SOMA
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October 16, 2014

RECEIVED
By Alameda County Environmental Health at 3:48 pm, Oct 20, 2014

Mr. Mark Detterman, PG, CEG
Alameda County Health Care Services Agency
1131 Harbor Bay Parkway, Suite 250
Alameda, California 94502-6577

Subject: Fuel Leak Case No. RO0000473 ARCO
Site Address: 15101 Freedom Avenue, San Leandro, California

Dear Mr. Detterman:

SOMA's "Installation of Off-Site Monitoring Wells, Additional Vapor Sampling, and MPE Event" report for the subject property has been uploaded to the State's GeoTracker database and Alameda County's FTP site for your review.

Thank you for your time in reviewing our report. Please do not hesitate to call me at (925) 734-6400, if you have questions or comments.

Sincerely,

Mansour Sepehr, Ph.D.,PE
Principal Hydrogeologist

cc: Mr. Mohammad Pazdel w/report enclosure

Installation of Off-Site Monitoring Wells, Additional Vapor Sampling, and MPE Event

Freedom Gas and Food
15101 Freedom Avenue
San Leandro, California

October 16, 2014

Project 2552

Prepared for

Mohammad Pazdel
1770 Pistacia Court
Fairfield, California

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PERJURY STATEMENT

Site Location: 15101 Freedom Avenue, San Leandro, California

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

M. R. Pazdel

Mohammad Pazdel
1770 Pistacia Court
Fairfield, California 94533
Responsible Party

CERTIFICATION

SOMA Environmental Engineering, Inc. submits this workplan on behalf of Mr. Mohammad Pazdel, owner of the property located at 15101 Freedom Avenue, San Leandro, California. This report has been prepared pursuant to the request of Alameda County Health Care Services – Environmental Health Services contained in correspondence dated July 17, 2014.

Mansour Sepehr, PhD, PE
Principal Hydrogeologist

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1. INTRODUCTION

1.1 Overview

SOMA Environmental Engineering, Inc. (SOMA) has prepared this report for the site located at 15101 Freedom Avenue, San Leandro, California. In a correspondence dated July 17, 2014, Alameda County Health Care Services – Environmental Health Services (ACEH) approved SOMA's work plan for groundwater monitoring wells installation, vapor sampling beneath the house on the neighboring property, and extended MPE operation. This report documents details and results of all approved field activities.

1.2 Site Location and Description

The site is located at the foot of the San Leandro Hills, along the west side of San Leandro Valley (Figure 1). It is bounded on the north by Freedom Avenue, on the east by Fairmont Avenue, on the south by residential properties and on the west by 151st Avenue. It currently operates as a Texaco gasoline service station with mini-mart, and retails Texaco-branded gasoline and diesel fuel. No automotive repair facility is on the site. There are three canopied product dispenser islands and three underground storage tanks (USTs) on-site: one 6,000-gallon diesel UST, one 8,000-gallon gasoline UST, and one 10,000-gallon gasoline UST. Figure 2 illustrates site features.

The site has operated as a gasoline service station since the 1960s. Mr. Pazdel, the responsible party, sold the property to Farrokh Hosseinyoun in 2010. Mr. Hosseinyoun subsequently sold the property to Mohammad Mashhoon in 2010. The station currently operates under the business name Freedom Gas and Food (formerly Freedom ARCO Mini-Mart). Previous site activities are summarized in Appendix A.

2. SCOPE OF WORK

In SOMA's workplan dated June 20, 2014, installation of three groundwater monitoring wells was proposed in order to define the downgradient extent of the groundwater plume. SOMA also proposed conducting an additional round of crawl space vapor sampling in conjunction with an outdoor air ambient air sampling.

To fulfill the scope of work, SOMA performed the following:

Task 1: Permit Acquisition, Health and Safety Plan Preparation, and Subsurface Utility Clearance

Task 2: Well Installations

Task 3: Crawl Space and Ambient Air Sampling

Task 4: Report Preparation

The above mentioned workplan also proposed conducting a multi-phase extraction (MPE) event at the site. This MPE event was conducted at the site from July 24, 2014 to September 8, 2014. Details and results of which will be included in SOMA's "Third Quarter 2014 Groundwater Monitoring and Remediation Progress Report".

3. OFF-SITE GROUNDWATER MONITORING WELL INSTALLATIONS

In SOMA's workplan dated June 20, 2014, installation of three off-site groundwater monitoring wells (MW-10, MW-11, and MW-12) was proposed. MW-10 was installed at the northern end of the center median in Fairmont Drive. MW-11 was installed along the eastern side of Fairmont Drive to the south of MIP-12. However, MW-12 which was proposed along Fairmont Drive to the south of MIP-16 could not be installed due to the presence of various subsurface utility lines at that location. Figure 2 shows locations of the newly installed wells.

3.1 Pre-Investigative Activities

Upon receipt of approval from ACEH dated July 17, 2014, SOMA obtained drilling permits (Permit # W2014-0708 to W2014-0710) and an encroachment permit (Permit # R14LD13523) from Alameda County Public Works Agency (ACPWA) for installation of off-site extraction wells (Appendix B). The ACPWA was given required advance notification on September 4, 2014 and grouting as well as encroachment inspections were scheduled with Mr. Steve Miller.

SOMA prepared a site-specific Health and Safety Plan (HASP). The HASP is a requirement of the Occupational Safety and Health Administration (OSHA), "Hazardous Waste Operation and Emergency Response" guidelines (29 CFR 1910.120) and the California Occupational Safety and Health Administration (Cal/OSHA) "Hazardous Waste Operation and Emergency Response" guidelines (CCR Title 8, section 5192). The HASP is designed to address safety provisions during field activities and protect the field crew from physical and chemical hazards resulting from drilling and sampling. It establishes personnel responsibilities, general safe work practices, field procedures, personal protective equipment standards, decontamination procedures, and emergency action plans. The HASP was reviewed and signed by field staff and contractors prior to beginning field operations at the site.

SOMA's field crew visited the site on September 2, 2014 and marked proposed well locations using chalk-based white paint. SOMA contacted Underground Service Alert (USA) to verify that drilling and digging areas were clear of underground utilities. USA clearances were obtained on the same day (Tickets

356252 and 356261). SOMA retained a private utility locator (OHJ, September 2, 2014) to survey proposed drilling areas and locate any additional subsurface conduits.

3.2 Well Installations

Under SOMA's oversight, on September 8 and 9, 2014, Fisch Drilling (Fisch) installed two 2-inch groundwater monitoring wells (MW-10 and MW-11) off-site in the First WBZ.

General field procedures are documented in Appendix C. For clearance of all underground utilities, all wells were hand augured to 5 feet bgs. Using hollow stem auger (HSA) drilling technology, well boreholes were continuously sampled to approximately 29 feet below ground surface (bgs). Using the Unified Soil Classification System, visual-manual method, SOMA's field geologist logged samples to characterize lithologic content of the boreholes and verified thickness of the saturated zone in boreholes. In addition, SOMA's field geologist screened representative soil samples for volatile vapors using a photo-ionization detector (PID). At each screened depth, results were noted on respective geologic boring logs (Appendix C).

After advancing well borings to 28 and 29-foot depths in MW-10 and MW-11, respectively, 2-inch-diameter threaded, factory-slotted and blank PVC pipes (schedule 40 polyvinyl chloride) were installed, with a 0.02-inch perforated screen spanning 18 to 28 feet bgs and 19 to 29 feet bgs, respectively. The drilling crew attached a threaded PVC cap on the bottom of each casing, without use of adhesives, and the top of each casing was fitted with a locking well cap. After the screen and well riser were positioned, a filter pack (consisting of No. 3 Monterey Sand) was emplaced into the annular space from the base of each well for approximately 10 feet in each well.

After the filter pack set, the well was sealed to ground surface. To keep grout out of the filter pack, bentonite chips were placed approximately 1 foot above the top of the filter. After hydrating the bentonite chips with sufficient distilled water for 30 minutes to 1 hour, the well was sealed from the top of the bentonite to approximately 1-foot bgs with Portland Type I/II neat cement grout. A flush-mounted, traffic-rated well vault (protective casing) and locking well cap were installed to ensure that the wells would be protected from vandalism and/or accidental damage. Geologic logs, showing well construction details, are included in Appendix C.

Groundwater was first encountered in MW-10 and MW-11 at 19 feet bgs and 18 feet bgs, respectively, and on September 22, 2014 stabilized groundwater measured 17.84 feet bgs and 15.52 feet bgs, respectively.

DWR forms for well installations were prepared and submitted to appropriate regulatory agencies.

Cored soil were checked for attributes characteristic of smear zone, hydrocarbon odors, visual staining, free product, and screened using a PID. PID readings were noted on boring logs. However, no soil samples were collected during installation due to low PID readings, and absence of odor, staining or discoloration. Observed soil characteristics were documented on boring logs and cross-section EE' in Figure 4 was updated with this information. Figure 3 shows the location of this cross-section. Appendix A includes the historical geologic cross-sections AA', BB', CC', and DD' and Appendix F includes photographic documentation of installation activities. Table 1 includes historical soil analytical results.

3.3 Groundwater Sampling

Groundwater sampling was conducted along with the groundwater monitoring event on September 22 and 23, 2014. Sampling results will be included in SOMA's 'Third Quarter 2014 Groundwater Monitoring and Remediation Progress Report' which will be submitted shortly.

3.3.1 Laboratory Analysis

Groundwater samples were submitted to a California state-certified environmental laboratory for chemical analysis of the following using EPA Method 8260B:

- Total petroleum hydrocarbons as gasoline (TPH-g)
- BTEX
- Fuel oxygenates, additives and lead scavengers including MtBE, tertiary-butyl alcohol (TBA), ethyl tertiary-butyl ether (ETBE), diisopropyl ether (DIPE), tertiary-amyl methyl ether (TAME), 1,2-dichloroethane (1,2-DCA), 1,2-dibromomethane (EDB), and ethanol

3.4 Well Development and Survey

Newly installed wells were developed by Fisch under SOMA's oversight on September 12, 2014. The wells were developed by bailing out sediment-rich groundwater followed by pumping and surging the wells. This process continued until purged groundwater clarified substantially, producing clear water with less than 2 to 5 ppm by weight sand and/or other suspended solids and groundwater quality parameters stabilized. Well development records are attached in Appendix E.

On September 27, 2014, Edgis Land Surveying, certified licensed land surveyor (License 6772), surveyed newly installed wells. Latitude and longitude coordinates were surveyed to Zone III NAD 83 datum, and the elevation coordinate to NAVD 88 datum from GPS observations. Survey data were uploaded to the State Water Resources Control Board Geotracker database (Appendix E).

3.5 Waste Disposal

Soil and wastewater generated during boring activities was temporarily stored on-site in separate DOT-rated 55-gallon steel drums pending characterization, profiling, and transportation to an approved disposal-recycling facility. On September 12, 2014, three drums of waste soil were transported to a licensed waste disposal facility (Waste Manifests, Appendix D).

4. ADDITIONAL VAPOR SAMPLING

In January 2014 SOMA had collected a sample from the crawl space of the residence adjacent to the southern boundary of the Site in order to determine the risk of vapor intrusion into the residences adjacent to the site. This vapor sample was analyzed for TPH-g, BTEX, Naphthalene and other VOCs. Results indicated that benzene concentrations (2.7 µg/m3) were above the Environmental Screening Levels (ESLs) established by San Francisco Regional Water Quality Control Board (RWQCB) for ambient and indoor air (0.084 µg/m3). Therefore, SOMA proposed to repeat crawl space sampling beneath the house. Along with the crawl space sample, SOMA also proposed to collect an ambient air sample at the location illustrated on Figure 2.

This vapor sampling was conducted in accordance with the most recent DTSC guidelines. Along with the contaminants of concern, oxygen, nitrogen, and carbon dioxide samples were also collected. General field procedures followed were adopted from the DTSC document ‘Guidance for the evaluation and mitigation of subsurface vapor intrusion to indoor air’, dated October 2011.

SOMA attempted to collect the crawl space and ambient air samples on September 22, 2014. However, due to malfunction of equipment provided by the laboratory, representative samples could not be collected and sampling event had to be rescheduled.

On September 25, 2014, SOMA field crew went back to the site with a new set of equipment. SOMA used an evacuated SUMMA passivated stainless steel canister to collect the air sample (SV-1a) from the crawl space of the same residence as in January 2014. A second canister was placed at an outside location to collect ambient air sample (AA-1). The two canisters were provided by the laboratory, along with flow controllers equipped with an in-line particulate filter

and vacuum gauge. Each flow controller was pre-calibrated by the laboratory for the desired duration of sample collection (in this case 24 hours). The sampling flow rate was set at 2-4 milliliters per minute (<0.2 lpm). The canisters were placed at the above mentioned sampling locations (Figure 2). The protective brass plug was removed from canisters and the pre-calibrated flow controllers were connected to them. Valve on the vacuum pressure was completely opened. The time that the valve was opened (beginning of sampling) and the canister pressure on the vacuum gauge was recorded on a field observation sheet (Appendix E). Photographic documentation is attached in Appendix F. Sample collection was stopped after the scheduled duration of 24 hours and it was made sure that each canister has a minimum amount of vacuum remaining (2-inches of mercury). The final vacuum pressure was recorded and canister valves were closed. Date and time was recorded of when the sample collection was stopped. Flow controller was removed and protective brass plugs were replaced. The canisters were delivered to a state certified analytical laboratory in laboratory-supplied packaging along with appropriate label and chain of custody documentation.

4.1 Vapor Analytical Results

The vapor sample was analyzed for TPH-g by method TO-3, VOCs including naphthalene by method TO-15, oxygen, carbon-dioxide, and methane. Nitrogen could not be analyzed due to laboratory instrument issues. As illustrated in Table 2, benzene was detected in SV-1a and AA-1 at 0.74 µg/m^3 and 0.76 µg/m^3, respectively. Naphthalene was detected in AA-1 at 1.4 µg/m^3 and was below laboratory-reporting limit in SV-1a. Other contaminants were below laboratory-reporting limits.

Benzene in crawl space and ambient air samples and naphthalene in ambient air sample were greater than the lowest residential Environmental Screening Levels (ESLs) established by San Francisco Regional Water Quality Control Board (RWQCB) for ambient and indoor air. The complete laboratory analytical report is in Appendix G.

5. MULTI-PHASE EXTRACTION EVENTS

During Third Quarter 2014, SOMA performed an MPE event from July 24 through September 8, 2014 utilizing MPE-1, MPE-2, MW-3, and MW-6.

The MPE operation was performed using a self-contained mobile treatment system (MTS), equipped with an electrical generator, propane tank, liquid ring vacuum pump rated at 25-horsepower and 428-standard cubic feet per minute (scfm), electrical submersible pumps, air/water separator vessel, discharge hoses and traffic-rated hose ramps, downhole stingers, and a thermal oxidizer for vapor abatement. The oxidizer operates under a valid various locations

BAAQMD permit. Both soil vapor and groundwater were extracted from the subsurface. Extracted groundwater was discharged into an existing treatment system.

Physical and chemical parameters including applied vacuum, soil vapor extraction flow rates, oxidizer temperature, volume of groundwater extracted, VOC concentrations, and depth to groundwater in observation wells, were monitored, measured and recorded. VOC concentrations in the extracted soil vapor stream were continuously monitored using a photoionization detector (PID) calibrated to hexane. MPE operational data is presented in Table 3. Extraction data is presented in Table 4. Field data sheets are presented in Appendix E.

5.1 Smear Zone Dewatering

Steady-state dewatering of the smear zone at wells MPE-1, MPE-2, MW-3, and MW-6 was achieved and maintained during the MPE event by vacuum. Dewatering was achieved by opening the dilution control valve at the extraction well to allow atmospheric air into the well casing, accelerating the removal of water from the well casing by vacuum. As the stinger was advanced into the well casing, water was removed by vacuum. As water was removed, vacuum was reestablished in the well casing and the stinger was advanced farther into the well casing. When the stinger reached the base of the well casing, and water ceased to be removed by vacuum, the stinger was elevated off the bottom of the well to maintain a steady-state groundwater flow into the well and to maximize mass removal rate out of the well, and then the dilution control valve was closed. During this event a total of 103,469 gallons of groundwater was extracted, treated and discharged into the sanitary sewer system. The estimated groundwater extraction rate for the MPE event based on gallons extracted and elapsed time (Table 3) was 1.56 gpm.

5.2 Soil Vapor Sampling and Analysis

Representative samples were analyzed from the stack of the thermal oxidizer to show compliance with the Bay Area Air Quality Management District (BAAQMD) permit. Influent soil vapor samples were collected through a sampling port located on the vacuum pump discharge manifold. Thermal oxidizer stack vapor samples were collected through a sampling port located at the top of the stack. The air samples were submitted under chain-of-custody documentation to Curtis and Tompkins Laboratories and analyzed for TPH-g using USEPA Analytical Method TO-3; and for BTEX and MtBE using USEPA Analytical Method TO-15. Soil vapor analytical results and abatement efficiencies are presented in Table 5. Certified laboratory analytical reports and chain-of-custody documentation are included in Appendix G.

Soil vapor samples (one influent and one effluent) were collected on July 24, 2014, within the first 24 hours of operation (Table 5) as required by the BAAQMD

permit. The effluent vapor sample collected at the oxidizer stack was used to demonstrate compliance with this various locations permit.

5.3 Extraction Summary

The MPE event ran from 10:00 on July 24, 2014 to 13:00 on September 8, 2014. The total extraction time was 66,420 minutes or 1,107 hours.

Applied vacuum ranged from 12.8 to 22.3 inches of mercury, and vapor extraction flow rate ranged from 28 to 163 scfm (Tables 3 and 4). VOC concentrations in the extracted soil vapor stream ranged from 172 parts per million vapor (ppmv) as hexane to 1,243 ppmv (Table 4).

5.4 Evaluation of Mass Removal Rate

The total number of the MPE operational days was 46.13 days. The estimated mass of volatile organic compounds (VOCs) removed from soil vapor extraction and VOC mass removal rate was 565 lbs at 12 lbs/day (Table 4).

The overall estimated total mass of VOCs extracted by previous and the current MPE events is 3,302 pounds. Figure 5 shows the extracted mass of VOCs during different MPE events at the site.

5.5 Air Injection

Air injection can enhance removal of volatile constituents in petroleum products that are adsorbed to sediments when used in combination with MPE operation. It involves injection of air into the subsurface through injection wells located in close vicinity to the extraction wells, enabling transfer of contaminants from a high pressure zone to a low pressure extraction point.

SOMA conducted an air injection pilot test during this MPE event. Objective of this pilot testing was to determine if air injection during MPE operation will increase mass removal efficiency. The air injection was conducted primarily on injection wells MW-3, MW4, and EX-2. During injection, SOMA observed a significant increase in mass removal rate. Details of this pilot testing were reported to the ACEH in a letter dated August 29, 2014.

6. CONCLUSION

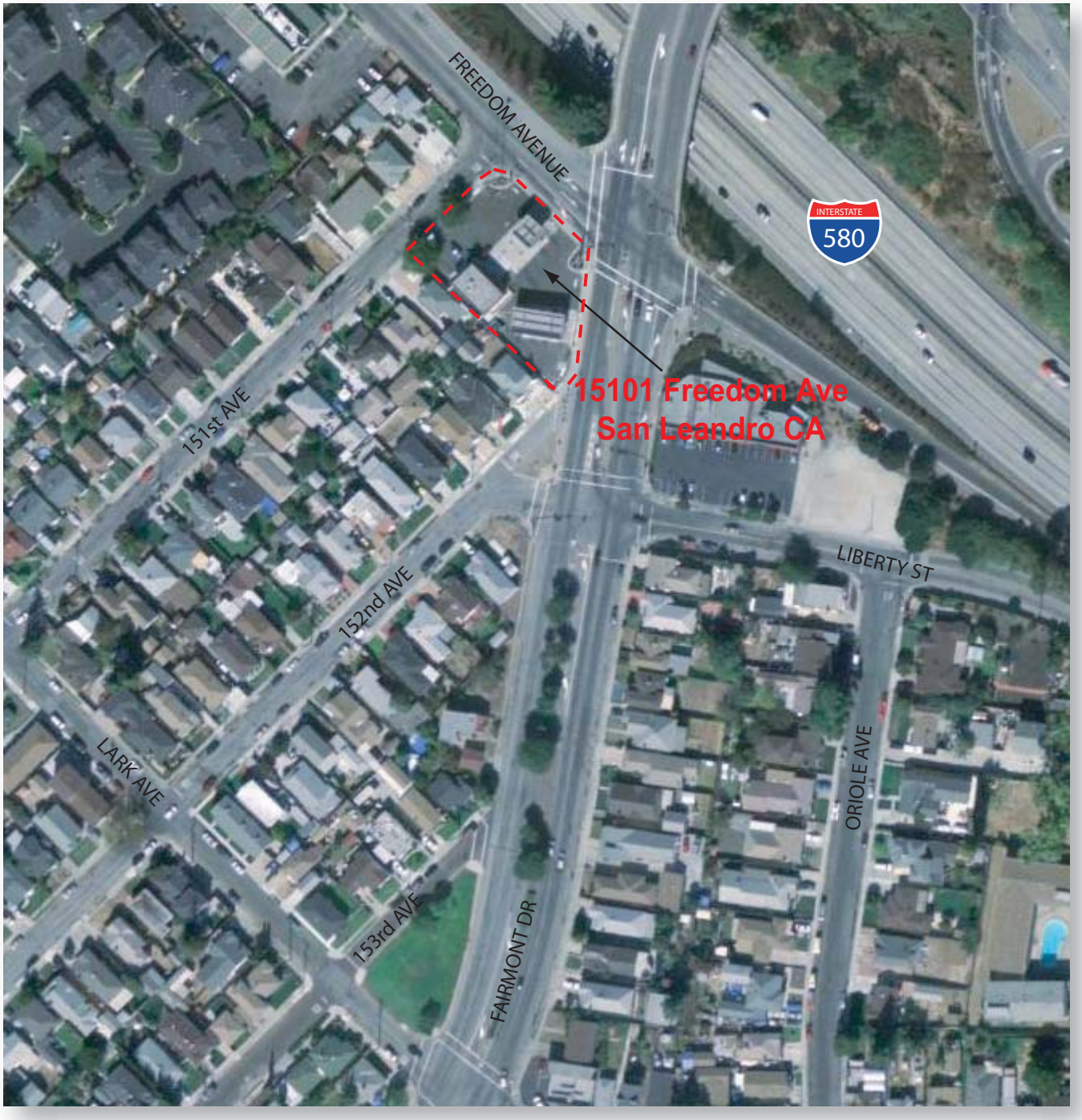
Two off-site groundwater monitoring wells MW-10 and MW-11 were installed in First WBZ. MW-12 could not be installed due to presence of several underground utilities in the vicinity of proposed location. Newly installed wells were sampled along with other site wells during Third Quarter 2014 groundwater monitoring

event. Results of the sampling event are documented in SOMA's Third Quarter 2014 groundwater monitoring report which will be submitted shortly.

Another crawl space sample was obtained from the same location (SV-1a) as during January 2014 and this time an ambient air sample (AA-1) was also collected from an outside location. Results indicate that benzene in crawl space and ambient air samples and naphthalene in ambient air sample were greater than the lowest residential Environmental Screening Levels (ESLs) established by San Francisco Regional Water Quality Control Board (RWQCB) for ambient and indoor air.

An MPE event was conducted at the site from July 24, 2014 to September 8, 2014 along with air injection pilot testing. During this event approximately 565 lbs of VOCs were removed at a mass removal rate of 12 lbs/day. The total mass of hydrocarbon removed by MPE operations (as of September 2014) at the site is estimated to be 3,302 pounds. Results of Third Quarter 2014 groundwater monitoring event will show the effectiveness of MPE operation at the site.

FIGURES



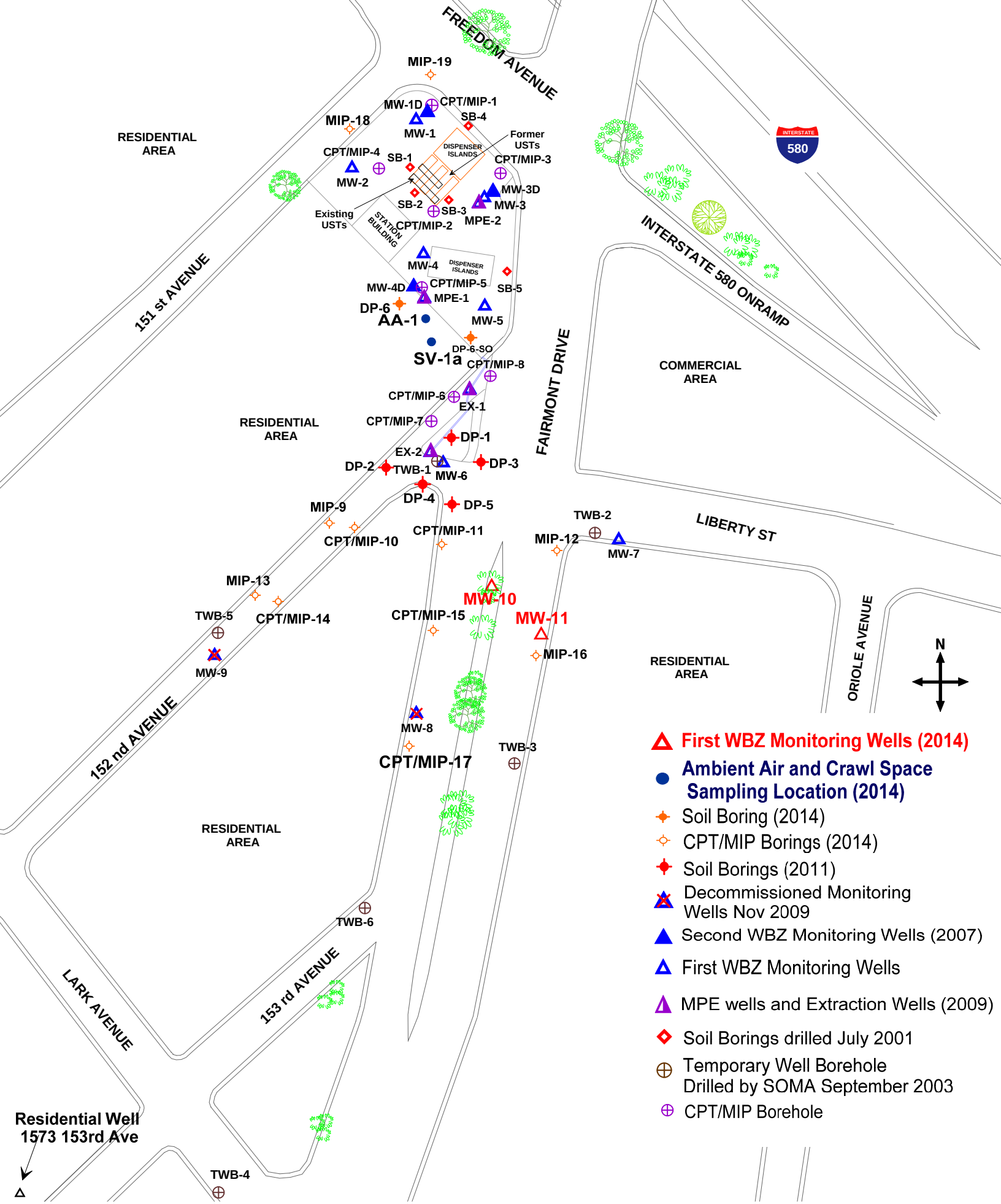
N

approximate scale in feet

0 150 300

Figure 1: Site vicinity map.

SOMA ENVIRONMENTAL ENGINEERING, INC.



approximate scale in feet

0 50 100

Figure 2: Site Map Showing Locations of USTs, Fuel Dispensers, Soil Borings, Vapor Samples, and Grundwater Monitoring Wells

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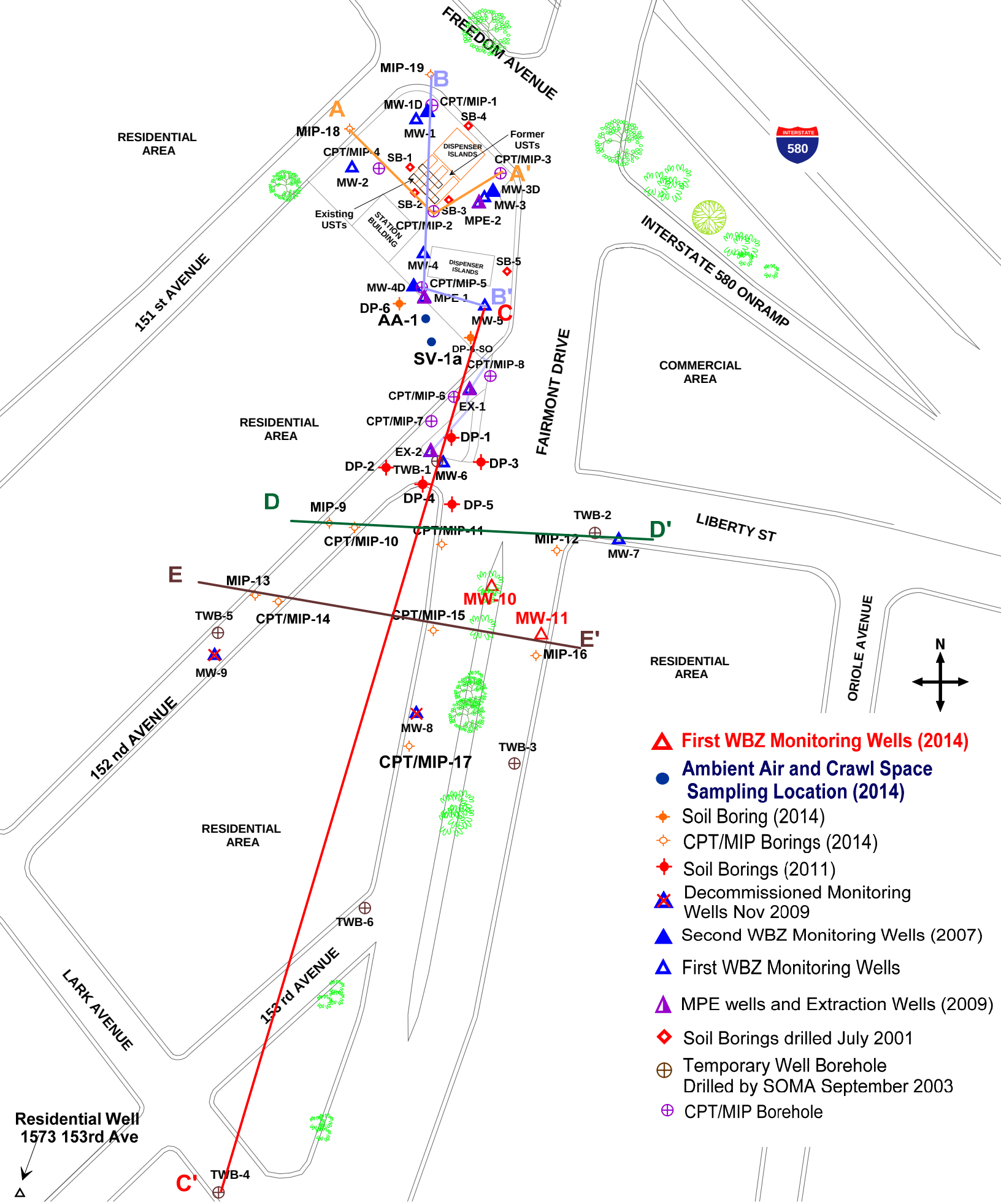

Figure 3: Locations of Geologic Cross-Sections

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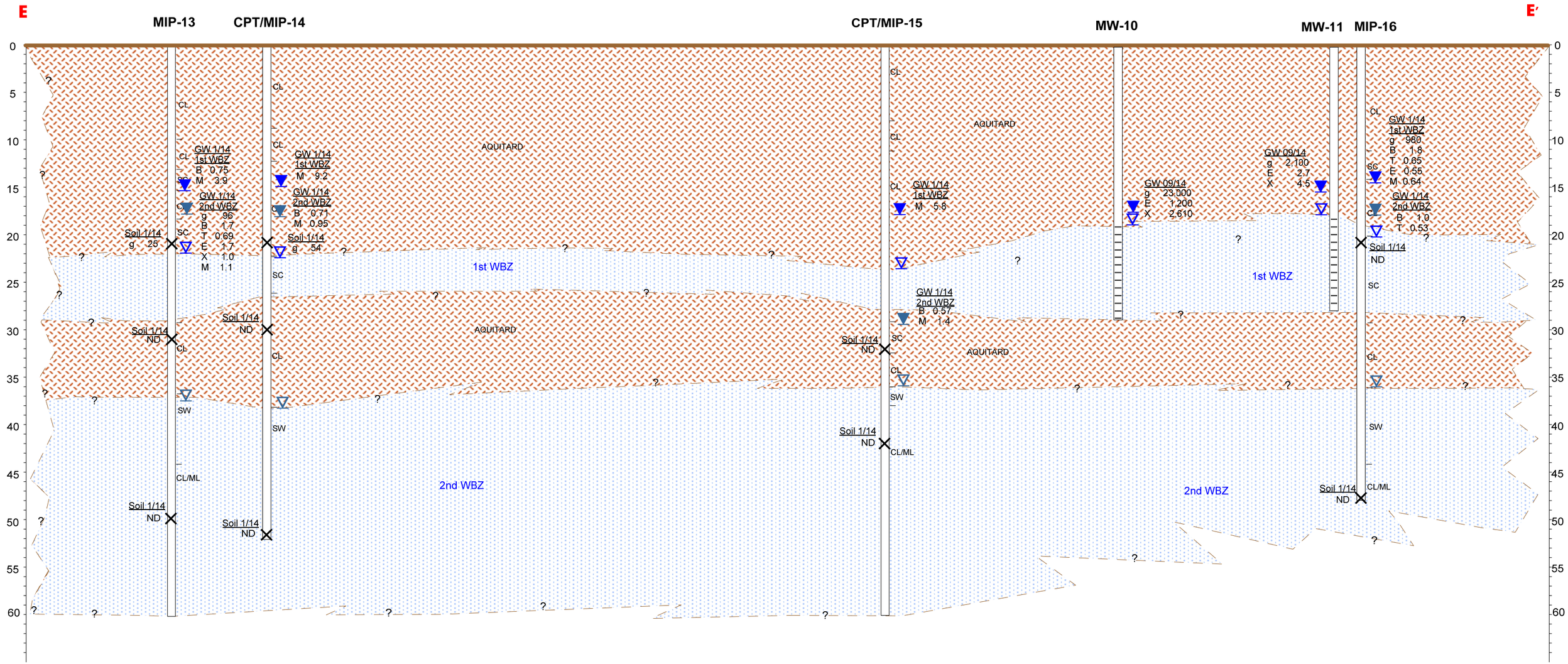

EXPLANATION

- Static groundwater in borings & wells
- Groundwater encountered during well borehole drilling
- Monitoring well screen interval
- ? Inferred contact

Note: Analytical Soil and Groundwater Data for CPT borings taken from soil borings (GS)

10
0 20
approximate scale in feet

Membrane Interface Probe (MIP)
PID + FID response interval

122 - PID readings ppm VOCs

N, L, M, S: No, Light, Medium, Strong PHC Odor

GW - GroundWater (ug/L)
Soil (ug/kg)

ug/L	g - TPH-g
ug/L	B - Benzene
ug/L	M - MtBE
ug/L	T - TBA

Unified Soil Classification System

CL	Clay	CL-Sa	Sandy Clayey
SP	Sand, Poorly Graded	CL-Si	Silty Clay
SW	Sand, Well Graded	CL-Gv	Gravelly Clay
GW	Gravel, Well Graded	GP-Sa	Sandy Gravel
ML	Silt		
SM	Silty Sand		

Figure 4: Updated Geologic Cross-Section EE'

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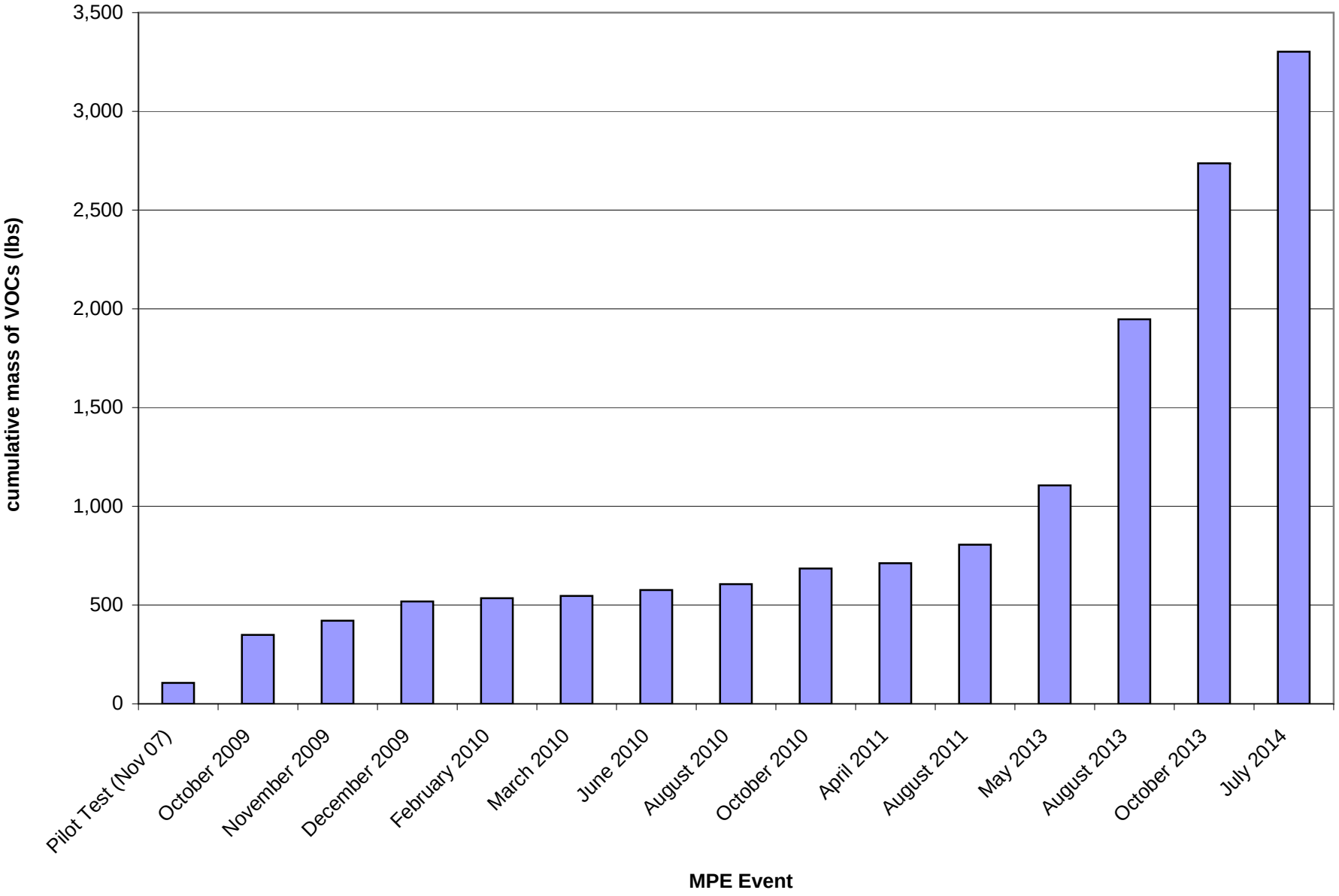

Figure 5: Cumulative mass of VOCs removed

TABLES

Table 1
Historical Soil Sample Analytical Results
15101 Freedom Avenue
San Leandro, California

Sample ID	Depth (Feet)	Date	TPH-g (mg/Kg)	Benzene (mg/Kg)	Toluene (mg/Kg)	Ethylbenzene (mg/Kg)	Total Xylenes (mg/Kg)	MtBE (mg/Kg)	TBA (mg/Kg)	TAME (mg/Kg)	DIPE (mg/Kg)	ETBE (mg/Kg)	1,2-DCA (mg/Kg)	EDB (mg/Kg)	Naphthalene (mg/Kg)
Limited Off-Site Investigation 2011															
DP-1	**6.5**	**7/20/2011**	<1.1	<0.0048	<0.0048	<0.0048	<0.0048	<0.0048	<0.096	<0.0048	<0.0048	<0.0048	<0.0048	<0.0048	<0.0048
	16	**7/20/2011**	<0.91	<0.0047	<0.0047	<0.0047	<0.0047	<0.0047	<0.094	<0.0047	<0.0047	<0.0047	<0.0047	<0.0047	<0.0047
	20	**7/20/2011**	22	<0.046	<0.046	0.65	**2.94**	<0.046	<0.93	<0.046	<0.046	<0.046	<0.046	<0.046	<0.046
	22	**7/20/2011**	5.7	<0.0048	0.0086	0.14	1.15	<0.0048	<0.096	<0.0048	<0.0048	<0.0048	<0.0048	<0.0048	<0.0048
	23	**7/20/2011**	<1.0	<0.0048	<0.0048	0.01	0.0253	<0.0048	<0.097	<0.0048	<0.0048	<0.0048	<0.0048	<0.0048	<0.0048
	30	**7/20/2011**	1.3	<0.0044	<0.0044	0.024	0.122	<0.0044	<0.088	<0.0044	<0.0044	<0.0044	<0.0044	<0.0044	<0.0044
DP-2	**8**	**7/20/2011**	<0.92	<0.0047	<0.0047	<0.0047	<0.0047	<0.0047	<0.094	<0.0047	<0.0047	<0.0047	<0.0047	<0.0047	<0.0047
	10	**7/20/2011**	<1.1	<0.0047	<0.0047	<0.0047	<0.0047	<0.0047	<0.094	<0.0047	<0.0047	<0.0047	<0.0047	<0.0047	<0.0047
	20	**7/20/2011**	<0.94	<0.0046	<0.0046	<0.0046	<0.0046	<0.0046	<0.093	<0.0046	<0.0046	<0.0046	<0.0046	<0.0046	<0.0046
	24	**7/20/2011**	4.4 Y	<0.0049	<0.0049	<0.0049	<0.0049	<0.0049	<0.098	<0.0049	<0.0049	<0.0049	<0.0049	<0.0049	<0.0049
	28	**7/20/2011**	<1.0	<0.0047	<0.0047	0.034	0.042	<0.0047	<0.095	<0.0047	<0.0047	<0.0047	<0.0047	<0.0047	<0.0047
	30	**7/20/2011**	<0.92	<0.0047	<0.0047	0.0071	<0.0047	<0.0047	<0.094	<0.0047	<0.0047	<0.0047	<0.0047	<0.0047	<0.0047
DP-3	**6**	**7/21/2011**	<1.0	<0.005	<0.005	<0.005	<0.005	<0.005	<0.099	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
	12	**7/21/2011**	<1.1	<0.0048	<0.0048	<0.0048	<0.0048	<0.0048	<0.096	<0.0048	<0.0048	<0.0048	<0.0048	<0.0048	<0.0048
	20	**7/21/2011**	26 Y	<0.0048	<0.0048	0.1	0.28	<0.0048	<0.095	<0.0048	<0.0048	<0.0048	<0.0048	<0.0048	<0.0048
	21	**7/21/2011**	<0.98	<0.0046	<0.0046	<0.0046	<0.0046	0.0051	<0.093	<0.0046	<0.0046	<0.0046	<0.0046	<0.0046	<0.0046
	30	**7/21/2011**	<1.1	<0.0049	<0.0049	<0.0049	<0.0049	<0.0049	<0.099	<0.0049	<0.0049	<0.0049	<0.0049	<0.0049	<0.0049
DP-4	**8**	**7/21/2011**	<1.1	<0.0046	<0.0046	<0.0046	<0.0046	<0.0046	<0.093	<0.0046	<0.0046	<0.0046	<0.0046	<0.0046	<0.0046
	11	**7/21/2011**	<0.99	<0.0048	<0.0048	<0.0048	<0.0048	<0.0048	<0.095	<0.0048	<0.0048	<0.0048	<0.0048	<0.0048	<0.0048
	16	**7/21/2011**	<1.0	<0.0049	<0.0049	<0.0049	<0.0049	<0.0049	<0.098	<0.0049	<0.0049	<0.0049	<0.0049	<0.0049	<0.0049
	20	**7/21/2011**	5.2 Y	<0.0046	<0.0046	<0.0046	<0.0046	<0.0046	<0.092	<0.0046	<0.0046	<0.0046	<0.0046	<0.0046	<0.0046
	24	**7/21/2011**	140	<0.25	<0.25	2.2	**6.79**	<0.25	<5.0	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25
	26	**7/21/2011**	40	<0.0048	<0.0048	<0.0048	<0.0048	<0.0048	<0.096	<0.0048	<0.0048	<0.0048	<0.0048	<0.0048	<0.0048
	30	**7/21/2011**	<1.0	<0.0048	<0.0048	<0.0048	<0.0048	<0.0048	<0.096	<0.0048	<0.0048	<0.0048	<0.0048	<0.0048	<0.0048
DP-5	**7.5**	**7/20/2011**	<1.1	<0.0048	<0.0048	<0.0048	<0.0048	<0.0048	<0.096	<0.0048	<0.0048	<0.0048	<0.0048	<0.0048	<0.0048
	10.5	**7/20/2011**	<1.0	<0.0047	<0.0047	<0.0047	<0.0047	<0.0047	<0.095	<0.0047	<0.0047	<0.0047	<0.0047	<0.0047	<0.0047
	12.5	**7/20/2011**	<0.93	<0.0048	<0.0048	<0.0048	<0.0048	<0.0048	<0.097	<0.0048	<0.0048	<0.0048	<0.0048	<0.0048	<0.0048
	23	**7/20/2011**	67	<0.0047	<0.0047	1.6	1.8	<0.0047	<0.093	<0.0047	<0.0047	<0.0047	<0.0047	<0.0047	<0.0047
	28	**7/20/2011**	<0.96	<0.0046	<0.0046	<0.0046	<0.0046	<0.0046	<0.093	<0.0046	<0.0046	<0.0046	<0.0046	<0.0046	<0.0046
	30	**7/20/2011**	<0.96	<0.0049	<0.0049	<0.0049	<0.0049	<0.0049	<0.098	<0.0049	<0.0049	<0.0049	<0.0049	<0.0049	<0.0049
Off-Site Investigation 2014															
DP-6	**21**	**1/28/2014**	24 Y	<0.0048	<0.0048	0.15	0.21	<0.0048	<0.096	<0.0048	<0.0048	<0.0048	<0.0048	<0.0048	0.065
	28	**1/28/2014**	<0.97	<0.0049	<0.0049	<0.0049	<0.0049	<0.0049	<0.098	<0.0049	<0.0049	<0.0049	<0.0049	<0.0049	<0.0049
DP-6-SO	**3**	**2/6/2014**	<0.98	<0.0048	<0.0048	<0.0048	<0.0048	<0.0048	<0.096	<0.0048	<0.0048	<0.0048	<0.0048	<0.0048	<0.0048
	6	**2/6/2014**	<1.0	<0.0048	<0.0048	<0.0048	<0.0048	<0.0048	<0.096	<0.0048	<0.0048	<0.0048	<0.0048	<0.0048	<0.0048
MIP-9	**21**	**1/17/2014**	180	<0.25	<0.25	**5.2**	**17.9**	<0.25	<5.0	<0.25	<0.25	<0.25	<0.25	<0.25	**1.9**
	24	**1/17/2014**	<0.98	<0.005	<0.005	<0.005	<0.005	<0.005	<0.10	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
	31	**1/17/2014**	<1.1	<0.0049	<0.0049	<0.0049	<0.0049	<0.0049	<0.099	<0.0049	<0.0049	<0.0049	<0.0049	<0.0049	<0.0049
	52	**1/17/2014**	<1.1	<0.0048	<0.0048	<0.0048	<0.0048	<0.0048	<0.096	<0.0048	<0.0048	<0.0048	<0.0048	<0.0048	<0.0048

Table 1
Historical Soil Sample Analytical Results
15101 Freedom Avenue
San Leandro, California

Sample ID	Depth (Feet)	Date	TPH-g (mg/Kg)	Benzene (mg/Kg)	Toluene (mg/Kg)	Ethylbenzene (mg/Kg)	Total Xylenes (mg/Kg)	MtBE (mg/Kg)	TBA (mg/Kg)	TAME (mg/Kg)	DIPE (mg/Kg)	ETBE (mg/Kg)	1,2-DCA (mg/Kg)	EDB (mg/Kg)	Naphthalene (mg/Kg)
CPT/MIP-10	**21**	**1/15/2014**	200	<0.25	<0.25	2.0	2.5	<0.25	<5.0	<0.25	<0.25	<0.25	<0.25	<0.25	0.72
	24	**1/15/2014**	<0.96	<0.0049	<0.0049	0.02	0.032	<0.0049	<0.099	<0.0049	<0.0049	<0.0049	<0.0049	<0.0049	0.0079
	33	**1/15/2014**	<1.1	<0.0048	<0.0048	<0.0048	0.034	<0.0048	<0.097	<0.0048	<0.0048	<0.0048	<0.0048	<0.0048	0.0052
	50	**1/16/2014**	<0.92	<0.005	<0.005	<0.005	<0.005	<0.005	<0.1	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
CPT/MIP-11	**23**	**1/13/2014**	29 [Y]	<0.25	<0.25	0.46	0.46	<0.25	<5.0	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25
	24	**1/13/2014**	<1.1	<0.005	<0.005	0.0086	0.0068	<0.005	<0.099	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
MIP-12	**20**	**1/20/2014**	<1.1	<0.005	<0.005	<0.005	<0.005	<0.005	<0.099	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
	32	**1/20/2014**	<1.1	<0.0049	<0.0049	<0.0049	<0.0049	0.01	<0.099	<0.0049	<0.0049	<0.0049	<0.0049	<0.0049	<0.0049
	52	**1/20/2014**	<1.0	<0.0048	<0.0048	<0.0048	<0.0048	<0.0048	<0.095	<0.0048	<0.0048	<0.0048	<0.0048	<0.0048	<0.0048
MIP-13	**21**	**1/16/2014**	25 [Y]	<0.01	<0.01	<0.01	<0.01	<0.01	<0.2	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
	31	**1/16/2014**	<0.99	<0.0049	<0.0049	<0.0049	<0.0049	<0.0049	<0.098	<0.0049	<0.0049	<0.0049	<0.0049	<0.0049	<0.0049
	50	**1/16/2014**	<1.1	<0.0047	<0.0047	<0.0047	<0.0047	<0.0047	<0.094	<0.0047	<0.0047	<0.0047	<0.0047	<0.0047	<0.0047
CPT/MIP-14	**21**	**1/14/2014**	54 [Y]	<0.25	<0.25	<0.25	<0.25	<0.25	<5.0	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25
	30	**1/14/2014**	<0.95	<0.0047	<0.0047	<0.0047	<0.0047	<0.0047	<0.095	<0.0047	<0.0047	<0.0047	<0.0047	<0.0047	<0.0047
	52	**1/14/2014**	<1.0	<0.0048	<0.0048	<0.0048	<0.0048	<0.0048	<0.097	<0.0048	<0.0048	<0.0048	<0.0048	<0.0048	<0.0048
CPT/MIP-15	**32**	**1/13/2014**	<0.96	<0.0048	<0.0048	<0.0048	<0.0048	<0.0048	<0.097	<0.0048	<0.0048	<0.0048	<0.0048	<0.0048	<0.0048
	42	**1/13/2014**	<1.1	<0.0048	<0.0048	<0.0048	<0.0048	<0.0048	<0.096	<0.0048	<0.0048	<0.0048	<0.0048	<0.0048	<0.0048
MIP-16	**21**	**1/17/2014**	<1.0	<0.0049	<0.0049	<0.0049	<0.0049	<0.0049	<0.098	<0.0049	<0.0049	<0.0049	<0.0049	<0.0049	<0.0049
	48	**1/20/2014**	<1.0	<0.005	<0.005	<0.005	<0.005	<0.005	<0.10	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
CPT/MIP-17	**30**	**1/14/2014**	<1.0	<0.0048	<0.0048	<0.0048	<0.0048	<0.0048	<0.095	<0.0048	<0.0048	<0.0048	<0.0048	<0.0048	<0.0048
MIP-18	**26**	**1/21/2014**	<1.0	<0.0047	<0.0047	<0.0047	<0.0047	<0.0047	<0.093	<0.0047	<0.0047	<0.0047	<0.0047	<0.0047	<0.0047
MIP-19	**27**	**1/21/2014**	26 [Y]	<0.048	<0.048	0.12	0.078	<0.048	<0.96	<0.048	<0.048	<0.048	<0.048	<0.048	0.19
	38	**1/21/2014**	<1.0	<0.0047	<0.0047	<0.0047	<0.0047	<0.0047	<0.094	<0.0047	<0.0047	<0.0047	<0.0047	<0.0047	<0.0047
ESLs (mg/Kg)		**Residential**	**500**	**0.044**	**2.9**	**3.3**	**2.3**	**0.023**	**0.075**	**NA**	**NA**	**NA**	**0.0045**	**0.00033**	**1.2**
		Commercial	**770**	**0.044**	**2.9**	**3.3**	**2.3**	**0.023**	**0.075**	**NA**	**NA**	**NA**	**0.0045**	**0.00033**	**1.2**

Notes:

ESLs Environmental Screening levels as per SF Bay Region RWQCB-Interim Final December 2013
(Tables C-1 & C-2. Deep Soils (>3m bgs) Groundwater is a Current or Potential Source of Drinking Water)

NA Not listed on the ESL Tables

<: Below laboratory detection limits

Table 2
Crawl Space and Ambient Air Sampling Results
15101 Freedom Ave
San Leandro, California

Sample ID	Date	TPH-g µg/m^3	Benzene µg/m^3	Toluene µg/m^3	Ethylbenzene µg/m^3	Total Xylenes µg/m^3	Naphthalene µg/m^3	Oxygen %	Carbon dioxide %	Nitrogen %	Methane %
SV-1	**1/22/2014**	90 J	**2.7**	7.6	<3.6	5.3	<18	19	<0.17	69	-
SV-1a	**9/26/2014**	<42	**0.74 J**	<3.4	<0.79	<4.0	<0.96	15	<0.18	-	<0.18
AA-1	**9/26/2014**	<40	**0.76 J**	<3.3	<0.76	<3.8	**1.4 J**	15	<0.17	-	<0.17
ESL (Indoor Air)		**590**	**0.084**	**310**	**0.97**	**100**	**0.072**	-	-	-	-

Note

ESLs Environmental Screening Levels per CRWQCB SFBay Region, Interim Final December 2013, Table E-3 (Ambient and Indoor Air Screening Levels)

Intrusion Concerns

J Estimated Value

Nitrogen was not reported in September 2014 samples due to technical issues with the laboratory instruments

Table 3

MPE Event
Operational Data : July-September 2014

15101 Freedom Ave.
San Leandro, California

DATE	TIME	PID (ppmv)	WELL MANIFOLD VACUUM (In of Hg)	OXIDIZER TEMPERATURE (^{0}F)	WELL FIELD FLOW VAPOR RATE (scfm)	PITOT TUBE (in of H2O)	EFFLUENT TEMPERATURE (F)	TOTAL SYSTEM VAPOR FLOW RATE (scfm)	DILUTION AIR FLOW RATE (scfm)	SYSTEM (BLOWER) VACUUM (In of Hg)	SYSTEM TOTALIZER READING (gallons)	COMMENTS
7/23/2014	1200											Mobilization and system setup
7/24/2014	1000										0	begin extraction from MPE-1
	1100	550	21	1547	98	-	-	98	0	23.2		
	1200	575	21	1475	96	-	-	96	0	23.3		
	1300	566	20.8	1515	98	-	-	98	0	23.2		
	1400	553	19.1	1515	98	-	-	98	0	23.2		
	1500	540	18.9	1477	96	-	-	96	0	23.3		
	1600	523	18.9	1546	98	-	-	98	0	23.2		
	1700	525	18.9	1523	96	-	-	96	0	23.3		
7/25/2014	800	498	19	1495	109	-	-	109	0	22.5		Extraction from MPE-1, MPE-2, and MW-3
	900	474	19.2	1526	109	-	-	109	0	22.5		
	1000	456	19.3	1518	109	-	-	109	0	22.5		
	1100	447	19.4	1514	103	-	-	103	0	22.9		
	1200	1,076	17	1492	133	-	-	133	0	21		
	1300	890	17	1537	133	-	-	133	0	21		
	1400	743	17	1498	133	-	-	133	0	21		
	1500	626	17	1509	133	-	-	133	0	21	4,374	
	1600	678	15	1459	117	-	-	117	0	22		
	1700	827	19.9	1505	104	-	-	104	0	22.8		
	1800	841	19.5	1498	109	-	-	109	0	22.5		
7/26/2014	2150	552	16.4	1471	162	-	-	162	0	19.2		
7/27/2014	1730	549	16.2	1434	147	-	-	147	0	20.1	6,666	
7/28/2014	830	481	16	1398	149	-	-	149	0	20	7,984	
	930	518	16	1512	149	-	-	149	0	20		
	1030	624	19.3	1506	149	-	-	149	0	20		
	1130	785	19.1	1516	149	-	-	149	0	20		
	1230	811	21.2	1498	112	-	-	112	0	22.3		
	1330	773	19.5	1516	109	-	-	109	0	22.5		
	1430	767	19.6	1508	109	-	-	109	0	22.5		
	1530	754	19.5	1502	109	-	-	109	0	22.5		
	1630	712	19.8	1507	108	-	-	108	0	22.6		
	1730	687	19.7	1511	106	-	-	106	0	22.7	8,735	
7/29/2014	800	659	19.4	1518	109	-	-	109	0	22.5		
	900	698	19.5	1521	109	-	-	109	0	22.5	10,119	
	1000	709	19.5	1506	109	-	-	109	0	22.5		
	1100	701	20	1546	61	0.25	130.0	61	0	22.5		
	1200	695	19.5	1498	87	0.50	132.0	87	0	22.5		
	1300	693	20	1515	87	0.50	132.0	87	0	22.5		
	1400	684	19.6	1509	119	0.95	134.0	119	0	22.4		
	1500	673	19.9	1505	105	0.75	138.0	105	0	23		
	1600	659	19.7	1509	112	0.85	136.0	112	0	22.5		

Table 3

MPE Event
Operational Data : July-September 2014

15101 Freedom Ave.
San Leandro, California

DATE	TIME	PID (ppmv)	WELL MANIFOLD VACUUM (In of Hg)	OXIDIZER TEMPERATURE (^{0}F)	WELL FIELD FLOW VAPOR RATE (scfm)	PITOT TUBE (in of H2O)	EFFLUENT TEMPERATURE (F)	TOTAL SYSTEM VAPOR FLOW RATE (scfm)	DILUTION AIR FLOW RATE (scfm)	SYSTEM (BLOWER) VACUUM (In of Hg)	SYSTEM TOTALIZER READING (gallons)	COMMENTS
	1700	538	19.7	1513	61	0.25	138.0	61	0	22.5		
	1800	622	19.7	1501	136	1.25	135.0	136	0	22.6		
7/30/2014	800	587	19.2	1410	89	0.50	100.0	89	0	22.5		
	900	608	19.4	1487	94	0.57	110.0	94	0	22.5	12,293	
	1000	631	19.5	1495	125	1.00	110.0	125	0	22.5		
	1100	636	19.9	1545	124	1.00	115.0	124	0	22.4		
	1200	628	20	1512	123	1.00	122.0	123	0	22.8		
	1300	618	19.3	1498	138	1.25	122.0	138	0	22.8		
	1400	598	20	1500	123	1.00	122.0	123	0	22.5		
	1500	610	19.8	1509	137	1.25	128.0	137	0	22.5		
	1600	604	19.5	1496	137	1.25	132.0	137	0	22.5		
	1700	610	19.4	1492	122	1.00	134.0	122	0	22.5		
7/31/2014	800	589	19.4	1498	87	0.50	122.0	87	0	22.6		
	900	575	19.5	1502	87	0.50	122.0	87	0	22.6	14,560	
	1000	495	19.5	1522	123	1.00	122.0	123	0	22.6		
	1100	495	19.5	1512	123	1.00	122.0	123	0	22.5		
	1200	481	19	1510	123	1.00	130.0	123	0	22		
	1300	465	19	1501	122	1.00	131.0	122	0	22.1		
	1400	489	19.5	1486	122	1.00	131.0	122	0	22.1		
	1500	449	19.3	1492	133	1.15	115.0	133	0	19.9		
	1600	423	19.2	1489	127	1.05	120.0	127	0	19.9		
	1700	457	18.9	1511	125	1.05	135.0	125	0	19.9		
	1800	457	18.6	1498	128	1.10	133.0	128	0	22		
8/1/2014	1000	440	18.8	1496	128	1.10	132.0	128	0	22.1		
	1130	433	18.9	1471	128	1.10	131.0	128	0	22.1		
	1230	489	15.4	1461	125	1.05	132.0	125	0	22.1		
	1330	496	19.9	1516	136	1.25	138.0	136	0	22.2		
	1430	495	19.9	1515	122	1.00	138.0	122	0	23.2		
	1530	494	19.8	1525	112	0.85	140.0	112	0	23.2		
	1630	482	19.9	1530	162	1.75	130.0	162	0	23.1		
	1730	491	19.6	1530	106	0.75	135.0	106	0	23.1		
8/2/2014	1400	421	19.7	1489	114	0.85	124.0	114	0	22.5		
	1500	428	19.7	1501	114	0.85	125.0	114	0	22.4	17,632	
	1600	451	19.5	1517	116	0.90	128.0	116	0	22.3		
	1700	448	19.5	1521	123	1.00	130.0	123	0	22.4		
	1800	432	19.4	1510	106	0.75	130.0	106	0	22.3		
	1900	445	19.4	1519	106	0.75	128.0	106	0	22.4		
8/4/2014	730	389	19.1	1512	62	0.25	122.0	62	0	22.8	20,501	
	800	376	19	1524	62	0.25	124.0	62	0	22.8		

Table 3

MPE Event
Operational Data : July-September 2014

15101 Freedom Ave.
San Leandro, California

DATE	TIME	PID (ppmv)	WELL MANIFOLD VACUUM (In of Hg)	OXIDIZER TEMPERATURE (^{0}F)	WELL FIELD FLOW VAPOR RATE (scfm)	PITOT TUBE (in of H2O)	EFFLUENT TEMPERATURE (F)	TOTAL SYSTEM VAPOR FLOW RATE (scfm)	DILUTION AIR FLOW RATE (scfm)	SYSTEM (BLOWER) VACUUM (In of Hg)	SYSTEM TOTALIZER READING (gallons)	COMMENTS
	900	372	19.2	1498	73	0.35	125.0	73	0	23		
	1000	384	19.3	1489	95	0.60	128.0	95	0	22.8		
	1100	388	19.2	1481	113	0.85	128.0	113	0	22.8		
	1200	393	19.2	1512	116	0.90	131.0	116	0	22.5		
	1300	409	19.2	1514	122	1.00	131.0	122	0	22.5		
	1400	399	19.3	1541	122	1.00	135.0	122	0	22.5		
	1500	382	17.5	1518	122	1.00	135.0	122	0	21.7		
	1600	389	17.5	1510	125	1.05	135.0	125	0	21.7		
	1700	420	18.9	1519	106	0.75	131.0	106	0	22.3		
	1730	418	19.1	1501	106	0.75	130.0	106	0	22.4		
8/5/2014	730	385	18.8	1491	55	0.20	120.0	55	0	22.9	22,507	
	800	393	18.6	1507	55	0.20	122.0	55	0	22.9		
	900	414	19	1516	62	0.25	122.0	62	0	22.9		
	1000	411	18.9	1521	62	0.25	126.0	62	0	22.4		
	1100	392	18.6	1514	87	0.50	128.0	87	0	22.4		
	1200	415	18.7	1502	106	0.75	130.0	106	0	22.4		
	1300	385	18.6	1541	126	1.05	130.0	126	0	22.4		
	1400	409	18.7	1520	119	0.95	130.0	119	0	22.8		
	1500	403	18.6	1501	120	0.95	122.0	120	0	22.8		
	1600	404	18.6	1508	113	0.85	134.0	113	0	22.5		
	1700	409	18.7	1495	128	1.10	134.0	128	0	22.5		
8/6/2014	730	397	18.9	1515	99	0.65	128.0	99	0	22.5	24,619	
	800	394	18.8	1507	99	0.65	128.0	99	0	22.5		
	900	395	18.7	1501	103	0.70	130.0	103	0	22.5		
	1000	399	18.6	1517	122	1.00	132.0	122	0	22.5		
	1100	388	18.5	1498	122	1.00	132.0	122	0	22.6		
	1200	392	18.4	1502	122	1.00	132.0	122	0	22.6		
	1300	395	18.3	1511	116	0.90	132.0	116	0	22.6		
	1400	392	18.9	1468	105	0.75	140.0	105	0	22.3		
	1500	390	17.3	1465	112	0.85	140.0	112	0	22.5		
	1600	386	18.4	1497	122	1.00	135.0	122	0	22.4		
	1700	406	18.6	1509	122	1.00	132.0	122	0	22.5		
8/7/2014	730	407	18.8	1501	87	0.50	130.0	87	0	22.5	26,863	
	800	415	18.8	1508	62	0.25	125.0	62	0	22.8		
	900	402	19	1498	87	0.50	128.0	87	0	22.8		
	1000	407	18.8	1475	132	1.15	128.0	132	0	22.8		
	1100	409	18.6	1469	107	0.75	125.0	107	0	22.5		
	1200	405	18.6	1485	107	0.75	124.0	107	0	22.5		

Table 3

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15101 Freedom Ave.
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DATE	TIME	PID (ppmv)	WELL MANIFOLD VACUUM (In of Hg)	OXIDIZER TEMPERATURE (^{0}F)	WELL FIELD FLOW VAPOR RATE (scfm)	PITOT TUBE (in of H2O)	EFFLUENT TEMPERATURE (F)	TOTAL SYSTEM VAPOR FLOW RATE (scfm)	DILUTION AIR FLOW RATE (scfm)	SYSTEM (BLOWER) VACUUM (In of Hg)	SYSTEM TOTALIZER READING (gallons)	COMMENTS
	1300	414	19.3	1485	114	0.85	124.0	114	0	22.3		
	1400	408	19.2	1465	163	1.75	124.0	163	0	22.5		
	1500	400	19.3	1518	107	0.75	125.0	107	0	22.3		
	1600	398	18.1	1542	123	1.00	124.0	123	0	22.2		
	1700	365	18.2	1565	137	1.25	130.0	137	0	22.1		
8/8/2014	1000	225	20.1	1513	73	0.35	120.0	73	0	25	29,300	
	1100	260	22.3	1530	78	0.40	116.0	78	0	25		
	1200	265	22.1	1545	73	0.35	118.0	73	0	25.1		
	1300	278	21.1	1547	92	0.55	120.0	92	0	25.1		
	1400	274	21.1	1479	107	0.75	120.0	107	0	25.1		
	1500	270	21	1519	117	0.90	120.2	117	0	25.1		
	1600	274	21.2	1476	124	1.00	120.2	124	0	25.1		
	1700	279	20.6	1497	124	1.00	120.4	124	0	25.2		
	2215	378	16.2	1507	73	0.35	122.0	73	0	22.8		
8/9/2014	1400	372	16.2	1510	119	0.95	135.0	119	0	22.3	31,769	
	1500	365	16	1501	119	0.95	136.0	119	0	22.3		
	1600	359	15.9	1494	116	0.90	132.0	116	0	22.3		
	1700	361	16	1509	106	0.75	130.0	106	0	22.3		
	1800	365	16.3	1499	95	0.60	128.0	95	0	22.3		
8/10/2014	1400	362	16	1492	128	1.10	136.0	128	0	22.3	33,813	
	1500	358	15.8	1509	122	1.00	134.0	122	0	22.4		
	1600	351	15.9	1517	122	1.00	132.0	122	0	22.3		
8/11/2014	730	362	19.2	1502	61	0.25	127.0	61	0	24.9	34,754	
	800	374	19.3	1509	61	0.25	128.0	61	0	24.9		
	900	384	19.2	1509	92	0.55	120.0	92	0	25		
	1000	400	19.2	1491	124	1.00	120.0	124	0	25		
	1100	303	19.2	1490	55	0.20	120.0	55	0	25		
	1200	415	19.2	1535	87	0.50	126.0	87	0	25		
	1300	403	19.2	1480	100	0.65	120.2	100	0	25		
	1400	416	19.2	1505	100	0.65	120.2	100	0	25		
	1500	408	19.2	1542	107	0.75	120.2	107	0	25		
	1600	416	19.2	1513	111	0.80	120.2	111	0	25		
	1700	410	19.2	1478	138	1.25	120.2	138	0	25		
8/12/2014	800	391	18.1	1505	87	0.50	120.0	87	0	25.1	37,378	
	900	398	18.1	1511	87	0.50	120.0	87	0	25		
	1000	405	18.1	1485	124	1.00	120.0	124	0	25		
	1100	819	18.2	1480	87	0.50	120.0	87	0	25		Extraction from MPE-1, MPE-2, MW-3,and MW-6
	1200	784	17.4	1525	92	0.55	120.2	92	0	24.6		
	1300	803	17	1511	78	0.40	120.0	78	0	24.4		
	1400	687	17	1502	73	0.35	128.0	73	0	24.4		
	1500	628	17	1489	83	0.45	120.0	83	0	24.4		

Table 3

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DATE	TIME	PID (ppmv)	WELL MANIFOLD VACUUM (In of Hg)	OXIDIZER TEMPERATURE (^{0}F)	WELL FIELD FLOW VAPOR RATE (scfm)	PITOT TUBE (in of H2O)	EFFLUENT TEMPERATURE (F)	TOTAL SYSTEM VAPOR FLOW RATE (scfm)	DILUTION AIR FLOW RATE (scfm)	SYSTEM (BLOWER) VACUUM (In of Hg)	SYSTEM TOTALIZER READING (gallons)	COMMENTS
8/13/2014	800	329	15	1502	39	0.10	128.0	39	0	22.9	39,758	
	900	337	15	1495	39	0.10	130.0	39	0	22.6		
	1000	395	15	1503	99	0.65	130.0	99	0	22.6		
	1100	338	15	1489	99	0.65	130.0	99	0	22.3		
	1200	438	14.6	1505	61	0.25	132.0	61	0	22.6		
	1300	431	16.5	1512	61	0.25	127.0	61	0	23.1		
	1400	446	16.7	1501	73	0.35	128.0	73	0	23.2		
	1500	442	17	1477	91	0.55	130.0	91	0	24.2		
	1600	428	17	1501	91	0.55	130.0	91	0	24.2		
	1700	426	17	1507	137	1.25	130.0	137	0	24.2		
	1800	432	17.1	1495	82	0.45	127.0	82	0	24.2		
8/14/2014	800	345	15.1	1507	61	0.25	128.0	61	0	22.7	42,131	
	900	315	15.1	1501	61	0.25	129.0	61	0	22.6		
	1000	288	15.1	1498	82	0.45	130.0	82	0	22.6		
	1100	298	14.6	1507	67	0.30	130.0	67	0	22.4		
	1200	318	15	1479	39	0.10	122.0	39	0	22.4		
	1300	337	15.1	1497	55	0.20	133.0	55	0	22.5		
	1400	333	15.1	1508	61	0.25	140.0	61	0	22.5		
	1500	328	14.4	1465	86	0.50	136.0	86	0	22.2		
	1600	337	14.4	1485	86	0.50	136.0	86	0	22.2		
	1700	325	15	1475	122	1.00	140.0	122	0	22.4		
8/15/2014	800	331	15	1507	55	0.20	127.0	55	0	22.4	44,838	
	900	348	15	1496	55	0.20	128.0	55	0	22.4		
	1000	350	15	1490	99	0.65	125.0	99	0	22.4		
	1100	348	14.6	1492	64	0.27	132.0	64	0	22.2		
	1200	358	14.7	1482	61	0.25	133.0	61	0	22.3		
	1300	376	14.6	1515	67	0.30	136.0	67	0	22.4		
	1400	362	14.4	1467	77	0.40	136.0	77	0	22.4		
	1500	368	15.1	1501	86	0.50	138.0	86	0	22.3		
	1600	379	14.4	1486	98	0.65	138.0	98	0	22.4		
	1700	349	14.4	1465	122	1.00	140.0	122	0	22.4		
8/16/2014	1500	408	15.3	1492	99	0.65	134.0	99	0	22.8	48,556	
	1600	417	15.2	1504	106	0.75	136.0	106	0	22.7		
	1700	401	14.9	1509	116	0.90	135.0	116	0	22.5		
8/17/2014	1400	361	15.4	1514	72	0.35	132.0	72	0	22.7	50,886	
	1500	368	15.4	1502	72	0.35	133.0	72	0	22.6		
	1600	352	15.2	1495	67	0.30	128.0	67	0	22.5		

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8/18/2014	800	258	17.8	1191	48	0.15	122.0	48	0	25	52,872	
	900	255	17.8	1495	39	0.10	122.0	39	0	25		
	1000	252	17.8	1490	28	0.05	122.0	28	0	25		
	1100	404	17.4	1495	30	0.06	123.0	30	0	22.6		
	1200	384	14	1522	39	0.10	132.0	39	0	22.4		
	1300	377	14.4	1501	61	0.25	130.0	61	0	22.4		
	1400	375	14.5	1507	47	0.15	130.0	47	0	22.4		
	1500	595	14.5	1495	61	0.25	135.0	61	0	22.4		Begin air injection
	1600	632	14.5	1492	87	0.50	130.0	87	0	22.4		
	1700	640	14.5	1509	87	0.50	124.0	87	0	22.6		
8/19/2014	800	1,010	14.5	1498	61	0.25	127.0	61	0	22.3	55,769	
	900	1,023	14.1	1502	67	0.30	130.0	67	0	22		
	1000	1,026	14.1	1490	73	0.35	130.0	73	0	22		
	1100	1,021	13.2	1499	67	0.30	126.0	67	0	22		
	1200	1,005	13.4	1487	87	0.50	128.0	87	0	22		
	1300	1,001	13.4	1523	73	0.35	130.0	73	0	22		
	1400	965	13.4	1517	73	0.35	130.0	73	0	22		
	1500	921	14	1472	61	0.25	130.0	61	0	22		
	1600	967	12.8	1505	106	0.75	136.0	106	0	21.8		
	1700	966	12.8	1467	105	0.75	138.0	105	0	21.4		
8/20/2014	800	917	14.2	1502	73	0.35	128.0	73	0	22.5	58,720	
	900	895	13.8	1516	67	0.30	128.0	67	0	22.4		
	1000	892	14.1	1507	61	0.25	127.0	61	0	22.5		
	1100	875	14.2	1515	87	0.50	125.0	87	0	22.5		
	1200	820	14	1505	73	0.35	124.0	73	0	22.4		
	1300	868	14.6	1497	67	0.30	126.0	67	0	22.5		
	1400	843	14	1510	82	0.45	128.0	82	0	22.6		
	1500	837	14	1499	48	0.15	128.0	48	0	22.5		
	1600	808	16	1507	103	0.70	126.0	103	0	23.4		
	1700	785	13.2	1505	123	1.00	125.0	123	0	23.5		
8/21/2014	800	751	13.9	1498	61	0.25	128.0	61	0	22.1	61,654	
	900	720	13.9	1502	61	0.25	130.0	61	0	22		
	1000	681	13.8	1600	61	0.25	132.0	61	0	22		
	1100	632	14	1495	67	0.30	131.0	67	0	22.3		
	1200	668	14	1498	72	0.35	132.0	72	0	22.4		
	1300	774	13.8	1502	90	0.55	136.0	90	0	22.2		
	1400	988	13.8	1501	72	0.35	137.0	72	0	22.2		
	1500	1,090	14.4	1513	86	0.50	139.0	86	0	22.8		
	1600	1,182	14.6	1490	122	1.00	138.0	122	0	22.8		
	1700	1,243	14.2	1495	136	1.25	140.0	136	0	22.3		

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8/22/2014	800	985	14.1	1510	55	0.20	131.0	55	0	22.5	64,173	
	900	962	14.1	1514	55	0.20	131.0	55	0	22.4		
	1000	946	14.1	1480	61	0.25	130.0	61	0	22.3		
	1100	927	14.2	1490	61	0.25	130.0	61	0	22.3		
	1200	917	13.4	1468	67	0.30	130.0	67	0	22.2		
	1300	986	14.8	1486	91	0.55	128.0	91	0	23.2		
	1400	762	15	1496	61	0.25	129.0	61	0	22		
	1500	679	14.5	1508	61	0.25	132.0	61	0	22.6		
	1600	740	14.6	1491	119	0.95	132.0	119	0	22.4		
	1700	806	13.6	1512	87	0.50	130.0	87	0	22.4		
8/23/2014	1400	551	13.9	1509	116	0.90	134.0	116	0	22.2	67,412	
	1500	535	14	1497	116	0.90	134.0	116	0	22.2		
	1600	522	14	1502	116	0.90	133.0	116	0	22		Air injection paused
	1700	498	14	1495	113	0.85	134.0	113	0	22		
8/24/2014	1400	365	13.9	1514	98	0.65	139.0	98	0	22.1	69,914	
	1500	382	13.8	1506	98	0.65	135.0	98	0	22		
	1600	401	14	1494	102	0.70	133.0	102	0	22.5		
8/25/2014	800	417	17.1	1512	73	0.35	121.0	73	0	23.5	71,740	
	900	429	14.1	1497	55	0.20	121.0	55	0	22.4		
	1000	454	14	1483	48	0.15	120.0	48	0	22.4		
	1100	504	14	1495	88	0.50	118.0	88	0	22.1		
	1200	643	14	1516	55	0.20	128.0	55	0	22.4		Resume air injection
	1300	611	13.8	1486	120	0.95	128.0	120	0	22.2		
	1400	688	14	1492	82	0.45	130.0	82	0	22.2		
	1500	686	13.8	1482	55	0.20	132.0	55	0	22		
	1600	705	16.4	1481	67	0.30	132.0	67	0	22.6		
	1700	621	14	1497	62	0.25	126.0	62	0	22.4		Air injection paused
8/26/2014	800	291	13.9	1502	61	0.25	128.0	61	0	22.5	74,169	
	900	284	14	1509	61	0.25	128.0	61	0	22.5		
	1000	349	14.4	1497	55	0.20	126.0	55	0	22.7		
	1100	493	13.8	1525	39	0.10	124.0	39	0	23.4		
	1200	615	14	1475	67	0.30	130.0	67	0	22.2		Resume air injection
	1300	758	14	1497	61	0.25	132.0	61	0	22.2		
	1400	831	13.8	1524	61	0.25	136.0	61	0	22.2		
	1500	896	13.8	1499	77	0.40	138.0	77	0	22.2		
	1600	916	13.6	1523	90	0.55	138.0	90	0	22.2		
	1700	926	13.8	1473	61	0.25	138.0	61	0	22.2		Air injection paused

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8/27/2014	1000	295	13.8	1515	55	0.20	132.0	55	0	22.2	76,846	
	1100	316	13.8	1512	91	0.55	132.0	91	0	22		
	1200	322	13.6	1465	82	0.45	136.0	82	0	22		
	1300	331	13.8	1501	67	0.30	140.0	67	0	22		
	1400	300	13.6	1495	90	0.55	142.0	90	0	22		
	1500	323	13.4	1481	115	0.90	142.0	115	0	22		
	1600	312	13.8	1509	130	1.15	140.0	130	0	22		
	1700	325	13.8	1474	90	0.55	140.0	90	0	22		
8/28/2014	800	318	13.9	1501	99	0.65	133.0	99	0	22	79,004	
	900	332	13.9	1507	95	0.60	130.0	95	0	22.1		
	1000	410	14	1485	110	0.80	130.0	110	0	22		
	1100	531	13.8	1478	87	0.50	130.0	87	0	22		
	1200	632	13.8	1525	106	0.75	128.0	106	0	22		
	1300	717	13.8	1492	78	0.40	128.0	78	0	22		
	1400	749	13.4	1508	54	0.20	138.0	54	0	22		
	1500	704	13.4	1518	61	0.25	142.0	61	0	22		
	1600	714	13.6	1466	77	0.40	142.0	77	0	22		
8/29/2014	900	303	13.6	1467	54	0.20	138.0	54	0	22	81,883	
	1000	308	13.8	1517	95	0.60	132.0	95	0	22		
	1100	347	13.8	1501	102	0.70	132.0	102	0	22		
	1200	460	13.8	1493	55	0.20	136.0	55	0	22.2		
	1300	543	13.8	1467	54	0.20	138.0	54	0	22		
	1400	637	13.6	1473	54	0.20	138.0	54	0	22		
	1500	617	13.6	1470	86	0.50	138.0	86	0	22		
	1600	620	13.8	1527	39	0.10	138.0	39	0	22		
	1700	615	13.6	1511	39	0.10	138.0	39	0	22		
8/30/2014	1400	381	13.8	1505	39	0.10	132.0	39	0	22	84,715	
	1500	384	13.9	1497	39	0.10	131.0	39	0	22		
	1600	393	13.8	1512	39	0.10	132.0	39	0	22		
8/31/2014	1400	259	13.9	1501	47	0.15	133.0	47	0	22	87,278	
	1500	271	13.8	1512	39	0.10	133.0	39	0	22		
	1600	294	13.9	1507	47	0.15	134.0	47	0	21.8		
9/1/2014	900	235	13.7	1499	39	0.10	130.0	39	0	21.9	90,277	
	1000	252	13.8	1505	39	0.10	130.0	39	0	21.9		
	1100	267	13.8	1496	47	0.15	131.0	47	0	22		
9/2/2014	900	172	17	1504	39	0.10	130.0	39	0	24.4	90,928	
	1000	187	14.8	1485	87	0.50	130.0	87	0	21.8		
	1100	202	14	1502	39	0.10	130.0	39	0	21.8		
	1200	291	13.8	1521	39	0.10	136.0	39	0	21.8		
	1300	410	13.8	1470	39	0.10	134.0	39	0	21.8		
	1400	504	13.8	1498	86	0.50	134.0	86	0	21.8		
	1500	538	13.8	1506	39	0.10	132.0	39	0	21.8		
	1600	576	13.8	1470	95	0.60	132.0	95	0	21.8		
	1700	582	13.8	1476	55	0.20	132.0	55	0	22		

Table 3

MPE Event
Operational Data : July-September 2014

15101 Freedom Ave.
San Leandro, California

DATE	TIME	PID (ppmv)	WELL MANIFOLD VACUUM (In of Hg)	OXIDIZER TEMPERATURE (^{0}F)	WELL FIELD FLOW VAPOR RATE (scfm)	PITOT TUBE (in of H2O)	EFFLUENT TEMPERATURE (F)	TOTAL SYSTEM VAPOR FLOW RATE (scfm)	DILUTION AIR FLOW RATE (scfm)	SYSTEM (BLOWER) VACUUM (In of Hg)	SYSTEM TOTALIZER READING (gallons)	COMMENTS
9/3/2014	800	210	14	1505	55	0.20	131.0	55	0	22.3	93,020	
	900	221	14	1498	55	0.20	133.0	55	0	22.3		
	1000	217	13.8	1494	61	0.25	132.0	61	0	22.1		
	1100	283	13.8	1496	47	0.15	132.0	47	0	22.3		
	1200	357	13.8	1495	47	0.15	136.0	47	0	22		
	1300	393	13.8	1513	39	0.10	132.0	39	0	22		
	1400	426	13.6	1514	61	0.25	136.0	61	0	22		
	1500	417	13.8	1503	82	0.45	140.0	82	0	22		
	1600	413	13.6	1481	81	0.45	142.0	81	0	22		
	1700	436	13.6	1469	98	0.65	138.0	98	0	22		
9/4/2014	800	180	13.9	1497	39	0.10	135.0	39	0	21.8	95,072	
	900	198	13.8	1512	102	0.70	132.0	102	0	21.8		
	1000	222	14	1518	39	0.10	130.0	39	0	22.2		
	1100	334	13.8	1498	39	0.10	134.0	39	0	22		
	1200	382	13.8	1468	39	0.10	136.0	39	0	22		
	1300	411	13.8	1512	39	0.10	138.0	39	0	22		
	1400	430	13.9	1496	39	0.10	138.0	39	0	22		
	1500	443	13.9	1491	38	0.10	139.0	38	0	22		
	1600	441	13.8	1496	61	0.25	140.0	61	0	22		
	1700	438	13.8	1471	61	0.25	136.0	61	0	22		
9/5/2014	730	221	13.9	1496	39	0.10	135.0	39	0	21.9	97,254	
	800	229	13.8	1499	102	0.70	135.0	102	0	21.9		
	900	287	14	1505	102	0.70	132.0	102	0	22		
	1000	312	14	1503	106	0.75	135.0	106	0	22		
	1100	362	13.5	1471	98	0.65	136.0	98	0	22		
	1200	377	13.8	1509	77	0.40	136.0	77	0	22		
	1300	391	14	1465	39	0.10	138.0	39	0	22		
	1400	394	13.8	1519	39	0.10	138.0	39	0	22		
	1500	408	13.9	1510	39	0.10	137.0	39	0	22		
	1600	405	13.9	1495	38	0.10	140.0	38	0	22		
	1700	409	13.8	1501	39	0.10	136.0	39	0	22		
9/6/2014	1500	207	15.1	1504	39	0.10	121.0	39	0	22.9	100,085	
	1600	215	15	1498	39	0.10	122.0	39	0	22.8		
9/7/2014	1100	219	15	1502	88	0.50	119.0	88	0	22.1	101,706	
	1200	231	21.2	1497	39	0.10	121.0	39	0	24		
9/8/2014	1300	244	21.1	1506	39	0.10	122.0	39	0	23.9	103,469	End Extraction
Totalizer readings = 103,469 gallons = 1.56 gpm												
Total time of test = 66,420 minutes = 1,107 hours = 46.13 days												

Notes

ppmv	parts per million vapor
In of Hg	inches of mercury
In of H_20	inches of water
^{0}F	degrees Fahrenheit
scfm	standard cubic feet per minute

Table 4

MPE Event
Extraction Data and VOC Mass Removal Rate
July-September 2014

15101 Freedom Avenue
San Leandro, California

MPE WELL	COMMENT	DATE	CLOCK TIME	INCREMENTAL TIME	ELAPSED TIME	Q			PID		MASS REMOVAL		
				minutes	minutes	SCFM	ft^3 of extracted air	Moles of extracted air	ppmv as hexane	VOC mole %	lb VOC mass removal as hexane	lbs/min	lbs/day
MPE-1	**START**	**7/24/2014**	1000	0	0								
			1100	60	60	98	5,884	15.5244	550	0.0006	0.7360	0.0123	18
			1200	60	120	96	5,789	15.2732	575	0.0006	0.7570	0.0126	18
			1300	60	180	98	5,884	15.5244	566	0.0006	0.7574	0.0126	18
			1400	60	240	98	5,884	15.5244	553	0.0006	0.7400	0.0123	18
			1500	60	300	96	5,789	15.2732	540	0.0005	0.7109	0.0118	17
			1600	60	360	98	5,884	15.5244	523	0.0005	0.6999	0.0117	17
			1700	60	420	96	5,789	15.2732	525	0.0005	0.6912	0.0115	17
MPE-1,MPE-2,MW-3		**7/25/2014**	800	900	1,320	109	98,253	259.2427	498	0.0005	11.1287	0.0124	18
			900	60	1,380	109	6,550	17.2828	474	0.0005	0.7062	0.0118	17
			1000	60	1,440	109	6,550	17.2828	456	0.0005	0.6793	0.0113	16
			1100	60	1,500	103	6,169	16.2780	447	0.0004	0.6272	0.0105	15
			1200	60	1,560	133	7,978	21.0510	1,076	0.0011	1.9525	0.0325	47
			1300	60	1,620	133	7,978	21.0510	890	0.0009	1.6150	0.0269	39
			1400	60	1,680	133	7,978	21.0510	743	0.0007	1.3482	0.0225	32
			1500	60	1,740	133	7,978	21.0510	626	0.0006	1.1359	0.0189	27
			1600	60	1,800	117	7,026	18.5389	678	0.0007	1.0835	0.0181	26
			1700	60	1,860	104	6,265	16.5292	827	0.0008	1.1783	0.0196	28
			1800	60	1,920	109	6,550	17.2828	841	0.0008	1.2529	0.0209	30
		7/26/2014	2150	1670	3,590	162	269,762	711.7743	552	0.0006	33.8679	0.0203	29
		7/27/2014	1730	1180	4,770	147	173,759	458.4664	549	0.0005	21.6964	0.0184	26
		7/28/2014	830	900	5,670	149	133,956	353.4459	481	0.0005	14.6546	0.0163	23
			930	60	5,730	149	8,930	23.5631	518	0.0005	1.0521	0.0175	25
			1030	60	5,790	149	8,930	23.5631	624	0.0006	1.2674	0.0211	30
			1130	60	5,850	149	8,930	23.5631	785	0.0008	1.5944	0.0266	38
			1230	60	5,910	112	6,741	17.7853	811	0.0008	1.2433	0.0207	30
			1330	60	5,970	109	6,550	17.2828	773	0.0008	1.1516	0.0192	28
			1430	60	6,030	109	6,550	17.2828	767	0.0008	1.1427	0.0190	27
			1530	60	6,090	109	6,550	17.2828	754	0.0008	1.1233	0.0187	27
			1630	60	6,150	108	6,455	17.0316	712	0.0007	1.0453	0.0174	25
			1730	60	6,210	106	6,360	16.7804	687	0.0007	0.9937	0.0166	24
		7/29/2014	800	870	7,080	109	94,978	250.6013	659	0.0007	14.2356	0.0164	24
			900	60	7,140	109	6,550	17.2828	698	0.0007	1.0399	0.0173	25
			1000	60	7,200	109	6,550	17.2828	709	0.0007	1.0563	0.0176	25
			1100	60	7,260	61	3,678	9.7039	701	0.0007	0.5864	0.0098	14
			1200	60	7,320	87	5,192	13.7002	695	0.0007	0.8208	0.0137	20
			1300	60	7,380	87	5,192	13.7002	693	0.0007	0.8184	0.0136	20

Table 4

MPE Event
Extraction Data and VOC Mass Removal Rate
July-September 2014

15101 Freedom Avenue
San Leandro, California

MPE WELL	COMMENT	DATE	CLOCK TIME	INCREMENTAL TIME	ELAPSED TIME	Q			PID		MASS REMOVAL		
				minutes	minutes	SCFM	ft^3 of extracted air	Moles of extracted air	ppmv as hexane	VOC mole %	lb VOC mass removal as hexane	lbs/min	lbs/day
			1400	60	7,440	119	7,145	18.8527	684	0.0007	1.1116	0.0185	27
			1500	60	7,500	105	6,327	16.6949	673	0.0007	0.9685	0.0161	23
			1600	60	7,560	112	6,747	17.8029	659	0.0007	1.0113	0.0169	24
			1700	60	7,620	61	3,653	9.6388	538	0.0005	0.4470	0.0075	11
			1800	60	7,680	136	8,189	21.6073	622	0.0006	1.1585	0.0193	28
		7/30/2014	800	840	8,520	89	74,742	197.2073	587	0.0006	9.9786	0.0119	17
			900	60	8,580	94	5,650	14.9075	608	0.0006	0.7813	0.0130	19
			1000	60	8,640	125	7,484	19.7454	631	0.0006	1.0740	0.0179	26
			1100	60	8,700	124	7,451	19.6594	636	0.0006	1.0778	0.0180	26
			1200	60	8,760	123	7,406	19.5408	628	0.0006	1.0578	0.0176	25
			1300	60	8,820	138	8,280	21.8473	618	0.0006	1.1638	0.0194	28
			1400	60	8,880	123	7,406	19.5408	598	0.0006	1.0073	0.0168	24
			1500	60	8,940	137	8,238	21.7355	610	0.0006	1.1429	0.0190	27
			1600	60	9,000	137	8,210	21.6620	604	0.0006	1.1278	0.0188	27
			1700	60	9,060	122	7,331	19.3424	610	0.0006	1.0171	0.0170	24
		7/31/2014	800	900	9,960	87	78,552	207.2615	589	0.0006	10.5230	0.0117	17
			900	60	10,020	87	5,237	13.8174	575	0.0006	0.6849	0.0114	16
			1000	60	10,080	123	7,406	19.5408	495	0.0005	0.8338	0.0139	20
			1100	60	10,140	123	7,406	19.5408	495	0.0005	0.8338	0.0139	20
			1200	60	10,200	123	7,356	19.4079	481	0.0005	0.8047	0.0134	19
			1300	60	10,260	122	7,349	19.3914	465	0.0005	0.7773	0.0130	19
			1400	60	10,320	122	7,349	19.3914	489	0.0005	0.8174	0.0136	20
			1500	60	10,380	133	7,990	21.0823	449	0.0004	0.8160	0.0136	20
			1600	60	10,440	127	7,602	20.0579	423	0.0004	0.7314	0.0122	18
			1700	60	10,500	125	7,505	19.8034	457	0.0005	0.7801	0.0130	19
			1800	60	10,560	128	7,695	20.3036	457	0.0005	0.7998	0.0133	19
		8/1/2014	1000	960	11,520	128	123,225	325.1317	440	0.0004	12.3316	0.0128	18
			1130	90	11,610	128	11,562	30.5069	433	0.0004	1.1387	0.0127	18
			1230	60	11,670	125	7,524	19.8535	489	0.0005	0.8369	0.0139	20
			1330	60	11,730	136	8,169	21.5530	496	0.0005	0.9215	0.0154	22
			1430	60	11,790	122	7,306	19.2776	495	0.0005	0.8226	0.0137	20
			1530	60	11,850	112	6,725	17.7434	494	0.0005	0.7556	0.0126	18
			1630	60	11,910	162	9,731	25.6742	482	0.0005	1.0667	0.0178	26
			1730	60	11,970	106	6,343	16.7369	491	0.0005	0.7084	0.0118	17

Table 4

MPE Event
Extraction Data and VOC Mass Removal Rate
July-September 2014

15101 Freedom Avenue
San Leandro, California

MPE WELL	COMMENT	DATE	CLOCK TIME	INCREMENTAL TIME	ELAPSED TIME	Q			PID		MASS REMOVAL		
				minutes	minutes	SCFM	ft^3 of extracted air	Moles of extracted air	ppmv as hexane	VOC mole %	lb VOC mass removal as hexane	lbs/min	lbs/day
		8/2/2014	1400	1230	13,200	114	139,733	368.6895	421	0.0004	13.3798	0.0109	16
			1500	60	13,260	114	6,810	17.9695	428	0.0004	0.6630	0.0110	16
			1600	60	13,320	116	6,990	18.4432	451	0.0005	0.7170	0.0120	17
			1700	60	13,380	123	7,356	19.4079	448	0.0004	0.7495	0.0125	18
			1800	60	13,440	106	6,370	16.8077	432	0.0004	0.6259	0.0104	15
			1900	60	13,500	106	6,381	16.8363	445	0.0004	0.6458	0.0108	15
		8/4/2014	730	2190	15,690	62	135,159	356.6196	389	0.0004	11.9581	0.0055	8
			800	30	15,720	62	1,848	4.8768	376	0.0004	0.1581	0.0053	8
			900	60	15,780	73	4,370	11.5308	372	0.0004	0.3698	0.0062	9
			1000	60	15,840	95	5,707	15.0588	384	0.0004	0.4985	0.0083	12
			1100	60	15,900	113	6,793	17.9236	388	0.0004	0.5995	0.0100	14
			1200	60	15,960	116	6,972	18.3963	393	0.0004	0.6232	0.0104	15
			1300	60	16,020	122	7,349	19.3914	409	0.0004	0.6837	0.0114	16
			1400	60	16,080	122	7,325	19.3262	399	0.0004	0.6647	0.0111	16
			1500	60	16,140	122	7,325	19.3262	382	0.0004	0.6364	0.0106	15
			1600	60	16,200	125	7,505	19.8034	389	0.0004	0.6640	0.0111	16
			1700	60	16,260	106	6,365	16.7935	420	0.0004	0.6080	0.0101	15
			1730	30	16,290	106	3,185	8.4039	418	0.0004	0.3028	0.0101	15
		8/5/2014	730	840	17,130	55	46,449	122.5555	385	0.0004	4.0673	0.0048	7
			800	30	17,160	55	1,656	4.3695	393	0.0004	0.1480	0.0049	7
			900	60	17,220	62	3,703	9.7704	414	0.0004	0.3487	0.0058	8
			1000	60	17,280	62	3,690	9.7370	411	0.0004	0.3450	0.0057	8
			1100	60	17,340	87	5,210	13.7468	392	0.0004	0.4645	0.0077	11
			1200	60	17,400	106	6,370	16.8077	415	0.0004	0.6013	0.0100	14
			1300	60	17,460	126	7,537	19.8871	385	0.0004	0.6600	0.0110	16
			1400	60	17,520	119	7,169	18.9165	409	0.0004	0.6669	0.0111	16
			1500	60	17,580	120	7,218	19.0460	403	0.0004	0.6616	0.0110	16
			1600	60	17,640	113	6,759	17.8328	404	0.0004	0.6210	0.0104	15
			1700	60	17,700	128	7,689	20.2865	409	0.0004	0.7152	0.0119	17
		8/6/2014	730	870	18,570	99	86,135	227.2688	397	0.0004	7.7775	0.0089	13
			800	30	18,600	99	2,970	7.8369	394	0.0004	0.2662	0.0089	13
			900	60	18,660	103	6,154	16.2378	395	0.0004	0.5529	0.0092	13
			1000	60	18,720	122	7,343	19.3751	399	0.0004	0.6664	0.0111	16
			1100	60	18,780	122	7,343	19.3751	388	0.0004	0.6480	0.0108	16
			1200	60	18,840	122	7,343	19.3751	392	0.0004	0.6547	0.0109	16

Table 4

MPE Event
Extraction Data and VOC Mass Removal Rate
July-September 2014

15101 Freedom Avenue
San Leandro, California

MPE WELL	COMMENT	DATE	CLOCK TIME	INCREMENTAL TIME	ELAPSED TIME	Q			PID		MASS REMOVAL		
				minutes	minutes	SCFM	ft^3 of extracted air	Moles of extracted air	ppmv as hexane	VOC mole %	lb VOC mass removal as hexane	lbs/min	lbs/day
			1300	60	18,900	116	6,966	18.3808	395	0.0004	0.6258	0.0104	15
			1400	60	18,960	105	6,317	16.6671	392	0.0004	0.5632	0.0094	14
			1500	60	19,020	112	6,725	17.7434	390	0.0004	0.5965	0.0099	14
			1600	60	19,080	122	7,325	19.3262	386	0.0004	0.6430	0.0107	15
			1700	60	19,140	122	7,343	19.3751	406	0.0004	0.6781	0.0113	16
		8/7/2014	730	870	20,010	87	75,417	198.9898	407	0.0004	6.9812	0.0080	12
			800	30	20,040	62	1,847	4.8727	415	0.0004	0.1743	0.0058	8
			900	60	20,100	87	5,210	13.7468	402	0.0004	0.4764	0.0079	11
			1000	60	20,160	132	7,901	20.8480	407	0.0004	0.7314	0.0122	18
			1100	60	20,220	107	6,397	16.8794	409	0.0004	0.5951	0.0099	14
			1200	60	20,280	107	6,403	16.8938	405	0.0004	0.5898	0.0098	14
			1300	60	20,340	114	6,816	17.9849	414	0.0004	0.6418	0.0107	15
			1400	60	20,400	163	9,780	25.8057	408	0.0004	0.9076	0.0151	22
			1500	60	20,460	107	6,397	16.8794	400	0.0004	0.5820	0.0097	14
			1600	60	20,520	123	7,393	19.5073	398	0.0004	0.6692	0.0112	16
			1700	60	20,580	137	8,224	21.6987	365	0.0004	0.6827	0.0114	16
		8/8/2014	1000	1020	21,600	73	74,613	196.8670	225	0.0002	3.8182	0.0037	5
			1100	60	21,660	78	4,708	12.4229	260	0.0003	0.2784	0.0046	7
			1200	60	21,720	73	4,397	11.6004	265	0.0003	0.2650	0.0044	6
			1300	60	21,780	92	5,502	14.5168	278	0.0003	0.3479	0.0058	8
			1400	60	21,840	107	6,425	16.9520	274	0.0003	0.4004	0.0067	10
			1500	60	21,900	117	7,037	18.5668	270	0.0003	0.4321	0.0072	10
			1600	60	21,960	124	7,417	19.5711	274	0.0003	0.4622	0.0077	11
			1700	60	22,020	124	7,416	19.5677	279	0.0003	0.4706	0.0078	11
			2200	300	22,320	73	21,907	57.8025	378	0.0004	1.8834	0.0063	9
		8/9/2014	1400	960	23,280	119	114,226	301.3889	372	0.0004	9.6645	0.0101	14
			1500	60	23,340	119	7,133	18.8210	365	0.0004	0.5922	0.0099	14
			1600	60	23,400	116	6,966	18.3808	359	0.0004	0.5688	0.0095	14
			1700	60	23,460	106	6,370	16.8077	361	0.0004	0.5230	0.0087	13
			1800	60	23,520	95	5,707	15.0588	365	0.0004	0.4738	0.0079	11
		8/10/2014	1400	1200	24,720	128	153,513	405.0486	362	0.0004	12.6393	0.0105	15
			1500	60	24,780	122	7,331	19.3424	358	0.0004	0.5969	0.0099	14
			1600	60	24,840	122	7,343	19.3751	351	0.0004	0.5862	0.0098	14
		8/11/2014	730	930	25,770	61	57,151	150.7949	362	0.0004	4.7055	0.0051	7
			800	30	25,800	61	1,842	4.8602	374	0.0004	0.1567	0.0052	8
			900	60	25,860	92	5,502	14.5168	384	0.0004	0.4805	0.0080	12

Table 4

MPE Event
Extraction Data and VOC Mass Removal Rate
July-September 2014

15101 Freedom Avenue
San Leandro, California

MPE WELL	COMMENT	DATE	CLOCK TIME	INCREMENTAL TIME	ELAPSED TIME	Q			PID		MASS REMOVAL		
				minutes	minutes	SCFM	ft^3 of extracted air	Moles of extracted air	ppmv as hexane	VOC mole %	lb VOC mass removal as hexane	lbs/min	lbs/day
MPE-1,2; MW-3,6		8/12/2014	1000	60	25,920	124	7,419	19.5745	400	0.0004	0.6749	0.0112	16
			1100	60	25,980	55	3,318	8.7540	303	0.0003	0.2286	0.0038	5
			1200	60	26,040	87	5,219	13.7702	415	0.0004	0.4926	0.0082	12
			1300	60	26,100	100	5,980	15.7787	403	0.0004	0.5481	0.0091	13
			1400	60	26,160	100	5,980	15.7787	416	0.0004	0.5658	0.0094	14
			1500	60	26,220	107	6,424	16.9491	408	0.0004	0.5961	0.0099	14
			1600	60	26,280	111	6,634	17.5049	416	0.0004	0.6277	0.0105	15
			1700	60	26,340	138	8,293	21.8811	410	0.0004	0.7733	0.0129	19
			800	900	27,240	87	78,687	207.6185	391	0.0004	6.9976	0.0078	11
			900	60	27,300	87	5,246	13.8412	398	0.0004	0.4749	0.0079	11
			1000	60	27,360	124	7,419	19.5745	405	0.0004	0.6834	0.0114	16
			1100	60	27,420	87	5,246	13.8412	819	0.0008	0.9772	0.0163	23
			1200	60	27,480	92	5,501	14.5143	784	0.0008	0.9809	0.0163	24
			1300	60	27,540	78	4,692	12.3800	803	0.0008	0.8569	0.0143	21
			1400	60	27,600	73	4,359	11.5014	687	0.0007	0.6811	0.0114	16
			1500	60	27,660	83	4,977	13.1309	628	0.0006	0.7108	0.0118	17
		8/13/2014	800	1020	28,680	39	39,610	104.5115	329	0.0003	2.9639	0.0029	4
			900	60	28,740	39	2,326	6.1373	337	0.0003	0.1783	0.0030	4
			1000	60	28,800	99	5,930	15.6471	395	0.0004	0.5328	0.0089	13
			1100	60	28,860	99	5,930	15.6471	338	0.0003	0.4559	0.0076	11
			1200	60	28,920	61	3,672	9.6875	438	0.0004	0.3658	0.0061	9
			1300	60	28,980	61	3,687	9.7287	431	0.0004	0.3614	0.0060	9
			1400	60	29,040	73	4,359	11.5014	446	0.0004	0.4422	0.0074	11
			1500	60	29,100	91	5,455	14.3933	442	0.0004	0.5484	0.0091	13
			1600	60	29,160	91	5,455	14.3933	428	0.0004	0.5310	0.0089	13
			1700	60	29,220	137	8,224	21.6987	426	0.0004	0.7968	0.0133	19
			1800	60	29,280	82	4,947	13.0524	432	0.0004	0.4861	0.0081	12
		8/14/2014	800	840	30,120	61	51,577	136.0859	345	0.0003	4.0471	0.0048	7
			900	60	30,180	61	3,681	9.7122	315	0.0003	0.2637	0.0044	6
			1000	60	30,240	82	4,934	13.0192	288	0.0003	0.3232	0.0054	8
			1100	60	30,300	67	4,029	10.6301	298	0.0003	0.2731	0.0046	7
			1200	60	30,360	39	2,342	6.1793	318	0.0003	0.1694	0.0028	4
			1300	60	30,420	55	3,281	8.6575	337	0.0003	0.2515	0.0042	6
			1400	60	30,480	61	3,647	9.6227	333	0.0003	0.2762	0.0046	7
			1500	60	30,540	86	5,175	13.6542	328	0.0003	0.3861	0.0064	9
			1600	60	30,600	86	5,175	13.6542	337	0.0003	0.3966	0.0066	10
			1700	60	30,660	122	7,294	19.2455	325	0.0003	0.5392	0.0090	13

Table 4

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MPE WELL	COMMENT	DATE	CLOCK TIME	INCREMENTAL TIME	ELAPSED TIME	Q			PID		MASS REMOVAL		
				minutes	minutes	SCFM	ft^3 of extracted air	Moles of extracted air	ppmv as hexane	VOC mole %	lb VOC mass removal as hexane	lbs/min	lbs/day
		8/15/2014	800	900	31,560	55	49,469	130.5242	331	0.0003	3.7241	0.0041	6
			900	60	31,620	55	3,295	8.6942	348	0.0003	0.2608	0.0043	6
			1000	60	31,680	99	5,956	15.7139	350	0.0004	0.4741	0.0079	11
			1100	60	31,740	64	3,816	10.0676	348	0.0003	0.3020	0.0050	7
			1200	60	31,800	61	3,668	9.6794	358	0.0004	0.2987	0.0050	7
			1300	60	31,860	67	4,008	10.5765	376	0.0004	0.3428	0.0057	8
			1400	60	31,920	77	4,629	12.2127	362	0.0004	0.3811	0.0064	9
			1500	60	31,980	86	5,166	13.6313	368	0.0004	0.4324	0.0072	10
			1600	60	32,040	98	5,890	15.5421	379	0.0004	0.5078	0.0085	12
			1700	60	32,100	122	7,294	19.2455	349	0.0003	0.5790	0.0096	14
		8/16/2014	1500	1320	33,420	99	130,026	343.0757	408	0.0004	12.0658	0.0091	13
			1600	60	33,480	106	6,338	16.7229	417	0.0004	0.6011	0.0100	14
			1700	60	33,540	116	6,949	18.3344	401	0.0004	0.6338	0.0106	15
		8/17/2014	1400	1260	34,800	72	91,230	240.7112	361	0.0004	7.4905	0.0059	9
			1500	60	34,860	72	4,341	11.4528	368	0.0004	0.3633	0.0061	9
			1600	60	34,920	67	4,036	10.6482	352	0.0004	0.3231	0.0054	8
MPE-1, MW-6		**8/18/2014**	800	960	35,880	48	45,893	121.0899	258	0.0003	2.6930	0.0028	4
			900	60	35,940	39	2,342	6.1793	255	0.0003	0.1358	0.0023	3
MPE-1,2; MW-3,6			1000	60	36,000	28	1,656	4.3695	252	0.0003	0.0949	0.0016	2
			1100	60	36,060	30	1,813	4.7824	404	0.0004	0.1665	0.0028	4
			1200	60	36,120	39	2,322	6.1269	384	0.0004	0.2028	0.0034	5
			1300	60	36,180	61	3,678	9.7039	377	0.0004	0.3154	0.0053	8
			1400	60	36,240	47	2,849	7.5166	375	0.0004	0.2430	0.0040	6
	Begin air injection		1500	60	36,300	61	3,662	9.6631	595	0.0006	0.4956	0.0083	12
			1600	60	36,360	87	5,201	13.7234	632	0.0006	0.7476	0.0125	18
			1700	60	36,420	87	5,228	13.7938	640	0.0006	0.7610	0.0127	18
		8/19/2014	800	900	37,320	61	55,308	145.9305	1,010	0.0010	12.7050	0.0141	20
			900	60	37,380	67	4,029	10.6301	1,023	0.0010	0.9374	0.0156	22
			1000	60	37,440	73	4,352	11.4819	1,026	0.0010	1.0155	0.0169	24
			1100	60	37,500	67	4,043	10.6663	1,021	0.0010	0.9387	0.0156	23
			1200	60	37,560	87	5,210	13.7468	1,005	0.0010	1.1909	0.0198	29
			1300	60	37,620	73	4,352	11.4819	1,001	0.0010	0.9907	0.0165	24
			1400	60	37,680	73	4,352	11.4819	965	0.0010	0.9551	0.0159	23
			1500	60	37,740	61	3,678	9.7039	921	0.0009	0.7704	0.0128	18
			1600	60	37,800	106	6,338	16.7229	967	0.0010	1.3939	0.0232	33
			1700	60	37,860	105	6,327	16.6949	966	0.0010	1.3902	0.0232	33

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MPE WELL	COMMENT	DATE	CLOCK TIME	INCREMENTAL TIME	ELAPSED TIME	Q			PID		MASS REMOVAL		
				minutes	minutes	SCFM	ft^3 of extracted air	Moles of extracted air	ppmv as hexane	VOC mole %	lb VOC mass removal as hexane	lbs/min	lbs/day
		8/20/2014	800	900	38,760	73	65,385	172.5204	917	0.0009	13.6369	0.0152	22
			900	60	38,820	67	4,036	10.6482	895	0.0009	0.8215	0.0137	20
			1000	60	38,880	61	3,687	9.7287	892	0.0009	0.7480	0.0125	18
			1100	60	38,940	87	5,223	13.7820	875	0.0009	1.0395	0.0173	25
			1200	60	39,000	73	4,374	11.5407	820	0.0008	0.8157	0.0136	20
			1300	60	39,060	67	4,043	10.6663	868	0.0009	0.7981	0.0133	19
			1400	60	39,120	82	4,943	13.0413	843	0.0008	0.9477	0.0158	23
			1500	60	39,180	48	2,854	7.5294	837	0.0008	0.5432	0.0091	13
			1600	60	39,240	103	6,175	16.2931	808	0.0008	1.1348	0.0189	27
			1700	60	39,300	123	7,387	19.4906	785	0.0008	1.3189	0.0220	32
		8/21/2014	800	900	40,200	61	55,261	145.8064	751	0.0008	9.4390	0.0105	15
			900	60	40,260	61	3,678	9.7039	720	0.0007	0.6023	0.0100	14
			1000	60	40,320	61	3,672	9.6875	681	0.0007	0.5687	0.0095	14
			1100	60	40,380	67	4,025	10.6211	632	0.0006	0.5786	0.0096	14
			1200	60	40,440	72	4,344	11.4624	668	0.0007	0.6600	0.0110	16
			1300	60	40,500	90	5,428	14.3206	774	0.0008	0.9555	0.0159	23
			1400	60	40,560	72	4,326	11.4143	988	0.0010	0.9721	0.0162	23
			1500	60	40,620	86	5,162	13.6199	1,090	0.0011	1.2797	0.0213	31
			1600	60	40,680	122	7,306	19.2776	1,182	0.0012	1.9642	0.0327	47
			1700	60	40,740	136	8,155	21.5171	1,243	0.0012	2.3055	0.0384	55
		8/22/2014	800	900	41,640	55	49,301	130.0818	985	0.0010	11.0449	0.0123	18
			900	60	41,700	55	3,287	8.6721	962	0.0010	0.7191	0.0120	17
			1000	60	41,760	61	3,678	9.7039	946	0.0009	0.7913	0.0132	19
			1100	60	41,820	61	3,678	9.7039	927	0.0009	0.7754	0.0129	19
			1200	60	41,880	67	4,029	10.6301	917	0.0009	0.8403	0.0140	20
			1300	60	41,940	91	5,464	14.4177	986	0.0010	1.2254	0.0204	29
			1400	60	42,000	61	3,681	9.7122	762	0.0008	0.6379	0.0106	15
			1500	60	42,060	61	3,672	9.6875	679	0.0007	0.5670	0.0095	14
			1600	60	42,120	119	7,157	18.8845	740	0.0007	1.2046	0.0201	29
			1700	60	42,180	87	5,201	13.7234	806	0.0008	0.9535	0.0159	23
		8/23/2014	1400	1260	43,440	116	146,046	385.3463	551	0.0006	18.3025	0.0145	21
			1500	60	43,500	116	6,955	18.3498	535	0.0005	0.8462	0.0141	20
	Air injection paused		1600	60	43,560	116	6,960	18.3653	522	0.0005	0.8264	0.0138	20
			1700	60	43,620	113	6,759	17.8328	498	0.0005	0.7655	0.0128	18
		8/24/2014	1400	1260	44,880	98	123,596	326.1117	365	0.0004	10.2605	0.0081	12
			1500	60	44,940	98	5,905	15.5812	382	0.0004	0.5131	0.0086	12
			1600	60	45,000	102	6,139	16.1967	401	0.0004	0.5599	0.0093	13

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MPE WELL	COMMENT	DATE	CLOCK TIME	INCREMENTAL TIME	ELAPSED TIME	Q			PID		MASS REMOVAL		
				minutes	minutes	SCFM	ft^3 of extracted air	Moles of extracted air	ppmv as hexane	VOC mole %	lb VOC mass removal as hexane	lbs/min	lbs/day
		8/25/2014	800	960	45,960	73	70,163	185.1270	417	0.0004	6.6545	0.0069	10
			900	60	46,020	55	3,315	8.7464	429	0.0004	0.3234	0.0054	8
			1000	60	46,080	48	2,873	7.5812	454	0.0005	0.2967	0.0049	7
			1100	60	46,140	88	5,255	13.8652	504	0.0005	0.6024	0.0100	14
	Resume air injection		1200	60	46,200	55	3,295	8.6942	643	0.0006	0.4819	0.0080	12
			1300	60	46,260	120	7,182	18.9486	611	0.0006	0.9980	0.0166	24
			1400	60	46,320	82	4,934	13.0192	688	0.0007	0.7721	0.0129	19
			1500	60	46,380	55	3,284	8.6648	686	0.0007	0.5124	0.0085	12
			1600	60	46,440	67	4,022	10.6122	705	0.0007	0.6449	0.0107	15
	Air injection paused		1700	60	46,500	62	3,690	9.7370	621	0.0006	0.5212	0.0087	13
		8/26/2014	800	900	47,400	61	55,261	145.8064	291	0.0003	3.6574	0.0041	6
			900	60	47,460	61	3,684	9.7204	284	0.0003	0.2380	0.0040	6
			1000	60	47,520	55	3,301	8.7090	349	0.0003	0.2620	0.0044	6
			1100	60	47,580	39	2,338	6.1688	493	0.0005	0.2622	0.0044	6
	Resume air injection		1200	60	47,640	67	4,029	10.6301	615	0.0006	0.5635	0.0094	14
			1300	60	47,700	61	3,672	9.6875	758	0.0008	0.6330	0.0105	15
			1400	60	47,760	61	3,659	9.6550	831	0.0008	0.6916	0.0115	17
			1500	60	47,820	77	4,621	12.1922	896	0.0009	0.9417	0.0157	23
			1600	60	47,880	90	5,418	14.2967	916	0.0009	1.1289	0.0188	27
	Air injection paused		1700	60	47,940	61	3,653	9.6388	926	0.0009	0.7694	0.0128	18
		8/27/2014	1000	1020	48,960	55	55,827	147.3014	295	0.0003	3.7457	0.0037	5
			1100	60	49,020	91	5,446	14.3689	316	0.0003	0.3914	0.0065	9
			1200	60	49,080	82	4,909	12.9535	322	0.0003	0.3595	0.0060	9
			1300	60	49,140	67	3,995	10.5412	331	0.0003	0.3008	0.0050	7
			1400	60	49,200	90	5,400	14.2491	300	0.0003	0.3685	0.0061	9
			1500	60	49,260	115	6,908	18.2275	323	0.0003	0.5075	0.0085	12
			1600	60	49,320	130	7,822	20.6385	312	0.0003	0.5551	0.0093	13
			1700	60	49,380	90	5,409	14.2728	325	0.0003	0.3999	0.0067	10
		8/28/2014	800	900	50,280	99	88,729	234.1124	318	0.0003	6.4174	0.0071	10
			900	60	50,340	95	5,698	15.0333	332	0.0003	0.4302	0.0072	10
			1000	60	50,400	110	6,579	17.3589	410	0.0004	0.6135	0.0102	15
			1100	60	50,460	87	5,201	13.7234	531	0.0005	0.6282	0.0105	15
			1200	60	50,520	106	6,381	16.8363	632	0.0006	0.9172	0.0153	22
			1300	60	50,580	78	4,660	12.2955	717	0.0007	0.7599	0.0127	18
			1400	60	50,640	54	3,267	8.6212	749	0.0007	0.5566	0.0093	13
			1500	60	50,700	61	3,641	9.6067	704	0.0007	0.5830	0.0097	14
			1600	60	50,760	77	4,605	12.1517	714	0.0007	0.7479	0.0125	18

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MPE WELL	COMMENT	DATE	CLOCK TIME	INCREMENTAL TIME	ELAPSED TIME	Q			PID		MASS REMOVAL		
				minutes	minutes	SCFM	ft^3 of extracted air	Moles of extracted air	ppmv as hexane	VOC mole %	lb VOC mass removal as hexane	lbs/min	lbs/day
		8/29/2014	900	1020	51,780	54	55,546	146.5606	303	0.0003	3.8280	0.0038	5
			1000	60	51,840	95	5,688	15.0079	308	0.0003	0.3985	0.0066	10
			1100	60	51,900	102	6,144	16.2103	347	0.0003	0.4849	0.0081	12
			1200	60	51,960	55	3,273	8.6357	460	0.0005	0.3424	0.0057	8
			1300	60	52,020	54	3,267	8.6212	543	0.0005	0.4035	0.0067	10
			1400	60	52,080	54	3,267	8.6212	637	0.0006	0.4734	0.0079	11
			1500	60	52,140	86	5,166	13.6313	617	0.0006	0.7250	0.0121	17
			1600	60	52,200	39	2,310	6.0961	620	0.0006	0.3258	0.0054	8
			1700	60	52,260	39	2,310	6.0961	615	0.0006	0.3232	0.0054	8
		8/30/2014	1400	1260	53,520	39	48,764	128.6656	381	0.0004	4.2257	0.0034	5
			1500	60	53,580	39	2,324	6.1321	384	0.0004	0.2030	0.0034	5
			1600	60	53,640	39	2,322	6.1269	393	0.0004	0.2076	0.0035	5
		8/31/2014	1400	1320	54,960	47	62,515	164.9472	259	0.0003	3.6826	0.0028	4
			1500	60	55,020	39	2,320	6.1218	271	0.0003	0.1430	0.0024	3
			1600	60	55,080	47	2,839	7.4913	294	0.0003	0.1899	0.0032	5
		9/1/2014	900	1020	56,100	39	39,543	104.3342	235	0.0002	2.1135	0.0021	3
			1000	60	56,160	39	2,326	6.1373	252	0.0003	0.1333	0.0022	3
			1100	60	56,220	47	2,846	7.5103	267	0.0003	0.1729	0.0029	4
		9/2/2014	900	1320	57,540	39	51,173	135.0208	172	0.0002	2.0019	0.0015	2
			1000	60	57,600	87	5,201	13.7234	187	0.0002	0.2212	0.0037	5
			1100	60	57,660	39	2,326	6.1373	202	0.0002	0.1069	0.0018	3
			1200	60	57,720	39	2,314	6.1063	291	0.0003	0.1532	0.0026	4
			1300	60	57,780	39	2,318	6.1166	410	0.0004	0.2162	0.0036	5
			1400	60	57,840	86	5,184	13.6772	504	0.0005	0.5942	0.0099	14
			1500	60	57,900	39	2,322	6.1269	538	0.0005	0.2841	0.0047	7
			1600	60	57,960	95	5,688	15.0079	576	0.0006	0.7452	0.0124	18
			1700	60	58,020	55	3,284	8.6648	582	0.0006	0.4347	0.0072	10
		9/3/2014	800	900	58,920	55	49,301	130.0818	210	0.0002	2.3547	0.0026	4
			900	60	58,980	55	3,281	8.6575	221	0.0002	0.1649	0.0027	4
			1000	60	59,040	61	3,672	9.6875	217	0.0002	0.1812	0.0030	4
			1100	60	59,100	47	2,844	7.5039	283	0.0003	0.1831	0.0031	4
			1200	60	59,160	47	2,834	7.4787	357	0.0004	0.2301	0.0038	6
			1300	60	59,220	39	2,322	6.1269	393	0.0004	0.2076	0.0035	5
			1400	60	59,280	61	3,659	9.6550	426	0.0004	0.3545	0.0059	9
			1500	60	59,340	82	4,893	12.9102	417	0.0004	0.4641	0.0077	11
			1600	60	59,400	81	4,885	12.8888	413	0.0004	0.4588	0.0076	11
			1700	60	59,460	98	5,890	15.5421	436	0.0004	0.5841	0.0097	14

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July-September 2014

15101 Freedom Avenue
San Leandro, California

MPE WELL	COMMENT	DATE	CLOCK TIME	INCREMENTAL TIME	ELAPSED TIME	Q			PID		MASS REMOVAL		
				minutes	minutes	SCFM	ft^3 of extracted air	Moles of extracted air	ppmv as hexane	VOC mole %	lb VOC mass removal as hexane	lbs/min	lbs/day
		9/4/2014	800	900	60,360	39	34,744	91.6720	180	0.0002	1.4224	0.0016	2
			900	60	60,420	102	6,144	16.2103	198	0.0002	0.2767	0.0046	7
			1000	60	60,480	39	2,326	6.1373	222	0.0002	0.1174	0.0020	3
			1100	60	60,540	39	2,318	6.1166	334	0.0003	0.1761	0.0029	4
			1200	60	60,600	39	2,314	6.1063	382	0.0004	0.2011	0.0034	5
			1300	60	60,660	39	2,310	6.0961	411	0.0004	0.2160	0.0036	5
			1400	60	60,720	39	2,310	6.0961	430	0.0004	0.2260	0.0038	5
			1500	60	60,780	38	2,308	6.0910	443	0.0004	0.2326	0.0039	6
			1600	60	60,840	61	3,647	9.6227	441	0.0004	0.3658	0.0061	9
			1700	60	60,900	61	3,659	9.6550	438	0.0004	0.3645	0.0061	9
		9/5/2014	730	870	61,770	39	33,586	88.6163	221	0.0002	1.6882	0.0019	3
			800	30	61,800	102	3,064	8.0847	229	0.0002	0.1596	0.0053	8
			900	60	61,860	102	6,144	16.2103	287	0.0003	0.4010	0.0067	10
			1000	60	61,920	106	6,343	16.7369	312	0.0003	0.4501	0.0075	11
			1100	60	61,980	98	5,900	15.5682	362	0.0004	0.4858	0.0081	12
			1200	60	62,040	77	4,629	12.2127	377	0.0004	0.3969	0.0066	10
			1300	60	62,100	39	2,310	6.0961	391	0.0004	0.2055	0.0034	5
			1400	60	62,160	39	2,310	6.0961	394	0.0004	0.2070	0.0035	5
			1500	60	62,220	39	2,312	6.1012	408	0.0004	0.2146	0.0036	5
			1600	60	62,280	38	2,307	6.0859	405	0.0004	0.2125	0.0035	5
			1700	60	62,340	39	2,314	6.1063	409	0.0004	0.2153	0.0036	5
		9/6/2014	1500	1320	63,660	39	51,568	136.0625	207	0.0002	2.4278	0.0018	3
			1600	60	63,720	39	2,342	6.1793	215	0.0002	0.1145	0.0019	3
		9/7/2014	1100	1140	64,860	88	99,757	263.2105	219	0.0002	4.9688	0.0044	6
			1200	60	64,920	39	2,344	6.1847	231	0.0002	0.1232	0.0021	3
	STOP	**9/8/2014**	1300	1500	66,420	39	58,549	154.4836	244	0.0002	3.2492	0.0022	3
	TOTAL				**66,420**		**5,407,323**	**14,267**			**565**	**0.0085**	**12**
	MEDIAN					**88**			**417**	**0.0004**			

Notes

Q	volumetric flow rate
SCFM	standard cubic feet per minute
ft^3	cubic feet per minute
VOC	volatile organic compounds
PID	photo-ionization detector
ppmv	parts per million vapor

DERIVATION OF MASS REMOVAL RATE

ppmv as hexane/1,000,000 = VOC mole %
ft3 of extracted air/(379 ft3 air/lb-mole air) = moles of extracted air
(moles of extracted air)(VOC mole %)(86.2 lb/lb-mole hexane) = lbs of VOC removed as hexane
(lbs of VOC mass removed as hexane)(elapsed time) = lbs/min of VOC removed as hexane
(lbs/min of VOC removed as hexane)(60 min/1 hour)(24 hours/1 day) = lbs/day of VOC removed as hexane

Table 5
SVE Abatement System Emissions
15101 Freedom Avenue, San Leandro, CA

Operation Start Date/Time	Onboard Analyzer Sample Date/Time	Onboard Analyzer		Lab Sample Date/Time	USEPA TO-3 MODIFIED		USEPA TO-15 MODIFIED		Q (SCFM)	Abatement Efficiency	Emissions Rate Benzene (lbs/day)
		Hydrocarbons (TPH-g + BTEX) (ppmv as hexane)			TPH-g (ppmv)		Benzene (ppmv)				
		Inlet	Outlet		Inlet	Outlet	Inlet	Outlet			
7/24/14 @ 10:00	7/24/14 @ 11:00	550	0	7/24/14 @ 11:00	290	0.10	0.67	<0.20	98	100.0%	NA

SCFM standard cubic feet per minute

lbs/day pounds per day

APPENDIX A

Previous Activities and
Historical Geologic Cross-Sections

In May 1999, three 10,000-gallon USTs, approximately 250 feet of product piping, and six product dispensers were removed from the site (Geo-Logic, 1999). A total of 21 soil samples were collected for laboratory analyses from the removal areas, including seven from the east and west sides of the UST removal excavation, at depths ranging from 12 to 14 feet below ground surface (bgs), and 14 from beneath the fuel dispensers and product delivery piping ranging in depth from 2.5 to 3.5 feet bgs. Samples were analyzed for the following: total petroleum hydrocarbons as gasoline (TPH-g); benzene, toluene, ethylbenzene, xylenes (BTEX); and methyl tertiary-butyl ether (MtBE). Analysis results indicated the need for removal of additional soil from product piping areas and the UST removal excavation. Concentrations of TPH-g, BTEX and MtBE in soil samples from the UST removal excavation were elevated relative to those from the product piping and dispenser areas, where concentrations were relatively low. Following overexcavation, three soil samples were collected for laboratory analysis from the enlarged UST removal excavation ranging in depth from 16.5 to 24.5 feet bgs, and one from the product delivery piping at 5 feet bgs. Laboratory analysis detected elevated concentrations in soil samples at 24.5 feet bgs from the UST removal excavation relative to those at 16.5 and 19.5 feet bgs. Low concentrations of petroleum hydrocarbons were detected in the soil sample from the product delivery piping.

In July 1999, one 14,000-gallon UST divided into a 6,000-gallon unit for diesel and an 8,000-gallon unit for gasoline, and one 20,000-gallon UST for gasoline were installed at the site (Geo-Logic, 1999).

On January 3, 2000, ACHCS notified the property owner, Mr. Pazdel, of an unauthorized release that had occurred during removal of old USTs in May 1999. ACHCS requested a preliminary site assessment.

On July 5, 2001, a soil and groundwater investigation was conducted at the site to delineate the extent of soil and groundwater impact discovered during removal of the USTs, product delivery piping and product dispensers in May 1999 (CSS Environmental Services, 2001). Five soil borings, SB-1 through SB-5, were advanced using direct-push methods, to a maximum depth of 31 feet bgs. Groundwater was encountered in borings at depths ranging from 29 to 30 feet bgs, and stabilized at depths ranging from 17 to 20 feet bgs. Ten soil samples were collected from borings for laboratory analysis of TPH-g, BTEX and MtBE. Analytical results revealed elevated concentrations between 19 and 25.5 feet bgs. Maximum concentrations of TPH-g and BTEX in samples were 470,000 µg/kg, 2,600 µg/kg, 16,000 µg/kg, 12,000 µg/kg, and 73,000 µg/kg, respectively. MtBE was not detected in any soil samples. Grab groundwater samples were collected from each boring for laboratory analysis of TPH-g, BTEX and MtBE. Maximum concentrations of TPH-g and benzene in boring samples were 83,000 µg/L and 19,000 µg/L, respectively. MtBE was detected in four of five grab groundwater samples, at a maximum concentration of 87,000 µg/L.

In April 2002, groundwater monitoring wells MW-1 through MW-5 were installed on the site to a total depth of 30 feet bgs, and competed with well screens installed between 15 and 30 feet bgs. The wells were installed to evaluate the groundwater flow gradient and the extent of dissolved-phase fuel hydrocarbons in groundwater (SOMA, 2002). Groundwater was first encountered at depths ranging from approximately 25 to 29 feet bgs, and stabilized at depths ranging from 21 to 23 feet bgs. Five soil samples were collected from borings for laboratory analyses of TPH-g, BTEX and MtBE. Results revealed elevated concentrations of TPH-g and BTEX between 21 and 26 feet bgs, coincident with the depth at which groundwater was first encountered in the boreholes. No MtBE was detected in soil samples. Groundwater samples were initially collected from each monitoring well during Second Quarter 2002 (May 2002) for laboratory analyses of TPH-g, BTEX and MtBE (SOMA, 2002a). Maximum concentrations of TPH-g, benzene and MtBE in groundwater samples were 44,000 µg/L, 6,000 µg/L and 12,000 µg/L, respectively. Groundwater was determined to flow south across the site. Elevated levels of dissolved-phase hydrocarbons in the farthest downgradient monitoring well indicated off-site migration.

Between August and October 2003, a soil and groundwater investigation was conducted to evaluate off-site extent of dissolved-phase hydrocarbon migration with groundwater (SOMA, 2003). The investigation included a sensitive receptor survey to locate water supply wells and/or water bodies within a 2,000-foot radius of the site, and a conduit study to identify underground utilities adjacent to the site beneath Freedom Avenue, Fairmont Drive and 153rd Avenue. Soil borings TWB-1 through TWB-6 were advanced to depths ranging from 30 to 44 feet bgs, at locations ranging from 125 to 750 feet hydraulically downgradient from the site. Fourteen soil samples were collected at depths ranging from 16 to 39 feet bgs for laboratory analysis of TPH-g, BTEX, MtBE and 1,2-dichloroethene (1,2-DCE). Results revealed soil impact off-site to a maximum distance of 265 feet hydraulically downgradient of the site, at depths ranging from 18 to 31.5 feet bgs. Elevated concentrations were detected at depths ranging from 21.5 to 24.5 feet bgs, approximately 125 feet hydraulically downgradient from the site. Concentrations of benzene, MtBE and 1,2 DCE were not detected in soil samples. Grab groundwater samples were collected from each boring for laboratory analysis of TPH-g, BTEX, MtBE and 1,2-dichloroethane (1,2-DCA). Maximum concentrations of TPH-g and benzene were 410,000 µg/L and 2,200 µg/L, respectively, detected in a boring 125 feet hydraulically downgradient of the site. Maximum concentration of MtBE was 34 µg/L, detected in a boring 265 feet hydraulically downgradient of the site. The investigation resulted in preliminary identification of two water-bearing zones beneath the site and proximity. The sensitive receptor survey identified 10 wells within 2,000 feet of the site. Three are located hydraulically downgradient of the site: one irrigation well and two wells of unknown use. The remaining wells are either hydraulically upgradient or crossgradient of the site. No water body was identified within a 0.5-mile distance

from the site. The conduit study revealed two sewer lines beneath Fairmont Drive and 153rd Avenue; it was determined that neither was submerged by groundwater.

In September 2004, an additional soil and groundwater investigation was conducted to further evaluate the extent of dissolved-phase hydrocarbon migration with groundwater off-site (SOMA 2004). Groundwater monitoring wells MW-6 thru MW-9 were installed downgradient from the site to total depths ranging from 21 to 33 feet bgs, and completed with well screens ranging from 4 to 15 feet long installed at the base of each well. Groundwater was first encountered at depths ranging from approximately 15 to 20 feet bgs, and stabilized at depths ranging from 12 to 17 feet bgs. Four soil samples were collected from one monitoring well borehole. Soil samples were not collected from other boreholes because of extensive and unexpected lateral lithologic changes encountered between the well boreholes during drilling, necessitating continuous coring that precluded soil sample collection. Collected samples were analyzed for TPH-g and BTEX; neither was detected.

During this investigation, an attempt was made to collect a groundwater sample from an irrigation well hydraulically downgradient from the site, identified by the sensitive receptor survey conducted between August and October 2003. The irrigation well had been unused for some time and, subsequently, no groundwater sample could be collected.

An attempt was made to locate another well of unknown use hydraulically downgradient from the site, also identified by the sensitive receptor survey. This well could not be located despite canvassing of the surrounding residential neighborhood with written requests for information. Based on results of this investigation and the previous investigation conducted between August and October 2003, one water-bearing zone was identified to consist of discontinuous water-bearing layers and stringers separated by discontinuous clay lenses of varying thickness. Additionally, a preferential flow pathway study was proposed consisting of a possible buried stream channel trending north to south beneath the eastern portion of the site, and extending off-site to the south, beneath the intersection of 153rd Avenue, Fairmont Drive and Liberty Avenue, which is hydraulically downgradient from the site.

On November 21, 2005, ACHCS requested that the property owner submit a workplan for a soil and water investigation by January 21, 2006. It was submitted on December 28, 2005 (SOMA, 2005) and proposed installation of eight cone penetrometer test (CPT), membrane interface probe (MIP) borings to refine hydrogeologic conditions using CPT technology on- and off-site. The purpose of this investigation was to define the horizontal and vertical extent of the soil and groundwater impact on- and off-site using MIP technology, and to collect soil and groundwater samples for laboratory analyses to support MIP findings.

Based on a telephone conversation between SOMA and ACHCS, an addendum to SOMA's December 2005 workplan was prepared and submitted on March 3, 2006. The workplan provided further clarification for advancing the CPT/MIP as requested by ACHCS.

On April 10, 2006, SOMA oversaw drilling of CPT/MIP boreholes. Fisch Environmental, SOMA's subcontractor, used a Geoprobe 6600. Because of unforeseen subsurface drilling conditions, and the fact that Fisch's drilling rig was not strong enough to drill through the hard subsurface materials, drilling could not advance beyond 35 feet bgs in any of the CPT/MIP locations despite three days effort. An ACHCS representative was present during this operation. On April 26, using a hollow stem auger, a CPT calibration borehole was drilled to 47 feet bgs. Because CPT/MIP boreholes could not be advanced to targeted depths, Gregg Drilling was selected to drill CPT/MIP boreholes at a later date, and Fisch's compensation was to be appropriately reduced.

In a letter dated May 29, 2006, ACHCS reduced the quantity of on-site CPT/MIP borings from six to five, altered some boring locations, adjusted depths at which to collect groundwater samples, and requested development of a site conceptual model (SCM) and corrective action plan (CAP) along with an interim remediation and migration control evaluation. ACHCS established a November 30, 2006 deadline for report submittal.

On September 7, 2006, SOMA resumed the field investigation. To characterize site lithology and hydrogeology, and evaluate lateral and vertical distribution of soil and groundwater impact on- and off-site, SOMA supervised advancement of eight CPT/MIP borings by Gregg, using a 25-ton CPT rig. The MIP portion of the study was performed by Fisch utilizing an MIP probe attached to Gregg's CPT probe. After completion of the CPT/MIP program, eight borings were advanced using direct-push drilling methods, in the immediate proximity of the CPT/MIP borings. These borings were advanced to collect soil and groundwater samples for laboratory analyses to support MIP findings.

Investigation results were presented by SOMA in "Additional Soil and Groundwater Investigation Report and Initial Conceptual Site Model, Texaco Gasoline Service Station, 15101 Freedom Avenue, San Leandro, California," dated November 27, 2006. The report also included an interim remediation and migration control evaluation.

In summary, the report described two main water-bearing zones designated as the First and Second water-bearing zones (WBZs). Both WBZs appear to be laterally continuous across the site and hydraulically downgradient of the site, and are separated by a laterally continuous aquitard. Moderately weathered fuel hydrocarbons are adsorbed to soil or dissolved in groundwater within the First

and Second WBZs. The source area in the First WBZ appears to be in proximity to the location of the former USTs and the existing fuel dispensers in both the north and southeast portions of the site. A source area for the Second WBZ is indeterminate because limited data for the Second WBZ was generated by the investigation. The site is located in an area of primarily residential properties with a commercial property to the east. Population/receptors exposed to fuel hydrocarbons in soil and groundwater of the First WBZ on- and off-site include current and future on-site workers and current off-site commercial workers and residents. Sources are fuel hydrocarbons adsorbed to soil, and dissolved-phase hydrocarbons in groundwater, of the First WBZ. Exposure pathways for on-site receptors are inhalation of volatile emissions from impacted soil and groundwater of the First WBZ. The only exposure pathway for off-site residents appears to be incidental ingestion of groundwater from the First and Second WBZs. The soil interim remediation alternatives evaluated included soil excavation, soil vapor extraction (SVE), and multi-phase extraction (MPE). Groundwater interim remediation alternatives included groundwater extraction, ozone sparging and hydrogen peroxide injection.

ACHCS correspondence dated March 14, 2007 directed that a workplan be prepared to address ACHCS comments contained therein and SOMA's recommendations in the November 27, 2006 report.

A workplan detailing proposed monitoring well installation, soil gas survey and remediation feasibility study was submitted to ACHCS on April 11, 2007 and approved in ACHCS correspondence dated October 18, 2007.

SOMA submitted "Additional Soil and Groundwater Investigation for Remedial Investigation and Feasibility Study" on March 14, 2008. ACHCS comments included in correspondence dated April 25, 2008 were addressed by SOMA's correspondence dated June 9, 2008.

In December 2007 SOMA installed three groundwater monitoring wells within the Second WBZ (MW-1D, MW-2D, and MW-3D) to approximately 60 feet bgs. A soil vapor study was conducted utilizing four soil gas sampling probes (SGS-1 through SGS-4, advanced to 5 feet bgs). Based on results of the soil gas sampling, concentrations of COCs in soil gas at the site are not considered a significant risk to human health.

In March 2009, ACHCS approved SOMA's CAP and initiated a public comment period for affected stakeholders to comment on SOMA's remedial action plan. On April 27, 2009, SOMA installed extraction wells MPE-1 and MPE-2 onsite. In their May 2009 correspondence, ACHCS approved SOMA's recommendation to decommission MW-8 and MW-9, off site wells that have consistently demonstrated COCs below ESLs and laboratory detection limits. November

2009, SOMA installed EX-1 and EX-2 off-site, within the downgradient plume and installed a groundwater extraction and treatment system at the site.

Quarterly and/or Semi-Annual groundwater monitoring/sampling has been regularly conducted at the site since Second Quarter 2002. Currently there are 14 groundwater monitoring wells, ten on-site and four off-site.

SOMA conducted MPE pilot testing between November 13 and 16, 2007. An estimated VOC mass of 106 lbs was removed during testing, at a mass removal rate of 35 lbs/day over 72 hours. Several week-long and extended MPE events have been conducted at the site with a total of 2,737 lbs of VOCs being removed as of November 2013.

The groundwater extraction system was initiated on December 9, 2009.

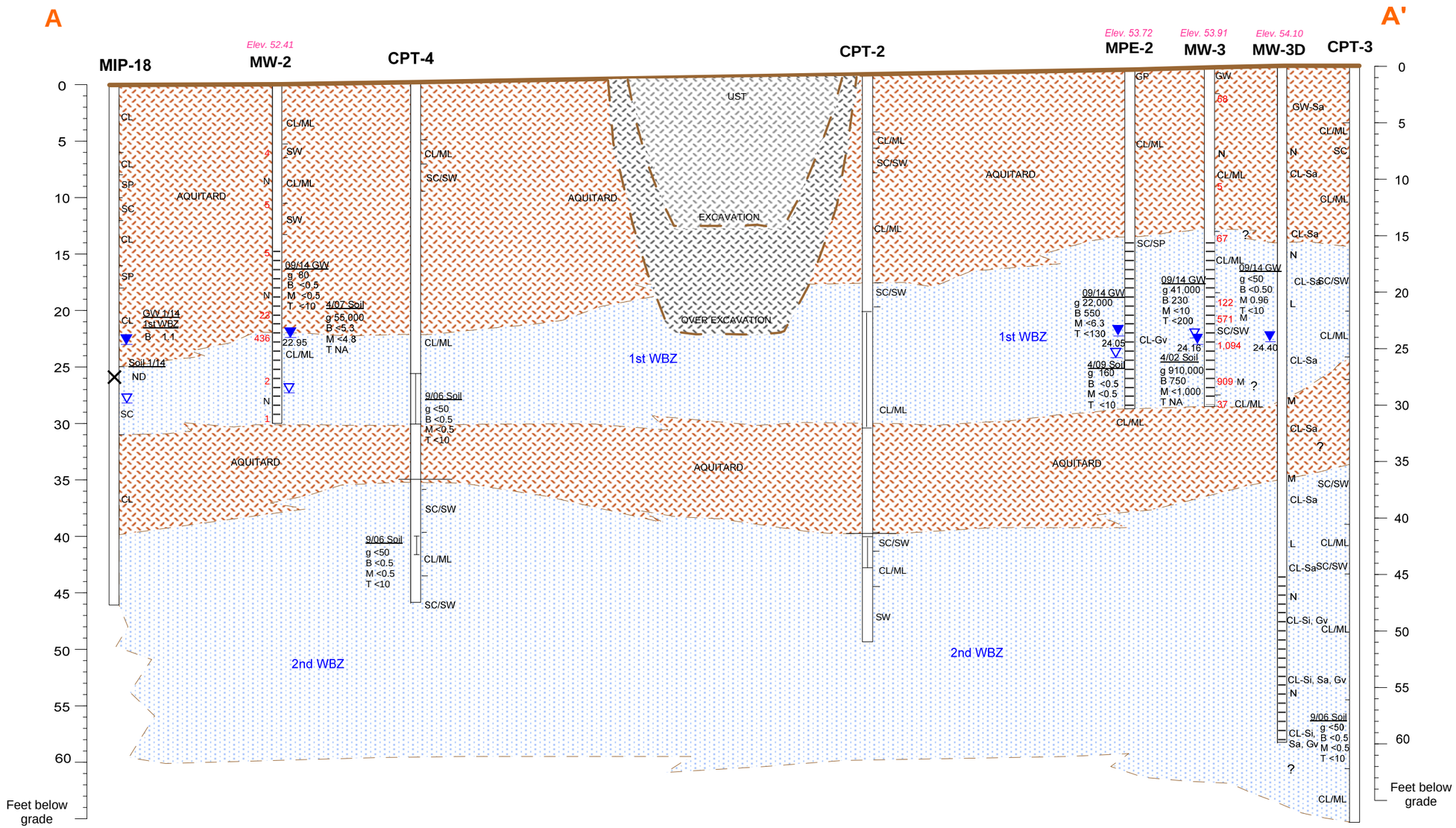
In July 20 and 21, 2011, SOMA advanced five soil borings in the vicinity of MW-6 and EX-2 within the First WBZ. TPH-g was detected above environmental screening levels (ESL) published by SB Bay Region RWQCB in DP-4 (located in the sidewalk area) at 24 feet bgs (140 mg/kg). TPH-g in all other soil samples was either below the laboratory-reporting limit or below ESL (100 mg/kg). Toluene was the only other contaminant of concern (COC), and was detected above ESL (2.9 mg/kg) in DP-1 at 20 feet bgs (2.94 mg/kg), and in DP-4 at 24 feet bgs (6.79 mg/kg). TPH-g in grab groundwater samples from advanced soil borings ranged from 1,500 µg/L (DP-3) to 84,000 µg/L (DP-1). Maximum benzene concentration was detected in DP-5 at 290 µg/L; Maximum MtBE and TBA were detected in DP-3 at 150 µg/L and 40 µg/L, respectively, and were below laboratory-detection limits in the other borings.

Based on ACEH directive dated April 22, 2013, SOMA submitted a data gaps workplan along with an updated site conceptual model on July 22, 2013 and an addendum was submitted on October 17, 2013. ACEH approved the workplan on October 30, 2013.

In October 2013, SOMA obtained a sample of free-product from MW-6 and had the laboratory run fingerprinting analysis on it. The laboratory reported that chromatographic pattern for the sample included a wide range of peaks in C6 through C12 range. However, this pattern did not resemble that of TPH-g or any other light-end distillates for which the laboratory has standards.

During January and February 2014, SOMA advanced eleven cone penetrometer test (CPT) and/or membrane interface technology (MIP) borings (MIP-9 through MIP-19) to the south of DP-4 and DP-5 and upgradient of the source on 151st Avenue. DP-6 was installed in the backyard of adjacent residential property and DP-6-SO was installed on-site. An air sample was obtained from the crawl space of the same adjacent property. Based on the results of this investigation, ACEH

requested installation of three off-site groundwater monitoring wells, and an additional crawl space air sample.



10
0 15
approximate scale in feet

EXPLANATION

- Static groundwater in borings & wells
- Groundwater encountered during well borehole drilling
- Monitoring well screen interval
- ? Inferred contact

Note: Analytical Soil and Groundwater Data for CPT borings taken from soil borings (GS)

Membrane Interface Probe (MIP)
PID + FID response interval

122 - PID readings ppm VOCs

N, L, M, S: No, Light, Medium, Strong PHC Odor

GW - GroundWater (ug/L)
Soil (ug/kg)

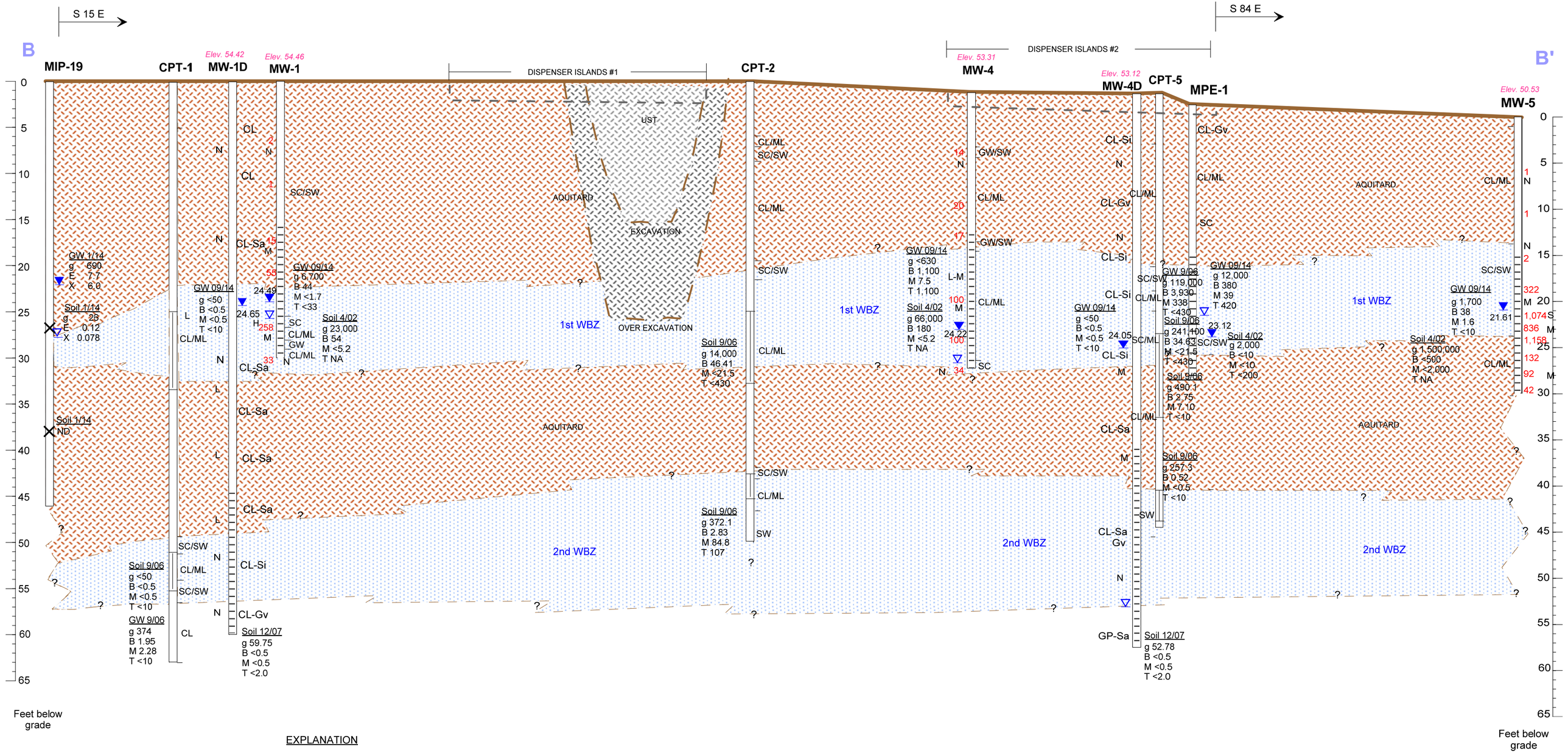
ug/L g - TPH-g
ug/L B - Benzene
ug/L M - MtBE
ug/L T - TBA

Unified Soil Classification System

CL	Clay	CL-Sa	Sandy Clayey
SP	Sand, Poorly Graded	CL-Si	Silty Clay
SW	Sand, Well Graded	CL-Gv	Gravelly Clay
GW	Gravel, Well Graded	GP-Sa	Sandy Gravel
ML	Silt		
SM	Silty Sand		

Geologic Cross-Section AA'

ENVIRONMENTAL ENGINEERING, INC.



EXPLANATION

- Static groundwater in borings & wells
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Note: Analytical Soil and Groundwater Data for CPT borings taken from soil borings (GS)

10 / 0 / 15 — approximate scale in feet

Membrane Interface Probe (MIP) PID + FID response interval

122 - PID readings ppm VOCs

N, L, M, S: No, Light, Medium, Strong PHC Odor

Fill material Excavation Area

GW - GroundWater (ug/L)
Soil (ug/kg)

ug/L	g - TPH-g
ug/L	B - Benzene
ug/L	M - MtBE
ug/L	T - TBA

Unified Soil Classification System

CL	Clay	CL-Sa	Sandy Clayey
SP	Sand, Poorly Graded	CL-Si	Silty Clay
SW	Sand, Well Graded	CL-Gv	Gravelly Clay
GW	Gravel, Well Graded	GP-Sa	Sandy Gravel
ML	Silt		
SM	Silty Sand		

Geologic Cross-Section BB'

ENVIRONMENTAL ENGINEERING, INC.

C

S 15 W

C'

Elev. 50.53'
MW-5

CPT-8
EX-1
CPT-6
CPT-7
DP-1
DP-3
EX-2
MW-6
TWB-1
DP-2
DP-4
DP-5
CPT/MIP-11
CPT/MIP-15
MW-8
(Decommissioned)
CPT/MIP-17
TWB-6
TWB-4

Approx. Elev. 45.82'
Approx. Elev. 39'
Approx. Elev. 36'

appx 5.9 ft. bgs
appx 9.1 ft. bgs

6 VCP; Sewer Line along 152nd Ave
6 VCP; Sewer Line along 153rd Ave

1st WBZ
2nd WBZ
AQUITARD

GW 1/14
2nd WBZ
g 63
E 1.6
X 2.55

GW 1/14
1st WBZ
M 58

Soil 1/14
g 29
E 0.46
X 0.46

GW 7/11
g 20,000
B 1.1

Soil 1/14
E 0.086
X 0.068

GW 1/14
1st WBZ
M 5.8

GW 1/14
2nd WBZ
B 0.57
M 1.4

GW 1/14
1st WBZ
M 10

GW 1/14
2nd WBZ
B 1.2

GW 09/14
g 1,700
B 38
M 1.6

GW 09/06
g 1,730
B 7.54
M 2,865
T 221

Soil 9/06
g 216,400
B 51.14

GW 09/14
g 1,500
B 63
M 7.1
T <10

GW 09/14
g 1,500
B 23
M 51
T 96

GW 09/06
M 40.9

Soil 4/02
g 1,500,000

Soil 11/09
ND

Soil 11/09
g 33

Soil 11/09
B 33

Soil 11/09
g 41

Soil 9/06
g 321.2
M 43.6

Soil 9/06
M 6.92

Soil 9/06
g 259,700

Soil 7/11
g 22

Soil 7/11
g 5.7

Soil 9/06
M 3.16

GW 9/06
g 16,800
B 12.6
M 3.94

Soil 7/11
ND

GW 7/11
g 1,500
M 150
T 40

Soil 9/06
g 69.36

GW 7/11
g 84,000

Soil 7/11
g 1.3

Soil 9/06
ND

Soil 7/11
ND

Soil 7/11
g 4.4

GW 7/11
g 46,000

Soil 7/11
ND

Soil 10/03
g 4,000,000

Soil 7/11
g 5.2

Soil 7/11
g 140

Soil 7/11
g 40

Soil 7/11
ND

Soil 7/11
g 67

Soil 10/03
g 3,300,000

Soil 7/11
ND

Soil 10/03
g 1,800

GW 7/11
g 80,000
B 290

Soil 9/04
ND

Soil 9/04
ND

Soil 10/03
ND

Soil 9/04
ND

GW 09/14
g 31,000
B 140
T 180
M 4.3

Soil 1/14
ND

Soil 1/14
ND

Soil 9/03
ND

Soil 9/03
ND

Soil 9/03
ND

Soil 9/03
ND

GW
ML/SM w/ CL
CL/ML
CL/SC
SM/ML
SM
SP

Feet below grade

10
0
50
approximate scale in feet

EXPLANATION

- Static groundwater in borings & wells
- Groundwater encountered during well borehole drilling
- Monitoring well screen interval
- ? Inferred contact

Note: Analytical Soil and groundwater Data for CPT borings taken from Soil borings (GS)

- Membrane Interface Probe (MIP) PID + FID Response Interval
- 5 - PID readings ppm VOCs

N, L, M, S: No, Light, Medium, Strong PHC odor

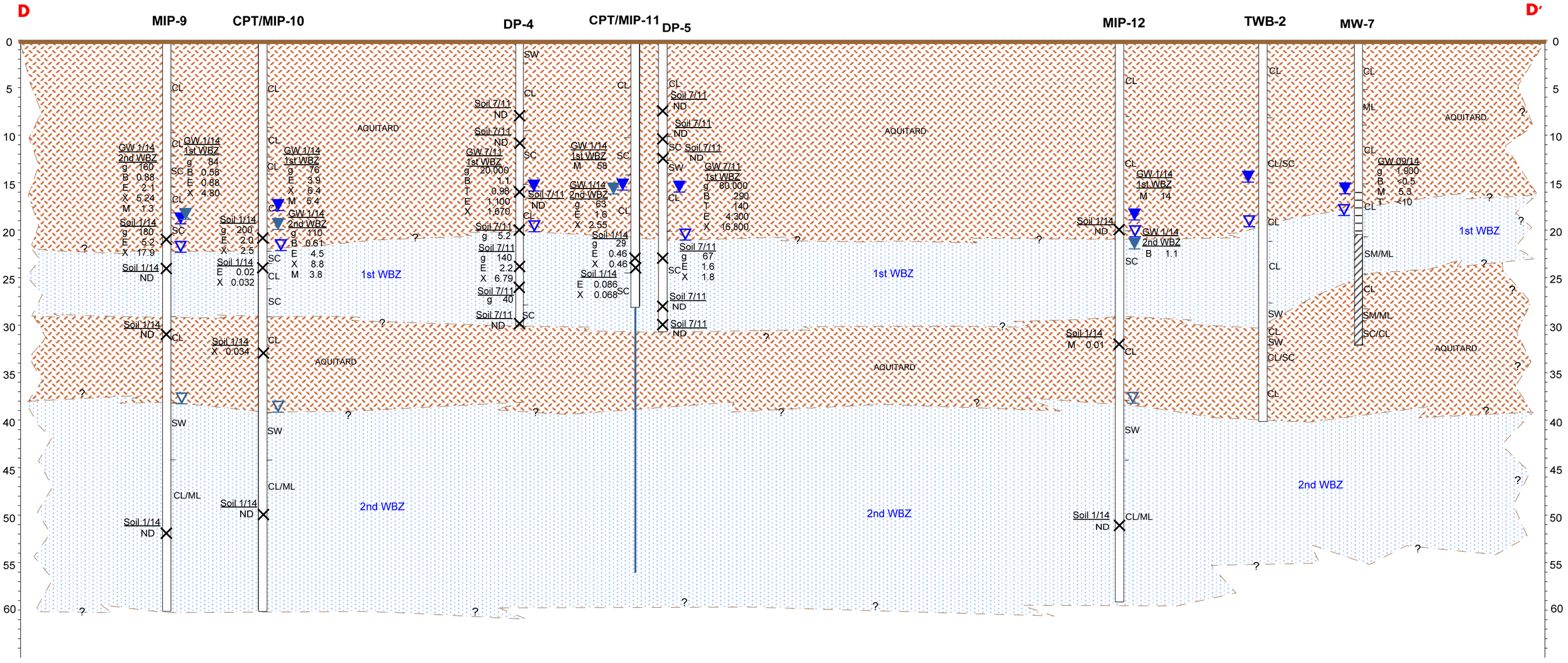
ug/L	g - TPH-g
ug/L	B - Benzene
ug/L	M - MtBE
ug/L	T - TBA

Unified Soil Classification System

CL	Clay
SP	Sand, Poorly Graded
SW	Sand, Well Graded
GW	Gravel, Well Graded
ML	Silt
SM	Silty Sand
ND	Non Detect

Geologic Cross-Section CC'

SOMA ENVIRONMENTAL ENGINEERING, INC.



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- Monitoring well screen interval
- ? Inferred contact

Note: Analytical Soil and Groundwater Data for CPT borings taken from soil borings (GS)

10 0 20
approximate scale in feet

Membrane Interface Probe (MIP)
PID + FID response interval

122 - PID readings ppm VOCs

N, L, M, S: No, Light, Medium, Strong PHC Odor

GW - GroundWater (ug/L)
Soil (ug/kg)

ug/L	g - TPH-g
ug/L	B - Benzene
ug/L	M - MtBE
ug/L	T - TBA

Unified Soil Classification System

CL	Clay	CL-Sa	Sandy Clayey
SP	Sand, Poorly Graded	CL-Si	Silty Clay
SW	Sand, Well Graded	CL-Gv	Gravelly Clay
GW	Gravel, Well Graded	GP-Sa	Sandy Gravel
ML	Silt		
SM	Silty Sand		

Geologic Cross-Section DD'

SOMA ENVIRONMENTAL ENGINEERING, INC.

APPENDIX B
Permits and Notifications

Alameda County Public Works Agency - Water Resources Well Permit

Public Works Agency
Alameda County

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

Application Approved on: 08/01/2014 By jamesy

Permit Numbers: W2014-0708 to W2014-0710
Permits Valid from 09/08/2014 to 09/09/2014

Application Id: 1406566326824
City of Project Site: San Leandro
Site Location: 15101 Freedom Avenue
Project Start Date: 09/08/2014
Completion Date: 09/09/2014
Assigned Inspector: Contact Steve Miller at (510) 670-5517 or stevem@acpwa.org

Applicant: SOMA Environmental Engineering, Inc. - Ruchi Mathur
6620 Owens Dr., Suite A, Pleasanton, CA 94588
Phone: 925-734-6400

Property Owner: Mohammad Mashhoon
428 13th St, 10th Floor, Oakland, CA 94612
Phone: --

Client: Farrokh Hosseinyoun
95 Belvedere St., Suite 1, San Rafael, CA 94901
Phone: --

Total Due: $1191.00
Receipt Number: WR2014-0307 **Total Amount Paid:** $1191.00
Payer Name : SOMA Environmental Engineering, Inc. Paid By: CHECK
PAID IN FULL

Works Requesting Permits:

Well Construction-Monitoring-Monitoring - 3 Wells
Driller: Fisch Drilling - Lic #: 683865 - Method: hstem

Work Total: $1191.00

Specifications

Permit #	Issued Date	Expire Date	Owner Well Id	Hole Diam.	Casing Diam.	Seal Depth	Max. Depth
W2014-0708	08/01/2014	12/07/2014	MW-10	8.00 in.	2.00 in.	15.00 ft	30.00 ft
W2014-0709	08/01/2014	12/07/2014	MW-11	8.00 in.	2.00 in.	15.00 ft	30.00 ft
W2014-0710	08/01/2014	12/07/2014	MW-12	8.00 in.	2.00 in.	15.00 ft	30.00 ft

Specific Work Permit Conditions

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

2. Permittee, permittee's contractors, consultants or agents shall be responsible to assure that all material or waters generated during drilling, boring destruction, and/or other activities associated with this Permit will be safely handled, properly managed, and disposed of according to all applicable federal, state, and local statutes regulating such. In no case shall these materials and/or waters be allowed to enter, or potentially enter, on or off-site storm sewers, dry wells, or waterways or be allowed to move off the property where work is being completed.

3. Prior to any drilling activities, it shall be the applicant's responsibility to contact and coordinate an Underground Service Alert (USA), obtain encroachment permit(s), excavation permit(s) or any other permits or agreements required for that Federal, State, County or City, and follow all City or County Ordinances. No work shall begin until all the permits and requirements have been approved or obtained. It shall also be the applicants responsibilities to provide to the Cities or to Alameda County an Traffic Safety Plan for any lane closures or detours planned. No work shall begin until all the

permits and requirements have been approved or obtained.

4. Compliance with the well-sealing specifications shall not exempt the well-sealing contractor from complying with appropriate State reporting-requirements related to well construction or destruction (Sections 13750 through 13755 (Division 7, Chapter 10, Article 3) of the California Water Code). Contractor must complete State DWR Form 188 and mail original to the Alameda County Public Works Agency, Water Resources Section, within 60 days. Include permit number and site map.

5. Remove the Christy box or similar structure. Drill out & Replace with New Well.

6. Applicant shall submit the copies of the approved encroachment permit to this office within 60 days.

7. Applicant shall contact assigned inspector listed on the top of the permit at least five (5) working days prior to starting, once the permit has been approved. Confirm the scheduled date(s) at least 24 hours prior to drilling.

8. Wells shall have a Christy box or similar structure with a locking cap or cover. Well(s) shall be kept locked at all times. Well(s) that become damaged by traffic or construction shall be repaired in a timely manner or destroyed immediately (through permit process). No well(s) shall be left in a manner to act as a conduit at any time.

9. Minimum surface seal thickness is two inches of cement grout placed by tremie.

10. Minimum seal (Neat Cement seal) depth for monitoring wells is 5 feet below ground surface(BGS) or the maximum depth practicable or 20 feet.

11. 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.

Public Works Agency
Alameda County

Roadway Encroachment Permit

Work Order # **8001**

Permit # **R14LD13523**

Permit Issuance Date **8/28/2014**

Permit Expiration Date **8/28/2015**

Name & Address of Property Owner:
Mohammad Pazdel

Phone Number:

Job Site Address:
15101 Freedom Ave
San Leandro, CA 94578

Name & Address of Applicant:
Soma Environmental Engineering, Inc.
6620 Owens Drive, A
Pleasanton, CA 94588

Phone Number: 925-734-6400 Fax: 925-734-6401

Applicant Reference: W2014-0708/10

The permittee intends to perform the following work scope:

Install three groundwater monitoring wells along the center divider and along parking lane near the intersection of northbound Fairmont Dr. and Liberty St.
Work is scheduled for September 8,9 and 12
MW-10, MW-11, MW12
Per attached map

All work and/or access shall be performed in accordance with the attached General Provisions and the following Special Provisions:

T-Cut 1' all around

Bond Type:	Bond Value:	Deposit:	Permit Fee:
	$0.00	$0.00	$774.00

By: _____ Alameda County

Work Completed (Date): _____

Inspector:

I agree to comply with all of the terms and conditions of this Permit, including any Special Provisions specified above.

_____ 8/29/2014
Permittee (Signature) Date

Call 510-670-6633, at least 24hr. in advance of starting work, to schedule an inspection.
If the work is within 500' of a traffic signal or in proximity to a streetlight pole, call (510) 670 - 5537 at least 48 hr. in advance to verify the location of County conduits and detector loops.

THIS PERMIT IS INCOMPLETE WITHOUT THE ATTACHED GENERAL PROVISIONS

INSPECTION REQUIREMENTS

- **All encroachments authorized by this Permit shall be subject to monitoring, inspection, and/or testing by a County representative; notify the County before you start work by calling the number on the front of this form.**

- If the face of this Permit is marked to indicate that the assigned County work order is open for charges, a job account will be opened and the assigned inspectors and other representatives will charge the actual cost of all required tests and inspections against this account. All cost overruns must be resolved prior to closeout of this Permit. Any underruns will be returned to the Permittee as soon as possible following the closeout.

CAUTION!

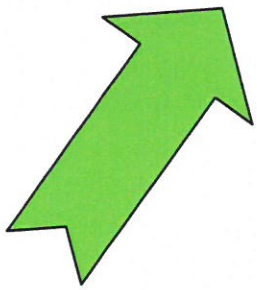
Most traffic signals and some streetlights are connected to their power sources with underground wiring. Many signals are also wired to traffic detector loops buried in the roadway. None of these County-owned wiring runs are included in the Underground Service Alert (USA) review and marking processes.

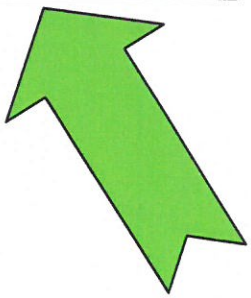
If you intend to excavate within 500' of a traffic signal, or in proximity to County-owned streetlights, you must contact the County traffic signal maintenance office at

→(510) 670 - 5537←

at least 48 hours in advance of the start of your planned work.

If you cause a signal outage, a streetlight failure, or other damage to County signal or streetlight facilities because you failed to contact the signal office to get the facilities marked, you will be billed for the full cost of our emergency response and repairs.





Elizabeth Hightower

From: support@usan.org
Sent: Tuesday, September 02, 2014 1:42 PM
To: ehightower@somaenv.com
Subject: USAN 2014/09/02 #00000 0356252-000 NORM NEW

00000 USAN 09/02/14 13:41:44 0356252 NORMAL NOTICE

Message Number: 0356252 Received by USAN at 13:36 on 09/02/14 by MJG

Work Begins: 09/08/14 at 08:30 Notice: 034 hrs Priority: 2
Night Work: N Weekend Work: N

Expires: 09/30/14 at 23:59 Update By: 09/26/14 at 16:59

Caller: LIZZIE HIGHTOWER
Company: SOMA ENVIRONMENTAL
Address: 6620 OWENS DR STE "A"
City: PLEASANTON State: CA Zip: 94588
Business Tel: 925-734-6400 Fax: 925-734-6401
Email Address: EHIGHTOWER@SOMAENV.COM

Nature of Work: VERTICAL BORING TO INST MNTR WELL
Done for: P/O MASHHOON Explosives: N
Foreman: CALLER
Field Tel: Cell Tel: 925-330-5235
Area Premarked: Y Premark Method: WHITE PAINT
Permit Type: COUNTY Number: W2014-0708
Vac / Pwr Equip Use In The Approx Location Of Member Facilities Requested: N Excavation Enters Into Street Or Sidewalk Area: Y

Location:

AT A POINT 50FT S/O INT FAIRMONT DR AND LIBERTY ST ON E/SI/O FAIRMONT DR
2) 100' S/O LOC 1 (WRK IN THE PARKING LN)

Place: SAN LEANDRO, CO AREA County: ALAMEDA State: CA

Long/Lat Long: -122.123858 Lat: 37.705322 Long: -122.122289 Lat: 37.707892

Sent to:
CTYSLE = CITY SAN LEANDRO COMHAY = COMCAST-HAYWARD
COMLIV = COMCAST-LIVERMORE COALAM = COUNTY ALAMEDA
EBWCMS = EAST BAY WATER OLOSAN = ORO LOMA SANITARY DIST
PACBEL = PACIFIC BELL PGEHAY = PGE DISTR HAYWARD
REDFLX = REDFLEX TRAFFIC SYSTEMS

Member Contact Information

Member Utility	Main Contact #	Vacuum Contact #	Emergency #	After hours #
CITY SAN LEAND	(510)577-3497	(510)577-3428	(510)638-2123	
COMCAST-HAYWAR	(510)887-1300			
COMCAST-LIVERM	(510)887-1300			
COUNTY ALAMEDA	(510)670-5500			
EAST BAY WATER	(510)287-0600	(510)287-0600		
ORO LOMA SANIT	(510)928-2003	(510)276-4700	(510)276-4700	(510)276-4700
PACIFIC BELL	(510)645-2929	(510)645-2929	(510)645-2929	(800)332-1321x8
PGE DISTR HAYW	(800)743-5000x00	(800)743-5000	(800)743-5000	(800)743-5000
REDFLEX TRAFFI	(312)327-1921	(253)212-5167		

Elizabeth Hightower

From: support@usan.org
Sent: Tuesday, September 02, 2014 1:44 PM
To: ehightower@somaenv.com
Subject: USAN 2014/09/02 #00000 0356261-000 NORM NEW

00000 USAN 09/02/14 13:43:53 0356261 NORMAL NOTICE

Message Number: 0356261 Received by USAN at 13:41 on 09/02/14 by MJG

Work Begins: 09/08/14 at 08:30 Notice: 034 hrs Priority: 2
Night Work: N Weekend Work: N

Expires: 09/30/14 at 23:59 Update By: 09/26/14 at 16:59

Caller: LIZZIE HIGHTOWER
Company: SOMA ENVIRONMENTAL
Address: 6620 OWENS DR STE "A"
City: PLEASANTON State: CA Zip: 94588
Business Tel: 925-734-6400 Fax: 925-734-6401
Email Address: EHIGHTOWER@SOMAENV.COM

Nature of Work: VERTICAL BORING TO INST MNTR WELL
Done for: P/O MASHHOON Explosives: N
Foreman: CALLER
Field Tel: Cell Tel: 925-330-5235
Area Premarked: Y Premark Method: WHITE PAINT
Permit Type: COUNTY Number: W2014-0708
Vac / Pwr Equip Use In The Approx Location Of Member Facilities Requested: N Excavation Enters Into Street Or Sidewalk Area: Y

Location:

AT A POINT 20FT S/O INT FAIRMONT DR AND LIBERTY ST ON CTR/O FAIRMONT DR

Place: SAN LEANDRO, CO AREA County: ALAMEDA State: CA

Long/Lat Long: -122.12373 Lat: 37.706592 Long: -122.122161 Lat: 37.707716

Sent to:
CTYSLE = CITY SAN LEANDRO COMHAY = COMCAST-HAYWARD
COMLIV = COMCAST-LIVERMORE COALAM = COUNTY ALAMEDA
EBWCMS = EAST BAY WATER OLOSAN = ORO LOMA SANITARY DIST
PACBEL = PACIFIC BELL PGEHAY = PGE DISTR HAYWARD

Member Contact Information

Member Utility	Main Contact #	Vacuum Contact #	Emergency #	After hours #
CITY SAN LEAND	(510)577-3497		(510)577-3428	(510)638-2123

COMCAST-HAYWAR (510)887-1300
COMCAST-LIVERM (510)887-1300
COUNTY ALAMEDA (510)670-5500
EAST BAY WATER (510)287-0600 (510)287-0600
ORO LOMA SANIT (510)928-2003 (510)276-4700 (510)276-4700
(510)276-4700
PACIFIC BELL (510)645-2929 (510)645-2929 (510)645-2929 (800)332-1321x8
PGE DISTR HAYW (800)743-5000x00 (800)743-5000 (800)743-5000 (800)743-5000

APPENDIX C

Boring Logs and
General Field Procedures

SOMA ENVIRONMENTAL ENGINEERING, INC.

GEOLOGIC LOG OF BOREHOLE: MW-10

PROJECT: 2552

DATE DRILLED: 9/8/2014

SITE LOCATION: 15101 Freedom Ave., San Leandro

CASING ELEVATION:

DRILLER: Fisch Drilling

First Encountered GW: 19 feet
Stablized GW: 17.84 feet

DRILLING METHOD: Hollow Stem Auger

T.O.C. TO SCREEN: 19 feet

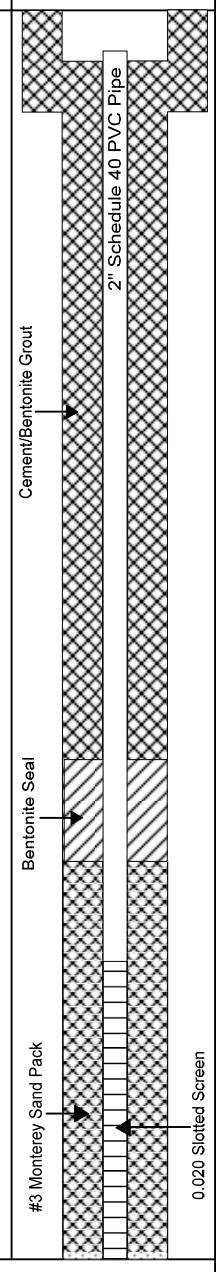
BORING DIAMETER: 8 inches

SCREEN LENGTH: 10 feet

LOGGED BY: E. Hightower

APPROVED BY: M. Sepehr

PID ppm	DEPTH	GRAPHIC LOG	SOIL CLASS	GEOLOGIC DESCRIPTION	SAMPLED (SPLIT SPOON / CORE)	GW LEVEL	BLOWCOUNTS	WELL DIAGRAM
0.4	0		CL	Hand Auger to 5 feet bgs SANDY LEAN CLAY: Brown, moist, ~30% fine-grained sand, ~70% clay with medium dry strength, slow dilatancy, medium toughness, medium plasticity, no HCl reaction, no PHC odor.				
0.2	5		CL	LEAN CLAY: Dark brown, moist, soft, high dry strength, medium toughness, no dilatancy, no HCl reaction; medium to high plasticity; no PHC odor.				
0.7	10		CL	SANDY LEAN CLAY: Brown, moist, ~30% fine-grained sand, ~70% clay with medium dry strength, slow dilatancy, medium toughness, medium plasticity, very hard, no HCl reaction, no PHC odor.				
0.1	15							
0.5	20		SC	CLAYEY SAND: Greenish-gray, very moist, ~70% fine- to medium-grained sand, ~30% clay with medium dry strength, slow dilatancy, medium toughness, medium plasticity, very hard, no HCl reaction, slight PHC odor, some gravel. As above, very moist to wet, PHC odor.		▼ ▽		
11.4								
258	25							



COMMENTS:

ENVIRONMENTAL ENGINEERING, INC.

GEOLOGIC LOG OF BOREHOLE: MW-10

PROJECT: 2552

DATE DRILLED: August 8, 2014

SITE LOCATION: 15101 Freedom Ave., San Leandro

CASING ELEVATION:

DRILLER: Fisch Drilling

First Encountered GW: 19 feet
Stablized GW: 17.84 feet

DRILLING METHOD: Hollow Stem Auger

T.O.C. TO SCREEN: 19 feet

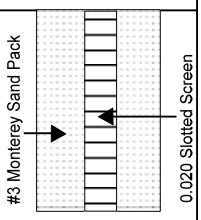
BORING DIAMETER: 8 inches

SCREEN LENGTH: 10 feet

LOGGED BY: E. Hightower

APPROVED BY: M. Sepehr

PID ppm	DEPTH	GRAPHIC LOG	SOIL CLASS	GEOLOGIC DESCRIPTION	SAMPLED: SPLIT SPOON	SAMPLED: CORE	GW LEVEL	BLOWCOUNTS	WELL DIAGRAM
92.6			SW	WELL-GRADED SAND: Greenish-gray, very moist to wet, fine- to medium grained sand, PHC odor.					
5.2			SC	CLAYEY SAND: Brown, very moist to wet, ~30% fine-grained sand, ~70% clay with medium dry strength, slow dilatancy, medium toughness, medium plasticity, firm, no HCl reaction, slight PHC odor, some gravel.					
	30								
	35								
	40								
	45								
	50								



COMMENTS:

ENVIRONMENTAL ENGINEERING, INC.

GEOLOGIC LOG OF BOREHOLE: MW-11

PROJECT: 2552

DATE DRILLED: 9/9/2014

SITE LOCATION: 15101 Freedom Ave., San Leandro

CASING ELEVATION:

DRILLER: Fisch Drilling

First Encountered GW: 18 feet
Stablized GW: 15.52 feet

DRILLING METHOD: Hollow Stem Auger

T.O.C. TO SCREEN: 18 feet

BORING DIAMETER: 8 inches

SCREEN LENGTH: 10 feet

LOGGED BY: E. Hightower

APPROVED BY: M. Sepehr

PID ppm	DEPTH	GRAPHIC LOG	SOIL CLASS	GEOLOGIC DESCRIPTION	SAMPLED (SPLIT SPOON / CORE)	GW LEVEL	BLOWCOUNTS	WELL DIAGRAM
0.2	0		CL	Hand Auger to 5 feet bgs SANDY LEAN CLAY: Brown, moist, ~30% fine-grained sand, ~70% clay with medium dry strength, slow dilatancy, medium toughness, medium plasticity, no HCl reaction, no PHC odor.				
0.3	5		CL	LEAN CLAY: Dark brown, moist, soft, high dry strength, medium toughness, no dilatancy, no HCl reaction; medium to high plasticity; no PHC odor.				
0.9	10		CL	SANDY LEAN CLAY: Brown, moist, ~30% fine-grained sand, ~70% clay with medium dry strength, slow dilatancy, medium toughness, medium plasticity, very hard, no HCl reaction, no PHC odor.				
0.3	15					▼		
0.2	18					▽		
5.6	20		SC	CLAYEY SAND: Greenish-gray, very moist to wet, ~70% fine- to medium-grained sand, ~30% clay with medium dry strength, slow dilatancy, medium toughness, medium plasticity, very hard, no HCl reaction, slight PHC odor, some gravel.				
30.1	25			As above, very moist to wet, slight PHC odor.				

WELL DIAGRAM: Cement/Bentonite Grout; 2" Schedule 40 PVC Pipe; Bentonite Seal; #3 Monterey Sand Pack; 0.020 Slotted Screen

COMMENTS:

ENVIRONMENTAL ENGINEERING, INC.

GEOLOGIC LOG OF BOREHOLE: MW-11

PROJECT: 2552

DATE DRILLED: August 9, 2014

SITE LOCATION: 15101 Freedom Ave., San Leandro

CASING ELEVATION:

DRILLER: Fisch Drilling

First Encountered GW: 18 feet
Stablized GW: 15.52 feet

DRILLING METHOD: Hollow Stem Auger

T.O.C. TO SCREEN:

BORING DIAMETER: 8 inches

SCREEN LENGTH:

LOGGED BY: E. Hightower

APPROVED BY: M. Sepehr

PID ppm	DEPTH	GRAPHIC LOG	SOIL CLASS	GEOLOGIC DESCRIPTION	SAMPLED: SPLIT SPOON	SAMPLED: CORE	GW LEVEL	BLOWCOUNTS	WELL DIAGRAM
10.3			SW	WELL-GRADED SAND: Greenish-gray, very moist to wet, fine- to medium grained sand, PHC odor.					#3 Monterey Sand Pack; 0.020 Slotted Screen
0.3			SC	CLAYEY SAND: Brown, very moist to wet, ~30% fine-grained sand, ~70% clay with medium dry strength, slow dilatancy, medium toughness, medium plasticity, firm, no HCl reaction, slight PHC odor, some gravel.					
	30								
	35								
	40								
	45								
	50								

COMMENTS:

Hollow Stem Auger Drilling/Monitoring Well Installation

Utility Locating

Prior to drilling, boring locations are marked with white paint or other discernible marking, and cleared for underground utilities through Underground Service Alert (USA). In addition, the first five feet of each borehole are air-knifed, or carefully advanced with a hand auger if shallow soil samples are necessary, to help evaluate the presence of underground structures or utilities.

Borehole Advancement

Pre-cleaned hollow stem augers (typically 8 to 10 inches in diameter) are advanced using a drill rig for the purpose of collecting samples and evaluating subsurface conditions. Upon completion of drilling and sampling, if no well is to be constructed, the augers are retracted, and the borehole is filled with neat cement grout, mixed at a ratio of 6 gallons of water per 94 pounds of Portland cement, through a tremmie pipe to displace standing water in the borehole. In areas where the borehole penetrates asphalt or concrete, the borehole is capped with an equivalent thickness of asphalt or concrete patch to match finish grade.

During the drilling process, a physical description of the encountered soil characteristics (i.e. moisture content, consistency or density, odor, color, and plasticity), drilling difficulty, and soil type as a function of depth are described on boring logs. The soil cuttings are classified in accordance with the uses.

Split-Spoon Sampling

The precleaned split spoon sampler lined with three 6-inch long brass or stainless steel tubes is driven 18 inches into the underlying soils at the desired sample depth interval. The sampler is driven by repeatedly dropping a 140-pound hammer a free fall distance of 30 inches. The number of blows (blow count) to advance the sampler for each six-inch drive length is recorded on the field logs. Once the sampler is driven the 18-inch drive length or the sampler has met refusal (typically 50 blows per six inches), the sampler is retrieved.

Of the three sample tubes, the bottom sample is generally selected for laboratory analysis. The sample is carefully packaged for chemical analysis by capping each end of the sample with a Teflon sheet followed by a tight-fitting plastic cap, and sealing the cap with nonvolatile organic compound (VOC), self-adhering silicon tape. A label is affixed to the sample indicating the sample identification number, borehole number, sampling depth, sample collection date and time, and job number. The sample is then annotated on a chain-of custody form and placed in an ice-filled cooler for transport to the laboratory.

The remaining soil samples are used for soil classification and field evaluation of headspace volatile organic vapors, where applicable, using a photo ionization or flame ionization detector calibrated to a calibration gas (typically isobutylene or hexane). VOC vapor concentrations are recorded on the boring logs.

Grab Groundwater Sample Collection

Grab groundwater samples are collected by lowering a pre-cleaned, single-sample polypropylene, disposable bailer down the borehole or temporary casing. The groundwater sample is discharged from the bailer to the sample container through a bottom emptying flow control valve to minimize volatilization.

Collected water samples are discharged directly into laboratory provided, pre-cleaned, vials or containers and sealed with Teflon-lined septum, screw-on lids. Labels documenting sample number, well identification, collection date and time, type of sample and type of preservative (if applicable, i.e. HCI for TPPH, BTEX, and fuel oxygenates) are affixed to each sample. The samples are then placed into an ice-filled cooler for delivery under chain-of-custody to a laboratory certified by the State of California to perform the specified tests.

Groundwater Monitoring Well Installation and Development

Groundwater monitoring wells are constructed by inserting or tremmieing well materials through the annulus of the hollow stem auger. The groundwater monitoring wells are constructed with a screen interval determined from the encountered soil stratigraphy, to maintain a proper seal at the surface (minimum three feet), to allow flow from permeable zones into the well, and to avoid penetrating aquicludes. Groundwater wells are installed in accordance with the conditions of the well construction permit issued by the regulatory agency exercising jurisdiction over the project site.

The well screen generally consists of schedule 40 polyvinyl chloride (PVC) casing with 0.01 to 0.02-inch factory slots. As a general rule, 0.01-inch slots are used in fine-grained silts and clays, and 0.02-inch slots are used in coarse-grained materials. The screen is then filter packed with #2/12 or #3 sand, or equivalent, for the 0.01 and 0.02 inch slots, respectively.

Once the borehole has been drilled to the desired depth, the well screen and blank well casing are inserted through the annulus of the hollow stem augers. The well screen is sand packed by tremmieing the appropriate filter sand through the annulus between the casing and augers while slowly retracting the augers. During this operation, the depth of the sand pack in the auger is continuously sounded to make sure that the sand remains in the auger annulus during auger retraction to avoid short-circuiting the well. The sand pack is tremmied to approximately two feet above the screen, at which time pre-development surging is performed to consolidate the sand pack. Additional sand is added as necessary so that the sand pack extends approximately two feet above top of screen. Following construction of the sand pack, a one to two foot thick bentonite seal is tremmied over the sand and hydrated in place. The remainder of the borehole is backfilled with Portland neat cement grout (or the equivalent), mixed at ratio of 6 gallons of water per 94 pounds of neat cement. The well head is then capped with a locking cap and secured with a lock to protect the well from surface water intrusion and vandalism.

The well head is further protected from damage with traffic a rated well box in paved areas or locking steel riser in undeveloped areas. The protective boxes or risers are set in concrete. The details of well construction are recorded on well construction logs.
Following well construction, the wells are developed in accordance with agency protocols by intermittently surging and bailing the wells. Development is determined to be sufficient once pH, conductivity, and temperature stabilize to within s 0.1, s 3%, and s 10%, respectively.

Groundwater Monitoring Well Sampling

Depth to Groundwater/SPH Thickness Measurements

Prior to the beginning of purging and sampling the wells, the depth to groundwater and thickness of SPH, if present, within each well casing are measured to the nearest 0.01 foot using either an electronic water level indicator or an electronic oil-water interface probe. This is done in within as narrow a time frame as possible, and before the first well is purged. Measurements are taken from a point of known elevation on the top of each well casing as determined in accordance with surveys by licensed land surveyors.

Groundwater Monitoring Well Purging

Groundwater wells are purged using low-flow protocol at a flow rate of less the 1 liter per minute using a bladder pump. The purge intake is placed opposite the portion of the saturated zone expected to contain the greatest hydrocarbon impact, and the depth of the purge intake is recorded during and after purging. The water level in each well is monitored, and care is taken that the well is not dewatered. The conductivity, temperature, and pH of the delivered effluent are monitored and recorded using a flow-through cell during purge operations. Purge operations are determined to be sufficient once three successive measurements of pH, conductivity, and temperature of the purged water at 3 to 5 minute intervals following the evacuation of on system or line volume vary by s 0.1, s 3%, and s 10%, respectively. System or line volumes, actual purge volumes, and the purging equipment used are recorded on the field data sheets.

Groundwater Sample Acquisition, Handling, and Analysis

Following purging operations, groundwater samples are collected from each of the wells, using a low-flow bladder pump. The groundwater sample is discharged from the pump tubing to the sample container before the water passes through the flow-through cell. The sampling equipment is recorded on the field data sheets.

Collected water samples are discharged directly into laboratory provided, pre-cleaned, and chemically preserved sample containers for the analyses requested. Preservatives are used in the samples if appropriate for the analyses, i.e., hydrochloric acid (HCI) for TPPH, BTEX, and fuel oxygenates by EPA Method 8260B.

Labels documenting sample number, well identification, collection date and time, type of sample and type of preservative (if applicable) are affixed to each sample. The samples are then placed into an ice-filled cooler for delivery under chain of custody to a certified laboratory. The type of preservative used is documented on the chain of custody form.

To help assure the quality of the collected samples and to evaluate the potential for cross contamination during transport to the laboratory, a distilled-water trip blank accompanies the samples in the cooler. The trip blank is analyzed for the presence of volatile organic compounds of concern. For petroleum hydrocarbons, the trip blank is typically analyzed for TPPH, BTEX, and fuel oxygenates by EPA Method 8260.

Organic Vapor Procedures

Soil samples are collected for analysis in the field for ionizable organic compounds using a PID with a 10.2 eV lamp. The test procedure involves measuring approximately 30 grams from an undisturbed soil sample, placing this subsample **in** a Ziploc™-type bag or in a clean glass jar, and sealing the jar with aluminum foil secured under a ring-type threaded lid. The container is warmed for approximately 20 minutes (in the sun); then the head-space within

the container is tested for total organic vapor, measured in parts per million as benzene (ppm; volume/volume). The instrument is calibrated prior to drilling. The results of the field-testing are noted on the boring logs. PID readings are useful for indicating relative levels of contamination, but cannot be used to evaluate petroleum hydrocarbon levels with the confidence of laboratory analyses.

Equipment Decontamination

Equipment that could potentially contact subsurface media and compromise the integrity of the samples is carefully decontaminated prior to drilling and sampling. Drill augers and other large pieces of equipment are decontaminated using high-pressure hot water spray. Samplers, groundwater pumps, liners and other equipment are decontaminated in an Alconox scrub solution and double rinsed in clean tap water rinse followed by a final distilled water rinse.

The rinsate and other wastewater are contained in 55-gallon DOT-approved drums, labeled (to identify the contents, generation date and project) and stored on-site pending waste profiling and disposal.

Soil Cuttings and Rinsate/Purge Water

Soil cuttings and rinsate/purge water generated during drilling and sampling are stored on-site in DOT-approved 55-gallon steel drums pending characterization. A label is affixed to the drums indicating the contents of the drum, suspected contaminants, date of generation, and the boring number from which the waste is generated. A licensed waste disposal contractor removes the drums from the site to an appropriate facility for treatment/recycling

Crawl Space Vapor Sampling

Air within a crawl space can be sampled as a method to evaluate vapor intrusion. Crawl space air should be less affected than indoor air by lifestyle choices of the building's occupants, such as household product use and smoking. Hence, the results of crawl space air sampling should be easier to interpret than indoor air sampling results. To use contaminant concentrations in crawl space air for evaluating vapor intrusion, an attenuation factor of 1.0 should be used, which is consistent with USEPA guidance. Thus, for evaluation purposes, the contaminant concentration in indoor air is assumed to be equal to the concentration in crawl space air. *(DTSC 2011)*

Indoor Air Sampling

Indoor air sampling should be conducted under conservative conditions. In general, the windows of the building should be closed. However, certain exceptions may be necessary if sampling is done in the summer in a building that is not air conditioned. Likewise, ingress and egress activities should be minimized. Heating, ventilation, and air conditioning (HVAC) systems should be operated normally for the season and time of day. During colder months, heating systems should be operating for at least twenty-four hours prior to the scheduled sampling event to maintain normal indoor temperatures above 65°F before and during sampling.

DTSC recommends the following when conducting indoor air sampling:

1) Sampling Duration. For the first sampling event, indoor air samples should be collected over a 24-hour period to ensure diurnal fluctuations in vapor intrusion and indoor air concentrations are included in the sampling period. After vapor intrusion is confirmed, sampling events should be conducted to produce representative concentrations of the monitored compounds over the anticipated daily exposure period for building occupants. Hence, air samples should be collected over a 24-hour period for residential structures, over an 8-hour period for non-residential structures, and over a typical school day for students. When feasible, 24-hour and 8-hour sampling may be conducted during the same sampling event. In some cases, indoor air samples may be collected with passive samplers for longer sampling periods.

2) Number of Sampling Events. One indoor air sampling event is not representative of continuous long-term exposure within a building. Multiple sampling events should be conducted to characterize exposure over the long-term. Numerous sampling events may be required within a building before DTSC would consider “no further action” for the exposure pathway. At a minimum, sampling data should be obtained over two seasons; late summer/early autumn and late winter/early spring. The data evaluation and contingency plan for the site should guide decisions regarding the objective and number of sampling events.

3) Number of Samples and Locations. All floors of a residential structure potentially subject to vapor intrusion should be sampled for indoor air quality. All occupied areas, as well as basements, should be sampled. Based on site-specific conditions, it may be necessary to sample all units of an apartment building. Sampling devices should be located in the breathing zone, approximately 3 to 5 feet off the ground for adults and at lower sampling heights if the receptors of concern are children as in a daycare center or school. Samples should be collected in the center of the room, away from doors. At a minimum, it is recommended that sampling points include the primary living area and likely locations for subsurface vapor entry (typically the bathroom or kitchen). For multi-storied residential buildings, at least one sample should be collected on each floor. When sampling an office building, the number and locations of samples should be based on site-specific conditions. In office buildings, samples should be collected from primary work areas and near the points of vapor entry (such as sumps, elevator shafts or floor drains) to help define the potential routes of entry.

4) Sampling Equipment. When sampling indoor air with evacuated canisters, extra canisters, pressure gauges, and flow regulators should be taken into the field in case the integrity of some of the canisters is compromised or if some flow regulators and pressure gauges malfunction. Each sampling canister should have a dedicated vacuum gauge. The gauge is needed to verify the canister is properly evacuated prior to initiation of sampling and to demonstrate that the canister is slightly depressurized upon completion of the sampling. Likewise, the gauge will indicate whether the canister’s flow regulator is functioning properly during sample collection. Flow regulators should be configured to produce a constant sampling rate. Sampling canisters, along with all flow regulators and pressure gauges, should be certified clean to the laboratory’s method reporting limit.

Collecting air samples in canisters is currently the predominant sampling method used for indoor air investigations. Canisters provide quantitative analytical data and achieve the low detection limits needed to support risk assessments. USEPA Region 9 is currently evaluating the use of passive air samplers for indoor air investigations by conducting comparison studies with canisters at several sites in California. Other researchers have also conducted comparison studies. Passive samplers offer several advantages over canisters, including lower cost, simplicity and versatility of use, small size, unobtrusive appearance, and potential to collect samples over longer time periods than canister samplers. At present, passive samplers appear to have potential as a reliable alternative to canister sampling in certain applications,

particularly as a screening tool for identifying structures for further indoor air evaluation. The use of passive samplers for screening or as a supplement to canister sampling should be based on the contaminants, site conditions, and project DQOs. As passive sampler technology becomes further developed, and high quality, quantitatively accurate results for contaminant concentrations in indoor air can be achieved, data from passive samplers may be used in quantitative risk assessments. *(DTSC 2011)*

APPENDIX D

Waste Disposal Manifests

NON-HAZARDOUS WASTE MANIFEST

Please print or type (Form designed for use on elite (12 pitch) typewriter)

NON-HAZARDOUS WASTE

GENERATOR

NON-HAZARDOUS WASTE MANIFEST	1. Generator's US EPA ID No.	Manifest Document No.	2. Page 1 of 1

3. Generator's Name and Mailing Address: FREEDOM FOOD + GAS, 15101 FREEDOM AVE, SAN LEANDRO, CA

4. Generator's Phone ( )

SOMA ENV, INC

5. Transporter 1 Company Name	6. US EPA ID Number	A. State Transporter's ID
INSTRAT INC		B. Transporter 1 Phone
7. Transporter 2 Company Name	8. US EPA ID Number	C. State Transporter's ID
		D. Transporter 2 Phone

9. Designated Facility Name and Site Address: INSTRAT, INC. 1105 C AIRPORT RD. RIO VISTA, CA 94571

10. US EPA ID Number

E. State Facility's ID

F. Facility's Phone (707) 374-8834

11. WASTE DESCRIPTION	12. Containers No.	12. Containers Type	13. Total Quantity	14. Unit Wt./Vol.
a. NON-HAZ SOIL + DEBRIS	3	DRM	1800	LBS
b.				
c.				
d.				

G. Additional Descriptions for Materials Listed Above: BROWN, SOIL + DEBRIS

H. Handling Codes for Wastes Listed Above

15. Special Handling Instructions and Additional Information

16. **GENERATOR'S CERTIFICATION:** I hereby certify that the contents of this shipment are fully and accurately described and are in all respects in proper condition for transport. The materials described on this manifest are not subject to federal hazardous waste regulations.

Printed/Typed Name	Signature	Date Month	Day	Year

TRANSPORTER

17. Transporter 1 Acknowledgement of Receipt of Materials

Printed/Typed Name	Signature	Date Month	Day	Year
Jason Noble		9	12	14

18. Transporter 2 Acknowledgement of Receipt of Materials

Printed/Typed Name	Signature	Date Month	Day	Year

FACILITY

19. Discrepancy Indication Space

20. Facility Owner or Operator: Certification of receipt of the waste materials covered by this manifest, except as noted in item 19.

Printed/Typed Name	Signature	Date Month	Day	Year
MICHAEL WHITEHEAD		9	12	14

APPENDIX E

Well Survey Data and Field Observation Data Sheets

DATE: 9/27/2014
JOB#

TABLE OF ELEVATIONS & COORDINATES ON MONITORING WELLS

SOMA ENVIRONMENTAL ENGINEERING
15101 FREEDOM AVENUE
SAN LEANDRO, CA 94579

WELL ID #	NORTHING (FT.) / LATITUDE (D.DEG.)	EASTING (FT.) / LONGITUDE (D.DEG.)	ELEVATION (FT.)	DESCRIPTION
MW-10	2083967.378	6092174.688	44.66	2" PVC NOTCH NORTH SIDE
	37.706998127N	122.123014988W	45.08	PUNCH NORTH SIDE RIM
			44.98	GROUNDNORTH SIDE
MW-11	2083923.210	6092215.039	42.45	2" PVC NOTCH NORTH SIDE
	37.706878766N	122.122872877W	42.83	PUNCH NORTH SIDE RIM
			42.84	PAVEMENT NORTH SIDE

HORIZONTAL AND VERTICAL CONTROL
SURVEY BASED ON PREVIOUS SURVEY BY EDGIS LAND SURVEYING DATED: 12/11/2009
COORDINATE VALUES ARE BASED ON THE CALIFORNIA COORDINATE SYSTEM, ZONE 3, NAD83.
ELEVATIONS ARE NAVD 88 DATUM.

EX-1, PUNCH
NORTHING 2,084,135.63, EASTING 6,092,163.63, ELEVATION 47.61

EX-2, PUNCH
NORTHING 2,084,082, EASTING 6,092,129.99, ELEVATION 47.04

EQUIPMENT USED: TRIMBLE S6

9/27/14

EDGIS LAND SURVEYING
Land Surveying and mapping
2519 W. Shaw Avenue, Ste. 111
Fresno, CA 93711
Phone (559) 803-2679 Fax (559) 823-9037
email: edgis@aol.com

WELL DEVELOPMENT DATA SHEET

WELL ID MW-10

PROJECT NAME: 15101 Freedom Ave, San Leandro	DATE: 9/12/14
PROJECT NO.: 2552	PREPARED BY:

WELL TYPE: Monitoring	CONTRACTOR: Fisch Drilling	OPERATOR: Rick
RIG TYPE:		DATE OF DEVELOPMENT: 9/12/14
BAILER TYPE:	PUMP TYPE: DC purge pump	
DESCRIPTION OF DEVELOPMENT: surge + bail, then pump		
MEASURING POINT (MP) ELEVATION (FMSL):		

WELL TD (FBMP) Before/After	BOTTOM CONDITION Before/After (hard-soft)	SWL (FBMP)	WATER COLUMN (FT)	WELL DIAMETER (IN)			GALLONS/FOOT			1 CASING VOLUME (GAL)	5 CASING VOLUMES (GAL)
				(2)	4	6	(2)	4	6		
29 /	hard /	18	11	(2)	4	6	0.16	0.65	1.47	1.76	8.8

TOP OF WELL SCREEN (FBGS)	BOTTOM OF WELL SCREEN (FBGS)	LENGTH OF WELL SCREEN (FBGS)
19	29	

TIME	ELAPSED TIME (MIN)	FLOW RATE (GPM)	CASING VOLUMES PURGED	VOLUME PURGED (GAL)	WATER LEVEL (FBMP)	TEMP. (°C)	Ph	CONDUCTIVITY (umhos/cm)	TURBIDITY (NTU)	ODOR	COMMENTS
10:33	Started purging										
10:37	4	1.5		6		23.3	5.86	1206	999	Slight Petro	
10:42	9					20.5	6.04	1167	633		
10:47	14			21		20.2	6.01	1169	242		
10:52	19					20.1	6.02	1159	245		
10:57	24			36		20.1	6.00	1153	182		
11:02	29					20.0	6.02	1150	126		
11:07	34	↓		51		20.1	6.02	1147	152		

WELL DEVELOPMENT DATA SHEET
(continued)

WELL ID MW-10

PROJECT NAME: 15101 Freedom Ave, San Leandro	DATE: 9/12/14
PROJECT NO.: 2552	PREPARED BY: Lizzie Hightower

TIME	ELAPSED TIME (MIN)	FLOW RATE (GPM)	CASING VOLUMES PURGED	VOLUME PURGED (GAL)	WATER LEVEL (FBMP)	TEMP. (°C)	Ph	CONDUCTIVITY (umhos/cm)	TURBIDITY (NTU)	ODOR	COMMENTS
11:12	39	1.5				20.2	6.03	1147	170		
11:17	44	1.5	66			20.1	6.00	1145	80.5		

WELL DEVELOPMENT DATA SHEET

WELL ID MW-11

PROJECT NAME: 15101 Freedom Ave, San Leandro	DATE: 9/12/14
PROJECT NO.: 2552	PREPARED BY: Lizzie Hightower

WELL TYPE: Monitoring	CONTRACTOR: Fisch Drilling	OPERATOR: Rick
RIG TYPE:		DATE OF DEVELOPMENT: 9/12/14
BAILER TYPE:	PUMP TYPE: DC purge pump	
DESCRIPTION OF DEVELOPMENT: Surge + bail, then pump		
MEASURING POINT (MP) ELEVATION (FMSL):		

WELL TD (FBMP) Before/After	BOTTOM CONDITION Before/After (hard-soft)	SWL (FBMP)	WATER COLUMN (FT)	WELL DIAMETER (IN)			GALLONS/FOOT			1 CASING VOLUME (GAL)	5 CASING VOLUMES (GAL)
				(2)	4	6	(2)	4	6		
28 / 28	hard / hard	16 ft	12	(2)	4	6	0.16	0.65	1.47	1.92	9.6

TOP OF WELL SCREEN (FBGS)	BOTTOM OF WELL SCREEN (FBGS)	LENGTH OF WELL SCREEN (FBGS)
18	28	10 ft

TIME	ELAPSED TIME (MIN)	FLOW RATE (GPM)	CASING VOLUMES PURGED	VOLUME PURGED (GAL)	WATER LEVEL (FBMP)	TEMP. (°C)	Ph	CONDUCTIVITY (umhos/cm)	TURBIDITY (NTU)	ODOR	COMMENTS
8:53	Started	pumping									
8:57	4	1.5		6		20.4	6.05	1174	999	NO	
9:01	8	↓				19.7	6.15	1117	999	NO	
9:07	14			21		19.6	6.16	1105	999		
9:12	19					19.6	6.15	1096	687		
9:17	24			36		19.6	6.16	1079	113		
9:22	29					19.5	6.17	1080	52.6		
9:27	34	↓		51		19.5	6.	1074	32.8		

WELL DEVELOPMENT DATA SHEET
(continued)

WELL ID MW-11

PROJECT NAME: 15101 Freedom Ave, San Leandro	DATE: 9/12/14
PROJECT NO.: 2552	PREPARED BY: Lizzie Hightower

TIME	ELAPSED TIME (MIN)	FLOW RATE (GPM)	CASING VOLUMES PURGED	VOLUME PURGED (GAL)	WATER LEVEL (FBMP)	TEMP. (°C)	Ph	CONDUCTIVITY (umhos/cm)	TURBIDITY (NTU)	ODOR	COMMENTS
9:32	39	1.5				19.5	6.17	1067	27.6		
9:37	44	1.5	--	66		20.0	6.17	1065	22.7		

SOMA
ENVIRONMENTAL ENGINEERING, INC.
6620 Owens Drive, Suite A • Pleasanton, CA 94588
TEL (925)734-6400 • FAX (925)734-6401

FIELD REPORT

Site Address: 15101 Freedom Ave., San Leandro Proj. No: 2552

Job Performing: Air Sampling Date: 9/25-26/2014

Arrival Time:_____ Departure Time: _____

Travel Time to Site & Back: _____

Staff Geol/Eng Signature: E Hyde

9/25/14

Time: 10:00 Left office to pick up air canister from C+T

12:15 Arrived at site, set up SV-1a in crawl space + AA-1 along the side of the house in the backyard. Starting volume: AA-1: -30" Hg SV-1a: -30" Hg

Time: 9/26/14

12:00 Picked up air canisters from site

Time: Final volume: AA-1: -2" Hg SV-1a: -2" Hg

Time: _____

Time: _____

Golden Gate Remediation Technology

ADDRESS: 15101 Freedom Ave., San Leandro
PROJECT #: 2555

MTS OPERATIONAL DATA

DATE	TIME	OXIDIZER TEMPERATURE (F)	PUMP/AIR TEMPERATURE (F)	STINGER VACUUM (IN-Hg)	PUMP VACUUM (IN-Hg)	PITOT TUBE (In of H2O)	EFFLUENT TEMPERATURE (F)	TOTAL FLOW (SCFM)	DILUTION FLOW (SCFM)	WELL FLOW (SCFM)	INFLUENT CONCENTRATION (PPMV)	WATER TOTALIZER
7/23/2014	1200	Mobilization and system setup										
7/24/2014	1000	Begin Extracting from MPE-1										
	1100	1547	174	21	23.2			98	0	98	eff=550; inf=0	0
	1200	1475	174	21	23.3			96	0	96	575	
	1300	1515	175	20.8	23.2			98	0	98	566	
	1400	1515	177	19.1	23.2			98	0	98	553	
	1500	1477	178	18.9	23.3			96	0	96	540	
	1600	1546	177	18.9	23.2			98	0	98	523	
	1700	1523	177	18.9	23.3			96	0	96	525	
7/25/2014	800	Extraction from MPE-1, MPE-2, and MW-3										
	800	1495	172	19	22.5			109	0	109	498	
	900	1526	173	19.2	22.5			109	0	109	474	
	1000	1518	174	19.3	22.5			109	0	109	456	
	1100	1514	174	19.4	22.9			103	0	103	447	
	1200	1492	176	17	21			133	0	133	1,076	
	1300	1537	178	17	21			133	0	133	890	
	1400	1498	180	17	21			133	0	133	743	
	1500	1509	180	17	21			133	0	133	626	4,374
	1600	1459	179	15	22			117	0	117	678	
	1700	1505	175	19.9	22.8			104	0	104	827	
	1800	1498	177	19.5	22.5			109	0	109	841	
7/26/2014	2150	1471	172	16.4	19.2			162	0	162	552	
7/27/2014	1730	1434	174	16.2	20.1			147	0	147	549	6,666
7/28/2014	830	1398	171	16	20			149	0	149	481	7,984

P. O. Box 12072, Pleasanton, California 94588 (925) 847-0684

Golden Gate Remediation Technology

ADDRESS: 15101 Freedom Ave., San Leandro
PROJECT #: 2555

MTS OPERATIONAL DATA

DATE	TIME	OXIDIZER TEMPERATURE (F)	PUMP/AIR TEMPERATURE (F)	STINGER VACUUM (IN-Hg)	PUMP VACUUM (IN-Hg)	PITOT TUBE (In of H2O)	EFFLUENT TEMPERATURE (F)	TOTAL FLOW (SCFM)	DILUTION FLOW (SCFM)	WELL FLOW (SCFM)	INFLUENT CONCENTRATION (PPMV)	WATER TOTALIZER
	930	1512	172	16	20			149	0	149	518	
	1030	1506	172	19.3	20			149	0	149	624	
	1130	1516	173	19.1	20			149	0	149	785	
	1230	1498	174	21.2	22.3			112	0	112	811	
	1330	1516	175	19.5	22.5			109	0	109	773	
	1430	1508	175	19.6	22.5			109	0	109	767	
	1530	1502	175	19.5	22.5			109	0	109	754	
	1630	1507	174	19.8	22.6			108	0	108	712	
	1730	1511	174	19.7	22.7			106	0	106	687	8,735
7/29/2014	800	1518	171	19.4	22.5			109	0	109	659	
	900	1521	172	19.5	22.5			109	0	109	698	10,119
	1000	1506	173	19.5	22.5			109	0	109	709	
	1100	1546	175	20	22.5	0.25	130	61	0	61	701	
	1200	1498	176	19.5	22.5	0.5	132	87	0	87	695	
	1300	1515	176	20	22.5	0.5	132	87	0	87	693	
	1400	1509	177	19.6	22.4	0.95	134	119	0	119	684	
	1500	1505	177	19.9	23	0.75	138	105	0	105	673	
	1600	1509	177	19.7	22.5	0.85	136	112	0	112	659	
	1700	1513	177	19.7	22.5	0.25	138	61	0	61	538	
	1800	1501	176	19.7	22.6	1.25	135	136	0	136	622	
7/30/2014	800	1410	172	19.2	22.5	0.5	100	89	0	89	587	
	900	1487	172	19.4	22.5	0.57	110	94	0	94	608	12,293
	1000	1495	172	19.5	22.5	1	110	125	0	125	631	
	1100	1545	173	19.9	22.4	1	115	124	0	124	636	
	1200	1512	174	20	22.8	1	122	123	0	123	628	
	1300	1498	176	19.3	22.8	1.25	122	138	0	138	618	
	1400	1500	175	20	22.5	1	122	123	0	123	598	

P. O. Box 12072, Pleasanton, California 94588 (925) 847-0684

Golden Gate Remediation Technology

ADDRESS: 15101 Freedom Ave., San Leandro
PROJECT #: 2555

MTS OPERATIONAL DATA

DATE	TIME	OXIDIZER TEMPERATURE (F)	PUMP/AIR TEMPERATURE (F)	STINGER VACUUM (IN-Hg)	PUMP VACUUM (IN-Hg)	PITOT TUBE (In of H2O)	EFFLUENT TEMPERATURE (F)	TOTAL FLOW (SCFM)	DILUTION FLOW (SCFM)	WELL FLOW (SCFM)	INFLUENT CONCENTRATION (PPMV)	WATER TOTALIZER
	1500	1509	177	19.8	22.5	1.25	128	137	0	137	610	
	1600	1496	176	19.5	22.5	1.25	132	137	0	137	604	
	1700	1492	175	19.4	22.5	1	134	122	0	122	610	
7/31/2014	800	1498	171	19.4	22.6	0.5	122	87	0	87	589	
	900	1502	172	19.5	22.6	0.5	122	87	0	87	575	14,560
	1000	1522	173	19.5	22.6	1	122	123	0	123	495	
	1100	1512	173	19.5	22.5	1	122	123	0	123	495	
	1200	1510	175	19	22	1	130	123	0	123	481	
	1300	1501	175	19	22.1	1	131	122	0	122	465	
	1400	1486	176	19.5	22.1	1	131	122	0	122	489	
	1500	1492	175	19.3	19.9	1.15	115	133	0	133	449	
	1600	1489	176	19.2	19.9	1.05	120	127	0	127	423	
	1700	1511	177	18.9	19.9	1.05	135	125	0	125	457	
	1800	1498	176	18.6	22	1.1	133	128	0	128	457	
8/1/2014	1000	1496	177	18.8	22.1	1.1	132	128	0	128	440	
	1130	1471	173	18.9	22.1	1.1	131	128	0	128	433	
	1230	1461	175	15.4	22.1	1.05	132	125	0	125	489	
	1330	1516	177	19.9	22.2	1.25	138	136	0	136	496	
	1430	1515	176	19.9	23.2	1	138	122	0	122	495	
	1530	1525	177	19.8	23.2	0.85	140	112	0	112	494	
	1630	1530	176	19.9	23.1	1.75	130	162	0	162	482	
	1730	1530	175	19.6	23.1	0.75	135	106	0	106	491	
8/2/2014	1400	1489	173	19.7	22.5	0.85	124	114	0	114	421	
	1500	1501	174	19.7	22.4	0.85	125	114	0	114	428	17,632
	1600	1517	175	19.5	22.3	0.9	128	116	0	116	451	
	1700	1521	174	19.5	22.4	1	130	123	0	123	448	
	1800	1510	173	19.4	22.3	0.75	130	106	0	106	432	

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DATE	TIME	OXIDIZER TEMPERATURE (F)	PUMP/AIR TEMPERATURE (F)	STINGER VACUUM (IN-Hg)	PUMP VACUUM (IN-Hg)	PITOT TUBE (In of H2O)	EFFLUENT TEMPERATURE (F)	TOTAL FLOW (SCFM)	DILUTION FLOW (SCFM)	WELL FLOW (SCFM)	INFLUENT CONCENTRATION (PPMV)	WATER TOTALIZER
	1900	1519	172	19.4	22.4	0.75	128	106	0	106	445	
8/4/2014	730	1512	172	19.1	22.8	0.25	122	62	0	62	389	20,501
	800	1524	172	19	22.8	0.25	124	62	0	62	376	
	900	1498	172	19.2	23	0.35	125	73	0	73	372	
	1000	1489	172	19.3	22.8	0.6	128	95	0	95	384	
	1100	1481	172	19.2	22.8	0.85	128	113	0	113	388	
	1200	1512	173	19.2	22.5	0.9	131	116	0	116	393	
	1300	1514	173	19.2	22.5	1	131	122	0	122	409	
	1400	1541	174	19.3	22.5	1	135	122	0	122	399	
	1500	1518	176	17.5	21.7	1	135	122	0	122	382	
	1600	1510	174	17.5	21.7	1.05	135	125	0	125	389	
	1700	1519	173	18.9	22.3	0.75	131	106	0	106	420	
	1730	1501	172	19.1	22.4	0.75	130	106	0	106	418	
8/5/2014	730	1491	171	18.8	22.9	0.2	120	55	0	55	385	22,507
	800	1507	171	18.6	22.9	0.2	122	55	0	55	393	
	900	1516	171	19	22.9	0.25	122	62	0	62	414	
	1000	1521	172	18.9	22.4	0.25	126	62	0	62	411	
	1100	1514	172	18.6	22.4	0.5	128	87	0	87	392	
	1200	1502	173	18.7	22.4	0.75	130	106	0	106	415	
	1300	1541	174	18.6	22.4	1.05	130	126	0	126	385	
	1400	1520	175	18.7	22.8	0.95	130	119	0	119	409	
	1500	1501	175	18.6	22.8	0.95	122	120	0	120	403	
	1600	1508	175	18.6	22.5	0.85	134	113	0	113	404	
	1700	1495	176	18.7	22.5	1.1	134	128	0	128	409	
8/6/2014	730	1515	171	18.9	22.5	0.65	128	99	0	99	397	24,619
	800	1507	171	18.8	22.5	0.65	128	99	0	99	394	
	900	1501	173	18.7	22.5	0.7	130	103	0	103	395	

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	1000	1517	173	18.6	22.5	1	132	122	0	122	399	
	1100	1498	173	18.5	22.6	1	132	122	0	122	388	
	1200	1502	175	18.4	22.6	1	132	122	0	122	392	
	1300	1511	175	18.3	22.6	0.9	132	116	0	116	395	
	1400	1468	177	18.9	22.3	0.75	140	105	0	105	392	
	1500	1465	176	17.3	22.5	0.85	140	112	0	112	390	
	1600	1497	175	18.4	22.4	1	135	122	0	122	386	
	1700	1509	174	18.6	22.5	1	132	122	0	122	406	
8/7/2014	730	1501	170	18.8	22.5	0.5	130	87	0	87	407	26,863
	800	1508	172	18.8	22.8	0.25	125	62	0	62	415	
	900	1498	173	19	22.8	0.5	128	87	0	87	402	
	1000	1475	172	18.8	22.8	1.15	128	132	0	132	407	
	1100	1469	173	18.6	22.5	0.75	125	107	0	107	409	
	1200	1485	174	18.6	22.5	0.75	124	107	0	107	405	
	1300	1485	174	19.3	22.3	0.85	124	114	0	114	414	
	1400	1465	174	19.2	22.5	1.75	124	163	0	163	408	
	1500	1518	174	19.3	22.3	0.75	125	107	0	107	400	
	1600	1542	174	18.1	22.2	1	124	123	0	123	398	
	1700	1565	173	18.2	22.1	1.25	130	137	0	137	365	
8/8/2014	1000	1513	171	20.1	25	0.35	120	73	0	73	225	29,300
	1100	1530	171	22.3	25	0.4	116	78	0	78	260	
	1200	1545	171	22.1	25.1	0.35	118	73	0	73	265	
	1300	1547	171	21.1	25.1	0.55	120	92	0	92	278	
	1400	1479	173	21.1	25.1	0.75	120	107	0	107	274	
	1500	1519	174	21	25.1	0.9	120.2	117	0	117	270	
	1600	1476	174	21.2	25.1	1	120.2	124	0	124	274	
	1700	1497	173	20.6	25.2	1	120.4	124	0	124	279	

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	2215	1507	171	16.2	22.8	0.35	122	73	0	73	378	
8/9/2014	1400	1510	174	16.2	22.3	0.95	135	119	0	119	372	31,769
	1500	1501	173	16	22.3	0.95	136	119	0	119	365	
	1600	1494	172	15.9	22.3	0.9	132	116	0	116	359	
	1700	1509	172	16	22.3	0.75	130	106	0	106	361	
	1800	1499	171	16.3	22.3	0.6	128	95	0	95	365	
8/10/2014	1400	1492	176	16	22.3	1.1	136	128	0	128	362	33,813
	1500	1509	175	15.8	22.4	1	134	122	0	122	358	
	1600	1517	173	15.9	22.3	1	132	122	0	122	351	
8/11/2014	730	1502	169	19.2	24.9	0.25	127	61	0	61	362	34,754
	800	1509	170	19.3	24.9	0.25	128	61	0	61	374	
	900	1509	171	19.2	25	0.55	120	92	0	92	384	
	1000	1491	172	19.2	25	1	120	124	0	124	400	
	1100	1490	171	19.2	25	0.2	120	55	0	55	303	
	1200	1535	173	19.2	25	0.5	126	87	0	87	415	
	1300	1480	173	19.2	25	0.65	120.2	100	0	100	403	
	1400	1505	173	19.2	25	0.65	120.2	100	0	100	416	
	1500	1542	174	19.2	25	0.75	120.2	107	0	107	408	
	1600	1513	170	19.2	25	0.8	120.2	111	0	111	416	
	1700	1478	174	19.2	25	1.25	120.2	138	0	138	410	
8/12/2014	800	1505	170	18.1	25.1	0.5	120	87	0	87	391	37,378
	900	1511	170	18.1	25	0.5	120	87	0	87	398	
	1000	1485	171	18.1	25	1	120	124	0	124	405	
		Extracting from MPE-1, MPE-2, MW-3, and MW-6										
	1100	1480	172	18.2	25	0.5	120	87	0	87	819	
	1200	1525	172	17.4	24.6	0.55	120.2	92	0	92	784	
	1300	1511	174	17	24.4	0.4	120	78	0	78	803	

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	1400	1502	173	17	24.4	0.35	128	73	0	73	687	
	1500	1489	173	17	24.4	0.45	120	83	0	83	628	
8/13/2014	800	1502	171	15	22.9	0.1	128	39	0	39	329	39,758
	900	1495	172	15	22.6	0.1	130	39	0	39	337	
	1000	1503	172	15	22.6	0.65	130	99	0	99	395	
	1100	1489	173	15	22.3	0.65	130	99	0	99	338	
	1200	1505	175	14.6	22.6	0.25	132	61	0	61	438	
	1300	1512	174	16.5	23.1	0.25	127	61	0	61	431	
	1400	1501	175	16.7	23.2	0.35	128	73	0	73	446	
	1500	1477	175	17	24.2	0.55	130	91	0	91	442	
	1600	1501	171	17	24.2	0.55	130	91	0	91	428	
	1700	1507	173	17	24.2	1.25	130	137	0	137	426	
	1800	1495	171	17.1	24.2	0.45	127	82	0	82	432	
8/14/2014	800	1507	171	15.1	22.7	0.25	128	61	0	61	345	42,131
	900	1501	172	15.1	22.6	0.25	129	61	0	61	315	
	1000	1498	172	15.1	22.6	0.45	130	82	0	82	288	
	1100	1507	173	14.6	22.4	0.3	130	67	0	67	298	
	1200	1479	174	15	22.4	0.1	122	39	0	39	318	
	1300	1497	176	15.1	22.5	0.2	133	55	0	55	337	
	1400	1508	176	15.1	22.5	0.25	140	61	0	61	333	
	1500	1465	176	14.4	22.2	0.5	136	86	0	86	328	
	1600	1485	177	14.4	22.2	0.5	136	86	0	86	337	
	1700	1475	176	15	22.4	1	140	122	0	122	325	
8/15/2014	800	1507	170	15	22.4	0.2	127	55	0	55	331	44,838
	900	1496	171	15	22.4	0.2	128	55	0	55	348	
	1000	1490	173	15	22.4	0.65	125	99	0	99	350	
	1100	1492	174	14.6	22.2	0.27	132	64	0	64	348	
	1200	1482	174	14.7	22.3	0.25	133	61	0	61	358	

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	1300	1515	176	14.6	22.4	0.3	136	67	0	67	376	
	1400	1467	177	14.4	22.4	0.4	136	77	0	77	362	
	1500	1501	177	15.1	22.3	0.5	138	86	0	86	368	
	1600	1486	176	14.4	22.4	0.65	138	98	0	98	379	
	1700	1465	175	14.4	22.4	1	140	122	0	122	349	
8/16/2014	1500	1492	175	15.3	22.8	0.65	134	99	0	99	408	48,556
	1600	1504	175	15.2	22.7	0.75	136	106	0	106	417	
	1700	1509	173	14.9	22.5	0.9	135	116	0	116	401	
8/17/2014	1400	1514	172	15.4	22.7	0.35	132	72	0	72	361	50,886
	1500	1502	172	15.4	22.6	0.35	133	72	0	72	368	
	1600	1495	172	15.2	22.5	0.3	128	67	0	67	352	
8/18/2014	800	1191	169	17.8	25	0.15	122	48	0	48	258	52,872
	900	1495	169	17.8	25	0.1	122	39	0	39	255	
	1000	1490	169	17.8	25	0.05	122	28	0	28	252	
	1100	1495	172	17.4	22.6	0.06	123	30	0	30	404	
	1200	1522	173	14	22.4	0.1	132	39	0	39	384	
	1300	1501	173	14.4	22.4	0.25	130	61	0	61	377	
	1400	1507	174	14.5	22.4	0.15	130	47	0	47	375	
		Begin air injection										
	1500	1495	174	14.5	22.4	0.25	135	61	0	61	595	
	1600	1492	174	14.5	22.4	0.5	130	87	0	87	632	
	1700	1509	171	14.5	22.6	0.5	124	87	0	87	640	
8/19/2014	800	1498	170	14.5	22.3	0.25	127	61	0	61	1,010	55,769
	900	1502	171	14.1	22	0.3	130	67	0	67	1,023	
	1000	1490	172	14.1	22	0.35	130	73	0	73	1,026	
	1100	1499	172	13.2	22	0.3	126	67	0	67	1,021	
	1200	1487	173	13.4	22	0.5	128	87	0	87	1,005	
	1300	1523	174	13.4	22	0.35	130	73	0	73	1,001	

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	1400	1517	174	13.4	22	0.35	130	73	0	73	965	
	1500	1472	173	14	22	0.25	130	61	0	61	921	
	1600	1505	176	12.8	21.8	0.75	136	106	0	106	967	
	1700	1467	174	12.8	21.4	0.75	138	105	0	105	966	
8/20/2014	800	1502	170	14.2	22.5	0.35	128	73	0	73	917	58,720
	900	1516	171	13.8	22.4	0.3	128	67	0	67	895	
	1000	1507	171	14.1	22.5	0.25	127	61	0	61	892	
	1100	1515	173	14.2	22.5	0.5	125	87	0	87	875	
	1200	1505	173	14	22.4	0.35	124	73	0	73	820	
	1300	1497	173	14.6	22.5	0.3	126	67	0	67	868	
	1400	1510	173	14	22.6	0.45	128	82	0	82	843	
	1500	1499	172	14	22.5	0.15	128	48	0	48	837	
	1600	1507	172	16	23.4	0.7	126	103	0	103	808	
	1700	1505	173	13.2	23.5	1.00	125	123	0	123	785	
8/21/2014	800	1498	171	13.9	22.1	0.25	128	61	0	61	751	61,654
	900	1502	172	13.9	22	0.25	130	61	0	61	720	
	1000	1600	174	13.8	22	0.25	132	61	0	61	681	
	1100	1495	173	14	22.3	0.3	131	67	0	67	632	
	1200	1498	174	14	22.4	0.35	132	72	0	72	668	
	1300	1502	176	13.8	22.2	0.55	136	90	0	90	774	
	1400	1501	176	13.8	22.2	0.35	137	72	0	72	988	
	1500	1513	177	14.4	22.8	0.5	139	86	0	86	1,090	
	1600	1490	176	14.6	22.8	1	138	122	0	122	1,182	
	1700	1495	175	14.2	22.3	1.25	140	136	0	136	1,243	
8/22/2014	800	1510	170	14.1	22.5	0.2	131	55	0	55	985	64,173
	900	1514	170	14.1	22.4	0.2	131	55	0	55	962	
	1000	1480	171	14.1	22.3	0.25	130	61	0	61	946	

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	1100	1490	173	14.2	22.3	0.25	130	61	0	61	927	
	1200	1468	175	13.4	22.2	0.3	130	67	0	67	917	
	1300	1486	172	14.8	23.2	0.55	128	91	0	91	986	
	1400	1496	175	15	22	0.25	129	61	0	61	762	
	1500	1508	171	14.5	22.6	0.25	132	61	0	61	679	
	1600	1491	174	14.6	22.4	0.95	132	119	0	119	740	
	1700	1512	172	13.6	22.4	0.5	130	87	0	87	806	
8/23/2014	1400	1509	173	13.9	22.2	0.9	134	116	0	116	551	67,412
	1500	1497	174	14	22.2	0.9	134	116	0	116	535	
	1600	1502	174	14	22	0.9	133	116	0	116	522	
		Air compressor off										
	1700	1495	173	14	22	0.85	134	113	0	113	498	
8/24/2014	1400	1514	174	13.9	22.1	0.65	139	98	0	98	365	69,914
	1500	1506	173	13.8	22	0.65	135	98	0	98	382	
	1600	1494	173	14	22.5	0.7	133	102	0	102	401	
8/25/2014	800	1512	169	17.1	23.5	0.35	121	73	0	73	417	71,740
	900	1497	169	14.1	22.4	0.2	121	55	0	55	429	
	1000	1483	172	14	22.4	0.15	120	48	0	48	454	
	1100	1495	172	14	22.1	0.5	118	88	0	88	504	
		Resume air injection										
	1200	1516	173	14	22.4	0.2	128	55	0	55	643	
	1300	1486	173	13.8	22.2	0.95	128	120	0	120	611	
	1400	1492	173	14	22.2	0.45	130	82	0	82	688	
	1500	1482	175	13.8	22	0.2	132	55	0	55	686	
	1600	1481	172	16.4	22.6	0.3	132	67	0	67	705	
	1700	1497	171	14	22.4	0.25	126	62	0	62	621	
		Air compressor off										
8/26/2014	800	1502	170	13.9	22.5	0.25	128	61	0	61	291	74,169
	900	1509	170	14	22.5	0.25	128	61	0	61	284	
	1000	1497	170	14.4	22.7	0.2	126	55	0	55	349	

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	1100	1525	170	13.8	23.4	0.1	124	39	0	39	493	
		Resume air injection										
	1200	1475	174	14	22.2	0.3	130	67	0	67	615	
	1300	1497	175	14	22.2	0.25	132	61	0	61	758	
	1400	1524	175	13.8	22.2	0.25	136	61	0	61	831	
	1500	1499	176	13.8	22.2	0.4	138	77	0	77	896	
	1600	1523	176	13.6	22.2	0.55	138	90	0	90	916	
	1700	1473	175	13.8	22.2	0.25	138	61	0	61	926	
		Air compressor off										
8/27/2014	1000	1515	173	13.8	22.2	0.2	132	55	0	55	295	76,846
	1100	1512	173	13.8	22	0.55	132	91	0	91	316	
	1200	1465	175	13.6	22	0.45	136	82	0	82	322	
	1300	1501	177	13.8	22	0.3	140	67	0	67	331	
	1400	1495	177	13.6	22	0.55	142	90	0	90	300	
	1500	1481	178	13.4	22	0.9	142	115	0	115	323	
	1600	1509	176	13.8	22	1.15	140	130	0	130	312	
	1700	1474	176	13.8	22	0.55	140	90	0	90	325	
8/28/2014	800	1501	170	13.9	22	0.65	133	99	0	99	318	79,004
	900	1507	170	13.9	22.1	0.6	130	95	0	95	332	
	1000	1485	171	14	22	0.8	130	110	0	110	410	
	1100	1478	171	13.8	22	0.5	130	87	0	87	531	
	1200	1525	172	13.8	22	0.75	128	106	0	106	632	
	1300	1492	173	13.8	22	0.4	128	78	0	78	717	
	1400	1508	177	13.4	22	0.2	138	54	0	54	749	
	1500	1518	177	13.4	22	0.25	142	61	0	61	704	
	1600	1466	177	13.6	22	0.4	142	77	0	77	714	
8/29/2014	900	1467	170	13.6	22	0.2	138	54	0	54	303	81,883
	1000	1517	172	13.8	22	0.6	132	95	0	95	308	
	1100	1501	172	13.8	22	0.7	132	102	0	102	347	
	1200	1493	174	13.8	22.2	0.2	136	55	0	55	460	
	1300	1467	175	13.8	22	0.2	138	54	0	54	543	

P. O. Box 12072, Pleasanton, California 94588 (925) 847-0684

Golden Gate Remediation Technology

ADDRESS: 15101 Freedom Ave., San Leandro
PROJECT #: 2555

MTS OPERATIONAL DATA

DATE	TIME	OXIDIZER TEMPERATURE (F)	PUMP/AIR TEMPERATURE (F)	STINGER VACUUM (IN-Hg)	PUMP VACUUM (IN-Hg)	PITOT TUBE (In of H2O)	EFFLUENT TEMPERATURE (F)	TOTAL FLOW (SCFM)	DILUTION FLOW (SCFM)	WELL FLOW (SCFM)	INFLUENT CONCENTRATION (PPMV)	WATER TOTALIZER
	1400	1473	176	13.6	22	0.2	138	54	0	54	637	
	1500	1470	174	13.6	22	0.5	138	86	0	86	617	
	1600	1527	175	13.8	22	0.1	138	39	0	39	620	
	1700	1511	173	13.6	22	0.1	138	39	0	39	615	
8/30/2014	1400	1505	173	13.8	22	0.1	132	39	0	39	381	84,715
	1500	1497	172	13.9	22	0.1	131	39	0	39	384	
	1600	1512	173	13.8	22	0.1	132	39	0	39	393	
8/31/2014	1400	1501	171	13.9	22	0.15	133	47	0	47	259	87,278
	1500	1512	173	13.8	22	0.1	133	39	0	39	271	
	1600	1507	172	13.9	21.8	0.15	134	47	0	47	294	
9/1/2014	900	1499	171	13.7	21.9	0.1	130	39	0	39	235	90,277
	1000	1505	170	13.8	21.9	0.1	130	39	0	39	252	
	1100	1496	172	13.8	22	0.15	131	47	0	47	267	
9/2/2014	900	1504	170	17	24.4	0.1	130	39	0	39	172	90,928
	1000	1485	172	14.8	21.8	0.5	130	87	0	87	187	
	1100	1502	173	14	21.8	0.1	130	39	0	39	202	
	1200	1521	175	13.8	21.8	0.1	136	39	0	39	291	
	1300	1470	174	13.8	21.8	0.1	134	39	0	39	410	
	1400	1498	174	13.8	21.8	0.5	134	86	0	86	504	
	1500	1506	174	13.8	21.8	0.1	132	39	0	39	538	
	1600	1470	174	13.8	21.8	0.6	132	95	0	95	576	
	1700	1476	174	13.8	22	0.2	132	55	0	55	582	
9/3/2014	800	1505	170	14	22.3	0.2	131	55	0	55	210	93,020
	900	1498	171	14	22.3	0.2	133	55	0	55	221	
	1000	1494	172	13.8	22.1	0.25	132	61	0	61	217	
	1100	1496	173	13.8	22.3	0.15	132	47	0	47	283	
	1200	1495	174	13.8	22	0.15	136	47	0	47	357	
	1300	1513	172	13.8	22	0.1	132	39	0	39	393	
	1400	1514	176	13.6	22	0.25	136	61	0	61	426	
	1500	1503	177	13.8	22	0.45	140	82	0	82	417	

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Golden Gate Remediation Technology

ADDRESS: 15101 Freedom Ave., San Leandro
PROJECT #: 2555

MTS OPERATIONAL DATA

DATE	TIME	OXIDIZER TEMPERATURE (F)	PUMP/AIR TEMPERATURE (F)	STINGER VACUUM (IN-Hg)	PUMP VACUUM (IN-Hg)	PITOT TUBE (In of H2O)	EFFLUENT TEMPERATURE (F)	TOTAL FLOW (SCFM)	DILUTION FLOW (SCFM)	WELL FLOW (SCFM)	INFLUENT CONCENTRATION (PPMV)	WATER TOTALIZER
	1600	1481	177	13.6	22	0.45	142	81	0	81	413	
	1700	1469	175	13.6	22	0.65	138	98	0	98	436	
9/4/2014	800	1497	170	13.9	21.8	0.1	135	39	0	39	180	95,072
	900	1512	170	13.8	21.8	0.7	132	102	0	102	198	
	1000	1518	172	14	22.2	0.1	130	39	0	39	222	
	1100	1498	173	13.8	22	0.1	134	39	0	39	334	
	1200	1468	176	13.8	22	0.1	136	39	0	39	382	
	1300	1512	176	13.8	22	0.1	138	39	0	39	411	
	1400	1496	177	13.9	22	0.1	138	39	0	39	430	
	1500	1491	176	13.9	22	0.1	139	38	0	38	443	
	1600	1496	176	13.8	22	0.25	140	61	0	61	441	
	1700	1471	174	13.8	22	0.25	136	61	0	61	438	
9/5/2014	730	1496	170	13.9	21.9	0.1	135	39	0	39	221	97,254
	800	1499	171	13.8	21.9	0.7	135	102	0	102	229	
	900	1505	171	14	22	0.7	132	102	0	102	287	
	1000	1503	172	14	22	0.75	135	106	0	106	312	
	1100	1471	172	13.5	22	0.65	136	98	0	98	362	
	1200	1509	173	13.8	22	0.4	136	77	0	77	377	
	1300	1465	174	14	22	0.1	138	39	0	39	391	
	1400	1519	176	13.8	22	0.1	138	39	0	39	394	
	1500	1510	176	13.9	22	0.1	137	39	0	39	408	
	1600	1495	176	13.9	22	0.1	140	38	0	38	405	
	1700	1501	175	13.8	22	0.1	136	39	0	39	409	
9/6/2014	1500	1504	173	15.1	22.9	0.1	121	39	0	39	207	100,085
	1600	1498	173	15	22.8	0.1	122	39	0	39	215	
9/7/2014	1100	1502	170	15	22.1	0.5	119	88	0	88	219	101,706
	1200	1497	171	21.2	24	0.1	121	39	0	39	231	
9/8/2014	1300	1506	172	21.1	23.9	0.1	122	39	0	39	244	103,469
		End of MPE Event										

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APPENDIX F
Photographic Documentation

Plate 1. Fisch Drilling setting up on MW-10

Plate 2. Fisch Drilling set up on MW-11

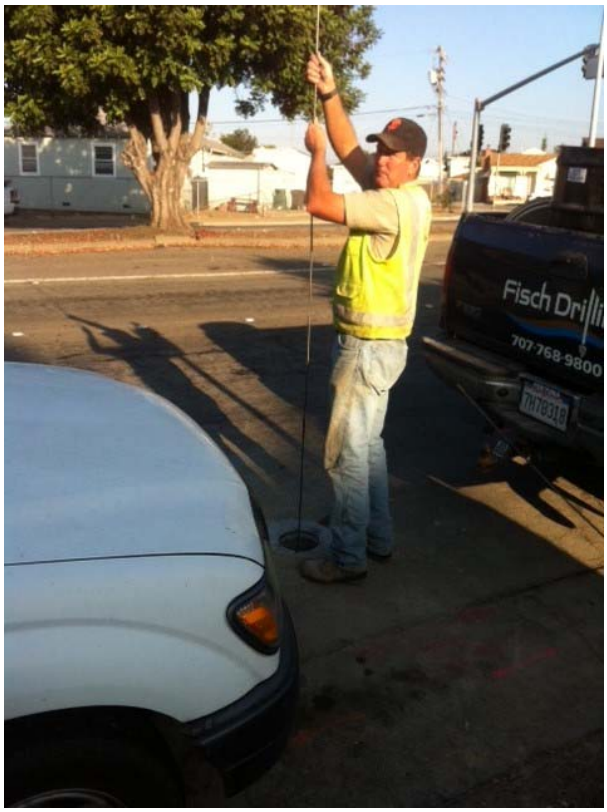

Plate 3. Fisch Drilling developing MW-11

Plate 4. Fisch drilling developing MW-10

Plate 5. Initial pressure reading on air sample gauge

Plate 6. Air sample set up in backyard of residence next to site

APPENDIX G

Certified Laboratory Analytical Reports and Chain-of-Custody Documentation

Curtis & Tompkins, Ltd., Analytical Laboratories, Since 1878
2323 Fifth Street, Berkeley, CA 94710, Phone (510) 486-0900

Laboratory Job Number 261305
ANALYTICAL REPORT

SOMA Environmental Engineering Inc.	Project : 2552
6620 Owens Dr.	Location : 15101 Freedom Avenue
Pleasanton, CA 94588	Level : II

Sample ID	Lab ID
SV-1A	261305-001
AA-1	261305-002

This data package has been reviewed for technical correctness and completeness. Release of this data has been authorized by the Laboratory Manager or the Manager's designee, as verified by the following signature. The results contained in this report meet all requirements of NELAC and pertain only to those samples which were submitted for analysis. This report may be reproduced only in its entirety.

Signature: Tracy Babjar Date: 10/14/2014

Tracy Babjar
Project Manager
tracy.babjar@ctberk.com
(510) 204-2226

CA ELAP# 2896, NELAP# 4044-001

Curtis & Tompkins, Ltd.

CASE NARRATIVE

Laboratory number:	**261305**
Client:	**SOMA Environmental Engineering Inc.**
Project:	**2552**
Location:	**15101 Freedom Avenue**
Request Date:	**09/30/14**
Samples Received:	**09/30/14**

This data package contains sample and QC results for two air samples, requested for the above referenced project on 09/30/14. The samples were received intact.

Volatile Organics in Air by MS (EPA TO-15):
High recovery was observed for carbon tetrachloride in the BSD for batch 216329; the associated RPD was within limits, and this analyte was not detected at or above the RL in the associated samples. No other analytical problems were encountered.

Volatile Organics in Air GC (ASTM D1946 and EPA TO-3):
No analytical problems were encountered.

Curtis & Tompkins, Ltd.
Analytical Laboratory Since 1878
2323 Fifth Street
Berkeley, CA 94710
(510)486-0900 Phone
(510)486-0532 Fax

AIR TESTING CHAIN OF CUSTODY
& PURCHASE ORDER

Chain of Custody # : _____

C&T LOGIN # 26/305

Project No: 2552
Project Name: 15101 Freedom Ave., San Leandro
EDD Format: _____ Rpt Level: II III IV
Turnaround Time: ☐ RUSH _____ ☐ Standard

Sampler: Lizzie Hightower
Report To: Joyce Bobek
Company : SOMA Environmental
Telephone: 925-734-6400
Email: jbobek@somaenv.com

Lab No.	Sample ID.	Sampling Information					TESTING REQUESTED				
		Date Collected	Time Collected	Canister ID (Bar Code #)	Flow Controller ID	Sample Volume (Gauge Reading)	TO-15	TO-3: C1-C6 Hydrocarbons GRO per Lizzie 10-1-14	D1946: ~~N_2, O_2, CO_2~~ Standard 1:5		
1	SV-1a	9/25-26/2014	12:40 - 12:00	44	A00142	-30 → -2	X	X	X		
2	AA-1	9/25-26/2014	12:00 - 12:00	28	A0C083	-30 → -2	X	X	X		

Notes:

RELIQUISHED BY:
9/30/14 08:30 DATE/TIME
DATE/TIME
DATE/TIME

RECEIVED BY:
9/30/14 1336 DATE/TIME
DATE/TIME
DATE/TIME

COOLER RECEIPT CHECKLIST — Curtis & Tompkins, Ltd.

Login # 261305 Date Received 9/30/14 Number of coolers 0
Client SOMA Project 15101 Freedom Ave.

Date Opened 9/30/14 By (print) AA (sign) [signature]
Date Logged in ↓ By (print) ↓ (sign) ↓

1. Did cooler come with a shipping slip (airbill, etc) YES (NO)
   Shipping info
2A. Were custody seals present? .... ☐ YES (circle) on cooler on samples ☒ NO
   How many Name Date
2B. Were custody seals intact upon arrival? YES NO (N/A)
3. Were custody papers dry and intact when received? (YES) NO
4. Were custody papers filled out properly (ink, signed, etc)? (YES) NO
5. Is the project identifiable from custody papers? (If so fill out top of form) (YES) NO
6. Indicate the packing in cooler: (if other, describe)

☐ Bubble Wrap ☐ Foam blocks ☐ Bags ☐ None
☐ Cloth material ☒ Cardboard ☐ Styrofoam ☐ Paper towels

7. Temperature documentation: * Notify PM if temperature exceeds 6°C

Type of ice used: ☐ Wet ☐ Blue/Gel ☒ None Temp(°C)

☐ Samples Received on ice & cold without a temperature blank; temp. taken with IR gun

☐ Samples received on ice directly from the field. Cooling process had begun

8. Were Method 5035 sampling containers present? YES (NO)
   If YES, what time were they transferred to freezer?
9. Did all bottles arrive unbroken/unopened? (YES) NO
10. Are there any missing / extra samples? YES (NO)
11. Are samples in the appropriate containers for indicated tests? (YES) NO
12. Are sample labels present, in good condition and complete? (YES) NO
13. Do the sample labels agree with custody papers? (YES) NO
14. Was sufficient amount of sample sent for tests requested? (YES) NO
15. Are the samples appropriately preserved? YES NO (N/A)
16. Did you check preservatives for all bottles for each sample? YES NO (N/A)
17. Did you document your preservative check? YES NO (N/A)
18. Did you change the hold time in LIMS for unpreserved VOAs? YES NO (N/A)
19. Did you change the hold time in LIMS for preserved terracores? YES NO (N/A)
20. Are bubbles > 6mm absent in VOA samples? YES NO (N/A)
21. Was the client contacted concerning this sample delivery? YES (NO)
   If YES, Who was called? Lizzie By T. Bobby Date: 10-1-14

COMMENTS

Changed C1-C4 - to GRO List

We will not report N2

Rev 10, 9/12

Curtis & Tompkins, Ltd.

Detections Summary for 261305

Results for any subcontracted analyses are not included in this summary.

Client : SOMA Environmental Engineering Inc.
Project : 2552
Location : 15101 Freedom Avenue

Client Sample ID : SV-1A Laboratory Sample ID : 261305-001

Analyte	Result	Flags	RL	MDL	Units	Basis	IDF	Method	Prep Method
Benzene	0.23	J	0.92	0.18	ppbv	As Recd	1.830	EPA TO-15	METHOD
Oxygen	150,000		1,800		ppmv	As Recd	1.830	ASTM D1946	METHOD

Client Sample ID : AA-1 Laboratory Sample ID : 261305-002

Analyte	Result	Flags	RL	MDL	Units	Basis	IDF	Method	Prep Method
Benzene	0.24	J	0.87	0.17	ppbv	As Recd	1.740	EPA TO-15	METHOD
Naphthalene	0.27	J	3.5	0.17	ppbv	As Recd	1.740	EPA TO-15	METHOD
Oxygen	150,000		1,700		ppmv	As Recd	1.740	ASTM D1946	METHOD

J = Estimated value

Curtis & Tompkins, Ltd.

Volatile Organics in Air

Lab #:	261305	Location:	15101 Freedom Avenue
Client:	SOMA Environmental Engineering Inc.	Prep:	METHOD
Project#:	2552	Analysis:	EPA TO-15
Field ID:	SV-1A	Diln Fac:	1.830
Lab ID:	261305-001	Batch#:	216329
Matrix:	Air	Sampled:	09/26/14
Units (V):	ppbv	Received:	09/30/14
Units (M):	ug/m3	Analyzed:	10/11/14

Analyte	Result (V)	RL	MDL	Result (M)	RL	MDL
Freon 12	ND	0.92		ND	4.5	
Freon 114	ND	0.92		ND	6.4	
Chloromethane	ND	0.92		ND	1.9	
Vinyl Chloride	ND	0.92		ND	2.3	
1,3-Butadiene	ND	0.92		ND	2.0	
Bromomethane	ND	0.92		ND	3.6	
Chloroethane	ND	0.92		ND	2.4	
Trichlorofluoromethane	ND	0.92		ND	5.1	
Acrolein	ND	3.7		ND	8.4	
1,1-Dichloroethene	ND	0.92		ND	3.6	
Freon 113	ND	0.92		ND	7.0	
Acetone	ND	3.7		ND	8.7	
Carbon Disulfide	ND	0.92		ND	2.8	
Isopropanol	ND	3.7		ND	9.0	
Methylene Chloride	ND	3.1		ND	11	
trans-1,2-Dichloroethene	ND	0.92		ND	3.6	
MTBE	ND	0.92		ND	3.3	
n-Hexane	ND	0.92		ND	3.2	
1,1-Dichloroethane	ND	0.92		ND	3.7	
Vinyl Acetate	ND	0.92		ND	3.2	
cis-1,2-Dichloroethene	ND	0.92		ND	3.6	
2-Butanone	ND	0.92		ND	2.7	
Ethyl Acetate	ND	0.92		ND	3.3	
Tetrahydrofuran	ND	0.92		ND	2.7	
Chloroform	ND	0.92		ND	4.5	
1,1,1-Trichloroethane	ND	0.92		ND	5.0	
Cyclohexane	ND	0.92		ND	3.1	
Carbon Tetrachloride	ND	0.92		ND	5.8	
Benzene	0.23 J	0.92	0.18	0.74 J	2.9	0.58
1,2-Dichloroethane	ND	0.92		ND	3.7	
n-Heptane	ND	0.92		ND	3.7	
Trichloroethene	ND	0.92		ND	4.9	
1,2-Dichloropropane	ND	0.92		ND	4.2	

J= Estimated value
ND= Not Detected
RL= Reporting Limit
MDL= Method Detection Limit
Result M= Result in mass units
Result V= Result in volume units

Curtis & Tompkins, Ltd.

Volatile Organics in Air

Lab #:	261305	Location:	15101 Freedom Avenue
Client:	SOMA Environmental Engineering Inc.	Prep:	METHOD
Project#:	2552	Analysis:	EPA TO-15
Field ID:	SV-1A	Diln Fac:	1.830
Lab ID:	261305-001	Batch#:	216329
Matrix:	Air	Sampled:	09/26/14
Units (V):	ppbv	Received:	09/30/14
Units (M):	ug/m3	Analyzed:	10/11/14

Analyte	Result (V)	RL	MDL	Result (M)	RL	MDL
Bromodichloromethane	ND	0.92		ND	6.1	
cis-1,3-Dichloropropene	ND	0.92		ND	4.2	
4-Methyl-2-Pentanone	ND	0.92		ND	3.7	
Toluene	ND	0.92		ND	3.4	
trans-1,3-Dichloropropene	ND	0.92		ND	4.2	
1,1,2-Trichloroethane	ND	0.92		ND	5.0	
Tetrachloroethene	ND	0.92		ND	6.2	
2-Hexanone	ND	0.92		ND	3.7	
Dibromochloromethane	ND	0.92		ND	7.8	
1,2-Dibromoethane	ND	0.92		ND	7.0	
Chlorobenzene	ND	0.92		ND	4.2	
Ethylbenzene	ND	0.92	0.18	ND	4.0	0.79
m,p-Xylenes	ND	0.92		ND	4.0	
o-Xylene	ND	0.92		ND	4.0	
Styrene	ND	0.92		ND	3.9	
Bromoform	ND	0.92		ND	9.5	
1,1,2,2-Tetrachloroethane	ND	0.92		ND	6.3	
4-Ethyltoluene	ND	0.92		ND	4.5	
1,3,5-Trimethylbenzene	ND	0.92		ND	4.5	
1,2,4-Trimethylbenzene	ND	0.92		ND	4.5	
1,3-Dichlorobenzene	ND	0.92		ND	5.5	
1,4-Dichlorobenzene	ND	0.92		ND	5.5	
Benzyl chloride	ND	0.92		ND	4.7	
1,2-Dichlorobenzene	ND	0.92		ND	5.5	
1,2,4-Trichlorobenzene	ND	0.92		ND	6.8	
Hexachlorobutadiene	ND	0.92		ND	9.8	
Naphthalene	ND	3.7	0.18	ND	19	0.96

Surrogate	%REC	Limits
Bromofluorobenzene	100	70-130

J= Estimated value
ND= Not Detected
RL= Reporting Limit
MDL= Method Detection Limit
Result M= Result in mass units
Result V= Result in volume units

Curtis & Tompkins, Ltd.

Volatile Organics in Air

Lab #:	261305	Location:	15101 Freedom Avenue
Client:	SOMA Environmental Engineering Inc.	Prep:	METHOD
Project#:	2552	Analysis:	EPA TO-15
Field ID:	AA-1	Diln Fac:	1.740
Lab ID:	261305-002	Batch#:	216329
Matrix:	Air	Sampled:	09/26/14
Units (V):	ppbv	Received:	09/30/14
Units (M):	ug/m3	Analyzed:	10/11/14

Analyte	Result (V)	RL	MDL	Result (M)	RL	MDL
Freon 12	ND	0.87		ND	4.3	
Freon 114	ND	0.87		ND	6.1	
Chloromethane	ND	0.87		ND	1.8	
Vinyl Chloride	ND	0.87		ND	2.2	
1,3-Butadiene	ND	0.87		ND	1.9	
Bromomethane	ND	0.87		ND	3.4	
Chloroethane	ND	0.87		ND	2.3	
Trichlorofluoromethane	ND	0.87		ND	4.9	
Acrolein	ND	3.5		ND	8.0	
1,1-Dichloroethene	ND	0.87		ND	3.4	
Freon 113	ND	0.87		ND	6.7	
Acetone	ND	3.5		ND	8.3	
Carbon Disulfide	ND	0.87		ND	2.7	
Isopropanol	ND	3.5		ND	8.6	
Methylene Chloride	ND	2.9		ND	10	
trans-1,2-Dichloroethene	ND	0.87		ND	3.4	
MTBE	ND	0.87		ND	3.1	
n-Hexane	ND	0.87		ND	3.1	
1,1-Dichloroethane	ND	0.87		ND	3.5	
Vinyl Acetate	ND	0.87		ND	3.1	
cis-1,2-Dichloroethene	ND	0.87		ND	3.4	
2-Butanone	ND	0.87		ND	2.6	
Ethyl Acetate	ND	0.87		ND	3.1	
Tetrahydrofuran	ND	0.87		ND	2.6	
Chloroform	ND	0.87		ND	4.2	
1,1,1-Trichloroethane	ND	0.87		ND	4.7	
Cyclohexane	ND	0.87		ND	3.0	
Carbon Tetrachloride	ND	0.87		ND	5.5	
Benzene	0.24 J	0.87	0.17	0.76 J	2.8	0.56
1,2-Dichloroethane	ND	0.87		ND	3.5	
n-Heptane	ND	0.87		ND	3.6	
Trichloroethene	ND	0.87		ND	4.7	
1,2-Dichloropropane	ND	0.87		ND	4.0	

J= Estimated value
ND= Not Detected
RL= Reporting Limit
MDL= Method Detection Limit
Result M= Result in mass units
Result V= Result in volume units

Curtis & Tompkins, Ltd.

Volatile Organics in Air

Lab #:	261305	Location:	15101 Freedom Avenue
Client:	SOMA Environmental Engineering Inc.	Prep:	METHOD
Project#:	2552	Analysis:	EPA TO-15
Field ID:	AA-1	Diln Fac:	1.740
Lab ID:	261305-002	Batch#:	216329
Matrix:	Air	Sampled:	09/26/14
Units (V):	ppbv	Received:	09/30/14
Units (M):	ug/m3	Analyzed:	10/11/14

Analyte	Result (V)	RL	MDL	Result (M)	RL	MDL
Bromodichloromethane	ND	0.87		ND	5.8	
cis-1,3-Dichloropropene	ND	0.87		ND	3.9	
4-Methyl-2-Pentanone	ND	0.87		ND	3.6	
Toluene	ND	0.87		ND	3.3	
trans-1,3-Dichloropropene	ND	0.87		ND	3.9	
1,1,2-Trichloroethane	ND	0.87		ND	4.7	
Tetrachloroethene	ND	0.87		ND	5.9	
2-Hexanone	ND	0.87		ND	3.6	
Dibromochloromethane	ND	0.87		ND	7.4	
1,2-Dibromoethane	ND	0.87		ND	6.7	
Chlorobenzene	ND	0.87		ND	4.0	
Ethylbenzene	ND	0.87	0.17	ND	3.8	0.76
m,p-Xylenes	ND	0.87		ND	3.8	
o-Xylene	ND	0.87		ND	3.8	
Styrene	ND	0.87		ND	3.7	
Bromoform	ND	0.87		ND	9.0	
1,1,2,2-Tetrachloroethane	ND	0.87		ND	6.0	
4-Ethyltoluene	ND	0.87		ND	4.3	
1,3,5-Trimethylbenzene	ND	0.87		ND	4.3	
1,2,4-Trimethylbenzene	ND	0.87		ND	4.3	
1,3-Dichlorobenzene	ND	0.87		ND	5.2	
1,4-Dichlorobenzene	ND	0.87		ND	5.2	
Benzyl chloride	ND	0.87		ND	4.5	
1,2-Dichlorobenzene	ND	0.87		ND	5.2	
1,2,4-Trichlorobenzene	ND	0.87		ND	6.5	
Hexachlorobutadiene	ND	0.87		ND	9.3	
Naphthalene	0.27 J	3.5	0.17	1.4 J	18	0.91

Surrogate	%REC	Limits
Bromofluorobenzene	99	70-130

J= Estimated value
ND= Not Detected
RL= Reporting Limit
MDL= Method Detection Limit
Result M= Result in mass units
Result V= Result in volume units

Curtis & Tompkins, Ltd.

Batch QC Report

Volatile Organics in Air

Lab #:	261305	Location:	15101 Freedom Avenue
Client:	SOMA Environmental Engineering Inc.	Prep:	METHOD
Project#:	2552	Analysis:	EPA TO-15
Matrix:	Air	Batch#:	216329
Units (V):	ppbv	Analyzed:	10/11/14
Diln Fac:	1.000		

Type: BS Lab ID: QC761302

Analyte	Spiked	Result (V)	%REC	Limits
Freon 12	10.00	9.401	94	70-130
Freon 114	10.00	9.720	97	70-130
Chloromethane	10.00	10.75	108	70-130
Vinyl Chloride	10.00	9.799	98	70-130
1,3-Butadiene	10.00	9.397	94	70-130
Bromomethane	10.00	9.751	98	70-130
Chloroethane	10.00	10.52	105	70-130
Trichlorofluoromethane	10.00	9.679	97	70-130
Acrolein	10.00	9.659	97	62-130
1,1-Dichloroethene	10.00	9.915	99	70-130
Freon 113	10.00	8.905	89	70-130
Acetone	10.00	8.535	85	67-130
Carbon Disulfide	10.00	8.707	87	70-130
Isopropanol	10.00	7.154	72	60-130
Methylene Chloride	10.00	8.843	88	68-130
trans-1,2-Dichloroethene	10.00	10.56	106	70-130
MTBE	10.00	9.107	91	70-130
n-Hexane	10.00	8.836	88	70-130
1,1-Dichloroethane	10.00	9.361	94	70-130
Vinyl Acetate	10.00	9.135	91	70-130
cis-1,2-Dichloroethene	10.00	9.819	98	70-130
2-Butanone	10.00	9.946	99	70-130
Ethyl Acetate	10.00	9.578	96	70-130
Tetrahydrofuran	10.00	9.580	96	70-130
Chloroform	10.00	9.373	94	70-130
1,1,1-Trichloroethane	10.00	9.788	98	70-130
Cyclohexane	10.00	9.849	98	70-130
Carbon Tetrachloride	10.00	13.05	130	70-130
Benzene	10.00	9.569	96	70-130
1,2-Dichloroethane	10.00	9.919	99	70-130
n-Heptane	10.00	8.537	85	70-130
Trichloroethene	10.00	9.782	98	70-130
1,2-Dichloropropane	10.00	10.20	102	70-130

*= Value outside of QC limits; see narrative
RPD= Relative Percent Difference
Result V= Result in volume units

Curtis & Tompkins, Ltd.

Batch QC Report

Volatile Organics in Air

Lab #:	261305	Location:	15101 Freedom Avenue
Client:	SOMA Environmental Engineering Inc.	Prep:	METHOD
Project#:	2552	Analysis:	EPA TO-15
Matrix:	Air	Batch#:	216329
Units (V):	ppbv	Analyzed:	10/11/14
Diln Fac:	1.000		

Analyte	Spiked	Result (V)	%REC	Limits
Bromodichloromethane	10.00	10.22	102	70-130
cis-1,3-Dichloropropene	10.00	9.634	96	70-130
4-Methyl-2-Pentanone	10.00	7.960	80	70-130
Toluene	10.00	8.741	87	70-130
trans-1,3-Dichloropropene	10.00	10.59	106	70-130
1,1,2-Trichloroethane	10.00	10.15	101	70-130
Tetrachloroethene	10.00	9.074	91	70-130
2-Hexanone	10.00	7.367	74	70-130
Dibromochloromethane	10.00	9.876	99	70-130
1,2-Dibromoethane	10.00	9.376	94	70-130
Chlorobenzene	10.00	8.448	84	70-130
Ethylbenzene	10.00	7.826	78	70-130
m,p-Xylenes	20.00	17.25	86	70-130
o-Xylene	10.00	8.677	87	70-130
Styrene	10.00	8.234	82	70-130
Bromoform	10.00	10.83	108	70-130
1,1,2,2-Tetrachloroethane	10.00	8.476	85	70-130
4-Ethyltoluene	10.00	9.238	92	70-130
1,3,5-Trimethylbenzene	10.00	9.139	91	70-130
1,2,4-Trimethylbenzene	10.00	9.043	90	70-130
1,3-Dichlorobenzene	10.00	8.413	84	70-130
1,4-Dichlorobenzene	10.00	8.242	82	70-130
Benzyl chloride	10.00	7.981	80	70-130
1,2-Dichlorobenzene	10.00	8.252	83	70-130
1,2,4-Trichlorobenzene	10.00	7.416	74	62-130
Hexachlorobutadiene	10.00	7.845	78	68-130
Naphthalene	10.00	8.926	89	54-136

Surrogate	%REC	Limits
Bromofluorobenzene	100	70-130

*= Value outside of QC limits; see narrative
RPD= Relative Percent Difference
Result V= Result in volume units

Curtis & Tompkins, Ltd.

Batch QC Report

Volatile Organics in Air

Lab #:	261305	Location:	15101 Freedom Avenue
Client:	SOMA Environmental Engineering Inc.	Prep:	METHOD
Project#:	2552	Analysis:	EPA TO-15
Matrix:	Air	Batch#:	216329
Units (V):	ppbv	Analyzed:	10/11/14
Diln Fac:	1.000		

Type: BSD Lab ID: QC761303

Analyte	Spiked	Result (V)	%REC	Limits	RPD	Lim
Freon 12	10.00	9.684	97	70-130	3	20
Freon 114	10.00	9.661	97	70-130	1	20
Chloromethane	10.00	10.83	108	70-130	1	27
Vinyl Chloride	10.00	9.890	99	70-130	1	23
1,3-Butadiene	10.00	9.436	94	70-130	0	21
Bromomethane	10.00	9.958	100	70-130	2	20
Chloroethane	10.00	10.98	110	70-130	4	20
Trichlorofluoromethane	10.00	9.822	98	70-130	1	20
Acrolein	10.00	9.848	98	62-130	2	31
1,1-Dichloroethene	10.00	10.13	101	70-130	2	20
Freon 113	10.00	9.062	91	70-130	2	23
Acetone	10.00	8.668	87	67-130	2	20
Carbon Disulfide	10.00	8.904	89	70-130	2	20
Isopropanol	10.00	7.239	72	60-130	1	21
Methylene Chloride	10.00	9.243	92	68-130	4	23
trans-1,2-Dichloroethene	10.00	10.70	107	70-130	1	20
MTBE	10.00	9.271	93	70-130	2	20
n-Hexane	10.00	9.034	90	70-130	2	20
1,1-Dichloroethane	10.00	9.539	95	70-130	2	20
Vinyl Acetate	10.00	9.268	93	70-130	1	21
cis-1,2-Dichloroethene	10.00	9.934	99	70-130	1	20
2-Butanone	10.00	9.788	98	70-130	2	20
Ethyl Acetate	10.00	9.881	99	70-130	3	20
Tetrahydrofuran	10.00	9.843	98	70-130	3	20
Chloroform	10.00	9.519	95	70-130	2	20
1,1,1-Trichloroethane	10.00	9.854	99	70-130	1	20
Cyclohexane	10.00	10.23	102	70-130	4	20
Carbon Tetrachloride	10.00	13.17	132 *	70-130	1	20
Benzene	10.00	9.826	98	70-130	3	20
1,2-Dichloroethane	10.00	10.19	102	70-130	3	20
n-Heptane	10.00	8.769	88	70-130	3	20
Trichloroethene	10.00	9.977	100	70-130	2	20
1,2-Dichloropropane	10.00	10.11	101	70-130	1	20

*= Value outside of QC limits; see narrative
RPD= Relative Percent Difference
Result V= Result in volume units

Curtis & Tompkins, Ltd.

Batch QC Report

Volatile Organics in Air

Lab #:	261305	Location:	15101 Freedom Avenue
Client:	SOMA Environmental Engineering Inc.	Prep:	METHOD
Project#:	2552	Analysis:	EPA TO-15
Matrix:	Air	Batch#:	216329
Units (V):	ppbv	Analyzed:	10/11/14
Diln Fac:	1.000		

Analyte	Spiked	Result (V)	%REC	Limits	RPD	Lim
Bromodichloromethane	10.00	10.29	103	70-130	1	20
cis-1,3-Dichloropropene	10.00	9.759	98	70-130	1	20
4-Methyl-2-Pentanone	10.00	8.216	82	70-130	3	20
Toluene	10.00	9.102	91	70-130	4	23
trans-1,3-Dichloropropene	10.00	10.79	108	70-130	2	20
1,1,2-Trichloroethane	10.00	10.44	104	70-130	3	20
Tetrachloroethene	10.00	9.418	94	70-130	4	20
2-Hexanone	10.00	7.503	75	70-130	2	21
Dibromochloromethane	10.00	10.06	101	70-130	2	20
1,2-Dibromoethane	10.00	9.653	97	70-130	3	20
Chlorobenzene	10.00	8.730	87	70-130	3	21
Ethylbenzene	10.00	8.104	81	70-130	3	20
m,p-Xylenes	20.00	17.70	88	70-130	3	20
o-Xylene	10.00	8.840	88	70-130	2	20
Styrene	10.00	8.346	83	70-130	1	21
Bromoform	10.00	10.94	109	70-130	1	20
1,1,2,2-Tetrachloroethane	10.00	8.527	85	70-130	1	24
4-Ethyltoluene	10.00	9.451	95	70-130	2	22
1,3,5-Trimethylbenzene	10.00	9.694	97	70-130	6	23
1,2,4-Trimethylbenzene	10.00	9.273	93	70-130	3	24
1,3-Dichlorobenzene	10.00	8.757	88	70-130	4	22
1,4-Dichlorobenzene	10.00	8.671	87	70-130	5	22
Benzyl chloride	10.00	7.983	80	70-130	0	21
1,2-Dichlorobenzene	10.00	8.573	86	70-130	4	22
1,2,4-Trichlorobenzene	10.00	8.090	81	62-130	9	28
Hexachlorobutadiene	10.00	8.266	83	68-130	5	27
Naphthalene	10.00	9.305	93	54-136	4	29

Surrogate	%REC	Limits
Bromofluorobenzene	100	70-130

*= Value outside of QC limits; see narrative
RPD= Relative Percent Difference
Result V= Result in volume units

Curtis & Tompkins, Ltd.

Batch QC Report

Volatile Organics in Air

Lab #:	261305	Location:	15101 Freedom Avenue
Client:	SOMA Environmental Engineering Inc.	Prep:	METHOD
Project#:	2552	Analysis:	EPA TO-15
Type:	BLANK	Units (M):	ug/m3
Lab ID:	QC761304	Diln Fac:	1.000
Matrix:	Air	Batch#:	216329
Units (V):	ppbv	Analyzed:	10/11/14

Analyte	Result (V)	RL	MDL	Result (M)	RL	MDL
Freon 12	ND	0.50		ND	2.5	
Freon 114	ND	0.50		ND	3.5	
Chloromethane	ND	0.50		ND	1.0	
Vinyl Chloride	ND	0.50		ND	1.3	
1,3-Butadiene	ND	0.50		ND	1.1	
Bromomethane	ND	0.50		ND	1.9	
Chloroethane	ND	0.50		ND	1.3	
Trichlorofluoromethane	ND	0.50		ND	2.8	
Acrolein	ND	2.0		ND	4.6	
1,1-Dichloroethene	ND	0.50		ND	2.0	
Freon 113	ND	0.50		ND	3.8	
Acetone	ND	2.0		ND	4.8	
Carbon Disulfide	ND	0.50		ND	1.6	
Isopropanol	ND	2.0		ND	4.9	
Methylene Chloride	ND	1.7		ND	5.8	
trans-1,2-Dichloroethene	ND	0.50		ND	2.0	
MTBE	ND	0.50		ND	1.8	
n-Hexane	ND	0.50		ND	1.8	
1,1-Dichloroethane	ND	0.50		ND	2.0	
Vinyl Acetate	ND	0.50		ND	1.8	
cis-1,2-Dichloroethene	ND	0.50		ND	2.0	
2-Butanone	ND	0.50		ND	1.5	
Ethyl Acetate	ND	0.50		ND	1.8	
Tetrahydrofuran	ND	0.50		ND	1.5	
Chloroform	ND	0.50		ND	2.4	
1,1,1-Trichloroethane	ND	0.50		ND	2.7	
Cyclohexane	ND	0.50		ND	1.7	
Carbon Tetrachloride	ND	0.50		ND	3.1	
Benzene	ND	0.50	0.10	ND	1.6	0.32
1,2-Dichloroethane	ND	0.50		ND	2.0	
n-Heptane	ND	0.50		ND	2.0	
Trichloroethene	ND	0.50		ND	2.7	
1,2-Dichloropropane	ND	0.50		ND	2.3	

J= Estimated value
ND= Not Detected
RL= Reporting Limit
MDL= Method Detection Limit
Result M= Result in mass units
Result V= Result in volume units

Curtis & Tompkins, Ltd.

Batch QC Report

Volatile Organics in Air

Lab #:	261305	Location:	15101 Freedom Avenue
Client:	SOMA Environmental Engineering Inc.	Prep:	METHOD
Project#:	2552	Analysis:	EPA TO-15
Type:	BLANK	Units (M):	ug/m3
Lab ID:	QC761304	Diln Fac:	1.000
Matrix:	Air	Batch#:	216329
Units (V):	ppbv	Analyzed:	10/11/14

Analyte	Result (V)	RL	MDL	Result (M)	RL	MDL
Bromodichloromethane	ND	0.50		ND	3.4	
cis-1,3-Dichloropropene	ND	0.50		ND	2.3	
4-Methyl-2-Pentanone	ND	0.50		ND	2.0	
Toluene	ND	0.50		ND	1.9	
trans-1,3-Dichloropropene	ND	0.50		ND	2.3	
1,1,2-Trichloroethane	ND	0.50		ND	2.7	
Tetrachloroethene	ND	0.50		ND	3.4	
2-Hexanone	ND	0.50		ND	2.0	
Dibromochloromethane	ND	0.50		ND	4.3	
1,2-Dibromoethane	ND	0.50		ND	3.8	
Chlorobenzene	ND	0.50		ND	2.3	
Ethylbenzene	ND	0.50	0.10	ND	2.2	0.43
m,p-Xylenes	ND	0.50		ND	2.2	
o-Xylene	ND	0.50		ND	2.2	
Styrene	ND	0.50		ND	2.1	
Bromoform	ND	0.50		ND	5.2	
1,1,2,2-Tetrachloroethane	ND	0.50		ND	3.4	
4-Ethyltoluene	ND	0.50		ND	2.5	
1,3,5-Trimethylbenzene	ND	0.50		ND	2.5	
1,2,4-Trimethylbenzene	ND	0.50		ND	2.5	
1,3-Dichlorobenzene	ND	0.50		ND	3.0	
1,4-Dichlorobenzene	ND	0.50		ND	3.0	
Benzyl chloride	ND	0.50		ND	2.6	
1,2-Dichlorobenzene	ND	0.50		ND	3.0	
1,2,4-Trichlorobenzene	ND	0.50		ND	3.7	
Hexachlorobutadiene	ND	0.50		ND	5.3	
Naphthalene	0.15 J	2.0	0.10	0.77 J	10	0.52

Surrogate	%REC	Limits
Bromofluorobenzene	99	70-130

J= Estimated value
ND= Not Detected
RL= Reporting Limit
MDL= Method Detection Limit
Result M= Result in mass units
Result V= Result in volume units

Curtis & Tompkins, Ltd.

Fixed Gas Analysis

Lab #:	261305	Location:	15101 Freedom Avenue
Client:	SOMA Environmental Engineering Inc.	Prep:	METHOD
Project#:	2552	Analysis:	ASTM D1946
Matrix:	Air	Sampled:	09/26/14
Units:	ppmv	Received:	09/30/14
Units (Mol %):	MOL %	Analyzed:	10/07/14
Batch#:	216190		

Field ID: SV-1A
Type: SAMPLE
Lab ID: 261305-001
Diln Fac: 1.830

Analyte	Result	RL	Result (Mol %)	RL
Carbon Monoxide	ND	1,800	ND	0.18
Carbon Dioxide	ND	1,800	ND	0.18
Oxygen	150,000	1,800	15	0.18
Methane	ND	1,800	ND	0.18

Field ID: AA-1
Type: SAMPLE
Lab ID: 261305-002
Diln Fac: 1.740

Analyte	Result	RL	Result (Mol %)	RL
Carbon Monoxide	ND	1,700	ND	0.17
Carbon Dioxide	ND	1,700	ND	0.17
Oxygen	150,000	1,700	15	0.17
Methane	ND	1,700	ND	0.17

Type: BLANK
Lab ID: QC760754
Diln Fac: 1.000

Analyte	Result	RL	Result (Mol %)	RL
Carbon Monoxide	ND	1,000	ND	0.10
Carbon Dioxide	ND	1,000	ND	0.10
Oxygen	ND	1,000	ND	0.10
Methane	ND	1,000	ND	0.10

ND= Not Detected
RL= Reporting Limit
Result Mol %= Result in Mole Percent

Curtis & Tompkins, Ltd.

Aromatic / Petroleum Hydrocarbons in Air

Lab #:	261305	Location:	15101 Freedom Avenue
Client:	SOMA Environmental Engineering Inc.	Prep:	METHOD
Project#:	2552	Analysis:	EPA TO-3
Analyte:	Gasoline Range Organics C6-C12	Batch#:	216095
Matrix:	Air	Sampled:	09/26/14
Units (V):	ppbv	Received:	09/30/14
Units (M):	ug/m3	Analyzed:	10/05/14

Field ID	Type	Lab ID	Result (V)	RL	MDL	Result (M)	RL	MDL	Diln Fac
SV-1A	SAMPLE	261305-001	ND	92	10	ND	370	42	1.830
AA-1	SAMPLE	261305-002	ND	87	9.7	ND	360	40	1.740
	BLANK	QC760365	ND	50	5.6	ND	200	23	1.000

ND= Not Detected
RL= Reporting Limit
MDL= Method Detection Limit
Result M= Result in mass units
Result V= Result in volume units

Curtis & Tompkins, Ltd.

Batch QC Report

Aromatic / Petroleum Hydrocarbons in Air

Lab #:	261305	Location:	15101 Freedom Avenue
Client:	SOMA Environmental Engineering Inc.	Prep:	METHOD
Project#:	2552	Analysis:	EPA TO-3
Analyte:	Gasoline Range Organics C6-C12	Diln Fac:	1.000
Matrix:	Air	Batch#:	216095
Units (V):	ppbv	Analyzed:	10/05/14

Type	Lab ID	Spiked	Result (V)	%REC	Limits	RPD	Lim
BS	QC760363	2,100	2,252	107	70-130		
BSD	QC760364	2,100	2,240	107	70-130	1	25

RPD= Relative Percent Difference
Result V= Result in volume units

Curtis & Tompkins, Ltd.

Batch QC Report

Fixed Gas Analysis

Lab #:	261305	Location:	15101 Freedom Avenue
Client:	SOMA Environmental Engineering Inc.	Prep:	METHOD
Project#:	2552	Analysis:	ASTM D1946
Type:	LCS	Diln Fac:	1.000
Lab ID:	QC760753	Batch#:	216190
Matrix:	Air	Analyzed:	10/07/14
Units:	ppmv		

Analyte	Spiked	Result	%REC	Limits
Carbon Monoxide	2,000	2,001	100	70-130
Carbon Dioxide	2,000	1,959	98	70-130
Oxygen	2,000	1,878	94	70-130
Methane	2,000	2,018	101	70-130

Curtis & Tompkins, Ltd.

Batch QC Report

Fixed Gas Analysis

Lab #:	261305	Location:	15101 Freedom Avenue
Client:	SOMA Environmental Engineering Inc.	Prep:	METHOD
Project#:	2552	Analysis:	ASTM D1946
Field ID:	ZZZZZZZZZZ	Units (Mol %):	MOL %
Type:	SDUP	Diln Fac:	1.900
MSS Lab ID:	261334-001	Batch#:	216190
Lab ID:	QC760755	Sampled:	09/30/14
Matrix:	Air	Received:	09/30/14
Units:	ppmv	Analyzed:	10/07/14

Analyte	MSS Result	Result	RL	Result (Mol %)	RL	RPD	Lim
Carbon Monoxide	<1,900	ND	1,900	ND	0.1900	NC	30
Carbon Dioxide	129,100	131,400	1,900	13.14	0.1900	2	30
Oxygen	11,610	11,830	1,900	1.183	0.1900	2	30
Methane	<1,900	ND	1,900	ND	0.1900	NC	30

NC= Not Calculated
ND= Not Detected
RL= Reporting Limit
RPD= Relative Percent Difference
Result Mol %= Result in Mole Percent

Curtis & Tompkins, Ltd., Analytical Laboratories, Since 1878
2323 Fifth Street, Berkeley, CA 94710, Phone (510) 486-0900

Laboratory Job Number 259209
ANALYTICAL REPORT

SOMA Environmental Engineering Inc.	Project : 2555
6620 Owens Dr.	Location : 15101 Freedom Ave. San Leandro
Pleasanton, CA 94588	Level : II

Sample ID	Lab ID
EFF MPE	259209-001
INF MPE	259209-002

This data package has been reviewed for technical correctness and completeness. Release of this data has been authorized by the Laboratory Manager or the Manager's designee, as verified by the following signature. The results contained in this report meet all requirements of NELAC and pertain only to those samples which were submitted for analysis. This report may be reproduced only in its entirety.

Signature: _____ Date: 07/28/2014

Tracy Babjar
Project Manager
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(510) 204-2226

CA ELAP# 2896, NELAP# 4044-001

Curtis & Tompkins, Ltd.

CASE NARRATIVE

Laboratory number:	**259209**
Client:	**SOMA Environmental Engineering Inc.**
Project:	**2555**
Location:	**15101 Freedom Ave. San Leandro**
Request Date:	**07/24/14**
Samples Received:	**07/24/14**

This data package contains sample and QC results for two air samples, requested for the above referenced project on 07/24/14. The samples were received intact.

Volatile Organics in Air by MS (EPA TO-15):

Low response was observed for carbon tetrachloride in the CCV analyzed 07/24/14 15:48; affected data was qualified with "b". Low recovery was observed for carbon tetrachloride in the BS for batch 213625; the associated RPD was within limits, and the low recovery was not associated with any reported results. No other analytical problems were encountered.

Volatile Organics in Air GC (EPA TO-3):

Gasoline range organics C6-C12 was detected between the MDL and the RL in the method blank for batch 213635; this analyte was detected in samples at a level at least 10 times that of the blank. No other analytical problems were encountered.

CHAIN OF CUSTODY

Curtis & Tompkins, Ltd.
Analytical Laboratory Since 1878
2323 Fifth Street
Berkeley, CA 94710
(510)486-0900 Phone
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C&T LOGIN # 259209

Sampler: Davoud Bazrpash

Project No: 2555

Report To: Joyce Bobek

Project Name: 15101 Freedom Ave.,San Leandro

Company : SOMA Environmental

Turnaround Time: Standard

Telephone: 925-734-6400

Fax: 925-734-6401

Lab No.	Sample ID.	Sampling Date Time	Matrix: Soil	Water	Waste	Air	# of Containers	Preservative: HCL	H_2SO_4	HNO_3	ICE	NONE	Analyses: TO-15	TO-3 (Modified)
1	EFF MPE	7/24/14 11 am				*	Tedlar bag					*	*	*
2	INF MPE	7/24/14 10:54 am				*	Tedlar bag					*	*	*

Notes: EDF OUTPUT REQUIRED

RELINQUISHED BY:	RECEIVED BY:
7/24/14 1132 DATE/TIME	7/24/14 1132 DATE/TIME
DATE/TIME	DATE/TIME
DATE/TIME	DATE/TIME

COOLER RECEIPT CHECKLIST

Curtis & Tompkins, Ltd.

Login # 254209 Date Received 7/24/14 Number of coolers 6
Client SOMA Project 1510 Freedom Ave.

Date Opened 7/24/14 By (print) MA (sign)
Date Logged in ↓ By (print) ↓ (sign) ↓

1. Did cooler come with a shipping slip (airbill, etc) YES (NO)
   Shipping info
2A. Were custody seals present? .... ☐ YES (circle) on cooler on samples ☒ NO
   How many Name Date
2B. Were custody seals intact upon arrival? YES NO (N/A)
3. Were custody papers dry and intact when received? (YES) NO
4. Were custody papers filled out properly (ink, signed, etc)? (YES) NO
5. Is the project identifiable from custody papers? (If so fill out top of form) (YES) NO
6. Indicate the packing in cooler: (if other, describe)

☐ Bubble Wrap ☐ Foam blocks ☐ Bags ☒ None
☐ Cloth material ☐ Cardboard ☐ Styrofoam ☐ Paper towels

7. Temperature documentation: * Notify PM if temperature exceeds 6°C

Type of ice used: ☐ Wet ☐ Blue/Gel ☒ None Temp(°C)

☐ Samples Received on ice & cold without a temperature blank

☐ Samples received on ice directly from the field. Cooling process had begun

8. Were Method 5035 sampling containers present? YES (NO)
   If YES, what time were they transferred to freezer?
9. Did all bottles arrive unbroken/unopened? (YES) NO
10. Are there any missing / extra samples? YES (NO)
11. Are samples in the appropriate containers for indicated tests? (YES) NO
12. Are sample labels present, in good condition and complete? (YES) NO
13. Do the sample labels agree with custody papers? (YES) NO
14. Was sufficient amount of sample sent for tests requested? (YES) NO
15. Are the samples appropriately preserved? YES NO (N/A)
16. Did you check preservatives for all bottles for each sample? YES NO (N/A)
17. Did you document your preservative check? YES NO (N/A)
18. Did you change the hold time in LIMS for unpreserved VOAs? YES NO (N/A)
19. Did you change the hold time in LIMS for preserved terracores? YES NO (N/A)
20. Are bubbles > 6mm absent in VOA samples? YES NO (N/A)
21. Was the client contacted concerning this sample delivery? YES (NO)
   If YES, Who was called? By Date:

COMMENTS

Rev 9, 10/11

Curtis & Tompkins, Ltd.

Detections Summary for 259209

Client : SOMA Environmental Engineering Inc.
Project : 2555
Location : 15101 Freedom Ave. San Leandro

Client Sample ID : EFF MPE Laboratory Sample ID : 259209-001

Analyte	Result	Flags	RL	MDL	Units	Basis	IDF	Method	Prep Method
Chloromethane	0.97		0.50	0.15	ppbv	As Recd	1.000	EPA TO-15	METHOD
Acrolein	2.0		2.0	0.21	ppbv	As Recd	1.000	EPA TO-15	METHOD
Acetone	14		2.0	0.15	ppbv	As Recd	1.000	EPA TO-15	METHOD
n-Hexane	1.1		0.50	0.10	ppbv	As Recd	1.000	EPA TO-15	METHOD
2-Butanone	1.2		0.50	0.10	ppbv	As Recd	1.000	EPA TO-15	METHOD
Tetrahydrofuran	0.83		0.50	0.10	ppbv	As Recd	1.000	EPA TO-15	METHOD
n-Heptane	0.55		0.50	0.10	ppbv	As Recd	1.000	EPA TO-15	METHOD
Toluene	3.8		0.50	0.10	ppbv	As Recd	1.000	EPA TO-15	METHOD
Ethylbenzene	1.1		0.50	0.10	ppbv	As Recd	1.000	EPA TO-15	METHOD
m,p-Xylenes	5.5		0.50	0.10	ppbv	As Recd	1.000	EPA TO-15	METHOD
o-Xylene	1.4		0.50	0.10	ppbv	As Recd	1.000	EPA TO-15	METHOD
4-Ethyltoluene	0.81		0.50	0.10	ppbv	As Recd	1.000	EPA TO-15	METHOD
1,3,5-Trimethylbenzene	0.80		0.50	0.10	ppbv	As Recd	1.000	EPA TO-15	METHOD
1,2,4-Trimethylbenzene	3.8		0.50	0.10	ppbv	As Recd	1.000	EPA TO-15	METHOD
Gasoline Range Organics C6-C12	100		25	5.6	ppbv	As Recd	1.000	EPA TO-3	METHOD

Client Sample ID : INF MPE Laboratory Sample ID : 259209-002

Analyte	Result	Flags	RL	MDL	Units	Basis	IDF	Method	Prep Method
n-Hexane	18,000		200	40	ppbv	As Recd	400.0	EPA TO-15	METHOD
Cyclohexane	7,400		200	40	ppbv	As Recd	400.0	EPA TO-15	METHOD
Benzene	670		200	8.7	ppbv	As Recd	400.0	EPA TO-15	METHOD
n-Heptane	8,000		200	40	ppbv	As Recd	400.0	EPA TO-15	METHOD
Toluene	2,500		200	40	ppbv	As Recd	400.0	EPA TO-15	METHOD
Ethylbenzene	3,800		200	40	ppbv	As Recd	400.0	EPA TO-15	METHOD
m,p-Xylenes	20,000		200	40	ppbv	As Recd	400.0	EPA TO-15	METHOD
o-Xylene	6,900		200	40	ppbv	As Recd	400.0	EPA TO-15	METHOD
4-Ethyltoluene	3,700		200	40	ppbv	As Recd	400.0	EPA TO-15	METHOD
1,3,5-Trimethylbenzene	3,600		200	40	ppbv	As Recd	400.0	EPA TO-15	METHOD
1,2,4-Trimethylbenzene	9,200		200	40	ppbv	As Recd	400.0	EPA TO-15	METHOD
Gasoline Range Organics C6-C12	290,000		500	110	ppbv	As Recd	20.00	EPA TO-3	METHOD

Curtis & Tompkins, Ltd.

Volatile Organics in Air

Lab #:	259209	Location:	15101 Freedom Ave. San Leandro
Client:	SOMA Environmental Engineering Inc.	Prep:	METHOD
Project#:	2555	Analysis:	EPA TO-15
Field ID:	EFF MPE	Units (M):	ug/m3
Lab ID:	259209-001	Diln Fac:	1.000
Matrix:	Air	Sampled:	07/24/14
Units (V):	ppbv	Received:	07/24/14

Analyte	Result (V)	RL	Result (M)	RL	Batch#	Analyzed
Freon 12	ND	0.50	ND	2.5	213625	07/24/14
Freon 114	ND	0.50	ND	3.5	213625	07/24/14
Chloromethane	0.97	0.50	2.0	1.0	213625	07/24/14
Vinyl Chloride	ND	0.50	ND	1.3	213625	07/24/14
1,3-Butadiene	ND	0.50	ND	1.1	213625	07/24/14
Bromomethane	ND	0.50	ND	1.9	213625	07/24/14
Chloroethane	ND	0.50	ND	1.3	213625	07/24/14
Trichlorofluoromethane	ND	0.50	ND	2.8	213625	07/24/14
Acrolein	2.0	2.0	4.6	4.6	213625	07/24/14
1,1-Dichloroethene	ND	0.50	ND	2.0	213625	07/24/14
Freon 113	ND	0.50	ND	3.8	213625	07/24/14
Acetone	14	2.0	32	4.8	213625	07/24/14
Carbon Disulfide	ND	0.50	ND	1.6	213625	07/24/14
Methylene Chloride	ND	0.50	ND	1.7	213625	07/24/14
trans-1,2-Dichloroethene	ND	0.50	ND	2.0	213625	07/24/14
MTBE	ND	0.50	ND	1.8	213625	07/24/14
n-Hexane	1.1	0.50	3.9	1.8	213625	07/24/14
1,1-Dichloroethane	ND	0.50	ND	2.0	213625	07/24/14
Vinyl Acetate	ND	0.50	ND	1.8	213625	07/24/14
cis-1,2-Dichloroethene	ND	0.50	ND	2.0	213625	07/24/14
2-Butanone	1.2	0.50	3.4	1.5	213625	07/24/14
Ethyl Acetate	ND	0.50	ND	1.8	213625	07/24/14
Tetrahydrofuran	0.83	0.50	2.4	1.5	213625	07/24/14
Chloroform	ND	0.50	ND	2.4	213625	07/24/14
1,1,1-Trichloroethane	ND	0.50	ND	2.7	213625	07/24/14
Cyclohexane	ND	0.50	ND	1.7	213625	07/24/14
Carbon Tetrachloride	ND	0.50	ND	3.1	213695	07/25/14
Benzene	ND	0.50	ND	1.6	213625	07/24/14
1,2-Dichloroethane	ND	0.50	ND	2.0	213625	07/24/14
n-Heptane	0.55	0.50	2.3	2.0	213625	07/24/14
Trichloroethene	ND	0.50	ND	2.7	213625	07/24/14
1,2-Dichloropropane	ND	0.50	ND	2.3	213625	07/24/14
Bromodichloromethane	ND	0.50	ND	3.4	213625	07/24/14
cis-1,3-Dichloropropene	ND	0.50	ND	2.3	213625	07/24/14
4-Methyl-2-Pentanone	ND	0.50	ND	2.0	213625	07/24/14
Toluene	3.8	0.50	14	1.9	213625	07/24/14

ND= Not Detected
RL= Reporting Limit
Result M= Result in mass units
Result V= Result in volume units

Curtis & Tompkins, Ltd.

Volatile Organics in Air

Lab #:	259209	Location:	15101 Freedom Ave. San Leandro
Client:	SOMA Environmental Engineering Inc.	Prep:	METHOD
Project#:	2555	Analysis:	EPA TO-15
Field ID:	EFF MPE	Units (M):	ug/m3
Lab ID:	259209-001	Diln Fac:	1.000
Matrix:	Air	Sampled:	07/24/14
Units (V):	ppbv	Received:	07/24/14

Analyte	Result (V)	RL	Result (M)	RL	Batch#	Analyzed
trans-1,3-Dichloropropene	ND	0.50	ND	2.3	213625	07/24/14
1,1,2-Trichloroethane	ND	0.50	ND	2.7	213625	07/24/14
Tetrachloroethene	ND	0.50	ND	3.4	213625	07/24/14
2-Hexanone	ND	0.50	ND	2.0	213625	07/24/14
Dibromochloromethane	ND	0.50	ND	4.3	213625	07/24/14
1,2-Dibromoethane	ND	0.50	ND	3.8	213625	07/24/14
Chlorobenzene	ND	0.50	ND	2.3	213625	07/24/14
Ethylbenzene	1.1	0.50	4.6	2.2	213625	07/24/14
m,p-Xylenes	5.5	0.50	24	2.2	213625	07/24/14
o-Xylene	1.4	0.50	6.2	2.2	213625	07/24/14
Styrene	ND	0.50	ND	2.1	213625	07/24/14
Bromoform	ND	0.50	ND	5.2	213625	07/24/14
1,1,2,2-Tetrachloroethane	ND	0.50	ND	3.4	213625	07/24/14
4-Ethyltoluene	0.81	0.50	4.0	2.5	213625	07/24/14
1,3,5-Trimethylbenzene	0.80	0.50	3.9	2.5	213625	07/24/14
1,2,4-Trimethylbenzene	3.8	0.50	19	2.5	213625	07/24/14
1,3-Dichlorobenzene	ND	0.50	ND	3.0	213625	07/24/14
1,4-Dichlorobenzene	ND	0.50	ND	3.0	213625	07/24/14
Benzyl chloride	ND	0.50	ND	2.6	213625	07/24/14
1,2-Dichlorobenzene	ND	0.50	ND	3.0	213625	07/24/14
1,2,4-Trichlorobenzene	ND	0.50	ND	3.7	213625	07/24/14
Hexachlorobutadiene	ND	0.50	ND	5.3	213625	07/24/14
Naphthalene	ND	2.0	ND	10	213625	07/24/14

Surrogate	%REC	Limits	Batch#	Analyzed
Bromofluorobenzene	96	70-130	213625	07/24/14

ND= Not Detected
RL= Reporting Limit
Result M= Result in mass units
Result V= Result in volume units

Curtis & Tompkins, Ltd.

Volatile Organics in Air

Lab #:	259209	Location:	15101 Freedom Ave. San Leandro
Client:	SOMA Environmental Engineering Inc.	Prep:	METHOD
Project#:	2555	Analysis:	EPA TO-15
Field ID:	INF MPE	Diln Fac:	400.0
Lab ID:	259209-002	Batch#:	213695
Matrix:	Air	Sampled:	07/24/14
Units (V):	ppbv	Received:	07/24/14
Units (M):	ug/m3	Analyzed:	07/25/14

Analyte	Result (V)	RL	Result (M)	RL
Freon 12	ND	200	ND	990
Freon 114	ND	200	ND	1,400
Chloromethane	ND	200	ND	410
Vinyl Chloride	ND	200	ND	510
1,3-Butadiene	ND	200	ND	440
Bromomethane	ND	200	ND	780
Chloroethane	ND	200	ND	530
Trichlorofluoromethane	ND	200	ND	1,100
Acrolein	ND	800	ND	1,800
1,1-Dichloroethene	ND	200	ND	790
Freon 113	ND	200	ND	1,500
Acetone	ND	800	ND	1,900
Carbon Disulfide	ND	200	ND	620
Methylene Chloride	ND	200	ND	690
trans-1,2-Dichloroethene	ND	200	ND	790
MTBE	ND	200	ND	720
n-Hexane	18,000	200	64,000	700
1,1-Dichloroethane	ND	200	ND	810
Vinyl Acetate	ND	200	ND	700
cis-1,2-Dichloroethene	ND	200	ND	790
2-Butanone	ND	200	ND	590
Ethyl Acetate	ND	200	ND	720
Tetrahydrofuran	ND	200	ND	590
Chloroform	ND	200	ND	980
1,1,1-Trichloroethane	ND	200	ND	1,100
Cyclohexane	7,400	200	25,000	690
Carbon Tetrachloride	ND	200	ND	1,300
Benzene	670	200	2,100	640
1,2-Dichloroethane	ND	200	ND	810
n-Heptane	8,000	200	33,000	820
Trichloroethene	ND	200	ND	1,100
1,2-Dichloropropane	ND	200	ND	920
Bromodichloromethane	ND	200	ND	1,300
cis-1,3-Dichloropropene	ND	200	ND	910
4-Methyl-2-Pentanone	ND	200	ND	820

ND= Not Detected
RL= Reporting Limit
Result M= Result in mass units
Result V= Result in volume units

Curtis & Tompkins, Ltd.

Volatile Organics in Air

Lab #:	259209	Location:	15101 Freedom Ave. San Leandro
Client:	SOMA Environmental Engineering Inc.	Prep:	METHOD
Project#:	2555	Analysis:	EPA TO-15
Field ID:	INF MPE	Diln Fac:	400.0
Lab ID:	259209-002	Batch#:	213695
Matrix:	Air	Sampled:	07/24/14
Units (V):	ppbv	Received:	07/24/14
Units (M):	ug/m3	Analyzed:	07/25/14

Analyte	Result (V)	RL	Result (M)	RL
Toluene	2,500	200	9,300	750
trans-1,3-Dichloropropene	ND	200	ND	910
1,1,2-Trichloroethane	ND	200	ND	1,100
Tetrachloroethene	ND	200	ND	1,400
2-Hexanone	ND	200	ND	820
Dibromochloromethane	ND	200	ND	1,700
1,2-Dibromoethane	ND	200	ND	1,500
Chlorobenzene	ND	200	ND	920
Ethylbenzene	3,800	200	16,000	870
m,p-Xylenes	20,000	200	85,000	870
o-Xylene	6,900	200	30,000	870
Styrene	ND	200	ND	850
Bromoform	ND	200	ND	2,100
1,1,2,2-Tetrachloroethane	ND	200	ND	1,400
4-Ethyltoluene	3,700	200	18,000	980
1,3,5-Trimethylbenzene	3,600	200	18,000	980
1,2,4-Trimethylbenzene	9,200	200	45,000	980
1,3-Dichlorobenzene	ND	200	ND	1,200
1,4-Dichlorobenzene	ND	200	ND	1,200
Benzyl chloride	ND	200	ND	1,000
1,2-Dichlorobenzene	ND	200	ND	1,200
1,2,4-Trichlorobenzene	ND	200	ND	1,500
Hexachlorobutadiene	ND	200	ND	2,100
Naphthalene	ND	800	ND	4,200

Surrogate	%REC	Limits
Bromofluorobenzene	107	70-130

ND= Not Detected
RL= Reporting Limit
Result M= Result in mass units
Result V= Result in volume units

Curtis & Tompkins, Ltd.

Batch QC Report

Volatile Organics in Air

Lab #:	259209	Location:	15101 Freedom Ave. San Leandro
Client:	SOMA Environmental Engineering Inc.	Prep:	METHOD
Project#:	2555	Analysis:	EPA TO-15
Matrix:	Air	Batch#:	213625
Units (V):	ppbv	Analyzed:	07/24/14
Diln Fac:	1.000		

Type: BS Lab ID: QC750523

Analyte	Spiked	Result (V)	%REC	Limits
Freon 12	10.00	10.21	102	70-130
Freon 114	10.00	8.704	87	70-130
Chloromethane	10.00	10.73	107	70-130
Vinyl Chloride	10.00	9.762	98	70-130
1,3-Butadiene	10.00	7.721	77	70-130
Bromomethane	10.00	10.74	107	70-130
Chloroethane	10.00	8.895	89	70-130
Trichlorofluoromethane	10.00	10.26	103	70-130
Acrolein	10.00	9.699	97	62-130
1,1-Dichloroethene	10.00	9.401	94	70-130
Freon 113	10.00	10.12	101	70-130
Acetone	10.00	7.638	76	67-130
Carbon Disulfide	10.00	8.219	82	70-130
Methylene Chloride	10.00	8.207	82	68-130
trans-1,2-Dichloroethene	10.00	9.102	91	70-130
MTBE	10.00	9.336	93	70-130
n-Hexane	10.00	9.416	94	70-130
1,1-Dichloroethane	10.00	9.340	93	70-130
Vinyl Acetate	10.00	11.14	111	70-130
cis-1,2-Dichloroethene	10.00	8.922	89	70-130
2-Butanone	10.00	8.160	82	70-130
Ethyl Acetate	10.00	8.340	83	70-130
Tetrahydrofuran	10.00	8.641	86	70-130
Chloroform	10.00	9.248	92	70-130
1,1,1-Trichloroethane	10.00	9.443	94	70-130
Cyclohexane	10.00	9.316	93	70-130
Carbon Tetrachloride	10.00	6.923 b	69 *	70-130
Benzene	10.00	8.905	89	70-130
1,2-Dichloroethane	10.00	8.697	87	70-130
n-Heptane	10.00	8.066	81	70-130
Trichloroethene	10.00	8.468	85	70-130
1,2-Dichloropropane	10.00	9.189	92	70-130

*= Value outside of QC limits; see narrative
b= See narrative
RPD= Relative Percent Difference
Result V= Result in volume units

Curtis & Tompkins, Ltd.

Batch QC Report

Volatile Organics in Air

Lab #:	259209	Location:	15101 Freedom Ave. San Leandro
Client:	SOMA Environmental Engineering Inc.	Prep:	METHOD
Project#:	2555	Analysis:	EPA TO-15
Matrix:	Air	Batch#:	213625
Units (V):	ppbv	Analyzed:	07/24/14
Diln Fac:	1.000		

Analyte	Spiked	Result (V)	%REC	Limits
Bromodichloromethane	10.00	8.824	88	70-130
cis-1,3-Dichloropropene	10.00	9.080	91	70-130
4-Methyl-2-Pentanone	10.00	9.511	95	70-130
Toluene	10.00	8.948	89	70-130
trans-1,3-Dichloropropene	10.00	9.287	93	70-130
1,1,2-Trichloroethane	10.00	9.940	99	70-130
Tetrachloroethene	10.00	9.206	92	70-130
2-Hexanone	10.00	8.743	87	70-130
Dibromochloromethane	10.00	8.704	87	70-130
1,2-Dibromoethane	10.00	9.570	96	70-130
Chlorobenzene	10.00	7.870	79	70-130
Ethylbenzene	10.00	8.408	84	70-130
m,p-Xylenes	20.00	18.36	92	70-130
o-Xylene	10.00	9.159	92	70-130
Styrene	10.00	7.573	76	70-130
Bromoform	10.00	8.622	86	70-130
1,1,2,2-Tetrachloroethane	10.00	9.320	93	70-130
4-Ethyltoluene	10.00	10.18	102	70-130
1,3,5-Trimethylbenzene	10.00	9.761	98	70-130
1,2,4-Trimethylbenzene	10.00	10.45	104	70-130
1,3-Dichlorobenzene	10.00	9.117	91	70-130
1,4-Dichlorobenzene	10.00	9.445	94	70-130
Benzyl chloride	10.00	8.574	86	70-130
1,2-Dichlorobenzene	10.00	9.465	95	70-130
1,2,4-Trichlorobenzene	10.00	8.927	89	62-130
Hexachlorobutadiene	10.00	7.874	79	68-130
Naphthalene	10.00	9.104	91	54-136

Surrogate	%REC	Limits
Bromofluorobenzene	103	70-130

*= Value outside of QC limits; see narrative
b= See narrative
RPD= Relative Percent Difference
Result V= Result in volume units

Curtis & Tompkins, Ltd.

Batch QC Report

Volatile Organics in Air

Lab #:	259209	Location:	15101 Freedom Ave. San Leandro
Client:	SOMA Environmental Engineering Inc.	Prep:	METHOD
Project#:	2555	Analysis:	EPA TO-15
Matrix:	Air	Batch#:	213625
Units (V):	ppbv	Analyzed:	07/24/14
Diln Fac:	1.000		

Type: BSD Lab ID: QC750524

Analyte	Spiked	Result (V)	%REC	Limits	RPD	Lim
Freon 12	10.00	10.51	105	70-130	3	20
Freon 114	10.00	9.063	91	70-130	4	20
Chloromethane	10.00	11.28	113	70-130	5	27
Vinyl Chloride	10.00	9.933	99	70-130	2	23
1,3-Butadiene	10.00	7.813	78	70-130	1	21
Bromomethane	10.00	11.15	111	70-130	4	20
Chloroethane	10.00	9.299	93	70-130	4	20
Trichlorofluoromethane	10.00	10.51	105	70-130	2	20
Acrolein	10.00	9.748	97	62-130	1	31
1,1-Dichloroethene	10.00	9.464	95	70-130	1	20
Freon 113	10.00	10.38	104	70-130	2	23
Acetone	10.00	7.685	77	67-130	1	20
Carbon Disulfide	10.00	8.152	82	70-130	1	20
Methylene Chloride	10.00	8.440	84	68-130	3	23
trans-1,2-Dichloroethene	10.00	9.027	90	70-130	1	20
MTBE	10.00	9.601	96	70-130	3	20
n-Hexane	10.00	9.421	94	70-130	0	20
1,1-Dichloroethane	10.00	9.475	95	70-130	1	20
Vinyl Acetate	10.00	11.16	112	70-130	0	21
cis-1,2-Dichloroethene	10.00	8.848	88	70-130	1	20
2-Butanone	10.00	8.127	81	70-130	0	20
Ethyl Acetate	10.00	8.649	86	70-130	4	20
Tetrahydrofuran	10.00	8.767	88	70-130	1	20
Chloroform	10.00	9.218	92	70-130	0	20
1,1,1-Trichloroethane	10.00	9.565	96	70-130	1	20
Cyclohexane	10.00	9.359	94	70-130	0	20
Carbon Tetrachloride	10.00	6.951 b	70	70-130	0	20
Benzene	10.00	8.964	90	70-130	1	20
1,2-Dichloroethane	10.00	8.770	88	70-130	1	20
n-Heptane	10.00	8.065	81	70-130	0	20
Trichloroethene	10.00	8.413	84	70-130	1	20
1,2-Dichloropropane	10.00	9.334	93	70-130	2	20

*= Value outside of QC limits; see narrative
b= See narrative
RPD= Relative Percent Difference
Result V= Result in volume units

Curtis & Tompkins, Ltd.

Batch QC Report

Volatile Organics in Air

Lab #:	259209	Location:	15101 Freedom Ave. San Leandro
Client:	SOMA Environmental Engineering Inc.	Prep:	METHOD
Project#:	2555	Analysis:	EPA TO-15
Matrix:	Air	Batch#:	213625
Units (V):	ppbv	Analyzed:	07/24/14
Diln Fac:	1.000		

Analyte	Spiked	Result (V)	%REC	Limits	RPD	Lim
Bromodichloromethane	10.00	8.795	88	70-130	0	20
cis-1,3-Dichloropropene	10.00	9.060	91	70-130	0	20
4-Methyl-2-Pentanone	10.00	9.462	95	70-130	1	20
Toluene	10.00	8.933	89	70-130	0	23
trans-1,3-Dichloropropene	10.00	9.152	92	70-130	1	20
1,1,2-Trichloroethane	10.00	10.21	102	70-130	3	20
Tetrachloroethene	10.00	9.263	93	70-130	1	20
2-Hexanone	10.00	8.524	85	70-130	3	21
Dibromochloromethane	10.00	8.929	89	70-130	3	20
1,2-Dibromoethane	10.00	9.720	97	70-130	2	20
Chlorobenzene	10.00	7.809	78	70-130	1	21
Ethylbenzene	10.00	8.440	84	70-130	0	20
m,p-Xylenes	20.00	18.35	92	70-130	0	20
o-Xylene	10.00	9.509	95	70-130	4	20
Styrene	10.00	7.703	77	70-130	2	21
Bromoform	10.00	8.785	88	70-130	2	20
1,1,2,2-Tetrachloroethane	10.00	9.550	96	70-130	2	24
4-Ethyltoluene	10.00	10.72	107	70-130	5	22
1,3,5-Trimethylbenzene	10.00	10.16	102	70-130	4	23
1,2,4-Trimethylbenzene	10.00	10.95	110	70-130	5	24
1,3-Dichlorobenzene	10.00	9.499	95	70-130	4	22
1,4-Dichlorobenzene	10.00	9.719	97	70-130	3	22
Benzyl chloride	10.00	8.728	87	70-130	2	21
1,2-Dichlorobenzene	10.00	9.854	99	70-130	4	22
1,2,4-Trichlorobenzene	10.00	9.205	92	62-130	3	28
Hexachlorobutadiene	10.00	8.106	81	68-130	3	27
Naphthalene	10.00	8.849	88	54-136	3	29

Surrogate	%REC	Limits
Bromofluorobenzene	104	70-130

*= Value outside of QC limits; see narrative
b= See narrative
RPD= Relative Percent Difference
Result V= Result in volume units

Curtis & Tompkins, Ltd.

Batch QC Report

Volatile Organics in Air

Lab #:	259209	Location:	15101 Freedom Ave. San Leandro
Client:	SOMA Environmental Engineering Inc.	Prep:	METHOD
Project#:	2555	Analysis:	EPA TO-15
Type:	BLANK	Units (M):	ug/m3
Lab ID:	QC750525	Diln Fac:	1.000
Matrix:	Air	Batch#:	213625
Units (V):	ppbv	Analyzed:	07/24/14

Analyte	Result (V)	RL	Result (M)	RL
Freon 12	ND	0.50	ND	2.5
Freon 114	ND	0.50	ND	3.5
Chloromethane	ND	0.50	ND	1.0
Vinyl Chloride	ND	0.50	ND	1.3
1,3-Butadiene	ND	0.50	ND	1.1
Bromomethane	ND	0.50	ND	1.9
Chloroethane	ND	0.50	ND	1.3
Trichlorofluoromethane	ND	0.50	ND	2.8
Acrolein	ND	2.0	ND	4.6
1,1-Dichloroethene	ND	0.50	ND	2.0
Freon 113	ND	0.50	ND	3.8
Acetone	ND	2.0	ND	4.8
Carbon Disulfide	ND	0.50	ND	1.6
Methylene Chloride	ND	0.50	ND	1.7
trans-1,2-Dichloroethene	ND	0.50	ND	2.0
MTBE	ND	0.50	ND	1.8
n-Hexane	ND	0.50	ND	1.8
1,1-Dichloroethane	ND	0.50	ND	2.0
Vinyl Acetate	ND	0.50	ND	1.8
cis-1,2-Dichloroethene	ND	0.50	ND	2.0
2-Butanone	ND	0.50	ND	1.5
Ethyl Acetate	ND	0.50	ND	1.8
Tetrahydrofuran	ND	0.50	ND	1.5
Chloroform	ND	0.50	ND	2.4
1,1,1-Trichloroethane	ND	0.50	ND	2.7
Cyclohexane	ND	0.50	ND	1.7
Carbon Tetrachloride	ND	0.50	ND	3.1
Benzene	ND	0.50	ND	1.6
1,2-Dichloroethane	ND	0.50	ND	2.0
n-Heptane	ND	0.50	ND	2.0
Trichloroethene	ND	0.50	ND	2.7
1,2-Dichloropropane	ND	0.50	ND	2.3
Bromodichloromethane	ND	0.50	ND	3.4
cis-1,3-Dichloropropene	ND	0.50	ND	2.3
4-Methyl-2-Pentanone	ND	0.50	ND	2.0

ND= Not Detected
RL= Reporting Limit
Result M= Result in mass units
Result V= Result in volume units

Curtis & Tompkins, Ltd.

Batch QC Report

Volatile Organics in Air

Lab #:	259209	Location:	15101 Freedom Ave. San Leandro
Client:	SOMA Environmental Engineering Inc.	Prep:	METHOD
Project#:	2555	Analysis:	EPA TO-15
Type:	BLANK	Units (M):	ug/m3
Lab ID:	QC750525	Diln Fac:	1.000
Matrix:	Air	Batch#:	213625
Units (V):	ppbv	Analyzed:	07/24/14

Analyte	Result (V)	RL	Result (M)	RL
Toluene	ND	0.50	ND	1.9
trans-1,3-Dichloropropene	ND	0.50	ND	2.3
1,1,2-Trichloroethane	ND	0.50	ND	2.7
Tetrachloroethene	ND	0.50	ND	3.4
2-Hexanone	ND	0.50	ND	2.0
Dibromochloromethane	ND	0.50	ND	4.3
1,2-Dibromoethane	ND	0.50	ND	3.8
Chlorobenzene	ND	0.50	ND	2.3
Ethylbenzene	ND	0.50	ND	2.2
m,p-Xylenes	ND	0.50	ND	2.2
o-Xylene	ND	0.50	ND	2.2
Styrene	ND	0.50	ND	2.1
Bromoform	ND	0.50	ND	5.2
1,1,2,2-Tetrachloroethane	ND	0.50	ND	3.4
4-Ethyltoluene	ND	0.50	ND	2.5
1,3,5-Trimethylbenzene	ND	0.50	ND	2.5
1,2,4-Trimethylbenzene	ND	0.50	ND	2.5
1,3-Dichlorobenzene	ND	0.50	ND	3.0
1,4-Dichlorobenzene	ND	0.50	ND	3.0
Benzyl chloride	ND	0.50	ND	2.6
1,2-Dichlorobenzene	ND	0.50	ND	3.0
1,2,4-Trichlorobenzene	ND	0.50	ND	3.7
Hexachlorobutadiene	ND	0.50	ND	5.3
Naphthalene	ND	2.0	ND	10

Surrogate	%REC	Limits
Bromofluorobenzene	96	70-130

ND= Not Detected
RL= Reporting Limit
Result M= Result in mass units
Result V= Result in volume units

Curtis & Tompkins, Ltd.

Batch QC Report

Volatile Organics in Air

Lab #:	259209	Location:	15101 Freedom Ave. San Leandro
Client:	SOMA Environmental Engineering Inc.	Prep:	METHOD
Project#:	2555	Analysis:	EPA TO-15
Matrix:	Air	Batch#:	213695
Units (V):	ppbv	Analyzed:	07/25/14
Diln Fac:	1.000		

Type: BS Lab ID: QC750787

Analyte	Spiked	Result (V)	%REC	Limits
Freon 12	10.00	11.13	111	70-130
Freon 114	10.00	9.538	95	70-130
Chloromethane	10.00	12.07	121	70-130
Vinyl Chloride	10.00	10.55	106	70-130
1,3-Butadiene	10.00	8.195	82	70-130
Bromomethane	10.00	11.56	116	70-130
Chloroethane	10.00	9.700	97	70-130
Trichlorofluoromethane	10.00	11.08	111	70-130
Acrolein	10.00	11.20	112	62-130
1,1-Dichloroethene	10.00	10.10	101	70-130
Freon 113	10.00	10.84	108	70-130
Acetone	10.00	7.948	79	67-130
Carbon Disulfide	10.00	8.817	88	70-130
Methylene Chloride	10.00	8.905	89	68-130
trans-1,2-Dichloroethene	10.00	9.551	96	70-130
MTBE	10.00	10.33	103	70-130
n-Hexane	10.00	9.717	97	70-130
1,1-Dichloroethane	10.00	10.03	100	70-130
Vinyl Acetate	10.00	11.83	118	70-130
cis-1,2-Dichloroethene	10.00	9.449	94	70-130
2-Butanone	10.00	9.172	92	70-130
Ethyl Acetate	10.00	9.253	93	70-130
Tetrahydrofuran	10.00	9.475	95	70-130
Chloroform	10.00	9.856	99	70-130
1,1,1-Trichloroethane	10.00	10.27	103	70-130
Cyclohexane	10.00	10.21	102	70-130
Carbon Tetrachloride	10.00	10.12	101	70-130
Benzene	10.00	9.735	97	70-130
1,2-Dichloroethane	10.00	9.586	96	70-130
n-Heptane	10.00	8.452	85	70-130
Trichloroethene	10.00	9.232	92	70-130
1,2-Dichloropropane	10.00	10.16	102	70-130
Bromodichloromethane	10.00	9.855	99	70-130
cis-1,3-Dichloropropene	10.00	9.924	99	70-130

RPD= Relative Percent Difference
Result V= Result in volume units

Curtis & Tompkins, Ltd.

Batch QC Report

Volatile Organics in Air

Lab #:	259209	Location:	15101 Freedom Ave. San Leandro
Client:	SOMA Environmental Engineering Inc.	Prep:	METHOD
Project#:	2555	Analysis:	EPA TO-15
Matrix:	Air	Batch#:	213695
Units (V):	ppbv	Analyzed:	07/25/14
Diln Fac:	1.000		

Analyte	Spiked	Result (V)	%REC	Limits
4-Methyl-2-Pentanone	10.00	10.48	105	70-130
Toluene	10.00	9.531	95	70-130
trans-1,3-Dichloropropene	10.00	10.23	102	70-130
1,1,2-Trichloroethane	10.00	10.82	108	70-130
Tetrachloroethene	10.00	10.04	100	70-130
2-Hexanone	10.00	9.546	95	70-130
Dibromochloromethane	10.00	10.20	102	70-130
1,2-Dibromoethane	10.00	10.61	106	70-130
Chlorobenzene	10.00	8.550	86	70-130
Ethylbenzene	10.00	8.994	90	70-130
m,p-Xylenes	20.00	19.90	99	70-130
o-Xylene	10.00	10.11	101	70-130
Styrene	10.00	8.332	83	70-130
Bromoform	10.00	10.91	109	70-130
1,1,2,2-Tetrachloroethane	10.00	10.82	108	70-130
4-Ethyltoluene	10.00	11.65	116	70-130
1,3,5-Trimethylbenzene	10.00	11.37	114	70-130
1,2,4-Trimethylbenzene	10.00	12.13	121	70-130
1,3-Dichlorobenzene	10.00	10.62	106	70-130
1,4-Dichlorobenzene	10.00	10.88	109	70-130
Benzyl chloride	10.00	9.814	98	70-130
1,2-Dichlorobenzene	10.00	11.19	112	70-130
1,2,4-Trichlorobenzene	10.00	12.33	123	62-130
Hexachlorobutadiene	10.00	10.41	104	68-130
Naphthalene	10.00	12.36	124	54-136

Surrogate	%REC	Limits
Bromofluorobenzene	104	70-130

RPD= Relative Percent Difference
Result V= Result in volume units

Curtis & Tompkins, Ltd.

Batch QC Report

Volatile Organics in Air

Lab #:	259209	Location:	15101 Freedom Ave. San Leandro
Client:	SOMA Environmental Engineering Inc.	Prep:	METHOD
Project#:	2555	Analysis:	EPA TO-15
Matrix:	Air	Batch#:	213695
Units (V):	ppbv	Analyzed:	07/25/14
Diln Fac:	1.000		

Type: BSD Lab ID: QC750788

Analyte	Spiked	Result (V)	%REC	Limits	RPD	Lim
Freon 12	10.00	10.93	109	70-130	2	20
Freon 114	10.00	9.495	95	70-130	0	20
Chloromethane	10.00	12.20	122	70-130	1	27
Vinyl Chloride	10.00	10.44	104	70-130	1	23
1,3-Butadiene	10.00	8.126	81	70-130	1	21
Bromomethane	10.00	11.44	114	70-130	1	20
Chloroethane	10.00	9.483	95	70-130	2	20
Trichlorofluoromethane	10.00	10.92	109	70-130	1	20
Acrolein	10.00	11.27	113	62-130	1	31
1,1-Dichloroethene	10.00	10.03	100	70-130	1	20
Freon 113	10.00	10.76	108	70-130	1	23
Acetone	10.00	8.191	82	67-130	3	20
Carbon Disulfide	10.00	8.720	87	70-130	1	20
Methylene Chloride	10.00	8.910	89	68-130	0	23
trans-1,2-Dichloroethene	10.00	9.527	95	70-130	0	20
MTBE	10.00	10.05	100	70-130	3	20
n-Hexane	10.00	9.564	96	70-130	2	20
1,1-Dichloroethane	10.00	9.929	99	70-130	1	20
Vinyl Acetate	10.00	11.64	116	70-130	2	21
cis-1,2-Dichloroethene	10.00	9.375	94	70-130	1	20
2-Butanone	10.00	9.038	90	70-130	1	20
Ethyl Acetate	10.00	8.973	90	70-130	3	20
Tetrahydrofuran	10.00	9.317	93	70-130	2	20
Chloroform	10.00	9.846	98	70-130	0	20
1,1,1-Trichloroethane	10.00	10.13	101	70-130	1	20
Cyclohexane	10.00	9.905	99	70-130	3	20
Carbon Tetrachloride	10.00	9.928	99	70-130	2	20
Benzene	10.00	9.326	93	70-130	4	20
1,2-Dichloroethane	10.00	9.354	94	70-130	2	20
n-Heptane	10.00	8.350	84	70-130	1	20
Trichloroethene	10.00	8.850	89	70-130	4	20
1,2-Dichloropropane	10.00	9.706	97	70-130	5	20
Bromodichloromethane	10.00	9.511	95	70-130	4	20
cis-1,3-Dichloropropene	10.00	9.517	95	70-130	4	20

RPD= Relative Percent Difference
Result V= Result in volume units

Curtis & Tompkins, Ltd.

Batch QC Report

Volatile Organics in Air

Lab #:	259209	Location:	15101 Freedom Ave. San Leandro
Client:	SOMA Environmental Engineering Inc.	Prep:	METHOD
Project#:	2555	Analysis:	EPA TO-15
Matrix:	Air	Batch#:	213695
Units (V):	ppbv	Analyzed:	07/25/14
Diln Fac:	1.000		

Analyte	Spiked	Result (V)	%REC	Limits	RPD	Lim
4-Methyl-2-Pentanone	10.00	10.27	103	70-130	2	20
Toluene	10.00	9.897	99	70-130	4	23
trans-1,3-Dichloropropene	10.00	9.767	98	70-130	5	20
1,1,2-Trichloroethane	10.00	11.25	113	70-130	4	20
Tetrachloroethene	10.00	10.22	102	70-130	2	20
2-Hexanone	10.00	9.522	95	70-130	0	21
Dibromochloromethane	10.00	10.20	102	70-130	0	20
1,2-Dibromoethane	10.00	10.74	107	70-130	1	20
Chlorobenzene	10.00	8.498	85	70-130	1	21
Ethylbenzene	10.00	8.814	88	70-130	2	20
m,p-Xylenes	20.00	19.75	99	70-130	1	20
o-Xylene	10.00	10.11	101	70-130	0	20
Styrene	10.00	8.132	81	70-130	2	21
Bromoform	10.00	10.91	109	70-130	0	20
1,1,2,2-Tetrachloroethane	10.00	11.06	111	70-130	2	24
4-Ethyltoluene	10.00	11.72	117	70-130	1	22
1,3,5-Trimethylbenzene	10.00	11.48	115	70-130	1	23
1,2,4-Trimethylbenzene	10.00	12.48	125	70-130	3	24
1,3-Dichlorobenzene	10.00	10.68	107	70-130	1	22
1,4-Dichlorobenzene	10.00	10.78	108	70-130	1	22
Benzyl chloride	10.00	9.391	94	70-130	4	21
1,2-Dichlorobenzene	10.00	11.14	111	70-130	0	22
1,2,4-Trichlorobenzene	10.00	12.54	125	62-130	2	28
Hexachlorobutadiene	10.00	10.31	103	68-130	1	27
Naphthalene	10.00	12.20	122	54-136	1	29

Surrogate	%REC	Limits
Bromofluorobenzene	103	70-130

RPD= Relative Percent Difference
Result V= Result in volume units

Curtis & Tompkins, Ltd.

Batch QC Report

Volatile Organics in Air

Lab #:	259209	Location:	15101 Freedom Ave. San Leandro
Client:	SOMA Environmental Engineering Inc.	Prep:	METHOD
Project#:	2555	Analysis:	EPA TO-15
Type:	BLANK	Units (M):	ug/m3
Lab ID:	QC750789	Diln Fac:	1.000
Matrix:	Air	Batch#:	213695
Units (V):	ppbv	Analyzed:	07/25/14

Analyte	Result (V)	RL	Result (M)	RL
Freon 12	ND	0.50	ND	2.5
Freon 114	ND	0.50	ND	3.5
Chloromethane	ND	0.50	ND	1.0
Vinyl Chloride	ND	0.50	ND	1.3
1,3-Butadiene	ND	0.50	ND	1.1
Bromomethane	ND	0.50	ND	1.9
Chloroethane	ND	0.50	ND	1.3
Trichlorofluoromethane	ND	0.50	ND	2.8
Acrolein	ND	2.0	ND	4.6
1,1-Dichloroethene	ND	0.50	ND	2.0
Freon 113	ND	0.50	ND	3.8
Acetone	ND	2.0	ND	4.8
Carbon Disulfide	ND	0.50	ND	1.6
Methylene Chloride	ND	0.50	ND	1.7
trans-1,2-Dichloroethene	ND	0.50	ND	2.0
MTBE	ND	0.50	ND	1.8
n-Hexane	ND	0.50	ND	1.8
1,1-Dichloroethane	ND	0.50	ND	2.0
Vinyl Acetate	ND	0.50	ND	1.8
cis-1,2-Dichloroethene	ND	0.50	ND	2.0
2-Butanone	ND	0.50	ND	1.5
Ethyl Acetate	ND	0.50	ND	1.8
Tetrahydrofuran	ND	0.50	ND	1.5
Chloroform	ND	0.50	ND	2.4
1,1,1-Trichloroethane	ND	0.50	ND	2.7
Cyclohexane	ND	0.50	ND	1.7
Carbon Tetrachloride	ND	0.50	ND	3.1
Benzene	ND	0.50	ND	1.6
1,2-Dichloroethane	ND	0.50	ND	2.0
n-Heptane	ND	0.50	ND	2.0
Trichloroethene	ND	0.50	ND	2.7
1,2-Dichloropropane	ND	0.50	ND	2.3
Bromodichloromethane	ND	0.50	ND	3.4
cis-1,3-Dichloropropene	ND	0.50	ND	2.3
4-Methyl-2-Pentanone	ND	0.50	ND	2.0

ND= Not Detected
RL= Reporting Limit
Result M= Result in mass units
Result V= Result in volume units

Curtis & Tompkins, Ltd.

Batch QC Report

Volatile Organics in Air

Lab #:	259209	Location:	15101 Freedom Ave. San Leandro
Client:	SOMA Environmental Engineering Inc.	Prep:	METHOD
Project#:	2555	Analysis:	EPA TO-15
Type:	BLANK	Units (M):	ug/m3
Lab ID:	QC750789	Diln Fac:	1.000
Matrix:	Air	Batch#:	213695
Units (V):	ppbv	Analyzed:	07/25/14

Analyte	Result (V)	RL	Result (M)	RL
Toluene	ND	0.50	ND	1.9
trans-1,3-Dichloropropene	ND	0.50	ND	2.3
1,1,2-Trichloroethane	ND	0.50	ND	2.7
Tetrachloroethene	ND	0.50	ND	3.4
2-Hexanone	ND	0.50	ND	2.0
Dibromochloromethane	ND	0.50	ND	4.3
1,2-Dibromoethane	ND	0.50	ND	3.8
Chlorobenzene	ND	0.50	ND	2.3
Ethylbenzene	ND	0.50	ND	2.2
m,p-Xylenes	ND	0.50	ND	2.2
o-Xylene	ND	0.50	ND	2.2
Styrene	ND	0.50	ND	2.1
Bromoform	ND	0.50	ND	5.2
1,1,2,2-Tetrachloroethane	ND	0.50	ND	3.4
4-Ethyltoluene	ND	0.50	ND	2.5
1,3,5-Trimethylbenzene	ND	0.50	ND	2.5
1,2,4-Trimethylbenzene	ND	0.50	ND	2.5
1,3-Dichlorobenzene	ND	0.50	ND	3.0
1,4-Dichlorobenzene	ND	0.50	ND	3.0
Benzyl chloride	ND	0.50	ND	2.6
1,2-Dichlorobenzene	ND	0.50	ND	3.0
1,2,4-Trichlorobenzene	ND	0.50	ND	3.7
Hexachlorobutadiene	ND	0.50	ND	5.3
Naphthalene	ND	2.0	ND	10

Surrogate	%REC	Limits
Bromofluorobenzene	95	70-130

ND= Not Detected
RL= Reporting Limit
Result M= Result in mass units
Result V= Result in volume units

Curtis & Tompkins, Ltd.

Aromatic / Petroleum Hydrocarbons in Air

Lab #:	259209	Location:	15101 Freedom Ave. San Leandro
Client:	SOMA Environmental Engineering Inc.	Prep:	METHOD
Project#:	2555	Analysis:	EPA TO-3
Analyte:	Gasoline Range Organics C6-C12	Batch#:	213635
Matrix:	Air	Sampled:	07/24/14
Units (V):	ppbv	Received:	07/24/14
Units (M):	ug/m3	Analyzed:	07/24/14

Field ID	Type	Lab ID	Result (V)	RL	MDL	Result (M)	RL	MDL	Diln Fac
EFF MPE	SAMPLE	259209-001	100	25	5.6	410	100	23	1.000
INF MPE	SAMPLE	259209-002	290,000	500	110	1,200,000	2,000	460	20.00
	BLANK	QC750557	7.4 J	25	5.6	30 J	100	23	1.000

J= Estimated value
RL= Reporting Limit
MDL= Method Detection Limit
Result M= Result in mass units
Result V= Result in volume units

Batch QC Report

Aromatic / Petroleum Hydrocarbons in Air

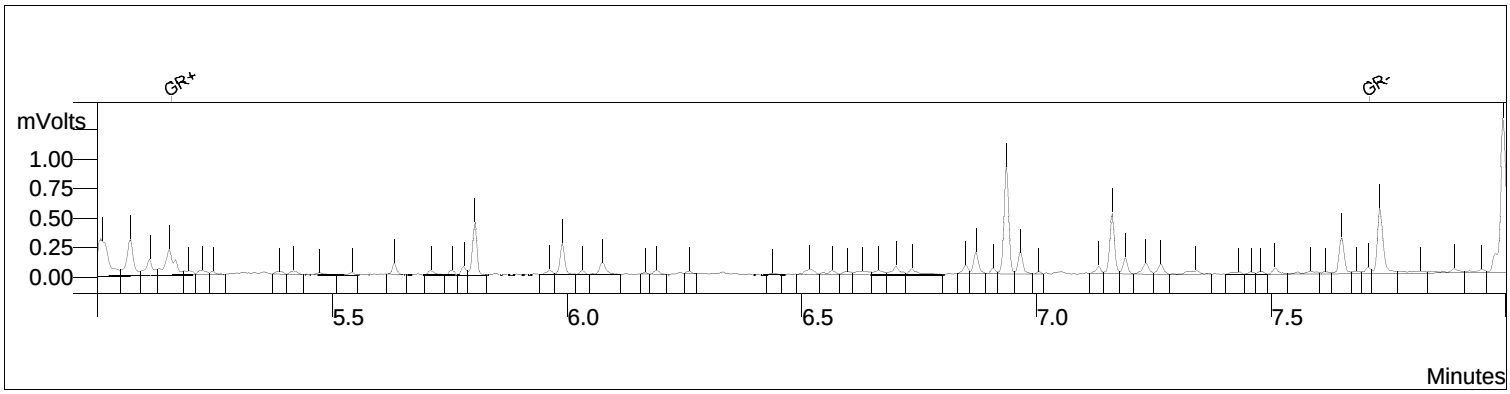
Lab #:	259209	Location:	15101 Freedom Ave. San Leandro
Client:	SOMA Environmental Engineering Inc.	Prep:	METHOD
Project#:	2555	Analysis:	EPA TO-3
Analyte:	Gasoline Range Organics C6-C12	Diln Fac:	1.000
Matrix:	Air	Batch#:	213635
Units (V):	ppbv	Analyzed:	07/24/14

Type	Lab ID	Spiked	Result (V)	%REC	Limits	RPD	Lim
BS	QC750555	2,100	2,105	100	70-130		
BSD	QC750556	2,100	2,105	100	70-130	0	25

RPD= Relative Percent Difference
Result V= Result in volume units

GRO by TO-3

Sample ID:	259209-001,213635		
Data File:	c:\varianws\data\072414\205_004.run		
Sample List:	c:\varianws\072414.smp		
Method:	c:\varianws\to3_081811.mth		
Acquisition Date:	07/24/2014 13:37:24		
Calculation Date:	07/24/2014 13:49:25		
Instrument ID:	MSAIR03	Operator:	TO-3
Injection Notes:	1x		
Multiplier:	1.000	Divisor:	1.000



Channel: **Front = FID** **RESULTS**

#	RT (min)	Peak Name	Area	Result (ppbv)
1	6.432	GRO:6-12	3745	100.658
		Totals	**3745**	**100.658**

Integration Parameters

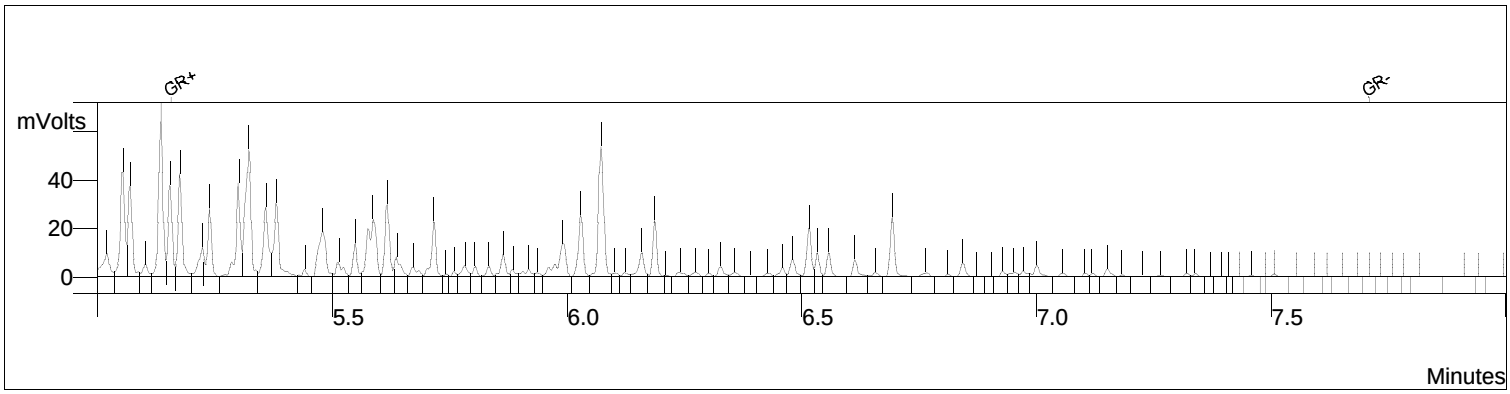
Initial Tangent %:	0
Initial Peak Width (sec):	4
Initial Peak Reject Value:	50.000
Initial S/N Ratio:	3

Data Handling Time Events

Time (min)	Event
0.009	II on
4.801	II off
5.157	GR on
7.708	GR off

GRO by TO-3

Sample ID:	259209-002,213635		
Data File:	c:\varianws\data\072414\205_008.run		
Sample List:	c:\varianws\072414.smp		
Method:	c:\varianws\to3_081811.mth		
Acquisition Date:	07/24/2014 15:38:23		
Calculation Date:	07/24/2014 15:50:24		
Instrument ID:	MSAIR03	Operator:	TO-3
Injection Notes:	20x,c00101		
Multiplier:	1.000	Divisor:	1.000



Channel: Front = FID RESULTS

#	RT (min)	Peak Name	Area	Result (ppbv)
1	6.432	GRO:6-12	535862	14403.524
		Totals	**535862**	**14403.524**

Integration Parameters

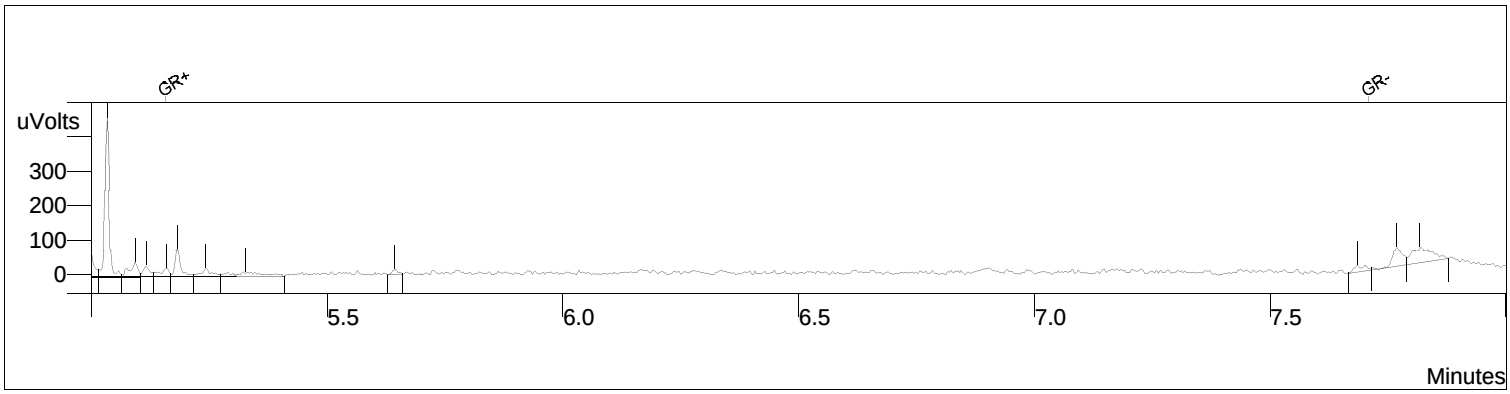
Initial Tangent %:	0
Initial Peak Width (sec):	4
Initial Peak Reject Value:	50.000
Initial S/N Ratio:	3

Data Handling Time Events

Time (min)	Event
0.009	II on
4.801	II off
5.157	GR on
7.708	GR off

GRO by TO-3

Sample ID:	mb,qc750557,213635		
Data File:	c:\varianws\data\072414\205_002.run		
Sample List:	c:\varianws\072414.smp		
Method:	c:\varianws\to3_081811.mth		
Acquisition Date:	07/24/2014 13:06:50		
Calculation Date:	07/24/2014 13:18:52		
Instrument ID:	MSAIR03	Operator:	TO-3
Injection Notes:	1x,c00355		
Multiplier:	1.000	Divisor:	1.000



Channel: **Front = FID** **RESULTS**

#	RT (min)	Peak Name	Area	Result (ppbv)
1	6.432	GRO:6-12	275	7.379
		Totals	**275**	**7.379**

Integration Parameters

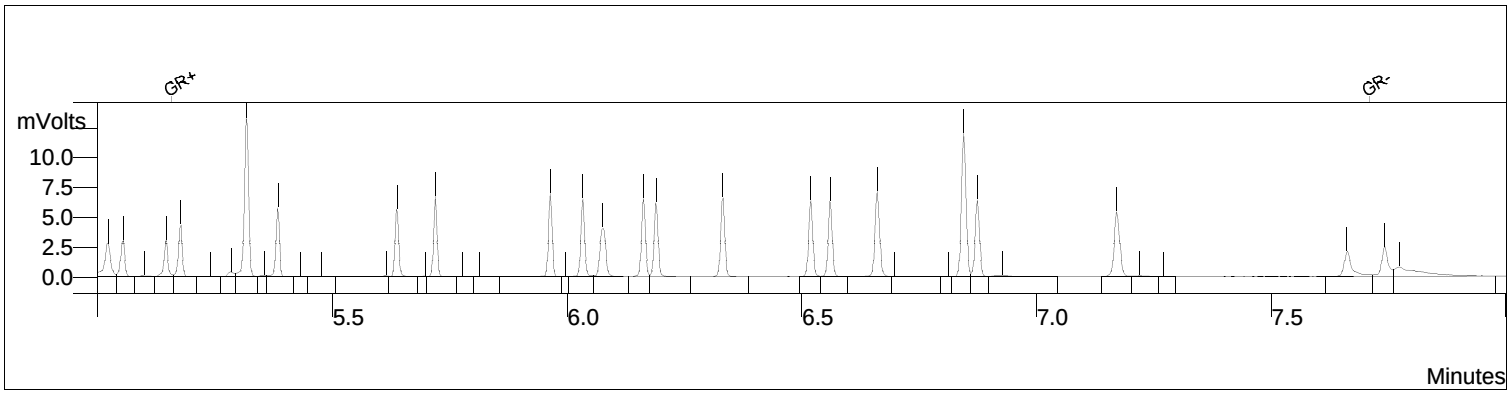
Initial Tangent %:	0
Initial Peak Width (sec):	4
Initial Peak Reject Value:	50.000
Initial S/N Ratio:	3

Data Handling Time Events

Time (min)	Event
0.009	II on
4.801	II off
5.157	GR on
7.708	GR off

GRO by TO-3

Sample ID:	bsd,qc750556		
Data File:	c:\varianws\data\072414\205_001.run		
Sample List:	c:\varianws\072414.smp		
Method:	c:\varianws\to3_081811.mth		
Acquisition Date:	07/24/2014 12:35:35		
Calculation Date:	07/24/2014 13:03:20		
Instrument ID:	MSAIR03	Operator:	TO-3
Injection Notes:	213635,s25248,1x		
Multiplier:	1.000	Divisor:	1.000



Channel: **Front = FID** **RESULTS**

#	RT (min)	Peak Name	Area	Result (ppbv)
1	6.432	GRO:6-12	78320	2105.165
		Totals	**78320**	**2105.165**

Integration Parameters

Initial Tangent %:	0
Initial Peak Width (sec):	4
Initial Peak Reject Value:	50.000
Initial S/N Ratio:	3

Data Handling Time Events

Time (min)	Event
0.009	II on
4.801	II off
5.157	GR on
7.708	GR off