Brian McCormack
5925 Ocean View Drive
Oakland, CA 94618

Mr. Mark E. Detterman, PG, CEG
Alameda County Health Care Services Agency
Department of Environmental Health
1131 Harbor Bay Parkway, Suite 250
Alameda, CA 94502-6577

Re: McCormack/Chackerian Property
5925 Ocean View Drive
Oakland, California
ACHCSA Case No. RO0003003

Dear Mr. Detterman:

I, Mr. Brian McCormack, have retained Pangea Environmental Services, Inc. (Pangea) as the environmental consultant for the project referenced above. Pangea is submitting the attached report on my behalf.

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

Sincerely,

Brian McCormack

October 6, 2010

Mr. Mark E. Detterman, PG, CEG
Alameda County Environmental Health
1131 Harbor Bay Parkway, Suite 250
Alameda, California 94502

Re: **Site Investigation Report**
5925 Ocean View Drive
Oakland, CA 94618
ACEH Case No. RO0003003

Dear Mr. Detterman:

On behalf of Brian McCormack, Pangea Environmental Services, Inc. (Pangea) has prepared this *Site Investigation Report* (report) for the subject site. This report documents implementation of the *Investigation Work Plan* (Workplan) dated September 18, 2009, which was approved by Alameda County Environmental Health (ACEH) in a letter dated June 24, 2010.

If you have any questions or comments, please call me at (510) 435-8664 or email briddell@pangeaenv.com.

Sincerely,
Pangea Environmental Services, Inc.

Bob Clark-Riddell, P.E.
Principal Engineer

Attachment: *Site Investigation Report*

cc: Brian McCormack c/o McCormack Law Firm, 150 Post Street, #742, San Francisco, CA 94108
John Morehouse, 5925 Ocean View Drive, Oakland, CA 94618
SWRCB Geotracker (electronic copy)

SITE INVESTIGATION REPORT

Private Residence
5925 Ocean View Drive
Oakland, California
ACEH RO0003003

October 6, 2010

Prepared for:

Brian McCormack
150 Post Street, #742
San Francisco, CA 94108

Prepared by:

Pangea Environmental Services, Inc.
1710 Franklin Street, Suite 200
Oakland, California 94612

Written by:

REGISTERED PROFESSIONAL ENGINEER
ROBERT G. CLARK-RIDDELL
No. C 049629
Exp. 9/30/2012
CIVIL
STATE OF CALIFORNIA

FOR

Morgan Gillies
Project Manager

Bob Clark-Riddell, P.E.
Principal Engineer

INTRODUCTION

On behalf of Brian McCormack, Pangea Environmental Services, Inc. (Pangea) has prepared this *Site Investigation Report* (report) for the subject site. This report documents implementation of the *Investigation Work Plan* (Workplan) dated September 18, 2009, and approved by the June 24, 2010 letter (Appendix A) from ACEH. The Workplan scope included soil gas sampling at two locations and soil and/or groundwater sampling from two borings.

SITE BACKGROUND

Site Use

The subject site is a residential property located at 5925 Ocean View Drive approximately 200 ft east of Broadway in a residential area of Oakland, California (Figure 1). The local topography slopes to the south-southwest.

Compliance Sampling and Tank Removal

During due diligence associated with sale of the property, Mr. McCormack discovered that a heating oil underground storage tank was located on the property. On April 23, 2009, Golden Gate Tank Removal (GGTR) removed one 250-gallon steel heating oil tank from beneath the driveway at the subject site. The tank was reportedly in good condition with no visible holes or pitting. However, hydrocarbon odors were noted in soil surrounding the tank. One soil sample was collected from beneath the former UST at a depth of approximately 8.5 ft below grade surface (bgs). The soil sample contained 448 milligrams per kilogram (mg/Kg) total petroleum hydrocarbons as heating oil (TPHho), 0.047 mg/Kg ethylbenzene, and 0.0396 total xylenes. Additionally, a four-point composite sample and hotspot sample were collected from the excavated soil. A concentration of 2,750 mg/Kg TPHho was detected in the hotspot sample.

Site Geology and Hydrogeology

Based on the tank removal report, shallow site soil consists of clay/rock. Groundwater was not observed during the excavation to approximately 8.5 ft bgs. For the nearby Shell/Thrifty Oil LUST site located at 5755 Broadway, the depth to groundwater in site wells has ranged from approximately 0.5 to 5 ft bgs with a groundwater flow direction in the south-southwest direction. Pangea understands that historically, during the winter rainy season, some site wells at the Shell site were artesian with site groundwater exiting the property (with a sheen). For another nearby LUFT site (5175 Broadway), groundwater was encountered both above and below fractured bedrock in select wells. During drilling by Pangea at 5175 Broadway, grab groundwater sampling was effective in some locations but not others due to site conditions.

SOIL BORINGS

Pre-Drilling Activities

A comprehensive site safety plan was prepared to protect site workers and the plan was kept onsite during all field activities. A drilling permit was obtained from Alameda County Public Works Agency (ACPWA). A Copy of the permit is presented in Appendix B. The proposed drilling locations were marked and Underground Service Alert was notified at least 48 hours before the proposed field activities.

Drilling Procedures

All soil borings were installed in general accordance with the procedures described in Pangea's September 18, 2009 Workplan. Pangea retained PeneCore Drilling (PeneCore) of Woodland, California, to drill the borings and install the soil gas vapor probes. The drilling was observed in the field by Pangea staff scientist Tina de la Fuente and supervised by Bob Clark-Riddell, a California Registered Professional Civil Engineer (P.E.). Soil characteristics such as color, texture, and relative water content were noted in the field using the USCS classification system and entered onto a field boring log. Field screening of soil samples for potential hydrocarbons and volatile organic compounds included photo-ionization detector (PID), and visual and olfactory observations. Soil samples were collected for laboratory analysis in acetate liners, and capped with Teflon tape and plastic end caps. All samples were shipped under chain of custody to Torrent Laboratory, Inc., of Milpitas, California, a California-certified laboratory.

Boring Activities

On August 3, 2010, Pangea coordinated drilling of two soil borings, SB-1 and SB-2. Both borings were hand augered to five feet below grade surface (bgs) to avoid damaging any unmarked subsurface utilities. Boring SB-2 was located at the southern end of the driveway on the property. After hand augering, boring SB-2 was advanced using direct-push drilling methods, but shallow bedrock was encountered and direct-push refusal was reached at approximately 11 ft bgs. Boring SB-2 was then reamed and advanced using 4-inch solid stem augers to a depth of approximately 18 ft bgs to facilitate collection of a groundwater sample. Temporary PVC casing was installed in the borehole, and a grab groundwater sample was collected using new polyethylene tubing and a clean check valve. Because groundwater samples were obtained, contingent well installation was not performed. An undisturbed soil sample was collected from SB-2 at four ft bgs, but no additional soil samples were collected because the soil was primarily comprised of bedrock.

Soil boring SB-1 was drilled using 4-inch diameter solid stem augers. A soil sample was collected from boring SB-1 at 8 ft bgs by removing the augers and taking a soil sample with a clean hand auger. Refusal was reached at 13 ft bgs. SB-1 was located in the driveway north of boring SB-2, and adjacent to the former underground storage tank. Boring locations are shown on Figure 2.

Groundwater was not encountered in soil boring SB-1. Soil and groundwater samples were collected from the borings in general accordance with Pangea's Standard Field Procedures for Soil Borings (Appendix C). Boring logs are included in Appendix D. No organic vapors were detected during screening with the PID, as shown on the boring logs in Appendix D.

Sample Analyses

Two soil samples were analyzed for TPH as Heating Oil (TPHho) by EPA Method 8015B; and benzene, toluene, ethylbenzene, and xylenes (BTEX) by EPA Method 8260B. Due to insufficient water volume, the grab groundwater sample could not be analyzed using standard extraction procedures for TPHho. The grab groundwater sample was analyzed for TPH as Diesel Range Organices (TPHdro) using micro extraction techniques (SW 3511). Heating Oil, also called Diesel #2, falls within the same C9-C23 range as DRO.

Site Geology and Hydrogeology

The site geology and hydrogeology based on this investigation is described herein. Soil encountered during drilling of boring SB-1 consisted of sandy clay (CL) to a depth of approximately 2 ft bgs, underlain by silty clay (CL) and siltstone bedrock at approximately 13 ft bgs. Soil from boring SB-2 consisted of silty clay (CL) to a depth of 4 ft, underlain by gravel and siltstone bedrock at 6 ft depth to the total explored depth of approximately 18 ft bgs.

Groundwater was encountered in boring SB-2 at approximately 16 ft bgs. No groundwater was encountered in boring SB-1, drilled to refusal at 13 ft bgs.

Soil and Grab Groundwater Analytical Results

No petroleum hydrocarbons were detected above reporting limits in the two soil samples or the one grab groundwater sample. The lack of detected hydrocarbons is consistent with the lack of organic vapors detected during field screening with the field meter (PID). Soil and groundwater analytical results are summarized on Tables 1 and 2, respectively. The laboratory analytical reports are included in Appendix E.

SOIL GAS SAMPLING

To evaluate shallow subsurface gas conditions near and beneath the onsite residence and the adjacent residence immediately west of the site, Pangea conducted soil gas sampling from two temporary probe locations on August 3, 2010. The sampling locations, SGP-1 and SGP-2, are shown on Figure 2. Sample depth intervals and soil gas analytical results are summarized on Table 3.

Soil Gas Sampling Procedures

The soil gas sampling was conducted in general accordance with procedures described in Pangea's Workplan and in Pangea's Standard Operating Procedures (SOPs) for Soil Gas Sampling (Appendix C). Temporary soil gas probes SGP-1 was installed adjacent to the onsite residence, while SGP-2 was installed adjacent to the residence west of the subject property. The proposed SGP locations were marked and Underground Service Alert was notified of Pangea's activities at least 48 hours prior to field activities. The soil gas vapor probes were installed by Penecore and the sampling was performed by Pangea staff scientist Tina de la Fuente under the supervision of Pangea's Bob Clark-Riddell, a California Registered Professional Civil Engineer.

The overall procedure involved hand augering or direct-push drilling to approximately 4.5 ft bgs, advancing a temporary vapor probe to approximately 5 ft bgs, pulling the sample tip open to expose the subsurface formation, placing a few inches of sand around the sample probe and a bentonite seal from the top of the sand to the surface.

To evaluate potential leakage within the sampling system, a leak-check enclosure was placed over the sampling point and sampling assembly (summa canisters and manifold). Isopropyl alcohol was applied to gauze placed inside the leak-check enclosure along with an additional leak-check summa canister for collection of air from within the enclosure, facilitating comparison to any isopropyl alcohol concentrations detected in the sampling summa canister. The air flow regulators for the sample and leak check summa canisters were calibrated and set identically. Additionally, the enclosure was monitored for isopropyl alcohol with a photo ionization detector (PID) to ensure that there was a sufficient concentration of isopropyl alcohol in the air inside the enclosure. After sample collection, SGP locations SGP-1 and SGP-2 were backfilled with neat cement.

Soil Gas Analytical Results

The soil gas samples were collected from approximately 4.7 to 5 ft bgs for both samples (SGP-1 and SGP-2). Soil gas samples were collected within Summa canisters and submitted for analysis to Torrent Laboratory, Inc. of Milpitas, California, a State-certified laboratory. Soil gas samples were analyzed by Total Organics Method 15 (TO-15) for benzene, toluene, ethylbenzene, xylenes (BTEX), methyl tert-butyl ether (MTBE), and isopropyl alcohol.

All petroleum hydrocarbon concentrations detected in soil gas were *below* the Environmental Screening Levels (ESLs) established by the San Francisco Regional Water Quality Control Board (RWQCB). Soil gas analytical results and sample depth intervals are summarized on Table 3. The laboratory analytical report is included in Appendix E. Additional discussion is provided below.

Benzene, toluene and xylenes were detected in soil gas samples from both SGP-1 and SGP-2. All detected concentrations were *well below* the shallow soil gas ESLs established by the RWQCB, except for the benzene concentration (65.8 µg/m^3) detected in boring SGP-2. This benzene concentration is *slightly* below the conservative residential ESLs for shallow gas sampling (84 µg/m^3). To further address potential vapor intrusion into nearby residencies, Pangea inspected the house construction and subgrade structures (basements/crawl spaces) on the subject property and adjacent property. According to the owner, the subject property has a ventilated crawl space beneath the front portion of the house as shown on Figure 2. The garage of the adjacent property (5915 Ocean View Drive), west of the subject property, has an extensive ventilated crawl space beneath the garage and front portion of the house, also shown on Figure 2. Based on the construction of the two houses and the concentrations detected in the soil gas probes, Pangea concludes that potential contaminated vapor intrusion does not present a significant risk to human health at this site.

Isopropyl alcohol was detected in samples SGP-1 and SGP-2, so the leak check summa canisters for these samples were analyzed for isopropyl alcohol. Since the air flow regulators on the sampling and leak check summa canisters were calibrated and set identically, the percentage of sample that leaked from air within the leak-check enclosure into the sample probe can be determined by dividing the concentration of isopropyl alcohol in the sample canister by the concentration of isopropyl alcohol in the leak-check canister. The isopropyl alcohol concentrations detected in SGP-1 and SGP-2 were 127 µg/m^3 and 18.5 µg/m^3, respectively, while the isopropyl alcohol concentration in the leak-check canisters for SGP-1 and SGP-2 were 44,700 µg/m^3 and 38,100 µg/m^3, respectively. The calculated apparent ambient air leak is >0.3% for both SGP locations; therefore, the results are representative of subsurface conditions.

CONCLUSIONS AND RECOMMENDATIONS

Based on the above site assessment information, Pangea offers the following conclusions and recommendations:

- No petroleum hydrocarbons were detected in soil and/or groundwater during this investigation near the former UST or in the presumed downgradient groundwater flow direction.
- No petroleum hydrocarbons were detected above conservative residential environmental screening levels (ESLs) in the two analyzed soil gas samples. Due to the extensive ventilated crawl spaces beneath the two adjacent residences, Pangea concludes that potential contaminated vapor intrusion does not present a significant risk to human health at this site.
- Pangea recommends no further action and issuance of regulatory case closure.

ATTACHMENTS

Figure 1 – Site Vicinity Map
Figure 2 – Boring Locations

Table 1 – Soil Analytical Data
Table 2 – Groundwater Analytical Data
Table 3 – Soil Gas Analytical Data

Appendix A – Regulatory Letter
Appendix B – Permits
Appendix C – Standard Operating Procedures
Appendix D – Boring Logs
Appendix E – Laboratory Analytical Report

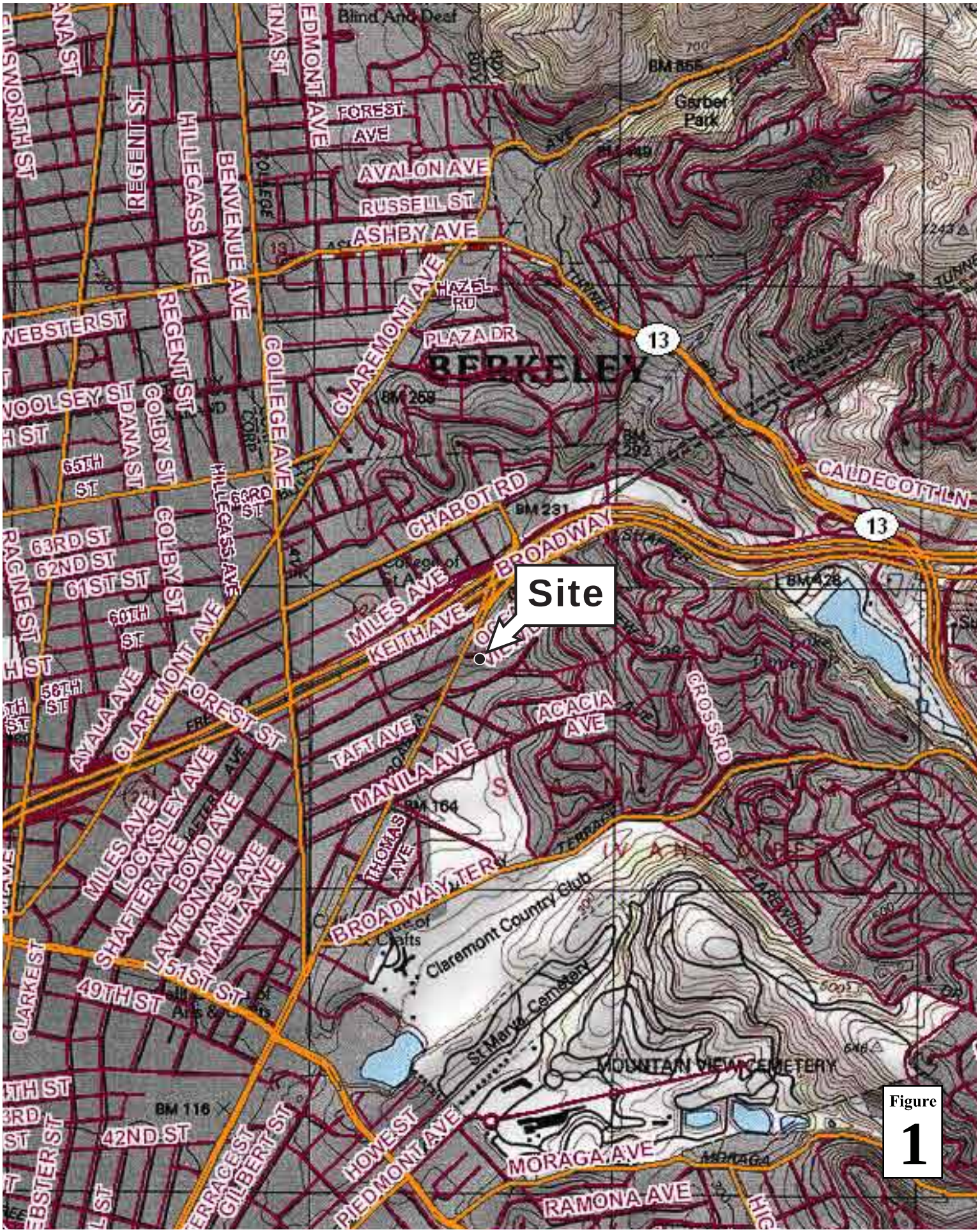

Figure 1

Morehouse
5925 Ocean View Drive
Oakland, California

PANGEA

Vicinity Map

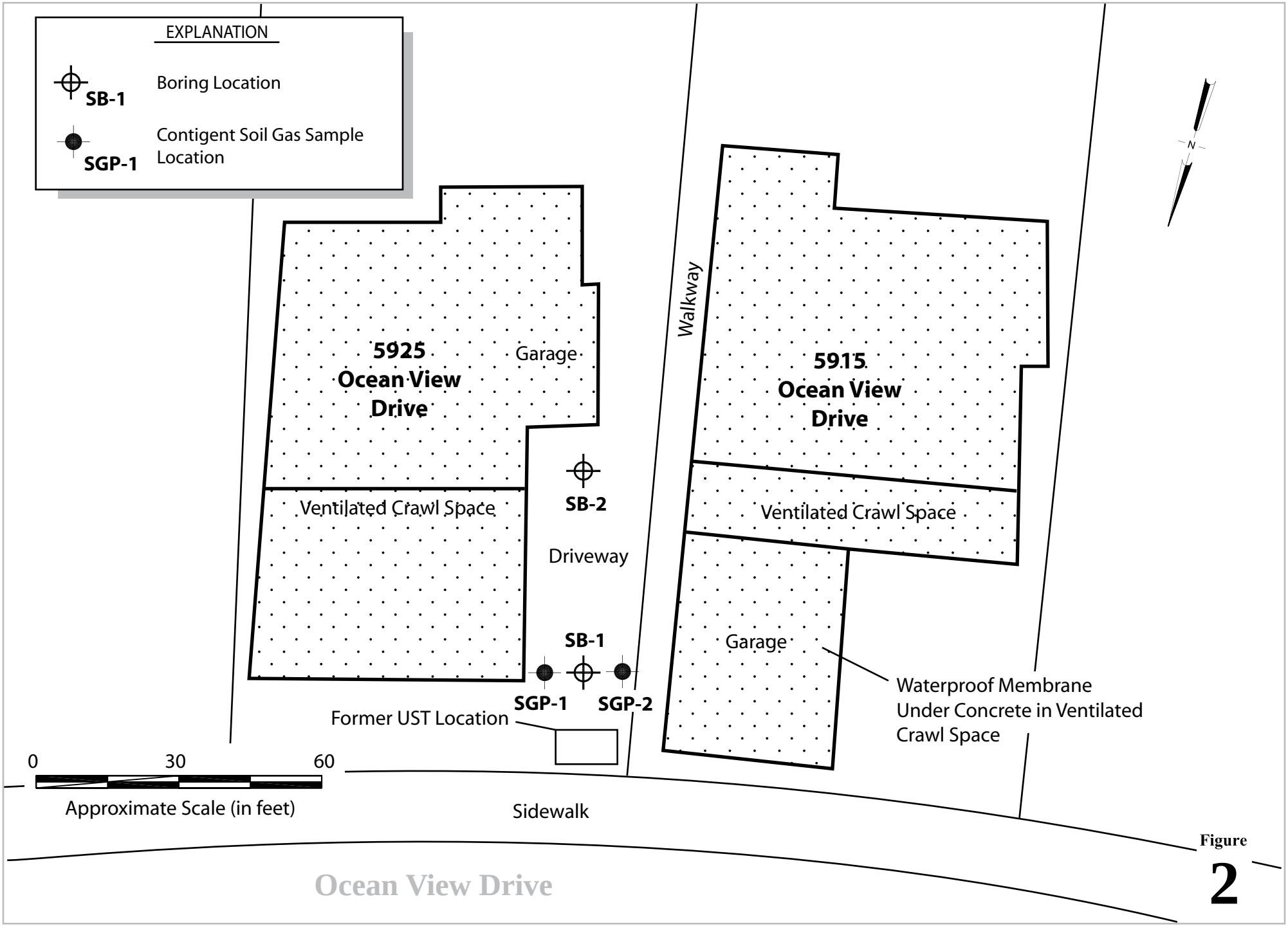

Figure
2

5925 Ocean View Drive
Oakland, California

PANGEA

Boring and Soil Gas Sampling Location Map

Pangea

Table 1. Soil Analytical Data - 5925 Ocean View Dr., Oakland, California

Boring/ Sample ID	Date Sampled	Sample Depth (ft bgs)	TPHd	TPHmo	TPHho	Benzene	Toluene	Ethylbenzene	Xylenes	Notes
Residential ESL for shallow soil dw(<3 m bgs):			83	370	370	0.044	2.9	2.3	2.3	
Residential ESL for deep soil dw(>3 m bgs):			83	5,000	5,000	0.044	2.9	3.3	2.3	
Residential ESL for shallow soil non-dw(<3 m bgs):			500	370	370	0.12	9.3	2.3	11	
Residential ESL for deep soil non-dw(>3 m bgs):			180	5,000	5,000	2.00	9.3	4.7	11	
Commercial ESL for shallow soil non-dw (<3 m bgs):			180	2,500	2,500	0.27	9.3	5	11	
Commercial ESL for deep soil non-dw (>3 m bgs):			180	5,000	5,000	2.0	9.3	5	11	
			←			mg/Kg	→			
August 2010 Investigation										
SB-1-8	8/3/2010	8	--	--	<100	<0.0015	<0.00098	<0.00086	<0.0026	
SB-2-4	8/3/2010	4	--	--	<3.3	<0.0015	<0.00098	<0.00086	<0.0026	
UST Compliance Sample										
9081-C8.5	4/23/2009	8.5	--	<100	448	<0.022	<0.022	0.0447	0.0396	
Stockpile Samples										
9081-SP(A-D)	4/23/2009	--	--	10.6	29.2	<0.25	0.0568	<0.25	<0.5	
9081-VC(A-D)	4/23/2009	--	--	<1,000	2,750	<0.24	0.0562	0.453	0.545	

Explanation:

Benzene, Toulene, Ethylbenzene and Xylenes by EPA Method 8260.

TPHd = Total Petroleum Hydrocarbons as diesel.

TPHmo - Total Petroleum Hydrocarbons as motor oil.

TPHho = Total Petroleum Hydrocarbons as heating oil by EPA Method 8015.

mg/Kg = milligrams per Kilogram

m bgs = Depth below ground surface (bgs) in meters

ft bgs = Depth below ground surface (bgs) in feet.

< n = Chemical not present at a concentration in excess of detection limit shown.

--- = Not analyzed

ESL = Environmental Screening Level for Shallow/Deep Soil with Residential and Commercial/Industrial Land Use, Groundwater is/is not a current or potential drinking water resource (Tables A, B, C and D).

ESL established by the SFBRWQCB, Interim Final - November 2007 (revised May 2008).

non-dw = groundwater is not a current or potential source of drinking water

dw = groundwater is a current or potential source of drinking water

Pangea

Table 2. Groundwater Analytical Data - 5925 Ocean View Dr., Oakland, California

Sample ID	Date Sampled	TPHg	TPHdro	TPHmo	Benzene	Ethylbenzene	Toluene	Xylenes	Notes
Final ESL for groundwater, non-dw:		210	210	210	46	43	130	100	
Final ESL for groundwater, dw:		100	100	100	1.0	30	40	20	
Ceiling Value:		100	100	100	170	30	40	20	
Drinking Water Toxicity:		210	210	210	1.0	700	150	1,800	
Indoor Air Impacts:		10,000	10,000	N/A	530	14,000	380,000	150,000	
Aquatic Habitat Goal:		500	640	640	46	290	130	13	
		←			µg/L			→	
SB-2	8/3/2010	---	<44	---	<0.49	<0.22	<0.28	<0.48	1

Explanation:

Benzene, Toulene, Ethybenzene and Xylenes by EPA Method 8260.

TPHg = Total Petroleum Hydrocarbons as Gasoline.

TPHdro = Total Petroleum Hydrocarbons as Diesel Range Organics by EPA Method 8015 (see Note 1).

TPHmo = Total Petroleum Hydrocarbons as Motor Oil.

µg/L = micrograms per Liter

< n = Chemical not present at a concentration in excess of detection limit shown.

--- = Not analyzed

ESL = Environmental Screening Level for groundwater, Groundwater is not a current or potential source of drinking water. (Table F-1b).

ESL = Environmental Screening Level for Groundwater, groundwater is a current or potential source of drinking water. (Table F-1a).

ESL established by the SFBRWQCB, Interim Final - November 2007 (revised May 2008).

Bold = Concentration above ESLs for groundwater, not drinking water

non-dw = groundwater is not a current or potential source of drinking water

dw = groundwater is a current or potential source of drinking water

Notes:

1 = Due to limited sample volume, micro extraction performed and sample analyzed for TPHdro (C9-C23) which covers heating oil range.

Pangea

Table 3. Soil Gas Analytical Data - 5925 Ocean View Dr., Oakland, California

Boring/ Sample ID	Date Sampled	Sample Depth (ft - ft bgs)	Benzene	Toluene	Ethylbenzene	Xylenes	TPH Gasoline	MTBE	Isopropyl Alcohol	Notes
			← ug/m^3 →							
Residential ESL for shallow **soil gas**:			84	63,000	980	21,000	10,000	9,400	--	
Commercial ESL for shallow **soil gas**:			280	180,000	3,300	58,000	29,000	31,000	--	
Soil Gas Probe Samples										
SGP-1	8/3/2010	4.7-5.0	8.68	22.7	<2.0	28.94	---	<1.7	127	Isoproponal = 0.28% of total sample volume*
SGP-2	8/3/2010	4.7-5.0	65.8	29.8	<2.0	19.28	---	<1.7	18.5	Isoproponal = 0.05% of total sample volume*
Leak Check Samples										
SGP-1 Leak Check	8/3/2010	--	--	--	--	--	--	--	44,700	
SGP-2 Leak Check	8/3/2010	--	--	--	--	--	--	--	38,100	

Abbreviations:

SGP-1 = Soil Gas Probe Sample

ug/m3 = Micrograms per cubic meter of air results calculated by laboratory from parts per billion results using normal temperature and pressure (NPT).

ft - ft bgs = Depth interval below ground surface (bgs) in feet.

Volatile organic compounds by EPA Method TO-15 (partial list), uses GC/MS scan.

< n = Chemical not present at a concentration in excess of detection limit shown.

--- = Not analyzed

MRL = Method reporting limit. Laboratory reporting limit based on parts per billion on volume to volume basis (ppbv/v) and converted to ug/m3.

ESL = Environmental Screening Level for Shallow Soil Gas with Residential and Commercial/Industrial Land Use, for samples less than five feet below a building foundation or ground

ESL established by the SFBRWQCB, Interim Final - November 2007 (revised May 2008).

Bold = Concentrations above ESLs for Residential and/or Commercial Land Use for shallow soil gas (SG samples).

* = Since the air flow regulators on the sampling and leak check summa canisters were setup identically, the percentage of sample that leaked from ambient air within the leak-check enclosure into the sample probe can be estimated by dividing the concentration of isopropanol in the sample canister by the concentration of isopropanol in the leak-check canister.

APPENDIX A

Regulatory Letter

ALAMEDA COUNTY
HEALTH CARE SERVICES
AGENCY
ALEX BRISCOE, Agency Director

ENVIRONMENTAL HEALTH SERVICES
ENVIRONMENTAL PROTECTION
1131 Harbor Bay Parkway, Suite 250
Alameda, CA 94502-6577
(510) 567-6700
FAX (510) 337-93

June 24, 2010

Mr. Brian McCormack and Ms Cynthia Chackerian
c/o McCormack. Law Firm
120 Montgomery Street, #1600
San Francisco, CA 94104

Mr. John Morehouse and Ms Katrina Rapa
5925 Ocean View Dr.
Oakland, CA 94618

Subject: Approval of Work Plan with Modifications; Fuel Leak Case No. RO0003003 and Geotracker Global ID T10000001165, McCormack / Chackerian Property, 5925 Ocean View Dr., Oakland, CA 94618

Dear Mr. McCormack and Ms Chackerian; and Mr. Morehouse and Ms Rapa:

Alameda County Environmental Health (ACEH) staff has reviewed the case file for the above referenced site including the *Investigation Work Plan*, dated September 18, 2009 prepared on your behalf by Pangea Environmental Services, Inc. Thank you for submitting the work plan.

Based on Alameda County Environmental Health (ACEH) staff review of the work plan the proposed scope of work is conditionally approved for implementation provided that the technical comments below are incorporated during the proposed field investigation. Submittal of a revised work plan or work plan addendum is not required unless an alternate scope of work outside that described in the Work Plan or technical comments below is proposed. We request that you address the following technical comments, perform the proposed work, and send us the reports described below. Please provide 72-hour advance written notification to this office (e-mail preferred to: mark.detterman@acgov.org) prior to the start of field activities.

TECHNICAL COMMENTS

1. **Installation of Contingency Well –** Pangea has proposed the installation of two soil bores and the collection of soil and grab groundwater samples, provided groundwater is encountered using a direct-push drilling technique. Should near surface bedrock hinder the collection of a grab groundwater sample using direct-push methodology, a contingency plan was proposed to install a permanent ¾-inch diameter well using hollow-stem auger methodology (using a drill rig with dual capabilities). A further contingency, consisting of the collection of two soil gas samples, was proposed if a permanent well would not be required by ACEH. Please be aware the collection of soil and / or groundwater does not preclude the collection of soil gas. At the present stage of the investigation it appears the collection of soil gas may be premature; however, collection of soil gas may help expedite site investigation at this residential property and thus ACEH would support collection of soil gas samples in conjunction with a (grab) groundwater sample.

   If a well is installed, please be aware that in general, ACEH recommends the use of monitoring wells designed with sand pack intervals of 5 feet or less; as these wells will likely be representative of depth discrete groundwater conditions.

TECHNICAL REPORT REQUEST

Please submit technical reports to Alameda County Environmental Health (Attention: Mark Detterman), according to the following schedule:

- **August 31, 2010** – Soil and Groundwater Investigation

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

If you have any questions, please call me at (510) 567-6876 or send me an electronic mail message at mark.detterman@acgov.org.

Sincerely,

Mark E. Detterman, PG, CEG
Hazardous Materials Specialist

cc: Mr. Bob Clark-Riddell, Pangea Environmental Services, Inc., 1710 Franklin Street, Suite 200, Oakland, CA 94612 (sent via electronic mail to BRiddell@pangeaenv.com)

Leroy Griffin, Oakland Fire Department, 250 Frank H. Ogawa Plaza, Ste. 3341, Oakland, CA 94612-2032 (sent via electronic mail to lgriffin@oaklandnet.com)

Donna Drogos (sent via electronic mail to donna.drogos@acgov.org),
Mark Detterman (sent via electronic mail to mark.detterman@acgov.org),
File

APPENDIX B

Permits

Alameda County Public Works Agency - Water Resources Well Permit

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

Application Approved on: 07/20/2010 By jamesy

Permit Numbers: W2010-0532
Permits Valid from 08/03/2010 to 08/04/2010

Application Id: 1278966347591 **City of Project Site:** Oakland
Site Location: 5925 Ocean View Drive
Oakland, CA 94618
Project Start Date: 08/03/2010 **Completion Date:** 08/04/2010
Assigned Inspector: Contact Ron Smalley at (510) 670-5407 or ronaldws@acpwa.org

Applicant: Pangea Environmental Services, Inc. - Tina de la Fuente
1710 Franklin Street, Suite 200, Oakland, CA 94612 **Phone:** 510-836-3700

Property Owner: John Morehouse
5925 Ocean View Drive, Oakland, CA 94618 **Phone:** --

Client: Brian McCormack
120 Montgomery Street, #1600, San Francisco, CA 94104 **Phone:** --

Total Due: $265.00
Receipt Number: WR2010-0252 **Total Amount Paid:** $265.00
Payer Name : Bob Clark-Riddell Paid By: VISA **PAID IN FULL**

Works Requesting Permits:

Borehole(s) for Investigation-Environmental/Monitorinig Study - 4 Boreholes
Driller: Penecore Drilling - Lic #: 906899 - Method: DP **Work Total: $265.00**

Specifications

Permit Number	Issued Dt	Expire Dt	# Boreholes	Hole Diam	Max Depth
W2010-0532	07/20/2010	11/01/2010	4	4.00 in.	20.00 ft

Specific Work Permit Conditions

1. Backfill bore hole by tremie with cement grout or cement grout/sand mixture. Upper two-three feet replaced in kind or with compacted cuttings. All cuttings remaining or unused shall be containerized and hauled off site. The containers shall be clearly labeled to the ownership of the container and labeled hazardous or non-hazardous.

2. Boreholes shall not be left open for a period of more than 24 hours. All boreholes left open more than 24 hours will need approval from Alameda County Public Works Agency, Water Resources Section. All boreholes shall be backfilled according to permit destruction requirements and all concrete material and asphalt material shall be to Caltrans Spec or County/City Codes. No borehole(s) shall be left in a manner to act as a conduit at any time.

3. Permittee shall assume entire responsibility for all activities and uses under this permit and shall indemnify, defend and save the Alameda County Public Works Agency, its officers, agents, and employees free and harmless from any and all expense, cost, liability in connection with or resulting from the exercise of this Permit including, but not limited to, properly damage, personal injury and wrongful death.

4. Applicant shall contact Ron Smalley for an inspection time at 510-670-5407 or email to ronaldws@acpwa.org at least five (5) working days prior to starting, once the permit has been approved. Confirm the scheduled date(s) at least 24 hours prior to drilling.

5. Copy of approved drilling permit must be on site at all times. Failure to present or show proof of the approved permit application on site shall result in a fine of $500.00.

6. Prior to any drilling activities onto any public right-of-ways, it shall be the applicants responsibilities to contact and coordinate a Underground Service Alert (USA), obtain encroachment permit(s), excavation permit(s) or any other permits required for that City or to the County and follow all City or County Ordinances. It shall also be the applicants responsibilities to provide to the Cities or to Alameda County a Traffic Safety Plan for any lane closures or detours planned. No work shall begin until all the permits and requirements have been approved or obtained.

7. Permit is valid only for the purpose specified herein. No changes in construction procedures, as described on this permit application. Boreholes shall not be converted to monitoring wells, without a permit application process.

APPENDIX C

Standard Operating Procedures

STANDARD FIELD PROCEDURES FOR SOIL BORINGS

This document describes Pangea Environmental Services' standard field methods for drilling and sampling soil borings. These procedures are designed to comply with Federal, State and local regulatory guidelines. Specific field procedures are summarized below.

Objectives

Soil samples are collected to characterize subsurface lithology, assess whether the soils exhibit obvious hydrocarbon or other compound vapor odor or staining, estimate ground water depth and quality, and to submit samples for chemical analysis.

Soil Classification/Logging

All soil samples are classified according to the Unified Soil Classification System by a trained geologist, scientist or engineer working under the supervision of a California Registered Engineer, California Registered Geologist (RG) or a Certified Engineering Geologist (CEG). The following soil properties are noted for each soil sample:

- Principal and secondary grain size category (i.e. sand, silt, clay or gravel)
- Approximate percentage of each grain size category,
- Color,
- Approximate water or product saturation percentage,
- Observed odor and/or discoloration,
- Other significant observations (i.e. cementation, presence of marker horizons, mineralogy), and
- Estimated permeability.

Soil Boring and Sampling

Soil borings are typically drilled using hollow-stem augers or hydraulic-push technologies. At least one and one half ft of the soil column is collected for every five ft of drilled depth. Additional soil samples are collected near the water table and at lithologic changes. With hollow-stem drilling, samples are collected using lined split-barrel or equivalent samplers driven into undisturbed sediments beyond the bottom of the borehole. With hydraulic-push drilling, samples are typically collected using acetate liners. The vertical location of each soil sample is determined by measuring the distance from the middle of the soil sample tube to the end of the drive rod used to advance the split barrel sampler. All sample depths use the ground surface immediately adjacent to the boring as a datum. The horizontal location of each boring is measured in the field from an onsite permanent reference using a measuring wheel or tape measure.

Drilling and sampling equipment is steam-cleaned prior to drilling and between borings to prevent cross-contamination. Sampling equipment is washed between samples with trisodium phosphate or an equivalent EPA-approved detergent.

Sample Storage, Handling and Transport

Sampling tubes or cut acetate liners chosen for analysis are trimmed of excess soil and capped with Teflon tape and plastic end caps. Soil samples are labeled and stored at or below 4°C on either crushed or dry ice, depending upon local regulations. Samples are transported under chain-of-custody to a State-certified analytic laboratory.

Field Screening

Soil samples collected during drilling will be analyzed in the field for ionizable organic compounds using a photo-ionization detector (PID) with a 10.2 eV lamp. The screening procedure will involve placing an undisturbed soil sample in a sealed container (either a zip-lock bag, glass jar, or a capped soil tube). The container will be set aside, preferably in the sun or warm location. After approximately fifteen minutes, the head space within the container will be tested for total organic vapor, measured in parts per million on a volume to volume basis (ppmv) by the PID. The PID instrument will be calibrated prior to boring using hexane or isobutylene. PID measurements are used along with the field observations, odors, stratigraphy and ground water depth to select soil samples for analysis.

Water Sampling

Water samples collected from borings are either collected from the open borehole, from within screened PVC inserted into the borehole, or from a driven Hydropunch-type sampler. Groundwater is typically extracted using a bailer, check valve and/or a peristaltic pump. The ground water samples are decanted into the appropriate containers supplied by the analytic laboratory. Samples are labeled, placed in protective foam sleeves, stored on crushed ice at or below 4°C, and transported under chain-of-custody to the laboratory.

Pangea often performs electrical conductivity (EC) logging and/or continuous coring to identify potential water-bearing zones. Hydropunch-type sampling is then performed to provide discrete-depth grab groundwater sampling within potential water-bearing zones for vertical contaminant delineation. Hydropunch-type sampling typically involves driving a cylindrical sheath of hardened steel with an expendable drive point to the desired depth within undisturbed soil. The sheath is retracted to expose a stainless steel or PVC screen that is sealed inside the sheath with Neoprene O-rings to prevent infiltration of formation fluids until the desired depth is attained. The groundwater is extracted using tubing inserted down the center of the rods into the screened sampler.

Duplicates and Blanks

Blind duplicate water samples are collected usually collected only for monitoring well sampling programs, at a rate of one blind sample for every 10 wells sampled. Laboratory-supplied trip blanks accompany samples collected for all sampling programs to check for cross-contamination caused by sample handling and transport. These trip blanks are analyzed if the internal laboratory QA/QC blanks contain the suspected field contaminants. An equipment blank may also be analyzed if non-dedicated sampling equipment is used.

Grouting

If the borings are not completed as wells, the borings are filled to the ground surface with cement grout poured or pumped through a tremie pipe.

Waste Handling and Disposal

Soil cuttings from drilling activities are usually stockpiled onsite on top of and covered by plastic sheeting. At least four individual soil samples are collected from the stockpiles for later compositing at the analytic laboratory. The composite sample is analyzed for the same constituents analyzed in the borehole samples. Soil cuttings are transported by licensed waste haulers and disposed in secure, licensed facilities based on the composite analytic results.

Ground water removed during sampling and/or rinsate generated during decontamination procedures are stored onsite in sealed 55 gallon drums. Each drum is labeled with the drum number, date of generation, suspected contents, generator identification and consultant contact. Disposal of the water is based on the analytic results for the well samples. The water is either pumped out using a vacuum truck for transport to a licensed waste treatment/disposal facility or the individual drums are picked up and transported to the waste facility where the drum contents are removed and appropriately disposed.

STANDARD OPERATING PROCEDURES FOR SOIL GAS SAMPLING

1.0 PURPOSE

This standard operating procedure (SOP) describes the procedures for collecting shallow soil gas vapor samples using temporary vapor probes and evacuated, stainless-steel Summa canisters. The SOP is modified from procedures and information presented in California Regional Water Quality Control Board – Los Angeles Region (LARWQCB), 1997, Cal/EPA 2004, and discussions (September 2006) with K Prime (Santa Rosa, California) laboratory staff.

2.0 REQUIRED EQUIPMENT

- Drill rig or hammer drill with 1" bit and smaller bits (slightly larger than vapor probe tip)
- Tubing for cleaning boring
- Vapor probes and tubing with Swagelok threaded compression fitting and vapor-tight cap.
- Rubber stopper or Teflon disk
- Powdered bentonite or expanding Portland cement
- 6-Liter Summa canister (evacuated with approximately 30" Hg vacuum) with vacuum gauge for purging and leak testing
- 6-Liter Summa canister with vacuum gauge for each sample (including duplicates)
- 1-Liter Summa canister for leak-check compound
- K Prime Inc. stainless-steel sampling manifold (see Figure 2) (request that laboratory leak-check manifold prior to mobilization)
- Leak-check compound (e.g. isopropyl alcohol) and absorbent material (e.g. gauze)
- Photoionization detector (PID)
- Isobutylene for PID calibration
- Tedlar bags for sampling leak-check compound
- Leak-check enclosure (plastic container with flexible weatherstripping and openings for vapor probe tubing and for sampling enclosure atmosphere)
- Record-keeping materials
- Latex or nitrile gloves

3.0 PROCEDURES

3.1 Boring Clearance

Prior to installing temporary soil vapor probes, ensure that a utility clearance has been conducted to ensure that subsurface utility and rebar locations have been identified and marked.

3.2 Vapor Probe Installation

1. To protect surfaces, lay plastic sheeting around the probe location.
2. Use a rotary hammer drill or concrete-coring equipment to create an approximately 1-inch or greater diameter hole that penetrates the slab.
3. In general, the drive rod is driven to a predetermined depth and then pulled back to expose the inlets of the soil gas probe either by exposing a short screened section or by leaving a disposable drop-off tip in the hole. After sample collection, both the drive rod and tubing are removed.

4. During installation of the probe, hydrated bentonite should be used to seal around the drive rod at ground surface to prevent ambient air intrusion from occurring.
5. The inner soil gas pathway from probe tip to the surface should be continuously sealed (e.g., a sampling tube attached to a screw adapter fitted with an o-ring and connected to the probe tip) to prevent infiltration.
6. Equilibration Time: During probe emplacement, subsurface conditions are disturbed. To allow for subsurface conditions to equilibrate, the following equilibration times are recommended:

   For probes installed with the direct push method where the drive rod remains in the ground, purge volume test, leak test, and soil gas sampling should not be conducted for at least 20 minutes following probe installation.

   For probes installed with the direct push method where the drive rod does not remain in the ground, purge volume test, leak test, and soil gas sampling should not be conducted for at least 30 minutes following probe installation.

   For probes installed with hollow stem drilling methods, purge volume test, leak test, and soil gas sampling should not be conducted for at least 48 hours (depending on site lithologic or drilling conditions) after the soil gas probe installation.
7. Probe installation time should be recorded in the field log book.
8. Decontamination: After each use, drive rods and other reusable components should be properly decontaminated to prevent cross contamination. These methods include:

   3-stage wash and rinse (e.g., wash equipment with a non-phosphate detergent, rinse with tap water, and finally rinse with distilled water); and/or

   Steam-cleaning.

3.3 Vapor Sampling

During vapor sampling, record all valve open/close times and canister/manifold vacuum readings at each step.

Setup

1. Calculate and record the volume of the sampling assembly, tubing vapor probe, and any permeable annular space around the vapor probe tip.

   Volume =3.14 x (1/2*ID) x (1/2*ID) *L,

   where ID = tubing or manifold inside diameter and L = length of tubing/manifold segment.
2. Wear latex or nitrile gloves while handling sampling equipment. Change gloves whenever a new sample is collected and after handling leak-check compound.
3. Replace the vapor probe cap with a closed Swagelok valve. Connect the sampling manifold to the vapor probe, sample Summa canister and purge Summa canister using Swagelok fittings and stainless-steel, Teflon or Tygon tubing. Check all fittings for tightness (do not overtighten).
4. Close all valves. Record pre-test vacuum readings on both canisters.

Flow and Leak Check

1. Open both manifold valves and valve on purge Summa canister. Do *not* open valve on sample port. Allow manifold/tubing vacuum to stabilize at approximately 30” Hg.

2. Close purge canister valve and wait at least 10 minutes. Monitor manifold vacuum gauge to test for leaks. If the vacuum decreases, rectify the leak before proceeding.

3. If vacuum is stable, open purge canister valve and open vapor probe valve. After approximately *5 seconds*, close the canister valve and estimate flow rate by recording the elapsed time after valve closure for manifold vacuum to drop to 5" vacuum, as indicated on the following chart (specific to K-Prime sampling manifold)

K PRIME, INC. SOIL GAS MANIFOLD FLOW RATE AND VACUUM LEVEL ESTIMATES

T (seconds)	PV	F (ml/minute)
5	0	135
10	5	115
15	10	90
30	15	60
120	20	40
480	25	20

Source: K Prime, Inc. – July 24, 2006

NOTES:
T = Time duration from full vacuum to less than 5" vacuum after closing purge canister.
PV = Approximate vapor probe vacuum level based on measured T
F = Approximate sampling flow rate based on measured T

4. This procedure should also be conducted several times at the beginning of sampling to ensure that flow rate is sufficient. If no significant flow is attained, either the sampling line is plugged or the vapor probe is positioned in an impermeable or saturated layer. Such a situation should be rectified before sample collection.

5. Place absorbent materials (e.g., gauze) *lightly* moistened (e.g., five drops) with leak-check compound (isopropyl alcohol) inside the leak-check enclosure. Do not allow liquid to come in direct contact with tubing or sampling assembly.

6. Place leak-check enclosure over vapor probe and seal to floor using weatherstripping or duct tape. Ensure that PID has been calibrated with isobutylene gas. Note that the isopropyl alcohol response factor is approximately 5.6 (i.e. a reading of 2 ppm on the PID indicates 5.6 x 2 = 11.2 ppm of isopropyl alcohol in the sample). Record both the observed PID reading and the calculated isopropyl alcohol concentration. If the PID reading is below 10 ppm, slowly reapply leak-check compound.

7. Record PID reading for leak-check enclosure at least once every 5 minutes during purging and sampling. Slowly reapply leak-check compound if PID reading drops more than 20% below initial readings in an attempt to return to the initial readings.

Purge and Sample

1. Open purge canister valve and vapor probe valve and purge the appropriate number of purge volumes. For vapor sampling in support of risk-assessments for regulatory review, a step-purge test should be conducted at a "worst case" sampling point, using 1, 3 and 7 purge volumes to determine the appropriate purge volume that yields the highest target compound concentration. For soil gas screening, or where a purge test is not feasible, purge approximately 3 to 5 purge volumes of the tubing and sampling assembly. Do *not* over-purge. Include the purging conducted during the leak-check step above in the purge

volume.

2. Close purge canister valve and open sample canister valve. Sampling should take approximately 30 minutes for a 6-liter Summa canister.
3. During sampling, the integrated flow rate should be checked periodically by closing the sample canister valve and checking the elapsed time versus the sampling volume. Sampling volume for a 6-liter canister can be estimated based on the following table.

Relationship between Final Canister Vacuum and Volume Sampled

Final Vacuum ("Hg)	0	2.5	5	7.5	10	12.5	15	17.5	20
Volume Sampled (L)	6	5.5	5	4.5	4	3.5	3	2.5	2

Source: Air Toxics, Inc.

4. Close sampling canister valve when vacuum decreases to between 1" and 5" mercury. Do *not* allow vacuum to fall below this range.
5. Use a 1-liter Summa canister to collect a sample from the leak-check enclosure. Submit canister for analysis of leak-check compound only.
6. Disassemble sampling assembly, and cap (or remove and restore) vapor sampling point.
7. Fill out chain-of-custody form, including analysis for chemicals of concern and leak-check compound. Also analyze for oxygen, carbon dioxide and methane. Include final vacuum reading and serial numbers of canister and flow restrictor.
8. Collect at least one duplicate sample per site per sampling event from the sampling point with the anticipated highest vapor concentrations. The duplicate sample should be collected by attaching a fresh sample canister following collection of the initial sample. If a new manifold is used, follow the same purging and sampling procedures used for the original sample. If the same manifold is used, collect a sample without further purging, using the same sampling procedures used for the original sample

Decontamination and Decommissioning

9. Use separate sampling manifold and tubing for each sample location. Return equipment to laboratory for decontamination.
10. Backfill soil vapor probe holes with bentonite slurry.

REFERENCES

California Regional Water Quality Control Board – Los Angeles Region (LARWQCB), 1997, Interim guidance for active soil gas investigation, February 25.

Cal/EPA, 2003, Advisory – Active soil gas investigations, California Environmental Protection Agency, Department of Toxic Substances Control, January 28.

Cal/EPA, 2004, Interim final guidance for the evaluation and mitigation of subsurface vapor intrusion to indoor air, California Environmental Protection Agency, Department of Toxic Substances Control, December 15 (revised February 7, 2005).

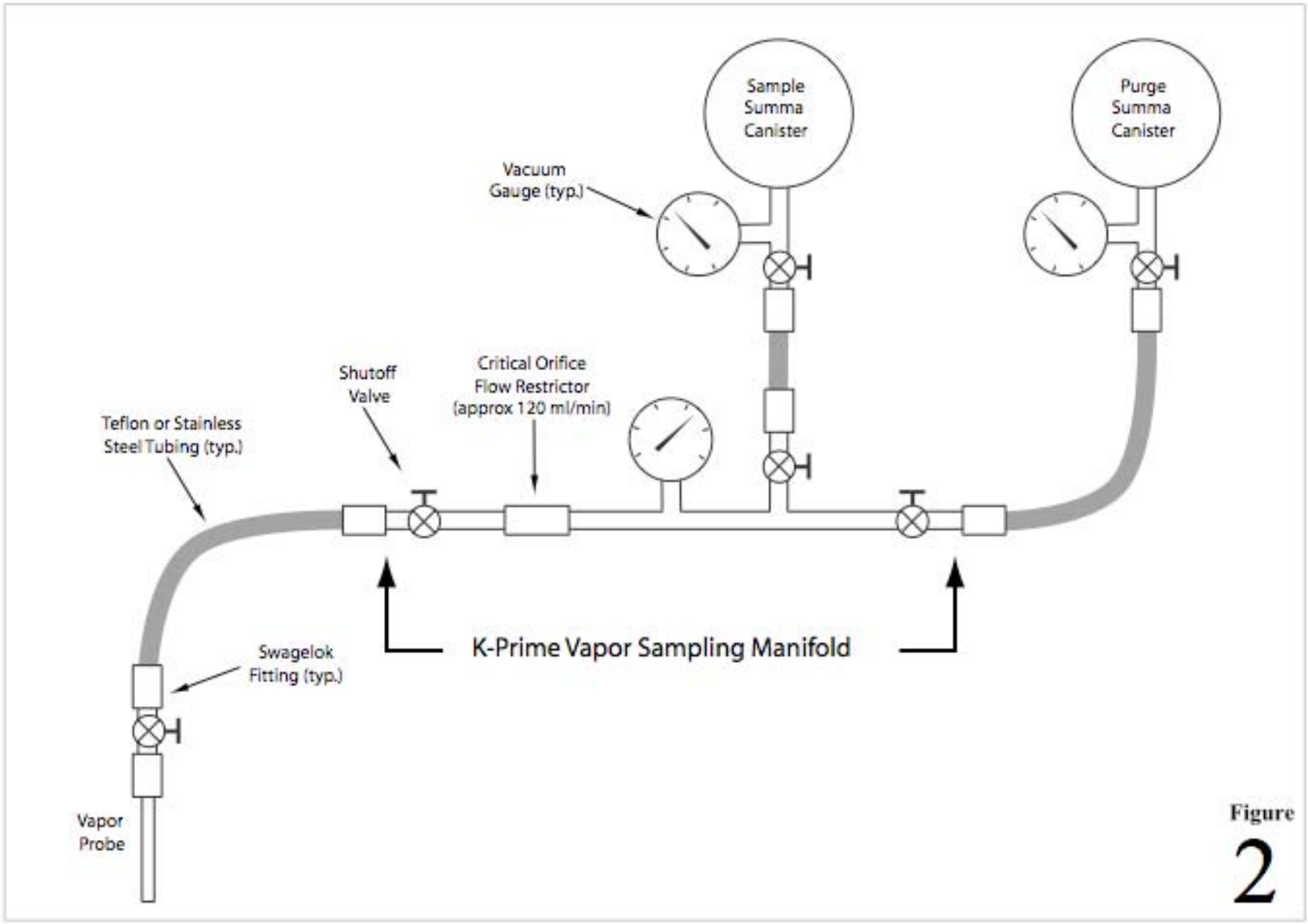

Figure
2

Subslab and Soil Vapor Sampling Manifold Schematic

PANGEA

APPENDIX D

Boring Logs

Pangea Environmental Services, Inc.
1710 Franklin Street Suite 200
Oakland, CA 94612

BORING NUMBER SB-1

CLIENT McCormack **PROJECT NAME** McCormack - 5925 Ocean View

PROJECT NUMBER 1350.001 **PROJECT LOCATION** 5925 Ocean View Dr, Oakland

DATE STARTED 8/3/10 **COMPLETED** 8/3/10 **GROUND ELEVATION** _____ **HOLE SIZE** 4.25"

DRILLING CONTRACTOR Penecore **GROUND WATER LEVELS:**

DRILLING METHOD Solid Stem Auger **AT TIME OF DRILLING** ---

LOGGED BY Tina de la Fuente **CHECKED BY** Bob Clark-Riddell **AT END OF DRILLING** ---

NOTES Hand auger to 5'. **AFTER DRILLING** ---

DEPTH (ft bgs)	SAMPLE TYPE NUMBER	PID (ppm)	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION	BORING DIAGRAM
0					Concrete	Concrete
					1.0	
			CL		**Sandy Clay (CL)**; light brown; 75-80% low plasticity fines; 10-15% fine- to coarse-grain sand; 5-10% fine gravel; low estimated permeability; dry.	
					Sandy Clay (CL); dark brown; 90-95% low plasticity fines; 5-10% fine-grain sand; trace fine gravel; low estimated permeability; damp.	
5						
	SB-1-8	0				Portland Cement
10						
					11.0	
					Siltstone Bedrock; difficult drilling.	
					13.0	
					(Top 5' of soil logged from hand auger. Drilled with Solid Stem Auger from 5' to refusal at 13'. Soil sample SB-1-8 collected by pulling up augers and collecting sample with clean hand auger. Groundwater was not encountered.)	
					Bottom of hole at 13.0 feet.	

Pangea Environmental Services, Inc.
1710 Franklin Street Suite 200
Oakland, CA 94612

BORING NUMBER SB-2

CLIENT McCormack **PROJECT NAME** McCormack - 5925 Ocean View

PROJECT NUMBER 1350.001 **PROJECT LOCATION** 5925 Ocean View Dr, Oakland

DATE STARTED 8/3/10 **COMPLETED** 8/3/10 **GROUND ELEVATION** _____ **HOLE SIZE** 2.25"/4.25"

DRILLING CONTRACTOR Penecore **GROUND WATER LEVELS:**

DRILLING METHOD Direct Push - Dual Wall/Solid Stem Auger **AT TIME OF DRILLING** ---

LOGGED BY Tina de la Fuente **CHECKED BY** Bob Clark-Riddell **AT END OF DRILLING** 16.3 ft

NOTES Hand auger to 4'. **AFTER DRILLING** ---

DEPTH (ft bgs)	SAMPLE TYPE NUMBER	PID (ppm)	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION	BORING DIAGRAM
0					Concrete	Concrete
					1.0	
			CL		**Silty Clay (CL)**; dark brown; 80-90% low plasticity fines; 10-20% very fine-grain sand; trace fine gravel; damp.	
	SB-2-4	0			4.5	
5			GP		**Poorly-graded Gravel (GP)**; 90-95% fine to course gravel; 5-10% medium plasticity fines; light grey; dry.	
					6.0	
					Siltstone Bedrock; difficult drilling.	
10		0				Portland Cement
15					18.0	
					(Drilled with Direct Push Dual Wall until refusal at 11'. Drilled with 4.25" diameter Solid Stem Augers from 11' to 18'. Installed temporary PVC casing with 5' of screen at bottom and collected a groundwater sample using new polyethylene tubing and a clean check valve.) Bottom of hole at 18.0 feet.	

APPENDIX E

Laboratory Analytical Reports

Pangea Environmental
1710 Franklin Street, Ste 200
Oakland, California 94612
Tel: 510 836 3700

RE: 5925 Ocean View Dr.

Work Order No.: 1008032 Rev: 1

Dear Tina De La Fuente:

Torrent Laboratory, Inc. received 4 sample(s) on August 04, 2010 for the analyses presented in the following Report.

Four samples received (2 placed on HOLD).

All data for associated QC met EPA or laboratory specification(s) except where noted in the case narrative.

Torrent Laboratory, Inc. is certified by the State of California, ELAP #1991. If you have any questions regarding these test results, please feel free to contact the Project Management Team at (408)263-5258; ext 204.

N. S. Kabir

Nutan Kabir

August 23, 2010

Date

Date: 8/23/2010

Client: Pangea Environmental

Project: 5925 Ocean View Dr.

Work Order: 1008032

CASE NARRATIVE

No issues encountered with the receiving, preparation, analysis or reporting of the results associated with this work order.

Per Client requests samples 002A and 004A are Off Hold and analyzed for IPA only.

Rev1

Torrent LABORATORY, INC.

Sample Result Summary

Report prepared for: Tina De La Fuente
Pangea Environmental

Date Received: 08/04/10
Date Reported: 08/23/10

SGP-1 1008032-001A

Parameters:	Analysis Method	DF	MDL	PQL	Results ug/m3
2-Propanol (Isopropyl Alcohol)	ETO15	2	1.9	20	127
Benzene	ETO15	2	1.4	3.2	8.68
Toluene	ETO15	2	1.9	3.8	22.7
m,p-Xylene	ETO15	2	3.3	8.7	22.0
o-Xylene	ETO15	2	1.6	4.3	6.94

SGP-1 Leak Check 1008032-002A

Parameters:	Analysis Method	DF	MDL	PQL	Results ug/m3
2-Propanol (Isopropyl Alcohol)	ETO15	250	240	2500	44700

SGP-2 1008032-003A

Parameters:	Analysis Method	DF	MDL	PQL	Results ug/m3
2-Propanol (Isopropyl Alcohol)	ETO15	2	1.9	20	18.5
Benzene	ETO15	2	1.4	3.2	65.8
Toluene	ETO15	2	1.9	3.8	29.8
m,p-Xylene	ETO15	2	3.3	8.7	13.9
o-Xylene	ETO15	2	1.6	4.3	5.38

SGP-2 Leak Check 1008032-004A

Parameters:	Analysis Method	DF	MDL	PQL	Results ug/m3
2-Propanol (Isopropyl Alcohol)	ETO15	250	240	2500	38100

Torrent LABORATORY, INC.

SAMPLE RESULTS

Report prepared for: Tina De La Fuente
Pangea Environmental

Date Received: 08/04/10
Date Reported: 08/23/10

Client Sample ID:	SGP-1	**Lab Sample ID:**	1008032-001A
Project Name/Location:	5925 Ocean View Dr.	**Sample Matrix:**	Soil Vapor
Project Number:			
Date/Time Sampled:	08/03/10 /	**Certified Clean WO # :**	
Canister/Tube ID:	6106	**Received PSI :**	11.6
Collection Volume (L):		**Corrected PSI :**	
Tag Number:	5925 Ocean View Dr		

Parameters:	Analysis Method	Prep Date	Date Analyzed	DF	MDL ug/m3	PQL ug/m3	Results ug/m3	Results ppbv	Lab Qualifier	Analytical Batch	Prep Batch
The results shown below are reported using their MDL.											
2-Propanol (Isopropyl Alcohol)	ETO15	NA	08/09/10	2	1.9	20	127	51.63		401725	NA
MTBE	ETO15	NA	08/09/10	2	1.7	3.6	ND	ND		401725	NA
Benzene	ETO15	NA	08/09/10	2	1.4	3.2	8.68	2.72		401725	NA
Toluene	ETO15	NA	08/09/10	2	1.9	3.8	22.7	6.02		401725	NA
Ethyl Benzene	ETO15	NA	08/09/10	2	2.0	4.3	ND	ND		401725	NA
m,p-Xylene	ETO15	NA	08/09/10	2	3.3	8.7	22.0	5.07		401725	NA
o-Xylene	ETO15	NA	08/09/10	2	1.6	4.3	6.94	1.60		401725	NA
(S) 4-Bromofluorobenzene	ETO15	NA	08/09/10	2	65	135	129 %			401725	NA

NOTE: Reporting limits were raised due to low intial canister pressure (1-L).

Client Sample ID:	SGP-1 Leak Check	**Lab Sample ID:**	1008032-002A
Project Name/Location:	5925 Ocean View Dr.	**Sample Matrix:**	Soil Vapor
Project Number:			
Date/Time Sampled:	/	**Certified Clean WO # :**	
Canister/Tube ID:	6320	**Received PSI :**	10.9
Collection Volume (L):		**Corrected PSI :**	
Tag Number:	5925 Ocean View Dr		

Parameters:	Analysis Method	Prep Date	Date Analyzed	DF	MDL ug/m3	PQL ug/m3	Results ug/m3	Results ppbv	Lab Qualifier	Analytical Batch	Prep Batch
2-Propanol (Isopropyl Alcohol)	ETO15	NA	08/18/10	250	240	2500	44700	18,170.73		401882	NA
(S) 4-Bromofluorobenzene	ETO15	NA	08/18/10	250	65	135	123 %			401882	NA

Torrent LABORATORY, INC.

SAMPLE RESULTS

Report prepared for: Tina De La Fuente
Pangea Environmental

Date Received: 08/04/10
Date Reported: 08/23/10

Client Sample ID:	SGP-2	**Lab Sample ID:**	1008032-003A
Project Name/Location:	5925 Ocean View Dr.	**Sample Matrix:**	Soil Vapor
Project Number:			
Date/Time Sampled:	08/03/10 /	**Certified Clean WO # :**	
Canister/Tube ID:	6333	**Received PSI :**	12.1
Collection Volume (L):		**Corrected PSI :**	
Tag Number:	5925 Ocean View Dr		

Parameters:	Analysis Method	Prep Date	Date Analyzed	DF	MDL ug/m3	PQL ug/m3	Results ug/m3	Results ppbv	Lab Qualifier	Analytical Batch	Prep Batch
The results shown below are reported using their MDL.											
2-Propanol (Isopropyl Alcohol)	ETO15	NA	08/09/10	2	1.9	20	18.5	7.52	J	401725	NA
MTBE	ETO15	NA	08/09/10	2	1.7	3.6	ND	ND		401725	NA
Benzene	ETO15	NA	08/09/10	2	1.4	3.2	65.8	20.63		401725	NA
Toluene	ETO15	NA	08/09/10	2	1.9	3.8	29.8	7.90		401725	NA
Ethyl Benzene	ETO15	NA	08/09/10	2	2.0	4.3	ND	ND		401725	NA
m,p-Xylene	ETO15	NA	08/09/10	2	3.3	8.7	13.9	3.20		401725	NA
o-Xylene	ETO15	NA	08/09/10	2	1.6	4.3	5.38	1.24		401725	NA
(S) 4-Bromofluorobenzene	ETO15	NA	08/09/10	2	65	135	122 %			401725	NA

NOTE: Reporting limits were raised due to low intial canister pressure (1-L).

Client Sample ID:	SGP-2 Leak Check	**Lab Sample ID:**	1008032-004A
Project Name/Location:	5925 Ocean View Dr.	**Sample Matrix:**	Soil Vapor
Project Number:			
Date/Time Sampled:	/	**Certified Clean WO # :**	
Canister/Tube ID:	6315	**Received PSI :**	11.7
Collection Volume (L):		**Corrected PSI :**	
Tag Number:	5925 Ocean View Dr		

Parameters:	Analysis Method	Prep Date	Date Analyzed	DF	MDL ug/m3	PQL ug/m3	Results ug/m3	Results ppbv	Lab Qualifier	Analytical Batch	Prep Batch
2-Propanol (Isopropyl Alcohol)	ETO15	NA	08/18/10	250	240	2500	38100	15,487.80		401882	NA
(S) 4-Bromofluorobenzene	ETO15	NA	08/18/10	250	65	135	123 %			401882	NA

Torrent LABORATORY, INC.

MB Summary Report

Work Order:	1008032	**Prep Method:**	NA	**Prep Date:**	NA	**Prep Batch:**	NA
Matrix:	Air	**Analytical Method:**	ETO15	**Analyzed Date:**	08/09/10	**Analytical Batch:**	401725
Units:	ppbv						

Parameters	MDL	PQL	Method Blank Conc.	Lab Qualifier
Dichlorodifluoromethane	0.15	0.500	ND	
1,1-Difluoroethane	0.092	0.250	ND	
1,2-Dichlorotetrafluoroethane	0.35	1.00	ND	
Chloromethane	0.076	0.250	ND	
Vinyl Chloride	0.13	0.500	ND	
1,3-Butadiene	0.10	0.250	ND	
Bromomethane	0.092	0.250	ND	
Chloroethane	0.096	0.250	ND	
Trichlorofluoromethane	0.16	0.500	ND	
1,1-Dichloroethene	0.077	0.250	ND	
Freon 113	0.055	0.250	ND	
Carbon Disulfide	0.13	0.500	ND	
2-Propanol (Isopropyl Alcohol)	0.19	2.00	ND	
Methylene Chloride	0.084	0.250	ND	
Acetone	0.18	2.00	ND	
trans-1,2-Dichloroethene	0.080	0.250	ND	
Hexane	0.075	0.250	ND	
MTBE	0.12	0.250	ND	
tert-Butanol	0.11	1.00	ND	
Diisopropyl ether (DIPE)	0.10	0.250	ND	
1,1-Dichloroethane	0.092	0.250	ND	
ETBE	0.081	0.250	ND	
cis-1,2-Dichloroethene	0.067	0.250	ND	
Chloroform	0.13	0.500	ND	
Vinyl Acetate	0.081	0.250	ND	
Carbon Tetrachloride	0.069	0.250	ND	
1,1,1-Trichloroethane	0.077	0.250	ND	
2-Butanone (MEK)	0.10	0.250	ND	
Ethyl Acetate	0.10	0.250	ND	
Tetrahydrofuran	0.050	0.250	ND	
Benzene	0.11	0.250	ND	
TAME	0.043	0.250	ND	
1,2-Dichloroethane (EDC)	0.12	0.250	ND	
Trichloroethylene	0.13	0.500	ND	
1,2-Dichloropropane	0.14	0.500	ND	
Bromodichloromethane	0.066	0.250	ND	
1,4-Dioxane	0.17	0.500	ND	
trans-1,3-Dichloropropene	0.097	0.250	ND	
Toluene	0.13	0.250	ND	
4-Methyl-2-Pentanone (MIBK)	0.10	0.250	ND	

Torrent LABORATORY, INC.

MB Summary Report

Work Order:	1008032	**Prep Method:**	NA	**Prep Date:**	NA	**Prep Batch:**	NA
Matrix:	Air	**Analytical Method:**	ETO15	**Analyzed Date:**	08/09/10	**Analytical Batch:**	401725
Units:	ppbv						

Parameters	MDL	PQL	Method Blank Conc.	Lab Qualifier
cis-1,3-Dichloropropene	0.13	0.250	ND	
Tetrachloroethylene	0.067	0.250	ND	
1,1,2-Trichloroethane	0.084	0.250	ND	
Dibromochloromethane	0.10	0.250	ND	
1,2-Dibromoethane (EDB)	0.13	0.500	ND	
2-Hexanone	0.14	0.500	ND	
Ethyl Benzene	0.12	0.250	ND	
Chlorobenzene	0.077	0.250	ND	
1,1,1,2-Tetrachloroethane	0.075	0.250	ND	
m,p-Xylene	0.19	0.500	ND	
o-Xylene	0.094	0.250	ND	
Styrene	0.078	0.250	ND	
Bromoform	0.055	0.250	ND	
1,1,2,2-Tetrachloroethane	0.051	0.250	ND	
4-Ethyl Toluene	0.084	0.250	ND	
1,3,5-Trimethylbenzene	0.077	0.250	ND	
1,2,4-Trimethylbenzene	0.070	0.250	ND	
1,4-Dichlorobenzene	0.054	0.250	ND	
1,3-Dichlorobenzene	0.070	0.250	ND	
Benzyl Chloride	0.059	0.250	ND	
1,2-Dichlorobenzene	0.076	0.250	ND	
Hexachlorobutadiene	0.11	0.250	ND	
1,2,4-Trichlorobenzene	0.23	0.500	ND	
Naphthalene	0.14	0.500	ND	
(S) 4-Bromofluorobenzene			125 %	

Torrent LABORATORY, INC.

MB Summary Report

Work Order:	1008032	**Prep Method:**	NA	**Prep Date:**	NA	**Prep Batch:**	NA
Matrix:	Air	**Analytical Method:**	ETO15	**Analyzed Date:**	08/18/10	**Analytical Batch:**	401882
Units:	ppbv						

Parameters	MDL	PQL	Method Blank Conc.	Lab Qualifier
Dichlorodifluoromethane	0.30	1.00	ND	
1,1-Difluoroethane	0.18	0.500	ND	
1,2-Dichlorotetrafluoroethane	0.70	2.00	ND	
Chloromethane	0.15	0.500	ND	
Vinyl Chloride	0.26	1.00	ND	
1,3-Butadiene	0.20	0.500	ND	
Bromomethane	0.18	0.500	ND	
Chloroethane	0.19	0.500	ND	
Trichlorofluoromethane	0.32	1.00	ND	
1,1-Dichloroethene	0.15	0.500	ND	
Freon 113	0.11	0.500	ND	
Carbon Disulfide	0.26	1.00	ND	
2-Propanol (Isopropyl Alcohol)	0.39	4.00	ND	
Methylene Chloride	0.17	0.500	ND	
Acetone	0.37	4.00	ND	
trans-1,2-Dichloroethene	0.16	0.500	ND	
Hexane	0.15	0.500	ND	
MTBE	0.24	0.500	ND	
tert-Butanol	0.22	2.00	ND	
Diisopropyl ether (DIPE)	0.21	0.500	ND	
1,1-Dichloroethane	0.18	0.500	ND	
ETBE	0.16	0.500	ND	
cis-1,2-Dichloroethene	0.13	0.500	ND	
Chloroform	0.25	1.00	ND	
Vinyl Acetate	0.16	0.500	ND	
Carbon Tetrachloride	0.14	0.500	ND	
1,1,1-Trichloroethane	0.15	0.500	ND	
2-Butanone (MEK)	0.21	0.500	ND	
Ethyl Acetate	0.21	0.500	ND	
Tetrahydrofuran	0.10	0.500	ND	
Benzene	0.21	0.500	ND	
TAME	0.086	0.500	ND	
1,2-Dichloroethane (EDC)	0.24	0.500	ND	
Trichloroethylene	0.26	1.00	ND	
1,2-Dichloropropane	0.29	1.00	ND	
Bromodichloromethane	0.13	0.500	ND	
1,4-Dioxane	0.35	1.00	ND	
trans-1,3-Dichloropropene	0.19	0.500	ND	
Toluene	0.25	0.500	ND	
4-Methyl-2-Pentanone (MIBK)	0.21	0.500	ND	

Torrent LABORATORY, INC.

MB Summary Report

Work Order:	1008032	**Prep Method:**	NA	**Prep Date:**	NA	**Prep Batch:**	NA
Matrix:	Air	**Analytical Method:**	ETO15	**Analyzed Date:**	08/18/10	**Analytical Batch:**	401882
Units:	ppbv						

Parameters	MDL	PQL	Method Blank Conc.	Lab Qualifier
cis-1,3-Dichloropropene	0.25	0.500	ND	
Tetrachloroethylene	0.13	0.500	ND	
1,1,2-Trichloroethane	0.17	0.500	ND	
Dibromochloromethane	0.20	0.500	ND	
1,2-Dibromoethane (EDB)	0.27	1.00	ND	
2-Hexanone	0.27	1.00	ND	
Ethyl Benzene	0.23	0.500	ND	
Chlorobenzene	0.15	0.500	ND	
1,1,1,2-Tetrachloroethane	0.15	0.500	ND	
m,p-Xylene	0.38	1.00	ND	
o-Xylene	0.19	0.500	ND	
Styrene	0.16	0.500	ND	
Bromoform	0.11	0.500	ND	
1,1,2,2-Tetrachloroethane	0.10	0.500	ND	
4-Ethyl Toluene	0.17	0.500	ND	
1,3,5-Trimethylbenzene	0.15	0.500	ND	
1,2,4-Trimethylbenzene	0.14	0.500	ND	
1,4-Dichlorobenzene	0.11	0.500	ND	
1,3-Dichlorobenzene	0.14	0.500	ND	
Benzyl Chloride	0.12	0.500	ND	
1,2-Dichlorobenzene	0.15	0.500	ND	
Hexachlorobutadiene	0.22	0.500	ND	
1,2,4-Trichlorobenzene	0.46	1.00	ND	
Naphthalene	0.28	1.00	ND	
(S) 4-Bromofluorobenzene			119 %	

Torrent LABORATORY, INC.

LCS/LCSD Summary Report

Raw values are used in quality control assessment.

Work Order:	1008032	**Prep Method:**	NA	**Prep Date:**	NA	**Prep Batch:**	NA
Matrix:	Air	**Analytical Method:**	ETO15	**Analyzed Date:**	08/09/10	**Analytical Batch:**	401725
Units:	ppbv						

Parameters	MDL	PQL	Method Blank Conc.	Spike Conc.	LCS % Recovery	LCSD % Recovery	LCS/LCSD % RPD	% Recovery Limits	% RPD Limits	Lab Qualifier
1,1-Dichloroethene	0.15	0.500		20	117	125	6.61	65 - 135	30	
Benzene	0.21	0.500		20	121	118	2.22	65 - 135	30	
Trichloroethylene	0.26	1.00		20	105	106	1.04	65 - 135	30	
Toluene	0.25	0.500		20	101	103	1.91	65 - 135	30	
Chlorobenzene	0.15	0.500		20	91.1	93.8	2.92	65 - 135	30	
(S) 4-Bromofluorobenzene				20	100	105		65 - 135		

Work Order:	1008032	**Prep Method:**	NA	**Prep Date:**	NA	**Prep Batch:**	NA
Matrix:	Air	**Analytical Method:**	ETO15	**Analyzed Date:**	08/18/10	**Analytical Batch:**	401882
Units:	ppbv						

Parameters	MDL	PQL	Method Blank Conc.	Spike Conc.	LCS % Recovery	LCSD % Recovery	LCS/LCSD % RPD	% Recovery Limits	% RPD Limits	Lab Qualifier
1,1-Dichloroethene	0.15	0.500		20	103	111	6.92	65 - 135	30	
Benzene	0.21	0.500		20	112	115	2.21	65 - 135	30	
Trichloroethylene	0.26	1.00		20	96.3	94.0	2.47	65 - 135	30	
Toluene	0.25	0.500		20	93.7	94.3	0.692	65 - 135	30	
Chlorobenzene	0.15	0.500		20	88.5	90.3	2.01	65 - 135	30	
(S) 4-Bromofluorobenzene				20	80.0	85.0		65 - 135		

Laboratory Qualifiers and Definitions

DEFINITIONS:

Accuracy/Bias (% Recovery) - The closeness of agreement between an observed value and an accepted reference value.
Blank (Method/Preparation Blank) -MB/PB - An analyte-free matrix to which all reagents are added in the same volumes/proportions as used in sample processing. The method blank is used to document contamination resulting from the analytical process.
Duplicate - a field sample and/or laboratory QC sample prepared in duplicate following all of the same processes and procedures used on the original sample (sample duplicate, LCSD, MSD)
Laboratory Control Sample (LCS ad LCSD) - A known matrix spiked with compounds representative of the target analyte(s). This is used to document laboratory performance.
Matrix - the component or substrate that contains the analyte of interest (e.g., - groundwater, sediment, soil, waste water, etc)
Matrix Spike (MS/MSD) - Client sample spiked with identical concentrations of target analyte (s). The spiking occurs prior to the sample preparation and analysis. They are used to document the precision and bias of a method in a given sample matrix.
Method Detection Limit (MDL) - the minimum concentration of a substance that can be measured and reported with a 99% confidence that the analyte concentration is greater than zero
Practical Quantitation Limit (PQL) - a laboratory determined value at 2 to 5 times above the MDL that can be reproduced in a manner that results in a 99% confidence level that the result is both accurate and precise. PQLs reflect all preparation factors and/or dilution factors that have been applied to the sample during the preparation and/or analytical processes.
Precision (%RPD) - The agreement among a set of replicate/duplicate measurements without regard to known value of the replicates
Surrogate (S) or (Surr) - An organic compound which is similar to the target analyte(s) in chemical composition and behavior in the analytical process, but which is not normally found in environmental samples. Surrogates are used in most organic analysis to demonstrate matrix compatibility with the chosen method of analysis
Tentatively Identified Compound (TIC) - A compound not contained within the analytical calibration standards but present in the GCMS library of defined compounds. When the library is searched for an unknown compound, it can frequently give a tentative identification to the compound based on retention time and primary and secondary ion match. TICs are reported as estimates and are candidates for further investigation.
Units: the unit of measure used to express the reported result - **mg/L** and ***mg/Kg*** (equivalent to PPM - parts per million in **liquid** and ***solid***), **ug/L** and ***ug/Kg*** (equivalent to PPB - parts per billion in **liquid** and ***solid***), **ug/m3**, ***mg.m3***, **ppbv** and ***ppmv*** (all units of measure for reporting concentrations in air), **%** (equivalent to 10000 ppm or 1,000,000 ppb), **ug/Wipe** (concentration found on the surface of a single Wipe usually taken over a 100cm2 surface)

LABORATORY QUALIFIERS:

B - Indicates when the anlayte is found in the associated method or preparation blank
D - Surrogate is not recoverable due to the necessary dilution of the sample
E - Indicates the reportable value is outside of the calibration range of the instrument but within the linear range of the instrument (unless otherwise noted) Values reported with an E qualifier should be considered as estimated.
H- Indicates that the recommended holding time for the analyte or compound has been exceeded
J- Indicates a value between the method MDL and PQL and that the reported concentration should be considered as estimated rather the quantitative
NA - Not Analyzed
N/A - Not Applicable
NR - Not recoverable - a matrix spike concentration is not recoverable due to a concentration within the original sample that is greater than four times the spike concentration added
R- The % RPD between a duplicate set of samples is outside of the absolute values established by laboratory control charts
S- Spike recovery is outside of established method and/or laboratory control limits. Further explanation of the use of this qualifier should be included within a case narrative
X -Used to indicate that a value based on pattern identification is within the pattern range but not typical of the pattern found in standards. Further explanation may or may not be provided within the sample footnote and/or the case narrative.

Sample Receipt Checklist

Client Name: Pangea Environmental

Project Name: 5925 Ocean View Dr.

Work Order No.: 1008032

Date and Time Received: 8/4/2010 17:00

Received By: NK

Physically Logged By: MJ

Checklist Completed By: MJ

Carrier Name: Gold Bullet Courier

Chain of Custody (COC) Information

Chain of custody present?	Yes
Chain of custody signed when relinquished and received?	Yes
Chain of custody agrees with sample labels?	Yes
Custody seals intact on sample bottles?	Not Present

Sample Receipt Information

Custody seals intact on shipping container/cooler?	Not Present
Shipping Container/Cooler In Good Condition?	Yes
Samples in proper container/bottle?	Yes
Samples containers intact?	Yes
Sufficient sample volume for indicated test?	Yes

Sample Preservation and Hold Time (HT) Information

All samples received within holding time?	Yes
Container/Temp Blank temperature in compliance?	Temperature: °C
Water-VOA vials have zero headspace?	No VOA vials submitted
Water-pH acceptable upon receipt?	N/A
pH Checked by:	pH Adjusted by:

Torrent LABORATORY, INC.

Login Summary Report

Client ID: TL5322 Pangea Environmental
Project Name: 5925 Ocean View Dr.
Project # :
Report Due Date: 8/20/2010
QC Level: II
TAT Requested: 5+ day:0
Date Received: 8/4/2010
Time Received: 17:00

Comments: 5 day TAT! Received 4 air samples for BTEX,IPA, 2 On hold.

Work Order # : ***1008032***

WO Sample ID	Client Sample ID	Collection Date/Time	Matrix	Scheduled Disposal	Sample On Hold	Test On Hold	Requested Tests	Subbed
1008032-001A	SGP-1	08/03/10	Air				EDF A_TO-15MBTEX	
Sample Note:	Report BTEX and Leak check compound IPA for samples 001A,003A.							
1008032-001A2x	SGP-1	08/03/10 0:00	Air				A_TO-15MBTEX	
1008032-002A	SGP-1 Leak Check		Air				A_TO-15MBTEX CO	
Sample Note:	Samples 002,003 off hold for IPA. 8/18/10							
1008032-002A250x	SGP-1 Leak Check	0:00	Air				A_TO-15MBTEX	
1008032-003A2x	SGP-2	08/03/10 0:00	Air				A_TO-15MBTEX	
1008032-004A	SGP-2 Leak Check		Air				A_TO-15MBTEX	
Sample Note:								
1008032-004A250x	SGP-2 Leak Check	0:00	Air				A_TO-15MBTEX	

Torrent LABORATORY, INC.

Torrent LABORATORY, INC.
483 Sinclair Frontage Road
Milpitas, CA 95035
Phone: 408.263.5258 RESET
FAX: 408.263.8293
www.torrentlab.com

CHAIN OF CUSTODY

• NOTE: SHADED AREAS ARE FOR TORRENT LAB USE ONLY •

LAB WORK ORDER NO: 1008032

Company Name: PANGEA ENVIRONMENTAL SERVICES	Location of Sampling: 5925 Ocean View Dr, Oakland
Address: 1710 FRANKLIN ST., STE 200	Purpose:
City: OAKLAND State: CA Zip Code: 94612	Special Instructions / Comments:
Telephone: 510-836-3700 FAX: 510-836-3709	
REPORT TO: TINA DE LA FUENTE SAMPLER: TINA DE LA FUENTE	P.O. #: 5925 Ocean View EMAIL: tdelafuente@pangeaenv.com

TURNAROUND TIME:
☐ 10 Work Days ☐ 3 Work Days ☐ Noon - Nxt Day
☐ 7 Work Days ☐ 2 Work Days ☐ 2 - 8 Hours
☒ 5 Work Days ☐ 1 Work Day ☐ Other

SAMPLE TYPE:
☐ Storm Water ☒ Air
☐ Waste Water ☐ Other
☐ Ground Water
☐ Soil

REPORT FORMAT:
☐ QC Level IV
☒ EDF
☐ Excel / EDD

ANALYSIS REQUESTED

LAB ID	CLIENT'S SAMPLE I.D.	DATE / TIME SAMPLED	MATRIX	# OF CONT	CONT TYPE	~~TPH-D~~, BTEX	Isopropyl Alcohol	REMARKS
001A	SGP-1		A	1	1L SUMA	X	X	
002A	SGP-1 leak check		A	1				HOLD
003A	SGP-2		A	1		X	X	
004A	SGP-2 leak check		A	1				HOLD

	Relinquished By:	Print:	Date:	Time:	Received By:	Print:	Date:	Time:
1		TdlF	8-04-10	1503	M. Vasquez		8-4-10	1505
2		Ivan	8-04-10	5-05			8/4/10	5:05pm

Were Samples Received in Good Condition? ☐ Yes ☐ NO Samples on Ice? ☐ Yes ☐ NO Method of Shipment Field Bullet Sample seals intact? ☐ Yes ☐ NO ☐ N/A

NOTE: Samples are discarded by the laboratory 30 days from date of receipt unless other arrange -ments are made.

Page 1 of 1

Log In By: _____ Date: _____ Log In Reviewed By: _____ Date: _____

Pangea Environmental
1710 Franklin Street, Ste 200
Oakland, California 94612
Tel: 510 836 3700

RE: 5925 Ocean View Dr

Work Order No.: 1008033

Dear Tina De La Fuente:

Torrent Laboratory, Inc. received 3 sample(s) on August 04, 2010 for the analyses presented in the following Report.

All data for associated QC met EPA or laboratory specification(s) except where noted in the case narrative.

Torrent Laboratory, Inc. is certified by the State of California, ELAP #1991. If you have any questions regarding these test results, please feel free to contact the Project Management Team at (408)263-5258; ext 204.

Patti Sandrock

August 11, 2010
Date

Date: 8/11/2010

Client: Pangea Environmental

Project: 5925 Ocean View Dr

Work Order: 1008033

CASE NARRATIVE

No issues encountered with the receiving, preparation, analysis or reporting of the results associated with this work order.

Due to insufficient sample volume submitted (minimum volume 1L), standard extraction procedure for TPH as Diesel and TPH as Heating Oil could not be performed. A micro extraction was perfomed (SW 3511) and Diesel Range Organics (DRO) from C9-C23 was anlayzed. Heating Oil, also called Diesel #2, falls within the same C9-C23 range. No pattern for either Diesel or Heating Oil was observed. Results are report as TPH DRO.

Sample Result Summary

Report prepared for: Tina De La Fuente
Pangea Environmental

Date Received: 08/04/10
Date Reported: 08/11/10

SB-2-4 1008033-001A

Parameters:	Analysis Method	DF	MDL	PQL	Results	Unit

All compounds were non-detectable for this sample.

SB-1-8 1008033-002A

Parameters:	Analysis Method	DF	MDL	PQL	Results	Unit

All compounds were non-detectable for this sample.

SB-2 1008033-003A

Parameters:	Analysis Method	DF	MDL	PQL	Results	Unit

All compounds were non-detectable for this sample.

Torrent LABORATORY, INC.

SAMPLE RESULTS

Report prepared for: Tina De La Fuente
Pangea Environmental

Date Received: 08/04/10
Date Reported: 08/11/10

Client Sample ID:	SB-2-4	**Lab Sample ID:**	1008033-001A
Project Name/Location:	5925 Ocean View Dr	**Sample Matrix:**	Soil
Project Number:			
Date/Time Sampled:	08/03/10 / 10:17		
Tag Number:	5925 Ocean View Dr		

Parameters:	Analysis Method	Prep Date	Date Analyzed	DF	MDL	PQL	Results	Lab Qualifier	Unit	Analytical Batch	Prep Batch
Benzene	SW8260B	NA	08/05/10	1	1.5	10	ND		ug/Kg	401674	NA
Toluene	SW8260B	NA	08/05/10	1	0.98	10	ND		ug/Kg	401674	NA
Ethyl Benzene	SW8260B	NA	08/05/10	1	0.86	10	ND		ug/Kg	401674	NA
m,p-Xylene	SW8260B	NA	08/05/10	1	1.9	10	ND		ug/Kg	401674	NA
o-Xylene	SW8260B	NA	08/05/10	1	0.66	5.0	ND		ug/Kg	401674	NA
(S) Dibromofluoromethane	SW8260B	NA	08/05/10	1	59.8	148	109		%	401674	NA
(S) Toluene-d8	SW8260B	NA	08/05/10	1	55.2	133	106		%	401674	NA
(S) 4-Bromofluorobenzene	SW8260B	NA	08/05/10	1	55.8	141	105		%	401674	NA

Parameters:	Analysis Method	Prep Date	Date Analyzed	DF	MDL	PQL	Results	Lab Qualifier	Unit	Analytical Batch	Prep Batch
TPH as Heating Oil	SW8015B	8/9/10	08/09/10	1	3.30	4.0	ND		mg/Kg	401722	0800
Pentacosane (S)	SW8015B	8/9/10	08/09/10	1	53.3	124	77.8		%	401722	0800

Torrent LABORATORY, INC.

SAMPLE RESULTS

Report prepared for: Tina De La Fuente
Pangea Environmental

Date Received: 08/04/10
Date Reported: 08/11/10

Client Sample ID:	SB-1-8	**Lab Sample ID:**	1008033-002A
Project Name/Location:	5925 Ocean View Dr	**Sample Matrix:**	Soil
Project Number:			
Date/Time Sampled:	08/03/10 / 0:43		
Tag Number:	5925 Ocean View Dr		

Parameters:	Analysis Method	Prep Date	Date Analyzed	DF	MDL	PQL	Results	Lab Qualifier	Unit	Analytical Batch	Prep Batch
Benzene	SW8260B	NA	08/05/10	1	1.5	10	ND		ug/Kg	401674	NA
Toluene	SW8260B	NA	08/05/10	1	0.98	10	ND		ug/Kg	401674	NA
Ethyl Benzene	SW8260B	NA	08/05/10	1	0.86	10	ND		ug/Kg	401674	NA
m,p-Xylene	SW8260B	NA	08/05/10	1	1.9	10	ND		ug/Kg	401674	NA
o-Xylene	SW8260B	NA	08/05/10	1	0.66	5.0	ND		ug/Kg	401674	NA
(S) Dibromofluoromethane	SW8260B	NA	08/05/10	1	59.8	148	117		%	401674	NA
(S) Toluene-d8	SW8260B	NA	08/05/10	1	55.2	133	104		%	401674	NA
(S) 4-Bromofluorobenzene	SW8260B	NA	08/05/10	1	55.8	141	111		%	401674	NA

Parameters:	Analysis Method	Prep Date	Date Analyzed	DF	MDL	PQL	Results	Lab Qualifier	Unit	Analytical Batch	Prep Batch
TPH as Heating Oil	SW8015B	8/9/10	08/09/10	1	100	120	ND		mg/Kg	401722	0800
Pentacosane (S)	SW8015B	8/9/10	08/09/10	1	53.3	124	94.8		%	401722	0800

Torrent LABORATORY, INC.

SAMPLE RESULTS

Report prepared for: Tina De La Fuente
Pangea Environmental

Date Received: 08/04/10
Date Reported: 08/11/10

Client Sample ID:	SB-2	**Lab Sample ID:**	1008033-003A
Project Name/Location:	5925 Ocean View Dr	**Sample Matrix:**	Water
Project Number:			
Date/Time Sampled:	08/03/10 / 12:00		
Tag Number:	5925 Ocean View Dr		

Parameters:	Analysis Method	Prep Date	Date Analyzed	DF	MDL	PQL	Results	Lab Qualifier	Unit	Analytical Batch	Prep Batch
Benzene	SW8260B	NA	08/09/10	1.46	0.49	0.73	ND		ug/L	401707	NA
Toluene	SW8260B	NA	08/09/10	1.46	0.28	0.73	ND		ug/L	401707	NA
Ethyl Benzene	SW8260B	NA	08/09/10	1.46	0.22	0.73	ND		ug/L	401707	NA
m,p-Xylene	SW8260B	NA	08/09/10	1.46	0.29	1.5	ND		ug/L	401707	NA
o-Xylene	SW8260B	NA	08/09/10	1.46	0.19	0.73	ND		ug/L	401707	NA
(S) Dibromofluoromethane	SW8260B	NA	08/09/10	1.46	61.2	131	94.1		%	401707	NA
(S) Toluene-d8	SW8260B	NA	08/09/10	1.46	75.1	127	99.9		%	401707	NA
(S) 4-Bromofluorobenzene	SW8260B	NA	08/09/10	1.46	64.1	120	93.4		%	401707	NA

NOTE: Reporting limit raised due to sediment in all voas.

Parameters:	Analysis Method	Prep Date	Date Analyzed	DF	MDL	PQL	Results	Lab Qualifier	Unit	Analytical Batch	Prep Batch
TPH as DRO (Diesel Range Organics)	SW8015B	8/10/10	08/10/10	1	0.0440	0.10	ND		mg/L	401733	0814
Pentacosane (S)	SW8015B	8/10/10	08/10/10	1	64.2	123	96.6		%	401733	0814

NOTE: Due to limit sample volume, micro extraction was perfromed and analyzed for DRO (Diesel Range Organics). No Diesel or Heating Oil pattern was present.

Torrent LABORATORY, INC.

MB Summary Report

Work Order:	1008033	**Prep Method:**	NA	**Prep Date:**	NA	**Prep Batch:**	NA
Matrix:	Soil	**Analytical Method:**	SW8260B	**Analyzed Date:**	08/05/10	**Analytical Batch:**	401674
Units:	ug/Kg						

Parameters	MDL	PQL	Method Blank Conc.	Lab Qualifier
Dichlorodifluoromethane	4.4	10	ND	
Chloromethane	4.6	10	ND	
Vinyl Chloride	2.6	10	ND	
Bromomethane	4.7	10	ND	
Trichlorofluoromethane	2.9	10	ND	
1,1-Dichloroethene	1.5	10	ND	
Freon 113	3.7	10	ND	
Methylene Chloride	2.0	10	ND	
trans-1,2-Dichloroethene	1.1	10	ND	
MTBE	2.6	10	ND	
tert-Butanol	21	50	ND	
Diisopropyl ether (DIPE)	2.2	10	ND	
1,1-Dichloroethane	1.3	10	ND	
ETBE	2.4	10	ND	
cis-1,2-Dichloroethene	1.8	10	ND	
2,2-Dichloropropane	1.2	10	ND	
Bromochloromethane	2.3	10	ND	
Chloroform	1.2	10	ND	
Carbon Tetrachloride	1.6	10	ND	
1,1,1-Trichloroethane	1.2	10	ND	
1,1-Dichloropropene	1.4	10	ND	
Benzene	1.5	10	ND	
TAME	2.1	10	ND	
1,2-Dichloroethane	1.9	10	ND	
Trichloroethylene	3.9	10	ND	
Dibromomethane	2.2	10	ND	
1,2-Dichloropropane	1.3	10	ND	
Bromodichloromethane	1.1	10	ND	
2-Chloroethyl vinyl ether	4.5	10	ND	
cis-1,3-Dichloropropene	1.4	10	ND	
Toluene	0.98	10	ND	
Tetrachloroethylene	1.8	10	ND	
trans-1,3-Dichloropropene	1.2	10	ND	
1,1,2-Trichloroethane	1.8	10	ND	
Dibromochloromethane	1.1	10	ND	
1,3-Dichloropropane	2.1	10	ND	
1,2-Dibromoethane	1.7	10	ND	
Ethyl Benzene	0.86	10	ND	
Chlorobenzene	4.2	10	ND	
1,1,1,2-Tetrachloroethane	0.86	10	ND	

Torrent LABORATORY, INC.

MB Summary Report

Work Order:	1008033	**Prep Method:**	NA	**Prep Date:**	NA	**Prep Batch:**	NA
Matrix:	Soil	**Analytical Method:**	SW8260B	**Analyzed Date:**	08/05/10	**Analytical Batch:**	401674
Units:	ug/Kg						

Parameters	MDL	PQL	Method Blank Conc.	Lab Qualifier
m,p-Xylene	1.9	10	ND	
o-Xylene	0.66	5.0	ND	
Styrene	0.77	10	ND	
Bromoform	1.9	10	ND	
Isopropyl Benzene	1.2	10	ND	
n-Propylbenzene	1.4	10	ND	
Bromobenzene	1.2	10	ND	
1,1,2,2-Tetrachloroethane	3.0	10	ND	
1,3,5-Trimethylbenzene	1.1	10	ND	
1,2,3-Trichloropropane	3.3	10	ND	
4-Chlorotoluene	1.6	10	ND	
2-Chlorotoluene	1.6	10	ND	
tert-Butylbenzene	1.4	10	ND	
1,2,4-Trimethylbenzene	1.1	10	ND	
sec-Butyl Benzene	1.6	10	ND	
p-Isopropyltoluene	1.5	10	ND	
1,3-Dichlorobenzene	1.8	10	ND	
1,4-Dichlorobenzene	1.5	10	ND	
n-Butylbenzene	2.2	10	ND	
1,2-Dichlorobenzene	1.3	10	ND	
1,2-Dibromo-3-Chloropropane	4.2	10	ND	
Hexachlorobutadiene	2.6	10	ND	
1,2,4-Trichlorobenzene	2.1	10	ND	
Naphthalene	2.8	10	ND	
1,2,3-Trichlorobenzene	2.9	10	ND	
(S) Dibromofluoromethane			122	
(S) Toluene-d8			97.2	
(S) 4-Bromofluorobenzene			93.3	

Torrent LABORATORY, INC.

MB Summary Report

Work Order:	1008033	**Prep Method:**	NA	**Prep Date:**	NA	**Prep Batch:**	NA
Matrix:	Water	**Analytical Method:**	SW8260B	**Analyzed Date:**	08/09/10	**Analytical Batch:**	401707
Units:	ug/L						

Parameters	MDL	PQL	Method Blank Conc.	Lab Qualifier
Dichlorodifluoromethane	0.41	0.50	ND	
Chloromethane	0.41	0.50	ND	
Vinyl Chloride	0.37	0.50	ND	
Bromomethane	0.37	0.50	ND	
Trichlorofluoromethane	0.34	0.50	ND	
1,1-Dichloroethene	0.29	0.50	ND	
Freon 113	0.38	0.50	ND	
Methylene Chloride	0.18	5.0	ND	
trans-1,2-Dichloroethene	0.31	0.50	ND	
MTBE	0.38	0.50	ND	
tert-Butanol	1.5	5.0	ND	
Diisopropyl ether (DIPE)	0.36	0.50	ND	
1,1-Dichloroethane	0.28	0.50	ND	
ETBE	0.40	0.50	ND	
cis-1,2-Dichloroethene	0.33	0.50	ND	
2,2-Dichloropropane	0.37	0.50	ND	
Bromochloromethane	0.34	0.50	ND	
Chloroform	0.29	0.50	ND	
Carbon Tetrachloride	0.26	0.50	ND	
1,1,1-Trichloroethane	0.32	0.50	ND	
1,1-Dichloropropene	0.40	0.50	ND	
Benzene	0.33	0.50	ND	
TAME	0.32	0.50	ND	
1,2-Dichloroethane	0.28	0.50	ND	
Trichloroethylene	0.38	0.50	ND	
Dibromomethane	0.21	0.50	ND	
1,2-Dichloropropane	0.37	0.50	ND	
Bromodichloromethane	0.23	0.50	ND	
2-Chloroethyl vinyl ether	0.91	2.0	ND	
cis-1,3-Dichloropropene	0.30	0.50	ND	
Toluene	0.19	0.50	ND	
Tetrachloroethylene	0.15	0.50	ND	
trans-1,3-Dichloropropene	0.20	0.50	ND	
1,1,2-Trichloroethane	0.20	0.50	ND	
Dibromochloromethane	0.21	0.50	ND	
1,3-Dichloropropane	0.18	0.50	ND	
1,2-Dibromoethane	0.19	0.50	ND	
Chlorobenzene	0.14	0.50	ND	
Ethyl Benzene	0.15	0.50	ND	
1,1,1,2-Tetrachloroethane	0.10	0.50	ND	
m,p-Xylene	0.20	1.0	ND	

Torrent LABORATORY, INC.

MB Summary Report

Work Order:	1008033	**Prep Method:**	NA	**Prep Date:**	NA	**Prep Batch:**	NA
Matrix:	Water	**Analytical Method:**	SW8260B	**Analyzed Date:**	08/09/10	**Analytical Batch:**	401707
Units:	ug/L						

Parameters	MDL	PQL	Method Blank Conc.	Lab Qualifier	
o-Xylene	0.13	0.50	ND		
Styrene	0.20	0.50	ND		
Bromoform	0.45	1.0	ND		
Isopropyl Benzene	0.28	0.50	ND		
Bromobenzene	0.39	0.50	ND		
1,1,2,2-Tetrachloroethane	0.26	0.50	ND		
n-Propylbenzene	0.30	0.50	ND		
2-Chlorotoluene	0.33	0.50	ND		
1,3,5-Trimethylbenzene	0.20	0.50	ND		
4-Chlorotoluene	0.32	0.50	ND		
tert-Butylbenzene	0.29	0.50	ND		
1,2,3-Trichloropropane	0.59	1.0	ND		
1,2,4-Trimethylbenzene	0.33	0.50	ND		
sec-Butyl Benzene	0.24	0.50	ND		
p-Isopropyltoluene	0.25	0.50	ND		
1,3-Dichlorobenzene	0.31	0.50	ND		
1,4-Dichlorobenzene	0.37	0.50	ND		
n-Butylbenzene	0.32	0.50	ND		
1,2-Dichlorobenzene	0.39	0.50	ND		
1,2-Dibromo-3-Chloropropane	0.45	1.0	ND		
Hexachlorobutadiene	0.22	0.50	ND		
1,2,4-Trichlorobenzene	0.48	1.0	ND		
Naphthalene	0.57	1.0	ND		
1,2,3-Trichlorobenzene	0.52	1.0	ND		
Ethanol	100	100	ND	TIC	
(S) Dibromofluoromethane			90.0		
(S) Toluene-d8			95.7		
(S) 4-Bromofluorobenzene			96.7		

Torrent LABORATORY, INC.

MB Summary Report

Work Order:	1008033	**Prep Method:**	3545_TPH	**Prep Date:**	08/09/10	**Prep Batch:**	0800
Matrix:	Soil	**Analytical Method:**	SW8015B	**Analyzed Date:**	08/09/10	**Analytical Batch:**	401722
Units:	mg/Kg						

Parameters	MDL	PQL	Method Blank Conc.	Lab Qualifier
Diesel Range Organics (DRO)	0.76	2.0	ND	
TPH as Bunker Oil	1.78	4.0	ND	
TPH as Fuel Oil	1.78	4.0	ND	
TPH as Diesel	0.758	2.0	ND	
TPH as Heating Oil	3.30	4.0	ND	
TPH as Hydraulic Oil	1.78	4.0	ND	
TPH as Jet A	0.758	2.0	ND	
TPH as Jet Fuel	0.76	2.0	ND	
TPH as JP-4	0.758	2.0	ND	
TPH as JP-5	0.758	2.0	ND	
TPH as JP-7	0.758	2.0	ND	
TPH as JP-8	0.758	2.0	ND	
TPH as Kerosene	0.758	3.3	ND	
TPH as Mineral Oil	1.78	4.0	ND	
TPH as Motor Oil	1.8	4.0	ND	
TPH as Naphtha	0.758	3.3	ND	
TPH as Oil	1.78	4.0	ND	
TPH as Stoddard	0.758	3.3	ND	
TPH as Transformer Oil	1.78	4.0	ND	
Creosote	0.758	3.3	ND	
Pentacosane (S)			93.4	

Work Order:	1008033	**Prep Method:**	3511_DRO	**Prep Date:**	08/10/10	**Prep Batch:**	0814
Matrix:	Water	**Analytical Method:**	SW8015B	**Analyzed Date:**	08/10/10	**Analytical Batch:**	401733
Units:	mg/L						

Parameters	MDL	PQL	Method Blank Conc.	Lab Qualifier
TPH as DRO (Diesel Range Organics)	0.0440	0.10	ND	
Pentacosane (S)			98.4	

Torrent LABORATORY, INC.

LCS/LCSD Summary Report

Raw values are used in quality control assessment.

Work Order:	1008033	**Prep Method:**	NA	**Prep Date:**	NA	**Prep Batch:**	NA
Matrix:	Soil	**Analytical Method:**	SW8260B	**Analyzed Date:**	08/05/10	**Analytical Batch:**	401674
Units:	ug/Kg						

Parameters	MDL	PQL	Method Blank Conc.	Spike Conc.	LCS % Recovery	LCSD % Recovery	LCS/LCSD % RPD	% Recovery Limits	% RPD Limits	Lab Qualifier
1,1-Dichloroethene	1.5	10		50	101	107	5.64	53.7 - 139	30	
Benzene	1.5	10		50	117	123	4.75	66.5 - 135	30	
Trichloroethylene	3.9	10		50	96.9	97.5	0.721	57.5 - 150	30	
Toluene	0.98	10		50	92.5	98.2	5.87	56.8 - 134	30	
Chlorobenzene	4.2	10		50	106	110	3.67	57.4 - 134	30	
(S) Dibromofluoromethane				50	120	123		59.8 - 148		
(S) Toluene-d8				50	92.9	92.8		55.2 - 133		
(S) 4-Bromofluorobenzene				50	99.1	92.1		55.8 - 141		

Work Order:	1008033	**Prep Method:**	NA	**Prep Date:**	NA	**Prep Batch:**	NA
Matrix:	Water	**Analytical Method:**	SW8260B	**Analyzed Date:**	08/09/10	**Analytical Batch:**	401707
Units:	ug/L						

Parameters	MDL	PQL	Method Blank Conc.	Spike Conc.	LCS % Recovery	LCSD % Recovery	LCS/LCSD % RPD	% Recovery Limits	% RPD Limits	Lab Qualifier
1,1-Dichloroethene	0.29	0.50		17.04	117	117	0.602	61.4 - 129	30	
Benzene	0.33	0.50		17.04	107	101	5.19	66.9 - 140	30	
Trichloroethylene	0.38	0.50		17.04	108	91.2	16.9	69.3 - 144	30	
Toluene	0.19	0.50		17.04	110	92.4	17.7	76.6 - 123	30	
Chlorobenzene	0.14	0.50		17.04	102	89.6	13.1	73.9 - 137	30	
(S) Dibromofluoromethane				11.36	87.9	96.2		61.2 - 131		
(S) Toluene-d8				11.36	87.7	89.1		75.1 - 127		
(S) 4-Bromofluorobenzene				11.36	101	90.0		64.1 - 120		

Work Order:	1008033	**Prep Method:**	3545_TPH	**Prep Date:**	08/09/10	**Prep Batch:**	0800
Matrix:	Soil	**Analytical Method:**	SW8015B	**Analyzed Date:**	08/09/10	**Analytical Batch:**	401722
Units:	mg/Kg						

Parameters	MDL	PQL	Method Blank Conc.	Spike Conc.	LCS % Recovery	LCSD % Recovery	LCS/LCSD % RPD	% Recovery Limits	% RPD Limits	Lab Qualifier
TPH as Diesel	0.76	2.0		33.33	79.1	99.1	22.4	50.8 - 111	30	
Pentacosane (S)				100	100	118		61.5 - 133		

Torrent LABORATORY, INC.

LCS/LCSD Summary Report

Raw values are used in quality control assessment.

Work Order:	1008033	**Prep Method:**	3511_DRO	**Prep Date:**	08/10/10	**Prep Batch:**	0814
Matrix:	Water	**Analytical Method:**	SW8015B	**Analyzed Date:**	08/10/10	**Analytical Batch:**	401733
Units:	mg/L						

Parameters	MDL	PQL	Method Blank Conc.	Spike Conc.	LCS % Recovery	LCSD % Recovery	LCS/LCSD % RPD	% Recovery Limits	% RPD Limits	Lab Qualifier
TPH as DRO (Diesel Range O	0.0440	0.10		15	84.1	89.1	5.94	70.0 - 130	30	
Pentacosane (S)				150	108	101		70.0 - 130		

Torrent LABORATORY, INC.

MS/MSD Summary Report

Raw values are used in quality control assessment.

Work Order:	1008033	**Prep Method:**	NA	**Prep Date:**	NA	**Prep Batch:**	NA
Matrix:	**Soil**	**Analytical Method:**	SW8260B	**Analyzed Date:**	08/05/10	**Analytical Batch:**	401674
Spiked Sample:	1008033-002A						
Units:	ug/Kg						

Parameters	MDL	PQL	Sample Conc.	Spike Conc.	MS % Recovery	MSD % Recovery	MS/MSD % RPD	% Recovery Limits	% RPD Limits	Lab Qualifier
Benzene	1.5	10	0	50	117	108	8.02	66.5 - 135	30	
Toluene	0.98	10	0	50	112	116	2.95	56.8 - 134	30	
(S) Dibromofluoromethane				50	94.0	97.0		59.8 - 148		
(S) Toluene-d8				50	107	103		55.2 - 133		
(S) 4-Bromofluorobenzene				50	91.0	127		55.8 - 141		

Laboratory Qualifiers and Definitions

DEFINITIONS:

Accuracy/Bias (% Recovery) - The closeness of agreement between an observed value and an accepted reference value.
Blank (Method/Preparation Blank) -MB/PB - An analyte-free matrix to which all reagents are added in the same volumes/proportions as used in sample processing. The method blank is used to document contamination resulting from the analytical process.
Duplicate - a field sample and/or laboratory QC sample prepared in duplicate following all of the same processes and procedures used on the original sample (sample duplicate, LCSD, MSD)
Laboratory Control Sample (LCS ad LCSD) - A known matrix spiked with compounds representative of the target analyte(s). This is used to document laboratory performance.
Matrix - the component or substrate that contains the analyte of interest (e.g., - groundwater, sediment, soil, waste water, etc)
Matrix Spike (MS/MSD) - Client sample spiked with identical concentrations of target analyte (s). The spiking occurs prior to the sample preparation and analysis. They are used to document the precision and bias of a method in a given sample matrix.
Method Detection Limit (MDL) - the minimum concentration of a substance that can be measured and reported with a 99% confidence that the analyte concentration is greater than zero
Practical Quantitation Limit (PQL) - a laboratory determined value at 2 to 5 times above the MDL that can be reproduced in a manner that results in a 99% confidence level that the result is both accurate and precise. PQLs reflect all preparation factors and/or dilution factors that have been applied to the sample during the preparation and/or analytical processes.
Precision (%RPD) - The agreement among a set of replicate/duplicate measurements without regard to known value of the replicates
Surrogate (S) or (Surr) - An organic compound which is similar to the target analyte(s) in chemical composition and behavior in the analytical process, but which is not normally found in environmental samples. Surrogates are used in most organic analysis to demonstrate matrix compatibility with the chosen method of analysis
Tentatively Identified Compound (TIC) - A compound not contained within the analytical calibration standards but present in the GCMS library of defined compounds. When the library is searched for an unknown compound, it can frequently give a tentative identification to the compound based on retention time and primary and secondary ion match. TICs are reported as estimates and are candidates for further investigation.
Units: the unit of measure used to express the reported result - **mg/L** and ***mg/Kg*** (equivalent to PPM - parts per million in **liquid** and ***solid***), **ug/L** and ***ug/Kg*** (equivalent to PPB - parts per billion in **liquid** and ***solid***), **ug/m3**, ***mg.m3***, **ppbv** and ***ppmv*** (all units of measure for reporting concentrations in air), **%** (equivalent to 10000 ppm or 1,000,000 ppb), **ug/Wipe** (concentration found on the surface of a single Wipe usually taken over a 100cm2 surface)

LABORATORY QUALIFIERS:

B - Indicates when the anlayte is found in the associated method or preparation blank
D - Surrogate is not recoverable due to the necessary dilution of the sample
E - Indicates the reportable value is outside of the calibration range of the instrument but within the linear range of the instrument (unless otherwise noted) Values reported with an E qualifier should be considered as estimated.
H- Indicates that the recommended holding time for the analyte or compound has been exceeded
J- Indicates a value between the method MDL and PQL and that the reported concentration should be considered as estimated rather the quantitative
NA - Not Analyzed
N/A - Not Applicable
NR - Not recoverable - a matrix spike concentration is not recoverable due to a concentration within the original sample that is greater than four times the spike concentration added
R- The % RPD between a duplicate set of samples is outside of the absolute values established by laboratory control charts
S- Spike recovery is outside of established method and/or laboratory control limits. Further explanation of the use of this qualifier should be included within a case narrative
X -Used to indicate that a value based on pattern identification is within the pattern range but not typical of the pattern found in standards. Further explanation may or may not be provided within the sample footnote and/or the case narrative.

Sample Receipt Checklist

Client Name: Pangea Environmental

Project Name: 5925 Ocean View Dr

Work Order No.: 1008033

Date and Time Received: 8/4/2010 17:05

Received By: NK

Physically Logged By: MJ

Checklist Completed By: MJ

Carrier Name: Gold Bullet Courier

Chain of Custody (COC) Information

Chain of custody present?	Yes
Chain of custody signed when relinquished and received?	Yes
Chain of custody agrees with sample labels?	Yes
Custody seals intact on sample bottles?	Not Present

Sample Receipt Information

Custody seals intact on shipping container/cooler?	Not Present
Shipping Container/Cooler In Good Condition?	Yes
Samples in proper container/bottle?	Yes
Samples containers intact?	Yes
Sufficient sample volume for indicated test?	Yes

Sample Preservation and Hold Time (HT) Information

All samples received within holding time?	Yes		
Container/Temp Blank temperature in compliance?		Temperature:	°C
Water-VOA vials have zero headspace?	Yes		
Water-pH acceptable upon receipt?			
pH Checked by:		pH Adjusted by:	

Login Summary Report

Client ID:	TL5322	Pangea Environmental	**QC Level:**	II
Project Name:	5925 Ocean View Dr		**TAT Requested:**	5+ day:0
Project # :			**Date Received:**	8/4/2010
Report Due Date:	8/11/2010		**Time Received:**	17:05

Comments: 5 day TAT! Received 2 soils, 1 water for TPH heating oil,BTEX.

Work Order # : ***1008033***

WO Sample ID	Client Sample ID	Collection Date/Time	Matrix	Scheduled Disposal	Sample On Hold	Test On Hold	Requested Tests	Subbed
1008033-001A	SB-2-4	08/03/10 10:17	Soil	01/31/11			S_8260MBTEX S_TEPH	
Sample Note:	Report TPH as Heating Oil, BTEX only for all samples.							
1008033-002A	SB-1-8	08/03/10 0:43	Soil	01/31/11			S_8260MBTEX S_TEPH	
Sample Note:	Report TPH as Heating Oil, 8260_For BTEX only.							
1008033-003A	SB-2	08/03/10 12:00	Water	09/18/10			W_8260MBTEX W_DRO	
Sample Note:	3 vials for 8260_BTEX and TPH Heating Oil. Please Manage.							
1008033-003A1.46x	SB-2	08/03/10 12:00	Water	09/18/10			W_8260MBTEX	

Torrent LABORATORY, INC.

Torrent LABORATORY, INC. 483 Sinclair Frontage Road Milpitas, CA 95035 Phone: 408.263.5258 FAX: 408.263.8293 www.torrentlab.com RESET

CHAIN OF CUSTODY

• NOTE: SHADED AREAS ARE FOR TORRENT LAB USE ONLY •

LAB WORK ORDER NO: 1008033

Company Name: PANGEA ENVIRONMENTAL SERVICES | Location of Sampling: 5925 Ocean View Dr, Oakland

Address: 1710 FRANKLIN ST, STE 200 | Purpose:

City: OAKLAND State: CA Zip Code: 94612 | Special Instructions / Comments: ho = heating oil

Telephone: 510-836-3700 FAX: 510-836-3709 | EDF location ID for SB-2-4 is SB-2 & for SB-1-8 it is SB-1

REPORT TO: TINA DE LA FUENTE SAMPLER: TINA DE LA FUENTE P.O. #: 5925 Ocean View EMAIL: tdelafuente@pangeaenv.com

TURNAROUND TIME: ☐ 10 Work Days ☐ 3 Work Days ☐ Noon - Nxt Day ☐ 7 Work Days ☐ 2 Work Days ☐ 2 - 8 Hours ☒ 5 Work Days ☐ 1 Work Day ☐ Other

SAMPLE TYPE: ☐ Storm Water ☐ Waste Water ☒ Ground Water ☒ Soil ☐ Air ☐ Other

REPORT FORMAT: ☐ QC Level IV ☒ EDF ☐ Excel / EDD

ANALYSIS REQUESTED: ~~BTEX / TPH-g / 5 oxys (8260)~~ TDIF; TPH-ho + BTEX (8015 + 8021)

LAB ID	CLIENT'S SAMPLE I.D.	DATE / TIME SAMPLED	MATRIX	# OF CONT	CONT TYPE	~~BTEX/TPH-g~~	TPH-ho + BTEX (8015+8021)	REMARKS
001A	SB-2-4	8/3/10 1017	S	1	LINER		X	ho = heating oil
002A	SB-1-8	8/3/10 1243	S	1	LINER		X	↓
003A	SB-2	8/3/10 1200	W	3	HCL VOAS		X	↓

	Relinquished By	Print	Date	Time	Received By	Print	Date	Time
1	[signature]	TDIF	8-4-10	1508	M. Vasquez		8-4-10	1504
2	[signature]	Ivo	8-4-10	5:05	[signature]		8/4/10	5:05pm

Were Samples Received in Good Condition? ☐ Yes ☐ NO Samples on Ice? ☐ Yes ☐ NO Method of Shipment Gold Bullet Sample seals intact? ☐ Yes ☐ NO ☐ N/A

NOTE: Samples are discarded by the laboratory 30 days from date of receipt unless other arrangements are made. Page 1 of 1

Log In By: ______ Date: ______ Log In Reviewed By: ______ Date: