5973 Avenida Encinas
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TRC

September 7, 2016

RECEIVED
By Alameda County Environmental Health 2:26 pm, Sep 30, 2016

Mr. Mark Detterman
Senior Hazardous Materials Specialist, PG, CEG
Alameda County Environmental Health
1131 Harbor Bay Parkway
Alameda, CA 94502

RE: FOLLOW-UP SAMPLING REPORT
POST INTERIM REMEDIAL ACTION
FORMER ROCKRIDGE DRY CLEANERS
SHOPS AT THE RIDGE REDEVELOPMENT SITE
5100 BROADWAY, OAKLAND, CALIFORNIA
ACDEH RO# 3172

Dear Mr. Detterman:

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.

Sincerely,
Terramar Retail Centers

Juan Arriaga
Construction Manager

Attachment: IRAP Follow-up Report

TETRA TECH

FOLLOW-UP SAMPLING
POST INTERIM REMEDIAL ACTION
FORMER ROCKRIDGE DRY CLEANERS
SHOPS AT THE RIDGE REDEVELOPMENT SITE
5100 BROADWAY, OAKLAND, CALIFORNIA

September 29, 2016

Prepared for:

Alameda County Department of Environmental Health
1131 Harbor Bay Parkway
Alameda, California 94502

and

Terramar Retail Centers
5973 Avenida Encinas, Suite 300
Carlsbad, CA 92008

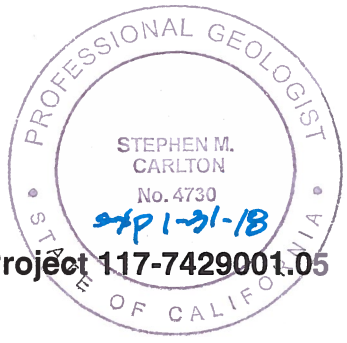
Prepared by:

Tetra Tech, Inc.
2969 Prospect Park Drive, Suite 100
Rancho Cordova, California 95670

Tim Costello
Senior Scientist

Keith Hoofard
Senior Geologist

Stephen M. Carlton, PG, CHG



Tetra Tech Project 117-7429001.05

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APPENDICES

1.0 INTRODUCTION

This report presents Tetra Tech's data gap confirmation soil vapor sampling study in connection with the former Rockridge Cleaners located at 5100 (5114 tenant space) Broadway in Oakland, California. One round of soil vapor sampling was conducted in August 2016, in accordance with the:

1) *Focused Site Conceptual Model and Data Gap Work Plan, Former Rockridge Cleaners, 5100 Broadway, Oakland, California, RO# 0003172, Tetra Tech Project Number 117-7429001*, dated June 17, 2015.

The document was previously uploaded to the Alameda County Department of Environmental Health (ACDEH) Cleanup Oversight Program database, and the GeoTracker database, on June 17, 2016. The ACDEH conditionally approved the data gap work plan on July 19, 2016.

This report also presents applicable information requested by the ACDEH for redevelopment sites.

2.0 BACKGROUND

The former Rockridge Cleaners was located in "Building 5" of the six building Rockridge Shopping Center (Figure 1), which is slated for two phases of demolition and construction, resulting in the new "Shops at the Ridge" redevelopment (Figure 2). Buildings 5 and 6 were demolished during the first phase (Phase I) of redevelopment, and have been replaced by contiguous Building K and Building A, respectively, along with stand-alone Building C and Building D (Figure 2). Terramar, with their general contractor Swinerton Builders, demolished Building 6 beginning the week of June 8, 2015, and demolished Building 5 between July 23 and July 29, 2015. Redevelopment work has been ongoing since, with all of the Phase I buildings nearing completion as of September 2016. Concurrent with the redevelopment work, and as part of the approved interim remedial action plan (IRAP), Tetra Tech conducted volatile organic compound (VOC) source area removal work at the former dry cleaner location in November 2015, excavating tetrachloroethene (PCE)-impacted soil and soil vapor to depths between 6 and 8 feet below grade at the former tenant space, and along a length of sanitary sewer line behind the former dry cleaner.

Based on data obtained from previous subsurface characterization work, and the post-excavation IRAP confirmation soil sampling, the bulk of the PCE-impacted soil and soil vapor was removed; however, two former soil vapor sampling points, located outside the limits of the IRAP soil excavation area remained, where elevated concentrations of vinyl chloride were previously detected. The two locations in question were vapor monitoring points DC-VMP-14 and DC-VMP-15, located approximately 40 feet northwest of new Building K, where vinyl chloride was detected in soil vapor above the commercial

environmental screening level (ESL) value of 160 micrograms per cubic meter (µg/m^3) at 5 feet in depth. Regarding the distribution of vinyl chloride, location DC-VMP-14 exhibited a slightly increasing vinyl chloride concentration with depth (210 µg/m^3 at 5' and 500 µg/m^3 at 14'), while location DC-VMP-15 exhibited a decreasing vinyl chloride concentration with depth (850 µg/m^3 at 5' and 35 µg/m^3 at 13'). The vinyl chloride is assumed to have migrated to these areas from the former source area via the coarse fill material (cobble and boulders) and many old utility lines in the area.

The purpose of this soil vapor sampling study was to re-sample soil vapor at DC-VMP-14 and DC-VMP-15 to assess if post-IRAP conditions meet commercial land use criteria, and to delineate the extent of VOCs above commercial ESL values in soil vapor, if any, through step-out borings northwest and north of the IRAP soil excavation limits.

3.0 FOLLOW-UP SOIL VAPOR SAMPLING

A total of four vapor monitoring points (VMPs), labeled DC-VMP-21 through DC-VMP-24 were planned for completion to a depth of 15 feet below grade; however, shallow bedrock in the area limited borings DC-VMP-21 and DC-VMP-22 to 10- and 13-feet below grade, respectively, after multiple attempts to reach planned total depth. Dual-completion VMPs were installed in the four borings. The boring locations are shown on Figure 3.

3.1 Dates of Work

August 4, 2016	Drilled four borings and installed VMP DC-VMP-21 through DC-VMP-24. Borings DC-VMP-21 and DC-VMP-23 were completed approximately 2-feet away from previous borings DC-VMP-15 and DC-VMP-14, respectively.
August 8, 2016	Sampled DC-VMP-21 through DC-VMP-24.

The four VMP locations were completed with 8-inch diameter flush mount vault boxes, and remain in-place. The VMPs will be abandoned following ACDEH review of this follow-up sampling study report.

3.2 Soil Boring Permits

The soil borings and VMPs were permitted through the Alameda County Public Works Agency (ACPWA). The permit is included in Appendix A.

3.3 Drilling Method

The soil borings were completed using a Rhino Limited Access Rig (LAR) using 5-inch outside diameter hollow stem augers, operated by National EWP drilling.

3.4 Soil Sampling Method

No soil samples were collected. Soil cuttings were field-screened using an organic vapor monitor (MiniRAE 3000), every 5-feet in depth. No elevated field instrument readings or other indications of potential soil impact were noted at the boring locations.

3.5 Lithology

Similar to previous Tetra Tech subsurface investigations, debris consisting of brick and decaying organic material, was encountered beneath an approximate 7-foot thick layer of dense, silty sandy gravel, with cobbles and boulders (cap fill). The debris material was entrained in a layer of finer soil material (clayey silt) at depth, exhibiting a putrid odor, typical of anaerobic (reducing) conditions. Carbonate bedrock was also encountered at DC-VMP-21 (at 8 feet) and at DC-VMP-22 (at 13.5 feet). Soil boring logs are presented in Appendix B.

During the VMP sampling event (Section 3.8), a large excavation was present approximately 15-feet west of the southern end of the former transformer pad, facilitating the installation of a new sanitary sewer line and manway vault. The base of the excavation was approximately 15-feet below grade, completed through an area of cobbles and boulders. Steep bedrock sidewalls were visible on the north and northeast sides of the excavation, just below grade, further confirming the presence of relatively shallow bedrock to the west of the former dry cleaner tenant space.

3.6 Depth to Groundwater

Groundwater was not encountered at the maximum depth explored during this field event (15 feet below grade). Groundwater was encountered at 15 feet below grade during subsurface investigation work conducted in Fall 2015. Based on Tetra Tech's prior review of historical aerial photography of the quarry, water within the quarry limits is expected to be localized, bound by the topography of the former quarry pit, and not contiguous with the true water table in the area.

3.7 VMP Installation

Stainless steel mesh screens measuring ½" OD x 3" long were installed from 4.75-5' bgs (all four shallow VMPs), and at varying depths for the deeper VMPs: 14.75-15' bgs (DC-VMP-23 and -24); 9.75-10' bgs (DC-VMP-21); and 13.25-13.5' bgs (DC-VMP-22). The screens were compression fit to stainless steel rigid tubing (¼" O.D. x 0.17" ID), extending to just below ground surface, completed in 8-inch diameter traffic-rated vault boxes set in concrete. The tip of each mesh screen was also fitted with an expendable anchor point, which helped to center the VMP in the hole during construction. A new compression fit brass ball valve/hose barb assembly was fitted to each VMP to facilitate later sampling.

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The VMP construction details are presented on the boring logs provided in Appendix B. An ACPWA inspector provided oversight during the VMP construction.

3.8 VMP Sampling

Soil vapor samples were collected from each VMP a minimum of 48-hours after installation, according to the sampling methodology described in Appendix C. No loss in vacuum was detected during the shut-in test at each VMP, indicating all surface connections were air-tight.

3.9 Soil Cuttings, Decon/Purge Water

Minimal soil cuttings (approximately 6 cubic feet total) generated from drilling program were spread adjacent to each soil boring. No field indication of soil impacts were noted. The equipment decon water from the drilling program was used to mix the hydrated bentonite gel (grout) used to seal the VMPs.

3.10 Laboratory Analyses

- Soil vapor samples (8 samples total) were submitted to Eurofins Air Toxics of Folsom, California for laboratory analysis of VOCs using EPA Method TO-15, and for helium (leak check) using the Modified ASTMD-1946 method. The samples were analyzed on a 3-day turnaround time.

3.11 Results and Discussion

Copies of the laboratory analytical data sheets and chain-of-custody forms are presented in Appendix D. Tabulated laboratory analytical results are presented in Table 1.

As shown in Table 1, low concentrations of vinyl chloride were detected in soil vapor at each VMP location. The detected concentrations of vinyl chloride ranged from 5.4 µg/m^3 to 62 µg/m^3, which is well below the corresponding commercial ESL value of 160 µg/m^3. The previous elevated concentrations of vinyl chloride at DC-VMP-14 and DC-VMP-15 in Fall 2015 (pre-IRAP) were not detected at DC-VMP-23 and DC-VMP-21, respectively. Both DC-VMP-23 and DC-VMP-21 were completed within 2 feet of the original 2015 VMP locations). In addition to the IRAP source area soil excavation, extensive construction excavation work has also been conducted in the immediate vicinity of DC-VMP-14 and DC-VMP-15 since Fall 2015, for the installation of new sewer and water lines (up to 15-feet in depth for the sewer) and a potential storm water bio swale. These soil disturbances likely resulted in soil off-gassing, reducing the concentrations of vinyl chloride in soil vapor in the area. With the former soil VOC source area removed, rebounding of the vinyl chloride concentrations in soil vapor is not expected.

As anticipated, residual concentrations of PCE, along with trichloroethene (TCE), cis-1,2-dichloroethene (cis-1,2-DCE) and trans-1,2-DCE were detected in soil vapor in the area,

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but at concentrations not exceeding respective commercial ESL values. The highest PCE concentration was 2,100 µg/m^3 (DC-VMP-21 at 5 feet); at, but not exceeding the commercial ESL value of 2,100 µg/m^3. Previous sample DC-VMP-15, immediately adjacent to DC-VMP-21, contained PCE in soil vapor at a concentration of 680 µg/m^3 at 5-feet in depth in Fall 2015.

As shown in Table 1, helium leak-check concentrations in each vapor sample were non-detect, indicating there was no ambient air short circuiting between the sample screen and ground surface.

Based on prior site characterization data, the source of PCE appeared to be from a minor surface release directly behind the former dry cleaner tenant space, limited to the upper 5 feet of soil. The release did not impact groundwater. The source area soil was removed in Fall 2015, and residual VOCs in soil vapor, previously detected in excess of commercial ESL values (pre-IRAP), were not detected or confirmed in the four VMPs completed to the northwest and north of the former IRAP soil excavation area during this field effort (post-IRAP). Please note, soil vapor concentrations, above commercial ESL values to the south and east, were previously excavated as part of the IRAP soil excavation.

One IRAP excavation sidewall confirmation soil sample (EXSW2) did contain PCE at a concentration of 480 micrograms per kilogram (µg/Kg) at 3-feet in depth in November 2015, and due to a recent revision in the commercial soil ESL values in February 2016, this concentration subsequently exceeded the revised ESL commercial soil PCE value of 420 µg/kg (based on leaching to groundwater within 10 feet of the data point). As numerous (12) groundwater samples have demonstrated a lack of VOCs in groundwater beneath the former PCE soil source area and surrounding areas, and depth to static groundwater is 15 feet below grade in this area, this residual PCE concentration is not considered significant nor a VOC source to groundwater. The area at EXSW2 will be paved over as part of a delivery truck route once redevelopment is complete, further isolating it from direct contact. Furthermore, a new water main was excavated through this location in July 2016, likely volatilizing the residual PCE through the soil excavation and backfill process (note: the soil was excavated, temporarily stockpiled adjacent to the trench, and then returned to the trench as backfill). The new water main trench measured approximately 3 feet wide by 4.5 feet deep.

4.0 ACDEH REDEVELOPMENT TOOLS - REQUESTED INFORMATION

As part of ACDEH's April 12, 2016 work plan request, a request for additional site information (i.e. redevelopment tools) was made in order to expedite review of site conditions in support of site closure. The requested tools include a plan set; cross-sections; data tables (including reporting limits for non-detects, and calling out data points

that have been excavated); a discussion of the appropriate use of ESLs; a project schedule; and potential for deed restrictions. Each tool is discussed below.

4.1 Plan Set

Attached Figure 2 and Figure 3 depict the former Rockridge Cleaners tenant space footprint in former Building 5 in relation to the new Building K footprint. The finished slab elevation between former Building 5 and new Building K remains unchanged at 158'-6" above mean sea level (msl). The northwest (back wall) of new Building K sits seven feet to the southeast of the former Building 5 rear wall. The new concrete slab is 5-inches thick, with a 2-foot thick perimeter footing (continuous beam) measuring between 4- and 6-feet wide.

Surveyed plan drawings showing the layout of former Building 5, and the plan set that includes new Building K, will be uploaded to the ACDEH database or review.

4.2 Cross Sections

Two section lines are shown on Figure 3, used to generate cross sections A-A' (Figure 4) and B-B' (Figure 5). The sections present the associated soil, groundwater and soil vapor data at corresponding borings/sample locations, depth to static groundwater, the IRAP soil excavation limits, and the bedrock interface. Data points removed by the IRAP soil excavation work are lined-out. Data points at location EXSW2 are lined out, as that location was subsequently excavated (trenched), and the material returned as backfill to the trench, during the installation of a new water main through the area.

4.3 Data Tables

All site data generated since 2001 are tabulated by year in Appendix E. Data points removed by the IRAP soil excavation are lined-out. Older sample locations from 2001 and 2014, located outside the former dry cleaner focus area, are presented on Figure 1.

4.4 Appropriate Use of ESLs

The soil vapor data collected during this field effort, and previous soil, soil vapor and groundwater data, have been compared to respective commercial ESL values. The use of ESLs requires the recognition that ESLs assume a minimum distance of 10 feet between a receptor and groundwater concentrations, and a minimum distance of 5 feet between a receptor and soil vapor concentrations. As required for ESL comparison, shallow soil vapor samples have been collected at 5-feet below grade, except where prevented by shallow bedrock. Deeper soil vapor samples have been collected at depths ranging from 10- to 15-feet below grade, for additional site characterization purposes, depending on depth to bedrock or the presence of groundwater. Depth to static groundwater has remained at 15 feet below grade and deeper since 2001, meeting the minimum 10-foot separation. Furthermore, PCE and associated breakdown products

have not been detected in groundwater to date. Given that grade has remained essentially unchanged in the area, pre- and post-redevelopment, the use of commercial ESL values remain applicable for soil, groundwater and soil vapor.

4.5 Schedule

Construction of new Building K commenced immediately after completion of the IRAP soil excavation work in Fall 2015, and has been on-going since. Building K is nearing completion, scheduled for occupancy in late September 2016. No additional environmental discoveries have come to light that would require additional subsurface investigation, or impact the construction schedule. However, in order for the City of Oakland to sign off on the redevelopment permits for the Phase I construction, a letter of No Further Action is needed from ACDEH as soon as possible.

4.6 Potential for Deed Restrictions

Soil and soil vapor containing VOCs above respective commercial ESL values have been excavated from the site, and no VOC-impacts to groundwater have been identified. Therefore, a deed restriction or land use covenant does not appear warranted for this site given the commercial land use.

5.0 CLOSURE AND PROFESSIONAL CERTIFICATION

The data collection and data interpretation presented herein was conducted under the supervision of Stephen M. Carlton, a California registered geologist (RG) and certified hydrogeologist (CHG). Mr. Carlton's professional registration stamp can be found on the cover of this report.

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TABLES

TABLE 1

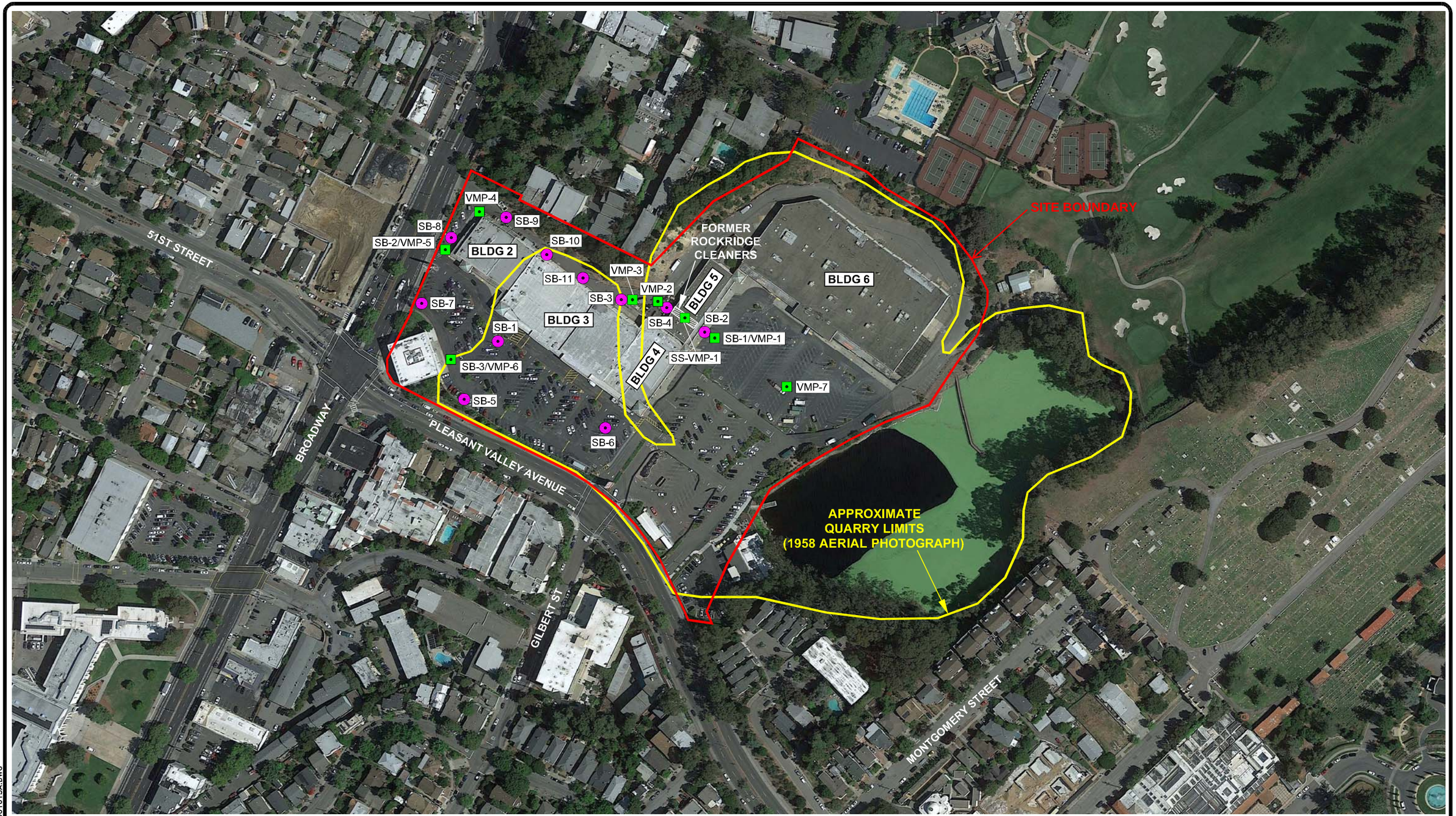
2016 Analytical Results Summary - Soil Vapor
Former Rockridge Cleaners Area
5100 Broadway (Former 5114 tenant space)
Oakland, California

Sample Location	Date	Depth (feet, bgs)	VOCs - EPA TO-15 (µg/m3)									Modified ASTM D-1946
			Acetone	Freon 12	Benzene	Tetrachloroethene (PCE)	Trichloroethene (TCE)	cis-1,2-Dichloroethene	trans-1,2-Dichlorethene	1,1-Dichloroethene	Vinyl Chloride	Helium (%)
DC-VMP-21	8/8/2016	4.75 - 5	**35**	**190**	**23**	**2,100**	**740**	**220**	**25**	< 4.7	**5.4**	< 0.12
	8/8/2016	9.75 - 10	**290**	**580**	**89**	**1,800**	**440**	**300**	**21**	< 9.0	**12**	< 0.11
DC-VMP-22	8/8/2016	4.75 - 5	< 28	**71**	**17**	**100**	**26**	**11**	< 4.8	< 4.8	< 3.1	< 0.12
	8/8/2016	13.25 - 13.5	< 110	**4,800**	**56**	< 31	< 25	**34**	< 18	< 18	**62**	< 0.12
DC-VMP-23	8/8/2016	4.75 - 5	< 29	**29**	**16**	**100**	**62**	**25**	< 4.9	< 4.9	< 3.2	< 0.12
	8/8/2016	14.75 - 15	**41**	**430**	**44**	< 7.4	**6.1**	**12**	< 4.3	< 4.3	**15**	< 0.11
DC-VMP-24	8/8/2016	4.75 - 5	**55**	**1,400**	**23**	< 7.7	< 6.1	**28**	< 4.5	< 4.5	**22**	< 0.11
	8/8/2016	14.75 - 15	110	880	21	< 32	< 25	< 19	< 19	< 19	< 12	< 0.12
ESL			140,000,000	NV	420	2,100	3,000	35,000	350,000	310,000	160	NA
CHHSL			NV	NV	280	1,600	4,400	120,000	240,000	NV	95	NA

Notes:

NOTE:	Additional compounds detected below screening values; see laboratory data sheets.
µg/m3	micrograms per cubic meter
ESL	Environmental Screening Level, Regional Water Quality Control Board, Tier 1 ESLs, Summary of Vapor ESLs, Subslab/Soil Gas Vapor Intrusion: Human Health Risk Levels, Commerical/Industrial, February 2016 (Rev. 3).
CHHSL	California Human Health Screening Level (CHHSL), Office of Environmental Health Hazard Assessment (OEHHA), Table 2; Soil-Gas Screening Values, September 23, 2010.
NV	No Value
NA	Not Applicable
	Indicates value exceeds one or more comparison criteria.

FIGURES



NOTE:

BUILDINGS 4 THRU 6 WERE DEMOLISHED IN SUMMER 2015 FOR PHASE I CONSTRUCTION.

SOURCE: GOOGLE EARTH PRO AERIAL DATED JUNE 2015.

LEGEND

- SOIL BORING - 2001 (GEOTRANS)
- SOIL BORING - 2014 (TETRA TECH - FORMERLY GEOTRANS)

N

0 200 400

SCALE IN FEET

TITLE: **SITE MAP**
EXISTING ROCKRIDGE SHOPPING CENTER

LOCATION: **5100 Broadway**
Oakland, California

TETRA TECH

APPROVED	TC
DRAFTED	CP
PROJECT#	117-7429001
DATE	6-15-16

FIGURE **1**

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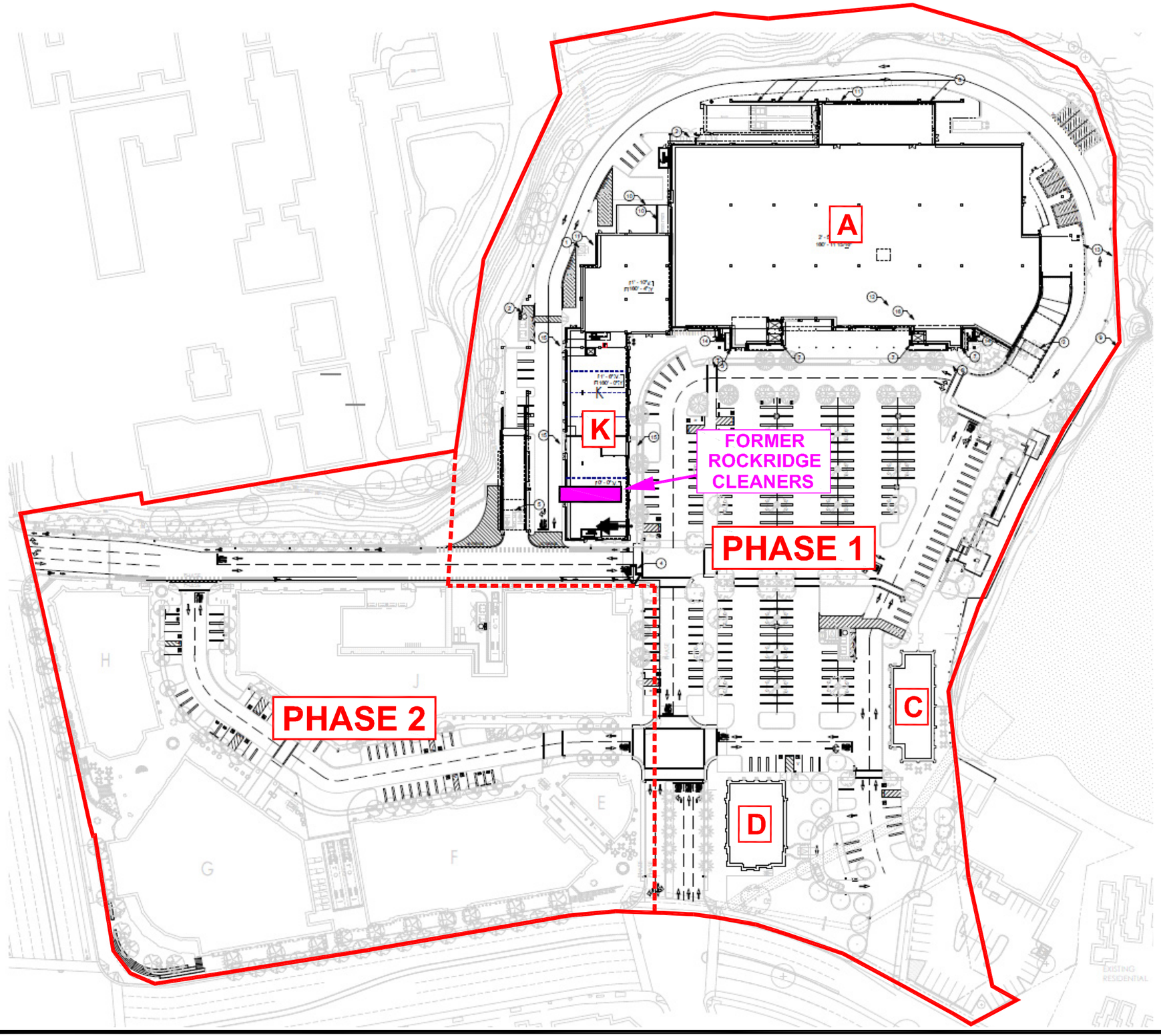

N

0 100 200

SCALE IN FEET

SOURCE: JRDV ARCHITECTS, DRAWING AS111 DATED MAY 30, 2014

TITLE: **REDEVELOPMENT PLAN**
PROPOSED SHOPS AT THE RIDGE

LOCATION: **5100 Broadway**
Oakland, California

TETRA TECH

APPROVED	TC
DRAFTED	CP
PROJECT#	117-7429001
DATE	6-15-16

FIGURE **2**

P:\ACAD\7429-001-OAKL\7429001014A.DWG

STEEP CLIFF

BUILDING 3
(SAFEWAY)

FORMER
BUILDING 4

FORMER
BUILDING 5

NEW
BUILDING K

FORMER
ROCKRIDGE
CLEANERS

FORMER
COMPACTOR

FORMER
LOADING DOCK

A

A'

B

B'

DC-VMP-24
DC-VMP-23
DC-SB-20/DC-VMP-14
DC-SB-10/DC-VMP-6/
DC-SB-22/DC-VMP-16
DC-SB-19/DC-VMP-13
DC-VMP-22
DC-SB-15/DC-VMP-9
DC-VMP-21
DC-SB-21/DC-VMP-15
DC-SB-1/
DC-VMP-1
DC-SB-18/DC-VMP-12
DC-SB-3/DC-VMP-2
DC-SB-9/DC-VMP-5
DC-SB-24/
DC-VMP-18
DC-SB-2
DC-SB-4
DC-SB-6
DC-SB-8/DC-VMP-4/DC-SB-17/DC-VMP-11
DC-SB-5/DC-VMP-3
DC-SB-23/
DC-VMP-17
DC-SB-14/
DC-VMP-8
DC-SB-7
DC-SB-11/DC-VMP-7
DC-SB-13
DC-SB-16/DC-VMP-10
DC-SB-12
DC-SB-26/DC-VMP-20
DC-SB-25/DC-VMP-19
SB-2
SB-1/VMP-1
SB-3
VMP-3
VMP-2
SB-4
SS-VMP-1
EXSW1
EXSW2
EXSW3
EXSW4
EXSW5
EXSW6
EXSW7
EXSW8
EXSW9
EXSW10
EXSW11
EXSW12
EXSW13
EXSW14
EXSW15
EXSW16
EXSW17
EXB1
EXB2
EXB3
EXB4
EXB5
EXB6
EXB7
EXB8
EXB9
EXB10
EXB11
EXB12
EXB13
EXB14

LEGEND

POST IRAP SOIL VAPOR MONITORING POINT - 5' AND 10-15' SCREENED INTERVALS (AUGUST 2016)

SOIL BORING - 2001 (GEOTRANS)

SOIL BORING - 2014 TO 2015
(TETRA TECH - FORMERLY GEOTRANS)

EXCAVATION BOTTOM CONFIRMATION
SOIL SAMPLE (NOVEMBER 2015)

EXCAVATION SIDEWALL CONFIRMATION
SOIL SAMPLE (NOVEMBER 2015)

ORIGINAL PG&E POWER POLE

FORMER TRANSFORMER
(BOTH REMOVED ALONG WITH PAD)

ABANDONED ELECTRIC LINE
ABANDONED STORM DRAIN
ABANDONED SANITARY SEWER
ABANDONED WATER LINE
ABANDONED NATURAL GAS LINE
ABANDONED FIRE SUPPRESSION WATER MAIN
SANITARY SEWER MANWAY
SANITARY SEWER CLEANOUT
STORM DRAIN GRATE
EXCAVATED TO 6' BGS (NOVEMBER 2015)
EXCAVATED TO 8' BGS (NOVEMBER 2015)
EXCAVATED TO 6.5'-8.5' BGS (NOVEMBER 2015)

N

0 20 40
SCALE IN FEET

TITLE: **DATA GAP BORINGS AND SECTION LINES FORMER ROCKRIDGE CLEANERS**

LOCATION: **5100 Broadway (5114 Tenant Space) Oakland, California**

TETRA TECH

APPROVED	KH
DRAFTED	CP
PROJECT#	117-7429001
DATE	8-30-16

FIGURE 3

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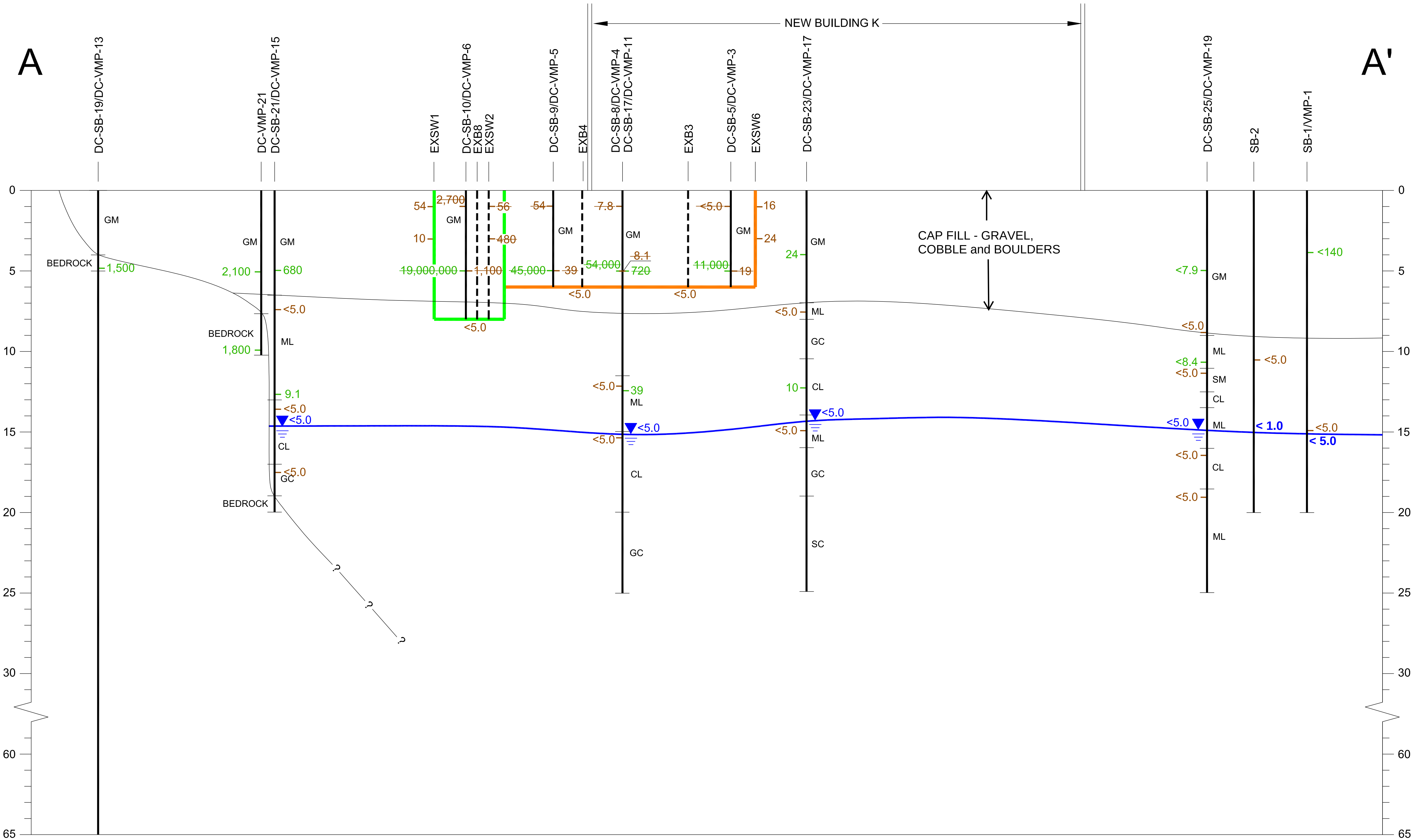

LEGEND

1,500	SOIL VAPOR RESULTS (PCE, μg/m^3)
<5.0	GROUNDWATER RESULTS (PCE, μg/L)
480	SOIL RESULTS (PCE, μg/kg)
(symbol)	STATIC DEPTH TO GROUNDWATER (FT, BGS)
(green box)	SOIL EXCAVATION LIMITS (NOVEMBER 2015)
(orange box)	SOIL EXCAVATION LIMITS (NOVEMBER 2015)
~~720~~	DATA POINT EXCAVATED
(dashed line)	CONFIRMATION SOIL SAMPLE LOCATION

0 12 24

SCALE IN FEET

VERTICAL EXAGGERATION 2X

TITLE: **CROSS SECTION A-A'**

LOCATION: **5100 Broadway (5114 Tenant Space) Oakland, California**

TETRA TECH

APPROVED	TC	FIGURE
DRAFTED	CP	**4**
PROJECT#	117-7429001	
DATE	8-31-16	

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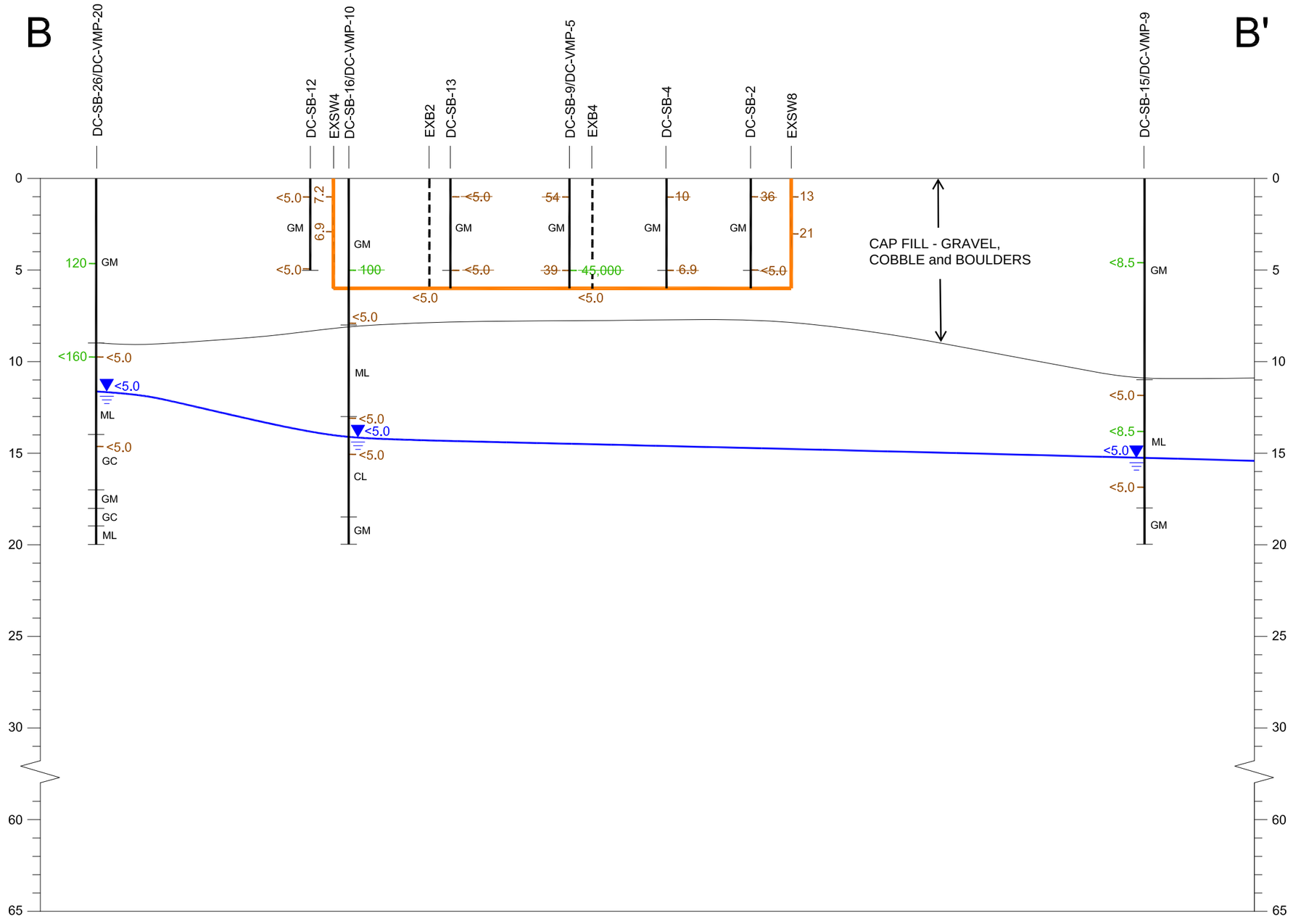

LEGEND

120	SOIL VAPOR RESULTS (PCE, $\mu g/m^3$)
<5.0	GROUNDWATER RESULTS (PCE, $\mu g/L$)
7.2	SOIL RESULTS (PCE, $\mu g/kg$)
	STATIC DEPTH TO GROUNDWATER (FT, BGS)
	SOIL EXCAVATION LIMITS (NOVEMBER 2015)
~~100~~	DATA POINT EXCAVATED
	CONFIRMATION SOIL SAMPLE LOCATION

0 12 24

SCALE IN FEET

VERTICAL EXAGGERATION 2X

TITLE: **CROSS SECTION B-B'**

LOCATION: **5100 Broadway (5114 Tenant Space)**
Oakland, California

TETRA TECH

APPROVED	TC
DRAFTED	CP
PROJECT#	117-7429001
DATE	8-31-16

FIGURE **5**

P:\ACAD\7429-001-OAKL\7429001017A.DWG

APPENDIX A
ACPWA Soil Boring Permit

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: 08/01/2016 By jamesy

Permit Numbers: W2016-0556
Permits Valid from 08/04/2016 to 08/05/2016

Application Id: 1469736425050 **City of Project Site:** Oakland
Site Location: 5130 Broadway (behind Safeway, north of former loading dock area)
Project Start Date: 08/04/2016 **Completion Date:** 08/05/2016
Assigned Inspector: Contact Marcelino Vialpando at (510) 670-5760 or Marcelino@acpwa.org

Applicant: Tetra Tech, Inc. - Keith Hoofard **Phone:** 916-853-1800 x4523
2969 Prospect Park Drive, Suite 100, Rancho Cordova, CA 95670
Property Owner: Luke Hazelwood Terramar Retail Centers **Phone:** 714-476-1145
5973 Avenida Encinas, Suite 300, Carlsbad, CA 92008
Client: ** same as Property Owner **
Contact: Keith Hoofard **Phone:** 916-853-4523
Cell: 916-709-4732

Total Due: $265.00
Receipt Number: WR2016-0386 **Total Amount Paid:** $265.00
Payer Name : Keith D Hoofard Paid By: VISA **PAID IN FULL**

Works Requesting Permits:

Well Construction-Vapor monitoring well-Vapor monitoring well - 4 Wells
Driller: National E W P - Lic #: 953646 - Method: auger **Work Total: $265.00**

Specifications

Permit #	Issued Date	Expire Date	Owner Well Id	Hole Diam.	Casing Diam.	Seal Depth	Max. Depth
W2016-0556	08/01/2016	11/02/2016	DC-VMP-21	5.00 in.	0.25 in.	4.00 ft	15.00 ft
W2016-0556	08/01/2016	11/02/2016	DC-VMP-22	5.00 in.	0.25 in.	4.00 ft	15.00 ft
W2016-0556	08/01/2016	11/02/2016	DC-VMP-23	5.00 in.	0.25 in.	4.00 ft	15.00 ft
W2016-0556	08/01/2016	11/02/2016	DC-VMP-24	5.00 in.	0.25 in.	4.00 ft	15.00 ft

Specific Work Permit Conditions

1. Drilling Permit(s) can be voided/ cancelled only in writing. It is the applicant's responsibility to notify Alameda County Public Works Agency, Water Resources Section in writing for an extension or to cancel the drilling permit application. No drilling permit application(s) shall be extended beyond ninety (90) days from the original start date. Applicants may not cancel a drilling permit application after the completion date of the permit issued has passed.

2. Compliance with the above well-sealing specifications shall not exempt the well-sealing contractor from complying with appropriate state reporting-requirements related to well 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, including permit number and site map.

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

4. 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.

5. 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.

6. No changes in construction procedures or well type shall change, as described on this permit application. This permit may be voided if it contains incorrect information.

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. 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.

10. Electronic Reporting Regulations (Chapter 30, Division 3 of Title 23 & Division 3 of Title 27, CCR) require electronic submission of any report or data required by a regulatory agency from a cleanup site. Submission dates are set by a Regional Water Board or by a regulatory agency. Once a report/data is successfully uploaded, as required, you have met the reporting requirement (i.e. the compliance measure for electronic submittals is the actual upload itself). The upload date should be on or prior to the regulatory due date.

11. Vapor monitoring wells above water level constructed with tubing maybe be backfilled with pancake-batter consistency bentonite. Minimum surface seal thickness is two inches of cement grout around well box.

Vapor monitoring wells above water level constructed with pvc pipe shall have a minimum seal depth (Neat Cement Seal) of 2 feet below ground surface (BGS). Minimum surface seal thickness is two inches of cement grout around well box. All other conditions for monitoring well construction shall apply.

APPENDIX B
Soil Boring Logs

TETRA TECH

BORING LOG

PROJECT NUMBER 117-7429001.06
PROJECT NAME Terramar - Oakland
LOCATION 5100 Broadway, Oakland (fmr 5114 tenant)
DRILLING METHOD Auger
SAMPLING METHOD Grab
DEPTH TO SATURATED SOIL (ft)
LOGGED BY Keith Hoofard

BORING/WELL NUMBER DC-VMP-21
DATE DRILLING BEGAN 8/4/2016
DATE DRILLING ENDED 8/4/2016
REMARKS Fill material to 8 feet

PID (ppm)	BLOW COUNTS	RECOVERY (ft)	SAMPLE ID.	SAMPLE DEPTH	DEPTH (ft. BGL)	U.S.C.S.	GRAPHIC LOG	LITHOLOGIC DESCRIPTION (Percent Gravel, Sand, Silt, Clay)
								0-10" **ASPHALT**
0.0					5	GM		10"-8' **SILTY SANDY GRAVEL COBBLES (GM):** brown (7.5YR 4/3); fine to coarse angular gravel; sub-angular cobbles; fine to coarse, angular to sub-angular sand; dense to hard; slightly moist.
								8'-10' **CARBONATE BEDROCK**
0.0					10			Installed temporary dual-completion VMPs **Casing:** 0-4.75' - 1/4" OD stainless steel rigid tubing 0'-9.75' - 1/4" OD stainless steel rigid tubing **Screen:** 4.75'-5' - 1/2" OD 50 Mesh stainless steel 9.75'-10' - 1/2" OD 50 Mesh stainless steel **Annular Material:** 0-4' - Neat cement w/ 5% bentonite 4'-4.5' - granular bentonite 4.5'-5' - #2/12 sand (34% porosity) 5'-5.5' - granular bentonite 5.5'-9' - hydrated bentonite (gel) 9'-9.5' - granular bentonite 9.5'-10' - #2/12 sand (34% porosity) Sampled VMPs on 8/8/16.

TT GEO (NO COORDINATES) TERRAMAR - OAKLAND.GPJ LAEWNN01.GDT 9/2/16

Keith Hoofard
Name of Geologist

Name of Reviewer

TETRA TECH

BORING LOG

PROJECT NUMBER 117-7429001.06
PROJECT NAME Terramar - Oakland
LOCATION 5100 Broadway, Oakland (fmr 5114 tenant)
DRILLING METHOD Auger
SAMPLING METHOD Grab
DEPTH TO SATURATED SOIL (ft)
LOGGED BY Keith Hoofard

BORING/WELL NUMBER DC-VMP-22
DATE DRILLING BEGAN 8/4/2016
DATE DRILLING ENDED 8/4/2016
REMARKS Fill material to total depth

PID (ppm)	BLOW COUNTS	RECOVERY (ft)	SAMPLE ID.	SAMPLE DEPTH	DEPTH (ft. BGL)	U.S.C.S.	GRAPHIC LOG	LITHOLOGIC DESCRIPTION (Percent Gravel, Sand, Silt, Clay)
								0-10" **ASPHALT**
0.0					5	GM		10"-6' **SILTY SANDY GRAVEL COBBLES (GM):** brown (7.5YR 4/3); fine to coarse angular gravel; sub-angular cobbles; fine to coarse, angular to sub-angular sand; dense to hard; slightly moist.
0.0					10	SM		6'-10' **SILTY SAND W/ MINOR GRAVELS (SM):** greenish grey (5/5GY); fine sub-angular gravel; fine to coarse sub-angular sand; dense; slightly moist.
0.0						ML		10'-13.5' **CLAYEY SILT (ML):** greenish black (2.5/5GY); red brick fragments and organics; slightly moist; slight plasticity.
								CARBONATE BEDROCK

Installed temporary dual-completion VMPs

Casing:
0-4.75' - 1/4" OD stainless steel rigid tubing
0'-13.25' - 1/4" OD stainless steel rigid tubing

Screen:
4.75'-5' - 1/2" OD 50 Mesh stainless steel
13.25'-13.5' - 1/2" OD 50 Mesh stainless steel

Annular Material:
0-4' - Neat cement w/ 5% bentonite
4'-4.5' - granular bentonite
4.5'-5' - #2/12 sand (34% porosity)
5'-5.5' - granular bentonite
5.5'-12.5' - hydrated bentonite (gel)
12.5'-13' - granular bentonite
13'-13.5' - #2/12 sand (34% porosity)

Sampled VMPs on 8/8/16.

TT GEO (NO COORDINATES) TERRAMAR - OAKLAND.GPJ LAEWNN01.GDT 9/2/16

Keith Hoofard
Name of Geologist

Name of Reviewer

TETRA TECH

BORING LOG

PROJECT NUMBER 117-7429001.06
PROJECT NAME Terramar - Oakland
LOCATION 5100 Broadway, Oakland (fmr 5114 tenant)
DRILLING METHOD Auger
SAMPLING METHOD Grab
DEPTH TO SATURATED SOIL (ft)
LOGGED BY Keith Hoofard

BORING/WELL NUMBER DC-VMP-23
DATE DRILLING BEGAN 8/4/2016
DATE DRILLING ENDED 8/4/2016
REMARKS Fill material to total depth

PID (ppm)	BLOW COUNTS	RECOVERY (ft)	SAMPLE ID.	SAMPLE DEPTH	DEPTH (ft. BGL)	U.S.C.S.	GRAPHIC LOG	LITHOLOGIC DESCRIPTION (Percent Gravel, Sand, Silt, Clay)
0.0					5	GM		0-7.5' **SILTY SANDY GRAVEL COBBLES (GM):** brown (7.5YR 4/3); fine to coarse angular gravel; sub-angular cobbles; fine to coarse, angular to sub-angular sand; dense to hard; slightly moist.
0.0					10	SM		7.5'-11.5' **SILTY SAND W/ MINOR GRAVELS (SM):** greenish grey (5/5GY); fine sub-angular gravel; fine to coarse sub-angular sand; dense; slightly moist.
0.0					15	ML		11.5'-15' **CLAYEY SILT (ML):** greenish black (2.5/5GY); red brick fragments and organics; slightly moist; slight plasticity.

Installed temporary dual-completion VMPs

Casing:
0-4.75' - 1/4" OD stainless steel rigid tubing
0'-14.75' - 1/4" OD stainless steel rigid tubing

Screen:
4.75'-5' - 1/2" OD 50 Mesh stainless steel
14.75'-15' - 1/2" OD 50 Mesh stainless steel

Annular Material:
0-4' - Neat cement w/ 5% bentonite
4'-4.5' - granular bentonite
4.5'-5' - #2/12 sand (34% porosity)
5'-5.5' - granular bentonite
5.5'-14' - hydrated bentonite (gel)
14'-14.5' - granular bentonite
14.5'-15' - #2/12 sand (34% porosity)

Sampled VMPs on 8/8/16.

TT GEO (NO COORDINATES) TERRAMAR - OAKLAND.GPJ LAEWNN01.GDT 9/2/16

Keith Hoofard
Name of Geologist

Name of Reviewer

TETRA TECH

BORING LOG

PROJECT NUMBER 117-7429001.06
PROJECT NAME Terramar - Oakland
LOCATION 5100 Broadway, Oakland (fmr 5114 tenant)
DRILLING METHOD Auger
SAMPLING METHOD Grab
DEPTH TO SATURATED SOIL (ft)
LOGGED BY Keith Hoofard

BORING/WELL NUMBER DC-VMP-24
DATE DRILLING BEGAN 8/4/2016
DATE DRILLING ENDED 8/4/2016
REMARKS Fill material to total depth

PID (ppm)	BLOW COUNTS	RECOVERY (ft)	SAMPLE ID.	SAMPLE DEPTH	DEPTH (ft. BGL)	U.S.C.S.	GRAPHIC LOG	LITHOLOGIC DESCRIPTION (Percent Gravel, Sand, Silt, Clay)
0.0					5	GM		0-7.5' **SILTY SANDY GRAVEL COBBLES (GM):** brown (7.5YR 4/3); fine to coarse angular gravel; sub-angular cobbles; fine to coarse, angular to sub-angular sand; dense to hard; slightly moist.
0.0					10	SM		7.5'-11' **SILTY SAND W/ MINOR GRAVELS (SM):** greenish grey (5/5GY); fine sub-angular gravel; fine to coarse sub-angular sand; dense; slightly moist.
0.0					15	ML		11'-15' **CLAYEY SILT (ML):** greenish black (2.5/5GY); red brick fragments and organics; slightly moist; slight plasticity.

Installed temporary dual-completion VMPs

Casing:
0-4.75' - 1/4" OD stainless steel rigid tubing
0'-14.75' - 1/4" OD stainless steel rigid tubing

Screen:
4.75'-5' - 1/2" OD 50 Mesh stainless steel
14.75'-15' - 1/2" OD 50 Mesh stainless steel

Annular Material:
0-4' - Neat cement w/ 5% bentonite
4'-4.5' - granular bentonite
4.5'-5' - #2/12 sand (34% porosity)
5'-5.5' - granular bentonite
5.5'-14' - hydrated bentonite (gel)
14'-14.5' - granular bentonite
14.5'-15' - #2/12 sand (34% porosity)

Sampled VMPs on 8/8/16.

TT GEO (NO COORDINATES) TERRAMAR - OAKLAND.GPJ LAEWNN01.GDT 9/2/16

Keith Hoofard
Name of Geologist

Name of Reviewer

APPENDIX C
Active Soil Gas Sampling Protocol

Active Soil Gas Sampling Protocol

Active soil gas samples are collected from the vapor monitoring points (VMPs) by connecting ¼-inch diameter Teflon tubing (DTSC/RWQCB, 2015), from the hose barb at the top of the VMP to a dedicated sampling manifold. A laboratory-supplied manifold prevents soil particles or water from entering the sample canisters and restricts the air flow to less than 200 milliliters per minute (mL/min). Manifolds are used once and then returned to the laboratory for cleaning.

Three purge volumes are extracted from each VMP using a 6-liter Summa canister that is only used for purging (DTSC/RWQCB, 2015). The soil gas samples are collected in a 1-liter Summa canister. As part of the quality control procedures, Summa canister vacuum levels are measured prior to and after collecting each soil gas sample. These measurements are recorded on the sample label and on the sample chain of custody form.

Ambient air leaks during soil gas sampling may dilute the samples and produce results that underestimate the actual site concentrations or contaminate the sample with external contaminants. Prior to collecting a soil gas sample in the 1-liter Summa canister, a shut-in test is conducted followed by a leak detection test using helium.

The shut-in test is used to test if the above-ground fittings are air tight. The soil gas sampling apparatus is assembled (e.g. valves, tubing, manifold, fittings) downstream from the top of the probe. The apparatus is evacuated using a vacuum of about 20 inches of mercury. The applied vacuum is allowed to equilibrate in the apparatus, all valves are then closed, and the vacuum held for at least one minute. If there is an observable loss of vacuum, then the fittings are adjusted as needed until the apparatus holds a vacuum (DTSC/RWQCB, 2015).

Helium is a naturally occurring compound and is present in air at about 5 parts per million by volume (ppmv). The potential for ambient air leaks is evaluated using a shroud. Assuming a reasonably good seal can be obtained with the shroud, the ambient air leak can be quantified with helium. The apparatus for leak detection is set up after the shut-in test has been conducted. Leak detection is implemented at the well head using industrial-grade helium gas within the sampling shroud. The shroud consists of a plastic container placed over the entire top of the VMP well head. The shroud has two ports fitted with ¼-inch stainless steel or brass through-wall bulkhead fittings equipped with hose barbs. One barb is for injection of the helium into the shroud and the second barb is for the helium detector to connect to the shroud. The Summa canister sample tubing is fed through a third hole in the shroud, fitted with a rubber grommet, and connected to the VMP via compression fittings. The helium cylinder is connected to the shroud via ¼-inch tubing.

The shroud is secured to cover the entire well top and aluminum foil or hydrated bentonite is used to seal around the bottom the shroud where the shroud does not fit evenly to the ground. The helium gas is injected into the shroud to a concentration equal to 50 percent by volume, as measured using a helium gas detector. A purge volume is calculated using the volume of the screened probe tip, the volume of the rigid tubing from the probe tip to brass ball valve at the

surface, the filter pack void space volume, and the length of tubing from the brass ball valve to the vacuum 6-liter Summa canister. Three purge volumes are purged from the well tubing using the vacuum 6-liter Summa canister. The 6-liter Summa canister is closed and the 1-liter Summa sample canister valve is opened to collect the soil gas sample. The helium concentration inside the shroud is measured continuously using a helium gas detector during the soil gas sampling. The concentrations of helium are noted at the start and end of sampling.

The 1-liter Summa canisters is submitted under COC documentation to Air Toxics, LTD in Folsom, California and analyzed for VOCs using Method TO-15 Direct Inject and helium to assess potential leak detection.

Helium is analyzed based on a percentage basis. An ambient air leak of five percent of the concentration within the shroud is acceptable for quantitative testing performed by shrouding. If the concentration of helium in the laboratory sample is less than five percent of the helium concentration in the shroud (using the helium gas detector), then the sample is considered valid.

APPENDIX D
Laboratory Analytical Data Sheets and Chain of Custody Forms

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8/16/2016
Mr. Garrett Kuhl
Tetra Tech - GEO
2969 Prospect Park
Suite 100
Rancho Cordova CA 95670

Project Name: Terramar - 5100 Broadway
Project #: 117-7429001.05
Workorder #: 1608146A

Dear Mr. Garrett Kuhl

The following report includes the data for the above referenced project for sample(s) received on 8/9/2016 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 the Project Manager: Kelly Buettner at 916-985-1000 if you have any questions regarding the data in this report.

Regards,

Kelly Buettner

Project Manager

eurofins | Air Toxics

WORK ORDER #: 1608146A

Work Order Summary

CLIENT:	Mr. Garrett Kuhl Tetra Tech - GEO 2969 Prospect Park Suite 100 Rancho Cordova, CA 95670	**BILL TO:**	Mr. Garrett Kuhl Tetra Tech - GEO 2969 Prospect Park Suite 100 Rancho Cordova, CA 95670
PHONE:	916-853-1800	**P.O. #**	117-7429001.05
FAX:	916-853-1860	**PROJECT #**	117-7429001.05 Terramar - 5100 Broadway
DATE RECEIVED:	08/09/2016	**CONTACT:**	Kelly Buettner
DATE COMPLETED:	08/16/2016		

FRACTION #	NAME	TEST	RECEIPT VAC./PRES.	FINAL PRESSURE
01A	DC-VMP-21-5'	TO-15	4.7 "Hg	14.5 psi
02A	DC-VMP-21-10'	TO-15	3.1 "Hg	14.7 psi
03A	DC-VMP-22-5'	TO-15	4.7 "Hg	15 psi
04A	DC-VMP-22-13.5'	TO-15	3.5 "Hg	15.2 psi
05A	DC-VMP-23-5'	TO-15	5.5 "Hg	15.1 psi
06A	DC-VMP-23-15'	TO-15	2.4 "Hg	14.9 psi
07A	DC-VMP-24-5'	TO-15	3.7 "Hg	14.7 psi
08A	DC-VMP-24-15'	TO-15	4.3 "Hg	15 psi
09A	Lab Blank	TO-15	NA	NA
09B	Lab Blank	TO-15	NA	NA
10A	CCV	TO-15	NA	NA
10B	CCV	TO-15	NA	NA
11A	LCS	TO-15	NA	NA
11AA	LCSD	TO-15	NA	NA
11B	LCS	TO-15	NA	NA
11BB	LCSD	TO-15	NA	NA

CERTIFIED BY: Heidi Mayo DATE: 08/16/16

Technical Director

Certification numbers: AZ Licensure AZ0775, NJ NELAP - CA016, NY NELAP - 11291,
TX NELAP - T104704434-15-9, UT NELAP CA0093332015-6, VA NELAP - 8113, WA NELAP - C935
Name of Accreditation Body: NELAP/ORELAP (Oregon Environmental Laboratory Accreditation Program)
Accreditation number: CA300005, Effective date: 10/18/2015, Expiration date: 10/17/2016.
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 - 95630
(916) 985-1000 . (800) 985-5955 . FAX (916) 985-1020

LABORATORY NARRATIVE
EPA Method TO-15
Tetra Tech - GEO
Workorder# 1608146A

Eight 1 Liter Summa Canister samples were received on August 09, 2016. 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

There were no receiving discrepancies.

Analytical Notes

Dilution was performed on sample DC-VMP-22-13.5' due to the presence of high level target species.

Dilution was performed on samples DC-VMP-21-10' and DC-VMP-24-15' due to the presence of high level non-target species.

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: DC-VMP-21-5'

Lab ID#: 1608146A-01A

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Freon 12	1.2	38	5.8	190
Vinyl Chloride	1.2	2.1	3.0	5.4
Freon 11	1.2	3.3	6.6	19
Acetone	12	14	28	35
Carbon Disulfide	4.7	31	15	97
trans-1,2-Dichloroethene	1.2	6.3	4.7	25
Hexane	1.2	11	4.2	38
cis-1,2-Dichloroethene	1.2	56	4.7	220
Chloroform	1.2	130	5.8	630
Benzene	1.2	7.3	3.8	23
Heptane	1.2	2.3	4.8	9.4
Trichloroethene	1.2	140	6.3	740
Bromodichloromethane	1.2	1.2	7.9	8.4
Toluene	1.2	5.5	4.4	21
Tetrachloroethene	1.2	320	8.0	2100
m,p-Xylene	1.2	1.5	5.1	6.3

Client Sample ID: DC-VMP-21-10'

Lab ID#: 1608146A-02A

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Freon 12	2.2	120	11	580
Vinyl Chloride	2.2	4.5	5.7	12
Freon 11	2.2	3.9	12	22
Acetone	22	120	53	290
Carbon Disulfide	8.9	140	28	450
trans-1,2-Dichloroethene	2.2	5.2	8.8	21
Hexane	2.2	88	7.8	310
2-Butanone (Methyl Ethyl Ketone)	8.9	17	26	51
cis-1,2-Dichloroethene	2.2	76	8.8	300
Chloroform	2.2	29	11	140
Cyclohexane	2.2	3.6	7.7	12
Benzene	2.2	28	7.1	89

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

Client Sample ID: DC-VMP-21-10'

Lab ID#: 1608146A-02A

Heptane	2.2	15	9.1	62
Trichloroethene	2.2	82	12	440
Toluene	2.2	10	8.4	38
Tetrachloroethene	2.2	260	15	1800

Client Sample ID: DC-VMP-22-5'

Lab ID#: 1608146A-03A

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Freon 12	1.2	14	5.9	71
Freon 11	1.2	9.9	6.7	56
Carbon Disulfide	4.8	7.2	15	22
Hexane	1.2	1.2	4.2	4.3
cis-1,2-Dichloroethene	1.2	2.9	4.8	11
Chloroform	1.2	32	5.8	160
Benzene	1.2	5.2	3.8	17
Trichloroethene	1.2	4.8	6.4	26
Tetrachloroethene	1.2	15	8.1	100

Client Sample ID: DC-VMP-22-13.5'

Lab ID#: 1608146A-04A

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Freon 12	4.6	970	23	4800
Vinyl Chloride	4.6	24	12	62
Hexane	4.6	120	16	410
cis-1,2-Dichloroethene	4.6	8.7	18	34
Chloroform	4.6	17	22	85
Cyclohexane	4.6	160	16	550
Benzene	4.6	17	15	56
Heptane	4.6	26	19	110
Toluene	4.6	5.7	17	22

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

Client Sample ID: DC-VMP-23-5'

Lab ID#: 1608146A-05A

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Freon 12	1.2	5.8	6.1	29
Freon 11	1.2	1.9	7.0	11
Carbon Disulfide	5.0	19	15	60
Hexane	1.2	3.6	4.4	13
cis-1,2-Dichloroethene	1.2	6.3	4.9	25
Chloroform	1.2	58	6.0	280
Cyclohexane	1.2	1.7	4.3	5.8
Benzene	1.2	5.0	4.0	16
Trichloroethene	1.2	11	6.7	62
Toluene	1.2	3.1	4.7	12
Tetrachloroethene	1.2	15	8.4	100
m,p-Xylene	1.2	1.5	5.4	6.7

Client Sample ID: DC-VMP-23-15'

Lab ID#: 1608146A-06A

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Freon 12	1.1	86	5.4	430
Vinyl Chloride	1.1	5.8	2.8	15
Freon 11	1.1	1.1	6.2	6.4
Ethanol	4.4	5.6	8.2	10
Acetone	11	17	26	41
Carbon Disulfide	4.4	12	14	37
Hexane	1.1	25	3.8	89
cis-1,2-Dichloroethene	1.1	3.1	4.3	12
Chloroform	1.1	9.9	5.3	48
Cyclohexane	1.1	37	3.8	130
Benzene	1.1	14	3.5	44
Heptane	1.1	8.5	4.5	35
Trichloroethene	1.1	1.1	5.9	6.1
Toluene	1.1	5.1	4.1	19
m,p-Xylene	1.1	4.8	4.8	21
o-Xylene	1.1	1.5	4.8	6.6

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

Client Sample ID: DC-VMP-23-15'

Lab ID#: 1608146A-06A

Cumene	1.1	1.5	5.4	7.6
1,2,4-Trimethylbenzene	1.1	1.4	5.4	7.0

Client Sample ID: DC-VMP-24-5'

Lab ID#: 1608146A-07A

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Freon 12	1.1	280	5.6	1400
Vinyl Chloride	1.1	8.7	2.9	22
Acetone	11	23	27	55
Carbon Disulfide	4.6	86	14	270
Hexane	1.1	10	4.0	35
cis-1,2-Dichloroethene	1.1	7.0	4.5	28
Chloroform	1.1	33	5.6	160
Cyclohexane	1.1	15	3.9	52
Benzene	1.1	7.2	3.6	23
Heptane	1.1	2.2	4.7	9.1
Toluene	1.1	3.4	4.3	13
m,p-Xylene	1.1	1.9	5.0	8.1

Client Sample ID: DC-VMP-24-15'

Lab ID#: 1608146A-08A

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Freon 12	4.7	180	23	880
Acetone	47	47	110	110
Hexane	4.7	28	17	99
Chloroform	4.7	13	23	63
Cyclohexane	4.7	42	16	150
Benzene	4.7	6.7	15	21
Toluene	4.7	5.5	18	21

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Client Sample ID: DC-VMP-21-5'

Lab ID#: 1608146A-01A

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	**17081522**	**Date of Collection:**	**8/8/16 12:25:00 PM**
Dil. Factor:	**2.36**	**Date of Analysis:**	**8/16/16 01:20 AM**

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Freon 12	1.2	38	5.8	190
Freon 114	1.2	Not Detected	8.2	Not Detected
Chloromethane	12	Not Detected	24	Not Detected
Vinyl Chloride	1.2	2.1	3.0	5.4
1,3-Butadiene	1.2	Not Detected	2.6	Not Detected
Bromomethane	12	Not Detected	46	Not Detected
Chloroethane	4.7	Not Detected	12	Not Detected
Freon 11	1.2	3.3	6.6	19
Ethanol	4.7	Not Detected	8.9	Not Detected
Freon 113	1.2	Not Detected	9.0	Not Detected
1,1-Dichloroethene	1.2	Not Detected	4.7	Not Detected
Acetone	12	14	28	35
2-Propanol	4.7	Not Detected	12	Not Detected
Carbon Disulfide	4.7	31	15	97
3-Chloropropene	4.7	Not Detected	15	Not Detected
Methylene Chloride	12	Not Detected	41	Not Detected
Methyl tert-butyl ether	4.7	Not Detected	17	Not Detected
trans-1,2-Dichloroethene	1.2	6.3	4.7	25
Hexane	1.2	11	4.2	38
1,1-Dichloroethane	1.2	Not Detected	4.8	Not Detected
2-Butanone (Methyl Ethyl Ketone)	4.7	Not Detected	14	Not Detected
cis-1,2-Dichloroethene	1.2	56	4.7	220
Tetrahydrofuran	1.2	Not Detected	3.5	Not Detected
Chloroform	1.2	130	5.8	630
1,1,1-Trichloroethane	1.2	Not Detected	6.4	Not Detected
Cyclohexane	1.2	Not Detected	4.1	Not Detected
Carbon Tetrachloride	1.2	Not Detected	7.4	Not Detected
2,2,4-Trimethylpentane	1.2	Not Detected	5.5	Not Detected
Benzene	1.2	7.3	3.8	23
1,2-Dichloroethane	1.2	Not Detected	4.8	Not Detected
Heptane	1.2	2.3	4.8	9.4
Trichloroethene	1.2	140	6.3	740
1,2-Dichloropropane	1.2	Not Detected	5.4	Not Detected
1,4-Dioxane	4.7	Not Detected	17	Not Detected
Bromodichloromethane	1.2	1.2	7.9	8.4
cis-1,3-Dichloropropene	1.2	Not Detected	5.4	Not Detected
4-Methyl-2-pentanone	1.2	Not Detected	4.8	Not Detected
Toluene	1.2	5.5	4.4	21
trans-1,3-Dichloropropene	1.2	Not Detected	5.4	Not Detected
1,1,2-Trichloroethane	1.2	Not Detected	6.4	Not Detected
Tetrachloroethene	1.2	320	8.0	2100
2-Hexanone	4.7	Not Detected	19	Not Detected

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Client Sample ID: DC-VMP-21-5'

Lab ID#: 1608146A-01A

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	**17081522**	**Date of Collection:**	**8/8/16 12:25:00 PM**
Dil. Factor:	**2.36**	**Date of Analysis:**	**8/16/16 01:20 AM**

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	9.1	Not Detected
Chlorobenzene	1.2	Not Detected	5.4	Not Detected
Ethyl Benzene	1.2	Not Detected	5.1	Not Detected
m,p-Xylene	1.2	1.5	5.1	6.3
o-Xylene	1.2	Not Detected	5.1	Not Detected
Styrene	1.2	Not Detected	5.0	Not Detected
Bromoform	1.2	Not Detected	12	Not Detected
Cumene	1.2	Not Detected	5.8	Not Detected
1,1,2,2-Tetrachloroethane	1.2	Not Detected	8.1	Not Detected
Propylbenzene	1.2	Not Detected	5.8	Not Detected
4-Ethyltoluene	1.2	Not Detected	5.8	Not Detected
1,3,5-Trimethylbenzene	1.2	Not Detected	5.8	Not Detected
1,2,4-Trimethylbenzene	1.2	Not Detected	5.8	Not Detected
1,3-Dichlorobenzene	1.2	Not Detected	7.1	Not Detected
1,4-Dichlorobenzene	1.2	Not Detected	7.1	Not Detected
alpha-Chlorotoluene	1.2	Not Detected	6.1	Not Detected
1,2-Dichlorobenzene	1.2	Not Detected	7.1	Not Detected
1,2,4-Trichlorobenzene	4.7	Not Detected	35	Not Detected
Hexachlorobutadiene	4.7	Not Detected	50	Not Detected

Container Type: 1 Liter Summa Canister

Surrogates	%Recovery	Method Limits
Toluene-d8	98	70-130
1,2-Dichloroethane-d4	99	70-130
4-Bromofluorobenzene	106	70-130

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Client Sample ID: DC-VMP-21-10'

Lab ID#: 1608146A-02A

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	**p081123**	**Date of Collection:**	**8/8/16 12:26:00 PM**
Dil. Factor:	**4.46**	**Date of Analysis:**	**8/12/16 12:42 AM**

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Freon 12	2.2	120	11	580
Freon 114	2.2	Not Detected	16	Not Detected
Chloromethane	22	Not Detected	46	Not Detected
Vinyl Chloride	2.2	4.5	5.7	12
1,3-Butadiene	2.2	Not Detected	4.9	Not Detected
Bromomethane	22	Not Detected	87	Not Detected
Chloroethane	8.9	Not Detected	24	Not Detected
Freon 11	2.2	3.9	12	22
Ethanol	8.9	Not Detected	17	Not Detected
Freon 113	2.2	Not Detected	17	Not Detected
1,1-Dichloroethene	2.2	Not Detected	8.8	Not Detected
Acetone	22	120	53	290
2-Propanol	8.9	Not Detected	22	Not Detected
Carbon Disulfide	8.9	140	28	450
3-Chloropropene	8.9	Not Detected	28	Not Detected
Methylene Chloride	22	Not Detected	77	Not Detected
Methyl tert-butyl ether	8.9	Not Detected	32	Not Detected
trans-1,2-Dichloroethene	2.2	5.2	8.8	21
Hexane	2.2	88	7.8	310
1,1-Dichloroethane	2.2	Not Detected	9.0	Not Detected
2-Butanone (Methyl Ethyl Ketone)	8.9	17	26	51
cis-1,2-Dichloroethene	2.2	76	8.8	300
Tetrahydrofuran	2.2	Not Detected	6.6	Not Detected
Chloroform	2.2	29	11	140
1,1,1-Trichloroethane	2.2	Not Detected	12	Not Detected
Cyclohexane	2.2	3.6	7.7	12
Carbon Tetrachloride	2.2	Not Detected	14	Not Detected
2,2,4-Trimethylpentane	2.2	Not Detected	10	Not Detected
Benzene	2.2	28	7.1	89
1,2-Dichloroethane	2.2	Not Detected	9.0	Not Detected
Heptane	2.2	15	9.1	62
Trichloroethene	2.2	82	12	440
1,2-Dichloropropane	2.2	Not Detected	10	Not Detected
1,4-Dioxane	8.9	Not Detected	32	Not Detected
Bromodichloromethane	2.2	Not Detected	15	Not Detected
cis-1,3-Dichloropropene	2.2	Not Detected	10	Not Detected
4-Methyl-2-pentanone	2.2	Not Detected	9.1	Not Detected
Toluene	2.2	10	8.4	38
trans-1,3-Dichloropropene	2.2	Not Detected	10	Not Detected
1,1,2-Trichloroethane	2.2	Not Detected	12	Not Detected
Tetrachloroethene	2.2	260	15	1800
2-Hexanone	8.9	Not Detected	36	Not Detected

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Client Sample ID: DC-VMP-21-10'

Lab ID#: 1608146A-02A

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	**p081123**	**Date of Collection: 8/8/16 12:26:00 PM**	
Dil. Factor:	**4.46**	**Date of Analysis: 8/12/16 12:42 AM**	

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Dibromochloromethane	2.2	Not Detected	19	Not Detected
1,2-Dibromoethane (EDB)	2.2	Not Detected	17	Not Detected
Chlorobenzene	2.2	Not Detected	10	Not Detected
Ethyl Benzene	2.2	Not Detected	9.7	Not Detected
m,p-Xylene	2.2	Not Detected	9.7	Not Detected
o-Xylene	2.2	Not Detected	9.7	Not Detected
Styrene	2.2	Not Detected	9.5	Not Detected
Bromoform	2.2	Not Detected	23	Not Detected
Cumene	2.2	Not Detected	11	Not Detected
1,1,2,2-Tetrachloroethane	2.2	Not Detected	15	Not Detected
Propylbenzene	2.2	Not Detected	11	Not Detected
4-Ethyltoluene	2.2	Not Detected	11	Not Detected
1,3,5-Trimethylbenzene	2.2	Not Detected	11	Not Detected
1,2,4-Trimethylbenzene	2.2	Not Detected	11	Not Detected
1,3-Dichlorobenzene	2.2	Not Detected	13	Not Detected
1,4-Dichlorobenzene	2.2	Not Detected	13	Not Detected
alpha-Chlorotoluene	2.2	Not Detected	12	Not Detected
1,2-Dichlorobenzene	2.2	Not Detected	13	Not Detected
1,2,4-Trichlorobenzene	8.9	Not Detected	66	Not Detected
Hexachlorobutadiene	8.9	Not Detected	95	Not Detected

Container Type: 1 Liter Summa Canister

Surrogates	%Recovery	Method Limits
Toluene-d8	98	70-130
1,2-Dichloroethane-d4	95	70-130
4-Bromofluorobenzene	98	70-130

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Client Sample ID: DC-VMP-22-5'

Lab ID#: 1608146A-03A

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	**p081124**	**Date of Collection:**	**8/8/16 1:11:00 PM**
Dil. Factor:	**2.40**	**Date of Analysis:**	**8/12/16 01:08 AM**

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Freon 12	1.2	14	5.9	71
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	9.9	6.7	56
Ethanol	4.8	Not Detected	9.0	Not Detected
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	7.2	15	22
3-Chloropropene	4.8	Not Detected	15	Not Detected
Methylene Chloride	12	Not Detected	42	Not Detected
Methyl tert-butyl ether	4.8	Not Detected	17	Not Detected
trans-1,2-Dichloroethene	1.2	Not Detected	4.8	Not Detected
Hexane	1.2	1.2	4.2	4.3
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	2.9	4.8	11
Tetrahydrofuran	1.2	Not Detected	3.5	Not Detected
Chloroform	1.2	32	5.8	160
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	5.2	3.8	17
1,2-Dichloroethane	1.2	Not Detected	4.8	Not Detected
Heptane	1.2	Not Detected	4.9	Not Detected
Trichloroethene	1.2	4.8	6.4	26
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	15	8.1	100
2-Hexanone	4.8	Not Detected	20	Not Detected

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Client Sample ID: DC-VMP-22-5'

Lab ID#: 1608146A-03A

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	**p081124**	**Date of Collection:**	**8/8/16 1:11:00 PM**
Dil. Factor:	**2.40**	**Date of Analysis:**	**8/12/16 01:08 AM**

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

Container Type: 1 Liter Summa Canister

Surrogates	%Recovery	Method Limits
Toluene-d8	101	70-130
1,2-Dichloroethane-d4	98	70-130
4-Bromofluorobenzene	103	70-130

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Client Sample ID: DC-VMP-22-13.5'

Lab ID#: 1608146A-04A

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	**17081523**	**Date of Collection:**	**8/8/16 1:10:00 PM**
Dil. Factor:	**9.21**	**Date of Analysis:**	**8/16/16 01:45 AM**

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Freon 12	4.6	970	23	4800
Freon 114	4.6	Not Detected	32	Not Detected
Chloromethane	46	Not Detected	95	Not Detected
Vinyl Chloride	4.6	24	12	62
1,3-Butadiene	4.6	Not Detected	10	Not Detected
Bromomethane	46	Not Detected	180	Not Detected
Chloroethane	18	Not Detected	49	Not Detected
Freon 11	4.6	Not Detected	26	Not Detected
Ethanol	18	Not Detected	35	Not Detected
Freon 113	4.6	Not Detected	35	Not Detected
1,1-Dichloroethene	4.6	Not Detected	18	Not Detected
Acetone	46	Not Detected	110	Not Detected
2-Propanol	18	Not Detected	45	Not Detected
Carbon Disulfide	18	Not Detected	57	Not Detected
3-Chloropropene	18	Not Detected	58	Not Detected
Methylene Chloride	46	Not Detected	160	Not Detected
Methyl tert-butyl ether	18	Not Detected	66	Not Detected
trans-1,2-Dichloroethene	4.6	Not Detected	18	Not Detected
Hexane	4.6	120	16	410
1,1-Dichloroethane	4.6	Not Detected	19	Not Detected
2-Butanone (Methyl Ethyl Ketone)	18	Not Detected	54	Not Detected
cis-1,2-Dichloroethene	4.6	8.7	18	34
Tetrahydrofuran	4.6	Not Detected	14	Not Detected
Chloroform	4.6	17	22	85
1,1,1-Trichloroethane	4.6	Not Detected	25	Not Detected
Cyclohexane	4.6	160	16	550
Carbon Tetrachloride	4.6	Not Detected	29	Not Detected
2,2,4-Trimethylpentane	4.6	Not Detected	22	Not Detected
Benzene	4.6	17	15	56
1,2-Dichloroethane	4.6	Not Detected	19	Not Detected
Heptane	4.6	26	19	110
Trichloroethene	4.6	Not Detected	25	Not Detected
1,2-Dichloropropane	4.6	Not Detected	21	Not Detected
1,4-Dioxane	18	Not Detected	66	Not Detected
Bromodichloromethane	4.6	Not Detected	31	Not Detected
cis-1,3-Dichloropropene	4.6	Not Detected	21	Not Detected
4-Methyl-2-pentanone	4.6	Not Detected	19	Not Detected
Toluene	4.6	5.7	17	22
trans-1,3-Dichloropropene	4.6	Not Detected	21	Not Detected
1,1,2-Trichloroethane	4.6	Not Detected	25	Not Detected
Tetrachloroethene	4.6	Not Detected	31	Not Detected
2-Hexanone	18	Not Detected	75	Not Detected

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Client Sample ID: DC-VMP-22-13.5'

Lab ID#: 1608146A-04A

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	**17081523**	**Date of Collection:**	**8/8/16 1:10:00 PM**
Dil. Factor:	**9.21**	**Date of Analysis:**	**8/16/16 01:45 AM**

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Dibromochloromethane	4.6	Not Detected	39	Not Detected
1,2-Dibromoethane (EDB)	4.6	Not Detected	35	Not Detected
Chlorobenzene	4.6	Not Detected	21	Not Detected
Ethyl Benzene	4.6	Not Detected	20	Not Detected
m,p-Xylene	4.6	Not Detected	20	Not Detected
o-Xylene	4.6	Not Detected	20	Not Detected
Styrene	4.6	Not Detected	20	Not Detected
Bromoform	4.6	Not Detected	48	Not Detected
Cumene	4.6	Not Detected	23	Not Detected
1,1,2,2-Tetrachloroethane	4.6	Not Detected	32	Not Detected
Propylbenzene	4.6	Not Detected	23	Not Detected
4-Ethyltoluene	4.6	Not Detected	23	Not Detected
1,3,5-Trimethylbenzene	4.6	Not Detected	23	Not Detected
1,2,4-Trimethylbenzene	4.6	Not Detected	23	Not Detected
1,3-Dichlorobenzene	4.6	Not Detected	28	Not Detected
1,4-Dichlorobenzene	4.6	Not Detected	28	Not Detected
alpha-Chlorotoluene	4.6	Not Detected	24	Not Detected
1,2-Dichlorobenzene	4.6	Not Detected	28	Not Detected
1,2,4-Trichlorobenzene	18	Not Detected	140	Not Detected
Hexachlorobutadiene	18	Not Detected	200	Not Detected

Container Type: 1 Liter Summa Canister

Surrogates	%Recovery	Method Limits
Toluene-d8	99	70-130
1,2-Dichloroethane-d4	108	70-130
4-Bromofluorobenzene	106	70-130

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Client Sample ID: DC-VMP-23-5'

Lab ID#: 1608146A-05A

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	**p081126**	**Date of Collection:**	**8/8/16 1:54:00 PM**
Dil. Factor:	**2.48**	**Date of Analysis:**	**8/12/16 02:00 AM**

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Freon 12	1.2	5.8	6.1	29
Freon 114	1.2	Not Detected	8.7	Not Detected
Chloromethane	12	Not Detected	26	Not Detected
Vinyl Chloride	1.2	Not Detected	3.2	Not Detected
1,3-Butadiene	1.2	Not Detected	2.7	Not Detected
Bromomethane	12	Not Detected	48	Not Detected
Chloroethane	5.0	Not Detected	13	Not Detected
Freon 11	1.2	1.9	7.0	11
Ethanol	5.0	Not Detected	9.3	Not Detected
Freon 113	1.2	Not Detected	9.5	Not Detected
1,1-Dichloroethene	1.2	Not Detected	4.9	Not Detected
Acetone	12	Not Detected	29	Not Detected
2-Propanol	5.0	Not Detected	12	Not Detected
Carbon Disulfide	5.0	19	15	60
3-Chloropropene	5.0	Not Detected	16	Not Detected
Methylene Chloride	12	Not Detected	43	Not Detected
Methyl tert-butyl ether	5.0	Not Detected	18	Not Detected
trans-1,2-Dichloroethene	1.2	Not Detected	4.9	Not Detected
Hexane	1.2	3.6	4.4	13
1,1-Dichloroethane	1.2	Not Detected	5.0	Not Detected
2-Butanone (Methyl Ethyl Ketone)	5.0	Not Detected	15	Not Detected
cis-1,2-Dichloroethene	1.2	6.3	4.9	25
Tetrahydrofuran	1.2	Not Detected	3.6	Not Detected
Chloroform	1.2	58	6.0	280
1,1,1-Trichloroethane	1.2	Not Detected	6.8	Not Detected
Cyclohexane	1.2	1.7	4.3	5.8
Carbon Tetrachloride	1.2	Not Detected	7.8	Not Detected
2,2,4-Trimethylpentane	1.2	Not Detected	5.8	Not Detected
Benzene	1.2	5.0	4.0	16
1,2-Dichloroethane	1.2	Not Detected	5.0	Not Detected
Heptane	1.2	Not Detected	5.1	Not Detected
Trichloroethene	1.2	11	6.7	62
1,2-Dichloropropane	1.2	Not Detected	5.7	Not Detected
1,4-Dioxane	5.0	Not Detected	18	Not Detected
Bromodichloromethane	1.2	Not Detected	8.3	Not Detected
cis-1,3-Dichloropropene	1.2	Not Detected	5.6	Not Detected
4-Methyl-2-pentanone	1.2	Not Detected	5.1	Not Detected
Toluene	1.2	3.1	4.7	12
trans-1,3-Dichloropropene	1.2	Not Detected	5.6	Not Detected
1,1,2-Trichloroethane	1.2	Not Detected	6.8	Not Detected
Tetrachloroethene	1.2	15	8.4	100
2-Hexanone	5.0	Not Detected	20	Not Detected

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Client Sample ID: DC-VMP-23-5'

Lab ID#: 1608146A-05A

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	**p081126**	**Date of Collection:**	**8/8/16 1:54:00 PM**
Dil. Factor:	**2.48**	**Date of Analysis:**	**8/12/16 02:00 AM**

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	9.5	Not Detected
Chlorobenzene	1.2	Not Detected	5.7	Not Detected
Ethyl Benzene	1.2	Not Detected	5.4	Not Detected
m,p-Xylene	1.2	1.5	5.4	6.7
o-Xylene	1.2	Not Detected	5.4	Not Detected
Styrene	1.2	Not Detected	5.3	Not Detected
Bromoform	1.2	Not Detected	13	Not Detected
Cumene	1.2	Not Detected	6.1	Not Detected
1,1,2,2-Tetrachloroethane	1.2	Not Detected	8.5	Not Detected
Propylbenzene	1.2	Not Detected	6.1	Not Detected
4-Ethyltoluene	1.2	Not Detected	6.1	Not Detected
1,3,5-Trimethylbenzene	1.2	Not Detected	6.1	Not Detected
1,2,4-Trimethylbenzene	1.2	Not Detected	6.1	Not Detected
1,3-Dichlorobenzene	1.2	Not Detected	7.4	Not Detected
1,4-Dichlorobenzene	1.2	Not Detected	7.4	Not Detected
alpha-Chlorotoluene	1.2	Not Detected	6.4	Not Detected
1,2-Dichlorobenzene	1.2	Not Detected	7.4	Not Detected
1,2,4-Trichlorobenzene	5.0	Not Detected	37	Not Detected
Hexachlorobutadiene	5.0	Not Detected	53	Not Detected

Container Type: 1 Liter Summa Canister

Surrogates	%Recovery	Method Limits
Toluene-d8	98	70-130
1,2-Dichloroethane-d4	95	70-130
4-Bromofluorobenzene	103	70-130

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Client Sample ID: DC-VMP-23-15'

Lab ID#: 1608146A-06A

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	**17081524**	**Date of Collection:**	**8/8/16 1:56:00 PM**
Dil. Factor:	**2.19**	**Date of Analysis:**	**8/16/16 02:11 AM**

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Freon 12	1.1	86	5.4	430
Freon 114	1.1	Not Detected	7.6	Not Detected
Chloromethane	11	Not Detected	23	Not Detected
Vinyl Chloride	1.1	5.8	2.8	15
1,3-Butadiene	1.1	Not Detected	2.4	Not Detected
Bromomethane	11	Not Detected	42	Not Detected
Chloroethane	4.4	Not Detected	12	Not Detected
Freon 11	1.1	1.1	6.2	6.4
Ethanol	4.4	5.6	8.2	10
Freon 113	1.1	Not Detected	8.4	Not Detected
1,1-Dichloroethene	1.1	Not Detected	4.3	Not Detected
Acetone	11	17	26	41
2-Propanol	4.4	Not Detected	11	Not Detected
Carbon Disulfide	4.4	12	14	37
3-Chloropropene	4.4	Not Detected	14	Not Detected
Methylene Chloride	11	Not Detected	38	Not Detected
Methyl tert-butyl ether	4.4	Not Detected	16	Not Detected
trans-1,2-Dichloroethene	1.1	Not Detected	4.3	Not Detected
Hexane	1.1	25	3.8	89
1,1-Dichloroethane	1.1	Not Detected	4.4	Not Detected
2-Butanone (Methyl Ethyl Ketone)	4.4	Not Detected	13	Not Detected
cis-1,2-Dichloroethene	1.1	3.1	4.3	12
Tetrahydrofuran	1.1	Not Detected	3.2	Not Detected
Chloroform	1.1	9.9	5.3	48
1,1,1-Trichloroethane	1.1	Not Detected	6.0	Not Detected
Cyclohexane	1.1	37	3.8	130
Carbon Tetrachloride	1.1	Not Detected	6.9	Not Detected
2,2,4-Trimethylpentane	1.1	Not Detected	5.1	Not Detected
Benzene	1.1	14	3.5	44
1,2-Dichloroethane	1.1	Not Detected	4.4	Not Detected
Heptane	1.1	8.5	4.5	35
Trichloroethene	1.1	1.1	5.9	6.1
1,2-Dichloropropane	1.1	Not Detected	5.1	Not Detected
1,4-Dioxane	4.4	Not Detected	16	Not Detected
Bromodichloromethane	1.1	Not Detected	7.3	Not Detected
cis-1,3-Dichloropropene	1.1	Not Detected	5.0	Not Detected
4-Methyl-2-pentanone	1.1	Not Detected	4.5	Not Detected
Toluene	1.1	5.1	4.1	19
trans-1,3-Dichloropropene	1.1	Not Detected	5.0	Not Detected
1,1,2-Trichloroethane	1.1	Not Detected	6.0	Not Detected
Tetrachloroethene	1.1	Not Detected	7.4	Not Detected
2-Hexanone	4.4	Not Detected	18	Not Detected

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Client Sample ID: DC-VMP-23-15'

Lab ID#: 1608146A-06A

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	**17081524**	**Date of Collection:**	**8/8/16 1:56:00 PM**
Dil. Factor:	**2.19**	**Date of Analysis:**	**8/16/16 02:11 AM**

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Dibromochloromethane	1.1	Not Detected	9.3	Not Detected
1,2-Dibromoethane (EDB)	1.1	Not Detected	8.4	Not Detected
Chlorobenzene	1.1	Not Detected	5.0	Not Detected
Ethyl Benzene	1.1	Not Detected	4.8	Not Detected
m,p-Xylene	1.1	4.8	4.8	21
o-Xylene	1.1	1.5	4.8	6.6
Styrene	1.1	Not Detected	4.7	Not Detected
Bromoform	1.1	Not Detected	11	Not Detected
Cumene	1.1	1.5	5.4	7.6
1,1,2,2-Tetrachloroethane	1.1	Not Detected	7.5	Not Detected
Propylbenzene	1.1	Not Detected	5.4	Not Detected
4-Ethyltoluene	1.1	Not Detected	5.4	Not Detected
1,3,5-Trimethylbenzene	1.1	Not Detected	5.4	Not Detected
1,2,4-Trimethylbenzene	1.1	1.4	5.4	7.0
1,3-Dichlorobenzene	1.1	Not Detected	6.6	Not Detected
1,4-Dichlorobenzene	1.1	Not Detected	6.6	Not Detected
alpha-Chlorotoluene	1.1	Not Detected	5.7	Not Detected
1,2-Dichlorobenzene	1.1	Not Detected	6.6	Not Detected
1,2,4-Trichlorobenzene	4.4	Not Detected	32	Not Detected
Hexachlorobutadiene	4.4	Not Detected	47	Not Detected

Container Type: 1 Liter Summa Canister

Surrogates	%Recovery	Method Limits
Toluene-d8	102	70-130
1,2-Dichloroethane-d4	103	70-130
4-Bromofluorobenzene	107	70-130

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Client Sample ID: DC-VMP-24-5'

Lab ID#: 1608146A-07A

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	**17081525**	**Date of Collection:**	**8/8/16 11:18:00 AM**
Dil. Factor:	**2.28**	**Date of Analysis:**	**8/16/16 02:38 AM**

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Freon 12	1.1	280	5.6	1400
Freon 114	1.1	Not Detected	8.0	Not Detected
Chloromethane	11	Not Detected	24	Not Detected
Vinyl Chloride	1.1	8.7	2.9	22
1,3-Butadiene	1.1	Not Detected	2.5	Not Detected
Bromomethane	11	Not Detected	44	Not Detected
Chloroethane	4.6	Not Detected	12	Not Detected
Freon 11	1.1	Not Detected	6.4	Not Detected
Ethanol	4.6	Not Detected	8.6	Not Detected
Freon 113	1.1	Not Detected	8.7	Not Detected
1,1-Dichloroethene	1.1	Not Detected	4.5	Not Detected
Acetone	11	23	27	55
2-Propanol	4.6	Not Detected	11	Not Detected
Carbon Disulfide	4.6	86	14	270
3-Chloropropene	4.6	Not Detected	14	Not Detected
Methylene Chloride	11	Not Detected	40	Not Detected
Methyl tert-butyl ether	4.6	Not Detected	16	Not Detected
trans-1,2-Dichloroethene	1.1	Not Detected	4.5	Not Detected
Hexane	1.1	10	4.0	35
1,1-Dichloroethane	1.1	Not Detected	4.6	Not Detected
2-Butanone (Methyl Ethyl Ketone)	4.6	Not Detected	13	Not Detected
cis-1,2-Dichloroethene	1.1	7.0	4.5	28
Tetrahydrofuran	1.1	Not Detected	3.4	Not Detected
Chloroform	1.1	33	5.6	160
1,1,1-Trichloroethane	1.1	Not Detected	6.2	Not Detected
Cyclohexane	1.1	15	3.9	52
Carbon Tetrachloride	1.1	Not Detected	7.2	Not Detected
2,2,4-Trimethylpentane	1.1	Not Detected	5.3	Not Detected
Benzene	1.1	7.2	3.6	23
1,2-Dichloroethane	1.1	Not Detected	4.6	Not Detected
Heptane	1.1	2.2	4.7	9.1
Trichloroethene	1.1	Not Detected	6.1	Not Detected
1,2-Dichloropropane	1.1	Not Detected	5.3	Not Detected
1,4-Dioxane	4.6	Not Detected	16	Not Detected
Bromodichloromethane	1.1	Not Detected	7.6	Not Detected
cis-1,3-Dichloropropene	1.1	Not Detected	5.2	Not Detected
4-Methyl-2-pentanone	1.1	Not Detected	4.7	Not Detected
Toluene	1.1	3.4	4.3	13
trans-1,3-Dichloropropene	1.1	Not Detected	5.2	Not Detected
1,1,2-Trichloroethane	1.1	Not Detected	6.2	Not Detected
Tetrachloroethene	1.1	Not Detected	7.7	Not Detected
2-Hexanone	4.6	Not Detected	19	Not Detected

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Client Sample ID: DC-VMP-24-5'

Lab ID#: 1608146A-07A

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	**17081525**	**Date of Collection:**	**8/8/16 11:18:00 AM**
Dil. Factor:	**2.28**	**Date of Analysis:**	**8/16/16 02:38 AM**

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Dibromochloromethane	1.1	Not Detected	9.7	Not Detected
1,2-Dibromoethane (EDB)	1.1	Not Detected	8.8	Not Detected
Chlorobenzene	1.1	Not Detected	5.2	Not Detected
Ethyl Benzene	1.1	Not Detected	4.9	Not Detected
m,p-Xylene	1.1	1.9	5.0	8.1
o-Xylene	1.1	Not Detected	5.0	Not Detected
Styrene	1.1	Not Detected	4.8	Not Detected
Bromoform	1.1	Not Detected	12	Not Detected
Cumene	1.1	Not Detected	5.6	Not Detected
1,1,2,2-Tetrachloroethane	1.1	Not Detected	7.8	Not Detected
Propylbenzene	1.1	Not Detected	5.6	Not Detected
4-Ethyltoluene	1.1	Not Detected	5.6	Not Detected
1,3,5-Trimethylbenzene	1.1	Not Detected	5.6	Not Detected
1,2,4-Trimethylbenzene	1.1	Not Detected	5.6	Not Detected
1,3-Dichlorobenzene	1.1	Not Detected	6.8	Not Detected
1,4-Dichlorobenzene	1.1	Not Detected	6.8	Not Detected
alpha-Chlorotoluene	1.1	Not Detected	5.9	Not Detected
1,2-Dichlorobenzene	1.1	Not Detected	6.8	Not Detected
1,2,4-Trichlorobenzene	4.6	Not Detected	34	Not Detected
Hexachlorobutadiene	4.6	Not Detected	49	Not Detected

Container Type: 1 Liter Summa Canister

Surrogates	%Recovery	Method Limits
Toluene-d8	99	70-130
1,2-Dichloroethane-d4	99	70-130
4-Bromofluorobenzene	108	70-130

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Client Sample ID: DC-VMP-24-15'

Lab ID#: 1608146A-08A

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	**17081530**	**Date of Collection:**	**8/8/16 11:25:00 AM**
Dil. Factor:	**9.43**	**Date of Analysis:**	**8/16/16 11:03 AM**

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Freon 12	4.7	180	23	880
Freon 114	4.7	Not Detected	33	Not Detected
Chloromethane	47	Not Detected	97	Not Detected
Vinyl Chloride	4.7	Not Detected	12	Not Detected
1,3-Butadiene	4.7	Not Detected	10	Not Detected
Bromomethane	47	Not Detected	180	Not Detected
Chloroethane	19	Not Detected	50	Not Detected
Freon 11	4.7	Not Detected	26	Not Detected
Ethanol	19	Not Detected	36	Not Detected
Freon 113	4.7	Not Detected	36	Not Detected
1,1-Dichloroethene	4.7	Not Detected	19	Not Detected
Acetone	47	47	110	110
2-Propanol	19	Not Detected	46	Not Detected
Carbon Disulfide	19	Not Detected	59	Not Detected
3-Chloropropene	19	Not Detected	59	Not Detected
Methylene Chloride	47	Not Detected	160	Not Detected
Methyl tert-butyl ether	19	Not Detected	68	Not Detected
trans-1,2-Dichloroethene	4.7	Not Detected	19	Not Detected
Hexane	4.7	28	17	99
1,1-Dichloroethane	4.7	Not Detected	19	Not Detected
2-Butanone (Methyl Ethyl Ketone)	19	Not Detected	56	Not Detected
cis-1,2-Dichloroethene	4.7	Not Detected	19	Not Detected
Tetrahydrofuran	4.7	Not Detected	14	Not Detected
Chloroform	4.7	13	23	63
1,1,1-Trichloroethane	4.7	Not Detected	26	Not Detected
Cyclohexane	4.7	42	16	150
Carbon Tetrachloride	4.7	Not Detected	30	Not Detected
2,2,4-Trimethylpentane	4.7	Not Detected	22	Not Detected
Benzene	4.7	6.7	15	21
1,2-Dichloroethane	4.7	Not Detected	19	Not Detected
Heptane	4.7	Not Detected	19	Not Detected
Trichloroethene	4.7	Not Detected	25	Not Detected
1,2-Dichloropropane	4.7	Not Detected	22	Not Detected
1,4-Dioxane	19	Not Detected	68	Not Detected
Bromodichloromethane	4.7	Not Detected	32	Not Detected
cis-1,3-Dichloropropene	4.7	Not Detected	21	Not Detected
4-Methyl-2-pentanone	4.7	Not Detected	19	Not Detected
Toluene	4.7	5.5	18	21
trans-1,3-Dichloropropene	4.7	Not Detected	21	Not Detected
1,1,2-Trichloroethane	4.7	Not Detected	26	Not Detected
Tetrachloroethene	4.7	Not Detected	32	Not Detected
2-Hexanone	19	Not Detected	77	Not Detected

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Client Sample ID: DC-VMP-24-15'

Lab ID#: 1608146A-08A

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	**17081530**	**Date of Collection:**	**8/8/16 11:25:00 AM**
Dil. Factor:	**9.43**	**Date of Analysis:**	**8/16/16 11:03 AM**

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Dibromochloromethane	4.7	Not Detected	40	Not Detected
1,2-Dibromoethane (EDB)	4.7	Not Detected	36	Not Detected
Chlorobenzene	4.7	Not Detected	22	Not Detected
Ethyl Benzene	4.7	Not Detected	20	Not Detected
m,p-Xylene	4.7	Not Detected	20	Not Detected
o-Xylene	4.7	Not Detected	20	Not Detected
Styrene	4.7	Not Detected	20	Not Detected
Bromoform	4.7	Not Detected	49	Not Detected
Cumene	4.7	Not Detected	23	Not Detected
1,1,2,2-Tetrachloroethane	4.7	Not Detected	32	Not Detected
Propylbenzene	4.7	Not Detected	23	Not Detected
4-Ethyltoluene	4.7	Not Detected	23	Not Detected
1,3,5-Trimethylbenzene	4.7	Not Detected	23	Not Detected
1,2,4-Trimethylbenzene	4.7	Not Detected	23	Not Detected
1,3-Dichlorobenzene	4.7	Not Detected	28	Not Detected
1,4-Dichlorobenzene	4.7	Not Detected	28	Not Detected
alpha-Chlorotoluene	4.7	Not Detected	24	Not Detected
1,2-Dichlorobenzene	4.7	Not Detected	28	Not Detected
1,2,4-Trichlorobenzene	19	Not Detected	140	Not Detected
Hexachlorobutadiene	19	Not Detected	200	Not Detected

Container Type: 1 Liter Summa Canister

Surrogates	%Recovery	Method Limits
Toluene-d8	98	70-130
1,2-Dichloroethane-d4	103	70-130
4-Bromofluorobenzene	107	70-130

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Client Sample ID: Lab Blank

Lab ID#: 1608146A-09A

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	**p081106**	**Date of Collection: NA**	
Dil. Factor:	**1.00**	**Date of Analysis: 8/11/16 01:47 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	2.0	Not Detected	7.2	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#: 1608146A-09A

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	**p081106**	**Date of Collection: NA**	
Dil. Factor:	**1.00**	**Date of Analysis: 8/11/16 01:47 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

Container Type: NA - Not Applicable

Surrogates	%Recovery	Method Limits
Toluene-d8	101	70-130
1,2-Dichloroethane-d4	94	70-130
4-Bromofluorobenzene	100	70-130

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Client Sample ID: Lab Blank

Lab ID#: 1608146A-09B

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	**17081515**	**Date of Collection: NA**	
Dil. Factor:	**1.00**	**Date of Analysis: 8/15/16 08:04 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	2.0	Not Detected	7.2	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#: 1608146A-09B

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	**17081515**	**Date of Collection: NA**	
Dil. Factor:	**1.00**	**Date of Analysis: 8/15/16 08:04 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

Container Type: NA - Not Applicable

Surrogates	%Recovery	Method Limits
Toluene-d8	100	70-130
1,2-Dichloroethane-d4	99	70-130
4-Bromofluorobenzene	102	70-130

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Client Sample ID: CCV

Lab ID#: 1608146A-10A

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	**p081102**	**Date of Collection: NA**	
Dil. Factor:	**1.00**	**Date of Analysis: 8/11/16 11:09 AM**	

Compound	%Recovery
Freon 12	98
Freon 114	98
Chloromethane	74
Vinyl Chloride	91
1,3-Butadiene	88
Bromomethane	94
Chloroethane	91
Freon 11	96
Ethanol	85
Freon 113	92
1,1-Dichloroethene	96
Acetone	91
2-Propanol	92
Carbon Disulfide	90
3-Chloropropene	95
Methylene Chloride	96
Methyl tert-butyl ether	96
trans-1,2-Dichloroethene	104
Hexane	101
1,1-Dichloroethane	96
2-Butanone (Methyl Ethyl Ketone)	97
cis-1,2-Dichloroethene	103
Tetrahydrofuran	99
Chloroform	101
1,1,1-Trichloroethane	96
Cyclohexane	99
Carbon Tetrachloride	106
2,2,4-Trimethylpentane	97
Benzene	95
1,2-Dichloroethane	98
Heptane	98
Trichloroethene	102
1,2-Dichloropropane	96
1,4-Dioxane	100
Bromodichloromethane	100
cis-1,3-Dichloropropene	98
4-Methyl-2-pentanone	98
Toluene	100
trans-1,3-Dichloropropene	99
1,1,2-Trichloroethane	106
Tetrachloroethene	102
2-Hexanone	101

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Client Sample ID: CCV

Lab ID#: 1608146A-10A

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	**p081102**	**Date of Collection: NA**	
Dil. Factor:	**1.00**	**Date of Analysis: 8/11/16 11:09 AM**	

Compound	%Recovery
Dibromochloromethane	101
1,2-Dibromoethane (EDB)	103
Chlorobenzene	104
Ethyl Benzene	101
m,p-Xylene	107
o-Xylene	105
Styrene	104
Bromoform	105
Cumene	104
1,1,2,2-Tetrachloroethane	98
Propylbenzene	102
4-Ethyltoluene	104
1,3,5-Trimethylbenzene	105
1,2,4-Trimethylbenzene	106
1,3-Dichlorobenzene	103
1,4-Dichlorobenzene	103
alpha-Chlorotoluene	99
1,2-Dichlorobenzene	103
1,2,4-Trichlorobenzene	105
Hexachlorobutadiene	106

Container Type: NA - Not Applicable

Surrogates	%Recovery	Method Limits
Toluene-d8	103	70-130
1,2-Dichloroethane-d4	93	70-130
4-Bromofluorobenzene	102	70-130

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Client Sample ID: CCV

Lab ID#: 1608146A-10B

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	**17081512**	**Date of Collection: NA**	
Dil. Factor:	**1.00**	**Date of Analysis: 8/15/16 06:05 PM**	

Compound	%Recovery
Freon 12	92
Freon 114	91
Chloromethane	73
Vinyl Chloride	82
1,3-Butadiene	80
Bromomethane	87
Chloroethane	82
Freon 11	90
Ethanol	83
Freon 113	87
1,1-Dichloroethene	86
Acetone	78
2-Propanol	79
Carbon Disulfide	84
3-Chloropropene	81
Methylene Chloride	82
Methyl tert-butyl ether	84
trans-1,2-Dichloroethene	88
Hexane	82
1,1-Dichloroethane	83
2-Butanone (Methyl Ethyl Ketone)	82
cis-1,2-Dichloroethene	88
Tetrahydrofuran	81
Chloroform	90
1,1,1-Trichloroethane	90
Cyclohexane	84
Carbon Tetrachloride	93
2,2,4-Trimethylpentane	83
Benzene	84
1,2-Dichloroethane	90
Heptane	87
Trichloroethene	87
1,2-Dichloropropane	81
1,4-Dioxane	87
Bromodichloromethane	88
cis-1,3-Dichloropropene	86
4-Methyl-2-pentanone	82
Toluene	87
trans-1,3-Dichloropropene	88
1,1,2-Trichloroethane	89
Tetrachloroethene	91
2-Hexanone	83

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Client Sample ID: CCV

Lab ID#: 1608146A-10B

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	**17081512**	**Date of Collection: NA**	
Dil. Factor:	**1.00**	**Date of Analysis: 8/15/16 06:05 PM**	

Compound	%Recovery
Dibromochloromethane	94
1,2-Dibromoethane (EDB)	90
Chlorobenzene	86
Ethyl Benzene	89
m,p-Xylene	90
o-Xylene	92
Styrene	93
Bromoform	95
Cumene	89
1,1,2,2-Tetrachloroethane	86
Propylbenzene	87
4-Ethyltoluene	93
1,3,5-Trimethylbenzene	93
1,2,4-Trimethylbenzene	90
1,3-Dichlorobenzene	91
1,4-Dichlorobenzene	92
alpha-Chlorotoluene	91
1,2-Dichlorobenzene	92
1,2,4-Trichlorobenzene	87
Hexachlorobutadiene	92

Container Type: NA - Not Applicable

Surrogates	%Recovery	Method Limits
Toluene-d8	100	70-130
1,2-Dichloroethane-d4	102	70-130
4-Bromofluorobenzene	107	70-130

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Client Sample ID: LCS

Lab ID#: 1608146A-11A

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	**p081103**	**Date of Collection: NA**	
Dil. Factor:	**1.00**	**Date of Analysis: 8/11/16 11:34 AM**	

Compound	%Recovery	Method Limits
Freon 12	114	70-130
Freon 114	113	70-130
Chloromethane	102	70-130
Vinyl Chloride	120	70-130
1,3-Butadiene	117	70-130
Bromomethane	104	70-130
Chloroethane	102	70-130
Freon 11	106	70-130
Ethanol	99	70-130
Freon 113	99	70-130
1,1-Dichloroethene	106	70-130
Acetone	106	70-130
2-Propanol	106	70-130
Carbon Disulfide	86	70-130
3-Chloropropene	100	70-130
Methylene Chloride	101	70-130
Methyl tert-butyl ether	105	70-130
trans-1,2-Dichloroethene	112	70-130
Hexane	108	70-130
1,1-Dichloroethane	103	70-130
2-Butanone (Methyl Ethyl Ketone)	104	70-130
cis-1,2-Dichloroethene	107	70-130
Tetrahydrofuran	110	70-130
Chloroform	107	70-130
1,1,1-Trichloroethane	105	70-130
Cyclohexane	110	70-130
Carbon Tetrachloride	117	70-130
2,2,4-Trimethylpentane	108	70-130
Benzene	103	70-130
1,2-Dichloroethane	108	70-130
Heptane	108	70-130
Trichloroethene	115	70-130
1,2-Dichloropropane	104	70-130
1,4-Dioxane	108	70-130
Bromodichloromethane	112	70-130
cis-1,3-Dichloropropene	104	70-130
4-Methyl-2-pentanone	112	70-130
Toluene	108	70-130
trans-1,3-Dichloropropene	104	70-130
1,1,2-Trichloroethane	108	70-130
Tetrachloroethene	103	70-130
2-Hexanone	107	70-130

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Client Sample ID: LCS

Lab ID#: 1608146A-11A

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	**p081103**	**Date of Collection: NA**	
Dil. Factor:	**1.00**	**Date of Analysis: 8/11/16 11:34 AM**	

Compound	%Recovery	Method Limits
Dibromochloromethane	106	70-130
1,2-Dibromoethane (EDB)	106	70-130
Chlorobenzene	106	70-130
Ethyl Benzene	108	70-130
m,p-Xylene	110	70-130
o-Xylene	113	70-130
Styrene	112	70-130
Bromoform	111	70-130
Cumene	110	70-130
1,1,2,2-Tetrachloroethane	100	70-130
Propylbenzene	110	70-130
4-Ethyltoluene	113	70-130
1,3,5-Trimethylbenzene	111	70-130
1,2,4-Trimethylbenzene	113	70-130
1,3-Dichlorobenzene	105	70-130
1,4-Dichlorobenzene	106	70-130
alpha-Chlorotoluene	109	70-130
1,2-Dichlorobenzene	107	70-130
1,2,4-Trichlorobenzene	115	70-130
Hexachlorobutadiene	116	70-130

Container Type: NA - Not Applicable

Surrogates	%Recovery	Method Limits
Toluene-d8	106	70-130
1,2-Dichloroethane-d4	100	70-130
4-Bromofluorobenzene	102	70-130

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Client Sample ID: LCSD

Lab ID#: 1608146A-11AA

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	**p081104**	**Date of Collection: NA**	
Dil. Factor:	**1.00**	**Date of Analysis: 8/11/16 11:58 AM**	

Compound	%Recovery	Method Limits
Freon 12	104	70-130
Freon 114	106	70-130
Chloromethane	98	70-130
Vinyl Chloride	97	70-130
1,3-Butadiene	95	70-130
Bromomethane	99	70-130
Chloroethane	101	70-130
Freon 11	98	70-130
Ethanol	95	70-130
Freon 113	92	70-130
1,1-Dichloroethene	101	70-130
Acetone	98	70-130
2-Propanol	97	70-130
Carbon Disulfide	80	70-130
3-Chloropropene	94	70-130
Methylene Chloride	95	70-130
Methyl tert-butyl ether	95	70-130
trans-1,2-Dichloroethene	111	70-130
Hexane	102	70-130
1,1-Dichloroethane	96	70-130
2-Butanone (Methyl Ethyl Ketone)	97	70-130
cis-1,2-Dichloroethene	100	70-130
Tetrahydrofuran	102	70-130
Chloroform	100	70-130
1,1,1-Trichloroethane	97	70-130
Cyclohexane	102	70-130
Carbon Tetrachloride	112	70-130
2,2,4-Trimethylpentane	100	70-130
Benzene	97	70-130
1,2-Dichloroethane	99	70-130
Heptane	103	70-130
Trichloroethene	108	70-130
1,2-Dichloropropane	93	70-130
1,4-Dioxane	103	70-130
Bromodichloromethane	104	70-130
cis-1,3-Dichloropropene	96	70-130
4-Methyl-2-pentanone	102	70-130
Toluene	103	70-130
trans-1,3-Dichloropropene	101	70-130
1,1,2-Trichloroethane	104	70-130
Tetrachloroethene	103	70-130
2-Hexanone	105	70-130

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Client Sample ID: LCSD

Lab ID#: 1608146A-11AA

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	**p081104**	**Date of Collection: NA**	
Dil. Factor:	**1.00**	**Date of Analysis: 8/11/16 11:58 AM**	

Compound	%Recovery	Method Limits
Dibromochloromethane	103	70-130
1,2-Dibromoethane (EDB)	104	70-130
Chlorobenzene	102	70-130
Ethyl Benzene	104	70-130
m,p-Xylene	108	70-130
o-Xylene	113	70-130
Styrene	108	70-130
Bromoform	110	70-130
Cumene	108	70-130
1,1,2,2-Tetrachloroethane	98	70-130
Propylbenzene	108	70-130
4-Ethyltoluene	109	70-130
1,3,5-Trimethylbenzene	113	70-130
1,2,4-Trimethylbenzene	112	70-130
1,3-Dichlorobenzene	106	70-130
1,4-Dichlorobenzene	105	70-130
alpha-Chlorotoluene	108	70-130
1,2-Dichlorobenzene	107	70-130
1,2,4-Trichlorobenzene	118	70-130
Hexachlorobutadiene	118	70-130

Container Type: NA - Not Applicable

Surrogates	%Recovery	Method Limits
Toluene-d8	100	70-130
1,2-Dichloroethane-d4	96	70-130
4-Bromofluorobenzene	101	70-130

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Client Sample ID: LCS

Lab ID#: 1608146A-11B

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	**17081513**	**Date of Collection: NA**	
Dil. Factor:	**1.00**	**Date of Analysis: 8/15/16 06:30 PM**	

Compound	%Recovery	Method Limits
Freon 12	101	70-130
Freon 114	101	70-130
Chloromethane	102	70-130
Vinyl Chloride	90	70-130
1,3-Butadiene	84	70-130
Bromomethane	99	70-130
Chloroethane	91	70-130
Freon 11	101	70-130
Ethanol	91	70-130
Freon 113	93	70-130
1,1-Dichloroethene	93	70-130
Acetone	84	70-130
2-Propanol	96	70-130
Carbon Disulfide	78	70-130
3-Chloropropene	81	70-130
Methylene Chloride	89	70-130
Methyl tert-butyl ether	91	70-130
trans-1,2-Dichloroethene	94	70-130
Hexane	88	70-130
1,1-Dichloroethane	89	70-130
2-Butanone (Methyl Ethyl Ketone)	89	70-130
cis-1,2-Dichloroethene	91	70-130
Tetrahydrofuran	87	70-130
Chloroform	94	70-130
1,1,1-Trichloroethane	97	70-130
Cyclohexane	92	70-130
Carbon Tetrachloride	101	70-130
2,2,4-Trimethylpentane	91	70-130
Benzene	91	70-130
1,2-Dichloroethane	99	70-130
Heptane	96	70-130
Trichloroethene	96	70-130
1,2-Dichloropropane	91	70-130
1,4-Dioxane	93	70-130
Bromodichloromethane	100	70-130
cis-1,3-Dichloropropene	89	70-130
4-Methyl-2-pentanone	92	70-130
Toluene	96	70-130
trans-1,3-Dichloropropene	96	70-130
1,1,2-Trichloroethane	96	70-130
Tetrachloroethene	98	70-130
2-Hexanone	91	70-130

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Client Sample ID: LCS

Lab ID#: 1608146A-11B

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	**17081513**	**Date of Collection: NA**	
Dil. Factor:	**1.00**	**Date of Analysis: 8/15/16 06:30 PM**	

Compound	%Recovery	Method Limits
Dibromochloromethane	101	70-130
1,2-Dibromoethane (EDB)	97	70-130
Chlorobenzene	93	70-130
Ethyl Benzene	98	70-130
m,p-Xylene	98	70-130
o-Xylene	102	70-130
Styrene	105	70-130
Bromoform	106	70-130
Cumene	100	70-130
1,1,2,2-Tetrachloroethane	94	70-130
Propylbenzene	98	70-130
4-Ethyltoluene	105	70-130
1,3,5-Trimethylbenzene	102	70-130
1,2,4-Trimethylbenzene	102	70-130
1,3-Dichlorobenzene	99	70-130
1,4-Dichlorobenzene	100	70-130
alpha-Chlorotoluene	101	70-130
1,2-Dichlorobenzene	100	70-130
1,2,4-Trichlorobenzene	95	70-130
Hexachlorobutadiene	100	70-130

Container Type: NA - Not Applicable

Surrogates	%Recovery	Method Limits
Toluene-d8	101	70-130
1,2-Dichloroethane-d4	102	70-130
4-Bromofluorobenzene	106	70-130

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Client Sample ID: LCSD

Lab ID#: 1608146A-11BB

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	**17081514**	**Date of Collection: NA**	
Dil. Factor:	**1.00**	**Date of Analysis: 8/15/16 06:54 PM**	

Compound	%Recovery	Method Limits
Freon 12	102	70-130
Freon 114	100	70-130
Chloromethane	101	70-130
Vinyl Chloride	90	70-130
1,3-Butadiene	85	70-130
Bromomethane	98	70-130
Chloroethane	89	70-130
Freon 11	98	70-130
Ethanol	93	70-130
Freon 113	93	70-130
1,1-Dichloroethene	94	70-130
Acetone	81	70-130
2-Propanol	94	70-130
Carbon Disulfide	78	70-130
3-Chloropropene	82	70-130
Methylene Chloride	88	70-130
Methyl tert-butyl ether	91	70-130
trans-1,2-Dichloroethene	94	70-130
Hexane	88	70-130
1,1-Dichloroethane	90	70-130
2-Butanone (Methyl Ethyl Ketone)	89	70-130
cis-1,2-Dichloroethene	89	70-130
Tetrahydrofuran	84	70-130
Chloroform	94	70-130
1,1,1-Trichloroethane	98	70-130
Cyclohexane	92	70-130
Carbon Tetrachloride	101	70-130
2,2,4-Trimethylpentane	92	70-130
Benzene	93	70-130
1,2-Dichloroethane	101	70-130
Heptane	97	70-130
Trichloroethene	96	70-130
1,2-Dichloropropane	90	70-130
1,4-Dioxane	95	70-130
Bromodichloromethane	100	70-130
cis-1,3-Dichloropropene	91	70-130
4-Methyl-2-pentanone	92	70-130
Toluene	97	70-130
trans-1,3-Dichloropropene	94	70-130
1,1,2-Trichloroethane	95	70-130
Tetrachloroethene	98	70-130
2-Hexanone	91	70-130

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Client Sample ID: LCSD

Lab ID#: 1608146A-11BB

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	**17081514**	**Date of Collection: NA**	
Dil. Factor:	**1.00**	**Date of Analysis: 8/15/16 06:54 PM**	

Compound	%Recovery	Method Limits
Dibromochloromethane	102	70-130
1,2-Dibromoethane (EDB)	97	70-130
Chlorobenzene	93	70-130
Ethyl Benzene	97	70-130
m,p-Xylene	100	70-130
o-Xylene	102	70-130
Styrene	106	70-130
Bromoform	105	70-130
Cumene	100	70-130
1,1,2,2-Tetrachloroethane	94	70-130
Propylbenzene	98	70-130
4-Ethyltoluene	107	70-130
1,3,5-Trimethylbenzene	101	70-130
1,2,4-Trimethylbenzene	101	70-130
1,3-Dichlorobenzene	100	70-130
1,4-Dichlorobenzene	101	70-130
alpha-Chlorotoluene	103	70-130
1,2-Dichlorobenzene	100	70-130
1,2,4-Trichlorobenzene	101	70-130
Hexachlorobutadiene	106	70-130

Container Type: NA - Not Applicable

Surrogates	%Recovery	Method Limits
Toluene-d8	100	70-130
1,2-Dichloroethane-d4	102	70-130
4-Bromofluorobenzene	106	70-130

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8/16/2016
Mr. Garrett Kuhl
Tetra Tech - GEO
2969 Prospect Park
Suite 100
Rancho Cordova CA 95670

Project Name: Terramar - 5100 Broadway
Project #: 117-7429001.05
Workorder #: 1608146B

Dear Mr. Garrett Kuhl

The following report includes the data for the above referenced project for sample(s) received on 8/9/2016 at Air Toxics Ltd.

The data and associated QC analyzed by Modified ASTM D-1946 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: Kelly Buettner at 916-985-1000 if you have any questions regarding the data in this report.

Regards,

Kelly Buettner

Project Manager

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WORK ORDER #: 1608146B

Work Order Summary

CLIENT:	Mr. Garrett Kuhl Tetra Tech - GEO 2969 Prospect Park Suite 100 Rancho Cordova, CA 95670	**BILL TO:**	Mr. Garrett Kuhl Tetra Tech - GEO 2969 Prospect Park Suite 100 Rancho Cordova, CA 95670
PHONE:	916-853-1800	**P.O. #**	117-7429001.05
FAX:	916-853-1860	**PROJECT #**	117-7429001.05 Terramar - 5100 Broadway
DATE RECEIVED:	08/09/2016	**CONTACT:**	Kelly Buettner
DATE COMPLETED:	08/16/2016		

FRACTION #	NAME	TEST	RECEIPT VAC./PRES.	FINAL PRESSURE
01A	DC-VMP-21-5'	Modified ASTM D-1946	4.7 "Hg	14.5 psi
02A	DC-VMP-21-10'	Modified ASTM D-1946	3.1 "Hg	14.7 psi
03A	DC-VMP-22-5'	Modified ASTM D-1946	4.7 "Hg	15 psi
04A	DC-VMP-22-13.5'	Modified ASTM D-1946	3.5 "Hg	15.2 psi
05A	DC-VMP-23-5'	Modified ASTM D-1946	5.5 "Hg	15.1 psi
06A	DC-VMP-23-15'	Modified ASTM D-1946	2.4 "Hg	14.9 psi
07A	DC-VMP-24-5'	Modified ASTM D-1946	3.7 "Hg	14.7 psi
08A	DC-VMP-24-15'	Modified ASTM D-1946	4.3 "Hg	15 psi
09A	Lab Blank	Modified ASTM D-1946	NA	NA
10A	LCS	Modified ASTM D-1946	NA	NA
10AA	LCSD	Modified ASTM D-1946	NA	NA

CERTIFIED BY: Heidi Hayes DATE: 08/16/16

Technical Director

Certification numbers: AZ Licensure AZ0775, NJ NELAP - CA016, NY NELAP - 11291,
TX NELAP - T104704434-15-9, UT NELAP CA0093332015-6, VA NELAP - 8113, WA NELAP - C935
Name of Accreditation Body: NELAP/ORELAP (Oregon Environmental Laboratory Accreditation Program)
Accreditation number: CA300005, Effective date: 10/18/2015, Expiration date: 10/17/2016.
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 - 95630
(916) 985-1000 . (800) 985-5955 . FAX (916) 985-1020

LABORATORY NARRATIVE
Modified ASTM D-1946
Tetra Tech - GEO
Workorder# 1608146B

Eight 1 Liter Summa Canister samples were received on August 09, 2016. The laboratory performed analysis via Modified ASTM Method D-1946 for Helium in air using GC/TCD. The method involves direct injection of 1.0 mL of sample.

Method modifications taken to run these samples are summarized in the table below. Specific project requirements may over-ride the ATL modifications.

Requirement	***ASTM D-1946***	***ATL Modifications***
Calibration	A single point calibration is performed using a reference standard closely matching the composition of the unknown.	A minimum of 5-point calibration curve is performed. Quantitation is based on average Response Factor.
Reference Standard	The composition of any reference standard must be known to within 0.01 mol % for any component.	The standards used by ATL are blended to a >/= 95% accuracy.
Sample Injection Volume	Components whose concentrations are in excess of 5 % should not be analyzed by using sample volumes greater than 0.5 mL.	The sample container is connected directly to a fixed volume sample loop of 1.0 mL on the GC. Linear range is defined by the calibration curve. Bags are loaded by vacuum.
Normalization	Normalize the mole percent values by multiplying each value by 100 and dividing by the sum of the original values. The sum of the original values should not differ from 100% by more than 1.0%.	Results are not normalized. The sum of the reported values can differ from 100% by as much as 15%, either due to analytical variability or an unusual sample matrix.
Precision	Precision requirements established at each concentration level.	Duplicates should agree within 25% RPD for detections > 5 X's the RL.

Receiving Notes

There were no receiving discrepancies.

Analytical Notes

There were no analytical discrepancies.

Definition of Data Qualifying Flags

Seven qualifiers may have been used on the data analysis sheets and indicate as follows:
B - Compound present in laboratory blank greater than reporting limit.
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 detection limit.
M - Reported value may be biased due to apparent matrix interferences.
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
NATURAL GAS ANALYSIS BY MODIFIED ASTM D-1946

Client Sample ID: DC-VMP-21-5'

Lab ID#: 1608146B-01A

No Detections Were Found.

Client Sample ID: DC-VMP-21-10'

Lab ID#: 1608146B-02A

No Detections Were Found.

Client Sample ID: DC-VMP-22-5'

Lab ID#: 1608146B-03A

No Detections Were Found.

Client Sample ID: DC-VMP-22-13.5'

Lab ID#: 1608146B-04A

No Detections Were Found.

Client Sample ID: DC-VMP-23-5'

Lab ID#: 1608146B-05A

No Detections Were Found.

Client Sample ID: DC-VMP-23-15'

Lab ID#: 1608146B-06A

No Detections Were Found.

Client Sample ID: DC-VMP-24-5'

Lab ID#: 1608146B-07A

No Detections Were Found.

Client Sample ID: DC-VMP-24-15'

Lab ID#: 1608146B-08A

No Detections Were Found.

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Client Sample ID: DC-VMP-21-5'

Lab ID#: 1608146B-01A

NATURAL GAS ANALYSIS BY MODIFIED ASTM D-1946

File Name:	**10081517c**	**Date of Collection: 8/8/16 12:25:00 PM**	
Dil. Factor:	**2.35**	**Date of Analysis: 8/15/16 03:52 PM**	

Compound	Rpt. Limit (%)	Amount (%)
Helium	0.12	Not Detected

Container Type: 1 Liter Summa Canister

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Client Sample ID: DC-VMP-21-10'

Lab ID#: 1608146B-02A

NATURAL GAS ANALYSIS BY MODIFIED ASTM D-1946

File Name:	**10081518c**	**Date of Collection: 8/8/16 12:26:00 PM**	
Dil. Factor:	**2.23**	**Date of Analysis: 8/15/16 04:48 PM**	

Compound	Rpt. Limit (%)	Amount (%)
Helium	0.11	Not Detected

Container Type: 1 Liter Summa Canister

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Client Sample ID: DC-VMP-22-5'

Lab ID#: 1608146B-03A

NATURAL GAS ANALYSIS BY MODIFIED ASTM D-1946

File Name:	**10081519c**	**Date of Collection: 8/8/16 1:11:00 PM**	
Dil. Factor:	**2.40**	**Date of Analysis: 8/15/16 05:15 PM**	

Compound	**Rpt. Limit (%)**	**Amount (%)**
Helium	0.12	Not Detected

Container Type: 1 Liter Summa Canister

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Client Sample ID: DC-VMP-22-13.5'

Lab ID#: 1608146B-04A

NATURAL GAS ANALYSIS BY MODIFIED ASTM D-1946

File Name:	**10081520c**	**Date of Collection: 8/8/16 1:10:00 PM**	
Dil. Factor:	**2.30**	**Date of Analysis: 8/15/16 05:52 PM**	

Compound	**Rpt. Limit (%)**	**Amount (%)**
Helium	0.12	Not Detected

Container Type: 1 Liter Summa Canister

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Client Sample ID: DC-VMP-23-5'

Lab ID#: 1608146B-05A

NATURAL GAS ANALYSIS BY MODIFIED ASTM D-1946

File Name:	**10081521c**	**Date of Collection: 8/8/16 1:54:00 PM**	
Dil. Factor:	**2.48**	**Date of Analysis: 8/15/16 06:25 PM**	

Compound	**Rpt. Limit (%)**	**Amount (%)**
Helium	0.12	Not Detected

Container Type: 1 Liter Summa Canister

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Client Sample ID: DC-VMP-23-15'

Lab ID#: 1608146B-06A

NATURAL GAS ANALYSIS BY MODIFIED ASTM D-1946

File Name:	**10081522c**	**Date of Collection: 8/8/16 1:56:00 PM**	
Dil. Factor:	**2.19**	**Date of Analysis: 8/15/16 07:01 PM**	

Compound	**Rpt. Limit (%)**	**Amount (%)**
Helium	0.11	Not Detected

Container Type: 1 Liter Summa Canister

eurofins | Air Toxics

Client Sample ID: DC-VMP-24-5'

Lab ID#: 1608146B-07A

NATURAL GAS ANALYSIS BY MODIFIED ASTM D-1946

File Name:	**10081523c**	**Date of Collection: 8/8/16 11:18:00 AM**	
Dil. Factor:	**2.28**	**Date of Analysis: 8/15/16 08:13 PM**	

Compound	**Rpt. Limit (%)**	**Amount (%)**
Helium	0.11	Not Detected

Container Type: 1 Liter Summa Canister

eurofins | Air Toxics

Client Sample ID: DC-VMP-24-15'

Lab ID#: 1608146B-08A

NATURAL GAS ANALYSIS BY MODIFIED ASTM D-1946

File Name:	**10081524c**	**Date of Collection: 8/8/16 11:25:00 AM**	
Dil. Factor:	**2.36**	**Date of Analysis: 8/15/16 08:48 PM**	

Compound	**Rpt. Limit (%)**	**Amount (%)**
Helium	0.12	Not Detected

Container Type: 1 Liter Summa Canister

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Client Sample ID: Lab Blank

Lab ID#: 1608146B-09A

NATURAL GAS ANALYSIS BY MODIFIED ASTM D-1946

File Name:	**10081503c**	**Date of Collection: NA**	
Dil. Factor:	**1.00**	**Date of Analysis: 8/15/16 08:19 AM**	

Compound	**Rpt. Limit (%)**	**Amount (%)**
Helium	0.050	Not Detected

Container Type: NA - Not Applicable

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Client Sample ID: LCS

Lab ID#: 1608146B-10A

NATURAL GAS ANALYSIS BY MODIFIED ASTM D-1946

File Name:	**10081502c**	**Date of Collection: NA**	
Dil. Factor:	**1.00**	**Date of Analysis: 8/15/16 07:52 AM**	

Compound	%Recovery	Method Limits
Helium	102	85-115

Container Type: NA - Not Applicable

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Client Sample ID: LCSD

Lab ID#: 1608146B-10AA

NATURAL GAS ANALYSIS BY MODIFIED ASTM D-1946

File Name:	**10081525c**	**Date of Collection: NA**	
Dil. Factor:	**1.00**	**Date of Analysis: 8/15/16 09:23 PM**	

Compound	%Recovery	Method Limits
Helium	101	85-115

Container Type: NA - Not Applicable

APPENDIX E
Historical Data Tables

TABLE 1
2001 Analytical Results Summary - Soil
Rockridge Shopping Center
5100 Broadway
Oakland, California

Sample Location	Date Sampled	Depth (feet, bgs)	TPH - GC/MS (mg/Kg)	TPH - EPA 8015M (mg/Kg)		VOCs - EPA 8260B (µg/Kg)										
			Gasoline	Diesel	Motor Oil	Acetone	MTBE	Benzene	Freon 12	n-Butylbenzene	PCE	TCE	cis-1,2-DCE	trans-1,2-DCE	1,1-DCE	VC
SB-1	6/12/2001	10	**1.6**	< 1.0	< 1.0	< 100	< 5.0	< 5.0	< 10	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 10
SB-2	6/12/2001	10	---	---	---	< 100	< 5.0	< 5.0	< 10	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 10
SB-3	~~6/12/2001~~	~~4~~	~~---~~	~~---~~	~~---~~	~~< 100~~	~~< 5.0~~	~~< 5.0~~	~~< 10~~	~~< 5.0~~	~~**14**~~	~~< 5.0~~	~~< 5.0~~	~~< 5.0~~	~~< 5.0~~	~~< 10~~
SB-4	~~6/12/2001~~	~~3.5~~	~~---~~	~~---~~	~~---~~	~~< 100~~	~~< 5.0~~	~~< 5.0~~	~~< 10~~	~~< 5.0~~	~~**17**~~	~~< 5.0~~	~~< 5.0~~	~~< 5.0~~	~~< 5.0~~	~~< 10~~
SB-5	6/12/2001	6	---	---	---	< 100	< 5.0	< 5.0	< 10	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 10
SB-6	6/12/2001	5	---	---	---	---	---	---	---	---	---	---	---	---	---	---
SB-7	6/12/2001	5	---	---	---	---	---	---	---	---	---	---	---	---	---	---
	6/12/2001	9	---	---	---	---	---	---	---	---	---	---	---	---	---	---
SB-8	7/20/2001	NS	---	---	---	---	---	---	---	---	---	---	---	---	---	---
SB-9	7/20/2001	5	---	---	---	< 100	< 5.0	< 5.0	< 10	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 10
SB-10	7/20/2001	NOT COMPLETED - PUNCTURED FIRE WATER MAIN AT 1.5 FEET BELOW GRADE														
SB-11	7/20/2001	5	---	---	---	< 100	< 5.0	< 5.0	< 10	< 5.0	**6.3**	< 5.0	< 5.0	< 5.0	< 5.0	< 10
	7/20/2001	10	---	---	---	< 500	< 25	< 25	< 25	< 25	< 25	< 25	< 25	< 25	< 25	< 50
	7/20/2001	15	---	---	---	< 500	< 25	< 25	< 25	< 25	< 25	< 25	< 25	< 25	< 25	< 50
ESL - Direct Exposure			740	230	140,000	260,000	180,000	1,000	NV	NV	2,700	8,000	90,000	730,000	400,000	150
ESL - Leaching to Groundwater			3,400	3,600	NV	500,000	840	49	NV	NV	420	510	3,500	39,000	4,300	10

Notes:

MTBE	Methyl-tertiary-butyl-ether
PCE	Tetrachloroethene
TCE	Trichloroethene
DCE	Dichloroethene
VC	Vinyl chloride
---	Not Analyzed
NS	No Sample - insufficent material
ESL	Environmental Screening Level, Regional Water Quality Control Board, Tier 1 ESLs, Summary of Soil ESLs, Direct Exposure (Commercial Soil) and Leaching to Groundwater (nondrinking), February 2016 (Rev. 3).
µg/Kg	micrograms per kilogram or parts per billion (ppb).
NV	No Value
	Indicates value exceeds one or more comparison criteria.
~~**14**~~	Indicates data point excavated (November 2015).

TABLE 2
2001 Analytical Results Summary - Groundwater
Rockridge Shopping Center
5100 Broadway
Oakland, California

		VOCs - EPA 8260B (µg/L)										
Sample Location	**Date Sampled**	**Acetone**	**MTBE**	**Benzene**	**Freon 12**	**n-Butylbenzene**	**PCE**	**TCE**	**cis-1,2-DCE**	**trans-1,2-DCE**	**1,1-DCE**	**VC**
SB-1-W	6/12/2001	NS - groundwater not encountered at 20 feet (total depth).										
SB-2-W	6/12/2001	< 20	< 1.0	**1.7**	**14**	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 2.0
SB-3-W	6/12/2001	NS - groundwater not encountered at 4.5-feet (total depth).										
SB-4-W	6/12/2001	NS - groundwater not encountered at 4-feet (total depth).										
SB-5-W	6/12/2001	NS - groundwater not encountered at 10 feet (total depth).										
SB-6-W	7/20/2001	NS - groundwater not encountered; bedrock at 9 feet.										
SB-7-W	7/20/2001	NS - groundwater not encountered; bedrock at 11 feet.										
SB-8-W	7/20/2001	NS - groundwater not encountered; bedrock at 7 feet.										
SB-9-W	7/20/2001	< 100	**48**	< 5.0	< 10	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 10
SB-10-W	7/20/2001	NS - Punctured water main at 1.5 feet below grade.										
SB-11-W	7/20/2001	NS - groundwater not encountered; bedrock at 23 feet.										
ESL - Vapor Intrusion		290,000,000	11,000	9.7	NV	NV	640	1,300	950	11,000	1,400	530
MCL		NV	13	1	NV	NV	5	5	6	10	6	0.5

Notes:

MTBE	Methyl-tertiary-butyl-ether
PCE	Tetrachloroethene
TCE	Trichloroethene
DCE	Dichloroethene
VC	Vinyl chloride
NS	No sample
ESL	Environmental Screening Level, Regional Water Quality Control Board, Tier 1 ESLs, Summary of Groundwater ESLs, Groundwater Vapor Intrusion Human Health Risk Levels, Shallow Groundwater, Commercial, February 2016 (Rev. 3).
MCL	California State Water Resouces Control Board, Maxium Contaminant Level, Primary MCL, on-line database, 6/22/16.
µg/L	micrograms per liter or parts per billion (ppb).
NV	No Value
	Exceeds ESL or MCL Value

TABLE 1

2014 Analytical Results Summary - Soil
Rockridge Shopping Center
5100 Broadway
Oakland, California

			TPH - GC/MS (mg/Kg)	TPH - EPA 8015M (mg/Kg)		VOCs - EPA 8260B (µg/Kg)									
Sample Location	**Date Sampled**	**Depth (feet, bgs)**	**Gasoline**	**Diesel**	**Motor Oil**	**Acetone**	**MTBE**	**Benzene**	**Freon 12**	**PCE**	**TCE**	**cis-1,2-DCE**	**trans-1,2-DCE**	**1,1-DCE**	**VC**
SB-1	5/28/2014	15	< 0.2	**29**	**260**	< 100	< 5.0	< 5.0	< 10	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 10
SB-2	5/28/2014	10.5	< 0.2	< 1.0	< 1.0	< 100	< 5.0	< 5.0	< 10	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 10
SB-3	5/28/2014	12	< 0.2	< 1.0	< 1.0	< 100	< 5.0	< 5.0	< 10	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 10
SS-VMP-1	~~6/27/2014~~	~~1.5~~	~~< 0.2~~	~~< 1.0~~	~~**10**~~	~~< 100~~	~~< 5.0~~	~~< 5.0~~	~~< 10~~	~~< 5.0~~	~~< 5.0~~	~~< 5.0~~	~~< 5.0~~	~~< 5.0~~	~~< 10~~
ESL - Direct Exposure			740	230	140,000	260,000	180,000	1,000	NV	2,700	8,000	90,000	730,000	400,000	150
ESL - Leaching to Groundwater			3,400	3,600	NV	500,000	840	49	NV	420	510	3,500	39,000	4,300	10

Notes:

MTBE	Methyl-tertiary-butyl-ether
PCE	Tetrachloroethene
TCE	Trichloroethene
DCE	Dichloroethene
VC	Vinyl chloride
ESL	Environmental Screening Level, Regional Water Quality Control Board, Tier 1 ESLs, Summary of Soil ESLs, Direct Exposure (Commercial Soil) and Leaching to Groundwater (nondrinking), February 2016 (Rev. 3).
µg/Kg	micrograms per kilogram or parts per billion (ppb).
mg/Kg	milligrams per kilogram or parts per million (ppm).
NV	No Value
~~**10**~~	Indicates data point excavated (November 2015).

TABLE 2

2014 Analytical Results Summary - Groundwater
Rockridge Shopping Center
5100 Broadway
Oakland, California

		TPH GC-FID (µg/L)	TPH EPA 8015M (mg/L)		VOCs - EPA 8260B (µg/L)										
Boring	**Date**	**Gasoline**	**Diesel**	**Motor Oil**	**Acetone**	**MTBE**	**Benzene**	**Dichlorodifluoromethane (Freon 12)**	**n-Butylbenzene**	**PCE**	**TCE**	**cis-1,2-DCE**	**trans-1,2-DCE**	**1,1-DCE**	**VC**
SB-1	5/28/2014	< 50	**0.096**	**0.70**	**12**	< 0.5	< 0.5	**4.6**	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 1.0
SB-2	5/28/2014	NS - groundwater not encountered; bedrock at 10.5 feet.													
SB-3	5/28/2014	NS - groundwater not encountered; bedrock at 12 feet.													
Vapor Intrusion ESL - Commercial		NV	NV	NV	290,000,000	11,000	10	NV	NV	640	1,300	950	11,000	1,400	530
MCL		NV	NV	NV	NV	13	1	NV	NV	5	5	6	10	6	0.5

Notes:

NS	No Sample.
mg/L	milligrams per liter or parts per million (ppm).
µg/L	micrograms per liter or parts per billion (ppb).
mg/L	milligrams per liter or parts per million (ppm).
VOCs	volatile organic compounds.
ESL	Environmental Screening Level, Regional Water Quality Control Board, Tier 1 ESLs, Summary of Groundwater ESLs, Groundwater Vapor Intrusion Human Health Risk Levels, Shallow Groundwater, Commercial, February 2016 (Rev. 3).
MCL	California State Water Resouces Control Board, Maxium Contaminant Level, Primary MCL, on-line database, 6/22/16.
NV	No Value

TABLE 3

2014 Analytical Results Summary - Soil Vapor
Rockridge Shopping Center
5100 Broadway
Oakland, California

			VOCs - EPA TO-15 (µg/m3)																															Modified ASTM D-1946
Sample Location	Date	Depth (feet, bgs)	1,3-Butadiene	Acetone	Carbon Disulfide	Freon 12	Vinyl Chloride	1,1-Dichloroethene	Methyl tert-butyl ether (MTBE)	trans-1,2-Dichlorethene	Hexane	cis-1,2-Dichloroethene	Tetrahydrafuran	Chloroform	Cyclohexane	2,2,4-Trimethylpentane	Benzene	Heptane	Trichloroethene (TCE)	Bromodichloromethane	4-Methyl-2-pentanone	Toluene	1,1,2-Trichloroethane	Tetrachloroethene (PCE)	Dibromochloromethane	Chlorobenzene	Ethyl Benzene	m,p-Xylene	o-Xylene	Styrene	Cumene (Isopropylbenzene)	1,1,2,2-Tetrachloroethane	Propylbenzene	4-Ethyltoluene	1,3,5-Trimethylbenzene	1,2,4-Trimethylbenzene	Leak Compound Helium (%)
VMP-1 (1)	5/30/2014	3.75 - 4	**100**	**540**	**530**	< 100	< 54	< 84	< 76	< 84	**1,800**	< 84	< 62	< 100	< 73	**3,200**	**270**	**3,200**	< 110	< 140	< 86	**410**	< 120	< 140	< 180	< 97	< 92	**190**	< 92	< 90	**130**	< 140 UJ	< 100	< 100	< 100	< 100	**1.2**
~~VMP-2~~	~~5/30/2014~~	~~1.75 - 2~~	~~< 5.0~~	~~< 54~~	~~< 28~~	~~130~~	~~140~~	~~10~~	~~8.4~~	~~14~~	~~35~~	~~100~~	~~7.7~~	~~420~~	~~28~~	~~11~~	~~24~~	~~15~~	~~230 J~~	~~24~~	~~14~~	~~24~~	~~12~~	3,800	~~23~~	~~12~~	~~16~~	~~40~~	~~23~~	~~9.7~~	~~32~~	~~16 J~~	~~14~~	~~32~~	~~24~~	~~48~~	< 0.11
~~VMP-3~~	~~5/30/2014~~	~~4.75 - 5~~	~~< 5.0~~	~~< 54~~	~~< 28~~	~~< 11~~	~~< 5.8~~	~~< 9.1~~	~~< 8.2~~	~~< 9.0~~	~~< 8.0~~	~~< 9.0~~	~~< 6.7~~	~~15~~	~~< 7.9~~	~~< 11~~	~~< 7.3~~	~~< 9.4~~	~~120 J~~	~~< 15~~	~~< 9.2~~	~~< 8.6~~	~~< 12~~	3,600	~~< 19~~	~~< 10~~	~~< 9.9~~	~~< 9.9~~	~~< 9.9~~	~~< 9.7~~	~~< 11~~	~~< 16 UJ~~	~~< 11~~	~~< 11~~	~~< 11~~	~~< 11~~	< 0.11
VMP-4	5/30/2014	4.75 - 5	< 2.4	**27**	< 14	< 5.4	< 2.8	< 4.3	< 3.9	< 4.3	< 3.8	< 4.3	< 3.2	**59**	< 3.7	< 5.1	**16**	< 4.4	**26 J**	< 7.3	< 4.4	< 4.1	< 5.9	**420**	< 9.2	< 5.0	< 4.7	< 4.7	< 4.7	< 4.6	**50**	< 7.4 UJ	< 5.3	< 5.3	< 5.3	< 5.3	< 0.11
VMP-5	5/30/2014	4.75 - 5	< 2.4	**27**	< 13	< 5.3	< 2.8	< 4.3	< 3.9	< 4.3	< 3.8	< 4.3	< 3.2	**56**	< 3.7	< 5.0	**15**	< 4.4	**25 J**	< 7.2	< 4.4	< 4.1	< 5.9	**390**	< 9.2	< 5.0	< 4.7	< 4.7	< 4.7	< 4.6	**47**	< 7.4 UJ	< 5.3	< 5.3	< 5.3	< 5.3	< 0.11
VMP-6	5/30/2014	4.75 - 5	< 120	< 1,200	< 660	< 260	< 140	< 210	< 190	< 210	< 190	< 210	< 160	< 260	< 180	< 250	< 170	< 220	< 280	< 360	< 220	**280**	< 290	< 360	< 450	< 240	< 230	< 230	< 230	< 220	< 260	< 360	< 260	< 260	< 260	< 260	< 0.10
VMP-7	5/30/2014	4.75 - 5	< 15	**240**	< 86	< 34	< 18	< 27	< 25	< 27	**380**	< 27	< 20	< 34	**890**	< 32	**75**	**190**	< 37	< 46	< 28	**42**	< 38	< 47	< 59	< 32	< 30	**47**	< 30	< 29	< 34	< 47 UJ	< 34	< 34	< 34	**54**	< 0.12
~~SS-VMP-1~~	~~6/30/2014~~	~~1.25-1.5~~	~~< 2.5~~	~~< 27~~	~~< 14~~	~~< 5.6~~	~~< 2.9~~	~~< 4.5~~	~~< 4.1~~	~~< 4.5~~	~~< 4.0~~	~~< 4.5~~	~~< 3.3~~	~~< 5.5~~	~~< 3.9~~	~~< 5.3~~	~~44~~	~~< 4.6~~	~~12~~	~~< 7.6~~	~~< 4.6~~	~~< 4.2~~	~~< 6.2~~	~~51~~	~~< 9.6~~	~~< 5.2~~	~~< 4.9~~	~~< 4.9~~	~~< 4.9~~	~~< 4.8~~	~~79~~	~~< 7.8~~	~~< 5.6~~	~~< 5.6~~	~~< 5.6~~	~~< 5.6~~	< 0.11
	ESL		NV	140,000,000	NV	NV	160	310,000	47,000	350,000	NV	35,000	NV	530	NV	NV	420	NV	3,000	330	NV	1,300,000	770	2,100	NV	220,000	4,900	440,000	440,000	3,900,000	NV	210	NV	NV	NV	NV	NA
	CHHSL		NV	NV	NV	NV	95	NV	29,000	240,000	NV	120,000	NV	NV	NV	NV	280	NV	4,400	NV	NV	890,000	NV	1,600	NV	NV	3,600	########	########	NV	NV	NV	NV	NV	NV	NV	NA

Notes:

(1) Sample purging was successful; however, sample flow stopped shortly after beginning the sample, leaving a vacuum of 21"Hg in the canister. Sample analysis was still possible with elevated reporting limits.

J Estimated value due to bias in the CCV.

UJ Analyte associated with low bias in the CCV and/or LCS.

µg/m3 micrograms per cubic meter

ESL Environmental Screening Level, Regional Water Quality Control Board, Tier 1 ESLs, Summary of Vapor ESLs, Subslab/Soil Gas Vapor Intrusion: Human Health Risk Levels, Commerical/Industrial, February 2016 (Rev. 3).

CHHSL California Human Health Screening Level (CHHSL), Office of Environmental Health Hazard Assessment (OEHHA), Table 2; Soil-Gas Screening Values, September 23, 2010.

NV No Value

NA Not Applicable

TABLE 1
2015 Analytical Results Summary - Soil
Former Rockridge Cleaners Area
5100 Broadway (Former 5114 tenant space)
Oakland, California

Sample Location	Date Sampled	Depth (feet, bgs)	VOCs - EPA 8260B (µg/Kg)								
			Acetone	Freon 12	n-Butylbenzene	PCE	TCE	cis-1,2-DCE	trans-1,2-DCE	1,1-DCE	VC
Shallow Soil - Immediate Vicinty of Former Dry Cleaner and Adjacent Former Tenant Spaces											
DC-SB-1	~~7/30/2015~~	~~1~~	~~< 100~~	~~< 10~~	~~< 5.0~~	~~**6.0**~~	~~< 5.0~~	~~**5.0**~~	~~< 5.0~~	~~< 5.0~~	~~< 10~~
	~~7/30/2015~~	~~5~~	~~< 100~~	~~< 10~~	~~< 5.0~~	~~< 5.0~~	~~< 5.0~~	~~< 5.0~~	~~< 5.0~~	~~< 5.0~~	~~< 10~~
DC-SB-2	~~7/30/2015~~	~~1~~	~~< 100~~	~~< 10~~	~~< 5.0~~	~~**36**~~	~~**21**~~	~~**25**~~	~~< 5.0~~	~~< 5.0~~	~~< 10~~
	~~7/30/2015~~	~~5~~	~~< 100~~	~~< 10~~	~~< 5.0~~	~~< 5.0~~	~~**36**~~	~~**27**~~	~~< 5.0~~	~~< 5.0~~	~~< 10~~
DC-SB-3	~~7/30/2015~~	~~1~~	~~< 100~~	~~< 10~~	~~< 5.0~~	~~**11**~~	~~< 5.0~~	~~< 5.0~~	~~< 5.0~~	~~< 5.0~~	~~< 10~~
	~~7/30/2015~~	~~5~~	~~< 100~~	~~< 10~~	~~< 5.0~~	~~**12**~~	~~**12**~~	~~**26**~~	~~< 5.0~~	~~< 5.0~~	~~< 10~~
DC-SB-4	~~7/30/2015~~	~~1~~	~~< 100~~	~~< 10~~	~~< 5.0~~	~~**10**~~	~~**15**~~	~~**16**~~	~~< 5.0~~	~~< 5.0~~	~~< 10~~
	~~7/30/2015~~	~~5~~	~~< 100~~	~~< 10~~	~~< 5.0~~	~~**6.9**~~	~~**19**~~	~~**23**~~	~~< 5.0~~	~~< 5.0~~	~~< 10~~
DC-SB-5	~~7/30/2015~~	~~1~~	~~< 100~~	~~< 10~~	~~< 5.0~~	~~< 5.0~~	~~< 5.0~~	~~< 5.0~~	~~< 5.0~~	~~< 5.0~~	~~< 10~~
	~~7/30/2015~~	~~5~~	~~< 100~~	~~< 10~~	~~< 5.0~~	~~**19**~~	~~**9.2**~~	~~**23**~~	~~< 5.0~~	~~< 5.0~~	~~< 10~~
DC-SB-6	~~7/30/2015~~	~~1~~	~~< 100~~	~~< 10~~	~~< 5.0~~	~~**21**~~	~~**10**~~	~~**8.0**~~	~~< 5.0~~	~~< 5.0~~	~~< 10~~
	~~7/30/2015~~	~~5~~	~~< 100~~	~~< 10~~	~~< 5.0~~	~~**12**~~	~~**17**~~	~~**23**~~	~~< 5.0~~	~~< 5.0~~	~~< 10~~
DC-SB-7	~~7/30/2015~~	~~1~~	~~< 100~~	~~< 10~~	~~< 5.0~~	~~**6.8**~~	~~< 5.0~~	~~**5.2**~~	~~< 5.0~~	~~< 5.0~~	~~< 10~~
	~~7/30/2015~~	~~5~~	~~< 100~~	~~< 10~~	~~< 5.0~~	~~**7.5**~~	~~< 5.0~~	~~**6.0**~~	~~< 5.0~~	~~< 5.0~~	~~< 10~~
DC-SB-8	~~7/30/2015~~	~~1~~	~~< 100~~	~~< 10~~	~~< 5.0~~	~~**7.8**~~	~~< 5.0~~	~~< 5.0~~	~~< 5.0~~	~~< 5.0~~	~~< 10~~
	~~7/30/2015~~	~~5~~	~~< 100~~	~~< 10~~	~~< 5.0~~	~~**8.1**~~	~~**12**~~	~~**6.3**~~	~~< 5.0~~	~~< 5.0~~	~~< 10~~
DC-SB-9	~~7/30/2015~~	~~1~~	~~< 100~~	~~< 10~~	~~< 5.0~~	~~**54**~~	~~**6.4**~~	~~< 5.0~~	~~< 5.0~~	~~< 5.0~~	~~< 10~~
	~~7/30/2015~~	~~5~~	~~< 100~~	~~< 10~~	~~< 5.0~~	~~**39**~~	~~**8.7**~~	~~**6.0**~~	~~< 5.0~~	~~< 5.0~~	~~< 10~~
DC-SB-10	~~7/30/2015~~	~~1~~	~~< 100~~	~~< 10~~	~~< 5.0~~	~~**2,700**~~	~~**5.6**~~	~~< 5.0~~	~~< 5.0~~	~~< 5.0~~	~~< 10~~
	~~7/30/2015~~	~~5~~	~~< 100~~	~~< 10~~	~~< 5.0~~	~~**1,100**~~	~~**12**~~	~~**5.6**~~	~~< 5.0~~	~~< 5.0~~	~~< 10~~
DC-SB-11	7/30/2015	1	< 100	< 10	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 10
	7/30/2015	5	< 100	< 10	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 10
DC-SB-12	7/30/2015	1	< 100	< 10	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 10
	7/30/2015	5	< 100	< 10	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 10
DC-SB-13	~~7/30/2015~~	~~1~~	~~< 100~~	~~< 10~~	~~< 5.0~~	~~< 5.0~~	~~< 5.0~~	~~< 5.0~~	~~< 5.0~~	~~< 5.0~~	~~< 10~~
	~~7/30/2015~~	~~5~~	~~< 100~~	~~< 10~~	~~< 5.0~~	~~< 5.0~~	~~**8.6**~~	~~**8.5**~~	~~< 5.0~~	~~< 5.0~~	~~< 10~~
DC-SB-14	~~7/30/2015~~	~~1~~	~~< 100~~	~~< 10~~	~~< 5.0~~	~~< 5.0~~	~~< 5.0~~	~~< 5.0~~	~~< 5.0~~	~~< 5.0~~	~~< 10~~
	~~7/30/2015~~	~~5~~	~~< 100~~	~~< 10~~	~~< 5.0~~	~~< 5.0~~	~~< 5.0~~	~~< 5.0~~	~~< 5.0~~	~~< 5.0~~	~~< 10~~

TABLE 1
2015 Analytical Results Summary - Soil
Former Rockridge Cleaners Area
5100 Broadway (Former 5114 tenant space)
Oakland, California

Sample Location	Date Sampled	Depth (feet, bgs)	VOCs - EPA 8260B (µg/Kg)								
			Acetone	Freon 12	n-Butylbenzene	PCE	TCE	cis-1,2-DCE	trans-1,2-DCE	1,1-DCE	VC
Deeper Soil - Immediate Vicinity of Former Dry Cleaner and Adjacent Former Tenant Spaces, and Step-Out Locations											
DC-SB-15	9/8/2015	12	**120**	< 10	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 10
	9/8/2015	17	< 100	< 10	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 10
DC-SB-16	9/8/2015	8	< 100	< 10	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 10
	9/8/2015	13	< 100	< 10	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 10
	9/8/2015	15	**150**	< 10	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 10
DC-SB-17	9/8/2015	12	< 100	< 10	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 10
	9/8/2015	15	< 100	< 10	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 10
DC-SB-18	9/8/2015	11.5	< 100	< 10	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 10
	9/8/2015	17	**130**	< 10	**5.3**	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 10
DC-SB-19	9/9/2015	NO SOIL SAMPLES - ENCOUNTERED BEDROCK AT 4 feet, bgs									
DC-SB-20	9/9/2015	6	< 100	< 10	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 10
	9/9/2015	10	< 100	< 10	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 10
	9/9/2015	17	< 100	< 10	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 10
DC-SB-21	9/9/2015	7	< 100	< 10	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 10
	9/9/2015	13.5	< 100	< 10	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 10
	9/9/2015	17	< 100	< 10	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 10
DC-SB-22	9/9/2015	NOT COMPLETED - WATER LINE/NEARBY UTILITY CONFLICTS									
DC-SB-23	9/10/2015	7.5	< 100	< 10	< 5.0	< 5.0	**20**	< 5.0	< 5.0	< 5.0	< 10
	9/10/2015	14.5	< 100	< 10	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 10
DC-SB-24	9/10/2015	9.5	**650**	< 10	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 10
	9/10/2015	13.5	**170**	< 10	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 10
	9/10/2015	17	**200**	< 10	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 10
DC-SB-25	9/10/2015	9	**220**	< 10	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 10
	9/10/2015	11.5	**130**	< 10	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 10
	9/10/2015	16.5	**220**	< 10	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 10
	9/10/2015	19	< 100	< 10	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 10

TABLE 1
2015 Analytical Results Summary - Soil
Former Rockridge Cleaners Area
5100 Broadway (Former 5114 tenant space)
Oakland, California

Sample Location	Date Sampled	Depth (feet, bgs)	VOCs - EPA 8260B (µg/Kg)								
			Acetone	Freon 12	n-Butylbenzene	PCE	TCE	cis-1,2-DCE	trans-1,2-DCE	1,1-DCE	VC
DC-SB-26	9/10/2015	9.5	**140**	< 10	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 10
	9/10/2015	14.5	**110**	< 10	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 10
ESL - Direct Exposure			260,000	NV	NV	2,700	8,000	90,000	730,000	400,000	150
ESL - Leaching to Groundwater			500,000	NV	NV	420	510	3,500	39,000	4,300	10

Notes:

Soil borings DC-SB-1 through DC-SB-14 compeleted on bare ground, shortly after building slab and asphalt out back were removed (July 27-29, 2015). Former building pad was 4-5" thick concrete, and aspahlt out back was 8-10-inches thick.

PCE	Tetrachloroethene
TCE	Trichloroethene
DCE	Dichloroethene
VC	Vinyl chloride
ESL	Environmental Screening Level, Regional Water Quality Control Board, Tier 1 ESLs, Summary of Soil ESLs, Direct Exposure (Commercial Soil) and Leaching to Groundwater (nondrinking), February 2016 (Rev. 3).
µg/Kg	micrograms per kilogram or parts per billion (ppb).
NV	No Value
	Indicates value exceeds one or more comparison criteria.
~~**2,700**~~	Indicates data point excavated (November 2015).

TABLE 2

2015 Analytical Results Summary - Soil Vapor
Former Rockridge Cleaners Area
5100 Broadway (Former 5114 tenant space)
Oakland, California

Sample Location	Date	Depth (feet, bgs)	VOCs - EPA TO-15 (µg/m3)									Modified ASTM D-1946
			Acetone	Freon 12	Benzene	Tetrachloroethene (PCE)	Trichloroethene (TCE)	cis-1,2-Dichloroethene	trans-1,2-Dichlorethene	1,1-Dichloroethene	Vinyl Chloride	Helium (%)
Shallow Soil Vapor - Immediate Vicinty of Former Dry Cleaner and Adjacent Former Tenant Spaces												
DC-VMP-1	~~8/4/2015~~	~~4.75 - 5~~	~~No Sample (1)~~									NA
DC-VMP-2	~~8/4/2015~~	~~4.75 - 5~~	~~< 520~~	~~**600**~~	~~< 180~~	~~**85,000**~~	~~**130,000**~~	~~**120,000**~~	~~**2,300**~~	~~**680**~~	~~**8,100**~~	< 0.11
DC-VMP-3	~~8/4/2015~~	~~4.75 - 5~~	~~< 140~~	~~**79**~~	~~**34**~~	~~**11,000**~~	~~**4,000**~~	~~**4,400**~~	~~< 23~~	~~< 23~~	~~**30**~~	**5.4**
DC-VMP-4	~~8/4/2015~~	~~4.75 - 5~~	~~< 140~~	~~< 72~~	~~< 46~~	~~**54,000**~~	~~**41,000**~~	~~**2,600**~~	~~< 57~~	~~< 57~~	~~< 37~~	< 0.12
DC-VMP-5	~~8/4/2015~~	~~4.75 - 5~~	~~< 130~~	~~**2,000**~~	~~< 44~~	~~**45,000**~~	~~**39,000**~~	~~**24,000**~~	~~**1,400**~~	~~**280**~~	~~**7,100**~~	< 0.11
DC-VMP-6	~~8/4/2015~~	~~4.75 - 5~~	~~< 35,000~~	~~< 18,000~~	~~< 12,000~~	~~**19,000,000**~~	~~**99,000**~~	~~**65,000**~~	~~< 15,000~~	~~< 15,000~~	~~**13,000**~~	< 0.12
DC-VMP-7	8/4/2015	4.75 - 5	**53**	**12**	< 3.7	**140**	< 6.3	< 4.6	< 4.6	< 4.6	< 3.0	< 0.14
DC-VMP-8	~~8/4/2015~~	~~4.75 - 5~~	~~< 270~~	~~**3,300**~~	~~< 37~~	~~**380**~~	~~**720**~~	~~**7,400**~~	~~**380**~~	~~**55**~~	~~**6,100**~~	< 0.11
Shallow and Deep Soil Vapor - Immediate Vicinty of Former Dry Cleaner and Adjacent Former Tenant Spaces, and Step-Out Locations												
DC-VMP-9	9/15/2015	4.75 - 5	**34**	< 6.2	**15**	< 8.5	< 6.8	< 5.0	< 5.0	< 5.0	**4.8**	< 0.13
	9/15/2015	13.75 - 14	**30**	< 6.2	**12**	< 8.5	< 6.8	**12**	< 5.0	< 5.0	**13**	< 0.13
DC-VMP-10	~~9/15/2015~~	~~4.75 - 5~~	~~< 120~~	~~< 25~~	~~< 16~~	~~**100**~~	~~**220**~~	~~**1,700**~~	~~**110**~~	~~**29**~~	~~**5,300**~~	< 0.13
		12.75 - 13	No Sample (1)									NA
DC-VMP-11	~~9/15/2015~~	~~4.75 - 5~~	~~**630**~~	~~< 120~~	~~< 78~~	~~**720**~~	~~**1,300**~~	~~**4,300**~~	~~**250**~~	~~**< 96**~~	~~**17,000**~~	< 0.12
	9/15/2015	12.75 - 13	**54**	< 6.5	**8.4**	**39**	**40**	**30**	< 5.2	< 5.2	**13**	< 0.13
DC-VMP-12	~~9/15/2015~~	~~4.75 - 5~~	~~< 380~~	~~< 78~~	~~< 51~~	~~**1,600**~~	~~**12,000**~~	~~**17,000**~~	~~**620**~~	~~**140**~~	~~**12,000**~~	< 0.12
		13.75 - 14	No Sample (1)									NA
DC-VMP-13	9/15/2015	4.75 - 5	< 48	< 10.0	**8.9**	**1,500**	**31**	< 8.0	< 8.0	< 8.0	< 5.2	< 0.20

TABLE 2

2015 Analytical Results Summary - Soil Vapor
Former Rockridge Cleaners Area
5100 Broadway (Former 5114 tenant space)
Oakland, California

Sample Location	Date	Depth (feet, bgs)	VOCs - EPA TO-15 (µg/m3) Acetone	Freon 12	Benzene	Tetrachloroethene (PCE)	Trichloroethene (TCE)	cis-1,2-Dichloroethene	trans-1,2-Dichlorethene	1,1-Dichloroethene	Vinyl Chloride	Modified ASTM D-1946 Helium (%)
DC-VMP-14	9/15/2015	4.75 - 5	**330**	< 5.8	**63**	**17**	**38**	**95**	**33**	**6.9**	**210**	< 0.12
	9/15/2015	13.75 - 14	**150**	< 6.0	**18**	**17**	**50**	**90**	**17**	**12**	**500**	< 0.12
DC-VMP-15	9/15/2015	4.75 - 5	**150**	< 5.8	**54**	**680**	**310**	**1,200**	**100**	**13**	**850**	< 0.12
	9/15/2015	12.75 - 13	**88**	< 6.0	**11**	**9.1**	**7.3**	**18**	< 4.8	< 4.8	**35**	< 0.12
DC-VMP-16			Not completed due to utility conflicts									NA
DC-VMP-17	9/15/2015	4.75 - 5	**57**	< 6.1	**13**	**24**	< 6.6	< 4.9	< 4.9	< 4.9	< 3.2	**0.39**
	9/15/2015	12.75 - 13	**120**	< 6.1	**16**	**10**	< 6.6	**7.3**	< 4.9	< 4.9	**31**	< 0.12
DC-VMP-18	9/15/2015	4.75 - 5	**50**	< 6.2	**15**	**160**	**250**	**1,100**	**30**	< 5.0	**22**	**1.3**
	9/15/2015	12.75 - 13	< 30	< 6.2	**5.8**	**48**	**56**	**190**	**5.8**	< 5.0	**4.1**	< 0.13
DC-VMP-19	9/15/2015	4.75 - 5	**40**	< 5.8	**10**	< 7.9	< 6.3	< 4.6	< 4.6	< 4.6	< 3.0	**0.90**
	9/15/2015	10.75 - 11	**96**	< 6.1	**9.7**	< 8.4	< 6.6	**11**	< 4.9	< 4.9	**21**	< 0.12
DC-VMP-20	9/15/2015	4.75 - 5	59	< 6.1	**16**	**120**	**8.1**	< 4.9	< 4.9	< 4.9	**5.6**	< 0.12
	9/15/2015	9.75 - 10	< 580	< 120	< 77	< 160	< 130	< 96	< 96	< 96	< 62	< 0.12
	ESL		140,000,000	NV	420	2,100	3,000	35,000	350,000	310,000	160	NA
	CHHSL		NV	NV	280	1,600	4,400	120,000	240,000	NV	95	NA

Notes:

NOTE: Additional compounds detected below screening values; see laboratory data sheets.

(1) No sample due to water in probe. For VMP-1, leaking water valve boxes in immediate vicinty are suspected source of water, damaged during recent building demolition.

µg/m3 micrograms per cubic meter

ESL Environmental Screening Level, Regional Water Quality Control Board, Tier 1 ESLs, Summary of Vapor ESLs, Subslab/Soil Gas Vapor Intrusion: Human Health Risk Levels, Commerical/Industrial, February 2016 (Rev. 3).

CHHSL California Human Health Screening Level (CHHSL), Office of Environmental Health Hazard Assessment (OEHHA), Table 2; Soil-Gas Screening Values, September 23, 2010.

NV No Value

TABLE 2

2015 Analytical Results Summary - Soil Vapor
Former Rockridge Cleaners Area
5100 Broadway (Former 5114 tenant space)
Oakland, California

Sample Location	Date	Depth (feet, bgs)	VOCs - EPA TO-15 (µg/m3)									Modified ASTM D-1946
			Acetone	Freon 12	Benzene	Tetrachloroethene (PCE)	Trichloroethene (TCE)	cis-1,2-Dichloroethene	trans-1,2-Dichlorethene	1,1-Dichloroethene	Vinyl Chloride	Helium (%)

NA Not Applicable

Indicates value exceeds one or more comparison criteria.

~~**2,700**~~ Indicates data point excavated (November 2015).

TABLE 3
2015 Analytical Results Summary - Groundwater
Former Rockridge Cleaners Area
5100 Broadway (Former 5114 tenant space)
Oakland, California

		VOCs - EPA 8260B (µg/L)								
Sample Location	**Date Sampled**	**Acetone**	**Freon 12**	**n-Butylbenzene**	**PCE**	**TCE**	**cis-1,2-DCE**	**trans-1,2-DCE**	**1,1-DCE**	**VC**
DC-SB-15-GW	9/8/2015	< 100	**17**	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 10
DC-SB-16-GW	9/8/2015	< 100	**47**	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 10
DC-SB-17-GW	9/8/2015	< 100	< 10	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 10
DC-SB-18-GW	9/8/2015	< 100	**21**	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 10
DC-SB-19-GW	9/9/2015	NO SAMPLE - ENCOUNTERED BEDROCK AT 4 feet, bgs								
DC-SB-20-GW	9/9/2015	< 100	**47**	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 10
DC-SB-21-GW	9/9/2015	< 100	**39**	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 10
DC-SB-22-GW	9/9/2015	NOT COMPLETED - WATER LINE/NEARBY UTILITY CONFLICTS								
DC-SB-23-GW	9/10/2015	< 100	**24**	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 10
DC-SB-24-GW	9/10/2015	< 100	< 10	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 10
DC-SB-25-GW	9/10/2015	< 100	< 10	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 10
DC-SB-26-GW	9/10/2015	< 100	**75**	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 10
Vapor Intrusion ESL - Commercial		290,000,000	NV	NV	640	1,300	950	11,000	1,400	530
MCL		NV	NV	NV	5	5	6	10	6	0.5

Notes:

PCE	Tetrachloroethene
TCE	Trichloroethene
DCE	Dichloroethene
VC	Vinyl chloride
ESL	Environmental Screening Level, Regional Water Quality Control Board, Tier 1 ESLs, Summary of Groundwater ESLs, Groundwater Vapor Intrusion Human Health Risk Levels, Shallow Groundwater, Commercial, February 2016 (Rev. 3).
MCL	California State Water Resouces Control Board, Maxium Contaminant Level, Primary MCL, on-line database, 6/22/16.
µg/L	micrograms per liter or parts per billion (ppb).
NV	No Value
	Exceeds ESL or MCL Value

TABLE 1
2015 Analytical Results Summary - Post-Excavation Confirmation Soil Samples
Former Rockridge Cleaners Area
5100 Broadway (Former 5114 tenant space)
Oakland, California

			VOCs - EPA 8260B (µg/Kg)								
Sample Location	**Date Sampled**	**Depth (feet, bgs)**	**Acetone**	**Freon 12 (dichlorodifluor-omethane)**	**n-Butylbenzene**	**PCE**	**TCE**	**cis-1,2-DCE**	**trans-1,2-DCE**	**1,1-DCE**	**VC**
Large Excavation Area											
EXSW1	11/4/2015	1	< 100	< 5	< 5	**54**	**53**	< 5	< 5	< 5	< 5
	11/4/2015	3	< 100	< 5	< 5	**10**	**18**	**9.4**	< 5	< 5	< 5
EXSW2	11/4/2015	1	< 100	< 5	< 5	**~~56~~**	< 5	< 5	< 5	< 5	< 5
	11/4/2015	3	< 400	< 20	< 20	**~~480~~**	< 20	< 20	< 20	< 20	< 20
EXSW3	11/4/2015	1	< 100	< 5	< 5	**18**	< 5	< 5	< 5	< 5	< 5
	11/4/2015	3	< 100	< 5	< 5	**36**	< 5	< 5	< 5	< 5	< 5
EXSW4	11/4/2015	1	< 100	< 5	< 5	**7.2**	< 5	< 5	< 5	< 5	< 5
	11/4/2015	3	< 100	< 5	< 5	**6.9**	< 5	< 5	< 5	< 5	< 5
EXSW5	11/4/2015	1	< 100	< 5	< 5	**16**	< 5	< 5	< 5	< 5	< 5
	11/4/2015	3	< 100	< 5	< 5	**9.4**	< 5	< 5	< 5	< 5	< 5
EXSW6	11/4/2015	1	< 100	< 5	< 5	**16**	< 5	< 5	< 5	< 5	< 5
	11/4/2015	3	< 100	< 5	< 5	**24**	**5.7**	< 5	< 5	< 5	< 5
EXSW7	11/4/2015	1	< 100	< 5	< 5	**14**	< 5	< 5	< 5	< 5	< 5
	11/4/2015	3	< 100	< 5	< 5	**10**	< 5	< 5	< 5	< 5	< 5
EXSW8	11/4/2015	1	< 100	< 5	< 5	**13**	< 5	< 5	< 5	< 5	< 5
	11/4/2015	3	< 100	< 5	< 5	**21**	**13**	< 5	< 5	< 5	< 5
EXSW9	11/4/2015	1	< 100	< 5	< 5	**7.1**	< 5	**7.5**	< 5	< 5	< 5
	11/4/2015	3	< 100	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5
EXB1	11/4/2015	6	< 100	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5
EXB2	11/4/2015	6	< 100	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5
EXB3	11/4/2015	6	< 100	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5
EXB4	11/4/2015	6	< 100	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5
EXB5	11/4/2015	6	< 100	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5
EXB6	11/4/2015	6	< 100	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5
EXB7	11/4/2015	6	< 100	< 5	< 5	< 5	**7.9**	**6.6**	< 5	< 5	< 5
EXB8	11/4/2015	8	< 100	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5
Trench Excavation											
EXSW10	11/10/2015	1	< 100	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5
	11/10/2015	3	< 100	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5
EXSW11	11/10/2015	1	< 100	< 5	< 5	**9.7**	< 5	< 5	< 5	< 5	< 5
EXSW12	11/10/2015	1	< 100	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5
	11/10/2015	3	< 100	< 5	< 5	**5.7**	< 5	< 5	< 5	< 5	< 5

TABLE 1
2015 Analytical Results Summary - Post-Excavation Confirmation Soil Samples
Former Rockridge Cleaners Area
5100 Broadway (Former 5114 tenant space)
Oakland, California

			VOCs - EPA 8260B (µg/Kg)								
Sample Location	**Date Sampled**	**Depth (feet, bgs)**	**Acetone**	**Freon 12 (dichlorodifluor-omethane)**	**n-Butylbenzene**	**PCE**	**TCE**	**cis-1,2-DCE**	**trans-1,2-DCE**	**1,1-DCE**	**VC**
EXSW13	11/10/2015	1	< 100	< 5	< 5	**5.4**	< 5	< 5	< 5	< 5	< 5
	11/10/2015	3	< 100	< 5	< 5	**17**	< 5	< 5	< 5	< 5	< 5
EXSW14	11/10/2015	1	< 100	< 5	< 5	**91**	< 5	< 5	< 5	< 5	< 5
	11/10/2015	3	< 100	< 5	< 5	**52**	< 5	< 5	< 5	< 5	< 5
EXSW15	11/10/2015	1	< 100	< 5	< 5	**79**	< 5	< 5	< 5	< 5	< 5
	11/10/2015	3	< 100	< 5	< 5	**100**	< 5	< 5	< 5	< 5	< 5
EXSW16	11/10/2015	1	< 100	< 5	< 5	**170**	< 5	< 5	< 5	< 5	< 5
	11/10/2015	3	< 100	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5
EXSW17	11/10/2015	1	< 100	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5
	11/10/2015	3	< 100	< 5	< 5	**5.3**	< 5	< 5	< 5	< 5	< 5
EXB9	11/10/2015	8.5	< 100	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5
EXB10	11/10/2015	8	< 100	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5
EXB11	11/10/2015	7.5	< 100	< 5	< 5	**6.1**	< 5	< 5	< 5	< 5	< 5
EXB12	11/10/2015	7	< 100	< 5	< 5	**22**	< 5	< 5	< 5	< 5	< 5
EXB13	11/10/2015	6.5	< 100	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5
EXB14	11/10/2015	6.5	< 100	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5
ESL - Commercial (<3m / >3m)			500 / 500	NV	NV	700 / 700	460 / 460	190 / 190	670 / 670	1,000 / 1,000	85 / 85
CHHSL - Commercial			NV	NV	NV	NV	NV	NV	NV	NV	NV

Notes:

ESL	Environmental Screening Level, Regional Water Quality Control Board, Table A-2 (< 3m) and C-2 (> 3m), Commercial Land Use (groundwater is a current or potential drinking water resource), Interim Final, December 2013.
CHHSL	California Human Health Screening Level, Department of Toxic Substances Control (DTSC) / Office of Environmental Health Hazard Assessment (OEHHA), soil screening numbers for Commercial land use, Table 1, September 2010.
µg/Kg	micrograms per kilogram or parts per billion (ppb).
NV	No Value
	Exceeds ESL Value
~~**480**~~	Indicates data point excavated (July 2016).
PCE	Tetrachloroethene
TCE	Trichloroethene
cis-1,2-DCE	cis-1,2-Dichloroethene
trans-1,2-DCE	trans-1,2-Dichloroethene
1,1-DCE	1,1-Dichloroethene
VC	Vinyl chloride

TABLE 1

2016 Analytical Results Summary - Soil Vapor
Former Rockridge Cleaners Area
5100 Broadway (Former 5114 tenant space)
Oakland, California

Sample Location	Date	Depth (feet, bgs)	VOCs - EPA TO-15 (µg/m3)									Modified ASTM D-1946
			Acetone	Freon 12	Benzene	Tetrachloroethene (PCE)	Trichloroethene (TCE)	cis-1,2-Dichloroethene	trans-1,2-Dichlorethene	1,1-Dichloroethene	Vinyl Chloride	Helium (%)
DC-VMP-21	8/8/2016	4.75 - 5	**35**	**190**	**23**	**2,100**	**740**	**220**	**25**	< 4.7	**5.4**	< 0.12
	8/8/2016	9.75 - 10	**290**	**580**	**89**	**1,800**	**440**	**300**	**21**	< 9.0	**12**	< 0.11
DC-VMP-22	8/8/2016	4.75 - 5	< 28	**71**	**17**	**100**	**26**	**11**	< 4.8	< 4.8	< 3.1	< 0.12
	8/8/2016	13.25 - 13.5	< 110	**4,800**	**56**	< 31	< 25	**34**	< 18	< 18	**62**	< 0.12
DC-VMP-23	8/8/2016	4.75 - 5	< 29	**29**	**16**	**100**	**62**	**25**	< 4.9	< 4.9	< 3.2	< 0.12
	8/8/2016	14.75 - 15	**41**	**430**	**44**	< 7.4	**6.1**	**12**	< 4.3	< 4.3	**15**	< 0.11
DC-VMP-24	8/8/2016	4.75 - 5	**55**	**1,400**	**23**	< 7.7	< 6.1	**28**	< 4.5	< 4.5	**22**	< 0.11
	8/8/2016	14.75 - 15	110	880	21	< 32	< 25	< 19	< 19	< 19	< 12	< 0.12
ESL			140,000,000	NV	420	2,100	3,000	35,000	350,000	310,000	160	NA
CHHSL			NV	NV	280	1,600	4,400	120,000	240,000	NV	95	NA

Notes:

NOTE:	Additional compounds detected below screening values; see laboratory data sheets.
µg/m3	micrograms per cubic meter
ESL	Environmental Screening Level, Regional Water Quality Control Board, Tier 1 ESLs, Summary of Vapor ESLs, Subslab/Soil Gas Vapor Intrusion: Human Health Risk Levels, Commerical/Industrial, February 2016 (Rev. 3).
CHHSL	California Human Health Screening Level (CHHSL), Office of Environmental Health Hazard Assessment (OEHHA), Table 2; Soil-Gas Screening Values, September 23, 2010.
NV	No Value
NA	Not Applicable
	Indicates value exceeds one or more comparison criteria.