B5C0480	03/19/2015	03/19/15 19:21	
4-Chlorotoluene	ND	5.0	1	B5C0480	03/19/2015	03/19/15 19:21	
4-Isopropyltoluene	ND	5.0	1	B5C0480	03/19/2015	03/19/15 19:21	
Benzene	ND	5.0	1	B5C0480	03/19/2015	03/19/15 19:21	
Bromobenzene	ND	5.0	1	B5C0480	03/19/2015	03/19/15 19:21	
Bromochloromethane	ND	5.0	1	B5C0480	03/19/2015	03/19/15 19:21	
Bromodichloromethane	ND	5.0	1	B5C0480	03/19/2015	03/19/15 19:21	
Bromoform	ND	5.0	1	B5C0480	03/19/2015	03/19/15 19:21	

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6001 Rickenbacker Road	Report To : Ron Lopez
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Client Sample ID E133A-55

Lab ID: 1500960-04

Volatile Organic Compounds by EPA 8260B **Analyst: AG**

Analyte	Result (ug/kg)	PQL (ug/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Bromomethane	ND	5.0	1	B5C0480	03/19/2015	03/19/15 19:21	
Carbon disulfide	ND	5.0	1	B5C0480	03/19/2015	03/19/15 19:21	
Carbon tetrachloride	ND	5.0	1	B5C0480	03/19/2015	03/19/15 19:21	
Chlorobenzene	ND	5.0	1	B5C0480	03/19/2015	03/19/15 19:21	
Chloroethane	ND	5.0	1	B5C0480	03/19/2015	03/19/15 19:21	
Chloroform	ND	5.0	1	B5C0480	03/19/2015	03/19/15 19:21	
Chloromethane	ND	5.0	1	B5C0480	03/19/2015	03/19/15 19:21	
cis-1,2-Dichloroethene	ND	5.0	1	B5C0480	03/19/2015	03/19/15 19:21	
cis-1,3-Dichloropropene	ND	5.0	1	B5C0480	03/19/2015	03/19/15 19:21	
Di-isopropyl ether	ND	5.0	1	B5C0480	03/19/2015	03/19/15 19:21	
Dibromochloromethane	ND	5.0	1	B5C0480	03/19/2015	03/19/15 19:21	
Dibromomethane	ND	5.0	1	B5C0480	03/19/2015	03/19/15 19:21	
Dichlorodifluoromethane	ND	5.0	1	B5C0480	03/19/2015	03/19/15 19:21	
Ethyl Acetate	ND	50	1	B5C0480	03/19/2015	03/19/15 19:21	
Ethyl Ether	ND	50	1	B5C0480	03/19/2015	03/19/15 19:21	
Ethyl tert-butyl ether	ND	5.0	1	B5C0480	03/19/2015	03/19/15 19:21	
Ethylbenzene	ND	5.0	1	B5C0480	03/19/2015	03/19/15 19:21	
Freon-113	ND	5.0	1	B5C0480	03/19/2015	03/19/15 19:21	
Hexachlorobutadiene	ND	5.0	1	B5C0480	03/19/2015	03/19/15 19:21	
Isopropylbenzene	ND	5.0	1	B5C0480	03/19/2015	03/19/15 19:21	
m,p-Xylene	ND	10	1	B5C0480	03/19/2015	03/19/15 19:21	
Methylene chloride	ND	5.0	1	B5C0480	03/19/2015	03/19/15 19:21	
MTBE	ND	5.0	1	B5C0480	03/19/2015	03/19/15 19:21	
n-Butylbenzene	ND	5.0	1	B5C0480	03/19/2015	03/19/15 19:21	
n-Propylbenzene	ND	5.0	1	B5C0480	03/19/2015	03/19/15 19:21	
Naphthalene	ND	5.0	1	B5C0480	03/19/2015	03/19/15 19:21	
o-Xylene	ND	5.0	1	B5C0480	03/19/2015	03/19/15 19:21	
sec-Butylbenzene	ND	5.0	1	B5C0480	03/19/2015	03/19/15 19:21	
Styrene	ND	5.0	1	B5C0480	03/19/2015	03/19/15 19:21	
tert-Amyl methyl ether	ND	5.0	1	B5C0480	03/19/2015	03/19/15 19:21	
tert-Butanol	ND	100	1	B5C0480	03/19/2015	03/19/15 19:21	
tert-Butylbenzene	ND	5.0	1	B5C0480	03/19/2015	03/19/15 19:21	
Tetrachloroethene	ND	5.0	1	B5C0480	03/19/2015	03/19/15 19:21	
Toluene	ND	5.0	1	B5C0480	03/19/2015	03/19/15 19:21	
trans-1,2-Dichloroethene	ND	5.0	1	B5C0480	03/19/2015	03/19/15 19:21	
trans-1,3-Dichloropropene	ND	5.0	1	B5C0480	03/19/2015	03/19/15 19:21	
Trichloroethene	ND	5.0	1	B5C0480	03/19/2015	03/19/15 19:21	

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Client Sample ID E133A-55

Lab ID: 1500960-04

Volatile Organic Compounds by EPA 8260B — **Analyst: AG**

Analyte	Result (ug/kg)	PQL (ug/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Trichlorofluoromethane	ND	5.0	1	B5C0480	03/19/2015	03/19/15 19:21	
Vinyl acetate	ND	50	1	B5C0480	03/19/2015	03/19/15 19:21	
Vinyl chloride	ND	5.0	1	B5C0480	03/19/2015	03/19/15 19:21	
Surrogate: 1,2-Dichloroethane-d4	*105 %*	*20 - 189*		B5C0480	03/19/2015	*03/19/15 19:21*	
Surrogate: 4-Bromofluorobenzene	*90.0 %*	*20 - 173*		B5C0480	03/19/2015	*03/19/15 19:21*	
Surrogate: Dibromofluoromethane	*107 %*	*26 - 178*		B5C0480	03/19/2015	*03/19/15 19:21*	
Surrogate: Toluene-d8	*99.0 %*	*31 - 166*		B5C0480	03/19/2015	*03/19/15 19:21*	

Semivolatile Organic Compounds by EPA 8270C — **Analyst: BD**

Analyte	Result (ug/kg)	PQL (ug/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
1,2,4-Trichlorobenzene	ND	330	1	B5C0472	03/18/2015	03/23/15 12:44	
1,2-Dichlorobenzene	ND	330	1	B5C0472	03/18/2015	03/23/15 12:44	
1,3-Dichlorobenzene	ND	330	1	B5C0472	03/18/2015	03/23/15 12:44	
1,4-Dichlorobenzene	ND	330	1	B5C0472	03/18/2015	03/23/15 12:44	
2,4,5-Trichlorophenol	ND	330	1	B5C0472	03/18/2015	03/23/15 12:44	
2,4,6-Trichlorophenol	ND	330	1	B5C0472	03/18/2015	03/23/15 12:44	
2,4-Dichlorophenol	ND	1600	1	B5C0472	03/18/2015	03/23/15 12:44	
2,4-Dimethylphenol	ND	330	1	B5C0472	03/18/2015	03/23/15 12:44	
2,4-Dinitrophenol	ND	1600	1	B5C0472	03/18/2015	03/23/15 12:44	
2,4-Dinitrotoluene	ND	330	1	B5C0472	03/18/2015	03/23/15 12:44	
2,6-Dinitrotoluene	ND	330	1	B5C0472	03/18/2015	03/23/15 12:44	
2-Chloronaphthalene	ND	330	1	B5C0472	03/18/2015	03/23/15 12:44	
2-Chlorophenol	ND	330	1	B5C0472	03/18/2015	03/23/15 12:44	
2-Methylnaphthalene	ND	330	1	B5C0472	03/18/2015	03/23/15 12:44	
2-Methylphenol	ND	330	1	B5C0472	03/18/2015	03/23/15 12:44	
2-Nitroaniline	ND	1600	1	B5C0472	03/18/2015	03/23/15 12:44	
2-Nitrophenol	ND	330	1	B5C0472	03/18/2015	03/23/15 12:44	
3,3´-Dichlorobenzidine	ND	660	1	B5C0472	03/18/2015	03/23/15 12:44	
3-Nitroaniline	ND	1600	1	B5C0472	03/18/2015	03/23/15 12:44	
4,6-Dinitro-2-methyphenol	ND	1600	1	B5C0472	03/18/2015	03/23/15 12:44	
4-Bromophenyl-phenylether	ND	330	1	B5C0472	03/18/2015	03/23/15 12:44	
4-Chloro-3-methylphenol	ND	660	1	B5C0472	03/18/2015	03/23/15 12:44	
4-Chloroaniline	ND	660	1	B5C0472	03/18/2015	03/23/15 12:44	
4-Chlorophenyl-phenylether	ND	330	1	B5C0472	03/18/2015	03/23/15 12:44	
4-Methylphenol	ND	330	1	B5C0472	03/18/2015	03/23/15 12:44	

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Client Sample ID E133A-55

Lab ID: 1500960-04

Semivolatile Organic Compounds by EPA 8270C **Analyst: BD**

Analyte	Result (ug/kg)	PQL (ug/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
4-Nitroaniline	ND	1600	1	B5C0472	03/18/2015	03/23/15 12:44	
4-Nitrophenol	ND	330	1	B5C0472	03/18/2015	03/23/15 12:44	
Acenaphthene	ND	330	1	B5C0472	03/18/2015	03/23/15 12:44	
Acenaphthylene	ND	330	1	B5C0472	03/18/2015	03/23/15 12:44	
Anthracene	ND	330	1	B5C0472	03/18/2015	03/23/15 12:44	
Benzidine (M)	ND	1600	1	B5C0472	03/18/2015	03/23/15 12:44	
Benzo(a)anthracene	ND	330	1	B5C0472	03/18/2015	03/23/15 12:44	
Benzo(a)pyrene	ND	330	1	B5C0472	03/18/2015	03/23/15 12:44	
Benzo(b)fluoranthene	ND	330	1	B5C0472	03/18/2015	03/23/15 12:44	
Benzo(g,h,i)perylene	ND	330	1	B5C0472	03/18/2015	03/23/15 12:44	
Benzo(k)fluoranthene	ND	330	1	B5C0472	03/18/2015	03/23/15 12:44	
Benzoic acid	ND	1600	1	B5C0472	03/18/2015	03/23/15 12:44	
Benzyl alcohol	ND	660	1	B5C0472	03/18/2015	03/23/15 12:44	
bis(2-chloroethoxy)methane	ND	330	1	B5C0472	03/18/2015	03/23/15 12:44	
bis(2-Chloroethyl)ether	ND	330	1	B5C0472	03/18/2015	03/23/15 12:44	
bis(2-chloroisopropyl)ether	ND	330	1	B5C0472	03/18/2015	03/23/15 12:44	
bis(2-ethylhexyl)phthalate	ND	330	1	B5C0472	03/18/2015	03/23/15 12:44	
Butylbenzylphthalate	ND	330	1	B5C0472	03/18/2015	03/23/15 12:44	
Chrysene	ND	330	1	B5C0472	03/18/2015	03/23/15 12:44	
Di-n-butylphthalate	ND	330	1	B5C0472	03/18/2015	03/23/15 12:44	
Di-n-octylphthalate	ND	330	1	B5C0472	03/18/2015	03/23/15 12:44	
Dibenz(a,h)anthracene	ND	330	1	B5C0472	03/18/2015	03/23/15 12:44	
Dibenzofuran	ND	330	1	B5C0472	03/18/2015	03/23/15 12:44	
Diethyl phthalate	ND	330	1	B5C0472	03/18/2015	03/23/15 12:44	
Dimethyl phthalate	ND	330	1	B5C0472	03/18/2015	03/23/15 12:44	
Fluoranthene	ND	330	1	B5C0472	03/18/2015	03/23/15 12:44	
Fluorene	ND	330	1	B5C0472	03/18/2015	03/23/15 12:44	
Hexachlorobenzene	ND	330	1	B5C0472	03/18/2015	03/23/15 12:44	
Hexachlorobutadiene	ND	660	1	B5C0472	03/18/2015	03/23/15 12:44	
Hexachlorocyclopentadiene	ND	660	1	B5C0472	03/18/2015	03/23/15 12:44	
Hexachloroethane	ND	330	1	B5C0472	03/18/2015	03/23/15 12:44	
Indeno(1,2,3-cd)pyrene	ND	330	1	B5C0472	03/18/2015	03/23/15 12:44	
Isophorone	ND	330	1	B5C0472	03/18/2015	03/23/15 12:44	
N-Nitroso-di-n propylamine	ND	330	1	B5C0472	03/18/2015	03/23/15 12:44	
N-Nitrosodiphenylamine	ND	330	1	B5C0472	03/18/2015	03/23/15 12:44	
Naphthalene	ND	330	1	B5C0472	03/18/2015	03/23/15 12:44	
Nitrobenzene	ND	330	1	B5C0472	03/18/2015	03/23/15 12:44	

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Lab ID: 1500960-04

Semivolatile Organic Compounds by EPA 8270C **Analyst: BD**

Analyte		Result (ug/kg)	PQL (ug/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Pentachlorophenol		ND	1600	1	B5C0472	03/18/2015	03/23/15 12:44	
Phenanthrene		ND	330	1	B5C0472	03/18/2015	03/23/15 12:44	
Phenol		ND	330	1	B5C0472	03/18/2015	03/23/15 12:44	
Pyrene		ND	330	1	B5C0472	03/18/2015	03/23/15 12:44	
Pyridine		ND	1600	1	B5C0472	03/18/2015	03/23/15 12:44	
Surrogate: 1,2-Dichlorobenzene-d4	*53.1 %*		*24 - 114*		B5C0472	03/18/2015	*03/23/15 12:44*	
Surrogate: 2,4,6-Tribromophenol	*74.6 %*		*0 - 189*		B5C0472	03/18/2015	*03/23/15 12:44*	
Surrogate: 2-Chlorophenol-d4	*64.2 %*		*23 - 123*		B5C0472	03/18/2015	*03/23/15 12:44*	
Surrogate: 2-Fluorobiphenyl	*59.7 %*		*28 - 128*		B5C0472	03/18/2015	*03/23/15 12:44*	
Surrogate: 2-Fluorophenol	*60.8 %*		*8 - 138*		B5C0472	03/18/2015	*03/23/15 12:44*	
Surrogate: 4-Terphenyl-d14	*74.2 %*		*27 - 154*		B5C0472	03/18/2015	*03/23/15 12:44*	
Surrogate: Nitrobenzene-d5	*55.7 %*		*19 - 129*		B5C0472	03/18/2015	*03/23/15 12:44*	
Surrogate: Phenol-d5	*64.5 %*		*20 - 126*		B5C0472	03/18/2015	*03/23/15 12:44*	

Figure C-2.134

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Lab ID: 1500960-05

Total Petroleum Hydrocarbons, HEM/SGT EPA 1664 (Modified) — **Analyst: la**

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Total Petroleum Hydrocarbons	ND	50	1	B5C0509	03/19/2015	03/19/15 18:45	

Title 22 Metals by ICP-AES EPA 6010B — **Analyst: RR**

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Antimony	ND	2.0	1	B5C0537	03/20/2015	03/20/15 16:45	
Arsenic	**2.5**	1.0	1	B5C0537	03/20/2015	03/20/15 16:45	
Barium	**40**	1.0	1	B5C0537	03/20/2015	03/20/15 16:44	
Beryllium	ND	1.0	1	B5C0537	03/20/2015	03/20/15 16:44	
Cadmium	ND	1.0	1	B5C0537	03/20/2015	03/20/15 16:45	
Chromium	**27**	1.0	1	B5C0537	03/20/2015	03/20/15 16:44	
Cobalt	**8.6**	1.0	1	B5C0537	03/20/2015	03/20/15 16:45	
Copper	**17**	2.0	1	B5C0537	03/20/2015	03/20/15 16:44	
Lead	**2.8**	1.0	1	B5C0537	03/20/2015	03/20/15 16:45	
Molybdenum	ND	1.0	1	B5C0537	03/20/2015	03/20/15 16:45	
Nickel	**26**	1.0	1	B5C0537	03/20/2015	03/20/15 16:44	
Selenium	ND	1.0	1	B5C0537	03/20/2015	03/20/15 16:45	
Silver	ND	1.0	1	B5C0537	03/20/2015	03/20/15 16:44	
Thallium	ND	1.0	1	B5C0537	03/20/2015	03/20/15 16:45	
Vanadium	**28**	1.0	1	B5C0537	03/20/2015	03/20/15 16:44	
Zinc	**41**	1.0	1	B5C0537	03/20/2015	03/20/15 16:44	

Mercury by AA (Cold Vapor) EPA 7471A — **Analyst: SB**

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Mercury	ND	0.10	1	B5C0538	03/20/2015	03/20/15 15:58	

Gasoline Range Organics by EPA 8015B (Modified) — **Analyst: BT/**

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Gasoline Range Organics	ND	1.0	1	B5C0445	03/16/2015	03/18/15 11:24	
Surrogate: 4-Bromofluorobenzene	*96.3 %*	*37 - 153*		B5C0445	03/16/2015	*03/18/15 11:24*	

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Lab ID: 1500960-05

Diesel Range Organics by EPA 8015B

Analyst: CR

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
DRO	ND	10	1	B5C0473	03/18/2015	03/18/15 19:27	
ORO	ND	10	1	B5C0473	03/18/2015	03/18/15 19:27	
Surrogate: p-Terphenyl	*89.3 %*	*49 - 142*		B5C0473	03/18/2015	*03/18/15 19:27*	

Volatile Organic Compounds by EPA 8260B

Analyst: AG

Analyte	Result (ug/kg)	PQL (ug/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
1,1,1,2-Tetrachloroethane	ND	5.0	1	B5C0480	03/19/2015	03/19/15 19:40	
1,1,1-Trichloroethane	ND	5.0	1	B5C0480	03/19/2015	03/19/15 19:40	
1,1,2,2-Tetrachloroethane	ND	5.0	1	B5C0480	03/19/2015	03/19/15 19:40	
1,1,2-Trichloroethane	ND	5.0	1	B5C0480	03/19/2015	03/19/15 19:40	
1,1-Dichloroethane	ND	5.0	1	B5C0480	03/19/2015	03/19/15 19:40	
1,1-Dichloroethene	ND	5.0	1	B5C0480	03/19/2015	03/19/15 19:40	
1,1-Dichloropropene	ND	5.0	1	B5C0480	03/19/2015	03/19/15 19:40	
1,2,3-Trichloropropane	ND	5.0	1	B5C0480	03/19/2015	03/19/15 19:40	
1,2,3-Trichlorobenzene	ND	5.0	1	B5C0480	03/19/2015	03/19/15 19:40	
1,2,4-Trichlorobenzene	ND	5.0	1	B5C0480	03/19/2015	03/19/15 19:40	
1,2,4-Trimethylbenzene	ND	5.0	1	B5C0480	03/19/2015	03/19/15 19:40	
1,2-Dibromo-3-chloropropane	ND	10	1	B5C0480	03/19/2015	03/19/15 19:40	
1,2-Dibromoethane	ND	5.0	1	B5C0480	03/19/2015	03/19/15 19:40	
1,2-Dichlorobenzene	ND	5.0	1	B5C0480	03/19/2015	03/19/15 19:40	
1,2-Dichloroethane	ND	5.0	1	B5C0480	03/19/2015	03/19/15 19:40	
1,2-Dichloropropane	ND	5.0	1	B5C0480	03/19/2015	03/19/15 19:40	
1,3,5-Trimethylbenzene	ND	5.0	1	B5C0480	03/19/2015	03/19/15 19:40	
1,3-Dichlorobenzene	ND	5.0	1	B5C0480	03/19/2015	03/19/15 19:40	
1,3-Dichloropropane	ND	5.0	1	B5C0480	03/19/2015	03/19/15 19:40	
1,4-Dichlorobenzene	ND	5.0	1	B5C0480	03/19/2015	03/19/15 19:40	
2,2-Dichloropropane	ND	5.0	1	B5C0480	03/19/2015	03/19/15 19:40	
2-Chlorotoluene	ND	5.0	1	B5C0480	03/19/2015	03/19/15 19:40	
4-Chlorotoluene	ND	5.0	1	B5C0480	03/19/2015	03/19/15 19:40	
4-Isopropyltoluene	ND	5.0	1	B5C0480	03/19/2015	03/19/15 19:40	
Benzene	ND	5.0	1	B5C0480	03/19/2015	03/19/15 19:40	
Bromobenzene	ND	5.0	1	B5C0480	03/19/2015	03/19/15 19:40	
Bromochloromethane	ND	5.0	1	B5C0480	03/19/2015	03/19/15 19:40	
Bromodichloromethane	ND	5.0	1	B5C0480	03/19/2015	03/19/15 19:40	
Bromoform	ND	5.0	1	B5C0480	03/19/2015	03/19/15 19:40	

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Lab ID: 1500960-05

Volatile Organic Compounds by EPA 8260B **Analyst: AG**

Analyte	Result (ug/kg)	PQL (ug/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Bromomethane	ND	5.0	1	B5C0480	03/19/2015	03/19/15 19:40	
Carbon disulfide	ND	5.0	1	B5C0480	03/19/2015	03/19/15 19:40	
Carbon tetrachloride	ND	5.0	1	B5C0480	03/19/2015	03/19/15 19:40	
Chlorobenzene	ND	5.0	1	B5C0480	03/19/2015	03/19/15 19:40	
Chloroethane	ND	5.0	1	B5C0480	03/19/2015	03/19/15 19:40	
Chloroform	ND	5.0	1	B5C0480	03/19/2015	03/19/15 19:40	
Chloromethane	ND	5.0	1	B5C0480	03/19/2015	03/19/15 19:40	
cis-1,2-Dichloroethene	ND	5.0	1	B5C0480	03/19/2015	03/19/15 19:40	
cis-1,3-Dichloropropene	ND	5.0	1	B5C0480	03/19/2015	03/19/15 19:40	
Di-isopropyl ether	ND	5.0	1	B5C0480	03/19/2015	03/19/15 19:40	
Dibromochloromethane	ND	5.0	1	B5C0480	03/19/2015	03/19/15 19:40	
Dibromomethane	ND	5.0	1	B5C0480	03/19/2015	03/19/15 19:40	
Dichlorodifluoromethane	ND	5.0	1	B5C0480	03/19/2015	03/19/15 19:40	
Ethyl Acetate	ND	50	1	B5C0480	03/19/2015	03/19/15 19:40	
Ethyl Ether	ND	50	1	B5C0480	03/19/2015	03/19/15 19:40	
Ethyl tert-butyl ether	ND	5.0	1	B5C0480	03/19/2015	03/19/15 19:40	
Ethylbenzene	ND	5.0	1	B5C0480	03/19/2015	03/19/15 19:40	
Freon-113	ND	5.0	1	B5C0480	03/19/2015	03/19/15 19:40	
Hexachlorobutadiene	ND	5.0	1	B5C0480	03/19/2015	03/19/15 19:40	
Isopropylbenzene	ND	5.0	1	B5C0480	03/19/2015	03/19/15 19:40	
m,p-Xylene	ND	10	1	B5C0480	03/19/2015	03/19/15 19:40	
Methylene chloride	ND	5.0	1	B5C0480	03/19/2015	03/19/15 19:40	
MTBE	ND	5.0	1	B5C0480	03/19/2015	03/19/15 19:40	
n-Butylbenzene	ND	5.0	1	B5C0480	03/19/2015	03/19/15 19:40	
n-Propylbenzene	ND	5.0	1	B5C0480	03/19/2015	03/19/15 19:40	
Naphthalene	ND	5.0	1	B5C0480	03/19/2015	03/19/15 19:40	
o-Xylene	ND	5.0	1	B5C0480	03/19/2015	03/19/15 19:40	
sec-Butylbenzene	ND	5.0	1	B5C0480	03/19/2015	03/19/15 19:40	
Styrene	ND	5.0	1	B5C0480	03/19/2015	03/19/15 19:40	
tert-Amyl methyl ether	ND	5.0	1	B5C0480	03/19/2015	03/19/15 19:40	
tert-Butanol	ND	100	1	B5C0480	03/19/2015	03/19/15 19:40	
tert-Butylbenzene	ND	5.0	1	B5C0480	03/19/2015	03/19/15 19:40	
Tetrachloroethene	ND	5.0	1	B5C0480	03/19/2015	03/19/15 19:40	
Toluene	ND	5.0	1	B5C0480	03/19/2015	03/19/15 19:40	
trans-1,2-Dichloroethene	ND	5.0	1	B5C0480	03/19/2015	03/19/15 19:40	
trans-1,3-Dichloropropene	ND	5.0	1	B5C0480	03/19/2015	03/19/15 19:40	
Trichloroethene	ND	5.0	1	B5C0480	03/19/2015	03/19/15 19:40	

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Client Sample ID E133A-65

Lab ID: 1500960-05

Volatile Organic Compounds by EPA 8260B

Analyst: AG

Analyte	Result (ug/kg)	PQL (ug/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Trichlorofluoromethane	ND	5.0	1	B5C0480	03/19/2015	03/19/15 19:40	
Vinyl acetate	ND	50	1	B5C0480	03/19/2015	03/19/15 19:40	
Vinyl chloride	ND	5.0	1	B5C0480	03/19/2015	03/19/15 19:40	
Surrogate: 1,2-Dichloroethane-d4	*106 %*	*20 - 189*		B5C0480	03/19/2015	*03/19/15 19:40*	
Surrogate: 4-Bromofluorobenzene	*91.2 %*	*20 - 173*		B5C0480	03/19/2015	*03/19/15 19:40*	
Surrogate: Dibromofluoromethane	*107 %*	*26 - 178*		B5C0480	03/19/2015	*03/19/15 19:40*	
Surrogate: Toluene-d8	*97.8 %*	*31 - 166*		B5C0480	03/19/2015	*03/19/15 19:40*	

Semivolatile Organic Compounds by EPA 8270C

Analyst: BD

Analyte	Result (ug/kg)	PQL (ug/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
1,2,4-Trichlorobenzene	ND	330	1	B5C0472	03/18/2015	03/23/15 13:12	
1,2-Dichlorobenzene	ND	330	1	B5C0472	03/18/2015	03/23/15 13:12	
1,3-Dichlorobenzene	ND	330	1	B5C0472	03/18/2015	03/23/15 13:12	
1,4-Dichlorobenzene	ND	330	1	B5C0472	03/18/2015	03/23/15 13:12	
2,4,5-Trichlorophenol	ND	330	1	B5C0472	03/18/2015	03/23/15 13:12	
2,4,6-Trichlorophenol	ND	330	1	B5C0472	03/18/2015	03/23/15 13:12	
2,4-Dichlorophenol	ND	1600	1	B5C0472	03/18/2015	03/23/15 13:12	
2,4-Dimethylphenol	ND	330	1	B5C0472	03/18/2015	03/23/15 13:12	
2,4-Dinitrophenol	ND	1600	1	B5C0472	03/18/2015	03/23/15 13:12	
2,4-Dinitrotoluene	ND	330	1	B5C0472	03/18/2015	03/23/15 13:12	
2,6-Dinitrotoluene	ND	330	1	B5C0472	03/18/2015	03/23/15 13:12	
2-Chloronaphthalene	ND	330	1	B5C0472	03/18/2015	03/23/15 13:12	
2-Chlorophenol	ND	330	1	B5C0472	03/18/2015	03/23/15 13:12	
2-Methylnaphthalene	ND	330	1	B5C0472	03/18/2015	03/23/15 13:12	
2-Methylphenol	ND	330	1	B5C0472	03/18/2015	03/23/15 13:12	
2-Nitroaniline	ND	1600	1	B5C0472	03/18/2015	03/23/15 13:12	
2-Nitrophenol	ND	330	1	B5C0472	03/18/2015	03/23/15 13:12	
3,3´-Dichlorobenzidine	ND	660	1	B5C0472	03/18/2015	03/23/15 13:12	
3-Nitroaniline	ND	1600	1	B5C0472	03/18/2015	03/23/15 13:12	
4,6-Dinitro-2-methyphenol	ND	1600	1	B5C0472	03/18/2015	03/23/15 13:12	
4-Bromophenyl-phenylether	ND	330	1	B5C0472	03/18/2015	03/23/15 13:12	
4-Chloro-3-methylphenol	ND	660	1	B5C0472	03/18/2015	03/23/15 13:12	
4-Chloroaniline	ND	660	1	B5C0472	03/18/2015	03/23/15 13:12	
4-Chlorophenyl-phenylether	ND	330	1	B5C0472	03/18/2015	03/23/15 13:12	
4-Methylphenol	ND	330	1	B5C0472	03/18/2015	03/23/15 13:12	

Figure C-2.138

Certificate of Analysis

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Client Sample ID E133A-65

Lab ID: 1500960-05

Semivolatile Organic Compounds by EPA 8270C **Analyst: BD**

Analyte	Result (ug/kg)	PQL (ug/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
4-Nitroaniline	ND	1600	1	B5C0472	03/18/2015	03/23/15 13:12	
4-Nitrophenol	ND	330	1	B5C0472	03/18/2015	03/23/15 13:12	
Acenaphthene	ND	330	1	B5C0472	03/18/2015	03/23/15 13:12	
Acenaphthylene	ND	330	1	B5C0472	03/18/2015	03/23/15 13:12	
Anthracene	ND	330	1	B5C0472	03/18/2015	03/23/15 13:12	
Benzidine (M)	ND	1600	1	B5C0472	03/18/2015	03/23/15 13:12	
Benzo(a)anthracene	ND	330	1	B5C0472	03/18/2015	03/23/15 13:12	
Benzo(a)pyrene	ND	330	1	B5C0472	03/18/2015	03/23/15 13:12	
Benzo(b)fluoranthene	ND	330	1	B5C0472	03/18/2015	03/23/15 13:12	
Benzo(g,h,i)perylene	ND	330	1	B5C0472	03/18/2015	03/23/15 13:12	
Benzo(k)fluoranthene	ND	330	1	B5C0472	03/18/2015	03/23/15 13:12	
Benzoic acid	ND	1600	1	B5C0472	03/18/2015	03/23/15 13:12	
Benzyl alcohol	ND	660	1	B5C0472	03/18/2015	03/23/15 13:12	
bis(2-chloroethoxy)methane	ND	330	1	B5C0472	03/18/2015	03/23/15 13:12	
bis(2-Chloroethyl)ether	ND	330	1	B5C0472	03/18/2015	03/23/15 13:12	
bis(2-chloroisopropyl)ether	ND	330	1	B5C0472	03/18/2015	03/23/15 13:12	
bis(2-ethylhexyl)phthalate	ND	330	1	B5C0472	03/18/2015	03/23/15 13:12	
Butylbenzylphthalate	ND	330	1	B5C0472	03/18/2015	03/23/15 13:12	
Chrysene	ND	330	1	B5C0472	03/18/2015	03/23/15 13:12	
Di-n-butylphthalate	ND	330	1	B5C0472	03/18/2015	03/23/15 13:12	
Di-n-octylphthalate	ND	330	1	B5C0472	03/18/2015	03/23/15 13:12	
Dibenz(a,h)anthracene	ND	330	1	B5C0472	03/18/2015	03/23/15 13:12	
Dibenzofuran	ND	330	1	B5C0472	03/18/2015	03/23/15 13:12	
Diethyl phthalate	ND	330	1	B5C0472	03/18/2015	03/23/15 13:12	
Dimethyl phthalate	ND	330	1	B5C0472	03/18/2015	03/23/15 13:12	
Fluoranthene	ND	330	1	B5C0472	03/18/2015	03/23/15 13:12	
Fluorene	ND	330	1	B5C0472	03/18/2015	03/23/15 13:12	
Hexachlorobenzene	ND	330	1	B5C0472	03/18/2015	03/23/15 13:12	
Hexachlorobutadiene	ND	660	1	B5C0472	03/18/2015	03/23/15 13:12	
Hexachlorocyclopentadiene	ND	660	1	B5C0472	03/18/2015	03/23/15 13:12	
Hexachloroethane	ND	330	1	B5C0472	03/18/2015	03/23/15 13:12	
Indeno(1,2,3-cd)pyrene	ND	330	1	B5C0472	03/18/2015	03/23/15 13:12	
Isophorone	ND	330	1	B5C0472	03/18/2015	03/23/15 13:12	
N-Nitroso-di-n propylamine	ND	330	1	B5C0472	03/18/2015	03/23/15 13:12	
N-Nitrosodiphenylamine	ND	330	1	B5C0472	03/18/2015	03/23/15 13:12	
Naphthalene	ND	330	1	B5C0472	03/18/2015	03/23/15 13:12	
Nitrobenzene	ND	330	1	B5C0472	03/18/2015	03/23/15 13:12	

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Lab ID: 1500960-05

Semivolatile Organic Compounds by EPA 8270C **Analyst: BD**

Analyte		Result (ug/kg)	PQL (ug/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Pentachlorophenol		ND	1600	1	B5C0472	03/18/2015	03/23/15 13:12	
Phenanthrene		ND	330	1	B5C0472	03/18/2015	03/23/15 13:12	
Phenol		ND	330	1	B5C0472	03/18/2015	03/23/15 13:12	
Pyrene		ND	330	1	B5C0472	03/18/2015	03/23/15 13:12	
Pyridine		ND	1600	1	B5C0472	03/18/2015	03/23/15 13:12	
Surrogate: 1,2-Dichlorobenzene-d4	*45.4 %*		*24 - 114*		B5C0472	03/18/2015	*03/23/15 13:12*	
Surrogate: 2,4,6-Tribromophenol	*71.9 %*		*0 - 189*		B5C0472	03/18/2015	*03/23/15 13:12*	
Surrogate: 2-Chlorophenol-d4	*58.9 %*		*23 - 123*		B5C0472	03/18/2015	*03/23/15 13:12*	
Surrogate: 2-Fluorobiphenyl	*51.0 %*		*28 - 128*		B5C0472	03/18/2015	*03/23/15 13:12*	
Surrogate: 2-Fluorophenol	*56.4 %*		*8 - 138*		B5C0472	03/18/2015	*03/23/15 13:12*	
Surrogate: 4-Terphenyl-d14	*64.0 %*		*27 - 154*		B5C0472	03/18/2015	*03/23/15 13:12*	
Surrogate: Nitrobenzene-d5	*50.5 %*		*19 - 129*		B5C0472	03/18/2015	*03/23/15 13:12*	
Surrogate: Phenol-d5	*60.2 %*		*20 - 126*		B5C0472	03/18/2015	*03/23/15 13:12*	

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Lab ID: 1500960-06

Total Petroleum Hydrocarbons, HEM/SGT EPA 1664 (Modified) — **Analyst: la**

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Total Petroleum Hydrocarbons	ND	50	1	B5C0509	03/19/2015	03/19/15 18:45	

Title 22 Metals by ICP-AES EPA 6010B — **Analyst: RR**

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Antimony	ND	2.0	1	B5C0537	03/20/2015	03/20/15 16:48	
Arsenic	ND	1.0	1	B5C0537	03/20/2015	03/20/15 16:48	
Barium	**38**	1.0	1	B5C0537	03/20/2015	03/20/15 16:48	
Beryllium	ND	1.0	1	B5C0537	03/20/2015	03/20/15 16:47	
Cadmium	ND	1.0	1	B5C0537	03/20/2015	03/20/15 16:48	
Chromium	**13**	1.0	1	B5C0537	03/20/2015	03/20/15 16:48	
Cobalt	ND	1.0	1	B5C0537	03/20/2015	03/20/15 16:48	
Copper	**26**	2.0	1	B5C0537	03/20/2015	03/20/15 16:48	
Lead	**1.4**	1.0	1	B5C0537	03/20/2015	03/20/15 16:48	
Molybdenum	**1.5**	1.0	1	B5C0537	03/20/2015	03/20/15 16:48	
Nickel	**2.6**	1.0	1	B5C0537	03/20/2015	03/20/15 16:48	
Selenium	ND	1.0	1	B5C0537	03/20/2015	03/20/15 16:48	
Silver	ND	1.0	1	B5C0537	03/20/2015	03/20/15 16:48	
Thallium	ND	1.0	1	B5C0537	03/20/2015	03/20/15 16:48	
Vanadium	**7.9**	1.0	1	B5C0537	03/20/2015	03/20/15 16:48	
Zinc	**33**	1.0	1	B5C0537	03/20/2015	03/20/15 16:48	

Mercury by AA (Cold Vapor) EPA 7471A — **Analyst: SB**

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Mercury	ND	0.10	1	B5C0538	03/20/2015	03/20/15 16:04	

Gasoline Range Organics by EPA 8015B (Modified) — **Analyst: BT/**

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Gasoline Range Organics	ND	1.0	1	B5C0445	03/16/2015	03/18/15 11:40	
Surrogate: 4-Bromofluorobenzene *96.0 %*		*37 - 153*		B5C0445	03/16/2015	*03/18/15 11:40*	

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Lab ID: 1500960-06

Diesel Range Organics by EPA 8015B

Analyst: CR

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
DRO	ND	10	1	B5C0473	03/18/2015	03/18/15 19:45	
ORO	ND	10	1	B5C0473	03/18/2015	03/18/15 19:45	
Surrogate: p-Terphenyl	*85.1 %*	*49 - 142*		B5C0473	03/18/2015	*03/18/15 19:45*	

Volatile Organic Compounds by EPA 8260B

Analyst: AG

Analyte	Result (ug/kg)	PQL (ug/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
1,1,1,2-Tetrachloroethane	ND	5.0	1	B5C0516	03/20/2015	03/20/15 13:56	
1,1,1-Trichloroethane	ND	5.0	1	B5C0516	03/20/2015	03/20/15 13:56	
1,1,2,2-Tetrachloroethane	ND	5.0	1	B5C0516	03/20/2015	03/20/15 13:56	
1,1,2-Trichloroethane	ND	5.0	1	B5C0516	03/20/2015	03/20/15 13:56	
1,1-Dichloroethane	ND	5.0	1	B5C0516	03/20/2015	03/20/15 13:56	
1,1-Dichloroethene	ND	5.0	1	B5C0516	03/20/2015	03/20/15 13:56	
1,1-Dichloropropene	ND	5.0	1	B5C0516	03/20/2015	03/20/15 13:56	
1,2,3-Trichloropropane	ND	5.0	1	B5C0516	03/20/2015	03/20/15 13:56	
1,2,3-Trichlorobenzene	ND	5.0	1	B5C0516	03/20/2015	03/20/15 13:56	
1,2,4-Trichlorobenzene	ND	5.0	1	B5C0516	03/20/2015	03/20/15 13:56	
1,2,4-Trimethylbenzene	ND	5.0	1	B5C0516	03/20/2015	03/20/15 13:56	
1,2-Dibromo-3-chloropropane	ND	10	1	B5C0516	03/20/2015	03/20/15 13:56	
1,2-Dibromoethane	ND	5.0	1	B5C0516	03/20/2015	03/20/15 13:56	
1,2-Dichlorobenzene	ND	5.0	1	B5C0516	03/20/2015	03/20/15 13:56	
1,2-Dichloroethane	ND	5.0	1	B5C0516	03/20/2015	03/20/15 13:56	
1,2-Dichloropropane	ND	5.0	1	B5C0516	03/20/2015	03/20/15 13:56	
1,3,5-Trimethylbenzene	ND	5.0	1	B5C0516	03/20/2015	03/20/15 13:56	
1,3-Dichlorobenzene	ND	5.0	1	B5C0516	03/20/2015	03/20/15 13:56	
1,3-Dichloropropane	ND	5.0	1	B5C0516	03/20/2015	03/20/15 13:56	
1,4-Dichlorobenzene	ND	5.0	1	B5C0516	03/20/2015	03/20/15 13:56	
2,2-Dichloropropane	ND	5.0	1	B5C0516	03/20/2015	03/20/15 13:56	
2-Chlorotoluene	ND	5.0	1	B5C0516	03/20/2015	03/20/15 13:56	
4-Chlorotoluene	ND	5.0	1	B5C0516	03/20/2015	03/20/15 13:56	
4-Isopropyltoluene	ND	5.0	1	B5C0516	03/20/2015	03/20/15 13:56	
Benzene	ND	5.0	1	B5C0516	03/20/2015	03/20/15 13:56	
Bromobenzene	ND	5.0	1	B5C0516	03/20/2015	03/20/15 13:56	
Bromochloromethane	ND	5.0	1	B5C0516	03/20/2015	03/20/15 13:56	
Bromodichloromethane	ND	5.0	1	B5C0516	03/20/2015	03/20/15 13:56	
Bromoform	ND	5.0	1	B5C0516	03/20/2015	03/20/15 13:56	

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Amec Foster Wheeler	Project Number : MTA WESTSIDE, 4953-11-1423
6001 Rickenbacker Road	Report To : Ron Lopez
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Client Sample ID E133A-75

Lab ID: 1500960-06

Volatile Organic Compounds by EPA 8260B **Analyst: AG**

Analyte	Result (ug/kg)	PQL (ug/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Bromomethane	ND	5.0	1	B5C0516	03/20/2015	03/20/15 13:56	
Carbon disulfide	ND	5.0	1	B5C0516	03/20/2015	03/20/15 13:56	
Carbon tetrachloride	ND	5.0	1	B5C0516	03/20/2015	03/20/15 13:56	
Chlorobenzene	ND	5.0	1	B5C0516	03/20/2015	03/20/15 13:56	
Chloroethane	ND	5.0	1	B5C0516	03/20/2015	03/20/15 13:56	
Chloroform	ND	5.0	1	B5C0516	03/20/2015	03/20/15 13:56	
Chloromethane	ND	5.0	1	B5C0516	03/20/2015	03/20/15 13:56	
cis-1,2-Dichloroethene	ND	5.0	1	B5C0516	03/20/2015	03/20/15 13:56	
cis-1,3-Dichloropropene	ND	5.0	1	B5C0516	03/20/2015	03/20/15 13:56	
Di-isopropyl ether	ND	5.0	1	B5C0516	03/20/2015	03/20/15 13:56	
Dibromochloromethane	ND	5.0	1	B5C0516	03/20/2015	03/20/15 13:56	
Dibromomethane	ND	5.0	1	B5C0516	03/20/2015	03/20/15 13:56	
Dichlorodifluoromethane	ND	5.0	1	B5C0516	03/20/2015	03/20/15 13:56	
Ethyl Acetate	ND	50	1	B5C0516	03/20/2015	03/20/15 13:56	
Ethyl Ether	ND	50	1	B5C0516	03/20/2015	03/20/15 13:56	
Ethyl tert-butyl ether	ND	5.0	1	B5C0516	03/20/2015	03/20/15 13:56	
Ethylbenzene	ND	5.0	1	B5C0516	03/20/2015	03/20/15 13:56	
Freon-113	ND	5.0	1	B5C0516	03/20/2015	03/20/15 13:56	
Hexachlorobutadiene	ND	5.0	1	B5C0516	03/20/2015	03/20/15 13:56	
Isopropylbenzene	ND	5.0	1	B5C0516	03/20/2015	03/20/15 13:56	
m,p-Xylene	ND	10	1	B5C0516	03/20/2015	03/20/15 13:56	
Methylene chloride	ND	5.0	1	B5C0516	03/20/2015	03/20/15 13:56	
MTBE	ND	5.0	1	B5C0516	03/20/2015	03/20/15 13:56	
n-Butylbenzene	ND	5.0	1	B5C0516	03/20/2015	03/20/15 13:56	
n-Propylbenzene	ND	5.0	1	B5C0516	03/20/2015	03/20/15 13:56	
Naphthalene	ND	5.0	1	B5C0516	03/20/2015	03/20/15 13:56	
o-Xylene	ND	5.0	1	B5C0516	03/20/2015	03/20/15 13:56	
sec-Butylbenzene	ND	5.0	1	B5C0516	03/20/2015	03/20/15 13:56	
Styrene	ND	5.0	1	B5C0516	03/20/2015	03/20/15 13:56	
tert-Amyl methyl ether	ND	5.0	1	B5C0516	03/20/2015	03/20/15 13:56	
tert-Butanol	ND	100	1	B5C0516	03/20/2015	03/20/15 13:56	
tert-Butylbenzene	ND	5.0	1	B5C0516	03/20/2015	03/20/15 13:56	
Tetrachloroethene	ND	5.0	1	B5C0516	03/20/2015	03/20/15 13:56	
Toluene	ND	5.0	1	B5C0516	03/20/2015	03/20/15 13:56	
trans-1,2-Dichloroethene	ND	5.0	1	B5C0516	03/20/2015	03/20/15 13:56	
trans-1,3-Dichloropropene	ND	5.0	1	B5C0516	03/20/2015	03/20/15 13:56	
Trichloroethene	ND	5.0	1	B5C0516	03/20/2015	03/20/15 13:56	

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Los Angeles , CA 90040	Reported : 03/23/2015

Client Sample ID E133A-75

Lab ID: 1500960-06

Volatile Organic Compounds by EPA 8260B

Analyst: AG

Analyte	Result (ug/kg)	PQL (ug/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Trichlorofluoromethane	ND	5.0	1	B5C0516	03/20/2015	03/20/15 13:56	
Vinyl acetate	ND	50	1	B5C0516	03/20/2015	03/20/15 13:56	
Vinyl chloride	ND	5.0	1	B5C0516	03/20/2015	03/20/15 13:56	
Surrogate: 1,2-Dichloroethane-d4	*90.4 %*	*20 - 189*		B5C0516	03/20/2015	*03/20/15 13:56*	
Surrogate: 4-Bromofluorobenzene	*96.6 %*	*20 - 173*		B5C0516	03/20/2015	*03/20/15 13:56*	
Surrogate: Dibromofluoromethane	*95.9 %*	*26 - 178*		B5C0516	03/20/2015	*03/20/15 13:56*	
Surrogate: Toluene-d8	*99.8 %*	*31 - 166*		B5C0516	03/20/2015	*03/20/15 13:56*	

Semivolatile Organic Compounds by EPA 8270C

Analyst: BD

Analyte	Result (ug/kg)	PQL (ug/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
1,2,4-Trichlorobenzene	ND	330	1	B5C0472	03/18/2015	03/23/15 11:50	
1,2-Dichlorobenzene	ND	330	1	B5C0472	03/18/2015	03/23/15 11:50	
1,3-Dichlorobenzene	ND	330	1	B5C0472	03/18/2015	03/23/15 11:50	
1,4-Dichlorobenzene	ND	330	1	B5C0472	03/18/2015	03/23/15 11:50	
2,4,5-Trichlorophenol	ND	330	1	B5C0472	03/18/2015	03/23/15 11:50	
2,4,6-Trichlorophenol	ND	330	1	B5C0472	03/18/2015	03/23/15 11:50	
2,4-Dichlorophenol	ND	1600	1	B5C0472	03/18/2015	03/23/15 11:50	
2,4-Dimethylphenol	ND	330	1	B5C0472	03/18/2015	03/23/15 11:50	
2,4-Dinitrophenol	ND	1600	1	B5C0472	03/18/2015	03/23/15 11:50	
2,4-Dinitrotoluene	ND	330	1	B5C0472	03/18/2015	03/23/15 11:50	
2,6-Dinitrotoluene	ND	330	1	B5C0472	03/18/2015	03/23/15 11:50	
2-Chloronaphthalene	ND	330	1	B5C0472	03/18/2015	03/23/15 11:50	
2-Chlorophenol	ND	330	1	B5C0472	03/18/2015	03/23/15 11:50	
2-Methylnaphthalene	ND	330	1	B5C0472	03/18/2015	03/23/15 11:50	
2-Methylphenol	ND	330	1	B5C0472	03/18/2015	03/23/15 11:50	
2-Nitroaniline	ND	1600	1	B5C0472	03/18/2015	03/23/15 11:50	
2-Nitrophenol	ND	330	1	B5C0472	03/18/2015	03/23/15 11:50	
3,3´-Dichlorobenzidine	ND	660	1	B5C0472	03/18/2015	03/23/15 11:50	
3-Nitroaniline	ND	1600	1	B5C0472	03/18/2015	03/23/15 11:50	
4,6-Dinitro-2-methyphenol	ND	1600	1	B5C0472	03/18/2015	03/23/15 11:50	
4-Bromophenyl-phenylether	ND	330	1	B5C0472	03/18/2015	03/23/15 11:50	
4-Chloro-3-methylphenol	ND	660	1	B5C0472	03/18/2015	03/23/15 11:50	
4-Chloroaniline	ND	660	1	B5C0472	03/18/2015	03/23/15 11:50	
4-Chlorophenyl-phenylether	ND	330	1	B5C0472	03/18/2015	03/23/15 11:50	
4-Methylphenol	ND	330	1	B5C0472	03/18/2015	03/23/15 11:50	

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Los Angeles , CA 90040	Reported : 03/23/2015

Client Sample ID E133A-75

Lab ID: 1500960-06

Semivolatile Organic Compounds by EPA 8270C **Analyst: BD**

Analyte	Result (ug/kg)	PQL (ug/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
4-Nitroaniline	ND	1600	1	B5C0472	03/18/2015	03/23/15 11:50	
4-Nitrophenol	ND	330	1	B5C0472	03/18/2015	03/23/15 11:50	
Acenaphthene	ND	330	1	B5C0472	03/18/2015	03/23/15 11:50	
Acenaphthylene	ND	330	1	B5C0472	03/18/2015	03/23/15 11:50	
Anthracene	ND	330	1	B5C0472	03/18/2015	03/23/15 11:50	
Benzidine (M)	ND	1600	1	B5C0472	03/18/2015	03/23/15 11:50	
Benzo(a)anthracene	ND	330	1	B5C0472	03/18/2015	03/23/15 11:50	
Benzo(a)pyrene	ND	330	1	B5C0472	03/18/2015	03/23/15 11:50	
Benzo(b)fluoranthene	ND	330	1	B5C0472	03/18/2015	03/23/15 11:50	
Benzo(g,h,i)perylene	ND	330	1	B5C0472	03/18/2015	03/23/15 11:50	
Benzo(k)fluoranthene	ND	330	1	B5C0472	03/18/2015	03/23/15 11:50	
Benzoic acid	ND	1600	1	B5C0472	03/18/2015	03/23/15 11:50	
Benzyl alcohol	ND	660	1	B5C0472	03/18/2015	03/23/15 11:50	
bis(2-chloroethoxy)methane	ND	330	1	B5C0472	03/18/2015	03/23/15 11:50	
bis(2-Chloroethyl)ether	ND	330	1	B5C0472	03/18/2015	03/23/15 11:50	
bis(2-chloroisopropyl)ether	ND	330	1	B5C0472	03/18/2015	03/23/15 11:50	
bis(2-ethylhexyl)phthalate	ND	330	1	B5C0472	03/18/2015	03/23/15 11:50	
Butylbenzylphthalate	ND	330	1	B5C0472	03/18/2015	03/23/15 11:50	
Chrysene	ND	330	1	B5C0472	03/18/2015	03/23/15 11:50	
Di-n-butylphthalate	ND	330	1	B5C0472	03/18/2015	03/23/15 11:50	
Di-n-octylphthalate	ND	330	1	B5C0472	03/18/2015	03/23/15 11:50	
Dibenz(a,h)anthracene	ND	330	1	B5C0472	03/18/2015	03/23/15 11:50	
Dibenzofuran	ND	330	1	B5C0472	03/18/2015	03/23/15 11:50	
Diethyl phthalate	ND	330	1	B5C0472	03/18/2015	03/23/15 11:50	
Dimethyl phthalate	ND	330	1	B5C0472	03/18/2015	03/23/15 11:50	
Fluoranthene	ND	330	1	B5C0472	03/18/2015	03/23/15 11:50	
Fluorene	ND	330	1	B5C0472	03/18/2015	03/23/15 11:50	
Hexachlorobenzene	ND	330	1	B5C0472	03/18/2015	03/23/15 11:50	
Hexachlorobutadiene	ND	660	1	B5C0472	03/18/2015	03/23/15 11:50	
Hexachlorocyclopentadiene	ND	660	1	B5C0472	03/18/2015	03/23/15 11:50	
Hexachloroethane	ND	330	1	B5C0472	03/18/2015	03/23/15 11:50	
Indeno(1,2,3-cd)pyrene	ND	330	1	B5C0472	03/18/2015	03/23/15 11:50	
Isophorone	ND	330	1	B5C0472	03/18/2015	03/23/15 11:50	
N-Nitroso-di-n propylamine	ND	330	1	B5C0472	03/18/2015	03/23/15 11:50	
N-Nitrosodiphenylamine	ND	330	1	B5C0472	03/18/2015	03/23/15 11:50	
Naphthalene	ND	330	1	B5C0472	03/18/2015	03/23/15 11:50	
Nitrobenzene	ND	330	1	B5C0472	03/18/2015	03/23/15 11:50	

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6001 Rickenbacker Road	Report To : Ron Lopez
Los Angeles , CA 90040	Reported : 03/23/2015

Client Sample ID E133A-75

Lab ID: 1500960-06

Semivolatile Organic Compounds by EPA 8270C **Analyst: BD**

Analyte		Result (ug/kg)	PQL (ug/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Pentachlorophenol		ND	1600	1	B5C0472	03/18/2015	03/23/15 11:50	
Phenanthrene		ND	330	1	B5C0472	03/18/2015	03/23/15 11:50	
Phenol		ND	330	1	B5C0472	03/18/2015	03/23/15 11:50	
Pyrene		ND	330	1	B5C0472	03/18/2015	03/23/15 11:50	
Pyridine		ND	1600	1	B5C0472	03/18/2015	03/23/15 11:50	
Surrogate: 1,2-Dichlorobenzene-d4	*52.2 %*		*24 - 114*		B5C0472	03/18/2015	*03/23/15 11:50*	
Surrogate: 2,4,6-Tribromophenol	*79.3 %*		*0 - 189*		B5C0472	03/18/2015	*03/23/15 11:50*	
Surrogate: 2-Chlorophenol-d4	*61.7 %*		*23 - 123*		B5C0472	03/18/2015	*03/23/15 11:50*	
Surrogate: 2-Fluorobiphenyl	*60.2 %*		*28 - 128*		B5C0472	03/18/2015	*03/23/15 11:50*	
Surrogate: 2-Fluorophenol	*59.9 %*		*8 - 138*		B5C0472	03/18/2015	*03/23/15 11:50*	
Surrogate: 4-Terphenyl-d14	*77.5 %*		*27 - 154*		B5C0472	03/18/2015	*03/23/15 11:50*	
Surrogate: Nitrobenzene-d5	*53.4 %*		*19 - 129*		B5C0472	03/18/2015	*03/23/15 11:50*	
Surrogate: Phenol-d5	*62.5 %*		*20 - 126*		B5C0472	03/18/2015	*03/23/15 11:50*	

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Amec Foster Wheeler	Project Number : MTA WESTSIDE, 4953-11-1423
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Client Sample ID E133A-85

Lab ID: 1500960-07

Total Petroleum Hydrocarbons, HEM/SGT EPA 1664 (Modified) — **Analyst: la**

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Total Petroleum Hydrocarbons	ND	50	1	B5C0509	03/19/2015	03/19/15 18:45	

Title 22 Metals by ICP-AES EPA 6010B — **Analyst: RR**

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Antimony	ND	2.0	1	B5C0537	03/20/2015	03/20/15 16:59	
Arsenic	ND	1.0	1	B5C0537	03/20/2015	03/20/15 16:59	
Barium	**10**	1.0	1	B5C0537	03/20/2015	03/20/15 16:58	
Beryllium	ND	1.0	1	B5C0537	03/20/2015	03/20/15 16:58	
Cadmium	ND	1.0	1	B5C0537	03/20/2015	03/20/15 16:59	
Chromium	**12**	1.0	1	B5C0537	03/20/2015	03/20/15 16:58	
Cobalt	ND	1.0	1	B5C0537	03/20/2015	03/20/15 16:59	
Copper	**4.5**	2.0	1	B5C0537	03/20/2015	03/20/15 16:58	
Lead	ND	1.0	1	B5C0537	03/20/2015	03/20/15 16:59	
Molybdenum	ND	1.0	1	B5C0537	03/20/2015	03/20/15 16:59	
Nickel	**4.2**	1.0	1	B5C0537	03/20/2015	03/20/15 16:58	
Selenium	ND	1.0	1	B5C0537	03/20/2015	03/20/15 16:59	
Silver	ND	1.0	1	B5C0537	03/20/2015	03/20/15 16:58	
Thallium	ND	1.0	1	B5C0537	03/20/2015	03/20/15 16:59	
Vanadium	**6.4**	1.0	1	B5C0537	03/20/2015	03/20/15 16:58	
Zinc	**14**	1.0	1	B5C0537	03/20/2015	03/20/15 16:58	

Mercury by AA (Cold Vapor) EPA 7471A — **Analyst: SB**

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Mercury	**0.11**	0.10	1	B5C0538	03/20/2015	03/20/15 16:06	

Gasoline Range Organics by EPA 8015B (Modified) — **Analyst: BT/**

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Gasoline Range Organics	ND	1.0	1	B5C0445	03/16/2015	03/18/15 11:56	
Surrogate: 4-Bromofluorobenzene *100 %*		*37 - 153*		B5C0445	03/16/2015	*03/18/15 11:56*	

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Amec Foster Wheeler	Project Number : MTA WESTSIDE, 4953-11-1423
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Lab ID: 1500960-07

Diesel Range Organics by EPA 8015B

Analyst: CR

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
DRO	ND	10	1	B5C0473	03/18/2015	03/18/15 20:02	
ORO	ND	10	1	B5C0473	03/18/2015	03/18/15 20:02	
Surrogate: p-Terphenyl	*87.8 %*	*49 - 142*		B5C0473	03/18/2015	*03/18/15 20:02*	

Volatile Organic Compounds by EPA 8260B

Analyst: AG

Analyte	Result (ug/kg)	PQL (ug/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
1,1,1,2-Tetrachloroethane	ND	5.0	1	B5C0480	03/19/2015	03/19/15 19:02	
1,1,1-Trichloroethane	ND	5.0	1	B5C0480	03/19/2015	03/19/15 19:02	
1,1,2,2-Tetrachloroethane	ND	5.0	1	B5C0480	03/19/2015	03/19/15 19:02	
1,1,2-Trichloroethane	ND	5.0	1	B5C0480	03/19/2015	03/19/15 19:02	
1,1-Dichloroethane	ND	5.0	1	B5C0480	03/19/2015	03/19/15 19:02	
1,1-Dichloroethene	ND	5.0	1	B5C0480	03/19/2015	03/19/15 19:02	
1,1-Dichloropropene	ND	5.0	1	B5C0480	03/19/2015	03/19/15 19:02	
1,2,3-Trichloropropane	ND	5.0	1	B5C0480	03/19/2015	03/19/15 19:02	
1,2,3-Trichlorobenzene	ND	5.0	1	B5C0480	03/19/2015	03/19/15 19:02	
1,2,4-Trichlorobenzene	ND	5.0	1	B5C0480	03/19/2015	03/19/15 19:02	
1,2,4-Trimethylbenzene	ND	5.0	1	B5C0480	03/19/2015	03/19/15 19:02	
1,2-Dibromo-3-chloropropane	ND	10	1	B5C0480	03/19/2015	03/19/15 19:02	
1,2-Dibromoethane	ND	5.0	1	B5C0480	03/19/2015	03/19/15 19:02	
1,2-Dichlorobenzene	ND	5.0	1	B5C0480	03/19/2015	03/19/15 19:02	
1,2-Dichloroethane	ND	5.0	1	B5C0480	03/19/2015	03/19/15 19:02	
1,2-Dichloropropane	ND	5.0	1	B5C0480	03/19/2015	03/19/15 19:02	
1,3,5-Trimethylbenzene	ND	5.0	1	B5C0480	03/19/2015	03/19/15 19:02	
1,3-Dichlorobenzene	ND	5.0	1	B5C0480	03/19/2015	03/19/15 19:02	
1,3-Dichloropropane	ND	5.0	1	B5C0480	03/19/2015	03/19/15 19:02	
1,4-Dichlorobenzene	ND	5.0	1	B5C0480	03/19/2015	03/19/15 19:02	
2,2-Dichloropropane	ND	5.0	1	B5C0480	03/19/2015	03/19/15 19:02	
2-Chlorotoluene	ND	5.0	1	B5C0480	03/19/2015	03/19/15 19:02	
4-Chlorotoluene	ND	5.0	1	B5C0480	03/19/2015	03/19/15 19:02	
4-Isopropyltoluene	ND	5.0	1	B5C0480	03/19/2015	03/19/15 19:02	
Benzene	ND	5.0	1	B5C0480	03/19/2015	03/19/15 19:02	
Bromobenzene	ND	5.0	1	B5C0480	03/19/2015	03/19/15 19:02	
Bromochloromethane	ND	5.0	1	B5C0480	03/19/2015	03/19/15 19:02	
Bromodichloromethane	ND	5.0	1	B5C0480	03/19/2015	03/19/15 19:02	
Bromoform	ND	5.0	1	B5C0480	03/19/2015	03/19/15 19:02	

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Amec Foster Wheeler	Project Number : MTA WESTSIDE, 4953-11-1423
6001 Rickenbacker Road	Report To : Ron Lopez
Los Angeles , CA 90040	Reported : 03/23/2015

Client Sample ID E133A-85

Lab ID: 1500960-07

Volatile Organic Compounds by EPA 8260B **Analyst: AG**

Analyte	Result (ug/kg)	PQL (ug/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Bromomethane	ND	5.0	1	B5C0480	03/19/2015	03/19/15 19:02	
Carbon disulfide	ND	5.0	1	B5C0480	03/19/2015	03/19/15 19:02	
Carbon tetrachloride	ND	5.0	1	B5C0480	03/19/2015	03/19/15 19:02	
Chlorobenzene	ND	5.0	1	B5C0480	03/19/2015	03/19/15 19:02	
Chloroethane	ND	5.0	1	B5C0480	03/19/2015	03/19/15 19:02	
Chloroform	ND	5.0	1	B5C0480	03/19/2015	03/19/15 19:02	
Chloromethane	ND	5.0	1	B5C0480	03/19/2015	03/19/15 19:02	
cis-1,2-Dichloroethene	ND	5.0	1	B5C0480	03/19/2015	03/19/15 19:02	
cis-1,3-Dichloropropene	ND	5.0	1	B5C0480	03/19/2015	03/19/15 19:02	
Di-isopropyl ether	ND	5.0	1	B5C0480	03/19/2015	03/19/15 19:02	
Dibromochloromethane	ND	5.0	1	B5C0480	03/19/2015	03/19/15 19:02	
Dibromomethane	ND	5.0	1	B5C0480	03/19/2015	03/19/15 19:02	
Dichlorodifluoromethane	ND	5.0	1	B5C0480	03/19/2015	03/19/15 19:02	
Ethyl Acetate	ND	50	1	B5C0480	03/19/2015	03/19/15 19:02	
Ethyl Ether	ND	50	1	B5C0480	03/19/2015	03/19/15 19:02	
Ethyl tert-butyl ether	ND	5.0	1	B5C0480	03/19/2015	03/19/15 19:02	
Ethylbenzene	ND	5.0	1	B5C0480	03/19/2015	03/19/15 19:02	
Freon-113	ND	5.0	1	B5C0480	03/19/2015	03/19/15 19:02	
Hexachlorobutadiene	ND	5.0	1	B5C0480	03/19/2015	03/19/15 19:02	
Isopropylbenzene	ND	5.0	1	B5C0480	03/19/2015	03/19/15 19:02	
m,p-Xylene	ND	10	1	B5C0480	03/19/2015	03/19/15 19:02	
Methylene chloride	ND	5.0	1	B5C0480	03/19/2015	03/19/15 19:02	
MTBE	ND	5.0	1	B5C0480	03/19/2015	03/19/15 19:02	
n-Butylbenzene	ND	5.0	1	B5C0480	03/19/2015	03/19/15 19:02	
n-Propylbenzene	ND	5.0	1	B5C0480	03/19/2015	03/19/15 19:02	
Naphthalene	ND	5.0	1	B5C0480	03/19/2015	03/19/15 19:02	
o-Xylene	ND	5.0	1	B5C0480	03/19/2015	03/19/15 19:02	
sec-Butylbenzene	ND	5.0	1	B5C0480	03/19/2015	03/19/15 19:02	
Styrene	ND	5.0	1	B5C0480	03/19/2015	03/19/15 19:02	
tert-Amyl methyl ether	ND	5.0	1	B5C0480	03/19/2015	03/19/15 19:02	
tert-Butanol	ND	100	1	B5C0480	03/19/2015	03/19/15 19:02	
tert-Butylbenzene	ND	5.0	1	B5C0480	03/19/2015	03/19/15 19:02	
Tetrachloroethene	ND	5.0	1	B5C0480	03/19/2015	03/19/15 19:02	
Toluene	ND	5.0	1	B5C0480	03/19/2015	03/19/15 19:02	
trans-1,2-Dichloroethene	ND	5.0	1	B5C0480	03/19/2015	03/19/15 19:02	
trans-1,3-Dichloropropene	ND	5.0	1	B5C0480	03/19/2015	03/19/15 19:02	
Trichloroethene	ND	5.0	1	B5C0480	03/19/2015	03/19/15 19:02	

Certificate of Analysis

Amec Foster Wheeler	Project Number : MTA WESTSIDE, 4953-11-1423
6001 Rickenbacker Road	Report To : Ron Lopez
Los Angeles , CA 90040	Reported : 03/23/2015

Client Sample ID E133A-85

Lab ID: 1500960-07

Volatile Organic Compounds by EPA 8260B

Analyst: AG

Analyte	Result (ug/kg)	PQL (ug/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Trichlorofluoromethane	ND	5.0	1	B5C0480	03/19/2015	03/19/15 19:02	
Vinyl acetate	ND	50	1	B5C0480	03/19/2015	03/19/15 19:02	
Vinyl chloride	ND	5.0	1	B5C0480	03/19/2015	03/19/15 19:02	
Surrogate: 1,2-Dichloroethane-d4	*99.6 %*	*20 - 189*		B5C0480	03/19/2015	*03/19/15 19:02*	
Surrogate: 4-Bromofluorobenzene	*92.4 %*	*20 - 173*		B5C0480	03/19/2015	*03/19/15 19:02*	
Surrogate: Dibromofluoromethane	*105 %*	*26 - 178*		B5C0480	03/19/2015	*03/19/15 19:02*	
Surrogate: Toluene-d8	*100 %*	*31 - 166*		B5C0480	03/19/2015	*03/19/15 19:02*	

Semivolatile Organic Compounds by EPA 8270C

Analyst: BD

Analyte	Result (ug/kg)	PQL (ug/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
1,2,4-Trichlorobenzene	ND	330	1	B5C0472	03/18/2015	03/23/15 13:39	
1,2-Dichlorobenzene	ND	330	1	B5C0472	03/18/2015	03/23/15 13:39	
1,3-Dichlorobenzene	ND	330	1	B5C0472	03/18/2015	03/23/15 13:39	
1,4-Dichlorobenzene	ND	330	1	B5C0472	03/18/2015	03/23/15 13:39	
2,4,5-Trichlorophenol	ND	330	1	B5C0472	03/18/2015	03/23/15 13:39	
2,4,6-Trichlorophenol	ND	330	1	B5C0472	03/18/2015	03/23/15 13:39	
2,4-Dichlorophenol	ND	1600	1	B5C0472	03/18/2015	03/23/15 13:39	
2,4-Dimethylphenol	ND	330	1	B5C0472	03/18/2015	03/23/15 13:39	
2,4-Dinitrophenol	ND	1600	1	B5C0472	03/18/2015	03/23/15 13:39	
2,4-Dinitrotoluene	ND	330	1	B5C0472	03/18/2015	03/23/15 13:39	
2,6-Dinitrotoluene	ND	330	1	B5C0472	03/18/2015	03/23/15 13:39	
2-Chloronaphthalene	ND	330	1	B5C0472	03/18/2015	03/23/15 13:39	
2-Chlorophenol	ND	330	1	B5C0472	03/18/2015	03/23/15 13:39	
2-Methylnaphthalene	ND	330	1	B5C0472	03/18/2015	03/23/15 13:39	
2-Methylphenol	ND	330	1	B5C0472	03/18/2015	03/23/15 13:39	
2-Nitroaniline	ND	1600	1	B5C0472	03/18/2015	03/23/15 13:39	
2-Nitrophenol	ND	330	1	B5C0472	03/18/2015	03/23/15 13:39	
3,3´-Dichlorobenzidine	ND	660	1	B5C0472	03/18/2015	03/23/15 13:39	
3-Nitroaniline	ND	1600	1	B5C0472	03/18/2015	03/23/15 13:39	
4,6-Dinitro-2-methyphenol	ND	1600	1	B5C0472	03/18/2015	03/23/15 13:39	
4-Bromophenyl-phenylether	ND	330	1	B5C0472	03/18/2015	03/23/15 13:39	
4-Chloro-3-methylphenol	ND	660	1	B5C0472	03/18/2015	03/23/15 13:39	
4-Chloroaniline	ND	660	1	B5C0472	03/18/2015	03/23/15 13:39	
4-Chlorophenyl-phenylether	ND	330	1	B5C0472	03/18/2015	03/23/15 13:39	
4-Methylphenol	ND	330	1	B5C0472	03/18/2015	03/23/15 13:39	

Certificate of Analysis

Amec Foster Wheeler	Project Number : MTA WESTSIDE, 4953-11-1423
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Los Angeles , CA 90040	Reported : 03/23/2015

Client Sample ID E133A-85

Lab ID: 1500960-07

Semivolatile Organic Compounds by EPA 8270C **Analyst: BD**

Analyte	Result (ug/kg)	PQL (ug/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
4-Nitroaniline	ND	1600	1	B5C0472	03/18/2015	03/23/15 13:39	
4-Nitrophenol	ND	330	1	B5C0472	03/18/2015	03/23/15 13:39	
Acenaphthene	ND	330	1	B5C0472	03/18/2015	03/23/15 13:39	
Acenaphthylene	ND	330	1	B5C0472	03/18/2015	03/23/15 13:39	
Anthracene	ND	330	1	B5C0472	03/18/2015	03/23/15 13:39	
Benzidine (M)	ND	1600	1	B5C0472	03/18/2015	03/23/15 13:39	
Benzo(a)anthracene	ND	330	1	B5C0472	03/18/2015	03/23/15 13:39	
Benzo(a)pyrene	ND	330	1	B5C0472	03/18/2015	03/23/15 13:39	
Benzo(b)fluoranthene	ND	330	1	B5C0472	03/18/2015	03/23/15 13:39	
Benzo(g,h,i)perylene	ND	330	1	B5C0472	03/18/2015	03/23/15 13:39	
Benzo(k)fluoranthene	ND	330	1	B5C0472	03/18/2015	03/23/15 13:39	
Benzoic acid	ND	1600	1	B5C0472	03/18/2015	03/23/15 13:39	
Benzyl alcohol	ND	660	1	B5C0472	03/18/2015	03/23/15 13:39	
bis(2-chloroethoxy)methane	ND	330	1	B5C0472	03/18/2015	03/23/15 13:39	
bis(2-Chloroethyl)ether	ND	330	1	B5C0472	03/18/2015	03/23/15 13:39	
bis(2-chloroisopropyl)ether	ND	330	1	B5C0472	03/18/2015	03/23/15 13:39	
bis(2-ethylhexyl)phthalate	ND	330	1	B5C0472	03/18/2015	03/23/15 13:39	
Butylbenzylphthalate	ND	330	1	B5C0472	03/18/2015	03/23/15 13:39	
Chrysene	ND	330	1	B5C0472	03/18/2015	03/23/15 13:39	
Di-n-butylphthalate	ND	330	1	B5C0472	03/18/2015	03/23/15 13:39	
Di-n-octylphthalate	ND	330	1	B5C0472	03/18/2015	03/23/15 13:39	
Dibenz(a,h)anthracene	ND	330	1	B5C0472	03/18/2015	03/23/15 13:39	
Dibenzofuran	ND	330	1	B5C0472	03/18/2015	03/23/15 13:39	
Diethyl phthalate	ND	330	1	B5C0472	03/18/2015	03/23/15 13:39	
Dimethyl phthalate	ND	330	1	B5C0472	03/18/2015	03/23/15 13:39	
Fluoranthene	ND	330	1	B5C0472	03/18/2015	03/23/15 13:39	
Fluorene	ND	330	1	B5C0472	03/18/2015	03/23/15 13:39	
Hexachlorobenzene	ND	330	1	B5C0472	03/18/2015	03/23/15 13:39	
Hexachlorobutadiene	ND	660	1	B5C0472	03/18/2015	03/23/15 13:39	
Hexachlorocyclopentadiene	ND	660	1	B5C0472	03/18/2015	03/23/15 13:39	
Hexachloroethane	ND	330	1	B5C0472	03/18/2015	03/23/15 13:39	
Indeno(1,2,3-cd)pyrene	ND	330	1	B5C0472	03/18/2015	03/23/15 13:39	
Isophorone	ND	330	1	B5C0472	03/18/2015	03/23/15 13:39	
N-Nitroso-di-n propylamine	ND	330	1	B5C0472	03/18/2015	03/23/15 13:39	
N-Nitrosodiphenylamine	ND	330	1	B5C0472	03/18/2015	03/23/15 13:39	
Naphthalene	ND	330	1	B5C0472	03/18/2015	03/23/15 13:39	
Nitrobenzene	ND	330	1	B5C0472	03/18/2015	03/23/15 13:39	

Certificate of Analysis

Amec Foster Wheeler	Project Number : MTA WESTSIDE, 4953-11-1423
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Los Angeles , CA 90040	Reported : 03/23/2015

Client Sample ID E133A-85

Lab ID: 1500960-07

Semivolatile Organic Compounds by EPA 8270C **Analyst: BD**

Analyte		Result (ug/kg)	PQL (ug/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Pentachlorophenol		ND	1600	1	B5C0472	03/18/2015	03/23/15 13:39	
Phenanthrene		ND	330	1	B5C0472	03/18/2015	03/23/15 13:39	
Phenol		ND	330	1	B5C0472	03/18/2015	03/23/15 13:39	
Pyrene		ND	330	1	B5C0472	03/18/2015	03/23/15 13:39	
Pyridine		ND	1600	1	B5C0472	03/18/2015	03/23/15 13:39	
Surrogate: 1,2-Dichlorobenzene-d4	*59.7 %*		*24 - 114*		B5C0472	03/18/2015	*03/23/15 13:39*	
Surrogate: 2,4,6-Tribromophenol	*80.1 %*		*0 - 189*		B5C0472	03/18/2015	*03/23/15 13:39*	
Surrogate: 2-Chlorophenol-d4	*71.3 %*		*23 - 123*		B5C0472	03/18/2015	*03/23/15 13:39*	
Surrogate: 2-Fluorobiphenyl	*67.3 %*		*28 - 128*		B5C0472	03/18/2015	*03/23/15 13:39*	
Surrogate: 2-Fluorophenol	*67.8 %*		*8 - 138*		B5C0472	03/18/2015	*03/23/15 13:39*	
Surrogate: 4-Terphenyl-d14	*79.7 %*		*27 - 154*		B5C0472	03/18/2015	*03/23/15 13:39*	
Surrogate: Nitrobenzene-d5	*60.9 %*		*19 - 129*		B5C0472	03/18/2015	*03/23/15 13:39*	
Surrogate: Phenol-d5	*71.7 %*		*20 - 126*		B5C0472	03/18/2015	*03/23/15 13:39*	

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Amec Foster Wheeler	Project Number : MTA WESTSIDE, 4953-11-1423
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Client Sample ID E133A-95

Lab ID: 1500960-08

Total Petroleum Hydrocarbons, HEM/SGT EPA 1664 (Modified) — **Analyst: la**

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Total Petroleum Hydrocarbons	ND	50	1	B5C0509	03/19/2015	03/19/15 18:45	

Title 22 Metals by ICP-AES EPA 6010B — **Analyst: RR**

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Antimony	ND	2.0	1	B5C0537	03/20/2015	03/20/15 17:02	
Arsenic	**2.7**	1.0	1	B5C0537	03/20/2015	03/20/15 17:02	
Barium	**71**	1.0	1	B5C0537	03/20/2015	03/20/15 17:02	
Beryllium	ND	1.0	1	B5C0537	03/20/2015	03/20/15 17:01	
Cadmium	ND	1.0	1	B5C0537	03/20/2015	03/20/15 17:02	
Chromium	**18**	1.0	1	B5C0537	03/20/2015	03/20/15 17:02	
Cobalt	**3.6**	1.0	1	B5C0537	03/20/2015	03/20/15 17:02	
Copper	**34**	2.0	1	B5C0537	03/20/2015	03/20/15 17:02	
Lead	**1.5**	1.0	1	B5C0537	03/20/2015	03/20/15 17:02	
Molybdenum	**1.9**	1.0	1	B5C0537	03/20/2015	03/20/15 17:02	
Nickel	**15**	1.0	1	B5C0537	03/20/2015	03/20/15 17:02	
Selenium	ND	1.0	1	B5C0537	03/20/2015	03/20/15 17:02	
Silver	ND	1.0	1	B5C0537	03/20/2015	03/20/15 17:02	
Thallium	ND	1.0	1	B5C0537	03/20/2015	03/20/15 17:02	
Vanadium	**20**	1.0	1	B5C0537	03/20/2015	03/20/15 17:02	
Zinc	**43**	1.0	1	B5C0537	03/20/2015	03/20/15 17:02	

Mercury by AA (Cold Vapor) EPA 7471A — **Analyst: SB**

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Mercury	ND	0.10	1	B5C0538	03/20/2015	03/20/15 16:09	

Gasoline Range Organics by EPA 8015B (Modified) — **Analyst: BT/**

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Gasoline Range Organics	ND	1.0	1	B5C0445	03/16/2015	03/18/15 12:12	
Surrogate: 4-Bromofluorobenzene	*93.0 %*	*37 - 153*		B5C0445	03/16/2015	*03/18/15 12:12*	

Certificate of Analysis

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Lab ID: 1500960-08

Diesel Range Organics by EPA 8015B

Analyst: CR

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
DRO	ND	10	1	B5C0473	03/18/2015	03/18/15 21:11	
ORO	ND	10	1	B5C0473	03/18/2015	03/18/15 21:11	
Surrogate: p-Terphenyl	*95.9 %*	*49 - 142*		B5C0473	03/18/2015	*03/18/15 21:11*	

Volatile Organic Compounds by EPA 8260B

Analyst: AG

Analyte	Result (ug/kg)	PQL (ug/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
1,1,1,2-Tetrachloroethane	ND	5.0	1	B5C0516	03/20/2015	03/20/15 14:14	
1,1,1-Trichloroethane	ND	5.0	1	B5C0516	03/20/2015	03/20/15 14:14	
1,1,2,2-Tetrachloroethane	ND	5.0	1	B5C0516	03/20/2015	03/20/15 14:14	
1,1,2-Trichloroethane	ND	5.0	1	B5C0516	03/20/2015	03/20/15 14:14	
1,1-Dichloroethane	ND	5.0	1	B5C0516	03/20/2015	03/20/15 14:14	
1,1-Dichloroethene	ND	5.0	1	B5C0516	03/20/2015	03/20/15 14:14	
1,1-Dichloropropene	ND	5.0	1	B5C0516	03/20/2015	03/20/15 14:14	
1,2,3-Trichloropropane	ND	5.0	1	B5C0516	03/20/2015	03/20/15 14:14	
1,2,3-Trichlorobenzene	ND	5.0	1	B5C0516	03/20/2015	03/20/15 14:14	
1,2,4-Trichlorobenzene	ND	5.0	1	B5C0516	03/20/2015	03/20/15 14:14	
1,2,4-Trimethylbenzene	ND	5.0	1	B5C0516	03/20/2015	03/20/15 14:14	
1,2-Dibromo-3-chloropropane	ND	10	1	B5C0516	03/20/2015	03/20/15 14:14	
1,2-Dibromoethane	ND	5.0	1	B5C0516	03/20/2015	03/20/15 14:14	
1,2-Dichlorobenzene	ND	5.0	1	B5C0516	03/20/2015	03/20/15 14:14	
1,2-Dichloroethane	ND	5.0	1	B5C0516	03/20/2015	03/20/15 14:14	
1,2-Dichloropropane	ND	5.0	1	B5C0516	03/20/2015	03/20/15 14:14	
1,3,5-Trimethylbenzene	ND	5.0	1	B5C0516	03/20/2015	03/20/15 14:14	
1,3-Dichlorobenzene	ND	5.0	1	B5C0516	03/20/2015	03/20/15 14:14	
1,3-Dichloropropane	ND	5.0	1	B5C0516	03/20/2015	03/20/15 14:14	
1,4-Dichlorobenzene	ND	5.0	1	B5C0516	03/20/2015	03/20/15 14:14	
2,2-Dichloropropane	ND	5.0	1	B5C0516	03/20/2015	03/20/15 14:14	
2-Chlorotoluene	ND	5.0	1	B5C0516	03/20/2015	03/20/15 14:14	
4-Chlorotoluene	ND	5.0	1	B5C0516	03/20/2015	03/20/15 14:14	
4-Isopropyltoluene	ND	5.0	1	B5C0516	03/20/2015	03/20/15 14:14	
Benzene	ND	5.0	1	B5C0516	03/20/2015	03/20/15 14:14	
Bromobenzene	ND	5.0	1	B5C0516	03/20/2015	03/20/15 14:14	
Bromochloromethane	ND	5.0	1	B5C0516	03/20/2015	03/20/15 14:14	
Bromodichloromethane	ND	5.0	1	B5C0516	03/20/2015	03/20/15 14:14	
Bromoform	ND	5.0	1	B5C0516	03/20/2015	03/20/15 14:14	

Certificate of Analysis

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Los Angeles , CA 90040	Reported : 03/23/2015

Client Sample ID E133A-95

Lab ID: 1500960-08

Volatile Organic Compounds by EPA 8260B **Analyst: AG**

Analyte	Result (ug/kg)	PQL (ug/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Bromomethane	ND	5.0	1	B5C0516	03/20/2015	03/20/15 14:14	
Carbon disulfide	ND	5.0	1	B5C0516	03/20/2015	03/20/15 14:14	
Carbon tetrachloride	ND	5.0	1	B5C0516	03/20/2015	03/20/15 14:14	
Chlorobenzene	ND	5.0	1	B5C0516	03/20/2015	03/20/15 14:14	
Chloroethane	ND	5.0	1	B5C0516	03/20/2015	03/20/15 14:14	
Chloroform	ND	5.0	1	B5C0516	03/20/2015	03/20/15 14:14	
Chloromethane	ND	5.0	1	B5C0516	03/20/2015	03/20/15 14:14	
cis-1,2-Dichloroethene	ND	5.0	1	B5C0516	03/20/2015	03/20/15 14:14	
cis-1,3-Dichloropropene	ND	5.0	1	B5C0516	03/20/2015	03/20/15 14:14	
Di-isopropyl ether	ND	5.0	1	B5C0516	03/20/2015	03/20/15 14:14	
Dibromochloromethane	ND	5.0	1	B5C0516	03/20/2015	03/20/15 14:14	
Dibromomethane	ND	5.0	1	B5C0516	03/20/2015	03/20/15 14:14	
Dichlorodifluoromethane	ND	5.0	1	B5C0516	03/20/2015	03/20/15 14:14	
Ethyl Acetate	ND	50	1	B5C0516	03/20/2015	03/20/15 14:14	
Ethyl Ether	ND	50	1	B5C0516	03/20/2015	03/20/15 14:14	
Ethyl tert-butyl ether	ND	5.0	1	B5C0516	03/20/2015	03/20/15 14:14	
Ethylbenzene	ND	5.0	1	B5C0516	03/20/2015	03/20/15 14:14	
Freon-113	ND	5.0	1	B5C0516	03/20/2015	03/20/15 14:14	
Hexachlorobutadiene	ND	5.0	1	B5C0516	03/20/2015	03/20/15 14:14	
Isopropylbenzene	ND	5.0	1	B5C0516	03/20/2015	03/20/15 14:14	
m,p-Xylene	ND	10	1	B5C0516	03/20/2015	03/20/15 14:14	
Methylene chloride	ND	5.0	1	B5C0516	03/20/2015	03/20/15 14:14	
MTBE	ND	5.0	1	B5C0516	03/20/2015	03/20/15 14:14	
n-Butylbenzene	ND	5.0	1	B5C0516	03/20/2015	03/20/15 14:14	
n-Propylbenzene	ND	5.0	1	B5C0516	03/20/2015	03/20/15 14:14	
Naphthalene	ND	5.0	1	B5C0516	03/20/2015	03/20/15 14:14	
o-Xylene	ND	5.0	1	B5C0516	03/20/2015	03/20/15 14:14	
sec-Butylbenzene	ND	5.0	1	B5C0516	03/20/2015	03/20/15 14:14	
Styrene	ND	5.0	1	B5C0516	03/20/2015	03/20/15 14:14	
tert-Amyl methyl ether	ND	5.0	1	B5C0516	03/20/2015	03/20/15 14:14	
tert-Butanol	ND	100	1	B5C0516	03/20/2015	03/20/15 14:14	
tert-Butylbenzene	ND	5.0	1	B5C0516	03/20/2015	03/20/15 14:14	
Tetrachloroethene	ND	5.0	1	B5C0516	03/20/2015	03/20/15 14:14	
Toluene	ND	5.0	1	B5C0516	03/20/2015	03/20/15 14:14	
trans-1,2-Dichloroethene	ND	5.0	1	B5C0516	03/20/2015	03/20/15 14:14	
trans-1,3-Dichloropropene	ND	5.0	1	B5C0516	03/20/2015	03/20/15 14:14	
Trichloroethene	ND	5.0	1	B5C0516	03/20/2015	03/20/15 14:14	

Certificate of Analysis

Amec Foster Wheeler	Project Number : MTA WESTSIDE, 4953-11-1423
6001 Rickenbacker Road	Report To : Ron Lopez
Los Angeles , CA 90040	Reported : 03/23/2015

Client Sample ID E133A-95

Lab ID: 1500960-08

Volatile Organic Compounds by EPA 8260B

Analyst: AG

Analyte	Result (ug/kg)	PQL (ug/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Trichlorofluoromethane	ND	5.0	1	B5C0516	03/20/2015	03/20/15 14:14	
Vinyl acetate	ND	50	1	B5C0516	03/20/2015	03/20/15 14:14	
Vinyl chloride	ND	5.0	1	B5C0516	03/20/2015	03/20/15 14:14	
Surrogate: 1,2-Dichloroethane-d4	*90.3 %*	*20 - 189*		B5C0516	03/20/2015	*03/20/15 14:14*	
Surrogate: 4-Bromofluorobenzene	*95.2 %*	*20 - 173*		B5C0516	03/20/2015	*03/20/15 14:14*	
Surrogate: Dibromofluoromethane	*97.5 %*	*26 - 178*		B5C0516	03/20/2015	*03/20/15 14:14*	
Surrogate: Toluene-d8	*98.8 %*	*31 - 166*		B5C0516	03/20/2015	*03/20/15 14:14*	

Semivolatile Organic Compounds by EPA 8270C

Analyst: BD

Analyte	Result (ug/kg)	PQL (ug/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
1,2,4-Trichlorobenzene	ND	330	1	B5C0472	03/18/2015	03/23/15 14:06	
1,2-Dichlorobenzene	ND	330	1	B5C0472	03/18/2015	03/23/15 14:06	
1,3-Dichlorobenzene	ND	330	1	B5C0472	03/18/2015	03/23/15 14:06	
1,4-Dichlorobenzene	ND	330	1	B5C0472	03/18/2015	03/23/15 14:06	
2,4,5-Trichlorophenol	ND	330	1	B5C0472	03/18/2015	03/23/15 14:06	
2,4,6-Trichlorophenol	ND	330	1	B5C0472	03/18/2015	03/23/15 14:06	
2,4-Dichlorophenol	ND	1600	1	B5C0472	03/18/2015	03/23/15 14:06	
2,4-Dimethylphenol	ND	330	1	B5C0472	03/18/2015	03/23/15 14:06	
2,4-Dinitrophenol	ND	1600	1	B5C0472	03/18/2015	03/23/15 14:06	
2,4-Dinitrotoluene	ND	330	1	B5C0472	03/18/2015	03/23/15 14:06	
2,6-Dinitrotoluene	ND	330	1	B5C0472	03/18/2015	03/23/15 14:06	
2-Chloronaphthalene	ND	330	1	B5C0472	03/18/2015	03/23/15 14:06	
2-Chlorophenol	ND	330	1	B5C0472	03/18/2015	03/23/15 14:06	
2-Methylnaphthalene	ND	330	1	B5C0472	03/18/2015	03/23/15 14:06	
2-Methylphenol	ND	330	1	B5C0472	03/18/2015	03/23/15 14:06	
2-Nitroaniline	ND	1600	1	B5C0472	03/18/2015	03/23/15 14:06	
2-Nitrophenol	ND	330	1	B5C0472	03/18/2015	03/23/15 14:06	
3,3´-Dichlorobenzidine	ND	660	1	B5C0472	03/18/2015	03/23/15 14:06	
3-Nitroaniline	ND	1600	1	B5C0472	03/18/2015	03/23/15 14:06	
4,6-Dinitro-2-methyphenol	ND	1600	1	B5C0472	03/18/2015	03/23/15 14:06	
4-Bromophenyl-phenylether	ND	330	1	B5C0472	03/18/2015	03/23/15 14:06	
4-Chloro-3-methylphenol	ND	660	1	B5C0472	03/18/2015	03/23/15 14:06	
4-Chloroaniline	ND	660	1	B5C0472	03/18/2015	03/23/15 14:06	
4-Chlorophenyl-phenylether	ND	330	1	B5C0472	03/18/2015	03/23/15 14:06	
4-Methylphenol	ND	330	1	B5C0472	03/18/2015	03/23/15 14:06	

Certificate of Analysis

Amec Foster Wheeler	Project Number : MTA WESTSIDE, 4953-11-1423
6001 Rickenbacker Road	Report To : Ron Lopez
Los Angeles , CA 90040	Reported : 03/23/2015

Client Sample ID E133A-95

Lab ID: 1500960-08

Semivolatile Organic Compounds by EPA 8270C **Analyst: BD**

Analyte	Result (ug/kg)	PQL (ug/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
4-Nitroaniline	ND	1600	1	B5C0472	03/18/2015	03/23/15 14:06	
4-Nitrophenol	ND	330	1	B5C0472	03/18/2015	03/23/15 14:06	
Acenaphthene	ND	330	1	B5C0472	03/18/2015	03/23/15 14:06	
Acenaphthylene	ND	330	1	B5C0472	03/18/2015	03/23/15 14:06	
Anthracene	ND	330	1	B5C0472	03/18/2015	03/23/15 14:06	
Benzidine (M)	ND	1600	1	B5C0472	03/18/2015	03/23/15 14:06	
Benzo(a)anthracene	ND	330	1	B5C0472	03/18/2015	03/23/15 14:06	
Benzo(a)pyrene	ND	330	1	B5C0472	03/18/2015	03/23/15 14:06	
Benzo(b)fluoranthene	ND	330	1	B5C0472	03/18/2015	03/23/15 14:06	
Benzo(g,h,i)perylene	ND	330	1	B5C0472	03/18/2015	03/23/15 14:06	
Benzo(k)fluoranthene	ND	330	1	B5C0472	03/18/2015	03/23/15 14:06	
Benzoic acid	ND	1600	1	B5C0472	03/18/2015	03/23/15 14:06	
Benzyl alcohol	ND	660	1	B5C0472	03/18/2015	03/23/15 14:06	
bis(2-chloroethoxy)methane	ND	330	1	B5C0472	03/18/2015	03/23/15 14:06	
bis(2-Chloroethyl)ether	ND	330	1	B5C0472	03/18/2015	03/23/15 14:06	
bis(2-chloroisopropyl)ether	ND	330	1	B5C0472	03/18/2015	03/23/15 14:06	
bis(2-ethylhexyl)phthalate	ND	330	1	B5C0472	03/18/2015	03/23/15 14:06	
Butylbenzylphthalate	ND	330	1	B5C0472	03/18/2015	03/23/15 14:06	
Chrysene	ND	330	1	B5C0472	03/18/2015	03/23/15 14:06	
Di-n-butylphthalate	ND	330	1	B5C0472	03/18/2015	03/23/15 14:06	
Di-n-octylphthalate	ND	330	1	B5C0472	03/18/2015	03/23/15 14:06	
Dibenz(a,h)anthracene	ND	330	1	B5C0472	03/18/2015	03/23/15 14:06	
Dibenzofuran	ND	330	1	B5C0472	03/18/2015	03/23/15 14:06	
Diethyl phthalate	ND	330	1	B5C0472	03/18/2015	03/23/15 14:06	
Dimethyl phthalate	ND	330	1	B5C0472	03/18/2015	03/23/15 14:06	
Fluoranthene	ND	330	1	B5C0472	03/18/2015	03/23/15 14:06	
Fluorene	ND	330	1	B5C0472	03/18/2015	03/23/15 14:06	
Hexachlorobenzene	ND	330	1	B5C0472	03/18/2015	03/23/15 14:06	
Hexachlorobutadiene	ND	660	1	B5C0472	03/18/2015	03/23/15 14:06	
Hexachlorocyclopentadiene	ND	660	1	B5C0472	03/18/2015	03/23/15 14:06	
Hexachloroethane	ND	330	1	B5C0472	03/18/2015	03/23/15 14:06	
Indeno(1,2,3-cd)pyrene	ND	330	1	B5C0472	03/18/2015	03/23/15 14:06	
Isophorone	ND	330	1	B5C0472	03/18/2015	03/23/15 14:06	
N-Nitroso-di-n propylamine	ND	330	1	B5C0472	03/18/2015	03/23/15 14:06	
N-Nitrosodiphenylamine	ND	330	1	B5C0472	03/18/2015	03/23/15 14:06	
Naphthalene	ND	330	1	B5C0472	03/18/2015	03/23/15 14:06	
Nitrobenzene	ND	330	1	B5C0472	03/18/2015	03/23/15 14:06	

Certificate of Analysis

Amec Foster Wheeler	Project Number : MTA WESTSIDE, 4953-11-1423
6001 Rickenbacker Road	Report To : Ron Lopez
Los Angeles , CA 90040	Reported : 03/23/2015

Client Sample ID E133A-95

Lab ID: 1500960-08

Semivolatile Organic Compounds by EPA 8270C **Analyst: BD**

Analyte		Result (ug/kg)	PQL (ug/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Pentachlorophenol		ND	1600	1	B5C0472	03/18/2015	03/23/15 14:06	
Phenanthrene		ND	330	1	B5C0472	03/18/2015	03/23/15 14:06	
Phenol		ND	330	1	B5C0472	03/18/2015	03/23/15 14:06	
Pyrene		ND	330	1	B5C0472	03/18/2015	03/23/15 14:06	
Pyridine		ND	1600	1	B5C0472	03/18/2015	03/23/15 14:06	
Surrogate: 1,2-Dichlorobenzene-d4	*44.9 %*		*24 - 114*		B5C0472	03/18/2015	*03/23/15 14:06*	
Surrogate: 2,4,6-Tribromophenol	*61.0 %*		*0 - 189*		B5C0472	03/18/2015	*03/23/15 14:06*	
Surrogate: 2-Chlorophenol-d4	*65.0 %*		*23 - 123*		B5C0472	03/18/2015	*03/23/15 14:06*	
Surrogate: 2-Fluorobiphenyl	*44.5 %*		*28 - 128*		B5C0472	03/18/2015	*03/23/15 14:06*	
Surrogate: 2-Fluorophenol	*63.7 %*		*8 - 138*		B5C0472	03/18/2015	*03/23/15 14:06*	
Surrogate: 4-Terphenyl-d14	*53.9 %*		*27 - 154*		B5C0472	03/18/2015	*03/23/15 14:06*	
Surrogate: Nitrobenzene-d5	*55.0 %*		*19 - 129*		B5C0472	03/18/2015	*03/23/15 14:06*	
Surrogate: Phenol-d5	*67.2 %*		*20 - 126*		B5C0472	03/18/2015	*03/23/15 14:06*	

Certificate of Analysis

Amec Foster Wheeler	Project Number : MTA WESTSIDE, 4953-11-1423
6001 Rickenbacker Road	Report To : Ron Lopez
Los Angeles , CA 90040	Reported : 03/23/2015

QUALITY CONTROL SECTION

Total Petroleum Hydrocarbons, HEM/SGT EPA 1664 (Modified) - Quality Control

Analyte	Result (mg/kg)	PQL (mg/kg)	Spike Level	Source Result	% Rec	% Rec Limits	RPD	RPD Limit	Notes
Batch B5C0509 - Prep_WC2_S									
Blank (B5C0509-BLK1)				Prepared: 3/19/2015 Analyzed: 3/19/2015					
Total Petroleum Hydrocarbons	ND	50			NR				
LCS (B5C0509-BS1)				Prepared: 3/19/2015 Analyzed: 3/19/2015					
Total Petroleum Hydrocarbons	1910.00	50	2000.00		95.5	80 - 120			
Matrix Spike (B5C0509-MS1)		**Source: 1500919-02**		Prepared: 3/19/2015 Analyzed: 3/19/2015					
Total Petroleum Hydrocarbons	1920.00	50	2000.00	ND	96.0	80 - 120			
Matrix Spike Dup (B5C0509-MSD1)		**Source: 1500919-02**		Prepared: 3/19/2015 Analyzed: 3/19/2015					
Total Petroleum Hydrocarbons	1930.00	50	2000.00	ND	96.5	80 - 120	0.519	20	

Certificate of Analysis

Amec Foster Wheeler	Project Number : MTA WESTSIDE, 4953-11-1423
6001 Rickenbacker Road	Report To : Ron Lopez
Los Angeles , CA 90040	Reported : 03/23/2015

Title 22 Metals by ICP-AES EPA 6010B - Quality Control

Analyte	Result (mg/kg)	PQL (mg/kg)	Spike Level	Source Result	% Rec	% Rec Limits	RPD	RPD Limit	Notes
Batch B5C0537 - EPA 3050B_S									
Blank (B5C0537-BLK1)				Prepared: 3/20/2015 Analyzed: 3/20/2015					
Antimony	ND	2.0			NR				
Arsenic	ND	1.0			NR				
Barium	ND	1.0			NR				
Beryllium	ND	1.0			NR				
Cadmium	ND	1.0			NR				
Chromium	ND	1.0			NR				
Cobalt	ND	1.0			NR				
Copper	ND	2.0			NR				
Lead	ND	1.0			NR				
Molybdenum	ND	1.0			NR				
Nickel	ND	1.0			NR				
Selenium	ND	1.0			NR				
Silver	ND	1.0			NR				
Thallium	ND	1.0			NR				
Vanadium	ND	1.0			NR				
Zinc	ND	1.0			NR				
LCS (B5C0537-BS1)				Prepared: 3/20/2015 Analyzed: 3/20/2015					
Antimony	48.6570	2.0	50.0000		97.3	80 - 120			
Arsenic	47.9570	1.0	50.0000		95.9	80 - 120			
Barium	51.6502	1.0	50.0000		103	80 - 120			
Beryllium	51.7022	1.0	50.0000		103	80 - 120			
Cadmium	50.0060	1.0	50.0000		100	80 - 120			
Chromium	51.6656	1.0	50.0000		103	80 - 120			
Cobalt	51.1618	1.0	50.0000		102	80 - 120			
Copper	49.5284	2.0	50.0000		99.1	80 - 120			
Lead	51.1446	1.0	50.0000		102	80 - 120			
Molybdenum	52.0615	1.0	50.0000		104	80 - 120			
Nickel	50.0656	1.0	50.0000		100	80 - 120			
Selenium	48.6595	1.0	50.0000		97.3	80 - 120			
Silver	48.8456	1.0	50.0000		97.7	80 - 120			
Thallium	50.5730	1.0	50.0000		101	80 - 120			
Vanadium	52.7850	1.0	50.0000		106	80 - 120			
Zinc	49.4780	1.0	50.0000		99.0	80 - 120			
Matrix Spike (B5C0537-MS1)		**Source: 1500956-01**		Prepared: 3/20/2015 Analyzed: 3/20/2015					
Antimony	102.699	2.0	125.000	0.906159	81.4	28 - 106			
Arsenic	126.233	1.0	125.000	4.50057	97.4	57 - 109			
Barium	222.914	1.0	125.000	104.506	94.7	18 - 159			
Beryllium	115.997	1.0	125.000	0.702227	92.2	61 - 107			
Cadmium	100.450	1.0	125.000	1.79577	78.9	53 - 104			
Chromium	125.587	1.0	125.000	15.3338	88.2	53 - 121			

Certificate of Analysis

Amec Foster Wheeler	Project Number : MTA WESTSIDE, 4953-11-1423
6001 Rickenbacker Road	Report To : Ron Lopez
Los Angeles , CA 90040	Reported : 03/23/2015

Title 22 Metals by ICP-AES EPA 6010B - Quality Control (cont'd)

Analyte	Result (mg/kg)	PQL (mg/kg)	Spike Level	Source Result	% Rec	% Rec Limits	RPD	RPD Limit	Notes
Batch B5C0537 - EPA 3050B_S (continued)									
Matrix Spike (B5C0537-MS1) - Continued		**Source: 1500956-01**		Prepared: 3/20/2015 Analyzed: 3/20/2015					
Cobalt	103.236	1.0	125.000	4.13231	79.3	55 - 109			
Copper	139.213	2.0	125.000	16.3956	98.3	58 - 124			
Lead	103.422	1.0	125.000	4.08761	79.5	35 - 129			
Molybdenum	117.501	1.0	125.000	4.41850	90.5	57 - 108			
Nickel	115.668	1.0	125.000	16.0740	79.7	44 - 122			
Selenium	122.649	1.0	125.000	0.890538	97.4	54 - 104			
Silver	126.699	1.0	125.000	ND	101	60 - 112			
Thallium	95.9804	1.0	125.000	ND	76.8	50 - 103			
Vanadium	161.080	1.0	125.000	37.5704	98.8	54 - 123			
Zinc	138.844	1.0	125.000	40.5278	78.7	29 - 132			
Matrix Spike Dup (B5C0537-MSD1)		**Source: 1500956-01**		Prepared: 3/20/2015 Analyzed: 3/20/2015					
Antimony	104.190	2.0	125.000	0.906159	82.6	28 - 106	1.44	20	
Arsenic	119.328	1.0	125.000	4.50057	91.9	57 - 109	5.62	20	
Barium	231.102	1.0	125.000	104.506	101	18 - 159	3.61	20	
Beryllium	113.723	1.0	125.000	0.702227	90.4	61 - 107	1.98	20	
Cadmium	97.3374	1.0	125.000	1.79577	76.4	53 - 104	3.15	20	
Chromium	118.762	1.0	125.000	15.3338	82.7	53 - 121	5.59	20	
Cobalt	100.631	1.0	125.000	4.13231	77.2	55 - 109	2.56	20	
Copper	135.979	2.0	125.000	16.3956	95.7	58 - 124	2.35	20	
Lead	100.904	1.0	125.000	4.08761	77.5	35 - 129	2.46	20	
Molybdenum	113.575	1.0	125.000	4.41850	87.3	57 - 108	3.40	20	
Nickel	108.068	1.0	125.000	16.0740	73.6	44 - 122	6.79	20	
Selenium	121.571	1.0	125.000	0.890538	96.5	54 - 104	0.883	20	
Silver	125.984	1.0	125.000	ND	101	60 - 112	0.566	20	
Thallium	94.1270	1.0	125.000	ND	75.3	50 - 103	1.95	20	
Vanadium	146.349	1.0	125.000	37.5704	87.0	54 - 123	9.58	20	
Zinc	129.696	1.0	125.000	40.5278	71.3	29 - 132	6.81	20	

Certificate of Analysis

Amec Foster Wheeler	Project Number : MTA WESTSIDE, 4953-11-1423
6001 Rickenbacker Road	Report To : Ron Lopez
Los Angeles , CA 90040	Reported : 03/23/2015

Mercury by AA (Cold Vapor) EPA 7471A - Quality Control

Analyte	Result (mg/kg)	PQL (mg/kg)	Spike Level	Source Result	% Rec	% Rec Limits	RPD	RPD Limit	Notes
Batch B5C0538 - EPA 7471_S									
Blank (B5C0538-BLK1)				Prepared: 3/20/2015 Analyzed: 3/20/2015					
Mercury	ND	0.10			NR				
LCS (B5C0538-BS1)				Prepared: 3/20/2015 Analyzed: 3/20/2015					
Mercury	0.793055	0.10	0.833333		95.2	80 - 120			
Matrix Spike (B5C0538-MS1)		**Source: 1500956-01**		Prepared: 3/20/2015 Analyzed: 3/20/2015					
Mercury	0.849975	0.10	0.833333	0.023568	99.2	70 - 130			
Matrix Spike Dup (B5C0538-MSD1)		**Source: 1500956-01**		Prepared: 3/20/2015 Analyzed: 3/20/2015					
Mercury	0.835125	0.10	0.819672	0.023568	99.0	70 - 130	1.76	20	
Post Spike (B5C0538-PS1)		**Source: 1500956-01**		Prepared: 3/20/2015 Analyzed: 3/20/2015					
Mercury	0.005799		5.00000E-3	0.000283	110	85 - 115			

Certificate of Analysis

Amec Foster Wheeler	Project Number : MTA WESTSIDE, 4953-11-1423
6001 Rickenbacker Road	Report To : Ron Lopez
Los Angeles , CA 90040	Reported : 03/23/2015

Gasoline Range Organics by EPA 8015B (Modified) - Quality Control

Analyte	Result (mg/kg)	PQL (mg/kg)	Spike Level	Source Result	% Rec	% Rec Limits	RPD	RPD Limit	Notes
Batch B5C0445 - GCVOA_S									
Blank (B5C0445-BLK1)					Prepared: 3/18/2015 Analyzed: 3/18/2015				
Gasoline Range Organics	ND	1.0			NR				
Surrogate: 4-Bromofluorobenzene	*0.1896*		*0.200000*		*94.8*	*37 - 153*			
LCS (B5C0445-BS1)					Prepared: 3/18/2015 Analyzed: 3/18/2015				
Gasoline Range Organics	4.34600	1.0	5.00000		86.9	70 - 130			
Surrogate: 4-Bromofluorobenzene	*0.1951*		*0.200000*		*97.5*	*37 - 153*			
Matrix Spike (B5C0445-MS1)		**Source: 1500960-02**			Prepared: 3/18/2015 Analyzed: 3/18/2015				
Gasoline Range Organics	3.99000	1.0	5.00000	ND	79.8	20 - 130			
Surrogate: 4-Bromofluorobenzene	*0.2050*		*0.200000*		*103*	*37 - 153*			
Matrix Spike Dup (B5C0445-MSD1)		**Source: 1500960-02**			Prepared: 3/18/2015 Analyzed: 3/18/2015				
Gasoline Range Organics	3.91500	1.0	5.00000	ND	78.3	20 - 130	1.90	20	
Surrogate: 4-Bromofluorobenzene	*0.2021*		*0.200000*		*101*	*37 - 153*			

Certificate of Analysis

Amec Foster Wheeler	Project Number : MTA WESTSIDE, 4953-11-1423
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Diesel Range Organics by EPA 8015B - Quality Control

Analyte	Result (mg/kg)	PQL (mg/kg)	Spike Level	Source Result	% Rec	% Rec Limits	RPD	RPD Limit	Notes
Batch B5C0473 - GCSEMI_DRO_S									
Blank (B5C0473-BLK1)					Prepared: 3/18/2015 Analyzed: 3/18/2015				
DRO	ND	10			NR				
ORO	ND	10			NR				
Surrogate: p-Terphenyl	*67.49*		*80.0000*		*84.4*	*49 - 142*			
LCS (B5C0473-BS1)					Prepared: 3/18/2015 Analyzed: 3/18/2015				
DRO	623.450	10	500.000		125	48 - 155			
Surrogate: p-Terphenyl	*66.12*		*80.0000*		*82.6*	*49 - 142*			
Matrix Spike (B5C0473-MS1)		**Source: 1500960-04**			Prepared: 3/18/2015 Analyzed: 3/18/2015				
DRO	628.700	10	1000.00	ND	62.9	30 - 173			
Surrogate: p-Terphenyl	*72.64*		*80.0000*		*90.8*	*49 - 142*			
Matrix Spike Dup (B5C0473-MSD1)		**Source: 1500960-04**			Prepared: 3/18/2015 Analyzed: 3/18/2015				
DRO	612.760	10	1000.00	ND	61.3	30 - 173	2.57	20	
Surrogate: p-Terphenyl	*68.68*		*80.0000*		*85.8*	*49 - 142*			

Figure C-2.164

Certificate of Analysis

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Volatile Organic Compounds by EPA 8260B - Quality Control

Analyte	Result (ug/kg)	PQL (ug/kg)	Spike Level	Source Result	% Rec	% Rec Limits	RPD	RPD Limit	Notes
Batch B5C0443 - MSVOA_S									
Blank (B5C0443-BLK1)				Prepared: 3/18/2015 Analyzed: 3/18/2015					
1,1,1,2-Tetrachloroethane	ND	5.0			NR				
1,1,1-Trichloroethane	ND	5.0			NR				
1,1,2,2-Tetrachloroethane	ND	5.0			NR				
1,1,2-Trichloroethane	ND	5.0			NR				
1,1-Dichloroethane	ND	5.0			NR				
1,1-Dichloroethene	ND	5.0			NR				
1,1-Dichloropropene	ND	5.0			NR				
1,2,3-Trichloropropane	ND	5.0			NR				
1,2,3-Trichlorobenzene	ND	5.0			NR				
1,2,4-Trichlorobenzene	ND	5.0			NR				
1,2,4-Trimethylbenzene	ND	5.0			NR				
1,2-Dibromo-3-chloropropane	ND	10			NR				
1,2-Dibromoethane	ND	5.0			NR				
1,2-Dichlorobenzene	ND	5.0			NR				
1,2-Dichloroethane	ND	5.0			NR				
1,2-Dichloropropane	ND	5.0			NR				
1,3,5-Trimethylbenzene	ND	5.0			NR				
1,3-Dichlorobenzene	ND	5.0			NR				
1,3-Dichloropropane	ND	5.0			NR				
1,4-Dichlorobenzene	ND	5.0			NR				
2,2-Dichloropropane	ND	5.0			NR				
2-Chlorotoluene	ND	5.0			NR				
4-Chlorotoluene	ND	5.0			NR				
4-Isopropyltoluene	ND	5.0			NR				
Benzene	ND	5.0			NR				
Bromobenzene	ND	5.0			NR				
Bromochloromethane	ND	5.0			NR				
Bromodichloromethane	ND	5.0			NR				
Bromoform	ND	5.0			NR				
Bromomethane	ND	5.0			NR				
Carbon disulfide	ND	5.0			NR				
Carbon tetrachloride	ND	5.0			NR				
Chlorobenzene	ND	5.0			NR				
Chloroethane	ND	5.0			NR				
Chloroform	ND	5.0			NR				
Chloromethane	ND	5.0			NR				
cis-1,2-Dichloroethene	ND	5.0			NR				
cis-1,3-Dichloropropene	ND	5.0			NR				
Di-isopropyl ether	ND	5.0			NR				
Dibromochloromethane	ND	5.0			NR				
Dibromomethane	ND	5.0			NR				

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Volatile Organic Compounds by EPA 8260B - Quality Control (cont'd)

Analyte	Result (ug/kg)	PQL (ug/kg)	Spike Level	Source Result	% Rec	% Rec Limits	RPD	RPD Limit	Notes
Batch B5C0443 - MSVOA_S (continued)									
Blank (B5C0443-BLK1) - Continued					Prepared: 3/18/2015 Analyzed: 3/18/2015				
Dichlorodifluoromethane	ND	5.0			NR				
Ethyl Acetate	ND	50			NR				
Ethyl Ether	ND	50			NR				
Ethyl tert-butyl ether	ND	5.0			NR				
Ethylbenzene	ND	5.0			NR				
Freon-113	ND	5.0			NR				
Hexachlorobutadiene	ND	5.0			NR				
Isopropylbenzene	ND	5.0			NR				
m,p-Xylene	ND	10			NR				
Methylene chloride	ND	5.0			NR				
MTBE	ND	5.0			NR				
n-Butylbenzene	ND	5.0			NR				
n-Propylbenzene	ND	5.0			NR				
Naphthalene	ND	5.0			NR				
o-Xylene	ND	5.0			NR				
sec-Butylbenzene	ND	5.0			NR				
Styrene	ND	5.0			NR				
tert-Amyl methyl ether	ND	5.0			NR				
tert-Butanol	ND	100			NR				
tert-Butylbenzene	ND	5.0			NR				
Tetrachloroethene	ND	5.0			NR				
Toluene	ND	5.0			NR				
trans-1,2-Dichloroethene	ND	5.0			NR				
trans-1,3-Dichloropropene	ND	5.0			NR				
Trichloroethene	ND	5.0			NR				
Trichlorofluoromethane	ND	5.0			NR				
Vinyl acetate	ND	50			NR				
Vinyl chloride	ND	5.0			NR				
Surrogate: 1,2-Dichloroethane-d4	*53.66*		*50.0000*		*107*	*20 - 189*			
Surrogate: 4-Bromofluorobenzene	*44.55*		*50.0000*		*89.1*	*20 - 173*			
Surrogate: Dibromofluoromethane	*53.39*		*50.0000*		*107*	*26 - 178*			
Surrogate: Toluene-d8	*48.92*		*50.0000*		*97.8*	*31 - 166*			
LCS (B5C0443-BS1)					Prepared: 3/18/2015 Analyzed: 3/18/2015				
1,1,1,2-Tetrachloroethane	50.4700	5.0	50.0000		101	74 - 117			
1,1,1-Trichloroethane	44.9400	5.0	50.0000		89.9	65 - 130			
1,1,2,2-Tetrachloroethane	51.4700	5.0	50.0000		103	63 - 123			
1,1,2-Trichloroethane	48.5400	5.0	50.0000		97.1	66 - 122			
1,1-Dichloroethane	44.7700	5.0	50.0000		89.5	65 - 124			
1,1-Dichloroethene	38.7300	5.0	50.0000		77.5	60 - 130			
1,1-Dichloropropene	43.4700	5.0	50.0000		86.9	75 - 121			

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Volatile Organic Compounds by EPA 8260B - Quality Control (cont'd)

Analyte	Result (ug/kg)	PQL (ug/kg)	Spike Level	Source Result	% Rec	% Rec Limits	RPD	RPD Limit	Notes
Batch B5C0443 - MSVOA_S (continued)									
LCS (B5C0443-BS1) - Continued					Prepared: 3/18/2015 Analyzed: 3/18/2015				
1,2,3-Trichloropropane	51.0600	5.0	50.0000		102	62 - 126			
1,2,3-Trichlorobenzene	47.6200	5.0	50.0000		95.2	72 - 120			
1,2,4-Trichlorobenzene	49.5400	5.0	50.0000		99.1	75 - 121			
1,2,4-Trimethylbenzene	54.5000	5.0	50.0000		109	82 - 118			
1,2-Dibromo-3-chloropropane	45.7600	10	50.0000		91.5	67 - 121			
1,2-Dibromoethane	48.5300	5.0	50.0000		97.1	69 - 123			
1,2-Dichlorobenzene	52.8100	5.0	50.0000		106	81 - 114			
1,2-Dichloroethane	46.9000	5.0	50.0000		93.8	71 - 119			
1,2-Dichloropropane	47.5800	5.0	50.0000		95.2	71 - 118			
1,3,5-Trimethylbenzene	55.1800	5.0	50.0000		110	81 - 120			
1,3-Dichlorobenzene	54.6500	5.0	50.0000		109	80 - 115			
1,3-Dichloropropane	48.5500	5.0	50.0000		97.1	77 - 117			
1,4-Dichlorobenzene	55.3200	5.0	50.0000		111	80 - 115			
2,2-Dichloropropane	46.0700	5.0	50.0000		92.1	58 - 141			
2-Chlorotoluene	54.9700	5.0	50.0000		110	78 - 120			
4-Chlorotoluene	55.0000	5.0	50.0000		110	79 - 119			
4-Isopropyltoluene	56.7300	5.0	50.0000		113	81 - 125			
Benzene	84.9300	5.0	100.000		84.9	73 - 116			
Bromobenzene	52.8400	5.0	50.0000		106	78 - 115			
Bromochloromethane	44.5800	5.0	50.0000		89.2	66 - 121			
Bromodichloromethane	48.5400	5.0	50.0000		97.1	73 - 120			
Bromoform	50.6400	5.0	50.0000		101	68 - 124			
Bromomethane	41.0700	5.0	50.0000		82.1	26 - 163			
Carbon disulfide	31.2000	5.0	50.0000		62.4	43 - 142			
Carbon tetrachloride	45.2900	5.0	50.0000		90.6	67 - 130			
Chlorobenzene	50.1300	5.0	50.0000		100	82 - 114			
Chloroethane	38.8600	5.0	50.0000		77.7	40 - 151			
Chloroform	49.0700	5.0	50.0000		98.1	68 - 124			
Chloromethane	30.8700	5.0	50.0000		61.7	18 - 144			
cis-1,2-Dichloroethene	46.1800	5.0	50.0000		92.4	66 - 125			
cis-1,3-Dichloropropene	49.9900	5.0	50.0000		100	77 - 120			
Di-isopropyl ether	44.4300	5.0	50.0000		88.9	56 - 132			
Dibromochloromethane	49.2200	5.0	50.0000		98.4	76 - 118			
Dibromomethane	47.3900	5.0	50.0000		94.8	69 - 122			
Dichlorodifluoromethane	31.6800	5.0	50.0000		63.4	0 - 155			
Ethyl Acetate	438.240	50	500.000		87.6	31 - 137			
Ethyl Ether	448.420	50	500.000		89.7	47 - 150			
Ethyl tert-butyl ether	44.9700	5.0	50.0000		89.9	63 - 134			
Ethylbenzene	98.4800	5.0	100.000		98.5	79 - 115			
Freon-113	35.5300	5.0	50.0000		71.1	62 - 134			
Hexachlorobutadiene	51.5700	5.0	50.0000		103	71 - 121			
Isopropylbenzene	55.2300	5.0	50.0000		110	78 - 126			

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Volatile Organic Compounds by EPA 8260B - Quality Control (cont'd)

Analyte	Result (ug/kg)	PQL (ug/kg)	Spike Level	Source Result	% Rec	% Rec Limits	RPD	RPD Limit	Notes
Batch B5C0443 - MSVOA_S (continued)									
LCS (B5C0443-BS1) - Continued					Prepared: 3/18/2015 Analyzed: 3/18/2015				
m,p-Xylene	103.210	10	100.000		103	80 - 119			
Methylene chloride	46.3600	5.0	50.0000		92.7	56 - 129			
MTBE	40.3600	5.0	50.0000		80.7	61 - 124			
n-Butylbenzene	57.1500	5.0	50.0000		114	78 - 127			
n-Propylbenzene	56.3100	5.0	50.0000		113	77 - 128			
Naphthalene	44.3800	5.0	50.0000		88.8	61 - 141			
o-Xylene	99.2000	5.0	100.000		99.2	81 - 116			
sec-Butylbenzene	56.4600	5.0	50.0000		113	81 - 125			
Styrene	53.8000	5.0	50.0000		108	82 - 120			
tert-Amyl methyl ether	43.4400	5.0	50.0000		86.9	52 - 149			
tert-Butanol	228.700	100	250.000		91.5	26 - 160			
tert-Butylbenzene	55.8900	5.0	50.0000		112	80 - 123			
Tetrachloroethene	47.6200	5.0	50.0000		95.2	75 - 123			
Toluene	91.6200	5.0	100.000		91.6	75 - 119			
trans-1,2-Dichloroethene	41.2100	5.0	50.0000		82.4	62 - 127			
trans-1,3-Dichloropropene	52.0100	5.0	50.0000		104	68 - 121			
Trichloroethene	47.2800	5.0	50.0000		94.6	73 - 119			
Trichlorofluoromethane	39.8900	5.0	50.0000		79.8	47 - 157			
Vinyl acetate	412.560	50	500.000		82.5	20 - 136			
Vinyl chloride	33.4600	5.0	50.0000		66.9	27 - 147			
Surrogate: 1,2-Dichloroethane-d4	*55.20*		*50.0000*		*110*	*20 - 189*			
Surrogate: 4-Bromofluorobenzene	*50.56*		*50.0000*		*101*	*20 - 173*			
Surrogate: Dibromofluoromethane	*54.63*		*50.0000*		*109*	*26 - 178*			
Surrogate: Toluene-d8	*50.86*		*50.0000*		*102*	*31 - 166*			
Matrix Spike (B5C0443-MS1)		**Source: 1500960-02**			Prepared: 3/18/2015 Analyzed: 3/18/2015				
1,1,1,2-Tetrachloroethane	45.5500	5.0	50.0000	ND	91.1	45 - 122			
1,1,1-Trichloroethane	43.1000	5.0	50.0000	ND	86.2	46 - 131			
1,1,2,2-Tetrachloroethane	53.9600	5.0	50.0000	ND	108	34 - 133			
1,1,2-Trichloroethane	47.5000	5.0	50.0000	ND	95.0	40 - 133			
1,1-Dichloroethane	42.0000	5.0	50.0000	ND	84.0	50 - 120			
1,1-Dichloroethene	36.5400	5.0	50.0000	ND	73.1	42 - 130			
1,1-Dichloropropene	41.6000	5.0	50.0000	ND	83.2	49 - 125			
1,2,3-Trichloropropane	51.0300	5.0	50.0000	ND	102	42 - 130			
1,2,3-Trichlorobenzene	43.7100	5.0	50.0000	ND	87.4	2 - 136			
1,2,4-Trichlorobenzene	43.9900	5.0	50.0000	ND	88.0	6 - 137			
1,2,4-Trimethylbenzene	49.2500	5.0	50.0000	ND	98.5	37 - 129			
1,2-Dibromo-3-chloropropane	51.8600	10	50.0000	ND	104	36 - 135			
1,2-Dibromoethane	48.3900	5.0	50.0000	ND	96.8	43 - 129			
1,2-Dichlorobenzene	48.1200	5.0	50.0000	ND	96.2	31 - 129			
1,2-Dichloroethane	45.2400	5.0	50.0000	ND	90.5	50 - 122			

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Volatile Organic Compounds by EPA 8260B - Quality Control (cont'd)

Analyte	Result (ug/kg)	PQL (ug/kg)	Spike Level	Source Result	% Rec	% Rec Limits	RPD	RPD Limit	Notes
Batch B5C0443 - MSVOA_S (continued)									
Matrix Spike (B5C0443-MS1) - Continued		**Source: 1500960-02**		Prepared: 3/18/2015 Analyzed: 3/18/2015					
1,2-Dichloropropane	43.6200	5.0	50.0000	ND	87.2	51 - 119			
1,3,5-Trimethylbenzene	49.6900	5.0	50.0000	ND	99.4	38 - 130			
1,3-Dichlorobenzene	48.0600	5.0	50.0000	ND	96.1	31 - 128			
1,3-Dichloropropane	46.3700	5.0	50.0000	ND	92.7	52 - 122			
1,4-Dichlorobenzene	49.2900	5.0	50.0000	ND	98.6	31 - 128			
2,2-Dichloropropane	43.7600	5.0	50.0000	ND	87.5	42 - 140			
2-Chlorotoluene	48.2300	5.0	50.0000	ND	96.5	38 - 129			
4-Chlorotoluene	48.7600	5.0	50.0000	ND	97.5	38 - 128			
4-Isopropyltoluene	50.6900	5.0	50.0000	ND	101	31 - 137			
Benzene	79.2400	5.0	100.000	ND	79.2	51 - 117			
Bromobenzene	47.4600	5.0	50.0000	ND	94.9	41 - 125			
Bromochloromethane	41.6200	5.0	50.0000	ND	83.2	47 - 123			
Bromodichloromethane	45.7800	5.0	50.0000	ND	91.6	50 - 122			
Bromoform	49.9800	5.0	50.0000	ND	100	39 - 131			
Bromomethane	37.7400	5.0	50.0000	ND	75.5	10 - 154			
Carbon disulfide	27.3600	5.0	50.0000	ND	54.7	24 - 138			
Carbon tetrachloride	43.2800	5.0	50.0000	ND	86.6	44 - 131			
Chlorobenzene	44.7100	5.0	50.0000	ND	89.4	46 - 123			
Chloroethane	35.9900	5.0	50.0000	ND	72.0	27 - 143			
Chloroform	45.7800	5.0	50.0000	ND	91.6	50 - 124			
Chloromethane	28.0600	5.0	50.0000	ND	56.1	8 - 139			
cis-1,2-Dichloroethene	43.6100	5.0	50.0000	ND	87.2	48 - 125			
cis-1,3-Dichloropropene	46.7800	5.0	50.0000	ND	93.6	51 - 123			
Di-isopropyl ether	41.3100	5.0	50.0000	ND	82.6	45 - 125			
Dibromochloromethane	45.9400	5.0	50.0000	ND	91.9	48 - 124			
Dibromomethane	45.9200	5.0	50.0000	ND	91.8	48 - 124			
Dichlorodifluoromethane	30.7600	5.0	50.0000	ND	61.5	0 - 150			
Ethyl Acetate	484.730	50	500.000	ND	96.9	0 - 140			
Ethyl Ether	440.270	50	500.000	ND	88.1	36 - 142			
Ethyl tert-butyl ether	43.5600	5.0	50.0000	ND	87.1	46 - 133			
Ethylbenzene	90.6500	5.0	100.000	ND	90.6	46 - 123			
Freon-113	34.1300	5.0	50.0000	ND	68.3	38 - 137			
Hexachlorobutadiene	45.3400	5.0	50.0000	ND	90.7	5 - 132			
Isopropylbenzene	49.7300	5.0	50.0000	ND	99.5	43 - 132			
m,p-Xylene	93.5300	10	100.000	ND	93.5	45 - 128			
Methylene chloride	43.3100	5.0	50.0000	ND	86.6	37 - 126			
MTBE	41.0100	5.0	50.0000	ND	82.0	46 - 125			
n-Butylbenzene	51.0600	5.0	50.0000	ND	102	24 - 138			
n-Propylbenzene	50.5300	5.0	50.0000	ND	101	40 - 133			
Naphthalene	44.8200	5.0	50.0000	ND	89.6	10 - 149			
o-Xylene	89.8300	5.0	100.000	ND	89.8	45 - 125			
sec-Butylbenzene	50.9400	5.0	50.0000	ND	102	33 - 136			

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Volatile Organic Compounds by EPA 8260B - Quality Control (cont'd)

Analyte	Result (ug/kg)	PQL (ug/kg)	Spike Level	Source Result	% Rec	% Rec Limits	RPD	RPD Limit	Notes
Batch B5C0443 - MSVOA_S (continued)									
Matrix Spike (B5C0443-MS1) - Continued		**Source: 1500960-02**		Prepared: 3/18/2015 Analyzed: 3/18/2015					
Styrene	47.8800	5.0	50.0000	ND	95.8	43 - 128			
tert-Amyl methyl ether	42.4500	5.0	50.0000	ND	84.9	35 - 147			
tert-Butanol	307.750	100	250.000	ND	123	0 - 208			
tert-Butylbenzene	50.7600	5.0	50.0000	ND	102	36 - 133			
Tetrachloroethene	44.2400	5.0	50.0000	ND	88.5	41 - 129			
Toluene	85.8500	5.0	100.000	ND	85.8	49 - 124			
trans-1,2-Dichloroethene	39.1500	5.0	50.0000	ND	78.3	44 - 126			
trans-1,3-Dichloropropene	49.6800	5.0	50.0000	ND	99.4	42 - 125			
Trichloroethene	44.1800	5.0	50.0000	ND	88.4	38 - 139			
Trichlorofluoromethane	38.7700	5.0	50.0000	ND	77.5	30 - 157			
Vinyl acetate	387.580	50	500.000	ND	77.5	0 - 132			
Vinyl chloride	31.9400	5.0	50.0000	ND	63.9	19 - 142			
Surrogate: 1,2-Dichloroethane-d4	*61.41*		*50.0000*		*123*	*20 - 189*			
Surrogate: 4-Bromofluorobenzene	*49.84*		*50.0000*		*99.7*	*20 - 173*			
Surrogate: Dibromofluoromethane	*56.32*		*50.0000*		*113*	*26 - 178*			
Surrogate: Toluene-d8	*51.69*		*50.0000*		*103*	*31 - 166*			
Matrix Spike Dup (B5C0443-MSD1)		**Source: 1500960-02**		Prepared: 3/18/2015 Analyzed: 3/18/2015					
1,1,1,2-Tetrachloroethane	43.6200	5.0	50.0000	ND	87.2	45 - 122	4.33	20	
1,1,1-Trichloroethane	39.0300	5.0	50.0000	ND	78.1	46 - 131	9.91	20	
1,1,2,2-Tetrachloroethane	50.0500	5.0	50.0000	ND	100	34 - 133	7.52	20	
1,1,2-Trichloroethane	45.9900	5.0	50.0000	ND	92.0	40 - 133	3.23	20	
1,1-Dichloroethane	37.7200	5.0	50.0000	ND	75.4	50 - 120	10.7	20	
1,1-Dichloroethene	33.0500	5.0	50.0000	ND	66.1	42 - 130	10.0	20	
1,1-Dichloropropene	39.4500	5.0	50.0000	ND	78.9	49 - 125	5.31	20	
1,2,3-Trichloropropane	47.7800	5.0	50.0000	ND	95.6	42 - 130	6.58	20	
1,2,3-Trichlorobenzene	47.1400	5.0	50.0000	ND	94.3	2 - 136	7.55	20	
1,2,4-Trichlorobenzene	45.8200	5.0	50.0000	ND	91.6	6 - 137	4.08	20	
1,2,4-Trimethylbenzene	47.5700	5.0	50.0000	ND	95.1	37 - 129	3.47	20	
1,2-Dibromo-3-chloropropane	48.3800	10	50.0000	ND	96.8	36 - 135	6.94	20	
1,2-Dibromoethane	43.7000	5.0	50.0000	ND	87.4	43 - 129	10.2	20	
1,2-Dichlorobenzene	46.0900	5.0	50.0000	ND	92.2	31 - 129	4.31	20	
1,2-Dichloroethane	42.6600	5.0	50.0000	ND	85.3	50 - 122	5.87	20	
1,2-Dichloropropane	41.5200	5.0	50.0000	ND	83.0	51 - 119	4.93	20	
1,3,5-Trimethylbenzene	47.3900	5.0	50.0000	ND	94.8	38 - 130	4.74	20	
1,3-Dichlorobenzene	45.6700	5.0	50.0000	ND	91.3	31 - 128	5.10	20	
1,3-Dichloropropane	44.3100	5.0	50.0000	ND	88.6	52 - 122	4.54	20	
1,4-Dichlorobenzene	46.4400	5.0	50.0000	ND	92.9	31 - 128	5.95	20	
2,2-Dichloropropane	38.3000	5.0	50.0000	ND	76.6	42 - 140	13.3	20	
2-Chlorotoluene	45.3900	5.0	50.0000	ND	90.8	38 - 129	6.07	20	
4-Chlorotoluene	46.3100	5.0	50.0000	ND	92.6	38 - 128	5.15	20	

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Volatile Organic Compounds by EPA 8260B - Quality Control (cont'd)

Analyte	Result (ug/kg)	PQL (ug/kg)	Spike Level	Source Result	% Rec	% Rec Limits	RPD	RPD Limit	Notes
Batch B5C0443 - MSVOA_S (continued)									
Matrix Spike Dup (B5C0443-MSD1) - Continued		**Source: 1500960-02**		Prepared: 3/18/2015 Analyzed: 3/18/2015					
4-Isopropyltoluene	48.6600	5.0	50.0000	ND	97.3	31 - 137	4.09	20	
Benzene	75.4700	5.0	100.000	ND	75.5	51 - 117	4.87	20	
Bromobenzene	43.9100	5.0	50.0000	ND	87.8	41 - 125	7.77	20	
Bromochloromethane	36.3500	5.0	50.0000	ND	72.7	47 - 123	13.5	20	
Bromodichloromethane	42.8500	5.0	50.0000	ND	85.7	50 - 122	6.61	20	
Bromoform	47.2700	5.0	50.0000	ND	94.5	39 - 131	5.57	20	
Bromomethane	34.0700	5.0	50.0000	ND	68.1	10 - 154	10.2	20	
Carbon disulfide	23.0800	5.0	50.0000	ND	46.2	24 - 138	17.0	20	
Carbon tetrachloride	41.7200	5.0	50.0000	ND	83.4	44 - 131	3.67	20	
Chlorobenzene	43.1900	5.0	50.0000	ND	86.4	46 - 123	3.46	20	
Chloroethane	32.6300	5.0	50.0000	ND	65.3	27 - 143	9.79	20	
Chloroform	41.2100	5.0	50.0000	ND	82.4	50 - 124	10.5	20	
Chloromethane	30.5600	5.0	50.0000	ND	61.1	8 - 139	8.53	20	
cis-1,2-Dichloroethene	38.7100	5.0	50.0000	ND	77.4	48 - 125	11.9	20	
cis-1,3-Dichloropropene	42.7700	5.0	50.0000	ND	85.5	51 - 123	8.96	20	
Di-isopropyl ether	38.6600	5.0	50.0000	ND	77.3	45 - 125	6.63	20	
Dibromochloromethane	44.4100	5.0	50.0000	ND	88.8	48 - 124	3.39	20	
Dibromomethane	43.1600	5.0	50.0000	ND	86.3	48 - 124	6.20	20	
Dichlorodifluoromethane	29.5500	5.0	50.0000	ND	59.1	0 - 150	4.01	20	
Ethyl Acetate	446.160	50	500.000	ND	89.2	0 - 140	8.29	20	
Ethyl Ether	410.450	50	500.000	ND	82.1	36 - 142	7.01	20	
Ethyl tert-butyl ether	40.7600	5.0	50.0000	ND	81.5	46 - 133	6.64	20	
Ethylbenzene	87.4500	5.0	100.000	ND	87.4	46 - 123	3.59	20	
Freon-113	30.7300	5.0	50.0000	ND	61.5	38 - 137	10.5	20	
Hexachlorobutadiene	45.4700	5.0	50.0000	ND	90.9	5 - 132	0.286	20	
Isopropylbenzene	46.6200	5.0	50.0000	ND	93.2	43 - 132	6.46	20	
m,p-Xylene	91.1200	10	100.000	ND	91.1	45 - 128	2.61	20	
Methylene chloride	37.6100	5.0	50.0000	ND	75.2	37 - 126	14.1	20	
MTBE	37.9900	5.0	50.0000	ND	76.0	46 - 125	7.65	20	
n-Butylbenzene	50.4400	5.0	50.0000	ND	101	24 - 138	1.22	20	
n-Propylbenzene	47.8000	5.0	50.0000	ND	95.6	40 - 133	5.55	20	
Naphthalene	46.4100	5.0	50.0000	ND	92.8	10 - 149	3.49	20	
o-Xylene	87.7100	5.0	100.000	ND	87.7	45 - 125	2.39	20	
sec-Butylbenzene	48.7800	5.0	50.0000	ND	97.6	33 - 136	4.33	20	
Styrene	45.4000	5.0	50.0000	ND	90.8	43 - 128	5.32	20	
tert-Amyl methyl ether	39.0600	5.0	50.0000	ND	78.1	35 - 147	8.32	20	
tert-Butanol	252.340	100	250.000	ND	101	0 - 208	19.8	20	
tert-Butylbenzene	48.3100	5.0	50.0000	ND	96.6	36 - 133	4.95	20	
Tetrachloroethene	42.0100	5.0	50.0000	ND	84.0	41 - 129	5.17	20	
Toluene	82.9000	5.0	100.000	ND	82.9	49 - 124	3.50	20	
trans-1,2-Dichloroethene	35.8700	5.0	50.0000	ND	71.7	44 - 126	8.74	20	
trans-1,3-Dichloropropene	45.6400	5.0	50.0000	ND	91.3	42 - 125	8.48	20	

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Volatile Organic Compounds by EPA 8260B - Quality Control (cont'd)

Analyte	Result (ug/kg)	PQL (ug/kg)	Spike Level	Source Result	% Rec	% Rec Limits	RPD	RPD Limit	Notes
Batch B5C0443 - MSVOA_S (continued)									
Matrix Spike Dup (B5C0443-MSD1) - Continued		**Source: 1500960-02**		Prepared: 3/18/2015 Analyzed: 3/18/2015					
Trichloroethene	42.0600	5.0	50.0000	ND	84.1	38 - 139	4.92	20	
Trichlorofluoromethane	34.3300	5.0	50.0000	ND	68.7	30 - 157	12.1	20	
Vinyl acetate	320.140	50	500.000	ND	64.0	0 - 132	19.1	20	
Vinyl chloride	31.8700	5.0	50.0000	ND	63.7	19 - 142	0.219	20	
Surrogate: 1,2-Dichloroethane-d4	*54.21*		*50.0000*		*108*	*20 - 189*			
Surrogate: 4-Bromofluorobenzene	*50.54*		*50.0000*		*101*	*20 - 173*			
Surrogate: Dibromofluoromethane	*53.99*		*50.0000*		*108*	*26 - 178*			
Surrogate: Toluene-d8	*50.93*		*50.0000*		*102*	*31 - 166*			

Figure C-2.172

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Volatile Organic Compounds by EPA 8260B - Quality Control (cont'd)

Analyte	Result (ug/kg)	PQL (ug/kg)	Spike Level	Source Result	% Rec	% Rec Limits	RPD	RPD Limit	Notes
Batch B5C0480 - MSVOA_S									
Blank (B5C0480-BLK1)				Prepared: 3/19/2015 Analyzed: 3/19/2015					
1,1,1,2-Tetrachloroethane	ND	5.0			NR				
1,1,1-Trichloroethane	ND	5.0			NR				
1,1,2,2-Tetrachloroethane	ND	5.0			NR				
1,1,2-Trichloroethane	ND	5.0			NR				
1,1-Dichloroethane	ND	5.0			NR				
1,1-Dichloroethene	ND	5.0			NR				
1,1-Dichloropropene	ND	5.0			NR				
1,2,3-Trichloropropane	ND	5.0			NR				
1,2,3-Trichlorobenzene	ND	5.0			NR				
1,2,4-Trichlorobenzene	ND	5.0			NR				
1,2,4-Trimethylbenzene	ND	5.0			NR				
1,2-Dibromo-3-chloropropane	ND	10			NR				
1,2-Dibromoethane	ND	5.0			NR				
1,2-Dichlorobenzene	ND	5.0			NR				
1,2-Dichloroethane	ND	5.0			NR				
1,2-Dichloropropane	ND	5.0			NR				
1,3,5-Trimethylbenzene	ND	5.0			NR				
1,3-Dichlorobenzene	ND	5.0			NR				
1,3-Dichloropropane	ND	5.0			NR				
1,4-Dichlorobenzene	ND	5.0			NR				
2,2-Dichloropropane	ND	5.0			NR				
2-Chlorotoluene	ND	5.0			NR				
4-Chlorotoluene	ND	5.0			NR				
4-Isopropyltoluene	ND	5.0			NR				
Benzene	ND	5.0			NR				
Bromobenzene	ND	5.0			NR				
Bromochloromethane	ND	5.0			NR				
Bromodichloromethane	ND	5.0			NR				
Bromoform	ND	5.0			NR				
Bromomethane	ND	5.0			NR				
Carbon disulfide	ND	5.0			NR				
Carbon tetrachloride	ND	5.0			NR				
Chlorobenzene	ND	5.0			NR				
Chloroethane	ND	5.0			NR				
Chloroform	ND	5.0			NR				
Chloromethane	ND	5.0			NR				
cis-1,2-Dichloroethene	ND	5.0			NR				
cis-1,3-Dichloropropene	ND	5.0			NR				
Di-isopropyl ether	ND	5.0			NR				
Dibromochloromethane	ND	5.0			NR				
Dibromomethane	ND	5.0			NR				

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Volatile Organic Compounds by EPA 8260B - Quality Control (cont'd)

Analyte	Result (ug/kg)	PQL (ug/kg)	Spike Level	Source Result	% Rec	% Rec Limits	RPD	RPD Limit	Notes
Batch B5C0480 - MSVOA_S (continued)									
Blank (B5C0480-BLK1) - Continued				Prepared: 3/19/2015 Analyzed: 3/19/2015					
Dichlorodifluoromethane	ND	5.0			NR				
Ethyl Acetate	ND	50			NR				
Ethyl Ether	ND	50			NR				
Ethyl tert-butyl ether	ND	5.0			NR				
Ethylbenzene	ND	5.0			NR				
Freon-113	ND	5.0			NR				
Hexachlorobutadiene	ND	5.0			NR				
Isopropylbenzene	ND	5.0			NR				
m,p-Xylene	ND	10			NR				
Methylene chloride	ND	5.0			NR				
MTBE	ND	5.0			NR				
n-Butylbenzene	ND	5.0			NR				
n-Propylbenzene	ND	5.0			NR				
Naphthalene	ND	5.0			NR				
o-Xylene	ND	5.0			NR				
sec-Butylbenzene	ND	5.0			NR				
Styrene	ND	5.0			NR				
tert-Amyl methyl ether	ND	5.0			NR				
tert-Butanol	ND	100			NR				
tert-Butylbenzene	ND	5.0			NR				
Tetrachloroethene	ND	5.0			NR				
Toluene	ND	5.0			NR				
trans-1,2-Dichloroethene	ND	5.0			NR				
trans-1,3-Dichloropropene	ND	5.0			NR				
Trichloroethene	ND	5.0			NR				
Trichlorofluoromethane	ND	5.0			NR				
Vinyl acetate	ND	50			NR				
Vinyl chloride	ND	5.0			NR				
Surrogate: 1,2-Dichloroethane-d4	*48.39*		*50.0000*		*96.8*	*20 - 189*			
Surrogate: 4-Bromofluorobenzene	*46.11*		*50.0000*		*92.2*	*20 - 173*			
Surrogate: Dibromofluoromethane	*49.94*		*50.0000*		*99.9*	*26 - 178*			
Surrogate: Toluene-d8	*49.96*		*50.0000*		*99.9*	*31 - 166*			

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Volatile Organic Compounds by EPA 8260B - Quality Control (cont'd)

Analyte	Result (ug/kg)	PQL (ug/kg)	Spike Level	Source Result	% Rec	% Rec Limits	RPD	RPD Limit	Notes
Batch B5C0480 - MSVOA_S (continued)									
LCS (B5C0480-BS1)				Prepared: 3/19/2015 Analyzed: 3/19/2015					
1,1,1,2-Tetrachloroethane	48.7700	5.0	50.0000		97.5	74 - 117			
1,1,1-Trichloroethane	51.9400	5.0	50.0000		104	65 - 130			
1,1,2,2-Tetrachloroethane	45.2300	5.0	50.0000		90.5	63 - 123			
1,1,2-Trichloroethane	48.7400	5.0	50.0000		97.5	66 - 122			
1,1-Dichloroethane	50.6300	5.0	50.0000		101	65 - 124			
1,1-Dichloroethene	52.9400	5.0	50.0000		106	60 - 130			
1,1-Dichloropropene	53.0800	5.0	50.0000		106	75 - 121			
1,2,3-Trichloropropane	46.0400	5.0	50.0000		92.1	62 - 126			
1,2,3-Trichlorobenzene	40.9800	5.0	50.0000		82.0	72 - 120			
1,2,4-Trichlorobenzene	44.8600	5.0	50.0000		89.7	75 - 121			
1,2,4-Trimethylbenzene	53.1200	5.0	50.0000		106	82 - 118			
1,2-Dibromo-3-chloropropane	46.0900	10	50.0000		92.2	67 - 121			
1,2-Dibromoethane	49.2900	5.0	50.0000		98.6	69 - 123			
1,2-Dichlorobenzene	50.4900	5.0	50.0000		101	81 - 114			
1,2-Dichloroethane	50.7600	5.0	50.0000		102	71 - 119			
1,2-Dichloropropane	51.3600	5.0	50.0000		103	71 - 118			
1,3,5-Trimethylbenzene	53.5300	5.0	50.0000		107	81 - 120			
1,3-Dichlorobenzene	51.4700	5.0	50.0000		103	80 - 115			
1,3-Dichloropropane	50.1400	5.0	50.0000		100	77 - 117			
1,4-Dichlorobenzene	51.2500	5.0	50.0000		102	80 - 115			
2,2-Dichloropropane	54.0300	5.0	50.0000		108	58 - 141			
2-Chlorotoluene	52.9000	5.0	50.0000		106	78 - 120			
4-Chlorotoluene	53.2600	5.0	50.0000		107	79 - 119			
4-Isopropyltoluene	54.9000	5.0	50.0000		110	81 - 125			
Benzene	100.130	5.0	100.000		100	73 - 116			
Bromobenzene	50.0500	5.0	50.0000		100	78 - 115			
Bromochloromethane	51.2800	5.0	50.0000		103	66 - 121			
Bromodichloromethane	49.6700	5.0	50.0000		99.3	73 - 120			
Bromoform	48.0700	5.0	50.0000		96.1	68 - 124			
Bromomethane	58.4100	5.0	50.0000		117	26 - 163			
Carbon disulfide	62.9000	5.0	50.0000		126	43 - 142			
Carbon tetrachloride	51.6000	5.0	50.0000		103	67 - 130			
Chlorobenzene	52.1100	5.0	50.0000		104	82 - 114			
Chloroethane	61.2000	5.0	50.0000		122	40 - 151			
Chloroform	49.1900	5.0	50.0000		98.4	68 - 124			
Chloromethane	53.9400	5.0	50.0000		108	18 - 144			
cis-1,2-Dichloroethene	52.0100	5.0	50.0000		104	66 - 125			
cis-1,3-Dichloropropene	50.7800	5.0	50.0000		102	77 - 120			
Di-isopropyl ether	50.4500	5.0	50.0000		101	56 - 132			
Dibromochloromethane	48.4900	5.0	50.0000		97.0	76 - 118			
Dibromomethane	51.6000	5.0	50.0000		103	69 - 122			

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Volatile Organic Compounds by EPA 8260B - Quality Control (cont'd)

Analyte	Result (ug/kg)	PQL (ug/kg)	Spike Level	Source Result	% Rec	% Rec Limits	RPD	RPD Limit	Notes
Batch B5C0480 - MSVOA_S (continued)									
LCS (B5C0480-BS1) - Continued					Prepared: 3/19/2015 Analyzed: 3/19/2015				
Dichlorodifluoromethane	54.9800	5.0	50.0000		110	0 - 155			
Ethyl Acetate	490.500	50	500.000		98.1	31 - 137			
Ethyl Ether	517.510	50	500.000		104	47 - 150			
Ethyl tert-butyl ether	50.9200	5.0	50.0000		102	63 - 134			
Ethylbenzene	103.610	5.0	100.000		104	79 - 115			
Freon-113	54.9300	5.0	50.0000		110	62 - 134			
Hexachlorobutadiene	47.9900	5.0	50.0000		96.0	71 - 121			
Isopropylbenzene	54.1600	5.0	50.0000		108	78 - 126			
m,p-Xylene	108.860	10	100.000		109	80 - 119			
Methylene chloride	62.9300	5.0	50.0000		126	56 - 129			
MTBE	48.0100	5.0	50.0000		96.0	61 - 124			
n-Butylbenzene	54.6000	5.0	50.0000		109	78 - 127			
n-Propylbenzene	54.7200	5.0	50.0000		109	77 - 128			
Naphthalene	40.7000	5.0	50.0000		81.4	61 - 141			
o-Xylene	107.490	5.0	100.000		107	81 - 116			
sec-Butylbenzene	54.2800	5.0	50.0000		109	81 - 125			
Styrene	57.2200	5.0	50.0000		114	82 - 120			
tert-Amyl methyl ether	47.5700	5.0	50.0000		95.1	52 - 149			
tert-Butanol	210.480	100	250.000		84.2	26 - 160			
tert-Butylbenzene	53.6600	5.0	50.0000		107	80 - 123			
Tetrachloroethene	51.8300	5.0	50.0000		104	75 - 123			
Toluene	103.430	5.0	100.000		103	75 - 119			
trans-1,2-Dichloroethene	50.7700	5.0	50.0000		102	62 - 127			
trans-1,3-Dichloropropene	49.7900	5.0	50.0000		99.6	68 - 121			
Trichloroethene	52.7100	5.0	50.0000		105	73 - 119			
Trichlorofluoromethane	46.7600	5.0	50.0000		93.5	47 - 157			
Vinyl acetate	438.640	50	500.000		87.7	20 - 136			
Vinyl chloride	53.8500	5.0	50.0000		108	27 - 147			
Surrogate: 1,2-Dichloroethane-d4	*52.72*		*50.0000*		*105*	*20 - 189*			
Surrogate: 4-Bromofluorobenzene	*52.61*		*50.0000*		*105*	*20 - 173*			
Surrogate: Dibromofluoromethane	*50.46*		*50.0000*		*101*	*26 - 178*			
Surrogate: Toluene-d8	*51.82*		*50.0000*		*104*	*31 - 166*			

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Volatile Organic Compounds by EPA 8260B - Quality Control (cont'd)

Analyte	Result (ug/kg)	PQL (ug/kg)	Spike Level	Source Result	% Rec	% Rec Limits	RPD	RPD Limit	Notes
Batch B5C0480 - MSVOA_S (continued)									
Matrix Spike (B5C0480-MS1)		**Source: 1500960-07**		Prepared: 3/19/2015 Analyzed: 3/19/2015					
1,1,1,2-Tetrachloroethane	44.8000	5.0	50.0000	ND	89.6	45 - 122			
1,1,1-Trichloroethane	44.6400	5.0	50.0000	ND	89.3	46 - 131			
1,1,2,2-Tetrachloroethane	44.4100	5.0	50.0000	ND	88.8	34 - 133			
1,1,2-Trichloroethane	49.0900	5.0	50.0000	ND	98.2	40 - 133			
1,1-Dichloroethane	42.9700	5.0	50.0000	ND	85.9	50 - 120			
1,1-Dichloroethene	41.6000	5.0	50.0000	ND	83.2	42 - 130			
1,1-Dichloropropene	47.4300	5.0	50.0000	ND	94.9	49 - 125			
1,2,3-Trichloropropane	45.8700	5.0	50.0000	ND	91.7	42 - 130			
1,2,3-Trichlorobenzene	53.5400	5.0	50.0000	ND	107	2 - 136			
1,2,4-Trichlorobenzene	52.5500	5.0	50.0000	ND	105	6 - 137			
1,2,4-Trimethylbenzene	47.5800	5.0	50.0000	ND	95.2	37 - 129			
1,2-Dibromo-3-chloropropane	48.9900	10	50.0000	ND	98.0	36 - 135			
1,2-Dibromoethane	50.0000	5.0	50.0000	ND	100	43 - 129			
1,2-Dichlorobenzene	46.7000	5.0	50.0000	ND	93.4	31 - 129			
1,2-Dichloroethane	47.9100	5.0	50.0000	ND	95.8	50 - 122			
1,2-Dichloropropane	47.7700	5.0	50.0000	ND	95.5	51 - 119			
1,3,5-Trimethylbenzene	47.2900	5.0	50.0000	ND	94.6	38 - 130			
1,3-Dichlorobenzene	46.0600	5.0	50.0000	ND	92.1	31 - 128			
1,3-Dichloropropane	47.8200	5.0	50.0000	ND	95.6	52 - 122			
1,4-Dichlorobenzene	46.7400	5.0	50.0000	ND	93.5	31 - 128			
2,2-Dichloropropane	45.1700	5.0	50.0000	ND	90.3	42 - 140			
2-Chlorotoluene	45.5300	5.0	50.0000	ND	91.1	38 - 129			
4-Chlorotoluene	46.2600	5.0	50.0000	ND	92.5	38 - 128			
4-Isopropyltoluene	48.8300	5.0	50.0000	ND	97.7	31 - 137			
Benzene	91.0600	5.0	100.000	ND	91.1	51 - 117			
Bromobenzene	44.4100	5.0	50.0000	ND	88.8	41 - 125			
Bromochloromethane	44.3900	5.0	50.0000	ND	88.8	47 - 123			
Bromodichloromethane	47.0800	5.0	50.0000	ND	94.2	50 - 122			
Bromoform	46.6200	5.0	50.0000	ND	93.2	39 - 131			
Bromomethane	48.4500	5.0	50.0000	ND	96.9	10 - 154			
Carbon disulfide	42.3900	5.0	50.0000	ND	84.8	24 - 138			
Carbon tetrachloride	45.2800	5.0	50.0000	ND	90.6	44 - 131			
Chlorobenzene	45.4200	5.0	50.0000	ND	90.8	46 - 123			
Chloroethane	51.5600	5.0	50.0000	ND	103	27 - 143			
Chloroform	43.2300	5.0	50.0000	ND	86.5	50 - 124			
Chloromethane	51.7800	5.0	50.0000	ND	104	8 - 139			
cis-1,2-Dichloroethene	45.6600	5.0	50.0000	ND	91.3	48 - 125			
cis-1,3-Dichloropropene	46.8400	5.0	50.0000	ND	93.7	51 - 123			
Di-isopropyl ether	47.9600	5.0	50.0000	ND	95.9	45 - 125			
Dibromochloromethane	46.0800	5.0	50.0000	ND	92.2	48 - 124			
Dibromomethane	50.8300	5.0	50.0000	ND	102	48 - 124			

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Volatile Organic Compounds by EPA 8260B - Quality Control (cont'd)

Analyte	Result (ug/kg)	PQL (ug/kg)	Spike Level	Source Result	% Rec	% Rec Limits	RPD	RPD Limit	Notes
Batch B5C0480 - MSVOA_S (continued)									
Matrix Spike (B5C0480-MS1) - Continued		**Source: 1500960-07**		Prepared: 3/19/2015 Analyzed: 3/19/2015					
Dichlorodifluoromethane	53.3900	5.0	50.0000	ND	107	0 - 150			
Ethyl Acetate	520.760	50	500.000	ND	104	0 - 140			
Ethyl Ether	528.130	50	500.000	ND	106	36 - 142			
Ethyl tert-butyl ether	50.8900	5.0	50.0000	ND	102	46 - 133			
Ethylbenzene	91.5700	5.0	100.000	ND	91.6	46 - 123			
Freon-113	42.2900	5.0	50.0000	ND	84.6	38 - 137			
Hexachlorobutadiene	47.8700	5.0	50.0000	ND	95.7	5 - 132			
Isopropylbenzene	45.8600	5.0	50.0000	ND	91.7	43 - 132			
m,p-Xylene	93.8900	10	100.000	ND	93.9	45 - 128			
Methylene chloride	51.3400	5.0	50.0000	ND	103	37 - 126			
MTBE	49.2700	5.0	50.0000	ND	98.5	46 - 125			
n-Butylbenzene	50.0600	5.0	50.0000	ND	100	24 - 138			
n-Propylbenzene	47.0100	5.0	50.0000	ND	94.0	40 - 133			
Naphthalene	54.7200	5.0	50.0000	ND	109	10 - 149			
o-Xylene	95.1100	5.0	100.000	ND	95.1	45 - 125			
sec-Butylbenzene	47.3300	5.0	50.0000	ND	94.7	33 - 136			
Styrene	49.5700	5.0	50.0000	ND	99.1	43 - 128			
tert-Amyl methyl ether	48.3600	5.0	50.0000	ND	96.7	35 - 147			
tert-Butanol	244.310	100	250.000	ND	97.7	0 - 208			
tert-Butylbenzene	46.7800	5.0	50.0000	ND	93.6	36 - 133			
Tetrachloroethene	45.8300	5.0	50.0000	ND	91.7	41 - 129			
Toluene	94.5100	5.0	100.000	ND	94.5	49 - 124			
trans-1,2-Dichloroethene	44.6600	5.0	50.0000	ND	89.3	44 - 126			
trans-1,3-Dichloropropene	47.8500	5.0	50.0000	ND	95.7	42 - 125			
Trichloroethene	49.0700	5.0	50.0000	ND	98.1	38 - 139			
Trichlorofluoromethane	37.6600	5.0	50.0000	ND	75.3	30 - 157			
Vinyl acetate	417.640	50	500.000	ND	83.5	0 - 132			
Vinyl chloride	48.9500	5.0	50.0000	ND	97.9	19 - 142			
Surrogate: 1,2-Dichloroethane-d4	*53.38*		*50.0000*		*107*	*20 - 189*			
Surrogate: 4-Bromofluorobenzene	*49.86*		*50.0000*		*99.7*	*20 - 173*			
Surrogate: Dibromofluoromethane	*49.64*		*50.0000*		*99.3*	*26 - 178*			
Surrogate: Toluene-d8	*51.77*		*50.0000*		*104*	*31 - 166*			

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Volatile Organic Compounds by EPA 8260B - Quality Control (cont'd)

Analyte	Result (ug/kg)	PQL (ug/kg)	Spike Level	Source Result	% Rec	% Rec Limits	RPD	RPD Limit	Notes
Batch B5C0480 - MSVOA_S (continued)									
Matrix Spike Dup (B5C0480-MSD1)		**Source: 1500960-07**		Prepared: 3/19/2015 Analyzed: 3/19/2015					
1,1,1,2-Tetrachloroethane	44.5200	5.0	50.0000	ND	89.0	45 - 122	0.627	20	
1,1,1-Trichloroethane	46.6900	5.0	50.0000	ND	93.4	46 - 131	4.49	20	
1,1,2,2-Tetrachloroethane	35.9100	5.0	50.0000	ND	71.8	34 - 133	21.2	20	R
1,1,2-Trichloroethane	43.2800	5.0	50.0000	ND	86.6	40 - 133	12.6	20	
1,1-Dichloroethane	44.5900	5.0	50.0000	ND	89.2	50 - 120	3.70	20	
1,1-Dichloroethene	39.5200	5.0	50.0000	ND	79.0	42 - 130	5.13	20	
1,1-Dichloropropene	48.6200	5.0	50.0000	ND	97.2	49 - 125	2.48	20	
1,2,3-Trichloropropane	37.2600	5.0	50.0000	ND	74.5	42 - 130	20.7	20	R
1,2,3-Trichlorobenzene	50.9300	5.0	50.0000	ND	102	2 - 136	5.00	20	
1,2,4-Trichlorobenzene	49.6800	5.0	50.0000	ND	99.4	6 - 137	5.61	20	
1,2,4-Trimethylbenzene	44.9600	5.0	50.0000	ND	89.9	37 - 129	5.66	20	
1,2-Dibromo-3-chloropropane	44.9700	10	50.0000	ND	89.9	36 - 135	8.56	20	
1,2-Dibromoethane	43.8300	5.0	50.0000	ND	87.7	43 - 129	13.2	20	
1,2-Dichlorobenzene	43.5800	5.0	50.0000	ND	87.2	31 - 129	6.91	20	
1,2-Dichloroethane	43.7300	5.0	50.0000	ND	87.5	50 - 122	9.12	20	
1,2-Dichloropropane	45.3700	5.0	50.0000	ND	90.7	51 - 119	5.15	20	
1,3,5-Trimethylbenzene	44.7400	5.0	50.0000	ND	89.5	38 - 130	5.54	20	
1,3-Dichlorobenzene	43.5700	5.0	50.0000	ND	87.1	31 - 128	5.56	20	
1,3-Dichloropropane	43.4000	5.0	50.0000	ND	86.8	52 - 122	9.69	20	
1,4-Dichlorobenzene	44.4100	5.0	50.0000	ND	88.8	31 - 128	5.11	20	
2,2-Dichloropropane	46.5200	5.0	50.0000	ND	93.0	42 - 140	2.94	20	
2-Chlorotoluene	43.3300	5.0	50.0000	ND	86.7	38 - 129	4.95	20	
4-Chlorotoluene	43.8400	5.0	50.0000	ND	87.7	38 - 128	5.37	20	
4-Isopropyltoluene	47.5700	5.0	50.0000	ND	95.1	31 - 137	2.61	20	
Benzene	91.3800	5.0	100.000	ND	91.4	51 - 117	0.351	20	
Bromobenzene	41.6300	5.0	50.0000	ND	83.3	41 - 125	6.46	20	
Bromochloromethane	41.5800	5.0	50.0000	ND	83.2	47 - 123	6.54	20	
Bromodichloromethane	44.3500	5.0	50.0000	ND	88.7	50 - 122	5.97	20	
Bromoform	41.0500	5.0	50.0000	ND	82.1	39 - 131	12.7	20	
Bromomethane	80.4700	5.0	50.0000	ND	161	10 - 154	49.7	20	M1, R
Carbon disulfide	33.8100	5.0	50.0000	ND	67.6	24 - 138	22.5	20	R
Carbon tetrachloride	47.6600	5.0	50.0000	ND	95.3	44 - 131	5.12	20	
Chlorobenzene	44.7800	5.0	50.0000	ND	89.6	46 - 123	1.42	20	
Chloroethane	70.0000	5.0	50.0000	ND	140	27 - 143	30.3	20	R
Chloroform	43.7300	5.0	50.0000	ND	87.5	50 - 124	1.15	20	
Chloromethane	51.6900	5.0	50.0000	ND	103	8 - 139	0.174	20	
cis-1,2-Dichloroethene	46.0500	5.0	50.0000	ND	92.1	48 - 125	0.851	20	
cis-1,3-Dichloropropene	43.6200	5.0	50.0000	ND	87.2	51 - 123	7.12	20	
Di-isopropyl ether	47.3800	5.0	50.0000	ND	94.8	45 - 125	1.22	20	
Dibromochloromethane	42.5100	5.0	50.0000	ND	85.0	48 - 124	8.06	20	
Dibromomethane	41.5700	5.0	50.0000	ND	83.1	48 - 124	20.0	20	R

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Volatile Organic Compounds by EPA 8260B - Quality Control (cont'd)

Analyte	Result (ug/kg)	PQL (ug/kg)	Spike Level	Source Result	% Rec	% Rec Limits	RPD	RPD Limit	Notes
Batch B5C0480 - MSVOA_S (continued)									
Matrix Spike Dup (B5C0480-MSD1) - Continued		**Source: 1500960-07**		Prepared: 3/19/2015 Analyzed: 3/19/2015					
Dichlorodifluoromethane	55.1500	5.0	50.0000	ND	110	0 - 150	3.24	20	
Ethyl Acetate	345.670	50	500.000	ND	69.1	0 - 140	40.4	20	R
Ethyl Ether	427.310	50	500.000	ND	85.5	36 - 142	21.1	20	R
Ethyl tert-butyl ether	49.6900	5.0	50.0000	ND	99.4	46 - 133	2.39	20	
Ethylbenzene	91.9900	5.0	100.000	ND	92.0	46 - 123	0.458	20	
Freon-113	39.6500	5.0	50.0000	ND	79.3	38 - 137	6.44	20	
Hexachlorobutadiene	48.2700	5.0	50.0000	ND	96.5	5 - 132	0.832	20	
Isopropylbenzene	44.6800	5.0	50.0000	ND	89.4	43 - 132	2.61	20	
m,p-Xylene	93.0600	10	100.000	ND	93.1	45 - 128	0.888	20	
Methylene chloride	50.4700	5.0	50.0000	ND	101	37 - 126	1.71	20	
MTBE	45.3600	5.0	50.0000	ND	90.7	46 - 125	8.26	20	
n-Butylbenzene	49.1700	5.0	50.0000	ND	98.3	24 - 138	1.79	20	
n-Propylbenzene	45.3000	5.0	50.0000	ND	90.6	40 - 133	3.70	20	
Naphthalene	52.2600	5.0	50.0000	ND	105	10 - 149	4.60	20	
o-Xylene	92.6700	5.0	100.000	ND	92.7	45 - 125	2.60	20	
sec-Butylbenzene	46.5900	5.0	50.0000	ND	93.2	33 - 136	1.58	20	
Styrene	47.7500	5.0	50.0000	ND	95.5	43 - 128	3.74	20	
tert-Amyl methyl ether	44.9100	5.0	50.0000	ND	89.8	35 - 147	7.40	20	
tert-Butanol	21.4700	100	250.000	ND	8.59	0 - 208	168	20	R
tert-Butylbenzene	45.4700	5.0	50.0000	ND	90.9	36 - 133	2.84	20	
Tetrachloroethene	47.0700	5.0	50.0000	ND	94.1	41 - 129	2.67	20	
Toluene	93.4800	5.0	100.000	ND	93.5	49 - 124	1.10	20	
trans-1,2-Dichloroethene	47.0100	5.0	50.0000	ND	94.0	44 - 126	5.13	20	
trans-1,3-Dichloropropene	43.0600	5.0	50.0000	ND	86.1	42 - 125	10.5	20	
Trichloroethene	50.8000	5.0	50.0000	ND	102	38 - 139	3.46	20	
Trichlorofluoromethane	41.1100	5.0	50.0000	ND	82.2	30 - 157	8.76	20	
Vinyl acetate	329.770	50	500.000	ND	66.0	0 - 132	23.5	20	R
Vinyl chloride	49.9800	5.0	50.0000	ND	100	19 - 142	2.08	20	
Surrogate: 1,2-Dichloroethane-d4	*48.16*		*50.0000*		*96.3*	*20 - 189*			
Surrogate: 4-Bromofluorobenzene	*50.97*		*50.0000*		*102*	*20 - 173*			
Surrogate: Dibromofluoromethane	*50.64*		*50.0000*		*101*	*26 - 178*			
Surrogate: Toluene-d8	*52.01*		*50.0000*		*104*	*31 - 166*			

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Volatile Organic Compounds by EPA 8260B - Quality Control (cont'd)

Analyte	Result (ug/kg)	PQL (ug/kg)	Spike Level	Source Result	% Rec	% Rec Limits	RPD	RPD Limit	Notes
Batch B5C0516 - MSVOA_S									
Blank (B5C0516-BLK1)				Prepared: 3/20/2015 Analyzed: 3/20/2015					
1,1,1,2-Tetrachloroethane	ND	5.0			NR				
1,1,1-Trichloroethane	ND	5.0			NR				
1,1,2,2-Tetrachloroethane	ND	5.0			NR				
1,1,2-Trichloroethane	ND	5.0			NR				
1,1-Dichloroethane	ND	5.0			NR				
1,1-Dichloroethene	ND	5.0			NR				
1,1-Dichloropropene	ND	5.0			NR				
1,2,3-Trichloropropane	ND	5.0			NR				
1,2,3-Trichlorobenzene	ND	5.0			NR				
1,2,4-Trichlorobenzene	ND	5.0			NR				
1,2,4-Trimethylbenzene	ND	5.0			NR				
1,2-Dibromo-3-chloropropane	ND	10			NR				
1,2-Dibromoethane	ND	5.0			NR				
1,2-Dichlorobenzene	ND	5.0			NR				
1,2-Dichloroethane	ND	5.0			NR				
1,2-Dichloropropane	ND	5.0			NR				
1,3,5-Trimethylbenzene	ND	5.0			NR				
1,3-Dichlorobenzene	ND	5.0			NR				
1,3-Dichloropropane	ND	5.0			NR				
1,4-Dichlorobenzene	ND	5.0			NR				
2,2-Dichloropropane	ND	5.0			NR				
2-Chlorotoluene	ND	5.0			NR				
4-Chlorotoluene	ND	5.0			NR				
4-Isopropyltoluene	ND	5.0			NR				
Benzene	ND	5.0			NR				
Bromobenzene	ND	5.0			NR				
Bromochloromethane	ND	5.0			NR				
Bromodichloromethane	ND	5.0			NR				
Bromoform	ND	5.0			NR				
Bromomethane	ND	5.0			NR				
Carbon disulfide	ND	5.0			NR				
Carbon tetrachloride	ND	5.0			NR				
Chlorobenzene	ND	5.0			NR				
Chloroethane	ND	5.0			NR				
Chloroform	ND	5.0			NR				
Chloromethane	ND	5.0			NR				
cis-1,2-Dichloroethene	ND	5.0			NR				
cis-1,3-Dichloropropene	ND	5.0			NR				
Di-isopropyl ether	ND	5.0			NR				
Dibromochloromethane	ND	5.0			NR				
Dibromomethane	ND	5.0			NR				

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Volatile Organic Compounds by EPA 8260B - Quality Control (cont'd)

Analyte	Result (ug/kg)	PQL (ug/kg)	Spike Level	Source Result	% Rec	% Rec Limits	RPD	RPD Limit	Notes
Batch B5C0516 - MSVOA_S (continued)									
Blank (B5C0516-BLK1) - Continued				Prepared: 3/20/2015 Analyzed: 3/20/2015					
Dichlorodifluoromethane	ND	5.0			NR				
Ethyl Acetate	ND	50			NR				
Ethyl Ether	ND	50			NR				
Ethyl tert-butyl ether	ND	5.0			NR				
Ethylbenzene	ND	5.0			NR				
Freon-113	ND	5.0			NR				
Hexachlorobutadiene	ND	5.0			NR				
Isopropylbenzene	ND	5.0			NR				
m,p-Xylene	ND	10			NR				
Methylene chloride	ND	5.0			NR				
MTBE	ND	5.0			NR				
n-Butylbenzene	ND	5.0			NR				
n-Propylbenzene	ND	5.0			NR				
Naphthalene	ND	5.0			NR				
o-Xylene	ND	5.0			NR				
sec-Butylbenzene	ND	5.0			NR				
Styrene	ND	5.0			NR				
tert-Amyl methyl ether	ND	5.0			NR				
tert-Butanol	ND	100			NR				
tert-Butylbenzene	ND	5.0			NR				
Tetrachloroethene	ND	5.0			NR				
Toluene	ND	5.0			NR				
trans-1,2-Dichloroethene	ND	5.0			NR				
trans-1,3-Dichloropropene	ND	5.0			NR				
Trichloroethene	ND	5.0			NR				
Trichlorofluoromethane	ND	5.0			NR				
Vinyl acetate	ND	50			NR				
Vinyl chloride	ND	5.0			NR				
Surrogate: 1,2-Dichloroethane-d4	*56.15*		*50.0000*		*112*	*20 - 189*			
Surrogate: 4-Bromofluorobenzene	*43.32*		*50.0000*		*86.6*	*20 - 173*			
Surrogate: Dibromofluoromethane	*53.50*		*50.0000*		*107*	*26 - 178*			
Surrogate: Toluene-d8	*49.71*		*50.0000*		*99.4*	*31 - 166*			

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Volatile Organic Compounds by EPA 8260B - Quality Control (cont'd)

Analyte	Result (ug/kg)	PQL (ug/kg)	Spike Level	Source Result	% Rec	% Rec Limits	RPD	RPD Limit	Notes
Batch B5C0516 - MSVOA_S (continued)									
LCS (B5C0516-BS1)				Prepared: 3/20/2015 Analyzed: 3/20/2015					
1,1,1,2-Tetrachloroethane	51.1000	5.0	50.0000		102	74 - 117			
1,1,1-Trichloroethane	52.7700	5.0	50.0000		106	65 - 130			
1,1,2,2-Tetrachloroethane	45.9600	5.0	50.0000		91.9	63 - 123			
1,1,2-Trichloroethane	49.8900	5.0	50.0000		99.8	66 - 122			
1,1-Dichloroethane	50.0500	5.0	50.0000		100	65 - 124			
1,1-Dichloroethene	54.1400	5.0	50.0000		108	60 - 130			
1,1-Dichloropropene	52.8600	5.0	50.0000		106	75 - 121			
1,2,3-Trichloropropane	47.4900	5.0	50.0000		95.0	62 - 126			
1,2,3-Trichlorobenzene	53.1900	5.0	50.0000		106	72 - 120			
1,2,4-Trichlorobenzene	52.9900	5.0	50.0000		106	75 - 121			
1,2,4-Trimethylbenzene	52.6700	5.0	50.0000		105	82 - 118			
1,2-Dibromo-3-chloropropane	48.9800	10	50.0000		98.0	67 - 121			
1,2-Dibromoethane	49.1000	5.0	50.0000		98.2	69 - 123			
1,2-Dichlorobenzene	50.4300	5.0	50.0000		101	81 - 114			
1,2-Dichloroethane	51.2300	5.0	50.0000		102	71 - 119			
1,2-Dichloropropane	50.1200	5.0	50.0000		100	71 - 118			
1,3,5-Trimethylbenzene	51.6800	5.0	50.0000		103	81 - 120			
1,3-Dichlorobenzene	50.4100	5.0	50.0000		101	80 - 115			
1,3-Dichloropropane	49.0700	5.0	50.0000		98.1	77 - 117			
1,4-Dichlorobenzene	50.9500	5.0	50.0000		102	80 - 115			
2,2-Dichloropropane	52.2800	5.0	50.0000		105	58 - 141			
2-Chlorotoluene	51.7600	5.0	50.0000		104	78 - 120			
4-Chlorotoluene	51.3000	5.0	50.0000		103	79 - 119			
4-Isopropyltoluene	54.9000	5.0	50.0000		110	81 - 125			
Benzene	101.760	5.0	100.000		102	73 - 116			
Bromobenzene	47.3300	5.0	50.0000		94.7	78 - 115			
Bromochloromethane	49.0100	5.0	50.0000		98.0	66 - 121			
Bromodichloromethane	51.4800	5.0	50.0000		103	73 - 120			
Bromoform	49.1200	5.0	50.0000		98.2	68 - 124			
Bromomethane	65.0400	5.0	50.0000		130	26 - 163			
Carbon disulfide	57.7100	5.0	50.0000		115	43 - 142			
Carbon tetrachloride	54.1600	5.0	50.0000		108	67 - 130			
Chlorobenzene	50.8400	5.0	50.0000		102	82 - 114			
Chloroethane	60.4100	5.0	50.0000		121	40 - 151			
Chloroform	50.2100	5.0	50.0000		100	68 - 124			
Chloromethane	53.1300	5.0	50.0000		106	18 - 144			
cis-1,2-Dichloroethene	52.4400	5.0	50.0000		105	66 - 125			
cis-1,3-Dichloropropene	47.8100	5.0	50.0000		95.6	77 - 120			
Di-isopropyl ether	51.0000	5.0	50.0000		102	56 - 132			
Dibromochloromethane	49.2700	5.0	50.0000		98.5	76 - 118			
Dibromomethane	48.9300	5.0	50.0000		97.9	69 - 122			

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Volatile Organic Compounds by EPA 8260B - Quality Control (cont'd)

Analyte	Result (ug/kg)	PQL (ug/kg)	Spike Level	Source Result	% Rec	% Rec Limits	RPD	RPD Limit	Notes
Batch B5C0516 - MSVOA_S (continued)									
LCS (B5C0516-BS1) - Continued					Prepared: 3/20/2015 Analyzed: 3/20/2015				
Dichlorodifluoromethane	60.9600	5.0	50.0000		122	0 - 155			
Ethyl Acetate	499.700	50	500.000		99.9	31 - 137			
Ethyl Ether	546.400	50	500.000		109	47 - 150			
Ethyl tert-butyl ether	52.3200	5.0	50.0000		105	63 - 134			
Ethylbenzene	103.330	5.0	100.000		103	79 - 115			
Freon-113	58.0800	5.0	50.0000		116	62 - 134			
Hexachlorobutadiene	53.8600	5.0	50.0000		108	71 - 121			
Isopropylbenzene	51.5300	5.0	50.0000		103	78 - 126			
m,p-Xylene	104.480	10	100.000		104	80 - 119			
Methylene chloride	56.8100	5.0	50.0000		114	56 - 129			
MTBE	48.6900	5.0	50.0000		97.4	61 - 124			
n-Butylbenzene	56.5900	5.0	50.0000		113	78 - 127			
n-Propylbenzene	53.2100	5.0	50.0000		106	77 - 128			
Naphthalene	47.4900	5.0	50.0000		95.0	61 - 141			
o-Xylene	104.190	5.0	100.000		104	81 - 116			
sec-Butylbenzene	54.2400	5.0	50.0000		108	81 - 125			
Styrene	52.6400	5.0	50.0000		105	82 - 120			
tert-Amyl methyl ether	47.8300	5.0	50.0000		95.7	52 - 149			
tert-Butanol	200.850	100	250.000		80.3	26 - 160			
tert-Butylbenzene	52.8100	5.0	50.0000		106	80 - 123			
Tetrachloroethene	50.4200	5.0	50.0000		101	75 - 123			
Toluene	103.660	5.0	100.000		104	75 - 119			
trans-1,2-Dichloroethene	52.0300	5.0	50.0000		104	62 - 127			
trans-1,3-Dichloropropene	50.0500	5.0	50.0000		100	68 - 121			
Trichloroethene	52.7900	5.0	50.0000		106	73 - 119			
Trichlorofluoromethane	46.8400	5.0	50.0000		93.7	47 - 157			
Vinyl acetate	459.700	50	500.000		91.9	20 - 136			
Vinyl chloride	53.4600	5.0	50.0000		107	27 - 147			
Surrogate: 1,2-Dichloroethane-d4	*51.49*		*50.0000*		*103*	*20 - 189*			
Surrogate: 4-Bromofluorobenzene	*50.39*		*50.0000*		*101*	*20 - 173*			
Surrogate: Dibromofluoromethane	*52.23*		*50.0000*		*104*	*26 - 178*			
Surrogate: Toluene-d8	*50.67*		*50.0000*		*101*	*31 - 166*			

Figure C-2.184

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Volatile Organic Compounds by EPA 8260B - Quality Control (cont'd)

Analyte	Result (ug/kg)	PQL (ug/kg)	Spike Level	Source Result	% Rec	% Rec Limits	RPD	RPD Limit	Notes
Batch B5C0516 - MSVOA_S (continued)									
Matrix Spike (B5C0516-MS1)		**Source: 1501013-04**		Prepared: 3/20/2015 Analyzed: 3/20/2015					
1,1,1,2-Tetrachloroethane	45.9600	5.0	50.0000	ND	91.9	45 - 122			
1,1,1-Trichloroethane	48.7700	5.0	50.0000	ND	97.5	46 - 131			
1,1,2,2-Tetrachloroethane	44.0600	5.0	50.0000	ND	88.1	34 - 133			
1,1,2-Trichloroethane	45.8600	5.0	50.0000	ND	91.7	40 - 133			
1,1-Dichloroethane	47.2500	5.0	50.0000	ND	94.5	50 - 120			
1,1-Dichloroethene	45.8900	5.0	50.0000	ND	91.8	42 - 130			
1,1-Dichloropropene	51.1200	5.0	50.0000	ND	102	49 - 125			
1,2,3-Trichloropropane	47.8700	5.0	50.0000	ND	95.7	42 - 130			
1,2,3-Trichlorobenzene	41.6900	5.0	50.0000	ND	83.4	2 - 136			
1,2,4-Trichlorobenzene	43.8100	5.0	50.0000	ND	87.6	6 - 137			
1,2,4-Trimethylbenzene	51.6800	5.0	50.0000	ND	103	37 - 129			
1,2-Dibromo-3-chloropropane	44.6700	10	50.0000	ND	89.3	36 - 135			
1,2-Dibromoethane	47.6900	5.0	50.0000	ND	95.4	43 - 129			
1,2-Dichlorobenzene	47.0800	5.0	50.0000	ND	94.2	31 - 129			
1,2-Dichloroethane	45.5100	5.0	50.0000	ND	91.0	50 - 122			
1,2-Dichloropropane	48.2600	5.0	50.0000	ND	96.5	51 - 119			
1,3,5-Trimethylbenzene	52.3000	5.0	50.0000	ND	105	38 - 130			
1,3-Dichlorobenzene	47.6500	5.0	50.0000	ND	95.3	31 - 128			
1,3-Dichloropropane	48.0000	5.0	50.0000	ND	96.0	52 - 122			
1,4-Dichlorobenzene	47.5900	5.0	50.0000	ND	95.2	31 - 128			
2,2-Dichloropropane	50.6000	5.0	50.0000	ND	101	42 - 140			
2-Chlorotoluene	51.1800	5.0	50.0000	ND	102	38 - 129			
4-Chlorotoluene	50.3000	5.0	50.0000	ND	101	38 - 128			
4-Isopropyltoluene	54.5200	5.0	50.0000	ND	109	31 - 137			
Benzene	93.5100	5.0	100.000	ND	93.5	51 - 117			
Bromobenzene	47.9900	5.0	50.0000	ND	96.0	41 - 125			
Bromochloromethane	45.5400	5.0	50.0000	ND	91.1	47 - 123			
Bromodichloromethane	45.0200	5.0	50.0000	ND	90.0	50 - 122			
Bromoform	43.3400	5.0	50.0000	ND	86.7	39 - 131			
Bromomethane	56.1000	5.0	50.0000	ND	112	10 - 154			
Carbon disulfide	55.4000	5.0	50.0000	ND	111	24 - 138			
Carbon tetrachloride	45.1300	5.0	50.0000	ND	90.3	44 - 131			
Chlorobenzene	47.5800	5.0	50.0000	ND	95.2	46 - 123			
Chloroethane	52.7800	5.0	50.0000	ND	106	27 - 143			
Chloroform	45.7800	5.0	50.0000	ND	91.6	50 - 124			
Chloromethane	49.1900	5.0	50.0000	ND	98.4	8 - 139			
cis-1,2-Dichloroethene	49.7600	5.0	50.0000	ND	99.5	48 - 125			
cis-1,3-Dichloropropene	46.0800	5.0	50.0000	ND	92.2	51 - 123			
Di-isopropyl ether	49.0600	5.0	50.0000	ND	98.1	45 - 125			
Dibromochloromethane	44.3400	5.0	50.0000	ND	88.7	48 - 124			
Dibromomethane	46.8200	5.0	50.0000	ND	93.6	48 - 124			

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Volatile Organic Compounds by EPA 8260B - Quality Control (cont'd)

Analyte	Result (ug/kg)	PQL (ug/kg)	Spike Level	Source Result	% Rec	% Rec Limits	RPD	RPD Limit	Notes
Batch B5C0516 - MSVOA_S (continued)									
Matrix Spike (B5C0516-MS1) - Continued		**Source: 1501013-04**		Prepared: 3/20/2015 Analyzed: 3/20/2015					
Dichlorodifluoromethane	53.5300	5.0	50.0000	ND	107	0 - 150			
Ethyl Acetate	485.210	50	500.000	ND	97.0	0 - 140			
Ethyl Ether	475.060	50	500.000	ND	95.0	36 - 142			
Ethyl tert-butyl ether	51.8400	5.0	50.0000	ND	104	46 - 133			
Ethylbenzene	96.5900	5.0	100.000	ND	96.6	46 - 123			
Freon-113	49.2600	5.0	50.0000	ND	98.5	38 - 137			
Hexachlorobutadiene	44.7500	5.0	50.0000	ND	89.5	5 - 132			
Isopropylbenzene	54.0000	5.0	50.0000	ND	108	43 - 132			
m,p-Xylene	99.9800	10	100.000	ND	100	45 - 128			
Methylene chloride	58.7900	5.0	50.0000	8.39000	101	37 - 126			
MTBE	49.0100	5.0	50.0000	ND	98.0	46 - 125			
n-Butylbenzene	53.4800	5.0	50.0000	ND	107	24 - 138			
n-Propylbenzene	54.6300	5.0	50.0000	ND	109	40 - 133			
Naphthalene	50.3700	5.0	50.0000	6.96000	86.8	10 - 149			
o-Xylene	99.2100	5.0	100.000	ND	99.2	45 - 125			
sec-Butylbenzene	54.1100	5.0	50.0000	ND	108	33 - 136			
Styrene	49.5000	5.0	50.0000	ND	99.0	43 - 128			
tert-Amyl methyl ether	50.5100	5.0	50.0000	ND	101	35 - 147			
tert-Butanol	379.030	100	250.000	ND	152	0 - 208			
tert-Butylbenzene	53.6100	5.0	50.0000	ND	107	36 - 133			
Tetrachloroethene	51.2500	5.0	50.0000	ND	102	41 - 129			
Toluene	95.4400	5.0	100.000	ND	95.4	49 - 124			
trans-1,2-Dichloroethene	49.3400	5.0	50.0000	ND	98.7	44 - 126			
trans-1,3-Dichloropropene	44.8600	5.0	50.0000	ND	89.7	42 - 125			
Trichloroethene	53.4200	5.0	50.0000	ND	107	38 - 139			
Trichlorofluoromethane	40.6200	5.0	50.0000	ND	81.2	30 - 157			
Vinyl acetate	379.060	50	500.000	ND	75.8	0 - 132			
Vinyl chloride	49.3000	5.0	50.0000	ND	98.6	19 - 142			
Surrogate: 1,2-Dichloroethane-d4	*51.76*		*50.0000*		*104*	*20 - 189*			
Surrogate: 4-Bromofluorobenzene	*50.36*		*50.0000*		*101*	*20 - 173*			
Surrogate: Dibromofluoromethane	*50.36*		*50.0000*		*101*	*26 - 178*			
Surrogate: Toluene-d8	*51.08*		*50.0000*		*102*	*31 - 166*			

Figure C-2.186

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Volatile Organic Compounds by EPA 8260B - Quality Control (cont'd)

Analyte	Result (ug/kg)	PQL (ug/kg)	Spike Level	Source Result	% Rec	% Rec Limits	RPD	RPD Limit	Notes
Batch B5C0516 - MSVOA_S (continued)									
Matrix Spike Dup (B5C0516-MSD1)		**Source: 1501013-04**		Prepared: 3/20/2015 Analyzed: 3/20/2015					
1,1,1,2-Tetrachloroethane	42.6900	5.0	50.0000	ND	85.4	45 - 122	7.38	20	
1,1,1-Trichloroethane	47.2600	5.0	50.0000	ND	94.5	46 - 131	3.14	20	
1,1,2,2-Tetrachloroethane	41.4900	5.0	50.0000	ND	83.0	34 - 133	6.01	20	
1,1,2-Trichloroethane	44.8000	5.0	50.0000	ND	89.6	40 - 133	2.34	20	
1,1-Dichloroethane	44.3900	5.0	50.0000	ND	88.8	50 - 120	6.24	20	
1,1-Dichloroethene	43.9000	5.0	50.0000	ND	87.8	42 - 130	4.43	20	
1,1-Dichloropropene	49.9300	5.0	50.0000	ND	99.9	49 - 125	2.36	20	
1,2,3-Trichloropropane	45.8500	5.0	50.0000	ND	91.7	42 - 130	4.31	20	
1,2,3-Trichlorobenzene	41.9100	5.0	50.0000	ND	83.8	2 - 136	0.526	20	
1,2,4-Trichlorobenzene	43.2200	5.0	50.0000	ND	86.4	6 - 137	1.36	20	
1,2,4-Trimethylbenzene	51.2800	5.0	50.0000	ND	103	37 - 129	0.777	20	
1,2-Dibromo-3-chloropropane	47.8400	10	50.0000	ND	95.7	36 - 135	6.85	20	
1,2-Dibromoethane	46.3900	5.0	50.0000	ND	92.8	43 - 129	2.76	20	
1,2-Dichlorobenzene	43.5100	5.0	50.0000	ND	87.0	31 - 129	7.88	20	
1,2-Dichloroethane	43.8800	5.0	50.0000	ND	87.8	50 - 122	3.65	20	
1,2-Dichloropropane	45.8900	5.0	50.0000	ND	91.8	51 - 119	5.03	20	
1,3,5-Trimethylbenzene	49.0600	5.0	50.0000	ND	98.1	38 - 130	6.39	20	
1,3-Dichlorobenzene	43.3700	5.0	50.0000	ND	86.7	31 - 128	9.40	20	
1,3-Dichloropropane	45.6300	5.0	50.0000	ND	91.3	52 - 122	5.06	20	
1,4-Dichlorobenzene	43.6900	5.0	50.0000	ND	87.4	31 - 128	8.55	20	
2,2-Dichloropropane	49.2900	5.0	50.0000	ND	98.6	42 - 140	2.62	20	
2-Chlorotoluene	46.8100	5.0	50.0000	ND	93.6	38 - 129	8.92	20	
4-Chlorotoluene	46.3800	5.0	50.0000	ND	92.8	38 - 128	8.11	20	
4-Isopropyltoluene	50.1200	5.0	50.0000	ND	100	31 - 137	8.41	20	
Benzene	92.0700	5.0	100.000	ND	92.1	51 - 117	1.55	20	
Bromobenzene	43.0000	5.0	50.0000	ND	86.0	41 - 125	11.0	20	
Bromochloromethane	42.4000	5.0	50.0000	ND	84.8	47 - 123	7.14	20	
Bromodichloromethane	42.4500	5.0	50.0000	ND	84.9	50 - 122	5.88	20	
Bromoform	41.2800	5.0	50.0000	ND	82.6	39 - 131	4.87	20	
Bromomethane	50.5300	5.0	50.0000	ND	101	10 - 154	10.4	20	
Carbon disulfide	38.1700	5.0	50.0000	ND	76.3	24 - 138	36.8	20	R
Carbon tetrachloride	37.4900	5.0	50.0000	ND	75.0	44 - 131	18.5	20	
Chlorobenzene	45.0600	5.0	50.0000	ND	90.1	46 - 123	5.44	20	
Chloroethane	53.3200	5.0	50.0000	ND	107	27 - 143	1.02	20	
Chloroform	44.2400	5.0	50.0000	ND	88.5	50 - 124	3.42	20	
Chloromethane	54.1900	5.0	50.0000	ND	108	8 - 139	9.67	20	
cis-1,2-Dichloroethene	46.8100	5.0	50.0000	ND	93.6	48 - 125	6.11	20	
cis-1,3-Dichloropropene	42.3900	5.0	50.0000	ND	84.8	51 - 123	8.34	20	
Di-isopropyl ether	48.7500	5.0	50.0000	ND	97.5	45 - 125	0.634	20	
Dibromochloromethane	41.3700	5.0	50.0000	ND	82.7	48 - 124	6.93	20	
Dibromomethane	46.2500	5.0	50.0000	ND	92.5	48 - 124	1.22	20	

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Volatile Organic Compounds by EPA 8260B - Quality Control (cont'd)

Analyte	Result (ug/kg)	PQL (ug/kg)	Spike Level	Source Result	% Rec	% Rec Limits	RPD	RPD Limit	Notes
Batch B5C0516 - MSVOA_S (continued)									
Matrix Spike Dup (B5C0516-MSD1) - Continued		**Source: 1501013-04**		Prepared: 3/20/2015 Analyzed: 3/20/2015					
Dichlorodifluoromethane	57.7100	5.0	50.0000	ND	115	0 - 150	7.52	20	
Ethyl Acetate	515.640	50	500.000	ND	103	0 - 140	6.08	20	
Ethyl Ether	502.840	50	500.000	ND	101	36 - 142	5.68	20	
Ethyl tert-butyl ether	52.8100	5.0	50.0000	ND	106	46 - 133	1.85	20	
Ethylbenzene	92.9500	5.0	100.000	ND	93.0	46 - 123	3.84	20	
Freon-113	44.1200	5.0	50.0000	ND	88.2	38 - 137	11.0	20	
Hexachlorobutadiene	37.2400	5.0	50.0000	ND	74.5	5 - 132	18.3	20	
Isopropylbenzene	49.4500	5.0	50.0000	ND	98.9	43 - 132	8.80	20	
m,p-Xylene	97.0100	10	100.000	ND	97.0	45 - 128	3.02	20	
Methylene chloride	57.3200	5.0	50.0000	8.39000	97.9	37 - 126	2.53	20	
MTBE	49.8200	5.0	50.0000	ND	99.6	46 - 125	1.64	20	
n-Butylbenzene	49.4800	5.0	50.0000	ND	99.0	24 - 138	7.77	20	
n-Propylbenzene	49.7200	5.0	50.0000	ND	99.4	40 - 133	9.41	20	
Naphthalene	69.9400	5.0	50.0000	6.96000	126	10 - 149	32.5	20	R
o-Xylene	95.3500	5.0	100.000	ND	95.4	45 - 125	3.97	20	
sec-Butylbenzene	48.4200	5.0	50.0000	ND	96.8	33 - 136	11.1	20	
Styrene	46.0800	5.0	50.0000	ND	92.2	43 - 128	7.16	20	
tert-Amyl methyl ether	50.5500	5.0	50.0000	ND	101	35 - 147	0.0792	20	
tert-Butanol	468.280	100	250.000	ND	187	0 - 208	21.1	20	R
tert-Butylbenzene	48.5400	5.0	50.0000	ND	97.1	36 - 133	9.93	20	
Tetrachloroethene	47.7000	5.0	50.0000	ND	95.4	41 - 129	7.18	20	
Toluene	94.8600	5.0	100.000	ND	94.9	49 - 124	0.610	20	
trans-1,2-Dichloroethene	47.4700	5.0	50.0000	ND	94.9	44 - 126	3.86	20	
trans-1,3-Dichloropropene	38.4100	5.0	50.0000	ND	76.8	42 - 125	15.5	20	
Trichloroethene	52.1500	5.0	50.0000	ND	104	38 - 139	2.41	20	
Trichlorofluoromethane	38.7900	5.0	50.0000	ND	77.6	30 - 157	4.61	20	
Vinyl acetate	334.600	50	500.000	ND	66.9	0 - 132	12.5	20	
Vinyl chloride	53.1600	5.0	50.0000	ND	106	19 - 142	7.53	20	
Surrogate: 1,2-Dichloroethane-d4	*54.21*		*50.0000*		*108*	*20 - 189*			
Surrogate: 4-Bromofluorobenzene	*51.75*		*50.0000*		*104*	*20 - 173*			
Surrogate: Dibromofluoromethane	*49.97*		*50.0000*		*99.9*	*26 - 178*			
Surrogate: Toluene-d8	*52.75*		*50.0000*		*106*	*31 - 166*			

Figure C-2.188

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Semivolatile Organic Compounds by EPA 8270C - Quality Control

Analyte	Result (ug/kg)	PQL (ug/kg)	Spike Level	Source Result	% Rec	% Rec Limits	RPD	RPD Limit	Notes
Batch B5C0472 - MSSEMI_ISOTOPEDILN									
Blank (B5C0472-BLK1)				Prepared: 3/18/2015 Analyzed: 3/22/2015					
1,2,4-Trichlorobenzene	ND	330			NR				
1,2-Dichlorobenzene	ND	330			NR				
1,3-Dichlorobenzene	ND	330			NR				
1,4-Dichlorobenzene	ND	330			NR				
2,4,5-Trichlorophenol	ND	330			NR				
2,4,6-Trichlorophenol	ND	330			NR				
2,4-Dichlorophenol	ND	1600			NR				
2,4-Dimethylphenol	ND	330			NR				
2,4-Dinitrophenol	ND	1600			NR				
2,4-Dinitrotoluene	ND	330			NR				
2,6-Dinitrotoluene	ND	330			NR				
2-Chloronaphthalene	ND	330			NR				
2-Chlorophenol	ND	330			NR				
2-Methylnaphthalene	ND	330			NR				
2-Methylphenol	ND	330			NR				
2-Nitroaniline	ND	1600			NR				
2-Nitrophenol	ND	330			NR				
3,3´-Dichlorobenzidine	ND	660			NR				
3-Nitroaniline	ND	1600			NR				
4,6-Dinitro-2-methyphenol	ND	1600			NR				
4-Bromophenyl-phenylether	ND	330			NR				
4-Chloro-3-methylphenol	ND	660			NR				
4-Chloroaniline	ND	660			NR				
4-Chlorophenyl-phenylether	ND	330			NR				
4-Methylphenol	ND	330			NR				
4-Nitroaniline	ND	1600			NR				
4-Nitrophenol	ND	330			NR				
Acenaphthene	ND	330			NR				
Acenaphthylene	ND	330			NR				
Anthracene	ND	330			NR				
Benzidine (M)	ND	1600			NR				
Benzo(a)anthracene	ND	330			NR				
Benzo(a)pyrene	ND	330			NR				
Benzo(b)fluoranthene	ND	330			NR				
Benzo(g,h,i)perylene	ND	330			NR				
Benzo(k)fluoranthene	ND	330			NR				
Benzoic acid	ND	1600			NR				
Benzyl alcohol	ND	660			NR				
bis(2-chloroethoxy)methane	ND	330			NR				
bis(2-Chloroethyl)ether	ND	330			NR				
bis(2-chloroisopropyl)ether	ND	330			NR				

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Semivolatile Organic Compounds by EPA 8270C - Quality Control (cont'd)

Analyte	Result (ug/kg)	PQL (ug/kg)	Spike Level	Source Result	% Rec	% Rec Limits	RPD	RPD Limit	Notes
Batch B5C0472 - MSSEMI_ISOTOPEDILN (continued)									
Blank (B5C0472-BLK1) - Continued				Prepared: 3/18/2015 Analyzed: 3/22/2015					
bis(2-ethylhexyl)phthalate	ND	330			NR				
Butylbenzylphthalate	ND	330			NR				
Chrysene	ND	330			NR				
Di-n-butylphthalate	ND	330			NR				
Di-n-octylphthalate	ND	330			NR				
Dibenz(a,h)anthracene	ND	330			NR				
Dibenzofuran	ND	330			NR				
Diethyl phthalate	ND	330			NR				
Dimethyl phthalate	ND	330			NR				
Fluoranthene	ND	330			NR				
Fluorene	ND	330			NR				
Hexachlorobenzene	ND	330			NR				
Hexachlorobutadiene	ND	660			NR				
Hexachlorocyclopentadiene	ND	660			NR				
Hexachloroethane	ND	330			NR				
Indeno(1,2,3-cd)pyrene	ND	330			NR				
Isophorone	ND	330			NR				
N-Nitroso-di-n propylamine	ND	330			NR				
N-Nitrosodiphenylamine	ND	330			NR				
Naphthalene	ND	330			NR				
Nitrobenzene	ND	330			NR				
Pentachlorophenol	ND	1600			NR				
Phenanthrene	ND	330			NR				
Phenol	ND	330			NR				
Pyrene	ND	330			NR				
Pyridine	ND	1600			NR				
Surrogate: 1,2-Dichlorobenzene-d4	*2020*		*3333.33*		*60.6*	*24 - 114*			
Surrogate: 2,4,6-Tribromophenol	*2531*		*3333.33*		*75.9*	*0 - 189*			
Surrogate: 2-Chlorophenol-d4	*2357*		*3333.33*		*70.7*	*23 - 123*			
Surrogate: 2-Fluorobiphenyl	*2175*		*3333.33*		*65.2*	*28 - 128*			
Surrogate: 2-Fluorophenol	*2281*		*3333.33*		*68.4*	*8 - 138*			
Surrogate: 4-Terphenyl-d14	*2443*		*3333.33*		*73.3*	*27 - 154*			
Surrogate: Nitrobenzene-d5	*1965*		*3333.33*		*58.9*	*19 - 129*			
Surrogate: Phenol-d5	*2315*		*3333.33*		*69.5*	*20 - 126*			

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Analyte	Result (ug/kg)	PQL (ug/kg)	Spike Level	Source Result	% Rec	% Rec Limits	RPD	RPD Limit	Notes
Batch B5C0472 - MSSEMI_ISOTOPEDILN (continued)									
LCS (B5C0472-BS1)				Prepared: 3/18/2015 Analyzed: 3/22/2015					
1,2,4-Trichlorobenzene	2565.00	330	3333.33		77.0	67 - 110			
1,2-Dichlorobenzene	2369.33	330	3333.33		71.1	64 - 104			
1,3-Dichlorobenzene	2403.33	330	3333.33		72.1	63 - 104			
1,4-Dichlorobenzene	2185.00	330	3333.33		65.6	62 - 102			
2,4,5-Trichlorophenol	3051.00	330	3333.33		91.5	69 - 129			
2,4,6-Trichlorophenol	2934.67	330	3333.33		88.0	66 - 127			
2,4-Dichlorophenol	2668.33	1600	3333.33		80.0	64 - 116			
2,4-Dimethylphenol	2390.00	330	3333.33		71.7	61 - 111			
2,4-Dinitrophenol	2049.33	1600	3333.33		61.5	33 - 138			
2,4-Dinitrotoluene	3249.00	330	3333.33		97.5	76 - 137			
2,6-Dinitrotoluene	3157.00	330	3333.33		94.7	76 - 132			
2-Chloronaphthalene	2751.33	330	3333.33		82.5	67 - 126			
2-Chlorophenol	2329.33	330	3333.33		69.9	65 - 105			
2-Methylnaphthalene	2703.33	330	3333.33		81.1	68 - 121			
2-Methylphenol	2423.00	330	3333.33		72.7	66 - 103			
2-Nitroaniline	3116.67	1600	3333.33		93.5	62 - 137			
2-Nitrophenol	2630.67	330	3333.33		78.9	60 - 122			
3,3´-Dichlorobenzidine	2949.00	660	3333.33		88.5	61 - 128			
3-Nitroaniline	2984.67	1600	3333.33		89.5	61 - 118			
4,6-Dinitro-2-methyphenol	2986.67	1600	3333.33		89.6	57 - 146			
4-Bromophenyl-phenylether	3057.33	330	3333.33		91.7	71 - 135			
4-Chloro-3-methylphenol	2853.33	660	3333.33		85.6	72 - 124			
4-Chloroaniline	2534.33	660	3333.33		76.0	59 - 108			
4-Chlorophenyl-phenylether	3020.33	330	3333.33		90.6	71 - 135			
4-Methylphenol	2596.33	330	3333.33		77.9	72 - 113			
4-Nitroaniline	3238.33	1600	3333.33		97.2	70 - 130			
4-Nitrophenol	2849.00	330	3333.33		85.5	55 - 146			
Acenaphthene	2720.00	330	3333.33		81.6	66 - 112			
Acenaphthylene	2754.00	330	3333.33		82.6	66 - 114			
Anthracene	3059.67	330	3333.33		91.8	72 - 123			
Benzidine (M)	2423.00	1600	3333.33		72.7	43 - 155			
Benzo(a)anthracene	2993.33	330	3333.33		89.8	73 - 115			
Benzo(a)pyrene	3098.00	330	3333.33		92.9	78 - 125			
Benzo(b)fluoranthene	3058.00	330	3333.33		91.7	71 - 127			
Benzo(g,h,i)perylene	2966.67	330	3333.33		89.0	73 - 120			
Benzo(k)fluoranthene	2972.00	330	3333.33		89.2	72 - 121			
Benzoic acid	1517.00	1600	3333.33		45.5	19 - 133			
Benzyl alcohol	2664.67	660	3333.33		79.9	65 - 119			
bis(2-chloroethoxy)methane	2431.00	330	3333.33		72.9	62 - 118			
bis(2-Chloroethyl)ether	2320.33	330	3333.33		69.6	55 - 111			
bis(2-chloroisopropyl)ether	2315.33	330	3333.33		69.5	34 - 131			

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Semivolatile Organic Compounds by EPA 8270C - Quality Control (cont'd)

Analyte	Result (ug/kg)	PQL (ug/kg)	Spike Level	Source Result	% Rec	% Rec Limits	RPD	RPD Limit	Notes
Batch B5C0472 - MSSEMI_ISOTOPEDILN (continued)									
LCS (B5C0472-BS1) - Continued				Prepared: 3/18/2015 Analyzed: 3/22/2015					
bis(2-ethylhexyl)phthalate	2951.00	330	3333.33		88.5	51 - 165			
Butylbenzylphthalate	3201.00	330	3333.33		96.0	54 - 155			
Chrysene	2851.00	330	3333.33		85.5	70 - 110			
Di-n-butylphthalate	3315.00	330	3333.33		99.5	65 - 155			
Di-n-octylphthalate	3020.67	330	3333.33		90.6	59 - 151			
Dibenz(a,h)anthracene	3032.00	330	3333.33		91.0	72 - 132			
Dibenzofuran	2858.33	330	3333.33		85.8	67 - 124			
Diethyl phthalate	3108.00	330	3333.33		93.2	66 - 138			
Dimethyl phthalate	3065.67	330	3333.33		92.0	70 - 136			
Fluoranthene	3016.00	330	3333.33		90.5	69 - 122			
Fluorene	2893.00	330	3333.33		86.8	67 - 120			
Hexachlorobenzene	3064.00	330	3333.33		91.9	71 - 130			
Hexachlorobutadiene	2483.33	660	3333.33		74.5	57 - 111			
Hexachlorocyclopentadiene	2913.67	660	3333.33		87.4	63 - 135			
Hexachloroethane	2364.67	330	3333.33		70.9	60 - 107			
Indeno(1,2,3-cd)pyrene	3190.00	330	3333.33		95.7	76 - 136			
Isophorone	2856.00	330	3333.33		85.7	63 - 137			
N-Nitroso-di-n propylamine	2564.67	330	3333.33		76.9	59 - 127			
N-Nitrosodiphenylamine	3180.00	330	3333.33		95.4	70 - 137			
Naphthalene	2422.00	330	3333.33		72.7	62 - 104			
Nitrobenzene	2479.33	330	3333.33		74.4	57 - 127			
Pentachlorophenol	2770.67	1600	3333.33		83.1	51 - 135			
Phenanthrene	3006.00	330	3333.33		90.2	70 - 121			
Phenol	2398.33	330	3333.33		72.0	63 - 112			
Pyrene	3007.67	330	3333.33		90.2	67 - 123			
Pyridine	1665.33	1600	3333.33		50.0	18 - 106			
Surrogate: 1,2-Dichlorobenzene-d4	*1832*		*3333.33*		*55.0*	*24 - 114*			
Surrogate: 2,4,6-Tribromophenol	*2779*		*3333.33*		*83.4*	*0 - 189*			
Surrogate: 2-Chlorophenol-d4	*2134*		*3333.33*		*64.0*	*23 - 123*			
Surrogate: 2-Fluorobiphenyl	*2117*		*3333.33*		*63.5*	*28 - 128*			
Surrogate: 2-Fluorophenol	*2026*		*3333.33*		*60.8*	*8 - 138*			
Surrogate: 4-Terphenyl-d14	*2393*		*3333.33*		*71.8*	*27 - 154*			
Surrogate: Nitrobenzene-d5	*1856*		*3333.33*		*55.7*	*19 - 129*			
Surrogate: Phenol-d5	*2141*		*3333.33*		*64.2*	*20 - 126*			

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Semivolatile Organic Compounds by EPA 8270C - Quality Control (cont'd)

Analyte	Result (ug/kg)	PQL (ug/kg)	Spike Level	Source Result	% Rec	% Rec Limits	RPD	RPD Limit	Notes
Batch B5C0472 - MSSEMI_ISOTOPEDILN (continued)									
Matrix Spike (B5C0472-MS1)		**Source: 1500960-06**		Prepared: 3/18/2015 Analyzed: 3/22/2015					
1,2,4-Trichlorobenzene	2569.33	330	3333.33	ND	77.1	56 - 112			
1,2-Dichlorobenzene	2342.00	330	3333.33	ND	70.3	52 - 105			
1,3-Dichlorobenzene	2354.33	330	3333.33	ND	70.6	51 - 105			
1,4-Dichlorobenzene	2167.00	330	3333.33	ND	65.0	50 - 104			
2,4,5-Trichlorophenol	3116.00	330	3333.33	ND	93.5	41 - 145			
2,4,6-Trichlorophenol	3008.33	330	3333.33	ND	90.2	35 - 147			
2,4-Dichlorophenol	2662.67	1600	3333.33	ND	79.9	50 - 120			
2,4-Dimethylphenol	2425.67	330	3333.33	ND	72.8	56 - 108			
2,4-Dinitrophenol	1894.67	1600	3333.33	ND	56.8	0 - 167			
2,4-Dinitrotoluene	3297.00	330	3333.33	ND	98.9	60 - 146			
2,6-Dinitrotoluene	3255.00	330	3333.33	ND	97.7	65 - 138			
2-Chloronaphthalene	2788.33	330	3333.33	ND	83.6	62 - 127			
2-Chlorophenol	2323.00	330	3333.33	ND	69.7	48 - 112			
2-Methylnaphthalene	2751.33	330	3333.33	ND	82.5	61 - 120			
2-Methylphenol	2417.33	330	3333.33	ND	72.5	53 - 107			
2-Nitroaniline	3221.33	1600	3333.33	ND	96.6	53 - 140			
2-Nitrophenol	2670.67	330	3333.33	ND	80.1	43 - 127			
3,3´-Dichlorobenzidine	3099.00	660	3333.33	ND	93.0	39 - 149			
3-Nitroaniline	3060.33	1600	3333.33	ND	91.8	47 - 127			
4,6-Dinitro-2-methyphenol	3148.00	1600	3333.33	ND	94.4	28 - 158			
4-Bromophenyl-phenylether	3172.67	330	3333.33	ND	95.2	67 - 137			
4-Chloro-3-methylphenol	2949.33	660	3333.33	ND	88.5	38 - 120			
4-Chloroaniline	2585.67	660	3333.33	ND	77.6	53 - 104			
4-Chlorophenyl-phenylether	3095.33	330	3333.33	ND	92.9	58 - 143			
4-Methylphenol	2661.00	330	3333.33	177.000	74.5	59 - 116			
4-Nitroaniline	3251.67	1600	3333.33	ND	97.6	49 - 142			
4-Nitrophenol	2904.67	330	3333.33	ND	87.1	30 - 155			
Acenaphthene	2784.67	330	3333.33	ND	83.5	56 - 116			
Acenaphthylene	2814.67	330	3333.33	ND	84.4	57 - 118			
Anthracene	3142.33	330	3333.33	ND	94.3	63 - 129			
Benzidine (M)	2366.33	1600	3333.33	ND	71.0	29 - 127			
Benzo(a)anthracene	3027.67	330	3333.33	ND	90.8	69 - 114			
Benzo(a)pyrene	3130.00	330	3333.33	ND	93.9	67 - 127			
Benzo(b)fluoranthene	3084.00	330	3333.33	ND	92.5	68 - 122			
Benzo(g,h,i)perylene	2992.67	330	3333.33	ND	89.8	50 - 138			
Benzo(k)fluoranthene	3077.33	330	3333.33	ND	92.3	60 - 125			
Benzoic acid	1417.33	1600	3333.33	ND	42.5	0 - 215			
Benzyl alcohol	2682.33	660	3333.33	ND	80.5	54 - 117			
bis(2-chloroethoxy)methane	2495.33	330	3333.33	ND	74.9	54 - 119			
bis(2-Chloroethyl)ether	2295.00	330	3333.33	ND	68.9	41 - 118			
bis(2-chloroisopropyl)ether	2302.00	330	3333.33	ND	69.1	33 - 123			

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Semivolatile Organic Compounds by EPA 8270C - Quality Control (cont'd)

Analyte	Result (ug/kg)	PQL (ug/kg)	Spike Level	Source Result	% Rec	% Rec Limits	RPD	RPD Limit	Notes
Batch B5C0472 - MSSEMI_ISOTOPEDILN (continued)									
Matrix Spike (B5C0472-MS1) - Continued		**Source: 1500960-06**		Prepared: 3/18/2015 Analyzed: 3/22/2015					
bis(2-ethylhexyl)phthalate	3072.00	330	3333.33	ND	92.2	53 - 158			
Butylbenzylphthalate	3346.33	330	3333.33	ND	100	53 - 152			
Chrysene	2908.67	330	3333.33	ND	87.3	62 - 113			
Di-n-butylphthalate	3388.33	330	3333.33	ND	102	57 - 158			
Di-n-octylphthalate	3115.33	330	3333.33	ND	93.5	38 - 166			
Dibenz(a,h)anthracene	3089.33	330	3333.33	ND	92.7	52 - 142			
Dibenzofuran	2914.67	330	3333.33	ND	87.4	54 - 134			
Diethyl phthalate	3163.67	330	3333.33	ND	94.9	61 - 140			
Dimethyl phthalate	3114.67	330	3333.33	ND	93.4	63 - 137			
Fluoranthene	3046.33	330	3333.33	ND	91.4	55 - 133			
Fluorene	2963.33	330	3333.33	ND	88.9	54 - 131			
Hexachlorobenzene	3127.33	330	3333.33	ND	93.8	65 - 134			
Hexachlorobutadiene	2413.33	660	3333.33	ND	72.4	48 - 114			
Hexachlorocyclopentadiene	2941.00	660	3333.33	ND	88.2	50 - 142			
Hexachloroethane	2288.33	330	3333.33	ND	68.6	43 - 119			
Indeno(1,2,3-cd)pyrene	3239.33	330	3333.33	ND	97.2	56 - 149			
Isophorone	2951.67	330	3333.33	ND	88.6	56 - 136			
N-Nitroso-di-n propylamine	2581.00	330	3333.33	ND	77.4	47 - 130			
N-Nitrosodiphenylamine	3306.33	330	3333.33	ND	99.2	70 - 137			
Naphthalene	2433.33	330	3333.33	ND	73.0	54 - 105			
Nitrobenzene	2535.00	330	3333.33	ND	76.1	47 - 130			
Pentachlorophenol	2867.67	1600	3333.33	ND	86.0	18 - 160			
Phenanthrene	3063.00	330	3333.33	ND	91.9	50 - 140			
Phenol	2395.33	330	3333.33	ND	71.9	55 - 112			
Pyrene	3105.67	330	3333.33	ND	93.2	54 - 135			
Pyridine	1781.00	1600	3333.33	ND	53.4	0 - 139			
Surrogate: 1,2-Dichlorobenzene-d4	*1735*		*3333.33*		*52.0*	*24 - 114*			
Surrogate: 2,4,6-Tribromophenol	*2801*		*3333.33*		*84.0*	*0 - 189*			
Surrogate: 2-Chlorophenol-d4	*2061*		*3333.33*		*61.8*	*23 - 123*			
Surrogate: 2-Fluorobiphenyl	*2109*		*3333.33*		*63.3*	*28 - 128*			
Surrogate: 2-Fluorophenol	*1938*		*3333.33*		*58.1*	*8 - 138*			
Surrogate: 4-Terphenyl-d14	*2406*		*3333.33*		*72.2*	*27 - 154*			
Surrogate: Nitrobenzene-d5	*1814*		*3333.33*		*54.4*	*19 - 129*			
Surrogate: Phenol-d5	*2085*		*3333.33*		*62.6*	*20 - 126*			

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Analyte	Result (ug/kg)	PQL (ug/kg)	Spike Level	Source Result	% Rec	% Rec Limits	RPD	RPD Limit	Notes
Batch B5C0472 - MSSEMI_ISOTOPEDILN (continued)									
Matrix Spike Dup (B5C0472-MSD1)		**Source: 1500960-06**		Prepared: 3/18/2015 Analyzed: 3/22/2015					
1,2,4-Trichlorobenzene	2774.33	330	3333.33	ND	83.2	56 - 112	7.67	20	
1,2-Dichlorobenzene	2560.67	330	3333.33	ND	76.8	52 - 105	8.92	20	
1,3-Dichlorobenzene	2551.33	330	3333.33	ND	76.5	51 - 105	8.03	20	
1,4-Dichlorobenzene	2331.67	330	3333.33	ND	70.0	50 - 104	7.32	20	
2,4,5-Trichlorophenol	3249.67	330	3333.33	ND	97.5	41 - 145	4.20	20	
2,4,6-Trichlorophenol	3099.00	330	3333.33	ND	93.0	35 - 147	2.97	20	
2,4-Dichlorophenol	2838.33	1600	3333.33	ND	85.2	50 - 120	6.39	20	
2,4-Dimethylphenol	2538.67	330	3333.33	ND	76.2	56 - 108	4.55	20	
2,4-Dinitrophenol	1593.67	1600	3333.33	ND	47.8	0 - 167	17.3	20	
2,4-Dinitrotoluene	3389.67	330	3333.33	ND	102	60 - 146	2.77	20	
2,6-Dinitrotoluene	3300.33	330	3333.33	ND	99.0	65 - 138	1.38	20	
2-Chloronaphthalene	2949.00	330	3333.33	ND	88.5	62 - 127	5.60	20	
2-Chlorophenol	2541.67	330	3333.33	ND	76.3	48 - 112	8.99	20	
2-Methylnaphthalene	2901.00	330	3333.33	ND	87.0	61 - 120	5.30	20	
2-Methylphenol	2644.00	330	3333.33	ND	79.3	53 - 107	8.96	20	
2-Nitroaniline	3294.67	1600	3333.33	ND	98.8	53 - 140	2.25	20	
2-Nitrophenol	2863.33	330	3333.33	ND	85.9	43 - 127	6.96	20	
3,3´-Dichlorobenzidine	3113.00	660	3333.33	ND	93.4	39 - 149	0.451	20	
3-Nitroaniline	3148.33	1600	3333.33	ND	94.4	47 - 127	2.83	20	
4,6-Dinitro-2-methyphenol	3009.00	1600	3333.33	ND	90.3	28 - 158	4.52	20	
4-Bromophenyl-phenylether	3188.33	330	3333.33	ND	95.6	67 - 137	0.493	20	
4-Chloro-3-methylphenol	2994.33	660	3333.33	ND	89.8	38 - 120	1.51	20	
4-Chloroaniline	2630.00	660	3333.33	ND	78.9	53 - 104	1.70	20	
4-Chlorophenyl-phenylether	3151.33	330	3333.33	ND	94.5	58 - 143	1.79	20	
4-Methylphenol	2822.33	330	3333.33	177.000	79.4	59 - 116	5.88	20	
4-Nitroaniline	3315.00	1600	3333.33	ND	99.5	49 - 142	1.93	20	
4-Nitrophenol	2906.33	330	3333.33	ND	87.2	30 - 155	0.0573	20	
Acenaphthene	2828.00	330	3333.33	ND	84.8	56 - 116	1.54	20	
Acenaphthylene	2914.67	330	3333.33	ND	87.4	57 - 118	3.49	20	
Anthracene	3187.67	330	3333.33	ND	95.6	63 - 129	1.43	20	
Benzidine (M)	2479.33	1600	3333.33	ND	74.4	29 - 127	4.66	20	
Benzo(a)anthracene	3072.00	330	3333.33	ND	92.2	69 - 114	1.45	20	
Benzo(a)pyrene	3220.00	330	3333.33	ND	96.6	67 - 127	2.83	20	
Benzo(b)fluoranthene	3120.00	330	3333.33	ND	93.6	68 - 122	1.16	20	
Benzo(g,h,i)perylene	3093.33	330	3333.33	ND	92.8	50 - 138	3.31	20	
Benzo(k)fluoranthene	3173.33	330	3333.33	ND	95.2	60 - 125	3.07	20	
Benzoic acid	1384.33	1600	3333.33	ND	41.5	0 - 215	2.36	20	
Benzyl alcohol	2904.00	660	3333.33	ND	87.1	54 - 117	7.94	20	
bis(2-chloroethoxy)methane	2630.33	330	3333.33	ND	78.9	54 - 119	5.27	20	
bis(2-Chloroethyl)ether	2539.67	330	3333.33	ND	76.2	41 - 118	10.1	20	
bis(2-chloroisopropyl)ether	2503.00	330	3333.33	ND	75.1	33 - 123	8.37	20	

Certificate of Analysis

Amec Foster Wheeler	Project Number : MTA WESTSIDE, 4953-11-1423
6001 Rickenbacker Road	Report To : Ron Lopez
Los Angeles , CA 90040	Reported : 03/23/2015

Semivolatile Organic Compounds by EPA 8270C - Quality Control (cont'd)

Analyte	Result (ug/kg)	PQL (ug/kg)	Spike Level	Source Result	% Rec	% Rec Limits	RPD	RPD Limit	Notes
Batch B5C0472 - MSSEMI_ISOTOPEDILN (continued)									
Matrix Spike Dup (B5C0472-MSD1) - Continued		**Source: 1500960-06**		Prepared: 3/18/2015 Analyzed: 3/22/2015					
bis(2-ethylhexyl)phthalate	3097.33	330	3333.33	ND	92.9	53 - 158	0.821	20	
Butylbenzylphthalate	3368.00	330	3333.33	ND	101	53 - 152	0.645	20	
Chrysene	2952.33	330	3333.33	ND	88.6	62 - 113	1.49	20	
Di-n-butylphthalate	3393.00	330	3333.33	ND	102	57 - 158	0.138	20	
Di-n-octylphthalate	3129.67	330	3333.33	ND	93.9	38 - 166	0.459	20	
Dibenz(a,h)anthracene	3174.00	330	3333.33	ND	95.2	52 - 142	2.70	20	
Dibenzofuran	3008.67	330	3333.33	ND	90.3	54 - 134	3.17	20	
Diethyl phthalate	3211.67	330	3333.33	ND	96.4	61 - 140	1.51	20	
Dimethyl phthalate	3167.00	330	3333.33	ND	95.0	63 - 137	1.67	20	
Fluoranthene	3073.00	330	3333.33	ND	92.2	55 - 133	0.872	20	
Fluorene	3011.00	330	3333.33	ND	90.3	54 - 131	1.60	20	
Hexachlorobenzene	3171.00	330	3333.33	ND	95.1	65 - 134	1.39	20	
Hexachlorobutadiene	2617.33	660	3333.33	ND	78.5	48 - 114	8.11	20	
Hexachlorocyclopentadiene	3153.33	660	3333.33	ND	94.6	50 - 142	6.97	20	
Hexachloroethane	2527.33	330	3333.33	ND	75.8	43 - 119	9.93	20	
Indeno(1,2,3-cd)pyrene	3353.67	330	3333.33	ND	101	56 - 149	3.47	20	
Isophorone	3055.67	330	3333.33	ND	91.7	56 - 136	3.46	20	
N-Nitroso-di-n propylamine	2759.00	330	3333.33	ND	82.8	47 - 130	6.67	20	
N-Nitrosodiphenylamine	3335.00	330	3333.33	ND	100	70 - 137	0.863	20	
Naphthalene	2600.67	330	3333.33	ND	78.0	54 - 105	6.65	20	
Nitrobenzene	2688.00	330	3333.33	ND	80.6	47 - 130	5.86	20	
Pentachlorophenol	2753.67	1600	3333.33	ND	82.6	18 - 160	4.06	20	
Phenanthrene	3110.00	330	3333.33	ND	93.3	50 - 140	1.52	20	
Phenol	2624.67	330	3333.33	ND	78.7	55 - 112	9.14	20	
Pyrene	3102.00	330	3333.33	ND	93.1	54 - 135	0.118	20	
Pyridine	1949.33	1600	3333.33	ND	58.5	0 - 139	9.03	20	
Surrogate: 1,2-Dichlorobenzene-d4	*1855*		*3333.33*		*55.7*	*24 - 114*			
Surrogate: 2,4,6-Tribromophenol	*2856*		*3333.33*		*85.7*	*0 - 189*			
Surrogate: 2-Chlorophenol-d4	*2266*		*3333.33*		*68.0*	*23 - 123*			
Surrogate: 2-Fluorobiphenyl	*2188*		*3333.33*		*65.6*	*28 - 128*			
Surrogate: 2-Fluorophenol	*2131*		*3333.33*		*63.9*	*8 - 138*			
Surrogate: 4-Terphenyl-d14	*2382*		*3333.33*		*71.5*	*27 - 154*			
Surrogate: Nitrobenzene-d5	*1970*		*3333.33*		*59.1*	*19 - 129*			
Surrogate: Phenol-d5	*2277*		*3333.33*		*68.3*	*20 - 126*			

Certificate of Analysis

Amec Foster Wheeler		Project Number :	MTA WESTSIDE, 4953-11-1423
6001 Rickenbacker Road		Report To :	Ron Lopez
Los Angeles , CA 90040		Reported :	03/23/2015

Notes and Definitions

R	RPD value outside acceptance criteria. Calculation is based on raw values.
M1	Matrix spike recovery outside of acceptance limit. The analytical batch was validated by the laboratory control sample.
ND	Analyte is not detected at or above the Practical Quantitation Limit (PQL). When client requests quantitation against MDL, analyte is not detected at or above the Method Detection Limit (MDL)
PQL	Practical Quantitation Limit
MDL	Method Detection Limit
NR	Not Reported
RPD	Relative Percent Difference
CA2	CA-ELAP (CDPH)
OR1	OR-NELAP (OSPHL)
TX1	TX-NELAP (TCEQ)

Notes:
(1) The reported MDL and PQL are based on prep ratio variation and analytical dilution.
(2) The suffix [2C] of specific analytes signifies that the reported result is taken from the instrument's second column.
(3) Results are wet unless otherwise specified.

ADVANCED TECHNOLOGY LABORATORIES
3275 Walnut Ave., Signal Hill, CA 90755
Tel: (562) 989-4045 • Fax: (562) 989-4040

CHAIN OF CUSTODY RECORD

Page ____ of _____

Instruction: Complete all shaded areas.

For Laboratory Use Only — ATLCOC Ver: 20130715

Method of Transport	Sample Conditions Upon Receipt					
	Condition	Y	N	Condition	Y	N
☑ Client ☐ ATL	1. CHILLED	☐	☐	5. # OF SAMPLES MATCH COC	☑	☐
☐ FedEx ☐ OnTrac	2. HEADSPACE (V0A)	☐	☐	6. PRESERVED	☐	☑
☐ GSO	3. CONTAINER INTACT	☑	☐	7. COOLER TEMP, deg C:	—	
☐ Other: _____	4. SEALED	☐	☑			

CUSTOMER

Company: AMEC FOSTER WHEELER
Address: 6001 RICKENBACKER Rd. Tel: 323-889-5300
City: LOS ANGELES State: CA Zip: 90040 Fax: 323-889-6700

SEND REPORT TO:	SEND INVOICE TO: ☐ same as SEND REPORT TO
Attn: RON LOPEZ	Attn:
Email: RON.R.LOPEZ@AMEC.COM	Email:
Company: AMEC FOSTER WHEELER	Company: AMEC FOSTER WHEELER
Address: SAME	Address: SAME
City: State: Zip:	City: State: Zip:

PROJECT SAMPLES

Project Name: MTA WESTSIDE
Project No.: 4953-11-1423
Sampler: RON LOPEZ
Quote No:
PO #: C022106204
Special Instructions/Comments:

Encircle or Write Requested Analysis: 8260 / 624 (Volatiles); 8015(GRO); 8015(DRO) / 1020; 8270(Semi-volatiles); 8081(Organochlorine Pesticides); 8082(PCBs); 6010 / 7000(Title 22 Metals); TO-15; 1664 TRPH

Encircle Sample Matrix: SOIL / SEDIMENT / SLUDGE; SOLIDS / WIPE / FILTER; WATER - DRINKING / GROUND; WATER - STORM / WASTE; AQUEOUS / LAYERED - OIL

ITEM	Lab No.	Sample Description: Sample ID / Location	Date	Time	TAT	Container: #	Container: Type (1=Tube; 2=VOA; 3=Liter; 4=Pint; 5=Jar; 6=Tedlar; 7=Canister)	Container: Material (1=Glass; 2=Plastic; 3=Metal)	Preservative (1=HCl; 2=HNO3; 3=H2SO4; 4=4C; 5=Zn (Ac)2; 6=NaOH; 7=NA2S2O3)	REMARKS
1	1500960-1	E133A-25	3-16-15	10:50						Hold
2	-2	E133A-35		11:06	5	1	1	3		
3	-3	E133A-45		11:24						Hold
4	-4	E133A-55		11:41	5	1	1	3		
5	-5	E133A-65		12:00	5	1	1	3		
6	-6	E133A-75		12:21	5	1	1	3		
7	-7	E133A-85		12:56	5	1	1	3		
8	-8	E133A-95	↓	1:21	5	1	1	3		
9										
10										

QA/QC: ☐ Routine ☐ Caltrans ☐ Legal ☐ RWQCB ☐ Level IV

TERMS

1. Sample receiving hours: 7:30 AM to 7:30 PM Monday - Friday; Saturday 8:00 AM to 12:00 PM.
2. Samples Submitted AFTER 3:00 PM, are considered received the following Business day at 8:00 AM.
3. The following turnaround time conditions apply:
   - TAT = 0 : 300% Surcharge SAME BUSINESS DAY if received by 9:00 AM
   - TAT = 1 : 100% Surcharge NEXT BUSINESS DAY (COB 5:00 PM)
   - TAT = 2 : 50% Surcharge 2ND BUSINESS DAY (COB 5:00 PM)
   - TAT = 3 : 30% Surcharge 3RD BUSINESS DAY (COB 5:00 PM)
   - TAT = 4 : 20% Surcharge 4TH BUSINESS DAY (COB 5:00 PM)
   - TAT = 5 : NO SURCHARGE 5th BUSINESS DAY (COB 5:00 PM)
4. Weekend, holiday, after-hours work - ask for quote.
5. Subcontract TAT is 10 - 15 business days. Projects requiring shorter TATs will incur a surcharge respective to the subcontract lab --- ask for quote.
6. Liquid and solid samples will be disposed of after 45 calendar days from receipt of samples; air samples will be disposed of after 14 calendar days after receipt of samples.
7. Electronic records maintained for five (5) years from report date.
8. Hard copy reports will be disposed of after 45 calendar days from report date.
9. Storage and Report Fees:
   - Liquid & solid samples: Complimentary storage for forty-five (45) calendar days from receipt of samples; $2/sample/month if extended storage or hold is requested.
   - Air samples: Complimentary storage for ten (10) calendar days from receipt of samples; $20/ sample/week if extended storage is requested.
   - Hard copy and regenerated reports/EDDs: $17.50 per hard copy report requested; $50.00 per regenerated/reformatted report; $35 per reprocessed EDD.
10. Rush TCLP/STLC samples: add 2 days to analysis TAT for extraction on procedure.
11. Unanalyzed samples will incur a disposal fee of $7 per sample.

As the authorized agent of the company above, I hereby purchase laboratory services from ATL as shown above and hereby guarantee payment as quoted.

RON LOPEZ — Submitter Print Name
Signature

CUSTODY

Relinquished by: (Signature and Printed Name)	Date:	Time:	Received by: (Signature and Printed Name)	Date:	Time:
RON LOPEZ	3-16-15	2:50 PM	FEDEX	3/16/15	1450
Relinquished by: (Signature and Printed Name)	Date:	Time:	Received by: (Signature and Printed Name)	Date:	Time:
Relinquished by: (Signature and Printed Name)	Date:	Time:	Received by: (Signature and Printed Name)	Date:	Time:

Figure C-2.198

March 27, 2015

Ron Lopez
Amec Foster Wheeler
6001 Rickenbacker Road
Los Angeles, CA 90040
Tel: (323) 889-5300
Fax:(323) 721-6700

ELAP No.: 1838
CSDLAC No.: 10196
ORELAP No.: CA300003
TCEQ No. : T104704502

Re: ATL Work Order Number : 1501023
Client Reference : MTA WESTSIDE, 4953-11-1423

Enclosed are the results for sample(s) received on March 20, 2015 by Advanced Technology Laboratories. The sample(s) are tested for the parameters as indicated on the enclosed chain of custody in accordance with applicable laboratory certifications. The laboratory results contained in this report specifically pertains to the sample(s) submitted.

Thank you for the opportunity to serve the needs of your company. If you have any questions, please feel free to contact me or your Project Manager.

Sincerely,

Eddie Rodriguez
Laboratory Director

Figure C-2.199

Certificate of Analysis

Amec Foster Wheeler		Project Number :	MTA WESTSIDE, 4953-11-1423
6001 Rickenbacker Road		Report To :	Ron Lopez
Los Angeles , CA 90040		Reported :	03/27/2015

SUMMARY OF SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
E132C-25	1501023-01	Soil	3/19/15 13:10	3/20/15 12:20
E132C-45	1501023-03	Soil	3/19/15 13:38	3/20/15 12:20
E132C-55	1501023-04	Soil	3/19/15 14:05	3/20/15 12:20
E132C-75	1501023-06	Soil	3/20/15 10:00	3/20/15 12:20
E132C-85	1501023-07	Soil	3/20/15 10:30	3/20/15 12:20
E132C-95	1501023-08	Soil	3/20/15 11:05	3/20/15 12:20

Certificate of Analysis

Amec Foster Wheeler	Project Number : MTA WESTSIDE, 4953-11-1423
6001 Rickenbacker Road	Report To : Ron Lopez
Los Angeles , CA 90040	Reported : 03/27/2015

Client Sample ID E132C-25

Lab ID: 1501023-01

Total Petroleum Hydrocarbons, HEM/SGT EPA 1664 (Modified) — **Analyst: la**

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Total Petroleum Hydrocarbons	ND	50	1	B5C0697	03/27/2015	03/27/15 13:00	

Title 22 Metals by ICP-AES EPA 6010B — **Analyst: RR**

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Antimony	ND	2.0	1	B5C0674	03/26/2015	03/26/15 15:11	
Arsenic	**5.7**	1.0	1	B5C0674	03/26/2015	03/26/15 15:11	
Barium	**40**	1.0	1	B5C0674	03/26/2015	03/26/15 15:11	
Beryllium	ND	1.0	1	B5C0674	03/26/2015	03/26/15 15:11	
Cadmium	ND	1.0	1	B5C0674	03/26/2015	03/26/15 15:11	
Chromium	**14**	1.0	1	B5C0674	03/26/2015	03/26/15 15:11	
Cobalt	**4.1**	1.0	1	B5C0674	03/26/2015	03/26/15 15:11	
Copper	**30**	2.0	1	B5C0674	03/26/2015	03/26/15 15:11	
Lead	**2.7**	1.0	1	B5C0674	03/26/2015	03/26/15 15:11	
Molybdenum	**1.9**	1.0	1	B5C0674	03/26/2015	03/26/15 15:11	
Nickel	**17**	1.0	1	B5C0674	03/26/2015	03/26/15 15:11	
Selenium	ND	1.0	1	B5C0674	03/26/2015	03/26/15 15:11	
Silver	ND	1.0	1	B5C0674	03/26/2015	03/26/15 15:11	
Thallium	ND	1.0	1	B5C0674	03/26/2015	03/26/15 15:11	
Vanadium	**33**	1.0	1	B5C0674	03/26/2015	03/26/15 15:11	
Zinc	**45**	1.0	1	B5C0674	03/26/2015	03/26/15 15:11	

Mercury by AA (Cold Vapor) EPA 7471A — **Analyst: SB**

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Mercury	ND	0.10	1	B5C0675	03/26/2015	03/26/15 13:47	

Gasoline Range Organics by EPA 8015B (Modified) — **Analyst: BT/**

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Gasoline Range Organics	ND	1.0	1	B5C0668	03/19/2015	03/26/15 16:25	
Surrogate: 4-Bromofluorobenzene	*94.3 %*	*37 - 153*		B5C0668	03/19/2015	*03/26/15 16:25*	

Certificate of Analysis

Amec Foster Wheeler	Project Number : MTA WESTSIDE, 4953-11-1423
6001 Rickenbacker Road	Report To : Ron Lopez
Los Angeles , CA 90040	Reported : 03/27/2015

Client Sample ID E132C-25

Lab ID: 1501023-01

Diesel Range Organics by EPA 8015B

Analyst: CR

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
DRO	ND	10	1	B5C0582	03/23/2015	03/24/15 15:41	
ORO	ND	10	1	B5C0582	03/23/2015	03/24/15 15:41	
Surrogate: p-Terphenyl	*82.9 %*	*49 - 142*		B5C0582	03/23/2015	*03/24/15 15:41*	

Volatile Organic Compounds by EPA 8260B

Analyst: AG

Analyte	Result (ug/kg)	PQL (ug/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
1,1,1,2-Tetrachloroethane	ND	5.0	1	B5C0542	03/20/2015	03/20/15 18:17	
1,1,1-Trichloroethane	ND	5.0	1	B5C0542	03/20/2015	03/20/15 18:17	
1,1,2,2-Tetrachloroethane	ND	5.0	1	B5C0542	03/20/2015	03/20/15 18:17	
1,1,2-Trichloroethane	ND	5.0	1	B5C0542	03/20/2015	03/20/15 18:17	
1,1-Dichloroethane	ND	5.0	1	B5C0542	03/20/2015	03/20/15 18:17	
1,1-Dichloroethene	ND	5.0	1	B5C0542	03/20/2015	03/20/15 18:17	
1,1-Dichloropropene	ND	5.0	1	B5C0542	03/20/2015	03/20/15 18:17	
1,2,3-Trichloropropane	ND	5.0	1	B5C0542	03/20/2015	03/20/15 18:17	
1,2,3-Trichlorobenzene	ND	5.0	1	B5C0542	03/20/2015	03/20/15 18:17	
1,2,4-Trichlorobenzene	ND	5.0	1	B5C0542	03/20/2015	03/20/15 18:17	
1,2,4-Trimethylbenzene	ND	5.0	1	B5C0542	03/20/2015	03/20/15 18:17	
1,2-Dibromo-3-chloropropane	ND	10	1	B5C0542	03/20/2015	03/20/15 18:17	
1,2-Dibromoethane	ND	5.0	1	B5C0542	03/20/2015	03/20/15 18:17	
1,2-Dichlorobenzene	ND	5.0	1	B5C0542	03/20/2015	03/20/15 18:17	
1,2-Dichloroethane	ND	5.0	1	B5C0542	03/20/2015	03/20/15 18:17	
1,2-Dichloropropane	ND	5.0	1	B5C0542	03/20/2015	03/20/15 18:17	
1,3,5-Trimethylbenzene	ND	5.0	1	B5C0542	03/20/2015	03/20/15 18:17	
1,3-Dichlorobenzene	ND	5.0	1	B5C0542	03/20/2015	03/20/15 18:17	
1,3-Dichloropropane	ND	5.0	1	B5C0542	03/20/2015	03/20/15 18:17	
1,4-Dichlorobenzene	ND	5.0	1	B5C0542	03/20/2015	03/20/15 18:17	
2,2-Dichloropropane	ND	5.0	1	B5C0542	03/20/2015	03/20/15 18:17	
2-Chlorotoluene	ND	5.0	1	B5C0542	03/20/2015	03/20/15 18:17	
4-Chlorotoluene	ND	5.0	1	B5C0542	03/20/2015	03/20/15 18:17	
4-Isopropyltoluene	ND	5.0	1	B5C0542	03/20/2015	03/20/15 18:17	
Benzene	ND	5.0	1	B5C0542	03/20/2015	03/20/15 18:17	
Bromobenzene	ND	5.0	1	B5C0542	03/20/2015	03/20/15 18:17	
Bromochloromethane	ND	5.0	1	B5C0542	03/20/2015	03/20/15 18:17	
Bromodichloromethane	ND	5.0	1	B5C0542	03/20/2015	03/20/15 18:17	
Bromoform	ND	5.0	1	B5C0542	03/20/2015	03/20/15 18:17	

Certificate of Analysis

Amec Foster Wheeler	Project Number : MTA WESTSIDE, 4953-11-1423
6001 Rickenbacker Road	Report To : Ron Lopez
Los Angeles , CA 90040	Reported : 03/27/2015

Client Sample ID E132C-25

Lab ID: 1501023-01

Volatile Organic Compounds by EPA 8260B **Analyst: AG**

Analyte	Result (ug/kg)	PQL (ug/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Bromomethane	ND	5.0	1	B5C0542	03/20/2015	03/20/15 18:17	
Carbon disulfide	ND	5.0	1	B5C0542	03/20/2015	03/20/15 18:17	
Carbon tetrachloride	ND	5.0	1	B5C0542	03/20/2015	03/20/15 18:17	
Chlorobenzene	ND	5.0	1	B5C0542	03/20/2015	03/20/15 18:17	
Chloroethane	ND	5.0	1	B5C0542	03/20/2015	03/20/15 18:17	
Chloroform	ND	5.0	1	B5C0542	03/20/2015	03/20/15 18:17	
Chloromethane	ND	5.0	1	B5C0542	03/20/2015	03/20/15 18:17	
cis-1,2-Dichloroethene	ND	5.0	1	B5C0542	03/20/2015	03/20/15 18:17	
cis-1,3-Dichloropropene	ND	5.0	1	B5C0542	03/20/2015	03/20/15 18:17	
Di-isopropyl ether	ND	5.0	1	B5C0542	03/20/2015	03/20/15 18:17	
Dibromochloromethane	ND	5.0	1	B5C0542	03/20/2015	03/20/15 18:17	
Dibromomethane	ND	5.0	1	B5C0542	03/20/2015	03/20/15 18:17	
Dichlorodifluoromethane	ND	5.0	1	B5C0542	03/20/2015	03/20/15 18:17	
Ethyl Acetate	ND	50	1	B5C0542	03/20/2015	03/20/15 18:17	
Ethyl Ether	ND	50	1	B5C0542	03/20/2015	03/20/15 18:17	
Ethyl tert-butyl ether	ND	5.0	1	B5C0542	03/20/2015	03/20/15 18:17	
Ethylbenzene	ND	5.0	1	B5C0542	03/20/2015	03/20/15 18:17	
Freon-113	ND	5.0	1	B5C0542	03/20/2015	03/20/15 18:17	
Hexachlorobutadiene	ND	5.0	1	B5C0542	03/20/2015	03/20/15 18:17	
Isopropylbenzene	ND	5.0	1	B5C0542	03/20/2015	03/20/15 18:17	
m,p-Xylene	ND	10	1	B5C0542	03/20/2015	03/20/15 18:17	
Methylene chloride	ND	5.0	1	B5C0542	03/20/2015	03/20/15 18:17	
MTBE	ND	5.0	1	B5C0542	03/20/2015	03/20/15 18:17	
n-Butylbenzene	ND	5.0	1	B5C0542	03/20/2015	03/20/15 18:17	
n-Propylbenzene	ND	5.0	1	B5C0542	03/20/2015	03/20/15 18:17	
Naphthalene	ND	5.0	1	B5C0542	03/20/2015	03/20/15 18:17	
o-Xylene	ND	5.0	1	B5C0542	03/20/2015	03/20/15 18:17	
sec-Butylbenzene	ND	5.0	1	B5C0542	03/20/2015	03/20/15 18:17	
Styrene	ND	5.0	1	B5C0542	03/20/2015	03/20/15 18:17	
tert-Amyl methyl ether	ND	5.0	1	B5C0542	03/20/2015	03/20/15 18:17	
tert-Butanol	ND	100	1	B5C0542	03/20/2015	03/20/15 18:17	
tert-Butylbenzene	ND	5.0	1	B5C0542	03/20/2015	03/20/15 18:17	
Tetrachloroethene	ND	5.0	1	B5C0542	03/20/2015	03/20/15 18:17	
Toluene	ND	5.0	1	B5C0542	03/20/2015	03/20/15 18:17	
trans-1,2-Dichloroethene	ND	5.0	1	B5C0542	03/20/2015	03/20/15 18:17	
trans-1,3-Dichloropropene	ND	5.0	1	B5C0542	03/20/2015	03/20/15 18:17	
Trichloroethene	ND	5.0	1	B5C0542	03/20/2015	03/20/15 18:17	

Figure C-2.203

Certificate of Analysis

Amec Foster Wheeler	Project Number : MTA WESTSIDE, 4953-11-1423
6001 Rickenbacker Road	Report To : Ron Lopez
Los Angeles , CA 90040	Reported : 03/27/2015

Client Sample ID E132C-25

Lab ID: 1501023-01

Volatile Organic Compounds by EPA 8260B

Analyst: AG

Analyte	Result (ug/kg)	PQL (ug/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Trichlorofluoromethane	ND	5.0	1	B5C0542	03/20/2015	03/20/15 18:17	
Vinyl acetate	ND	50	1	B5C0542	03/20/2015	03/20/15 18:17	
Vinyl chloride	ND	5.0	1	B5C0542	03/20/2015	03/20/15 18:17	
Surrogate: 1,2-Dichloroethane-d4	*90.2 %*	*20 - 189*		B5C0542	03/20/2015	*03/20/15 18:17*	
Surrogate: 4-Bromofluorobenzene	*92.8 %*	*20 - 173*		B5C0542	03/20/2015	*03/20/15 18:17*	
Surrogate: Dibromofluoromethane	*95.2 %*	*26 - 178*		B5C0542	03/20/2015	*03/20/15 18:17*	
Surrogate: Toluene-d8	*96.1 %*	*31 - 166*		B5C0542	03/20/2015	*03/20/15 18:17*	

Semivolatile Organic Compounds by EPA 8270C

Analyst: BD

Analyte	Result (ug/kg)	PQL (ug/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
1,2,4-Trichlorobenzene	ND	330	1	B5C0628	03/25/2015	03/25/15 13:40	
1,2-Dichlorobenzene	ND	330	1	B5C0628	03/25/2015	03/25/15 13:40	
1,3-Dichlorobenzene	ND	330	1	B5C0628	03/25/2015	03/25/15 13:40	
1,4-Dichlorobenzene	ND	330	1	B5C0628	03/25/2015	03/25/15 13:40	
2,4,5-Trichlorophenol	ND	330	1	B5C0628	03/25/2015	03/25/15 13:40	
2,4,6-Trichlorophenol	ND	330	1	B5C0628	03/25/2015	03/25/15 13:40	
2,4-Dichlorophenol	ND	1600	1	B5C0628	03/25/2015	03/25/15 13:40	
2,4-Dimethylphenol	ND	330	1	B5C0628	03/25/2015	03/25/15 13:40	
2,4-Dinitrophenol	ND	1600	1	B5C0628	03/25/2015	03/25/15 13:40	
2,4-Dinitrotoluene	ND	330	1	B5C0628	03/25/2015	03/25/15 13:40	
2,6-Dinitrotoluene	ND	330	1	B5C0628	03/25/2015	03/25/15 13:40	
2-Chloronaphthalene	ND	330	1	B5C0628	03/25/2015	03/25/15 13:40	
2-Chlorophenol	ND	330	1	B5C0628	03/25/2015	03/25/15 13:40	
2-Methylnaphthalene	ND	330	1	B5C0628	03/25/2015	03/25/15 13:40	
2-Methylphenol	ND	330	1	B5C0628	03/25/2015	03/25/15 13:40	
2-Nitroaniline	ND	1600	1	B5C0628	03/25/2015	03/25/15 13:40	
2-Nitrophenol	ND	330	1	B5C0628	03/25/2015	03/25/15 13:40	
3,3´-Dichlorobenzidine	ND	660	1	B5C0628	03/25/2015	03/25/15 13:40	
3-Nitroaniline	ND	1600	1	B5C0628	03/25/2015	03/25/15 13:40	
4,6-Dinitro-2-methyphenol	ND	1600	1	B5C0628	03/25/2015	03/25/15 13:40	
4-Bromophenyl-phenylether	ND	330	1	B5C0628	03/25/2015	03/25/15 13:40	
4-Chloro-3-methylphenol	ND	660	1	B5C0628	03/25/2015	03/25/15 13:40	
4-Chloroaniline	ND	660	1	B5C0628	03/25/2015	03/25/15 13:40	
4-Chlorophenyl-phenylether	ND	330	1	B5C0628	03/25/2015	03/25/15 13:40	
4-Methylphenol	ND	330	1	B5C0628	03/25/2015	03/25/15 13:40	

Certificate of Analysis

Amec Foster Wheeler	Project Number : MTA WESTSIDE, 4953-11-1423
6001 Rickenbacker Road	Report To : Ron Lopez
Los Angeles , CA 90040	Reported : 03/27/2015

Client Sample ID E132C-25

Lab ID: 1501023-01

Semivolatile Organic Compounds by EPA 8270C **Analyst: BD**

Analyte	Result (ug/kg)	PQL (ug/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
4-Nitroaniline	ND	1600	1	B5C0628	03/25/2015	03/25/15 13:40	
4-Nitrophenol	ND	330	1	B5C0628	03/25/2015	03/25/15 13:40	
Acenaphthene	ND	330	1	B5C0628	03/25/2015	03/25/15 13:40	
Acenaphthylene	ND	330	1	B5C0628	03/25/2015	03/25/15 13:40	
Anthracene	ND	330	1	B5C0628	03/25/2015	03/25/15 13:40	
Benzidine (M)	ND	1600	1	B5C0628	03/25/2015	03/25/15 13:40	
Benzo(a)anthracene	ND	330	1	B5C0628	03/25/2015	03/25/15 13:40	
Benzo(a)pyrene	ND	330	1	B5C0628	03/25/2015	03/25/15 13:40	
Benzo(b)fluoranthene	ND	330	1	B5C0628	03/25/2015	03/25/15 13:40	
Benzo(g,h,i)perylene	ND	330	1	B5C0628	03/25/2015	03/25/15 13:40	
Benzo(k)fluoranthene	ND	330	1	B5C0628	03/25/2015	03/25/15 13:40	
Benzoic acid	ND	1600	1	B5C0628	03/25/2015	03/25/15 13:40	
Benzyl alcohol	ND	660	1	B5C0628	03/25/2015	03/25/15 13:40	
bis(2-chloroethoxy)methane	ND	330	1	B5C0628	03/25/2015	03/25/15 13:40	
bis(2-Chloroethyl)ether	ND	330	1	B5C0628	03/25/2015	03/25/15 13:40	
bis(2-chloroisopropyl)ether	ND	330	1	B5C0628	03/25/2015	03/25/15 13:40	
bis(2-ethylhexyl)phthalate	ND	330	1	B5C0628	03/25/2015	03/25/15 13:40	
Butylbenzylphthalate	ND	330	1	B5C0628	03/25/2015	03/25/15 13:40	
Chrysene	ND	330	1	B5C0628	03/25/2015	03/25/15 13:40	
Di-n-butylphthalate	ND	330	1	B5C0628	03/25/2015	03/25/15 13:40	
Di-n-octylphthalate	ND	330	1	B5C0628	03/25/2015	03/25/15 13:40	
Dibenz(a,h)anthracene	ND	330	1	B5C0628	03/25/2015	03/25/15 13:40	
Dibenzofuran	ND	330	1	B5C0628	03/25/2015	03/25/15 13:40	
Diethyl phthalate	ND	330	1	B5C0628	03/25/2015	03/25/15 13:40	
Dimethyl phthalate	ND	330	1	B5C0628	03/25/2015	03/25/15 13:40	
Fluoranthene	ND	330	1	B5C0628	03/25/2015	03/25/15 13:40	
Fluorene	ND	330	1	B5C0628	03/25/2015	03/25/15 13:40	
Hexachlorobenzene	ND	330	1	B5C0628	03/25/2015	03/25/15 13:40	
Hexachlorobutadiene	ND	660	1	B5C0628	03/25/2015	03/25/15 13:40	
Hexachlorocyclopentadiene	ND	660	1	B5C0628	03/25/2015	03/25/15 13:40	
Hexachloroethane	ND	330	1	B5C0628	03/25/2015	03/25/15 13:40	
Indeno(1,2,3-cd)pyrene	ND	330	1	B5C0628	03/25/2015	03/25/15 13:40	
Isophorone	ND	330	1	B5C0628	03/25/2015	03/25/15 13:40	
N-Nitroso-di-n propylamine	ND	330	1	B5C0628	03/25/2015	03/25/15 13:40	
N-Nitrosodiphenylamine	ND	330	1	B5C0628	03/25/2015	03/25/15 13:40	
Naphthalene	ND	330	1	B5C0628	03/25/2015	03/25/15 13:40	
Nitrobenzene	ND	330	1	B5C0628	03/25/2015	03/25/15 13:40	

Figure C-2.205

Certificate of Analysis

Amec Foster Wheeler	Project Number : MTA WESTSIDE, 4953-11-1423
6001 Rickenbacker Road	Report To : Ron Lopez
Los Angeles , CA 90040	Reported : 03/27/2015

Client Sample ID E132C-25

Lab ID: 1501023-01

Semivolatile Organic Compounds by EPA 8270C **Analyst: BD**

Analyte		Result (ug/kg)	PQL (ug/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Pentachlorophenol		ND	1600	1	B5C0628	03/25/2015	03/25/15 13:40	
Phenanthrene		ND	330	1	B5C0628	03/25/2015	03/25/15 13:40	
Phenol		ND	330	1	B5C0628	03/25/2015	03/25/15 13:40	
Pyrene		ND	330	1	B5C0628	03/25/2015	03/25/15 13:40	
Pyridine		ND	1600	1	B5C0628	03/25/2015	03/25/15 13:40	
Surrogate: 1,2-Dichlorobenzene-d4	*48.7 %*		*24 - 114*		B5C0628	03/25/2015	*03/25/15 13:40*	
Surrogate: 2,4,6-Tribromophenol	*71.9 %*		*0 - 189*		B5C0628	03/25/2015	*03/25/15 13:40*	
Surrogate: 2-Chlorophenol-d4	*65.0 %*		*23 - 123*		B5C0628	03/25/2015	*03/25/15 13:40*	
Surrogate: 2-Fluorobiphenyl	*51.3 %*		*28 - 128*		B5C0628	03/25/2015	*03/25/15 13:40*	
Surrogate: 2-Fluorophenol	*62.5 %*		*8 - 138*		B5C0628	03/25/2015	*03/25/15 13:40*	
Surrogate: 4-Terphenyl-d14	*59.4 %*		*27 - 154*		B5C0628	03/25/2015	*03/25/15 13:40*	
Surrogate: Nitrobenzene-d5	*57.3 %*		*19 - 129*		B5C0628	03/25/2015	*03/25/15 13:40*	
Surrogate: Phenol-d5	*67.3 %*		*20 - 126*		B5C0628	03/25/2015	*03/25/15 13:40*	

Certificate of Analysis

Amec Foster Wheeler	Project Number : MTA WESTSIDE, 4953-11-1423
6001 Rickenbacker Road	Report To : Ron Lopez
Los Angeles , CA 90040	Reported : 03/27/2015

Client Sample ID E132C-45

Lab ID: 1501023-03

Total Petroleum Hydrocarbons, HEM/SGT EPA 1664 (Modified) — **Analyst: la**

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Total Petroleum Hydrocarbons	ND	50	1	B5C0697	03/27/2015	03/27/15 13:00	

Title 22 Metals by ICP-AES EPA 6010B — **Analyst: RR**

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Antimony	ND	2.0	1	B5C0674	03/26/2015	03/26/15 15:21	
Arsenic	**1.1**	1.0	1	B5C0674	03/26/2015	03/26/15 15:21	
Barium	**72**	1.0	1	B5C0674	03/26/2015	03/26/15 15:21	
Beryllium	ND	1.0	1	B5C0674	03/26/2015	03/26/15 15:21	
Cadmium	ND	1.0	1	B5C0674	03/26/2015	03/26/15 15:21	
Chromium	**8.9**	1.0	1	B5C0674	03/26/2015	03/26/15 15:21	
Cobalt	ND	1.0	1	B5C0674	03/26/2015	03/26/15 15:21	
Copper	**4.3**	2.0	1	B5C0674	03/26/2015	03/26/15 15:21	
Lead	**3.2**	1.0	1	B5C0674	03/26/2015	03/26/15 15:21	
Molybdenum	**1.8**	1.0	1	B5C0674	03/26/2015	03/26/15 15:21	
Nickel	**1.3**	1.0	1	B5C0674	03/26/2015	03/26/15 15:21	
Selenium	ND	1.0	1	B5C0674	03/26/2015	03/26/15 15:21	
Silver	ND	1.0	1	B5C0674	03/26/2015	03/26/15 15:21	
Thallium	ND	1.0	1	B5C0674	03/26/2015	03/26/15 15:21	
Vanadium	**27**	1.0	1	B5C0674	03/26/2015	03/26/15 15:21	
Zinc	**7.0**	1.0	1	B5C0674	03/26/2015	03/26/15 15:21	

Mercury by AA (Cold Vapor) EPA 7471A — **Analyst: SB**

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Mercury	ND	0.10	1	B5C0675	03/26/2015	03/26/15 13:57	

Gasoline Range Organics by EPA 8015B (Modified) — **Analyst: BT/**

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Gasoline Range Organics	ND	1.0	1	B5C0662	03/19/2015	03/26/15 07:01	
Surrogate: 4-Bromofluorobenzene	*96.2 %*	*37 - 153*		B5C0662	03/19/2015	*03/26/15 07:01*	

Certificate of Analysis

Amec Foster Wheeler	Project Number : MTA WESTSIDE, 4953-11-1423
6001 Rickenbacker Road	Report To : Ron Lopez
Los Angeles , CA 90040	Reported : 03/27/2015

Client Sample ID E132C-45

Lab ID: 1501023-03

Diesel Range Organics by EPA 8015B

Analyst: CR

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
DRO	ND	10	1	B5C0582	03/23/2015	03/24/15 14:14	
ORO	ND	10	1	B5C0582	03/23/2015	03/24/15 14:14	
Surrogate: p-Terphenyl	*88.2 %*	*49 - 142*		B5C0582	03/23/2015	*03/24/15 14:14*	

Volatile Organic Compounds by EPA 8260B

Analyst: AG

Analyte	Result (ug/kg)	PQL (ug/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
1,1,1,2-Tetrachloroethane	ND	5.0	1	B5C0547	03/21/2015	03/21/15 10:39	
1,1,1-Trichloroethane	ND	5.0	1	B5C0547	03/21/2015	03/21/15 10:39	
1,1,2,2-Tetrachloroethane	ND	5.0	1	B5C0547	03/21/2015	03/21/15 10:39	
1,1,2-Trichloroethane	ND	5.0	1	B5C0547	03/21/2015	03/21/15 10:39	
1,1-Dichloroethane	ND	5.0	1	B5C0547	03/21/2015	03/21/15 10:39	
1,1-Dichloroethene	ND	5.0	1	B5C0547	03/21/2015	03/21/15 10:39	
1,1-Dichloropropene	ND	5.0	1	B5C0547	03/21/2015	03/21/15 10:39	
1,2,3-Trichloropropane	ND	5.0	1	B5C0547	03/21/2015	03/21/15 10:39	
1,2,3-Trichlorobenzene	ND	5.0	1	B5C0547	03/21/2015	03/21/15 10:39	
1,2,4-Trichlorobenzene	ND	5.0	1	B5C0547	03/21/2015	03/21/15 10:39	
1,2,4-Trimethylbenzene	ND	5.0	1	B5C0547	03/21/2015	03/21/15 10:39	
1,2-Dibromo-3-chloropropane	ND	10	1	B5C0547	03/21/2015	03/21/15 10:39	
1,2-Dibromoethane	ND	5.0	1	B5C0547	03/21/2015	03/21/15 10:39	
1,2-Dichlorobenzene	ND	5.0	1	B5C0547	03/21/2015	03/21/15 10:39	
1,2-Dichloroethane	ND	5.0	1	B5C0547	03/21/2015	03/21/15 10:39	
1,2-Dichloropropane	ND	5.0	1	B5C0547	03/21/2015	03/21/15 10:39	
1,3,5-Trimethylbenzene	ND	5.0	1	B5C0547	03/21/2015	03/21/15 10:39	
1,3-Dichlorobenzene	ND	5.0	1	B5C0547	03/21/2015	03/21/15 10:39	
1,3-Dichloropropane	ND	5.0	1	B5C0547	03/21/2015	03/21/15 10:39	
1,4-Dichlorobenzene	ND	5.0	1	B5C0547	03/21/2015	03/21/15 10:39	
2,2-Dichloropropane	ND	5.0	1	B5C0547	03/21/2015	03/21/15 10:39	
2-Chlorotoluene	ND	5.0	1	B5C0547	03/21/2015	03/21/15 10:39	
4-Chlorotoluene	ND	5.0	1	B5C0547	03/21/2015	03/21/15 10:39	
4-Isopropyltoluene	ND	5.0	1	B5C0547	03/21/2015	03/21/15 10:39	
Benzene	ND	5.0	1	B5C0547	03/21/2015	03/21/15 10:39	
Bromobenzene	ND	5.0	1	B5C0547	03/21/2015	03/21/15 10:39	
Bromochloromethane	ND	5.0	1	B5C0547	03/21/2015	03/21/15 10:39	
Bromodichloromethane	ND	5.0	1	B5C0547	03/21/2015	03/21/15 10:39	
Bromoform	ND	5.0	1	B5C0547	03/21/2015	03/21/15 10:39	

Figure C-2.208

Certificate of Analysis

Amec Foster Wheeler	Project Number : MTA WESTSIDE, 4953-11-1423
6001 Rickenbacker Road	Report To : Ron Lopez
Los Angeles , CA 90040	Reported : 03/27/2015

Client Sample ID E132C-45

Lab ID: 1501023-03

Volatile Organic Compounds by EPA 8260B **Analyst: AG**

Analyte	Result (ug/kg)	PQL (ug/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Bromomethane	ND	5.0	1	B5C0547	03/21/2015	03/21/15 10:39	
Carbon disulfide	ND	5.0	1	B5C0547	03/21/2015	03/21/15 10:39	
Carbon tetrachloride	ND	5.0	1	B5C0547	03/21/2015	03/21/15 10:39	
Chlorobenzene	ND	5.0	1	B5C0547	03/21/2015	03/21/15 10:39	
Chloroethane	ND	5.0	1	B5C0547	03/21/2015	03/21/15 10:39	
Chloroform	ND	5.0	1	B5C0547	03/21/2015	03/21/15 10:39	
Chloromethane	ND	5.0	1	B5C0547	03/21/2015	03/21/15 10:39	
cis-1,2-Dichloroethene	ND	5.0	1	B5C0547	03/21/2015	03/21/15 10:39	
cis-1,3-Dichloropropene	ND	5.0	1	B5C0547	03/21/2015	03/21/15 10:39	
Di-isopropyl ether	ND	5.0	1	B5C0547	03/21/2015	03/21/15 10:39	
Dibromochloromethane	ND	5.0	1	B5C0547	03/21/2015	03/21/15 10:39	
Dibromomethane	ND	5.0	1	B5C0547	03/21/2015	03/21/15 10:39	
Dichlorodifluoromethane	ND	5.0	1	B5C0547	03/21/2015	03/21/15 10:39	
Ethyl Acetate	ND	50	1	B5C0547	03/21/2015	03/21/15 10:39	
Ethyl Ether	ND	50	1	B5C0547	03/21/2015	03/21/15 10:39	
Ethyl tert-butyl ether	ND	5.0	1	B5C0547	03/21/2015	03/21/15 10:39	
Ethylbenzene	ND	5.0	1	B5C0547	03/21/2015	03/21/15 10:39	
Freon-113	ND	5.0	1	B5C0547	03/21/2015	03/21/15 10:39	
Hexachlorobutadiene	ND	5.0	1	B5C0547	03/21/2015	03/21/15 10:39	
Isopropylbenzene	ND	5.0	1	B5C0547	03/21/2015	03/21/15 10:39	
m,p-Xylene	ND	10	1	B5C0547	03/21/2015	03/21/15 10:39	
Methylene chloride	ND	5.0	1	B5C0547	03/21/2015	03/21/15 10:39	
MTBE	ND	5.0	1	B5C0547	03/21/2015	03/21/15 10:39	
n-Butylbenzene	ND	5.0	1	B5C0547	03/21/2015	03/21/15 10:39	
n-Propylbenzene	ND	5.0	1	B5C0547	03/21/2015	03/21/15 10:39	
Naphthalene	ND	5.0	1	B5C0547	03/21/2015	03/21/15 10:39	
o-Xylene	ND	5.0	1	B5C0547	03/21/2015	03/21/15 10:39	
sec-Butylbenzene	ND	5.0	1	B5C0547	03/21/2015	03/21/15 10:39	
Styrene	ND	5.0	1	B5C0547	03/21/2015	03/21/15 10:39	
tert-Amyl methyl ether	ND	5.0	1	B5C0547	03/21/2015	03/21/15 10:39	
tert-Butanol	ND	100	1	B5C0547	03/21/2015	03/21/15 10:39	
tert-Butylbenzene	ND	5.0	1	B5C0547	03/21/2015	03/21/15 10:39	
Tetrachloroethene	ND	5.0	1	B5C0547	03/21/2015	03/21/15 10:39	
Toluene	ND	5.0	1	B5C0547	03/21/2015	03/21/15 10:39	
trans-1,2-Dichloroethene	ND	5.0	1	B5C0547	03/21/2015	03/21/15 10:39	
trans-1,3-Dichloropropene	ND	5.0	1	B5C0547	03/21/2015	03/21/15 10:39	
Trichloroethene	ND	5.0	1	B5C0547	03/21/2015	03/21/15 10:39	

Figure C-2.209

Certificate of Analysis

Amec Foster Wheeler	Project Number : MTA WESTSIDE, 4953-11-1423
6001 Rickenbacker Road	Report To : Ron Lopez
Los Angeles , CA 90040	Reported : 03/27/2015

Client Sample ID E132C-45

Lab ID: 1501023-03

Volatile Organic Compounds by EPA 8260B

Analyst: AG

Analyte	Result (ug/kg)	PQL (ug/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Trichlorofluoromethane	ND	5.0	1	B5C0547	03/21/2015	03/21/15 10:39	
Vinyl acetate	ND	50	1	B5C0547	03/21/2015	03/21/15 10:39	
Vinyl chloride	ND	5.0	1	B5C0547	03/21/2015	03/21/15 10:39	
Surrogate: 1,2-Dichloroethane-d4	*95.0 %*	*20 - 189*		B5C0547	03/21/2015	*03/21/15 10:39*	
Surrogate: 4-Bromofluorobenzene	*91.7 %*	*20 - 173*		B5C0547	03/21/2015	*03/21/15 10:39*	
Surrogate: Dibromofluoromethane	*100 %*	*26 - 178*		B5C0547	03/21/2015	*03/21/15 10:39*	
Surrogate: Toluene-d8	*101 %*	*31 - 166*		B5C0547	03/21/2015	*03/21/15 10:39*	

Semivolatile Organic Compounds by EPA 8270C

Analyst: BD

Analyte	Result (ug/kg)	PQL (ug/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
1,2,4-Trichlorobenzene	ND	330	1	B5C0628	03/25/2015	03/25/15 14:08	
1,2-Dichlorobenzene	ND	330	1	B5C0628	03/25/2015	03/25/15 14:08	
1,3-Dichlorobenzene	ND	330	1	B5C0628	03/25/2015	03/25/15 14:08	
1,4-Dichlorobenzene	ND	330	1	B5C0628	03/25/2015	03/25/15 14:08	
2,4,5-Trichlorophenol	ND	330	1	B5C0628	03/25/2015	03/25/15 14:08	
2,4,6-Trichlorophenol	ND	330	1	B5C0628	03/25/2015	03/25/15 14:08	
2,4-Dichlorophenol	ND	1600	1	B5C0628	03/25/2015	03/25/15 14:08	
2,4-Dimethylphenol	ND	330	1	B5C0628	03/25/2015	03/25/15 14:08	
2,4-Dinitrophenol	ND	1600	1	B5C0628	03/25/2015	03/25/15 14:08	
2,4-Dinitrotoluene	ND	330	1	B5C0628	03/25/2015	03/25/15 14:08	
2,6-Dinitrotoluene	ND	330	1	B5C0628	03/25/2015	03/25/15 14:08	
2-Chloronaphthalene	ND	330	1	B5C0628	03/25/2015	03/25/15 14:08	
2-Chlorophenol	ND	330	1	B5C0628	03/25/2015	03/25/15 14:08	
2-Methylnaphthalene	ND	330	1	B5C0628	03/25/2015	03/25/15 14:08	
2-Methylphenol	ND	330	1	B5C0628	03/25/2015	03/25/15 14:08	
2-Nitroaniline	ND	1600	1	B5C0628	03/25/2015	03/25/15 14:08	
2-Nitrophenol	ND	330	1	B5C0628	03/25/2015	03/25/15 14:08	
3,3´-Dichlorobenzidine	ND	660	1	B5C0628	03/25/2015	03/25/15 14:08	
3-Nitroaniline	ND	1600	1	B5C0628	03/25/2015	03/25/15 14:08	
4,6-Dinitro-2-methyphenol	ND	1600	1	B5C0628	03/25/2015	03/25/15 14:08	
4-Bromophenyl-phenylether	ND	330	1	B5C0628	03/25/2015	03/25/15 14:08	
4-Chloro-3-methylphenol	ND	660	1	B5C0628	03/25/2015	03/25/15 14:08	
4-Chloroaniline	ND	660	1	B5C0628	03/25/2015	03/25/15 14:08	
4-Chlorophenyl-phenylether	ND	330	1	B5C0628	03/25/2015	03/25/15 14:08	
4-Methylphenol	ND	330	1	B5C0628	03/25/2015	03/25/15 14:08	

Certificate of Analysis

Amec Foster Wheeler	Project Number : MTA WESTSIDE, 4953-11-1423
6001 Rickenbacker Road	Report To : Ron Lopez
Los Angeles , CA 90040	Reported : 03/27/2015

Client Sample ID E132C-45

Lab ID: 1501023-03

Semivolatile Organic Compounds by EPA 8270C **Analyst: BD**

Analyte	Result (ug/kg)	PQL (ug/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
4-Nitroaniline	ND	1600	1	B5C0628	03/25/2015	03/25/15 14:08	
4-Nitrophenol	ND	330	1	B5C0628	03/25/2015	03/25/15 14:08	
Acenaphthene	ND	330	1	B5C0628	03/25/2015	03/25/15 14:08	
Acenaphthylene	ND	330	1	B5C0628	03/25/2015	03/25/15 14:08	
Anthracene	ND	330	1	B5C0628	03/25/2015	03/25/15 14:08	
Benzidine (M)	ND	1600	1	B5C0628	03/25/2015	03/25/15 14:08	
Benzo(a)anthracene	ND	330	1	B5C0628	03/25/2015	03/25/15 14:08	
Benzo(a)pyrene	ND	330	1	B5C0628	03/25/2015	03/25/15 14:08	
Benzo(b)fluoranthene	ND	330	1	B5C0628	03/25/2015	03/25/15 14:08	
Benzo(g,h,i)perylene	ND	330	1	B5C0628	03/25/2015	03/25/15 14:08	
Benzo(k)fluoranthene	ND	330	1	B5C0628	03/25/2015	03/25/15 14:08	
Benzoic acid	ND	1600	1	B5C0628	03/25/2015	03/25/15 14:08	
Benzyl alcohol	ND	660	1	B5C0628	03/25/2015	03/25/15 14:08	
bis(2-chloroethoxy)methane	ND	330	1	B5C0628	03/25/2015	03/25/15 14:08	
bis(2-Chloroethyl)ether	ND	330	1	B5C0628	03/25/2015	03/25/15 14:08	
bis(2-chloroisopropyl)ether	ND	330	1	B5C0628	03/25/2015	03/25/15 14:08	
bis(2-ethylhexyl)phthalate	ND	330	1	B5C0628	03/25/2015	03/25/15 14:08	
Butylbenzylphthalate	ND	330	1	B5C0628	03/25/2015	03/25/15 14:08	
Chrysene	ND	330	1	B5C0628	03/25/2015	03/25/15 14:08	
Di-n-butylphthalate	ND	330	1	B5C0628	03/25/2015	03/25/15 14:08	
Di-n-octylphthalate	ND	330	1	B5C0628	03/25/2015	03/25/15 14:08	
Dibenz(a,h)anthracene	ND	330	1	B5C0628	03/25/2015	03/25/15 14:08	
Dibenzofuran	ND	330	1	B5C0628	03/25/2015	03/25/15 14:08	
Diethyl phthalate	ND	330	1	B5C0628	03/25/2015	03/25/15 14:08	
Dimethyl phthalate	ND	330	1	B5C0628	03/25/2015	03/25/15 14:08	
Fluoranthene	ND	330	1	B5C0628	03/25/2015	03/25/15 14:08	
Fluorene	ND	330	1	B5C0628	03/25/2015	03/25/15 14:08	
Hexachlorobenzene	ND	330	1	B5C0628	03/25/2015	03/25/15 14:08	
Hexachlorobutadiene	ND	660	1	B5C0628	03/25/2015	03/25/15 14:08	
Hexachlorocyclopentadiene	ND	660	1	B5C0628	03/25/2015	03/25/15 14:08	
Hexachloroethane	ND	330	1	B5C0628	03/25/2015	03/25/15 14:08	
Indeno(1,2,3-cd)pyrene	ND	330	1	B5C0628	03/25/2015	03/25/15 14:08	
Isophorone	ND	330	1	B5C0628	03/25/2015	03/25/15 14:08	
N-Nitroso-di-n propylamine	ND	330	1	B5C0628	03/25/2015	03/25/15 14:08	
N-Nitrosodiphenylamine	ND	330	1	B5C0628	03/25/2015	03/25/15 14:08	
Naphthalene	ND	330	1	B5C0628	03/25/2015	03/25/15 14:08	
Nitrobenzene	ND	330	1	B5C0628	03/25/2015	03/25/15 14:08	

Figure C-2.211

Certificate of Analysis

Amec Foster Wheeler	Project Number : MTA WESTSIDE, 4953-11-1423
6001 Rickenbacker Road	Report To : Ron Lopez
Los Angeles , CA 90040	Reported : 03/27/2015

Client Sample ID E132C-45

Lab ID: 1501023-03

Semivolatile Organic Compounds by EPA 8270C **Analyst: BD**

Analyte		Result (ug/kg)	PQL (ug/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Pentachlorophenol		ND	1600	1	B5C0628	03/25/2015	03/25/15 14:08	
Phenanthrene		ND	330	1	B5C0628	03/25/2015	03/25/15 14:08	
Phenol		ND	330	1	B5C0628	03/25/2015	03/25/15 14:08	
Pyrene		ND	330	1	B5C0628	03/25/2015	03/25/15 14:08	
Pyridine		ND	1600	1	B5C0628	03/25/2015	03/25/15 14:08	
Surrogate: 1,2-Dichlorobenzene-d4	*60.0 %*		*24 - 114*		B5C0628	03/25/2015	*03/25/15 14:08*	
Surrogate: 2,4,6-Tribromophenol	*80.7 %*		*0 - 189*		B5C0628	03/25/2015	*03/25/15 14:08*	
Surrogate: 2-Chlorophenol-d4	*73.1 %*		*23 - 123*		B5C0628	03/25/2015	*03/25/15 14:08*	
Surrogate: 2-Fluorobiphenyl	*65.7 %*		*28 - 128*		B5C0628	03/25/2015	*03/25/15 14:08*	
Surrogate: 2-Fluorophenol	*70.2 %*		*8 - 138*		B5C0628	03/25/2015	*03/25/15 14:08*	
Surrogate: 4-Terphenyl-d14	*75.7 %*		*27 - 154*		B5C0628	03/25/2015	*03/25/15 14:08*	
Surrogate: Nitrobenzene-d5	*65.4 %*		*19 - 129*		B5C0628	03/25/2015	*03/25/15 14:08*	
Surrogate: Phenol-d5	*73.6 %*		*20 - 126*		B5C0628	03/25/2015	*03/25/15 14:08*	

Certificate of Analysis

Amec Foster Wheeler	Project Number : MTA WESTSIDE, 4953-11-1423
6001 Rickenbacker Road	Report To : Ron Lopez
Los Angeles , CA 90040	Reported : 03/27/2015

Client Sample ID E132C-55

Lab ID: 1501023-04

Total Petroleum Hydrocarbons, HEM/SGT EPA 1664 (Modified) — **Analyst: la**

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Total Petroleum Hydrocarbons	ND	50	1	B5C0697	03/27/2015	03/27/15 13:00	

Title 22 Metals by ICP-AES EPA 6010B — **Analyst: RR**

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Antimony	ND	2.0	1	B5C0674	03/26/2015	03/26/15 15:23	
Arsenic	**1.3**	1.0	1	B5C0674	03/26/2015	03/26/15 15:23	
Barium	**84**	1.0	1	B5C0674	03/26/2015	03/26/15 15:23	
Beryllium	ND	1.0	1	B5C0674	03/26/2015	03/26/15 15:23	
Cadmium	ND	1.0	1	B5C0674	03/26/2015	03/26/15 15:23	
Chromium	**5.4**	1.0	1	B5C0674	03/26/2015	03/26/15 15:23	
Cobalt	ND	1.0	1	B5C0674	03/26/2015	03/26/15 15:23	
Copper	**5.9**	2.0	1	B5C0674	03/26/2015	03/26/15 15:23	
Lead	**1.6**	1.0	1	B5C0674	03/26/2015	03/26/15 15:23	
Molybdenum	**8.2**	1.0	1	B5C0674	03/26/2015	03/26/15 15:23	
Nickel	**2.4**	1.0	1	B5C0674	03/26/2015	03/26/15 15:23	
Selenium	ND	1.0	1	B5C0674	03/26/2015	03/26/15 15:23	
Silver	ND	1.0	1	B5C0674	03/26/2015	03/26/15 15:23	
Thallium	ND	1.0	1	B5C0674	03/26/2015	03/26/15 15:23	
Vanadium	**6.1**	1.0	1	B5C0674	03/26/2015	03/26/15 15:23	
Zinc	**13**	1.0	1	B5C0674	03/26/2015	03/26/15 15:23	

Mercury by AA (Cold Vapor) EPA 7471A — **Analyst: SB**

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Mercury	ND	0.10	1	B5C0675	03/26/2015	03/26/15 13:59	

Gasoline Range Organics by EPA 8015B (Modified) — **Analyst: BT/**

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Gasoline Range Organics	ND	1.0	1	B5C0662	03/19/2015	03/26/15 07:16	
Surrogate: 4-Bromofluorobenzene	*96.6 %*	*37 - 153*		B5C0662	03/19/2015	*03/26/15 07:16*	

Certificate of Analysis

Amec Foster Wheeler	Project Number : MTA WESTSIDE, 4953-11-1423
6001 Rickenbacker Road	Report To : Ron Lopez
Los Angeles , CA 90040	Reported : 03/27/2015

Client Sample ID E132C-55

Lab ID: 1501023-04

Diesel Range Organics by EPA 8015B — **Analyst: CR**

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
DRO	ND	10	1	B5C0582	03/23/2015	03/24/15 14:49	
ORO	ND	10	1	B5C0582	03/23/2015	03/24/15 14:49	
Surrogate: p-Terphenyl	*95.7 %*	*49 - 142*		B5C0582	03/23/2015	*03/24/15 14:49*	

Volatile Organic Compounds by EPA 8260B — **Analyst: AG**

Analyte	Result (ug/kg)	PQL (ug/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
1,1,1,2-Tetrachloroethane	ND	5.0	1	B5C0557	03/23/2015	03/23/15 19:15	
1,1,1-Trichloroethane	ND	5.0	1	B5C0557	03/23/2015	03/23/15 19:15	
1,1,2,2-Tetrachloroethane	ND	5.0	1	B5C0557	03/23/2015	03/23/15 19:15	
1,1,2-Trichloroethane	ND	5.0	1	B5C0557	03/23/2015	03/23/15 19:15	
1,1-Dichloroethane	ND	5.0	1	B5C0557	03/23/2015	03/23/15 19:15	
1,1-Dichloroethene	ND	5.0	1	B5C0557	03/23/2015	03/23/15 19:15	
1,1-Dichloropropene	ND	5.0	1	B5C0557	03/23/2015	03/23/15 19:15	
1,2,3-Trichloropropane	ND	5.0	1	B5C0557	03/23/2015	03/23/15 19:15	
1,2,3-Trichlorobenzene	ND	5.0	1	B5C0557	03/23/2015	03/23/15 19:15	
1,2,4-Trichlorobenzene	ND	5.0	1	B5C0557	03/23/2015	03/23/15 19:15	
1,2,4-Trimethylbenzene	ND	5.0	1	B5C0557	03/23/2015	03/23/15 19:15	
1,2-Dibromo-3-chloropropane	ND	10	1	B5C0557	03/23/2015	03/23/15 19:15	
1,2-Dibromoethane	ND	5.0	1	B5C0557	03/23/2015	03/23/15 19:15	
1,2-Dichlorobenzene	ND	5.0	1	B5C0557	03/23/2015	03/23/15 19:15	
1,2-Dichloroethane	ND	5.0	1	B5C0557	03/23/2015	03/23/15 19:15	
1,2-Dichloropropane	ND	5.0	1	B5C0557	03/23/2015	03/23/15 19:15	
1,3,5-Trimethylbenzene	ND	5.0	1	B5C0557	03/23/2015	03/23/15 19:15	
1,3-Dichlorobenzene	ND	5.0	1	B5C0557	03/23/2015	03/23/15 19:15	
1,3-Dichloropropane	ND	5.0	1	B5C0557	03/23/2015	03/23/15 19:15	
1,4-Dichlorobenzene	ND	5.0	1	B5C0557	03/23/2015	03/23/15 19:15	
2,2-Dichloropropane	ND	5.0	1	B5C0557	03/23/2015	03/23/15 19:15	
2-Chlorotoluene	ND	5.0	1	B5C0557	03/23/2015	03/23/15 19:15	
4-Chlorotoluene	ND	5.0	1	B5C0557	03/23/2015	03/23/15 19:15	
4-Isopropyltoluene	ND	5.0	1	B5C0557	03/23/2015	03/23/15 19:15	
Benzene	ND	5.0	1	B5C0557	03/23/2015	03/23/15 19:15	
Bromobenzene	ND	5.0	1	B5C0557	03/23/2015	03/23/15 19:15	
Bromochloromethane	ND	5.0	1	B5C0557	03/23/2015	03/23/15 19:15	
Bromodichloromethane	ND	5.0	1	B5C0557	03/23/2015	03/23/15 19:15	
Bromoform	ND	5.0	1	B5C0557	03/23/2015	03/23/15 19:15	

Figure C-2.214

Certificate of Analysis

Amec Foster Wheeler	Project Number : MTA WESTSIDE, 4953-11-1423
6001 Rickenbacker Road	Report To : Ron Lopez
Los Angeles , CA 90040	Reported : 03/27/2015

Client Sample ID E132C-55

Lab ID: 1501023-04

Volatile Organic Compounds by EPA 8260B **Analyst: AG**

Analyte	Result (ug/kg)	PQL (ug/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Bromomethane	ND	5.0	1	B5C0557	03/23/2015	03/23/15 19:15	
Carbon disulfide	ND	5.0	1	B5C0557	03/23/2015	03/23/15 19:15	
Carbon tetrachloride	ND	5.0	1	B5C0557	03/23/2015	03/23/15 19:15	
Chlorobenzene	ND	5.0	1	B5C0557	03/23/2015	03/23/15 19:15	
Chloroethane	ND	5.0	1	B5C0557	03/23/2015	03/23/15 19:15	
Chloroform	ND	5.0	1	B5C0557	03/23/2015	03/23/15 19:15	
Chloromethane	ND	5.0	1	B5C0557	03/23/2015	03/23/15 19:15	
cis-1,2-Dichloroethene	ND	5.0	1	B5C0557	03/23/2015	03/23/15 19:15	
cis-1,3-Dichloropropene	ND	5.0	1	B5C0557	03/23/2015	03/23/15 19:15	
Di-isopropyl ether	ND	5.0	1	B5C0557	03/23/2015	03/23/15 19:15	
Dibromochloromethane	ND	5.0	1	B5C0557	03/23/2015	03/23/15 19:15	
Dibromomethane	ND	5.0	1	B5C0557	03/23/2015	03/23/15 19:15	
Dichlorodifluoromethane	ND	5.0	1	B5C0557	03/23/2015	03/23/15 19:15	
Ethyl Acetate	ND	50	1	B5C0557	03/23/2015	03/23/15 19:15	
Ethyl Ether	ND	50	1	B5C0557	03/23/2015	03/23/15 19:15	
Ethyl tert-butyl ether	ND	5.0	1	B5C0557	03/23/2015	03/23/15 19:15	
Ethylbenzene	ND	5.0	1	B5C0557	03/23/2015	03/23/15 19:15	
Freon-113	ND	5.0	1	B5C0557	03/23/2015	03/23/15 19:15	
Hexachlorobutadiene	ND	5.0	1	B5C0557	03/23/2015	03/23/15 19:15	
Isopropylbenzene	ND	5.0	1	B5C0557	03/23/2015	03/23/15 19:15	
m,p-Xylene	ND	10	1	B5C0557	03/23/2015	03/23/15 19:15	
Methylene chloride	ND	5.0	1	B5C0557	03/23/2015	03/23/15 19:15	
MTBE	ND	5.0	1	B5C0557	03/23/2015	03/23/15 19:15	
n-Butylbenzene	ND	5.0	1	B5C0557	03/23/2015	03/23/15 19:15	
n-Propylbenzene	ND	5.0	1	B5C0557	03/23/2015	03/23/15 19:15	
Naphthalene	ND	5.0	1	B5C0557	03/23/2015	03/23/15 19:15	
o-Xylene	ND	5.0	1	B5C0557	03/23/2015	03/23/15 19:15	
sec-Butylbenzene	ND	5.0	1	B5C0557	03/23/2015	03/23/15 19:15	
Styrene	ND	5.0	1	B5C0557	03/23/2015	03/23/15 19:15	
tert-Amyl methyl ether	ND	5.0	1	B5C0557	03/23/2015	03/23/15 19:15	
tert-Butanol	ND	100	1	B5C0557	03/23/2015	03/23/15 19:15	
tert-Butylbenzene	ND	5.0	1	B5C0557	03/23/2015	03/23/15 19:15	
Tetrachloroethene	ND	5.0	1	B5C0557	03/23/2015	03/23/15 19:15	
Toluene	ND	5.0	1	B5C0557	03/23/2015	03/23/15 19:15	
trans-1,2-Dichloroethene	ND	5.0	1	B5C0557	03/23/2015	03/23/15 19:15	
trans-1,3-Dichloropropene	ND	5.0	1	B5C0557	03/23/2015	03/23/15 19:15	
Trichloroethene	ND	5.0	1	B5C0557	03/23/2015	03/23/15 19:15	

Certificate of Analysis

Amec Foster Wheeler	Project Number : MTA WESTSIDE, 4953-11-1423
6001 Rickenbacker Road	Report To : Ron Lopez
Los Angeles , CA 90040	Reported : 03/27/2015

Client Sample ID E132C-55

Lab ID: 1501023-04

Volatile Organic Compounds by EPA 8260B

Analyst: AG

Analyte	Result (ug/kg)	PQL (ug/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Trichlorofluoromethane	ND	5.0	1	B5C0557	03/23/2015	03/23/15 19:15	
Vinyl acetate	ND	50	1	B5C0557	03/23/2015	03/23/15 19:15	
Vinyl chloride	ND	5.0	1	B5C0557	03/23/2015	03/23/15 19:15	
Surrogate: 1,2-Dichloroethane-d4	*114 %*	*20 - 189*		B5C0557	03/23/2015	*03/23/15 19:15*	
Surrogate: 4-Bromofluorobenzene	*88.2 %*	*20 - 173*		B5C0557	03/23/2015	*03/23/15 19:15*	
Surrogate: Dibromofluoromethane	*120 %*	*26 - 178*		B5C0557	03/23/2015	*03/23/15 19:15*	
Surrogate: Toluene-d8	*97.3 %*	*31 - 166*		B5C0557	03/23/2015	*03/23/15 19:15*	

Semivolatile Organic Compounds by EPA 8270C

Analyst: BD

Analyte	Result (ug/kg)	PQL (ug/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
1,2,4-Trichlorobenzene	ND	330	1	B5C0628	03/25/2015	03/25/15 14:35	
1,2-Dichlorobenzene	ND	330	1	B5C0628	03/25/2015	03/25/15 14:35	
1,3-Dichlorobenzene	ND	330	1	B5C0628	03/25/2015	03/25/15 14:35	
1,4-Dichlorobenzene	ND	330	1	B5C0628	03/25/2015	03/25/15 14:35	
2,4,5-Trichlorophenol	ND	330	1	B5C0628	03/25/2015	03/25/15 14:35	
2,4,6-Trichlorophenol	ND	330	1	B5C0628	03/25/2015	03/25/15 14:35	
2,4-Dichlorophenol	ND	1600	1	B5C0628	03/25/2015	03/25/15 14:35	
2,4-Dimethylphenol	ND	330	1	B5C0628	03/25/2015	03/25/15 14:35	
2,4-Dinitrophenol	ND	1600	1	B5C0628	03/25/2015	03/25/15 14:35	
2,4-Dinitrotoluene	ND	330	1	B5C0628	03/25/2015	03/25/15 14:35	
2,6-Dinitrotoluene	ND	330	1	B5C0628	03/25/2015	03/25/15 14:35	
2-Chloronaphthalene	ND	330	1	B5C0628	03/25/2015	03/25/15 14:35	
2-Chlorophenol	ND	330	1	B5C0628	03/25/2015	03/25/15 14:35	
2-Methylnaphthalene	ND	330	1	B5C0628	03/25/2015	03/25/15 14:35	
2-Methylphenol	ND	330	1	B5C0628	03/25/2015	03/25/15 14:35	
2-Nitroaniline	ND	1600	1	B5C0628	03/25/2015	03/25/15 14:35	
2-Nitrophenol	ND	330	1	B5C0628	03/25/2015	03/25/15 14:35	
3,3´-Dichlorobenzidine	ND	660	1	B5C0628	03/25/2015	03/25/15 14:35	
3-Nitroaniline	ND	1600	1	B5C0628	03/25/2015	03/25/15 14:35	
4,6-Dinitro-2-methyphenol	ND	1600	1	B5C0628	03/25/2015	03/25/15 14:35	
4-Bromophenyl-phenylether	ND	330	1	B5C0628	03/25/2015	03/25/15 14:35	
4-Chloro-3-methylphenol	ND	660	1	B5C0628	03/25/2015	03/25/15 14:35	
4-Chloroaniline	ND	660	1	B5C0628	03/25/2015	03/25/15 14:35	
4-Chlorophenyl-phenylether	ND	330	1	B5C0628	03/25/2015	03/25/15 14:35	
4-Methylphenol	ND	330	1	B5C0628	03/25/2015	03/25/15 14:35	

Certificate of Analysis

Amec Foster Wheeler	Project Number : MTA WESTSIDE, 4953-11-1423
6001 Rickenbacker Road	Report To : Ron Lopez
Los Angeles , CA 90040	Reported : 03/27/2015

Client Sample ID E132C-55

Lab ID: 1501023-04

Semivolatile Organic Compounds by EPA 8270C **Analyst: BD**

Analyte	Result (ug/kg)	PQL (ug/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
4-Nitroaniline	ND	1600	1	B5C0628	03/25/2015	03/25/15 14:35	
4-Nitrophenol	ND	330	1	B5C0628	03/25/2015	03/25/15 14:35	
Acenaphthene	ND	330	1	B5C0628	03/25/2015	03/25/15 14:35	
Acenaphthylene	ND	330	1	B5C0628	03/25/2015	03/25/15 14:35	
Anthracene	ND	330	1	B5C0628	03/25/2015	03/25/15 14:35	
Benzidine (M)	ND	1600	1	B5C0628	03/25/2015	03/25/15 14:35	
Benzo(a)anthracene	ND	330	1	B5C0628	03/25/2015	03/25/15 14:35	
Benzo(a)pyrene	ND	330	1	B5C0628	03/25/2015	03/25/15 14:35	
Benzo(b)fluoranthene	ND	330	1	B5C0628	03/25/2015	03/25/15 14:35	
Benzo(g,h,i)perylene	ND	330	1	B5C0628	03/25/2015	03/25/15 14:35	
Benzo(k)fluoranthene	ND	330	1	B5C0628	03/25/2015	03/25/15 14:35	
Benzoic acid	ND	1600	1	B5C0628	03/25/2015	03/25/15 14:35	
Benzyl alcohol	ND	660	1	B5C0628	03/25/2015	03/25/15 14:35	
bis(2-chloroethoxy)methane	ND	330	1	B5C0628	03/25/2015	03/25/15 14:35	
bis(2-Chloroethyl)ether	ND	330	1	B5C0628	03/25/2015	03/25/15 14:35	
bis(2-chloroisopropyl)ether	ND	330	1	B5C0628	03/25/2015	03/25/15 14:35	
bis(2-ethylhexyl)phthalate	ND	330	1	B5C0628	03/25/2015	03/25/15 14:35	
Butylbenzylphthalate	ND	330	1	B5C0628	03/25/2015	03/25/15 14:35	
Chrysene	ND	330	1	B5C0628	03/25/2015	03/25/15 14:35	
Di-n-butylphthalate	ND	330	1	B5C0628	03/25/2015	03/25/15 14:35	
Di-n-octylphthalate	ND	330	1	B5C0628	03/25/2015	03/25/15 14:35	
Dibenz(a,h)anthracene	ND	330	1	B5C0628	03/25/2015	03/25/15 14:35	
Dibenzofuran	ND	330	1	B5C0628	03/25/2015	03/25/15 14:35	
Diethyl phthalate	ND	330	1	B5C0628	03/25/2015	03/25/15 14:35	
Dimethyl phthalate	ND	330	1	B5C0628	03/25/2015	03/25/15 14:35	
Fluoranthene	ND	330	1	B5C0628	03/25/2015	03/25/15 14:35	
Fluorene	ND	330	1	B5C0628	03/25/2015	03/25/15 14:35	
Hexachlorobenzene	ND	330	1	B5C0628	03/25/2015	03/25/15 14:35	
Hexachlorobutadiene	ND	660	1	B5C0628	03/25/2015	03/25/15 14:35	
Hexachlorocyclopentadiene	ND	660	1	B5C0628	03/25/2015	03/25/15 14:35	
Hexachloroethane	ND	330	1	B5C0628	03/25/2015	03/25/15 14:35	
Indeno(1,2,3-cd)pyrene	ND	330	1	B5C0628	03/25/2015	03/25/15 14:35	
Isophorone	ND	330	1	B5C0628	03/25/2015	03/25/15 14:35	
N-Nitroso-di-n propylamine	ND	330	1	B5C0628	03/25/2015	03/25/15 14:35	
N-Nitrosodiphenylamine	ND	330	1	B5C0628	03/25/2015	03/25/15 14:35	
Naphthalene	ND	330	1	B5C0628	03/25/2015	03/25/15 14:35	
Nitrobenzene	ND	330	1	B5C0628	03/25/2015	03/25/15 14:35	

Certificate of Analysis

Amec Foster Wheeler	Project Number : MTA WESTSIDE, 4953-11-1423
6001 Rickenbacker Road	Report To : Ron Lopez
Los Angeles , CA 90040	Reported : 03/27/2015

Client Sample ID E132C-55

Lab ID: 1501023-04

Semivolatile Organic Compounds by EPA 8270C **Analyst: BD**

Analyte		Result (ug/kg)	PQL (ug/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Pentachlorophenol		ND	1600	1	B5C0628	03/25/2015	03/25/15 14:35	
Phenanthrene		ND	330	1	B5C0628	03/25/2015	03/25/15 14:35	
Phenol		ND	330	1	B5C0628	03/25/2015	03/25/15 14:35	
Pyrene		ND	330	1	B5C0628	03/25/2015	03/25/15 14:35	
Pyridine		ND	1600	1	B5C0628	03/25/2015	03/25/15 14:35	
Surrogate: 1,2-Dichlorobenzene-d4	*52.7 %*		*24 - 114*		B5C0628	03/25/2015	*03/25/15 14:35*	
Surrogate: 2,4,6-Tribromophenol	*77.7 %*		*0 - 189*		B5C0628	03/25/2015	*03/25/15 14:35*	
Surrogate: 2-Chlorophenol-d4	*69.5 %*		*23 - 123*		B5C0628	03/25/2015	*03/25/15 14:35*	
Surrogate: 2-Fluorobiphenyl	*61.5 %*		*28 - 128*		B5C0628	03/25/2015	*03/25/15 14:35*	
Surrogate: 2-Fluorophenol	*67.4 %*		*8 - 138*		B5C0628	03/25/2015	*03/25/15 14:35*	
Surrogate: 4-Terphenyl-d14	*74.4 %*		*27 - 154*		B5C0628	03/25/2015	*03/25/15 14:35*	
Surrogate: Nitrobenzene-d5	*59.7 %*		*19 - 129*		B5C0628	03/25/2015	*03/25/15 14:35*	
Surrogate: Phenol-d5	*72.0 %*		*20 - 126*		B5C0628	03/25/2015	*03/25/15 14:35*	

Certificate of Analysis

Amec Foster Wheeler	Project Number : MTA WESTSIDE, 4953-11-1423
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Client Sample ID E132C-75

Lab ID: 1501023-06

Total Petroleum Hydrocarbons, HEM/SGT EPA 1664 (Modified) — **Analyst: la**

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Total Petroleum Hydrocarbons	ND	50	1	B5C0697	03/27/2015	03/27/15 13:00	

Title 22 Metals by ICP-AES EPA 6010B — **Analyst: RR**

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Antimony	ND	2.0	1	B5C0674	03/26/2015	03/26/15 15:25	
Arsenic	**4.5**	1.0	1	B5C0674	03/26/2015	03/26/15 15:25	
Barium	**26**	1.0	1	B5C0674	03/26/2015	03/26/15 15:25	
Beryllium	ND	1.0	1	B5C0674	03/26/2015	03/26/15 15:25	
Cadmium	ND	1.0	1	B5C0674	03/26/2015	03/26/15 15:25	
Chromium	**13**	1.0	1	B5C0674	03/26/2015	03/26/15 15:25	
Cobalt	**1.8**	1.0	1	B5C0674	03/26/2015	03/26/15 15:25	
Copper	**10**	2.0	1	B5C0674	03/26/2015	03/26/15 15:25	
Lead	**1.3**	1.0	1	B5C0674	03/26/2015	03/26/15 15:25	
Molybdenum	**2.6**	1.0	1	B5C0674	03/26/2015	03/26/15 15:25	
Nickel	**6.6**	1.0	1	B5C0674	03/26/2015	03/26/15 15:25	
Selenium	**11**	1.0	1	B5C0674	03/26/2015	03/26/15 15:25	
Silver	ND	1.0	1	B5C0674	03/26/2015	03/26/15 15:25	
Thallium	ND	1.0	1	B5C0674	03/26/2015	03/26/15 15:25	
Vanadium	**13**	1.0	1	B5C0674	03/26/2015	03/26/15 15:25	
Zinc	**19**	1.0	1	B5C0674	03/26/2015	03/26/15 15:25	

Mercury by AA (Cold Vapor) EPA 7471A — **Analyst: SB**

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Mercury	ND	0.10	1	B5C0675	03/26/2015	03/26/15 14:01	

Gasoline Range Organics by EPA 8015B (Modified) — **Analyst: BT/**

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Gasoline Range Organics	ND	1.0	1	B5C0662	03/20/2015	03/26/15 07:32	
Surrogate: 4-Bromofluorobenzene	*97.5 %*	*37 - 153*		B5C0662	03/20/2015	*03/26/15 07:32*	

Certificate of Analysis

Amec Foster Wheeler	Project Number : MTA WESTSIDE, 4953-11-1423
6001 Rickenbacker Road	Report To : Ron Lopez
Los Angeles , CA 90040	Reported : 03/27/2015

Client Sample ID E132C-75

Lab ID: 1501023-06

Diesel Range Organics by EPA 8015B

Analyst: CR

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
DRO	ND	10	1	B5C0582	03/23/2015	03/24/15 10:13	
ORO	ND	10	1	B5C0582	03/23/2015	03/24/15 10:13	
Surrogate: p-Terphenyl	*88.7 %*	*49 - 142*		B5C0582	03/23/2015	*03/24/15 10:13*	

Volatile Organic Compounds by EPA 8260B

Analyst: AG

Analyte	Result (ug/kg)	PQL (ug/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
1,1,1,2-Tetrachloroethane	ND	5.0	1	B5C0557	03/23/2015	03/23/15 19:33	
1,1,1-Trichloroethane	ND	5.0	1	B5C0557	03/23/2015	03/23/15 19:33	
1,1,2,2-Tetrachloroethane	ND	5.0	1	B5C0557	03/23/2015	03/23/15 19:33	
1,1,2-Trichloroethane	ND	5.0	1	B5C0557	03/23/2015	03/23/15 19:33	
1,1-Dichloroethane	ND	5.0	1	B5C0557	03/23/2015	03/23/15 19:33	
1,1-Dichloroethene	ND	5.0	1	B5C0557	03/23/2015	03/23/15 19:33	
1,1-Dichloropropene	ND	5.0	1	B5C0557	03/23/2015	03/23/15 19:33	
1,2,3-Trichloropropane	ND	5.0	1	B5C0557	03/23/2015	03/23/15 19:33	
1,2,3-Trichlorobenzene	ND	5.0	1	B5C0557	03/23/2015	03/23/15 19:33	
1,2,4-Trichlorobenzene	ND	5.0	1	B5C0557	03/23/2015	03/23/15 19:33	
1,2,4-Trimethylbenzene	ND	5.0	1	B5C0557	03/23/2015	03/23/15 19:33	
1,2-Dibromo-3-chloropropane	ND	10	1	B5C0557	03/23/2015	03/23/15 19:33	
1,2-Dibromoethane	ND	5.0	1	B5C0557	03/23/2015	03/23/15 19:33	
1,2-Dichlorobenzene	ND	5.0	1	B5C0557	03/23/2015	03/23/15 19:33	
1,2-Dichloroethane	ND	5.0	1	B5C0557	03/23/2015	03/23/15 19:33	
1,2-Dichloropropane	ND	5.0	1	B5C0557	03/23/2015	03/23/15 19:33	
1,3,5-Trimethylbenzene	ND	5.0	1	B5C0557	03/23/2015	03/23/15 19:33	
1,3-Dichlorobenzene	ND	5.0	1	B5C0557	03/23/2015	03/23/15 19:33	
1,3-Dichloropropane	ND	5.0	1	B5C0557	03/23/2015	03/23/15 19:33	
1,4-Dichlorobenzene	ND	5.0	1	B5C0557	03/23/2015	03/23/15 19:33	
2,2-Dichloropropane	ND	5.0	1	B5C0557	03/23/2015	03/23/15 19:33	
2-Chlorotoluene	ND	5.0	1	B5C0557	03/23/2015	03/23/15 19:33	
4-Chlorotoluene	ND	5.0	1	B5C0557	03/23/2015	03/23/15 19:33	
4-Isopropyltoluene	ND	5.0	1	B5C0557	03/23/2015	03/23/15 19:33	
Benzene	ND	5.0	1	B5C0557	03/23/2015	03/23/15 19:33	
Bromobenzene	ND	5.0	1	B5C0557	03/23/2015	03/23/15 19:33	
Bromochloromethane	ND	5.0	1	B5C0557	03/23/2015	03/23/15 19:33	
Bromodichloromethane	ND	5.0	1	B5C0557	03/23/2015	03/23/15 19:33	
Bromoform	ND	5.0	1	B5C0557	03/23/2015	03/23/15 19:33	

Certificate of Analysis

Amec Foster Wheeler	Project Number : MTA WESTSIDE, 4953-11-1423
6001 Rickenbacker Road	Report To : Ron Lopez
Los Angeles , CA 90040	Reported : 03/27/2015

Client Sample ID E132C-75

Lab ID: 1501023-06

Volatile Organic Compounds by EPA 8260B **Analyst: AG**

Analyte	Result (ug/kg)	PQL (ug/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Bromomethane	ND	5.0	1	B5C0557	03/23/2015	03/23/15 19:33	
Carbon disulfide	ND	5.0	1	B5C0557	03/23/2015	03/23/15 19:33	
Carbon tetrachloride	ND	5.0	1	B5C0557	03/23/2015	03/23/15 19:33	
Chlorobenzene	ND	5.0	1	B5C0557	03/23/2015	03/23/15 19:33	
Chloroethane	ND	5.0	1	B5C0557	03/23/2015	03/23/15 19:33	
Chloroform	ND	5.0	1	B5C0557	03/23/2015	03/23/15 19:33	
Chloromethane	ND	5.0	1	B5C0557	03/23/2015	03/23/15 19:33	
cis-1,2-Dichloroethene	ND	5.0	1	B5C0557	03/23/2015	03/23/15 19:33	
cis-1,3-Dichloropropene	ND	5.0	1	B5C0557	03/23/2015	03/23/15 19:33	
Di-isopropyl ether	ND	5.0	1	B5C0557	03/23/2015	03/23/15 19:33	
Dibromochloromethane	ND	5.0	1	B5C0557	03/23/2015	03/23/15 19:33	
Dibromomethane	ND	5.0	1	B5C0557	03/23/2015	03/23/15 19:33	
Dichlorodifluoromethane	ND	5.0	1	B5C0557	03/23/2015	03/23/15 19:33	
Ethyl Acetate	ND	50	1	B5C0557	03/23/2015	03/23/15 19:33	
Ethyl Ether	ND	50	1	B5C0557	03/23/2015	03/23/15 19:33	
Ethyl tert-butyl ether	ND	5.0	1	B5C0557	03/23/2015	03/23/15 19:33	
Ethylbenzene	ND	5.0	1	B5C0557	03/23/2015	03/23/15 19:33	
Freon-113	ND	5.0	1	B5C0557	03/23/2015	03/23/15 19:33	
Hexachlorobutadiene	ND	5.0	1	B5C0557	03/23/2015	03/23/15 19:33	
Isopropylbenzene	ND	5.0	1	B5C0557	03/23/2015	03/23/15 19:33	
m,p-Xylene	ND	10	1	B5C0557	03/23/2015	03/23/15 19:33	
Methylene chloride	ND	5.0	1	B5C0557	03/23/2015	03/23/15 19:33	
MTBE	ND	5.0	1	B5C0557	03/23/2015	03/23/15 19:33	
n-Butylbenzene	ND	5.0	1	B5C0557	03/23/2015	03/23/15 19:33	
n-Propylbenzene	ND	5.0	1	B5C0557	03/23/2015	03/23/15 19:33	
Naphthalene	ND	5.0	1	B5C0557	03/23/2015	03/23/15 19:33	
o-Xylene	ND	5.0	1	B5C0557	03/23/2015	03/23/15 19:33	
sec-Butylbenzene	ND	5.0	1	B5C0557	03/23/2015	03/23/15 19:33	
Styrene	ND	5.0	1	B5C0557	03/23/2015	03/23/15 19:33	
tert-Amyl methyl ether	ND	5.0	1	B5C0557	03/23/2015	03/23/15 19:33	
tert-Butanol	ND	100	1	B5C0557	03/23/2015	03/23/15 19:33	
tert-Butylbenzene	ND	5.0	1	B5C0557	03/23/2015	03/23/15 19:33	
Tetrachloroethene	ND	5.0	1	B5C0557	03/23/2015	03/23/15 19:33	
Toluene	ND	5.0	1	B5C0557	03/23/2015	03/23/15 19:33	
trans-1,2-Dichloroethene	ND	5.0	1	B5C0557	03/23/2015	03/23/15 19:33	
trans-1,3-Dichloropropene	ND	5.0	1	B5C0557	03/23/2015	03/23/15 19:33	
Trichloroethene	ND	5.0	1	B5C0557	03/23/2015	03/23/15 19:33	

Certificate of Analysis

Amec Foster Wheeler	Project Number : MTA WESTSIDE, 4953-11-1423
6001 Rickenbacker Road	Report To : Ron Lopez
Los Angeles , CA 90040	Reported : 03/27/2015

Client Sample ID E132C-75

Lab ID: 1501023-06

Volatile Organic Compounds by EPA 8260B

Analyst: AG

Analyte	Result (ug/kg)	PQL (ug/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Trichlorofluoromethane	ND	5.0	1	B5C0557	03/23/2015	03/23/15 19:33	
Vinyl acetate	ND	50	1	B5C0557	03/23/2015	03/23/15 19:33	
Vinyl chloride	ND	5.0	1	B5C0557	03/23/2015	03/23/15 19:33	
Surrogate: 1,2-Dichloroethane-d4	*116 %*	*20 - 189*		B5C0557	03/23/2015	*03/23/15 19:33*	
Surrogate: 4-Bromofluorobenzene	*87.4 %*	*20 - 173*		B5C0557	03/23/2015	*03/23/15 19:33*	
Surrogate: Dibromofluoromethane	*115 %*	*26 - 178*		B5C0557	03/23/2015	*03/23/15 19:33*	
Surrogate: Toluene-d8	*97.6 %*	*31 - 166*		B5C0557	03/23/2015	*03/23/15 19:33*	

Semivolatile Organic Compounds by EPA 8270C

Analyst: BD

Analyte	Result (ug/kg)	PQL (ug/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
1,2,4-Trichlorobenzene	ND	330	1	B5C0628	03/25/2015	03/25/15 15:03	
1,2-Dichlorobenzene	ND	330	1	B5C0628	03/25/2015	03/25/15 15:03	
1,3-Dichlorobenzene	ND	330	1	B5C0628	03/25/2015	03/25/15 15:03	
1,4-Dichlorobenzene	ND	330	1	B5C0628	03/25/2015	03/25/15 15:03	
2,4,5-Trichlorophenol	ND	330	1	B5C0628	03/25/2015	03/25/15 15:03	
2,4,6-Trichlorophenol	ND	330	1	B5C0628	03/25/2015	03/25/15 15:03	
2,4-Dichlorophenol	ND	1600	1	B5C0628	03/25/2015	03/25/15 15:03	
2,4-Dimethylphenol	ND	330	1	B5C0628	03/25/2015	03/25/15 15:03	
2,4-Dinitrophenol	ND	1600	1	B5C0628	03/25/2015	03/25/15 15:03	
2,4-Dinitrotoluene	ND	330	1	B5C0628	03/25/2015	03/25/15 15:03	
2,6-Dinitrotoluene	ND	330	1	B5C0628	03/25/2015	03/25/15 15:03	
2-Chloronaphthalene	ND	330	1	B5C0628	03/25/2015	03/25/15 15:03	
2-Chlorophenol	ND	330	1	B5C0628	03/25/2015	03/25/15 15:03	
2-Methylnaphthalene	ND	330	1	B5C0628	03/25/2015	03/25/15 15:03	
2-Methylphenol	ND	330	1	B5C0628	03/25/2015	03/25/15 15:03	
2-Nitroaniline	ND	1600	1	B5C0628	03/25/2015	03/25/15 15:03	
2-Nitrophenol	ND	330	1	B5C0628	03/25/2015	03/25/15 15:03	
3,3´-Dichlorobenzidine	ND	660	1	B5C0628	03/25/2015	03/25/15 15:03	
3-Nitroaniline	ND	1600	1	B5C0628	03/25/2015	03/25/15 15:03	
4,6-Dinitro-2-methyphenol	ND	1600	1	B5C0628	03/25/2015	03/25/15 15:03	
4-Bromophenyl-phenylether	ND	330	1	B5C0628	03/25/2015	03/25/15 15:03	
4-Chloro-3-methylphenol	ND	660	1	B5C0628	03/25/2015	03/25/15 15:03	
4-Chloroaniline	ND	660	1	B5C0628	03/25/2015	03/25/15 15:03	
4-Chlorophenyl-phenylether	ND	330	1	B5C0628	03/25/2015	03/25/15 15:03	
4-Methylphenol	ND	330	1	B5C0628	03/25/2015	03/25/15 15:03	

Certificate of Analysis

Amec Foster Wheeler	Project Number : MTA WESTSIDE, 4953-11-1423
6001 Rickenbacker Road	Report To : Ron Lopez
Los Angeles , CA 90040	Reported : 03/27/2015

Client Sample ID E132C-75

Lab ID: 1501023-06

Semivolatile Organic Compounds by EPA 8270C **Analyst: BD**

Analyte	Result (ug/kg)	PQL (ug/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
4-Nitroaniline	ND	1600	1	B5C0628	03/25/2015	03/25/15 15:03	
4-Nitrophenol	ND	330	1	B5C0628	03/25/2015	03/25/15 15:03	
Acenaphthene	ND	330	1	B5C0628	03/25/2015	03/25/15 15:03	
Acenaphthylene	ND	330	1	B5C0628	03/25/2015	03/25/15 15:03	
Anthracene	ND	330	1	B5C0628	03/25/2015	03/25/15 15:03	
Benzidine (M)	ND	1600	1	B5C0628	03/25/2015	03/25/15 15:03	
Benzo(a)anthracene	ND	330	1	B5C0628	03/25/2015	03/25/15 15:03	
Benzo(a)pyrene	ND	330	1	B5C0628	03/25/2015	03/25/15 15:03	
Benzo(b)fluoranthene	ND	330	1	B5C0628	03/25/2015	03/25/15 15:03	
Benzo(g,h,i)perylene	ND	330	1	B5C0628	03/25/2015	03/25/15 15:03	
Benzo(k)fluoranthene	ND	330	1	B5C0628	03/25/2015	03/25/15 15:03	
Benzoic acid	ND	1600	1	B5C0628	03/25/2015	03/25/15 15:03	
Benzyl alcohol	ND	660	1	B5C0628	03/25/2015	03/25/15 15:03	
bis(2-chloroethoxy)methane	ND	330	1	B5C0628	03/25/2015	03/25/15 15:03	
bis(2-Chloroethyl)ether	ND	330	1	B5C0628	03/25/2015	03/25/15 15:03	
bis(2-chloroisopropyl)ether	ND	330	1	B5C0628	03/25/2015	03/25/15 15:03	
bis(2-ethylhexyl)phthalate	ND	330	1	B5C0628	03/25/2015	03/25/15 15:03	
Butylbenzylphthalate	ND	330	1	B5C0628	03/25/2015	03/25/15 15:03	
Chrysene	ND	330	1	B5C0628	03/25/2015	03/25/15 15:03	
Di-n-butylphthalate	ND	330	1	B5C0628	03/25/2015	03/25/15 15:03	
Di-n-octylphthalate	ND	330	1	B5C0628	03/25/2015	03/25/15 15:03	
Dibenz(a,h)anthracene	ND	330	1	B5C0628	03/25/2015	03/25/15 15:03	
Dibenzofuran	ND	330	1	B5C0628	03/25/2015	03/25/15 15:03	
Diethyl phthalate	ND	330	1	B5C0628	03/25/2015	03/25/15 15:03	
Dimethyl phthalate	ND	330	1	B5C0628	03/25/2015	03/25/15 15:03	
Fluoranthene	ND	330	1	B5C0628	03/25/2015	03/25/15 15:03	
Fluorene	ND	330	1	B5C0628	03/25/2015	03/25/15 15:03	
Hexachlorobenzene	ND	330	1	B5C0628	03/25/2015	03/25/15 15:03	
Hexachlorobutadiene	ND	660	1	B5C0628	03/25/2015	03/25/15 15:03	
Hexachlorocyclopentadiene	ND	660	1	B5C0628	03/25/2015	03/25/15 15:03	
Hexachloroethane	ND	330	1	B5C0628	03/25/2015	03/25/15 15:03	
Indeno(1,2,3-cd)pyrene	ND	330	1	B5C0628	03/25/2015	03/25/15 15:03	
Isophorone	ND	330	1	B5C0628	03/25/2015	03/25/15 15:03	
N-Nitroso-di-n propylamine	ND	330	1	B5C0628	03/25/2015	03/25/15 15:03	
N-Nitrosodiphenylamine	ND	330	1	B5C0628	03/25/2015	03/25/15 15:03	
Naphthalene	ND	330	1	B5C0628	03/25/2015	03/25/15 15:03	
Nitrobenzene	ND	330	1	B5C0628	03/25/2015	03/25/15 15:03	

Certificate of Analysis

Amec Foster Wheeler	Project Number : MTA WESTSIDE, 4953-11-1423
6001 Rickenbacker Road	Report To : Ron Lopez
Los Angeles , CA 90040	Reported : 03/27/2015

Client Sample ID E132C-75

Lab ID: 1501023-06

Semivolatile Organic Compounds by EPA 8270C **Analyst: BD**

Analyte		Result (ug/kg)	PQL (ug/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Pentachlorophenol		ND	1600	1	B5C0628	03/25/2015	03/25/15 15:03	
Phenanthrene		ND	330	1	B5C0628	03/25/2015	03/25/15 15:03	
Phenol		ND	330	1	B5C0628	03/25/2015	03/25/15 15:03	
Pyrene		ND	330	1	B5C0628	03/25/2015	03/25/15 15:03	
Pyridine		ND	1600	1	B5C0628	03/25/2015	03/25/15 15:03	
Surrogate: 1,2-Dichlorobenzene-d4	*54.2 %*		*24 - 114*		B5C0628	03/25/2015	*03/25/15 15:03*	
Surrogate: 2,4,6-Tribromophenol	*72.0 %*		*0 - 189*		B5C0628	03/25/2015	*03/25/15 15:03*	
Surrogate: 2-Chlorophenol-d4	*67.0 %*		*23 - 123*		B5C0628	03/25/2015	*03/25/15 15:03*	
Surrogate: 2-Fluorobiphenyl	*62.6 %*		*28 - 128*		B5C0628	03/25/2015	*03/25/15 15:03*	
Surrogate: 2-Fluorophenol	*64.2 %*		*8 - 138*		B5C0628	03/25/2015	*03/25/15 15:03*	
Surrogate: 4-Terphenyl-d14	*71.5 %*		*27 - 154*		B5C0628	03/25/2015	*03/25/15 15:03*	
Surrogate: Nitrobenzene-d5	*58.2 %*		*19 - 129*		B5C0628	03/25/2015	*03/25/15 15:03*	
Surrogate: Phenol-d5	*68.4 %*		*20 - 126*		B5C0628	03/25/2015	*03/25/15 15:03*	

Figure C-2.224

Certificate of Analysis

Amec Foster Wheeler	Project Number : MTA WESTSIDE, 4953-11-1423
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Client Sample ID E132C-85

Lab ID: 1501023-07

Total Petroleum Hydrocarbons, HEM/SGT EPA 1664 (Modified) — **Analyst: la**

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Total Petroleum Hydrocarbons	ND	50	1	B5C0697	03/27/2015	03/27/15 13:00	

Title 22 Metals by ICP-AES EPA 6010B — **Analyst: RR**

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Antimony	ND	2.0	1	B5C0674	03/26/2015	03/26/15 15:51	
Arsenic	**3.1**	1.0	1	B5C0674	03/26/2015	03/26/15 15:51	
Barium	**14**	1.0	1	B5C0674	03/26/2015	03/26/15 15:51	
Beryllium	ND	1.0	1	B5C0674	03/26/2015	03/26/15 15:51	
Cadmium	ND	1.0	1	B5C0674	03/26/2015	03/26/15 15:51	
Chromium	**25**	1.0	1	B5C0674	03/26/2015	03/26/15 15:51	
Cobalt	**1.2**	1.0	1	B5C0674	03/26/2015	03/26/15 15:51	
Copper	**9.9**	2.0	1	B5C0674	03/26/2015	03/26/15 15:51	
Lead	**1.2**	1.0	1	B5C0674	03/26/2015	03/26/15 15:51	
Molybdenum	**4.7**	1.0	1	B5C0674	03/26/2015	03/26/15 15:51	
Nickel	**5.9**	1.0	1	B5C0674	03/26/2015	03/26/15 15:51	
Selenium	ND	1.0	1	B5C0674	03/26/2015	03/26/15 15:51	
Silver	ND	1.0	1	B5C0674	03/26/2015	03/26/15 15:51	
Thallium	ND	1.0	1	B5C0674	03/26/2015	03/26/15 15:51	
Vanadium	**20**	1.0	1	B5C0674	03/26/2015	03/26/15 15:51	
Zinc	**19**	1.0	1	B5C0674	03/26/2015	03/26/15 15:51	

Mercury by AA (Cold Vapor) EPA 7471A — **Analyst: SB**

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Mercury	ND	0.10	1	B5C0675	03/26/2015	03/26/15 14:07	

Gasoline Range Organics by EPA 8015B (Modified) — **Analyst: BT/**

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Gasoline Range Organics	ND	1.0	1	B5C0668	03/20/2015	03/26/15 16:41	
Surrogate: 4-Bromofluorobenzene	*95.5 %*	*37 - 153*		B5C0668	03/20/2015	*03/26/15 16:41*	

Certificate of Analysis

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Client Sample ID E132C-85

Lab ID: 1501023-07

Diesel Range Organics by EPA 8015B

Analyst: CR

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
DRO	ND	10	1	B5C0582	03/23/2015	03/24/15 09:56	
ORO	ND	10	1	B5C0582	03/23/2015	03/24/15 09:56	
Surrogate: p-Terphenyl	*85.4 %*	*49 - 142*		B5C0582	03/23/2015	*03/24/15 09:56*	

Volatile Organic Compounds by EPA 8260B

Analyst: AG

Analyte	Result (ug/kg)	PQL (ug/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
1,1,1,2-Tetrachloroethane	ND	5.0	1	B5C0557	03/23/2015	03/23/15 19:52	
1,1,1-Trichloroethane	ND	5.0	1	B5C0557	03/23/2015	03/23/15 19:52	
1,1,2,2-Tetrachloroethane	ND	5.0	1	B5C0557	03/23/2015	03/23/15 19:52	
1,1,2-Trichloroethane	ND	5.0	1	B5C0557	03/23/2015	03/23/15 19:52	
1,1-Dichloroethane	ND	5.0	1	B5C0557	03/23/2015	03/23/15 19:52	
1,1-Dichloroethene	ND	5.0	1	B5C0557	03/23/2015	03/23/15 19:52	
1,1-Dichloropropene	ND	5.0	1	B5C0557	03/23/2015	03/23/15 19:52	
1,2,3-Trichloropropane	ND	5.0	1	B5C0557	03/23/2015	03/23/15 19:52	
1,2,3-Trichlorobenzene	ND	5.0	1	B5C0557	03/23/2015	03/23/15 19:52	
1,2,4-Trichlorobenzene	ND	5.0	1	B5C0557	03/23/2015	03/23/15 19:52	
1,2,4-Trimethylbenzene	ND	5.0	1	B5C0557	03/23/2015	03/23/15 19:52	
1,2-Dibromo-3-chloropropane	ND	10	1	B5C0557	03/23/2015	03/23/15 19:52	
1,2-Dibromoethane	ND	5.0	1	B5C0557	03/23/2015	03/23/15 19:52	
1,2-Dichlorobenzene	ND	5.0	1	B5C0557	03/23/2015	03/23/15 19:52	
1,2-Dichloroethane	ND	5.0	1	B5C0557	03/23/2015	03/23/15 19:52	
1,2-Dichloropropane	ND	5.0	1	B5C0557	03/23/2015	03/23/15 19:52	
1,3,5-Trimethylbenzene	ND	5.0	1	B5C0557	03/23/2015	03/23/15 19:52	
1,3-Dichlorobenzene	ND	5.0	1	B5C0557	03/23/2015	03/23/15 19:52	
1,3-Dichloropropane	ND	5.0	1	B5C0557	03/23/2015	03/23/15 19:52	
1,4-Dichlorobenzene	ND	5.0	1	B5C0557	03/23/2015	03/23/15 19:52	
2,2-Dichloropropane	ND	5.0	1	B5C0557	03/23/2015	03/23/15 19:52	
2-Chlorotoluene	ND	5.0	1	B5C0557	03/23/2015	03/23/15 19:52	
4-Chlorotoluene	ND	5.0	1	B5C0557	03/23/2015	03/23/15 19:52	
4-Isopropyltoluene	ND	5.0	1	B5C0557	03/23/2015	03/23/15 19:52	
Benzene	ND	5.0	1	B5C0557	03/23/2015	03/23/15 19:52	
Bromobenzene	ND	5.0	1	B5C0557	03/23/2015	03/23/15 19:52	
Bromochloromethane	ND	5.0	1	B5C0557	03/23/2015	03/23/15 19:52	
Bromodichloromethane	ND	5.0	1	B5C0557	03/23/2015	03/23/15 19:52	
Bromoform	ND	5.0	1	B5C0557	03/23/2015	03/23/15 19:52	

Certificate of Analysis

Amec Foster Wheeler	Project Number : MTA WESTSIDE, 4953-11-1423
6001 Rickenbacker Road	Report To : Ron Lopez
Los Angeles , CA 90040	Reported : 03/27/2015

Client Sample ID E132C-85

Lab ID: 1501023-07

Volatile Organic Compounds by EPA 8260B **Analyst: AG**

Analyte	Result (ug/kg)	PQL (ug/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Bromomethane	ND	5.0	1	B5C0557	03/23/2015	03/23/15 19:52	
Carbon disulfide	ND	5.0	1	B5C0557	03/23/2015	03/23/15 19:52	
Carbon tetrachloride	ND	5.0	1	B5C0557	03/23/2015	03/23/15 19:52	
Chlorobenzene	ND	5.0	1	B5C0557	03/23/2015	03/23/15 19:52	
Chloroethane	ND	5.0	1	B5C0557	03/23/2015	03/23/15 19:52	
Chloroform	ND	5.0	1	B5C0557	03/23/2015	03/23/15 19:52	
Chloromethane	ND	5.0	1	B5C0557	03/23/2015	03/23/15 19:52	
cis-1,2-Dichloroethene	ND	5.0	1	B5C0557	03/23/2015	03/23/15 19:52	
cis-1,3-Dichloropropene	ND	5.0	1	B5C0557	03/23/2015	03/23/15 19:52	
Di-isopropyl ether	ND	5.0	1	B5C0557	03/23/2015	03/23/15 19:52	
Dibromochloromethane	ND	5.0	1	B5C0557	03/23/2015	03/23/15 19:52	
Dibromomethane	ND	5.0	1	B5C0557	03/23/2015	03/23/15 19:52	
Dichlorodifluoromethane	ND	5.0	1	B5C0557	03/23/2015	03/23/15 19:52	
Ethyl Acetate	ND	50	1	B5C0557	03/23/2015	03/23/15 19:52	
Ethyl Ether	ND	50	1	B5C0557	03/23/2015	03/23/15 19:52	
Ethyl tert-butyl ether	ND	5.0	1	B5C0557	03/23/2015	03/23/15 19:52	
Ethylbenzene	ND	5.0	1	B5C0557	03/23/2015	03/23/15 19:52	
Freon-113	ND	5.0	1	B5C0557	03/23/2015	03/23/15 19:52	
Hexachlorobutadiene	ND	5.0	1	B5C0557	03/23/2015	03/23/15 19:52	
Isopropylbenzene	ND	5.0	1	B5C0557	03/23/2015	03/23/15 19:52	
m,p-Xylene	ND	10	1	B5C0557	03/23/2015	03/23/15 19:52	
Methylene chloride	ND	5.0	1	B5C0557	03/23/2015	03/23/15 19:52	
MTBE	ND	5.0	1	B5C0557	03/23/2015	03/23/15 19:52	
n-Butylbenzene	ND	5.0	1	B5C0557	03/23/2015	03/23/15 19:52	
n-Propylbenzene	ND	5.0	1	B5C0557	03/23/2015	03/23/15 19:52	
Naphthalene	ND	5.0	1	B5C0557	03/23/2015	03/23/15 19:52	
o-Xylene	ND	5.0	1	B5C0557	03/23/2015	03/23/15 19:52	
sec-Butylbenzene	ND	5.0	1	B5C0557	03/23/2015	03/23/15 19:52	
Styrene	ND	5.0	1	B5C0557	03/23/2015	03/23/15 19:52	
tert-Amyl methyl ether	ND	5.0	1	B5C0557	03/23/2015	03/23/15 19:52	
tert-Butanol	ND	100	1	B5C0557	03/23/2015	03/23/15 19:52	
tert-Butylbenzene	ND	5.0	1	B5C0557	03/23/2015	03/23/15 19:52	
Tetrachloroethene	ND	5.0	1	B5C0557	03/23/2015	03/23/15 19:52	
Toluene	ND	5.0	1	B5C0557	03/23/2015	03/23/15 19:52	
trans-1,2-Dichloroethene	ND	5.0	1	B5C0557	03/23/2015	03/23/15 19:52	
trans-1,3-Dichloropropene	ND	5.0	1	B5C0557	03/23/2015	03/23/15 19:52	
Trichloroethene	ND	5.0	1	B5C0557	03/23/2015	03/23/15 19:52	

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Client Sample ID E132C-85

Lab ID: 1501023-07

Volatile Organic Compounds by EPA 8260B

Analyst: AG

Analyte	Result (ug/kg)	PQL (ug/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Trichlorofluoromethane	ND	5.0	1	B5C0557	03/23/2015	03/23/15 19:52	
Vinyl acetate	ND	50	1	B5C0557	03/23/2015	03/23/15 19:52	
Vinyl chloride	ND	5.0	1	B5C0557	03/23/2015	03/23/15 19:52	
Surrogate: 1,2-Dichloroethane-d4	*111 %*	*20 - 189*		B5C0557	03/23/2015	*03/23/15 19:52*	
Surrogate: 4-Bromofluorobenzene	*90.0 %*	*20 - 173*		B5C0557	03/23/2015	*03/23/15 19:52*	
Surrogate: Dibromofluoromethane	*120 %*	*26 - 178*		B5C0557	03/23/2015	*03/23/15 19:52*	
Surrogate: Toluene-d8	*101 %*	*31 - 166*		B5C0557	03/23/2015	*03/23/15 19:52*	

Semivolatile Organic Compounds by EPA 8270C

Analyst: BD

Analyte	Result (ug/kg)	PQL (ug/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
1,2,4-Trichlorobenzene	ND	330	1	B5C0628	03/25/2015	03/25/15 15:31	
1,2-Dichlorobenzene	ND	330	1	B5C0628	03/25/2015	03/25/15 15:31	
1,3-Dichlorobenzene	ND	330	1	B5C0628	03/25/2015	03/25/15 15:31	
1,4-Dichlorobenzene	ND	330	1	B5C0628	03/25/2015	03/25/15 15:31	
2,4,5-Trichlorophenol	ND	330	1	B5C0628	03/25/2015	03/25/15 15:31	
2,4,6-Trichlorophenol	ND	330	1	B5C0628	03/25/2015	03/25/15 15:31	
2,4-Dichlorophenol	ND	1600	1	B5C0628	03/25/2015	03/25/15 15:31	
2,4-Dimethylphenol	ND	330	1	B5C0628	03/25/2015	03/25/15 15:31	
2,4-Dinitrophenol	ND	1600	1	B5C0628	03/25/2015	03/25/15 15:31	
2,4-Dinitrotoluene	ND	330	1	B5C0628	03/25/2015	03/25/15 15:31	
2,6-Dinitrotoluene	ND	330	1	B5C0628	03/25/2015	03/25/15 15:31	
2-Chloronaphthalene	ND	330	1	B5C0628	03/25/2015	03/25/15 15:31	
2-Chlorophenol	ND	330	1	B5C0628	03/25/2015	03/25/15 15:31	
2-Methylnaphthalene	ND	330	1	B5C0628	03/25/2015	03/25/15 15:31	
2-Methylphenol	ND	330	1	B5C0628	03/25/2015	03/25/15 15:31	
2-Nitroaniline	ND	1600	1	B5C0628	03/25/2015	03/25/15 15:31	
2-Nitrophenol	ND	330	1	B5C0628	03/25/2015	03/25/15 15:31	
3,3´-Dichlorobenzidine	ND	660	1	B5C0628	03/25/2015	03/25/15 15:31	
3-Nitroaniline	ND	1600	1	B5C0628	03/25/2015	03/25/15 15:31	
4,6-Dinitro-2-methyphenol	ND	1600	1	B5C0628	03/25/2015	03/25/15 15:31	
4-Bromophenyl-phenylether	ND	330	1	B5C0628	03/25/2015	03/25/15 15:31	
4-Chloro-3-methylphenol	ND	660	1	B5C0628	03/25/2015	03/25/15 15:31	
4-Chloroaniline	ND	660	1	B5C0628	03/25/2015	03/25/15 15:31	
4-Chlorophenyl-phenylether	ND	330	1	B5C0628	03/25/2015	03/25/15 15:31	
4-Methylphenol	ND	330	1	B5C0628	03/25/2015	03/25/15 15:31	

Figure C-2.228

Certificate of Analysis

Amec Foster Wheeler	Project Number : MTA WESTSIDE, 4953-11-1423
6001 Rickenbacker Road	Report To : Ron Lopez
Los Angeles , CA 90040	Reported : 03/27/2015

Client Sample ID E132C-85

Lab ID: 1501023-07

Semivolatile Organic Compounds by EPA 8270C **Analyst: BD**

Analyte	Result (ug/kg)	PQL (ug/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
4-Nitroaniline	ND	1600	1	B5C0628	03/25/2015	03/25/15 15:31	
4-Nitrophenol	ND	330	1	B5C0628	03/25/2015	03/25/15 15:31	
Acenaphthene	ND	330	1	B5C0628	03/25/2015	03/25/15 15:31	
Acenaphthylene	ND	330	1	B5C0628	03/25/2015	03/25/15 15:31	
Anthracene	ND	330	1	B5C0628	03/25/2015	03/25/15 15:31	
Benzidine (M)	ND	1600	1	B5C0628	03/25/2015	03/25/15 15:31	
Benzo(a)anthracene	ND	330	1	B5C0628	03/25/2015	03/25/15 15:31	
Benzo(a)pyrene	ND	330	1	B5C0628	03/25/2015	03/25/15 15:31	
Benzo(b)fluoranthene	ND	330	1	B5C0628	03/25/2015	03/25/15 15:31	
Benzo(g,h,i)perylene	ND	330	1	B5C0628	03/25/2015	03/25/15 15:31	
Benzo(k)fluoranthene	ND	330	1	B5C0628	03/25/2015	03/25/15 15:31	
Benzoic acid	ND	1600	1	B5C0628	03/25/2015	03/25/15 15:31	
Benzyl alcohol	ND	660	1	B5C0628	03/25/2015	03/25/15 15:31	
bis(2-chloroethoxy)methane	ND	330	1	B5C0628	03/25/2015	03/25/15 15:31	
bis(2-Chloroethyl)ether	ND	330	1	B5C0628	03/25/2015	03/25/15 15:31	
bis(2-chloroisopropyl)ether	ND	330	1	B5C0628	03/25/2015	03/25/15 15:31	
bis(2-ethylhexyl)phthalate	ND	330	1	B5C0628	03/25/2015	03/25/15 15:31	
Butylbenzylphthalate	ND	330	1	B5C0628	03/25/2015	03/25/15 15:31	
Chrysene	ND	330	1	B5C0628	03/25/2015	03/25/15 15:31	
Di-n-butylphthalate	ND	330	1	B5C0628	03/25/2015	03/25/15 15:31	
Di-n-octylphthalate	ND	330	1	B5C0628	03/25/2015	03/25/15 15:31	
Dibenz(a,h)anthracene	ND	330	1	B5C0628	03/25/2015	03/25/15 15:31	
Dibenzofuran	ND	330	1	B5C0628	03/25/2015	03/25/15 15:31	
Diethyl phthalate	ND	330	1	B5C0628	03/25/2015	03/25/15 15:31	
Dimethyl phthalate	ND	330	1	B5C0628	03/25/2015	03/25/15 15:31	
Fluoranthene	ND	330	1	B5C0628	03/25/2015	03/25/15 15:31	
Fluorene	ND	330	1	B5C0628	03/25/2015	03/25/15 15:31	
Hexachlorobenzene	ND	330	1	B5C0628	03/25/2015	03/25/15 15:31	
Hexachlorobutadiene	ND	660	1	B5C0628	03/25/2015	03/25/15 15:31	
Hexachlorocyclopentadiene	ND	660	1	B5C0628	03/25/2015	03/25/15 15:31	
Hexachloroethane	ND	330	1	B5C0628	03/25/2015	03/25/15 15:31	
Indeno(1,2,3-cd)pyrene	ND	330	1	B5C0628	03/25/2015	03/25/15 15:31	
Isophorone	ND	330	1	B5C0628	03/25/2015	03/25/15 15:31	
N-Nitroso-di-n propylamine	ND	330	1	B5C0628	03/25/2015	03/25/15 15:31	
N-Nitrosodiphenylamine	ND	330	1	B5C0628	03/25/2015	03/25/15 15:31	
Naphthalene	ND	330	1	B5C0628	03/25/2015	03/25/15 15:31	
Nitrobenzene	ND	330	1	B5C0628	03/25/2015	03/25/15 15:31	

Certificate of Analysis

Amec Foster Wheeler	Project Number : MTA WESTSIDE, 4953-11-1423
6001 Rickenbacker Road	Report To : Ron Lopez
Los Angeles , CA 90040	Reported : 03/27/2015

Client Sample ID E132C-85

Lab ID: 1501023-07

Semivolatile Organic Compounds by EPA 8270C **Analyst: BD**

Analyte		Result (ug/kg)	PQL (ug/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Pentachlorophenol		ND	1600	1	B5C0628	03/25/2015	03/25/15 15:31	
Phenanthrene		ND	330	1	B5C0628	03/25/2015	03/25/15 15:31	
Phenol		ND	330	1	B5C0628	03/25/2015	03/25/15 15:31	
Pyrene		ND	330	1	B5C0628	03/25/2015	03/25/15 15:31	
Pyridine		ND	1600	1	B5C0628	03/25/2015	03/25/15 15:31	
Surrogate: 1,2-Dichlorobenzene-d4	*53.3 %*		*24 - 114*		B5C0628	03/25/2015	*03/25/15 15:31*	
Surrogate: 2,4,6-Tribromophenol	*71.7 %*		*0 - 189*		B5C0628	03/25/2015	*03/25/15 15:31*	
Surrogate: 2-Chlorophenol-d4	*64.6 %*		*23 - 123*		B5C0628	03/25/2015	*03/25/15 15:31*	
Surrogate: 2-Fluorobiphenyl	*62.1 %*		*28 - 128*		B5C0628	03/25/2015	*03/25/15 15:31*	
Surrogate: 2-Fluorophenol	*62.2 %*		*8 - 138*		B5C0628	03/25/2015	*03/25/15 15:31*	
Surrogate: 4-Terphenyl-d14	*72.6 %*		*27 - 154*		B5C0628	03/25/2015	*03/25/15 15:31*	
Surrogate: Nitrobenzene-d5	*57.2 %*		*19 - 129*		B5C0628	03/25/2015	*03/25/15 15:31*	
Surrogate: Phenol-d5	*66.5 %*		*20 - 126*		B5C0628	03/25/2015	*03/25/15 15:31*	

Certificate of Analysis

Amec Foster Wheeler	Project Number : MTA WESTSIDE, 4953-11-1423
6001 Rickenbacker Road	Report To : Ron Lopez
Los Angeles , CA 90040	Reported : 03/27/2015

Client Sample ID E132C-95

Lab ID: 1501023-08

Total Petroleum Hydrocarbons, HEM/SGT EPA 1664 (Modified) — **Analyst: la**

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Total Petroleum Hydrocarbons	ND	50	1	B5C0697	03/27/2015	03/27/15 13:00	

Title 22 Metals by ICP-AES EPA 6010B — **Analyst: RR**

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Antimony	ND	2.0	1	B5C0674	03/26/2015	03/26/15 15:53	
Arsenic	ND	1.0	1	B5C0674	03/26/2015	03/26/15 15:53	
Barium	**61**	1.0	1	B5C0674	03/26/2015	03/26/15 15:53	
Beryllium	ND	1.0	1	B5C0674	03/26/2015	03/26/15 15:53	
Cadmium	ND	1.0	1	B5C0674	03/26/2015	03/26/15 15:53	
Chromium	**41**	1.0	1	B5C0674	03/26/2015	03/26/15 15:53	
Cobalt	**6.3**	1.0	1	B5C0674	03/26/2015	03/26/15 15:53	
Copper	**26**	2.0	1	B5C0674	03/26/2015	03/26/15 15:53	
Lead	**1.6**	1.0	1	B5C0674	03/26/2015	03/26/15 15:53	
Molybdenum	ND	1.0	1	B5C0674	03/26/2015	03/26/15 15:53	
Nickel	**23**	1.0	1	B5C0674	03/26/2015	03/26/15 15:53	
Selenium	ND	1.0	1	B5C0674	03/26/2015	03/26/15 15:53	
Silver	ND	1.0	1	B5C0674	03/26/2015	03/26/15 15:53	
Thallium	ND	1.0	1	B5C0674	03/26/2015	03/26/15 15:53	
Vanadium	**52**	1.0	1	B5C0674	03/26/2015	03/26/15 15:53	
Zinc	**36**	1.0	1	B5C0674	03/26/2015	03/26/15 15:53	

Mercury by AA (Cold Vapor) EPA 7471A — **Analyst: SB**

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Mercury	ND	0.10	1	B5C0675	03/26/2015	03/26/15 14:08	

Gasoline Range Organics by EPA 8015B (Modified) — **Analyst: BT/**

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Gasoline Range Organics	ND	1.0	1	B5C0668	03/20/2015	03/26/15 16:56	
Surrogate: 4-Bromofluorobenzene	*93.1 %*	*37 - 153*		B5C0668	03/20/2015	*03/26/15 16:56*	

Certificate of Analysis

Amec Foster Wheeler	Project Number : MTA WESTSIDE, 4953-11-1423
6001 Rickenbacker Road	Report To : Ron Lopez
Los Angeles , CA 90040	Reported : 03/27/2015

Client Sample ID E132C-95

Lab ID: 1501023-08

Diesel Range Organics by EPA 8015B

Analyst: CR

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
DRO	ND	10	1	B5C0582	03/23/2015	03/24/15 08:49	
ORO	ND	10	1	B5C0582	03/23/2015	03/24/15 08:49	
Surrogate: p-Terphenyl	*88.9 %*	*49 - 142*		B5C0582	03/23/2015	*03/24/15 08:49*	

Volatile Organic Compounds by EPA 8260B

Analyst: AG

Analyte	Result (ug/kg)	PQL (ug/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
1,1,1,2-Tetrachloroethane	ND	5.0	1	B5C0557	03/23/2015	03/23/15 20:10	
1,1,1-Trichloroethane	ND	5.0	1	B5C0557	03/23/2015	03/23/15 20:10	
1,1,2,2-Tetrachloroethane	ND	5.0	1	B5C0557	03/23/2015	03/23/15 20:10	
1,1,2-Trichloroethane	ND	5.0	1	B5C0557	03/23/2015	03/23/15 20:10	
1,1-Dichloroethane	ND	5.0	1	B5C0557	03/23/2015	03/23/15 20:10	
1,1-Dichloroethene	ND	5.0	1	B5C0557	03/23/2015	03/23/15 20:10	
1,1-Dichloropropene	ND	5.0	1	B5C0557	03/23/2015	03/23/15 20:10	
1,2,3-Trichloropropane	ND	5.0	1	B5C0557	03/23/2015	03/23/15 20:10	
1,2,3-Trichlorobenzene	ND	5.0	1	B5C0557	03/23/2015	03/23/15 20:10	
1,2,4-Trichlorobenzene	ND	5.0	1	B5C0557	03/23/2015	03/23/15 20:10	
1,2,4-Trimethylbenzene	ND	5.0	1	B5C0557	03/23/2015	03/23/15 20:10	
1,2-Dibromo-3-chloropropane	ND	10	1	B5C0557	03/23/2015	03/23/15 20:10	
1,2-Dibromoethane	ND	5.0	1	B5C0557	03/23/2015	03/23/15 20:10	
1,2-Dichlorobenzene	ND	5.0	1	B5C0557	03/23/2015	03/23/15 20:10	
1,2-Dichloroethane	ND	5.0	1	B5C0557	03/23/2015	03/23/15 20:10	
1,2-Dichloropropane	ND	5.0	1	B5C0557	03/23/2015	03/23/15 20:10	
1,3,5-Trimethylbenzene	ND	5.0	1	B5C0557	03/23/2015	03/23/15 20:10	
1,3-Dichlorobenzene	ND	5.0	1	B5C0557	03/23/2015	03/23/15 20:10	
1,3-Dichloropropane	ND	5.0	1	B5C0557	03/23/2015	03/23/15 20:10	
1,4-Dichlorobenzene	ND	5.0	1	B5C0557	03/23/2015	03/23/15 20:10	
2,2-Dichloropropane	ND	5.0	1	B5C0557	03/23/2015	03/23/15 20:10	
2-Chlorotoluene	ND	5.0	1	B5C0557	03/23/2015	03/23/15 20:10	
4-Chlorotoluene	ND	5.0	1	B5C0557	03/23/2015	03/23/15 20:10	
4-Isopropyltoluene	ND	5.0	1	B5C0557	03/23/2015	03/23/15 20:10	
Benzene	ND	5.0	1	B5C0557	03/23/2015	03/23/15 20:10	
Bromobenzene	ND	5.0	1	B5C0557	03/23/2015	03/23/15 20:10	
Bromochloromethane	ND	5.0	1	B5C0557	03/23/2015	03/23/15 20:10	
Bromodichloromethane	ND	5.0	1	B5C0557	03/23/2015	03/23/15 20:10	
Bromoform	ND	5.0	1	B5C0557	03/23/2015	03/23/15 20:10	

Figure C-2.232

Certificate of Analysis

Amec Foster Wheeler	Project Number : MTA WESTSIDE, 4953-11-1423
6001 Rickenbacker Road	Report To : Ron Lopez
Los Angeles , CA 90040	Reported : 03/27/2015

Client Sample ID E132C-95

Lab ID: 1501023-08

Volatile Organic Compounds by EPA 8260B **Analyst: AG**

Analyte	Result (ug/kg)	PQL (ug/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Bromomethane	ND	5.0	1	B5C0557	03/23/2015	03/23/15 20:10	
Carbon disulfide	ND	5.0	1	B5C0557	03/23/2015	03/23/15 20:10	
Carbon tetrachloride	ND	5.0	1	B5C0557	03/23/2015	03/23/15 20:10	
Chlorobenzene	ND	5.0	1	B5C0557	03/23/2015	03/23/15 20:10	
Chloroethane	ND	5.0	1	B5C0557	03/23/2015	03/23/15 20:10	
Chloroform	ND	5.0	1	B5C0557	03/23/2015	03/23/15 20:10	
Chloromethane	ND	5.0	1	B5C0557	03/23/2015	03/23/15 20:10	
cis-1,2-Dichloroethene	ND	5.0	1	B5C0557	03/23/2015	03/23/15 20:10	
cis-1,3-Dichloropropene	ND	5.0	1	B5C0557	03/23/2015	03/23/15 20:10	
Di-isopropyl ether	ND	5.0	1	B5C0557	03/23/2015	03/23/15 20:10	
Dibromochloromethane	ND	5.0	1	B5C0557	03/23/2015	03/23/15 20:10	
Dibromomethane	ND	5.0	1	B5C0557	03/23/2015	03/23/15 20:10	
Dichlorodifluoromethane	ND	5.0	1	B5C0557	03/23/2015	03/23/15 20:10	
Ethyl Acetate	ND	50	1	B5C0557	03/23/2015	03/23/15 20:10	
Ethyl Ether	ND	50	1	B5C0557	03/23/2015	03/23/15 20:10	
Ethyl tert-butyl ether	ND	5.0	1	B5C0557	03/23/2015	03/23/15 20:10	
Ethylbenzene	ND	5.0	1	B5C0557	03/23/2015	03/23/15 20:10	
Freon-113	ND	5.0	1	B5C0557	03/23/2015	03/23/15 20:10	
Hexachlorobutadiene	ND	5.0	1	B5C0557	03/23/2015	03/23/15 20:10	
Isopropylbenzene	ND	5.0	1	B5C0557	03/23/2015	03/23/15 20:10	
m,p-Xylene	ND	10	1	B5C0557	03/23/2015	03/23/15 20:10	
Methylene chloride	ND	5.0	1	B5C0557	03/23/2015	03/23/15 20:10	
MTBE	ND	5.0	1	B5C0557	03/23/2015	03/23/15 20:10	
n-Butylbenzene	ND	5.0	1	B5C0557	03/23/2015	03/23/15 20:10	
n-Propylbenzene	ND	5.0	1	B5C0557	03/23/2015	03/23/15 20:10	
Naphthalene	ND	5.0	1	B5C0557	03/23/2015	03/23/15 20:10	
o-Xylene	ND	5.0	1	B5C0557	03/23/2015	03/23/15 20:10	
sec-Butylbenzene	ND	5.0	1	B5C0557	03/23/2015	03/23/15 20:10	
Styrene	ND	5.0	1	B5C0557	03/23/2015	03/23/15 20:10	
tert-Amyl methyl ether	ND	5.0	1	B5C0557	03/23/2015	03/23/15 20:10	
tert-Butanol	ND	100	1	B5C0557	03/23/2015	03/23/15 20:10	
tert-Butylbenzene	ND	5.0	1	B5C0557	03/23/2015	03/23/15 20:10	
Tetrachloroethene	ND	5.0	1	B5C0557	03/23/2015	03/23/15 20:10	
Toluene	ND	5.0	1	B5C0557	03/23/2015	03/23/15 20:10	
trans-1,2-Dichloroethene	ND	5.0	1	B5C0557	03/23/2015	03/23/15 20:10	
trans-1,3-Dichloropropene	ND	5.0	1	B5C0557	03/23/2015	03/23/15 20:10	
Trichloroethene	ND	5.0	1	B5C0557	03/23/2015	03/23/15 20:10	

Figure C-2.233

Certificate of Analysis

Amec Foster Wheeler	Project Number : MTA WESTSIDE, 4953-11-1423
6001 Rickenbacker Road	Report To : Ron Lopez
Los Angeles , CA 90040	Reported : 03/27/2015

Client Sample ID E132C-95

Lab ID: 1501023-08

Volatile Organic Compounds by EPA 8260B

Analyst: AG

Analyte	Result (ug/kg)	PQL (ug/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Trichlorofluoromethane	ND	5.0	1	B5C0557	03/23/2015	03/23/15 20:10	
Vinyl acetate	ND	50	1	B5C0557	03/23/2015	03/23/15 20:10	
Vinyl chloride	ND	5.0	1	B5C0557	03/23/2015	03/23/15 20:10	
Surrogate: 1,2-Dichloroethane-d4	*119 %*	*20 - 189*		B5C0557	03/23/2015	*03/23/15 20:10*	
Surrogate: 4-Bromofluorobenzene	*88.6 %*	*20 - 173*		B5C0557	03/23/2015	*03/23/15 20:10*	
Surrogate: Dibromofluoromethane	*124 %*	*26 - 178*		B5C0557	03/23/2015	*03/23/15 20:10*	
Surrogate: Toluene-d8	*105 %*	*31 - 166*		B5C0557	03/23/2015	*03/23/15 20:10*	

Semivolatile Organic Compounds by EPA 8270C

Analyst: BD

Analyte	Result (ug/kg)	PQL (ug/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
1,2,4-Trichlorobenzene	ND	330	1	B5C0628	03/25/2015	03/25/15 15:58	
1,2-Dichlorobenzene	ND	330	1	B5C0628	03/25/2015	03/25/15 15:58	
1,3-Dichlorobenzene	ND	330	1	B5C0628	03/25/2015	03/25/15 15:58	
1,4-Dichlorobenzene	ND	330	1	B5C0628	03/25/2015	03/25/15 15:58	
2,4,5-Trichlorophenol	ND	330	1	B5C0628	03/25/2015	03/25/15 15:58	
2,4,6-Trichlorophenol	ND	330	1	B5C0628	03/25/2015	03/25/15 15:58	
2,4-Dichlorophenol	ND	1600	1	B5C0628	03/25/2015	03/25/15 15:58	
2,4-Dimethylphenol	ND	330	1	B5C0628	03/25/2015	03/25/15 15:58	
2,4-Dinitrophenol	ND	1600	1	B5C0628	03/25/2015	03/25/15 15:58	
2,4-Dinitrotoluene	ND	330	1	B5C0628	03/25/2015	03/25/15 15:58	
2,6-Dinitrotoluene	ND	330	1	B5C0628	03/25/2015	03/25/15 15:58	
2-Chloronaphthalene	ND	330	1	B5C0628	03/25/2015	03/25/15 15:58	
2-Chlorophenol	ND	330	1	B5C0628	03/25/2015	03/25/15 15:58	
2-Methylnaphthalene	ND	330	1	B5C0628	03/25/2015	03/25/15 15:58	
2-Methylphenol	ND	330	1	B5C0628	03/25/2015	03/25/15 15:58	
2-Nitroaniline	ND	1600	1	B5C0628	03/25/2015	03/25/15 15:58	
2-Nitrophenol	ND	330	1	B5C0628	03/25/2015	03/25/15 15:58	
3,3´-Dichlorobenzidine	ND	660	1	B5C0628	03/25/2015	03/25/15 15:58	
3-Nitroaniline	ND	1600	1	B5C0628	03/25/2015	03/25/15 15:58	
4,6-Dinitro-2-methyphenol	ND	1600	1	B5C0628	03/25/2015	03/25/15 15:58	
4-Bromophenyl-phenylether	ND	330	1	B5C0628	03/25/2015	03/25/15 15:58	
4-Chloro-3-methylphenol	ND	660	1	B5C0628	03/25/2015	03/25/15 15:58	
4-Chloroaniline	ND	660	1	B5C0628	03/25/2015	03/25/15 15:58	
4-Chlorophenyl-phenylether	ND	330	1	B5C0628	03/25/2015	03/25/15 15:58	
4-Methylphenol	ND	330	1	B5C0628	03/25/2015	03/25/15 15:58	

Certificate of Analysis

Amec Foster Wheeler	Project Number : MTA WESTSIDE, 4953-11-1423
6001 Rickenbacker Road	Report To : Ron Lopez
Los Angeles , CA 90040	Reported : 03/27/2015

Client Sample ID E132C-95

Lab ID: 1501023-08

Semivolatile Organic Compounds by EPA 8270C **Analyst: BD**

Analyte	Result (ug/kg)	PQL (ug/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
4-Nitroaniline	ND	1600	1	B5C0628	03/25/2015	03/25/15 15:58	
4-Nitrophenol	ND	330	1	B5C0628	03/25/2015	03/25/15 15:58	
Acenaphthene	ND	330	1	B5C0628	03/25/2015	03/25/15 15:58	
Acenaphthylene	ND	330	1	B5C0628	03/25/2015	03/25/15 15:58	
Anthracene	ND	330	1	B5C0628	03/25/2015	03/25/15 15:58	
Benzidine (M)	ND	1600	1	B5C0628	03/25/2015	03/25/15 15:58	
Benzo(a)anthracene	ND	330	1	B5C0628	03/25/2015	03/25/15 15:58	
Benzo(a)pyrene	ND	330	1	B5C0628	03/25/2015	03/25/15 15:58	
Benzo(b)fluoranthene	ND	330	1	B5C0628	03/25/2015	03/25/15 15:58	
Benzo(g,h,i)perylene	ND	330	1	B5C0628	03/25/2015	03/25/15 15:58	
Benzo(k)fluoranthene	ND	330	1	B5C0628	03/25/2015	03/25/15 15:58	
Benzoic acid	ND	1600	1	B5C0628	03/25/2015	03/25/15 15:58	
Benzyl alcohol	ND	660	1	B5C0628	03/25/2015	03/25/15 15:58	
bis(2-chloroethoxy)methane	ND	330	1	B5C0628	03/25/2015	03/25/15 15:58	
bis(2-Chloroethyl)ether	ND	330	1	B5C0628	03/25/2015	03/25/15 15:58	
bis(2-chloroisopropyl)ether	ND	330	1	B5C0628	03/25/2015	03/25/15 15:58	
bis(2-ethylhexyl)phthalate	ND	330	1	B5C0628	03/25/2015	03/25/15 15:58	
Butylbenzylphthalate	ND	330	1	B5C0628	03/25/2015	03/25/15 15:58	
Chrysene	ND	330	1	B5C0628	03/25/2015	03/25/15 15:58	
Di-n-butylphthalate	ND	330	1	B5C0628	03/25/2015	03/25/15 15:58	
Di-n-octylphthalate	ND	330	1	B5C0628	03/25/2015	03/25/15 15:58	
Dibenz(a,h)anthracene	ND	330	1	B5C0628	03/25/2015	03/25/15 15:58	
Dibenzofuran	ND	330	1	B5C0628	03/25/2015	03/25/15 15:58	
Diethyl phthalate	ND	330	1	B5C0628	03/25/2015	03/25/15 15:58	
Dimethyl phthalate	ND	330	1	B5C0628	03/25/2015	03/25/15 15:58	
Fluoranthene	ND	330	1	B5C0628	03/25/2015	03/25/15 15:58	
Fluorene	ND	330	1	B5C0628	03/25/2015	03/25/15 15:58	
Hexachlorobenzene	ND	330	1	B5C0628	03/25/2015	03/25/15 15:58	
Hexachlorobutadiene	ND	660	1	B5C0628	03/25/2015	03/25/15 15:58	
Hexachlorocyclopentadiene	ND	660	1	B5C0628	03/25/2015	03/25/15 15:58	
Hexachloroethane	ND	330	1	B5C0628	03/25/2015	03/25/15 15:58	
Indeno(1,2,3-cd)pyrene	ND	330	1	B5C0628	03/25/2015	03/25/15 15:58	
Isophorone	ND	330	1	B5C0628	03/25/2015	03/25/15 15:58	
N-Nitroso-di-n propylamine	ND	330	1	B5C0628	03/25/2015	03/25/15 15:58	
N-Nitrosodiphenylamine	ND	330	1	B5C0628	03/25/2015	03/25/15 15:58	
Naphthalene	ND	330	1	B5C0628	03/25/2015	03/25/15 15:58	
Nitrobenzene	ND	330	1	B5C0628	03/25/2015	03/25/15 15:58	

Certificate of Analysis

Amec Foster Wheeler	Project Number : MTA WESTSIDE, 4953-11-1423
6001 Rickenbacker Road	Report To : Ron Lopez
Los Angeles , CA 90040	Reported : 03/27/2015

Client Sample ID E132C-95

Lab ID: 1501023-08

Semivolatile Organic Compounds by EPA 8270C **Analyst: BD**

Analyte		Result (ug/kg)	PQL (ug/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Pentachlorophenol		ND	1600	1	B5C0628	03/25/2015	03/25/15 15:58	
Phenanthrene		ND	330	1	B5C0628	03/25/2015	03/25/15 15:58	
Phenol		ND	330	1	B5C0628	03/25/2015	03/25/15 15:58	
Pyrene		ND	330	1	B5C0628	03/25/2015	03/25/15 15:58	
Pyridine		ND	1600	1	B5C0628	03/25/2015	03/25/15 15:58	
Surrogate: 1,2-Dichlorobenzene-d4	*57.9 %*		*24 - 114*		B5C0628	03/25/2015	*03/25/15 15:58*	
Surrogate: 2,4,6-Tribromophenol	*77.8 %*		*0 - 189*		B5C0628	03/25/2015	*03/25/15 15:58*	
Surrogate: 2-Chlorophenol-d4	*71.6 %*		*23 - 123*		B5C0628	03/25/2015	*03/25/15 15:58*	
Surrogate: 2-Fluorobiphenyl	*63.4 %*		*28 - 128*		B5C0628	03/25/2015	*03/25/15 15:58*	
Surrogate: 2-Fluorophenol	*69.2 %*		*8 - 138*		B5C0628	03/25/2015	*03/25/15 15:58*	
Surrogate: 4-Terphenyl-d14	*73.4 %*		*27 - 154*		B5C0628	03/25/2015	*03/25/15 15:58*	
Surrogate: Nitrobenzene-d5	*62.5 %*		*19 - 129*		B5C0628	03/25/2015	*03/25/15 15:58*	
Surrogate: Phenol-d5	*72.5 %*		*20 - 126*		B5C0628	03/25/2015	*03/25/15 15:58*	

Figure C-2.236

Certificate of Analysis

Amec Foster Wheeler	Project Number : MTA WESTSIDE, 4953-11-1423
6001 Rickenbacker Road	Report To : Ron Lopez
Los Angeles , CA 90040	Reported : 03/27/2015

QUALITY CONTROL SECTION

Total Petroleum Hydrocarbons, HEM/SGT EPA 1664 (Modified) - Quality Control

Analyte	Result (mg/kg)	PQL (mg/kg)	Spike Level	Source Result	% Rec	% Rec Limits	RPD	RPD Limit	Notes
Batch B5C0697 - Prep_WC2_S									
Blank (B5C0697-BLK1)				Prepared: 3/27/2015 Analyzed: 3/27/2015					
Total Petroleum Hydrocarbons	ND	50			NR				
LCS (B5C0697-BS1)				Prepared: 3/27/2015 Analyzed: 3/27/2015					
Total Petroleum Hydrocarbons	2080.00	50	2000.00		104	80 - 120			
Matrix Spike (B5C0697-MS1)		**Source: 1501023-01**		Prepared: 3/27/2015 Analyzed: 3/27/2015					
Total Petroleum Hydrocarbons	2170.00	50	2000.00	ND	108	80 - 120			
Matrix Spike Dup (B5C0697-MSD1)		**Source: 1501023-01**		Prepared: 3/27/2015 Analyzed: 3/27/2015					
Total Petroleum Hydrocarbons	2150.00	50	2000.00	ND	108	80 - 120	0.926	20	

Certificate of Analysis

Amec Foster Wheeler	Project Number : MTA WESTSIDE, 4953-11-1423
6001 Rickenbacker Road	Report To : Ron Lopez
Los Angeles , CA 90040	Reported : 03/27/2015

Title 22 Metals by ICP-AES EPA 6010B - Quality Control

Analyte	Result (mg/kg)	PQL (mg/kg)	Spike Level	Source Result	% Rec	% Rec Limits	RPD	RPD Limit	Notes
Batch B5C0674 - EPA 3050B_S									
Blank (B5C0674-BLK1)				Prepared: 3/26/2015 Analyzed: 3/26/2015					
Antimony	ND	2.0			NR				
Arsenic	ND	1.0			NR				
Barium	ND	1.0			NR				
Beryllium	ND	1.0			NR				
Cadmium	ND	1.0			NR				
Chromium	ND	1.0			NR				
Cobalt	ND	1.0			NR				
Copper	ND	2.0			NR				
Lead	ND	1.0			NR				
Molybdenum	ND	1.0			NR				
Nickel	ND	1.0			NR				
Selenium	ND	1.0			NR				
Silver	ND	1.0			NR				
Thallium	ND	1.0			NR				
Vanadium	ND	1.0			NR				
Zinc	ND	1.0			NR				
LCS (B5C0674-BS1)				Prepared: 3/26/2015 Analyzed: 3/26/2015					
Antimony	46.0252	2.0	50.0000		92.1	80 - 120			
Arsenic	43.9602	1.0	50.0000		87.9	80 - 120			
Barium	48.9977	1.0	50.0000		98.0	80 - 120			
Beryllium	47.3174	1.0	50.0000		94.6	80 - 120			
Cadmium	46.1545	1.0	50.0000		92.3	80 - 120			
Chromium	49.6760	1.0	50.0000		99.4	80 - 120			
Cobalt	48.5634	1.0	50.0000		97.1	80 - 120			
Copper	49.1056	2.0	50.0000		98.2	80 - 120			
Lead	46.8868	1.0	50.0000		93.8	80 - 120			
Molybdenum	49.2090	1.0	50.0000		98.4	80 - 120			
Nickel	46.7962	1.0	50.0000		93.6	80 - 120			
Selenium	42.9395	1.0	50.0000		85.9	80 - 120			
Silver	46.9887	1.0	50.0000		94.0	80 - 120			
Thallium	46.6095	1.0	50.0000		93.2	80 - 120			
Vanadium	48.2334	1.0	50.0000		96.5	80 - 120			
Zinc	44.8599	1.0	50.0000		89.7	80 - 120			
Duplicate (B5C0674-DUP1)		**Source: 1501023-01**		Prepared: 3/26/2015 Analyzed: 3/26/2015					
Antimony	0.257040	2.0		0.437518	NR		52.0	20	R
Arsenic	5.89212	1.0		5.69294	NR		3.44	20	
Barium	48.6408	1.0		40.4298	NR		18.4	20	
Beryllium	0.313056	1.0		0.285733	NR		9.13	20	
Cadmium	1.02477	1.0		0.929608	NR		9.74	20	
Chromium	13.8568	1.0		14.3210	NR		3.29	20	

Certificate of Analysis

Amec Foster Wheeler	Project Number : MTA WESTSIDE, 4953-11-1423
6001 Rickenbacker Road	Report To : Ron Lopez
Los Angeles , CA 90040	Reported : 03/27/2015

Title 22 Metals by ICP-AES EPA 6010B - Quality Control (cont'd)

Analyte	Result (mg/kg)	PQL (mg/kg)	Spike Level	Source Result	% Rec	% Rec Limits	RPD	RPD Limit	Notes
Batch B5C0674 - EPA 3050B_S (continued)									
Duplicate (B5C0674-DUP1) - Continued		**Source: 1501023-01**		Prepared: 3/26/2015 Analyzed: 3/26/2015					
Cobalt	4.37542	1.0		4.10086	NR		6.48	20	
Copper	44.7850	2.0		29.7721	NR		40.3	20	R
Lead	3.19678	1.0		2.65000	NR		18.7	20	
Molybdenum	2.07746	1.0		1.92137	NR		7.81	20	
Nickel	18.0574	1.0		17.1610	NR		5.09	20	
Selenium	ND	1.0		ND	NR			20	
Silver	ND	1.0		ND	NR			20	
Thallium	ND	1.0		ND	NR			20	
Vanadium	34.5937	1.0		32.8127	NR		5.28	20	
Zinc	57.0042	1.0		44.9703	NR		23.6	20	R
Matrix Spike (B5C0674-MS1)		**Source: 1501023-01**		Prepared: 3/26/2015 Analyzed: 3/26/2015					
Antimony	77.4282	2.0	125.000	0.437518	61.6	28 - 106			
Arsenic	94.1766	1.0	125.000	5.69294	70.8	57 - 109			
Barium	131.844	1.0	125.000	40.4298	73.1	18 - 159			
Beryllium	96.3608	1.0	125.000	0.285733	76.9	61 - 107			
Cadmium	89.1466	1.0	125.000	0.929608	70.6	53 - 104			
Chromium	109.044	1.0	125.000	14.3210	75.8	53 - 121			
Cobalt	95.3056	1.0	125.000	4.10086	73.0	55 - 109			
Copper	156.926	2.0	125.000	29.7721	102	58 - 124			
Lead	91.9660	1.0	125.000	2.65000	71.5	35 - 129			
Molybdenum	95.3348	1.0	125.000	1.92137	74.7	57 - 108			
Nickel	107.226	1.0	125.000	17.1610	72.1	44 - 122			
Selenium	88.2802	1.0	125.000	ND	70.6	54 - 104			
Silver	92.2810	1.0	125.000	ND	73.8	60 - 112			
Thallium	85.9444	1.0	125.000	ND	68.8	50 - 103			
Vanadium	128.878	1.0	125.000	32.8127	76.9	54 - 123			
Zinc	159.635	1.0	125.000	44.9703	91.7	29 - 132			
Matrix Spike Dup (B5C0674-MSD1)		**Source: 1501023-01**		Prepared: 3/26/2015 Analyzed: 3/26/2015					
Antimony	80.5606	2.0	125.000	0.437518	64.1	28 - 106	3.97	20	
Arsenic	97.6431	1.0	125.000	5.69294	73.6	57 - 109	3.61	20	
Barium	136.302	1.0	125.000	40.4298	76.7	18 - 159	3.33	20	
Beryllium	100.871	1.0	125.000	0.285733	80.5	61 - 107	4.57	20	
Cadmium	91.0594	1.0	125.000	0.929608	72.1	53 - 104	2.12	20	
Chromium	112.272	1.0	125.000	14.3210	78.4	53 - 121	2.92	20	
Cobalt	96.2972	1.0	125.000	4.10086	73.8	55 - 109	1.04	20	
Copper	150.941	2.0	125.000	29.7721	96.9	58 - 124	3.89	20	
Lead	95.5444	1.0	125.000	2.65000	74.3	35 - 129	3.82	20	
Molybdenum	98.8824	1.0	125.000	1.92137	77.6	57 - 108	3.65	20	
Nickel	107.773	1.0	125.000	17.1610	72.5	44 - 122	0.509	20	
Selenium	91.4986	1.0	125.000	ND	73.2	54 - 104	3.58	20	

Certificate of Analysis

Amec Foster Wheeler	Project Number : MTA WESTSIDE, 4953-11-1423
6001 Rickenbacker Road	Report To : Ron Lopez
Los Angeles , CA 90040	Reported : 03/27/2015

Title 22 Metals by ICP-AES EPA 6010B - Quality Control (cont'd)

Analyte	Result (mg/kg)	PQL (mg/kg)	Spike Level	Source Result	% Rec	% Rec Limits	RPD	RPD Limit	Notes
Batch B5C0674 - EPA 3050B_S (continued)									
Matrix Spike Dup (B5C0674-MSD1) - Continued		**Source: 1501023-01**		Prepared: 3/26/2015 Analyzed: 3/26/2015					
Silver	95.4394	1.0	125.000	ND	76.4	60 - 112	3.36	20	
Thallium	89.6364	1.0	125.000	ND	71.7	50 - 103	4.21	20	
Vanadium	131.282	1.0	125.000	32.8127	78.8	54 - 123	1.85	20	
Zinc	151.975	1.0	125.000	44.9703	85.6	29 - 132	4.92	20	

Certificate of Analysis

Amec Foster Wheeler	Project Number : MTA WESTSIDE, 4953-11-1423
6001 Rickenbacker Road	Report To : Ron Lopez
Los Angeles , CA 90040	Reported : 03/27/2015

Mercury by AA (Cold Vapor) EPA 7471A - Quality Control

Analyte	Result (mg/kg)	PQL (mg/kg)	Spike Level	Source Result	% Rec	% Rec Limits	RPD	RPD Limit	Notes
Batch B5C0675 - EPA 7471_S									
Blank (B5C0675-BLK1)				Prepared: 3/26/2015 Analyzed: 3/26/2015					
Mercury	ND	0.10			NR				
LCS (B5C0675-BS1)				Prepared: 3/26/2015 Analyzed: 3/26/2015					
Mercury	0.850475	0.10	0.833333		102	80 - 120			
Duplicate (B5C0675-DUP1)		**Source: 1501023-01**		Prepared: 3/26/2015 Analyzed: 3/26/2015					
Mercury	0.013609	0.10		0.013833	NR		1.63	20	
Matrix Spike (B5C0675-MS1)		**Source: 1501023-01**		Prepared: 3/26/2015 Analyzed: 3/26/2015					
Mercury	0.859324	0.10	0.833333	0.013833	101	70 - 130			
Matrix Spike Dup (B5C0675-MSD1)		**Source: 1501023-01**		Prepared: 3/26/2015 Analyzed: 3/26/2015					
Mercury	0.845921	0.10	0.833333	0.013833	99.9	70 - 130	1.57	20	
Post Spike (B5C0675-PS1)		**Source: 1501023-01**		Prepared: 3/26/2015 Analyzed: 3/26/2015					
Mercury	0.006152		5.00000E-3	0.000166	120	85 - 115			M1

Certificate of Analysis

Amec Foster Wheeler	Project Number : MTA WESTSIDE, 4953-11-1423
6001 Rickenbacker Road	Report To : Ron Lopez
Los Angeles , CA 90040	Reported : 03/27/2015

Gasoline Range Organics by EPA 8015B (Modified) - Quality Control

Analyte	Result (mg/kg)	PQL (mg/kg)	Spike Level	Source Result	% Rec	% Rec Limits	RPD	RPD Limit	Notes
Batch B5C0662 - GCVOA_S									
Blank (B5C0662-BLK1)					Prepared: 3/26/2015 Analyzed: 3/26/2015				
Gasoline Range Organics	ND	1.0			NR				
Surrogate: 4-Bromofluorobenzene	*0.1868*		*0.200000*		*93.4*	*37 - 153*			
LCS (B5C0662-BS1)					Prepared: 3/26/2015 Analyzed: 3/26/2015				
Gasoline Range Organics	5.09500	1.0	5.00000		102	70 - 130			
Surrogate: 4-Bromofluorobenzene	*0.1940*		*0.200000*		*97.0*	*37 - 153*			
Matrix Spike (B5C0662-MS1)		**Source: 1501007-54**			Prepared: 3/26/2015 Analyzed: 3/26/2015				
Gasoline Range Organics	4.81600	1.0	5.00000	ND	96.3	20 - 130			
Surrogate: 4-Bromofluorobenzene	*0.2068*		*0.200000*		*103*	*37 - 153*			
Matrix Spike Dup (B5C0662-MSD1)		**Source: 1501007-54**			Prepared: 3/26/2015 Analyzed: 3/26/2015				
Gasoline Range Organics	4.72800	1.0	5.00000	ND	94.6	20 - 130	1.84	20	
Surrogate: 4-Bromofluorobenzene	*0.1975*		*0.200000*		*98.8*	*37 - 153*			
Batch B5C0668 - GCVOA_S									
Blank (B5C0668-BLK1)					Prepared: 3/26/2015 Analyzed: 3/26/2015				
Gasoline Range Organics	ND	1.0			NR				
Surrogate: 4-Bromofluorobenzene	*0.1878*		*0.200000*		*93.9*	*37 - 153*			
LCS (B5C0668-BS1)					Prepared: 3/26/2015 Analyzed: 3/26/2015				
Gasoline Range Organics	5.35400	1.0	5.00000		107	70 - 130			
Surrogate: 4-Bromofluorobenzene	*0.1956*		*0.200000*		*97.8*	*37 - 153*			
Duplicate (B5C0668-DUP1)		**Source: 1501068-21**			Prepared: 3/26/2015 Analyzed: 3/26/2015				
Gasoline Range Organics	ND	1.0		ND	NR			20	
Surrogate: 4-Bromofluorobenzene	*0.1946*		*0.200000*		*97.3*	*37 - 153*			
Matrix Spike (B5C0668-MS1)		**Source: 1501065-23**			Prepared: 3/26/2015 Analyzed: 3/26/2015				
Gasoline Range Organics	4.47200	1.0	5.00000	ND	89.4	20 - 130			
Surrogate: 4-Bromofluorobenzene	*0.1952*		*0.200000*		*97.6*	*37 - 153*			
Matrix Spike Dup (B5C0668-MSD1)		**Source: 1501065-23**			Prepared: 3/26/2015 Analyzed: 3/26/2015				
Gasoline Range Organics	4.24900	1.0	5.00000	ND	85.0	20 - 130	5.11	20	
Surrogate: 4-Bromofluorobenzene	*0.1926*		*0.200000*		*96.3*	*37 - 153*			

Certificate of Analysis

Amec Foster Wheeler	Project Number : MTA WESTSIDE, 4953-11-1423
6001 Rickenbacker Road	Report To : Ron Lopez
Los Angeles , CA 90040	Reported : 03/27/2015

Diesel Range Organics by EPA 8015B - Quality Control

Analyte	Result (mg/kg)	PQL (mg/kg)	Spike Level	Source Result	% Rec	% Rec Limits	RPD	RPD Limit	Notes
Batch B5C0582 - GCSEMI_DRO_S									
Blank (B5C0582-BLK1)					Prepared: 3/23/2015 Analyzed: 3/24/2015				
DRO	ND	10			NR				
ORO	ND	10			NR				
Surrogate: p-Terphenyl	*72.87*		*80.0000*		*91.1*	*49 - 142*			
LCS (B5C0582-BS1)					Prepared: 3/23/2015 Analyzed: 3/24/2015				
DRO	725.930	10	1000.00		72.6	48 - 155			
Surrogate: p-Terphenyl	*64.63*		*80.0000*		*80.8*	*49 - 142*			

Figure C-2.243

Certificate of Analysis

Amec Foster Wheeler	Project Number : MTA WESTSIDE, 4953-11-1423
6001 Rickenbacker Road	Report To : Ron Lopez
Los Angeles , CA 90040	Reported : 03/27/2015

Diesel Range Organics by EPA 8015B - Quality Control (cont'd)

Analyte	Result (mg/kg)	PQL (mg/kg)	Spike Level	Source Result	% Rec	% Rec Limits	RPD	RPD Limit	Notes
Batch B5C0582 - GCSEMI_DRO_S (continued)									
Matrix Spike (B5C0582-MS1)		**Source: 1501023-04**		Prepared: 3/23/2015 Analyzed: 3/24/2015					
DRO	659.330	10	1000.00	ND	65.9	30 - 173			
Surrogate: p-Terphenyl	*60.76*		*80.0000*		*76.0*	*49 - 142*			

Certificate of Analysis

Amec Foster Wheeler	Project Number : MTA WESTSIDE, 4953-11-1423
6001 Rickenbacker Road	Report To : Ron Lopez
Los Angeles , CA 90040	Reported : 03/27/2015

Diesel Range Organics by EPA 8015B - Quality Control (cont'd)

Analyte	Result (mg/kg)	PQL (mg/kg)	Spike Level	Source Result	% Rec	% Rec Limits	RPD	RPD Limit	Notes
Batch B5C0582 - GCSEMI_DRO_S (continued)									
Matrix Spike Dup (B5C0582-MSD1)		**Source: 1501023-04**		Prepared: 3/23/2015 Analyzed: 3/24/2015					
DRO	690.160	10	1000.00	ND	69.0	30 - 173	4.57	20	
Surrogate: p-Terphenyl	*63.53*		*80.0000*		*79.4*	*49 - 142*			

Certificate of Analysis

Amec Foster Wheeler	Project Number : MTA WESTSIDE, 4953-11-1423
6001 Rickenbacker Road	Report To : Ron Lopez
Los Angeles , CA 90040	Reported : 03/27/2015

Volatile Organic Compounds by EPA 8260B - Quality Control

Analyte	Result (ug/kg)	PQL (ug/kg)	Spike Level	Source Result	% Rec	% Rec Limits	RPD	RPD Limit	Notes
Batch B5C0542 - MSVOA_S									
Blank (B5C0542-BLK1)				Prepared: 3/20/2015 Analyzed: 3/20/2015					
1,1,1,2-Tetrachloroethane	ND	5.0			NR				
1,1,1-Trichloroethane	ND	5.0			NR				
1,1,2,2-Tetrachloroethane	ND	5.0			NR				
1,1,2-Trichloroethane	ND	5.0			NR				
1,1-Dichloroethane	ND	5.0			NR				
1,1-Dichloroethene	ND	5.0			NR				
1,1-Dichloropropene	ND	5.0			NR				
1,2,3-Trichloropropane	ND	5.0			NR				
1,2,3-Trichlorobenzene	ND	5.0			NR				
1,2,4-Trichlorobenzene	ND	5.0			NR				
1,2,4-Trimethylbenzene	ND	5.0			NR				
1,2-Dibromo-3-chloropropane	ND	10			NR				
1,2-Dibromoethane	ND	5.0			NR				
1,2-Dichlorobenzene	ND	5.0			NR				
1,2-Dichloroethane	ND	5.0			NR				
1,2-Dichloropropane	ND	5.0			NR				
1,3,5-Trimethylbenzene	ND	5.0			NR				
1,3-Dichlorobenzene	ND	5.0			NR				
1,3-Dichloropropane	ND	5.0			NR				
1,4-Dichlorobenzene	ND	5.0			NR				
2,2-Dichloropropane	ND	5.0			NR				
2-Chlorotoluene	ND	5.0			NR				
4-Chlorotoluene	ND	5.0			NR				
4-Isopropyltoluene	ND	5.0			NR				
Benzene	ND	5.0			NR				
Bromobenzene	ND	5.0			NR				
Bromochloromethane	ND	5.0			NR				
Bromodichloromethane	ND	5.0			NR				
Bromoform	ND	5.0			NR				
Bromomethane	ND	5.0			NR				
Carbon disulfide	ND	5.0			NR				
Carbon tetrachloride	ND	5.0			NR				
Chlorobenzene	ND	5.0			NR				
Chloroethane	ND	5.0			NR				
Chloroform	ND	5.0			NR				
Chloromethane	ND	5.0			NR				
cis-1,2-Dichloroethene	ND	5.0			NR				
cis-1,3-Dichloropropene	ND	5.0			NR				
Di-isopropyl ether	ND	5.0			NR				
Dibromochloromethane	ND	5.0			NR				
Dibromomethane	ND	5.0			NR				

Certificate of Analysis

Amec Foster Wheeler	Project Number : MTA WESTSIDE, 4953-11-1423
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Volatile Organic Compounds by EPA 8260B - Quality Control (cont'd)

Analyte	Result (ug/kg)	PQL (ug/kg)	Spike Level	Source Result	% Rec	% Rec Limits	RPD	RPD Limit	Notes
Batch B5C0542 - MSVOA_S (continued)									
Blank (B5C0542-BLK1) - Continued				Prepared: 3/20/2015 Analyzed: 3/20/2015					
Dichlorodifluoromethane	ND	5.0			NR				
Ethyl Acetate	ND	50			NR				
Ethyl Ether	ND	50			NR				
Ethyl tert-butyl ether	ND	5.0			NR				
Ethylbenzene	ND	5.0			NR				
Freon-113	ND	5.0			NR				
Hexachlorobutadiene	ND	5.0			NR				
Isopropylbenzene	ND	5.0			NR				
m,p-Xylene	ND	10			NR				
Methylene chloride	ND	5.0			NR				
MTBE	ND	5.0			NR				
n-Butylbenzene	ND	5.0			NR				
n-Propylbenzene	ND	5.0			NR				
Naphthalene	ND	5.0			NR				
o-Xylene	ND	5.0			NR				
sec-Butylbenzene	ND	5.0			NR				
Styrene	ND	5.0			NR				
tert-Amyl methyl ether	ND	5.0			NR				
tert-Butanol	ND	100			NR				
tert-Butylbenzene	ND	5.0			NR				
Tetrachloroethene	ND	5.0			NR				
Toluene	ND	5.0			NR				
trans-1,2-Dichloroethene	ND	5.0			NR				
trans-1,3-Dichloropropene	ND	5.0			NR				
Trichloroethene	ND	5.0			NR				
Trichlorofluoromethane	ND	5.0			NR				
Vinyl acetate	ND	50			NR				
Vinyl chloride	ND	5.0			NR				
Surrogate: 1,2-Dichloroethane-d4	*45.66*		*50.0000*		*91.3*	*20 - 189*			
Surrogate: 4-Bromofluorobenzene	*45.73*		*50.0000*		*91.5*	*20 - 173*			
Surrogate: Dibromofluoromethane	*46.07*		*50.0000*		*92.1*	*26 - 178*			
Surrogate: Toluene-d8	*48.36*		*50.0000*		*96.7*	*31 - 166*			

Figure C-2.247

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Volatile Organic Compounds by EPA 8260B - Quality Control (cont'd)

Analyte	Result (ug/kg)	PQL (ug/kg)	Spike Level	Source Result	% Rec	% Rec Limits	RPD	RPD Limit	Notes
Batch B5C0542 - MSVOA_S (continued)									
LCS (B5C0542-BS1)				Prepared: 3/20/2015 Analyzed: 3/20/2015					
1,1,1,2-Tetrachloroethane	47.5200	5.0	50.0000		95.0	74 - 117			
1,1,1-Trichloroethane	49.3900	5.0	50.0000		98.8	65 - 130			
1,1,2,2-Tetrachloroethane	46.2900	5.0	50.0000		92.6	63 - 123			
1,1,2-Trichloroethane	47.4500	5.0	50.0000		94.9	66 - 122			
1,1-Dichloroethane	48.7300	5.0	50.0000		97.5	65 - 124			
1,1-Dichloroethene	51.5700	5.0	50.0000		103	60 - 130			
1,1-Dichloropropene	51.1800	5.0	50.0000		102	75 - 121			
1,2,3-Trichloropropane	47.0300	5.0	50.0000		94.1	62 - 126			
1,2,3-Trichlorobenzene	41.6300	5.0	50.0000		83.3	72 - 120			
1,2,4-Trichlorobenzene	45.0200	5.0	50.0000		90.0	75 - 121			
1,2,4-Trimethylbenzene	51.2600	5.0	50.0000		103	82 - 118			
1,2-Dibromo-3-chloropropane	46.6800	10	50.0000		93.4	67 - 121			
1,2-Dibromoethane	50.9400	5.0	50.0000		102	69 - 123			
1,2-Dichlorobenzene	49.6800	5.0	50.0000		99.4	81 - 114			
1,2-Dichloroethane	47.5400	5.0	50.0000		95.1	71 - 119			
1,2-Dichloropropane	49.7200	5.0	50.0000		99.4	71 - 118			
1,3,5-Trimethylbenzene	51.7800	5.0	50.0000		104	81 - 120			
1,3-Dichlorobenzene	50.0800	5.0	50.0000		100	80 - 115			
1,3-Dichloropropane	49.3300	5.0	50.0000		98.7	77 - 117			
1,4-Dichlorobenzene	49.8200	5.0	50.0000		99.6	80 - 115			
2,2-Dichloropropane	51.1100	5.0	50.0000		102	58 - 141			
2-Chlorotoluene	51.1600	5.0	50.0000		102	78 - 120			
4-Chlorotoluene	51.1800	5.0	50.0000		102	79 - 119			
4-Isopropyltoluene	53.2700	5.0	50.0000		107	81 - 125			
Benzene	96.6600	5.0	100.000		96.7	73 - 116			
Bromobenzene	49.3500	5.0	50.0000		98.7	78 - 115			
Bromochloromethane	50.5500	5.0	50.0000		101	66 - 121			
Bromodichloromethane	47.6000	5.0	50.0000		95.2	73 - 120			
Bromoform	49.0600	5.0	50.0000		98.1	68 - 124			
Bromomethane	51.4100	5.0	50.0000		103	26 - 163			
Carbon disulfide	58.7200	5.0	50.0000		117	43 - 142			
Carbon tetrachloride	48.1800	5.0	50.0000		96.4	67 - 130			
Chlorobenzene	49.5200	5.0	50.0000		99.0	82 - 114			
Chloroethane	54.4600	5.0	50.0000		109	40 - 151			
Chloroform	47.2500	5.0	50.0000		94.5	68 - 124			
Chloromethane	46.9700	5.0	50.0000		93.9	18 - 144			
cis-1,2-Dichloroethene	51.8200	5.0	50.0000		104	66 - 125			
cis-1,3-Dichloropropene	49.6100	5.0	50.0000		99.2	77 - 120			
Di-isopropyl ether	49.7100	5.0	50.0000		99.4	56 - 132			
Dibromochloromethane	47.8800	5.0	50.0000		95.8	76 - 118			
Dibromomethane	51.0200	5.0	50.0000		102	69 - 122			

Certificate of Analysis

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Volatile Organic Compounds by EPA 8260B - Quality Control (cont'd)

Analyte	Result (ug/kg)	PQL (ug/kg)	Spike Level	Source Result	% Rec	% Rec Limits	RPD	RPD Limit	Notes
Batch B5C0542 - MSVOA_S (continued)									
LCS (B5C0542-BS1) - Continued					Prepared: 3/20/2015 Analyzed: 3/20/2015				
Dichlorodifluoromethane	52.3300	5.0	50.0000		105	0 - 155			
Ethyl Acetate	499.200	50	500.000		99.8	31 - 137			
Ethyl Ether	502.070	50	500.000		100	47 - 150			
Ethyl tert-butyl ether	51.7400	5.0	50.0000		103	63 - 134			
Ethylbenzene	97.0300	5.0	100.000		97.0	79 - 115			
Freon-113	53.4000	5.0	50.0000		107	62 - 134			
Hexachlorobutadiene	48.3600	5.0	50.0000		96.7	71 - 121			
Isopropylbenzene	52.2800	5.0	50.0000		105	78 - 126			
m,p-Xylene	101.170	10	100.000		101	80 - 119			
Methylene chloride	58.4800	5.0	50.0000		117	56 - 129			
MTBE	49.6600	5.0	50.0000		99.3	61 - 124			
n-Butylbenzene	52.5500	5.0	50.0000		105	78 - 127			
n-Propylbenzene	52.7900	5.0	50.0000		106	77 - 128			
Naphthalene	45.0800	5.0	50.0000		90.2	61 - 141			
o-Xylene	100.640	5.0	100.000		101	81 - 116			
sec-Butylbenzene	52.6300	5.0	50.0000		105	81 - 125			
Styrene	54.3500	5.0	50.0000		109	82 - 120			
tert-Amyl methyl ether	49.9600	5.0	50.0000		99.9	52 - 149			
tert-Butanol	224.660	100	250.000		89.9	26 - 160			
tert-Butylbenzene	52.3900	5.0	50.0000		105	80 - 123			
Tetrachloroethene	51.5100	5.0	50.0000		103	75 - 123			
Toluene	98.2600	5.0	100.000		98.3	75 - 119			
trans-1,2-Dichloroethene	50.0800	5.0	50.0000		100	62 - 127			
trans-1,3-Dichloropropene	47.9700	5.0	50.0000		95.9	68 - 121			
Trichloroethene	51.8800	5.0	50.0000		104	73 - 119			
Trichlorofluoromethane	42.0700	5.0	50.0000		84.1	47 - 157			
Vinyl acetate	443.870	50	500.000		88.8	20 - 136			
Vinyl chloride	50.4300	5.0	50.0000		101	27 - 147			
Surrogate: 1,2-Dichloroethane-d4	*51.44*		*50.0000*		*103*	*20 - 189*			
Surrogate: 4-Bromofluorobenzene	*52.11*		*50.0000*		*104*	*20 - 173*			
Surrogate: Dibromofluoromethane	*50.81*		*50.0000*		*102*	*26 - 178*			
Surrogate: Toluene-d8	*52.23*		*50.0000*		*104*	*31 - 166*			

Figure C-2.249

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Volatile Organic Compounds by EPA 8260B - Quality Control (cont'd)

Analyte	Result (ug/kg)	PQL (ug/kg)	Spike Level	Source Result	% Rec	% Rec Limits	RPD	RPD Limit	Notes
Batch B5C0542 - MSVOA_S (continued)									
Matrix Spike (B5C0542-MS1)		**Source: 1501023-01**		Prepared: 3/20/2015 Analyzed: 3/20/2015					
1,1,1,2-Tetrachloroethane	44.5100	5.0	50.0000	ND	89.0	45 - 122			
1,1,1-Trichloroethane	44.3200	5.0	50.0000	ND	88.6	46 - 131			
1,1,2,2-Tetrachloroethane	42.3000	5.0	50.0000	ND	84.6	34 - 133			
1,1,2-Trichloroethane	45.5900	5.0	50.0000	ND	91.2	40 - 133			
1,1-Dichloroethane	41.8200	5.0	50.0000	ND	83.6	50 - 120			
1,1-Dichloroethene	40.7200	5.0	50.0000	ND	81.4	42 - 130			
1,1-Dichloropropene	49.2300	5.0	50.0000	ND	98.5	49 - 125			
1,2,3-Trichloropropane	42.7900	5.0	50.0000	ND	85.6	42 - 130			
1,2,3-Trichlorobenzene	51.7800	5.0	50.0000	ND	104	2 - 136			
1,2,4-Trichlorobenzene	51.4100	5.0	50.0000	ND	103	6 - 137			
1,2,4-Trimethylbenzene	47.1000	5.0	50.0000	ND	94.2	37 - 129			
1,2-Dibromo-3-chloropropane	44.7900	10	50.0000	ND	89.6	36 - 135			
1,2-Dibromoethane	46.2400	5.0	50.0000	ND	92.5	43 - 129			
1,2-Dichlorobenzene	45.9300	5.0	50.0000	ND	91.9	31 - 129			
1,2-Dichloroethane	42.0800	5.0	50.0000	ND	84.2	50 - 122			
1,2-Dichloropropane	44.9200	5.0	50.0000	ND	89.8	51 - 119			
1,3,5-Trimethylbenzene	47.1400	5.0	50.0000	ND	94.3	38 - 130			
1,3-Dichlorobenzene	45.7100	5.0	50.0000	ND	91.4	31 - 128			
1,3-Dichloropropane	44.8600	5.0	50.0000	ND	89.7	52 - 122			
1,4-Dichlorobenzene	46.1200	5.0	50.0000	ND	92.2	31 - 128			
2,2-Dichloropropane	43.3900	5.0	50.0000	ND	86.8	42 - 140			
2-Chlorotoluene	45.4300	5.0	50.0000	ND	90.9	38 - 129			
4-Chlorotoluene	45.6500	5.0	50.0000	ND	91.3	38 - 128			
4-Isopropyltoluene	49.8200	5.0	50.0000	ND	99.6	31 - 137			
Benzene	90.0500	5.0	100.000	ND	90.0	51 - 117			
Bromobenzene	44.3300	5.0	50.0000	ND	88.7	41 - 125			
Bromochloromethane	42.2700	5.0	50.0000	ND	84.5	47 - 123			
Bromodichloromethane	44.2700	5.0	50.0000	ND	88.5	50 - 122			
Bromoform	45.2900	5.0	50.0000	ND	90.6	39 - 131			
Bromomethane	47.5400	5.0	50.0000	ND	95.1	10 - 154			
Carbon disulfide	45.4300	5.0	50.0000	ND	90.9	24 - 138			
Carbon tetrachloride	46.7700	5.0	50.0000	ND	93.5	44 - 131			
Chlorobenzene	46.0300	5.0	50.0000	ND	92.1	46 - 123			
Chloroethane	47.9400	5.0	50.0000	ND	95.9	27 - 143			
Chloroform	42.2000	5.0	50.0000	ND	84.4	50 - 124			
Chloromethane	48.4600	5.0	50.0000	ND	96.9	8 - 139			
cis-1,2-Dichloroethene	45.6500	5.0	50.0000	ND	91.3	48 - 125			
cis-1,3-Dichloropropene	43.9700	5.0	50.0000	ND	87.9	51 - 123			
Di-isopropyl ether	44.6800	5.0	50.0000	ND	89.4	45 - 125			
Dibromochloromethane	44.0900	5.0	50.0000	ND	88.2	48 - 124			
Dibromomethane	46.4900	5.0	50.0000	ND	93.0	48 - 124			

Certificate of Analysis

Amec Foster Wheeler	Project Number : MTA WESTSIDE, 4953-11-1423
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Volatile Organic Compounds by EPA 8260B - Quality Control (cont'd)

Analyte	Result (ug/kg)	PQL (ug/kg)	Spike Level	Source Result	% Rec	% Rec Limits	RPD	RPD Limit	Notes
Batch B5C0542 - MSVOA_S (continued)									
Matrix Spike (B5C0542-MS1) - Continued		**Source: 1501023-01**		Prepared: 3/20/2015 Analyzed: 3/20/2015					
Dichlorodifluoromethane	55.0000	5.0	50.0000	ND	110	0 - 150			
Ethyl Acetate	466.150	50	500.000	ND	93.2	0 - 140			
Ethyl Ether	453.980	50	500.000	ND	90.8	36 - 142			
Ethyl tert-butyl ether	47.1800	5.0	50.0000	ND	94.4	46 - 133			
Ethylbenzene	93.0200	5.0	100.000	ND	93.0	46 - 123			
Freon-113	42.6000	5.0	50.0000	ND	85.2	38 - 137			
Hexachlorobutadiene	50.3000	5.0	50.0000	ND	101	5 - 132			
Isopropylbenzene	47.1100	5.0	50.0000	ND	94.2	43 - 132			
m,p-Xylene	96.6400	10	100.000	ND	96.6	45 - 128			
Methylene chloride	49.0200	5.0	50.0000	ND	98.0	37 - 126			
MTBE	45.1100	5.0	50.0000	ND	90.2	46 - 125			
n-Butylbenzene	50.7600	5.0	50.0000	ND	102	24 - 138			
n-Propylbenzene	47.8400	5.0	50.0000	ND	95.7	40 - 133			
Naphthalene	52.5700	5.0	50.0000	ND	105	10 - 149			
o-Xylene	95.8700	5.0	100.000	ND	95.9	45 - 125			
sec-Butylbenzene	49.3800	5.0	50.0000	ND	98.8	33 - 136			
Styrene	49.3800	5.0	50.0000	ND	98.8	43 - 128			
tert-Amyl methyl ether	44.9000	5.0	50.0000	ND	89.8	35 - 147			
tert-Butanol	196.520	100	250.000	ND	78.6	0 - 208			
tert-Butylbenzene	47.9900	5.0	50.0000	ND	96.0	36 - 133			
Tetrachloroethene	48.2600	5.0	50.0000	ND	96.5	41 - 129			
Toluene	94.0700	5.0	100.000	ND	94.1	49 - 124			
trans-1,2-Dichloroethene	45.8200	5.0	50.0000	ND	91.6	44 - 126			
trans-1,3-Dichloropropene	43.0400	5.0	50.0000	ND	86.1	42 - 125			
Trichloroethene	48.1600	5.0	50.0000	ND	96.3	38 - 139			
Trichlorofluoromethane	36.8000	5.0	50.0000	ND	73.6	30 - 157			
Vinyl acetate	412.560	50	500.000	ND	82.5	0 - 132			
Vinyl chloride	47.0900	5.0	50.0000	ND	94.2	19 - 142			
Surrogate: 1,2-Dichloroethane-d4	*51.14*		*50.0000*		*102*	*20 - 189*			
Surrogate: 4-Bromofluorobenzene	*51.67*		*50.0000*		*103*	*20 - 173*			
Surrogate: Dibromofluoromethane	*48.45*		*50.0000*		*96.9*	*26 - 178*			
Surrogate: Toluene-d8	*51.13*		*50.0000*		*102*	*31 - 166*			

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Volatile Organic Compounds by EPA 8260B - Quality Control (cont'd)

Analyte	Result (ug/kg)	PQL (ug/kg)	Spike Level	Source Result	% Rec	% Rec Limits	RPD	RPD Limit	Notes
Batch B5C0542 - MSVOA_S (continued)									
Matrix Spike Dup (B5C0542-MSD1)		**Source: 1501023-01**		Prepared: 3/20/2015 Analyzed: 3/20/2015					
1,1,1,2-Tetrachloroethane	43.3900	5.0	50.0000	ND	86.8	45 - 122	2.55	20	
1,1,1-Trichloroethane	44.8000	5.0	50.0000	ND	89.6	46 - 131	1.08	20	
1,1,2,2-Tetrachloroethane	41.1700	5.0	50.0000	ND	82.3	34 - 133	2.71	20	
1,1,2-Trichloroethane	42.8600	5.0	50.0000	ND	85.7	40 - 133	6.17	20	
1,1-Dichloroethane	41.9500	5.0	50.0000	ND	83.9	50 - 120	0.310	20	
1,1-Dichloroethene	41.6600	5.0	50.0000	ND	83.3	42 - 130	2.28	20	
1,1-Dichloropropene	47.2600	5.0	50.0000	ND	94.5	49 - 125	4.08	20	
1,2,3-Trichloropropane	42.6000	5.0	50.0000	ND	85.2	42 - 130	0.445	20	
1,2,3-Trichlorobenzene	43.4300	5.0	50.0000	ND	86.9	2 - 136	17.5	20	
1,2,4-Trichlorobenzene	43.2000	5.0	50.0000	ND	86.4	6 - 137	17.4	20	
1,2,4-Trimethylbenzene	44.7900	5.0	50.0000	ND	89.6	37 - 129	5.03	20	
1,2-Dibromo-3-chloropropane	40.7400	10	50.0000	ND	81.5	36 - 135	9.47	20	
1,2-Dibromoethane	44.6200	5.0	50.0000	ND	89.2	43 - 129	3.57	20	
1,2-Dichlorobenzene	43.3600	5.0	50.0000	ND	86.7	31 - 129	5.76	20	
1,2-Dichloroethane	41.9400	5.0	50.0000	ND	83.9	50 - 122	0.333	20	
1,2-Dichloropropane	43.1300	5.0	50.0000	ND	86.3	51 - 119	4.07	20	
1,3,5-Trimethylbenzene	45.0100	5.0	50.0000	ND	90.0	38 - 130	4.62	20	
1,3-Dichlorobenzene	43.7500	5.0	50.0000	ND	87.5	31 - 128	4.38	20	
1,3-Dichloropropane	44.0400	5.0	50.0000	ND	88.1	52 - 122	1.84	20	
1,4-Dichlorobenzene	43.5600	5.0	50.0000	ND	87.1	31 - 128	5.71	20	
2,2-Dichloropropane	44.5900	5.0	50.0000	ND	89.2	42 - 140	2.73	20	
2-Chlorotoluene	44.2500	5.0	50.0000	ND	88.5	38 - 129	2.63	20	
4-Chlorotoluene	43.7900	5.0	50.0000	ND	87.6	38 - 128	4.16	20	
4-Isopropyltoluene	47.5400	5.0	50.0000	ND	95.1	31 - 137	4.68	20	
Benzene	86.0900	5.0	100.000	ND	86.1	51 - 117	4.50	20	
Bromobenzene	43.2200	5.0	50.0000	ND	86.4	41 - 125	2.54	20	
Bromochloromethane	43.2500	5.0	50.0000	ND	86.5	47 - 123	2.29	20	
Bromodichloromethane	42.1100	5.0	50.0000	ND	84.2	50 - 122	5.00	20	
Bromoform	44.3400	5.0	50.0000	ND	88.7	39 - 131	2.12	20	
Bromomethane	44.0600	5.0	50.0000	ND	88.1	10 - 154	7.60	20	
Carbon disulfide	35.9500	5.0	50.0000	ND	71.9	24 - 138	23.3	20	R
Carbon tetrachloride	44.8800	5.0	50.0000	ND	89.8	44 - 131	4.12	20	
Chlorobenzene	44.5400	5.0	50.0000	ND	89.1	46 - 123	3.29	20	
Chloroethane	47.7300	5.0	50.0000	ND	95.5	27 - 143	0.439	20	
Chloroform	42.2700	5.0	50.0000	ND	84.5	50 - 124	0.166	20	
Chloromethane	43.6900	5.0	50.0000	ND	87.4	8 - 139	10.4	20	
cis-1,2-Dichloroethene	45.1800	5.0	50.0000	ND	90.4	48 - 125	1.03	20	
cis-1,3-Dichloropropene	41.7500	5.0	50.0000	ND	83.5	51 - 123	5.18	20	
Di-isopropyl ether	44.2900	5.0	50.0000	ND	88.6	45 - 125	0.877	20	
Dibromochloromethane	42.7500	5.0	50.0000	ND	85.5	48 - 124	3.09	20	
Dibromomethane	43.9400	5.0	50.0000	ND	87.9	48 - 124	5.64	20	

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Volatile Organic Compounds by EPA 8260B - Quality Control (cont'd)

Analyte	Result (ug/kg)	PQL (ug/kg)	Spike Level	Source Result	% Rec	% Rec Limits	RPD	RPD Limit	Notes
Batch B5C0542 - MSVOA_S (continued)									
Matrix Spike Dup (B5C0542-MSD1) - Continued		**Source: 1501023-01**		Prepared: 3/20/2015 Analyzed: 3/20/2015					
Dichlorodifluoromethane	49.5900	5.0	50.0000	ND	99.2	0 - 150	10.3	20	
Ethyl Acetate	461.850	50	500.000	ND	92.4	0 - 140	0.927	20	
Ethyl Ether	465.620	50	500.000	ND	93.1	36 - 142	2.53	20	
Ethyl tert-butyl ether	45.9800	5.0	50.0000	ND	92.0	46 - 133	2.58	20	
Ethylbenzene	89.8200	5.0	100.000	ND	89.8	46 - 123	3.50	20	
Freon-113	42.5100	5.0	50.0000	ND	85.0	38 - 137	0.211	20	
Hexachlorobutadiene	46.1800	5.0	50.0000	ND	92.4	5 - 132	8.54	20	
Isopropylbenzene	46.2800	5.0	50.0000	ND	92.6	43 - 132	1.78	20	
m,p-Xylene	92.6400	10	100.000	ND	92.6	45 - 128	4.23	20	
Methylene chloride	48.2200	5.0	50.0000	ND	96.4	37 - 126	1.65	20	
MTBE	44.8300	5.0	50.0000	ND	89.7	46 - 125	0.623	20	
n-Butylbenzene	46.7600	5.0	50.0000	ND	93.5	24 - 138	8.20	20	
n-Propylbenzene	46.1700	5.0	50.0000	ND	92.3	40 - 133	3.55	20	
Naphthalene	44.9400	5.0	50.0000	ND	89.9	10 - 149	15.6	20	
o-Xylene	91.8300	5.0	100.000	ND	91.8	45 - 125	4.30	20	
sec-Butylbenzene	46.9200	5.0	50.0000	ND	93.8	33 - 136	5.11	20	
Styrene	47.5500	5.0	50.0000	ND	95.1	43 - 128	3.78	20	
tert-Amyl methyl ether	44.7600	5.0	50.0000	ND	89.5	35 - 147	0.312	20	
tert-Butanol	207.730	100	250.000	ND	83.1	0 - 208	5.55	20	
tert-Butylbenzene	46.3300	5.0	50.0000	ND	92.7	36 - 133	3.52	20	
Tetrachloroethene	47.6900	5.0	50.0000	ND	95.4	41 - 129	1.19	20	
Toluene	89.7300	5.0	100.000	ND	89.7	49 - 124	4.72	20	
trans-1,2-Dichloroethene	45.1900	5.0	50.0000	ND	90.4	44 - 126	1.38	20	
trans-1,3-Dichloropropene	41.5700	5.0	50.0000	ND	83.1	42 - 125	3.47	20	
Trichloroethene	46.8900	5.0	50.0000	ND	93.8	38 - 139	2.67	20	
Trichlorofluoromethane	38.0100	5.0	50.0000	ND	76.0	30 - 157	3.23	20	
Vinyl acetate	403.260	50	500.000	ND	80.7	0 - 132	2.28	20	
Vinyl chloride	44.6700	5.0	50.0000	ND	89.3	19 - 142	5.27	20	
Surrogate: 1,2-Dichloroethane-d4	*52.28*		*50.0000*		*105*	*20 - 189*			
Surrogate: 4-Bromofluorobenzene	*51.57*		*50.0000*		*103*	*20 - 173*			
Surrogate: Dibromofluoromethane	*51.06*		*50.0000*		*102*	*26 - 178*			
Surrogate: Toluene-d8	*51.42*		*50.0000*		*103*	*31 - 166*			

Figure C-2.253

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Volatile Organic Compounds by EPA 8260B - Quality Control (cont'd)

Analyte	Result (ug/kg)	PQL (ug/kg)	Spike Level	Source Result	% Rec	% Rec Limits	RPD	RPD Limit	Notes
Batch B5C0547 - MSVOA_S									
Blank (B5C0547-BLK1)				Prepared: 3/21/2015 Analyzed: 3/21/2015					
1,1,1,2-Tetrachloroethane	ND	5.0			NR				
1,1,1-Trichloroethane	ND	5.0			NR				
1,1,2,2-Tetrachloroethane	ND	5.0			NR				
1,1,2-Trichloroethane	ND	5.0			NR				
1,1-Dichloroethane	ND	5.0			NR				
1,1-Dichloroethene	ND	5.0			NR				
1,1-Dichloropropene	ND	5.0			NR				
1,2,3-Trichloropropane	ND	5.0			NR				
1,2,3-Trichlorobenzene	ND	5.0			NR				
1,2,4-Trichlorobenzene	ND	5.0			NR				
1,2,4-Trimethylbenzene	ND	5.0			NR				
1,2-Dibromo-3-chloropropane	ND	10			NR				
1,2-Dibromoethane	ND	5.0			NR				
1,2-Dichlorobenzene	ND	5.0			NR				
1,2-Dichloroethane	ND	5.0			NR				
1,2-Dichloropropane	ND	5.0			NR				
1,3,5-Trimethylbenzene	ND	5.0			NR				
1,3-Dichlorobenzene	ND	5.0			NR				
1,3-Dichloropropane	ND	5.0			NR				
1,4-Dichlorobenzene	ND	5.0			NR				
2,2-Dichloropropane	ND	5.0			NR				
2-Chlorotoluene	ND	5.0			NR				
4-Chlorotoluene	ND	5.0			NR				
4-Isopropyltoluene	ND	5.0			NR				
Benzene	ND	5.0			NR				
Bromobenzene	ND	5.0			NR				
Bromochloromethane	ND	5.0			NR				
Bromodichloromethane	ND	5.0			NR				
Bromoform	ND	5.0			NR				
Bromomethane	ND	5.0			NR				
Carbon disulfide	ND	5.0			NR				
Carbon tetrachloride	ND	5.0			NR				
Chlorobenzene	ND	5.0			NR				
Chloroethane	ND	5.0			NR				
Chloroform	ND	5.0			NR				
Chloromethane	ND	5.0			NR				
cis-1,2-Dichloroethene	ND	5.0			NR				
cis-1,3-Dichloropropene	ND	5.0			NR				
Di-isopropyl ether	ND	5.0			NR				
Dibromochloromethane	ND	5.0			NR				
Dibromomethane	ND	5.0			NR				

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Volatile Organic Compounds by EPA 8260B - Quality Control (cont'd)

Analyte	Result (ug/kg)	PQL (ug/kg)	Spike Level	Source Result	% Rec	% Rec Limits	RPD	RPD Limit	Notes
Batch B5C0547 - MSVOA_S (continued)									
Blank (B5C0547-BLK1) - Continued				Prepared: 3/21/2015 Analyzed: 3/21/2015					
Dichlorodifluoromethane	ND	5.0			NR				
Ethyl Acetate	ND	50			NR				
Ethyl Ether	ND	50			NR				
Ethyl tert-butyl ether	ND	5.0			NR				
Ethylbenzene	ND	5.0			NR				
Freon-113	ND	5.0			NR				
Hexachlorobutadiene	ND	5.0			NR				
Isopropylbenzene	ND	5.0			NR				
m,p-Xylene	ND	10			NR				
Methylene chloride	ND	5.0			NR				
MTBE	ND	5.0			NR				
n-Butylbenzene	ND	5.0			NR				
n-Propylbenzene	ND	5.0			NR				
Naphthalene	ND	5.0			NR				
o-Xylene	ND	5.0			NR				
sec-Butylbenzene	ND	5.0			NR				
Styrene	ND	5.0			NR				
tert-Amyl methyl ether	ND	5.0			NR				
tert-Butanol	ND	100			NR				
tert-Butylbenzene	ND	5.0			NR				
Tetrachloroethene	ND	5.0			NR				
Toluene	ND	5.0			NR				
trans-1,2-Dichloroethene	ND	5.0			NR				
trans-1,3-Dichloropropene	ND	5.0			NR				
Trichloroethene	ND	5.0			NR				
Trichlorofluoromethane	ND	5.0			NR				
Vinyl acetate	ND	50			NR				
Vinyl chloride	ND	5.0			NR				
Surrogate: 1,2-Dichloroethane-d4	*49.92*		*50.0000*		*99.8*	*20 - 189*			
Surrogate: 4-Bromofluorobenzene	*44.36*		*50.0000*		*88.7*	*20 - 173*			
Surrogate: Dibromofluoromethane	*50.08*		*50.0000*		*100*	*26 - 178*			
Surrogate: Toluene-d8	*49.79*		*50.0000*		*99.6*	*31 - 166*			

Figure C-2.255

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Volatile Organic Compounds by EPA 8260B - Quality Control (cont'd)

Analyte	Result (ug/kg)	PQL (ug/kg)	Spike Level	Source Result	% Rec	% Rec Limits	RPD	RPD Limit	Notes
Batch B5C0547 - MSVOA_S (continued)									
LCS (B5C0547-BS1)				Prepared: 3/21/2015 Analyzed: 3/21/2015					
1,1,1,2-Tetrachloroethane	48.0000	5.0	50.0000		96.0	74 - 117			
1,1,1-Trichloroethane	47.7400	5.0	50.0000		95.5	65 - 130			
1,1,2,2-Tetrachloroethane	45.0500	5.0	50.0000		90.1	63 - 123			
1,1,2-Trichloroethane	47.7900	5.0	50.0000		95.6	66 - 122			
1,1-Dichloroethane	45.7400	5.0	50.0000		91.5	65 - 124			
1,1-Dichloroethene	45.0600	5.0	50.0000		90.1	60 - 130			
1,1-Dichloropropene	52.0900	5.0	50.0000		104	75 - 121			
1,2,3-Trichloropropane	45.2100	5.0	50.0000		90.4	62 - 126			
1,2,3-Trichlorobenzene	50.7700	5.0	50.0000		102	72 - 120			
1,2,4-Trichlorobenzene	49.8900	5.0	50.0000		99.8	75 - 121			
1,2,4-Trimethylbenzene	48.7700	5.0	50.0000		97.5	82 - 118			
1,2-Dibromo-3-chloropropane	43.2700	10	50.0000		86.5	67 - 121			
1,2-Dibromoethane	49.1800	5.0	50.0000		98.4	69 - 123			
1,2-Dichlorobenzene	48.2600	5.0	50.0000		96.5	81 - 114			
1,2-Dichloroethane	48.2400	5.0	50.0000		96.5	71 - 119			
1,2-Dichloropropane	48.3300	5.0	50.0000		96.7	71 - 118			
1,3,5-Trimethylbenzene	49.9700	5.0	50.0000		99.9	81 - 120			
1,3-Dichlorobenzene	48.9100	5.0	50.0000		97.8	80 - 115			
1,3-Dichloropropane	47.7200	5.0	50.0000		95.4	77 - 117			
1,4-Dichlorobenzene	49.1500	5.0	50.0000		98.3	80 - 115			
2,2-Dichloropropane	48.5300	5.0	50.0000		97.1	58 - 141			
2-Chlorotoluene	49.1600	5.0	50.0000		98.3	78 - 120			
4-Chlorotoluene	48.9200	5.0	50.0000		97.8	79 - 119			
4-Isopropyltoluene	51.7200	5.0	50.0000		103	81 - 125			
Benzene	97.0300	5.0	100.000		97.0	73 - 116			
Bromobenzene	46.4600	5.0	50.0000		92.9	78 - 115			
Bromochloromethane	46.4000	5.0	50.0000		92.8	66 - 121			
Bromodichloromethane	47.5700	5.0	50.0000		95.1	73 - 120			
Bromoform	46.8700	5.0	50.0000		93.7	68 - 124			
Bromomethane	34.6700	5.0	50.0000		69.3	26 - 163			
Carbon disulfide	39.6400	5.0	50.0000		79.3	43 - 142			
Carbon tetrachloride	50.2000	5.0	50.0000		100	67 - 130			
Chlorobenzene	49.0300	5.0	50.0000		98.1	82 - 114			
Chloroethane	57.2700	5.0	50.0000		115	40 - 151			
Chloroform	45.8300	5.0	50.0000		91.7	68 - 124			
Chloromethane	48.6500	5.0	50.0000		97.3	18 - 144			
cis-1,2-Dichloroethene	48.4200	5.0	50.0000		96.8	66 - 125			
cis-1,3-Dichloropropene	46.4200	5.0	50.0000		92.8	77 - 120			
Di-isopropyl ether	48.0300	5.0	50.0000		96.1	56 - 132			
Dibromochloromethane	46.9000	5.0	50.0000		93.8	76 - 118			
Dibromomethane	47.8300	5.0	50.0000		95.7	69 - 122			

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Volatile Organic Compounds by EPA 8260B - Quality Control (cont'd)

Analyte	Result (ug/kg)	PQL (ug/kg)	Spike Level	Source Result	% Rec	% Rec Limits	RPD	RPD Limit	Notes
Batch B5C0547 - MSVOA_S (continued)									
LCS (B5C0547-BS1) - Continued					Prepared: 3/21/2015 Analyzed: 3/21/2015				
Dichlorodifluoromethane	55.0800	5.0	50.0000		110	0 - 155			
Ethyl Acetate	478.100	50	500.000		95.6	31 - 137			
Ethyl Ether	526.580	50	500.000		105	47 - 150			
Ethyl tert-butyl ether	50.0800	5.0	50.0000		100	63 - 134			
Ethylbenzene	99.0400	5.0	100.000		99.0	79 - 115			
Freon-113	45.1800	5.0	50.0000		90.4	62 - 134			
Hexachlorobutadiene	50.8100	5.0	50.0000		102	71 - 121			
Isopropylbenzene	50.1500	5.0	50.0000		100	78 - 126			
m,p-Xylene	102.410	10	100.000		102	80 - 119			
Methylene chloride	52.0000	5.0	50.0000		104	56 - 129			
MTBE	47.4400	5.0	50.0000		94.9	61 - 124			
n-Butylbenzene	52.4500	5.0	50.0000		105	78 - 127			
n-Propylbenzene	50.8200	5.0	50.0000		102	77 - 128			
Naphthalene	48.3800	5.0	50.0000		96.8	61 - 141			
o-Xylene	101.450	5.0	100.000		101	81 - 116			
sec-Butylbenzene	51.7300	5.0	50.0000		103	81 - 125			
Styrene	52.0600	5.0	50.0000		104	82 - 120			
tert-Amyl methyl ether	47.1600	5.0	50.0000		94.3	52 - 149			
tert-Butanol	197.280	100	250.000		78.9	26 - 160			
tert-Butylbenzene	51.0900	5.0	50.0000		102	80 - 123			
Tetrachloroethene	50.2000	5.0	50.0000		100	75 - 123			
Toluene	99.7800	5.0	100.000		99.8	75 - 119			
trans-1,2-Dichloroethene	48.4200	5.0	50.0000		96.8	62 - 127			
trans-1,3-Dichloropropene	47.2300	5.0	50.0000		94.5	68 - 121			
Trichloroethene	50.2400	5.0	50.0000		100	73 - 119			
Trichlorofluoromethane	41.3900	5.0	50.0000		82.8	47 - 157			
Vinyl acetate	439.290	50	500.000		87.9	20 - 136			
Vinyl chloride	50.0400	5.0	50.0000		100	27 - 147			
Surrogate: 1,2-Dichloroethane-d4	*47.10*		*50.0000*		*94.2*	*20 - 189*			
Surrogate: 4-Bromofluorobenzene	*50.80*		*50.0000*		*102*	*20 - 173*			
Surrogate: Dibromofluoromethane	*49.07*		*50.0000*		*98.1*	*26 - 178*			
Surrogate: Toluene-d8	*51.45*		*50.0000*		*103*	*31 - 166*			

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Volatile Organic Compounds by EPA 8260B - Quality Control (cont'd)

Analyte	Result (ug/kg)	PQL (ug/kg)	Spike Level	Source Result	% Rec	% Rec Limits	RPD	RPD Limit	Notes
Batch B5C0547 - MSVOA_S (continued)									
Matrix Spike (B5C0547-MS1)		**Source: 1501023-03**		Prepared: 3/21/2015 Analyzed: 3/21/2015					
1,1,1,2-Tetrachloroethane	45.3400	5.0	50.0000	ND	90.7	45 - 122			
1,1,1-Trichloroethane	49.1700	5.0	50.0000	ND	98.3	46 - 131			
1,1,2,2-Tetrachloroethane	44.6600	5.0	50.0000	ND	89.3	34 - 133			
1,1,2-Trichloroethane	46.5800	5.0	50.0000	ND	93.2	40 - 133			
1,1-Dichloroethane	45.5700	5.0	50.0000	ND	91.1	50 - 120			
1,1-Dichloroethene	50.0600	5.0	50.0000	ND	100	42 - 130			
1,1-Dichloropropene	51.3400	5.0	50.0000	ND	103	49 - 125			
1,2,3-Trichloropropane	43.5600	5.0	50.0000	ND	87.1	42 - 130			
1,2,3-Trichlorobenzene	38.0000	5.0	50.0000	ND	76.0	2 - 136			
1,2,4-Trichlorobenzene	39.6500	5.0	50.0000	ND	79.3	6 - 137			
1,2,4-Trimethylbenzene	46.2700	5.0	50.0000	ND	92.5	37 - 129			
1,2-Dibromo-3-chloropropane	42.7700	10	50.0000	ND	85.5	36 - 135			
1,2-Dibromoethane	47.6600	5.0	50.0000	ND	95.3	43 - 129			
1,2-Dichlorobenzene	44.7800	5.0	50.0000	ND	89.6	31 - 129			
1,2-Dichloroethane	45.6600	5.0	50.0000	ND	91.3	50 - 122			
1,2-Dichloropropane	46.5800	5.0	50.0000	ND	93.2	51 - 119			
1,3,5-Trimethylbenzene	47.5700	5.0	50.0000	ND	95.1	38 - 130			
1,3-Dichlorobenzene	45.7600	5.0	50.0000	ND	91.5	31 - 128			
1,3-Dichloropropane	46.3400	5.0	50.0000	ND	92.7	52 - 122			
1,4-Dichlorobenzene	46.0200	5.0	50.0000	ND	92.0	31 - 128			
2,2-Dichloropropane	48.9200	5.0	50.0000	ND	97.8	42 - 140			
2-Chlorotoluene	47.0000	5.0	50.0000	ND	94.0	38 - 129			
4-Chlorotoluene	46.9100	5.0	50.0000	ND	93.8	38 - 128			
4-Isopropyltoluene	49.6100	5.0	50.0000	ND	99.2	31 - 137			
Benzene	94.0900	5.0	100.000	ND	94.1	51 - 117			
Bromobenzene	44.4000	5.0	50.0000	ND	88.8	41 - 125			
Bromochloromethane	45.4600	5.0	50.0000	ND	90.9	47 - 123			
Bromodichloromethane	46.0700	5.0	50.0000	ND	92.1	50 - 122			
Bromoform	46.5100	5.0	50.0000	ND	93.0	39 - 131			
Bromomethane	33.3600	5.0	50.0000	ND	66.7	10 - 154			
Carbon disulfide	56.7900	5.0	50.0000	ND	114	24 - 138			
Carbon tetrachloride	50.3500	5.0	50.0000	ND	101	44 - 131			
Chlorobenzene	47.3900	5.0	50.0000	ND	94.8	46 - 123			
Chloroethane	49.8500	5.0	50.0000	ND	99.7	27 - 143			
Chloroform	44.1100	5.0	50.0000	ND	88.2	50 - 124			
Chloromethane	41.9700	5.0	50.0000	ND	83.9	8 - 139			
cis-1,2-Dichloroethene	47.4900	5.0	50.0000	ND	95.0	48 - 125			
cis-1,3-Dichloropropene	45.4100	5.0	50.0000	ND	90.8	51 - 123			
Di-isopropyl ether	45.2400	5.0	50.0000	ND	90.5	45 - 125			
Dibromochloromethane	45.6300	5.0	50.0000	ND	91.3	48 - 124			
Dibromomethane	47.9900	5.0	50.0000	ND	96.0	48 - 124			

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Volatile Organic Compounds by EPA 8260B - Quality Control (cont'd)

Analyte	Result (ug/kg)	PQL (ug/kg)	Spike Level	Source Result	% Rec	% Rec Limits	RPD	RPD Limit	Notes
Batch B5C0547 - MSVOA_S (continued)									
Matrix Spike (B5C0547-MS1) - Continued		**Source: 1501023-03**		Prepared: 3/21/2015 Analyzed: 3/21/2015					
Dichlorodifluoromethane	51.7400	5.0	50.0000	ND	103	0 - 150			
Ethyl Acetate	476.940	50	500.000	ND	95.4	0 - 140			
Ethyl Ether	466.540	50	500.000	ND	93.3	36 - 142			
Ethyl tert-butyl ether	47.6100	5.0	50.0000	ND	95.2	46 - 133			
Ethylbenzene	95.6500	5.0	100.000	ND	95.6	46 - 123			
Freon-113	52.8200	5.0	50.0000	ND	106	38 - 137			
Hexachlorobutadiene	44.8000	5.0	50.0000	ND	89.6	5 - 132			
Isopropylbenzene	48.8700	5.0	50.0000	ND	97.7	43 - 132			
m,p-Xylene	99.7400	10	100.000	ND	99.7	45 - 128			
Methylene chloride	51.1700	5.0	50.0000	ND	102	37 - 126			
MTBE	45.2700	5.0	50.0000	ND	90.5	46 - 125			
n-Butylbenzene	48.3800	5.0	50.0000	ND	96.8	24 - 138			
n-Propylbenzene	49.3500	5.0	50.0000	ND	98.7	40 - 133			
Naphthalene	39.4300	5.0	50.0000	ND	78.9	10 - 149			
o-Xylene	99.8800	5.0	100.000	ND	99.9	45 - 125			
sec-Butylbenzene	49.6600	5.0	50.0000	ND	99.3	33 - 136			
Styrene	51.4600	5.0	50.0000	ND	103	43 - 128			
tert-Amyl methyl ether	45.1600	5.0	50.0000	ND	90.3	35 - 147			
tert-Butanol	215.520	100	250.000	ND	86.2	0 - 208			
tert-Butylbenzene	49.1900	5.0	50.0000	ND	98.4	36 - 133			
Tetrachloroethene	50.4500	5.0	50.0000	ND	101	41 - 129			
Toluene	97.8500	5.0	100.000	ND	97.8	49 - 124			
trans-1,2-Dichloroethene	47.7100	5.0	50.0000	ND	95.4	44 - 126			
trans-1,3-Dichloropropene	44.3200	5.0	50.0000	ND	88.6	42 - 125			
Trichloroethene	50.3200	5.0	50.0000	ND	101	38 - 139			
Trichlorofluoromethane	42.1900	5.0	50.0000	ND	84.4	30 - 157			
Vinyl acetate	372.970	50	500.000	ND	74.6	0 - 132			
Vinyl chloride	44.8000	5.0	50.0000	ND	89.6	19 - 142			
Surrogate: 1,2-Dichloroethane-d4	*47.78*		*50.0000*		*95.6*	*20 - 189*			
Surrogate: 4-Bromofluorobenzene	*51.21*		*50.0000*		*102*	*20 - 173*			
Surrogate: Dibromofluoromethane	*49.73*		*50.0000*		*99.5*	*26 - 178*			
Surrogate: Toluene-d8	*52.37*		*50.0000*		*105*	*31 - 166*			

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Volatile Organic Compounds by EPA 8260B - Quality Control (cont'd)

Analyte	Result (ug/kg)	PQL (ug/kg)	Spike Level	Source Result	% Rec	% Rec Limits	RPD	RPD Limit	Notes
Batch B5C0547 - MSVOA_S (continued)									
Matrix Spike Dup (B5C0547-MSD1)		**Source: 1501023-03**		Prepared: 3/21/2015 Analyzed: 3/21/2015					
1,1,1,2-Tetrachloroethane	42.8500	5.0	50.0000	ND	85.7	45 - 122	5.65	20	
1,1,1-Trichloroethane	43.9300	5.0	50.0000	ND	87.9	46 - 131	11.3	20	
1,1,2,2-Tetrachloroethane	41.4400	5.0	50.0000	ND	82.9	34 - 133	7.48	20	
1,1,2-Trichloroethane	42.5200	5.0	50.0000	ND	85.0	40 - 133	9.11	20	
1,1-Dichloroethane	40.7800	5.0	50.0000	ND	81.6	50 - 120	11.1	20	
1,1-Dichloroethene	46.2800	5.0	50.0000	ND	92.6	42 - 130	7.85	20	
1,1-Dichloropropene	47.6900	5.0	50.0000	ND	95.4	49 - 125	7.37	20	
1,2,3-Trichloropropane	41.0000	5.0	50.0000	ND	82.0	42 - 130	6.05	20	
1,2,3-Trichlorobenzene	45.9100	5.0	50.0000	ND	91.8	2 - 136	18.9	20	
1,2,4-Trichlorobenzene	45.1100	5.0	50.0000	ND	90.2	6 - 137	12.9	20	
1,2,4-Trimethylbenzene	43.9400	5.0	50.0000	ND	87.9	37 - 129	5.17	20	
1,2-Dibromo-3-chloropropane	40.1500	10	50.0000	ND	80.3	36 - 135	6.32	20	
1,2-Dibromoethane	42.5000	5.0	50.0000	ND	85.0	43 - 129	11.4	20	
1,2-Dichlorobenzene	43.1700	5.0	50.0000	ND	86.3	31 - 129	3.66	20	
1,2-Dichloroethane	42.2200	5.0	50.0000	ND	84.4	50 - 122	7.83	20	
1,2-Dichloropropane	42.6800	5.0	50.0000	ND	85.4	51 - 119	8.74	20	
1,3,5-Trimethylbenzene	44.6800	5.0	50.0000	ND	89.4	38 - 130	6.27	20	
1,3-Dichlorobenzene	42.6800	5.0	50.0000	ND	85.4	31 - 128	6.97	20	
1,3-Dichloropropane	42.7100	5.0	50.0000	ND	85.4	52 - 122	8.15	20	
1,4-Dichlorobenzene	43.3000	5.0	50.0000	ND	86.6	31 - 128	6.09	20	
2,2-Dichloropropane	43.0400	5.0	50.0000	ND	86.1	42 - 140	12.8	20	
2-Chlorotoluene	43.1700	5.0	50.0000	ND	86.3	38 - 129	8.50	20	
4-Chlorotoluene	43.4700	5.0	50.0000	ND	86.9	38 - 128	7.61	20	
4-Isopropyltoluene	46.6700	5.0	50.0000	ND	93.3	31 - 137	6.11	20	
Benzene	87.3600	5.0	100.000	ND	87.4	51 - 117	7.42	20	
Bromobenzene	41.2900	5.0	50.0000	ND	82.6	41 - 125	7.26	20	
Bromochloromethane	40.0400	5.0	50.0000	ND	80.1	47 - 123	12.7	20	
Bromodichloromethane	41.8100	5.0	50.0000	ND	83.6	50 - 122	9.70	20	
Bromoform	42.4300	5.0	50.0000	ND	84.9	39 - 131	9.17	20	
Bromomethane	31.6600	5.0	50.0000	ND	63.3	10 - 154	5.23	20	
Carbon disulfide	49.2600	5.0	50.0000	ND	98.5	24 - 138	14.2	20	
Carbon tetrachloride	46.0500	5.0	50.0000	ND	92.1	44 - 131	8.92	20	
Chlorobenzene	44.3000	5.0	50.0000	ND	88.6	46 - 123	6.74	20	
Chloroethane	44.9600	5.0	50.0000	ND	89.9	27 - 143	10.3	20	
Chloroform	40.8200	5.0	50.0000	ND	81.6	50 - 124	7.75	20	
Chloromethane	45.8100	5.0	50.0000	ND	91.6	8 - 139	8.75	20	
cis-1,2-Dichloroethene	43.8200	5.0	50.0000	ND	87.6	48 - 125	8.04	20	
cis-1,3-Dichloropropene	41.3700	5.0	50.0000	ND	82.7	51 - 123	9.31	20	
Di-isopropyl ether	43.5000	5.0	50.0000	ND	87.0	45 - 125	3.92	20	
Dibromochloromethane	41.8300	5.0	50.0000	ND	83.7	48 - 124	8.69	20	
Dibromomethane	43.8500	5.0	50.0000	ND	87.7	48 - 124	9.02	20	

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Volatile Organic Compounds by EPA 8260B - Quality Control (cont'd)

Analyte	Result (ug/kg)	PQL (ug/kg)	Spike Level	Source Result	% Rec	% Rec Limits	RPD	RPD Limit	Notes
Batch B5C0547 - MSVOA_S (continued)									
Matrix Spike Dup (B5C0547-MSD1) - Continued		**Source: 1501023-03**		Prepared: 3/21/2015 Analyzed: 3/21/2015					
Dichlorodifluoromethane	52.0300	5.0	50.0000	ND	104	0 - 150	0.559	20	
Ethyl Acetate	445.570	50	500.000	ND	89.1	0 - 140	6.80	20	
Ethyl Ether	425.390	50	500.000	ND	85.1	36 - 142	9.23	20	
Ethyl tert-butyl ether	45.2400	5.0	50.0000	ND	90.5	46 - 133	5.11	20	
Ethylbenzene	90.2600	5.0	100.000	ND	90.3	46 - 123	5.80	20	
Freon-113	49.9200	5.0	50.0000	ND	99.8	38 - 137	5.65	20	
Hexachlorobutadiene	45.6800	5.0	50.0000	ND	91.4	5 - 132	1.95	20	
Isopropylbenzene	45.4200	5.0	50.0000	ND	90.8	43 - 132	7.32	20	
m,p-Xylene	92.4100	10	100.000	ND	92.4	45 - 128	7.63	20	
Methylene chloride	45.5500	5.0	50.0000	ND	91.1	37 - 126	11.6	20	
MTBE	42.8100	5.0	50.0000	ND	85.6	46 - 125	5.59	20	
n-Butylbenzene	47.2500	5.0	50.0000	ND	94.5	24 - 138	2.36	20	
n-Propylbenzene	45.7400	5.0	50.0000	ND	91.5	40 - 133	7.59	20	
Naphthalene	46.0000	5.0	50.0000	ND	92.0	10 - 149	15.4	20	
o-Xylene	93.7300	5.0	100.000	ND	93.7	45 - 125	6.35	20	
sec-Butylbenzene	46.6800	5.0	50.0000	ND	93.4	33 - 136	6.19	20	
Styrene	46.5800	5.0	50.0000	ND	93.2	43 - 128	9.96	20	
tert-Amyl methyl ether	42.9000	5.0	50.0000	ND	85.8	35 - 147	5.13	20	
tert-Butanol	199.460	100	250.000	ND	79.8	0 - 208	7.74	20	
tert-Butylbenzene	45.4800	5.0	50.0000	ND	91.0	36 - 133	7.84	20	
Tetrachloroethene	46.3400	5.0	50.0000	ND	92.7	41 - 129	8.49	20	
Toluene	90.9200	5.0	100.000	ND	90.9	49 - 124	7.34	20	
trans-1,2-Dichloroethene	44.2000	5.0	50.0000	ND	88.4	44 - 126	7.64	20	
trans-1,3-Dichloropropene	41.5700	5.0	50.0000	ND	83.1	42 - 125	6.40	20	
Trichloroethene	46.1800	5.0	50.0000	ND	92.4	38 - 139	8.58	20	
Trichlorofluoromethane	36.1600	5.0	50.0000	ND	72.3	30 - 157	15.4	20	
Vinyl acetate	304.520	50	500.000	ND	60.9	0 - 132	20.2	20	R
Vinyl chloride	42.8700	5.0	50.0000	ND	85.7	19 - 142	4.40	20	
Surrogate: 1,2-Dichloroethane-d4	*46.94*		*50.0000*		*93.9*	*20 - 189*			
Surrogate: 4-Bromofluorobenzene	*50.15*		*50.0000*		*100*	*20 - 173*			
Surrogate: Dibromofluoromethane	*49.02*		*50.0000*		*98.0*	*26 - 178*			
Surrogate: Toluene-d8	*51.01*		*50.0000*		*102*	*31 - 166*			

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Volatile Organic Compounds by EPA 8260B - Quality Control (cont'd)

Analyte	Result (ug/kg)	PQL (ug/kg)	Spike Level	Source Result	% Rec	% Rec Limits	RPD	RPD Limit	Notes
Batch B5C0557 - MSVOA_S									
Blank (B5C0557-BLK1)				Prepared: 3/23/2015 Analyzed: 3/23/2015					
1,1,1,2-Tetrachloroethane	ND	5.0			NR				
1,1,1-Trichloroethane	ND	5.0			NR				
1,1,2,2-Tetrachloroethane	ND	5.0			NR				
1,1,2-Trichloroethane	ND	5.0			NR				
1,1-Dichloroethane	ND	5.0			NR				
1,1-Dichloroethene	ND	5.0			NR				
1,1-Dichloropropene	ND	5.0			NR				
1,2,3-Trichloropropane	ND	5.0			NR				
1,2,3-Trichlorobenzene	ND	5.0			NR				
1,2,4-Trichlorobenzene	ND	5.0			NR				
1,2,4-Trimethylbenzene	ND	5.0			NR				
1,2-Dibromo-3-chloropropane	ND	10			NR				
1,2-Dibromoethane	ND	5.0			NR				
1,2-Dichlorobenzene	ND	5.0			NR				
1,2-Dichloroethane	ND	5.0			NR				
1,2-Dichloropropane	ND	5.0			NR				
1,3,5-Trimethylbenzene	ND	5.0			NR				
1,3-Dichlorobenzene	ND	5.0			NR				
1,3-Dichloropropane	ND	5.0			NR				
1,4-Dichlorobenzene	ND	5.0			NR				
2,2-Dichloropropane	ND	5.0			NR				
2-Chlorotoluene	ND	5.0			NR				
4-Chlorotoluene	ND	5.0			NR				
4-Isopropyltoluene	ND	5.0			NR				
Benzene	ND	5.0			NR				
Bromobenzene	ND	5.0			NR				
Bromochloromethane	ND	5.0			NR				
Bromodichloromethane	ND	5.0			NR				
Bromoform	ND	5.0			NR				
Bromomethane	ND	5.0			NR				
Carbon disulfide	ND	5.0			NR				
Carbon tetrachloride	ND	5.0			NR				
Chlorobenzene	ND	5.0			NR				
Chloroethane	ND	5.0			NR				
Chloroform	ND	5.0			NR				
Chloromethane	ND	5.0			NR				
cis-1,2-Dichloroethene	ND	5.0			NR				
cis-1,3-Dichloropropene	ND	5.0			NR				
Di-isopropyl ether	ND	5.0			NR				
Dibromochloromethane	ND	5.0			NR				
Dibromomethane	ND	5.0			NR				

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Volatile Organic Compounds by EPA 8260B - Quality Control (cont'd)

Analyte	Result (ug/kg)	PQL (ug/kg)	Spike Level	Source Result	% Rec	% Rec Limits	RPD	RPD Limit	Notes
Batch B5C0557 - MSVOA_S (continued)									
Blank (B5C0557-BLK1) - Continued				Prepared: 3/23/2015 Analyzed: 3/23/2015					
Dichlorodifluoromethane	ND	5.0			NR				
Ethyl Acetate	ND	50			NR				
Ethyl Ether	ND	50			NR				
Ethyl tert-butyl ether	ND	5.0			NR				
Ethylbenzene	ND	5.0			NR				
Freon-113	ND	5.0			NR				
Hexachlorobutadiene	ND	5.0			NR				
Isopropylbenzene	ND	5.0			NR				
m,p-Xylene	ND	10			NR				
Methylene chloride	ND	5.0			NR				
MTBE	ND	5.0			NR				
n-Butylbenzene	ND	5.0			NR				
n-Propylbenzene	ND	5.0			NR				
Naphthalene	ND	5.0			NR				
o-Xylene	ND	5.0			NR				
sec-Butylbenzene	ND	5.0			NR				
Styrene	ND	5.0			NR				
tert-Amyl methyl ether	ND	5.0			NR				
tert-Butanol	ND	100			NR				
tert-Butylbenzene	ND	5.0			NR				
Tetrachloroethene	ND	5.0			NR				
Toluene	ND	5.0			NR				
trans-1,2-Dichloroethene	ND	5.0			NR				
trans-1,3-Dichloropropene	ND	5.0			NR				
Trichloroethene	ND	5.0			NR				
Trichlorofluoromethane	ND	5.0			NR				
Vinyl acetate	ND	50			NR				
Vinyl chloride	ND	5.0			NR				
Surrogate: 1,2-Dichloroethane-d4	*53.23*		*50.0000*		*106*	*20 - 189*			
Surrogate: 4-Bromofluorobenzene	*43.92*		*50.0000*		*87.8*	*20 - 173*			
Surrogate: Dibromofluoromethane	*54.67*		*50.0000*		*109*	*26 - 178*			
Surrogate: Toluene-d8	*50.32*		*50.0000*		*101*	*31 - 166*			

Figure C-2.263

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Volatile Organic Compounds by EPA 8260B - Quality Control (cont'd)

Analyte	Result (ug/kg)	PQL (ug/kg)	Spike Level	Source Result	% Rec	% Rec Limits	RPD	RPD Limit	Notes
Batch B5C0557 - MSVOA_S (continued)									
LCS (B5C0557-BS1)				Prepared: 3/23/2015 Analyzed: 3/23/2015					
1,1,1,2-Tetrachloroethane	50.6600	5.0	50.0000		101	74 - 117			
1,1,1-Trichloroethane	53.9500	5.0	50.0000		108	65 - 130			
1,1,2,2-Tetrachloroethane	46.2300	5.0	50.0000		92.5	63 - 123			
1,1,2-Trichloroethane	51.3400	5.0	50.0000		103	66 - 122			
1,1-Dichloroethane	50.4700	5.0	50.0000		101	65 - 124			
1,1-Dichloroethene	49.7200	5.0	50.0000		99.4	60 - 130			
1,1-Dichloropropene	55.0700	5.0	50.0000		110	75 - 121			
1,2,3-Trichloropropane	46.1000	5.0	50.0000		92.2	62 - 126			
1,2,3-Trichlorobenzene	54.0600	5.0	50.0000		108	72 - 120			
1,2,4-Trichlorobenzene	52.3300	5.0	50.0000		105	75 - 121			
1,2,4-Trimethylbenzene	51.3500	5.0	50.0000		103	82 - 118			
1,2-Dibromo-3-chloropropane	43.2700	10	50.0000		86.5	67 - 121			
1,2-Dibromoethane	50.8300	5.0	50.0000		102	69 - 123			
1,2-Dichlorobenzene	50.1900	5.0	50.0000		100	81 - 114			
1,2-Dichloroethane	50.2700	5.0	50.0000		101	71 - 119			
1,2-Dichloropropane	50.8900	5.0	50.0000		102	71 - 118			
1,3,5-Trimethylbenzene	51.7300	5.0	50.0000		103	81 - 120			
1,3-Dichlorobenzene	50.6300	5.0	50.0000		101	80 - 115			
1,3-Dichloropropane	48.8500	5.0	50.0000		97.7	77 - 117			
1,4-Dichlorobenzene	51.3000	5.0	50.0000		103	80 - 115			
2,2-Dichloropropane	52.4900	5.0	50.0000		105	58 - 141			
2-Chlorotoluene	51.2800	5.0	50.0000		103	78 - 120			
4-Chlorotoluene	51.3600	5.0	50.0000		103	79 - 119			
4-Isopropyltoluene	53.3400	5.0	50.0000		107	81 - 125			
Benzene	102.730	5.0	100.000		103	73 - 116			
Bromobenzene	48.9900	5.0	50.0000		98.0	78 - 115			
Bromochloromethane	51.9000	5.0	50.0000		104	66 - 121			
Bromodichloromethane	51.1700	5.0	50.0000		102	73 - 120			
Bromoform	48.2100	5.0	50.0000		96.4	68 - 124			
Bromomethane	54.9000	5.0	50.0000		110	26 - 163			
Carbon disulfide	43.9600	5.0	50.0000		87.9	43 - 142			
Carbon tetrachloride	54.2200	5.0	50.0000		108	67 - 130			
Chlorobenzene	50.4400	5.0	50.0000		101	82 - 114			
Chloroethane	64.0400	5.0	50.0000		128	40 - 151			
Chloroform	51.5100	5.0	50.0000		103	68 - 124			
Chloromethane	55.7100	5.0	50.0000		111	18 - 144			
cis-1,2-Dichloroethene	54.4400	5.0	50.0000		109	66 - 125			
cis-1,3-Dichloropropene	46.8200	5.0	50.0000		93.6	77 - 120			
Di-isopropyl ether	50.7900	5.0	50.0000		102	56 - 132			
Dibromochloromethane	47.9500	5.0	50.0000		95.9	76 - 118			
Dibromomethane	52.4800	5.0	50.0000		105	69 - 122			

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Volatile Organic Compounds by EPA 8260B - Quality Control (cont'd)

Analyte	Result (ug/kg)	PQL (ug/kg)	Spike Level	Source Result	% Rec	% Rec Limits	RPD	RPD Limit	Notes
Batch B5C0557 - MSVOA_S (continued)									
LCS (B5C0557-BS1) - Continued				Prepared: 3/23/2015 Analyzed: 3/23/2015					
Dichlorodifluoromethane	61.6900	5.0	50.0000		123	0 - 155			
Ethyl Acetate	496.870	50	500.000		99.4	31 - 137			
Ethyl Ether	562.160	50	500.000		112	47 - 150			
Ethyl tert-butyl ether	52.0800	5.0	50.0000		104	63 - 134			
Ethylbenzene	102.780	5.0	100.000		103	79 - 115			
Freon-113	50.3700	5.0	50.0000		101	62 - 134			
Hexachlorobutadiene	52.9600	5.0	50.0000		106	71 - 121			
Isopropylbenzene	52.1700	5.0	50.0000		104	78 - 126			
m,p-Xylene	104.960	10	100.000		105	80 - 119			
Methylene chloride	57.6200	5.0	50.0000		115	56 - 129			
MTBE	48.1400	5.0	50.0000		96.3	61 - 124			
n-Butylbenzene	53.6000	5.0	50.0000		107	78 - 127			
n-Propylbenzene	52.7600	5.0	50.0000		106	77 - 128			
Naphthalene	48.6500	5.0	50.0000		97.3	61 - 141			
o-Xylene	104.300	5.0	100.000		104	81 - 116			
sec-Butylbenzene	53.2900	5.0	50.0000		107	81 - 125			
Styrene	53.9400	5.0	50.0000		108	82 - 120			
tert-Amyl methyl ether	48.3100	5.0	50.0000		96.6	52 - 149			
tert-Butanol	204.770	100	250.000		81.9	26 - 160			
tert-Butylbenzene	52.3100	5.0	50.0000		105	80 - 123			
Tetrachloroethene	51.4400	5.0	50.0000		103	75 - 123			
Toluene	107.040	5.0	100.000		107	75 - 119			
trans-1,2-Dichloroethene	53.6200	5.0	50.0000		107	62 - 127			
trans-1,3-Dichloropropene	49.5200	5.0	50.0000		99.0	68 - 121			
Trichloroethene	53.0700	5.0	50.0000		106	73 - 119			
Trichlorofluoromethane	48.4700	5.0	50.0000		96.9	47 - 157			
Vinyl acetate	461.610	50	500.000		92.3	20 - 136			
Vinyl chloride	56.6800	5.0	50.0000		113	27 - 147			
Surrogate: 1,2-Dichloroethane-d4	*50.46*		*50.0000*		*101*	*20 - 189*			
Surrogate: 4-Bromofluorobenzene	*50.82*		*50.0000*		*102*	*20 - 173*			
Surrogate: Dibromofluoromethane	*54.23*		*50.0000*		*108*	*26 - 178*			
Surrogate: Toluene-d8	*53.02*		*50.0000*		*106*	*31 - 166*			

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Volatile Organic Compounds by EPA 8260B - Quality Control (cont'd)

Analyte	Result (ug/kg)	PQL (ug/kg)	Spike Level	Source Result	% Rec	% Rec Limits	RPD	RPD Limit	Notes
Batch B5C0557 - MSVOA_S (continued)									
Matrix Spike (B5C0557-MS1)		**Source: 1501023-04**		Prepared: 3/23/2015 Analyzed: 3/23/2015					
1,1,1,2-Tetrachloroethane	45.1800	5.0	50.0000	ND	90.4	45 - 122			
1,1,1-Trichloroethane	49.3400	5.0	50.0000	ND	98.7	46 - 131			
1,1,2,2-Tetrachloroethane	45.3100	5.0	50.0000	ND	90.6	34 - 133			
1,1,2-Trichloroethane	47.6100	5.0	50.0000	ND	95.2	40 - 133			
1,1-Dichloroethane	47.7200	5.0	50.0000	ND	95.4	50 - 120			
1,1-Dichloroethene	45.5600	5.0	50.0000	ND	91.1	42 - 130			
1,1-Dichloropropene	49.2400	5.0	50.0000	ND	98.5	49 - 125			
1,2,3-Trichloropropane	45.2100	5.0	50.0000	ND	90.4	42 - 130			
1,2,3-Trichlorobenzene	38.0900	5.0	50.0000	ND	76.2	2 - 136			
1,2,4-Trichlorobenzene	39.6900	5.0	50.0000	ND	79.4	6 - 137			
1,2,4-Trimethylbenzene	47.0000	5.0	50.0000	ND	94.0	37 - 129			
1,2-Dibromo-3-chloropropane	43.6900	10	50.0000	ND	87.4	36 - 135			
1,2-Dibromoethane	48.7700	5.0	50.0000	ND	97.5	43 - 129			
1,2-Dichlorobenzene	45.5700	5.0	50.0000	ND	91.1	31 - 129			
1,2-Dichloroethane	48.4600	5.0	50.0000	ND	96.9	50 - 122			
1,2-Dichloropropane	46.2800	5.0	50.0000	ND	92.6	51 - 119			
1,3,5-Trimethylbenzene	47.5800	5.0	50.0000	ND	95.2	38 - 130			
1,3-Dichlorobenzene	46.4800	5.0	50.0000	ND	93.0	31 - 128			
1,3-Dichloropropane	45.8200	5.0	50.0000	ND	91.6	52 - 122			
1,4-Dichlorobenzene	46.4800	5.0	50.0000	ND	93.0	31 - 128			
2,2-Dichloropropane	49.6100	5.0	50.0000	ND	99.2	42 - 140			
2-Chlorotoluene	47.7700	5.0	50.0000	ND	95.5	38 - 129			
4-Chlorotoluene	47.6400	5.0	50.0000	ND	95.3	38 - 128			
4-Isopropyltoluene	48.5000	5.0	50.0000	ND	97.0	31 - 137			
Benzene	92.9100	5.0	100.000	ND	92.9	51 - 117			
Bromobenzene	45.7400	5.0	50.0000	ND	91.5	41 - 125			
Bromochloromethane	50.1100	5.0	50.0000	ND	100	47 - 123			
Bromodichloromethane	47.2000	5.0	50.0000	ND	94.4	50 - 122			
Bromoform	46.2900	5.0	50.0000	ND	92.6	39 - 131			
Bromomethane	46.4500	5.0	50.0000	ND	92.9	10 - 154			
Carbon disulfide	43.2000	5.0	50.0000	ND	86.4	24 - 138			
Carbon tetrachloride	48.7400	5.0	50.0000	ND	97.5	44 - 131			
Chlorobenzene	46.6300	5.0	50.0000	ND	93.3	46 - 123			
Chloroethane	54.5600	5.0	50.0000	ND	109	27 - 143			
Chloroform	47.2000	5.0	50.0000	ND	94.4	50 - 124			
Chloromethane	44.1600	5.0	50.0000	ND	88.3	8 - 139			
cis-1,2-Dichloroethene	49.6900	5.0	50.0000	ND	99.4	48 - 125			
cis-1,3-Dichloropropene	45.8000	5.0	50.0000	ND	91.6	51 - 123			
Di-isopropyl ether	46.6400	5.0	50.0000	ND	93.3	45 - 125			
Dibromochloromethane	44.6400	5.0	50.0000	ND	89.3	48 - 124			
Dibromomethane	51.2700	5.0	50.0000	ND	103	48 - 124			

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Volatile Organic Compounds by EPA 8260B - Quality Control (cont'd)

Analyte	Result (ug/kg)	PQL (ug/kg)	Spike Level	Source Result	% Rec	% Rec Limits	RPD	RPD Limit	Notes
Batch B5C0557 - MSVOA_S (continued)									
Matrix Spike (B5C0557-MS1) - Continued		**Source: 1501023-04**		Prepared: 3/23/2015 Analyzed: 3/23/2015					
Dichlorodifluoromethane	52.8400	5.0	50.0000	ND	106	0 - 150			
Ethyl Acetate	509.050	50	500.000	ND	102	0 - 140			
Ethyl Ether	502.570	50	500.000	ND	101	36 - 142			
Ethyl tert-butyl ether	48.1900	5.0	50.0000	ND	96.4	46 - 133			
Ethylbenzene	92.5600	5.0	100.000	ND	92.6	46 - 123			
Freon-113	45.2000	5.0	50.0000	ND	90.4	38 - 137			
Hexachlorobutadiene	43.4500	5.0	50.0000	ND	86.9	5 - 132			
Isopropylbenzene	48.3200	5.0	50.0000	ND	96.6	43 - 132			
m,p-Xylene	95.8100	10	100.000	ND	95.8	45 - 128			
Methylene chloride	56.8300	5.0	50.0000	ND	114	37 - 126			
MTBE	46.5300	5.0	50.0000	ND	93.1	46 - 125			
n-Butylbenzene	47.5800	5.0	50.0000	ND	95.2	24 - 138			
n-Propylbenzene	48.7700	5.0	50.0000	ND	97.5	40 - 133			
Naphthalene	38.6700	5.0	50.0000	ND	77.3	10 - 149			
o-Xylene	94.9600	5.0	100.000	ND	95.0	45 - 125			
sec-Butylbenzene	48.8500	5.0	50.0000	ND	97.7	33 - 136			
Styrene	50.0500	5.0	50.0000	ND	100	43 - 128			
tert-Amyl methyl ether	46.2200	5.0	50.0000	ND	92.4	35 - 147			
tert-Butanol	249.110	100	250.000	ND	99.6	0 - 208			
tert-Butylbenzene	48.0200	5.0	50.0000	ND	96.0	36 - 133			
Tetrachloroethene	46.7900	5.0	50.0000	ND	93.6	41 - 129			
Toluene	97.0900	5.0	100.000	ND	97.1	49 - 124			
trans-1,2-Dichloroethene	49.1700	5.0	50.0000	ND	98.3	44 - 126			
trans-1,3-Dichloropropene	48.0700	5.0	50.0000	ND	96.1	42 - 125			
Trichloroethene	48.9700	5.0	50.0000	ND	97.9	38 - 139			
Trichlorofluoromethane	45.3500	5.0	50.0000	ND	90.7	30 - 157			
Vinyl acetate	442.090	50	500.000	ND	88.4	0 - 132			
Vinyl chloride	48.0900	5.0	50.0000	ND	96.2	19 - 142			
Surrogate: 1,2-Dichloroethane-d4	*56.94*		*50.0000*		*114*	*20 - 189*			
Surrogate: 4-Bromofluorobenzene	*50.58*		*50.0000*		*101*	*20 - 173*			
Surrogate: Dibromofluoromethane	*54.14*		*50.0000*		*108*	*26 - 178*			
Surrogate: Toluene-d8	*51.51*		*50.0000*		*103*	*31 - 166*			

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Volatile Organic Compounds by EPA 8260B - Quality Control (cont'd)

Analyte	Result (ug/kg)	PQL (ug/kg)	Spike Level	Source Result	% Rec	% Rec Limits	RPD	RPD Limit	Notes
Batch B5C0557 - MSVOA_S (continued)									
Matrix Spike Dup (B5C0557-MSD1)		**Source: 1501023-04**		Prepared: 3/23/2015 Analyzed: 3/23/2015					
1,1,1,2-Tetrachloroethane	44.8100	5.0	50.0000	ND	89.6	45 - 122	0.822	20	
1,1,1-Trichloroethane	46.4600	5.0	50.0000	ND	92.9	46 - 131	6.01	20	
1,1,2,2-Tetrachloroethane	44.3800	5.0	50.0000	ND	88.8	34 - 133	2.07	20	
1,1,2-Trichloroethane	46.3400	5.0	50.0000	ND	92.7	40 - 133	2.70	20	
1,1-Dichloroethane	44.3500	5.0	50.0000	ND	88.7	50 - 120	7.32	20	
1,1-Dichloroethene	43.6200	5.0	50.0000	ND	87.2	42 - 130	4.35	20	
1,1-Dichloropropene	45.0100	5.0	50.0000	ND	90.0	49 - 125	8.98	20	
1,2,3-Trichloropropane	44.3000	5.0	50.0000	ND	88.6	42 - 130	2.03	20	
1,2,3-Trichlorobenzene	48.8800	5.0	50.0000	ND	97.8	2 - 136	24.8	20	R
1,2,4-Trichlorobenzene	47.2400	5.0	50.0000	ND	94.5	6 - 137	17.4	20	
1,2,4-Trimethylbenzene	44.7300	5.0	50.0000	ND	89.5	37 - 129	4.95	20	
1,2-Dibromo-3-chloropropane	44.4700	10	50.0000	ND	88.9	36 - 135	1.77	20	
1,2-Dibromoethane	45.8200	5.0	50.0000	ND	91.6	43 - 129	6.24	20	
1,2-Dichlorobenzene	43.8600	5.0	50.0000	ND	87.7	31 - 129	3.82	20	
1,2-Dichloroethane	45.6600	5.0	50.0000	ND	91.3	50 - 122	5.95	20	
1,2-Dichloropropane	44.0200	5.0	50.0000	ND	88.0	51 - 119	5.01	20	
1,3,5-Trimethylbenzene	44.5800	5.0	50.0000	ND	89.2	38 - 130	6.51	20	
1,3-Dichlorobenzene	44.1500	5.0	50.0000	ND	88.3	31 - 128	5.14	20	
1,3-Dichloropropane	44.7900	5.0	50.0000	ND	89.6	52 - 122	2.27	20	
1,4-Dichlorobenzene	44.1000	5.0	50.0000	ND	88.2	31 - 128	5.26	20	
2,2-Dichloropropane	45.7600	5.0	50.0000	ND	91.5	42 - 140	8.07	20	
2-Chlorotoluene	44.1300	5.0	50.0000	ND	88.3	38 - 129	7.92	20	
4-Chlorotoluene	44.6500	5.0	50.0000	ND	89.3	38 - 128	6.48	20	
4-Isopropyltoluene	46.2800	5.0	50.0000	ND	92.6	31 - 137	4.68	20	
Benzene	88.3400	5.0	100.000	ND	88.3	51 - 117	5.04	20	
Bromobenzene	42.9700	5.0	50.0000	ND	85.9	41 - 125	6.25	20	
Bromochloromethane	45.9900	5.0	50.0000	ND	92.0	47 - 123	8.57	20	
Bromodichloromethane	44.5500	5.0	50.0000	ND	89.1	50 - 122	5.78	20	
Bromoform	45.6300	5.0	50.0000	ND	91.3	39 - 131	1.44	20	
Bromomethane	46.8300	5.0	50.0000	ND	93.7	10 - 154	0.815	20	
Carbon disulfide	37.3900	5.0	50.0000	ND	74.8	24 - 138	14.4	20	
Carbon tetrachloride	46.3500	5.0	50.0000	ND	92.7	44 - 131	5.03	20	
Chlorobenzene	44.0800	5.0	50.0000	ND	88.2	46 - 123	5.62	20	
Chloroethane	54.0900	5.0	50.0000	ND	108	27 - 143	0.865	20	
Chloroform	45.2200	5.0	50.0000	ND	90.4	50 - 124	4.28	20	
Chloromethane	49.5200	5.0	50.0000	ND	99.0	8 - 139	11.4	20	
cis-1,2-Dichloroethene	47.7400	5.0	50.0000	ND	95.5	48 - 125	4.00	20	
cis-1,3-Dichloropropene	42.9900	5.0	50.0000	ND	86.0	51 - 123	6.33	20	
Di-isopropyl ether	46.7900	5.0	50.0000	ND	93.6	45 - 125	0.321	20	
Dibromochloromethane	44.1500	5.0	50.0000	ND	88.3	48 - 124	1.10	20	
Dibromomethane	46.1600	5.0	50.0000	ND	92.3	48 - 124	10.5	20	

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Volatile Organic Compounds by EPA 8260B - Quality Control (cont'd)

Analyte	Result (ug/kg)	PQL (ug/kg)	Spike Level	Source Result	% Rec	% Rec Limits	RPD	RPD Limit	Notes
Batch B5C0557 - MSVOA_S (continued)									
Matrix Spike Dup (B5C0557-MSD1) - Continued		**Source: 1501023-04**		Prepared: 3/23/2015 Analyzed: 3/23/2015					
Dichlorodifluoromethane	53.5600	5.0	50.0000	ND	107	0 - 150	1.35	20	
Ethyl Acetate	507.550	50	500.000	ND	102	0 - 140	0.295	20	
Ethyl Ether	530.540	50	500.000	ND	106	36 - 142	5.41	20	
Ethyl tert-butyl ether	49.1400	5.0	50.0000	ND	98.3	46 - 133	1.95	20	
Ethylbenzene	89.2500	5.0	100.000	ND	89.2	46 - 123	3.64	20	
Freon-113	43.8900	5.0	50.0000	ND	87.8	38 - 137	2.94	20	
Hexachlorobutadiene	45.2600	5.0	50.0000	ND	90.5	5 - 132	4.08	20	
Isopropylbenzene	45.3100	5.0	50.0000	ND	90.6	43 - 132	6.43	20	
m,p-Xylene	91.3000	10	100.000	ND	91.3	45 - 128	4.82	20	
Methylene chloride	52.4300	5.0	50.0000	ND	105	37 - 126	8.05	20	
MTBE	47.1400	5.0	50.0000	ND	94.3	46 - 125	1.30	20	
n-Butylbenzene	46.4400	5.0	50.0000	ND	92.9	24 - 138	2.43	20	
n-Propylbenzene	45.2400	5.0	50.0000	ND	90.5	40 - 133	7.51	20	
Naphthalene	47.2900	5.0	50.0000	ND	94.6	10 - 149	20.1	20	R
o-Xylene	93.3400	5.0	100.000	ND	93.3	45 - 125	1.72	20	
sec-Butylbenzene	46.1500	5.0	50.0000	ND	92.3	33 - 136	5.68	20	
Styrene	46.9600	5.0	50.0000	ND	93.9	43 - 128	6.37	20	
tert-Amyl methyl ether	46.2700	5.0	50.0000	ND	92.5	35 - 147	0.108	20	
tert-Butanol	259.730	100	250.000	ND	104	0 - 208	4.17	20	
tert-Butylbenzene	45.3300	5.0	50.0000	ND	90.7	36 - 133	5.76	20	
Tetrachloroethene	45.1400	5.0	50.0000	ND	90.3	41 - 129	3.59	20	
Toluene	91.1100	5.0	100.000	ND	91.1	49 - 124	6.35	20	
trans-1,2-Dichloroethene	46.9100	5.0	50.0000	ND	93.8	44 - 126	4.70	20	
trans-1,3-Dichloropropene	44.4800	5.0	50.0000	ND	89.0	42 - 125	7.76	20	
Trichloroethene	45.2100	5.0	50.0000	ND	90.4	38 - 139	7.98	20	
Trichlorofluoromethane	41.1400	5.0	50.0000	ND	82.3	30 - 157	9.74	20	
Vinyl acetate	443.330	50	500.000	ND	88.7	0 - 132	0.280	20	
Vinyl chloride	49.2000	5.0	50.0000	ND	98.4	19 - 142	2.28	20	
Surrogate: 1,2-Dichloroethane-d4	*56.89*		*50.0000*		*114*	*20 - 189*			
Surrogate: 4-Bromofluorobenzene	*50.31*		*50.0000*		*101*	*20 - 173*			
Surrogate: Dibromofluoromethane	*54.30*		*50.0000*		*109*	*26 - 178*			
Surrogate: Toluene-d8	*50.39*		*50.0000*		*101*	*31 - 166*			

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Semivolatile Organic Compounds by EPA 8270C - Quality Control

