FOR CONTRACT NO: 12-0L9704
PROJECT ID: 1200020262

INFORMATION HANDOUT

NINYO & MOORE SUBSURFACE INVESTIGATION REPORT

ROUTE: 12-Ora-39-2.1, 3.1, 6.1

June 29, 2012
Project No. 208449004

Mr. Mitch Khalilifar
State of California Department of Transportation
District 12, Environmental Engineering
3347 Michelson Drive, Suite 100
Irvine, California 92612-8894

Subject: Subsurface Investigation
Beach Boulevard and McFadden Avenue
Westminster, California
Task Order No. 12-0L9701-04
EA No. 0L9701, Contract No. 12A1340

Dear Mr. Khalilifar:

Ninyo & Moore has prepared this Subsurface Investigation Report to document the procedures and results for soil sampling conducted at the intersection of Beach Boulevard and McFadden Avenue, in the city of Westminster, California. Fieldwork was conducted by Ninyo & Moore on May 31, 2012 in accordance with the State of California, Department of Transportation Contract No. 12A1340, Task Order No. 12-0L9701-04. The following report documents our methodologies, findings, conclusions, and recommendations. We appreciate the opportunity to provide service on this project.

Sincerely,
NINYO & MOORE

Patrick Cullip
Senior Staff Environmental Engineer

Michael S. Cushner, CAC
Project Environmental Scientist

John Jay Roberts, PG, CEG
Senior Geologist

PROFESSIONAL GEOLOGIST No. 3489
JOHN JAY ROBERTS
CERTIFIED ENGINEERING GEOLOGIST No 1016
EXPIRATION DATE 10/31/12
STATE OF CALIFORNIA

PJC/MSC/JJR/NA/lr/mlc/sc

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Ninyo & Moore
Geotechnical and Environmental Sciences Consultants

SUBSURFACE INVESTIGATION
BEACH BOULEVARD AND MCFADDEN AVENUE
WESTMINSTER, CALIFORNIA
TASK ORDER NO. 12-0L9701-04
EA NO. 0L9701, CONTRACT NO. 12A1340

PREPARED FOR:
State of California
Department of Transportation
District 12, Environmental Engineering
3347 Michelson Drive, Suite 100
Irvine, California 92612-8894

PREPARED BY:
Ninyo & Moore
Geotechnical and Environmental Sciences Consultants
475 Goddard, Suite 200
Irvine, California 92618

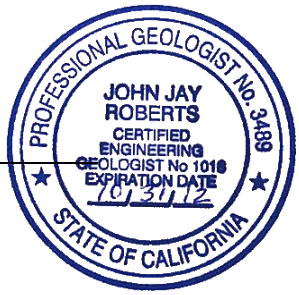
June 29, 2012
Project No. 208449004

SITE INVESTIGATION REPORT

Task Order No. 12-0L9701-04
E.A. 0L9701

This report was prepared by the staff of Ninyo & Moore Geotechnical and Environmental Sciences Consultants under the supervision of the Engineer and/or Geologist whose signature appears hereon.

The findings, recommendations, specifications, or professional opinions are presented within the limits described by the client, after being prepared in accordance with generally accepted professional engineering and geologic practice. No warranty is expressed or implied.



John Jay Roberts, PG, CEG
Senior Geologist

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EXECUTIVE SUMMARY

In accordance with the State of California, Department of Transportation (Caltrans) Contract No. 12A1340, Task Order No. 04, Ninyo & Moore has performed a subsurface investigation (SI) within their right-of-way (ROW) at the intersection of Beach Boulevard and McFadden Avenue in the city of Westminster, California (site; Figure 1).

Three Leaking Underground Storage Tank Cleanup sites are adjacent to the site: a Chevron Service Station at the northeast corner of the intersection (GeoTracker Global ID T0605900077), an ExxonMobil Service Station at the southeast corner of the intersection (GeoTracker Global ID T0605900208), and a Shell Service Station at the southwest corner of the intersection (GeoTracker Global ID T0605900544).

The objective of the SI is to evaluate the potential concerns associated with the soil and groundwater (if encountered) at the site in areas of proposed earthmoving. The results of this SI will be used to evaluate worker safety and soil handling procedures. Groundwater was not encountered during this SI. Sampling locations were screened for contaminants of concern in soil including: total petroleum hydrocarbons with carbon chain speciation (TPHcc) and volatile organic compounds plus oxygenates (VOCs).

Based on the results of this SI the following conclusions have been made:

- Some petroleum hydrocarbon compounds (benzene and toluene) were encountered in low concentrations in the soil samples for boring B2, located in the southeast corner of the site.
- Benzene concentration in boring B2 between 4 and 8 feet exceeds its respective Maximum Soil Screening Level (MSSL) published by the Los Angeles Regional Water Quality Control Board (RWQCB, 1996) for the soil type (silt) encountered at this site.
- Soil beneath the site is not significantly impacted with fuel products to the maximum depth of anticipated construction, which is the maximum depth explored of 8 feet below ground surface (bgs).
- The impact of fuel products on the soil below the water table is unknown because groundwater was not encountered at the maximum depth of the boreholes (8 feet bgs). However, based on information available in GeoTracker, it is likely that groundwater is impacted with fuel products beneath the site.

RECOMMENDATIONS

The following recommendations are based on the results and conclusions of the SI:

- A site-specific health and safety plan (HSP) for the construction work should be prepared. This HSP should be reviewed by a Certified Industrial Hygienist.

- Based on encountered low concentrations of benzene and toluene, the excavations should be monitored in accordance with Rule 1166 of the South Coast Air Quality Management District using a photo-ionization detector (PID) calibrated to hexane.

- After disturbance, soil from the excavation at southeast corner of the site between 4 and 8 feet bgs will be characterized as non-hazardous petroleum-impacted waste and should be transported to a facility licensed to receive the waste. The selected receiving facility may have sampling requirements for profiling purposes.

- The remaining soil is suitable for on-site reuse by Caltrans with no restrictions, based on reported TPH and VOC concentrations in the samples collected during this SI.

1. INTRODUCTION

In accordance with the State of California, Department of Transportation (Caltrans) Contract No. 12A1340, Task Order No. 04 (TO-04), Ninyo & Moore has performed a subsurface investigation (SI) within the right-of-way (ROW) at the intersection of Beach Boulevard and McFadden Avenue in the city of Westminster, California (site; Figure 1). This report is based on conditions at the site at the time of the sampling activities and provides documentation of our findings and recommendations. It is our understanding that Caltrans is planning to make safety improvements including upgrading traffic light poles at the Beach Boulevard and McFadden Avenue intersection.

2. BACKGROUND

According to information on the State Water Resources Control Board (SWRCB) GeoTracker website (GeoTracker), three Leaking Underground Storage Tank (LUST) Cleanup sites are adjacent to the site: a Chevron Service Station at the northeast corner of the intersection (GeoTracker Global ID T0605900077), an ExxonMobil Service Station at the southeast corner of the intersection (GeoTracker Global ID T0605900208), and a Shell Service Station at the southwest corner of the intersection (GeoTracker Global ID T0605900544).

An unauthorized gasoline release was discovered at the Chevron Service Station in January 1988 and cleanup began in January 1991. The Chevron Service Station LUST case was closed in August 1983, before the introduction of oxygenates as fuel additives and is now occupied by a single-story building which houses a dental office and multiple commercial and retail businesses. In February 2012, an enhanced bioremediation system was installed at the site to assist in the reduction of hydrocarbon concentrations and to control offsite plume migration (SAIC, 2012).

According to information on GeoTracker, an unauthorized gasoline release was discovered at the ExxonMobil Service Station in March 1985 and cleanup began in April 1992. The LUST case is currently open. The ExxonMobil Service Station is currently a parking lot associated with the adjacent Infinity automobile dealership (ERI, 2009).

According to information on GeoTracker, an unauthorized gasoline release was discovered at the Shell Service Station in May 1987 and cleanup began in August 2002. The LUST case is currently open. The Shell Service Station is currently an active service station, consisting of two fuel underground storage tanks, four fuel dispensers, associated product piping, and a station building (CRA, 2011).

3. GEOLOGY/HYDROGEOLOGY

The site is on the western portion of the coastal plain of Orange County Groundwater Basin. The groundwater basin lies within a synclinal, northwest-trending trough that extends from the Irvine area and deepens as it continues beyond the Los Angeles-Orange County line. The uplifted margins of the basin are formed by the Coyote Hills-Santa Ana Mountains to the north and east, and the coastal mesas along the Newport-Inglewood Fault Zone to the south. The basin consists of over 20,000 feet of Miocene-age sedimentary rocks, of which only the upper 4,000 feet contain fresh water (Herndon, 1992).

The site is within the Pressure Area hydrologic subunit of the Orange County Groundwater Basin (Herndon, 1992). The Pressure Area is characterized by shallow, semi-perched, water-bearing zones that are separated from the deeper production aquifers in the basin by low permeability clays and silts. These low permeability, near-surface sediments are known collectively as the Semi-Perched Aquifer. They underlie most of the central and coastal portions of the basin and represent deposition in lagoonal and fresh-water swamp environments. The shallowest principal aquifer beneath the site is the Talbert Aquifer located directly below the Semi-Perched Aquifer. The Talbert Aquifer is a relatively thin sand and gravel unit deposited by ancestral streams. In the region of the site, the Talbert Aquifer occurs at a depth of approximately 60 to 90 feet below ground surface (bgs). According to the Orange County Water District's November 1997 Groundwater Contour Map for the Coastal Area, the regional groundwater flow direction in the vicinity of the site is southwestward toward the Pacific Ocean. Based on information in GeoTracker, first water in the vicinity of the site is estimated at 8.5 feet bgs.

Based on the United States Geological Survey (USGS) 7.5-minute topographic map for the Newport Beach, California Quadrangle (photorevised 1981), the site is at an elevation of approximately 30 feet above mean sea level. The East Garden Grove Wintersburg Channel is the closest surface water body to the site, approximately 5,000 feet to the southeast. Based on information available in GeoTracker, the groundwater flow direction at the site is generally to the northwest but historically has varied on the adjacent facilities.

4. OBJECTIVE

The objective of the SI is to evaluate the potential concerns associated with the soil and groundwater at the site in areas of proposed earthmoving. The results of this SI will be used to evaluate worker safety and soil and groundwater handling procedures. Sampling locations were screened for contaminants of concern in soil and groundwater including: total petroleum hydrocarbons with carbon chain speciation (TPHcc) and volatile organic compounds plus oxygenates (VOCs).

5. SCOPE OF WORK

The following scope of work was performed in accordance with the work plan.

5.1. Site-Specific Health and Safety Plan (HSP)

Ninyo & Moore prepared and provided a site-specific HSP under separate cover, based on the scope of work and potential hazards observed during a site reconnaissance. The HSP was prepared in accordance with applicable local, state, and federal regulations. The HSP covered the field activities conducted by Ninyo & Moore personnel and was approved by a California Certified Industrial Hygienist.

5.2. Site Investigation

The following sections describe the SI activities.

5.2.1. Site Reconnaissance

Ninyo & Moore and Caltrans conducted a site walk on May 25, 2012. Three boring locations were selected by Caltrans. Ninyo & Moore marked the locations with white spray paint at the approximate locations shown on Figure 2.

5.2.2. Underground Service Alert (USA)

Ninyo & Moore obtained the inquiry identification number (A921460801) from USA at least 2 working days prior to start of work at the site. This number was obtained for the proposed SI borings.

5.2.3. Soil Sampling

Three direct-push borings (B1, B2, and B3) were advanced on May 31, 2012 at the approximate locations shown on Figure 2. Soil samples were collected at 2, 4, 6, and 8 feet bgs. A total of 12 soil samples were collected. The borings were advanced to a depth of 8 feet bgs. The two samples from each boring with the highest photo-ionization detection reading were selected for laboratory analyses.

Soil samples were collected using clean acetate liners and direct-push methods. Soil cuttings generated by direct-push methods were returned to their corresponding borehole after sample collection (refer to Appendix A for sampling procedures).

Sample containers were labeled with the boring number and sample depth. Sampling information, time, date of sample collection, sample matrix type, turn-around-time, container type, requested analysis, and other information was recorded on the chain-of-custody form. Soil samples were stored in an ice chest for transport within 24 hours of collection to a laboratory certified by the State of Department of Health Services Environmental Laboratory Accreditation Program (ELAP).

5.2.4. Groundwater Sampling

Groundwater was not encountered in the borings at the site, so groundwater samples were not collected or analyzed.

5.2.5. Decontamination

Clean and decontaminated sampling equipment was used for each borehole location. Sampling equipment was new or decontaminated between boreholes to prevent introduction of foreign materials and cross-contamination. Specific decontamination procedures are described in Appendix A.

5.2.6. Investigative Derived Wastes

Soil cuttings generated by direct-push methods were returned to their corresponding boreholes after collection of soil samples. Decontamination water was transported to Ninyo & Moore's Irvine office and placed in a drum pending chemical characterization. Based on the analytical result of the decontamination water sample, the decontamination water was subsequently disposed in the sanitary sewer.

5.3. Global Positioning Satellite (GPS) Data Collection

Borings were located using a GPS. Approximate latitude and longitude of the North American Datum (NAD 83) were recorded. GPS location data is presented in Table 1.

5.4. Laboratory Analysis

Soil samples were analyzed for TPHcc by modified United States Environmental Protection Agency (EPA) Method 8015B and VOCs by EPA Method 8260B/5035.

Soil samples were analyzed by Advanced Technology Laboratories (ATL), a state-certified ELAP laboratory in Signal Hill, California. Copies of laboratory reports are presented in Appendix B.

5.5. Quality Control And Quality Assurance (QA/QC)

The following QA/QC procedures were followed.

5.5.1. Field QA/QC

Field procedures, including decontamination of field sampling equipment, described in Appendix A, were used to ensure quality of samples during field sampling. Duplicate samples were not collected.

5.5.2. Laboratory QA/QC

ATL analyzed samples in accordance with the requirements of their in-house QA/QC program and the requirements of contract 12A1340.

6. RESULTS

Results of the chemical analyses of soil samples are summarized in Tables 2 and 3, and on Figure 3. Laboratory reports are presented in Appendix B. Chemical results for the soil samples are summarized as follows:

- Concentrations of TPHcc were not detected in the soil samples analyzed.
- Concentrations of VOCs were detected in two soil samples. Benzene was detected in soil samples B2-4 and B2-8 at concentrations of 8.2 and 21 micrograms per kilograms (µg/kg), respectively. Toluene was detected in soil samples B2-4 and B2-8 at concentrations of 6.1 and 13 µg/kg. Other VOCs were not detected in soil samples. The VOCs detected were below their respective Regional Screening Levels (RSLs) for residential and industrial soil.
- Benzene concentration in boring B2 between 4 and 8 feet exceeds its respective Maximum Soil Screening Level (MSSL) published by the Los Angeles Regional Water Quality Control Board (RWQCB, 1996) for the soil type (silt) encountered at this site. Thus, soil from this area should be managed as non-hazardous, petroleum-impacted waste, properly removed from the site, and not be re-used as backfill.
- Groundwater was not encountered in the borings to the maximum depth explored.

7. CONCLUSIONS

Based on the results of this SI the following conclusions have been made:

- Some petroleum hydrocarbon compounds (benzene and toluene) were encountered in low concentrations in the soil samples for boring B2, located in the southeast corner of the site.
- Soil beneath the site is not significantly impacted with fuel products to the maximum depth of anticipated construction, which is the maximum depth explored of 8 feet bgs.
- The impact of fuel products on the soil below the water table is unknown because groundwater was not encountered at the maximum depth of the boreholes (8 feet bgs). However, based on information available in GeoTracker, it is likely that groundwater is impacted with fuel products beneath the site.

8. RECOMMENDATIONS

The following recommendations are based on the results and conclusions of the SI:

- A site-specific HSP for the construction work should be prepared. This HSP should be reviewed by a Certified Industrial Hygienist.

- Based on encountered low concentrations of benzene and toluene, the excavations should be monitored in accordance with Rule 1166 of the South Coast Air Quality Management District using a PID calibrated to hexane.
- After disturbance, soil from the excavation at southeast corner of the site between 4 and 8 feet bgs will be characterized as non-hazardous petroleum-impacted waste and should be transported to a facility licensed to receive the waste. The selected receiving facility may have sampling requirements for profiling purposes.
- The remaining soil is suitable for on-site reuse by Caltrans with no restrictions, based on reported TPH and VOC concentrations in the samples collected during this SI.

9. LIMITATIONS

The services outlined in this report have been conducted in a manner generally consistent with current regulatory guidelines. No warranty, expressed or implied, is made regarding the professional opinions presented in this report. Ninyo & Moore's opinions are based on an analysis of observed conditions and on information obtained from third parties. It is likely that variations in soil conditions may exist which were beyond the scope of work.

The samples collected and chemically analyzed and the observations made are believed to be representative of the general area evaluated; however, conditions can vary significantly between sampling locations. The interpretations and opinions contained in this report are based on the results of laboratory tests and analyses intended to detect the presence and measure the concentration of certain chemical or physical constituents in samples collected from the site. The analyses have been conducted by an independent laboratory, which is accredited by the United States EPA and/or certified by the State of California to conduct such analyses. Ninyo & Moore has no involvement in, or control over, such analyses and has no means of confirming the accuracy of laboratory results. Ninyo & Moore, therefore, disclaims any responsibility for inaccuracy in such laboratory results.

This document is intended to be used only in its entirety. No portion of the document, by itself, is designed to completely represent any aspect of the project described herein. Ninyo & Moore should be contacted if the reader requires any additional information, or has questions regarding content, interpretations presented, or completeness of this document. Opinions and judgments

expressed herein, which are based on our understanding and interpretation of current regulatory standards, should not be construed as legal opinions.

10. REFERENCES

Conestoga-Rovers & Associates (CRA), 2011, Updated Site Conceptual Model and Corrective Action Plan, Shell Service Station, 15501 Beach Boulevard, dated May 13, 2011.

CRA, see Conestoga-Rovers & Associates.

Environmental Resolutions, Inc. (ERI), 2009, Report for the Installation of Three Off-Site Soil Vapor Extraction Wells, 15502 Beach Boulevard, ExxonMobil Service Station, dated November 16, 2009.

ERI, see Environmental Resolutions, Inc.

Herndon, R.L. 1992. Hydrogeology of the Orange County Groundwater Basin – An Overview, in The Regressive Pliestocene Shoreline Coastal Southern California, South Coast Geological Society Guidebook No. 20.

Orange County Water District, 1997. November 1997 Groundwater Contour Map for the Coastal Area.

SAIC, see SAIC Energy, Environment & Infrastructure, LLC.

SAIC Energy, Environment & Infrastructure, LLC (SAIC), 2012, 1st Quarter 2012 – Operations and Maintenance Progress Report, 15482 Beach Boulevard, Chevron Service Station, dated April 10, 2012.

State Water Resources Control Board (SWRCB), 2012, GeoTracker webpage http://geotracker.waterboards.ca.gov/

SWRCB, see State Water Resources Control Board.

United States Geological Survey, 1964, 7.5-minute topographic map, Newport Beach, California Quadrangle, 1964, photorevised 1981.

USGS, see United States Geological Survey.

TABLE 1 – GLOBAL POSITIONING SATELLITE DATA
NAD 83 - North American Datum 1983

Boring	Sample Date	Latitude	Longitude
B1	5/31/2012	33.737360651	-117.989671284
B2	5/31/2012	33.737294908	-117.989198648
B3	5/31/2012	33.737570174	-117.989132949

TABLE 2 – CHEMICAL RESULTS FOR SOIL SAMPLES – TPHcc

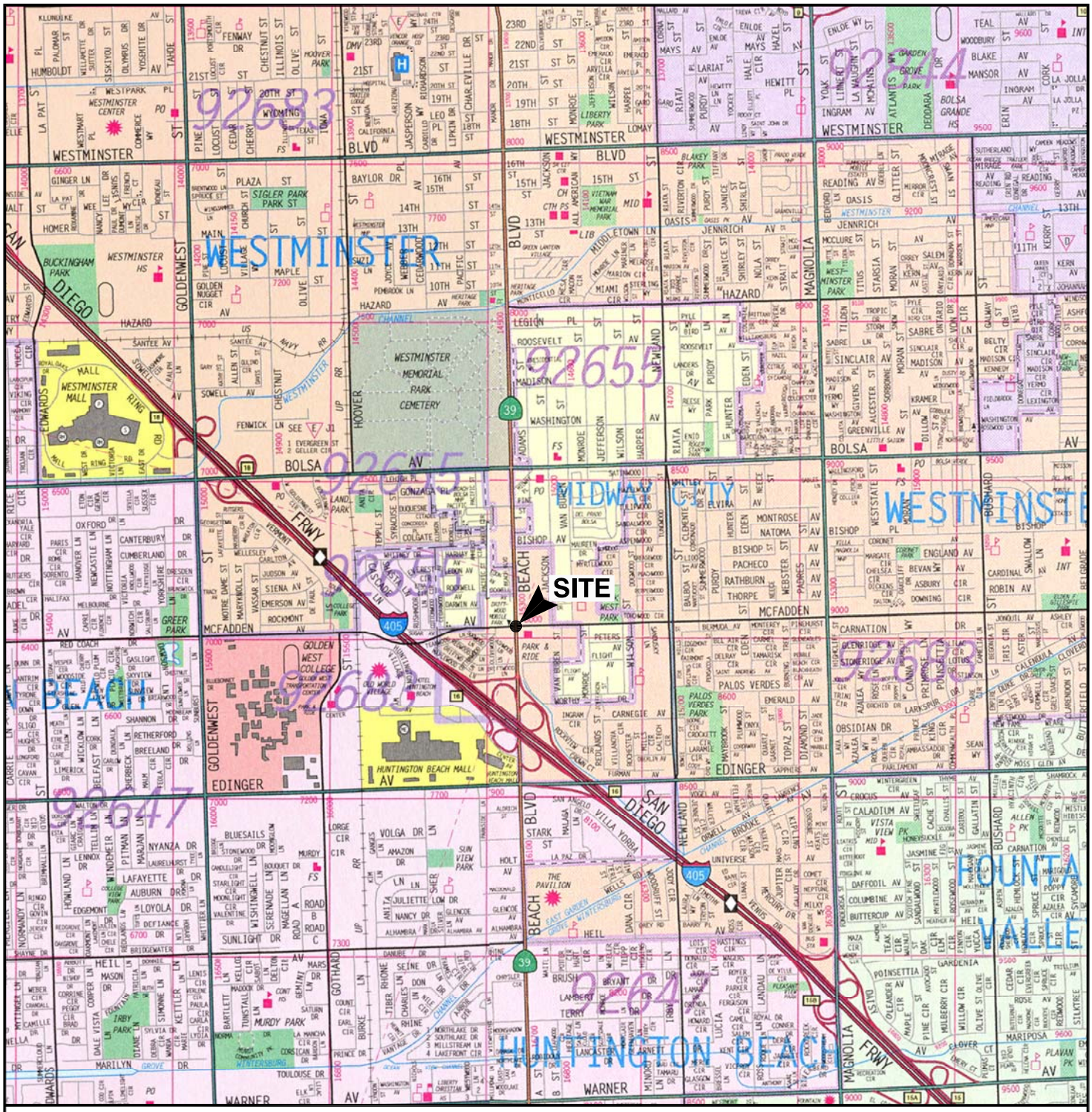
Sample	Depth (feet bgs)	Sample Date	EPA 8015B (mg/kg)			
			C4-C12	C13-C22	C23-C32	>C32
B1-6	6	5/31/2012	ND<1.0	ND<10	ND<10	ND<10
B1-8	8	5/31/2012	ND<1.0	ND<10	ND<10	ND<10
B2-4	4	5/31/2012	ND<1.0	ND<10	ND<10	ND<10
B2-8	8	5/31/2012	ND<1.0	ND<10	ND<10	ND<10
B3-6	6	5/31/2012	ND<1.0	ND<10	ND<10	ND<10
B3-8	8	5/31/2012	ND<1.0	ND<10	ND<10	ND<10
SSLs			100	100	1,000	NL

Notes:
bgs – below ground surface
EPA – United States Environmental Protection Agency
mg/kg – milligrams per kilogram
ND – not detected above the Practical Quantitation Limit - see laboratory report for additional details
MSSLs – Maximum Soil Screening Levels published by the Los Angeles Regional Water Quality Control Board for soil less than 20 feet above groundwater
TPHcc – total petroleum hydrocarbons carbon chain

TABLE 3 – CHEMICAL RESULTS FOR SOIL SAMPLES – VOCs

Sample	Depth (feet bgs)	Sample Date	EPA Method 5035/EPA 8260 (µg/kg)				
			Benzene	Toluene	Ethylbenzene	m,p-Xylene	All Other VOCs
B1-6	6	5/31/2012	ND<4.8	ND<4.8	ND<4.8	ND<9.5	ND
B1-8	8	5/31/2012	ND<5.4	ND<5.4	ND<5.4	ND<11	ND
B2-4	4	5/31/2012	8.2	6.1	ND<3.9	ND<7.9	ND
B2-8	8	5/31/2012	21	13	ND<4.7	ND<9.4	ND
B3-6	6	5/31/2012	ND<5.0	ND<5.0	ND<5.0	ND<10	ND
B3-8	8	5/31/2012	ND<5.1	ND<5.1	ND<5.1	ND<10	ND
RSL - industrial			5,400	45,000,000	27,000	2,700,000	varies
RSL - residential			1,100	5,000,000	5,400	630,000	varies
MSSL			11	450	2,000	5,300	varies

Notes:
bgs – below ground surface
EPA – United States Environmental Protection Agency
µg/kg – microgram per kilogram
ND – not detected above the Practical Quantitation Limit - see laboratory report for additional details
RSL – EPA, Region 9, Regional Screening Level for industrial soil
VOCs – volatile organic compounds
MSSL – Maximum Soil Screening Level for soils less than 20 feet above groundwater, California Regional Water Quality Control Board (RWQCB), Interim Site Assessment & Cleanup Guidebook, Los Angeles and Ventura Counties, Region 4, May 1996.



REFERENCE: 52ND EDITION, THOMAS GUIDE FOR LOS ANGELES/ORANGE COUNTIES, STREET GUIDE AND DIRECTORY

N

APPROXIMATE SCALE

0 2400 4800

NOTE: DIMENSIONS, DIRECTIONS AND LOCATIONS ARE APPROXIMATE.

Map © Rand McNally, R.L.07-S-129

Ninyo & Moore	SITE LOCATION	FIGURE
PROJECT NO. 208449004 / DATE 6/12	BEACH BOULEVARD AND McFADDEN AVENUE WESTMINSTER, CALIFORNIA	1

208449004_SL.dwg 13:52:29 06/29/2012 GK

REFERENCE: GOOGLE EARTH AERIAL PHOTO, 2012.

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SCALE IN FEET

0 80 160

NOTE: DIMENSIONS, DIRECTIONS AND LOCATIONS ARE APPROXIMATE.

LEGEND	
B3	BORING

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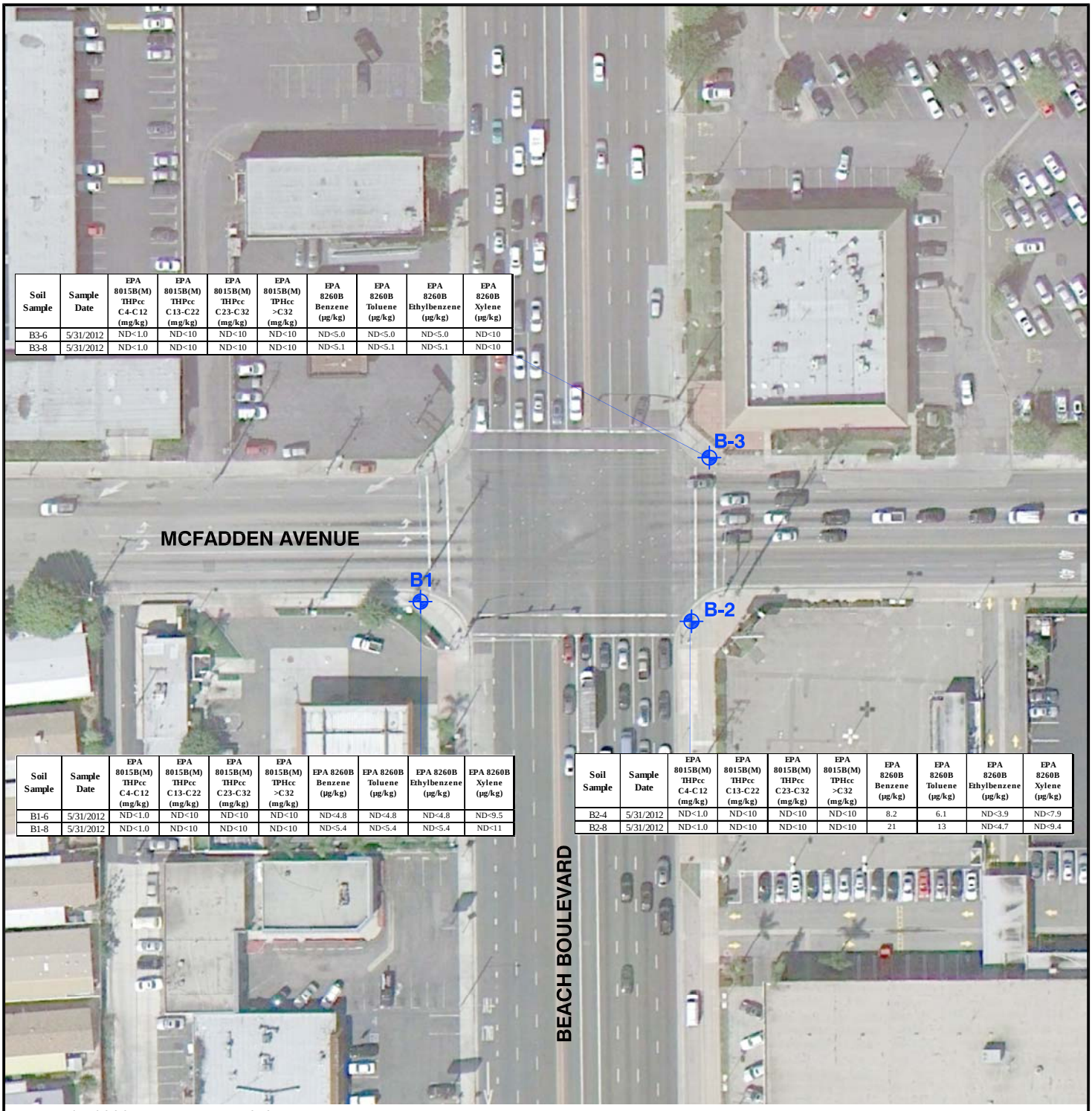
Ninyo & Moore		BORING LOCATIONS	FIGURE
PROJECT NO.	DATE	BEACH BOULEVARD AND McFADDEN AVENUE WESTMINSTER, CALIFORNIA	2
208449004	6/12		



Soil Sample	Sample Date	EPA 8015B(M) THPcc C4-C12 (mg/kg)	EPA 8015B(M) THPcc C13-C22 (mg/kg)	EPA 8015B(M) THPcc C23-C32 (mg/kg)	EPA 8015B(M) TPHcc >C32 (mg/kg)	EPA 8260B Benzene (µg/kg)	EPA 8260B Toluene (µg/kg)	EPA 8260B Ethylbenzene (µg/kg)	EPA 8260B Xylene (µg/kg)
B3-6	5/31/2012	ND<1.0	ND<10	ND<10	ND<10	ND<5.0	ND<5.0	ND<5.0	ND<10
B3-8	5/31/2012	ND<1.0	ND<10	ND<10	ND<10	ND<5.1	ND<5.1	ND<5.1	ND<10

Soil Sample	Sample Date	EPA 8015B(M) THPcc C4-C12 (mg/kg)	EPA 8015B(M) THPcc C13-C22 (mg/kg)	EPA 8015B(M) THPcc C23-C32 (mg/kg)	EPA 8015B(M) THPcc >C32 (mg/kg)	EPA 8260B Benzene (µg/kg)	EPA 8260B Toluene (µg/kg)	EPA 8260B Ethylbenzene (µg/kg)	EPA 8260B Xylene (µg/kg)
B1-6	5/31/2012	ND<1.0	ND<10	ND<10	ND<10	ND<4.8	ND<4.8	ND<4.8	ND<9.5
B1-8	5/31/2012	ND<1.0	ND<10	ND<10	ND<10	ND<5.4	ND<5.4	ND<5.4	ND<11

Soil Sample	Sample Date	EPA 8015B(M) THPcc C4-C12 (mg/kg)	EPA 8015B(M) THPcc C13-C22 (mg/kg)	EPA 8015B(M) THPcc C23-C32 (mg/kg)	EPA 8015B(M) TPHcc >C32 (mg/kg)	EPA 8260B Benzene (µg/kg)	EPA 8260B Toluene (µg/kg)	EPA 8260B Ethylbenzene (µg/kg)	EPA 8260B Xylene (µg/kg)
B2-4	5/31/2012	ND<1.0	ND<10	ND<10	ND<10	8.2	6.1	ND<3.9	ND<7.9
B2-8	5/31/2012	ND<1.0	ND<10	ND<10	ND<10	21	13	ND<4.7	ND<9.4

REFERENCE: GOOGLE EARTH AERIAL PHOTO, 2012.

N

SCALE IN FEET

0 80 160

NOTE: DIMENSIONS, DIRECTIONS AND LOCATIONS ARE APPROXIMATE.

LEGEND

B-3	Approximate boring location	µg/kg	Micrograms per kilogram
TPHg	Total Petroleum Hydrocarbons as gasoline	mg/l	Milligrams per liter
TPHd	Total Petroleum Hydrocarbons as diesel	µg/l	Micrograms per liter
mg/kg	Milligrams per kilogram	ND	Not detected above practical quantitation limits

Ninyo & Moore

BORING DATA

FIGURE 3

PROJECT NO.	DATE
208449004	6/12

BEACH BOULEVARD AND McFADDEN AVENUE
WESTMINSTER, CALIFORNIA

208449004_BD.dwg 14:07:29 06/29/2012 GK

APPENDIX A

FIELD PROCEDURES

APPENDIX A

FIELD PROCEDURES

A.1 Direct-Push Soil Sampling Procedures

1. Sampling probes were advanced using a truck-mounted hydraulic direct-push (Geoprobe or equivalent) rig equipped with 1½-inch-diameter soil samples.

2. The drive rods and samplers were cleaned prior to the advancement.

3. During soil sample collection, sample type and depth, and photo-ionization detector (PID) readings were recorded on a field log.

4. Discrete, relatively undisturbed soil samples were collected using a 1½-inch-diameter sampler containing an acetate sampling tube.

5. The sampler was cleaned prior to use and between sampling intervals using a bristle brush and a detergent solution; this was followed by two tap water rinses and a deionized-water rinse. The sampler was dried by air or with a paper towel prior to being used for sampling.

6. The sampler was driven approximately 24 inches using the hydraulic push-rod equipment.

7. Following retrieval of the sampler, the bottom 8-inch section of the tube was removed from the sampler, its ends covered with aluminum foil or Teflon sheeting, and capped with polyethylene end caps. The sample tube was labeled with the project number, sample number, sample depth, collection date and time, and sampler's initials. This sample tube was used for chemical analysis, with the exception of volatile organic compounds (VOCs).

8. The sample in the remaining tubing was used for the EPA Method 5035 sample preservation for VOC analysis. A plastic syringe was used to collect three samples of approximately 5 grams of soil from this tube. Two of the 5-gram soil samples were ejected into two pre-weighed, laboratory supplied, 40-milliliter volatile organic analysis (VOA) vials containing sodium bisulfate. The third 5-gram soil sample was ejected into one pre-weighed, laboratory supplied, 40-milliliter VOA vial containing methanol. A new syringe was used for each sampling interval.

9. The soil samplers were placed in sealable plastic bags and stored in an ice chest cooled using bagged water ice to a temperature of approximately 4 degrees Celsius.

10. The samples were delivered to a State of California Environmental Laboratory Accreditation Program (ELAP) or National Environmental Laboratory Accreditation Program (NELAP) certified laboratory within 24 hours of collection. Sample handling, transport, and delivery to the laboratory was documented using appropriate chain-of-custody (COC) protocol, including the use of COC forms.

11. The borings were backfilled with soil cuttings, filled with bentonite or cement, and hydrated with potable water to 6 inches below approximate grade level following termination of soil sampling.

12. The ground surface was patched with concrete.

13. Boring locations were recorded using a GPS device.

A.2 Sample Handling

1. The samples retained for chemical analyses were placed in 4 ounce jars and stored in an ice chest, cooled, using ice, to a temperature of approximately 40 degrees Fahrenheit.

2. The samples were delivered to a State-certified laboratory within 24 hours of collection. Sample handling, transport, and delivery to the laboratory was documented using COC procedures, and included the use of COC forms.

APPENDIX B

LABORATORY REPORTS

ADVANCED TECHNOLOGY LABORATORIES

June 08, 2012

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

Michael Cushner
Ninyo & Moore
475 Goddard Suite 200
Irvine, CA 92618
Tel: (949) 753-7070
Fax:(949) 753-7071

Re: ATL Work Order Number : 1202045

Client Reference : Caltrans TO-04, 208449004

Enclosed are the results for sample(s) received on May 31, 2012 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

The cover letter and the case narrative are an integral part of this analytical report and its absence renders the report invalid. The report cannot be reproduced without written permission from the client and Advanced Technology Laboratories.

3275 Walnut Avenue, Signal Hill, CA 90755 • Tel: 562-989-4045 • Fax: 562-989-4040
www.atlglobal.com

Ninyo & Moore		Project Number :	Caltrans TO-04, 208449004
475 Goddard Suite 200		Report To :	Michael Cushner
Irvine , CA 92618		Reported :	06/08/2012

SUMMARY OF SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
B1-2	1202045-01	Soil	5/31/12 11:00	5/31/12 16:39
B1-6	1202045-03	Soil	5/31/12 11:06	5/31/12 16:39
B1-8	1202045-04	Soil	5/31/12 11:05	5/31/12 16:39
B2-4	1202045-06	Soil	5/31/12 10:12	5/31/12 16:39
B2-8	1202045-08	Soil	5/31/12 10:16	5/31/12 16:39
B3-6	1202045-11	Soil	5/31/12 8:54	5/31/12 16:39
B3-8	1202045-12	Soil	5/31/12 8:53	5/31/12 16:39

CASE NARRATIVE

EPA 8260 soil analysis was performed using 5035 preservation requirements except for sample B3-6. Any high level dilutions were performed on a preserved methanol sample unless otherwise noted.

Ninyo & Moore		Project Number :	Caltrans TO-04, 208449004
475 Goddard Suite 200		Report To :	Michael Cushner
Irvine , CA 92618		Reported :	06/08/2012

Client Sample ID B1-6
Lab ID: 1202045-03

Gasoline Range Organics by EPA 8015B

Analyst: DP

Analyte	Result (mg/kg)	PQL (mg/kg)	MDL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
T/R Hydrocarbons: C4-C12	ND	1.0	NA	1	B2F0064	06/04/2012	06/04/12 17:55	
Surrogate: 4-Bromofluorobenzene	*97.4 %*	*69 - 158*			B2F0064	06/04/2012	*06/04/12 17:55*	

Hydrocarbon Chain Distribution by GC/FID

Analyst: CR

Analyte	Result (mg/kg)	PQL (mg/kg)	MDL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
T/R Hydrocarbons: C13-C22	ND	10	NA	1	B2F0089	06/05/2012	06/05/12 16:03	
T/R Hydrocarbons: C23-C32	ND	10	NA	1	B2F0089	06/05/2012	06/05/12 16:03	
T/R Hydrocarbons: >C32	ND	10	NA	1	B2F0089	06/05/2012	06/05/12 16:03	
Surrogate: p-Terphenyl	*69.2 %*	*62 - 136*			B2F0089	06/05/2012	*06/05/12 16:03*	

Volatile Organic Compounds by EPA 5035/EPA 8260

Analyst: RP

Analyte	Result (ug/kg)	PQL (ug/kg)	MDL (ug/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
1,1,1,2-Tetrachloroethane	ND	4.8	NA	1	B2F0048	05/31/2012	06/04/12 13:45	
1,1,1-Trichloroethane	ND	4.8	NA	1	B2F0048	05/31/2012	06/04/12 13:45	
1,1,2,2-Tetrachloroethane	ND	4.8	NA	1	B2F0048	05/31/2012	06/04/12 13:45	
1,1,2-Trichloroethane	ND	4.8	NA	1	B2F0048	05/31/2012	06/04/12 13:45	
1,1-Dichloroethane	ND	4.8	NA	1	B2F0048	05/31/2012	06/04/12 13:45	
1,1-Dichloroethene	ND	4.8	NA	1	B2F0048	05/31/2012	06/04/12 13:45	
1,1-Dichloropropene	ND	4.8	NA	1	B2F0048	05/31/2012	06/04/12 13:45	
1,2,3-Trichloropropane	ND	4.8	NA	1	B2F0048	05/31/2012	06/04/12 13:45	
1,2,3-Trichlorobenzene	ND	4.8	NA	1	B2F0048	05/31/2012	06/04/12 13:45	
1,2,4-Trichlorobenzene	ND	4.8	NA	1	B2F0048	05/31/2012	06/04/12 13:45	
1,2,4-Trimethylbenzene	ND	4.8	NA	1	B2F0048	05/31/2012	06/04/12 13:45	
1,2-Dibromo-3-chloropropane	ND	9.5	NA	1	B2F0048	05/31/2012	06/04/12 13:45	
1,2-Dibromoethane	ND	4.8	NA	1	B2F0048	05/31/2012	06/04/12 13:45	
1,2-Dichlorobenzene	ND	4.8	NA	1	B2F0048	05/31/2012	06/04/12 13:45	
1,2-Dichloroethane	ND	4.8	NA	1	B2F0048	05/31/2012	06/04/12 13:45	
1,2-Dichloropropane	ND	4.8	NA	1	B2F0048	05/31/2012	06/04/12 13:45	
1,3,5-Trimethylbenzene	ND	4.8	NA	1	B2F0048	05/31/2012	06/04/12 13:45	
1,3-Dichlorobenzene	ND	4.8	NA	1	B2F0048	05/31/2012	06/04/12 13:45	

Ninyo & Moore		Project Number :	Caltrans TO-04, 208449004
475 Goddard Suite 200		Report To :	Michael Cushner
Irvine , CA 92618		Reported :	06/08/2012

Client Sample ID B1-6

Lab ID: 1202045-03

Volatile Organic Compounds by EPA 5035/EPA 8260 **Analyst: RP**

Analyte	Result (ug/kg)	PQL (ug/kg)	MDL (ug/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
1,3-Dichloropropane	ND	4.8	NA	1	B2F0048	05/31/2012	06/04/12 13:45	
1,4-Dichlorobenzene	ND	4.8	NA	1	B2F0048	05/31/2012	06/04/12 13:45	
2,2-Dichloropropane	ND	4.8	NA	1	B2F0048	05/31/2012	06/04/12 13:45	
2-Chlorotoluene	ND	4.8	NA	1	B2F0048	05/31/2012	06/04/12 13:45	
4-Chlorotoluene	ND	4.8	NA	1	B2F0048	05/31/2012	06/04/12 13:45	
4-Isopropyltoluene	ND	4.8	NA	1	B2F0048	05/31/2012	06/04/12 13:45	
Benzene	ND	4.8	NA	1	B2F0048	05/31/2012	06/04/12 13:45	
Bromobenzene	ND	4.8	NA	1	B2F0048	05/31/2012	06/04/12 13:45	
Bromochloromethane	ND	4.8	NA	1	B2F0048	05/31/2012	06/04/12 13:45	
Bromodichloromethane	ND	4.8	NA	1	B2F0048	05/31/2012	06/04/12 13:45	
Bromoform	ND	4.8	NA	1	B2F0048	05/31/2012	06/04/12 13:45	
Bromomethane	ND	4.8	NA	1	B2F0048	05/31/2012	06/04/12 13:45	
Carbon disulfide	ND	4.8	NA	1	B2F0048	05/31/2012	06/04/12 13:45	
Carbon tetrachloride	ND	4.8	NA	1	B2F0048	05/31/2012	06/04/12 13:45	
Chlorobenzene	ND	4.8	NA	1	B2F0048	05/31/2012	06/04/12 13:45	
Chloroethane	ND	4.8	NA	1	B2F0048	05/31/2012	06/04/12 13:45	
Chloroform	ND	4.8	NA	1	B2F0048	05/31/2012	06/04/12 13:45	
Chloromethane	ND	4.8	NA	1	B2F0048	05/31/2012	06/04/12 13:45	
cis-1,2-Dichloroethene	ND	4.8	NA	1	B2F0048	05/31/2012	06/04/12 13:45	
cis-1,3-Dichloropropene	ND	4.8	NA	1	B2F0048	05/31/2012	06/04/12 13:45	
Di-isopropyl ether	ND	4.8	NA	1	B2F0048	05/31/2012	06/04/12 13:45	
Dibromochloromethane	ND	4.8	NA	1	B2F0048	05/31/2012	06/04/12 13:45	
Dibromomethane	ND	4.8	NA	1	B2F0048	05/31/2012	06/04/12 13:45	
Dichlorodifluoromethane	ND	4.8	NA	1	B2F0048	05/31/2012	06/04/12 13:45	
Ethyl Acetate	ND	48	NA	1	B2F0048	05/31/2012	06/04/12 13:45	
Ethyl Ether	ND	48	NA	1	B2F0048	05/31/2012	06/04/12 13:45	
Ethyl tert-butyl ether	ND	4.8	NA	1	B2F0048	05/31/2012	06/04/12 13:45	
Ethylbenzene	ND	4.8	NA	1	B2F0048	05/31/2012	06/04/12 13:45	
Freon-113	ND	4.8	NA	1	B2F0048	05/31/2012	06/04/12 13:45	
Hexachlorobutadiene	ND	4.8	NA	1	B2F0048	05/31/2012	06/04/12 13:45	
Isopropylbenzene	ND	4.8	NA	1	B2F0048	05/31/2012	06/04/12 13:45	
m,p-Xylene	ND	9.5	NA	1	B2F0048	05/31/2012	06/04/12 13:45	
Methylene chloride	ND	4.8	NA	1	B2F0048	05/31/2012	06/04/12 13:45	
MTBE	ND	4.8	NA	1	B2F0048	05/31/2012	06/04/12 13:45	

Ninyo & Moore		Project Number :	Caltrans TO-04, 208449004
475 Goddard Suite 200		Report To :	Michael Cushner
Irvine , CA 92618		Reported :	06/08/2012

Client Sample ID B1-6
Lab ID: 1202045-03

Volatile Organic Compounds by EPA 5035/EPA 8260 **Analyst: RP**

Analyte	Result (ug/kg)	PQL (ug/kg)	MDL (ug/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
n-Butylbenzene	ND	4.8	NA	1	B2F0048	05/31/2012	06/04/12 13:45	
n-Propylbenzene	ND	4.8	NA	1	B2F0048	05/31/2012	06/04/12 13:45	
Naphthalene	ND	4.8	NA	1	B2F0048	05/31/2012	06/04/12 13:45	
o-Xylene	ND	4.8	NA	1	B2F0048	05/31/2012	06/04/12 13:45	
sec-Butylbenzene	ND	4.8	NA	1	B2F0048	05/31/2012	06/04/12 13:45	
Styrene	ND	4.8	NA	1	B2F0048	05/31/2012	06/04/12 13:45	
tert-Amyl methyl ether	ND	4.8	NA	1	B2F0048	05/31/2012	06/04/12 13:45	
tert-Butanol	ND	95	NA	1	B2F0048	05/31/2012	06/04/12 13:45	
tert-Butylbenzene	ND	4.8	NA	1	B2F0048	05/31/2012	06/04/12 13:45	
Tetrachloroethene	ND	4.8	NA	1	B2F0048	05/31/2012	06/04/12 13:45	
Toluene	ND	4.8	NA	1	B2F0048	05/31/2012	06/04/12 13:45	
trans-1,2-Dichloroethene	ND	4.8	NA	1	B2F0048	05/31/2012	06/04/12 13:45	
trans-1,3-Dichloropropene	ND	48	NA	1	B2F0048	05/31/2012	06/04/12 13:45	
Trichloroethene	ND	4.8	NA	1	B2F0048	05/31/2012	06/04/12 13:45	
Trichlorofluoromethane	ND	4.8	NA	1	B2F0048	05/31/2012	06/04/12 13:45	
Vinyl acetate	ND	48	NA	1	B2F0048	05/31/2012	06/04/12 13:45	
Vinyl chloride	ND	4.8	NA	1	B2F0048	05/31/2012	06/04/12 13:45	
Surrogate: 1,2-Dichloroethane-d4	*87.4 %*	*65 - 135*			B2F0048	05/31/2012	*06/04/12 13:45*	
Surrogate: 4-Bromofluorobenzene	*103 %*	*57 - 126*			B2F0048	05/31/2012	*06/04/12 13:45*	
Surrogate: Dibromofluoromethane	*92.1 %*	*72 - 121*			B2F0048	05/31/2012	*06/04/12 13:45*	
Surrogate: Toluene-d8	*98.2 %*	*80 - 107*			B2F0048	05/31/2012	*06/04/12 13:45*	

Ninyo & Moore		Project Number :	Caltrans TO-04, 208449004
475 Goddard Suite 200		Report To :	Michael Cushner
Irvine , CA 92618		Reported :	06/08/2012

Client Sample ID B1-8
Lab ID: 1202045-04

Gasoline Range Organics by EPA 8015B

Analyst: DP

Analyte	Result (mg/kg)	PQL (mg/kg)	MDL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
T/R Hydrocarbons: C4-C12	ND	1.0	NA	1	B2F0064	06/04/2012	06/04/12 18:10	
Surrogate: 4-Bromofluorobenzene	*99.9 %*	*69 - 158*			B2F0064	06/04/2012	*06/04/12 18:10*	

Hydrocarbon Chain Distribution by GC/FID

Analyst: CR

Analyte	Result (mg/kg)	PQL (mg/kg)	MDL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
T/R Hydrocarbons: C13-C22	ND	10	NA	1	B2F0089	06/05/2012	06/05/12 16:20	
T/R Hydrocarbons: C23-C32	ND	10	NA	1	B2F0089	06/05/2012	06/05/12 16:20	
T/R Hydrocarbons: >C32	ND	10	NA	1	B2F0089	06/05/2012	06/05/12 16:20	
Surrogate: p-Terphenyl	*68.2 %*	*62 - 136*			B2F0089	06/05/2012	*06/05/12 16:20*	

Volatile Organic Compounds by EPA 5035/EPA 8260

Analyst: RP

Analyte	Result (ug/kg)	PQL (ug/kg)	MDL (ug/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
1,1,1,2-Tetrachloroethane	ND	5.4	NA	1	B2F0048	05/31/2012	06/04/12 14:19	
1,1,1-Trichloroethane	ND	5.4	NA	1	B2F0048	05/31/2012	06/04/12 14:19	
1,1,2,2-Tetrachloroethane	ND	5.4	NA	1	B2F0048	05/31/2012	06/04/12 14:19	
1,1,2-Trichloroethane	ND	5.4	NA	1	B2F0048	05/31/2012	06/04/12 14:19	
1,1-Dichloroethane	ND	5.4	NA	1	B2F0048	05/31/2012	06/04/12 14:19	
1,1-Dichloroethene	ND	5.4	NA	1	B2F0048	05/31/2012	06/04/12 14:19	
1,1-Dichloropropene	ND	5.4	NA	1	B2F0048	05/31/2012	06/04/12 14:19	
1,2,3-Trichloropropane	ND	5.4	NA	1	B2F0048	05/31/2012	06/04/12 14:19	
1,2,3-Trichlorobenzene	ND	5.4	NA	1	B2F0048	05/31/2012	06/04/12 14:19	
1,2,4-Trichlorobenzene	ND	5.4	NA	1	B2F0048	05/31/2012	06/04/12 14:19	
1,2,4-Trimethylbenzene	ND	5.4	NA	1	B2F0048	05/31/2012	06/04/12 14:19	
1,2-Dibromo-3-chloropropane	ND	11	NA	1	B2F0048	05/31/2012	06/04/12 14:19	
1,2-Dibromoethane	ND	5.4	NA	1	B2F0048	05/31/2012	06/04/12 14:19	
1,2-Dichlorobenzene	ND	5.4	NA	1	B2F0048	05/31/2012	06/04/12 14:19	
1,2-Dichloroethane	ND	5.4	NA	1	B2F0048	05/31/2012	06/04/12 14:19	
1,2-Dichloropropane	ND	5.4	NA	1	B2F0048	05/31/2012	06/04/12 14:19	
1,3,5-Trimethylbenzene	ND	5.4	NA	1	B2F0048	05/31/2012	06/04/12 14:19	
1,3-Dichlorobenzene	ND	5.4	NA	1	B2F0048	05/31/2012	06/04/12 14:19	

Ninyo & Moore		Project Number :	Caltrans TO-04, 208449004
475 Goddard Suite 200		Report To :	Michael Cushner
Irvine , CA 92618		Reported :	06/08/2012

Client Sample ID B1-8

Lab ID: 1202045-04

Volatile Organic Compounds by EPA 5035/EPA 8260 **Analyst: RP**

Analyte	Result (ug/kg)	PQL (ug/kg)	MDL (ug/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
1,3-Dichloropropane	ND	5.4	NA	1	B2F0048	05/31/2012	06/04/12 14:19	
1,4-Dichlorobenzene	ND	5.4	NA	1	B2F0048	05/31/2012	06/04/12 14:19	
2,2-Dichloropropane	ND	5.4	NA	1	B2F0048	05/31/2012	06/04/12 14:19	
2-Chlorotoluene	ND	5.4	NA	1	B2F0048	05/31/2012	06/04/12 14:19	
4-Chlorotoluene	ND	5.4	NA	1	B2F0048	05/31/2012	06/04/12 14:19	
4-Isopropyltoluene	ND	5.4	NA	1	B2F0048	05/31/2012	06/04/12 14:19	
Benzene	ND	5.4	NA	1	B2F0048	05/31/2012	06/04/12 14:19	
Bromobenzene	ND	5.4	NA	1	B2F0048	05/31/2012	06/04/12 14:19	
Bromochloromethane	ND	5.4	NA	1	B2F0048	05/31/2012	06/04/12 14:19	
Bromodichloromethane	ND	5.4	NA	1	B2F0048	05/31/2012	06/04/12 14:19	
Bromoform	ND	5.4	NA	1	B2F0048	05/31/2012	06/04/12 14:19	
Bromomethane	ND	5.4	NA	1	B2F0048	05/31/2012	06/04/12 14:19	
Carbon disulfide	ND	5.4	NA	1	B2F0048	05/31/2012	06/04/12 14:19	
Carbon tetrachloride	ND	5.4	NA	1	B2F0048	05/31/2012	06/04/12 14:19	
Chlorobenzene	ND	5.4	NA	1	B2F0048	05/31/2012	06/04/12 14:19	
Chloroethane	ND	5.4	NA	1	B2F0048	05/31/2012	06/04/12 14:19	
Chloroform	ND	5.4	NA	1	B2F0048	05/31/2012	06/04/12 14:19	
Chloromethane	ND	5.4	NA	1	B2F0048	05/31/2012	06/04/12 14:19	
cis-1,2-Dichloroethene	ND	5.4	NA	1	B2F0048	05/31/2012	06/04/12 14:19	
cis-1,3-Dichloropropene	ND	5.4	NA	1	B2F0048	05/31/2012	06/04/12 14:19	
Di-isopropyl ether	ND	5.4	NA	1	B2F0048	05/31/2012	06/04/12 14:19	
Dibromochloromethane	ND	5.4	NA	1	B2F0048	05/31/2012	06/04/12 14:19	
Dibromomethane	ND	5.4	NA	1	B2F0048	05/31/2012	06/04/12 14:19	
Dichlorodifluoromethane	ND	5.4	NA	1	B2F0048	05/31/2012	06/04/12 14:19	
Ethyl Acetate	ND	54	NA	1	B2F0048	05/31/2012	06/04/12 14:19	
Ethyl Ether	ND	54	NA	1	B2F0048	05/31/2012	06/04/12 14:19	
Ethyl tert-butyl ether	ND	5.4	NA	1	B2F0048	05/31/2012	06/04/12 14:19	
Ethylbenzene	ND	5.4	NA	1	B2F0048	05/31/2012	06/04/12 14:19	
Freon-113	ND	5.4	NA	1	B2F0048	05/31/2012	06/04/12 14:19	
Hexachlorobutadiene	ND	5.4	NA	1	B2F0048	05/31/2012	06/04/12 14:19	
Isopropylbenzene	ND	5.4	NA	1	B2F0048	05/31/2012	06/04/12 14:19	
m,p-Xylene	ND	11	NA	1	B2F0048	05/31/2012	06/04/12 14:19	
Methylene chloride	ND	5.4	NA	1	B2F0048	05/31/2012	06/04/12 14:19	
MTBE	ND	5.4	NA	1	B2F0048	05/31/2012	06/04/12 14:19	

Ninyo & Moore		Project Number :	Caltrans TO-04, 208449004
475 Goddard Suite 200		Report To :	Michael Cushner
Irvine , CA 92618		Reported :	06/08/2012

Client Sample ID B1-8
Lab ID: 1202045-04

Volatile Organic Compounds by EPA 5035/EPA 8260 **Analyst: RP**

Analyte	Result (ug/kg)	PQL (ug/kg)	MDL (ug/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
n-Butylbenzene	ND	5.4	NA	1	B2F0048	05/31/2012	06/04/12 14:19	
n-Propylbenzene	ND	5.4	NA	1	B2F0048	05/31/2012	06/04/12 14:19	
Naphthalene	ND	5.4	NA	1	B2F0048	05/31/2012	06/04/12 14:19	
o-Xylene	ND	5.4	NA	1	B2F0048	05/31/2012	06/04/12 14:19	
sec-Butylbenzene	ND	5.4	NA	1	B2F0048	05/31/2012	06/04/12 14:19	
Styrene	ND	5.4	NA	1	B2F0048	05/31/2012	06/04/12 14:19	
tert-Amyl methyl ether	ND	5.4	NA	1	B2F0048	05/31/2012	06/04/12 14:19	
tert-Butanol	ND	110	NA	1	B2F0048	05/31/2012	06/04/12 14:19	
tert-Butylbenzene	ND	5.4	NA	1	B2F0048	05/31/2012	06/04/12 14:19	
Tetrachloroethene	ND	5.4	NA	1	B2F0048	05/31/2012	06/04/12 14:19	
Toluene	ND	5.4	NA	1	B2F0048	05/31/2012	06/04/12 14:19	
trans-1,2-Dichloroethene	ND	5.4	NA	1	B2F0048	05/31/2012	06/04/12 14:19	
trans-1,3-Dichloropropene	ND	54	NA	1	B2F0048	05/31/2012	06/04/12 14:19	
Trichloroethene	ND	5.4	NA	1	B2F0048	05/31/2012	06/04/12 14:19	
Trichlorofluoromethane	ND	5.4	NA	1	B2F0048	05/31/2012	06/04/12 14:19	
Vinyl acetate	ND	54	NA	1	B2F0048	05/31/2012	06/04/12 14:19	
Vinyl chloride	ND	5.4	NA	1	B2F0048	05/31/2012	06/04/12 14:19	
Surrogate: 1,2-Dichloroethane-d4	*88.5 %*	*65 - 135*			B2F0048	05/31/2012	*06/04/12 14:19*	
Surrogate: 4-Bromofluorobenzene	*102 %*	*57 - 126*			B2F0048	05/31/2012	*06/04/12 14:19*	
Surrogate: Dibromofluoromethane	*97.0 %*	*72 - 121*			B2F0048	05/31/2012	*06/04/12 14:19*	
Surrogate: Toluene-d8	*101 %*	*80 - 107*			B2F0048	05/31/2012	*06/04/12 14:19*	

Ninyo & Moore		Project Number :	Caltrans TO-04, 208449004
475 Goddard Suite 200		Report To :	Michael Cushner
Irvine , CA 92618		Reported :	06/08/2012

Client Sample ID B2-4
Lab ID: 1202045-06

Gasoline Range Organics by EPA 8015B

Analyst: DP

Analyte	Result (mg/kg)	PQL (mg/kg)	MDL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
T/R Hydrocarbons: C4-C12	ND	1.0	NA	1	B2F0064	06/04/2012	06/04/12 18:26	
Surrogate: 4-Bromofluorobenzene	*99.7 %*	*69 - 158*			B2F0064	06/04/2012	*06/04/12 18:26*	

Hydrocarbon Chain Distribution by GC/FID

Analyst: CR

Analyte	Result (mg/kg)	PQL (mg/kg)	MDL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
T/R Hydrocarbons: C13-C22	ND	10	NA	1	B2F0089	06/05/2012	06/05/12 16:53	
T/R Hydrocarbons: C23-C32	ND	10	NA	1	B2F0089	06/05/2012	06/05/12 16:53	
T/R Hydrocarbons: >C32	ND	10	NA	1	B2F0089	06/05/2012	06/05/12 16:53	
Surrogate: p-Terphenyl	*85.2 %*	*62 - 136*			B2F0089	06/05/2012	*06/05/12 16:53*	

Volatile Organic Compounds by EPA 5035/EPA 8260

Analyst: RP

Analyte	Result (ug/kg)	PQL (ug/kg)	MDL (ug/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
1,1,1,2-Tetrachloroethane	ND	3.9	NA	1	B2F0048	05/31/2012	06/04/12 14:36	
1,1,1-Trichloroethane	ND	3.9	NA	1	B2F0048	05/31/2012	06/04/12 14:36	
1,1,2,2-Tetrachloroethane	ND	3.9	NA	1	B2F0048	05/31/2012	06/04/12 14:36	
1,1,2-Trichloroethane	ND	3.9	NA	1	B2F0048	05/31/2012	06/04/12 14:36	
1,1-Dichloroethane	ND	3.9	NA	1	B2F0048	05/31/2012	06/04/12 14:36	
1,1-Dichloroethene	ND	3.9	NA	1	B2F0048	05/31/2012	06/04/12 14:36	
1,1-Dichloropropene	ND	3.9	NA	1	B2F0048	05/31/2012	06/04/12 14:36	
1,2,3-Trichloropropane	ND	3.9	NA	1	B2F0048	05/31/2012	06/04/12 14:36	
1,2,3-Trichlorobenzene	ND	3.9	NA	1	B2F0048	05/31/2012	06/04/12 14:36	
1,2,4-Trichlorobenzene	ND	3.9	NA	1	B2F0048	05/31/2012	06/04/12 14:36	
1,2,4-Trimethylbenzene	ND	3.9	NA	1	B2F0048	05/31/2012	06/04/12 14:36	
1,2-Dibromo-3-chloropropane	ND	7.9	NA	1	B2F0048	05/31/2012	06/04/12 14:36	
1,2-Dibromoethane	ND	3.9	NA	1	B2F0048	05/31/2012	06/04/12 14:36	
1,2-Dichlorobenzene	ND	3.9	NA	1	B2F0048	05/31/2012	06/04/12 14:36	
1,2-Dichloroethane	ND	3.9	NA	1	B2F0048	05/31/2012	06/04/12 14:36	
1,2-Dichloropropane	ND	3.9	NA	1	B2F0048	05/31/2012	06/04/12 14:36	
1,3,5-Trimethylbenzene	ND	3.9	NA	1	B2F0048	05/31/2012	06/04/12 14:36	
1,3-Dichlorobenzene	ND	3.9	NA	1	B2F0048	05/31/2012	06/04/12 14:36	

Ninyo & Moore		Project Number :	Caltrans TO-04, 208449004
475 Goddard Suite 200		Report To :	Michael Cushner
Irvine , CA 92618		Reported :	06/08/2012

Client Sample ID B2-4
Lab ID: 1202045-06

Volatile Organic Compounds by EPA 5035/EPA 8260 **Analyst: RP**

Analyte	Result (ug/kg)	PQL (ug/kg)	MDL (ug/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
1,3-Dichloropropane	ND	3.9	NA	1	B2F0048	05/31/2012	06/04/12 14:36	
1,4-Dichlorobenzene	ND	3.9	NA	1	B2F0048	05/31/2012	06/04/12 14:36	
2,2-Dichloropropane	ND	3.9	NA	1	B2F0048	05/31/2012	06/04/12 14:36	
2-Chlorotoluene	ND	3.9	NA	1	B2F0048	05/31/2012	06/04/12 14:36	
4-Chlorotoluene	ND	3.9	NA	1	B2F0048	05/31/2012	06/04/12 14:36	
4-Isopropyltoluene	ND	3.9	NA	1	B2F0048	05/31/2012	06/04/12 14:36	
Benzene	**8.2**	3.9	NA	1	B2F0048	05/31/2012	06/04/12 14:36	
Bromobenzene	ND	3.9	NA	1	B2F0048	05/31/2012	06/04/12 14:36	
Bromochloromethane	ND	3.9	NA	1	B2F0048	05/31/2012	06/04/12 14:36	
Bromodichloromethane	ND	3.9	NA	1	B2F0048	05/31/2012	06/04/12 14:36	
Bromoform	ND	3.9	NA	1	B2F0048	05/31/2012	06/04/12 14:36	
Bromomethane	ND	3.9	NA	1	B2F0048	05/31/2012	06/04/12 14:36	
Carbon disulfide	ND	3.9	NA	1	B2F0048	05/31/2012	06/04/12 14:36	
Carbon tetrachloride	ND	3.9	NA	1	B2F0048	05/31/2012	06/04/12 14:36	
Chlorobenzene	ND	3.9	NA	1	B2F0048	05/31/2012	06/04/12 14:36	
Chloroethane	ND	3.9	NA	1	B2F0048	05/31/2012	06/04/12 14:36	
Chloroform	ND	3.9	NA	1	B2F0048	05/31/2012	06/04/12 14:36	
Chloromethane	ND	3.9	NA	1	B2F0048	05/31/2012	06/04/12 14:36	
cis-1,2-Dichloroethene	ND	3.9	NA	1	B2F0048	05/31/2012	06/04/12 14:36	
cis-1,3-Dichloropropene	ND	3.9	NA	1	B2F0048	05/31/2012	06/04/12 14:36	
Di-isopropyl ether	ND	3.9	NA	1	B2F0048	05/31/2012	06/04/12 14:36	
Dibromochloromethane	ND	3.9	NA	1	B2F0048	05/31/2012	06/04/12 14:36	
Dibromomethane	ND	3.9	NA	1	B2F0048	05/31/2012	06/04/12 14:36	
Dichlorodifluoromethane	ND	3.9	NA	1	B2F0048	05/31/2012	06/04/12 14:36	
Ethyl Acetate	ND	39	NA	1	B2F0048	05/31/2012	06/04/12 14:36	
Ethyl Ether	ND	39	NA	1	B2F0048	05/31/2012	06/04/12 14:36	
Ethyl tert-butyl ether	ND	3.9	NA	1	B2F0048	05/31/2012	06/04/12 14:36	
Ethylbenzene	ND	3.9	NA	1	B2F0048	05/31/2012	06/04/12 14:36	
Freon-113	ND	3.9	NA	1	B2F0048	05/31/2012	06/04/12 14:36	
Hexachlorobutadiene	ND	3.9	NA	1	B2F0048	05/31/2012	06/04/12 14:36	
Isopropylbenzene	ND	3.9	NA	1	B2F0048	05/31/2012	06/04/12 14:36	
m,p-Xylene	ND	7.9	NA	1	B2F0048	05/31/2012	06/04/12 14:36	
Methylene chloride	ND	3.9	NA	1	B2F0048	05/31/2012	06/04/12 14:36	
MTBE	ND	3.9	NA	1	B2F0048	05/31/2012	06/04/12 14:36	

Ninyo & Moore		Project Number :	Caltrans TO-04, 208449004
475 Goddard Suite 200		Report To :	Michael Cushner
Irvine , CA 92618		Reported :	06/08/2012

Client Sample ID B2-4
Lab ID: 1202045-06

Volatile Organic Compounds by EPA 5035/EPA 8260 **Analyst: RP**

Analyte	Result (ug/kg)	PQL (ug/kg)	MDL (ug/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
n-Butylbenzene	ND	3.9	NA	1	B2F0048	05/31/2012	06/04/12 14:36	
n-Propylbenzene	ND	3.9	NA	1	B2F0048	05/31/2012	06/04/12 14:36	
Naphthalene	ND	3.9	NA	1	B2F0048	05/31/2012	06/04/12 14:36	
o-Xylene	ND	3.9	NA	1	B2F0048	05/31/2012	06/04/12 14:36	
sec-Butylbenzene	ND	3.9	NA	1	B2F0048	05/31/2012	06/04/12 14:36	
Styrene	ND	3.9	NA	1	B2F0048	05/31/2012	06/04/12 14:36	
tert-Amyl methyl ether	ND	3.9	NA	1	B2F0048	05/31/2012	06/04/12 14:36	
tert-Butanol	ND	79	NA	1	B2F0048	05/31/2012	06/04/12 14:36	
tert-Butylbenzene	ND	3.9	NA	1	B2F0048	05/31/2012	06/04/12 14:36	
Tetrachloroethene	ND	3.9	NA	1	B2F0048	05/31/2012	06/04/12 14:36	
Toluene	**6.1**	3.9	NA	1	B2F0048	05/31/2012	06/04/12 14:36	
trans-1,2-Dichloroethene	ND	3.9	NA	1	B2F0048	05/31/2012	06/04/12 14:36	
trans-1,3-Dichloropropene	ND	39	NA	1	B2F0048	05/31/2012	06/04/12 14:36	
Trichloroethene	ND	3.9	NA	1	B2F0048	05/31/2012	06/04/12 14:36	
Trichlorofluoromethane	ND	3.9	NA	1	B2F0048	05/31/2012	06/04/12 14:36	
Vinyl acetate	ND	39	NA	1	B2F0048	05/31/2012	06/04/12 14:36	
Vinyl chloride	ND	3.9	NA	1	B2F0048	05/31/2012	06/04/12 14:36	
Surrogate: 1,2-Dichloroethane-d4	*85.8 %*	*65 - 135*			B2F0048	05/31/2012	*06/04/12 14:36*	
Surrogate: 4-Bromofluorobenzene	*104 %*	*57 - 126*			B2F0048	05/31/2012	*06/04/12 14:36*	
Surrogate: Dibromofluoromethane	*92.6 %*	*72 - 121*			B2F0048	05/31/2012	*06/04/12 14:36*	
Surrogate: Toluene-d8	*99.7 %*	*80 - 107*			B2F0048	05/31/2012	*06/04/12 14:36*	

Ninyo & Moore		Project Number :	Caltrans TO-04, 208449004
475 Goddard Suite 200		Report To :	Michael Cushner
Irvine , CA 92618		Reported :	06/08/2012

Client Sample ID B2-8
Lab ID: 1202045-08

Gasoline Range Organics by EPA 8015B

Analyst: DP

Analyte	Result (mg/kg)	PQL (mg/kg)	MDL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
T/R Hydrocarbons: C4-C12	ND	1.0	NA	1	B2F0064	06/04/2012	06/04/12 18:41	
Surrogate: 4-Bromofluorobenzene	*100 %*		*69 - 158*		B2F0064	06/04/2012	*06/04/12 18:41*	

Hydrocarbon Chain Distribution by GC/FID

Analyst: CR

Analyte	Result (mg/kg)	PQL (mg/kg)	MDL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
T/R Hydrocarbons: C13-C22	ND	10	NA	1	B2F0089	06/05/2012	06/05/12 17:10	
T/R Hydrocarbons: C23-C32	ND	10	NA	1	B2F0089	06/05/2012	06/05/12 17:10	
T/R Hydrocarbons: >C32	ND	10	NA	1	B2F0089	06/05/2012	06/05/12 17:10	
Surrogate: p-Terphenyl	*75.8 %*		*62 - 136*		B2F0089	06/05/2012	*06/05/12 17:10*	

Volatile Organic Compounds by EPA 5035/EPA 8260

Analyst: RP

Analyte	Result (ug/kg)	PQL (ug/kg)	MDL (ug/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
1,1,1,2-Tetrachloroethane	ND	4.7	NA	1	B2F0048	05/31/2012	06/04/12 14:53	
1,1,1-Trichloroethane	ND	4.7	NA	1	B2F0048	05/31/2012	06/04/12 14:53	
1,1,2,2-Tetrachloroethane	ND	4.7	NA	1	B2F0048	05/31/2012	06/04/12 14:53	
1,1,2-Trichloroethane	ND	4.7	NA	1	B2F0048	05/31/2012	06/04/12 14:53	
1,1-Dichloroethane	ND	4.7	NA	1	B2F0048	05/31/2012	06/04/12 14:53	
1,1-Dichloroethene	ND	4.7	NA	1	B2F0048	05/31/2012	06/04/12 14:53	
1,1-Dichloropropene	ND	4.7	NA	1	B2F0048	05/31/2012	06/04/12 14:53	
1,2,3-Trichloropropane	ND	4.7	NA	1	B2F0048	05/31/2012	06/04/12 14:53	
1,2,3-Trichlorobenzene	ND	4.7	NA	1	B2F0048	05/31/2012	06/04/12 14:53	
1,2,4-Trichlorobenzene	ND	4.7	NA	1	B2F0048	05/31/2012	06/04/12 14:53	
1,2,4-Trimethylbenzene	ND	4.7	NA	1	B2F0048	05/31/2012	06/04/12 14:53	
1,2-Dibromo-3-chloropropane	ND	9.4	NA	1	B2F0048	05/31/2012	06/04/12 14:53	
1,2-Dibromoethane	ND	4.7	NA	1	B2F0048	05/31/2012	06/04/12 14:53	
1,2-Dichlorobenzene	ND	4.7	NA	1	B2F0048	05/31/2012	06/04/12 14:53	
1,2-Dichloroethane	ND	4.7	NA	1	B2F0048	05/31/2012	06/04/12 14:53	
1,2-Dichloropropane	ND	4.7	NA	1	B2F0048	05/31/2012	06/04/12 14:53	
1,3,5-Trimethylbenzene	ND	4.7	NA	1	B2F0048	05/31/2012	06/04/12 14:53	
1,3-Dichlorobenzene	ND	4.7	NA	1	B2F0048	05/31/2012	06/04/12 14:53	

Ninyo & Moore		Project Number :	Caltrans TO-04, 208449004
475 Goddard Suite 200		Report To :	Michael Cushner
Irvine , CA 92618		Reported :	06/08/2012

Client Sample ID B2-8
Lab ID: 1202045-08

Volatile Organic Compounds by EPA 5035/EPA 8260 **Analyst: RP**

Analyte	Result (ug/kg)	PQL (ug/kg)	MDL (ug/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
1,3-Dichloropropane	ND	4.7	NA	1	B2F0048	05/31/2012	06/04/12 14:53	
1,4-Dichlorobenzene	ND	4.7	NA	1	B2F0048	05/31/2012	06/04/12 14:53	
2,2-Dichloropropane	ND	4.7	NA	1	B2F0048	05/31/2012	06/04/12 14:53	
2-Chlorotoluene	ND	4.7	NA	1	B2F0048	05/31/2012	06/04/12 14:53	
4-Chlorotoluene	ND	4.7	NA	1	B2F0048	05/31/2012	06/04/12 14:53	
4-Isopropyltoluene	ND	4.7	NA	1	B2F0048	05/31/2012	06/04/12 14:53	
Benzene	**21**	4.7	NA	1	B2F0048	05/31/2012	06/04/12 14:53	
Bromobenzene	ND	4.7	NA	1	B2F0048	05/31/2012	06/04/12 14:53	
Bromochloromethane	ND	4.7	NA	1	B2F0048	05/31/2012	06/04/12 14:53	
Bromodichloromethane	ND	4.7	NA	1	B2F0048	05/31/2012	06/04/12 14:53	
Bromoform	ND	4.7	NA	1	B2F0048	05/31/2012	06/04/12 14:53	
Bromomethane	ND	4.7	NA	1	B2F0048	05/31/2012	06/04/12 14:53	
Carbon disulfide	ND	4.7	NA	1	B2F0048	05/31/2012	06/04/12 14:53	
Carbon tetrachloride	ND	4.7	NA	1	B2F0048	05/31/2012	06/04/12 14:53	
Chlorobenzene	ND	4.7	NA	1	B2F0048	05/31/2012	06/04/12 14:53	
Chloroethane	ND	4.7	NA	1	B2F0048	05/31/2012	06/04/12 14:53	
Chloroform	ND	4.7	NA	1	B2F0048	05/31/2012	06/04/12 14:53	
Chloromethane	ND	4.7	NA	1	B2F0048	05/31/2012	06/04/12 14:53	
cis-1,2-Dichloroethene	ND	4.7	NA	1	B2F0048	05/31/2012	06/04/12 14:53	
cis-1,3-Dichloropropene	ND	4.7	NA	1	B2F0048	05/31/2012	06/04/12 14:53	
Di-isopropyl ether	ND	4.7	NA	1	B2F0048	05/31/2012	06/04/12 14:53	
Dibromochloromethane	ND	4.7	NA	1	B2F0048	05/31/2012	06/04/12 14:53	
Dibromomethane	ND	4.7	NA	1	B2F0048	05/31/2012	06/04/12 14:53	
Dichlorodifluoromethane	ND	4.7	NA	1	B2F0048	05/31/2012	06/04/12 14:53	
Ethyl Acetate	ND	47	NA	1	B2F0048	05/31/2012	06/04/12 14:53	
Ethyl Ether	ND	47	NA	1	B2F0048	05/31/2012	06/04/12 14:53	
Ethyl tert-butyl ether	ND	4.7	NA	1	B2F0048	05/31/2012	06/04/12 14:53	
Ethylbenzene	ND	4.7	NA	1	B2F0048	05/31/2012	06/04/12 14:53	
Freon-113	ND	4.7	NA	1	B2F0048	05/31/2012	06/04/12 14:53	
Hexachlorobutadiene	ND	4.7	NA	1	B2F0048	05/31/2012	06/04/12 14:53	
Isopropylbenzene	ND	4.7	NA	1	B2F0048	05/31/2012	06/04/12 14:53	
m,p-Xylene	ND	9.4	NA	1	B2F0048	05/31/2012	06/04/12 14:53	
Methylene chloride	ND	4.7	NA	1	B2F0048	05/31/2012	06/04/12 14:53	
MTBE	ND	4.7	NA	1	B2F0048	05/31/2012	06/04/12 14:53	

Ninyo & Moore		Project Number :	Caltrans TO-04, 208449004
475 Goddard Suite 200		Report To :	Michael Cushner
Irvine , CA 92618		Reported :	06/08/2012

Client Sample ID B2-8
Lab ID: 1202045-08

Volatile Organic Compounds by EPA 5035/EPA 8260 **Analyst: RP**

Analyte	Result (ug/kg)	PQL (ug/kg)	MDL (ug/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
n-Butylbenzene	ND	4.7	NA	1	B2F0048	05/31/2012	06/04/12 14:53	
n-Propylbenzene	ND	4.7	NA	1	B2F0048	05/31/2012	06/04/12 14:53	
Naphthalene	ND	4.7	NA	1	B2F0048	05/31/2012	06/04/12 14:53	
o-Xylene	ND	4.7	NA	1	B2F0048	05/31/2012	06/04/12 14:53	
sec-Butylbenzene	ND	4.7	NA	1	B2F0048	05/31/2012	06/04/12 14:53	
Styrene	ND	4.7	NA	1	B2F0048	05/31/2012	06/04/12 14:53	
tert-Amyl methyl ether	ND	4.7	NA	1	B2F0048	05/31/2012	06/04/12 14:53	
tert-Butanol	ND	94	NA	1	B2F0048	05/31/2012	06/04/12 14:53	
tert-Butylbenzene	ND	4.7	NA	1	B2F0048	05/31/2012	06/04/12 14:53	
Tetrachloroethene	ND	4.7	NA	1	B2F0048	05/31/2012	06/04/12 14:53	
Toluene	**13**	4.7	NA	1	B2F0048	05/31/2012	06/04/12 14:53	
trans-1,2-Dichloroethene	ND	4.7	NA	1	B2F0048	05/31/2012	06/04/12 14:53	
trans-1,3-Dichloropropene	ND	47	NA	1	B2F0048	05/31/2012	06/04/12 14:53	
Trichloroethene	ND	4.7	NA	1	B2F0048	05/31/2012	06/04/12 14:53	
Trichlorofluoromethane	ND	4.7	NA	1	B2F0048	05/31/2012	06/04/12 14:53	
Vinyl acetate	ND	47	NA	1	B2F0048	05/31/2012	06/04/12 14:53	
Vinyl chloride	ND	4.7	NA	1	B2F0048	05/31/2012	06/04/12 14:53	
Surrogate: 1,2-Dichloroethane-d4	*88.0 %*	*65 - 135*			B2F0048	05/31/2012	*06/04/12 14:53*	
Surrogate: 4-Bromofluorobenzene	*105 %*	*57 - 126*			B2F0048	05/31/2012	*06/04/12 14:53*	
Surrogate: Dibromofluoromethane	*93.7 %*	*72 - 121*			B2F0048	05/31/2012	*06/04/12 14:53*	
Surrogate: Toluene-d8	*103 %*	*80 - 107*			B2F0048	05/31/2012	*06/04/12 14:53*	

Ninyo & Moore		Project Number :	Caltrans TO-04, 208449004
475 Goddard Suite 200		Report To :	Michael Cushner
Irvine , CA 92618		Reported :	06/08/2012

Client Sample ID B3-6
Lab ID: 1202045-11

Gasoline Range Organics by EPA 8015B

Analyst: DP

Analyte	Result (mg/kg)	PQL (mg/kg)	MDL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
T/R Hydrocarbons: C4-C12	ND	1.0	NA	1	B2F0064	06/04/2012	06/04/12 18:57	
Surrogate: 4-Bromofluorobenzene	*100 %*		*69 - 158*		B2F0064	06/04/2012	*06/04/12 18:57*	

Hydrocarbon Chain Distribution by GC/FID

Analyst: CR

Analyte	Result (mg/kg)	PQL (mg/kg)	MDL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
T/R Hydrocarbons: C13-C22	ND	10	NA	1	B2F0089	06/05/2012	06/05/12 17:27	
T/R Hydrocarbons: C23-C32	ND	10	NA	1	B2F0089	06/05/2012	06/05/12 17:27	
T/R Hydrocarbons: >C32	ND	10	NA	1	B2F0089	06/05/2012	06/05/12 17:27	
Surrogate: p-Terphenyl	*88.0 %*		*62 - 136*		B2F0089	06/05/2012	*06/05/12 17:27*	

Volatile Organic Compounds by EPA 8260

Analyst: RP

Analyte	Result (ug/kg)	PQL (ug/kg)	MDL (ug/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
1,1,1,2-Tetrachloroethane	ND	5.0	NA	1	B2F0049	06/04/2012	06/04/12 12:46	
1,1,1-Trichloroethane	ND	5.0	NA	1	B2F0049	06/04/2012	06/04/12 12:46	
1,1,2,2-Tetrachloroethane	ND	5.0	NA	1	B2F0049	06/04/2012	06/04/12 12:46	
1,1,2-Trichloroethane	ND	5.0	NA	1	B2F0049	06/04/2012	06/04/12 12:46	
1,1-Dichloroethane	ND	5.0	NA	1	B2F0049	06/04/2012	06/04/12 12:46	
1,1-Dichloroethene	ND	5.0	NA	1	B2F0049	06/04/2012	06/04/12 12:46	
1,1-Dichloropropene	ND	5.0	NA	1	B2F0049	06/04/2012	06/04/12 12:46	
1,2,3-Trichloropropane	ND	5.0	NA	1	B2F0049	06/04/2012	06/04/12 12:46	
1,2,3-Trichlorobenzene	ND	5.0	NA	1	B2F0049	06/04/2012	06/04/12 12:46	
1,2,4-Trichlorobenzene	ND	5.0	NA	1	B2F0049	06/04/2012	06/04/12 12:46	
1,2,4-Trimethylbenzene	ND	5.0	NA	1	B2F0049	06/04/2012	06/04/12 12:46	
1,2-Dibromo-3-chloropropane	ND	5.0	NA	1	B2F0049	06/04/2012	06/04/12 12:46	
1,2-Dibromoethane	ND	5.0	NA	1	B2F0049	06/04/2012	06/04/12 12:46	
1,2-Dichlorobenzene	ND	5.0	NA	1	B2F0049	06/04/2012	06/04/12 12:46	
1,2-Dichloroethane	ND	5.0	NA	1	B2F0049	06/04/2012	06/04/12 12:46	
1,2-Dichloropropane	ND	5.0	NA	1	B2F0049	06/04/2012	06/04/12 12:46	
1,3,5-Trimethylbenzene	ND	5.0	NA	1	B2F0049	06/04/2012	06/04/12 12:46	
1,3-Dichlorobenzene	ND	5.0	NA	1	B2F0049	06/04/2012	06/04/12 12:46	

Ninyo & Moore		Project Number :	Caltrans TO-04, 208449004
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Irvine , CA 92618		Reported :	06/08/2012

Client Sample ID B3-6

Lab ID: 1202045-11

Volatile Organic Compounds by EPA 8260 **Analyst: RP**

Analyte	Result (ug/kg)	PQL (ug/kg)	MDL (ug/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
1,3-Dichloropropane	ND	5.0	NA	1	B2F0049	06/04/2012	06/04/12 12:46	
1,4-Dichlorobenzene	ND	5.0	NA	1	B2F0049	06/04/2012	06/04/12 12:46	
2,2-Dichloropropane	ND	5.0	NA	1	B2F0049	06/04/2012	06/04/12 12:46	
2-Chlorotoluene	ND	5.0	NA	1	B2F0049	06/04/2012	06/04/12 12:46	
4-Chlorotoluene	ND	5.0	NA	1	B2F0049	06/04/2012	06/04/12 12:46	
4-Isopropyltoluene	ND	5.0	NA	1	B2F0049	06/04/2012	06/04/12 12:46	
Benzene	ND	5.0	NA	1	B2F0049	06/04/2012	06/04/12 12:46	
Bromobenzene	ND	5.0	NA	1	B2F0049	06/04/2012	06/04/12 12:46	
Bromochloromethane	ND	5.0	NA	1	B2F0049	06/04/2012	06/04/12 12:46	
Bromodichloromethane	ND	5.0	NA	1	B2F0049	06/04/2012	06/04/12 12:46	
Bromoform	ND	5.0	NA	1	B2F0049	06/04/2012	06/04/12 12:46	
Bromomethane	ND	5.0	NA	1	B2F0049	06/04/2012	06/04/12 12:46	
Carbon disulfide	ND	5.0	NA	1	B2F0049	06/04/2012	06/04/12 12:46	
Carbon tetrachloride	ND	5.0	NA	1	B2F0049	06/04/2012	06/04/12 12:46	
Chlorobenzene	ND	5.0	NA	1	B2F0049	06/04/2012	06/04/12 12:46	
Chloroethane	ND	5.0	NA	1	B2F0049	06/04/2012	06/04/12 12:46	
Chloroform	ND	5.0	NA	1	B2F0049	06/04/2012	06/04/12 12:46	
Chloromethane	ND	5.0	NA	1	B2F0049	06/04/2012	06/04/12 12:46	
cis-1,2-Dichloroethene	ND	5.0	NA	1	B2F0049	06/04/2012	06/04/12 12:46	
cis-1,3-Dichloropropene	ND	5.0	NA	1	B2F0049	06/04/2012	06/04/12 12:46	
Di-isopropyl ether	ND	5.0	NA	1	B2F0049	06/04/2012	06/04/12 12:46	
Dibromochloromethane	ND	5.0	NA	1	B2F0049	06/04/2012	06/04/12 12:46	
Dibromomethane	ND	5.0	NA	1	B2F0049	06/04/2012	06/04/12 12:46	
Dichlorodifluoromethane	ND	5.0	NA	1	B2F0049	06/04/2012	06/04/12 12:46	
Ethyl Acetate	ND	50	NA	1	B2F0049	06/04/2012	06/04/12 12:46	
Ethyl Ether	ND	50	NA	1	B2F0049	06/04/2012	06/04/12 12:46	
Ethyl tert-butyl ether	ND	5.0	NA	1	B2F0049	06/04/2012	06/04/12 12:46	
Ethylbenzene	ND	5.0	NA	1	B2F0049	06/04/2012	06/04/12 12:46	
Freon-113	ND	5.0	NA	1	B2F0049	06/04/2012	06/04/12 12:46	
Hexachlorobutadiene	ND	5.0	NA	1	B2F0049	06/04/2012	06/04/12 12:46	
Isopropylbenzene	ND	5.0	NA	1	B2F0049	06/04/2012	06/04/12 12:46	
m,p-Xylene	ND	10	NA	1	B2F0049	06/04/2012	06/04/12 12:46	
Methylene chloride	ND	5.0	NA	1	B2F0049	06/04/2012	06/04/12 12:46	
MTBE	ND	5.0	NA	1	B2F0049	06/04/2012	06/04/12 12:46	

Ninyo & Moore		Project Number :	Caltrans TO-04, 208449004
475 Goddard Suite 200		Report To :	Michael Cushner
Irvine , CA 92618		Reported :	06/08/2012

Client Sample ID B3-6

Lab ID: 1202045-11

Volatile Organic Compounds by EPA 8260 **Analyst: RP**

Analyte	Result (ug/kg)	PQL (ug/kg)	MDL (ug/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
n-Butylbenzene	ND	5.0	NA	1	B2F0049	06/04/2012	06/04/12 12:46	
n-Propylbenzene	ND	5.0	NA	1	B2F0049	06/04/2012	06/04/12 12:46	
Naphthalene	ND	5.0	NA	1	B2F0049	06/04/2012	06/04/12 12:46	
o-Xylene	ND	5.0	NA	1	B2F0049	06/04/2012	06/04/12 12:46	
sec-Butylbenzene	ND	5.0	NA	1	B2F0049	06/04/2012	06/04/12 12:46	
Styrene	ND	5.0	NA	1	B2F0049	06/04/2012	06/04/12 12:46	
tert-Amyl methyl ether	ND	5.0	NA	1	B2F0049	06/04/2012	06/04/12 12:46	
tert-Butanol	ND	100	NA	1	B2F0049	06/04/2012	06/04/12 12:46	
tert-Butylbenzene	ND	5.0	NA	1	B2F0049	06/04/2012	06/04/12 12:46	
Tetrachloroethene	ND	5.0	NA	1	B2F0049	06/04/2012	06/04/12 12:46	
Toluene	ND	5.0	NA	1	B2F0049	06/04/2012	06/04/12 12:46	
trans-1,2-Dichloroethene	ND	5.0	NA	1	B2F0049	06/04/2012	06/04/12 12:46	
trans-1,3-Dichloropropene	ND	50	NA	1	B2F0049	06/04/2012	06/04/12 12:46	
Trichloroethene	ND	5.0	NA	1	B2F0049	06/04/2012	06/04/12 12:46	
Trichlorofluoromethane	ND	5.0	NA	1	B2F0049	06/04/2012	06/04/12 12:46	
Vinyl acetate	ND	50	NA	1	B2F0049	06/04/2012	06/04/12 12:46	
Vinyl chloride	ND	5.0	NA	1	B2F0049	06/04/2012	06/04/12 12:46	
Surrogate: 1,2-Dichloroethane-d4	*89.2 %*	*70 - 130*			B2F0049	06/04/2012	*06/04/12 12:46*	
Surrogate: 4-Bromofluorobenzene	*99.4 %*	*70 - 130*			B2F0049	06/04/2012	*06/04/12 12:46*	
Surrogate: Dibromofluoromethane	*103 %*	*70 - 130*			B2F0049	06/04/2012	*06/04/12 12:46*	
Surrogate: Toluene-d8	*71.1 %*	*70 - 130*			B2F0049	06/04/2012	*06/04/12 12:46*	

Ninyo & Moore		Project Number :	Caltrans TO-04, 208449004
475 Goddard Suite 200		Report To :	Michael Cushner
Irvine , CA 92618		Reported :	06/08/2012

Client Sample ID B3-8
Lab ID: 1202045-12

Gasoline Range Organics by EPA 8015B

Analyst: DP

Analyte	Result (mg/kg)	PQL (mg/kg)	MDL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
T/R Hydrocarbons: C4-C12	ND	1.0	NA	1	B2F0064	06/04/2012	06/04/12 19:12	
Surrogate: 4-Bromofluorobenzene	*97.5 %*	*69 - 158*			B2F0064	06/04/2012	*06/04/12 19:12*	

Hydrocarbon Chain Distribution by GC/FID

Analyst: CR

Analyte	Result (mg/kg)	PQL (mg/kg)	MDL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
T/R Hydrocarbons: C13-C22	ND	10	NA	1	B2F0089	06/05/2012	06/05/12 17:44	
T/R Hydrocarbons: C23-C32	ND	10	NA	1	B2F0089	06/05/2012	06/05/12 17:44	
T/R Hydrocarbons: >C32	ND	10	NA	1	B2F0089	06/05/2012	06/05/12 17:44	
Surrogate: p-Terphenyl	*86.5 %*	*62 - 136*			B2F0089	06/05/2012	*06/05/12 17:44*	

Volatile Organic Compounds by EPA 5035/EPA 8260

Analyst: RP

Analyte	Result (ug/kg)	PQL (ug/kg)	MDL (ug/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
1,1,1,2-Tetrachloroethane	ND	5.1	NA	1	B2F0085	05/31/2012	06/05/12 12:17	
1,1,1-Trichloroethane	ND	5.1	NA	1	B2F0085	05/31/2012	06/05/12 12:17	
1,1,2,2-Tetrachloroethane	ND	5.1	NA	1	B2F0085	05/31/2012	06/05/12 12:17	
1,1,2-Trichloroethane	ND	5.1	NA	1	B2F0085	05/31/2012	06/05/12 12:17	
1,1-Dichloroethane	ND	5.1	NA	1	B2F0085	05/31/2012	06/05/12 12:17	
1,1-Dichloroethene	ND	5.1	NA	1	B2F0085	05/31/2012	06/05/12 12:17	
1,1-Dichloropropene	ND	5.1	NA	1	B2F0085	05/31/2012	06/05/12 12:17	
1,2,3-Trichloropropane	ND	5.1	NA	1	B2F0085	05/31/2012	06/05/12 12:17	
1,2,3-Trichlorobenzene	ND	5.1	NA	1	B2F0085	05/31/2012	06/05/12 12:17	
1,2,4-Trichlorobenzene	ND	5.1	NA	1	B2F0085	05/31/2012	06/05/12 12:17	
1,2,4-Trimethylbenzene	ND	5.1	NA	1	B2F0085	05/31/2012	06/05/12 12:17	
1,2-Dibromo-3-chloropropane	ND	10	NA	1	B2F0085	05/31/2012	06/05/12 12:17	
1,2-Dibromoethane	ND	5.1	NA	1	B2F0085	05/31/2012	06/05/12 12:17	
1,2-Dichlorobenzene	ND	5.1	NA	1	B2F0085	05/31/2012	06/05/12 12:17	
1,2-Dichloroethane	ND	5.1	NA	1	B2F0085	05/31/2012	06/05/12 12:17	
1,2-Dichloropropane	ND	5.1	NA	1	B2F0085	05/31/2012	06/05/12 12:17	
1,3,5-Trimethylbenzene	ND	5.1	NA	1	B2F0085	05/31/2012	06/05/12 12:17	
1,3-Dichlorobenzene	ND	5.1	NA	1	B2F0085	05/31/2012	06/05/12 12:17	

Ninyo & Moore		Project Number :	Caltrans TO-04, 208449004
475 Goddard Suite 200		Report To :	Michael Cushner
Irvine , CA 92618		Reported :	06/08/2012

Client Sample ID B3-8

Lab ID: 1202045-12

Volatile Organic Compounds by EPA 5035/EPA 8260 **Analyst: RP**

Analyte	Result (ug/kg)	PQL (ug/kg)	MDL (ug/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
1,3-Dichloropropane	ND	5.1	NA	1	B2F0085	05/31/2012	06/05/12 12:17	
1,4-Dichlorobenzene	ND	5.1	NA	1	B2F0085	05/31/2012	06/05/12 12:17	
2,2-Dichloropropane	ND	5.1	NA	1	B2F0085	05/31/2012	06/05/12 12:17	
2-Chlorotoluene	ND	5.1	NA	1	B2F0085	05/31/2012	06/05/12 12:17	
4-Chlorotoluene	ND	5.1	NA	1	B2F0085	05/31/2012	06/05/12 12:17	
4-Isopropyltoluene	ND	5.1	NA	1	B2F0085	05/31/2012	06/05/12 12:17	
Benzene	ND	5.1	NA	1	B2F0085	05/31/2012	06/05/12 12:17	
Bromobenzene	ND	5.1	NA	1	B2F0085	05/31/2012	06/05/12 12:17	
Bromochloromethane	ND	5.1	NA	1	B2F0085	05/31/2012	06/05/12 12:17	
Bromodichloromethane	ND	5.1	NA	1	B2F0085	05/31/2012	06/05/12 12:17	
Bromoform	ND	5.1	NA	1	B2F0085	05/31/2012	06/05/12 12:17	
Bromomethane	ND	5.1	NA	1	B2F0085	05/31/2012	06/05/12 12:17	
Carbon disulfide	ND	5.1	NA	1	B2F0085	05/31/2012	06/05/12 12:17	
Carbon tetrachloride	ND	5.1	NA	1	B2F0085	05/31/2012	06/05/12 12:17	
Chlorobenzene	ND	5.1	NA	1	B2F0085	05/31/2012	06/05/12 12:17	
Chloroethane	ND	5.1	NA	1	B2F0085	05/31/2012	06/05/12 12:17	
Chloroform	ND	5.1	NA	1	B2F0085	05/31/2012	06/05/12 12:17	
Chloromethane	ND	5.1	NA	1	B2F0085	05/31/2012	06/05/12 12:17	
cis-1,2-Dichloroethene	ND	5.1	NA	1	B2F0085	05/31/2012	06/05/12 12:17	
cis-1,3-Dichloropropene	ND	5.1	NA	1	B2F0085	05/31/2012	06/05/12 12:17	
Di-isopropyl ether	ND	5.1	NA	1	B2F0085	05/31/2012	06/05/12 12:17	
Dibromochloromethane	ND	5.1	NA	1	B2F0085	05/31/2012	06/05/12 12:17	
Dibromomethane	ND	5.1	NA	1	B2F0085	05/31/2012	06/05/12 12:17	
Dichlorodifluoromethane	ND	5.1	NA	1	B2F0085	05/31/2012	06/05/12 12:17	
Ethyl Acetate	ND	51	NA	1	B2F0085	05/31/2012	06/05/12 12:17	
Ethyl Ether	ND	51	NA	1	B2F0085	05/31/2012	06/05/12 12:17	
Ethyl tert-butyl ether	ND	5.1	NA	1	B2F0085	05/31/2012	06/05/12 12:17	
Ethylbenzene	ND	5.1	NA	1	B2F0085	05/31/2012	06/05/12 12:17	
Freon-113	ND	5.1	NA	1	B2F0085	05/31/2012	06/05/12 12:17	
Hexachlorobutadiene	ND	5.1	NA	1	B2F0085	05/31/2012	06/05/12 12:17	
Isopropylbenzene	ND	5.1	NA	1	B2F0085	05/31/2012	06/05/12 12:17	
m,p-Xylene	ND	10	NA	1	B2F0085	05/31/2012	06/05/12 12:17	
Methylene chloride	ND	5.1	NA	1	B2F0085	05/31/2012	06/05/12 12:17	
MTBE	ND	5.1	NA	1	B2F0085	05/31/2012	06/05/12 12:17	

Ninyo & Moore		Project Number :	Caltrans TO-04, 208449004
475 Goddard Suite 200		Report To :	Michael Cushner
Irvine , CA 92618		Reported :	06/08/2012

Client Sample ID B3-8

Lab ID: 1202045-12

Volatile Organic Compounds by EPA 5035/EPA 8260 **Analyst: RP**

Analyte	Result (ug/kg)	PQL (ug/kg)	MDL (ug/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
n-Butylbenzene	ND	5.1	NA	1	B2F0085	05/31/2012	06/05/12 12:17	
n-Propylbenzene	ND	5.1	NA	1	B2F0085	05/31/2012	06/05/12 12:17	
Naphthalene	ND	5.1	NA	1	B2F0085	05/31/2012	06/05/12 12:17	
o-Xylene	ND	5.1	NA	1	B2F0085	05/31/2012	06/05/12 12:17	
sec-Butylbenzene	ND	5.1	NA	1	B2F0085	05/31/2012	06/05/12 12:17	
Styrene	ND	5.1	NA	1	B2F0085	05/31/2012	06/05/12 12:17	
tert-Amyl methyl ether	ND	5.1	NA	1	B2F0085	05/31/2012	06/05/12 12:17	
tert-Butanol	ND	100	NA	1	B2F0085	05/31/2012	06/05/12 12:17	
tert-Butylbenzene	ND	5.1	NA	1	B2F0085	05/31/2012	06/05/12 12:17	
Tetrachloroethene	ND	5.1	NA	1	B2F0085	05/31/2012	06/05/12 12:17	
Toluene	ND	5.1	NA	1	B2F0085	05/31/2012	06/05/12 12:17	
trans-1,2-Dichloroethene	ND	5.1	NA	1	B2F0085	05/31/2012	06/05/12 12:17	
trans-1,3-Dichloropropene	ND	51	NA	1	B2F0085	05/31/2012	06/05/12 12:17	
Trichloroethene	ND	5.1	NA	1	B2F0085	05/31/2012	06/05/12 12:17	
Trichlorofluoromethane	ND	5.1	NA	1	B2F0085	05/31/2012	06/05/12 12:17	
Vinyl acetate	ND	51	NA	1	B2F0085	05/31/2012	06/05/12 12:17	
Vinyl chloride	ND	5.1	NA	1	B2F0085	05/31/2012	06/05/12 12:17	
Surrogate: 1,2-Dichloroethane-d4	*95.5 %*	*65 - 135*			B2F0085	05/31/2012	*06/05/12 12:17*	
Surrogate: 4-Bromofluorobenzene	*104 %*	*57 - 126*			B2F0085	05/31/2012	*06/05/12 12:17*	
Surrogate: Dibromofluoromethane	*95.1 %*	*72 - 121*			B2F0085	05/31/2012	*06/05/12 12:17*	
Surrogate: Toluene-d8	*99.7 %*	*80 - 107*			B2F0085	05/31/2012	*06/05/12 12:17*	

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QUALITY CONTROL SECTION

Gasoline 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 B2F0064 - GCVOAS									
Blank (B2F0064-BLK1)				Prepared: 6/4/2012 Analyzed: 6/4/2012					
T/R Hydrocarbons: C4-C12	ND	1.0			NR				
Surrogate: 4-Bromofluorobenzene	*0.099*		*0.100*		*99.0*	*69 - 158*			
LCS (B2F0064-BS1)				Prepared: 6/4/2012 Analyzed: 6/4/2012					
T/R Hydrocarbons: C4-C12	4.3	1.0	5.00		85.8	70 - 130			
Surrogate: 4-Bromofluorobenzene	*0.10*		*0.100*		*102*	*69 - 158*			
LCS Dup (B2F0064-BSD1)				Prepared: 6/4/2012 Analyzed: 6/4/2012					
T/R Hydrocarbons: C4-C12	4.7	1.0	5.00		94.2	70 - 130	9.27	20	
Surrogate: 4-Bromofluorobenzene	*0.10*		*0.100*		*101*	*69 - 158*			
Duplicate (B2F0064-DUP1)		**Source: 1202045-12**		Prepared: 6/4/2012 Analyzed: 6/4/2012					
T/R Hydrocarbons: C4-C12	ND	1.0		ND	NR			20	
Surrogate: 4-Bromofluorobenzene	*0.10*		*0.100*		*102*	*69 - 158*			
Matrix Spike (B2F0064-MS1)		**Source: 1202026-01**		Prepared: 6/4/2012 Analyzed: 6/4/2012					
T/R Hydrocarbons: C4-C12	2.8	1.0	5.00	0.20	51.8	46 - 135			
Surrogate: 4-Bromofluorobenzene	*0.11*		*0.100*		*107*	*69 - 158*			
Matrix Spike Dup (B2F0064-MSD1)		**Source: 1202026-01**		Prepared: 6/4/2012 Analyzed: 6/4/2012					
T/R Hydrocarbons: C4-C12	2.8	1.0	5.00	0.20	51.6	46 - 135	0.251	20	
Surrogate: 4-Bromofluorobenzene	*0.10*		*0.100*		*101*	*69 - 158*			

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Hydrocarbon Chain Distribution by GC/FID - Quality Control

Analyte	Result (mg/kg)	PQL (mg/kg)	Spike Level	Source Result	% Rec	% Rec Limits	RPD	RPD Limit	Notes
Batch B2F0089 - GCSEMI_DRO									
Blank (B2F0089-BLK1)				Prepared: 6/5/2012 Analyzed: 6/5/2012					
T/R Hydrocarbons: C13-C22	ND	10			NR				
T/R Hydrocarbons: C23-C32	ND	10			NR				
T/R Hydrocarbons: >C32	ND	10			NR				
Surrogate: p-Terphenyl	*72*		*80.0*		*89.7*	*62 - 136*			
LCS (B2F0089-BS1)				Prepared: 6/5/2012 Analyzed: 6/5/2012					
DRO	1300	10	1000		126	72 - 131			
Surrogate: p-Terphenyl	*88*		*80.0*		*109*	*62 - 136*			
Duplicate (B2F0089-DUP1)		**Source: 1202045-08**		Prepared: 6/5/2012 Analyzed: 6/5/2012					
DRO	ND	10		12	NR			20	
Surrogate: p-Terphenyl	*70*		*80.0*		*87.5*	*62 - 136*			
Matrix Spike (B2F0089-MS1)		**Source: 1202052-10**		Prepared: 6/5/2012 Analyzed: 6/5/2012					
DRO	1400	10	1000	40	133	64 - 131			M2
Surrogate: p-Terphenyl	*80*		*80.0*		*100*	*62 - 136*			
Matrix Spike Dup (B2F0089-MSD1)		**Source: 1202052-10**		Prepared: 6/5/2012 Analyzed: 6/5/2012					
DRO	1200	10	1000	40	118	64 - 131	11.6	20	
Surrogate: p-Terphenyl	*84*		*80.0*		*105*	*62 - 136*			

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Volatile Organic Compounds by EPA 8260 - Quality Control

Analyte	Result (ug/kg)	PQL (ug/kg)	Spike Level	Source Result	% Rec	% Rec Limits	RPD	RPD Limit	Notes
Batch B2F0049 - MSVOAS									
Blank (B2F0049-BLK1)				Prepared: 6/4/2012 Analyzed: 6/4/2012					
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	5.0			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 8260 - Quality Control (cont'd)

Analyte	Result (ug/kg)	PQL (ug/kg)	Spike Level	Source Result	% Rec	% Rec Limits	RPD	RPD Limit	Notes
Batch B2F0049 - MSVOAS (continued)									
Blank (B2F0049-BLK1) - Continued				Prepared: 6/4/2012 Analyzed: 6/4/2012					
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	50			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	*42*		*50.0*		*84.7*	*70 - 130*			
Surrogate: 4-Bromofluorobenzene	*57*		*50.0*		*113*	*70 - 130*			
Surrogate: Dibromofluoromethane	*45*		*50.0*		*90.3*	*70 - 130*			
Surrogate: Toluene-d8	*42*		*50.0*		*85.0*	*70 - 130*			
LCS (B2F0049-BS1)				Prepared: 6/4/2012 Analyzed: 6/4/2012					
1,1-Dichloroethene	37	5.0	50.0		73.8	70 - 130			
Benzene	84	5.0	100		84.2	70 - 130			
Chlorobenzene	46	5.0	50.0		92.0	70 - 130			
MTBE	42	5.0	50.0		84.8	70 - 130			
Toluene	84	5.0	100		84.1	70 - 130			
Trichloroethene	41	5.0	50.0		82.9	70 - 130			
Surrogate: 1,2-Dichloroethane-d4	*37*		*50.0*		*73.7*	*70 - 130*			

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Volatile Organic Compounds by EPA 8260 - Quality Control (cont'd)

Analyte	Result (ug/kg)	PQL (ug/kg)	Spike Level	Source Result	% Rec	% Rec Limits	RPD	RPD Limit	Notes
Batch B2F0049 - MSVOAS (continued)									
LCS (B2F0049-BS1) - Continued				Prepared: 6/4/2012 Analyzed: 6/4/2012					
Surrogate: 4-Bromofluorobenzene	*47*		*50.0*		*93.6*	*70 - 130*			
Surrogate: Dibromofluoromethane	*41*		*50.0*		*82.7*	*70 - 130*			
Surrogate: Toluene-d8	*45*		*50.0*		*89.7*	*70 - 130*			
LCS Dup (B2F0049-BSD1)				Prepared: 6/4/2012 Analyzed: 6/4/2012					
1,1-Dichloroethene	38	5.0	50.0		75.0	70 - 130	1.64	20	
Benzene	88	5.0	100		87.9	70 - 130	4.36	20	
Chlorobenzene	44	5.0	50.0		88.1	70 - 130	4.29	20	
MTBE	44	5.0	50.0		88.0	70 - 130	3.80	20	
Toluene	84	5.0	100		83.8	70 - 130	0.322	20	
Trichloroethene	42	5.0	50.0		83.4	70 - 130	0.577	20	
Surrogate: 1,2-Dichloroethane-d4	*46*		*50.0*		*91.1*	*70 - 130*			
Surrogate: 4-Bromofluorobenzene	*46*		*50.0*		*92.4*	*70 - 130*			
Surrogate: Dibromofluoromethane	*46*		*50.0*		*91.9*	*70 - 130*			
Surrogate: Toluene-d8	*44*		*50.0*		*88.6*	*70 - 130*			
Duplicate (B2F0049-DUP1)		**Source: 1202045-11**		Prepared: 6/4/2012 Analyzed: 6/4/2012					
1,1-Dichloroethene	ND	5.0		ND	NR			20	
Benzene	ND	5.0		ND	NR			20	
Chlorobenzene	ND	5.0		ND	NR			20	
MTBE	ND	5.0		ND	NR			20	
Toluene	ND	5.0		ND	NR			20	
Trichloroethene	ND	5.0		ND	NR			20	
Surrogate: 1,2-Dichloroethane-d4	*47*		*50.0*		*93.6*	*70 - 130*			
Surrogate: 4-Bromofluorobenzene	*42*		*50.0*		*84.4*	*70 - 130*			
Surrogate: Dibromofluoromethane	*47*		*50.0*		*93.1*	*70 - 130*			
Surrogate: Toluene-d8	*40*		*50.0*		*80.2*	*70 - 130*			
Matrix Spike (B2F0049-MS2)		**Source: 1202045-11**		Prepared: 6/4/2012 Analyzed: 6/4/2012					
1,1-Dichloroethene	23	5.0	50.0	ND	45.3	70 - 130			M1
Benzene	48	5.0	100	ND	48.3	70 - 130			M1
Chlorobenzene	23	5.0	50.0	ND	46.1	70 - 130			M1
MTBE	25	5.0	50.0	ND	50.7	70 - 130			M1
Toluene	48	5.0	100	ND	48.1	70 - 130			M1
Trichloroethene	23	5.0	50.0	ND	46.9	70 - 130			M1
Surrogate: 1,2-Dichloroethane-d4	*42*		*50.0*		*83.8*	*70 - 130*			
Surrogate: 4-Bromofluorobenzene	*44*		*50.0*		*87.2*	*70 - 130*			
Surrogate: Dibromofluoromethane	*45*		*50.0*		*89.9*	*70 - 130*			
Surrogate: Toluene-d8	*44*		*50.0*		*87.1*	*70 - 130*			
Matrix Spike Dup (B2F0049-MSD2)		**Source: 1202045-11**		Prepared: 6/4/2012 Analyzed: 6/4/2012					

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Volatile Organic Compounds by EPA 8260 - Quality Control (cont'd)

Analyte	Result (ug/kg)	PQL (ug/kg)	Spike Level	Source Result	% Rec	% Rec Limits	RPD	RPD Limit	Notes
Batch B2F0049 - MSVOAS (continued)									
Matrix Spike Dup (B2F0049-MSD2) - Continued		**Source: 1202045-11**		Prepared: 6/4/2012 Analyzed: 6/4/2012					
1,1-Dichloroethene	26	5.0	50.0	ND	52.8	70 - 130	15.2	20	M1
Benzene	55	5.0	100	ND	55.5	70 - 130	13.7	20	M1
Chlorobenzene	25	5.0	50.0	ND	50.7	70 - 130	9.38	20	M1
MTBE	26	5.0	50.0	ND	52.9	70 - 130	4.33	20	M1
Toluene	54	5.0	100	ND	54.1	70 - 130	11.6	20	M1
Trichloroethene	26	5.0	50.0	ND	52.0	70 - 130	10.4	20	M1
Surrogate: 1,2-Dichloroethane-d4	*45*		*50.0*		*90.1*	*70 - 130*			
Surrogate: 4-Bromofluorobenzene	*45*		*50.0*		*89.5*	*70 - 130*			
Surrogate: Dibromofluoromethane	*45*		*50.0*		*89.9*	*70 - 130*			
Surrogate: Toluene-d8	*44*		*50.0*		*88.4*	*70 - 130*			

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Volatile Organic Compounds by EPA 5035/EPA 8260 - Quality Control

Analyte	Result (ug/kg)	PQL (ug/kg)	Spike Level	Source Result	% Rec	% Rec Limits	RPD	RPD Limit	Notes
Batch B2F0048 - MSVOAS									
Blank (B2F0048-BLK1)				Prepared: 6/4/2012 Analyzed: 6/4/2012					
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 5035/EPA 8260 - Quality Control (cont'd)

Analyte	Result (ug/kg)	PQL (ug/kg)	Spike Level	Source Result	% Rec	% Rec Limits	RPD	RPD Limit	Notes
Batch B2F0048 - MSVOAS (continued)									
Blank (B2F0048-BLK1) - Continued				Prepared: 6/4/2012 Analyzed: 6/4/2012					
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	50			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	*40*		*50.0*		*79.0*	*65 - 135*			
Surrogate: 4-Bromofluorobenzene	*51*		*50.0*		*102*	*57 - 126*			
Surrogate: Dibromofluoromethane	*46*		*50.0*		*92.2*	*72 - 121*			
Surrogate: Toluene-d8	*51*		*50.0*		*102*	*80 - 107*			
LCS (B2F0048-BS1)				Prepared: 6/4/2012 Analyzed: 6/4/2012					
1,1-Dichloroethene	45	5.0	50.0		90.3	70 - 130			
Benzene	90	5.0	100		90.4	70 - 130			
Chlorobenzene	43	5.0	50.0		86.9	70 - 130			
MTBE	49	5.0	50.0		97.3	70 - 130			
Toluene	87	5.0	100		87.0	70 - 130			
Trichloroethene	46	5.0	50.0		92.1	70 - 130			
Surrogate: 1,2-Dichloroethane-d4	*40*		*50.0*		*80.0*	*65 - 135*			

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Volatile Organic Compounds by EPA 5035/EPA 8260 - Quality Control (cont'd)

Analyte	Result (ug/kg)	PQL (ug/kg)	Spike Level	Source Result	% Rec	% Rec Limits	RPD	RPD Limit	Notes
Batch B2F0048 - MSVOAS (continued)									
LCS (B2F0048-BS1) - Continued				Prepared: 6/4/2012 Analyzed: 6/4/2012					
Surrogate: 4-Bromofluorobenzene	*50*		*50.0*		*99.2*	*57 - 126*			
Surrogate: Dibromofluoromethane	*47*		*50.0*		*94.6*	*72 - 121*			
Surrogate: Toluene-d8	*51*		*50.0*		*103*	*80 - 107*			
LCS Dup (B2F0048-BSD1)				Prepared: 6/4/2012 Analyzed: 6/4/2012					
1,1-Dichloroethene	45	5.0	50.0		89.5	70 - 130	0.868	20	
Benzene	88	5.0	100		88.0	70 - 130	2.76	20	
Chlorobenzene	45	5.0	50.0		90.3	70 - 130	3.81	20	
MTBE	52	5.0	50.0		104	70 - 130	7.04	20	
Toluene	86	5.0	100		86.4	70 - 130	0.704	20	
Trichloroethene	44	5.0	50.0		88.9	70 - 130	3.51	20	
Surrogate: 1,2-Dichloroethane-d4	*41*		*50.0*		*82.3*	*65 - 135*			
Surrogate: 4-Bromofluorobenzene	*51*		*50.0*		*102*	*57 - 126*			
Surrogate: Dibromofluoromethane	*48*		*50.0*		*96.1*	*72 - 121*			
Surrogate: Toluene-d8	*51*		*50.0*		*101*	*80 - 107*			
Duplicate (B2F0048-DUP1)		**Source: 1202045-03**		Prepared: 5/31/2012 Analyzed: 6/4/2012					
1,1-Dichloroethene	ND	5.7		ND	NR			20	
Benzene	1.7	5.7		0.71	NR		82.8	20	R
Chlorobenzene	ND	5.7		ND	NR			20	
MTBE	ND	5.7		ND	NR			20	
Toluene	1.4	5.7		ND	NR			20	
Trichloroethene	ND	5.7		ND	NR			20	
Surrogate: 1,2-Dichloroethane-d4	*46*		*50.0*		*92.2*	*65 - 135*			
Surrogate: 4-Bromofluorobenzene	*53*		*50.0*		*106*	*57 - 126*			
Surrogate: Dibromofluoromethane	*48*		*50.0*		*96.0*	*72 - 121*			
Surrogate: Toluene-d8	*53*		*50.0*		*106*	*80 - 107*			
Batch B2F0085 - MSVOAS									
Blank (B2F0085-BLK1)				Prepared: 6/5/2012 Analyzed: 6/5/2012					
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				

Ninyo & Moore		Project Number :	Caltrans TO-04, 208449004
475 Goddard Suite 200		Report To :	Michael Cushner
Irvine , CA 92618		Reported :	06/08/2012

Volatile Organic Compounds by EPA 5035/EPA 8260 - Quality Control (cont'd)

Analyte	Result (ug/kg)	PQL (ug/kg)	Spike Level	Source Result	% Rec	% Rec Limits	RPD	RPD Limit	Notes
Batch B2F0085 - MSVOAS (continued)									
Blank (B2F0085-BLK1) - Continued					Prepared: 6/5/2012 Analyzed: 6/5/2012				
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				
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				

Ninyo & Moore	Project Number :	Caltrans TO-04, 208449004
475 Goddard Suite 200	Report To :	Michael Cushner
Irvine , CA 92618	Reported :	06/08/2012

Volatile Organic Compounds by EPA 5035/EPA 8260 - Quality Control (cont'd)

Analyte	Result (ug/kg)	PQL (ug/kg)	Spike Level	Source Result	% Rec	% Rec Limits	RPD	RPD Limit	Notes
Batch B2F0085 - MSVOAS (continued)									
Blank (B2F0085-BLK1) - Continued				Prepared: 6/5/2012 Analyzed: 6/5/2012					
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	50			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	*40*		*50.0*		*79.8*	*65 - 135*			
Surrogate: 4-Bromofluorobenzene	*50*		*50.0*		*101*	*57 - 126*			
Surrogate: Dibromofluoromethane	*45*		*50.0*		*89.4*	*72 - 121*			
Surrogate: Toluene-d8	*49*		*50.0*		*97.4*	*80 - 107*			
LCS (B2F0085-BS1)				Prepared: 6/5/2012 Analyzed: 6/5/2012					
1,1-Dichloroethene	40	5.0	50.0		79.6	70 - 130			
Benzene	83	5.0	100		82.6	70 - 130			
Chlorobenzene	42	5.0	50.0		84.4	70 - 130			
MTBE	44	5.0	50.0		87.5	70 - 130			
Toluene	83	5.0	100		82.5	70 - 130			
Trichloroethene	44	5.0	50.0		88.5	70 - 130			
Surrogate: 1,2-Dichloroethane-d4	*40*		*50.0*		*80.3*	*65 - 135*			
Surrogate: 4-Bromofluorobenzene	*53*		*50.0*		*105*	*57 - 126*			
Surrogate: Dibromofluoromethane	*46*		*50.0*		*91.4*	*72 - 121*			
Surrogate: Toluene-d8	*49*		*50.0*		*98.6*	*80 - 107*			
LCS Dup (B2F0085-BSD1)				Prepared: 6/5/2012 Analyzed: 6/5/2012					
1,1-Dichloroethene	40	5.0	50.0		80.6	70 - 130	1.22	20	
Benzene	89	5.0	100		89.1	70 - 130	7.61	20	
Chlorobenzene	45	5.0	50.0		90.0	70 - 130	6.47	20	
MTBE	45	5.0	50.0		90.8	70 - 130	3.66	20	
Toluene	88	5.0	100		87.8	70 - 130	6.13	20	
Trichloroethene	48	5.0	50.0		95.3	70 - 130	7.31	20	

Ninyo & Moore		Project Number :	Caltrans TO-04, 208449004
475 Goddard Suite 200		Report To :	Michael Cushner
Irvine , CA 92618		Reported :	06/08/2012

Volatile Organic Compounds by EPA 5035/EPA 8260 - Quality Control (cont'd)

Analyte	Result (ug/kg)	PQL (ug/kg)	Spike Level	Source Result	% Rec	% Rec Limits	RPD	RPD Limit	Notes
Batch B2F0085 - MSVOAS (continued)									
LCS Dup (B2F0085-BSD1) - Continued				Prepared: 6/5/2012 Analyzed: 6/5/2012					
Surrogate: 1,2-Dichloroethane-d4	*40*		*50.0*		*79.6*	*65 - 135*			
Surrogate: 4-Bromofluorobenzene	*53*		*50.0*		*106*	*57 - 126*			
Surrogate: Dibromofluoromethane	*47*		*50.0*		*93.1*	*72 - 121*			
Surrogate: Toluene-d8	*51*		*50.0*		*103*	*80 - 107*			

Ninyo & Moore		Project Number :	Caltrans TO-04, 208449004
475 Goddard Suite 200		Report To :	Michael Cushner
Irvine , CA 92618		Reported :	06/08/2012

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 not detected at or above reporting limit
PQL	Practical Quantitation Limit
MDL	Method Detection Limit
NR	Not Reported
RPD	Relative Percent Difference
CA1	CA-NELAP (CDPH)
CA2	CA-ELAP (CDPH)
OR1	OR-NELAP (OSPHL)
TX1	TX-NELAP (TCEQ)

CHAIN OF CUSTODY RECORD

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

P.O.#: _____ Quote #: _____

As the authorized agent of the below named company, I hereby purchase testing services from ATL as dictated below and guarantee payment in full.

Submitter (Print):

Signature:

Submitter - Please complete all SHADED areas and include QUOTE # above to ensure proper invoicing.

FOR LABORATORY USE ONLY:

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

Sample Condition Upon Receipt:
1. CHILLED 5.0 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: Ninyo & Moore
Attn: Michael Cushner
Address: 475 Goddard
City: Irvine State: CA Zip Code: 92618
TEL: (949) 753-7070
FAX: (949) 753-7071

Project Name: Caltrans TO-04 Project #: 208449004 Sampler: (Printed Name) Gia Le (Signature) Gia Le

Relinquished by: (Signature and Printed Name)	Date:	Time:	Received by: (Signature and Printed Name)	Date:	Time:
Gia Le	5/31/12	4:39	[signature]	5/31/12	1639
[signature]	5/31/12	1745	[signature]	5/31/12	1745

Bill To: Same as Client
Attn: E-mail:
Company:
Address:
City: State: Zip:

Send Report To:
Attn: Michael Cushner E-mail: mcushner@ninyoandmoore.com
Company:
Address:
City: State: Zip:

Special Instructions/Comments: TPHcc $C_4 - C_{12}$, $C_{13} - C_{22}$, $C_{23} - C_{32}$, $> C_{32}$. Run analysis for samples B1-6, B1-8, B2-4, B2-8, B3-6 and B3-8. Put rest on hold

Sample/Records - Archival & Disposal
Unless otherwise requested by client, all Samples and Hardcopy will be disposed Forty-five(45) days after generation of report - electronic copies retained for five(5) years.
Storage Fees (applies when storage is requested):
- Sample : Forty-five(45) Days Complimentary - $2.00 / sample / mo thereafter.

Hardcopy Reports $17.50 per report.

CIRCLE or Write IN Analyses Needed

CIRCLE APPROPRIATE MATRIX

ITEM	BUSINESS HOURS 8:30 am to 5:30 pm Lab No.	Sample Description: Sample I.D. / Location	Date	Time	8260-624 (Volatiles) +Oxys	8015B (GRO) / 8021 (BTEX)	TO-15 / TO-14 / TO-3 / RSK-175	8270B-625(BNA) / 8310(PAHs)	8015B(DRO)/8015B(HCID)	8081 OrgCl / 8141 OrgPO4 Pest	8082 PCBs	6010B-200.7 CAM Metals	6010B-200.7 Metals	6020B-200.8-1640 Metals	7199-218.6 (Hex. Chromium)	300(Anions) / 314 (Perchlorate)	8015 TPHcc	5035 VOCs	SOIL/SEDIMENT/SLUDGE	SOLIDS/WIPES/FILTERS	WATER-DRINKING/GROUND	WATER-STORM/WASTE	AQUEOUS/LAYERED-OIL	TAT	Container(s) #	Container(s) Type	PRESERVATION	REMARKS
1	1202045 - 1	B1 - 2	5/31/12	1100																				5				
2	- 2	B1 - 4		1108																								
3	- 3	B1 - 6		1106	X											X									4	1	2	
4	- 4	B1 - 8		1105	X											X									4	1	2	
5	- 5	B2 - 2		1006																								
6	- 6	B2 - 4		1012	X											X									4	1	2	
7	- 7	B2 - 6		1014																								
8	- 8	B2 - 8		1016	X											X									4	1	2	
9	- 9	B3 - 2		0845																								
10	- 10	B3 - 4		0847																								

QA/QC: RTNE ☐ CT ☐ Legal ☐ SWRCB ☐ Logcode____ OTHER ____

■ Samples Submitted AFTER 3:30 PM, are considered received the following business day at 8:30 AM.

Weekend, Holiday, Off Hours Work ASK for QUOTE

Container Types: 1=Tube 2=VOA 3=Liter 4=Pint 5=Jar 6=Tedlar 7= Canister

Material: 1=Glass 2=Plastic 3=Metal

Preservatives: 1=HCl, 2=HNO_3 3=H_2SO_4 4=4°C 5=$Zn(Ac)_2$ 6=NaOH 7=$NA_2S_2O_4$

TAT 0	TAT 1	TAT 2	TAT 3	TAT 4	TAT 5	TAT 10
☐ 300% SURCHARGE SAME BUSINESS DAY IF RCV'D BY 9:00 AM	☐ 100% SURCHARGE NEXT BUSINESS DAY 5:30 PM	☐ 50% SURCHARGE 2ND BUSINESS DAY 5:30 PM	☐ 30% SURCHARGE 3RD BUSINESS DAY 5:30 PM	☐ 20% SURCHARGE 4TH BUSINESS DAY 5:30 PM	☑ NO SURCHARGE 5 -7 BUSINESS DAYS 5:30 PM	☐ 10% DISCOUNT 10th BUSINESS DAY 5:30 PM

For RUSH TCLP/STLC, add 2 days to respective TAT.

Subcon. TAT is 10-15 business days, Dioxin and Furans 21 business days.

CHAIN OF CUSTODY RECORD

ADVANCED TECHNOLOGY LABORATORIES
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Tel: (562) 989-4045 • Fax: (562) 989-4040

P.O.#: _____ Quote #: _____

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FOR LABORATORY USE ONLY:

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

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

Client:
Attn:
Address:
City State Zip Code
TEL:
FAX:

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

Relinquished by: (Signature and Printed Name) X Gia Zee Date: 5/31/12 Time: 1639 Received by: (Signature and Printed Name) Date: 5/31/12 Time: 1639
Relinquished by: (Signature and Printed Name) Joe Arce Date: 5/31/12 Time: 1745 Received by: (Signature and Printed Name) Joe Arce Proiwa Date: 5/31/12 Time: 1745
Relinquished by: (Signature and Printed Name) Date: Time: Received by: (Signature and Printed Name) Date: Time:

Bill To:
Attn: E-mail:
Company:
Address:
City: State: Zip:

Send Report To:
Attn: E-mail:
Company:
Address:
City: State: Zip:

Special Instructions/Comments:

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CIRCLE APPROPRIATE MATRIX: SOIL/SEDIMENT/SLUDGE, SOLIDS/WIPES/FILTERS, WATER-DRINKING/GROUND, WATER-STORM/WASTE, AQUEOUS/LAYERED-OIL

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1	1202045 -11	B3 - 6	5/31/12	0854	X											X	X		X					5	1	1	2		Run 8260 in Tube
2	-12	B3 - 8	↓	0853	X											X	X		X					↓	4	1	2		
3	-13	W1		1134																	X				1	3	2		place on Hold
4																													
5																													
6																													
7																													
8																													
9																													
10																													

QA/QC: RTNE ☐ CT ☐ Legal ☐ SWRCB ☐ Logcode____ OTHER ____

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