PERJURY STATEMENT

Subject: Fuel Lake Case No. Ro0002981 and Geotracker Clobal ID T1000000416, Red Hanger Cleaners, 6335-6339 College Ave., Oakland, CA 94618

" 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."

Ted Cleveland
Vice President – Eastern Region
EFI Global, Inc.

P&D ENVIRONMENTAL, INC.

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December 14, 2015
Report 0461.R4

Mr. Gary Bates
EFI Global, Inc.
11000 Richmond Avenue, Suite 250
Houston, TX 77042

SUBJECT: SUB-SLAB DEPRESSURIZATION FEASIBILITY TEST REPORT
Spills Leaks, Investigation and Cleanup Leak Case No RO0002981
Geotracker Global ID T10000000416
Red Hanger Cleaners
6239 College Avenue
Oakland, CA 94618

Dear Mr. Bates:

P&D Environmental (P&D) has prepared this report documenting a sub-slab depressurization (SSD) feasibility test for the subject site on behalf of the property owner Ronald Elvidge and EFI Global, Inc. (EFI). The feasibility test was performed on November 16, 2015 to determine if sub-slab depressurization is feasible as a mitigation measure for vapor intrusion of the dry cleaning chemical tetrachloroethene (PCE) at the site. The work scope included extracting sub-slab vapors at four different locations in the former dry cleaner space designated as SSE1 through SSE4, monitoring vacuum at surrounding locations (including at soil gas wells SG9-17 and SG10-7 and at Vapor Pins VP1 through VP8), and collection of soil gas samples from each of the extraction locations at the conclusion of extraction for each of the extraction locations.

This work was performed in accordance with procedures set forth in P&D's Sub-Slab Depressurization Feasibility Test Work Plan dated November 9, 2015 (document 0461.W2). The work plan was approved in an e-mail from Keith Nowell of the Alameda County Department of Environmental Health (ACDEH) dated November 10, 2015. All work was performed under the direct supervision of a professional geologist.

During coring in the floor slab for construction of the extraction locations, a sub-slab concrete grade beam was encountered at one of the locations, and one additional extraction location was constructed in addition to the proposed extraction locations identified in the work plan. A Site Location Map is attached as Figure 1 and a Site Plan showing the feasibility test extraction and monitoring locations is attached as Figure 2.

BACKGROUND

It is P&D's understanding that the former Red Hanger Kleaners store (also identified in various reports as Red Hanger Cleaners) occupied the ground floor of the subject site building at 6235–6239 College Avenue in Oakland, California from 1987 until 2015 (approximately 28 years), and that the Red Hanger Kleaners business vacated the premises in 2015. The second building to the north at 6251-6255 College Avenue (located at the corner of College Avenue and 63rd Street, see

Figure 2) was reported to have been occupied by dry cleaner stores from 1953 to 1987 (approximately 34 years) with Red Hanger Kleaners identified at this location from either 1970 or 1982 to 1987.

The building at 6251 to 6255 College Avenue is occupied by three tenant spaces along College Avenue. Based on discussions with individuals in the dry cleaning industry who report that they were familiar with the owner of the dry cleaning store at 6251 to 6255 College Avenue, the dry cleaning store originally occupied the southernmost of the three tenant spaces and eventually expanded to include the middle tenant space before moving to 6239 College Avenue.

It is unknown when the dry cleaning operations began utilizing tetrachloroethene (PCE) as the dry cleaning solvent. However, it is P&D's understanding that review of Hazardous Materials Business Plans for 6239 College Avenue from April 1991 through March 2007 identified the presence of PCE at the site as early as April 1991 and as late as March 2007.

Review of Figure 2 shows that the first floor of 6239 College Avenue consists of the former Red Hanger Kleaners store occupying the southern portion of the building, with open parking and storage located immediately to the north of the west end of the former Red Hanger Kleaners store. The second and third floor of the building above the first floor parking and storage areas are occupied by offices, bathrooms, hallways and stairwells. The first floor tenant space (the former Red Hanger Kleaners store) is presently vacant. The former dry cleaning machines were located to the south and west of the elevator (see Figure 2).

The locations of features shown inside the Red Hanger Kleaners store, including the locations of the elevator and boiler room, are based on measurements made with a steel tape. Comparison of the locations of the elevator and the boiler room with the locations shown on site plans for each of the floors for the subject property shows that the site plans for the different floors of the building are approximate but not completely accurate regarding the locations of the elevator and the boiler room. The sanitary sewer trench was also determined to be located several feet further to the east than shown in figures in the work plan based on the location of the sanitary sewer cleanout that is located immediately to the north of Red Hanger Kleaners building parking and storage area, and markings of the sanitary sewer location made by a plumber who identified the sanitary sewer location.

Additionally, measurements using a steel tape of the locations of features shown on Figure 2 (as measured from the sidewalk along 63rd Street to the north side of the Red Hanger Kleaners building parking and storage area) shows that site features shown on Figure 2 are accurate, however measurements using a steel tape of the locations of features shown on Figure 2 (as measured from the southwest corner of the property to the north side of the Red Hanger Kleaners building parking and storage area) shows that the parking and storage area as shown on Figure 2 is approximately 3 feet longer than as measured with the steel tape. Measurements made with a steel tape from the

west side of the property to College Avenue and from College Avenue to the west side of the property show that the features shown on Figure 2 are accurately shown. These measurements suggest that the southwest corner of the property shown on Figure 2 should be approximately 3 feet further north than shown, with the length of the Red Hanger Kleaners parking and storage area reduced by approximately 3 feet to the north of the stairs. Reconciliation of these site dimensions and site plans is beyond the current scope of work.

Historical investigations at the subject site have detected PCE in soil, groundwater, soil gas, and indoor air. Trichloroethene (TCE) has only been detected in indoor air at the site. A complete discussion of the historical dry cleaner operations and historical investigations of the property is provided in the July 27, 2015 Youngdahl Phase II Environmental Site Assessment Soil Gas Investigation Report for the subject site (identified in the report title as located at 6335-6339 College Avenue). A site conceptual model is also provided in the October 21, 2014 Youngdahl Phase II Environmental Site Assessment Soil Gas Investigation Work Plan for the subject site. A summary of historical subsurface investigations at the site and the site geology and hydrogeology are also provided in P&D's October 16, 2015 Soil Gas Investigation Work Plan (document 0461.W1).

FIELD ACTIVITIES

Field activities consisted of installation of Vapor Pins for sub-slab vacuum monitoring, installation of 4-inch diameter PVC pipe in the floor slab for sub-slab vapor extraction, and sub-slab depressurization feasibility testing. Prior to the beginning of field activities a health and safety plan was prepared, and notification of the scheduled dates of field activities was provided to the ACDEH and the Bay Area Air Quality Management District.

Vapor Pin and Sub-Slab Soil Gas Extraction Pipe Installation

Eight Vapor Pins with flush-mounted secure covers were installed by P&D at locations VP1 through VP8 on November 11, 2015 at locations shown on Figure 2 in accordance with manufacturer recommended methods as follows: A rotohammer was used to drill a 1.5-inch diameter hole to a depth of 1.75 inches into the concrete slab. A 5/8-inch diameter hole was then drilled through the center of the 1.5-inch diameter hole in the slab to a depth of two inches below the bottom of the concrete slab. The total concrete floor slab thickness was measured to be approximately 6.0 inches at all Vapor Pin drilling locations. Once drilling was completed a steel rod was inserted into the hole and pushed into the sub-slab materials to a depth of approximately 6 inches below the slab several times to puncture any vapor barrier that might be present, and the hole was then cleaned with a vacuum and a bottle brush. A new Vapor Pin with a new silicone sleeve was then installed in the 5/8-inch diameter hole in the concrete slab and covered with a flush-mounted stainless steel cover. Prior to placement of the flush-mounted stainless steel cover, a plastic cap was placed on the top of the Vapor Pin barb fitting. Prior to performing the

sub-slab depressurization feasibility test a ¼-inch diameter brass ball valve with a brass barb was installed at each Vapor Pin using new silicone tubing for vacuum monitoring during the feasibility test.

Sub-slab soil gas extraction locations were installed in the concrete floor slab On November 11, 2015 by coring a 5-inch diameter hole in the floor at locations shown in Figure 2 and inserting a 4-inch inside diameter (4.5-inch outside diameter) Schedule 40 PVC pipe into the cored hole so that the bottom of the PVC pipe was at a depth of approximately 6 inches below the top of the concrete floor slab. The PVC pipe also extended approximately 6 inches above the top of the floor slab. During concrete coring at proposed location SSE2 a sub-slab grade beam was encountered. The concrete core at proposed location SSE2 was extended to the bottom of the sub-slab grade beam and one additional soil gas extraction location more than was proposed in the work plan was cored in the floor slab at a location approximately 9 feet to the east of location SSE2 in anticipation of the possibility of reduced air flow from beneath the grade beam.

The PVC pipe was secured in the cored hole in the concrete floor at each location using strips of supermarket paper shopping bags that were twisted into a coil and inserted into the annular space between the PVC pipe and the concrete floor slab. Following placement and securing of the PVC pipe in the concrete cored hole, the top of the annular space between the PVC pipe and the concrete floor was caulked with low-VOC latex caulk to provide an airtight seal. In addition, a sampling port consisting of a ¼-inch diameter brass ball valve with a brass barb was installed in the side of each of the PVC pipes in preparation for vacuum monitoring and soil gas sample collection at the completion of soil gas extraction at each location.

Prior to installation of the PVC pipe at each soil gas extraction location the materials beneath the concrete floor slab were excavated to determine the thickness of sub-slab coarse-grained fill materials and the presence of a vapor barrier. A vapor barrier consisting of a sheet of plastic was encountered at each soil gas extraction location. Beneath the coarse-grained fill material silty clay was encountered at all soil gas extraction locations. The thickness of the floor slab and the thickness and type of underlying materials at each soil gas extraction location are summarized in Table 1.

Sub-Slab Depressurization Feasibility Testing

On November 16, 2015 vacuum was applied to each of the extraction locations beginning with location SSE1 and subsequently at locations SSE2, SSE3, and SSE4 using a 1 horsepower regenerative blower capable of generating a maximum air flow of 92 cubic feet per minute (cfm) and a maximum vacuum of 48 inches of water column. During extraction at each location vacuum was simultaneously monitored at the following monitoring locations shown on Figure 2:

- Extraction locations where extraction was not being performed,
- Vapor Pins VP1 through VP8, and
- Soil gas wells SG9-17 and SG10-7.

The blower was connected sequentially to each extraction location with a flexible 2-inch diameter hose. An 8-foot long section of 4-inch diameter PVC pipe was installed in the exhaust hose from the blower and air flow measurements were periodically recorded using a hot wire anemometer through a monitoring port located approximately mid-way along the length of the pipe. Vacuum was monitored using a Dwyer Model 476A-0 digital manometer calibrated to measure vacuums of 0 to 20 inches of water with an accuracy of 0.3 inches of water column vacuum except at SSE2 where vacuum was measured with a mechanical diaphragm vacuum gage with an accuracy of 0.2 inches of Mercury vacuum. Air quality was also periodically evaluated with a Photoionization Detector (PID) at monitoring ports located upstream of the blower and immediately before the inlet and immediately after the outlet from the carbon drum by using a vacuum chamber to pull air into a 1-liter Tedlar bag and then connecting the PID intake to the Tedlar bag. The PID was equipped with a 10.6 eV bulb and was calibrated with a 100 parts per million (ppm) isobutylene standard prior to the beginning of the feasibility test.

All air exhausted from the blower was directed through a 55-gallon drum containing 200-pounds of granular activated carbon before being exhausted to the atmosphere. The drum was labeled and stored at the site pending appropriate disposal. Air flow, temperature, PID values and the time of recording were recorded on an Extraction Monitoring Log. Copies of the Extraction Monitoring Logs for each extraction location are attached with this report in Appendix A. The Extraction Monitoring Log information is summarized in Tables 2A, 2B, 2C and 2D.

Prior to the application of vacuum at each extraction location the vacuum at all monitoring locations was monitored and recorded on a vacuum monitoring log to identify baseline vacuum conditions. At locations where vacuum was greater than 0.25 inches of water column the vacuum was measured with a Dwyer Model 476A-0 digital manometer calibrated to measure vacuums of 0 to 20 inches of water with an accuracy of 0.3 inches of water column vacuum. At locations where vacuum was less than 0.25 inches of water column the vacuum was measured with an Omnigard Model 4 digital manometer calibrated to measure vacuums of 0 to 0.250 inches of water with an accuracy of 0.003 inches of water column vacuum. Vacuum, location, and the time of recording were recorded on a Vacuum Monitoring Log.

One person monitored locations VP1 through VP5 during the feasibility test in addition to recording information on the Extraction Monitoring Log, and a different person monitored extraction locations SSE1 through SSE4, Vapor Pins VP6 through VP8, and soil gas wells SG9-17 and SG10-7 during the feasibility test. Copies of the Vacuum Monitoring Logs for each extraction location are attached with this report in Appendix A. The maximum vacuum measured at each monitoring location during extraction at each extraction location is summarized in Table 3. The

maximum vacuum value recorded during extraction at each of locations SSE1 through SSE4 is shown in Figures 3 through 6, respectively. At the beginning of the application of vacuum at each location, the vacuum was observed at values near the maximum vacuum value almost instantaneously (in less than 5 seconds) for sub-slab locations, and in approximately one minute in the soil gas wells. Extraction was performed for approximately 90 minutes at the first extraction location, and based on the stable vacuums observed at monitoring locations was performed for approximately 45 to 60 minutes at each of the other extraction locations.

At the conclusion of extraction for each of the four extraction locations and prior to shutting off the blower, an air sample was collected from the sampling port installed in the side of the 4-inch diameter PVC extraction pipe into a 1-liter Summa canister for laboratory analysis. An unused manifold equipped with a nominal 150 cubic centimeter per minute flow restrictor was located between the sampling Summa canister and the sampling port (see Figure 8, no purge canister was used) to regulate flow from the extraction location into the Summa canister. Once the vacuum in the Summa canister was observed to be approximately 5 inches of Mercury the valve to the Summa canister was closed and the extraction location sampling port was closed. Each canister was labeled and stored in a box pending shipment to Eurofins Air Toxics, Ltd. (Air Toxics) of Folsom, California. Chain of custody procedures were observed for all sample handling.

Sample collection times, beginning and ending Summa canister vacuums, and PID values at the extraction location sampling port for each extraction location were recorded on an Air Sampling Log. A copy of the Air Sampling Log is attached with this report as Appendix A. The PCE concentrations detected in the air samples are shown on Figure 7.

GEOLOGY AND HYDROGEOLOGY

Based on a review of the USGS Oakland West, California Quadrangle topographic map, the subject property is located approximately 200 feet above mean sea level, and the local topography slopes to the southwest (see Figure 1). The nearest surface water is Lake Temescal, located approximately 1.1 mile east of the subject site. Based on local topography and consistent southwesterly groundwater flow directions identified from groundwater monitoring well water level data at nearby sites, the assumed groundwater flow direction at the subject site is to the southwest.

Based on review of regional geologic maps from U. S. Geological Survey Professional Paper 943, "Flatland Deposits - Their Geology and Engineering Properties and Their Importance to Comprehensive Planning," by E. J. Helley and K. R. Lajoie, 1979, the subject site is underlain by Late Pleistocene Alluvium (Qpa), which is described as weakly consolidated slightly weathered poorly sorted irregularly interbedded clay, silt, sand, and gravel.

The subsurface materials encountered in the boreholes drilled to a depth of 17 feet bgs during soil gas well installation in November 2015 consisted predominantly of silt, silty clay and clay, with

layers of coarse grained materials consisting of gravelly clayey sand, sandy gravel and clayey gravel measuring from 1 to 5 feet in thickness. The subsurface materials encountered in the soil gas well boreholes are consistent with the Qpa description provided above. No groundwater was encountered in any of the soil gas well boreholes.

Review of boring logs for historical boreholes at the site shows that the subsurface materials beneath the west end of the Red Hanger Kleaners store where the dry cleaning machines were located consists predominantly of silty clay to a depth of approximately 12 to 14 feet bgs, beneath which the subsurface materials consist predominantly of clayey silt and silt with layers of gravelly silty sand or sandy gravelly silt of variable thickness to the total depth explored of 35 feet bgs. To the north of the Red Hanger Kleaners building the subsurface materials consist predominantly of layers of silty clay and silt, with layers of gravelly silty sand or sandy gravelly silt of variable thickness to the total depth explored of 35 feet bgs. At one borehole located immediately downgradient of the former Kay's Cleaners a gravelly silty sand layer measuring approximately 10 feet in thickness was encountered between the depths of approximately 12 and 22 feet bgs.

Groundwater has historically been encountered at the site as follows:

- By AEI Consultants in May 2005 in borehole SB1 during drilling at a depth of 17.5 feet bgs and was subsequently measured after 5 minutes at a depth of 15.8 feet bgs.
- By Ecology Control Associates under the supervision of EFI on June 28, 2005 during drilling in borehole SB-6 at a depth of 20 feet bgs and was subsequently measured in the borehole at a depth of approximately 16 feet bgs.
- By P&D in August 2008 in boreholes B7 and B8 at depths of 21.3 and 22.6 feet bgs, and was subsequently measured at depths of 22.3 and 21.2 feet bgs prior to groundwater sample collection.
- By ERM West, Inc. in October 2009 in boreholes A-1, AD-3 and AUST-6 during drilling at a depth of 35 feet bgs, and was subsequently measured in these boreholes at a depth of approximately 22 feet bgs. Groundwater was not encountered in borehole A-2.

Groundwater has historically been encountered at depths of approximately 22 feet bgs or greater with the exception of borehole SB1 where groundwater was encountered during drilling at a depth of 17.5 feet bgs and was subsequently measured after 5 minutes at a depth of 15.8 feet bgs, and borehole SB-6 where groundwater was encountered during drilling at a depth of approximately 20 feet bgs and was subsequently measured at a depth of approximately 16 feet bgs. Both of these boreholes where groundwater was historically encountered at depths of less than 20 feet bgs are located at the southern boundary of the property in the western half of the property.

LABORATORY ANALYSIS

All four of the soil gas samples collected from extraction locations SSE1 through SSE4 were analyzed at Air Toxics for Volatile Organic Compounds (VOCs), including PCE, Trichloroethene (TCE), cis-1,2-Dichloroethene (cis-1,2-DCE), trans-1,2-Dichloroethene (trans-1,2-DCE), Vinyl Chloride, Methyl-tert-Butyl Ether (MTBE), benzene, toluene, ethylbenzene, and total xylenes (BTEX) using EPA Method TO-15. The sample results are summarized in Table 4. Copies of the laboratory analytical reports and chain of custody documentation are attached with this report as Appendix B.

PCE was detected in samples SSE1, SSE2, SSE3, and SSE4 at concentrations of 890, 580, 280, and 88 micrograms per cubic meter (ug/m^3), respectively, and ethanol was detected at concentrations of 22, 15, 17, and 26 ug/m^3, respectively. The only other analytes that were detected were carbon disulfide in sample SSE3 at a concentration of 17 ug/m^3, and benzene, acetone, methyl ethyl ketone (MEK), and cumene in sample SSE4 at concentrations of 4.6, 56, 21, and 7.4 ug/m^3, respectively.

DISCUSSION AND RECOMMENDATIONS

Review of Table 1 shows that a vapor barrier consisting of a plastic sheet was encountered at each of the soil gas extraction locations, and that coarse-grained material consisting primarily of gravel was encountered beneath the floor slab and the sub-slab grade beam to a depth of approximately 8 to 9.5 inches (the total coarse-grained material thickness beneath the slab at location SSE1 was 9 inches).

Review of Tables 2A through 2D shows that the measured extraction vacuum at all extraction locations was between 12 and 13 inches of water column with the exception of SSE2 where the sub-slab grade beam was encountered and the measured extraction vacuum was approximately 31 inches of water column. Similarly, the measured air flow at all extraction locations ranged from approximately 76 to 80 scfm with the exception of SSE2 where the measured air flow ranged from approximately 58 to 60 scfm. No organic vapors were detected with the PID.

A sub-slab perimeter footing is assumed to be present at the building, and the sub-slab grade beam encountered at location SSE2 is assumed to extend continuously from the south side of the building to the north side of the building. Review of Table 3 and Figures 3 through 6 shows that although the sub-slab grade beam encountered at extraction location SSE2 was a barrier to the propagation of sub-slab vacuum, that vacuum was measured at all monitoring locations during sub-slab soil gas extraction at all extraction locations. Additionally, vacuum was also measured in both of the monitored soil gas wells during sub-slab soil gas extraction at all extraction locations. At the beginning of the application of vacuum at each location, the vacuum was observed at values near the maximum vacuum value almost instantaneously (in less than 5 seconds) for sub-slab locations,

and in approximately one minute in the soil gas wells, indicating very good sub-slab and subsurface vacuum communication at the site.

Review of Table 4 and Figure 7 shows that the detected PCE sub-slab soil gas concentrations were highest at location SSE1 in the vicinity of the former dry cleaning machines and were lowest at SSE4 at the location farthest from the former dry cleaning machines. Additionally, the PCE concentrations shown on Figure 7 suggest that the sub-slab grade beam may be a barrier to the eastward movement of sub-slab PCE vapors.

The maximum sub-slab soil gas PCE concentration detected during the sub-slab depressurization feasibility test was 880 ug/m^3 at location SSE1. Based on one ppm of PCE being equivalent to 6,783 ug/m^3 PCE, the maximum PCE concentrations extracted during the feasibility test were all below the PID minimum detection concentration for the PID used to monitor extracted soil gas vapor concentrations during the feasibility test.

Based on the sub-slab depressurization feasibility test results, P&D recommends that sub-slab depressurization be performed in an effort to mitigate PCE vapor intrusion into the subject site building. P&D recommends that as part of the vapor intrusion mitigation effort that sub-slab depressurization extraction be performed at accessible locations surrounding the elevator pit in an effort to mitigate PCE vapor intrusion into the elevator pit where the highest historical PCE air concentrations have been detected.

DISTRIBUTION

A copy of this report should be uploaded to the GeoTracker and ACDEH websites.

LIMITATIONS

This report was prepared solely for the use of Ron Elvidge and EFI Global, Inc. The content and conclusions provided by P&D in this assessment are based on information collected during our investigation, which may include, but not be limited to, visual site inspections; interviews with the site owner, regulatory agencies and other pertinent individuals; review of available public documents; subsurface exploration and our professional judgment based on said information at the time of preparation of this document. Any subsurface sample results and observations presented herein are considered to be representative of the area of investigation; however, geological conditions may vary between borings and may not necessarily apply to the general site as a whole. If future subsurface or other conditions are revealed which vary from these findings, the newly revealed conditions must be evaluated and may invalidate the findings of this report.

This report is issued with the understanding that it is the responsibility of the owner, or his representative, to ensure that the information contained herein is brought to the attention of the appropriate regulatory agencies, where required by law. Additionally, it is the sole responsibility of the owner to properly dispose of any hazardous materials or hazardous wastes left onsite, in accordance with existing laws and regulations.

This report has been prepared in accordance with generally accepted practices using standards of care and diligence normally practiced by recognized consulting firms performing services of a similar nature. P&D is not responsible for the accuracy or completeness of information provided by other individuals or entities which is used in this report. This report presents our professional judgment based upon data and findings identified in this report and interpretation of such data based upon our experience and background, and no warranty, either express or implied, is made. The conclusions presented are based upon the current regulatory climate and may require revision if future regulatory changes occur.

December 14, 2015
Report 0461.R4

Should you have any questions, please do not hesitate to contact us at (510) 658-6916.

Sincerely,

P&D Environmental, Inc.

Paul H. King
California Professional Geologist #5901
Expires: 12/31/17

Attachments:

Table 1 - Summary of Floor Slab and Sub-Slab Material Thicknesses
Table 2A - Summary of ESE1 Vapor Extraction Data
Table 2B - Summary of ESE2 Vapor Extraction Data
Table 2C - Summary of ESE3 Vapor Extraction Data
Table 2D - Summary of ESE4 Vapor Extraction Data
Table 3 - Summary of Maximum Vacuum Measurements at Observation Locations
Table 4 - Summary of Extracted Sub-Slab Soil Gas Sample Laboratory Analytical Results

Figure 1 - Site Location Map
Figure 2 - Site Plan Showing Sub-Slab Soil Gas Extraction and Feasibility Test Monitoring Locations
Figure 3 - Site Plan Showing Maximum Sub-Slab Vacuum During Extraction at Location SSE1
Figure 4 - Site Plan Showing Maximum Sub-Slab Vacuum During Extraction at Location SSE2
Figure 5 - Site Plan Showing Maximum Sub-Slab Vacuum During Extraction at Location SSE3
Figure 6 - Site Plan Showing Maximum Sub-Slab Vacuum During Extraction at Location SSE4
Figure 7 - Site Plan Showing Sub-Slab PCE Concentrations at the Conclusion of Extraction at Locations SSE1 Through SSE4
Figure 8 - Typical Soil Gas Sampling Manifold

Appendix A - Field Data Sheets
Appendix B - Laboratory Reports and Chain of Custody Documentation

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TABLES

Table 1

Summary of Floor Slab and Sub-Slab Material Thicknesses

Extraction Location	Concrete Slab Thickness (Inches)	Depth to Vapor Barrier Concrete Slab Beneath Concrete Slab (Inches)*	Material Between Vapor Barrier and Vapor Barrier	Gravel Thickness Beneath Vapor Barrier (Inches)
SSE1	7	2	Sand	7
SSE2	15	0	None	8
SSE3	6	0	None	9.5
SSE4	6	0	None	9

Notes:

The material beneath the gravel consisted of native silty clay at all locations.

* = Vapor barrier consisting of a plastic sheet was encountered beneath the floor slab at all four extraction locations.

Table 2A

Summary of SSE1 Vapor Extraction Data

Date	11/16/2015			
Extraction Location		SSE1		
			PID	PID
Time	Vacuum	Flow	Carbon Inlet	Carbon Outlet
	(Inches of Water)	(Standard Cubic	(parts per million)	(parts per million)
		Feet per Minute)		
09:02	12.60	79.78		
09:08			0.00	0.00
09:24	12.60			
09:28		77.90		
09:33			0.00	
09:35				0.00
09:47	12.61			
09:50		77.08		
09:54			0.00	
09:57				0.00
10:05	12.39			
10:09		77.78		
10:13			0.00	
10:14				0.00
10:23	12.54			
10:27		77.21		
10:32			0.00	
10:33				0.00

Table 2B

Summary of SSE2 Vapor Extraction Data

Date	11/16/2015				
Extraction Location		SSE2			
			PID	PID	
Time	Vacuum	Flow	Carbon Inlet	Carbon Outlet	
	(Inches of Hg/	(Standard Cubic	(parts per million)	(parts per million)	
	Inches of Water	Feet per Minute)			
	Column)				
11:18	2.30/31.3	58.36			
11:24			0.00	0.00	
11:27					
11:36	2.30/31.3	59.05			
11:44			0.00		
11:46				0.00	
11:52	2.30/31.3				
11:56		59.95			
12:01			0.00		
12:03				0.00	
Note: Vacuum measured in inches of mercury and converted on this table to inches of water.					

Table 2C

Summary of SSE3 Vapor Extraction Data

Date	11/16/2015			
Extraction Location		SSE3		
			PID	PID
Time	Vacuum	Flow	Carbon Inlet	Carbon Outlet
	(Inches of Water)	(Standard Cubic	(parts per million)	(parts per million)
		Feet per Minute)		
13:15	12.84			
13:18		77.26		
13:23			0.00	
13:24				0.00
13:32	12.58	77.36		
13:38			0.00	
13:39				0.00
13:43	12.59			
13:45			0.00	
13:46				0.00
13:52		76.24		

Table 2D

Summary of SSE4 Vapor Extraction Data

Date	11/16/2015			
Extraction Location		SSE4		
			PID	PID
Time	Vacuum	Flow	Carbon Inlet	Carbon Outlet
	(Inches of Water)	(Standard Cubic	(parts per million)	(parts per million)
		Feet per Minute)		
14:39	12.30			
14:48		76.84		
14:52			0.00	0.00
14:55	12.25			
15:00		76.72		
15:02			0.00	0.00
15:04	12.27			
15:09		80.54		
15:13			0.00	0.00

Table 3

Summary of Maximum Vacuum Measurements at Observation Locations

Date	11/16/2015													
Extraction														
Location	SSE1	SSE2	SSE3	SSE4	VP1	VP2	VP3	VP4	VP5	VP6	VP7	VP8	SG9-17	SG10-7
SSE1	1.700	0.650	0.204	0.137	0.099	0.086	0.180	0.850	0.970	1.110	0.880	0.162	0.103	0.037
SSE2	0.490	20.760	0.370	0.310	0.162	0.140	0.400	0.600	0.450	0.470	0.700	0.340	0.062	0.042
SSE3	0.152	0.410	1.900	0.800	0.590	0.490	0.980	0.199	0.126	0.144	0.223	0.980	0.038	0.098
SSE4	0.107	0.260	0.790	1.770	0.750	0.560	0.690	0.145	0.087	0.096	0.158	0.790	0.027	0.097
Note:														
Vacuum measurements reported in Inches of water.														

Table 4

Summary of Extracted Sub-Slab Soil Gas Sample Laboratory Analtytical Results

Sample ID	Sample Date	Benzene	Toluene	Ethyl-benzene	m,p-Xylenes	o-Xylenes	PCE	TCE	cis-1,2-DCE	trans-1,2-DCE	Vinyl Chloride	Other VOCs by EPA TO-15
SSE1	11/16/2015	ND<3.8	ND<4.5	ND<5.2	ND<5.2	ND<5.2	890	ND<6.4	ND<4.7	ND<4.7	ND<3.0	ND, except Ethanol = 22
SSE2	11/16/2015	ND<3.8	ND<4.5	ND<5.2	ND<5.2	ND<5.2	580	ND<6.4	ND<4.8	ND<4.8	ND<3.1	ND, except Ethanol = 15
SSE3	11/16/2015	ND<3.8	ND<4.5	ND<5.2	ND<5.2	ND<5.2	280	ND<6.5	ND<4.8	ND<4.8	ND<3.1	ND, except Ethanol = 17, Carbon Disulfide = 17
SSE4	11/16/2015	4.6	ND<4.8	ND<5.5	ND<5.5	ND<5.5	88	ND<6.8	ND<5.0	ND<5.0	ND<3.2	ND, except Ethanol = 26, Acetone = 56, MEK = 21, Cumene = 7.4
ESL [1]		*420*	*1,300,000*	*4,900*	*Combined = 440,000*		*2,100*	*3,000*	*31,000*	*260,000*	*160*	*Acetone = 140,000,000, MEK = 22,000,000, Ethanol = No Value, Carbon Disulfide = No Value, Cumene = No Value*
ESL [2]		*0.42*	*1,300*	*4.9*	*Combined = 440*		*2.1*	*3.0*	*31*	*260*	*0.16*	*Acetone = 140,000, MEK = 22,000, Ethanol = No Value, Carbon Disulfide = No Value, Cumene = No Value*
20 x ESL [2]		*8.4*	*26,000*	*98*	*Combined = 8,800*		*42*	*60*	*620*	*5,200*	*3.2*	*Acetone = 2,800,000, MEK = 440,000, Ethanol = No Value, Carbon Disulfide = No Value, Cumene = No Value*

NOTES:

Samples were collected at the end of sub-slab soil gas extraction activities at each location.

PCE = Tetrachloroethene.

TCE = Trichloroethene.

cis-1,2-TCE = cis-1,2-Dichloroethene.

trans-1,2-TCE = trans-1,2-Dichloroethene.

MEK = Methyl Ethyl Ketone (2-Butanone).

ND = Not Detected.

ESL[1] = Environmental Screening Level, by San Francisco Bay – Regional Water Quality Control Board , updated December 2013 from Table E-2 - Soil Gas Screening Levels for Evaluation of Potential Vapor Intrusion for Commerical/Industrial Land Use.

ESL[2] = Environmental Screening Level, by San Francisco Bay – Regional Water Quality Control Board, updated December 2013 from Table E-3 – Ambient and Indoor Air Screening Levels for Commercial/Industrial Land Use.

Underlined results are for extracted sub-slab soil gas sample results that exceed their respective 20 x ESL [2] value.

Results and ESL values in micrograms per cubic meter (µg/m3), unless otherwise indicated.

FIGURES

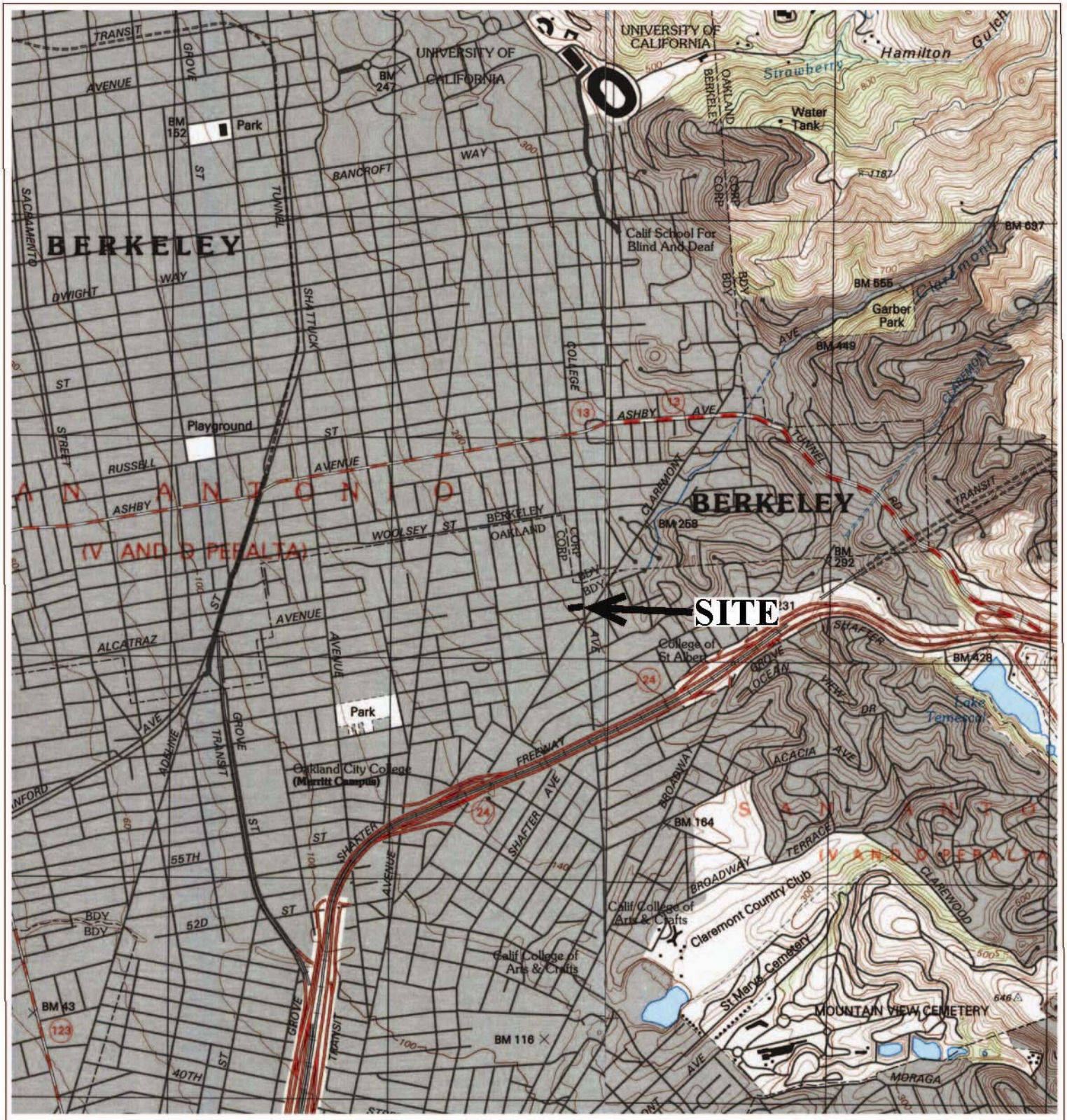

Figure 1
Site Location Map
Red Hanger Kleaners
6239 College Avenue
Oakland, California

Base Map From:
U.S. Geologic Survey 7.5 Minute Quadrangles Oakland East, and Oakland West, both maps edited 1996.

P&D Environmental, Inc.
55 Santa Clara Avenue, Suite 240
Oakland CA 94610

0 1,000 2,000
Approximate Scale in Feet

N

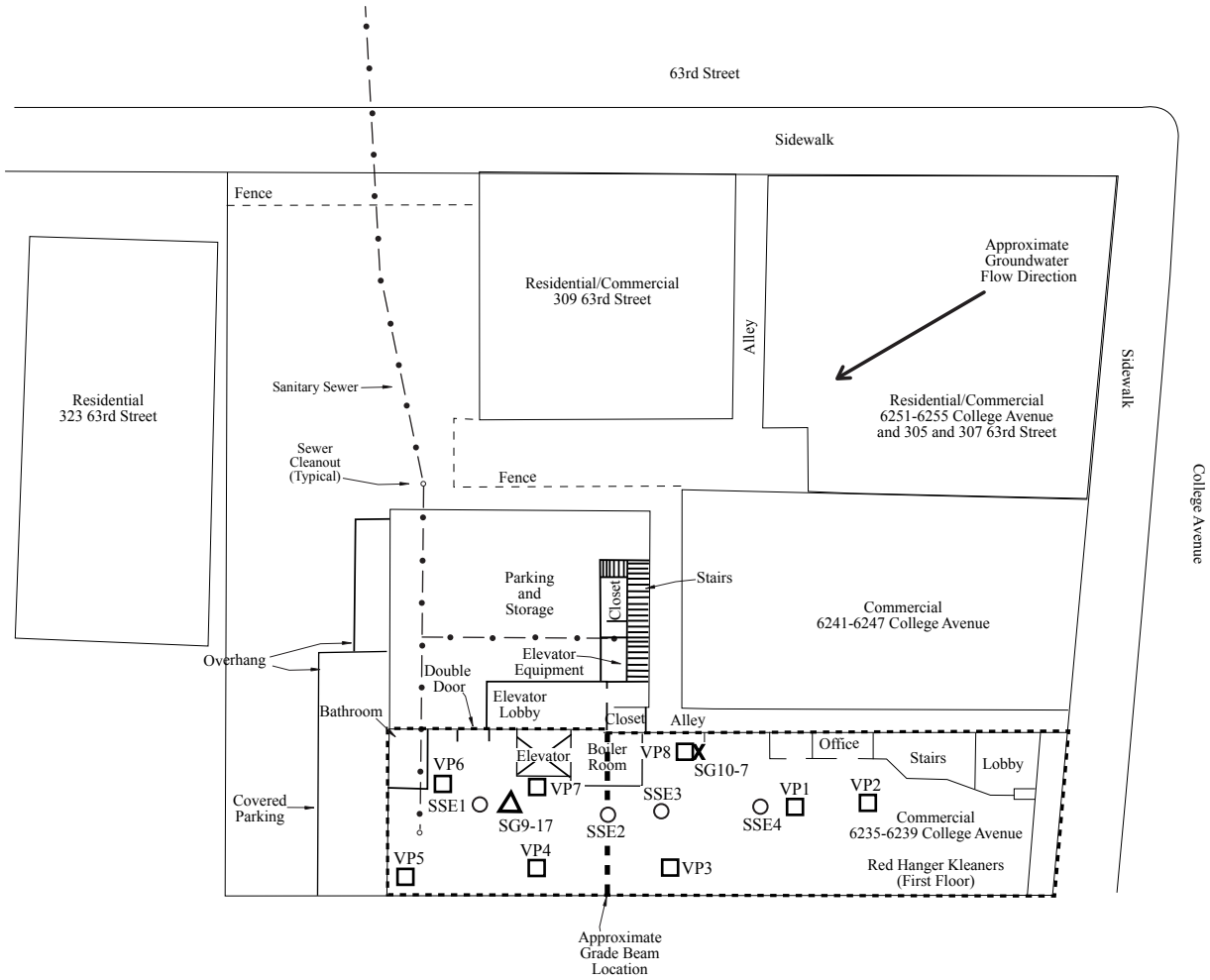

Figure 2
Site Plan Showing Sub-Slab Soil Gas Extraction and Feasibility Test Monitoring Locations
Red Hanger Kleaners
6239 College Avenue
Oakland, California

Base Map from:
Gordon Building, July 30, 2007, Alameda County Assessor's Map, Revised June 15,1989, and Google Earth, 2015

P&D Environmental, Inc.
55 Santa Clara Ave., Suite 240
Oakland, CA 94610

0 15 30
Approximate Scale in Feet

N

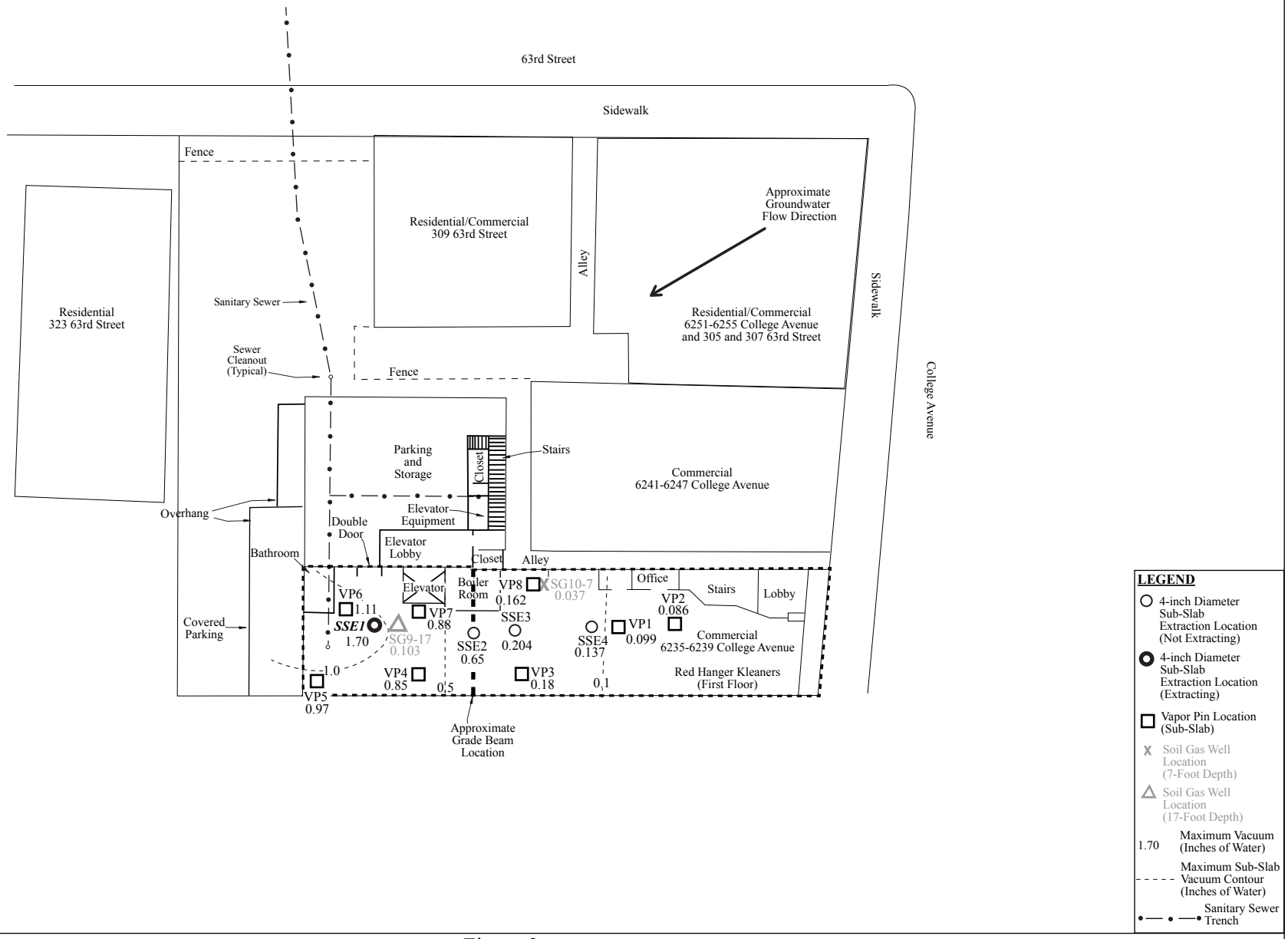

Figure 3
Site Plan Showing Maximum Sub-Slab Vacuum During Extraction at Location SSE1
Red Hanger Kleaners
6239 College Avenue
Oakland, California

Base Map from:
Gordon Building, July 30, 2007, Alameda County Assessor's Map, Revised June 15,1989, and Google Earth, 2015

P&D Environmental, Inc.
55 Santa Clara Ave., Suite 240
Oakland, CA 94610

0 15 30
Approximate Scale in Feet

N

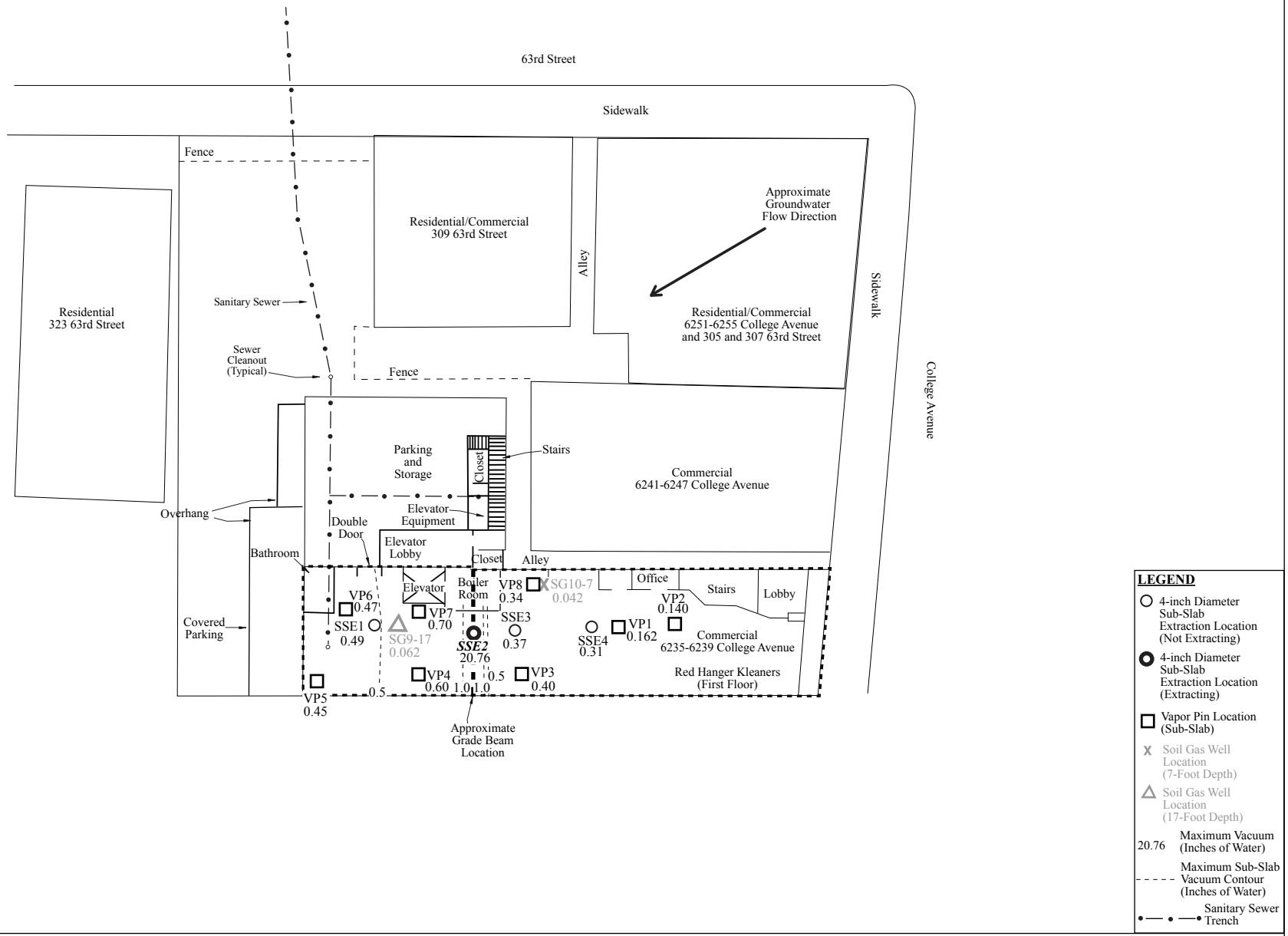

Figure 4
Site Plan Showing Maximum Sub-Slab Vacuum During Extraction at Location SSE2
Red Hanger Kleaners
6239 College Avenue
Oakland, California

Base Map from:
Gordon Building, July 30, 2007, Alameda County Assessor's Map, Revised June 15,1989, and Google Earth, 2015

P&D Environmental, Inc.
55 Santa Clara Ave., Suite 240
Oakland, CA 94610

0 15 30
Approximate Scale in Feet

N

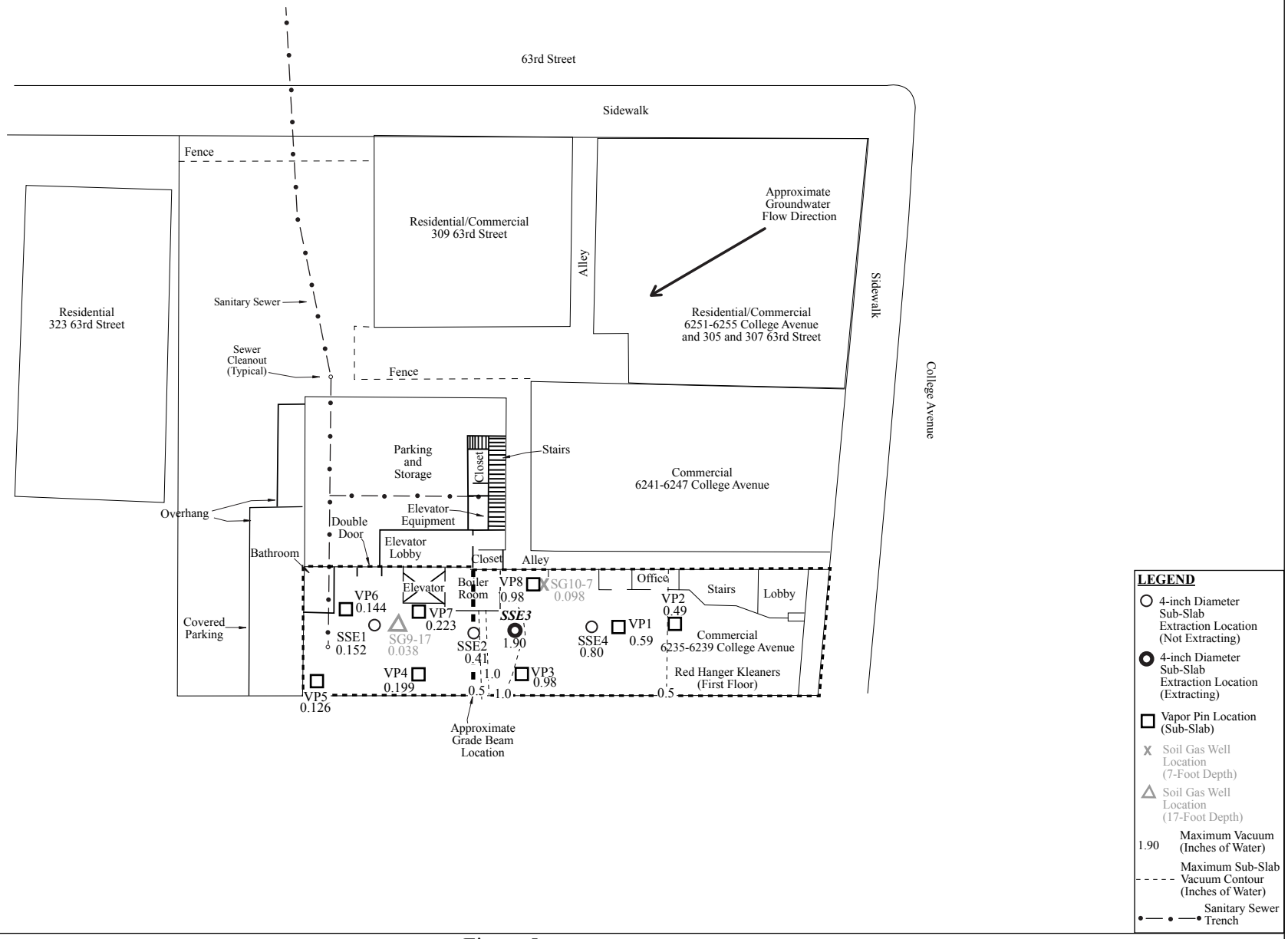

Figure 5
Site Plan Showing Maximum Sub-Slab Vacuum During Extraction at Location SSE3
Red Hanger Kleaners
6239 College Avenue
Oakland, California

Base Map from:
Gordon Building, July 30, 2007, Alameda County Assessor's Map, Revised June 15,1989, and Google Earth, 2015

P&D Environmental, Inc.
55 Santa Clara Ave., Suite 240
Oakland, CA 94610

0 15 30
Approximate Scale in Feet

N

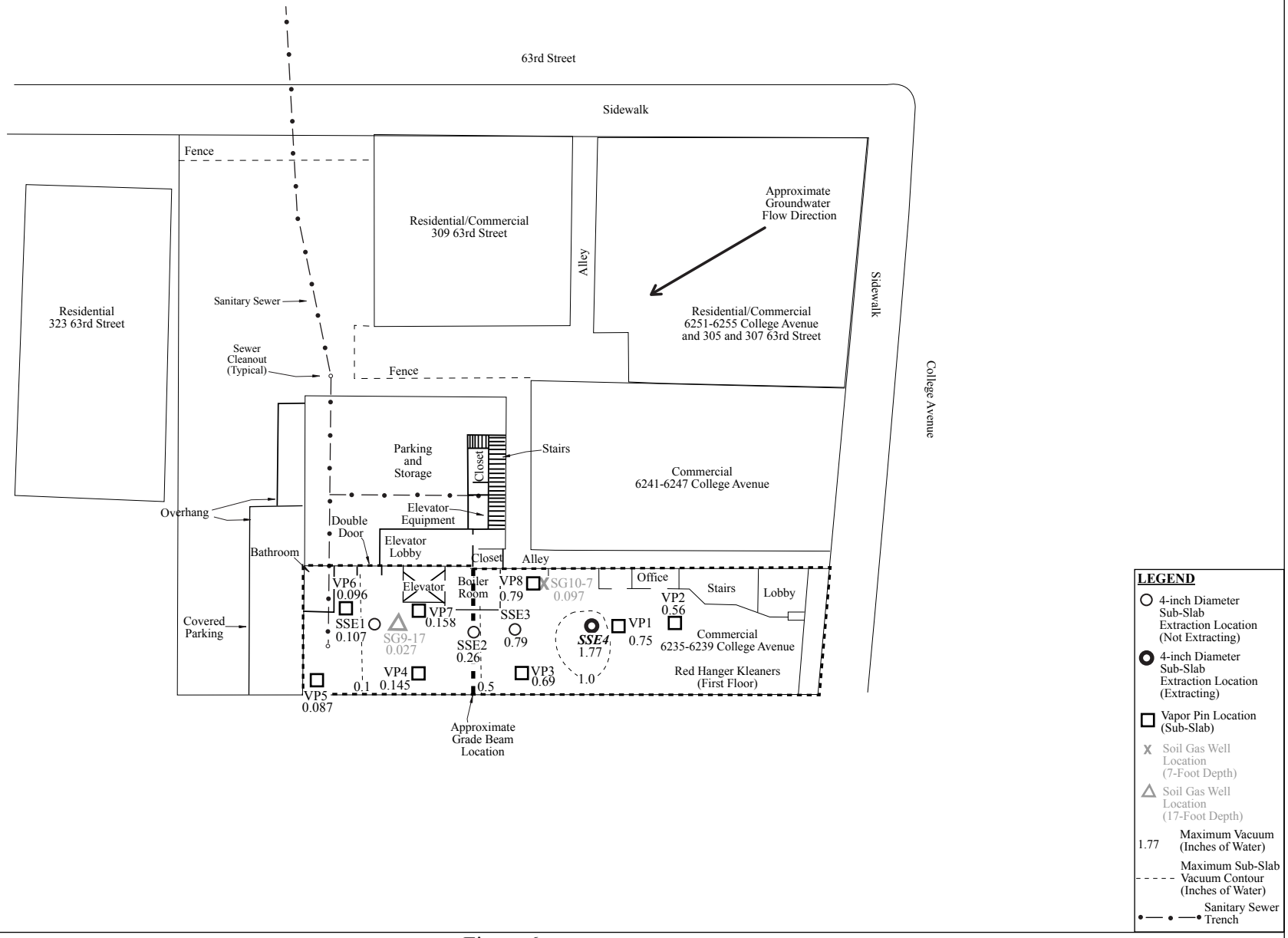

Figure 6
Site Plan Showing Maximum Sub-Slab Vacuum During Extraction at Location SSE4
Red Hanger Kleaners
6239 College Avenue
Oakland, California

Base Map from:
Gordon Building, July 30, 2007, Alameda County Assessor's Map, Revised June 15,1989, and Google Earth, 2015

P&D Environmental, Inc.
55 Santa Clara Ave., Suite 240
Oakland, CA 94610

0 15 30
Approximate Scale in Feet

N

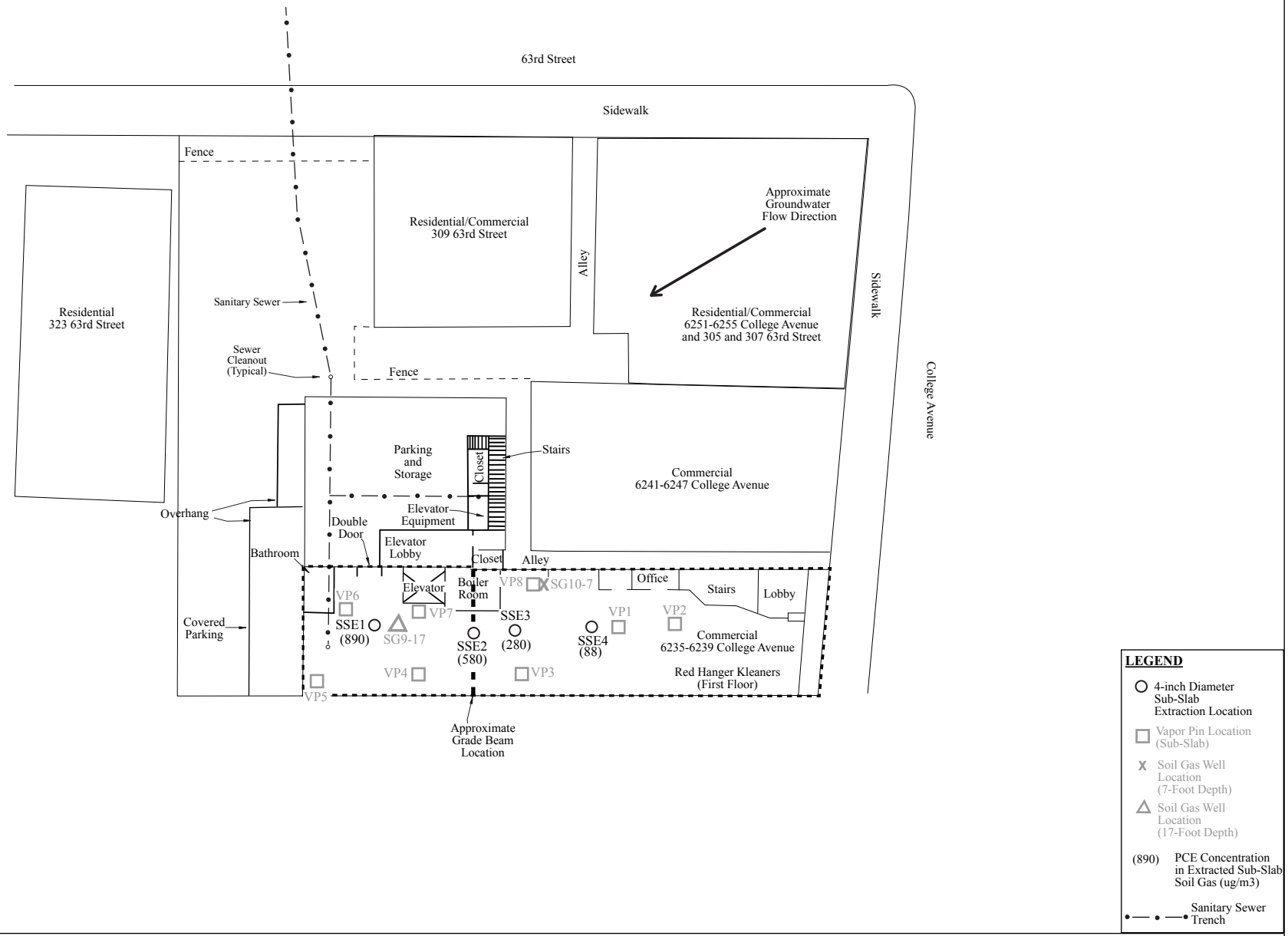

Figure 7
Site Plan Showing Sub-Slab PCE Concentrations At the Conclusion of Extraction at Each of Locations SSE1 Through SSE4
Red Hanger Kleaners
6239 College Avenue
Oakland, California

Base Map from: Gordon Building, July 30, 2007, Alameda County Assessor's Map, Revised June 15,1989, and Google Earth, 2015	P&D Environmental, Inc. 55 Santa Clara Ave., Suite 240 Oakland, CA 94610	0 15 30 Approximate Scale in Feet N

Figure 8
Typical Soil Gas Sampling Manifold
Red Hanger Kleaners
6239 College Avenue
Oakland, California

APPENDIX A

Field Data Sheets

- **Extraction Monitoring Logs**
- **Vacuum Monitoring Logs**
- **Air Sampling Log**

Extraction Monitoring Logs

EXTRACTION MONITORING LOG

Date: 11/16/15
Site Address: 6239 College Ave, Oakland
Job #: Red Hanger Kleaners, # 0461
Initials of Person Monitoring: JHM
Extracting Location: SSE1

Time	Vacuum (Inches of Water)	Flow (Feet per Minute)	Flow (Standard Cubic Feet Per Minute)	Temp (Degrees Celsius) F	Carbon INLET Inlet CI (ppm)	Carbon OUTLET Outlet CO (ppm)	NOTES
0902	-12.60	914	79.78	62.3			
0908					000.0	000.0	
0924	-12.60						
0928		893	77.90	72.4			
0933					000.0		
0935						000.0	
0947	-12.61						
0950		883	77.08	70.8			
0954					000.0		
0957						000.0	
1005	-12.59						
1009		891	77.78	68.7			
1013					000.0		
1014						000.0	
1023	-12.55						
1027		885	77.21	71.6			
1032					000.0		
1033						000.0	

EXTRACTION MONITORING LOG

Date: 11/16/15
Site Address: 6239 College Ave, Oakland
Job #: Red Hanger Kleaners, # 0461
Initials of Person Monitoring:
Extracting Location: SSE2

Time	Vacuum (Inches of Water)	Flow (Feet per Minute)	Flow (Standard Cubic Feet Per Minute)	Temp (Degrees Celsius) F	Carbon Inlet (ppm)	Carbon Outlet (ppm)	NOTES
1118	-2.3 HG	669	58.36	67.5			
1124					000.0		
1127						000.0	
1136	-2.3 HG	677	59.05	76.7			
1144					000.0		
1146						000.0	
1152	-2.3 HG	687	59.95	78.1			
1156							
1201					000.0		
1205						000.0	
							SYSTEM OFF 1221

EXTRACTION MONITORING LOG

Date: 11/16/15
Site Address: 6239 College Ave, Oakland
Job #: 0461 Red Hanger Kleaners, # 0461
Initials of Person Monitoring: JHM
Extracting Location: SSE3

Time	Vacuum (Inches of Water)	Flow (Feet per Minute)	Flow (Standard Cubic Feet Per Minute)	Temp (Degrees Celsius) F	Carbon Inlet (ppm)	Carbon Outlet (ppm)	NOTES
1315	- 12.84						
1318		885	77.24	70.4			
1323					000.0		
1324						000.0	
1332	- 12.58	~~886~~					
1335		886	77.36	75.8			
1338					000.0		
1339						000,0	
1343	- 12.59						
1345					000.0		
1346						000,0	
1352		874	76.24	78.7			

EXTRACTION MONITORING LOG

Date: 11/16/15
Site Address: 6239 College Ave, Oakland
Job #: Red Hanger Kleaners, # 0461
Initials of Person Monitoring: JHM
Extracting Location: SSE4

Time	Vacuum (Inches of Water)	Flow (Feet per Minute)	Flow (Standard Cubic Feet Per Minute)	Temp (Degrees Celsius)	Carbon Inlet (ppm)	Carbon Outlet (ppm)	NOTES
1439	-12.30						
1448		882	76.84	75.5			
1452					0.000	0.000	
1455	-12.25						
1500		878	76.72	79.2			
1502					0.000	0.000	
1504	-12.27						
1509		938	80.54	80.4			
1513					0.000	000.0	

Vacuum Monitoring Logs

VACUUM MONITORING LOG

Page 1 of 2

Date: 11/16/15
Site Address: 6239 College Ave, Oakland
Job #: 0461 Red Hanger Kleaners, # 0461
Initials of Person Monitoring: MLOD / PMK
Extracting Location: SSE1

Vacuum in Inches of Water

Time	SSE1	SSE2	SSE3	SSE4	VP1	VP2	VP3	VP4	VP5	VP6	VP7	VP8	SG9-17	SG10-7 NOTES
0741										0.000				
0743											0.000			
0746												0.000		
0754	0.000													
0755		0.000												
0756			0.000											
0758				0.000										
0800													0.000	
0802														0.000
	start 0855													
9:00											0.80			
9:08		0.64												
9:10													0.100	0.017 to 0.038
9:12			0.204											
9:14												.161		
9:19				0.137										0.037
9:21										1.06				
9:23	1.66													
9:28											0.74			
9:29													0.096	
9:30		0.65												
9:31			0.203											
9:35				1.31										0.024 to 0.43
9:36												0.160		
9:40														0.033
9:43	1.70													
9:45										1.11				
9:46													1.03	
9:47											0.88			
9:49		0.65												
9:50												0.161		
9:51			0.203											0.028 E
9.52				0.134										0.044 E
9.56														0.035
9.58										1.09				
9:59	1.70													
1000													0.091	
1002											0.88			
1003		0.65												
1004			0.188											
1005												0.157		
1006				0.130										

VACUUM MONITORING LOG

Page 2 of 2

Date: 11/16/15
Site Address: 6239 College Ave, Oakland
Job #: 0461 Red Hanger Kleaners, # 0461
Initials of Person Monitoring: MLBD
Extracting Location: SSE1

Vacuum in Inches of Water

Time	SSE1	SSE2	SSE3	SSE4	VP1	VP2	VP3	VP4	VP5	VP6	VP7	VP8	SG9-17	SG10-7 NOTES
														0.022
														~~0.030~~ 0.041
1008														0.031
1009										1.03				
1010	1.65													
1011													0.101	
1012											0.83			
1013		0.63												
1014			0.188											
~~1015~~												0.162		0.022
				~~0.130~~										0.032
1015				0.130										~~0.027~~
1017														0.027
	SSE1 Extraction stopped at 10:37											0.20 to 0.13		
10.40													0.017	
10:41														

VACUUM MONITORING LOG

Page 1 of 2

Date: 11/16/15
Site Address: 6239 College Ave, Oakland
Job #: 0461 Red Hanger Kleaners, # 0461
Initials of Person Monitoring: MLBD
Extracting Location: SSE2

Vacuum in Inches of Water

Time	SSE1	SSE2	SSE3	SSE4	VP1	VP2	VP3	VP4	VP5	VP6	VP7	VP8	SG9-17	SG10-7 NOTES
~~1044~~ 10:59										0.000 to ~~0.014~~				
1100	0.000 to 0.006													
1101											0.000 to 0.003			
1102		0.000 to 0.003												
1103		~~0~~	0.003 to 0.007											
1104												0.000 to 0.004		
1105				0.000 to 0.004										
1106														0.000 to 0.023
1107													0.006 to 0.012	
1112										0.28				
1113	0.30													
1115											0.49			
1117			0.18											0.033
1120												0.018		0.042
1124														0.038
1127				0.228										
1128		20.76												
1128													0.056	
1129										0.33				
1130	0.33													
1131											0.51			
1132		20.68												
1133				0.228										

VACUUM MONITORING LOG

Page 2 of 2

Date: 11/14/15
Site Address: 6239 College Ave, Oakland
Job #: 0461 Red Hanger Kleaners, # 0461
Initials of Person Monitoring: MLB
Extracting Location: SSE2

Vacuum in Inches of Water

Time	SSE1	SSE2	SSE3	SSE4	VP1	VP2	VP3	VP4	VP5	VP6	VP7	VP8	SG9-17	NOTES
1135														0.036
1136												0.31		
1137			0.37											
1138										0.45				
1139	0.45													
1140														
1141													0.032 to 0.060	
1142											0.67			
1143		20.67												
1144			0.35											
1145												0.34		
1146				0.31										
														0.030 0.036
1148														0.033
~~1150~~														
1150										0.47				
1151	0.49													
1152											0.70			
1153		20.70												
1154			0.37											
1155												0.34		
1156				0.29										
1157													0.045 to 0.062	

SSE2 EXTRACTION STOPPED AT 1221

VACUUM MONITORING LOG Page 1 of 2

Date: 11/16/15
Site Address: 6239 College Ave, Oakland
Job #: 0461 Red Hanger Kleaners, # 0461
Initials of Person Monitoring: ULBD
Extracting Location: SSE3

Vacuum in Inches of Water

Time	SSE1	SSE2	SSE3	SSE4	VP1	VP2	VP3	VP4	VP5	VP6	VP7	VP8	SG9-17	SG10-7 NOTES
baseline readings -														
1257										0.000				
1258	0.002												0.003	
1259		0.002									0.002			
1300			0.000											0.000
												0.000		0.004
1301														
1302				0.000										0.002
1312	START EXTRACTING AT SSE3													
1313										0.144				
1314	0.152													
1315													0.028	
1316											0.223			
1317		0.31												
1318			1.84											0.098
1319												0.87		0.095
1320				0.70										
1322														
1324														0.092
1325	0.151									0.139				
1326													0.038	
1327											0.221			
1328		0.20												
1329			1.80											
1330												0.85		
1331				0.65										
														0.083
														0.097
1333														0.090
1335														
1336	0.152									0.136				
													0.028	
1337		0.41									0.217			
1338			0.190											
1339														
1340												0.97		

VACUUM MONITORING LOG Page 2 of 2

Date: 11/16/15
Site Address: 6239 College Ave, Oakland
Job #: 0461 Red Hanger Kleaners, # 0461
Initials of Person Monitoring: MLBD
Extracting Location: SSE3

Vacuum in Inches of Water

Time	SSE1	SSE2	SSE3	SSE4	VP1	VP2	VP3	VP4	VP5	VP6	VP7	VP8	SG9-17	NOTES
1341														0.098
1342				0.75										
1355										0.133				
1356	0.149													
1357													0.026	
1358											0.217			0.091
1359		0.38												0.097
1400			1.90											
1401												0.98		0.094
1402				0.80										
1422	SSE3 EXTRACTION STOPPED AT 1422													

0.095
0.102
SG10-7

VACUUM MONITORING LOG

Page 1 of 2

Date: 11/16/15
Site Address: 6239 College Ave, Oakland
Job #: 0461 Red Hanger Kleaners, # 0461
Initials of Person Monitoring: MLBD
Extracting Location: SSE4

Vacuum in Inches of Water

Time	SSE1	SSE2	SSE3	SSE4	VP1	VP2	VP3	VP4	VP5	VP6	VP7	VP8	SG9-17	SG10-7 NOTES
Baseline readings.														
1430										0.000				
1431	0.003													
1432													0.000	
1433														
1434		0.002									0.000			
1435			0.000											
1436														
1437												0.000		
1438				0.000										0.000
1439	START EXTRACTING AT SSE4													
1440										0.095				
1441	0.107													
1442													0.021	
1443											0.158			
1444		0.16												
1445			0.69											
1446												0.74		0.100 0.094
1448														
1449				1.74										0.097
~~1450~~														
1450										0.095				
1451	0.105													
1452													0.027	
1453											0.156			
1454		0.15												0.085
1455			0.69									0.70		0.092
1456				1.72										~~0.092~~
1457														0.089

VACUUM MONITORING LOG Page 2 of 2

Date: 11/16/15
Site Address: 6239 College Ave, Oakland
Job #: 0461 Red Hanger Kleaners, # 0461
Initials of Person Monitoring: MLBD
Extracting Location: SSE4

Vacuum in Inches of Water

Time	SSE1	SSE2	SSE3	SSE4	VP1	VP2	VP3	VP4	VP5	VP6	VP7	VP8	SG9-17	SG10-7 NOTES
1505										0.096				
1506	0.104													
1507													0.019	
1508											0.13			0089
1509		0.26												0.093
1510			0.79											
1511												0.79		
1512				1.77										
1513														0.091
1530		SSE4 EXTRACTION STOPPED.												

VACUUM MONITORING LOG

Date: 11/16/15
Site Address: 6239 College Ave, Oakland
Job #: Red Hanger Kleaners, # 0461
Initials of Person Monitoring: JHM
Extracting Location: SSE1

					Vacuum in Inches of Water –									
Time	SSE1	SSE2	SSE3	SSE4	VP1	VP2	VP3	VP4	VP5	VP6	VP7	VP8	SG9-17	NOTES
0749					0.000									
0750						0.000								
0751							0.000							
0752								0.000						
0753									0.000					
0911								-0.83						
0912							-0.13							
0913									-0.88					
0916					-0.098									
0917						-0.083								
0936								-0.83						
0937									-0.95					
0938							-0.18							
0939					-0.096									
0941						-0.086								
0958					-0.094									
1000						-0.082								
1002							-0.13							
1003								-0.85						
1004									-0.94					
1014								-0.75						
1018									-0.95					
1019							-0.11							
1020					-0.092									
1022						-0.086								
1032							~~-0.84~~	-0.84						
1033									-0.97					
1034						-0.080								
1035					-0.099		-0.158							
1037														

VACUUM MONITORING LOG

Date: 11/16/15
Site Address: 6239 College Ave, Oakland
Job #: Red Hanger Kleaners, # 0461
Initials of Person Monitoring: JHM
Extracting Location: SSE2

Vacuum in Inches of Water

Time	SSE1	SSE2	SSE3	SSE4	VP1	VP2	VP3	VP4	VP5	VP6	VP7	VP8	SG9-17	NOTES
1100					-0.002									
					TO -0.011									
1101						0.000								
						TO -0.005								
1103						-0.002								
						TO -0.012								
1105								-0.004						
								TO -0.009						
									-0.002					
								TO -0.013						
1128					-0.162									
1129						-0.140								
1134							-0.32							
1135								-0.52						
1136									-0.39					
1146					-0.162									
1147						-0.140								
1148							-0.39							
1149								-0.53						
1150									-0.44					
1204					-0.160									
1207						-0.138								
1208							-0.40							
1209								-0.60						
1210									-0.45					
														SYSTEM off 1221

VACUUM MONITORING LOG

Page 3 of 4

Date: 11/16/15
Site Address: 6239 College Ave, Oakland
Job #: 0461 Red Hanger Kleaners, # 0461
Initials of Person Monitoring: JHM
Extracting Location: SSE3

					Vacuum in Inches of Water									
Time	SSE1	SSE2	SSE3	SSE4	VP1	VP2	VP3	VP4	VP5	VP6	VP7	VP8	SG9-17	NOTES
1256					-0.002									
					TO -0.006									
1259						0.000								
						TO -0.003								
1301							0.00							
							TO -0.002							
1302								0.000						
							TO	-0.002						
1304									0.000					
								TO	-0.004					
1312	SYSTEM START													
1325					-0.47									
1327								-0.199						
1328									-0.126					
1330						-0.43								
1331							-0.88							
1339					-0.52									
1340						-0.49								
1341							-0.98							
1342								-0.196						
1343									-0.126					
1349					-0.59									
1350						-0.49								
1351							-0.98							
1352								-0.198						
1353									-0.126					

VACUUM MONITORING LOG

Page 4 of 4

Date: 11/16/15
Site Address: 6239 College Ave, Oakland
Job #: Red Hanger Kleaners, # 0461
Initials of Person Monitoring: JHM
Extracting Location: SSE4

Vacuum in Inches of Water

Time	SSE1	SSE2	SSE3	SSE4	VP1	VP2	VP3	VP4	VP5	VP6	VP7	VP8	SG9-17	NOTES
1430					0.000									
1431						0.000								
1432							0.000 TO -0.004							
1433								0.000 TO -0.004						
1434									-0.002 TO -0.005					
SYSTEM START 1439														
1443				-0.72										
1444						-0.56								
1445							-0.69							
1446								-0.143						
1447									-0.086					
1456				-0.75										
1457						-0.56								
1458							-0.69							
1459								-0.145						
1500									-0.087					
1505				-0.75										
1506						-0.54								
1507							-0.69							
1508								-0.142						
1509									-0.085					

Air Sampling Log

AIR SAMPLING LOG

Page 1 of 1

Date: 11/16/15

Site Address: 6239 College Ave, Oakland

Job #: 0461 Red Hamger Kleaners, # 0461

Initals of Person Sampling: MLB

Air Sample Location Designation	Canister #	Sample Canister Initial Vacuum Check (In. Hg) and Time	Begin Sample Collection Vacuum (In. Hg) and Time	End Sample Collection Vacuum (In. Hg) and Time	Post-Sampling PID Value (ppm)	NOTES
SSE1	33398	vac -30 time 0904	vac -28 time 101815	vac -5 time 102625	0	
SSE2	369	vac -30 time 0915	vac -30 time 120915	vac -5 time 121623	0	
SSE3	IL1514	vac -30 time 0925	vac -25 time 141112	vac -5 time 141823	0	
SSE4	IL1536	vac -30 time 0930	vac -24 time 151820	vac -5 time 152624	0	
		vac time	vac time	vac time		
		vac time	vac time	vac time		
		vac time	vac time	vac time		
		vac time	vac time	vac time		
		vac time	vac time	vac time		
		vac time	vac time	vac time		
		vac time	vac time	vac time		
		vac time	vac time	vac time		
		vac time	vac time	vac time		

APPENDIX B

Laboratory Analytical Reports and Chain of Custody Documentation

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12/2/2015
Mr. Paul King
P & D Environmental
55 Santa Clara
Suite 240
Oakland CA 94610

Project Name: RED HANGER KLEANERS 6239 COLLEGE AVE OAK
Project #: 0461
Workorder #: 1511270

Dear Mr. Paul King

The following report includes the data for the above referenced project for sample(s) received on 11/17/2015 at Air Toxics Ltd.

The data and associated QC analyzed by TO-15 are compliant with the project requirements or laboratory criteria with the exception of the deviations noted in the attached case narrative.

Thank you for choosing Eurofins Air Toxics Inc. for your air analysis needs. Eurofins Air Toxics Inc. is committed to providing accurate data of the highest quality. Please feel free to the Project Manager: Kyle Vagadori at 916-985-1000 if you have any questions regarding the data in this report.

Regards,

Kyle Vagadori

Project Manager

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WORK ORDER #: 1511270

Work Order Summary

CLIENT:	Mr. Paul King P & D Environmental 55 Santa Clara Suite 240 Oakland, CA 94610	**BILL TO:**	Mr. Paul King P & D Environmental 55 Santa Clara Suite 240 Oakland, CA 94610
PHONE:	510-658-6916	**P.O. #**	
FAX:	510-834-0772	**PROJECT #**	0461 RED HANGER KLEANERS 6239 COLLEGE AVE OAK
DATE RECEIVED:	11/17/2015	**CONTACT:**	Kyle Vagadori
DATE COMPLETED:	12/02/2015		

FRACTION #	NAME	TEST	RECEIPT VAC./PRES.	FINAL PRESSURE
01A	SSE1	TO-15	4.7 "Hg	14.9 psi
02A	SSE2	TO-15	4.7 "Hg	15.4 psi
03A	SSE3	TO-15	4.7 "Hg	15.2 psi
04A	SSE4	TO-15	6.1 "Hg	15 psi
05A	Lab Blank	TO-15	NA	NA
06A	CCV	TO-15	NA	NA
07A	LCS	TO-15	NA	NA
07AA	LCSD	TO-15	NA	NA

CERTIFIED BY: Heidi Rayos DATE: 12/02/15

Technical Director

Certification numbers: AZ Licensure AZ0775, NJ NELAP - CA016, NY NELAP - 11291,
TX NELAP - T104704343-14-7, UT NELAP CA009332014-5, VA NELAP - 460197, WA NELAP - C935
Name of Accreditation Body: NELAP/ORELAP (Oregon Environmental Laboratory Accreditation Program)
Accreditation number: CA300005, Effective date: 10/18/2014, Expiration date: 10/17/2015.
Eurofins Air Toxics Inc.. certifies that the test results contained in this report meet all requirements of the NELAC standards

180 BLUE RAVINE ROAD, SUITE B FOLSOM, CA - 956
(916) 985-1000 . (800) 985-5955 . FAX (916) 985-1020

LABORATORY NARRATIVE
EPA Method TO-15
P & D Environmental
Workorder# 1511270

Four 1 Liter Summa Canister samples were received on November 17, 2015. The laboratory performed analysis via EPA Method TO-15 using GC/MS in the full scan mode.

This workorder was independently validated prior to submittal using 'USEPA National Functional Guidelines' as generally applied to the analysis of volatile organic compounds in air. A rules-based, logic driven, independent validation engine was employed to assess completeness, evaluate pass/fail of relevant project quality control requirements and verification of all quantified amounts.

Receiving Notes

The Chain of Custody (COC) information for sample SSE2 did not match the information on the canister with regard to canister identification. The client was notified of the discrepancy and the information on the canister was used to process and report the sample.

Analytical Notes

The reported CCV for each daily batch may be derived from more than one analytical file due to the client's request for non-standard compounds. Non-standard compounds may have different acceptance criteria than the standard TO-14A/TO-15 compound list as per contract or verbal agreement.

Definition of Data Qualifying Flags

Eight qualifiers may have been used on the data analysis sheets and indicates as follows:

B - Compound present in laboratory blank greater than reporting limit (background subtraction not performed).

J - Estimated value.

E - Exceeds instrument calibration range.

S - Saturated peak.

Q - Exceeds quality control limits.

U - Compound analyzed for but not detected above the reporting limit, LOD, or MDL value. See data page for project specific U-flag definition.

UJ- Non-detected compound associated with low bias in the CCV

N - The identification is based on presumptive evidence.

File extensions may have been used on the data analysis sheets and indicates as follows:

a-File was requantified

b-File was quantified by a second column and detector

r1-File was requantified for the purpose of reissue

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Summary of Detected Compounds
EPA METHOD TO-15 GC/MS FULL SCAN

Client Sample ID: SSE1

Lab ID#: 1511270-01A

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Ethanol	4.8	11	9.0	22
Tetrachloroethene	1.2	130	8.1	890

Client Sample ID: SSE2

Lab ID#: 1511270-02A

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Ethanol	4.8	8.1	9.0	15
Tetrachloroethene	1.2	86	8.1	580

Client Sample ID: SSE3

Lab ID#: 1511270-03A

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Ethanol	4.8	9.2	9.1	17
Carbon Disulfide	4.8	5.4	15	17
Tetrachloroethene	1.2	42	8.2	280

Client Sample ID: SSE4

Lab ID#: 1511270-04A

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Ethanol	5.1	14	9.6	26
Acetone	13	24	30	56
2-Butanone (Methyl Ethyl Ketone)	5.1	7.3	15	21
Benzene	1.3	1.4	4.0	4.6
Tetrachloroethene	1.3	13	8.6	88
Cumene	1.3	1.5	6.2	7.4

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Client Sample ID: SSE1

Lab ID#: 1511270-01A

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	**17112110**	**Date of Collection:**	**11/16/15 10:26:00 AM**
Dil. Factor:	**2.39**	**Date of Analysis:**	**11/21/15 04:27 PM**

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Freon 12	1.2	Not Detected	5.9	Not Detected
Freon 114	1.2	Not Detected	8.4	Not Detected
Chloromethane	12	Not Detected	25	Not Detected
Vinyl Chloride	1.2	Not Detected	3.0	Not Detected
1,3-Butadiene	1.2	Not Detected	2.6	Not Detected
Bromomethane	12	Not Detected	46	Not Detected
Chloroethane	4.8	Not Detected	13	Not Detected
Freon 11	1.2	Not Detected	6.7	Not Detected
Ethanol	4.8	11	9.0	22
Freon 113	1.2	Not Detected	9.2	Not Detected
1,1-Dichloroethene	1.2	Not Detected	4.7	Not Detected
Acetone	12	Not Detected	28	Not Detected
2-Propanol	4.8	Not Detected	12	Not Detected
Carbon Disulfide	4.8	Not Detected	15	Not Detected
3-Chloropropene	4.8	Not Detected	15	Not Detected
Methylene Chloride	12	Not Detected	42	Not Detected
Methyl tert-butyl ether	1.2	Not Detected	4.3	Not Detected
trans-1,2-Dichloroethene	1.2	Not Detected	4.7	Not Detected
Hexane	1.2	Not Detected	4.2	Not Detected
1,1-Dichloroethane	1.2	Not Detected	4.8	Not Detected
2-Butanone (Methyl Ethyl Ketone)	4.8	Not Detected	14	Not Detected
cis-1,2-Dichloroethene	1.2	Not Detected	4.7	Not Detected
Tetrahydrofuran	1.2	Not Detected	3.5	Not Detected
Chloroform	1.2	Not Detected	5.8	Not Detected
1,1,1-Trichloroethane	1.2	Not Detected	6.5	Not Detected
Cyclohexane	1.2	Not Detected	4.1	Not Detected
Carbon Tetrachloride	1.2	Not Detected	7.5	Not Detected
2,2,4-Trimethylpentane	1.2	Not Detected	5.6	Not Detected
Benzene	1.2	Not Detected	3.8	Not Detected
1,2-Dichloroethane	1.2	Not Detected	4.8	Not Detected
Heptane	1.2	Not Detected	4.9	Not Detected
Trichloroethene	1.2	Not Detected	6.4	Not Detected
1,2-Dichloropropane	1.2	Not Detected	5.5	Not Detected
1,4-Dioxane	4.8	Not Detected	17	Not Detected
Bromodichloromethane	1.2	Not Detected	8.0	Not Detected
cis-1,3-Dichloropropene	1.2	Not Detected	5.4	Not Detected
4-Methyl-2-pentanone	1.2	Not Detected	4.9	Not Detected
Toluene	1.2	Not Detected	4.5	Not Detected
trans-1,3-Dichloropropene	1.2	Not Detected	5.4	Not Detected
1,1,2-Trichloroethane	1.2	Not Detected	6.5	Not Detected
Tetrachloroethene	1.2	130	8.1	890
2-Hexanone	4.8	Not Detected	20	Not Detected

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Client Sample ID: SSE1

Lab ID#: 1511270-01A

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	**17112110**	**Date of Collection: 11/16/15 10:26:00 AM**	
Dil. Factor:	**2.39**	**Date of Analysis: 11/21/15 04:27 PM**	

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Dibromochloromethane	1.2	Not Detected	10	Not Detected
1,2-Dibromoethane (EDB)	1.2	Not Detected	9.2	Not Detected
Chlorobenzene	1.2	Not Detected	5.5	Not Detected
Ethyl Benzene	1.2	Not Detected	5.2	Not Detected
m,p-Xylene	1.2	Not Detected	5.2	Not Detected
o-Xylene	1.2	Not Detected	5.2	Not Detected
Styrene	1.2	Not Detected	5.1	Not Detected
Bromoform	1.2	Not Detected	12	Not Detected
Cumene	1.2	Not Detected	5.9	Not Detected
1,1,2,2-Tetrachloroethane	1.2	Not Detected	8.2	Not Detected
Propylbenzene	1.2	Not Detected	5.9	Not Detected
4-Ethyltoluene	1.2	Not Detected	5.9	Not Detected
1,3,5-Trimethylbenzene	1.2	Not Detected	5.9	Not Detected
1,2,4-Trimethylbenzene	1.2	Not Detected	5.9	Not Detected
1,3-Dichlorobenzene	1.2	Not Detected	7.2	Not Detected
1,4-Dichlorobenzene	1.2	Not Detected	7.2	Not Detected
alpha-Chlorotoluene	1.2	Not Detected	6.2	Not Detected
1,2-Dichlorobenzene	1.2	Not Detected	7.2	Not Detected
1,2,4-Trichlorobenzene	4.8	Not Detected	35	Not Detected
Hexachlorobutadiene	4.8	Not Detected	51	Not Detected
1,1-Difluoroethane	4.8	Not Detected	13	Not Detected

Container Type: 1 Liter Summa Canister

Surrogates	%Recovery	Method Limits
Toluene-d8	109	70-130
1,2-Dichloroethane-d4	98	70-130
4-Bromofluorobenzene	93	70-130

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Client Sample ID: SSE2

Lab ID#: 1511270-02A

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	**17112111**	**Date of Collection:**	**11/16/15 12:16:00 PM**
Dil. Factor:	**2.40**	**Date of Analysis:**	**11/21/15 05:03 PM**

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Freon 12	1.2	Not Detected	5.9	Not Detected
Freon 114	1.2	Not Detected	8.4	Not Detected
Chloromethane	12	Not Detected	25	Not Detected
Vinyl Chloride	1.2	Not Detected	3.1	Not Detected
1,3-Butadiene	1.2	Not Detected	2.6	Not Detected
Bromomethane	12	Not Detected	47	Not Detected
Chloroethane	4.8	Not Detected	13	Not Detected
Freon 11	1.2	Not Detected	6.7	Not Detected
Ethanol	4.8	8.1	9.0	15
Freon 113	1.2	Not Detected	9.2	Not Detected
1,1-Dichloroethene	1.2	Not Detected	4.8	Not Detected
Acetone	12	Not Detected	28	Not Detected
2-Propanol	4.8	Not Detected	12	Not Detected
Carbon Disulfide	4.8	Not Detected	15	Not Detected
3-Chloropropene	4.8	Not Detected	15	Not Detected
Methylene Chloride	12	Not Detected	42	Not Detected
Methyl tert-butyl ether	1.2	Not Detected	4.3	Not Detected
trans-1,2-Dichloroethene	1.2	Not Detected	4.8	Not Detected
Hexane	1.2	Not Detected	4.2	Not Detected
1,1-Dichloroethane	1.2	Not Detected	4.8	Not Detected
2-Butanone (Methyl Ethyl Ketone)	4.8	Not Detected	14	Not Detected
cis-1,2-Dichloroethene	1.2	Not Detected	4.8	Not Detected
Tetrahydrofuran	1.2	Not Detected	3.5	Not Detected
Chloroform	1.2	Not Detected	5.8	Not Detected
1,1,1-Trichloroethane	1.2	Not Detected	6.5	Not Detected
Cyclohexane	1.2	Not Detected	4.1	Not Detected
Carbon Tetrachloride	1.2	Not Detected	7.6	Not Detected
2,2,4-Trimethylpentane	1.2	Not Detected	5.6	Not Detected
Benzene	1.2	Not Detected	3.8	Not Detected
1,2-Dichloroethane	1.2	Not Detected	4.8	Not Detected
Heptane	1.2	Not Detected	4.9	Not Detected
Trichloroethene	1.2	Not Detected	6.4	Not Detected
1,2-Dichloropropane	1.2	Not Detected	5.5	Not Detected
1,4-Dioxane	4.8	Not Detected	17	Not Detected
Bromodichloromethane	1.2	Not Detected	8.0	Not Detected
cis-1,3-Dichloropropene	1.2	Not Detected	5.4	Not Detected
4-Methyl-2-pentanone	1.2	Not Detected	4.9	Not Detected
Toluene	1.2	Not Detected	4.5	Not Detected
trans-1,3-Dichloropropene	1.2	Not Detected	5.4	Not Detected
1,1,2-Trichloroethane	1.2	Not Detected	6.5	Not Detected
Tetrachloroethene	1.2	86	8.1	580
2-Hexanone	4.8	Not Detected	20	Not Detected

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Client Sample ID: SSE2

Lab ID#: 1511270-02A

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	**17112111**	**Date of Collection: 11/16/15 12:16:00 PM**	
Dil. Factor:	**2.40**	**Date of Analysis: 11/21/15 05:03 PM**	

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Dibromochloromethane	1.2	Not Detected	10	Not Detected
1,2-Dibromoethane (EDB)	1.2	Not Detected	9.2	Not Detected
Chlorobenzene	1.2	Not Detected	5.5	Not Detected
Ethyl Benzene	1.2	Not Detected	5.2	Not Detected
m,p-Xylene	1.2	Not Detected	5.2	Not Detected
o-Xylene	1.2	Not Detected	5.2	Not Detected
Styrene	1.2	Not Detected	5.1	Not Detected
Bromoform	1.2	Not Detected	12	Not Detected
Cumene	1.2	Not Detected	5.9	Not Detected
1,1,2,2-Tetrachloroethane	1.2	Not Detected	8.2	Not Detected
Propylbenzene	1.2	Not Detected	5.9	Not Detected
4-Ethyltoluene	1.2	Not Detected	5.9	Not Detected
1,3,5-Trimethylbenzene	1.2	Not Detected	5.9	Not Detected
1,2,4-Trimethylbenzene	1.2	Not Detected	5.9	Not Detected
1,3-Dichlorobenzene	1.2	Not Detected	7.2	Not Detected
1,4-Dichlorobenzene	1.2	Not Detected	7.2	Not Detected
alpha-Chlorotoluene	1.2	Not Detected	6.2	Not Detected
1,2-Dichlorobenzene	1.2	Not Detected	7.2	Not Detected
1,2,4-Trichlorobenzene	4.8	Not Detected	36	Not Detected
Hexachlorobutadiene	4.8	Not Detected	51	Not Detected
1,1-Difluoroethane	4.8	Not Detected	13	Not Detected

Container Type: 1 Liter Summa Canister

Surrogates	%Recovery	Method Limits
Toluene-d8	110	70-130
1,2-Dichloroethane-d4	97	70-130
4-Bromofluorobenzene	94	70-130

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Client Sample ID: SSE3

Lab ID#: 1511270-03A

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	**17112112**	**Date of Collection: 11/16/15 2:18:00 PM**	
Dil. Factor:	**2.41**	**Date of Analysis: 11/21/15 05:25 PM**	

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Freon 12	1.2	Not Detected	6.0	Not Detected
Freon 114	1.2	Not Detected	8.4	Not Detected
Chloromethane	12	Not Detected	25	Not Detected
Vinyl Chloride	1.2	Not Detected	3.1	Not Detected
1,3-Butadiene	1.2	Not Detected	2.7	Not Detected
Bromomethane	12	Not Detected	47	Not Detected
Chloroethane	4.8	Not Detected	13	Not Detected
Freon 11	1.2	Not Detected	6.8	Not Detected
Ethanol	4.8	9.2	9.1	17
Freon 113	1.2	Not Detected	9.2	Not Detected
1,1-Dichloroethene	1.2	Not Detected	4.8	Not Detected
Acetone	12	Not Detected	29	Not Detected
2-Propanol	4.8	Not Detected	12	Not Detected
Carbon Disulfide	4.8	5.4	15	17
3-Chloropropene	4.8	Not Detected	15	Not Detected
Methylene Chloride	12	Not Detected	42	Not Detected
Methyl tert-butyl ether	1.2	Not Detected	4.3	Not Detected
trans-1,2-Dichloroethene	1.2	Not Detected	4.8	Not Detected
Hexane	1.2	Not Detected	4.2	Not Detected
1,1-Dichloroethane	1.2	Not Detected	4.9	Not Detected
2-Butanone (Methyl Ethyl Ketone)	4.8	Not Detected	14	Not Detected
cis-1,2-Dichloroethene	1.2	Not Detected	4.8	Not Detected
Tetrahydrofuran	1.2	Not Detected	3.6	Not Detected
Chloroform	1.2	Not Detected	5.9	Not Detected
1,1,1-Trichloroethane	1.2	Not Detected	6.6	Not Detected
Cyclohexane	1.2	Not Detected	4.1	Not Detected
Carbon Tetrachloride	1.2	Not Detected	7.6	Not Detected
2,2,4-Trimethylpentane	1.2	Not Detected	5.6	Not Detected
Benzene	1.2	Not Detected	3.8	Not Detected
1,2-Dichloroethane	1.2	Not Detected	4.9	Not Detected
Heptane	1.2	Not Detected	4.9	Not Detected
Trichloroethene	1.2	Not Detected	6.5	Not Detected
1,2-Dichloropropane	1.2	Not Detected	5.6	Not Detected
1,4-Dioxane	4.8	Not Detected	17	Not Detected
Bromodichloromethane	1.2	Not Detected	8.1	Not Detected
cis-1,3-Dichloropropene	1.2	Not Detected	5.5	Not Detected
4-Methyl-2-pentanone	1.2	Not Detected	4.9	Not Detected
Toluene	1.2	Not Detected	4.5	Not Detected
trans-1,3-Dichloropropene	1.2	Not Detected	5.5	Not Detected
1,1,2-Trichloroethane	1.2	Not Detected	6.6	Not Detected
Tetrachloroethene	1.2	42	8.2	280
2-Hexanone	4.8	Not Detected	20	Not Detected

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Client Sample ID: SSE3

Lab ID#: 1511270-03A

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	**17112112**	**Date of Collection: 11/16/15 2:18:00 PM**	
Dil. Factor:	**2.41**	**Date of Analysis: 11/21/15 05:25 PM**	

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Dibromochloromethane	1.2	Not Detected	10	Not Detected
1,2-Dibromoethane (EDB)	1.2	Not Detected	9.2	Not Detected
Chlorobenzene	1.2	Not Detected	5.5	Not Detected
Ethyl Benzene	1.2	Not Detected	5.2	Not Detected
m,p-Xylene	1.2	Not Detected	5.2	Not Detected
o-Xylene	1.2	Not Detected	5.2	Not Detected
Styrene	1.2	Not Detected	5.1	Not Detected
Bromoform	1.2	Not Detected	12	Not Detected
Cumene	1.2	Not Detected	5.9	Not Detected
1,1,2,2-Tetrachloroethane	1.2	Not Detected	8.3	Not Detected
Propylbenzene	1.2	Not Detected	5.9	Not Detected
4-Ethyltoluene	1.2	Not Detected	5.9	Not Detected
1,3,5-Trimethylbenzene	1.2	Not Detected	5.9	Not Detected
1,2,4-Trimethylbenzene	1.2	Not Detected	5.9	Not Detected
1,3-Dichlorobenzene	1.2	Not Detected	7.2	Not Detected
1,4-Dichlorobenzene	1.2	Not Detected	7.2	Not Detected
alpha-Chlorotoluene	1.2	Not Detected	6.2	Not Detected
1,2-Dichlorobenzene	1.2	Not Detected	7.2	Not Detected
1,2,4-Trichlorobenzene	4.8	Not Detected	36	Not Detected
Hexachlorobutadiene	4.8	Not Detected	51	Not Detected
1,1-Difluoroethane	4.8	Not Detected	13	Not Detected

Container Type: 1 Liter Summa Canister

Surrogates	%Recovery	Method Limits
Toluene-d8	109	70-130
1,2-Dichloroethane-d4	100	70-130
4-Bromofluorobenzene	96	70-130

eurofins | Air Toxics

Client Sample ID: SSE4

Lab ID#: 1511270-04A

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	**17112113**	**Date of Collection:**	**11/16/15 3:26:00 PM**
Dil. Factor:	**2.54**	**Date of Analysis:**	**11/21/15 06:00 PM**

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Freon 12	1.3	Not Detected	6.3	Not Detected
Freon 114	1.3	Not Detected	8.9	Not Detected
Chloromethane	13	Not Detected	26	Not Detected
Vinyl Chloride	1.3	Not Detected	3.2	Not Detected
1,3-Butadiene	1.3	Not Detected	2.8	Not Detected
Bromomethane	13	Not Detected	49	Not Detected
Chloroethane	5.1	Not Detected	13	Not Detected
Freon 11	1.3	Not Detected	7.1	Not Detected
Ethanol	5.1	14	9.6	26
Freon 113	1.3	Not Detected	9.7	Not Detected
1,1-Dichloroethene	1.3	Not Detected	5.0	Not Detected
Acetone	13	24	30	56
2-Propanol	5.1	Not Detected	12	Not Detected
Carbon Disulfide	5.1	Not Detected	16	Not Detected
3-Chloropropene	5.1	Not Detected	16	Not Detected
Methylene Chloride	13	Not Detected	44	Not Detected
Methyl tert-butyl ether	1.3	Not Detected	4.6	Not Detected
trans-1,2-Dichloroethene	1.3	Not Detected	5.0	Not Detected
Hexane	1.3	Not Detected	4.5	Not Detected
1,1-Dichloroethane	1.3	Not Detected	5.1	Not Detected
2-Butanone (Methyl Ethyl Ketone)	5.1	7.3	15	21
cis-1,2-Dichloroethene	1.3	Not Detected	5.0	Not Detected
Tetrahydrofuran	1.3	Not Detected	3.7	Not Detected
Chloroform	1.3	Not Detected	6.2	Not Detected
1,1,1-Trichloroethane	1.3	Not Detected	6.9	Not Detected
Cyclohexane	1.3	Not Detected	4.4	Not Detected
Carbon Tetrachloride	1.3	Not Detected	8.0	Not Detected
2,2,4-Trimethylpentane	1.3	Not Detected	5.9	Not Detected
Benzene	1.3	1.4	4.0	4.6
1,2-Dichloroethane	1.3	Not Detected	5.1	Not Detected
Heptane	1.3	Not Detected	5.2	Not Detected
Trichloroethene	1.3	Not Detected	6.8	Not Detected
1,2-Dichloropropane	1.3	Not Detected	5.9	Not Detected
1,4-Dioxane	5.1	Not Detected	18	Not Detected
Bromodichloromethane	1.3	Not Detected	8.5	Not Detected
cis-1,3-Dichloropropene	1.3	Not Detected	5.8	Not Detected
4-Methyl-2-pentanone	1.3	Not Detected	5.2	Not Detected
Toluene	1.3	Not Detected	4.8	Not Detected
trans-1,3-Dichloropropene	1.3	Not Detected	5.8	Not Detected
1,1,2-Trichloroethane	1.3	Not Detected	6.9	Not Detected
Tetrachloroethene	1.3	13	8.6	88
2-Hexanone	5.1	Not Detected	21	Not Detected

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Client Sample ID: SSE4

Lab ID#: 1511270-04A

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	**17112113**	**Date of Collection: 11/16/15 3:26:00 PM**	
Dil. Factor:	**2.54**	**Date of Analysis: 11/21/15 06:00 PM**	

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Dibromochloromethane	1.3	Not Detected	11	Not Detected
1,2-Dibromoethane (EDB)	1.3	Not Detected	9.8	Not Detected
Chlorobenzene	1.3	Not Detected	5.8	Not Detected
Ethyl Benzene	1.3	Not Detected	5.5	Not Detected
m,p-Xylene	1.3	Not Detected	5.5	Not Detected
o-Xylene	1.3	Not Detected	5.5	Not Detected
Styrene	1.3	Not Detected	5.4	Not Detected
Bromoform	1.3	Not Detected	13	Not Detected
Cumene	1.3	1.5	6.2	7.4
1,1,2,2-Tetrachloroethane	1.3	Not Detected	8.7	Not Detected
Propylbenzene	1.3	Not Detected	6.2	Not Detected
4-Ethyltoluene	1.3	Not Detected	6.2	Not Detected
1,3,5-Trimethylbenzene	1.3	Not Detected	6.2	Not Detected
1,2,4-Trimethylbenzene	1.3	Not Detected	6.2	Not Detected
1,3-Dichlorobenzene	1.3	Not Detected	7.6	Not Detected
1,4-Dichlorobenzene	1.3	Not Detected	7.6	Not Detected
alpha-Chlorotoluene	1.3	Not Detected	6.6	Not Detected
1,2-Dichlorobenzene	1.3	Not Detected	7.6	Not Detected
1,2,4-Trichlorobenzene	5.1	Not Detected	38	Not Detected
Hexachlorobutadiene	5.1	Not Detected	54	Not Detected
1,1-Difluoroethane	5.1	Not Detected	14	Not Detected

Container Type: 1 Liter Summa Canister

Surrogates	%Recovery	Method Limits
Toluene-d8	108	70-130
1,2-Dichloroethane-d4	102	70-130
4-Bromofluorobenzene	97	70-130

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Client Sample ID: Lab Blank

Lab ID#: 1511270-05A

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	**17112106a**	**Date of Collection: NA**	
Dil. Factor:	**1.00**	**Date of Analysis: 11/21/15 01:20 PM**	

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Freon 12	0.50	Not Detected	2.5	Not Detected
Freon 114	0.50	Not Detected	3.5	Not Detected
Chloromethane	5.0	Not Detected	10	Not Detected
Vinyl Chloride	0.50	Not Detected	1.3	Not Detected
1,3-Butadiene	0.50	Not Detected	1.1	Not Detected
Bromomethane	5.0	Not Detected	19	Not Detected
Chloroethane	2.0	Not Detected	5.3	Not Detected
Freon 11	0.50	Not Detected	2.8	Not Detected
Ethanol	2.0	Not Detected	3.8	Not Detected
Freon 113	0.50	Not Detected	3.8	Not Detected
1,1-Dichloroethene	0.50	Not Detected	2.0	Not Detected
Acetone	5.0	Not Detected	12	Not Detected
2-Propanol	2.0	Not Detected	4.9	Not Detected
Carbon Disulfide	2.0	Not Detected	6.2	Not Detected
3-Chloropropene	2.0	Not Detected	6.3	Not Detected
Methylene Chloride	5.0	Not Detected	17	Not Detected
Methyl tert-butyl ether	0.50	Not Detected	1.8	Not Detected
trans-1,2-Dichloroethene	0.50	Not Detected	2.0	Not Detected
Hexane	0.50	Not Detected	1.8	Not Detected
1,1-Dichloroethane	0.50	Not Detected	2.0	Not Detected
2-Butanone (Methyl Ethyl Ketone)	2.0	Not Detected	5.9	Not Detected
cis-1,2-Dichloroethene	0.50	Not Detected	2.0	Not Detected
Tetrahydrofuran	0.50	Not Detected	1.5	Not Detected
Chloroform	0.50	Not Detected	2.4	Not Detected
1,1,1-Trichloroethane	0.50	Not Detected	2.7	Not Detected
Cyclohexane	0.50	Not Detected	1.7	Not Detected
Carbon Tetrachloride	0.50	Not Detected	3.1	Not Detected
2,2,4-Trimethylpentane	0.50	Not Detected	2.3	Not Detected
Benzene	0.50	Not Detected	1.6	Not Detected
1,2-Dichloroethane	0.50	Not Detected	2.0	Not Detected
Heptane	0.50	Not Detected	2.0	Not Detected
Trichloroethene	0.50	Not Detected	2.7	Not Detected
1,2-Dichloropropane	0.50	Not Detected	2.3	Not Detected
1,4-Dioxane	2.0	Not Detected	7.2	Not Detected
Bromodichloromethane	0.50	Not Detected	3.4	Not Detected
cis-1,3-Dichloropropene	0.50	Not Detected	2.3	Not Detected
4-Methyl-2-pentanone	0.50	Not Detected	2.0	Not Detected
Toluene	0.50	Not Detected	1.9	Not Detected
trans-1,3-Dichloropropene	0.50	Not Detected	2.3	Not Detected
1,1,2-Trichloroethane	0.50	Not Detected	2.7	Not Detected
Tetrachloroethene	0.50	Not Detected	3.4	Not Detected
2-Hexanone	2.0	Not Detected	8.2	Not Detected

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Client Sample ID: Lab Blank

Lab ID#: 1511270-05A

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	**17112106a**	**Date of Collection: NA**	
Dil. Factor:	**1.00**	**Date of Analysis: 11/21/15 01:20 PM**	

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Dibromochloromethane	0.50	Not Detected	4.2	Not Detected
1,2-Dibromoethane (EDB)	0.50	Not Detected	3.8	Not Detected
Chlorobenzene	0.50	Not Detected	2.3	Not Detected
Ethyl Benzene	0.50	Not Detected	2.2	Not Detected
m,p-Xylene	0.50	Not Detected	2.2	Not Detected
o-Xylene	0.50	Not Detected	2.2	Not Detected
Styrene	0.50	Not Detected	2.1	Not Detected
Bromoform	0.50	Not Detected	5.2	Not Detected
Cumene	0.50	Not Detected	2.4	Not Detected
1,1,2,2-Tetrachloroethane	0.50	Not Detected	3.4	Not Detected
Propylbenzene	0.50	Not Detected	2.4	Not Detected
4-Ethyltoluene	0.50	Not Detected	2.4	Not Detected
1,3,5-Trimethylbenzene	0.50	Not Detected	2.4	Not Detected
1,2,4-Trimethylbenzene	0.50	Not Detected	2.4	Not Detected
1,3-Dichlorobenzene	0.50	Not Detected	3.0	Not Detected
1,4-Dichlorobenzene	0.50	Not Detected	3.0	Not Detected
alpha-Chlorotoluene	0.50	Not Detected	2.6	Not Detected
1,2-Dichlorobenzene	0.50	Not Detected	3.0	Not Detected
1,2,4-Trichlorobenzene	2.0	Not Detected	15	Not Detected
Hexachlorobutadiene	2.0	Not Detected	21	Not Detected
1,1-Difluoroethane	2.0	Not Detected	5.4	Not Detected

Container Type: NA - Not Applicable

Surrogates	%Recovery	Method Limits
Toluene-d8	107	70-130
1,2-Dichloroethane-d4	98	70-130
4-Bromofluorobenzene	83	70-130

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Client Sample ID: CCV

Lab ID#: 1511270-06A

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	**17112102**	**Date of Collection: NA**	
Dil. Factor:	**1.00**	**Date of Analysis: 11/21/15 11:08 AM**	

Compound	%Recovery
Freon 12	93
Freon 114	90
Chloromethane	96
Vinyl Chloride	97
1,3-Butadiene	93
Bromomethane	101
Chloroethane	100
Freon 11	88
Ethanol	94
Freon 113	86
1,1-Dichloroethene	85
Acetone	92
2-Propanol	86
Carbon Disulfide	98
3-Chloropropene	88
Methylene Chloride	99
Methyl tert-butyl ether	81
trans-1,2-Dichloroethene	94
Hexane	89
1,1-Dichloroethane	101
2-Butanone (Methyl Ethyl Ketone)	97
cis-1,2-Dichloroethene	90
Tetrahydrofuran	89
Chloroform	96
1,1,1-Trichloroethane	91
Cyclohexane	90
Carbon Tetrachloride	93
2,2,4-Trimethylpentane	100
Benzene	107
1,2-Dichloroethane	100
Heptane	109
Trichloroethene	95
1,2-Dichloropropane	114
1,4-Dioxane	105
Bromodichloromethane	104
cis-1,3-Dichloropropene	96
4-Methyl-2-pentanone	119
Toluene	106
trans-1,3-Dichloropropene	98
1,1,2-Trichloroethane	104
Tetrachloroethene	95
2-Hexanone	120

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Client Sample ID: CCV

Lab ID#: 1511270-06A

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	**17112102**	**Date of Collection: NA**	
Dil. Factor:	**1.00**	**Date of Analysis: 11/21/15 11:08 AM**	

Compound	%Recovery
Dibromochloromethane	97
1,2-Dibromoethane (EDB)	101
Chlorobenzene	99
Ethyl Benzene	102
m,p-Xylene	108
o-Xylene	104
Styrene	112
Bromoform	99
Cumene	105
1,1,2,2-Tetrachloroethane	115
Propylbenzene	108
4-Ethyltoluene	108
1,3,5-Trimethylbenzene	115
1,2,4-Trimethylbenzene	102
1,3-Dichlorobenzene	106
1,4-Dichlorobenzene	109
alpha-Chlorotoluene	123
1,2-Dichlorobenzene	111
1,2,4-Trichlorobenzene	102
Hexachlorobutadiene	112
1,1-Difluoroethane	98

Container Type: NA - Not Applicable

Surrogates	%Recovery	Method Limits
Toluene-d8	113	70-130
1,2-Dichloroethane-d4	106	70-130
4-Bromofluorobenzene	96	70-130

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Client Sample ID: LCS

Lab ID#: 1511270-07A

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	**17112103**	**Date of Collection: NA**	
Dil. Factor:	**1.00**	**Date of Analysis: 11/21/15 11:43 AM**	

Compound	%Recovery	Method Limits
Freon 12	98	70-130
Freon 114	96	70-130
Chloromethane	99	70-130
Vinyl Chloride	102	70-130
1,3-Butadiene	96	70-130
Bromomethane	104	70-130
Chloroethane	102	70-130
Freon 11	92	70-130
Ethanol	93	70-130
Freon 113	85	70-130
1,1-Dichloroethene	85	70-130
Acetone	93	70-130
2-Propanol	91	70-130
Carbon Disulfide	87	70-130
3-Chloropropene	83	70-130
Methylene Chloride	100	70-130
Methyl tert-butyl ether	80	70-130
trans-1,2-Dichloroethene	81	70-130
Hexane	91	70-130
1,1-Dichloroethane	101	70-130
2-Butanone (Methyl Ethyl Ketone)	96	70-130
cis-1,2-Dichloroethene	98	70-130
Tetrahydrofuran	90	70-130
Chloroform	94	70-130
1,1,1-Trichloroethane	92	70-130
Cyclohexane	93	70-130
Carbon Tetrachloride	94	70-130
2,2,4-Trimethylpentane	104	70-130
Benzene	109	70-130
1,2-Dichloroethane	100	70-130
Heptane	107	70-130
Trichloroethene	97	70-130
1,2-Dichloropropane	115	70-130
1,4-Dioxane	104	70-130
Bromodichloromethane	109	70-130
cis-1,3-Dichloropropene	94	70-130
4-Methyl-2-pentanone	125	70-130
Toluene	108	70-130
trans-1,3-Dichloropropene	98	70-130
1,1,2-Trichloroethane	102	70-130
Tetrachloroethene	95	70-130
2-Hexanone	121	70-130

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Client Sample ID: LCS

Lab ID#: 1511270-07A

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	**17112103**	**Date of Collection: NA**	
Dil. Factor:	**1.00**	**Date of Analysis: 11/21/15 11:43 AM**	

Compound	%Recovery	Method Limits
Dibromochloromethane	100	70-130
1,2-Dibromoethane (EDB)	102	70-130
Chlorobenzene	101	70-130
Ethyl Benzene	105	70-130
m,p-Xylene	106	70-130
o-Xylene	105	70-130
Styrene	112	70-130
Bromoform	101	70-130
Cumene	105	70-130
1,1,2,2-Tetrachloroethane	117	70-130
Propylbenzene	111	70-130
4-Ethyltoluene	106	70-130
1,3,5-Trimethylbenzene	117	70-130
1,2,4-Trimethylbenzene	105	70-130
1,3-Dichlorobenzene	106	70-130
1,4-Dichlorobenzene	110	70-130
alpha-Chlorotoluene	128	70-130
1,2-Dichlorobenzene	108	70-130
1,2,4-Trichlorobenzene	108	70-130
Hexachlorobutadiene	108	70-130
1,1-Difluoroethane	Not Spiked	

Container Type: NA - Not Applicable

Surrogates	%Recovery	Method Limits
Toluene-d8	113	70-130
1,2-Dichloroethane-d4	101	70-130
4-Bromofluorobenzene	95	70-130

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Client Sample ID: LCSD

Lab ID#: 1511270-07AA

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	**17112104**	**Date of Collection: NA**	
Dil. Factor:	**1.00**	**Date of Analysis: 11/21/15 12:05 PM**	

Compound	%Recovery	Method Limits
Freon 12	96	70-130
Freon 114	95	70-130
Chloromethane	97	70-130
Vinyl Chloride	100	70-130
1,3-Butadiene	93	70-130
Bromomethane	102	70-130
Chloroethane	102	70-130
Freon 11	90	70-130
Ethanol	88	70-130
Freon 113	85	70-130
1,1-Dichloroethene	83	70-130
Acetone	92	70-130
2-Propanol	91	70-130
Carbon Disulfide	84	70-130
3-Chloropropene	83	70-130
Methylene Chloride	96	70-130
Methyl tert-butyl ether	78	70-130
trans-1,2-Dichloroethene	80	70-130
Hexane	90	70-130
1,1-Dichloroethane	100	70-130
2-Butanone (Methyl Ethyl Ketone)	93	70-130
cis-1,2-Dichloroethene	95	70-130
Tetrahydrofuran	88	70-130
Chloroform	93	70-130
1,1,1-Trichloroethane	91	70-130
Cyclohexane	90	70-130
Carbon Tetrachloride	90	70-130
2,2,4-Trimethylpentane	102	70-130
Benzene	107	70-130
1,2-Dichloroethane	99	70-130
Heptane	106	70-130
Trichloroethene	96	70-130
1,2-Dichloropropane	115	70-130
1,4-Dioxane	105	70-130
Bromodichloromethane	108	70-130
cis-1,3-Dichloropropene	94	70-130
4-Methyl-2-pentanone	121	70-130
Toluene	107	70-130
trans-1,3-Dichloropropene	96	70-130
1,1,2-Trichloroethane	100	70-130
Tetrachloroethene	92	70-130
2-Hexanone	120	70-130

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Client Sample ID: LCSD

Lab ID#: 1511270-07AA

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	**17112104**	**Date of Collection: NA**	
Dil. Factor:	**1.00**	**Date of Analysis: 11/21/15 12:05 PM**	

Compound	%Recovery	Method Limits
Dibromochloromethane	97	70-130
1,2-Dibromoethane (EDB)	98	70-130
Chlorobenzene	98	70-130
Ethyl Benzene	102	70-130
m,p-Xylene	106	70-130
o-Xylene	105	70-130
Styrene	110	70-130
Bromoform	99	70-130
Cumene	103	70-130
1,1,2,2-Tetrachloroethane	112	70-130
Propylbenzene	108	70-130
4-Ethyltoluene	98	70-130
1,3,5-Trimethylbenzene	118	70-130
1,2,4-Trimethylbenzene	102	70-130
1,3-Dichlorobenzene	103	70-130
1,4-Dichlorobenzene	106	70-130
alpha-Chlorotoluene	123	70-130
1,2-Dichlorobenzene	106	70-130
1,2,4-Trichlorobenzene	106	70-130
Hexachlorobutadiene	108	70-130
1,1-Difluoroethane	Not Spiked	

Container Type: NA - Not Applicable

Surrogates	%Recovery	Method Limits
Toluene-d8	114	70-130
1,2-Dichloroethane-d4	102	70-130
4-Bromofluorobenzene	97	70-130

CHAIN OF CUSTODY RECORD

P&D ENVIRONMENTAL, INC.
55 Santa Clara Ave., Suite 240
Oakland, CA 94610
(510) 658-6916

PROJECT NUMBER: 0491

PROJECT NAME: RED HANGER KLEANERS 6239 COLLEGE AVE OAKLAND, CA.

SAMPLED BY: (PRINTED & SIGNATURE) MICHAEL BASS-DESCHENES *Michael Bass-Deschenes*

SAMPLE NUMBER	DATE	TIME	TYPE	SAMPLE LOCATION	NUMBER OF CONTAINERS	ANALYSIS(ES): TO-15	PRESERVATIVE	REMARKS
SSB1	11/6/15	[illegible]	AIR	-28 -5 [illegible]	1	X	NONE	NORMAL TAT
SSB2	↓	[illegible]	↓	-30 -5 [illegible]	1	X	↓	↓
SSB3	↓	[illegible]	↓	-25 -5 [illegible]	1	X	↓	↓
SSB4	↓	[illegible]	↓	-26 -5 [illegible]	1	X	↓	↓

RELINQUISHED BY: (SIGNATURE) *Michael Bass-Deschenes*	DATE 11/1[illegible]	TIME 11:28	RECEIVED BY: (SIGNATURE) [signature]	Total No. of Samples (This Shipment): 4 / Total No. of Containers (This Shipment): 4 / LABORATORY: [illegible] AIR TOXICS, INC
RELINQUISHED BY: (SIGNATURE)	DATE	TIME	RECEIVED BY: (SIGNATURE)	LABORATORY CONTACT: KYLE VAGADORI / LABORATORY PHONE NUMBER: (916) 605-3259
RELINQUISHED BY: (SIGNATURE)	DATE	TIME	RECEIVED FOR LABORATORY BY: (SIGNATURE)	SAMPLE ANALYSIS REQUEST SHEET ATTACHED ( ) YES (X) NO

Results and billing to:
P&D Environmental, Inc.
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REMARKS: 1-LITER SUMMA CANISTERS

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