Analyte	Result (ug/kg)	PQL (ug/kg)	Spike Level	Source Result	% Rec	% Rec Limits	RPD	RPD Limit	Notes
Batch B5C0628 - MSSEMI_ISOTOPEDILN									
Blank (B5C0628-BLK1)				Prepared: 3/25/2015 Analyzed: 3/25/2015					
1,2,4-Trichlorobenzene	ND	330			NR				
1,2-Dichlorobenzene	ND	330			NR				
1,3-Dichlorobenzene	ND	330			NR				
1,4-Dichlorobenzene	ND	330			NR				
2,4,5-Trichlorophenol	ND	330			NR				
2,4,6-Trichlorophenol	ND	330			NR				
2,4-Dichlorophenol	ND	1600			NR				
2,4-Dimethylphenol	ND	330			NR				
2,4-Dinitrophenol	ND	1600			NR				
2,4-Dinitrotoluene	ND	330			NR				
2,6-Dinitrotoluene	ND	330			NR				
2-Chloronaphthalene	ND	330			NR				
2-Chlorophenol	ND	330			NR				
2-Methylnaphthalene	ND	330			NR				
2-Methylphenol	ND	330			NR				
2-Nitroaniline	ND	1600			NR				
2-Nitrophenol	ND	330			NR				
3,3´-Dichlorobenzidine	ND	660			NR				
3-Nitroaniline	ND	1600			NR				
4,6-Dinitro-2-methyphenol	ND	1600			NR				
4-Bromophenyl-phenylether	ND	330			NR				
4-Chloro-3-methylphenol	ND	660			NR				
4-Chloroaniline	ND	660			NR				
4-Chlorophenyl-phenylether	ND	330			NR				
4-Methylphenol	ND	330			NR				
4-Nitroaniline	ND	1600			NR				
4-Nitrophenol	ND	330			NR				
Acenaphthene	ND	330			NR				
Acenaphthylene	ND	330			NR				
Anthracene	ND	330			NR				
Benzidine (M)	ND	1600			NR				
Benzo(a)anthracene	ND	330			NR				
Benzo(a)pyrene	ND	330			NR				
Benzo(b)fluoranthene	ND	330			NR				
Benzo(g,h,i)perylene	ND	330			NR				
Benzo(k)fluoranthene	ND	330			NR				
Benzoic acid	ND	1600			NR				
Benzyl alcohol	ND	660			NR				
bis(2-chloroethoxy)methane	ND	330			NR				
bis(2-Chloroethyl)ether	ND	330			NR				
bis(2-chloroisopropyl)ether	ND	330			NR				

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Semivolatile Organic Compounds by EPA 8270C - Quality Control (cont'd)

Analyte	Result (ug/kg)	PQL (ug/kg)	Spike Level	Source Result	% Rec	% Rec Limits	RPD	RPD Limit	Notes
Batch B5C0628 - MSSEMI_ISOTOPEDILN (continued)									
Blank (B5C0628-BLK1) - Continued				Prepared: 3/25/2015 Analyzed: 3/25/2015					
bis(2-ethylhexyl)phthalate	ND	330			NR				
Butylbenzylphthalate	ND	330			NR				
Chrysene	ND	330			NR				
Di-n-butylphthalate	ND	330			NR				
Di-n-octylphthalate	ND	330			NR				
Dibenz(a,h)anthracene	ND	330			NR				
Dibenzofuran	ND	330			NR				
Diethyl phthalate	ND	330			NR				
Dimethyl phthalate	ND	330			NR				
Fluoranthene	ND	330			NR				
Fluorene	ND	330			NR				
Hexachlorobenzene	ND	330			NR				
Hexachlorobutadiene	ND	660			NR				
Hexachlorocyclopentadiene	ND	660			NR				
Hexachloroethane	ND	330			NR				
Indeno(1,2,3-cd)pyrene	ND	330			NR				
Isophorone	ND	330			NR				
N-Nitroso-di-n propylamine	ND	330			NR				
N-Nitrosodiphenylamine	ND	330			NR				
Naphthalene	ND	330			NR				
Nitrobenzene	ND	330			NR				
Pentachlorophenol	ND	1600			NR				
Phenanthrene	ND	330			NR				
Phenol	ND	330			NR				
Pyrene	ND	330			NR				
Pyridine	ND	1600			NR				
Surrogate: 1,2-Dichlorobenzene-d4	*1998*		*3333.33*		*59.9*	*24 - 114*			
Surrogate: 2,4,6-Tribromophenol	*2589*		*3333.33*		*77.7*	*0 - 189*			
Surrogate: 2-Chlorophenol-d4	*2288*		*3333.33*		*68.6*	*23 - 123*			
Surrogate: 2-Fluorobiphenyl	*2137*		*3333.33*		*64.1*	*28 - 128*			
Surrogate: 2-Fluorophenol	*2260*		*3333.33*		*67.8*	*8 - 138*			
Surrogate: 4-Terphenyl-d14	*2457*		*3333.33*		*73.7*	*27 - 154*			
Surrogate: Nitrobenzene-d5	*2018*		*3333.33*		*60.5*	*19 - 129*			
Surrogate: Phenol-d5	*2315*		*3333.33*		*69.4*	*20 - 126*			

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Semivolatile Organic Compounds by EPA 8270C - Quality Control (cont'd)

Analyte	Result (ug/kg)	PQL (ug/kg)	Spike Level	Source Result	% Rec	% Rec Limits	RPD	RPD Limit	Notes
Batch B5C0628 - MSSEMI_ISOTOPEDILN (continued)									
LCS (B5C0628-BS1)				Prepared: 3/25/2015 Analyzed: 3/25/2015					
1,2,4-Trichlorobenzene	2725.00	330	3333.33		81.8	67 - 110			
1,2-Dichlorobenzene	2583.67	330	3333.33		77.5	64 - 104			
1,3-Dichlorobenzene	2593.67	330	3333.33		77.8	63 - 104			
1,4-Dichlorobenzene	2346.00	330	3333.33		70.4	62 - 102			
2,4,5-Trichlorophenol	2819.67	330	3333.33		84.6	69 - 129			
2,4,6-Trichlorophenol	2860.67	330	3333.33		85.8	66 - 127			
2,4-Dichlorophenol	2709.00	1600	3333.33		81.3	64 - 116			
2,4-Dimethylphenol	2707.33	330	3333.33		81.2	61 - 111			
2,4-Dinitrophenol	2576.67	1600	3333.33		77.3	33 - 138			
2,4-Dinitrotoluene	3312.33	330	3333.33		99.4	76 - 137			
2,6-Dinitrotoluene	3163.33	330	3333.33		94.9	76 - 132			
2-Chloronaphthalene	2810.67	330	3333.33		84.3	67 - 126			
2-Chlorophenol	2500.33	330	3333.33		75.0	65 - 105			
2-Methylnaphthalene	2625.33	330	3333.33		78.8	68 - 121			
2-Methylphenol	2508.00	330	3333.33		75.2	66 - 103			
2-Nitroaniline	3016.00	1600	3333.33		90.5	62 - 137			
2-Nitrophenol	2682.33	330	3333.33		80.5	60 - 122			
3,3´-Dichlorobenzidine	2677.67	660	3333.33		80.3	61 - 128			
3-Nitroaniline	2710.33	1600	3333.33		81.3	61 - 118			
4,6-Dinitro-2-methyphenol	2925.67	1600	3333.33		87.8	57 - 146			
4-Bromophenyl-phenylether	2936.00	330	3333.33		88.1	71 - 135			
4-Chloro-3-methylphenol	2917.00	660	3333.33		87.5	72 - 124			
4-Chloroaniline	2449.00	660	3333.33		73.5	59 - 108			
4-Chlorophenyl-phenylether	3017.00	330	3333.33		90.5	71 - 135			
4-Methylphenol	2628.33	330	3333.33		78.8	72 - 113			
4-Nitroaniline	2968.00	1600	3333.33		89.0	70 - 130			
4-Nitrophenol	2836.67	330	3333.33		85.1	55 - 146			
Acenaphthene	2671.00	330	3333.33		80.1	66 - 112			
Acenaphthylene	2635.00	330	3333.33		79.1	66 - 114			
Anthracene	2843.33	330	3333.33		85.3	72 - 123			
Benzidine (M)	2567.00	1600	3333.33		77.0	43 - 155			
Benzo(a)anthracene	2731.33	330	3333.33		81.9	73 - 115			
Benzo(a)pyrene	2868.00	330	3333.33		86.0	78 - 125			
Benzo(b)fluoranthene	2845.33	330	3333.33		85.4	71 - 127			
Benzo(g,h,i)perylene	2698.00	330	3333.33		80.9	73 - 120			
Benzo(k)fluoranthene	2769.67	330	3333.33		83.1	72 - 121			
Benzoic acid	1680.67	1600	3333.33		50.4	19 - 133			
Benzyl alcohol	2623.00	660	3333.33		78.7	65 - 119			
bis(2-chloroethoxy)methane	2581.00	330	3333.33		77.4	62 - 118			
bis(2-Chloroethyl)ether	2458.33	330	3333.33		73.8	55 - 111			
bis(2-chloroisopropyl)ether	2475.00	330	3333.33		74.3	34 - 131			

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Semivolatile Organic Compounds by EPA 8270C - Quality Control (cont'd)

Analyte	Result (ug/kg)	PQL (ug/kg)	Spike Level	Source Result	% Rec	% Rec Limits	RPD	RPD Limit	Notes
Batch B5C0628 - MSSEMI_ISOTOPEDILN (continued)									
LCS (B5C0628-BS1) - Continued				Prepared: 3/25/2015 Analyzed: 3/25/2015					
bis(2-ethylhexyl)phthalate	2889.67	330	3333.33		86.7	51 - 165			
Butylbenzylphthalate	3273.33	330	3333.33		98.2	54 - 155			
Chrysene	2621.33	330	3333.33		78.6	70 - 110			
Di-n-butylphthalate	3295.00	330	3333.33		98.9	65 - 155			
Di-n-octylphthalate	3059.00	330	3333.33		91.8	59 - 151			
Dibenz(a,h)anthracene	2768.00	330	3333.33		83.0	72 - 132			
Dibenzofuran	2673.00	330	3333.33		80.2	67 - 124			
Diethyl phthalate	3173.33	330	3333.33		95.2	66 - 138			
Dimethyl phthalate	3057.00	330	3333.33		91.7	70 - 136			
Fluoranthene	2752.00	330	3333.33		82.6	69 - 122			
Fluorene	2734.00	330	3333.33		82.0	67 - 120			
Hexachlorobenzene	2969.67	330	3333.33		89.1	71 - 130			
Hexachlorobutadiene	2609.33	660	3333.33		78.3	57 - 111			
Hexachlorocyclopentadiene	3076.67	660	3333.33		92.3	63 - 135			
Hexachloroethane	2610.00	330	3333.33		78.3	60 - 107			
Indeno(1,2,3-cd)pyrene	2925.33	330	3333.33		87.8	76 - 136			
Isophorone	2979.00	330	3333.33		89.4	63 - 137			
N-Nitroso-di-n propylamine	2749.33	330	3333.33		82.5	59 - 127			
N-Nitrosodiphenylamine	3115.33	330	3333.33		93.5	70 - 137			
Naphthalene	2443.33	330	3333.33		73.3	62 - 104			
Nitrobenzene	2688.67	330	3333.33		80.7	57 - 127			
Pentachlorophenol	2569.00	1600	3333.33		77.1	51 - 135			
Phenanthrene	2775.67	330	3333.33		83.3	70 - 121			
Phenol	2538.67	330	3333.33		76.2	63 - 112			
Pyrene	2754.67	330	3333.33		82.6	67 - 123			
Pyridine	1852.67	1600	3333.33		55.6	18 - 106			
Surrogate: 1,2-Dichlorobenzene-d4	*2051*		*3333.33*		*61.5*	*24 - 114*			
Surrogate: 2,4,6-Tribromophenol	*2797*		*3333.33*		*83.9*	*0 - 189*			
Surrogate: 2-Chlorophenol-d4	*2366*		*3333.33*		*71.0*	*23 - 123*			
Surrogate: 2-Fluorobiphenyl	*2246*		*3333.33*		*67.4*	*28 - 128*			
Surrogate: 2-Fluorophenol	*2275*		*3333.33*		*68.2*	*8 - 138*			
Surrogate: 4-Terphenyl-d14	*2492*		*3333.33*		*74.8*	*27 - 154*			
Surrogate: Nitrobenzene-d5	*2089*		*3333.33*		*62.7*	*19 - 129*			
Surrogate: Phenol-d5	*2370*		*3333.33*		*71.1*	*20 - 126*			

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Semivolatile Organic Compounds by EPA 8270C - Quality Control (cont'd)

Analyte	Result (ug/kg)	PQL (ug/kg)	Spike Level	Source Result	% Rec	% Rec Limits	RPD	RPD Limit	Notes
Batch B5C0628 - MSSEMI_ISOTOPEDILN (continued)									
Matrix Spike (B5C0628-MS1)		**Source: 1501023-03**		Prepared: 3/25/2015 Analyzed: 3/25/2015					
1,2,4-Trichlorobenzene	2862.00	330	3333.33	ND	85.9	56 - 112			
1,2-Dichlorobenzene	2727.33	330	3333.33	ND	81.8	52 - 105			
1,3-Dichlorobenzene	2767.00	330	3333.33	ND	83.0	51 - 105			
1,4-Dichlorobenzene	2470.67	330	3333.33	ND	74.1	50 - 104			
2,4,5-Trichlorophenol	2936.00	330	3333.33	ND	88.1	41 - 145			
2,4,6-Trichlorophenol	2969.67	330	3333.33	ND	89.1	35 - 147			
2,4-Dichlorophenol	2884.33	1600	3333.33	ND	86.5	50 - 120			
2,4-Dimethylphenol	2805.33	330	3333.33	ND	84.2	56 - 108			
2,4-Dinitrophenol	2770.00	1600	3333.33	ND	83.1	0 - 167			
2,4-Dinitrotoluene	3369.33	330	3333.33	ND	101	60 - 146			
2,6-Dinitrotoluene	3249.00	330	3333.33	ND	97.5	65 - 138			
2-Chloronaphthalene	2945.00	330	3333.33	ND	88.4	62 - 127			
2-Chlorophenol	2674.33	330	3333.33	ND	80.2	48 - 112			
2-Methylnaphthalene	2725.00	330	3333.33	ND	81.8	61 - 120			
2-Methylphenol	2654.00	330	3333.33	ND	79.6	53 - 107			
2-Nitroaniline	3119.67	1600	3333.33	ND	93.6	53 - 140			
2-Nitrophenol	2831.00	330	3333.33	ND	84.9	43 - 127			
3,3´-Dichlorobenzidine	2757.33	660	3333.33	ND	82.7	39 - 149			
3-Nitroaniline	2775.67	1600	3333.33	ND	83.3	47 - 127			
4,6-Dinitro-2-methyphenol	3061.33	1600	3333.33	ND	91.8	28 - 158			
4-Bromophenyl-phenylether	3055.00	330	3333.33	ND	91.7	67 - 137			
4-Chloro-3-methylphenol	2979.33	660	3333.33	ND	89.4	38 - 120			
4-Chloroaniline	2563.00	660	3333.33	ND	76.9	53 - 104			
4-Chlorophenyl-phenylether	3087.33	330	3333.33	ND	92.6	58 - 143			
4-Methylphenol	2724.33	330	3333.33	ND	81.7	59 - 116			
4-Nitroaniline	3054.67	1600	3333.33	ND	91.6	49 - 142			
4-Nitrophenol	2906.67	330	3333.33	ND	87.2	30 - 155			
Acenaphthene	2760.33	330	3333.33	ND	82.8	56 - 116			
Acenaphthylene	2749.67	330	3333.33	ND	82.5	57 - 118			
Anthracene	2923.33	330	3333.33	ND	87.7	63 - 129			
Benzidine (M)	ND	1600	3333.33	ND	NR	29 - 127			M1
Benzo(a)anthracene	2806.00	330	3333.33	ND	84.2	69 - 114			
Benzo(a)pyrene	2964.67	330	3333.33	ND	88.9	67 - 127			
Benzo(b)fluoranthene	2920.00	330	3333.33	ND	87.6	68 - 122			
Benzo(g,h,i)perylene	2770.00	330	3333.33	ND	83.1	50 - 138			
Benzo(k)fluoranthene	2843.67	330	3333.33	ND	85.3	60 - 125			
Benzoic acid	2010.67	1600	3333.33	ND	60.3	0 - 215			
Benzyl alcohol	2783.33	660	3333.33	ND	83.5	54 - 117			
bis(2-chloroethoxy)methane	2743.33	330	3333.33	ND	82.3	54 - 119			
bis(2-Chloroethyl)ether	2605.00	330	3333.33	ND	78.2	41 - 118			
bis(2-chloroisopropyl)ether	2620.33	330	3333.33	ND	78.6	33 - 123			

Figure C-2.274

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Semivolatile Organic Compounds by EPA 8270C - Quality Control (cont'd)

Analyte	Result (ug/kg)	PQL (ug/kg)	Spike Level	Source Result	% Rec	% Rec Limits	RPD	RPD Limit	Notes
Batch B5C0628 - MSSEMI_ISOTOPEDILN (continued)									
Matrix Spike (B5C0628-MS1) - Continued		**Source: 1501023-03**		Prepared: 3/25/2015 Analyzed: 3/25/2015					
bis(2-ethylhexyl)phthalate	2981.67	330	3333.33	ND	89.5	53 - 158			
Butylbenzylphthalate	3329.67	330	3333.33	ND	99.9	53 - 152			
Chrysene	2697.67	330	3333.33	ND	80.9	62 - 113			
Di-n-butylphthalate	3395.67	330	3333.33	ND	102	57 - 158			
Di-n-octylphthalate	3119.33	330	3333.33	ND	93.6	38 - 166			
Dibenz(a,h)anthracene	2848.67	330	3333.33	ND	85.5	52 - 142			
Dibenzofuran	2798.67	330	3333.33	ND	84.0	54 - 134			
Diethyl phthalate	3230.67	330	3333.33	ND	96.9	61 - 140			
Dimethyl phthalate	3135.00	330	3333.33	ND	94.1	63 - 137			
Fluoranthene	2848.00	330	3333.33	ND	85.4	55 - 133			
Fluorene	2819.67	330	3333.33	ND	84.6	54 - 131			
Hexachlorobenzene	3070.67	330	3333.33	ND	92.1	65 - 134			
Hexachlorobutadiene	2790.67	660	3333.33	ND	83.7	48 - 114			
Hexachlorocyclopentadiene	3337.33	660	3333.33	ND	100	50 - 142			
Hexachloroethane	2728.67	330	3333.33	ND	81.9	43 - 119			
Indeno(1,2,3-cd)pyrene	2997.67	330	3333.33	ND	89.9	56 - 149			
Isophorone	3140.33	330	3333.33	ND	94.2	56 - 136			
N-Nitroso-di-n propylamine	2831.33	330	3333.33	ND	84.9	47 - 130			
N-Nitrosodiphenylamine	3183.33	330	3333.33	ND	95.5	70 - 137			
Naphthalene	2547.67	330	3333.33	ND	76.4	54 - 105			
Nitrobenzene	2831.00	330	3333.33	ND	84.9	47 - 130			
Pentachlorophenol	2672.67	1600	3333.33	ND	80.2	18 - 160			
Phenanthrene	2886.67	330	3333.33	ND	86.6	50 - 140			
Phenol	2728.67	330	3333.33	ND	81.9	55 - 112			
Pyrene	2830.67	330	3333.33	ND	84.9	54 - 135			
Pyridine	1626.67	1600	3333.33	ND	48.8	0 - 139			
Surrogate: 1,2-Dichlorobenzene-d4	*2047*		*3333.33*		*61.4*	*24 - 114*			
Surrogate: 2,4,6-Tribromophenol	*2764*		*3333.33*		*82.9*	*0 - 189*			
Surrogate: 2-Chlorophenol-d4	*2470*		*3333.33*		*74.1*	*23 - 123*			
Surrogate: 2-Fluorobiphenyl	*2196*		*3333.33*		*65.9*	*28 - 128*			
Surrogate: 2-Fluorophenol	*2364*		*3333.33*		*70.9*	*8 - 138*			
Surrogate: 4-Terphenyl-d14	*2435*		*3333.33*		*73.0*	*27 - 154*			
Surrogate: Nitrobenzene-d5	*2176*		*3333.33*		*65.3*	*19 - 129*			
Surrogate: Phenol-d5	*2496*		*3333.33*		*74.9*	*20 - 126*			

Figure C-2.275

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Semivolatile Organic Compounds by EPA 8270C - Quality Control (cont'd)

Analyte	Result (ug/kg)	PQL (ug/kg)	Spike Level	Source Result	% Rec	% Rec Limits	RPD	RPD Limit	Notes
Batch B5C0628 - MSSEMI_ISOTOPEDILN (continued)									
Matrix Spike Dup (B5C0628-MSD1)		**Source: 1501023-03**		Prepared: 3/25/2015 Analyzed: 3/25/2015					
1,2,4-Trichlorobenzene	2868.33	330	3333.33	ND	86.0	56 - 112	0.221	20	
1,2-Dichlorobenzene	2753.67	330	3333.33	ND	82.6	52 - 105	0.961	20	
1,3-Dichlorobenzene	2811.33	330	3333.33	ND	84.3	51 - 105	1.59	20	
1,4-Dichlorobenzene	2523.00	330	3333.33	ND	75.7	50 - 104	2.10	20	
2,4,5-Trichlorophenol	2989.67	330	3333.33	ND	89.7	41 - 145	1.81	20	
2,4,6-Trichlorophenol	3022.67	330	3333.33	ND	90.7	35 - 147	1.77	20	
2,4-Dichlorophenol	2904.33	1600	3333.33	ND	87.1	50 - 120	0.691	20	
2,4-Dimethylphenol	2878.00	330	3333.33	ND	86.3	56 - 108	2.56	20	
2,4-Dinitrophenol	2870.33	1600	3333.33	ND	86.1	0 - 167	3.56	20	
2,4-Dinitrotoluene	3377.67	330	3333.33	ND	101	60 - 146	0.247	20	
2,6-Dinitrotoluene	3295.00	330	3333.33	ND	98.9	65 - 138	1.41	20	
2-Chloronaphthalene	3032.67	330	3333.33	ND	91.0	62 - 127	2.93	20	
2-Chlorophenol	2693.00	330	3333.33	ND	80.8	48 - 112	0.696	20	
2-Methylnaphthalene	2773.00	330	3333.33	ND	83.2	61 - 120	1.75	20	
2-Methylphenol	2683.00	330	3333.33	ND	80.5	53 - 107	1.09	20	
2-Nitroaniline	3124.33	1600	3333.33	ND	93.7	53 - 140	0.149	20	
2-Nitrophenol	2903.33	330	3333.33	ND	87.1	43 - 127	2.52	20	
3,3´-Dichlorobenzidine	2770.67	660	3333.33	ND	83.1	39 - 149	0.482	20	
3-Nitroaniline	2814.33	1600	3333.33	ND	84.4	47 - 127	1.38	20	
4,6-Dinitro-2-methyphenol	3084.00	1600	3333.33	ND	92.5	28 - 158	0.738	20	
4-Bromophenyl-phenylether	3090.33	330	3333.33	ND	92.7	67 - 137	1.15	20	
4-Chloro-3-methylphenol	3012.67	660	3333.33	ND	90.4	38 - 120	1.11	20	
4-Chloroaniline	2600.33	660	3333.33	ND	78.0	53 - 104	1.45	20	
4-Chlorophenyl-phenylether	3111.67	330	3333.33	ND	93.4	58 - 143	0.785	20	
4-Methylphenol	2805.33	330	3333.33	ND	84.2	59 - 116	2.93	20	
4-Nitroaniline	3088.00	1600	3333.33	ND	92.6	49 - 142	1.09	20	
4-Nitrophenol	2941.33	330	3333.33	ND	88.2	30 - 155	1.19	20	
Acenaphthene	2843.00	330	3333.33	ND	85.3	56 - 116	2.95	20	
Acenaphthylene	2803.67	330	3333.33	ND	84.1	57 - 118	1.94	20	
Anthracene	2954.67	330	3333.33	ND	88.6	63 - 129	1.07	20	
Benzidine (M)	1793.33	1600	3333.33	ND	53.8	29 - 127		20	
Benzo(a)anthracene	2822.33	330	3333.33	ND	84.7	69 - 114	0.580	20	
Benzo(a)pyrene	3005.00	330	3333.33	ND	90.2	67 - 127	1.35	20	
Benzo(b)fluoranthene	2937.67	330	3333.33	ND	88.1	68 - 122	0.603	20	
Benzo(g,h,i)perylene	2786.00	330	3333.33	ND	83.6	50 - 138	0.576	20	
Benzo(k)fluoranthene	2916.67	330	3333.33	ND	87.5	60 - 125	2.53	20	
Benzoic acid	2089.33	1600	3333.33	ND	62.7	0 - 215	3.84	20	
Benzyl alcohol	2859.67	660	3333.33	ND	85.8	54 - 117	2.71	20	
bis(2-chloroethoxy)methane	2744.67	330	3333.33	ND	82.3	54 - 119	0.0486	20	
bis(2-Chloroethyl)ether	2607.33	330	3333.33	ND	78.2	41 - 118	0.0895	20	
bis(2-chloroisopropyl)ether	2647.33	330	3333.33	ND	79.4	33 - 123	1.03	20	

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Semivolatile Organic Compounds by EPA 8270C - Quality Control (cont'd)

Analyte	Result (ug/kg)	PQL (ug/kg)	Spike Level	Source Result	% Rec	% Rec Limits	RPD	RPD Limit	Notes
Batch B5C0628 - MSSEMI_ISOTOPEDILN (continued)									
Matrix Spike Dup (B5C0628-MSD1) - Continued		**Source: 1501023-03**		Prepared: 3/25/2015 Analyzed: 3/25/2015					
bis(2-ethylhexyl)phthalate	3048.67	330	3333.33	ND	91.5	53 - 158	2.22	20	
Butylbenzylphthalate	3357.67	330	3333.33	ND	101	53 - 152	0.837	20	
Chrysene	2708.00	330	3333.33	ND	81.2	62 - 113	0.382	20	
Di-n-butylphthalate	3434.67	330	3333.33	ND	103	57 - 158	1.14	20	
Di-n-octylphthalate	3211.67	330	3333.33	ND	96.4	38 - 166	2.92	20	
Dibenz(a,h)anthracene	2854.00	330	3333.33	ND	85.6	52 - 142	0.187	20	
Dibenzofuran	2790.67	330	3333.33	ND	83.7	54 - 134	0.286	20	
Diethyl phthalate	3301.67	330	3333.33	ND	99.1	61 - 140	2.17	20	
Dimethyl phthalate	3178.33	330	3333.33	ND	95.4	63 - 137	1.37	20	
Fluoranthene	2894.00	330	3333.33	ND	86.8	55 - 133	1.60	20	
Fluorene	2855.33	330	3333.33	ND	85.7	54 - 131	1.26	20	
Hexachlorobenzene	3098.33	330	3333.33	ND	93.0	65 - 134	0.897	20	
Hexachlorobutadiene	2840.00	660	3333.33	ND	85.2	48 - 114	1.75	20	
Hexachlorocyclopentadiene	3411.00	660	3333.33	ND	102	50 - 142	2.18	20	
Hexachloroethane	2793.67	330	3333.33	ND	83.8	43 - 119	2.35	20	
Indeno(1,2,3-cd)pyrene	3022.33	330	3333.33	ND	90.7	56 - 149	0.819	20	
Isophorone	3186.00	330	3333.33	ND	95.6	56 - 136	1.44	20	
N-Nitroso-di-n propylamine	2927.33	330	3333.33	ND	87.8	47 - 130	3.33	20	
N-Nitrosodiphenylamine	3274.33	330	3333.33	ND	98.2	70 - 137	2.82	20	
Naphthalene	2608.67	330	3333.33	ND	78.3	54 - 105	2.37	20	
Nitrobenzene	2885.00	330	3333.33	ND	86.6	47 - 130	1.89	20	
Pentachlorophenol	2712.67	1600	3333.33	ND	81.4	18 - 160	1.49	20	
Phenanthrene	2881.33	330	3333.33	ND	86.4	50 - 140	0.185	20	
Phenol	2725.67	330	3333.33	ND	81.8	55 - 112	0.110	20	
Pyrene	2870.00	330	3333.33	ND	86.1	54 - 135	1.38	20	
Pyridine	2007.67	1600	3333.33	ND	60.2	0 - 139	21.0	20	R
Surrogate: 1,2-Dichlorobenzene-d4	*2007*		*3333.33*		*60.2*	*24 - 114*			
Surrogate: 2,4,6-Tribromophenol	*2801*		*3333.33*		*84.0*	*0 - 189*			
Surrogate: 2-Chlorophenol-d4	*2480*		*3333.33*		*74.4*	*23 - 123*			
Surrogate: 2-Fluorobiphenyl	*2129*		*3333.33*		*63.9*	*28 - 128*			
Surrogate: 2-Fluorophenol	*2380*		*3333.33*		*71.4*	*8 - 138*			
Surrogate: 4-Terphenyl-d14	*2389*		*3333.33*		*71.7*	*27 - 154*			
Surrogate: Nitrobenzene-d5	*2204*		*3333.33*		*66.1*	*19 - 129*			
Surrogate: Phenol-d5	*2483*		*3333.33*		*74.5*	*20 - 126*			

Certificate of Analysis

Amec Foster Wheeler		Project Number :	MTA WESTSIDE, 4953-11-1423
6001 Rickenbacker Road		Report To :	Ron Lopez
Los Angeles , CA 90040		Reported :	03/27/2015

Notes and Definitions

R	RPD value outside acceptance criteria. Calculation is based on raw values.
M1	Matrix spike recovery outside of acceptance limit. The analytical batch was validated by the laboratory control sample.
ND	Analyte is not detected at or above the Practical Quantitation Limit (PQL). When client requests quantitation against MDL, analyte is not detected at or above the Method Detection Limit (MDL)
PQL	Practical Quantitation Limit
MDL	Method Detection Limit
NR	Not Reported
RPD	Relative Percent Difference
CA2	CA-ELAP (CDPH)
OR1	OR-NELAP (OSPHL)
TX1	TX-NELAP (TCEQ)

Notes:
(1) The reported MDL and PQL are based on prep ratio variation and analytical dilution.
(2) The suffix [2C] of specific analytes signifies that the reported result is taken from the instrument's second column.
(3) Results are wet unless otherwise specified.

Figure C-2.278

ADVANCED TECHNOLOGY LABORATORIES

3275 Walnut Ave., Signal Hill, CA 90755
Tel: (562) 989-4045 • Fax: (562) 989-4040

CHAIN OF CUSTODY RECORD

Page ____ of ____

Instruction: Complete all shaded areas.

For Laboratory Use Only — ATLCOC Ver: 20130715

Method of Transport	Sample Conditions Upon Receipt					
	Condition	Y	N	Condition	Y	N
☑ Client ☐ ATL	1. CHILLED	☑	☐	5. # OF SAMPLES MATCH COC	☑	☐
☐ FedEx ☐ OnTrac	2. HEADSPACE (VOA)	☐	☐	6. PRESERVED	☐	☑
☐ GSO	3. CONTAINER INTACT	☑	☐	7. COOLER TEMP, deg C:	—	
☐ Other:	4. SEALED	☐	☑			

CUSTOMER

Company: AMEC FOSTER WHEELER
Address: 6001 RICKENBAKER Rd.
Tel: 323-889-5300
City: LOS ANGELES State: CA Zip: 90040 Fax: 323-889-6700

SEND REPORT TO:
Attn: RON LOPEZ Email: RON.R.LOPEZ@AMEC.COM
Company: AMEC FOSTER WHEELER
Address: SAME
City: State: Zip:

SEND INVOICE TO: ☐ same as SEND REPORT TO
Attn: Email:
Company: AMEC FOSTER WHEELER
Address: SAME
City: State: Zip:

PROJECT SAMPLES

Project Name: MTA WESTSIDE
Project No.: 4953-11-1423
Sampler: RON LOPEZ
Quote No:
PO #: C0220604
Special Instructions/Comments:

ITEM	Lab No.	Sample Description: Sample ID / Location	Date	Time	8260 / 624 (Volatiles)	8015(GRO)	8015(DRO) / ORO	8270(Semi-volatiles)	8081(Organochlorine Pesticides)	8082(PCBs)	6010 / 7000(Title 22 Metals)	TO-15	1664 TRPH	(SOIL) SEDIMENT / SLUDGE	SOLIDS / WIPE/ FILTER	WATER - DRINKING / GROUND	WATER - STORM / WASTE	AQUEOUS / LAYERED - OIL	TAT	Container #	Container Type	Container Material	QA/QC	REMARKS
1	1501023-1	E132C-25	3-19-15	1:10	X	X	X	X			X		X	X					5	1	1	3		
2	-2	E132C-35	↓	1:25																				HOLD
3	-3	E132C-45		1:38	X	X	X	X			X		X	X					5	1	1	3		
4	-4	E132C-55		2:05	X	X	X	X			X		X	X					5	1	1	3		
5	-5	E132C-65	↓	2:30																				HOLD
6	-6	E132C-75	3-20-15	10:00	X	X	X	X			X		X	X					5	1	1	3		
7	-7	E132C-85	↓	10:30	X	X	X	X			X		X	X					5	1	1	3		
8	-8	E132C-95	↓	11:05	X	X	X	X			X		X	X					5	1	1	3		
9																								
10																								

Encircle or Write Requested Analysis

Encircle Sample Matrix

Container: TAT; #; Type: 1=Tube; 2=VOA; 3=Liter; 4=Pint; 5=Jar; 6=Tedlar; 7=Canister; Material: 1=Glass; 2=Plastic; 3=Metal

Preservative: 1=HCl; 2=HNO3; 3=H2SO4; 4=4C; 5=Zn (Ac)2; 6=NaOH; 7=NA2S2O3

QA/QC: ☐ Routine ☐ Caltrans ☐ Legal ☐ RWQCB ☐ Level IV

TERMS

1. Sample receiving hours: 7:30 AM to 7:30 PM Monday - Friday; Saturday 8:00 AM to 12:00 PM.
2. Samples Submitted AFTER 3:00 PM, are considered received the following Business day at 8:00 AM.
3. The following turnaround time conditions apply:
   TAT = 0 : 300% Surcharge SAME BUSINESS DAY if received by 9:00 AM
   TAT = 1 : 100% Surcharge NEXT BUSINESS DAY (COB 5:00 PM)
   TAT = 2 : 50% Surcharge 2ND BUSINESS DAY (COB 5:00 PM)
   TAT = 3 : 30% Surcharge 3RD BUSINESS DAY (COB 5:00 PM)
   TAT = 4 : 20% Surcharge 4TH BUSINESS DAY (COB 5:00 PM)
   TAT = 5 : NO SURCHARGE 5th BUSINESS DAY (COB 5:00 PM)
4. Weekend, holiday, after-hours work - ask for quote.
5. Subcontract TAT is 10 - 15 business days. Projects requiring shorter TATs will incur a surcharge respective to the subcontract lab --- ask for quote.
6. Liquid and solid samples will be disposed of after 45 calendar days from receipt of samples; air samples will be disposed of after 14 calendar days after receipt of samples.
7. Electronic records maintained for five (5) years from report date.
8. Hard copy reports will be disposed of after 45 calendar days from report date.
9. Storage and Report Fees:
   - Liquid & solid samples: Complimentary storage for forty-five (45) calendar days from receipt of samples; $2/sample/month if extended storage or hold is requested.
   - Air samples: Complimentary storage for ten (10) calendar days from receipt of samples; $20/ sample/week if extended storage is requested.
   - Hard copy and regenerated reports/EDDs: $17.50 per hard copy report requested; $50.00 per regenerated/reformated report; $35 per reprocessed EDD.
10. Rush TCLP/STLC samples: add 2 days to analysis TAT for extraction on procedure.
11. Unanalyzed samples will incur a disposal fee of $7 per sample.

As the authorized agent of the company above, I hereby purchase laboratory services from ATL as shown above and hereby guarantee payment as quoted.

RON LOPEZ — Submitter Print Name

Signature

CUSTODY

Relinquished by: (Signature and Printed Name)	Date	Time	Received by: (Signature and Printed Name)	Date	Time
RON LOPEZ	3-20-15	12:20	FEDEX	3/20/15	1220
Relinquished by: (Signature and Printed Name)	Date	Time	Received by: (Signature and Printed Name)	Date	Time
Relinquished by: (Signature and Printed Name)	Date	Time	Received by: (Signature and Printed Name)	Date	Time

Figure C-2.279

ADVANCED TECHNOLOGY LABORATORIES

May 28, 2015

Ron Lopez
Amec Foster Wheeler
6001 Rickenbacker Road
Los Angeles, CA 90040
Tel: (323) 889-5300
Fax:(323) 721-6700

ELAP No.: 1838
CSDLAC No.: 10196
ORELAP No.: CA300003
TCEQ No. : T104704502

Re: ATL Work Order Number : 1501023
Client Reference : MTA WESTSIDE, 4953-11-1423

Enclosed are the results for sample(s) received on March 20, 2015 by Advanced Technology Laboratories. The sample(s) are tested for the parameters as indicated on the enclosed chain of custody in accordance with applicable laboratory certifications. The laboratory results contained in this report specifically pertains to the sample(s) submitted.

Thank you for the opportunity to serve the needs of your company. If you have any questions, please feel free to contact me or your Project Manager.

Sincerely,

Eddie Rodriguez
Laboratory Director

Figure C-2.280

Certificate of Analysis

Amec Foster Wheeler		Project Number :	MTA WESTSIDE, 4953-11-1423
6001 Rickenbacker Road		Report To :	Ron Lopez
Los Angeles , CA 90040		Reported :	05/28/2015

SUMMARY OF SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
E132C-75	1501023-06	Soil	3/20/15 10:00	3/20/15 12:20

Figure C-2.281

Certificate of Analysis

Amec Foster Wheeler	Project Number : MTA WESTSIDE, 4953-11-1423
6001 Rickenbacker Road	Report To : Ron Lopez
Los Angeles , CA 90040	Reported : 05/28/2015

Client Sample ID E132C-75

Lab ID: 1501023-06

STLC Metals by ICP-AES by EPA 6010B **Analyst: RR**

Analyte	Result (mg/L)	PQL (mg/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Selenium	ND	1.0	20	B5E0726	05/28/2015	05/28/15 10:28	

QUALITY CONTROL SECTION

STLC Metals by ICP-AES by EPA 6010B - Quality Control

Analyte	Result (mg/L)	PQL (mg/L)	Spike Level	Source Result	% Rec	% Rec Limits	RPD	RPD Limit	Notes
Batch B5E0726 - STLC_S Extraction									
Blank (B5E0726-BLK1)				Prepared: 5/28/2015 Analyzed: 5/28/2015					
Selenium	ND	1.0			NR				
LCS (B5E0726-BS1)				Prepared: 5/28/2015 Analyzed: 5/28/2015					
Selenium	1.86274		2.00000		93.1	80 - 120			
Duplicate (B5E0726-DUP1)		**Source: 1500919-07**		Prepared: 5/28/2015 Analyzed: 5/28/2015					
Selenium	ND	1.0		ND	NR			20	
Matrix Spike (B5E0726-MS1)		**Source: 1500919-07**		Prepared: 5/28/2015 Analyzed: 5/28/2015					
Selenium	2.28903		2.50000	0.067323	88.9	84 - 114			
Matrix Spike Dup (B5E0726-MSD1)		**Source: 1500919-07**		Prepared: 5/28/2015 Analyzed: 5/28/2015					
Selenium	2.45235		2.50000	0.067323	95.4	84 - 114	6.89	20	

Certificate of Analysis

Amec Foster Wheeler		Project Number :	MTA WESTSIDE, 4953-11-1423
6001 Rickenbacker Road		Report To :	Ron Lopez
Los Angeles , CA 90040		Reported :	05/28/2015

Notes and Definitions

ND	Analyte is not detected at or above the Practical Quantitation Limit (PQL). When client requests quantitation against MDL, analyte is not detected at or above the Method Detection Limit (MDL)
PQL	Practical Quantitation Limit
MDL	Method Detection Limit
NR	Not Reported
RPD	Relative Percent Difference
CA2	CA-ELAP (CDPH)
OR1	OR-NELAP (OSPHL)
TX1	TX-NELAP (TCEQ)

Notes:
(1) The reported MDL and PQL are based on prep ratio variation and analytical dilution.
(2) The suffix [2C] of specific analytes signifies that the reported result is taken from the instrument's second column.
(3) Results are wet unless otherwise specified.

Figure C-2.283

Rachelle Arada

From: Lopez, Ron R (Los Angeles) [ron.lopez@amecfw.com]
Sent: Tuesday, May 19, 2015 10:05 AM
To: Rachelle Arada
Subject: Run STLC for MTA Westside Soil Samples

Hi Rachelle,

Is it possible to run the following soil samples for STLC

- Lab ID 1501023-06 (E-132C-75) run STLC for Selenium
- Lab ID 1500919-07 (E-132B-85) run STLC for Arsenic

These are from the MTA Westside Project (4953-11-142)

Thanks,

Ronald Lopez
Senior Engineer
AMEC Foster Wheeler
Environment & Infrastructure
6001 Rickenbacker Road | Los Angeles, CA 90040
Office (323) 889-5300 x286 | **Cell** (818) 472-1875 | **Fax** (323) 721-6700
Email: ron.r.lopez@amecfw.com | **Web:** www.amecfw.com

amec
foster
wheeler

Figure C-2.284

May 21, 2015

Ron Lopez/Marty Hudson
Amec Foster Wheeler
6001 Rickenbacker Road
Los Angeles, CA 90040
Tel: (323) 889-5300
Fax:(323) 721-6700

ELAP No.: 1838
CSDLAC No.: 10196
ORELAP No.: CA300003
TCEQ No. : T104704502

Re: ATL Work Order Number : 1501681

Client Reference : MTA WES, 4953-11-1423

Enclosed are the results for sample(s) received on May 12, 2015 by Advanced Technology Laboratories. The sample(s) are tested for the parameters as indicated on the enclosed chain of custody in accordance with applicable laboratory certifications. The laboratory results contained in this report specifically pertains to the sample(s) submitted.

Thank you for the opportunity to serve the needs of your company. If you have any questions, please feel free to contact me or your Project Manager.

Sincerely,

Eddie Rodriguez

Laboratory Director

Figure C-3.1

Certificate of Analysis

Amec Foster Wheeler	Project Number : MTA WES, 4953-11-1423
6001 Rickenbacker Road	Report To : Ron Lopez/Marty Hudson
Los Angeles , CA 90040	Reported : 05/21/2015

SUMMARY OF SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
M410-80	1501681-01	Groundwater	5/12/15 12:20	5/12/15 17:20
M409-90	1501681-02	Groundwater	5/12/15 14:55	5/12/15 17:20

CASE NARRATIVE

The sample for BOD (SM5210) was subcontracted to AETL with ELAP Cert.# 1541.

Figure C-3.2

Certificate of Analysis

Amec Foster Wheeler	Project Number : MTA WES, 4953-11-1423
6001 Rickenbacker Road	Report To : Ron Lopez/Marty Hudson
Los Angeles , CA 90040	Reported : 05/21/2015

Client Sample ID M410-80

Lab ID: 1501681-01

Total Metals by ICP-MS EPA 200.8

Analyst: SB

Analyte	Result (ug/L)	PQL (ug/L)	MDL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Antimony	**0.22**	0.50	0.06	1	B5E0336	05/14/2015	05/15/15 11:17	J
Arsenic	**7.7**	1.0	0.25	1	B5E0336	05/14/2015	05/15/15 11:17	
Barium	**89**	1.0	0.22	1	B5E0336	05/14/2015	05/15/15 11:17	
Beryllium	ND	1.0	0.15	2	B5E0336	05/14/2015	05/15/15 14:30	D1
Boron	**160**	100	2.7	2	B5E0336	05/14/2015	05/15/15 14:30	D1
Cadmium	**0.04**	0.50	0.03	1	B5E0336	05/14/2015	05/15/15 11:17	J
Chromium	**0.81**	1.0	0.43	2	B5E0336	05/14/2015	05/15/15 14:30	D1, J
Cobalt	**0.77**	1.0	0.10	2	B5E0336	05/14/2015	05/15/15 14:30	D1, J
Copper	**4.5**	2.0	0.40	2	B5E0336	05/14/2015	05/15/15 14:30	D1
Lead	ND	1.0	0.09	1	B5E0336	05/14/2015	05/15/15 11:17	
Molybdenum	**0.45**	0.50	0.07	1	B5E0336	05/14/2015	05/15/15 11:17	J
Nickel	**12**	2.0	0.20	2	B5E0336	05/14/2015	05/15/15 14:30	D1
Selenium	**17**	0.50	0.18	1	B5E0336	05/14/2015	05/15/15 11:17	
Silver	ND	0.50	0.03	1	B5E0336	05/14/2015	05/15/15 11:17	
Thallium	ND	0.50	0.05	1	B5E0336	05/14/2015	05/15/15 11:17	
Vanadium	ND	2.0	1.6	2	B5E0336	05/14/2015	05/15/15 14:30	D1
Zinc	**9.8**	10	5.4	1	B5E0336	05/14/2015	05/15/15 11:17	J

Hexavalent Chromium by EPA 218.6

Analyst: QD

Analyte	Result (ug/L)	PQL (ug/L)	MDL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Hexavalent Chromium	ND	1.0	0.33	5	B5E0472	05/13/2015	05/18/15 17:15	D1

Mercury by AA (Cold Vapor) EPA 245.1

Analyst: SB

Analyte	Result (ug/L)	PQL (ug/L)	MDL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Mercury	ND	0.20	0.15	1	B5E0439	05/18/2015	05/19/15 08:33	

Anions Scan by Ion Chromatography EPA 300.0

Analyst: QD

Analyte	Result (mg/L)	PQL (mg/L)	MDL (mg/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Chloride	**870**	50	7.8	100	B5E0479	05/13/2015	05/13/15 14:11	
Nitrate, as N	ND	2.0	1.3	20	B5E0479	05/13/2015	05/13/15 14:11	D1
Nitrite, as N	ND	2.0	1.1	20	B5E0479	05/13/2015	05/13/15 14:11	D1

Figure C-3.3

Certificate of Analysis

Amec Foster Wheeler	Project Number : MTA WES, 4953-11-1423
6001 Rickenbacker Road	Report To : Ron Lopez/Marty Hudson
Los Angeles , CA 90040	Reported : 05/21/2015

Client Sample ID M410-80

Lab ID: 1501681-01

Anions Scan by Ion Chromatography EPA 300.0

Analyst: QD

Analyte	Result (mg/L)	PQL (mg/L)	MDL (mg/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Sulfate	**1000**	100	9.0	100	B5E0479	05/13/2015	05/13/15 14:11	

Perchlorate by Ion Chromatography EPA 314.0

Analyst: QD

Analyte	Result (ug/L)	PQL (ug/L)	MDL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Perchlorate	ND	40	14	20	B5E0510	05/19/2015	05/19/15 19:29	D1

Polychlorinated Biphenyls and Pesticides Analysis by EPA 608

Analyst: CL

Analyte	Result (ug/L)	PQL (ug/L)	MDL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
4,4´-DDD	ND	0.05	0.005	1	B5E0363	05/14/2015	05/14/15 17:38	
4,4´-DDE	ND	0.05	0.005	1	B5E0363	05/14/2015	05/14/15 17:38	
4,4´-DDT	ND	0.05	0.005	1	B5E0363	05/14/2015	05/14/15 17:38	
Aldrin	ND	0.02	0.005	1	B5E0363	05/14/2015	05/14/15 17:38	
alpha-BHC	ND	0.02	0.004	1	B5E0363	05/14/2015	05/14/15 17:38	
alpha-Chlordane	ND	0.02	0.006	1	B5E0363	05/14/2015	05/14/15 17:38	
Aroclor 1016	ND	0.50	0.06	1	B5E0363	05/14/2015	05/14/15 20:40	
Aroclor 1221	ND	1.0	0.06	1	B5E0363	05/14/2015	05/14/15 20:40	
Aroclor 1232	ND	0.50	0.06	1	B5E0363	05/14/2015	05/14/15 20:40	
Aroclor 1242	ND	0.50	0.06	1	B5E0363	05/14/2015	05/14/15 20:40	
Aroclor 1248	ND	0.50	0.06	1	B5E0363	05/14/2015	05/14/15 20:40	
Aroclor 1254	ND	0.50	0.06	1	B5E0363	05/14/2015	05/14/15 20:40	
Aroclor 1260	ND	0.50	0.06	1	B5E0363	05/14/2015	05/14/15 20:40	
beta-BHC	ND	0.02	0.005	1	B5E0363	05/14/2015	05/14/15 17:38	
Chlordane	ND	0.25	0.05	1	B5E0363	05/14/2015	05/14/15 17:38	
delta-BHC	ND	0.02	0.005	1	B5E0363	05/14/2015	05/14/15 17:38	
Dieldrin	ND	0.05	0.005	1	B5E0363	05/14/2015	05/14/15 17:38	
Endosulfan I	ND	0.02	0.005	1	B5E0363	05/14/2015	05/14/15 17:38	
Endosulfan II	ND	0.05	0.005	1	B5E0363	05/14/2015	05/14/15 17:38	
Endosulfan sulfate	ND	0.05	0.007	1	B5E0363	05/14/2015	05/14/15 17:38	
Endrin	ND	0.05	0.005	1	B5E0363	05/14/2015	05/14/15 17:38	
Endrin aldehyde	ND	0.05	0.006	1	B5E0363	05/14/2015	05/14/15 17:38	
Endrin ketone	ND	0.05	0.006	1	B5E0363	05/14/2015	05/14/15 17:38	
gamma-BHC	ND	0.02	0.005	1	B5E0363	05/14/2015	05/14/15 17:38	
gamma-Chlordane	ND	0.02	0.005	1	B5E0363	05/14/2015	05/14/15 17:38	

Figure C-3.4

Certificate of Analysis

Amec Foster Wheeler	Project Number : MTA WES, 4953-11-1423
6001 Rickenbacker Road	Report To : Ron Lopez/Marty Hudson
Los Angeles , CA 90040	Reported : 05/21/2015

Client Sample ID M410-80

Lab ID: 1501681-01

Polychlorinated Biphenyls and Pesticides Analysis by EPA 608 — **Analyst: CL**

Analyte	Result (ug/L)	PQL (ug/L)	MDL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Heptachlor	ND	0.02	0.005	1	B5E0363	05/14/2015	05/14/15 17:38	
Heptachlor epoxide	ND	0.02	0.005	1	B5E0363	05/14/2015	05/14/15 17:38	
Toxaphene	ND	2.5	0.54	1	B5E0363	05/14/2015	05/14/15 17:38	
Surrogate: Decachlorobiphenyl	*66.8 %*		*20 - 138*		B5E0363	05/14/2015	*05/14/15 20:40*	
Surrogate: Decachlorobiphenyl	*85.0 %*		*20 - 138*		B5E0363	05/14/2015	*05/14/15 17:38*	
Surrogate: Tetrachloro-m-xylene [2C	*87.5 %*		*11 - 133*		B5E0363	05/14/2015	*05/14/15 17:38*	
Surrogate: Tetrachloro-m-xylene	*123 %*		*11 - 133*		B5E0363	05/14/2015	*05/14/15 20:40*	

Volatile Organic Compounds by EPA 624 — **Analyst: SL**

Analyte	Result (ug/L)	PQL (ug/L)	MDL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
1,1,1-Trichloroethane	ND	0.50	0.35	1	B5E0259	05/14/2015	05/14/15 19:34	
1,1,2,2-Tetrachloroethane	ND	0.50	0.32	1	B5E0259	05/14/2015	05/14/15 19:34	
1,1,2-Trichloroethane	ND	0.50	0.44	1	B5E0259	05/14/2015	05/14/15 19:34	
1,1-Dichloroethane	ND	0.50	0.37	1	B5E0259	05/14/2015	05/14/15 19:34	
1,1-Dichloroethene	ND	0.50	0.47	1	B5E0259	05/14/2015	05/14/15 19:34	
1,2-Dichlorobenzene	ND	0.50	0.33	1	B5E0259	05/14/2015	05/14/15 19:34	
1,2-Dichloroethane	ND	0.50	0.34	1	B5E0259	05/14/2015	05/14/15 19:34	
1,2-Dichloropropane	ND	0.50	0.32	1	B5E0259	05/14/2015	05/14/15 19:34	
1,3-Dichlorobenzene	ND	0.50	0.35	1	B5E0259	05/14/2015	05/14/15 19:34	
1,4-Dichlorobenzene	ND	0.50	0.33	1	B5E0259	05/14/2015	05/14/15 19:34	
2-Chloroethyl vinyl ether	ND	0.50	0.39	1	B5E0259	05/14/2015	05/14/15 19:34	
Acrolein	ND	10	4.0	1	B5E0259	05/14/2015	05/14/15 19:34	
Acrylonitrile	ND	10	4.2	1	B5E0259	05/14/2015	05/14/15 19:34	
Benzene	ND	0.50	0.32	1	B5E0259	05/14/2015	05/14/15 19:34	
Bromodichloromethane	ND	0.50	0.37	1	B5E0259	05/14/2015	05/14/15 19:34	
Bromoform	ND	0.50	0.37	1	B5E0259	05/14/2015	05/14/15 19:34	
Bromomethane	ND	0.50	0.37	1	B5E0259	05/14/2015	05/14/15 19:34	
Carbon tetrachloride	ND	0.50	0.40	1	B5E0259	05/14/2015	05/14/15 19:34	
Chlorobenzene	ND	0.50	0.44	1	B5E0259	05/14/2015	05/14/15 19:34	
Chloroethane	ND	0.50	0.28	1	B5E0259	05/14/2015	05/14/15 19:34	
Chloroform	ND	0.50	0.37	1	B5E0259	05/14/2015	05/14/15 19:34	
Chloromethane	ND	0.50	0.47	1	B5E0259	05/14/2015	05/14/15 19:34	
cis-1,3-Dichloropropene	ND	0.50	0.27	1	B5E0259	05/14/2015	05/14/15 19:34	
Dibromochloromethane	ND	0.50	0.32	1	B5E0259	05/14/2015	05/14/15 19:34	
Ethylbenzene	ND	0.50	0.35	1	B5E0259	05/14/2015	05/14/15 19:34	

Certificate of Analysis

Amec Foster Wheeler		Project Number :	MTA WES, 4953-11-1423
6001 Rickenbacker Road		Report To :	Ron Lopez/Marty Hudson
Los Angeles , CA 90040		Reported :	05/21/2015

Client Sample ID M410-80

Lab ID: 1501681-01

Volatile Organic Compounds by EPA 624

Analyst: SL

Analyte	Result (ug/L)	PQL (ug/L)	MDL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
m,p-Xylene	ND	1.0	0.67	1	B5E0259	05/14/2015	05/14/15 19:34	
Methylene chloride	ND	1.0	0.60	1	B5E0259	05/14/2015	05/14/15 19:34	
o-Xylene	ND	0.50	0.29	1	B5E0259	05/14/2015	05/14/15 19:34	
Tetrachloroethene	ND	0.50	0.39	1	B5E0259	05/14/2015	05/14/15 19:34	
Toluene	ND	0.50	0.31	1	B5E0259	05/14/2015	05/14/15 19:34	
trans-1,2-Dichloroethene	ND	0.50	0.30	1	B5E0259	05/14/2015	05/14/15 19:34	
trans-1,3-Dichloropropene	ND	0.50	0.22	1	B5E0259	05/14/2015	05/14/15 19:34	
Trichloroethene	ND	0.50	0.34	1	B5E0259	05/14/2015	05/14/15 19:34	
Trichlorofluoromethane	ND	0.50	0.49	1	B5E0259	05/14/2015	05/14/15 19:34	
Vinyl chloride	ND	0.50	0.41	1	B5E0259	05/14/2015	05/14/15 19:34	
Surrogate: 1,2-Dichloroethane-d4	*93.4 %*		*49 - 148*		B5E0259	05/14/2015	*05/14/15 19:34*	
Surrogate: 4-Bromofluorobenzene	*100 %*		*65 - 132*		B5E0259	05/14/2015	*05/14/15 19:34*	
Surrogate: Dibromofluoromethane	*85.8 %*		*55 - 138*		B5E0259	05/14/2015	*05/14/15 19:34*	
Surrogate: Toluene-d8	*102 %*		*60 - 120*		B5E0259	05/14/2015	*05/14/15 19:34*	

Semivolatile Organic Compounds by EPA 625

Analyst: BD

Analyte	Result (ug/L)	PQL (ug/L)	MDL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
1,2,4-Trichlorobenzene	ND	10	1.5	1	B5E0440	05/18/2015	05/18/15 21:44	
1,2-Dichlorobenzene	ND	10	1.7	1	B5E0440	05/18/2015	05/18/15 21:44	
1,2-Diphenylhydrazine	ND	10	1.7	1	B5E0440	05/18/2015	05/18/15 21:44	
1,3-Dichlorobenzene	ND	10	1.5	1	B5E0440	05/18/2015	05/18/15 21:44	
1,4-Dichlorobenzene	ND	10	1.3	1	B5E0440	05/18/2015	05/18/15 21:44	
2,4,6-Trichlorophenol	ND	10	3.3	1	B5E0440	05/18/2015	05/18/15 21:44	
2,4-Dichlorophenol	ND	10	3.9	1	B5E0440	05/18/2015	05/18/15 21:44	
2,4-Dimethylphenol	ND	10	3.3	1	B5E0440	05/18/2015	05/18/15 21:44	
2,4-Dinitrophenol	ND	50	2.8	1	B5E0440	05/18/2015	05/18/15 21:44	
2,4-Dinitrotoluene	ND	10	2.0	1	B5E0440	05/18/2015	05/18/15 21:44	
2,6-Dinitrotoluene	ND	10	2.1	1	B5E0440	05/18/2015	05/18/15 21:44	
2-Chloronaphthalene	ND	10	1.4	1	B5E0440	05/18/2015	05/18/15 21:44	
2-Chlorophenol	ND	10	3.5	1	B5E0440	05/18/2015	05/18/15 21:44	
2-Nitrophenol	ND	10	3.3	1	B5E0440	05/18/2015	05/18/15 21:44	
3,3´-Dichlorobenzidine	ND	20	11	1	B5E0440	05/18/2015	05/18/15 21:44	
4,6-Dinitro-2-methyphenol	ND	50	2.4	1	B5E0440	05/18/2015	05/18/15 21:44	
4-Bromophenyl-phenylether	ND	10	1.5	1	B5E0440	05/18/2015	05/18/15 21:44	
4-Chloro-3-methylphenol	ND	50	3.7	1	B5E0440	05/18/2015	05/18/15 21:44	

Figure C-3.6

Certificate of Analysis

Amec Foster Wheeler	Project Number : MTA WES, 4953-11-1423
6001 Rickenbacker Road	Report To : Ron Lopez/Marty Hudson
Los Angeles , CA 90040	Reported : 05/21/2015

Client Sample ID M410-80

Lab ID: 1501681-01

Semivolatile Organic Compounds by EPA 625 **Analyst: BD**

Analyte	Result (ug/L)	PQL (ug/L)	MDL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
4-Chlorophenyl-phenylether	ND	10	1.8	1	B5E0440	05/18/2015	05/18/15 21:44	
4-Nitrophenol	ND	50	3.6	1	B5E0440	05/18/2015	05/18/15 21:44	
Acenaphthene	ND	10	1.4	1	B5E0440	05/18/2015	05/18/15 21:44	
Acenaphthylene	ND	10	1.3	1	B5E0440	05/18/2015	05/18/15 21:44	
Anthracene	ND	10	1.5	1	B5E0440	05/18/2015	05/18/15 21:44	
Benzidine (M)	ND	50	2.7	1	B5E0440	05/18/2015	05/18/15 21:44	
Benzo(a)anthracene	ND	10	1.6	1	B5E0440	05/18/2015	05/18/15 21:44	
Benzo(a)pyrene	ND	10	1.8	1	B5E0440	05/18/2015	05/18/15 21:44	
Benzo(b)fluoranthene	ND	10	2.0	1	B5E0440	05/18/2015	05/18/15 21:44	
Benzo(g,h,i)perylene	ND	10	2.5	1	B5E0440	05/18/2015	05/18/15 21:44	
Benzo(k)fluoranthene	ND	10	1.6	1	B5E0440	05/18/2015	05/18/15 21:44	
bis(2-chloroethoxy)methane	ND	10	1.7	1	B5E0440	05/18/2015	05/18/15 21:44	
bis(2-Chloroethyl)ether	ND	10	2.9	1	B5E0440	05/18/2015	05/18/15 21:44	
bis(2-chloroisopropyl)ether	ND	10	1.5	1	B5E0440	05/18/2015	05/18/15 21:44	
bis(2-ethylhexyl)phthalate	ND	10	2.1	1	B5E0440	05/18/2015	05/18/15 21:44	
Butylbenzylphthalate	ND	10	2.1	1	B5E0440	05/18/2015	05/18/15 21:44	
Chrysene	ND	10	1.5	1	B5E0440	05/18/2015	05/18/15 21:44	
Di-n-butylphthalate	ND	10	3.2	1	B5E0440	05/18/2015	05/18/15 21:44	
Di-n-octylphthalate	ND	10	2.2	1	B5E0440	05/18/2015	05/18/15 21:44	
Dibenz(a,h)anthracene	ND	10	1.5	1	B5E0440	05/18/2015	05/18/15 21:44	
Diethyl phthalate	ND	10	1.8	1	B5E0440	05/18/2015	05/18/15 21:44	
Dimethyl phthalate	ND	10	1.6	1	B5E0440	05/18/2015	05/18/15 21:44	
Fluoranthene	ND	10	1.7	1	B5E0440	05/18/2015	05/18/15 21:44	
Fluorene	ND	10	1.5	1	B5E0440	05/18/2015	05/18/15 21:44	
Hexachlorobenzene	ND	10	1.5	1	B5E0440	05/18/2015	05/18/15 21:44	
Hexachlorobutadiene	ND	20	1.6	1	B5E0440	05/18/2015	05/18/15 21:44	
Hexachlorocyclopentadiene	ND	10	1.9	1	B5E0440	05/18/2015	05/18/15 21:44	
Hexachloroethane	ND	10	1.5	1	B5E0440	05/18/2015	05/18/15 21:44	
Indeno(1,2,3-cd)pyrene	ND	10	1.9	1	B5E0440	05/18/2015	05/18/15 21:44	
Isophorone	ND	10	1.6	1	B5E0440	05/18/2015	05/18/15 21:44	
N-Nitroso-di-n propylamine	ND	10	1.6	1	B5E0440	05/18/2015	05/18/15 21:44	
N-Nitrosodimethylamine	ND	50	1.7	1	B5E0440	05/18/2015	05/18/15 21:44	
N-Nitrosodiphenylamine	ND	10	1.5	1	B5E0440	05/18/2015	05/18/15 21:44	
Naphthalene	ND	10	1.5	1	B5E0440	05/18/2015	05/18/15 21:44	
Nitrobenzene	ND	10	1.7	1	B5E0440	05/18/2015	05/18/15 21:44	
Pentachlorophenol	ND	50	2.9	1	B5E0440	05/18/2015	05/18/15 21:44	
Phenanthrene	ND	10	1.8	1	B5E0440	05/18/2015	05/18/15 21:44	

Certificate of Analysis

Amec Foster Wheeler	Project Number : MTA WES, 4953-11-1423
6001 Rickenbacker Road	Report To : Ron Lopez/Marty Hudson
Los Angeles , CA 90040	Reported : 05/21/2015

Client Sample ID M410-80

Lab ID: 1501681-01

Semivolatile Organic Compounds by EPA 625

Analyst: BD

Analyte	Result (ug/L)	PQL (ug/L)	MDL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Phenol	ND	10	4.8	1	B5E0440	05/18/2015	05/18/15 21:44	
Pyrene	ND	10	1.9	1	B5E0440	05/18/2015	05/18/15 21:44	
Surrogate: 1,2-Dichlorobenzene-d4	*56.8 %*	*4 - 111*			B5E0440	05/18/2015	*05/18/15 21:44*	
Surrogate: 2,4,6-Tribromophenol	*70.1 %*	*21 - 162*			B5E0440	05/18/2015	*05/18/15 21:44*	
Surrogate: 2-Chlorophenol-d4	*46.2 %*	*0 - 124*			B5E0440	05/18/2015	*05/18/15 21:44*	
Surrogate: 2-Fluorobiphenyl	*66.3 %*	*21 - 118*			B5E0440	05/18/2015	*05/18/15 21:44*	
Surrogate: 2-Fluorophenol	*29.4 %*	*0 - 83*			B5E0440	05/18/2015	*05/18/15 21:44*	
Surrogate: 4-Terphenyl-d14	*84.2 %*	*33 - 150*			B5E0440	05/18/2015	*05/18/15 21:44*	
Surrogate: Nitrobenzene-d5	*53.1 %*	*10 - 117*			B5E0440	05/18/2015	*05/18/15 21:44*	
Surrogate: Phenol-d5	*27.0 %*	*0 - 68*			B5E0440	05/18/2015	*05/18/15 21:44*	

Oil & Grease, Hexane Extractable Material (HEM) EPA 1664A

Analyst: LA

Analyte	Result (mg/L)	PQL (mg/L)	MDL (mg/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Oil & Grease, HEM	**2.5**	2.3	0.71	1	B5E0469	05/19/2015	05/19/15 18:41	

Dissolved Gases in Water

Analyst: MFR

Analyte	Result (ug/L)	PQL (ug/L)	MDL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Methane	**370**	5.0	3.7	5	B5E0426	05/18/2015	05/18/15 11:11	

Turbidity by EPA 180.1

Analyst: RD

Analyte	Result (NTU)	PQL (NTU)	MDL (NTU)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Turbidity	**10**	0.10	0.10	1	B5E0419	05/12/2015	05/12/15 12:40	

Hardness by Calculation by SM 2340B

Analyst: SB

Analyte	Result (ug/L)	PQL (ug/L)	MDL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Hardness Total (As CaCO3)	**2400000**	25000	11000	100	B5E0337	05/14/2015	05/15/15 15:14	

Figure C-3.8

Certificate of Analysis

Amec Foster Wheeler	Project Number : MTA WES, 4953-11-1423
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Total Dissolved Solids (Residue, Filterable) by SM 2540C

Analyst: PT

Analyte	Result (mg/L)	PQL (mg/L)	MDL (mg/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Residue, Dissolved	**3800**	33	33	1	B5E0408	05/14/2015	05/15/15 09:00	

Total Suspended Solids (Residue, Non-Filtrable) by SM 2540D

Analyst: PT

Analyte	Result (mg/L)	PQL (mg/L)	MDL (mg/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Residue, Suspended	**21**	1.4	1.4	1	B5E0407	05/15/2015	05/15/15 09:00	

Residue, Settleable by SM 2540F

Analyst: PT

Analyte	Result (mL/L)	PQL (mL/L)	MDL (mL/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Residue, Settleable	ND	0.10	0.10	1	B5E0301	05/13/2015	05/13/15 09:30	

Cyanide, Total by SM4500-CN E

Analyst: LA

Analyte	Result (mg/L)	PQL (mg/L)	MDL (mg/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Cyanide, Total	**0.19**	0.050	0.030	5	B5E0522	05/19/2015	05/19/15 19:10	D1

pH by SM 4500H+B

Analyst: RD

Analyte	Result (pH Units)	PQL (pH Units)	MDL (pH Units)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
pH	**7.3**	0.10	0.10	1	B5E0455	05/12/2015	05/12/15 00:00	H1

Sulfide, Total by SM 4500-S=D

Analyst: LA

Analyte	Result (mg/L)	PQL (mg/L)	MDL (mg/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Sulfide, Total	**82**	3.0	1.3	300	B5E0324	05/13/2015	05/13/15 14:46	
Hydrogen sulfide	**88**	3.3	1.4	300	B5E0324	05/13/2015	05/13/15 14:46	

Certificate of Analysis

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Los Angeles , CA 90040		Reported :	05/21/2015

Client Sample ID M410-80

Lab ID: 1501681-01

Gasoline Range Organics by EPA 8015B (Modified)

Analyst: BT

Analyte	Result (mg/L)	PQL (mg/L)	MDL (mg/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Gasoline Range Organics	ND	0.05	0.05	1	B5E0350	05/12/2015	05/14/15 12:08	
Surrogate: 4-Bromofluorobenzene	*110 %*	*70 - 130*			B5E0350	05/12/2015	*05/14/15 12:08*	

Alcohols by EPA 8015B

Analyst: CR

Analyte	Result (mg/L)	PQL (mg/L)	MDL (mg/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Ethanol	**1.4**	1.0	0.25	1	B5E0442	05/18/2015	05/19/15 16:25	
Methanol	ND	1.0	0.24	1	B5E0442	05/18/2015	05/19/15 16:25	

Diesel Range Organics by EPA 8015B

Analyst: CR

Analyte	Result (mg/L)	PQL (mg/L)	MDL (mg/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
DRO	ND	0.05	0.05	1	B5E0473	05/19/2015	05/19/15 11:18	
ORO	ND	0.05	0.05	1	B5E0473	05/19/2015	05/19/15 11:18	
Surrogate: p-Terphenyl	*96.5 %*	*20 - 141*			B5E0473	05/19/2015	*05/19/15 11:18*	

1,4-Dioxane by EPA 8270/SIM: Isotope Dilution Technique

Analyst: BD

Analyte	Result (ug/L)	PQL (ug/L)	MDL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
1,4-Dioxane	ND	0.20	0.11	1	B5E0399	05/15/2015	05/15/15 19:46	
Surrogate: 1,2-Dichlorobenzene-d4	*65.7 %*	*47 - 117*			B5E0399	05/15/2015	*05/15/15 19:46*	
Surrogate: 2-Fluorobiphenyl	*72.6 %*	*48 - 121*			B5E0399	05/15/2015	*05/15/15 19:46*	
Surrogate: 4-Terphenyl-d14	*85.6 %*	*58 - 142*			B5E0399	05/15/2015	*05/15/15 19:46*	
Surrogate: Nitrobenzene-d5	*59.7 %*	*27 - 151*			B5E0399	05/15/2015	*05/15/15 19:46*	

Certificate of Analysis

Amec Foster Wheeler	Project Number : MTA WES, 4953-11-1423
6001 Rickenbacker Road	Report To : Ron Lopez/Marty Hudson
Los Angeles , CA 90040	Reported : 05/21/2015

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Lab ID: 1501681-02

Total Metals by ICP-MS EPA 200.8

Analyst: SB

Analyte	Result (ug/L)	PQL (ug/L)	MDL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Antimony	**0.07**	0.50	0.06	1	B5E0336	05/14/2015	05/15/15 11:22	J
Arsenic	**2.5**	1.0	0.25	1	B5E0336	05/14/2015	05/15/15 11:22	
Barium	**140**	1.0	0.22	1	B5E0336	05/14/2015	05/15/15 11:22	E
Beryllium	ND	2.5	0.37	5	B5E0336	05/14/2015	05/15/15 14:41	D5
Cadmium	**0.05**	0.50	0.03	1	B5E0336	05/14/2015	05/15/15 11:22	J
Chromium	**1.3**	1.0	0.43	2	B5E0336	05/14/2015	05/15/15 14:35	D5
Cobalt	**0.48**	1.0	0.10	2	B5E0336	05/14/2015	05/15/15 14:35	D5, J
Copper	**1.4**	2.0	0.40	2	B5E0336	05/14/2015	05/15/15 14:35	D5, J
Lead	**0.13**	1.0	0.09	1	B5E0336	05/14/2015	05/15/15 11:22	J
Molybdenum	**1.7**	0.50	0.07	1	B5E0336	05/14/2015	05/15/15 11:22	
Nickel	**4.6**	2.0	0.20	2	B5E0336	05/14/2015	05/15/15 14:35	D5
Selenium	**4.8**	0.50	0.18	1	B5E0336	05/14/2015	05/15/15 11:22	
Silver	ND	0.50	0.03	1	B5E0336	05/14/2015	05/15/15 11:22	
Thallium	ND	0.50	0.05	1	B5E0336	05/14/2015	05/15/15 11:22	
Vanadium	ND	2.0	1.6	2	B5E0336	05/14/2015	05/15/15 14:35	D5
Zinc	**6.2**	10	5.4	1	B5E0336	05/14/2015	05/15/15 11:22	J

Mercury by AA (Cold Vapor) EPA 245.1

Analyst: SB

Analyte	Result (ug/L)	PQL (ug/L)	MDL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Mercury	ND	0.20	0.15	1	B5E0439	05/18/2015	05/19/15 08:44	

Volatile Organic Compounds by EPA 624

Analyst: SL

Analyte	Result (ug/L)	PQL (ug/L)	MDL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
1,1,1-Trichloroethane	ND	0.50	0.35	1	B5E0379	05/15/2015	05/15/15 14:33	
1,1,2,2-Tetrachloroethane	ND	0.50	0.32	1	B5E0379	05/15/2015	05/15/15 14:33	
1,1,2-Trichloroethane	ND	0.50	0.44	1	B5E0379	05/15/2015	05/15/15 14:33	
1,1-Dichloroethane	ND	0.50	0.37	1	B5E0379	05/15/2015	05/15/15 14:33	
1,1-Dichloroethene	ND	0.50	0.47	1	B5E0379	05/15/2015	05/15/15 14:33	
1,2-Dichlorobenzene	ND	0.50	0.33	1	B5E0379	05/15/2015	05/15/15 14:33	
1,2-Dichloroethane	ND	0.50	0.34	1	B5E0379	05/15/2015	05/15/15 14:33	
1,2-Dichloropropane	ND	0.50	0.32	1	B5E0379	05/15/2015	05/15/15 14:33	
1,3-Dichlorobenzene	ND	0.50	0.35	1	B5E0379	05/15/2015	05/15/15 14:33	
1,4-Dichlorobenzene	ND	0.50	0.33	1	B5E0379	05/15/2015	05/15/15 14:33	

Certificate of Analysis

Amec Foster Wheeler		Project Number :	MTA WES, 4953-11-1423
6001 Rickenbacker Road		Report To :	Ron Lopez/Marty Hudson
Los Angeles , CA 90040		Reported :	05/21/2015

Client Sample ID M409-90

Lab ID: 1501681-02

Volatile Organic Compounds by EPA 624 **Analyst: SL**

Analyte	Result (ug/L)	PQL (ug/L)	MDL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
2-Chloroethyl vinyl ether	ND	0.50	0.39	1	B5E0379	05/15/2015	05/15/15 14:33	
Acrolein	ND	10	4.0	1	B5E0379	05/15/2015	05/15/15 14:33	
Acrylonitrile	ND	10	4.2	1	B5E0379	05/15/2015	05/15/15 14:33	
Benzene	ND	0.50	0.32	1	B5E0379	05/15/2015	05/15/15 14:33	
Bromodichloromethane	ND	0.50	0.37	1	B5E0379	05/15/2015	05/15/15 14:33	
Bromoform	ND	0.50	0.37	1	B5E0379	05/15/2015	05/15/15 14:33	
Bromomethane	ND	0.50	0.37	1	B5E0379	05/15/2015	05/15/15 14:33	
Carbon tetrachloride	ND	0.50	0.40	1	B5E0379	05/15/2015	05/15/15 14:33	
Chlorobenzene	ND	0.50	0.44	1	B5E0379	05/15/2015	05/15/15 14:33	
Chloroethane	ND	0.50	0.28	1	B5E0379	05/15/2015	05/15/15 14:33	
Chloroform	ND	0.50	0.37	1	B5E0379	05/15/2015	05/15/15 14:33	
Chloromethane	ND	0.50	0.47	1	B5E0379	05/15/2015	05/15/15 14:33	
cis-1,3-Dichloropropene	ND	0.50	0.27	1	B5E0379	05/15/2015	05/15/15 14:33	
Dibromochloromethane	ND	0.50	0.32	1	B5E0379	05/15/2015	05/15/15 14:33	
Ethylbenzene	ND	0.50	0.35	1	B5E0379	05/15/2015	05/15/15 14:33	
m,p-Xylene	ND	1.0	0.67	1	B5E0379	05/15/2015	05/15/15 14:33	
Methylene chloride	ND	1.0	0.60	1	B5E0379	05/15/2015	05/15/15 14:33	
o-Xylene	ND	0.50	0.29	1	B5E0379	05/15/2015	05/15/15 14:33	
Tetrachloroethene	ND	0.50	0.39	1	B5E0379	05/15/2015	05/15/15 14:33	
Toluene	ND	0.50	0.31	1	B5E0379	05/15/2015	05/15/15 14:33	
trans-1,2-Dichloroethene	ND	0.50	0.30	1	B5E0379	05/15/2015	05/15/15 14:33	
trans-1,3-Dichloropropene	ND	0.50	0.22	1	B5E0379	05/15/2015	05/15/15 14:33	
Trichloroethene	ND	0.50	0.34	1	B5E0379	05/15/2015	05/15/15 14:33	
Trichlorofluoromethane	ND	0.50	0.49	1	B5E0379	05/15/2015	05/15/15 14:33	
Vinyl chloride	ND	0.50	0.41	1	B5E0379	05/15/2015	05/15/15 14:33	
Surrogate: 1,2-Dichloroethane-d4	*86.0 %*		*49 - 148*		B5E0379	05/15/2015	*05/15/15 14:33*	
Surrogate: 4-Bromofluorobenzene	*117 %*		*65 - 132*		B5E0379	05/15/2015	*05/15/15 14:33*	
Surrogate: Dibromofluoromethane	*91.8 %*		*55 - 138*		B5E0379	05/15/2015	*05/15/15 14:33*	
Surrogate: Toluene-d8	*73.6 %*		*60 - 120*		B5E0379	05/15/2015	*05/15/15 14:33*	

Certificate of Analysis

Amec Foster Wheeler	Project Number : MTA WES, 4953-11-1423
6001 Rickenbacker Road	Report To : Ron Lopez/Marty Hudson
Los Angeles , CA 90040	Reported : 05/21/2015

Client Sample ID M409-90

Lab ID: 1501681-02

Semivolatile Organic Compounds by EPA 625 **Analyst: BD**

Analyte	Result (ug/L)	PQL (ug/L)	MDL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
1,2,4-Trichlorobenzene	ND	10	1.5	1	B5E0440	05/18/2015	05/18/15 22:11	
1,2-Dichlorobenzene	ND	10	1.7	1	B5E0440	05/18/2015	05/18/15 22:11	
1,2-Diphenylhydrazine	ND	10	1.7	1	B5E0440	05/18/2015	05/18/15 22:11	
1,3-Dichlorobenzene	ND	10	1.5	1	B5E0440	05/18/2015	05/18/15 22:11	
1,4-Dichlorobenzene	ND	10	1.3	1	B5E0440	05/18/2015	05/18/15 22:11	
2,4,6-Trichlorophenol	ND	10	3.3	1	B5E0440	05/18/2015	05/18/15 22:11	
2,4-Dichlorophenol	ND	10	3.9	1	B5E0440	05/18/2015	05/18/15 22:11	
2,4-Dimethylphenol	ND	10	3.3	1	B5E0440	05/18/2015	05/18/15 22:11	
2,4-Dinitrophenol	ND	50	2.8	1	B5E0440	05/18/2015	05/18/15 22:11	
2,4-Dinitrotoluene	ND	10	2.0	1	B5E0440	05/18/2015	05/18/15 22:11	
2,6-Dinitrotoluene	ND	10	2.1	1	B5E0440	05/18/2015	05/18/15 22:11	
2-Chloronaphthalene	ND	10	1.4	1	B5E0440	05/18/2015	05/18/15 22:11	
2-Chlorophenol	ND	10	3.5	1	B5E0440	05/18/2015	05/18/15 22:11	
2-Nitrophenol	ND	10	3.3	1	B5E0440	05/18/2015	05/18/15 22:11	
3,3´-Dichlorobenzidine	ND	20	11	1	B5E0440	05/18/2015	05/18/15 22:11	
4,6-Dinitro-2-methyphenol	ND	50	2.4	1	B5E0440	05/18/2015	05/18/15 22:11	
4-Bromophenyl-phenylether	ND	10	1.5	1	B5E0440	05/18/2015	05/18/15 22:11	
4-Chloro-3-methylphenol	ND	50	3.7	1	B5E0440	05/18/2015	05/18/15 22:11	
4-Chlorophenyl-phenylether	ND	10	1.8	1	B5E0440	05/18/2015	05/18/15 22:11	
4-Nitrophenol	ND	50	3.6	1	B5E0440	05/18/2015	05/18/15 22:11	
Acenaphthene	ND	10	1.4	1	B5E0440	05/18/2015	05/18/15 22:11	
Acenaphthylene	ND	10	1.3	1	B5E0440	05/18/2015	05/18/15 22:11	
Anthracene	ND	10	1.5	1	B5E0440	05/18/2015	05/18/15 22:11	
Benzidine (M)	ND	50	2.7	1	B5E0440	05/18/2015	05/18/15 22:11	
Benzo(a)anthracene	ND	10	1.6	1	B5E0440	05/18/2015	05/18/15 22:11	
Benzo(a)pyrene	ND	10	1.8	1	B5E0440	05/18/2015	05/18/15 22:11	
Benzo(b)fluoranthene	ND	10	2.0	1	B5E0440	05/18/2015	05/18/15 22:11	
Benzo(g,h,i)perylene	ND	10	2.5	1	B5E0440	05/18/2015	05/18/15 22:11	
Benzo(k)fluoranthene	ND	10	1.6	1	B5E0440	05/18/2015	05/18/15 22:11	
bis(2-chloroethoxy)methane	ND	10	1.7	1	B5E0440	05/18/2015	05/18/15 22:11	
bis(2-Chloroethyl)ether	ND	10	2.9	1	B5E0440	05/18/2015	05/18/15 22:11	
bis(2-chloroisopropyl)ether	ND	10	1.5	1	B5E0440	05/18/2015	05/18/15 22:11	
bis(2-ethylhexyl)phthalate	ND	10	2.1	1	B5E0440	05/18/2015	05/18/15 22:11	
Butylbenzylphthalate	ND	10	2.1	1	B5E0440	05/18/2015	05/18/15 22:11	
Chrysene	ND	10	1.5	1	B5E0440	05/18/2015	05/18/15 22:11	
Di-n-butylphthalate	ND	10	3.2	1	B5E0440	05/18/2015	05/18/15 22:11	
Di-n-octylphthalate	ND	10	2.2	1	B5E0440	05/18/2015	05/18/15 22:11	

Certificate of Analysis

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Los Angeles , CA 90040	Reported : 05/21/2015

Client Sample ID M409-90

Lab ID: 1501681-02

Semivolatile Organic Compounds by EPA 625 **Analyst: BD**

Analyte	Result (ug/L)	PQL (ug/L)	MDL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Dibenz(a,h)anthracene	ND	10	1.5	1	B5E0440	05/18/2015	05/18/15 22:11	
Diethyl phthalate	ND	10	1.8	1	B5E0440	05/18/2015	05/18/15 22:11	
Dimethyl phthalate	ND	10	1.6	1	B5E0440	05/18/2015	05/18/15 22:11	
Fluoranthene	ND	10	1.7	1	B5E0440	05/18/2015	05/18/15 22:11	
Fluorene	ND	10	1.5	1	B5E0440	05/18/2015	05/18/15 22:11	
Hexachlorobenzene	ND	10	1.5	1	B5E0440	05/18/2015	05/18/15 22:11	
Hexachlorobutadiene	ND	20	1.6	1	B5E0440	05/18/2015	05/18/15 22:11	
Hexachlorocyclopentadiene	ND	10	1.9	1	B5E0440	05/18/2015	05/18/15 22:11	
Hexachloroethane	ND	10	1.5	1	B5E0440	05/18/2015	05/18/15 22:11	
Indeno(1,2,3-cd)pyrene	ND	10	1.9	1	B5E0440	05/18/2015	05/18/15 22:11	
Isophorone	ND	10	1.6	1	B5E0440	05/18/2015	05/18/15 22:11	
N-Nitroso-di-n propylamine	ND	10	1.6	1	B5E0440	05/18/2015	05/18/15 22:11	
N-Nitrosodimethylamine	ND	50	1.7	1	B5E0440	05/18/2015	05/18/15 22:11	
N-Nitrosodiphenylamine	ND	10	1.5	1	B5E0440	05/18/2015	05/18/15 22:11	
Naphthalene	ND	10	1.5	1	B5E0440	05/18/2015	05/18/15 22:11	
Nitrobenzene	ND	10	1.7	1	B5E0440	05/18/2015	05/18/15 22:11	
Pentachlorophenol	ND	50	2.9	1	B5E0440	05/18/2015	05/18/15 22:11	
Phenanthrene	ND	10	1.8	1	B5E0440	05/18/2015	05/18/15 22:11	
Phenol	ND	10	4.8	1	B5E0440	05/18/2015	05/18/15 22:11	
Pyrene	ND	10	1.9	1	B5E0440	05/18/2015	05/18/15 22:11	
Surrogate: 1,2-Dichlorobenzene-d4	*68.9 %*	*4 - 111*			B5E0440	05/18/2015	*05/18/15 22:11*	
Surrogate: 2,4,6-Tribromophenol	*72.0 %*	*21 - 162*			B5E0440	05/18/2015	*05/18/15 22:11*	
Surrogate: 2-Chlorophenol-d4	*55.0 %*	*0 - 124*			B5E0440	05/18/2015	*05/18/15 22:11*	
Surrogate: 2-Fluorobiphenyl	*77.2 %*	*21 - 118*			B5E0440	05/18/2015	*05/18/15 22:11*	
Surrogate: 2-Fluorophenol	*35.1 %*	*0 - 83*			B5E0440	05/18/2015	*05/18/15 22:11*	
Surrogate: 4-Terphenyl-d14	*90.5 %*	*33 - 150*			B5E0440	05/18/2015	*05/18/15 22:11*	
Surrogate: Nitrobenzene-d5	*63.6 %*	*10 - 117*			B5E0440	05/18/2015	*05/18/15 22:11*	
Surrogate: Phenol-d5	*26.5 %*	*0 - 68*			B5E0440	05/18/2015	*05/18/15 22:11*	

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Dissolved Gases in Water

Analyst: MFR

Analyte	Result (ug/L)	PQL (ug/L)	MDL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Methane	**240**	5.0	3.7	5	B5E0426	05/18/2015	05/18/15 11:51	

Sulfide, Total by SM 4500-S=D

Analyst: LA

Analyte	Result (mg/L)	PQL (mg/L)	MDL (mg/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Hydrogen sulfide	**0.005**	0.011	0.005	1	B5E0324	05/13/2015	05/13/15 14:46	J

Gasoline Range Organics by EPA 8015B (Modified)

Analyst: BT

Analyte	Result (mg/L)	PQL (mg/L)	MDL (mg/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Gasoline Range Organics	ND	0.05	0.05	1	B5E0350	05/12/2015	05/14/15 12:48	
Surrogate: 4-Bromofluorobenzene	*104 %*	*70 - 130*			B5E0350	05/12/2015	*05/14/15 12:48*	

Diesel Range Organics by EPA 8015B

Analyst: CR

Analyte	Result (mg/L)	PQL (mg/L)	MDL (mg/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
DRO	ND	0.05	0.05	1	B5E0473	05/19/2015	05/19/15 11:35	
ORO	ND	0.05	0.05	1	B5E0473	05/19/2015	05/19/15 11:35	
Surrogate: p-Terphenyl	*87.0 %*	*20 - 141*			B5E0473	05/19/2015	*05/19/15 11:35*	

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QUALITY CONTROL SECTION

Total Metals by ICP-MS EPA 200.8 - Quality Control

Analyte	Result (ug/L)	PQL (ug/L)	Spike Level	Source Result	% Rec	% Rec Limits	RPD	RPD Limit	Notes
Batch B5E0336 - EPA 200.8_W									
Blank (B5E0336-BLK1)				Prepared: 5/14/2015 Analyzed: 5/15/2015					
Antimony	ND	0.50			NR				
Arsenic	ND	1.0			NR				
Barium	ND	1.0			NR				
Beryllium	ND	0.50			NR				
Boron	ND	50			NR				
Cadmium	ND	0.50			NR				
Chromium	0.423912	0.50			NR				J
Cobalt	ND	0.50			NR				
Copper	ND	1.0			NR				
Lead	ND	1.0			NR				
Molybdenum	ND	0.50			NR				
Nickel	ND	1.0			NR				
Selenium	ND	0.50			NR				
Silver	ND	0.50			NR				
Thallium	ND	0.50			NR				
Vanadium	ND	1.0			NR				
Zinc	ND	10			NR				
LCS (B5E0336-BS1)				Prepared: 5/14/2015 Analyzed: 5/15/2015					
Antimony	9.84266	0.50	10.0000		98.4	85 - 115			
Arsenic	9.19771	1.0	10.0000		92.0	85 - 115			
Barium	9.77678	1.0	10.0000		97.8	85 - 115			
Beryllium	9.48107	0.50	10.0000		94.8	85 - 115			
Boron	94.8294	50	100.000		94.8	85 - 115			
Cadmium	9.90988	0.50	10.0000		99.1	85 - 115			
Chromium	10.2151	0.50	10.0000		102	85 - 115			
Cobalt	9.93166	0.50	10.0000		99.3	85 - 115			
Copper	10.0115	1.0	10.0000		100	85 - 115			
Lead	9.94572	1.0	10.0000		99.5	85 - 115			
Molybdenum	9.91609	0.50	10.0000		99.2	85 - 115			
Nickel	9.75582	1.0	10.0000		97.6	85 - 115			
Selenium	9.65850	0.50	10.0000		96.6	85 - 115			
Silver	9.60669	0.50	10.0000		96.1	85 - 115			
Thallium	9.82486	0.50	10.0000		98.2	85 - 115			
Vanadium	8.59604	1.0	10.0000		86.0	85 - 115			
Zinc	98.0036	10	100.000		98.0	85 - 115			
Matrix Spike (B5E0336-MS1)		**Source: 1501691-01**		Prepared: 5/14/2015 Analyzed: 5/15/2015					
Antimony	10.0155	0.50	10.0000	0.226023	97.9	70 - 130			
Arsenic	9.88916	1.0	10.0000	0.713443	91.8	70 - 130			

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Total Metals by ICP-MS EPA 200.8 - Quality Control (cont'd)

Analyte	Result (ug/L)	PQL (ug/L)	Spike Level	Source Result	% Rec	% Rec Limits	RPD	RPD Limit	Notes
Batch B5E0336 - EPA 200.8_W (continued)									
Matrix Spike (B5E0336-MS1) - Continued		**Source: 1501691-01**		Prepared: 5/14/2015 Analyzed: 5/15/2015					
Barium	100.510	1.0	10.0000	89.4430	111	70 - 130			E
Beryllium	7.72580	0.50	10.0000	ND	77.3	70 - 130			
Boron	225.189	50	100.000	153.904	71.3	70 - 130			
Cadmium	9.38825	0.50	10.0000	0.147477	92.4	70 - 130			
Chromium	9.78247	0.50	10.0000	1.85656	79.3	70 - 130			
Cobalt	8.15677	0.50	10.0000	0.328421	78.3	70 - 130			
Copper	13.2787	1.0	10.0000	6.42722	68.5	70 - 130			M1
Lead	9.27049	1.0	10.0000	0.297469	89.7	70 - 130			
Molybdenum	21.3769	0.50	10.0000	11.5513	98.3	70 - 130			
Nickel	14.3971	1.0	10.0000	7.06695	73.3	70 - 130			
Selenium	10.8926	0.50	10.0000	2.15013	87.4	70 - 130			
Silver	9.06080	0.50	10.0000	ND	90.6	70 - 130			
Thallium	8.78558	0.50	10.0000	ND	87.9	70 - 130			
Vanadium	19.9956	1.0	10.0000	11.9458	80.5	70 - 130			
Zinc	90.4639	10	100.000	7.91097	82.6	70 - 130			
Matrix Spike (B5E0336-MS2)		**Source: 1501691-01**		Prepared: 5/14/2015 Analyzed: 5/15/2015					
Antimony	9.39044	1.0	10.0000	0.226023	91.6	70 - 130			
Arsenic	10.0338	2.0	10.0000	0.713443	93.2	70 - 130			
Barium	102.272	2.0	10.0000	89.4430	128	70 - 130			D6
Beryllium	7.58186	1.0	10.0000	ND	75.8	70 - 130			
Boron	230.941	100	100.000	153.904	77.0	70 - 130			
Cadmium	8.92007	1.0	10.0000	0.147477	87.7	70 - 130			
Chromium	9.77383	1.0	10.0000	1.85656	79.2	70 - 130			
Cobalt	7.99429	1.0	10.0000	0.328421	76.7	70 - 130			
Copper	13.5478	2.0	10.0000	6.42722	71.2	70 - 130			
Lead	8.95067	2.0	10.0000	0.297469	86.5	70 - 130			
Molybdenum	19.6586	1.0	10.0000	11.5513	81.1	70 - 130			
Nickel	13.9207	2.0	10.0000	7.06695	68.5	70 - 130			
Selenium	10.3382	1.0	10.0000	2.15013	81.9	70 - 130			
Silver	8.80233	1.0	10.0000	ND	88.0	70 - 130			
Thallium	8.71991	1.0	10.0000	ND	87.2	70 - 130			
Vanadium	20.0503	2.0	10.0000	11.9458	81.0	70 - 130			
Zinc	92.0513	20	100.000	7.91097	92.1	70 - 130			
Matrix Spike Dup (B5E0336-MSD1)		**Source: 1501691-01**		Prepared: 5/14/2015 Analyzed: 5/15/2015					
Antimony	9.68083	0.50	10.0000	0.226023	94.5	70 - 130	3.40	20	
Arsenic	9.99338	1.0	10.0000	0.713443	92.8	70 - 130	1.05	20	
Barium	105.195	1.0	10.0000	89.4430	158	70 - 130	4.56	20	E
Beryllium	7.45536	0.50	10.0000	ND	74.6	70 - 130	3.56	20	
Boron	217.242	50	100.000	153.904	63.3	70 - 130	3.59	20	M1
Cadmium	9.07640	0.50	10.0000	0.147477	89.3	70 - 130	3.38	20	

Figure C-3.17

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Total Metals by ICP-MS EPA 200.8 - Quality Control (cont'd)

Analyte	Result (ug/L)	PQL (ug/L)	Spike Level	Source Result	% Rec	% Rec Limits	RPD	RPD Limit	Notes
Batch B5E0336 - EPA 200.8_W (continued)									
Matrix Spike Dup (B5E0336-MSD1) - Continued		**Source: 1501691-01**		Prepared: 5/14/2015 Analyzed: 5/15/2015					
Chromium	9.47253	0.50	10.0000	1.85656	76.2	70 - 130	3.22	20	
Cobalt	7.64337	0.50	10.0000	0.328421	73.1	70 - 130	6.50	20	
Copper	12.7513	1.0	10.0000	6.42722	63.2	70 - 130	4.05	20	
Lead	9.10656	1.0	10.0000	0.297469	88.1	70 - 130	1.78	20	
Molybdenum	20.7730	0.50	10.0000	11.5513	92.2	70 - 130	2.87	20	
Nickel	13.4368	1.0	10.0000	7.06695	63.7	70 - 130	6.90	20	M1
Selenium	10.6361	0.50	10.0000	2.15013	84.9	70 - 130	2.38	20	
Silver	8.80455	0.50	10.0000	ND	88.0	70 - 130	2.87	20	
Thallium	8.86751	0.50	10.0000	ND	88.7	70 - 130	0.928	20	
Vanadium	19.1543	1.0	10.0000	11.9458	72.1	70 - 130	4.30	20	
Zinc	91.8318	10	100.000	7.91097	83.9	70 - 130	1.50	20	
Matrix Spike Dup (B5E0336-MSD2)		**Source: 1501691-01**		Prepared: 5/14/2015 Analyzed: 5/15/2015					
Antimony	9.39728	1.0	10.0000	0.226023	91.7	70 - 130	0.0728	20	
Arsenic	9.99224	2.0	10.0000	0.713443	92.8	70 - 130	0.415	20	
Barium	103.517	2.0	10.0000	89.4430	141	70 - 130	1.21	20	D6, M1
Beryllium	7.78468	1.0	10.0000	ND	77.8	70 - 130	2.64	20	
Boron	233.822	100	100.000	153.904	79.9	70 - 130	1.24	20	
Cadmium	9.15864	1.0	10.0000	0.147477	90.1	70 - 130	2.64	20	
Chromium	9.98883	1.0	10.0000	1.85656	81.3	70 - 130	2.18	20	
Cobalt	8.07464	1.0	10.0000	0.328421	77.5	70 - 130	1.00	20	
Copper	13.4289	2.0	10.0000	6.42722	70.0	70 - 130	0.882	20	
Lead	8.90355	2.0	10.0000	0.297469	86.1	70 - 130	0.528	20	
Molybdenum	19.6195	1.0	10.0000	11.5513	80.7	70 - 130	0.199	20	
Nickel	14.1516	2.0	10.0000	7.06695	70.8	70 - 130	1.65	20	
Selenium	10.1818	1.0	10.0000	2.15013	80.3	70 - 130	1.52	20	
Silver	9.01112	1.0	10.0000	ND	90.1	70 - 130	2.34	20	
Thallium	8.78280	1.0	10.0000	ND	87.8	70 - 130	0.719	20	
Vanadium	20.1255	2.0	10.0000	11.9458	81.8	70 - 130	0.374	20	
Zinc	93.4681	20	100.000	7.91097	93.5	70 - 130	1.53	20	

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Hexavalent Chromium by EPA 218.6 - Quality Control

Analyte	Result (ug/L)	PQL (ug/L)	Spike Level	Source Result	% Rec	% Rec Limits	RPD	RPD Limit	Notes
Batch B5E0472 - No_Prep_IC3_W									
Blank (B5E0472-BLK1)				Prepared: 5/13/2015 Analyzed: 5/18/2015					
Hexavalent Chromium	ND	0.20			NR				
LCS (B5E0472-BS1)				Prepared: 5/13/2015 Analyzed: 5/18/2015					
Hexavalent Chromium	5.08935	0.20	5.00000		102	90 - 110			
Duplicate (B5E0472-DUP1)		**Source: 1501681-01**		Prepared: 5/13/2015 Analyzed: 5/18/2015					
Hexavalent Chromium	ND	1.0		ND	NR			10	
Matrix Spike (B5E0472-MS1)		**Source: 1501681-01**		Prepared: 5/13/2015 Analyzed: 5/18/2015					
Hexavalent Chromium	5.83266	1.0	5.00000	ND	117	90 - 110			M2
Matrix Spike Dup (B5E0472-MSD1)		**Source: 1501681-01**		Prepared: 5/13/2015 Analyzed: 5/18/2015					
Hexavalent Chromium	5.67994	1.0	5.00000	ND	114	90 - 110	2.65	10	M2

Figure C-3.19

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Mercury by AA (Cold Vapor) EPA 245.1 - Quality Control

Analyte	Result (ug/L)	PQL (ug/L)	Spike Level	Source Result	% Rec	% Rec Limits	RPD	RPD Limit	Notes
Batch B5E0439 - EPA 245.1/7470_W									
Blank (B5E0439-BLK1)				Prepared: 5/18/2015 Analyzed: 5/19/2015					
Mercury	ND	0.20			NR				
LCS (B5E0439-BS1)				Prepared: 5/18/2015 Analyzed: 5/19/2015					
Mercury	10.1024	0.20	10.0000		101	85 - 115			
Duplicate (B5E0439-DUP1)		**Source: 1501681-01**		Prepared: 5/18/2015 Analyzed: 5/19/2015					
Mercury	ND	0.20		ND	NR			20	
Matrix Spike (B5E0439-MS1)		**Source: 1501681-01**		Prepared: 5/18/2015 Analyzed: 5/19/2015					
Mercury	3.31927	0.20	10.0000	ND	33.2	70 - 130			M1
Matrix Spike Dup (B5E0439-MSD1)		**Source: 1501681-01**		Prepared: 5/18/2015 Analyzed: 5/19/2015					
Mercury	3.23706	0.20	10.0000	ND	32.4	70 - 130	2.51	20	M1
Post Spike (B5E0439-PS1)		**Source: 1501681-01**		Prepared: 5/18/2015 Analyzed: 5/19/2015					
Mercury	1.75439		5.00000	-0.007360	35.1	85 - 115			M1

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Anions Scan by Ion Chromatography EPA 300.0 - Quality Control

Analyte	Result (mg/L)	PQL (mg/L)	Spike Level	Source Result	% Rec	% Rec Limits	RPD	RPD Limit	Notes
Batch B5E0479 - No_Prep_IC1_W									
Blank (B5E0479-BLK1)				Prepared: 5/13/2015 Analyzed: 5/13/2015					
Chloride	ND	0.50			NR				
Nitrate, as N	ND	0.10			NR				
Nitrite, as N	ND	0.10			NR				
Sulfate	ND	1.0			NR				
LCS (B5E0479-BS1)				Prepared: 5/13/2015 Analyzed: 5/13/2015					
Chloride	0.943000	0.50	1.00000		94.3	90 - 110			
Nitrate, as N	0.947500	0.10	1.00000		94.8	90 - 110			
Nitrite, as N	0.960000	0.10	1.00000		96.0	90 - 110			
Sulfate	1.88950	1.0	2.00000		94.5	90 - 110			
Duplicate (B5E0479-DUP1)		**Source: 1501362-05RE1**		Prepared: 5/13/2015 Analyzed: 5/13/2015					
Chloride	133.228	10		156.648	NR		16.2	20	
Nitrate, as N	6.08400	2.0		18.3440	NR		100	20	
Nitrite, as N	ND	2.0		ND	NR			20	
Sulfate	72.3660	20		72.1860	NR		0.249	20	
Matrix Spike (B5E0479-MS1)		**Source: 1501362-05RE1**		Prepared: 5/13/2015 Analyzed: 5/13/2015					
Chloride	145.726	10	10.0000	156.648	-109	80 - 120			M2
Nitrate, as N	15.3360	2.0	10.0000	18.3440	-30.1	80 - 120			M2
Nitrite, as N	10.9300	2.0	10.0000	ND	109	80 - 120			
Sulfate	92.5160	20	20.0000	72.1860	102	80 - 120			
Matrix Spike Dup (B5E0479-MSD1)		**Source: 1501362-05RE1**		Prepared: 5/13/2015 Analyzed: 5/13/2015					
Chloride	145.018	10	10.0000	156.648	-116	80 - 120	0.487	20	M2
Nitrate, as N	15.2320	2.0	10.0000	18.3440	-31.1	80 - 120	0.680	20	M2
Nitrite, as N	10.9400	2.0	10.0000	ND	109	80 - 120	0.0914	20	
Sulfate	91.8820	20	20.0000	72.1860	98.5	80 - 120	0.688	20	

Figure C-3.21

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Perchlorate by Ion Chromatography EPA 314.0 - Quality Control

Analyte	Result (ug/L)	PQL (ug/L)	Spike Level	Source Result	% Rec	% Rec Limits	RPD	RPD Limit	Notes
Batch B5E0510 - No_Prep_IC2_W									
Blank (B5E0510-BLK1)				Prepared: 5/19/2015 Analyzed: 5/19/2015					
Perchlorate	ND	2.0			NR				
LCS (B5E0510-BS1)				Prepared: 5/19/2015 Analyzed: 5/19/2015					
Perchlorate	25.8940	2.0	25.0000		104	85 - 115			
Duplicate (B5E0510-DUP1)		**Source: 1501323-01**		Prepared: 5/19/2015 Analyzed: 5/19/2015					
Perchlorate	17.4583	2.0		17.1397	NR		1.84	15	
Matrix Spike (B5E0510-MS1)		**Source: 1501323-01**		Prepared: 5/19/2015 Analyzed: 5/19/2015					
Perchlorate	46.5609	2.0	25.0000	17.1397	118	80 - 120			
Matrix Spike Dup (B5E0510-MSD1)		**Source: 1501323-01**		Prepared: 5/19/2015 Analyzed: 5/19/2015					
Perchlorate	46.5200	2.0	25.0000	17.1397	118	80 - 120	0.0879	15	

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Analyte	Result (ug/L)	PQL (ug/L)	Spike Level	Source Result	% Rec	% Rec Limits	RPD	RPD Limit	Notes
Batch B5E0363 - GCSEMI_PCB/PEST_W									
Blank (B5E0363-BLK1)				Prepared: 5/14/2015 Analyzed: 5/14/2015					
4,4´-DDD	ND	0.05			NR				
4,4´-DDD [2C]	ND	0.05			NR				
4,4´-DDE	ND	0.05			NR				
4,4´-DDE [2C]	ND	0.05			NR				
4,4´-DDT	ND	0.05			NR				
4,4´-DDT [2C]	ND	0.05			NR				
Aldrin	ND	0.02			NR				
Aldrin [2C]	ND	0.02			NR				
alpha-BHC	ND	0.02			NR				
alpha-BHC [2C]	ND	0.02			NR				
alpha-Chlordane	ND	0.02			NR				
alpha-Chlordane [2C]	ND	0.02			NR				
beta-BHC	ND	0.02			NR				
beta-BHC [2C]	ND	0.02			NR				
Chlordane	ND	0.25			NR				
Chlordane [2C]	ND	0.25			NR				
delta-BHC	ND	0.02			NR				
delta-BHC [2C]	ND	0.02			NR				
Dieldrin	ND	0.05			NR				
Dieldrin [2C]	ND	0.05			NR				
Endosulfan I	ND	0.02			NR				
Endosulfan I [2C]	ND	0.02			NR				
Endosulfan II	ND	0.05			NR				
Endosulfan II [2C]	ND	0.05			NR				
Endosulfan sulfate	ND	0.05			NR				
Endosulfan Sulfate [2C]	ND	0.05			NR				
Endrin	ND	0.05			NR				
Endrin [2C]	ND	0.05			NR				
Endrin aldehyde	ND	0.05			NR				
Endrin aldehyde [2C]	ND	0.05			NR				
Endrin ketone	ND	0.05			NR				
Endrin ketone [2C]	ND	0.05			NR				
gamma-BHC	ND	0.02			NR				
gamma-BHC [2C]	ND	0.02			NR				
gamma-Chlordane	ND	0.02			NR				
gamma-Chlordane [2C]	ND	0.02			NR				
Heptachlor	ND	0.02			NR				
Heptachlor [2C]	ND	0.02			NR				
Heptachlor epoxide	ND	0.02			NR				
Heptachlor epoxide [2C]	ND	0.02			NR				
Toxaphene	ND	2.5			NR				

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Polychlorinated Biphenyls and Pesticides Analysis by EPA 608 - Quality Control (cont'd)

Analyte	Result (ug/L)	PQL (ug/L)	Spike Level	Source Result	% Rec	% Rec Limits	RPD	RPD Limit	Notes
Batch B5E0363 - GCSEMI_PCB/PEST_W (continued)									
Blank (B5E0363-BLK1) - Continued				Prepared: 5/14/2015 Analyzed: 5/14/2015					
Toxaphene [2C]	ND	2.5			NR				
Surrogate: Decachlorobiphenyl	*0.3685*		*0.500000*		*73.7*	*20 - 138*			
Surrogate: Decachlorobiphenyl [2C]	*0.3598*		*0.500000*		*72.0*	*20 - 138*			
Surrogate: Tetrachloro-m-xylene	*0.3606*		*0.500000*		*72.1*	*11 - 133*			
Surrogate: Tetrachloro-m-xylene [2C]	*0.3834*		*0.500000*		*76.7*	*11 - 133*			

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Analyte	Result (ug/L)	PQL (ug/L)	Spike Level	Source Result	% Rec	% Rec Limits	RPD	RPD Limit	Notes
Batch B5E0363 - GCSEMI_PCB/PEST_W (continued)									
Blank (B5E0363-BLK2)				Prepared: 5/14/2015 Analyzed: 5/14/2015					
Aroclor 1016	ND	0.50			NR				
Aroclor 1221	ND	1.0			NR				
Aroclor 1232	ND	0.50			NR				
Aroclor 1242	ND	0.50			NR				
Aroclor 1248	ND	0.50			NR				
Aroclor 1254	ND	0.50			NR				
Aroclor 1260	ND	0.50			NR				
Surrogate: Decachlorobiphenyl	*0.3138*		*0.500000*		*62.8*	*20 - 138*			
Surrogate: Tetrachloro-m-xylene	*0.4277*		*0.500000*		*85.5*	*11 - 133*			

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Analyte	Result (ug/L)	PQL (ug/L)	Spike Level	Source Result	% Rec	% Rec Limits	RPD	RPD Limit	Notes
Batch B5E0363 - GCSEMI_PCB/PEST_W (continued)									
LCS (B5E0363-BS1)				Prepared: 5/14/2015 Analyzed: 5/14/2015					
4,4´-DDD	0.348320	0.05	0.500000		69.7	56 - 107			
4,4´-DDD [2C]	0.397495	0.05	0.500000		79.5	56 - 107			
4,4´-DDE	0.377235	0.05	0.500000		75.4	62 - 107			
4,4´-DDE [2C]	0.430865	0.05	0.500000		86.2	62 - 107			
4,4´-DDT	0.290115	0.05	0.500000		58.0	41 - 110			
4,4´-DDT [2C]	0.297205	0.05	0.500000		59.4	41 - 110			
Aldrin	0.381660	0.02	0.500000		76.3	56 - 101			
Aldrin [2C]	0.420700	0.02	0.500000		84.1	56 - 101			
alpha-BHC	0.365265	0.02	0.500000		73.1	55 - 89			
alpha-BHC [2C]	0.394055	0.02	0.500000		78.8	55 - 89			
alpha-Chlordane	0.388135	0.02	0.500000		77.6	57 - 103			
alpha-Chlordane [2C]	0.416100	0.02	0.500000		83.2	57 - 103			
beta-BHC	0.390815	0.02	0.500000		78.2	58 - 95			
beta-BHC [2C]	0.411630	0.02	0.500000		82.3	58 - 95			
delta-BHC	0.287435	0.02	0.500000		57.5	12 - 80			
delta-BHC [2C]	0.315710	0.02	0.500000		63.1	12 - 80			
Dieldrin	0.359285	0.05	0.500000		71.9	60 - 102			
Dieldrin [2C]	0.391935	0.05	0.500000		78.4	60 - 102			
Endosulfan I	0.366280	0.02	0.500000		73.3	55 - 98			
Endosulfan I [2C]	0.381040	0.02	0.500000		76.2	55 - 98			
Endosulfan II	0.365710	0.05	0.500000		73.1	62 - 101			
Endosulfan II [2C]	0.377830	0.05	0.500000		75.6	62 - 101			
Endosulfan sulfate	0.375505	0.05	0.500000		75.1	54 - 95			
Endosulfan Sulfate [2C]	0.401270	0.05	0.500000		80.3	54 - 95			
Endrin	0.357355	0.05	0.500000		71.5	62 - 102			
Endrin [2C]	0.394625	0.05	0.500000		78.9	62 - 102			
Endrin aldehyde	0.369770	0.05	0.500000		74.0	62 - 104			
Endrin aldehyde [2C]	0.385795	0.05	0.500000		77.2	62 - 104			
Endrin ketone	0.307900	0.05	0.500000		61.6	61 - 102			
Endrin ketone [2C]	0.316095	0.05	0.500000		63.2	61 - 102			
gamma-BHC	0.373895	0.02	0.500000		74.8	60 - 94			
gamma-BHC [2C]	0.405000	0.02	0.500000		81.0	60 - 94			
gamma-Chlordane	0.369695	0.02	0.500000		73.9	58 - 103			
gamma-Chlordane [2C]	0.412735	0.02	0.500000		82.5	58 - 103			
Heptachlor	0.376930	0.02	0.500000		75.4	65 - 103			
Heptachlor [2C]	0.386205	0.02	0.500000		77.2	65 - 103			
Heptachlor epoxide	0.394485	0.02	0.500000		78.9	59 - 102			
Heptachlor epoxide [2C]	0.411360	0.02	0.500000		82.3	59 - 102			
Surrogate: Decachlorobiphenyl	*0.4284*		*0.500000*		*85.7*	*20 - 138*			
Surrogate: Decachlorobiphenyl [2C]	*0.3748*		*0.500000*		*75.0*	*20 - 138*			
Surrogate: Tetrachloro-m-xylene	*0.3579*		*0.500000*		*71.6*	*11 - 133*			

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Analyte	Result (ug/L)	PQL (ug/L)	Spike Level	Source Result	% Rec	% Rec Limits	RPD	RPD Limit	Notes
Batch B5E0363 - GCSEMI_PCB/PEST_W (continued)									
LCS (B5E0363-BS1) - Continued					Prepared: 5/14/2015 Analyzed: 5/14/2015				
Surrogate: Tetrachloro-m-xylene [2C]	*0.3896*		*0.500000*		*77.9*	*11 - 133*			

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Analyte	Result (ug/L)	PQL (ug/L)	Spike Level	Source Result	% Rec	% Rec Limits	RPD	RPD Limit	Notes
Batch B5E0363 - GCSEMI_PCB/PEST_W (continued)									
LCS (B5E0363-BS2)				Prepared: 5/14/2015 Analyzed: 5/14/2015					
Aroclor 1016	4.51100	0.50	5.00000		90.2	61 - 103			
Aroclor 1260	4.17432	0.50	5.00000		83.5	69 - 118			
Surrogate: Decachlorobiphenyl	*0.3179*		*0.500000*		*63.6*	*20 - 138*			
Surrogate: Tetrachloro-m-xylene	*0.4172*		*0.500000*		*83.4*	*11 - 133*			

Figure C-3.28

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Polychlorinated Biphenyls and Pesticides Analysis by EPA 608 - Quality Control (cont'd)

Analyte	Result (ug/L)	PQL (ug/L)	Spike Level	Source Result	% Rec	% Rec Limits	RPD	RPD Limit	Notes
Batch B5E0363 - GCSEMI_PCB/PEST_W (continued)									
LCS Dup (B5E0363-BSD1)				Prepared: 5/14/2015 Analyzed: 5/14/2015					
4,4´-DDD	0.380145	0.05	0.500000		76.0	56 - 107	8.74	20	
4,4´-DDD [2C]	0.427990	0.05	0.500000		85.6	56 - 107	7.39	20	
4,4´-DDE	0.403160	0.05	0.500000		80.6	62 - 107	6.64	20	
4,4´-DDE [2C]	0.460845	0.05	0.500000		92.2	62 - 107	6.72	20	
4,4´-DDT	0.309740	0.05	0.500000		61.9	41 - 110	6.54	20	
4,4´-DDT [2C]	0.313655	0.05	0.500000		62.7	41 - 110	5.39	20	
Aldrin	0.403965	0.02	0.500000		80.8	56 - 101	5.68	20	
Aldrin [2C]	0.445440	0.02	0.500000		89.1	56 - 101	5.71	20	
alpha-BHC	0.383240	0.02	0.500000		76.6	55 - 89	4.80	20	
alpha-BHC [2C]	0.412940	0.02	0.500000		82.6	55 - 89	4.68	20	
alpha-Chlordane	0.411865	0.02	0.500000		82.4	57 - 103	5.93	20	
alpha-Chlordane [2C]	0.444405	0.02	0.500000		88.9	57 - 103	6.58	20	
beta-BHC	0.413220	0.02	0.500000		82.6	58 - 95	5.57	20	
beta-BHC [2C]	0.435320	0.02	0.500000		87.1	58 - 95	5.59	20	
delta-BHC	0.303295	0.02	0.500000		60.7	12 - 80	5.37	20	
delta-BHC [2C]	0.333390	0.02	0.500000		66.7	12 - 80	5.45	20	
Dieldrin	0.385205	0.05	0.500000		77.0	60 - 102	6.96	20	
Dieldrin [2C]	0.421075	0.05	0.500000		84.2	60 - 102	7.17	20	
Endosulfan I	0.390575	0.02	0.500000		78.1	55 - 98	6.42	20	
Endosulfan I [2C]	0.408275	0.02	0.500000		81.7	55 - 98	6.90	20	
Endosulfan II	0.398195	0.05	0.500000		79.6	62 - 101	8.50	20	
Endosulfan II [2C]	0.407935	0.05	0.500000		81.6	62 - 101	7.66	20	
Endosulfan sulfate	0.405185	0.05	0.500000		81.0	54 - 95	7.60	20	
Endosulfan Sulfate [2C]	0.433235	0.05	0.500000		86.6	54 - 95	7.66	20	
Endrin	0.385120	0.05	0.500000		77.0	62 - 102	7.48	20	
Endrin [2C]	0.423095	0.05	0.500000		84.6	62 - 102	6.96	20	
Endrin aldehyde	0.402820	0.05	0.500000		80.6	62 - 104	8.56	20	
Endrin aldehyde [2C]	0.418645	0.05	0.500000		83.7	62 - 104	8.17	20	
Endrin ketone	0.331490	0.05	0.500000		66.3	61 - 102	7.38	20	
Endrin ketone [2C]	0.341000	0.05	0.500000		68.2	61 - 102	7.58	20	
gamma-BHC	0.393050	0.02	0.500000		78.6	60 - 94	5.00	20	
gamma-BHC [2C]	0.425970	0.02	0.500000		85.2	60 - 94	5.05	20	
gamma-Chlordane	0.392910	0.02	0.500000		78.6	58 - 103	6.09	20	
gamma-Chlordane [2C]	0.440130	0.02	0.500000		88.0	58 - 103	6.42	20	
Heptachlor	0.397755	0.02	0.500000		79.6	65 - 103	5.38	20	
Heptachlor [2C]	0.405185	0.02	0.500000		81.0	65 - 103	4.80	20	
Heptachlor epoxide	0.419425	0.02	0.500000		83.9	59 - 102	6.13	20	
Heptachlor epoxide [2C]	0.438645	0.02	0.500000		87.7	59 - 102	6.42	20	
Surrogate: Decachlorobiphenyl	*0.4022*		*0.500000*		*80.4*	*20 - 138*			
Surrogate: Decachlorobiphenyl [2C]	*0.4019*		*0.500000*		*80.4*	*20 - 138*			
Surrogate: Tetrachloro-m-xylene	*0.3746*		*0.500000*		*74.9*	*11 - 133*			

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Polychlorinated Biphenyls and Pesticides Analysis by EPA 608 - Quality Control (cont'd)

Analyte	Result (ug/L)	PQL (ug/L)	Spike Level	Source Result	% Rec	% Rec Limits	RPD	RPD Limit	Notes
Batch B5E0363 - GCSEMI_PCB/PEST_W (continued)									
LCS Dup (B5E0363-BSD1) - Continued					Prepared: 5/14/2015 Analyzed: 5/14/2015				
Surrogate: Tetrachloro-m-xylene [2C]	*0.4077*		*0.500000*		*81.5*	*11 - 133*			

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Polychlorinated Biphenyls and Pesticides Analysis by EPA 608 - Quality Control (cont'd)

Analyte	Result (ug/L)	PQL (ug/L)	Spike Level	Source Result	% Rec	% Rec Limits	RPD	RPD Limit	Notes
Batch B5E0363 - GCSEMI_PCB/PEST_W (continued)									
LCS Dup (B5E0363-BSD2)				Prepared: 5/14/2015 Analyzed: 5/14/2015					
Aroclor 1016	4.58568	0.50	5.00000		91.7	61 - 103	1.64	20	
Aroclor 1260	4.26215	0.50	5.00000		85.2	69 - 118	2.08	20	
Surrogate: Decachlorobiphenyl	*0.3233*		*0.500000*		*64.7*	*20 - 138*			
Surrogate: Tetrachloro-m-xylene	*0.4199*		*0.500000*		*84.0*	*11 - 133*			

Figure C-3.31

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Volatile Organic Compounds by EPA 624 - Quality Control

Analyte	Result (ug/L)	PQL (ug/L)	Spike Level	Source Result	% Rec	% Rec Limits	RPD	RPD Limit	Notes
Batch B5E0259 - MSVOA_LL_W									
Blank (B5E0259-BLK1)				Prepared: 5/14/2015 Analyzed: 5/14/2015					
1,1,1-Trichloroethane	ND	0.50			NR				
1,1,2,2-Tetrachloroethane	ND	0.50			NR				
1,1,2-Trichloroethane	ND	0.50			NR				
1,1-Dichloroethane	ND	0.50			NR				
1,1-Dichloroethene	ND	0.50			NR				
1,2-Dichlorobenzene	ND	0.50			NR				
1,2-Dichloroethane	ND	0.50			NR				
1,2-Dichloropropane	ND	0.50			NR				
1,3-Dichlorobenzene	ND	0.50			NR				
1,4-Dichlorobenzene	ND	0.50			NR				
2-Chloroethyl vinyl ether	ND	0.50			NR				
Acrolein	ND	10			NR				
Acrylonitrile	ND	10			NR				
Benzene	ND	0.50			NR				
Bromodichloromethane	ND	0.50			NR				
Bromoform	ND	0.50			NR				
Bromomethane	ND	0.50			NR				
Carbon tetrachloride	ND	0.50			NR				
Chlorobenzene	ND	0.50			NR				
Chloroethane	ND	0.50			NR				
Chloroform	ND	0.50			NR				
Chloromethane	ND	0.50			NR				
cis-1,3-Dichloropropene	ND	0.50			NR				
Dibromochloromethane	ND	0.50			NR				
Ethylbenzene	ND	0.50			NR				
m,p-Xylene	ND	1.0			NR				
Methylene chloride	ND	1.0			NR				
o-Xylene	ND	0.50			NR				
Tetrachloroethene	ND	0.50			NR				
Toluene	ND	0.50			NR				
trans-1,2-Dichloroethene	ND	0.50			NR				
trans-1,3-Dichloropropene	ND	0.50			NR				
Trichloroethene	ND	0.50			NR				
Trichlorofluoromethane	ND	0.50			NR				
Vinyl chloride	ND	0.50			NR				
Surrogate: 1,2-Dichloroethane-d4	*24.52*		*25.0000*		*98.1*	*49 - 148*			
Surrogate: 4-Bromofluorobenzene	*24.13*		*25.0000*		*96.5*	*65 - 132*			
Surrogate: Dibromofluoromethane	*25.46*		*25.0000*		*102*	*55 - 138*			
Surrogate: Toluene-d8	*22.21*		*25.0000*		*88.8*	*60 - 120*			

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Volatile Organic Compounds by EPA 624 - Quality Control (cont'd)

Analyte	Result (ug/L)	PQL (ug/L)	Spike Level	Source Result	% Rec	% Rec Limits	RPD	RPD Limit	Notes
Batch B5E0259 - MSVOA_LL_W (continued)									
LCS (B5E0259-BS1)				Prepared: 5/14/2015 Analyzed: 5/14/2015					
1,1,1-Trichloroethane	21.4600	0.50	20.0000		107	68 - 141			
1,1,2,2-Tetrachloroethane	19.7400	0.50	20.0000		98.7	72 - 123			
1,1,2-Trichloroethane	18.9800	0.50	20.0000		94.9	63 - 129			
1,1-Dichloroethane	19.6200	0.50	20.0000		98.1	65 - 133			
1,1-Dichloroethene	20.9800	0.50	20.0000		105	61 - 136			
1,2-Dichlorobenzene	21.7400	0.50	20.0000		109	75 - 130			
1,2-Dichloroethane	20.3600	0.50	20.0000		102	71 - 131			
1,2-Dichloropropane	19.6200	0.50	20.0000		98.1	69 - 130			
1,3-Dichlorobenzene	22.7900	0.50	20.0000		114	76 - 129			
1,4-Dichlorobenzene	22.1700	0.50	20.0000		111	76 - 123			
2-Chloroethyl vinyl ether	14.1900	0.50	20.0000		71.0	29 - 144			
Acrolein	143.530	10	200.000		71.8	0 - 206			
Acrylonitrile	201.570	10	200.000		101	27 - 176			
Benzene	40.5400	0.50	40.0000		101	72 - 127			
Bromodichloromethane	20.1300	0.50	20.0000		101	74 - 130			
Bromoform	20.3500	0.50	20.0000		102	74 - 135			
Bromomethane	18.9300	0.50	20.0000		94.6	14 - 166			
Carbon tetrachloride	24.7900	0.50	20.0000		124	57 - 162			
Chlorobenzene	22.0700	0.50	20.0000		110	78 - 125			
Chloroethane	17.5500	0.50	20.0000		87.8	54 - 144			
Chloroform	18.0900	0.50	20.0000		90.4	66 - 132			
Chloromethane	15.9000	0.50	20.0000		79.5	31 - 128			
cis-1,3-Dichloropropene	19.0100	0.50	20.0000		95.0	63 - 139			
Dibromochloromethane	19.7100	0.50	20.0000		98.6	78 - 132			
Ethylbenzene	45.1700	0.50	40.0000		113	71 - 142			
m,p-Xylene	47.8000	1.0	40.0000		120	75 - 150			
Methylene chloride	22.6000	1.0	20.0000		113	66 - 130			
o-Xylene	45.5300	0.50	40.0000		114	75 - 143			
Tetrachloroethene	22.4800	0.50	20.0000		112	58 - 139			
Toluene	41.8000	0.50	40.0000		104	59 - 140			
trans-1,2-Dichloroethene	19.7000	0.50	20.0000		98.5	63 - 128			
trans-1,3-Dichloropropene	20.3600	0.50	20.0000		102	54 - 142			
Trichloroethene	20.4700	0.50	20.0000		102	67 - 130			
Trichlorofluoromethane	22.7000	0.50	20.0000		114	56 - 168			
Vinyl chloride	18.3300	0.50	20.0000		91.6	49 - 146			
Surrogate: 1,2-Dichloroethane-d4	*22.92*		*25.0000*		*91.7*	*49 - 148*			
Surrogate: 4-Bromofluorobenzene	*23.22*		*25.0000*		*92.9*	*65 - 132*			
Surrogate: Dibromofluoromethane	*23.42*		*25.0000*		*93.7*	*55 - 138*			
Surrogate: Toluene-d8	*23.26*		*25.0000*		*93.0*	*60 - 120*			

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Volatile Organic Compounds by EPA 624 - Quality Control (cont'd)

Analyte	Result (ug/L)	PQL (ug/L)	Spike Level	Source Result	% Rec	% Rec Limits	RPD	RPD Limit	Notes
Batch B5E0259 - MSVOA_LL_W (continued)									
LCS Dup (B5E0259-BSD1)				Prepared: 5/14/2015 Analyzed: 5/14/2015					
1,1,1-Trichloroethane	21.8600	0.50	20.0000		109	68 - 141	1.85	20	
1,1,2,2-Tetrachloroethane	19.6400	0.50	20.0000		98.2	72 - 123	0.508	20	
1,1,2-Trichloroethane	19.1400	0.50	20.0000		95.7	63 - 129	0.839	20	
1,1-Dichloroethane	20.2200	0.50	20.0000		101	65 - 133	3.01	20	
1,1-Dichloroethene	21.5100	0.50	20.0000		108	61 - 136	2.49	20	
1,2-Dichlorobenzene	21.7400	0.50	20.0000		109	75 - 130	0.00	20	
1,2-Dichloroethane	20.1600	0.50	20.0000		101	71 - 131	0.987	20	
1,2-Dichloropropane	19.6700	0.50	20.0000		98.4	69 - 130	0.255	20	
1,3-Dichlorobenzene	23.1200	0.50	20.0000		116	76 - 129	1.44	20	
1,4-Dichlorobenzene	22.5700	0.50	20.0000		113	76 - 123	1.79	20	
2-Chloroethyl vinyl ether	12.8100	0.50	20.0000		64.0	29 - 144	10.2	20	
Acrolein	145.100	10	200.000		72.6	0 - 206	1.09	20	
Acrylonitrile	203.860	10	200.000		102	27 - 176	1.13	20	
Benzene	40.4700	0.50	40.0000		101	72 - 127	0.173	20	
Bromodichloromethane	19.8600	0.50	20.0000		99.3	74 - 130	1.35	20	
Bromoform	20.1400	0.50	20.0000		101	74 - 135	1.04	20	
Bromomethane	19.2000	0.50	20.0000		96.0	14 - 166	1.42	20	
Carbon tetrachloride	24.6300	0.50	20.0000		123	57 - 162	0.648	20	
Chlorobenzene	22.3500	0.50	20.0000		112	78 - 125	1.26	20	
Chloroethane	17.8100	0.50	20.0000		89.0	54 - 144	1.47	20	
Chloroform	18.5200	0.50	20.0000		92.6	66 - 132	2.35	20	
Chloromethane	16.5000	0.50	20.0000		82.5	31 - 128	3.70	20	
cis-1,3-Dichloropropene	19.2300	0.50	20.0000		96.2	63 - 139	1.15	20	
Dibromochloromethane	20.1500	0.50	20.0000		101	78 - 132	2.21	20	
Ethylbenzene	46.7800	0.50	40.0000		117	71 - 142	3.50	20	
m,p-Xylene	49.5600	1.0	40.0000		124	75 - 150	3.62	20	
Methylene chloride	23.6000	1.0	20.0000		118	66 - 130	4.33	20	
o-Xylene	46.5100	0.50	40.0000		116	75 - 143	2.13	20	
Tetrachloroethene	23.2800	0.50	20.0000		116	58 - 139	3.50	20	
Toluene	42.7900	0.50	40.0000		107	59 - 140	2.34	20	
trans-1,2-Dichloroethene	20.0800	0.50	20.0000		100	63 - 128	1.91	20	
trans-1,3-Dichloropropene	20.5400	0.50	20.0000		103	54 - 142	0.880	20	
Trichloroethene	20.4000	0.50	20.0000		102	67 - 130	0.343	20	
Trichlorofluoromethane	22.4900	0.50	20.0000		112	56 - 168	0.929	20	
Vinyl chloride	19.0200	0.50	20.0000		95.1	49 - 146	3.69	20	
Surrogate: 1,2-Dichloroethane-d4	*22.96*		*25.0000*		*91.8*	*49 - 148*			
Surrogate: 4-Bromofluorobenzene	*23.81*		*25.0000*		*95.2*	*65 - 132*			
Surrogate: Dibromofluoromethane	*23.88*		*25.0000*		*95.5*	*55 - 138*			
Surrogate: Toluene-d8	*24.01*		*25.0000*		*96.0*	*60 - 120*			

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Volatile Organic Compounds by EPA 624 - Quality Control (cont'd)

Analyte	Result (ug/L)	PQL (ug/L)	Spike Level	Source Result	% Rec	% Rec Limits	RPD	RPD Limit	Notes
Batch B5E0259 - MSVOA_LL_W (continued)									
Matrix Spike (B5E0259-MS1)		**Source: 1501683-02**		Prepared: 5/14/2015 Analyzed: 5/14/2015					
1,1,1-Trichloroethane	20.5700	0.50	20.0000	ND	103	68 - 141			
1,1,2,2-Tetrachloroethane	18.2800	0.50	20.0000	ND	91.4	72 - 123			
1,1,2-Trichloroethane	17.9200	0.50	20.0000	ND	89.6	63 - 129			
1,1-Dichloroethane	19.3800	0.50	20.0000	ND	96.9	65 - 133			
1,1-Dichloroethene	32.2700	0.50	20.0000	241.200	-1040	61 - 136			M3
1,2-Dichlorobenzene	19.8100	0.50	20.0000	ND	99.0	75 - 130			
1,2-Dichloroethane	19.3700	0.50	20.0000	ND	96.8	71 - 131			
1,2-Dichloropropane	18.3600	0.50	20.0000	ND	91.8	69 - 130			
1,3-Dichlorobenzene	21.1500	0.50	20.0000	ND	106	76 - 129			
1,4-Dichlorobenzene	20.3900	0.50	20.0000	ND	102	76 - 123			
2-Chloroethyl vinyl ether	10.3500	0.50	20.0000	ND	51.8	29 - 144			
Acrolein	151.660	10	200.000	ND	75.8	0 - 206			
Acrylonitrile	200.940	10	200.000	ND	100	27 - 176			
Benzene	38.5500	0.50	40.0000	ND	96.4	72 - 127			
Bromodichloromethane	18.8100	0.50	20.0000	ND	94.0	74 - 130			
Bromoform	19.0000	0.50	20.0000	ND	95.0	74 - 135			
Bromomethane	19.0500	0.50	20.0000	ND	95.2	14 - 166			
Carbon tetrachloride	24.4600	0.50	20.0000	ND	122	57 - 162			
Chlorobenzene	20.6300	0.50	20.0000	ND	103	78 - 125			
Chloroethane	18.2900	0.50	20.0000	ND	91.4	54 - 144			
Chloroform	17.5700	0.50	20.0000	ND	87.8	66 - 132			
Chloromethane	15.2400	0.50	20.0000	ND	76.2	31 - 128			
cis-1,3-Dichloropropene	17.5000	0.50	20.0000	ND	87.5	63 - 139			
Dibromochloromethane	18.2800	0.50	20.0000	ND	91.4	78 - 132			
Ethylbenzene	43.0800	0.50	40.0000	ND	108	71 - 142			
m,p-Xylene	45.5800	1.0	40.0000	ND	114	75 - 150			
Methylene chloride	23.0700	1.0	20.0000	ND	115	66 - 130			
o-Xylene	43.5700	0.50	40.0000	ND	109	75 - 143			
Tetrachloroethene	21.0400	0.50	20.0000	ND	105	58 - 139			
Toluene	39.9600	0.50	40.0000	ND	99.9	59 - 140			
trans-1,2-Dichloroethene	19.6200	0.50	20.0000	ND	98.1	63 - 128			
trans-1,3-Dichloropropene	18.6300	0.50	20.0000	ND	93.2	54 - 142			
Trichloroethene	19.5900	0.50	20.0000	ND	98.0	67 - 130			
Trichlorofluoromethane	22.8000	0.50	20.0000	ND	114	56 - 168			
Vinyl chloride	18.1300	0.50	20.0000	ND	90.6	49 - 146			
Surrogate: 1,2-Dichloroethane-d4	*22.40*		*25.0000*		*89.6*	*49 - 148*			
Surrogate: 4-Bromofluorobenzene	*23.86*		*25.0000*		*95.4*	*65 - 132*			
Surrogate: Dibromofluoromethane	*22.77*		*25.0000*		*91.1*	*55 - 138*			
Surrogate: Toluene-d8	*22.62*		*25.0000*		*90.5*	*60 - 120*			

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Volatile Organic Compounds by EPA 624 - Quality Control (cont'd)

Analyte	Result (ug/L)	PQL (ug/L)	Spike Level	Source Result	% Rec	% Rec Limits	RPD	RPD Limit	Notes
Batch B5E0259 - MSVOA_LL_W (continued)									
Matrix Spike Dup (B5E0259-MSD1)		**Source: 1501683-02**		Prepared: 5/14/2015 Analyzed: 5/14/2015					
1,1,1-Trichloroethane	21.0600	0.50	20.0000	ND	105	68 - 141	2.35	20	
1,1,2,2-Tetrachloroethane	19.0300	0.50	20.0000	ND	95.2	72 - 123	4.02	20	
1,1,2-Trichloroethane	18.5400	0.50	20.0000	ND	92.7	63 - 129	3.40	20	
1,1-Dichloroethane	19.4400	0.50	20.0000	ND	97.2	65 - 133	0.309	20	
1,1-Dichloroethene	30.7900	0.50	20.0000	241.200	-1050	61 - 136	4.69	20	M3
1,2-Dichlorobenzene	21.0400	0.50	20.0000	ND	105	75 - 130	6.02	20	
1,2-Dichloroethane	20.1000	0.50	20.0000	ND	100	71 - 131	3.70	20	
1,2-Dichloropropane	18.5600	0.50	20.0000	ND	92.8	69 - 130	1.08	20	
1,3-Dichlorobenzene	22.0600	0.50	20.0000	ND	110	76 - 129	4.21	20	
1,4-Dichlorobenzene	21.4800	0.50	20.0000	ND	107	76 - 123	5.21	20	
2-Chloroethyl vinyl ether	7.86000	0.50	20.0000	ND	39.3	29 - 144	27.3	20	R
Acrolein	146.170	10	200.000	ND	73.1	0 - 206	3.69	20	
Acrylonitrile	198.230	10	200.000	ND	99.1	27 - 176	1.36	20	
Benzene	39.1300	0.50	40.0000	ND	97.8	72 - 127	1.49	20	
Bromodichloromethane	19.2600	0.50	20.0000	ND	96.3	74 - 130	2.36	20	
Bromoform	19.3000	0.50	20.0000	ND	96.5	74 - 135	1.57	20	
Bromomethane	19.4700	0.50	20.0000	ND	97.4	14 - 166	2.18	20	
Carbon tetrachloride	23.6600	0.50	20.0000	ND	118	57 - 162	3.33	20	
Chlorobenzene	21.2000	0.50	20.0000	ND	106	78 - 125	2.73	20	
Chloroethane	17.8000	0.50	20.0000	ND	89.0	54 - 144	2.72	20	
Chloroform	17.8600	0.50	20.0000	ND	89.3	66 - 132	1.64	20	
Chloromethane	15.6500	0.50	20.0000	ND	78.2	31 - 128	2.65	20	
cis-1,3-Dichloropropene	17.5900	0.50	20.0000	ND	88.0	63 - 139	0.513	20	
Dibromochloromethane	18.9800	0.50	20.0000	ND	94.9	78 - 132	3.76	20	
Ethylbenzene	44.1900	0.50	40.0000	ND	110	71 - 142	2.54	20	
m,p-Xylene	46.6100	1.0	40.0000	ND	117	75 - 150	2.23	20	
Methylene chloride	22.6100	1.0	20.0000	ND	113	66 - 130	2.01	20	
o-Xylene	44.3600	0.50	40.0000	ND	111	75 - 143	1.80	20	
Tetrachloroethene	22.0500	0.50	20.0000	ND	110	58 - 139	4.69	20	
Toluene	40.0200	0.50	40.0000	ND	100	59 - 140	0.150	20	
trans-1,2-Dichloroethene	18.9400	0.50	20.0000	ND	94.7	63 - 128	3.53	20	
trans-1,3-Dichloropropene	19.6600	0.50	20.0000	ND	98.3	54 - 142	5.38	20	
Trichloroethene	19.4700	0.50	20.0000	ND	97.4	67 - 130	0.614	20	
Trichlorofluoromethane	21.8500	0.50	20.0000	ND	109	56 - 168	4.26	20	
Vinyl chloride	18.0900	0.50	20.0000	ND	90.4	49 - 146	0.221	20	
Surrogate: 1,2-Dichloroethane-d4	*21.38*		*25.0000*		*85.5*	*49 - 148*			
Surrogate: 4-Bromofluorobenzene	*23.26*		*25.0000*		*93.0*	*65 - 132*			
Surrogate: Dibromofluoromethane	*22.20*		*25.0000*		*88.8*	*55 - 138*			
Surrogate: Toluene-d8	*21.69*		*25.0000*		*86.8*	*60 - 120*			

Figure C-3.36

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Volatile Organic Compounds by EPA 624 - Quality Control (cont'd)

Analyte	Result (ug/L)	PQL (ug/L)	Spike Level	Source Result	% Rec	% Rec Limits	RPD	RPD Limit	Notes
Batch B5E0379 - MSVOA_LL_W									
Blank (B5E0379-BLK1)				Prepared: 5/15/2015 Analyzed: 5/15/2015					
1,1,1-Trichloroethane	ND	0.50			NR				
1,1,2,2-Tetrachloroethane	ND	0.50			NR				
1,1,2-Trichloroethane	ND	0.50			NR				
1,1-Dichloroethane	ND	0.50			NR				
1,1-Dichloroethene	ND	0.50			NR				
1,2-Dichlorobenzene	ND	0.50			NR				
1,2-Dichloroethane	ND	0.50			NR				
1,2-Dichloropropane	ND	0.50			NR				
1,3-Dichlorobenzene	ND	0.50			NR				
1,4-Dichlorobenzene	ND	0.50			NR				
2-Chloroethyl vinyl ether	ND	0.50			NR				
Acrolein	ND	10			NR				
Acrylonitrile	ND	10			NR				
Benzene	ND	0.50			NR				
Bromodichloromethane	ND	0.50			NR				
Bromoform	ND	0.50			NR				
Bromomethane	ND	0.50			NR				
Carbon tetrachloride	ND	0.50			NR				
Chlorobenzene	ND	0.50			NR				
Chloroethane	ND	0.50			NR				
Chloroform	ND	0.50			NR				
Chloromethane	ND	0.50			NR				
cis-1,3-Dichloropropene	ND	0.50			NR				
Dibromochloromethane	ND	0.50			NR				
Ethylbenzene	ND	0.50			NR				
m,p-Xylene	ND	1.0			NR				
Methylene chloride	ND	1.0			NR				
o-Xylene	ND	0.50			NR				
Tetrachloroethene	ND	0.50			NR				
Toluene	ND	0.50			NR				
trans-1,2-Dichloroethene	ND	0.50			NR				
trans-1,3-Dichloropropene	ND	0.50			NR				
Trichloroethene	ND	0.50			NR				
Trichlorofluoromethane	ND	0.50			NR				
Vinyl chloride	ND	0.50			NR				
Surrogate: 1,2-Dichloroethane-d4	*20.55*		*25.0000*		*82.2*	*49 - 148*			
Surrogate: 4-Bromofluorobenzene	*26.46*		*25.0000*		*106*	*65 - 132*			
Surrogate: Dibromofluoromethane	*22.04*		*25.0000*		*88.2*	*55 - 138*			
Surrogate: Toluene-d8	*20.15*		*25.0000*		*80.6*	*60 - 120*			

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Volatile Organic Compounds by EPA 624 - Quality Control (cont'd)

Analyte	Result (ug/L)	PQL (ug/L)	Spike Level	Source Result	% Rec	% Rec Limits	RPD	RPD Limit	Notes
Batch B5E0379 - MSVOA_LL_W (continued)									
LCS (B5E0379-BS1)				Prepared: 5/15/2015 Analyzed: 5/15/2015					
1,1,1-Trichloroethane	21.2400	0.50	20.0000		106	68 - 141			
1,1,2,2-Tetrachloroethane	19.0900	0.50	20.0000		95.4	72 - 123			
1,1,2-Trichloroethane	18.0700	0.50	20.0000		90.4	63 - 129			
1,1-Dichloroethane	19.5400	0.50	20.0000		97.7	65 - 133			
1,1-Dichloroethene	20.4400	0.50	20.0000		102	61 - 136			
1,2-Dichlorobenzene	21.0800	0.50	20.0000		105	75 - 130			
1,2-Dichloroethane	19.7400	0.50	20.0000		98.7	71 - 131			
1,2-Dichloropropane	18.8200	0.50	20.0000		94.1	69 - 130			
1,3-Dichlorobenzene	22.4600	0.50	20.0000		112	76 - 129			
1,4-Dichlorobenzene	21.6500	0.50	20.0000		108	76 - 123			
2-Chloroethyl vinyl ether	12.4800	0.50	20.0000		62.4	29 - 144			
Acrolein	135.330	10	200.000		67.7	0 - 206			
Acrylonitrile	200.020	10	200.000		100	27 - 176			
Benzene	39.6800	0.50	40.0000		99.2	72 - 127			
Bromodichloromethane	19.6100	0.50	20.0000		98.0	74 - 130			
Bromoform	20.2500	0.50	20.0000		101	74 - 135			
Bromomethane	14.5000	0.50	20.0000		72.5	14 - 166			
Carbon tetrachloride	24.0700	0.50	20.0000		120	57 - 162			
Chlorobenzene	21.6400	0.50	20.0000		108	78 - 125			
Chloroethane	17.4500	0.50	20.0000		87.2	54 - 144			
Chloroform	18.0100	0.50	20.0000		90.0	66 - 132			
Chloromethane	12.3500	0.50	20.0000		61.8	31 - 128			
cis-1,3-Dichloropropene	18.4700	0.50	20.0000		92.4	63 - 139			
Dibromochloromethane	19.7000	0.50	20.0000		98.5	78 - 132			
Ethylbenzene	44.8400	0.50	40.0000		112	71 - 142			
m,p-Xylene	47.3500	1.0	40.0000		118	75 - 150			
Methylene chloride	22.2900	1.0	20.0000		111	66 - 130			
o-Xylene	44.6700	0.50	40.0000		112	75 - 143			
Tetrachloroethene	22.1500	0.50	20.0000		111	58 - 139			
Toluene	41.2800	0.50	40.0000		103	59 - 140			
trans-1,2-Dichloroethene	18.8600	0.50	20.0000		94.3	63 - 128			
trans-1,3-Dichloropropene	19.9500	0.50	20.0000		99.8	54 - 142			
Trichloroethene	19.9100	0.50	20.0000		99.6	67 - 130			
Trichlorofluoromethane	22.1300	0.50	20.0000		111	56 - 168			
Vinyl chloride	17.7200	0.50	20.0000		88.6	49 - 146			
Surrogate: 1,2-Dichloroethane-d4	*18.76*		*25.0000*		*75.0*	*49 - 148*			
Surrogate: 4-Bromofluorobenzene	*24.73*		*25.0000*		*98.9*	*65 - 132*			
Surrogate: Dibromofluoromethane	*20.22*		*25.0000*		*80.9*	*55 - 138*			
Surrogate: Toluene-d8	*20.84*		*25.0000*		*83.4*	*60 - 120*			

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Volatile Organic Compounds by EPA 624 - Quality Control (cont'd)

Analyte	Result (ug/L)	PQL (ug/L)	Spike Level	Source Result	% Rec	% Rec Limits	RPD	RPD Limit	Notes
Batch B5E0379 - MSVOA_LL_W (continued)									
LCS Dup (B5E0379-BSD1)				Prepared: 5/15/2015 Analyzed: 5/15/2015					
1,1,1-Trichloroethane	21.0400	0.50	20.0000		105	68 - 141	0.946	20	
1,1,2,2-Tetrachloroethane	20.3000	0.50	20.0000		102	72 - 123	6.14	20	
1,1,2-Trichloroethane	19.3200	0.50	20.0000		96.6	63 - 129	6.69	20	
1,1-Dichloroethane	19.5500	0.50	20.0000		97.8	65 - 133	0.0512	20	
1,1-Dichloroethene	20.1400	0.50	20.0000		101	61 - 136	1.48	20	
1,2-Dichlorobenzene	21.3100	0.50	20.0000		107	75 - 130	1.09	20	
1,2-Dichloroethane	20.7100	0.50	20.0000		104	71 - 131	4.80	20	
1,2-Dichloropropane	19.5500	0.50	20.0000		97.8	69 - 130	3.81	20	
1,3-Dichlorobenzene	22.7400	0.50	20.0000		114	76 - 129	1.24	20	
1,4-Dichlorobenzene	22.1700	0.50	20.0000		111	76 - 123	2.37	20	
2-Chloroethyl vinyl ether	14.5300	0.50	20.0000		72.6	29 - 144	15.2	20	
Acrolein	143.820	10	200.000		71.9	0 - 206	6.08	20	
Acrylonitrile	214.980	10	200.000		107	27 - 176	7.21	20	
Benzene	39.5900	0.50	40.0000		99.0	72 - 127	0.227	20	
Bromodichloromethane	20.0000	0.50	20.0000		100	74 - 130	1.97	20	
Bromoform	22.2400	0.50	20.0000		111	74 - 135	9.37	20	
Bromomethane	14.7400	0.50	20.0000		73.7	14 - 166	1.64	20	
Carbon tetrachloride	23.6200	0.50	20.0000		118	57 - 162	1.89	20	
Chlorobenzene	23.2300	0.50	20.0000		116	78 - 125	7.09	20	
Chloroethane	15.5700	0.50	20.0000		77.8	54 - 144	11.4	20	
Chloroform	18.1000	0.50	20.0000		90.5	66 - 132	0.498	20	
Chloromethane	11.9600	0.50	20.0000		59.8	31 - 128	3.21	20	
cis-1,3-Dichloropropene	19.6700	0.50	20.0000		98.4	63 - 139	6.29	20	
Dibromochloromethane	21.7900	0.50	20.0000		109	78 - 132	10.1	20	
Ethylbenzene	47.7200	0.50	40.0000		119	71 - 142	6.22	20	
m,p-Xylene	50.2900	1.0	40.0000		126	75 - 150	6.02	20	
Methylene chloride	23.0700	1.0	20.0000		115	66 - 130	3.44	20	
o-Xylene	47.4500	0.50	40.0000		119	75 - 143	6.04	20	
Tetrachloroethene	23.5700	0.50	20.0000		118	58 - 139	6.21	20	
Toluene	41.9000	0.50	40.0000		105	59 - 140	1.49	20	
trans-1,2-Dichloroethene	18.4500	0.50	20.0000		92.2	63 - 128	2.20	20	
trans-1,3-Dichloropropene	21.5800	0.50	20.0000		108	54 - 142	7.85	20	
Trichloroethene	19.7200	0.50	20.0000		98.6	67 - 130	0.959	20	
Trichlorofluoromethane	21.5900	0.50	20.0000		108	56 - 168	2.47	20	
Vinyl chloride	17.3500	0.50	20.0000		86.8	49 - 146	2.11	20	
Surrogate: 1,2-Dichloroethane-d4	*19.21*		*25.0000*		*76.8*	*49 - 148*			
Surrogate: 4-Bromofluorobenzene	*25.74*		*25.0000*		*103*	*65 - 132*			
Surrogate: Dibromofluoromethane	*20.07*		*25.0000*		*80.3*	*55 - 138*			
Surrogate: Toluene-d8	*20.65*		*25.0000*		*82.6*	*60 - 120*			

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Volatile Organic Compounds by EPA 624 - Quality Control (cont'd)

Analyte	Result (ug/L)	PQL (ug/L)	Spike Level	Source Result	% Rec	% Rec Limits	RPD	RPD Limit	Notes
Batch B5E0379 - MSVOA_LL_W (continued)									
Matrix Spike (B5E0379-MS1)		**Source: 1501699-05**		Prepared: 5/15/2015 Analyzed: 5/15/2015					
1,1,1-Trichloroethane	21.3500	0.50	20.0000	ND	107	68 - 141			
1,1,2,2-Tetrachloroethane	18.9200	0.50	20.0000	ND	94.6	72 - 123			
1,1,2-Trichloroethane	18.4500	0.50	20.0000	ND	92.2	63 - 129			
1,1-Dichloroethane	19.7500	0.50	20.0000	ND	98.8	65 - 133			
1,1-Dichloroethene	27.5600	0.50	20.0000	5.94000	108	61 - 136			
1,2-Dichlorobenzene	20.5700	0.50	20.0000	ND	103	75 - 130			
1,2-Dichloroethane	20.3400	0.50	20.0000	ND	102	71 - 131			
1,2-Dichloropropane	18.9500	0.50	20.0000	ND	94.8	69 - 130			
1,3-Dichlorobenzene	21.7300	0.50	20.0000	ND	109	76 - 129			
1,4-Dichlorobenzene	21.4400	0.50	20.0000	ND	107	76 - 123			
2-Chloroethyl vinyl ether	2.23000	0.50		ND	NR	29 - 144			
Acrolein	162.930	10	200.000	ND	81.5	0 - 206			
Acrylonitrile	230.840	10	200.000	ND	115	27 - 176			
Benzene	40.7200	0.50	40.0000	ND	102	72 - 127			
Bromodichloromethane	19.9800	0.50	20.0000	ND	99.9	74 - 130			
Bromoform	20.3200	0.50	20.0000	ND	102	74 - 135			
Bromomethane	13.4800	0.50	20.0000	ND	67.4	14 - 166			
Carbon tetrachloride	24.6200	0.50	20.0000	ND	123	57 - 162			
Chlorobenzene	21.9000	0.50	20.0000	ND	110	78 - 125			
Chloroethane	18.7400	0.50	20.0000	ND	93.7	54 - 144			
Chloroform	18.2700	0.50	20.0000	ND	91.4	66 - 132			
Chloromethane	11.2300	0.50	20.0000	ND	56.2	31 - 128			
cis-1,3-Dichloropropene	16.3700	0.50	20.0000	ND	81.8	63 - 139			
Dibromochloromethane	19.9600	0.50	20.0000	ND	99.8	78 - 132			
Ethylbenzene	46.3900	0.50	40.0000	ND	116	71 - 142			
m,p-Xylene	48.4500	1.0	40.0000	ND	121	75 - 150			
Methylene chloride	23.4600	1.0	20.0000	ND	117	66 - 130			
o-Xylene	46.1000	0.50	40.0000	ND	115	75 - 143			
Tetrachloroethene	22.2900	0.50	20.0000	ND	111	58 - 139			
Toluene	41.5800	0.50	40.0000	ND	104	59 - 140			
trans-1,2-Dichloroethene	20.1700	0.50	20.0000	ND	101	63 - 128			
trans-1,3-Dichloropropene	19.3900	0.50	20.0000	ND	97.0	54 - 142			
Trichloroethene	20.7800	0.50	20.0000	0.800000	99.9	67 - 130			
Trichlorofluoromethane	23.4600	0.50	20.0000	ND	117	56 - 168			
Vinyl chloride	17.9300	0.50	20.0000	ND	89.6	49 - 146			
Surrogate: 1,2-Dichloroethane-d4	*16.26*		*25.0000*		*65.0*	*49 - 148*			
Surrogate: 4-Bromofluorobenzene	*26.71*		*25.0000*		*107*	*65 - 132*			
Surrogate: Dibromofluoromethane	*17.83*		*25.0000*		*71.3*	*55 - 138*			
Surrogate: Toluene-d8	*18.69*		*25.0000*		*74.8*	*60 - 120*			

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Volatile Organic Compounds by EPA 624 - Quality Control (cont'd)

Analyte	Result (ug/L)	PQL (ug/L)	Spike Level	Source Result	% Rec	% Rec Limits	RPD	RPD Limit	Notes
Batch B5E0379 - MSVOA_LL_W (continued)									
Matrix Spike Dup (B5E0379-MSD1)		**Source: 1501699-05**		Prepared: 5/15/2015 Analyzed: 5/15/2015					
1,1,1-Trichloroethane	21.0700	0.50	20.0000	ND	105	68 - 141	1.32	20	
1,1,2,2-Tetrachloroethane	20.1500	0.50	20.0000	ND	101	72 - 123	6.30	20	
1,1,2-Trichloroethane	19.4100	0.50	20.0000	ND	97.0	63 - 129	5.07	20	
1,1-Dichloroethane	19.7400	0.50	20.0000	ND	98.7	65 - 133	0.0506	20	
1,1-Dichloroethene	27.0800	0.50	20.0000	5.94000	106	61 - 136	1.76	20	
1,2-Dichlorobenzene	21.0500	0.50	20.0000	ND	105	75 - 130	2.31	20	
1,2-Dichloroethane	20.4700	0.50	20.0000	ND	102	71 - 131	0.637	20	
1,2-Dichloropropane	18.9200	0.50	20.0000	ND	94.6	69 - 130	0.158	20	
1,3-Dichlorobenzene	22.0100	0.50	20.0000	ND	110	76 - 129	1.28	20	
1,4-Dichlorobenzene	21.4100	0.50	20.0000	ND	107	76 - 123	0.140	20	
2-Chloroethyl vinyl ether	2.24000	0.50		ND	NR	29 - 144	0.447	20	
Acrolein	166.650	10	200.000	ND	83.3	0 - 206	2.26	20	
Acrylonitrile	237.130	10	200.000	ND	119	27 - 176	2.69	20	
Benzene	40.1000	0.50	40.0000	ND	100	72 - 127	1.53	20	
Bromodichloromethane	20.2800	0.50	20.0000	ND	101	74 - 130	1.49	20	
Bromoform	21.1800	0.50	20.0000	ND	106	74 - 135	4.14	20	
Bromomethane	14.6600	0.50	20.0000	ND	73.3	14 - 166	8.39	20	
Carbon tetrachloride	24.3100	0.50	20.0000	ND	122	57 - 162	1.27	20	
Chlorobenzene	21.8100	0.50	20.0000	ND	109	78 - 125	0.412	20	
Chloroethane	17.3000	0.50	20.0000	ND	86.5	54 - 144	7.99	20	
Chloroform	18.0600	0.50	20.0000	ND	90.3	66 - 132	1.16	20	
Chloromethane	11.5800	0.50	20.0000	ND	57.9	31 - 128	3.07	20	
cis-1,3-Dichloropropene	17.0800	0.50	20.0000	ND	85.4	63 - 139	4.25	20	
Dibromochloromethane	19.9100	0.50	20.0000	ND	99.6	78 - 132	0.251	20	
Ethylbenzene	45.0300	0.50	40.0000	ND	113	71 - 142	2.98	20	
m,p-Xylene	48.0000	1.0	40.0000	ND	120	75 - 150	0.933	20	
Methylene chloride	23.7500	1.0	20.0000	ND	119	66 - 130	1.23	20	
o-Xylene	46.2700	0.50	40.0000	ND	116	75 - 143	0.368	20	
Tetrachloroethene	21.8400	0.50	20.0000	ND	109	58 - 139	2.04	20	
Toluene	40.8700	0.50	40.0000	ND	102	59 - 140	1.72	20	
trans-1,2-Dichloroethene	20.0200	0.50	20.0000	ND	100	63 - 128	0.746	20	
trans-1,3-Dichloropropene	20.0000	0.50	20.0000	ND	100	54 - 142	3.10	20	
Trichloroethene	20.8600	0.50	20.0000	0.800000	100	67 - 130	0.384	20	
Trichlorofluoromethane	22.4300	0.50	20.0000	ND	112	56 - 168	4.49	20	
Vinyl chloride	17.7300	0.50	20.0000	ND	88.6	49 - 146	1.12	20	
Surrogate: 1,2-Dichloroethane-d4	*29.87*		*25.0000*		*119*	*49 - 148*			
Surrogate: 4-Bromofluorobenzene	*22.80*		*25.0000*		*91.2*	*65 - 132*			
Surrogate: Dibromofluoromethane	*28.14*		*25.0000*		*113*	*55 - 138*			
Surrogate: Toluene-d8	*26.10*		*25.0000*		*104*	*60 - 120*			

Certificate of Analysis

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Semivolatile Organic Compounds by EPA 625 - Quality Control

Analyte	Result (ug/L)	PQL (ug/L)	Spike Level	Source Result	% Rec	% Rec Limits	RPD	RPD Limit	Notes
Batch B5E0440 - MSSEMI_ISOTOPEDILN									
Blank (B5E0440-BLK1)				Prepared: 5/18/2015 Analyzed: 5/18/2015					
1,2,4-Trichlorobenzene	ND	10			NR				
1,2-Dichlorobenzene	ND	10			NR				
1,2-Diphenylhydrazine	ND	10			NR				
1,3-Dichlorobenzene	ND	10			NR				
1,4-Dichlorobenzene	ND	10			NR				
2,4,6-Trichlorophenol	ND	10			NR				
2,4-Dichlorophenol	ND	10			NR				
2,4-Dimethylphenol	ND	10			NR				
2,4-Dinitrophenol	ND	50			NR				
2,4-Dinitrotoluene	ND	10			NR				
2,6-Dinitrotoluene	ND	10			NR				
2-Chloronaphthalene	ND	10			NR				
2-Chlorophenol	ND	10			NR				
2-Nitrophenol	ND	10			NR				
3,3´-Dichlorobenzidine	ND	20			NR				
4,6-Dinitro-2-methyphenol	ND	50			NR				
4-Bromophenyl-phenylether	ND	10			NR				
4-Chloro-3-methylphenol	ND	50			NR				
4-Chlorophenyl-phenylether	ND	10			NR				
4-Nitrophenol	ND	50			NR				
Acenaphthene	ND	10			NR				
Acenaphthylene	ND	10			NR				
Anthracene	ND	10			NR				
Benzidine (M)	ND	50			NR				
Benzo(a)anthracene	ND	10			NR				
Benzo(a)pyrene	ND	10			NR				
Benzo(b)fluoranthene	ND	10			NR				
Benzo(g,h,i)perylene	ND	10			NR				
Benzo(k)fluoranthene	ND	10			NR				
bis(2-chloroethoxy)methane	ND	10			NR				
bis(2-Chloroethyl)ether	ND	10			NR				
bis(2-chloroisopropyl)ether	ND	10			NR				
bis(2-ethylhexyl)phthalate	ND	10			NR				
Butylbenzylphthalate	ND	10			NR				
Chrysene	ND	10			NR				
Di-n-butylphthalate	ND	10			NR				
Di-n-octylphthalate	ND	10			NR				
Dibenz(a,h)anthracene	ND	10			NR				
Diethyl phthalate	ND	10			NR				
Dimethyl phthalate	ND	10			NR				
Fluoranthene	ND	10			NR				

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Semivolatile Organic Compounds by EPA 625 - Quality Control (cont'd)

Analyte	Result (ug/L)	PQL (ug/L)	Spike Level	Source Result	% Rec	% Rec Limits	RPD	RPD Limit	Notes
Batch B5E0440 - MSSEMI_ISOTOPEDILN (continued)									
Blank (B5E0440-BLK1) - Continued				Prepared: 5/18/2015 Analyzed: 5/18/2015					
Fluorene	ND	10			NR				
Hexachlorobenzene	ND	10			NR				
Hexachlorobutadiene	ND	20			NR				
Hexachlorocyclopentadiene	ND	10			NR				
Hexachloroethane	ND	10			NR				
Indeno(1,2,3-cd)pyrene	ND	10			NR				
Isophorone	ND	10			NR				
N-Nitroso-di-n propylamine	ND	10			NR				
N-Nitrosodimethylamine	ND	50			NR				
N-Nitrosodiphenylamine	ND	10			NR				
Naphthalene	ND	10			NR				
Nitrobenzene	ND	10			NR				
Pentachlorophenol	ND	50			NR				
Phenanthrene	ND	10			NR				
Phenol	ND	10			NR				
Pyrene	ND	10			NR				
Surrogate: 1,2-Dichlorobenzene-d4	*67.12*		*100.000*		*67.1*	*4 - 111*			
Surrogate: 2,4,6-Tribromophenol	*72.49*		*100.000*		*72.5*	*21 - 162*			
Surrogate: 2-Chlorophenol-d4	*57.66*		*100.000*		*57.7*	*0 - 124*			
Surrogate: 2-Fluorobiphenyl	*75.22*		*100.000*		*75.2*	*21 - 118*			
Surrogate: 2-Fluorophenol	*39.49*		*100.000*		*39.5*	*0 - 83*			
Surrogate: 4-Terphenyl-d14	*85.98*		*100.000*		*86.0*	*33 - 150*			
Surrogate: Nitrobenzene-d5	*63.80*		*100.000*		*63.8*	*10 - 117*			
Surrogate: Phenol-d5	*31.60*		*100.000*		*31.6*	*0 - 68*			

Figure C-3.43

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Semivolatile Organic Compounds by EPA 625 - Quality Control (cont'd)

Analyte	Result (ug/L)	PQL (ug/L)	Spike Level	Source Result	% Rec	% Rec Limits	RPD	RPD Limit	Notes
Batch B5E0440 - MSSEMI_ISOTOPEDILN (continued)									
LCS (B5E0440-BS1)				Prepared: 5/18/2015 Analyzed: 5/18/2015					
1,2,4-Trichlorobenzene	125.090	10	100.000		125	44 - 118			L3, L5
1,2-Dichlorobenzene	100.490	10	100.000		100	36 - 114			
1,2-Diphenylhydrazine	122.950	10	100.000		123	49 - 146			
1,3-Dichlorobenzene	102.960	10	100.000		103	34 - 115			
1,4-Dichlorobenzene	93.7500	10	100.000		93.8	33 - 113			
2,4,6-Trichlorophenol	123.320	10	100.000		123	63 - 125			
2,4-Dichlorophenol	122.310	10	100.000		122	53 - 114			L3, L5
2,4-Dimethylphenol	106.830	10	100.000		107	46 - 108			
2,4-Dinitrophenol	96.7000	50	100.000		96.7	38 - 134			
2,4-Dinitrotoluene	141.950	10	100.000		142	74 - 140			L5
2,6-Dinitrotoluene	144.010	10	100.000		144	76 - 134			L5
2-Chloronaphthalene	122.570	10	100.000		123	59 - 126			
2-Chlorophenol	92.6700	10	100.000		92.7	33 - 106			
2-Nitrophenol	115.930	10	100.000		116	45 - 123			
3,3´-Dichlorobenzidine	93.4100	20	100.000		93.4	60 - 131			
4,6-Dinitro-2-methyphenol	132.420	50	100.000		132	66 - 142			
4-Bromophenyl-phenylether	136.010	10	100.000		136	65 - 139			
4-Chloro-3-methylphenol	118.430	50	100.000		118	64 - 117			L3, L5
4-Chlorophenyl-phenylether	138.930	10	100.000		139	62 - 137			L5
4-Nitrophenol	55.9300	50	100.000		55.9	31 - 70			
Acenaphthene	95.1800	10	100.000		95.2	59 - 113			
Acenaphthylene	100.560	10	100.000		101	59 - 113			
Anthracene	107.340	10	100.000		107	74 - 121			
Benzidine (M)	55.7600	50	100.000		55.8	0 - 53			L5
Benzo(a)anthracene	104.220	10	100.000		104	71 - 131			
Benzo(a)pyrene	106.140	10	100.000		106	76 - 131			
Benzo(b)fluoranthene	99.2900	10	100.000		99.3	73 - 129			
Benzo(g,h,i)perylene	97.1600	10	100.000		97.2	68 - 129			
Benzo(k)fluoranthene	93.8200	10	100.000		93.8	69 - 129			
bis(2-chloroethoxy)methane	115.240	10	100.000		115	48 - 124			
bis(2-Chloroethyl)ether	108.500	10	100.000		108	36 - 118			
bis(2-chloroisopropyl)ether	94.1100	10	100.000		94.1	34 - 125			
bis(2-ethylhexyl)phthalate	121.570	10	100.000		122	56 - 165			
Butylbenzylphthalate	123.470	10	100.000		123	64 - 157			
Chrysene	100.110	10	100.000		100	68 - 119			
Di-n-butylphthalate	113.920	10	100.000		114	60 - 163			
Di-n-octylphthalate	120.550	10	100.000		121	72 - 140			
Dibenz(a,h)anthracene	88.1200	10	100.000		88.1	70 - 132			
Diethyl phthalate	127.960	10	100.000		128	60 - 144			
Dimethyl phthalate	134.510	10	100.000		135	67 - 138			
Fluoranthene	104.210	10	100.000		104	69 - 121			

Figure C-3.44

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Semivolatile Organic Compounds by EPA 625 - Quality Control (cont'd)

Analyte	Result (ug/L)	PQL (ug/L)	Spike Level	Source Result	% Rec	% Rec Limits	RPD	RPD Limit	Notes
Batch B5E0440 - MSSEMI_ISOTOPEDILN (continued)									
LCS (B5E0440-BS1) - Continued				Prepared: 5/18/2015 Analyzed: 5/18/2015					
Fluorene	97.1800	10	100.000		97.2	64 - 116			
Hexachlorobenzene	128.220	10	100.000		128	63 - 136			
Hexachlorobutadiene	115.070	20	100.000		115	28 - 119			
Hexachlorocyclopentadiene	132.770	10	100.000		133	38 - 140			
Hexachloroethane	97.1200	10	100.000		97.1	29 - 107			
Indeno(1,2,3-cd)pyrene	95.4100	10	100.000		95.4	75 - 137			
Isophorone	134.820	10	100.000		135	52 - 139			
N-Nitroso-di-n propylamine	111.500	10	100.000		112	43 - 132			
N-Nitrosodimethylamine	58.4700	50	100.000		58.5	0 - 123			
N-Nitrosodiphenylamine	131.910	10	100.000		132	70 - 140			
Naphthalene	86.4700	10	100.000		86.5	46 - 106			
Nitrobenzene	114.350	10	100.000		114	37 - 132			
Pentachlorophenol	125.400	50	100.000		125	60 - 128			
Phenanthrene	99.1800	10	100.000		99.2	71 - 119			
Phenol	48.5100	10	100.000		48.5	16 - 57			
Pyrene	101.610	10	100.000		102	68 - 122			
Surrogate: 1,2-Dichlorobenzene-d4	*70.09*		*100.000*		*70.1*	*4 - 111*			
Surrogate: 2,4,6-Tribromophenol	*81.98*		*100.000*		*82.0*	*21 - 162*			
Surrogate: 2-Chlorophenol-d4	*60.87*		*100.000*		*60.9*	*0 - 124*			
Surrogate: 2-Fluorobiphenyl	*79.61*		*100.000*		*79.6*	*21 - 118*			
Surrogate: 2-Fluorophenol	*40.72*		*100.000*		*40.7*	*0 - 83*			
Surrogate: 4-Terphenyl-d14	*93.16*		*100.000*		*93.2*	*33 - 150*			
Surrogate: Nitrobenzene-d5	*75.95*		*100.000*		*76.0*	*10 - 117*			
Surrogate: Phenol-d5	*31.78*		*100.000*		*31.8*	*0 - 68*			

Figure C-3.45

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Semivolatile Organic Compounds by EPA 625 - Quality Control (cont'd)

Analyte	Result (ug/L)	PQL (ug/L)	Spike Level	Source Result	% Rec	% Rec Limits	RPD	RPD Limit	Notes
Batch B5E0440 - MSSEMI_ISOTOPEDILN (continued)									
Matrix Spike (B5E0440-MS1)		**Source: 1501683-02**		Prepared: 5/18/2015 Analyzed: 5/18/2015					
1,2,4-Trichlorobenzene	106.950	10	100.000	ND	107	44 - 118			
1,2-Dichlorobenzene	84.4000	10	100.000	ND	84.4	36 - 114			
1,2-Diphenylhydrazine	115.900	10	100.000	ND	116	49 - 146			
1,3-Dichlorobenzene	85.8900	10	100.000	ND	85.9	34 - 115			
1,4-Dichlorobenzene	77.6700	10	100.000	ND	77.7	33 - 113			
2,4,6-Trichlorophenol	111.810	10	100.000	ND	112	63 - 125			
2,4-Dichlorophenol	107.850	10	100.000	ND	108	53 - 114			
2,4-Dimethylphenol	94.5700	10	100.000	ND	94.6	46 - 108			
2,4-Dinitrophenol	95.8000	50	100.000	ND	95.8	38 - 134			
2,4-Dinitrotoluene	137.800	10	100.000	ND	138	74 - 140			
2,6-Dinitrotoluene	137.060	10	100.000	ND	137	76 - 134			M7
2-Chloronaphthalene	109.100	10	100.000	ND	109	59 - 126			
2-Chlorophenol	78.8900	10	100.000	ND	78.9	33 - 106			
2-Nitrophenol	103.800	10	100.000	ND	104	45 - 123			
3,3´-Dichlorobenzidine	92.2800	20	100.000	ND	92.3	60 - 131			
4,6-Dinitro-2-methyphenol	133.660	50	100.000	ND	134	66 - 142			
4-Bromophenyl-phenylether	133.880	10	100.000	ND	134	65 - 139			
4-Chloro-3-methylphenol	107.360	50	100.000	ND	107	64 - 117			
4-Chlorophenyl-phenylether	129.680	10	100.000	ND	130	62 - 137			
4-Nitrophenol	52.3700	50	100.000	ND	52.4	31 - 70			
Acenaphthene	86.0700	10	100.000	ND	86.1	59 - 113			
Acenaphthylene	91.3200	10	100.000	ND	91.3	59 - 113			
Anthracene	106.000	10	100.000	ND	106	74 - 121			
Benzidine (M)	79.8300	50	100.000	ND	79.8	0 - 53			M7
Benzo(a)anthracene	102.720	10	100.000	ND	103	71 - 120			
Benzo(a)pyrene	104.870	10	100.000	ND	105	76 - 131			
Benzo(b)fluoranthene	99.4200	10	100.000	ND	99.4	73 - 129			
Benzo(g,h,i)perylene	95.3600	10	100.000	ND	95.4	68 - 129			
Benzo(k)fluoranthene	92.6700	10	100.000	ND	92.7	69 - 129			
bis(2-chloroethoxy)methane	102.460	10	100.000	ND	102	48 - 124			
bis(2-Chloroethyl)ether	92.2000	10	100.000	ND	92.2	36 - 118			
bis(2-chloroisopropyl)ether	81.5300	10	100.000	ND	81.5	34 - 125			
bis(2-ethylhexyl)phthalate	119.270	10	100.000	ND	119	56 - 165			
Butylbenzylphthalate	121.010	10	100.000	ND	121	64 - 157			
Chrysene	98.7600	10	100.000	ND	98.8	68 - 119			
Di-n-butylphthalate	113.720	10	100.000	ND	114	60 - 163			
Di-n-octylphthalate	118.950	10	100.000	ND	119	72 - 140			
Dibenz(a,h)anthracene	86.3000	10	100.000	ND	86.3	70 - 132			
Diethyl phthalate	124.810	10	100.000	ND	125	60 - 144			
Dimethyl phthalate	130.680	10	100.000	ND	131	67 - 138			
Fluoranthene	101.850	10	100.000	ND	102	69 - 121			

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Semivolatile Organic Compounds by EPA 625 - Quality Control (cont'd)

Analyte	Result (ug/L)	PQL (ug/L)	Spike Level	Source Result	% Rec	% Rec Limits	RPD	RPD Limit	Notes
Batch B5E0440 - MSSEMI_ISOTOPEDILN (continued)									
Matrix Spike (B5E0440-MS1) - Continued		**Source: 1501683-02**		Prepared: 5/18/2015 Analyzed: 5/18/2015					
Fluorene	91.2100	10	100.000	ND	91.2	64 - 116			
Hexachlorobenzene	125.840	10	100.000	ND	126	63 - 136			
Hexachlorobutadiene	98.3800	20	100.000	ND	98.4	28 - 119			
Hexachlorocyclopentadiene	115.620	10	100.000	ND	116	38 - 140			
Hexachloroethane	80.3400	10	100.000	ND	80.3	29 - 107			
Indeno(1,2,3-cd)pyrene	93.9500	10	100.000	ND	94.0	75 - 137			
Isophorone	119.490	10	100.000	ND	119	52 - 139			
N-Nitroso-di-n propylamine	98.5500	10	100.000	ND	98.6	43 - 132			
N-Nitrosodimethylamine	48.7700	50	100.000	ND	48.8	0 - 123			J
N-Nitrosodiphenylamine	129.240	10	100.000	ND	129	70 - 140			
Naphthalene	76.2700	10	100.000	ND	76.3	46 - 106			
Nitrobenzene	99.6300	10	100.000	ND	99.6	37 - 132			
Pentachlorophenol	123.370	50	100.000	ND	123	60 - 128			
Phenanthrene	97.7700	10	100.000	ND	97.8	71 - 119			
Phenol	41.3900	10	100.000	ND	41.4	16 - 57			
Pyrene	100.750	10	100.000	ND	101	68 - 122			
Surrogate: 1,2-Dichlorobenzene-d4	*58.35*		*100.000*		*58.4*	*4 - 111*			
Surrogate: 2,4,6-Tribromophenol	*75.89*		*100.000*		*75.9*	*21 - 162*			
Surrogate: 2-Chlorophenol-d4	*50.85*		*100.000*		*50.8*	*0 - 124*			
Surrogate: 2-Fluorobiphenyl	*68.72*		*100.000*		*68.7*	*21 - 118*			
Surrogate: 2-Fluorophenol	*33.16*		*100.000*		*33.2*	*0 - 83*			
Surrogate: 4-Terphenyl-d14	*90.53*		*100.000*		*90.5*	*33 - 150*			
Surrogate: Nitrobenzene-d5	*64.60*		*100.000*		*64.6*	*10 - 117*			
Surrogate: Phenol-d5	*26.27*		*100.000*		*26.3*	*0 - 68*			

Figure C-3.47

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Semivolatile Organic Compounds by EPA 625 - Quality Control (cont'd)

Analyte	Result (ug/L)	PQL (ug/L)	Spike Level	Source Result	% Rec	% Rec Limits	RPD	RPD Limit	Notes
Batch B5E0440 - MSSEMI_ISOTOPEDILN (continued)									
Matrix Spike Dup (B5E0440-MSD1)		**Source: 1501683-02**		Prepared: 5/18/2015 Analyzed: 5/18/2015					
1,2,4-Trichlorobenzene	118.080	10	100.000	ND	118	44 - 118	9.89	20	M7
1,2-Dichlorobenzene	93.1600	10	100.000	ND	93.2	36 - 114	9.87	20	
1,2-Diphenylhydrazine	116.520	10	100.000	ND	117	49 - 146	0.534	20	
1,3-Dichlorobenzene	94.4400	10	100.000	ND	94.4	34 - 115	9.48	20	
1,4-Dichlorobenzene	86.6200	10	100.000	ND	86.6	33 - 113	10.9	20	
2,4,6-Trichlorophenol	112.970	10	100.000	ND	113	63 - 125	1.03	20	
2,4-Dichlorophenol	118.780	10	100.000	ND	119	53 - 114	9.65	20	M7
2,4-Dimethylphenol	102.840	10	100.000	ND	103	46 - 108	8.38	20	
2,4-Dinitrophenol	96.2400	50	100.000	ND	96.2	38 - 134	0.458	20	
2,4-Dinitrotoluene	136.850	10	100.000	ND	137	74 - 140	0.692	20	
2,6-Dinitrotoluene	139.180	10	100.000	ND	139	76 - 134	1.53	20	M7
2-Chloronaphthalene	114.660	10	100.000	ND	115	59 - 126	4.97	20	
2-Chlorophenol	86.7600	10	100.000	ND	86.8	33 - 106	9.50	20	
2-Nitrophenol	111.620	10	100.000	ND	112	45 - 123	7.26	20	
3,3´-Dichlorobenzidine	89.5900	20	100.000	ND	89.6	60 - 131	2.96	20	
4,6-Dinitro-2-methyphenol	132.310	50	100.000	ND	132	66 - 142	1.02	20	
4-Bromophenyl-phenylether	132.350	10	100.000	ND	132	65 - 139	1.15	20	
4-Chloro-3-methylphenol	112.840	50	100.000	ND	113	64 - 117	4.98	20	
4-Chlorophenyl-phenylether	130.940	10	100.000	ND	131	62 - 137	0.967	20	
4-Nitrophenol	53.4900	50	100.000	ND	53.5	31 - 70	2.12	20	
Acenaphthene	89.6500	10	100.000	ND	89.6	59 - 113	4.07	20	
Acenaphthylene	94.8100	10	100.000	ND	94.8	59 - 113	3.75	20	
Anthracene	103.970	10	100.000	ND	104	74 - 121	1.93	20	
Benzidine (M)	82.2200	50	100.000	ND	82.2	0 - 53	2.95	20	M7
Benzo(a)anthracene	100.120	10	100.000	ND	100	71 - 120	2.56	20	
Benzo(a)pyrene	101.320	10	100.000	ND	101	76 - 131	3.44	20	
Benzo(b)fluoranthene	95.9400	10	100.000	ND	95.9	73 - 129	3.56	20	
Benzo(g,h,i)perylene	92.1200	10	100.000	ND	92.1	68 - 129	3.46	20	
Benzo(k)fluoranthene	90.4600	10	100.000	ND	90.5	69 - 129	2.41	20	
bis(2-chloroethoxy)methane	111.690	10	100.000	ND	112	48 - 124	8.62	20	
bis(2-Chloroethyl)ether	100.430	10	100.000	ND	100	36 - 118	8.54	20	
bis(2-chloroisopropyl)ether	88.3800	10	100.000	ND	88.4	34 - 125	8.06	20	
bis(2-ethylhexyl)phthalate	115.810	10	100.000	ND	116	56 - 165	2.94	20	
Butylbenzylphthalate	119.240	10	100.000	ND	119	64 - 157	1.47	20	
Chrysene	95.9600	10	100.000	ND	96.0	68 - 119	2.88	20	
Di-n-butylphthalate	113.060	10	100.000	ND	113	60 - 163	0.582	20	
Di-n-octylphthalate	115.440	10	100.000	ND	115	72 - 140	3.00	20	
Dibenz(a,h)anthracene	83.4300	10	100.000	ND	83.4	70 - 132	3.38	20	
Diethyl phthalate	123.430	10	100.000	ND	123	60 - 144	1.11	20	
Dimethyl phthalate	129.290	10	100.000	ND	129	67 - 138	1.07	20	
Fluoranthene	101.780	10	100.000	ND	102	69 - 121	0.0688	20	

Certificate of Analysis

Amec Foster Wheeler	Project Number : MTA WES, 4953-11-1423
6001 Rickenbacker Road	Report To : Ron Lopez/Marty Hudson
Los Angeles , CA 90040	Reported : 05/21/2015

Semivolatile Organic Compounds by EPA 625 - Quality Control (cont'd)

Analyte	Result (ug/L)	PQL (ug/L)	Spike Level	Source Result	% Rec	% Rec Limits	RPD	RPD Limit	Notes
Batch B5E0440 - MSSEMI_ISOTOPEDILN (continued)									
Matrix Spike Dup (B5E0440-MSD1) - Continued		**Source: 1501683-02**		Prepared: 5/18/2015 Analyzed: 5/18/2015					
Fluorene	93.0000	10	100.000	ND	93.0	64 - 116	1.94	20	
Hexachlorobenzene	122.700	10	100.000	ND	123	63 - 136	2.53	20	
Hexachlorobutadiene	107.970	20	100.000	ND	108	28 - 119	9.29	20	
Hexachlorocyclopentadiene	122.560	10	100.000	ND	123	38 - 140	5.83	20	
Hexachloroethane	90.3700	10	100.000	ND	90.4	29 - 107	11.8	20	
Indeno(1,2,3-cd)pyrene	90.5800	10	100.000	ND	90.6	75 - 137	3.65	20	
Isophorone	128.650	10	100.000	ND	129	52 - 139	7.38	20	
N-Nitroso-di-n propylamine	105.390	10	100.000	ND	105	43 - 132	6.71	20	
N-Nitrosodimethylamine	53.3000	50	100.000	ND	53.3	0 - 123	8.88	20	
N-Nitrosodiphenylamine	126.750	10	100.000	ND	127	70 - 140	1.95	20	
Naphthalene	82.5500	10	100.000	ND	82.6	46 - 106	7.91	20	
Nitrobenzene	109.800	10	100.000	ND	110	37 - 132	9.71	20	
Pentachlorophenol	123.330	50	100.000	ND	123	60 - 128	0.0324	20	
Phenanthrene	96.7000	10	100.000	ND	96.7	71 - 119	1.10	20	
Phenol	45.0400	10	100.000	ND	45.0	16 - 57	8.45	20	
Pyrene	99.6200	10	100.000	ND	99.6	68 - 122	1.13	20	
Surrogate: 1,2-Dichlorobenzene-d4	*64.16*		*100.000*		*64.2*	*4 - 111*			
Surrogate: 2,4,6-Tribromophenol	*76.36*		*100.000*		*76.4*	*21 - 162*			
Surrogate: 2-Chlorophenol-d4	*56.36*		*100.000*		*56.4*	*0 - 124*			
Surrogate: 2-Fluorobiphenyl	*73.79*		*100.000*		*73.8*	*21 - 118*			
Surrogate: 2-Fluorophenol	*37.32*		*100.000*		*37.3*	*0 - 83*			
Surrogate: 4-Terphenyl-d14	*87.74*		*100.000*		*87.7*	*33 - 150*			
Surrogate: Nitrobenzene-d5	*71.84*		*100.000*		*71.8*	*10 - 117*			
Surrogate: Phenol-d5	*28.58*		*100.000*		*28.6*	*0 - 68*			

Certificate of Analysis

Amec Foster Wheeler		Project Number :	MTA WES, 4953-11-1423
6001 Rickenbacker Road		Report To :	Ron Lopez/Marty Hudson
Los Angeles , CA 90040		Reported :	05/21/2015

Oil & Grease, Hexane Extractable Material (HEM) EPA 1664A - Quality Control

Analyte	Result (mg/L)	PQL (mg/L)	Spike Level	Source Result	% Rec	% Rec Limits	RPD	RPD Limit	Notes
Batch B5E0469 - Prep_WC2_W									
Blank (B5E0469-BLK1)				Prepared: 5/19/2015 Analyzed: 5/19/2015					
Oil & Grease, HEM	ND	2.0			NR				

Figure C-3.50

Certificate of Analysis

Amec Foster Wheeler	Project Number : MTA WES, 4953-11-1423
6001 Rickenbacker Road	Report To : Ron Lopez/Marty Hudson
Los Angeles , CA 90040	Reported : 05/21/2015

Oil & Grease, Hexane Extractable Material (HEM) EPA 1664A - Quality Control (cont'd)

Analyte	Result (mg/L)	PQL (mg/L)	Spike Level	Source Result	% Rec	% Rec Limits	RPD	RPD Limit	Notes
Batch B5E0469 - Prep_WC2_W (continued)									
LCS (B5E0469-BS1)				Prepared: 5/19/2015 Analyzed: 5/19/2015					
Oil & Grease, HEM	38.4000	2.0	40.0000		96.0	78 - 114			

Figure C-3.51

Amec Foster Wheeler	Project Number : MTA WES, 4953-11-1423
6001 Rickenbacker Road	Report To : Ron Lopez/Marty Hudson
Los Angeles , CA 90040	Reported : 05/21/2015

Oil & Grease, Hexane Extractable Material (HEM) EPA 1664A - Quality Control (cont'd)

Analyte	Result (mg/L)	PQL (mg/L)	Spike Level	Source Result	% Rec	% Rec Limits	RPD	RPD Limit	Notes
Batch B5E0469 - Prep_WC2_W (continued)									
LCS Dup (B5E0469-BSD1)				Prepared: 5/19/2015 Analyzed: 5/19/2015					
Oil & Grease, HEM	38.0000	2.0	40.0000		95.0	78 - 114	1.05	20	

Figure C-3.52

Certificate of Analysis

Amec Foster Wheeler	Project Number : MTA WES, 4953-11-1423
6001 Rickenbacker Road	Report To : Ron Lopez/Marty Hudson
Los Angeles , CA 90040	Reported : 05/21/2015

Dissolved Gases in Water - Quality Control

Analyte	Result (ug/L)	PQL (ug/L)	Spike Level	Source Result	% Rec	% Rec Limits	RPD	RPD Limit	Notes
Batch B5E0426 - No_Prep_RSK_W									
Blank (B5E0426-BLK1)					Prepared: 5/18/2015 Analyzed: 5/18/2015				
Methane	ND	1.0			NR				

Amec Foster Wheeler	Project Number : MTA WES, 4953-11-1423
6001 Rickenbacker Road	Report To : Ron Lopez/Marty Hudson
Los Angeles , CA 90040	Reported : 05/21/2015

Dissolved Gases in Water - Quality Control (cont'd)

Analyte	Result (ug/L)	PQL (ug/L)	Spike Level	Source Result	% Rec	% Rec Limits	RPD	RPD Limit	Notes
Batch B5E0426 - No_Prep_RSK_W (continued)									
LCS (B5E0426-BS1)				Prepared: 5/18/2015 Analyzed: 5/18/2015					
Methane	33.9200	1.0	48.1000		70.5	70 - 130			

Certificate of Analysis

Amec Foster Wheeler	Project Number : MTA WES, 4953-11-1423
6001 Rickenbacker Road	Report To : Ron Lopez/Marty Hudson
Los Angeles , CA 90040	Reported : 05/21/2015

Dissolved Gases in Water - Quality Control (cont'd)

Analyte	Result (ug/L)	PQL (ug/L)	Spike Level	Source Result	% Rec	% Rec Limits	RPD	RPD Limit	Notes
Batch B5E0426 - No_Prep_RSK_W (continued)									
LCS Dup (B5E0426-BSD1)				Prepared: 5/18/2015 Analyzed: 5/18/2015					
Methane	33.9200	1.0	48.1000		70.5	70 - 130	0.00	20	

Amec Foster Wheeler	Project Number : MTA WES, 4953-11-1423
6001 Rickenbacker Road	Report To : Ron Lopez/Marty Hudson
Los Angeles , CA 90040	Reported : 05/21/2015

Dissolved Gases in Water - Quality Control (cont'd)

Analyte	Result (ug/L)	PQL (ug/L)	Spike Level	Source Result	% Rec	% Rec Limits	RPD	RPD Limit	Notes
Batch B5E0426 - No_Prep_RSK_W (continued)									
Duplicate (B5E0426-DUP1)		**Source: 1501682-02**		Prepared: 5/18/2015 Analyzed: 5/18/2015					
Methane	479.750	5.0		400.100	NR		18.1	20	

Figure C-3.56

Certificate of Analysis

Amec Foster Wheeler	Project Number : MTA WES, 4953-11-1423
6001 Rickenbacker Road	Report To : Ron Lopez/Marty Hudson
Los Angeles , CA 90040	Reported : 05/21/2015

Turbidity by EPA 180.1 - Quality Control

Analyte	Result (NTU)	PQL (NTU)	Spike Level	Source Result	% Rec	% Rec Limits	RPD	RPD Limit	Notes
Batch B5E0419 - No_Prep_SC_W									
Blank (B5E0419-BLK1)				Prepared: 5/12/2015 Analyzed: 5/12/2015					
Turbidity	ND	0.10			NR				

Figure C-3.57

Amec Foster Wheeler	Project Number : MTA WES, 4953-11-1423
6001 Rickenbacker Road	Report To : Ron Lopez/Marty Hudson
Los Angeles , CA 90040	Reported : 05/21/2015

Turbidity by EPA 180.1 - Quality Control (cont'd)

Analyte	Result (NTU)	PQL (NTU)	Spike Level	Source Result	% Rec	% Rec Limits	RPD	RPD Limit	Notes
Batch B5E0419 - No_Prep_SC_W (continued)									
Duplicate (B5E0419-DUP1)		**Source: 1501660-01**		Prepared: 5/12/2015 Analyzed: 5/12/2015					
Turbidity	0.200000	0.10		0.210000	NR		4.88	10	

Figure C-3.58

Certificate of Analysis

Amec Foster Wheeler	Project Number : MTA WES, 4953-11-1423
6001 Rickenbacker Road	Report To : Ron Lopez/Marty Hudson
Los Angeles , CA 90040	Reported : 05/21/2015

Hardness by Calculation by SM 2340B - Quality Control

Analyte	Result (ug/L)	PQL (ug/L)	Spike Level	Source Result	% Rec	% Rec Limits	RPD	RPD Limit	Notes
Batch B5E0337 - EPA 200.8_W									
Blank (B5E0337-BLK1)				Prepared: 5/14/2015 Analyzed: 5/15/2015					
Hardness Total (As CaCO3)	ND	250			NR				

Figure C-3.59

Amec Foster Wheeler	Project Number : MTA WES, 4953-11-1423
6001 Rickenbacker Road	Report To : Ron Lopez/Marty Hudson
Los Angeles , CA 90040	Reported : 05/21/2015

Hardness by Calculation by SM 2340B - Quality Control (cont'd)

Analyte	Result (ug/L)	PQL (ug/L)	Spike Level	Source Result	% Rec	% Rec Limits	RPD	RPD Limit	Notes
Batch B5E0337 - EPA 200.8_W (continued)									
LCS (B5E0337-BS1)				Prepared: 5/14/2015 Analyzed: 5/15/2015					
Hardness Total (As CaCO3)	3180.00	250	3306.80		96.2	80 - 120			

Amec Foster Wheeler	Project Number : MTA WES, 4953-11-1423
6001 Rickenbacker Road	Report To : Ron Lopez/Marty Hudson
Los Angeles , CA 90040	Reported : 05/21/2015

Hardness by Calculation by SM 2340B - Quality Control (cont'd)

Analyte	Result (ug/L)	PQL (ug/L)	Spike Level	Source Result	% Rec	% Rec Limits	RPD	RPD Limit	Notes
Batch B5E0337 - EPA 200.8_W (continued)									
Matrix Spike (B5E0337-MS1)		**Source: 1501681-01**		Prepared: 5/14/2015 Analyzed: 5/15/2015					
Hardness Total (As CaCO3)	2240000	25000	3306.80	2430000	-5750	80 - 120			M1

Amec Foster Wheeler	Project Number : MTA WES, 4953-11-1423
6001 Rickenbacker Road	Report To : Ron Lopez/Marty Hudson
Los Angeles , CA 90040	Reported : 05/21/2015

Hardness by Calculation by SM 2340B - Quality Control (cont'd)

Analyte	Result (ug/L)	PQL (ug/L)	Spike Level	Source Result	% Rec	% Rec Limits	RPD	RPD Limit	Notes
Batch B5E0337 - EPA 200.8_W (continued)									
Matrix Spike Dup (B5E0337-MSD1)		**Source: 1501681-01**		Prepared: 5/14/2015 Analyzed: 5/15/2015					
Hardness Total (As CaCO3)	2300000	25000	3306.80	2430000	-3930	80 - 120	2.64	20	M1

Certificate of Analysis

Amec Foster Wheeler	Project Number : MTA WES, 4953-11-1423
6001 Rickenbacker Road	Report To : Ron Lopez/Marty Hudson
Los Angeles , CA 90040	Reported : 05/21/2015

Total Dissolved Solids (Residue, Filterable) by SM 2540C - Quality Control

Analyte	Result (mg/L)	PQL (mg/L)	Spike Level	Source Result	% Rec	% Rec Limits	RPD	RPD Limit	Notes
Batch B5E0408 - No_Prep_WC1_W									
Blank (B5E0408-BLK1)				Prepared: 5/14/2015 Analyzed: 5/15/2015					
Residue, Dissolved	ND	10			NR				

Figure C-3.63

Amec Foster Wheeler	Project Number : MTA WES, 4953-11-1423
6001 Rickenbacker Road	Report To : Ron Lopez/Marty Hudson
Los Angeles , CA 90040	Reported : 05/21/2015

Total Dissolved Solids (Residue, Filterable) by SM 2540C - Quality Control (cont'd)

Analyte	Result (mg/L)	PQL (mg/L)	Spike Level	Source Result	% Rec	% Rec Limits	RPD	RPD Limit	Notes
Batch B5E0408 - No_Prep_WC1_W (continued)									
LCS (B5E0408-BS1)				Prepared: 5/14/2015 Analyzed: 5/15/2015					
Residue, Dissolved	961.000	10	970.000		99.1	80 - 120			

Amec Foster Wheeler	Project Number : MTA WES, 4953-11-1423
6001 Rickenbacker Road	Report To : Ron Lopez/Marty Hudson
Los Angeles , CA 90040	Reported : 05/21/2015

Total Dissolved Solids (Residue, Filterable) by SM 2540C - Quality Control (cont'd)

Analyte	Result (mg/L)	PQL (mg/L)	Spike Level	Source Result	% Rec	% Rec Limits	RPD	RPD Limit	Notes
Batch B5E0408 - No_Prep_WC1_W (continued)									
Duplicate (B5E0408-DUP1)		**Source: 1501660-01**		Prepared: 5/14/2015 Analyzed: 5/15/2015					
Residue, Dissolved	954.000	10		961.000	NR		0.731	10	

Figure C-3.65

Certificate of Analysis

Amec Foster Wheeler		Project Number :	MTA WES, 4953-11-1423
6001 Rickenbacker Road		Report To :	Ron Lopez/Marty Hudson
Los Angeles , CA 90040		Reported :	05/21/2015

Total Suspended Solids (Residue, Non-Filtrable) by SM 2540D - Quality Control

Analyte	Result (mg/L)	PQL (mg/L)	Spike Level	Source Result	% Rec	% Rec Limits	RPD	RPD Limit	Notes
Batch B5E0407 - No_Prep_WC1_W									
Blank (B5E0407-BLK1)				Prepared: 5/15/2015 Analyzed: 5/15/2015					
Residue, Suspended	ND	1.0			NR				

Figure C-3.66

Amec Foster Wheeler	Project Number : MTA WES, 4953-11-1423
6001 Rickenbacker Road	Report To : Ron Lopez/Marty Hudson
Los Angeles , CA 90040	Reported : 05/21/2015

Total Suspended Solids (Residue, Non-Filtrable) by SM 2540D - Quality Control (cont'd)

Analyte	Result (mg/L)	PQL (mg/L)	Spike Level	Source Result	% Rec	% Rec Limits	RPD	RPD Limit	Notes
Batch B5E0407 - No_Prep_WC1_W (continued)									
LCS (B5E0407-BS1)				Prepared: 5/15/2015 Analyzed: 5/15/2015					
Residue, Suspended	94.0000	10	96.6000		97.3	80 - 120			

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Amec Foster Wheeler	Project Number : MTA WES, 4953-11-1423
6001 Rickenbacker Road	Report To : Ron Lopez/Marty Hudson
Los Angeles , CA 90040	Reported : 05/21/2015

Total Suspended Solids (Residue, Non-Filtrable) by SM 2540D - Quality Control (cont'd)

Analyte	Result (mg/L)	PQL (mg/L)	Spike Level	Source Result	% Rec	% Rec Limits	RPD	RPD Limit	Notes
Batch B5E0407 - No_Prep_WC1_W (continued)									
Duplicate (B5E0407-DUP1)		**Source: 1501667-01**		Prepared: 5/15/2015 Analyzed: 5/15/2015					
Residue, Suspended	67.0000	10		64.0000	NR		4.58	10	

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Amec Foster Wheeler	Project Number : MTA WES, 4953-11-1423
6001 Rickenbacker Road	Report To : Ron Lopez/Marty Hudson
Los Angeles , CA 90040	Reported : 05/21/2015

Residue, Settleable by SM 2540F - Quality Control

Analyte	Result (mL/L)	PQL (mL/L)	Spike Level	Source Result	% Rec	% Rec Limits	RPD	RPD Limit	Notes
Batch B5E0301 - No_Prep_WC1_W									
Blank (B5E0301-BLK1)					Prepared: 5/12/2015 Analyzed: 5/13/2015				
Residue, Settleable	ND	0.10			NR				

Certificate of Analysis

Amec Foster Wheeler	Project Number : MTA WES, 4953-11-1423
6001 Rickenbacker Road	Report To : Ron Lopez/Marty Hudson
Los Angeles , CA 90040	Reported : 05/21/2015

Cyanide, Total by SM4500-CN E - Quality Control

Analyte	Result (mg/L)	PQL (mg/L)	Spike Level	Source Result	% Rec	% Rec Limits	RPD	RPD Limit	Notes
Batch B5E0522 - Prep_WC3_W									
Blank (B5E0522-BLK1)				Prepared: 5/19/2015 Analyzed: 5/19/2015					
Cyanide, Total	ND	0.010			NR				

Figure C-3.70

Certificate of Analysis

Amec Foster Wheeler	Project Number : MTA WES, 4953-11-1423
6001 Rickenbacker Road	Report To : Ron Lopez/Marty Hudson
Los Angeles , CA 90040	Reported : 05/21/2015

Cyanide, Total by SM4500-CN E - Quality Control (cont'd)

Analyte	Result (mg/L)	PQL (mg/L)	Spike Level	Source Result	% Rec	% Rec Limits	RPD	RPD Limit	Notes
Batch B5E0522 - Prep_WC3_W (continued)									
LCS (B5E0522-BS1)				Prepared: 5/19/2015 Analyzed: 5/19/2015					
Cyanide, Total	0.384000	0.010	0.400000		96.0	80 - 120			

Figure C-3.71

Amec Foster Wheeler	Project Number : MTA WES, 4953-11-1423
6001 Rickenbacker Road	Report To : Ron Lopez/Marty Hudson
Los Angeles , CA 90040	Reported : 05/21/2015

Cyanide, Total by SM4500-CN E - Quality Control (cont'd)

Analyte	Result (mg/L)	PQL (mg/L)	Spike Level	Source Result	% Rec	% Rec Limits	RPD	RPD Limit	Notes
Batch B5E0522 - Prep_WC3_W (continued)									
Matrix Spike (B5E0522-MS1)		**Source: 1501775-02**		Prepared: 5/19/2015 Analyzed: 5/19/2015					
Cyanide, Total	0.386000	0.010	0.400000	0.012	93.5	80 - 120			

Amec Foster Wheeler	Project Number : MTA WES, 4953-11-1423
6001 Rickenbacker Road	Report To : Ron Lopez/Marty Hudson
Los Angeles , CA 90040	Reported : 05/21/2015

Cyanide, Total by SM4500-CN E - Quality Control (cont'd)

Analyte	Result (mg/L)	PQL (mg/L)	Spike Level	Source Result	% Rec	% Rec Limits	RPD	RPD Limit	Notes
Batch B5E0522 - Prep_WC3_W (continued)									
Matrix Spike Dup (B5E0522-MSD1)		**Source: 1501775-02**		Prepared: 5/19/2015 Analyzed: 5/19/2015					
Cyanide, Total	0.386000	0.010	0.400000	0.012	93.5	80 - 120	0.00	20	

Figure C-3.73

Certificate of Analysis

Amec Foster Wheeler	Project Number : MTA WES, 4953-11-1423
6001 Rickenbacker Road	Report To : Ron Lopez/Marty Hudson
Los Angeles , CA 90040	Reported : 05/21/2015

pH by SM 4500H+B - Quality Control

Analyte	Result (pH Units)	PQL (pH Units)	Spike Level	Source Result	% Rec	% Rec Limits	RPD	RPD Limit	Notes
Batch B5E0455 - No_Prep_SC_W									
Duplicate (B5E0455-DUP1)		**Source: 1501664-01**		Prepared: 5/12/2015 Analyzed: 5/12/2015					
pH	7.51000	0.10		7.49000	NR		0.267	10	H1

Figure C-3.74

Certificate of Analysis

Amec Foster Wheeler	Project Number : MTA WES, 4953-11-1423
6001 Rickenbacker Road	Report To : Ron Lopez/Marty Hudson
Los Angeles , CA 90040	Reported : 05/21/2015

Sulfide, Total by SM 4500-S=D - Quality Control

Analyte	Result (mg/L)	PQL (mg/L)	Spike Level	Source Result	% Rec	% Rec Limits	RPD	RPD Limit	Notes
Batch B5E0324 - Prep_WC3_W									
Blank (B5E0324-BLK1)				Prepared: 5/13/2015 Analyzed: 5/13/2015					
Sulfide, Total	ND	0.010			NR				
Hydrogen sulfide	ND	0.011			NR				

Figure C-3.75

Amec Foster Wheeler	Project Number : MTA WES, 4953-11-1423
6001 Rickenbacker Road	Report To : Ron Lopez/Marty Hudson
Los Angeles , CA 90040	Reported : 05/21/2015

Sulfide, Total by SM 4500-S=D - Quality Control (cont'd)

Analyte	Result (mg/L)	PQL (mg/L)	Spike Level	Source Result	% Rec	% Rec Limits	RPD	RPD Limit	Notes
Batch B5E0324 - Prep_WC3_W (continued)									
LCS (B5E0324-BS1)				Prepared: 5/13/2015 Analyzed: 5/13/2015					
Sulfide, Total	0.0991	0.010	0.100000		99.1	80 - 120			
Hydrogen sulfide	0.105328	0.011	0.106284		99.1	80 - 120			

Amec Foster Wheeler	Project Number : MTA WES, 4953-11-1423
6001 Rickenbacker Road	Report To : Ron Lopez/Marty Hudson
Los Angeles , CA 90040	Reported : 05/21/2015

Sulfide, Total by SM 4500-S=D - Quality Control (cont'd)

Analyte	Result (mg/L)	PQL (mg/L)	Spike Level	Source Result	% Rec	% Rec Limits	RPD	RPD Limit	Notes
Batch B5E0324 - Prep_WC3_W (continued)									
Matrix Spike (B5E0324-MS1)		**Source: 1501681-02**		Prepared: 5/13/2015 Analyzed: 5/13/2015					
Sulfide, Total	0.0943	0.010	0.100000	0.005	89.3	70 - 120			
Hydrogen sulfide	0.100226	0.011	0.106284	0.005314	89.3	70 - 120			

Figure C-3.77

Certificate of Analysis

Amec Foster Wheeler	Project Number : MTA WES, 4953-11-1423
6001 Rickenbacker Road	Report To : Ron Lopez/Marty Hudson
Los Angeles , CA 90040	Reported : 05/21/2015

Sulfide, Total by SM 4500-S=D - Quality Control (cont'd)

Analyte	Result (mg/L)	PQL (mg/L)	Spike Level	Source Result	% Rec	% Rec Limits	RPD	RPD Limit	Notes
Batch B5E0324 - Prep_WC3_W (continued)									
Matrix Spike Dup (B5E0324-MSD1)		**Source: 1501681-02**		Prepared: 5/13/2015 Analyzed: 5/13/2015					
Sulfide, Total	0.0907	0.010	0.100000	0.005	85.7	70 - 120	3.89	20	
Hydrogen sulfide	0.0964	0.011	0.106284	0.005314	85.7	70 - 120	3.89	20	

Figure C-3.78

Certificate of Analysis

Amec Foster Wheeler	Project Number : MTA WES, 4953-11-1423
6001 Rickenbacker Road	Report To : Ron Lopez/Marty Hudson
Los Angeles , CA 90040	Reported : 05/21/2015

Gasoline Range Organics by EPA 8015B (Modified) - Quality Control

Analyte	Result (mg/L)	PQL (mg/L)	Spike Level	Source Result	% Rec	% Rec Limits	RPD	RPD Limit	Notes
Batch B5E0350 - GCVOA_W									
Blank (B5E0350-BLK1)				Prepared: 5/14/2015 Analyzed: 5/14/2015					
Gasoline Range Organics	ND	0.05			NR				
Surrogate: 4-Bromofluorobenzene	*0.1052*		*0.100000*		*105*	*70 - 130*			

Certificate of Analysis

Amec Foster Wheeler	Project Number : MTA WES, 4953-11-1423
6001 Rickenbacker Road	Report To : Ron Lopez/Marty Hudson
Los Angeles , CA 90040	Reported : 05/21/2015

Gasoline Range Organics by EPA 8015B (Modified) - Quality Control (cont'd)

Analyte	Result (mg/L)	PQL (mg/L)	Spike Level	Source Result	% Rec	% Rec Limits	RPD	RPD Limit	Notes
Batch B5E0350 - GCVOA_W (continued)									
LCS (B5E0350-BS1)				Prepared: 5/14/2015 Analyzed: 5/14/2015					
Gasoline Range Organics	0.875000	0.05	1.00000		87.5	70 - 130			
Surrogate: 4-Bromofluorobenzene	*0.1095*		*0.100000*		*109*	*70 - 130*			

Figure C-3.80

Certificate of Analysis

Amec Foster Wheeler	Project Number : MTA WES, 4953-11-1423
6001 Rickenbacker Road	Report To : Ron Lopez/Marty Hudson
Los Angeles , CA 90040	Reported : 05/21/2015

Gasoline Range Organics by EPA 8015B (Modified) - Quality Control (cont'd)

Analyte	Result (mg/L)	PQL (mg/L)	Spike Level	Source Result	% Rec	% Rec Limits	RPD	RPD Limit	Notes
Batch B5E0350 - GCVOA_W (continued)									
LCS Dup (B5E0350-BSD1)				Prepared: 5/14/2015 Analyzed: 5/14/2015					
Gasoline Range Organics	0.802000	0.05	1.00000		80.2	70 - 130	8.71	20	
Surrogate: 4-Bromofluorobenzene	*0.1038*		*0.100000*		*104*	*70 - 130*			

Certificate of Analysis

Amec Foster Wheeler	Project Number : MTA WES, 4953-11-1423
6001 Rickenbacker Road	Report To : Ron Lopez/Marty Hudson
Los Angeles , CA 90040	Reported : 05/21/2015

Alcohols by EPA 8015B - Quality Control

Analyte	Result (mg/L)	PQL (mg/L)	Spike Level	Source Result	% Rec	% Rec Limits	RPD	RPD Limit	Notes
Batch B5E0442 - GCSEMI_ALCOHOLS_W									
Blank (B5E0442-BLK1)					Prepared: 5/18/2015 Analyzed: 5/19/2015				
Ethanol	ND	1.0			NR				
Methanol	ND	1.0			NR				

Figure C-3.82

Certificate of Analysis

Amec Foster Wheeler	Project Number : MTA WES, 4953-11-1423
6001 Rickenbacker Road	Report To : Ron Lopez/Marty Hudson
Los Angeles , CA 90040	Reported : 05/21/2015

Alcohols by EPA 8015B - Quality Control (cont'd)

Analyte	Result (mg/L)	PQL (mg/L)	Spike Level	Source Result	% Rec	% Rec Limits	RPD	RPD Limit	Notes
Batch B5E0442 - GCSEMI_ALCOHOLS_W (continued)									
LCS (B5E0442-BS1)				Prepared: 5/18/2015 Analyzed: 5/19/2015					
Ethanol	496.567	1.0	500.000		99.3	70 - 130			
Methanol	503.075	1.0	500.000		101	70 - 130			

Figure C-3.83

Certificate of Analysis

Amec Foster Wheeler	Project Number : MTA WES, 4953-11-1423
6001 Rickenbacker Road	Report To : Ron Lopez/Marty Hudson
Los Angeles , CA 90040	Reported : 05/21/2015

Alcohols by EPA 8015B - Quality Control (cont'd)

Analyte	Result (mg/L)	PQL (mg/L)	Spike Level	Source Result	% Rec	% Rec Limits	RPD	RPD Limit	Notes
Batch B5E0442 - GCSEMI_ALCOHOLS_W (continued)									
Matrix Spike (B5E0442-MS1)		**Source: 1501681-01**		Prepared: 5/18/2015 Analyzed: 5/19/2015					
Ethanol	273.575	1.0	200.000	1.42800	136	70 - 130			M1
Methanol	251.716	1.0	200.000	ND	126	70 - 130			

Figure C-3.84

Certificate of Analysis

Amec Foster Wheeler	Project Number : MTA WES, 4953-11-1423
6001 Rickenbacker Road	Report To : Ron Lopez/Marty Hudson
Los Angeles , CA 90040	Reported : 05/21/2015

Alcohols by EPA 8015B - Quality Control (cont'd)

Analyte	Result (mg/L)	PQL (mg/L)	Spike Level	Source Result	% Rec	% Rec Limits	RPD	RPD Limit	Notes
Batch B5E0442 - GCSEMI_ALCOHOLS_W (continued)									
Matrix Spike Dup (B5E0442-MSD1)		**Source: 1501681-01**		Prepared: 5/18/2015 Analyzed: 5/19/2015					
Ethanol	254.001	1.0	200.000	1.42800	126	70 - 130	7.42	20	
Methanol	241.336	1.0	200.000	ND	121	70 - 130	4.21	20	

Figure C-3.85

Certificate of Analysis

Amec Foster Wheeler	Project Number : MTA WES, 4953-11-1423
6001 Rickenbacker Road	Report To : Ron Lopez/Marty Hudson
Los Angeles , CA 90040	Reported : 05/21/2015

Diesel Range Organics by EPA 8015B - Quality Control

Analyte	Result (mg/L)	PQL (mg/L)	Spike Level	Source Result	% Rec	% Rec Limits	RPD	RPD Limit	Notes
Batch B5E0473 - GCSEMI_DRO_W									
Blank (B5E0473-BLK1)				Prepared: 5/19/2015 Analyzed: 5/19/2015					
DRO	ND	0.05			NR				
ORO	ND	0.05			NR				
Surrogate: p-Terphenyl	*0.05854*		*8.00000E-2*		*73.2*	*20 - 141*			

Figure C-3.86

Certificate of Analysis

Amec Foster Wheeler	Project Number : MTA WES, 4953-11-1423
6001 Rickenbacker Road	Report To : Ron Lopez/Marty Hudson
Los Angeles , CA 90040	Reported : 05/21/2015

Diesel Range Organics by EPA 8015B - Quality Control (cont'd)

Analyte	Result (mg/L)	PQL (mg/L)	Spike Level	Source Result	% Rec	% Rec Limits	RPD	RPD Limit	Notes
Batch B5E0473 - GCSEMI_DRO_W (continued)									
LCS (B5E0473-BS1)				Prepared: 5/19/2015 Analyzed: 5/19/2015					
DRO	0.577430	0.05	1.00000		57.7	29 - 135			
Surrogate: p-Terphenyl	*0.05571*		*8.00000E-2*		*69.6*	*20 - 141*			

Figure C-3.87

Certificate of Analysis

Amec Foster Wheeler	Project Number : MTA WES, 4953-11-1423
6001 Rickenbacker Road	Report To : Ron Lopez/Marty Hudson
Los Angeles , CA 90040	Reported : 05/21/2015

Diesel Range Organics by EPA 8015B - Quality Control (cont'd)

Analyte	Result (mg/L)	PQL (mg/L)	Spike Level	Source Result	% Rec	% Rec Limits	RPD	RPD Limit	Notes
Batch B5E0473 - GCSEMI_DRO_W (continued)									
LCS Dup (B5E0473-BSD1)				Prepared: 5/19/2015 Analyzed: 5/19/2015					
DRO	0.598460	0.05	1.00000		59.8	29 - 135	3.58	20	
Surrogate: p-Terphenyl	*0.05892*		*8.00000E-2*		*73.6*	*20 - 141*			

Figure C-3.88

Certificate of Analysis

Amec Foster Wheeler	Project Number : MTA WES, 4953-11-1423
6001 Rickenbacker Road	Report To : Ron Lopez/Marty Hudson
Los Angeles , CA 90040	Reported : 05/21/2015

1,4-Dioxane by EPA 8270/SIM: Isotope Dilution Technique - Quality Control

Analyte	Result (ug/L)	PQL (ug/L)	Spike Level	Source Result	% Rec	% Rec Limits	RPD	RPD Limit	Notes
Batch B5E0399 - MSSEMI_W									
Blank (B5E0399-BLK1)			Prepared: 5/15/2015 Analyzed: 5/15/2015						
1,4-Dioxane	ND	0.20			NR				
Surrogate: 1,2-Dichlorobenzene-d4	*0.7330*		*1.00000*		*73.3*	*47 - 117*			
Surrogate: 2-Fluorobiphenyl	*0.8026*		*1.00000*		*80.3*	*48 - 121*			
Surrogate: 4-Terphenyl-d14	*0.9039*		*1.00000*		*90.4*	*58 - 142*			
Surrogate: Nitrobenzene-d5	*0.6857*		*1.00000*		*68.6*	*27 - 151*			

Figure C-3.89

Amec Foster Wheeler	Project Number : MTA WES, 4953-11-1423
6001 Rickenbacker Road	Report To : Ron Lopez/Marty Hudson
Los Angeles , CA 90040	Reported : 05/21/2015

1,4-Dioxane by EPA 8270/SIM: Isotope Dilution Technique - Quality Control (cont'd)

Analyte	Result (ug/L)	PQL (ug/L)	Spike Level	Source Result	% Rec	% Rec Limits	RPD	RPD Limit	Notes
Batch B5E0399 - MSSEMI_W (continued)									
LCS (B5E0399-BS1)				Prepared: 5/15/2015 Analyzed: 5/15/2015					
1,4-Dioxane	1.02448	0.20	1.00000		102	58 - 151			
Surrogate: 1,2-Dichlorobenzene-d4	*0.6652*		*1.00000*		*66.5*	*47 - 117*			
Surrogate: 2-Fluorobiphenyl	*0.6931*		*1.00000*		*69.3*	*48 - 121*			
Surrogate: 4-Terphenyl-d14	*0.7875*		*1.00000*		*78.8*	*58 - 142*			
Surrogate: Nitrobenzene-d5	*0.6097*		*1.00000*		*61.0*	*27 - 151*			

Figure C-3.90

Amec Foster Wheeler	Project Number : MTA WES, 4953-11-1423
6001 Rickenbacker Road	Report To : Ron Lopez/Marty Hudson
Los Angeles , CA 90040	Reported : 05/21/2015

1,4-Dioxane by EPA 8270/SIM: Isotope Dilution Technique - Quality Control (cont'd)

Analyte	Result (ug/L)	PQL (ug/L)	Spike Level	Source Result	% Rec	% Rec Limits	RPD	RPD Limit	Notes
Batch B5E0399 - MSSEMI_W (continued)									
Matrix Spike (B5E0399-MS1)		**Source: 1501699-05**		Prepared: 5/15/2015 Analyzed: 5/15/2015					
1,4-Dioxane	0.923020	0.20	1.00000	ND	92.3	58 - 151			
Surrogate: 1,2-Dichlorobenzene-d4	*0.6642*		*1.00000*		*66.4*	*47 - 117*			
Surrogate: 2-Fluorobiphenyl	*0.7185*		*1.00000*		*71.9*	*48 - 121*			
Surrogate: 4-Terphenyl-d14	*0.8150*		*1.00000*		*81.5*	*58 - 142*			
Surrogate: Nitrobenzene-d5	*0.5893*		*1.00000*		*58.9*	*27 - 151*			

Figure C-3.91

Amec Foster Wheeler	Project Number : MTA WES, 4953-11-1423
6001 Rickenbacker Road	Report To : Ron Lopez/Marty Hudson
Los Angeles , CA 90040	Reported : 05/21/2015

1,4-Dioxane by EPA 8270/SIM: Isotope Dilution Technique - Quality Control (cont'd)

Analyte	Result (ug/L)	PQL (ug/L)	Spike Level	Source Result	% Rec	% Rec Limits	RPD	RPD Limit	Notes
Batch B5E0399 - MSSEMI_W (continued)									
Matrix Spike Dup (B5E0399-MSD1)		**Source: 1501699-05**		Prepared: 5/15/2015 Analyzed: 5/15/2015					
1,4-Dioxane	0.929770	0.20	1.00000	ND	93.0	58 - 151	0.729	20	
Surrogate: 1,2-Dichlorobenzene-d4	*0.6873*		*1.00000*		*68.7*	*47 - 117*			
Surrogate: 2-Fluorobiphenyl	*0.7226*		*1.00000*		*72.3*	*48 - 121*			
Surrogate: 4-Terphenyl-d14	*0.7371*		*1.00000*		*73.7*	*58 - 142*			
Surrogate: Nitrobenzene-d5	*0.6172*		*1.00000*		*61.7*	*27 - 151*			

Certificate of Analysis

Amec Foster Wheeler	Project Number : MTA WES, 4953-11-1423
6001 Rickenbacker Road	Report To : Ron Lopez/Marty Hudson
Los Angeles , CA 90040	Reported : 05/21/2015

Notes and Definitions

S5	Surrogate recovery was above laboratory acceptance limit. Sample reanalysis showed the same high recovery.
R	RPD value outside acceptance criteria. Calculation is based on raw values.
M7	Matrix spike was high biased. Sample result/s was non-detect (ND) for the target analyte; therefore reanalysis was not necessary.
M3	Matrix spike recovery outside of acceptance limit due to disproportionate concentration of the analyte to spike level. The analytical batch was validated by the laboratory control sample.
M2	Matrix spike recovery outside of acceptance limit due to possible matrix interference. The analytical batch was validated by the laboratory control sample.
M1	Matrix spike recovery outside of acceptance limit. The analytical batch was validated by the laboratory control sample.
L5	Laboratory Control Sample high biased. Sample result/s was non-detect (ND) for the target analyte; therefore reanalysis was not necessary.
L3	Laboratory control sample outside in-house established limits but within method criteria.
J	Analyte detected below the Practical Quantitation Limit but above or equal to the Method Detection Limit. Result is an estimated concentration.
H1	Sample was received past holding time.
E	Result value above quantitation range.
D6	Sample required dilution due to high concentration of target analyte.
D5	Sample diluted due to failing internal standard in the original run.
D1	Sample required dilution due to possible matrix interference.
ND	Analyte is not detected at or above the Practical Quantitation Limit (PQL). When client requests quantitation against MDL, analyte is not detected at or above the Method Detection Limit (MDL)
PQL	Practical Quantitation Limit
MDL	Method Detection Limit
NR	Not Reported
RPD	Relative Percent Difference
CA2	CA-ELAP (CDPH)
OR1	OR-NELAP (OSPHL)
TX1	TX-NELAP (TCEQ)

Notes:
(1) The reported MDL and PQL are based on prep ratio variation and analytical dilution.
(2) The suffix [2C] of specific analytes signifies that the reported result is taken from the instrument's second column.
(3) Results are wet unless otherwise specified.

Figure C-3.93

American Environmental Testing Laboratory Inc.
2834 & 2908 North Naomi Street Burbank, CA 91504 • DOHS NO: 1541, LACSD NO: 10181
Tel: (888) 288-AETL • (818) 845-8200 • Fax: (818) 845-8840 • www.aetlab.com

Ordered By

Advanced Technology Laboratories **3275 Walnut Avenue** **Signal Hill, CA 90755-5225**

Telephone: (562)989-4045
Attention: Rachelle Arada

Number of Pages 2 **Date Received 05/13/2015** **Date Reported 05/20/2015**

Job Number	Order Date	Client
76919	05/13/2015	ATL

Project ID: 1501681
Project Name: PO# SC09581

Enclosed please find results of analyses of 1 ground water sample which was analyzed as specified on the attached chain of custody. If there are any questions, please do not hesitate to call.

Checked By: _____ Approved By: C. Razmara

Cyrus Razmara, Ph.D.
Laboratory Director

Figure C-3.94

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Ordered By

Advanced Technology Laboratories **3275 Walnut Avenue** **Signal Hill, CA 90755-5225**	**Project ID: 1501681** **Date Received 05/13/2015** **Date Reported 05/20/2015**

Telephone: (562)989-4045
Attention: Rachelle Arada

Job Number	Order Date	Client
76919	05/13/2015	ATL

CERTIFICATE OF ANALYSIS
CASE NARRATIVE

AETL received 1 samples with the following specification on 05/13/2015.

Lab ID	Sample ID	Sample Date	Matrix	Quantity Of Containers
76919.01	1501681-01	05/12/2015	Aqueous	1

Method ^ Submethod	*Req Date*	*Priority*	*TAT*	*Units*
SM5210B	05/20/2015	2	Normal	mg/L

The samples were analyzed as specified on the enclosed chain of custody.
No analytical non-conformances were encountered.

Checked By: _____ Approved By: C. Razmara

Cyrus Razmara, Ph.D.
Laboratory Dire

Figure C-3.95

American Environmental Testing Laboratory Inc.
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ANALYTICAL RESULTS

Ordered By

Advanced Technology Laboratories
3275 Walnut Avenue
Signal Hill, CA 90755-5225

Telephone: (562)989-4045
Attn: Rachelle Arada
Page: **2**

Project ID: 1501681
Project Name: PO# SC09581

AETL Job Number	Submitted	Client
76919	05/13/2015	ATL

Method: SM5210B, Biochemical Oxygen Demand 5 days, @ 20C (Standard Methods)

QC Batch No: 051315-1

Our Lab I.D.			Method Blank	**76919.01**			
Client Sample I.D.				1501681-01			
Date Sampled				05/12/2015			
Date Prepared			05/13/2015	05/13/2015			
Preparation Method			SM5210B	SM5210B			
Date Analyzed			05/18/2015	05/18/2015			
Matrix			Aqueous	Aqueous			
Units			mg/L	mg/L			
Dilution Factor			1	1			
Analytes	**MDL**	**PQL**	**Results**	**Results**			
Biochemical Oxygen Demand (BOD)	5.0	5.0	ND	92.8			

QUALITY CONTROL REPORT

QC Batch No: 051315-1; Dup or Spiked Sample: 76883.01; LCS: Clean Water; LCS Prepared: 05/13/2015; LCS Analyzed: 05/18/2015; Units: mg/L

Analytes	SM Result	SM DUP Result	RPD %	SM RPD % Limit	LCS Concen	LCS Recov	LCS % REC	LCS/LCSD % Limit		
Biochemical Oxygen Demand (BOD)	ND	ND	<1	<15	198	159	80.3	80-120		

Figure C-3.96

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Data Qualifiers and Descriptors

Data Qualifier:

#:	Recovery is not within acceptable control limits.
*:	In the QC section, sample results have been taken directly from the ICP reading. No preparation factor has been applied.
B:	Analyte was present in the Method Blank.
D:	Result is from a diluted analysis.
E:	Result is beyond calibration limits and is estimated.
H:	Analysis was performed over the allowed holding time due to circumstances which were beyond laboratory control.
J:	Analyte was detected . However, the analyte concentration is an estimated value, which is between the Method Detection Limit (MDL) and the Practical Quantitation Limit (PQL).
M:	Matrix spike recovery is outside control limits due to matrix interference. Laboratory Control Sample recovery was acceptable.
MCL:	Maximum Contaminant Level
NS:	No Standard Available
S6:	Surrogate recovery is outside control limits due to matrix interference.
S8:	The analysis of the sample required a dilution such that the surrogate concentration was diluted below the method acceptance criteria.
X:	Results represent LCS and LCSD data.

Definition:

%Limi:	Percent acceptable limits.
%REC:	Percent recovery.
Con.L:	Acceptable Control Limits
Conce:	Added concentration to the sample.
LCS:	Laboratory Control Sample
MDL:	Method Detection Limit is a statistically derived number which is specific for each instrument, each method, and each compound. It indicates a distinctively detectable quantity with 99% probability.

Figure C-3.97

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Data Qualifiers and Descriptors

MS:	Matrix Spike
MS DU:	Matrix Spike Duplicate
ND:	Analyte was not detected in the sample at or above MDL.
PQL:	Practical Quantitation Limit or ML (Minimum Level as per RWQCB) is the minimum concentration that can be quantified with more than 99% confidence. Taking into account all aspects of the entire analytical instrumentation and practice.
Recov:	Recovered concentration in the sample.
RPD:	Relative Percent Difference

Figure C-3.98

ADVANCED TECHNOLOGY LABORATORIES

SUBCONTRACT ORDER

Work Order: 1501681 76919

SENDING LABORATORY:	**RECEIVING LABORATORY:**
Advanced Technology Laboratories	AETL
3275 Walnut Avenue	2834 North Naomi Street
Signal Hill, CA 90755	Burbank, CA 91504
Phone: 562.989.4045	Phone :(818) 845-8200
Fax: 562.989.6348	Fax: (818) 845-8840
Project Manager: Rachelle Arada (Rachelle@atlglobal.com)	PO#: SC09581- STANDARD TAT

IMPORTANT : Please include Work Order # and PO # in your invoice.

Analysis	Due	Expires	Sampled	Comments
ATL Lab#: 1501681-01 / M410-80		**Groundwater**	**05/12/15 12:20**	76919.01
405.1_5210B_SUB [Biochemical Oxygen Demand] 1-Poly Unpres - 1000mL	**05/20/15 17:00**	05/14/15 12:20		

Released By	Date	Received By	Date
	5/13/15 1056	Sargis P	5/13/15 1056
Sargis P	5/13/15 1315	Artin	05/13/15 1315

Figure C-3.99

ADVANCED TECHNOLOGY LABORATORIES

3275 Walnut Ave., Signal Hill, CA 90755
Tel: (562) 989-4045 • Fax: (562) 989-4040

CHAIN OF CUSTODY RECORD

Page 1 of 2

Instruction: Complete all shaded areas.

For Laboratory Use Only				ATL COC Ver: 20130715
Method of Transport	Sample Conditions Upon Receipt			
	Condition	Y	N	Condition	Y	N
☑ Client ☐ ATL	1. CHILLED	☐	☐	5. # OF SAMPLES MATCH COC	☐	☐
☐ FedEx ☐ OnTrac	2. HEADSPACE (VOA)	☐	☐	6. PRESERVED	☐	☐
☐ GSO	3. CONTAINER INTACT	☐	☐	7. COOLER TEMP, deg C:		
☐ Other:	4. SEALED	☐	☐			

CUSTOMER

Company: AMEC FOSTER WHEELER
Address: 6001 RICKENBACKER Rd.
Tel: 323-889-5300
City: LOS ANGELES State: CA Zip: 90040 Fax: 323-887-6706

SEND REPORT TO:
Attn: RON LOPEZ / Marty Hudson Email: RON.R.LOPEZ@AMEC.COM
Company: AMEC FOSTER WHEELER
Address: SAME
City: State: Zip:

SEND INVOICE TO: ☐ same as SEND REPORT TO
Attn: Email:
Company: AMEC FW
Address: SAME
City: State: Zip:

PROJECT SAMPLES

Project Name: MTA WES
Project No.: 4953-11-1423
Sampler: RON LOPEZ
Quote No:
PO #: CO2206204
Special Instructions/Comments: CONSTELLATION STATION GW

ITEM	Lab No.	Sample Description: Sample ID / Location	Date	Time
1	1501681-1	M410-80	5-12-15	12:20
2	1 "	M409-90	"	2:55
3				
4				
5				
6				
7				
8				
9				
10				

Encircle or Write Requested Analysis

ITEM	8260 / 624 (Volatiles)	8015(GRO)	8015(DRO) + ORO	8270(Semi-volatiles)	8081(Organochlorine Pesticides)	8082(PCBs)	6010 / 7000(Title 22 Metals)	~~TCLP~~ BORON	HARDNESS	O:1 & GREASE	1,4-DIOXANE	PERCHLORATE	TDS	pH	TURB: 0.1Y	HEX CR.	ANIONS	TSS
1	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
2	X	X	X	X			X											

Encircle Sample Matrix

ITEM	SOIL / SEDIMENT / SLUDGE	SOLIDS / WIPE / FILTER	WATER - DRINKING (GROUND)	WATER - STORM / WASTE	AQUEOUS / LAYERED - OIL
1					
2					

ITEM	TAT	Container #	Container Type: 1=Tube; 2=VOA; 3=Liter; 4=Pint; 5=Jar; 6=Tedlar; 7 = Canister	Container Material: 1=Glass; 2=Plastic; 3=Metal	Preservative: 1=HCl; 2=HNO3; 3=H2SO4; 4 = 4C; 5=Zn (Ac)2; 6=NaOH; 7=NA2S2O3	REMARKS
1	5		2 Pint		✓	
2	5	14	2 Pint			

QA/QC
☐ Routine
☐ Caltrans
☐ Legal
☐ RWQCB
☐ Level IV

TERMS

1. Sample receiving hours: 7:30 AM to 7:30 PM Monday - Friday; Saturday 8:00 AM to 12:00 PM.
2. Samples Submitted AFTER 3:00 PM, are considered received the following Business day at 8:00 AM.
3. The following turnaround time conditions apply:
   TAT = 0 : 300% Surcharge SAME BUSINESS DAY if received by 9:00 AM
   TAT = 1 : 100% Surcharge NEXT BUSINESS DAY (COB 5:00 PM)
   TAT = 2 : 50% Surcharge 2ND BUSINESS DAY (COB 5:00 PM)
   TAT = 3 : 30% Surcharge 3RD BUSINESS DAY (COB 5:00 PM)
   TAT = 4 : 20% Surcharge 4TH BUSINESS DAY (COB 5:00 PM)
   TAT = 5 : NO SURCHARGE 5th BUSINESS DAY (COB 5:00 PM)
4. Weekend, holiday, after-hours work - ask for quote.
5. Subcontract TAT is 10 - 15 business days. Projects requiring shorter TATs will incur a surcharge respective to the subcontract lab --- ask for quote.
6. Liquid and solid samples will be disposed of after 45 calendar days from receipt of samples; air samples will be disposed of after 14 calendar days after receipt of samples.
7. Electronic records maintained for five (5) years from report date.
8. Hard copy reports will be disposed of after 45 calendar days from report date.
9. Storage and Report Fees:
   - Liquid & solid samples: Complimentary storage for forty-five (45) calendar days from receipt of samples; $2/sample/month if extended storage or hold is requested.
   - Air samples: Complimentary storage for ten (10) calendar days from receipt of samples; $20/ sample/week if extended storage is requested.
   - Hard copy and regenerated reports/EDDs: $17.50 per hard copy report requested; $50.00 per regenerated/reformatted report; $35 per reprocessed EDD.
10. Rush TCLP/STLC samples: add 2 days to analysis TAT for extraction on procedure.
11. Unanalyzed samples will incur a disposal fee of $7 per sample.

As the authorized agent of the company above, I hereby purchase laboratory services from ATL as shown above and hereby guarantee payment as quoted.

Diego Scapillato
Submitter Print Name

Signature

CUSTODY

Relinquished by: (Signature and Printed Name)	Date:	Time:	Received by: (Signature and Printed Name)	Date:	Time:
RON LOPEZ	5-12-15	3:35	Diego Scapillato	5/12/15	3:35
Diego Scapillato	5/12/15	5:20		5/12/15	17:20

Figure C-3.100

ADVANCED ATECHNOLOGY LABORATORIES
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CHAIN OF CUSTODY RECORD

Page 2 of 2

Instruction: Complete all shaded areas.

For Laboratory Use Only — ATLCOC Ver: 20130715

Method of Transport	Sample Conditions Upon Receipt					
	Condition	Y	N	Condition	Y	N
☐ Client ☐ ATL	1. CHILLED	☐	☐	5. # OF SAMPLES MATCH COC	☐	☐
☐ FedEx ☐ OnTrac	2. HEADSPACE (VOA)	☐	☐	6. PRESERVED	☐	☐
☐ GSO	3. CONTAINER INTACT	☐	☐	7. COOLER TEMP, deg C:		
☐ Other:	4. SEALED	☐	☐			

CUSTOMER

Company: AMEC FOSTER WHEELER
Address: 6001 RICHELBACHER RD
City: LOS ANGELES State: CA Zip: 90040
Tel: 323-889-5300 Fax: 323-889-6700

SEND REPORT TO:
Attn: RON LOPEZ / MARTY HUDSON Email: RON.R.LOPEZ@AMEC.COM
Company: SAME AMEC FW
Address: SAME
City: State: Zip:

SEND INVOICE TO: ☐ same as SEND REPORT TO
Attn: Email:
Company: AMEC FW
Address: SAME
City: State: Zip:

PROJECT SAMPLES

Project Name: MTA WES
Project No.: 4953-11-1423
Sampler: RON LOPEZ
Quote No:
PO #: CO22062 04
Special Instructions/Comments: CONSTELLATION STATION GW

ITEM	Lab No.	Sample Description: Sample ID / Location	Date	Time
1	15050[illegible]-1	M410-80	5-12-15	12:20
2	[illegible]-2	M409-90	5-12-15	2:55
3				
4				
5				
6				
7				
8				
9				
10				

Encircle or Write Requested Analysis: 8260 / 624 (Volatiles); 8015(GRO); 8015(DRO); 8270(Semi-volatiles); 8081(Organochlorine Pesticides); 8082(PCBs); 6010 / 7000(Title 22 Metals); ~~Toss~~ BOD; SETTLEABLE SOLIDS; CYANIDE; SULFIDE; H_2S; METHANOL/ETHANOL; METHANE

Encircle Sample Matrix: SOIL / SEDIMENT / SLUDGE; SOLIDS / WIPE / FILTER; WATER, DRINKING / GROUND; WATER, STORM / WASTE; AQUEOUS / LAYERED - OIL

ITEM	TAT	Container #	Container Type: 1=Tube; 2=VOA; 3=Liter; 4=Pint; 5=Jar; 6=Tedlar; 7=Canister	Container Material: 1=Glass; 2=Plastic; 3=Metal	Preservative: 1=HCl; 2=HNO3; 3=H2SO4; 4=4C; 5=Zn ((Ac)2; 6=NaOH; 7=NA2S2O3	REMARKS
1	5					
2	5	14	2	3	4	
3						
4						
5						
6						
7						
8						
9						
10						

QA/QC: ☐ Routine ☐ Caltrans ☐ Legal ☐ RWQCB ☐ Level IV

TERMS

1. Sample receiving hours: 7:30 AM to 7:30 PM Monday - Friday; Saturday 8:00 AM to 12:00 PM.
2. Samples Submitted AFTER 3:00 PM, are considered received the following Business day at 8:00 AM.
3. The following turnaround time conditions apply:
   - TAT = 0 : 300% Surcharge SAME BUSINESS DAY if received by 9:00 AM
   - TAT = 1 : 100% Surcharge NEXT BUSINESS DAY (COB 5:00 PM)
   - TAT = 2 : 50% Surcharge 2ND BUSINESS DAY (COB 5:00 PM)
   - TAT = 3 : 30% Surcharge 3RD BUSINESS DAY (COB 5:00 PM)
   - TAT = 4 : 20% Surcharge 4TH BUSINESS DAY (COB 5:00 PM)
   - TAT = 5 : NO SURCHARGE 5th BUSINESS DAY (COB 5:00 PM)
4. Weekend, holiday, after-hours work - ask for quote.
5. Subcontract TAT is 10 - 15 business days. Projects requiring shorter TATs will incur a surcharge respective to the subcontract lab --- ask for quote.
6. Liquid and solid samples will be disposed of after 45 calendar days from receipt of samples; air samples will be disposed of after 14 calendar days after receipt of samples.
7. Electronic records maintained for five (5) years from report date.
8. Hard copy reports will be disposed of after 45 calendar days from report date.
9. Storage and Report Fees:
   - Liquid & solid samples: Complimentary storage for forty-five (45) calendar days from receipt of samples; $2/sample/month if extended storage or hold is requested.
   - Air samples: Complimentary storage for ten (10) calendar days from receipt of samples; $20/ sample/week if extended storage is requested.
   - Hard copy and regenerated reports/EDDs: $17.50 per hard copy report requested; $50.00 per regenerated/reforma? ed report; $35 per reprocessed EDD.
10. Rush TCLP/STLC samples: add 2 days to analysis TAT for extraction on procedure.
11. Unanalyzed samples will incur a disposal fee of $7 per sample.

As the authorized agent of the company above, I hereby purchase laboratory services from ATL as shown above and hereby guarantee payment as quoted.

Diego Scapillato — Submitter Print Name

Signature

CUSTODY

	Relinquished by: (Signature and Printed Name)	Date:	Time:	Received by: (Signature and Printed Name)	Date:	Time:
1	RON LOPEZ	5-12-15	3:35	Diego Scapillato	5/12/15	3:35
2	Diego Scapillato	5/12/15	5:20	[illegible]	5/13/15	1720
3						

Figure C-3.101

ADVANCED TECHNOLOGY LABORATORIES

20 May 2015

Ron Lopez
Amec Foster Wheeler - LA
6001 Rickenbacker Road
Los Angeles, CA 90040
Tel: (323) 889-5300
Fax:(323) 721-6700

ELAP No.: 1838
CSDLAC No.: 10196
ORELAP No.: CA300003
TCEQ No. : T104704502

RE: ATL Work Order Number : 1501682
Client Reference : MTA Westside, 4953-11-1423

Enclosed are the results for sample(s) received on May, 12 2015 by Advanced Technology Laboratories. The sample(s) are tested for the parameters as indicated on the enclosed chain of custody in accordance with applicable laboratory certifications. The laboratory results contained in this report specifically pertains to the sample(s) submitted.

Thank you for the opportunity to serve the needs of your company. If you have any questions, please feel free to contact me or your Project Manager.

Sincerely,

Eddie Rodriguez
Laboratory Director

Certificate of Analysis

Amec Foster Wheeler - LA	Project Number : MTA Westside, 4953-11-1423
6001 Rickenbacker Road	Report To : Ron Lopez
Los Angeles , CA 90040	Reported : 05/20/2015

SUMMARY OF SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
M409-90'	1501682-01	Water	5/12/15 14:55	5/12/15 17:20
M410 -80'	1501682-02	Water	5/12/15 12:20	5/12/15 17:20

CASE NARRATIVE

The air samples for Methane, H2S (15/16) and Fixed Gases (ASTM D1946) were subcontracted to Air Technology Laboratories. Results to follow in an addendum report.

Client Sample ID: M409-90'
Lab ID: 1501682-01

Dissolved Gases in Water — **Analyst: MFR**

Analyte	Result (ug/L)	PQL (ug/L)	MDL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Methane	**600**	5.0	3.7	5	B5E0426	05/18/2015	05/18/15 12:26	

Sulfide, Total by SM 4500-S=D — **Analyst: LA**

Analyte	Result (mg/L)	PQL (mg/L)	MDL (mg/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Sulfide, Total	**0.041**	0.010	0.004	1	B5E0520	05/19/2015	05/19/15 18:51	

Client Sample ID: M410 -80'
Lab ID: 1501682-02

Dissolved Gases in Water — **Analyst: MFR**

Analyte	Result (ug/L)	PQL (ug/L)	MDL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Methane	**400**	5.0	3.7	5	B5E0426	05/18/2015	05/18/15 13:43	

Sulfide, Total by SM 4500-S=D — **Analyst: LA**

Analyte	Result (mg/L)	PQL (mg/L)	MDL (mg/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Sulfide, Total	**82**	4.0	1.8	400	B5E0520	05/19/2015	05/19/15 18:51	

Certificate of Analysis

Amec Foster Wheeler - LA	Project Number : MTA Westside, 4953-11-1423
6001 Rickenbacker Road	Report To : Ron Lopez
Los Angeles , CA 90040	Reported : 05/20/2015

QUALITY CONTROL SECTION

Dissolved Gases in Water - Quality Control

Analyte	Result (ug/L)	PQL (ug/L)	Spike Level	Source Result	% Rec	% Rec Limits	RPD	RPD Limit	Notes
Batch B5E0426 - No_Prep_RSK_W									
Blank (B5E0426-BLK1)					Prepared: 5/18/2015 Analyzed: 5/18/2015				
Methane	ND	1.0			NR				
LCS (B5E0426-BS1)					Prepared: 5/18/2015 Analyzed: 5/18/2015				
Methane	33.9200	1.0	48.1000		70.5	70 - 130			
LCS Dup (B5E0426-BSD1)					Prepared: 5/18/2015 Analyzed: 5/18/2015				
Methane	33.9200	1.0	48.1000		70.5	70 - 130	0.00	20	
Duplicate (B5E0426-DUP1)		**Source: 1501682-02**			Prepared: 5/18/2015 Analyzed: 5/18/2015				
Methane	479.750	5.0		400.100	NR		18.1	20	

Certificate of Analysis

Amec Foster Wheeler - LA	Project Number : MTA Westside, 4953-11-1423
6001 Rickenbacker Road	Report To : Ron Lopez
Los Angeles , CA 90040	Reported : 05/20/2015

Sulfide, Total by SM 4500-S=D - Quality Control

Analyte	Result (mg/L)	PQL (mg/L)	Spike Level	Source Result	% Rec	% Rec Limits	RPD	RPD Limit	Notes
Batch B5E0520 - Prep_WC3_W									
Blank (B5E0520-BLK1)					Prepared: 5/19/2015 Analyzed: 5/19/2015				
Sulfide, Total	ND	0.010			NR				
LCS (B5E0520-BS1)					Prepared: 5/19/2015 Analyzed: 5/19/2015				
Sulfide, Total	0.107700	0.010	0.100000		108	80 - 120			
Matrix Spike (B5E0520-MS1)		**Source: 1501682-01**			Prepared: 5/19/2015 Analyzed: 5/19/2015				
Sulfide, Total	0.142100	0.010	0.100000	0.0412	101	70 - 120			
Matrix Spike Dup (B5E0520-MSD1)		**Source: 1501682-01**			Prepared: 5/19/2015 Analyzed: 5/19/2015				
Sulfide, Total	0.142000	0.010	0.100000	0.0412	101	70 - 120	0.0704	20	

Certificate of Analysis

Amec Foster Wheeler - LA	Project Number : MTA Westside, 4953-11-1423
6001 Rickenbacker Road	Report To : Ron Lopez
Los Angeles , CA 90040	Reported : 05/20/2015

Notes and Definitions

ND	Analyte is not detected at or above the Practical Quantitation Limit (PQL). When client requests quantitation against MDL, analyte is not detected at or above the Method Detection Limit (MDL)
PQL	Practical Quantitation Limit
MDL	Method Detection Limit
NR	Not Reported
RPD	Relative Percent Difference
CA2	CA-ELAP (CDPH)
OR1	OR-NELAP (OSPHL)
TX1	TX-NELAP (TCEQ)

Notes:
(1) The reported MDL and PQL are based on prep ratio variation and analytical dilution.
(2) The suffix [2C] of specific analytes signifies that the reported result is taken from the instrument's second column.
(3) Results are wet unless otherwise specified.

ADVANCED TECHNOLOGY LABORATORIES

3275 Walnut Ave., Signal Hill, CA 90755
Tel: (562) 989-4045 • Fax: (562) 989-4040

CHAIN OF CUSTODY RECORD

Page ____ of _____

Instruction: Complete all shaded areas.

For Laboratory Use Only — ATLCOC Ver: 20130715

Method of Transport		Condition	Y	N	Condition	Y	N
☑ Client	☐ ATL	1. CHILLED	☑	☐	5. # OF SAMPLES MATCH COC	☑	☐
☐ FedEx	☐ OnTrac	2. HEADSPACE (VOA)	☐	☐	6. PRESERVED	☑	☑
☐ GSO		3. CONTAINER INTACT	☑	☐	7. COOLER TEMP, deg C: 5.7		
☐ Other: ________		4. SEALED	☐	☑			

CUSTOMER

Company: Amec Foster Wheeler
Address: 6001 Rickenbaker Rd
City: Los Angeles State: CA Zip: 90040
Tel: 323 889 5300 Fax: 323 889 6700

SEND REPORT TO:
Attn: Ron Lopez Email: Ron.R.LOPEZ@AMEC.COM
Company: Amec Foster Wheeler
Address: Same
City: State: Zip:

SEND INVOICE TO: ☐ same as SEND REPORT TO
Attn: Email:
Company: Amec
Address: Same
City: State: Zip:

PROJECT SAMPLES

Project Name: MTA Westside
Project No.: 4953-11-1423
Sampler: Diego Scapillato / Ron Lopez
Quote No.:
PO #:
Special Instructions/Comments: * fixed gases CO2, O2, Nitrogen

ITEM	Lab No.	Sample ID / Location	Date	Time	8260 / 624 (Volatiles)	8015(GRO)	8015(DRO)	8270(Semi-volatiles)	8081(Organochlorine Pesticides)	8082(PCBs)	6010 / 7000(Title 22 Metals)	TO-15	EPA RSK-175	SM 4500-S=D	ASTM D1946 Methane	EPA 15/16	ASTM D1946*	SOIL / SEDIMENT / SLUDGE	SOLIDS / WIPE/ FILTER	WATER - DRINKING / GROUND	WATER - STORM / WASTE	AQUEOUS / LAYERED - OIL	AIR	TAT	#	Type	Material	Preservative	REMARKS
1	1501682-1	M409 - 90'	5/12/15	2:55									X	X						X					1	1	2		
2	2	M410 - 80'	5/12/15	12:20									X	X						X					1	1	2		
3	3	M 409 probe @ 70'	5/12/15	1:55											X	X	X						X		2	6	2		
4	4	M 409 standpipe @ 85'	5/12/15	2:08											X	X	X						X		2	6	2		
5	5	M 410 probe @ 60'	5/12/15	11:00											X	X	X						X		2	6	2		
6																													
7																													
8																													
9																													
10																													

Container Type: 1=Tube; 2=VOA; 3=Liter; 4=Pint; 5=Jar; 6=Tedlar; 7 = Canister
Material: 1=Glass; 2=Plastic; 3=Metal
Preservative: 1=HCl; 2=HNO3; 3=H2SO4; 4 = 4C; 5=Zn(Ac)2; 6=NaOH; 7=NA2S2O3

QA/QC: ☐ Routine ☐ Caltrans ☐ Legal ☐ RWQCB ☐ Level IV

TERMS

1. Sample receiving hours: 7:30 AM to 7:30 PM Monday - Friday; Saturday 8:00 AM to 12:00 PM.
2. Samples Submitted AFTER 3:00 PM, are considered received the following Business day at 8:00 AM.
3. The following turnaround time conditions apply:
   - TAT = 0 : 300% Surcharge SAME BUSINESS DAY if received by 9:00 AM
   - TAT = 1 : 100% Surcharge NEXT BUSINESS DAY (COB 5:00 PM)
   - TAT = 2 : 50% Surcharge 2ND BUSINESS DAY (COB 5:00 PM)
   - TAT = 3 : 30% Surcharge 3RD BUSINESS DAY (COB 5:00 PM)
   - TAT = 4 : 20% Surcharge 4TH BUSINESS DAY (COB 5:00 PM)
   - TAT = 5 : NO SURCHARGE 5th BUSINESS DAY (COB 5:00 PM)
4. Weekend, holiday, after-hours work - ask for quote.
5. Subcontract TAT is 10 - 15 Business days. Projects requiring shorter TATs will incur a surcharge respective to the subcontract lab --- ask for quote.
6. Liquid and solid samples will be disposed of after 45 calendar days from receipt of samples; air samples will be disposed of after 14 calendar days after receipt of samples.
7. Electronic records maintained for five (5) years from report date.
8. Hard copy reports will be disposed of after 45 calendar days from report date.
9. Storage and Report Fees:
   - Liquid & solid samples: Complimentary storage for forty-five (45) calendar days from receipt of samples; $2/sample/month if extended storage or hold is requested.
   - Air samples: Complimentary storage for ten (10) calendar days from receipt of samples; $20/ sample/week if extended storage is requested.
   - Hard copy and regenerated reports/EDDs: $17.50 per hard copy report requested; $50.00 per regenerated/reforma? ed report; $35 per reprocessed EDD.
10. Rush TCLP/STLC samples: add 2 days to analysis TAT for extraction on procedure.
11. Unanalyzed samples will incur a disposal fee of $7 per sample.

As the authorized agent of the company above, I hereby purchase laboratory services from ATL as shown above and hereby guarantee payment as quoted.

Diego Scapillato
Submitter Print Name Signature

CUSTODY

Relinquished by: (Signature and Printed Name)	Date:	Time:	Received by: (Signature and Printed Name)	Date:	Time:
Diego Scapillato	5/12/15	5:20	F P Dunn	5/12/15	1720

Figure C-3.107

May 29, 2015

Ron Lopez
Amec Foster Wheeler
6001 Rickenbacker Road
Los Angeles, CA 90040
Tel: (323) 889-5300
Fax:(323) 721-6700

ELAP No.: 1838
CSDLAC No.: 10196
ORELAP No.: CA300003
TCEQ No. : T104704502

Re: ATL Work Order Number : 1501682

Client Reference : MTA Westside, 4953-11-1423

Enclosed are the results for sample(s) received on May 12, 2015 by Advanced Technology Laboratories. The sample(s) are tested for the parameters as indicated on the enclosed chain of custody in accordance with applicable laboratory certifications. The laboratory results contained in this report specifically pertains to the sample(s) submitted.

Thank you for the opportunity to serve the needs of your company. If you have any questions, please feel free to contact me or your Project Manager.

Sincerely,

Eddie Rodriguez

Laboratory Director

Figure C-3.108

Certificate of Analysis

Amec Foster Wheeler		Project Number :	MTA Westside, 4953-11-1423
6001 Rickenbacker Road		Report To :	Ron Lopez
Los Angeles , CA 90040		Reported :	05/29/2015

SUMMARY OF SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
M409-90'	1501682-01	Water	5/12/15 14:55	5/12/15 17:20
M410 -80'	1501682-02	Water	5/12/15 12:20	5/12/15 17:20
M409 probe @70'	1501682-03	Air	5/12/15 13:55	5/12/15 17:20
M409 stand pipe@ 85'	1501682-04	Air	5/12/15 14:08	5/12/15 17:20
M410 probe @ 60'	1501682-05	Air	5/12/15 11:00	5/12/15 17:20

CASE NARRATIVE

The air samples for Methane, H2S (15/16) and Fixed Gases (ASTM D1946) were subcontracted to Air Technology Laboratories.

Certificate of Analysis

Amec Foster Wheeler	Project Number : MTA Westside, 4953-11-1423
6001 Rickenbacker Road	Report To : Ron Lopez
Los Angeles , CA 90040	Reported : 05/29/2015

Client Sample ID M409-90'

Lab ID: 1501682-01

Dissolved Gases in Water — **Analyst: MFR**

Analyte	Result (ug/L)	PQL (ug/L)	MDL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Methane	**600**	5.0	3.7	5	B5E0426	05/18/2015	05/18/15 12:26	

Sulfide, Total by SM 4500-S=D — **Analyst: LA**

Analyte	Result (mg/L)	PQL (mg/L)	MDL (mg/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Sulfide, Total	**0.027**	0.010	0.004	1	B5E0520	05/19/2015	05/19/15 18:51	
Hydrogen sulfide	**0.029**	0.011	0.005	1	B5E0520	05/19/2015	05/19/15 18:51	

Certificate of Analysis

Amec Foster Wheeler	Project Number : MTA Westside, 4953-11-1423
6001 Rickenbacker Road	Report To : Ron Lopez
Los Angeles , CA 90040	Reported : 05/29/2015

Client Sample ID M410 -80'

Lab ID: 1501682-02

Dissolved Gases in Water — **Analyst: MFR**

Analyte	Result (ug/L)	PQL (ug/L)	MDL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Methane	**400**	5.0	3.7	5	B5E0426	05/18/2015	05/18/15 13:43	

Sulfide, Total by SM 4500-S=D — **Analyst: LA**

Analyte	Result (mg/L)	PQL (mg/L)	MDL (mg/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Sulfide, Total	**82**	4.0	1.8	400	B5E0520	05/19/2015	05/19/15 18:51	
Hydrogen sulfide	**87**	4.4	1.9	400	B5E0520	05/19/2015	05/19/15 18:51	

Certificate of Analysis

Amec Foster Wheeler	Project Number : MTA Westside, 4953-11-1423
6001 Rickenbacker Road	Report To : Ron Lopez
Los Angeles , CA 90040	Reported : 05/29/2015

QUALITY CONTROL SECTION

Dissolved Gases in Water - Quality Control

Analyte	Result (ug/L)	PQL (ug/L)	Spike Level	Source Result	% Rec	% Rec Limits	RPD	RPD Limit	Notes
Batch B5E0426 - No_Prep_RSK_W									
Blank (B5E0426-BLK1)				Prepared: 5/18/2015 Analyzed: 5/18/2015					
Methane	ND	1.0			NR				
LCS (B5E0426-BS1)				Prepared: 5/18/2015 Analyzed: 5/18/2015					
Methane	33.9200	1.0	48.1000		70.5	70 - 130			
LCS Dup (B5E0426-BSD1)				Prepared: 5/18/2015 Analyzed: 5/18/2015					
Methane	33.9200	1.0	48.1000		70.5	70 - 130	0.00	20	
Duplicate (B5E0426-DUP1)		**Source: 1501682-02**		Prepared: 5/18/2015 Analyzed: 5/18/2015					
Methane	479.750	5.0		400.100	NR		18.1	20	

Certificate of Analysis

Amec Foster Wheeler	Project Number : MTA Westside, 4953-11-1423
6001 Rickenbacker Road	Report To : Ron Lopez
Los Angeles , CA 90040	Reported : 05/29/2015

Sulfide, Total by SM 4500-S=D - Quality Control

Analyte	Result (mg/L)	PQL (mg/L)	Spike Level	Source Result	% Rec	% Rec Limits	RPD	RPD Limit	Notes
Batch B5E0520 - Prep_WC3_W									
Blank (B5E0520-BLK1)					Prepared: 5/19/2015 Analyzed: 5/19/2015				
Sulfide, Total	ND	0.010			NR				
Hydrogen sulfide	ND	0.011			NR				
LCS (B5E0520-BS1)					Prepared: 5/19/2015 Analyzed: 5/19/2015				
Sulfide, Total	0.107700	0.010	0.100000		108	80 - 120			
Hydrogen sulfide	0.114468	0.011	0.106284		108	80 - 120			
Matrix Spike (B5E0520-MS1)		**Source: 1501682-01**			Prepared: 5/19/2015 Analyzed: 5/19/2015				
Sulfide, Total	0.142100	0.010	0.100000	0.0272	115	70 - 120			
Hydrogen sulfide	0.151030	0.011	0.106284	0.028909	115	70 - 120			
Matrix Spike Dup (B5E0520-MSD1)		**Source: 1501682-01**			Prepared: 5/19/2015 Analyzed: 5/19/2015				
Sulfide, Total	0.142000	0.010	0.100000	0.0272	115	70 - 120	0.0704	20	
Hydrogen sulfide	0.150923	0.011	0.106284	0.028909	115	70 - 120	0.0709	20	

Certificate of Analysis

Amec Foster Wheeler		Project Number :	MTA Westside, 4953-11-1423
6001 Rickenbacker Road		Report To :	Ron Lopez
Los Angeles , CA 90040		Reported :	05/29/2015

Notes and Definitions

ND	Analyte is not detected at or above the Practical Quantitation Limit (PQL). When client requests quantitation against MDL, analyte is not detected at or above the Method Detection Limit (MDL)
PQL	Practical Quantitation Limit
MDL	Method Detection Limit
NR	Not Reported
RPD	Relative Percent Difference
CA2	CA-ELAP (CDPH)
OR1	OR-NELAP (OSPHL)
TX1	TX-NELAP (TCEQ)

Notes:
(1) The reported MDL and PQL are based on prep ratio variation and analytical dilution.
(2) The suffix [2C] of specific analytes signifies that the reported result is taken from the instrument's second column.
(3) Results are wet unless otherwise specified.

Air TECHNOLOGY Laboratories, Inc.

May 28, 2015

ADE-1461
EPA Methods TO-3, TO14A,TO15 SIM & Scan, ASTM D1946

LA Cert 04140
EPA Methods TO3, TO14A, TO15, 25C/3C, RSK-175

TX Cert T104704450-09-TX
EPA Methods TO14A, TO15

UT Cert CA0133332014-1
EPA Methods TO3, TO14A, TO15, RSK-175

Advanced Technology Laboratories
ATTN: Rachelle Arada
3275 Walnut Ave.
Signal Hill, CA 90755

LABORATORY TEST RESULTS

Project Reference: 1501682
Lab Number: G051303-01/03

Enclosed are results for sample(s) received 5/13/15 by Air Technology Laboratories. Samples were received intact. Analyses were performed according to specifications on the chain of custody provided with the sample(s).

Report Narrative:

- Unless otherwise noted in the report, sample analyses were performed within method performance criteria and meet all requirements of the NELAC Standards.
- The enclosed results relate only to the sample(s).

ATL appreciates the opportunity to provide testing services to your company. If you have any questions regarding these results, please call me at (626) 964-4032.

Sincerely,

Mark Johnson
Operations Manager
MJohnson@AirTechLabs.com

Enclosures

Note: The cover letter is an integral part of this analytical report.

Client: Advanced Technology Laboratories
Attn: Rachelle Arada
Project Name: NA
Project No.: 1501682
Date Received: 05/13/15
Matrix: Air
Reporting Units: % v/v

ASTM D1946

Lab No.:	G051303-01		G051303-02		G051303-03			
Client Sample I.D.:	1501682-03 / M409 probe @70'		1501682-04 / M409 stand pipe @85'		1501682-05 / M410 probe @60'			
Date/Time Sampled:	5/12/15 13:55		5/12/15 14:08		5/12/15 11:00			
Date/Time Analyzed:	5/14/15 12:47		5/14/15 12:17		5/14/15 12:31			
QC Batch No.:	150514GC8A1		150514GC8A1		150514GC8A1			
Analyst Initials:	AS		AS		AS			
Dilution Factor:	1.0		1.0		1.0			
ANALYTE	Result % v/v	RL % v/v	Result % v/v	RL % v/v	Result % v/v	RL % v/v		
Carbon Dioxide	13	0.010	7.4	0.010	17	0.010		
Oxygen/Argon	3.7	0.50	4.1	0.50	2.2	0.50		
Nitrogen	83	1.0	79	1.0	76	1.0		
Methane	0.21	0.0010	8.9	0.0010	4.4	0.0010		

Results normalized including non-methane hydrocarbons
ND = Not Detected (below RL)
RL = Reporting Limit

Reviewed/Approved By: _____ Date 5-28-15
Mark Johnson
Operations Manager

The cover letter is an integral part of this analytical report

QC Batch No.: 150514GC8A1
Matrix: Air
Units: % v/v

QC for ASTM D1946

Lab No.:	Method Blank		LCS		LCSD			
Date/Time Analyzed:	5/14/15 11:31		5/14/15 9:51		5/14/15 10:06			
Analyst Initials:	AS		AS		AS			
Datafile:	14may010		14may003		14may004			
Dilution Factor:	1.0		1.0		1.0			
ANALYTE	**Results**	**RL**	**% Rec.**	**Criteria**	**% Rec.**	**Criteria**	**%RPD**	**Criteria**
Carbon Dioxide	ND	0.010	91	70-130%	79	70-130%	13.4	<30
Oxygen/Argon	ND	0.50	101	70-130%	88	70-130%	13.8	<30
Nitrogen	ND	1.0	101	70-130%	88	70-130%	13.6	<30
Methane	ND	0.0010	103	70-130%	103	70-130%	0.1	<30

ND = Not Detected (Below RL)

Reviewed/Approved By: _____ Date: 5-27-15

Mark J. Johnson
Operations Manager

The cover letter is an integral part of this analytical report.

Client: Advanced Technology Laboratories
Attn: Rachelle Arada
Project Name: NA
Project No.: 1501682
Date Received: 05/13/15
Matrix: Air
Reporting Units: ppmv

EPA 15/16

Lab No.:	G051303-01		G051303-02		G051303-03			
Client Sample I.D.:	1501682-03 / M409 probe @70'		1501682-04 / M409 stand pipe @85'		1501682-05 / M410 probe @60'			
Date/Time Sampled:	5/12/15 13:55		5/12/15 14:08		5/12/15 11:00			
Date/Time Analyzed:	5/14/15 10:02		5/14/15 10:14		5/14/15 10:25			
QC Batch No.:	150514GC3A1		150514GC3A1		150514GC3A1			
Analyst Initials:	AS		AS		AS			
Dilution Factor:	1.0		1.0		1.0			
ANALYTE	Result ppmv	RL ppmv	Result ppmv	RL ppmv	Result ppmv	RL ppmv		
Hydrogen Sulfide	ND	0.20	ND	0.20	ND	0.20		

ND = Not Detected (below RL)
RL = Reporting Limit

Reviewed/Approved By: _____ Date 5-28-15

Mark Johnson
Operations Manager

The cover letter is an integral part of this analytical report

Figure C-3.118

QC Batch No.: 150514GC3A1
Matrix: Air
Units: ppmv

QC for Sulfur Compounds by EPA 15/16

Lab No.:	Method Blank		LCS		LCSD			
Date/Time Analyzed:	5/14/15 9:49		5/14/15 9:20		5/14/15 9:31			
Analyst Initials:	AS		AS		AS			
Datafile:	14may003		14may001		14may002			
Dilution Factor:	1.0		1.0		1.0			
ANALYTE	Results	RL	% Rec.	Criteria	% Rec.	Criteria	%RPD	Criteria
Hydrogen Sulfide	ND	0.20	92	70-130%	91	70-130%	1.2	<30

ND = Not Detected (Below RL)
RL = Reporting Limit

Reviewed/Approved By: _____ Date: 5-28-15
Mark J. Johnson
Operations Manager

The cover letter is an integral part of this analytical report.

ADVANCED TECHNOLOGY LABORATORIES

SUBCONTRACT ORDER

Work Order: 1501682

C051303-01/03

SENDING LABORATORY:	RECEIVING LABORATORY:
Advanced Technology Laboratories	Air Technology Laboratories, Inc.
3275 Walnut Avenue	18501 E. Gale Ave, Suite 130
Signal Hill, CA 90755	City of Industry, CA 91748
Phone: 562.989.4045	Phone :(626) 964-4032
Fax: 562.989.6348	Fax: (626) 964-5832
Project Manager: Rachelle Arada (Rachelle@atlglobal.com)	PO#: SC09583-STANDARD TAT

IMPORTANT : Please include Work Order # and PO # in your invoice.

Analysis	Due	Expires	Sampled	Comments
ATL Lab#: 1501682-03	**/ M409 probe @70'**	**Air**	**05/12/15 13:55**	**D1946- please report Carbon Dioxide, Oxygen, Nitrogen and Methane**
D1946_T [Fixed Gases]	**05/27/15 17:00**	05/15/15 13:55		
15_16_H2S_T_SUB [Hydrogen Sulfide] 2-Tedlar Bag	**05/27/15 17:00**	05/15/15 13:55		
ATL Lab#: 1501682-04	**/ M409 stand pipe @85'**	**Air**	**05/12/15 14:08**	
D1946_T [Fixed Gases]	**05/27/15 17:00**	05/15/15 14:08		
15_16_H2S_T_SUB [Hydrogen Sulfide] 2-Tedlar Bag	**05/27/15 17:00**	05/15/15 14:08		
ATL Lab#: 1501682-05	**/ M410 probe @60'**	**Air**	**05/12/15 11:00**	
D1946_T [Fixed Gases]	**05/27/15 17:00**	05/15/15 11:00		
15_16_H2S_T_SUB [Hydrogen Sulfide] 2-Tedlar Bag	**05/27/15 17:00**	05/15/15 11:00		

Released By	Date	Received By	Date	
	5/13/15		5-13-15	9:00
	5-13-15	11:06	5/13/15	1106

Figure C-3.120

ADVANCED TECHNOLOGY LABORATORIES

3275 Walnut Ave., Signal Hill, CA 90755
Tel: (562) 989-4045 • Fax: (562) 989-4040

CHAIN OF CUSTODY RECORD

Page ____ of ____

Instruction: Complete all shaded areas.

For Laboratory Use Only				ATLCOC Ver: 20130715
Method of Transport	Sample Conditions Upon Receipt			
	Condition	Y	N	Condition	Y	N
☑ Client ☐ ATL ☐ FedEx ☐ OnTrac ☐ GSO ☐ Other:	1. CHILLED	☑	☐	5. # OF SAMPLES MATCH COC	☑	☐
	2. HEADSPACE (VOA)	☐	☐	6. PRESERVED	☑	☑
	3. CONTAINER INTACT	☑	☐	7. COOLER TEMP, deg C:	5.7	
	4. SEALED	☐	☑			

CUSTOMER

Company: Amec Foster Wheeler
Address: 6001 Rickenbaker Rd
City: Los Angeles State: CA Zip: 90040
Tel: 323 889 5300 Fax: 323 889 6700

SEND REPORT TO:
Attn: Ron Lopez Email: RON.R.LOPEZ@AMEC.COM
Company: Amec Foster Wheeler
Address: Same
City: State: Zip:

SEND INVOICE TO: ☐ same as SEND REPORT TO
Attn: Email:
Company: Amec
Address: Same
City: State: Zip:

PROJECT SAMPLES

Project Name: MTA Westside
Project No.: 4953-11-1423
Sampler: Diego Scapillato / Ron Lopez
Quote No:
PO #:
Special Instructions/Comments: * Fixed gases O_2, O_2, Nitrogen

ITEM	Lab No.	Sample Description: Sample ID / Location	Date	Time
1	1701662 - 1	M409 - 90'	5/12/15	2:55
2	2	M410 - 80'	5/12/15	12:20
3	3	M 409 probe @ 70'	5/12/15	1:55
4	4	M 409 standpipe @ 85'	5/12/15	2:08
5	5	M 410 probe @ 60'	5/12/15	11:00
6				
7				
8				
9				
10				

Encircle or Write Requested Analysis: 8260 / 624 (Volatiles); 8015(GRO); 8015(DRO); 8270(Semi-volatiles); 8081(Organochlorine Pesticides); 8082(PCBs); 6010 / 7000(Title 22 Metals); TO-15; EPA RSK-175; SM 4500-S=D; ASTM D1946 Methane; EPA 15/16; ASTM D1946*; TAT

ITEM	EPA RSK-175	SM 4500-S=D	ASTM D1946 Methane	EPA 15/16	ASTM D1946*
1	X	X			
2	X	X			
3			X	X	X
4			X	X	X
5			X	X	X

Encircle Sample Matrix: SOIL / SEDIMENT / SLUDGE; SOLIDS / WIPE / FILTER; WATER - DRINKING / GROUND; WATER - STORM / WASTE; AQUEOUS / LAYERED - OIL; WAS AIR

ITEM	WATER - DRINKING / GROUND	WAS AIR
1	X	
2	X	
3		X
4		X
5		X

Container: # | Type: 1=Tube; 2=VOA; 3=Liter; 4=Pint; 5=Jar; 6=Tedlar; 7=Canister | Material: 1=Glass; 2=Plastic; 3=Metal | Preservative: 1=HCl; 2=HNO3; 3=H2SO4; 4=4C; 5=Zn (Ac)2; 6=NaOH; 7=NA2S2O3

ITEM	#	Type	Material	Preservative
1	1	1	2	
2	1	1	2	
3	2	6	2	
4	2	6	2	
5	2	6	2	

QA/QC: ☐ Routine ☐ Caltrans ☐ Legal ☐ RWQCB ☐ Level IV

REMARKS

TERMS

1. Sample receiving hours: 7:30 AM to 7:30 PM Monday - Friday; Saturday 8:00 AM to 12:00 PM.
2. Samples Submitted AFTER 3:00 PM, are considered received the following Business day at 8:00 AM.
3. The following turnaround time conditions apply:
   - TAT = 0 : 300% Surcharge SAME BUSINESS DAY if received by 9:00 AM
   - TAT = 1 : 100% Surcharge NEXT BUSINESS DAY (COB 5:00 PM)
   - TAT = 2 : 50% Surcharge 2ND BUSINESS DAY (COB 5:00 PM)
   - TAT = 3 : 30% Surcharge 3RD BUSINESS DAY (COB 5:00 PM)
   - TAT = 4 : 20% Surcharge 4TH BUSINESS DAY (COB 5:00 PM)
   - TAT = 5 : NO SURCHARGE 5th BUSINESS DAY (COB 5:00 PM)
4. Weekend, holiday, after-hours work - ask for quote.
5. Subcontract TAT is 10 - 15 business days. Projects requiring shorter TATs will incur a surcharge respective to the subcontract lab --- ask for quote.
6. Liquid and solid samples will be disposed of after 45 calendar days from receipt of samples; air samples will be disposed of after 14 calendar days after receipt of samples.
7. Electronic records maintained for five (5) years from report date.
8. Hard copy reports will be disposed of after 45 calendar days from report date.
9. Storage and Report Fees:
   - Liquid & solid samples: Complimentary storage for forty-five (45) calendar days from receipt of samples; $2/sample/month if extended storage or hold is requested.
   - Air samples: Complimentary storage for ten (10) calendar days from receipt of samples; $20/ sample/week if extended storage is requested.
   - Hard copy and regenerated reports/EDDs: $17.50 per hard copy report requested; $50.00 per regenerated/reforma? ed report; $35 per reprocessed EDD.
10. Rush TCLP/STLC samples: add 2 days to analysis TAT for extraction on procedure.
11. Unanalyzed samples will incur a disposal fee of $7 per sample.

As the authorized agent of the company above, I hereby purchase laboratory services from ATL as shown above and hereby guarantee payment as quoted.

Diego Scapillato
Submitter Print Name

Signature

CUSTODY

Relinquished by: (Signature and Printed Name)	Date:	Time:	Received by: (Signature and Printed Name)	Date:	Time:
Diego Scapillato	5/12/15	5:20	FEDEX	5/12/15	1720
Relinquished by: (Signature and Printed Name)	Date:	Time:	Received by: (Signature and Printed Name)	Date:	Time:
Relinquished by: (Signature and Printed Name)	Date:	Time:	Received by: (Signature and Printed Name)	Date:	Time:

Figure C-3.121

Rachelle Arada

From: Lopez, Ron R (Los Angeles) [ron.lopez@amecfw.com]
Sent: Thursday, May 21, 2015 8:32 AM
To: Rachelle Arada
Subject: RE: Results - MTA Westside, 4953-11-1423 (ATL# 1501682)

Hi Rachelle,

Can you please had H_2S to the results of the lab report.
Thanks,

Ronald Lopez
Senior Engineer
Amec Foster Wheeler
Environment & Infrastructure
6001 Rickenbacker Road | Los Angeles, CA 90040
Office (323) 889-5300 x286 | **Cell** (818) 472-1875 | **Fax** (323) 721-6700
Email: ron.r.lopez@amecfw.com | **Web:** www.amecfw.com

From: Rachelle Arada [mailto:Rachelle@atlglobal.com]
Sent: Wednesday, May 20, 2015 3:58 PM
To: Lopez, Ron R (Los Angeles)
Subject: Results - MTA Westside, 4953-11-1423 (ATL# 1501682)

Hi Ron,

Attached are the results for the above project. Subcontract analysis results to follow.

Rachelle Arada
Project Manager

Advanced Technology Laboratories
www.atlglobal.com
Tel: (562) 989-4045 ext. 237
Fax: (562) 989-4040

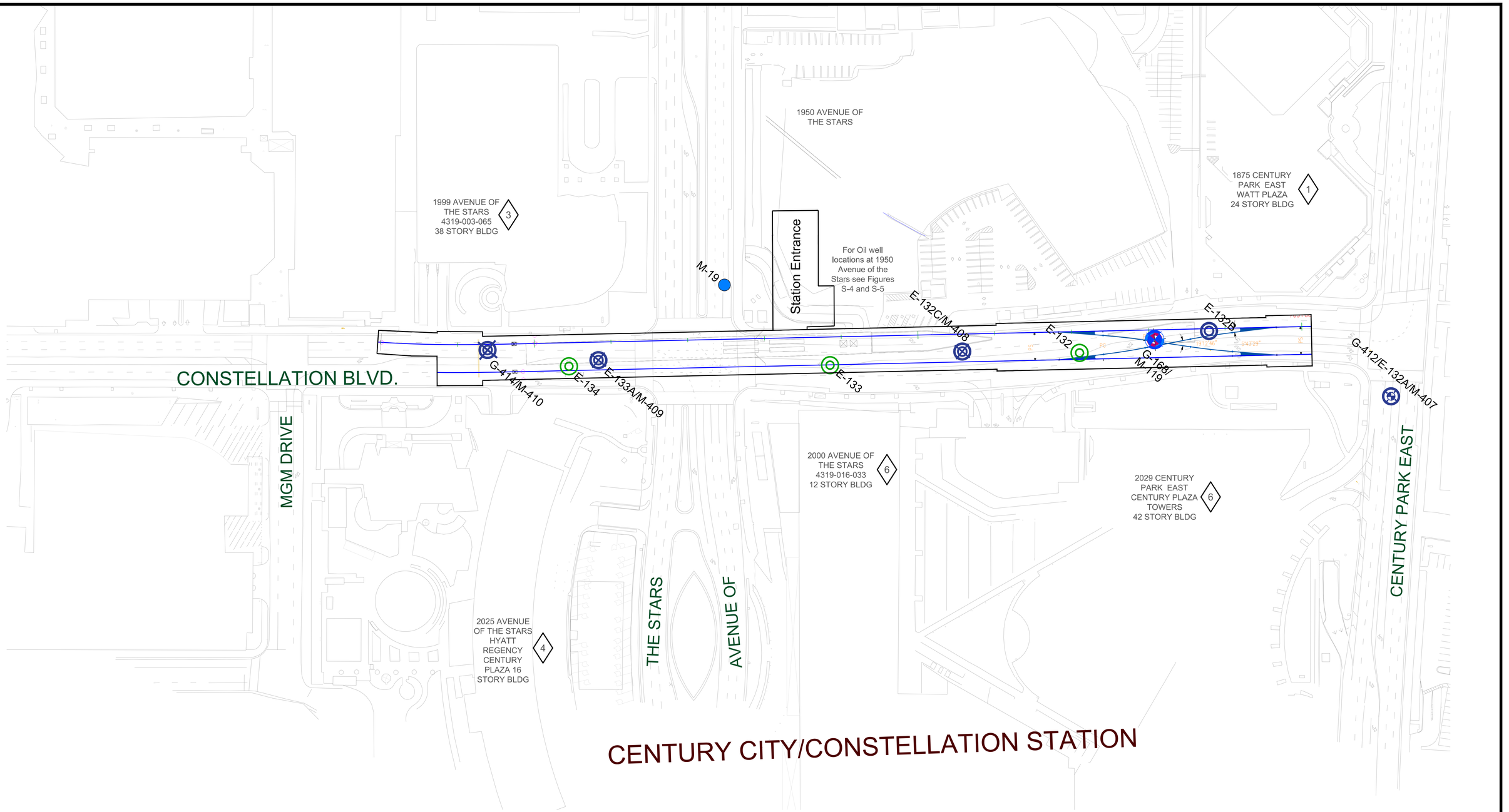
Advanced Technology Laboratories is a full-service environmental lab providing organic and inorganic analyses of soil, water, wastewater, storm water and hazardous waste samples. ATL is accredited by the State of California, NELAP and State of Oregon (Air) and holds various SBE, DBE and MBE certificates and a USDA soil permit. ATL takes pride in providing our customers with quick turnaround time, excellent customer service and defensible data while offering very competitive rates. *Advanced Technology Labs - Your Partner for Quality Environmental Testing*

amec
foster
wheeler

Figure C-3.122

PLATES

Plate 1: Exploration Plan



CENTURY CITY/CONSTELLATION STATION

EXPLANATION

Geotechnical / Soil-Gas for Adv. PE Phase:

- E-132B — Enviromental Exploration
- G-412/E-132A/M-407 — Geotechnical Boring / Enviromental Exploration / Gas Monitoring Well
- G-414/M-410 — Geotechnical Rotary-Wash Boring

Geotechnical / Soil-Gas Investigations for PE Phase:

- E-132 — Environmental Exploration
- G-168/M-119 — Dual Geotechnical Boring / Gas Monitoring Well

Geotechnical / Soil-Gas Investigations for ACE Phase:

- M-19 — Subsurface Gas Exploration

Symbol Labels:

4 — Number of basement levels for the subject building

Site view of station. Alignment based on plans dated June, 2015

No. 10 Double Crossover Tracks

For Oil well locations per DOGGR see Figures 5-4 and 5-5.

Reference: Proposed Tunnel Alignment and Station Plan and Profile dated June, 2015

0 25' 50' 100'

SCALE: 1" = 50'

REV	DATE	BY	APP	DESCRIPTION

DESIGNED BY: FYW
DRAWN BY: KO
CHECKED BY: WL/DLP
IN CHARGE: FYW/HP
DATE: 10/7/2015

LOS ANGELES COUNTY METROPOLITAN TRANSPORTATION AUTHORITY

Metro

PB 125 YEARS

PROJECT MANAGER

WESTSIDE PURPLE LINE EXTENSION
ADVANCED PRELIMINARY ENGINEERING

ENVIRONMENTAL EXPLORATION PLAN AND PROFILE
CENTURY CITY CONSTELLATION STATION

CONTRACT NO:
DRAWING NO: PLATE 1
REV:
SCALE: 1" = 50'
SHEET NO: