

# SNOW CLEANERS INC.

EXPERT FINISHING • ALL LEATHER GOODS

## MAIN OFFICE & PLANT

38 WEST SONORA ST.  
STOCKTON, CA 95203

209 / 547-1454  
September 24, 2012



RECEIVED

10:00 am, Sep 27, 2012

Alameda County  
Environmental Health

Mr. Jerry Wickham  
Alameda County Department of Environmental Health  
1131 Harbor Bay Parkway, Suite 250  
Alameda, CA 94502

**SUBJECT: GROUNDWATER MONITORING AND SAMPLING  
REPORT CERTIFICATION  
ACEH Case # RO 0000357  
Snow Cleaners  
2678 Coolidge Avenue  
Oakland, CA**

Dear Mr. Wickham:

You will find enclosed one copy of the following document prepared by P&D Environmental, Inc.

- Groundwater Monitoring and Sampling Report (January Through June 2012) dated September 24, 2012 (document 0298.R15).

I declare, under penalty of perjury, that the information and/or recommendations contained in the above-mentioned work plan for the subject site is true and correct to the best of my knowledge.

Should you have any questions, please do not hesitate to call me at (800) 818-7669.

Cordially,  
Snow Cleaners, Inc.

Harold Turner  
President

Cc: Mr. LeRoy Griffin, Oakland Fire Department, Emergency Services, 250 Frank Ogawa Plaza, Suite 3341, Oakland, CA 94612 (with enclosure)

0298.L76

# **P&D ENVIRONMENTAL, INC.**

55 Santa Clara Ave, Suite 240  
Oakland, CA 94610  
(510) 658-6916

September 24, 2012  
Report 0298.R15

Mr. Harold Turner  
Snow Cleaners, Inc.  
2678 Coolidge Avenue  
Oakland, CA

**SUBJECT: GROUNDWATER MONITORING AND SAMPLING REPORT  
(JANUARY THROUGH JUNE 2012)  
ACDEH Case # RO 0000357  
Snow Cleaners  
2678 Coolidge Avenue  
Oakland, CA**

Dear Mr. Turner:

P&D Environmental Inc. (P&D) has prepared this report documenting the monitoring and sampling of four groundwater monitoring wells designated as MW1 through MW4 located near the subject site, and four groundwater extraction wells designated as DP1 through DP4 located at the subject site. All of the wells in the groundwater monitoring network were monitored and sampled on June 29, 2012. A Site Location Map is attached as Figure 1, and a Site Vicinity Map Detail showing all of the well locations is attached as Figure 2.

## **BACKGROUND**

Underground Storage Tanks (USTs) associated with the former dry cleaning facility were removed and associated limited excavation of the UST pit was performed by others in 1990. In January, 1994 two groundwater monitoring wells (MW1 and MW2) were installed by others at offsite locations in Davis Street approximately five feet south of the former UST pit. P&D subsequently oversaw the installation of groundwater monitoring wells MW3 and MW4 at offsite locations on September 9, 2008. A detailed discussion of the site background and historical monitoring, sampling, and investigation are provided in P&D's Subsurface Investigation Report dated August 19, 2009 (document 0298.R6). On September 27 through 29, 2010 P&D oversaw the installation of dual-phase extraction wells DP1 through DP4, and vapor extraction wells VE1 and VE2. A detailed discussion of well installation is provided in P&D's Well Installation Report dated December 2, 2010 (document 0298.R11). The initial monitoring and sampling of the new wells was performed on October 15, 2010 in conjunction with the periodic monitoring and sampling of the existing offsite groundwater monitoring wells. Documentation of the October 15, 2010 sampling event is provided in P&D's Semi-Annual Groundwater Monitoring and Sampling Report (document 0298.R12) dated December 17, 2010.

In December 2010 a vapor extraction feasibility test was performed at well DP1. During 2011 a discharge permit was obtained from East Bay Municipal Utility District (EBMUD), a pump was

installed in well DP1, and groundwater extraction feasibility testing was performed. Documentation of the vapor extraction and groundwater extraction feasibility testing is provided in P&D's Vapor Extraction and Groundwater Extraction Feasibility Test Report (document 0298.R13) dated January 24, 2012.

### FIELD ACTIVITIES

P&D personnel monitored offsite groundwater monitoring wells MW1, MW2, MW3, and MW4, and onsite extraction wells DP1, DP2, DP3, and DP4 for depth to water on June 29, 2012 to the nearest 0.01 foot using an electric water level indicator. A summary of the depth to water measurements is attached with this report as Table 1.

In well DP1 the depth to water and depth to free product were measured to the nearest 1/32-inch with a steel tape and water-finding and product-finding paste. No measureable free product thickness was encountered in well DP1.

Following the measurement of depth to water on June 29, 2012, each of the groundwater monitoring and extraction wells were purged with a peristaltic pump for a minimum of 15 minutes prior to being sampled. Purging was performed at low flow rates to minimize turbulence and minimize the likelihood of sediments in the samples. During purging operations, the field parameters of electrical conductivity, temperature, pH, dissolved oxygen, oxidation reduction potential, turbidity, and depth to water were monitored and recorded on a groundwater monitoring/well purging data sheet. Petroleum hydrocarbon odors were detected on the purge water from well DP2. Petroleum hydrocarbon sheen was not observed on the purge water from any of the wells. Records of the field parameters measured during well purging are included with this report.

Once the field parameters were observed to stabilize, and the wells had been purged for a minimum of 15 minutes, water samples were collected directly from the discharge tubing from the pump. The samples were transferred to 40-milliliter glass Volatile Organic Analysis (VOA) vials and 1-liter amber glass bottles that were preserved with hydrochloric acid and sealed with Teflon-lined screw caps. The VOA vials were overturned and tapped to assure that no air bubbles were present. The VOA vials and bottles were then labeled and transferred to a cooler with ice, pending transport to the laboratory. Chain of custody procedures were observed for all sample handling. Records of the field parameters measured during well purging are attached with this report.

### GEOLOGY AND HYDROGEOLOGY

Review of Figure 1 shows that the site is located near the top of a northeasterly-trending interfluvial (ridge-like) structure. The topography in the area surrounding the site slopes to the east and south. Peralta Creek is located approximately 500 feet to the east and approximately 400 feet to the southeast of the subject site. The creek flows towards the southwest. Portions of the creek located directly to the east of the site are lined with concrete. Based on evaluation of the concrete channel for Peralta Creek that is located beneath Davis Street, the water that flows through Peralta Hacienda Historic Park is not the same water that flows in Peralta Creek on the north side of Davis Street.

The site geology and hydrogeology are complex, and a detailed discussion of the site geology and hydrogeology is provided in P&D's Subsurface Investigation Report dated August 19, 2009 (document 0298.R6). The interpreted groundwater flow direction in the vicinity of the site was developed using multiple lines of evidence (topography, lithology, soil discoloration, contaminant concentration distribution, and the measured depth to water in the different wells).

Groundwater is interpreted to generally move in an unconfined A-water-bearing zone in the immediate vicinity of the site northeastwards and eastwards in the vicinity of the former UST pit and then towards the southeast (towards Peralta Creek) to the north of the former UST pit, based on the elevations and slope of the surface of the fine-grained materials that are encountered beginning at a depth of approximately 25 feet below the ground surface (bgs) in the vicinity of the site. Based on the presence of coarse-grained materials at depths greater than 30 feet bgs that are located between borehole B6 and well MW3, groundwater is interpreted to move vertically in a southerly-trending paleo-channel from the unconfined A-water-bearing zone to a confined B-water-bearing zone in the area between the northeast side of well DP2 at the subject site and 34th Avenue, and then move horizontally in the B-water-bearing zone to the south towards Peralta Creek and Peralta Hacienda Historical Park.

Review of Table 1 and Figure 2 shows that historically there has been a difference in water table elevation of as much as approximately 4.5 to 5.0 feet between wells DP2 and DP1. The horizontal distance is approximately 18 feet between these two wells, and the location of this change in water table elevation corresponds with an increase in depth to fine-grained materials which are encountered at a depth of approximately 22 to 25 feet bgs between well DP2 and Davis Street to the southwest. Based on the depth of approximately 22 to 25 feet bgs to fine-grained materials between well DP2 and Davis Street to the southwest, the thickness of the water layer overlying the fine-grained materials to the southwest of DP2 ranges seasonally between approximately 1 and 4 feet. The depth to fine-grained materials and the saturated thickness of the water-bearing sediments to the northeast of DP2 is unknown. A discussion of geologic cross sections in P&D's Well Installation Report dated December 2, 2010 (document 0298.R11) identifies a east-northeasterly-trending channel in the surface of the fine-grained materials that drains the area beneath the former UST pit towards the northeast and towards the change in water table elevation of approximately 4.5 to 5.0 feet that has historically been located between wells DP2 and DP1.

Based on water level information available (see Table 1) the historically measured depth to water in the offsite groundwater monitoring wells MW1 through MW4 has ranged from 11.49 to 18.83 feet in well MW2; 16.95 to 22.97 feet in well MW3 (after September 19, 2008); 19.07 to 23.92 feet in well MW1; and 21.18 to 25.86 feet in well MW4. Review of historical groundwater monitoring well water levels shows that the water levels in wells MW2 and MW3 (screened in the A-water-bearing zone) have been consistently similar, and that the water levels in wells MW1 and MW4 (screened in the B-water-bearing zone) have been consistently similar, with a difference of approximately 6 to 7 feet in the elevations between the two sets of wells during dry season months and a difference of approximately 8 to 10 feet during wet season months. The water elevations in the wells that are screened in the A-water-bearing zone are higher than the water elevations in the wells that are screened in the B-water-bearing zone. Additionally, both the A-water-bearing zone and the B-water-bearing zone respond similarly to seasonal changes in water levels, with a seasonal vertical range of water elevations to date of approximately 7.0 feet in wells MW2 and MW3, and approximately 4.0

feet in wells MW1 and MW4. Historical well water levels are shown for August 2009 through June 2012 in Figure 3 to illustrate the relationships of water level changes for wells MW1 through MW4.

Figure 4 shows water level changes in all of the wells for October 2010 through June 2012 (wells DP1 through DP4 were not installed until September 2010). Review of Figure 4 shows the following.

- Water levels in wells MW2, DP2 and DP3 are similar.
- Water levels and changes in water levels in wells DP1 and DP4 are similar (the water level in well DP1 was depressed in June 2011 because of groundwater extraction in well DP1).
- Water levels and changes in water levels in wells MW1 and MW4 are similar.
- Changes in water levels in wells DP2 and DP3 are similar.

Water level monitoring was not performed in any of the wells between the beginning of December 2011 and the end of June 2012. For this reason elevated water levels historically measured in the wells during this time period were not recorded and are not shown on Figures 3 and 4.

## LABORATORY RESULTS

All of the groundwater samples were analyzed at McCampbell Analytical, Inc. (McCampbell) of Pacheco, California. McCampbell is a State-accredited hazardous waste testing laboratory. The samples were analyzed for Total Petroleum Hydrocarbons as Gasoline (TPH-G) and for Total Petroleum Hydrocarbons as Stoddard solvent (TPH-SS) by EPA Methods 5030B in conjunction with modified EPA Method 8015B, and for Total Petroleum Hydrocarbons as Diesel (TPH-D) and for Total Petroleum Hydrocarbons as Bunker Oil (TPH-BO) by EPA Method 3510C in conjunction with EPA Method 8015B. In addition, all of the samples were analyzed for Volatile Organic Compounds (VOCs) including Methyl tert-Butyl Ether (MTBE); benzene, toluene, ethylbenzene, and total xylenes (BTEX); and halogenated volatile organic compounds (HVOCs) by EPA Method 8260B. The groundwater sample results are summarized in Table 2, and copies of the laboratory analytical reports and chain of custody documentation are attached with this report.

No analytes were detected in the groundwater sample collected from well MW3, and no analytes were detected in the groundwater samples collected from wells MW1 and MW4 with the exceptions of 1.2 micrograms per liter (ug/L) tetrachloroethene (PCE), 3.0 ug/L cis-1,2-dichloroethene (cis-1,2-DCE), and 1.2 ug/L chloroform in well MW1 and 12 ug/L cis-1,2-DCE and 1.2 ug/L chloroform in well MW4.

TPH-G was detected in the samples collected from wells MW2, DP1, DP2, DP3, and DP4 at concentrations of 600, 1,100, 1,500, 770, and 53 ug/L, respectively; TPH-SS was detected in the same five wells at concentrations of 970, 73, 990, 1,300, and 68 ug/L, respectively; TPH-D was detected in the wells MW2, DP1, DP2, and DP3 at concentrations of 1,400, 84, 1,000, and 1,400 ug/L, respectively; and TPH-BO was detected at concentrations of 1,600, 190, 1,200, and 1,600 ug/L, respectively. TPH-D and TPH-BO were not detected in well DP4. Review of the laboratory report shows that the laboratory described the TPH-G and TPH-SS results for wells MW2, DP2, DP3, and DP4 as consisting of Stoddard solvent/mineral spirit-range compounds, and the samples

from wells MW2, DP1, and DP2 having one to a few isolated peaks present in the TPH-G chromatogram.

The TPH-D and TPH-BO results for wells MW2 and DP3 are described by the laboratory as consisting of diesel-range compounds with no recognizable pattern, oil-range compounds, and gasoline-range compounds. The TPH-D and TPH-BO results for well DP1 are described as diesel-range compounds with no recognizable pattern, and the TPH-D and TPH-BO results for well DP2 are described as consisting of Stoddard solvent/mineral spirits range and kerosene or jet fuel range compounds.

PCE and associated decomposition products were detected as follows:

- PCE was detected in wells MW1, DP1, and DP4 at concentrations of 1.2, 2,400 and 2.1 ug/L, respectively.
- Trichlorethene was detected in wells DP1, DP3, and DP4 at concentrations of 650, 0.70 and 1.3 ug/L, respectively.
- Cis-1,2-DCE was detected in wells MW1, MW2, MW4, DP1, DP2, DP3, and DP4 at concentrations of 3.0, 190, 12, 110, 14,000, 27, and 0.66 ug/L, respectively.
- Trans-1,2-dichloroethene was detected in wells MW2 and DP3 at concentrations of 18 and 3.3 ug/L, respectively.
- Vinyl chloride was detected in wells MW2 and DP3 at concentrations of 82 and 25 ug/L, respectively.

Additional petroleum-related volatile organic compounds and chloroform were also detected at various concentrations in different wells (see Table 2).

## DISCUSSION AND RECOMMENDATIONS

All of the groundwater monitoring wells and dual phase extraction wells were sampled on June 29, 2012. Petroleum hydrocarbon odors were detected on the purge water from well DP2, and petroleum hydrocarbon sheen was not observed on the purge water from any of the wells.

The water level in well DP2 was 1.78 feet higher than the water level in well DP1, which is located 18 feet horizontally from well DP1. This difference in water levels is consistent with historical differences in the water levels between these two wells, and is attributed to the geology of the site. A detailed discussion of the similarities and relationships of water level changes in the different wells is provided above in the geology and hydrogeology section of this report. Based on the geology identified in boreholes at and near these wells the groundwater drains from the vicinity of the former UST pit and the vicinity of wells DP2, DP3 and MW2 northeastwards towards well DP1. A detailed discussion of the extent of petroleum and HVOCs in groundwater with figures is provided in P&Ds Well Installation Report dated December 2, 2010 (document 0298.R11). A detailed discussion of observations regarding the extent of petroleum hydrocarbons and HVOCs in groundwater is also provided in P&D's December 17, 2010 Groundwater Monitoring and Sampling Report (document 0298.R12).

The increase in TPH and VOC concentrations in wells DP2, DP3, and DP4 and the decrease in TPH, PCE and TCE concentrations in well DP1 may be related to groundwater extraction that was performed at well DP1 during 2011. Based on the sample results, P&D recommends that all of the groundwater monitoring and extraction wells be sampled on a semi-annual basis. Documentation of site remediation in accordance with recommendations set forth in P&D's Vapor Extraction and Groundwater Extraction Feasibility Test Report will be provided in the next semi-annual well sampling report.

#### DISTRIBUTION

A copy of this report will be uploaded to the ACDEH website, in accordance with ACDEH requirements. In addition, a copy of this report will be uploaded to the GeoTracker database, and one copy of this report will be mailed to LeRoy Griffin of the City of Oakland Fire Department

#### LIMITATIONS

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

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

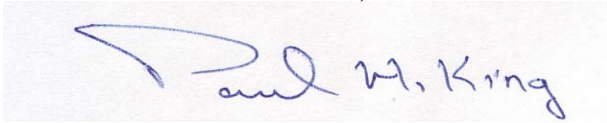
This report has been prepared in accordance with generally accepted practices using standards of care and diligence normally practiced by recognized consulting firms performing services of a similar nature. P&D is not responsible for the accuracy or completeness of information provided by other individuals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

September 24, 2012  
Report 0298.R15

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

Sincerely,

P&D Environmental, Inc.



Paul H. King  
President  
Professional Geologist #5901  
Expires: 12/31/13



Attachments:

Table 1 – Summary of Groundwater Elevation Data

Table 2 - Summary of Groundwater Sample Results

Figure 1 - Site Location Map

Figure 2 – Site Vicinity Map Detail Showing Well Locations

Figure 3 – Graph of Water Levels in Site Groundwater Monitoring Network Wells for August 2009 Through June 2012

Figure 4 – Graph of Water Levels in Site Groundwater Monitoring Network Wells for October 2010 Through June 2012

Groundwater Monitoring/Well Purging Data Sheets

Laboratory Reports and Chain of Custody Documentation

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# **TABLES**

TABLE 1  
SUMMARY OF GROUNDWATER ELEVATION DATA

Well No	Date	Top Of Casing Elevation (ft) <sup>1)</sup>	Depth To Water (ft)	Water Table Elevation (ft)	Change in Water Table Elevation
MW1	6/28/2012	132.78	22.04	110.74	0.51
	12/5/2011		car parked on well	could not measure	
	9/2/2011		22.55	110.23	-1.62
	6/1/2011		20.93	111.85	-0.52
	5/20/2011		20.41	112.37	-0.95
	4/15/2011		19.46	113.32	-0.21
	3/18/2011		19.25	113.53	2.65
	2/18/2011		21.90	110.88	-1.14
	1/21/2011		20.76	112.02	2.39
	12/10/2010		23.15	109.63	0.70
	11/19/2010		23.85	108.93	0.07
	10/15/2010		23.92	108.86	-0.42
	9/22/2010		23.50	109.28	-0.63
	8/20/2010		22.87	109.91	-0.86
	7/16/2010		22.01	110.77	-0.95
	6/18/2010		21.06	111.72	-0.80
	5/21/2010		20.26	112.52	-1.02
	4/16/2010		19.24	113.54	-0.17
	3/19/2010		19.07	113.71	1.49
	2/19/2010		20.56	112.22	0.52
	1/27/2010		21.08	111.70	2.28
	12/1/2009		23.36	109.42	0.06
	11/30/2009		23.42	109.36	-0.32
	11/25/2009		car parked on well	could not measure	
	10/29/2009		23.10	109.68	0.30
	9/24/2009		23.40	109.38	-0.52
	8/20/2009		22.88	109.90	0.12
	9/26/2008		23.00	109.78	0.02
	9/18/2008		23.02	109.76	-2.37
	2/20/2003		20.65	112.13	-0.59
	1/18/2003		20.06	112.72	
	MW2		6/28/2012	133.59	16.01
12/5/2011		18.10	115.49		-1.04
9/2/2011		17.06	116.53		-1.99
6/1/2011		15.07	118.52		-1.04
5/20/2011		14.03	119.56		-2.99
4/15/2011		11.04	122.55		0.57
3/18/2011		11.61	121.98		2.09
2/18/2011		13.70	119.89		0.20
1/21/2011		13.90	119.69		1.88
12/13/2010		15.78	117.81		-0.05
12/10/2010		15.73	117.86		0.96
11/23/2010		16.69	116.90		0.97
11/19/2010		17.66	115.93		-0.07
11/12/2010		17.59	116.00		0.47
10/15/2010		18.06	115.53		-0.34
9/22/2010		17.72	115.87		-0.37
8/20/2010		17.35	116.24		-0.60
7/16/2010		16.75	116.84		-1.34
6/18/2010		15.41	118.18		-1.37
5/21/2010		14.04	119.55		-2.25
4/16/2010		11.79	121.80		-0.30
3/19/2010		11.49	122.10		1.91
2/19/2010		13.40	120.19		-0.65
1/27/2010		12.75	120.84		5.71
12/1/2009		18.46	115.13		-1.00
11/30/2009		car parked on well	could not measure		
11/25/2009		car parked on well	could not measure		
10/29/2009		17.46	116.13		1.37
9/24/2009		18.83	114.76		-0.37
8/20/2009		18.42	115.13		0.04
9/18/2008		18.50	115.09		-5.41
2/20/2003		13.09	120.50		-1.54
1/18/2003	11.55 <sup>d</sup>	122.04			
MW3	6/28/2012	136.35	20.77	115.58	-0.26
	12/5/2011		20.51	115.84	0.78
	9/2/2011		21.29	115.06	-1.34
	6/1/2011		19.95	116.40	-0.98
	5/20/2011		18.97	117.38	-2.45
	4/15/2011		16.52	119.83	0.67
	3/18/2011		17.19	119.16	1.40
	2/18/2011		18.59	117.76	-0.51
	1/21/2011		18.08	118.27	1.20
	12/10/2010		19.28	117.07	1.87
	11/19/2010		21.15	115.20	1.82
	10/15/2010		22.97	113.38	-0.42
	9/22/2010		22.55	113.80	-0.93
	8/20/2010		21.62	114.73	-1.25
	7/16/2010		20.37	115.98	-1.05
	6/18/2010		19.32	117.03	-0.59
	5/21/2010		18.73	117.62	-1.34
	4/16/2010		17.39	118.96	-0.44
	3/19/2010		16.95	119.40	1.01
	2/19/2010		17.96	118.39	-0.25
	1/27/2010		17.71	118.64	3.45
	12/1/2009		21.16	115.19	-0.02
	11/30/2009		21.14	115.21	-0.12
	11/25/2009		21.02	115.33	-1.07
	10/29/2009		19.95	116.40	1.72
	9/24/2009		21.67	114.68	-0.59
	8/20/2009		21.08	115.27	-0.17
	9/26/2008		20.91	115.44	2.78
	9/19/2008		23.69	112.66	4.37
	9/18/2008		28.06	108.29	5.25
	9/15/2008		33.31	103.04	-6.51
	9/15/2008		26.80	109.55	

TABLE 1  
SUMMARY OF GROUNDWATER ELEVATION DATA

Well No	Date	Top Of Casing Elevation (ft)**	Depth To Water (ft)	Water Table Elevation (ft)	Change in Water Table Elevation		
MW4	6/28/2012	134.09	24.08	-24.08	1.12		
	12/5/2011		25.20	-25.20	-0.65		
	9/2/2011		24.55	-24.55	-1.57		
	6/1/2011		22.98	-22.98	-0.52		
	5/20/2011		22.46	-22.46	-1.87		
	4/15/2011		20.59	-20.59	0.76		
	3/18/2011		21.35	-21.35	1.59		
	2/18/2011		22.94	-22.94	-0.16		
	1/21/2011		22.78	-22.78	2.32		
	12/10/2010		25.10	-25.10	0.69		
	11/19/2010		25.79	-25.79	0.07		
	10/15/2010		25.86	-25.86	-0.39		
	9/22/2010		25.47	-25.47	-0.62		
	8/20/2010		24.85	-24.85	-0.82		
	7/16/2010		24.03	-24.03	-0.92		
	6/18/2010		23.11	-23.11	-0.78		
	5/21/2010		22.33	-22.33	-0.97		
	4/16/2010		21.36	-21.36	-0.18		
	3/19/2010		21.18	-21.18	1.41		
	2/19/2010		22.59	-22.59	0.52		
	1/27/2010		23.11	-23.11	2.20		
	12/1/2009		25.31	-25.31	0.06		
	11/30/2009		25.37	-25.37	-0.11		
	11/25/2009		25.26	-25.26	-0.20		
	10/29/2009		25.06	-25.06	0.31		
	9/24/2009		25.37	-25.37	-0.51		
	8/20/2009		24.86	-24.86	0.14		
	9/26/2008		25.00	-25.00	0.00		
	9/19/2008		25.00	-25.00	0.02		
	9/18/2008		25.02	-25.02	0.09		
	9/15/2008		25.11	-25.11	-0.08		
	9/15/2008		134.09	25.03	-25.03		
	DP1		6/28/2012	137.22	20.93	116.29	4.05
12/5/2011		25.17 (0.25) ##	112.24		-2.73		
9/2/2011		22.25	114.97		1.44		
6/1/2011		23.69	113.53				
5/20/2011		Adjusting pump rates - water level fluctuating.					
4/15/2011		14.19	123.03		1.46		
3/18/2011		15.65	121.57		3.26		
2/18/2011		18.91	118.31		-1.08		
1/21/2011		17.83	119.39		7.08		
12/13/2010		24.91	112.31		0.50		
12/10/2010		25.41	111.81		1.06		
11/23/2010		26.47	110.75		0.24		
11/19/2010		26.71	110.51		0.13		
11/12/2010		26.84	110.38		-0.33		
10/15/2010		25.68	110.71		-0.26		
10/5/2010*		25.42	110.97		0.33		
9/28/2010*		136.39	25.75		110.64		
DP2		6/28/2012	136.59		19.15	117.44	2.01
		12/5/2011			21.16	115.43	-0.79
		9/2/2011			20.37	116.22	-1.89
	6/1/2011	18.48		118.11			
	5/20/2011	Not Measured					
	4/15/2011	13.12		123.47	1.06		
	3/18/2011	14.18		122.41	2.73		
	2/18/2011	16.91		119.68	-0.17		
	1/21/2011	16.74		119.85	3.40		
	12/13/2010	20.14		116.45	-0.01		
	12/10/2010	20.13		116.46	0.81		
	11/23/2010	20.94		115.65	0.71		
	11/19/2010	21.65		114.94	-0.07		
	11/12/2010	21.58		115.01	0.35		
	10/15/2010	21.11		114.66	-0.15		
	10/5/2010*	20.96		114.81	-1.39		
	9/28/2010*	135.77		19.57	116.20		
DP3	6/28/2012	135.75	17.98	117.77	2.22		
	12/5/2011		20.20	115.55	0.33		
	9/2/2011		19.07	116.68	1.31		
	6/1/2011		17.09	118.66			
	5/20/2011		Not Measured				
	4/15/2011		12.35	123.40	0.95		
	3/18/2011		13.30	122.45	2.60		
	2/18/2011		15.90	119.85	-0.27		
	1/21/2011		15.63	120.12	2.61		
	12/13/2010		18.24	117.51	0.11		
	12/10/2010		18.35	117.40	0.91		
	11/23/2010		19.26	116.49	0.89		
	11/19/2010		20.15	115.60	-0.09		
	11/12/2010		20.06	115.69	0.47		
	10/15/2010		19.29	115.22	-0.15		
	10/5/2010*		19.14	115.37	0.28		
	9/28/2010*		134.51	19.42	115.09		
DP4	6/28/2012	137.60	19.66	117.94	3.52		
	12/5/2011		23.18	114.42	-2.00		
	9/2/2011		21.18	116.42	-1.87		
	6/1/2011		19.31	118.29			
	5/20/2011		Not Measured				
	4/15/2011		13.14	124.46	1.28		
	3/18/2011		14.42	123.18	3.13		
	2/18/2011		17.55	120.05	-0.46		
	1/21/2011		17.09	120.51	6.76		
	12/13/2010		23.85	113.75	6.76		
	12/10/2010		24.61	112.99	1.63		
	11/23/2010		26.24	111.36	0.21		
	11/19/2010		26.45	111.15	0.16		
	11/12/2010		26.61	110.99	-0.38		
	10/15/2010		25.40	111.37	-0.37		
	10/5/2010*		25.03	111.74	0.79		
	9/28/2010*		136.77	25.82	110.95		

NOTES:

Top of well casing amended on 11/12/2010 in preparation for vapor extraction pilot test.

\* = Prior to well development.

\*\* = Wells MW3 and MW4 surveyed on September 22-23, 2008; wells DP1 through DP4 surveyed on October 5, 2010

## = Depth to water not corrected for free product thickness; free product with thickness of 0.02 feet encountered.

### = Indicates free product thickness in feet. The water table elevation has been corrected for the presence of free product by assuming a specific gravity of 0.75.

TABLE 2

SUMMARY OF GROUNDWATER SAMPLE RESULTS

Well Number	Sample Date	TPH-G	TPH-SS	TPH-D	TPH-MO	TPH-BO	VOCs by 8260B
MW1	6/29/2012	ND<50	ND<50	ND<50	NA	ND<100	ND, except: Tetrachloroethene = 1.2, cis-1,2-Dichloroethene = 3.0, Chloroform = 1.2
	12/6/2011			Well Inaccessible; car parked on top of well.			
	10/15/2010	ND<50	ND<50	ND<50	NA	ND<100	ND, except: Chloroform=0.85
	5/21/2010	ND<50	ND<50	ND<50	NA	ND<100	ND, except: Chloroform=0.80
	12/1/2009	ND<50	ND<50	ND<50	NA	ND<100	ND, except: Chloroform=0.71
	9/18/2008	ND<50	ND<50	ND<50	NA	ND<100	ND, except: Chloroform=0.74
	10/27/2004	ND<50	ND<50	ND<50	ND<250	NA	ND, except: Chloroform=0.78
	2/20/2003	ND<50	ND<50	ND<50	ND<250	NA	ND, except: Chloroform=1.2, Xylenes = 0.61
	5/15/1995	ND<50	NA	NA	NA	NA	** ND
	12/22/1994	ND<50	NA	NA	NA	NA	** ND
	9/14/1994	ND, a	NA	NA	NA	NA	** ND
	7/29/1994	ND<50	NA	NA	NA	NA	** ND
	5/31/1994	ND<50	NA	NA	NA	NA	** ND
	1/24/1994	ND<50	NA	ND	NA	NA	** ND
MW2	6/29/2012	600, a,g	970, a,g	1,400, i,j,l	NA	1,600, i,j,l	ND, except: Toluene = 7.6, Xylenes = 12, cis-1,2-Dichloroethene = 190, trans-1,2-Dichloroethene = 18, Vinyl Chloride = 82, Carbon disulfide = 5.1, 1,2,4-Trimethylbenzene = 38, 1,3,5-Trimethylbenzene = 9.1
	12/5/2011	1,200, a,g	1,800, a,g	2,400, h,i	NA	2,700, h,i	ND, except: Toluene = 15, Ethylbenzene = 18, Xylenes = 57, cis-1,2-Dichloroethene = 310, trans-1,2-Dichloroethene = 12, Naphthalene = 9.8, Vinyl Chloride = 50, n-Butyl benzene = 5.3, Isopropylbenzene = 12, sec-Butyl benzene = 8.4, n-Propyl benzene = 17, 1,2,4-Trimethylbenzene = 120, 1,3,5-Trimethylbenzene = 35,
	10/15/2010	3,600, a,b,g	3,900, a,b,g	25,000, b,h,i,j	NA	22,000, b,h,i,j	ND, except: cis-1,2-dichloroethene= 1,500, Vinyl Chloride = 160, 1,2,4-Trimethylbenzene = 100
	5/21/2010	2,400, g	2,500, g	3,900, h,j	NA	4,700, h,j	ND, except: cis-1,2-dichloroethene= 1,700, Vinyl Chloride = 180, 1,2,4-Trimethylbenzene = 89
	12/1/2009	34,000, b,c	47,000, b,c	74,000, b,d,e,f	NA	91,000, b,d,e,f	ND, except: cis-1,2-dichloroethene= 1,800, Vinyl Chloride = 73, 1,2,4-Trimethylbenzene = 140
	9/18/2008	11,000, c,b	14,000	28,000, b,d,e	NA	33,000	ND, except: cis-1,2-dichloroethene= 880, Vinyl Chloride = 44, Xylenes = 46, 1,2,4-Trimethylbenzene = 140, 1,3,5-Trimethylbenzene = 41
	10/27/2004	320,000, c	500,000	280,000, b,d,f	ND<50,000	NA	**ND, except: cis-1,2-dichloroethene = 3,300
	2/20/2003	76,000, b,c	75,000	370,000, b,d,f	37,000	NA	ND, except: Toluene = 47, Ethylbenzene = 43, Xylenes = 160, cis-1,2-Dichloroethene = 360, trans-1,2-Dichloroethene = 22, n-Butyl benzene = 43, Isopropylbenzene = 35, sec-Butyl benzene = 48, n-Propyl benzene = 86, 4-Isopropyl toluene = 25, 1,3,5-Trimethylbenzene = 160, Naphthalene = 32, Vinyl Chloride = 24
	5/15/1995	12,000, c	NA	NA	NA	NA	**Benzene = 17, **Toluene = 96, **Ethylbenzene = 50, **Xylenes = 200
	12/22/1994	20,000, a,c	NA	NA	NA	NA	**Benzene = 22, **Toluene = 170, **Ethylbenzene = 89, **Xylenes = 470
	12/22/1994	--	--	--	--	--	ND, except: +Benzene = 21, +Toluene = 170, +Ethylbenzene = 48, +Xylenes = 180, +cis-1,2-Dichloroethene = 1,100, +trans-1,2-Dichloroethene = 15, +1,1-Dichloroethane = 2.8, +Chloroethane = 6.7 **Benzene = ND < 15
	9/14/1994	200,000, b,c	NA	NA	NA	NA	**Toluene = 170, **Ethylbenzene = 400, **Xylenes = 2,600
	9/14/1994	--	--	--	--	--	ND, except: +Benzene = 24, +Toluene = 440, +Ethylbenzene = 300, +Xylenes = 830, +cis-1,2-dichloroethene = 720, +Chloroform = 25, +Acetone = 120

TABLE 2

SUMMARY OF GROUNDWATER SAMPLE RESULTS

Well Number	Sample Date	TPH-G	TPH-SS	TPH-D	TPH-MO	TPH-BO	VOCs by 8260B
MW2 Continued	7/29/1994	21,000, b, c	NA	NA	NA	NA	**Benzene = 21,  **Toluene = 150, **Ethylbenzene = 53, **Xylenes = 150 **Benzene = 15, **Toluene = 100, **Ethylbenzene = 43, **Xylenes = 220 ND, except:
	5/31/1994	6,400, c	NA	NA	NA	NA	**Xylenes = 43 **Benzene = 15, **Toluene = 180, **Ethylbenzene = 39, **Xylenes = 200
	1/28/1994	2,800, c	NA	12,000, d	NA	NA	
	1/19/1994++	3,400, c	NA	20,000	NA	NA	
MW3	6/29/2012	ND<50	ND<50	ND<50	NA	ND<100	ND
	12/5/2011	ND<50	ND<50	ND<50	NA	ND<100	ND, except: Carbon disulfide = 1.9
	10/15/2010	ND<50	ND<50	ND<50	NA	ND<100	ND
	5/21/2010	ND<50	ND<50	ND<50	NA	ND<100	ND
	12/1/2009	ND<50	ND<50	63, e	NA	120, e	ND
9/18/2008	ND<50	ND<50	ND<50	NA	ND<100	ND, except:  Bromoform = 0.57, Chloroform = 1.3	
MW4	6/29/2012	ND<50	ND<50	ND<50	NA	ND<100	ND, except: Cis-1,2-dichloroethene = 12, Chloroform = 1.2
	12/5/2011	ND<50	ND<50	ND<50	NA	ND<100	ND, except: Cis-1,2-dichloroethene = 12, Chloroform = 1.2
	10/15/2010	ND<50	ND<50	ND<50	NA	ND<100	ND, except: Cis-1,2-dichloroethene = 8.4, Trans-1,2-dichloroethene = 0.84, Chloroform = 1.3
	5/21/2010	ND<50	ND<50	ND<50	NA	ND<100	ND, except: Cis-1,2-dichloroethene = 8.7, Chloroform = 1.3
	12/1/2009	ND<50	ND<50	ND<50	NA	ND<100	ND, except: Cis-1,2-dichloroethene = 5.8, Chloroform = 0.97
	9/18/2008	ND<50	ND<50	ND<50	NA	ND<100	ND, except: Cis-1,2-dichloroethene = 4.8, Chloroform = 0.96
DP1	6/29/2012	1,100, a	73, a	84, i	NA	190, i	ND, except: Tetrachloroethene = 2,400, Trichloroethene = 650, cis-1,2-Dichloroethene = 110
	12/6/2011	2,000, a,g	940, a,g	47,000, h,i,j	NA	59,000, h,i,j	ND, except: Tetrachloroethene = 2,800, Trichloroethene = 850, cis-1,2-Dichloroethene = 260
	10/15/2010	10,000, b,g,k	5,100, b,g	9,000, b,h,j	NA	9,800, b,h,j	ND, except: Cis-1,2-dichloroethene = 17,000, Vinyl Chloride = 2,600
DP2	6/29/2012	1,500, a,g	990, a,g	1,000, h,m	NA	1,200, h,m	ND, except: Cis-1,2-dichloroethene = 14,000
	12/6/2011	1,300, a,g	480, a,g	670, i,l	NA	1,000, i,l	ND, except: Cis-1,2-dichloroethene = 14,000
	10/15/2010	4,800, a,g	2,900, a,g	3,900, h,i	NA	2,900, h,i	ND, except: Cis-1,2-dichloroethene = 22,000
DP3	6/29/2012	770, g	1,300, g	1,400, i,j,l	NA	1,600, i,j,l	ND, except: Benzene = 0.77, Toluene = 1.6, Ethylbenzene = 1.7, Xylenes = 7.5, Trichloroethene = 0.70, cis-1,2-Dichloroethene = 27, trans-1,2-Dichloroethene = 3.3, Vinyl Chloride = 25, Naphthalene = 5.6, n-Butyl benzene = 2.4, 1,2,4-Trimethylbenzene = 38, 1,3,5-Trimethylbenzene = 9.4, sec-Butyl benzene = 3.2, Isopropylbenzene = 4.2, n-Propyl benzene = 6.0, 4-Isopropyl toluene = 1.4, Carbon disulfide = 0.73
	12/6/2011	480, g	630, g	3,600, m	NA	4,500, m	ND, except: Benzene = 0.97, Toluene = 1.1, Ethylbenzene = 1.7, Xylenes = 3.1, cis-1,2-Dichloroethene = 22, trans-1,2-Dichloroethene = 2.3, Vinyl Chloride = 17, Naphthalene = 2.2, n-Butyl benzene = 1.7, 1,2,4-Trimethylbenzene = 24, 1,3,5-Trimethylbenzene = 3.5, sec-Butyl benzene = 2.5, Isopropylbenzene = 2.8, n-Propyl benzene = 4.2, 4-Isopropyl toluene = 0.99
	10/15/2010	5,700, g	8,000, g	10,000, h,i,j	NA	9,800, h,i,j	ND, except: Toluene = 2.7, Ethylbenzene = 4.0, Xylenes = 23, cis-1,2-Dichloroethene = 44, trans-1,2-Dichloroethene = 4.5, Vinyl Chloride = 28, Naphthalene = 7.5, n-Butyl benzene = 4.4, 1,2,4-Trimethylbenzene = 69, 1,3,5-Trimethylbenzene = 24, sec-Butyl benzene = 6.0, Isopropylbenzene = 7.2, n-Propyl benzene = 10,

TABLE 2

SUMMARY OF GROUNDWATER SAMPLE RESULTS

Well Number	Sample Date	TPH-G	TPH-SS	TPH-D	TPH-MO	TPH-BO	VOCs by 8260B
DP4	6/29/2012	53, g	68, g	ND<50	NA	ND<100	ND, except: Tetrachloroethene = 2.1, Trichloroethene = 1.3, cis-1,2-Dichloroethene = 0.66, Chloroform = 0.62
	12/5/2011	ND<50	ND<50	ND<50	NA	ND<100	ND, except: Chloroform = 0.96
	10/15/2010	<b>1,800, g,k</b>	<b>1,500, g,k</b>	<b>1,200, hi</b>	NA	<b>920, hi</b>	ND, except: Tetrachloroethene = <b>22</b> , Trichloroethene = <b>40</b> , cis-1,2-Dichloroethene = <b>80</b> , trans-1,2-Dichloroethene = <b>33</b> , Vinyl Chloride = <b>2.9</b> , tert-Butyl benzene = 3.8, 4-Isopropyl toluene = 4.5
<i>ESL</i>		<i>100</i>	<i>100</i>	<i>100</i>	<i>100</i>	<i>100</i>	Benzene = 1.0, Toluene = 40, Ethylbenzene = 30, Xylenes = 20, Tetrachloroethene = 5.0, Trichloroethene = 5.0, cis-1,2-Dichloroethene = 6.0, trans-1,2-Dichloroethene = 10, 1,1-Dichloroethane = 5.0, Chloroethane = 12, Vinyl Chloride = 0.5, Naphthalene = 17, Chloroform = 70, Bromoform = 100, Acetone = 6,300, n-Butyl benzene = None, 1,2,4-Trimethylbenzene = None, 1,3,5-Trimethylbenzene = None, sec-Butyl benzene = None, Isopropylbenzene = None, tert-Butyl benzene = None, n-Propyl benzene = None, Carbon disulfide = None.

**Abbreviations and Notes:**

TPH-G = Total Petroleum Hydrocarbons as Gasoline  
 TPH-SS = Total Petroleum Hydrocarbons as Stoddard solvent  
 TPH-D = Total Petroleum Hydrocarbons as Diesel  
 TPH-MO = Total Petroleum Hydrocarbons as Motor Oil  
 TPH-BO = Total Petroleum Hydrocarbons as Bunker Oil  
 VOCs = Volatile Organic Compounds  
 ND = Not Detected.  
 NA = Not Analyzed.  
 -- = See TPH-G results in the line above.  
 a = Laboratory Note: one to a few isolated peaks present.  
 b = Laboratory Note: lighter than water immiscible sheen/product present.  
 c = Laboratory Note: results reported as gasoline consist of Stoddard Solvent/mineral spirit.  
 d = Laboratory Note: results reported as diesel consist of Stoddard Solvent/mineral spirit.  
 e = results reported as diesel consist of diesel range compounds; no recognizable pattern.  
 f = results reported as diesel consist of oil range compounds.  
 g = Laboratory Note: results reported as gasoline and Stoddard solvent consist of Stoddard Solvent/mineral spirit.  
 h = Laboratory Note: results reported as diesel and bunker oil consist of Stoddard Solvent/mineral spirit.  
 i = Laboratory Note: results reported as diesel and bunker oil consist of diesel range compounds; no recognizable pattern.  
 j = Laboratory Note: results reported as diesel and bunker oil consist of oil range compounds.  
 k = Laboratory Note: no recognizable pattern.  
 l = Laboratory Note: results reported as diesel and bunker oil consist of gasoline range compounds.  
 m = Laboratory Note: results reported as diesel and bunker oil consist of kerosene or jet fuel range compounds.  
 \* = MW2 VOC detection limits are all increased because of a sample dilution factor of 500.  
 \*\* = Analysis by EPA Method 8020.  
 + = Samples subcontracted to different lab for VOC analysis by EPA Method 8260.  
 ++ = Well Development Water stored at site in drum; submitted to lab on January 28, 1994.  
*ESL - Environmental Screening Level, developed by San Francisco Bay - Regional Water Quality Control Board (SF-RWQCB) updated May 2008, from Table A - Shallow Soil Screening Levels, Groundwater is a current or potential source of drinking water.*  
**Values in bold indicate concentrations that exceed their respective ESL values.**  
 Results are in micrograms per liter (µg/L), unless otherwise noted.

# FIGURES



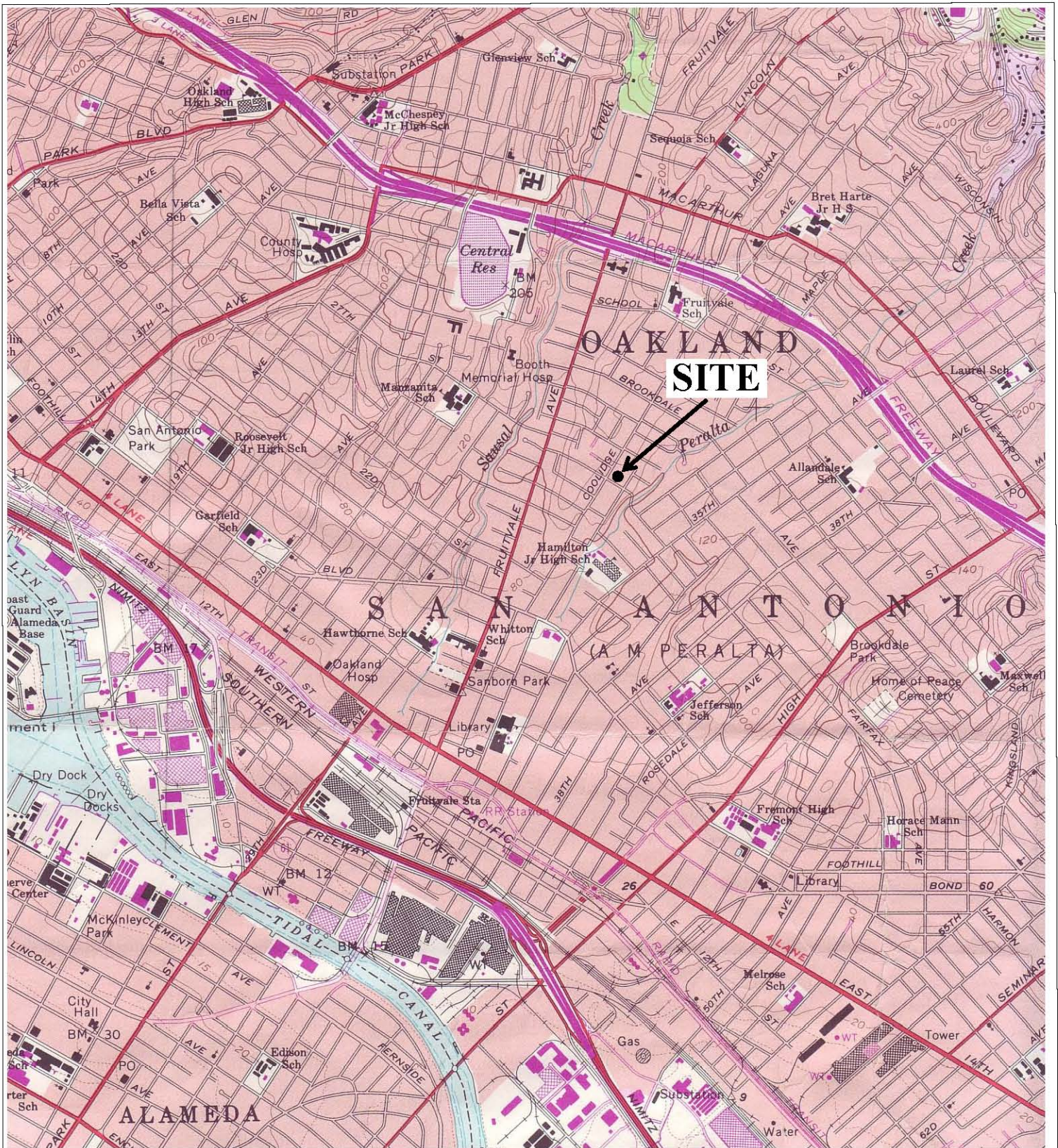
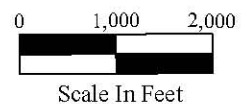


Figure 1  
 Site Location Map  
 Snow Cleaners  
 2678 Coolidge Avenue  
 Oakland, California

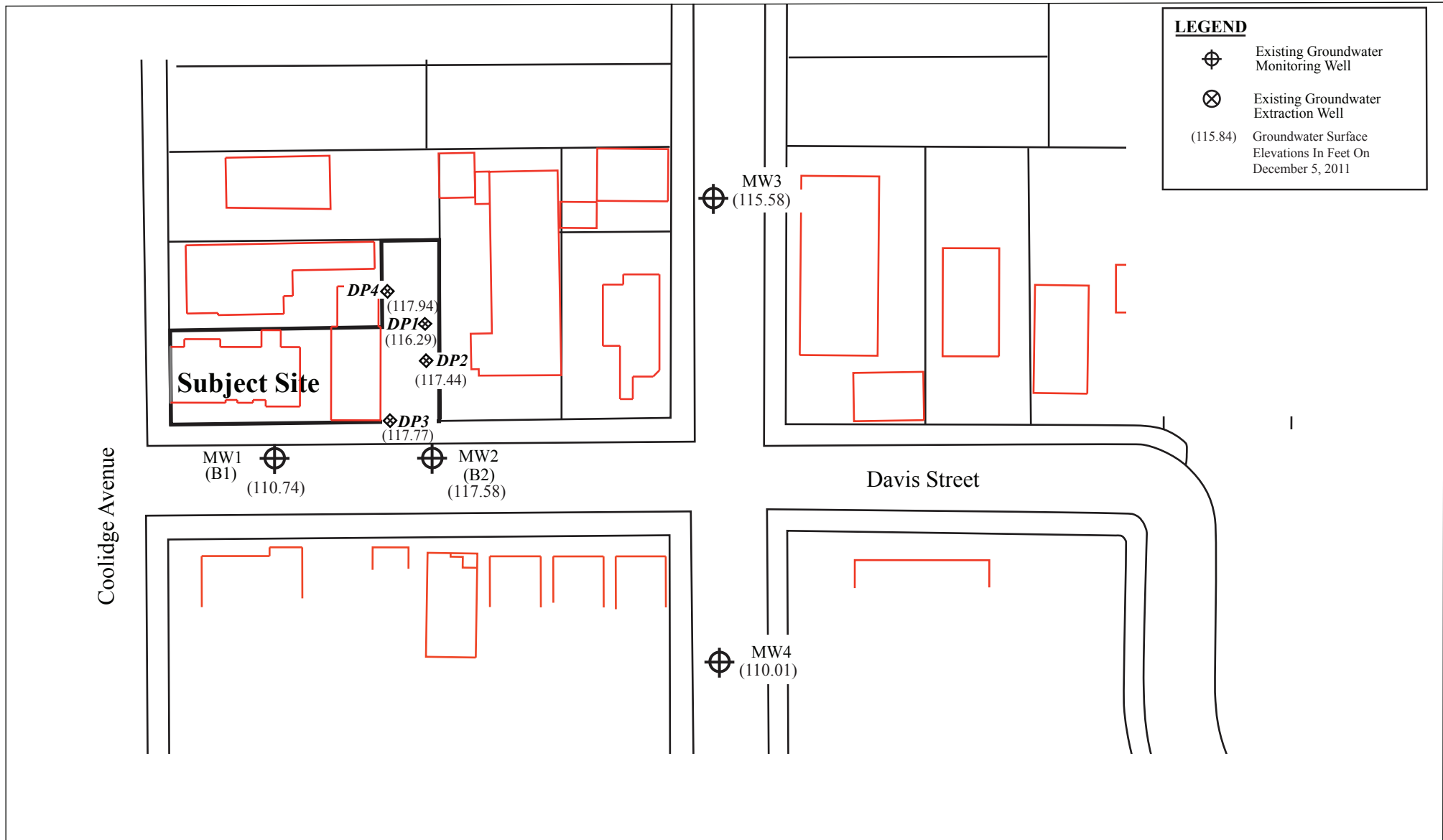


Base Map From:  
 U.S. Geological Survey  
 Oakland East, California  
 7.5-Minute Quadrangle  
 Photorevised 1980

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





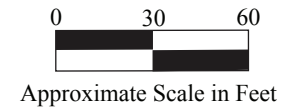


**Figure 2**  
 Site Vicinity Map Detail Showing Well Locations  
 Snow Cleaners  
 2678 Coolidge Avenue  
 Oakland, California



Base Map from:  
 Kier & Wright Engineers Surveyors, Inc.  
 September 2008 Survey  
 and  
 Parcel Quest Assessor's Parcel Maps  
 Alameda County Map Disc, July 2001

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



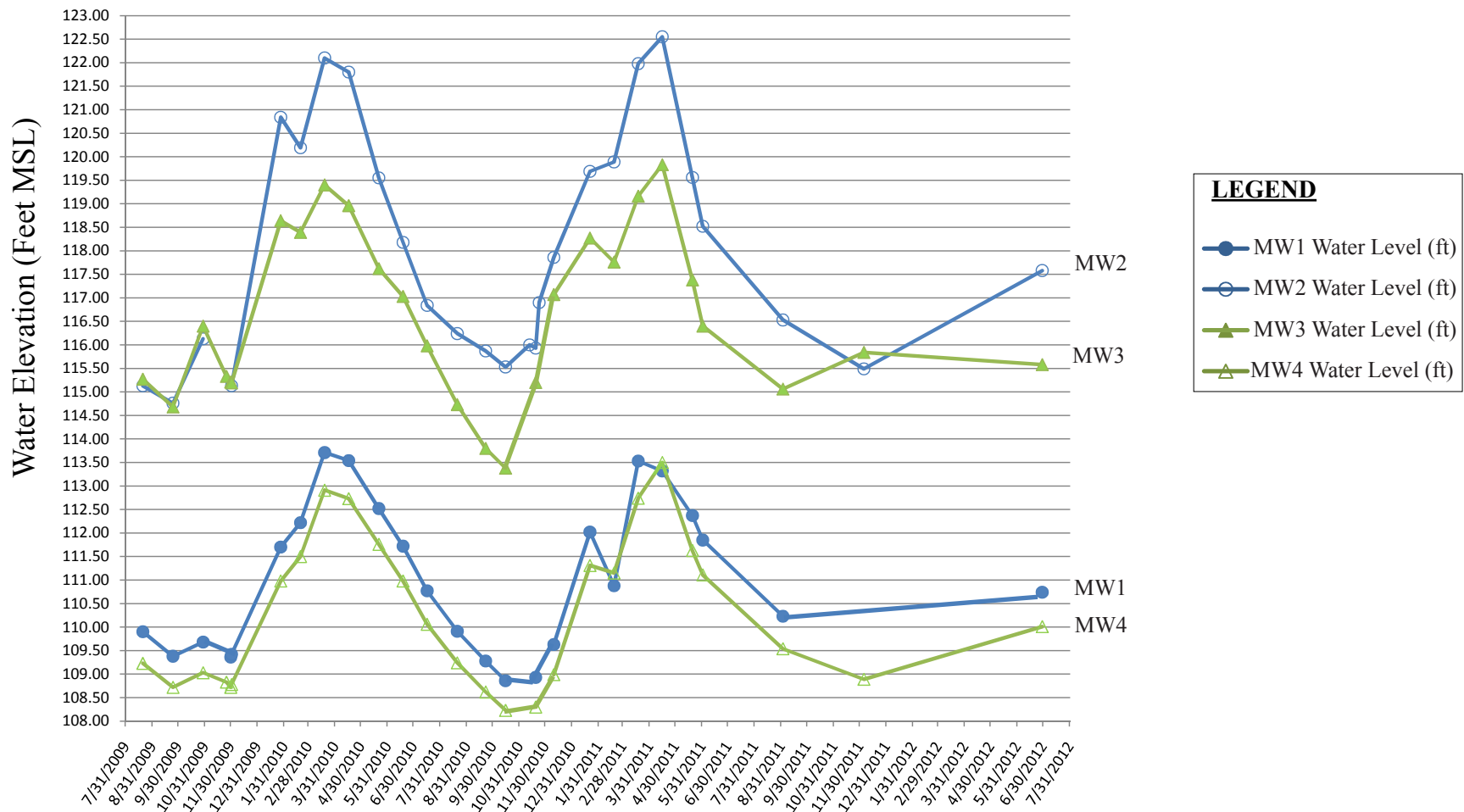


Figure 3  
 Graph of Water Levels in Site Groundwater Monitoring Network Wells  
 for August 2009 Through June 2012  
 Snow Cleaners  
 2678 Coolidge Avenue  
 Oakland, California

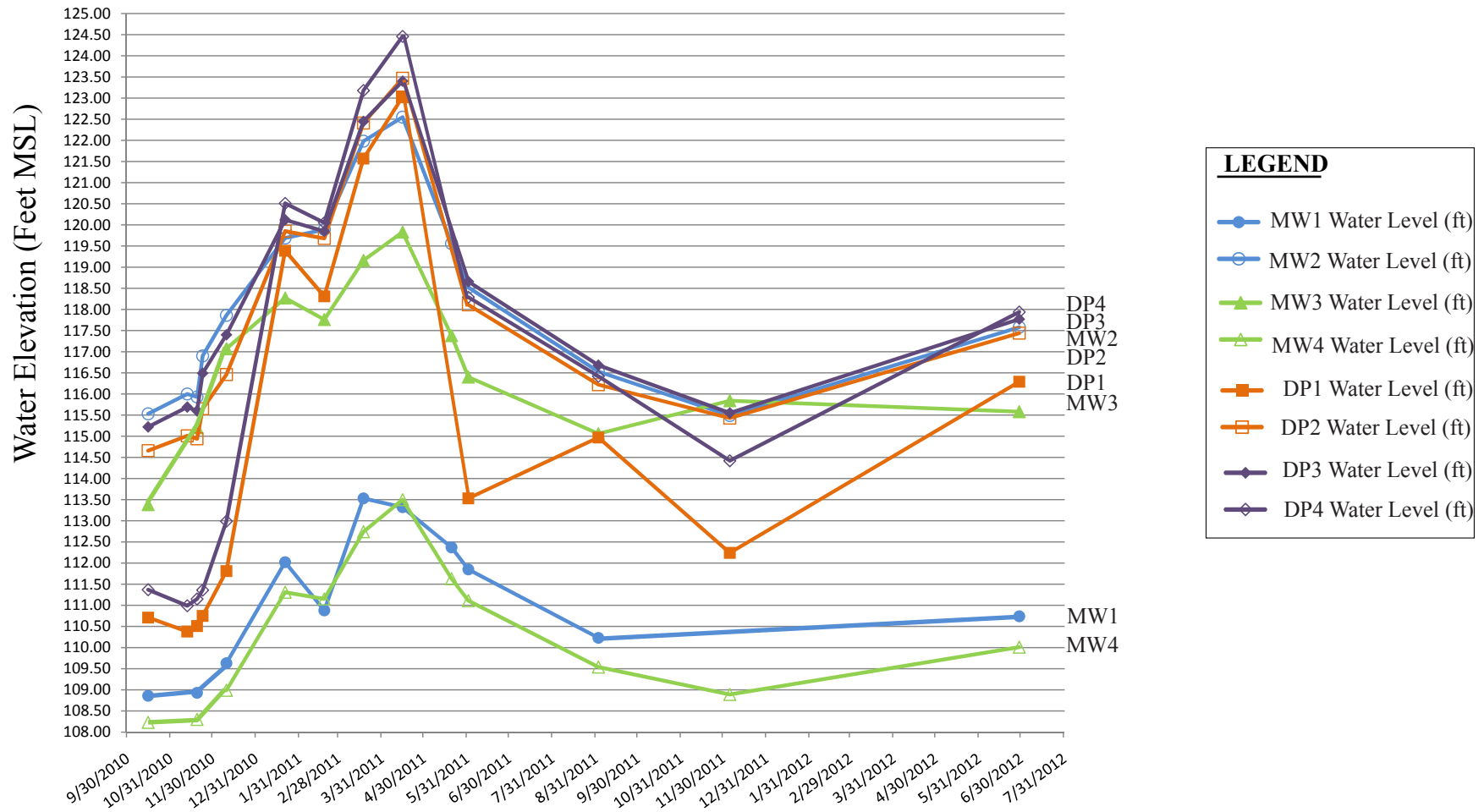


Figure 4  
 Graph of Water Levels in Site Groundwater Monitoring Network Wells  
 for October Through June 2012  
 Snow Cleaners  
 2678 Coolidge Avenue  
 Oakland, California

**GROUNDWATER MONITORING/WELL  
PURGING DATA SHEETS**



6

P&D Environmental, Inc.  
Groundwater Monitoring/Well Purging Data Sheet

Site Name Snow Cleaners, Oakland  
Job Number 0298  
TOC to Water (ft.) 16.01  
Well Depth (ft.) 24.6  
Well Diameter 4"  
Flow Rate (mL/minute) 300 mL/min  
Start Purge Time 1706

Well No. MW-2  
Date 6/29/12  
Sheen none  
Free Product Thickness -0  
Sample Collection Method Peristaltic pump & new unused PE tubing

Time	Vol. Purged (mL)	Depth to Water (ft.)	pH	Electrical Conductivity (uS/cm)	Temperature (C°)	Dissolved Oxygen (mg/L)	Oxidation/Reduction Potential (mV)	Turbidity (NTU)
1707	300	16.05	6.70	578	21.2	0.75	-72.3	0.00
1710	1,200	16.07	6.67	559	19.6	0.45	-82.0	0.00
1713	2,100	16.11	6.65	558	19.5	0.21	-85.9	0.00
1716	3,000	16.14	6.65	560	19.5	0.17	-87.4	0.00
1719	3,900	16.16	6.66	563	19.5	0.14	-89.0	0.00
1722	4,800	16.17	6.66	567	19.4	0.12	-91.2	0.00

NOTES

no odor / no sheen  
MW2 sampled @ 1725

Stability Parameters  
p.H. = +/- 0.1  
Sp. Conductivity = +/- 3%  
Turbidity = +/- 10%  
D.O. = +/- 10%



















**LABORATORY REPORTS AND CHAIN OF  
CUSTODY DOCUMENTATION**



## Analytical Report

P & D Environmental  55 Santa Clara, Ste.240  Oakland, CA 94610	Client Project ID: #0298; Snow Cleaners	Date Sampled: 06/29/12
		Date Received: 07/02/12
	Client Contact: Steve Carmack	Date Reported: 07/09/12
	Client P.O.:	Date Completed: 07/09/12

**WorkOrder: 1207014**

July 09, 2012

Dear Steve:

Enclosed within are:

- 1) The results of the **8** analyzed samples from your project: **#0298; Snow Cleaners,**
- 2) QC data for the above samples, and
- 3) A copy of the chain of custody.

All analyses were completed satisfactorily and all QC samples were found to be within our control limits.

If you have any questions or concerns, please feel free to give me a call. Thank you for choosing McC Campbell Analytical Laboratories for your analytical needs.

Best regards,

Angela Rydelius  
 Laboratory Manager  
 McC Campbell Analytical, Inc.

*The analytical results relate only to the items tested.*



# CHAIN OF CUSTODY RECORD

1207014

PAGE 1 OF 1

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

PROJECT NUMBER:

0298

PROJECT NAME:

Snow Cleaners  
 2678 Coolidge Ave.  
 Oakland

SAMPLED BY: (PRINTED & SIGNATURE)

Steve Carmack

*[Signature]*

NUMBER OF CONTAINERS

ANALYSIS(ES):

TPH, Methane (G.P. 55/80)

VOCs by 8260B

PRESERVATIVE

REMARKS

SAMPLE NUMBER	DATE	TIME	TYPE	SAMPLE LOCATION
MW-1	6/29/30	1645	H <sub>2</sub> O	
MW-2	"	1725	"	
MW-3	"	1825	"	
MW-4	"	1756	"	
DP-1	"	1405	"	
DP-2	"	1535	"	
DP-3	"	1615	"	
DP-4	"	1446	"	

+  
+  
+  
+  
+  
+  
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RELINQUISHED BY: (SIGNATURE)

*[Signature]*

DATE TIME

7/2/12 1139

RECEIVED BY: (SIGNATURE)

*[Signature]*

Total No. of Samples (This Shipment)

8

Total No. of Containers (This Shipment)

56

LABORATORY:

McCampbell Analytical, Inc.

RELINQUISHED BY: (SIGNATURE)

*[Signature]*

DATE TIME

7/2/12 1400

RECEIVED BY: (SIGNATURE)

*[Signature]*

LABORATORY CONTACT:

Angela Rydelius

LABORATORY PHONE NUMBER:

(877) 252-9262

RELINQUISHED BY: (SIGNATURE)

*[Signature]*

DATE TIME

ICE 11 1400

RECEIVED FOR LABORATORY BY: (SIGNATURE)

*[Signature]*

SAMPLE ANALYSIS REQUEST SHEET

ATTACHED: ( ) YES (X) NO

Results and billing to:  
 P&D Environmental, Inc.  
 lab@pdenviro.com

GOOD CONDITION  APPROPRIATE REMARKS   
 HEAD SPACE ABSENT \_\_\_\_\_  
 DECHLORINATED IN LAB \_\_\_\_\_ PRESERVED IN LAB \_\_\_\_\_  
 VOAS | C | & G | METALS | OTHER \_\_\_\_\_  
 PRESERVATION

All bottles preserved w/ HCL



1534 Willow Pass Rd  
Pittsburg, CA 94565-1701  
(925) 252-9262

# CHAIN-OF-CUSTODY RECORD

WorkOrder: 1207014

ClientCode: PDEO

WaterTrax   
  WriteOn   
  EDF   
  Excel   
  EQUIS   
  Email   
  HardCopy   
  ThirdParty   
  J-flag

**Report to:**

Steve Carmack  
P & D Environmental  
55 Santa Clara, Ste.240  
Oakland, CA 94610  
(510) 658-6916    FAX: 510-834-0152

Email: lab@pdenviro.com  
cc:  
PO:  
ProjectNo: #0298; Snow Cleaners

**Bill to:**

Accounts Payable  
P & D Environmental  
55 Santa Clara, Ste.240  
Oakland, CA 94610

**Requested TAT:**

**5 days**

**Date Received: 07/02/2012**

**Date Printed: 07/02/2012**

Lab ID	Client ID	Matrix	Collection Date	Hold	Requested Tests (See legend below)											
					1	2	3	4	5	6	7	8	9	10	11	12
1207014-001	MW-1	Water	6/29/2012 16:45	<input type="checkbox"/>	B	A	A									
1207014-002	MW-2	Water	6/29/2012 17:25	<input type="checkbox"/>	B	A	A									
1207014-003	MW-3	Water	6/29/2012 18:25	<input type="checkbox"/>	B	A	A									
1207014-004	MW-4	Water	6/29/2012 17:56	<input type="checkbox"/>	B	A	A									
1207014-005	DP-1	Water	6/29/2012 14:05	<input type="checkbox"/>	B	A	A									
1207014-006	DP-2	Water	6/29/2012 15:35	<input type="checkbox"/>	B	A	A									
1207014-007	DP-3	Water	6/29/2012 16:15	<input type="checkbox"/>	B	A	A									
1207014-008	DP-4	Water	6/29/2012 14:46	<input type="checkbox"/>	B	A	A									

**Test Legend:**

1	8260B_W	2	G-MBTX_W	3	TPH_W	4		5	
6		7		8		9		10	
11		12							

The following SampIDs: 001A, 002A, 003A, 004A, 005A, 006A, 007A, 008A contain testgroup.

**Prepared by: Melissa Valles**

**Comments:**

NOTE: Soil samples are discarded 60 days after results are reported unless other arrangements are made (Water samples are 30 days).  
Hazardous samples will be returned to client or disposed of at client expense.



### Sample Receipt Checklist

Client Name: **P & D Environmental** Date and Time Received: **7/2/2012 2:11:57 PM**  
 Project Name: **#0298; Snow Cleaners** LogIn Reviewed by: **Melissa Valles**  
 WorkOrder N°: **1207014** Matrix: Water Carrier: Client Drop-In

**Chain of Custody (COC) Information**

Chain of custody present? Yes  No   
 Chain of custody signed when relinquished and received? Yes  No   
 Chain of custody agrees with sample labels? Yes  No   
 Sample IDs noted by Client on COC? Yes  No   
 Date and Time of collection noted by Client on COC? Yes  No   
 Sampler's name noted on COC? Yes  No

**Sample Receipt Information**

Custody seals intact on shipping container/cooler? Yes  No  NA   
 Shipping container/cooler in good condition? Yes  No   
 Samples in proper containers/bottles? Yes  No   
 Sample containers intact? Yes  No   
 Sufficient sample volume for indicated test? Yes  No

**Sample Preservation and Hold Time (HT) Information**

All samples received within holding time? Yes  No   
 Container/Temp Blank temperature Cooler Temp: 1.4°C NA   
 Water - VOA vials have zero headspace / no bubbles? Yes  No  No VOA vials submitted   
 Sample labels checked for correct preservation? Yes  No   
 Metal - pH acceptable upon receipt (pH<2)? Yes  No  NA   
 Samples Received on Ice? Yes  No

(Ice Type: WET ICE )

\* NOTE: If the "No" box is checked, see comments below.

-----  
 Comments:



Table with 4 rows and 3 columns: Client Project ID, Date Sampled, Date Received, Client Contact, Date Extracted, Client P.O., Date Analyzed.

Volatile Organics by P&T and GC/MS (Basic Target List)\*

Extraction Method: SW5030B

Analytical Method: SW8260B

Work Order: 1207014

Table with 2 columns: Lab ID (1207014-001B), Client ID (MW-1), Matrix (Water)

Main data table with 8 columns: Compound, Concentration, DF, Reporting Limit, Compound, Concentration, DF, Reporting Limit. Lists various organic compounds and their detection results.

Surrogate Recoveries (%)

Table with 2 rows and 2 columns: %SS1 (116), %SS2 (93), %SS3 (111)

Comments:

\* water and vapor samples are reported in µg/L, soil/sludge/solid samples in mg/kg, product/oil/non-aqueous liquid samples and all TCLP & SPLP extracts are reported in mg/L, wipe samples in µg/wipe.
ND means not detected above the reporting limit/method detection limit; N/A means analyte not applicable to this analysis; %SS = Percent Recovery of Surrogate Standard; DF = Dilution Factor
# surrogate diluted out of range or coelutes with another peak; &) low surrogate due to matrix interference.



Table with 3 columns: Client Project ID: #0298; Snow Cleaners, Date Sampled: 06/29/12, Date Received: 07/02/12; Client Contact: Steve Carmack, Date Extracted: 07/06/12; Client P.O., Date Analyzed: 07/06/12.

Volatile Organics by P&T and GC/MS (Basic Target List)\*

Extraction Method: SW5030B

Analytical Method: SW8260B

Work Order: 1207014

Table with 2 columns: Lab ID (1207014-002B), Client ID (MW-2), Matrix (Water)

Main data table with 8 columns: Compound, Concentration \*, DF, Reporting Limit, Compound, Concentration \*, DF, Reporting Limit. Lists various organic compounds and their detection results.

Surrogate Recoveries (%)

Table with 2 columns: %SS1 (109), %SS2 (96); %SS3 (111)

Comments:

\* water and vapor samples are reported in µg/L, soil/sludge/solid samples in mg/kg, product/oil/non-aqueous liquid samples and all TCLP & SPLP extracts are reported in mg/L, wipe samples in µg/wipe.
ND means not detected above the reporting limit/method detection limit; N/A means analyte not applicable to this analysis; %SS = Percent Recovery of Surrogate Standard; DF = Dilution Factor
# surrogate diluted out of range or coelutes with another peak; &) low surrogate due to matrix interference.





P & D Environmental 55 Santa Clara, Ste.240 Oakland, CA 94610	Client Project ID: #0298; Snow Cleaners	Date Sampled: 06/29/12
	Client Contact: Steve Carmack	Date Received: 07/02/12
	Client P.O.:	Date Extracted: 07/06/12
		Date Analyzed: 07/06/12

**Volatile Organics by P&T and GC/MS (Basic Target List)\***

Extraction Method: SW5030B

Analytical Method: SW8260B

Work Order: 1207014

Lab ID	1207014-003B
Client ID	MW-3
Matrix	Water

Compound	Concentration *	DF	Reporting Limit	Compound	Concentration *	DF	Reporting Limit
Acetone	ND	1.0	10	tert-Amyl methyl ether (TAME)	ND	1.0	0.5
Benzene	ND	1.0	0.5	Bromobenzene	ND	1.0	0.5
Bromochloromethane	ND	1.0	0.5	Bromodichloromethane	ND	1.0	0.5
Bromoform	ND	1.0	0.5	Bromomethane	ND	1.0	0.5
2-Butanone (MEK)	ND	1.0	2.0	t-Butyl alcohol (TBA)	ND	1.0	2.0
n-Butyl benzene	ND	1.0	0.5	sec-Butyl benzene	ND	1.0	0.5
tert-Butyl benzene	ND	1.0	0.5	Carbon Disulfide	ND	1.0	0.5
Carbon Tetrachloride	ND	1.0	0.5	Chlorobenzene	ND	1.0	0.5
Chloroethane	ND	1.0	0.5	Chloroform	ND	1.0	0.5
Chloromethane	ND	1.0	0.5	2-Chlorotoluene	ND	1.0	0.5
4-Chlorotoluene	ND	1.0	0.5	Dibromochloromethane	ND	1.0	0.5
1,2-Dibromo-3-chloropropane	ND	1.0	0.2	1,2-Dibromoethane (EDB)	ND	1.0	0.5
Dibromomethane	ND	1.0	0.5	1,2-Dichlorobenzene	ND	1.0	0.5
1,3-Dichlorobenzene	ND	1.0	0.5	1,4-Dichlorobenzene	ND	1.0	0.5
Dichlorodifluoromethane	ND	1.0	0.5	1,1-Dichloroethane	ND	1.0	0.5
1,2-Dichloroethane (1,2-DCA)	ND	1.0	0.5	1,1-Dichloroethene	ND	1.0	0.5
cis-1,2-Dichloroethene	ND	1.0	0.5	trans-1,2-Dichloroethene	ND	1.0	0.5
1,2-Dichloropropane	ND	1.0	0.5	1,3-Dichloropropane	ND	1.0	0.5
2,2-Dichloropropane	ND	1.0	0.5	1,1-Dichloropropene	ND	1.0	0.5
cis-1,3-Dichloropropene	ND	1.0	0.5	trans-1,3-Dichloropropene	ND	1.0	0.5
Diisopropyl ether (DIPE)	ND	1.0	0.5	Ethylbenzene	ND	1.0	0.5
Ethyl tert-butyl ether (ETBE)	ND	1.0	0.5	Freon 113	ND	1.0	10
Hexachlorobutadiene	ND	1.0	0.5	Hexachloroethane	ND	1.0	0.5
2-Hexanone	ND	1.0	0.5	Isopropylbenzene	ND	1.0	0.5
4-Isopropyl toluene	ND	1.0	0.5	Methyl-t-butyl ether (MTBE)	ND	1.0	0.5
Methylene chloride	ND	1.0	0.5	4-Methyl-2-pentanone (MIBK)	ND	1.0	0.5
Naphthalene	ND	1.0	0.5	n-Propyl benzene	ND	1.0	0.5
Styrene	ND	1.0	0.5	1,1,1,2-Tetrachloroethane	ND	1.0	0.5
1,1,2,2-Tetrachloroethane	ND	1.0	0.5	Tetrachloroethene	ND	1.0	0.5
Toluene	ND	1.0	0.5	1,2,3-Trichlorobenzene	ND	1.0	0.5
1,2,4-Trichlorobenzene	ND	1.0	0.5	1,1,1-Trichloroethane	ND	1.0	0.5
1,1,2-Trichloroethane	ND	1.0	0.5	Trichloroethene	ND	1.0	0.5
Trichlorofluoromethane	ND	1.0	0.5	1,2,3-Trichloropropane	ND	1.0	0.5
1,2,4-Trimethylbenzene	ND	1.0	0.5	1,3,5-Trimethylbenzene	ND	1.0	0.5
Vinyl Chloride	ND	1.0	0.5	Xylenes, Total	ND	1.0	0.5

**Surrogate Recoveries (%)**

%SS1:	109	%SS2:	96
%SS3:	114		

**Comments:**

\* water and vapor samples are reported in µg/L, soil/sludge/solid samples in mg/kg, product/oil/non-aqueous liquid samples and all TCLP & SPLP extracts are reported in mg/L, wipe samples in µg/wipe.

ND means not detected above the reporting limit/method detection limit; N/A means analyte not applicable to this analysis; %SS = Percent Recovery of Surrogate Standard; DF = Dilution Factor

# surrogate diluted out of range or coelutes with another peak; &) low surrogate due to matrix interference.



P & D Environmental 55 Santa Clara, Ste.240 Oakland, CA 94610	Client Project ID: #0298; Snow Cleaners	Date Sampled: 06/29/12
	Client Contact: Steve Carmack	Date Received: 07/02/12
	Client P.O.:	Date Extracted: 07/05/12
		Date Analyzed: 07/05/12

**Volatile Organics by P&T and GC/MS (Basic Target List)\***

Extraction Method: SW5030B

Analytical Method: SW8260B

Work Order: 1207014

Lab ID	1207014-004B
Client ID	MW-4
Matrix	Water

Compound	Concentration *	DF	Reporting Limit	Compound	Concentration *	DF	Reporting Limit
Acetone	ND	1.0	10	tert-Amyl methyl ether (TAME)	ND	1.0	0.5
Benzene	ND	1.0	0.5	Bromobenzene	ND	1.0	0.5
Bromochloromethane	ND	1.0	0.5	Bromodichloromethane	ND	1.0	0.5
Bromoform	ND	1.0	0.5	Bromomethane	ND	1.0	0.5
2-Butanone (MEK)	ND	1.0	2.0	t-Butyl alcohol (TBA)	ND	1.0	2.0
n-Butyl benzene	ND	1.0	0.5	sec-Butyl benzene	ND	1.0	0.5
tert-Butyl benzene	ND	1.0	0.5	Carbon Disulfide	ND	1.0	0.5
Carbon Tetrachloride	ND	1.0	0.5	Chlorobenzene	ND	1.0	0.5
Chloroethane	ND	1.0	0.5	Chloroform	1.2	1.0	0.5
Chloromethane	ND	1.0	0.5	2-Chlorotoluene	ND	1.0	0.5
4-Chlorotoluene	ND	1.0	0.5	Dibromochloromethane	ND	1.0	0.5
1,2-Dibromo-3-chloropropane	ND	1.0	0.2	1,2-Dibromoethane (EDB)	ND	1.0	0.5
Dibromomethane	ND	1.0	0.5	1,2-Dichlorobenzene	ND	1.0	0.5
1,3-Dichlorobenzene	ND	1.0	0.5	1,4-Dichlorobenzene	ND	1.0	0.5
Dichlorodifluoromethane	ND	1.0	0.5	1,1-Dichloroethane	ND	1.0	0.5
1,2-Dichloroethane (1,2-DCA)	ND	1.0	0.5	1,1-Dichloroethene	ND	1.0	0.5
cis-1,2-Dichloroethene	12	1.0	0.5	trans-1,2-Dichloroethene	ND	1.0	0.5
1,2-Dichloropropane	ND	1.0	0.5	1,3-Dichloropropane	ND	1.0	0.5
2,2-Dichloropropane	ND	1.0	0.5	1,1-Dichloropropene	ND	1.0	0.5
cis-1,3-Dichloropropene	ND	1.0	0.5	trans-1,3-Dichloropropene	ND	1.0	0.5
Diisopropyl ether (DIPE)	ND	1.0	0.5	Ethylbenzene	ND	1.0	0.5
Ethyl tert-butyl ether (ETBE)	ND	1.0	0.5	Freon 113	ND	1.0	10
Hexachlorobutadiene	ND	1.0	0.5	Hexachloroethane	ND	1.0	0.5
2-Hexanone	ND	1.0	0.5	Isopropylbenzene	ND	1.0	0.5
4-Isopropyl toluene	ND	1.0	0.5	Methyl-t-butyl ether (MTBE)	ND	1.0	0.5
Methylene chloride	ND	1.0	0.5	4-Methyl-2-pentanone (MIBK)	ND	1.0	0.5
Naphthalene	ND	1.0	0.5	n-Propyl benzene	ND	1.0	0.5
Styrene	ND	1.0	0.5	1,1,1,2-Tetrachloroethane	ND	1.0	0.5
1,1,2,2-Tetrachloroethane	ND	1.0	0.5	Tetrachloroethene	ND	1.0	0.5
Toluene	ND	1.0	0.5	1,2,3-Trichlorobenzene	ND	1.0	0.5
1,2,4-Trichlorobenzene	ND	1.0	0.5	1,1,1-Trichloroethane	ND	1.0	0.5
1,1,2-Trichloroethane	ND	1.0	0.5	Trichloroethene	ND	1.0	0.5
Trichlorofluoromethane	ND	1.0	0.5	1,2,3-Trichloropropane	ND	1.0	0.5
1,2,4-Trimethylbenzene	ND	1.0	0.5	1,3,5-Trimethylbenzene	ND	1.0	0.5
Vinyl Chloride	ND	1.0	0.5	Xylenes, Total	ND	1.0	0.5

**Surrogate Recoveries (%)**

%SS1:	83	%SS2:	99
%SS3:	93		

**Comments:**

\* water and vapor samples are reported in µg/L, soil/sludge/solid samples in mg/kg, product/oil/non-aqueous liquid samples and all TCLP & SPLP extracts are reported in mg/L, wipe samples in µg/wipe.

ND means not detected above the reporting limit/method detection limit; N/A means analyte not applicable to this analysis; %SS = Percent Recovery of Surrogate Standard; DF = Dilution Factor

# surrogate diluted out of range or coelutes with another peak; &) low surrogate due to matrix interference.



Table with 4 columns: Client Project ID, Date Sampled, Client Contact, Date Analyzed. Includes details for P & D Environmental, Client Project ID #0298, Steve Carmack, and dates 06/29/12, 07/02/12, 07/06/12.

Volatile Organics by P&T and GC/MS (Basic Target List)\*

Extraction Method: SW5030B Analytical Method: SW8260B Work Order: 1207014

Table with 2 columns: Lab ID (1207014-005B), Client ID (DP-1), Matrix (Water)

Main data table with 8 columns: Compound, Concentration, DF, Reporting Limit, Compound, Concentration, DF, Reporting Limit. Lists various organic compounds like Acetone, Benzene, etc., with their respective concentrations and limits.

Surrogate Recoveries (%)

Table with 2 columns: %SS1 (89), %SS2 (101), %SS3 (93)

Comments:

\* water and vapor samples are reported in µg/L, soil/sludge/solid samples in mg/kg, product/oil/non-aqueous liquid samples and all TCLP & SPLP extracts are reported in mg/L, wipe samples in µg/wipe.
ND means not detected above the reporting limit/method detection limit; N/A means analyte not applicable to this analysis; %SS = Percent Recovery of Surrogate Standard; DF = Dilution Factor
# surrogate diluted out of range or coelutes with another peak; &) low surrogate due to matrix interference.





P & D Environmental 55 Santa Clara, Ste.240 Oakland, CA 94610	Client Project ID: #0298; Snow Cleaners	Date Sampled: 06/29/12
	Client Contact: Steve Carmack	Date Received: 07/02/12
	Client P.O.:	Date Extracted: 07/07/12
		Date Analyzed: 07/07/12

**Volatile Organics by P&T and GC/MS (Basic Target List)\***

Extraction Method: SW5030B

Analytical Method: SW8260B

Work Order: 1207014

Lab ID	1207014-006B
Client ID	DP-2
Matrix	Water

Compound	Concentration *	DF	Reporting Limit	Compound	Concentration *	DF	Reporting Limit
Acetone	ND<10,000	1000	10	tert-Amyl methyl ether (TAME)	ND<500	1000	0.5
Benzene	ND<500	1000	0.5	Bromobenzene	ND<500	1000	0.5
Bromochloromethane	ND<500	1000	0.5	Bromodichloromethane	ND<500	1000	0.5
Bromoform	ND<500	1000	0.5	Bromomethane	ND<500	1000	0.5
2-Butanone (MEK)	ND<2000	1000	2.0	t-Butyl alcohol (TBA)	ND<2000	1000	2.0
n-Butyl benzene	ND<500	1000	0.5	sec-Butyl benzene	ND<500	1000	0.5
tert-Butyl benzene	ND<500	1000	0.5	Carbon Disulfide	ND<500	1000	0.5
Carbon Tetrachloride	ND<500	1000	0.5	Chlorobenzene	ND<500	1000	0.5
Chloroethane	ND<500	1000	0.5	Chloroform	ND<500	1000	0.5
Chloromethane	ND<500	1000	0.5	2-Chlorotoluene	ND<500	1000	0.5
4-Chlorotoluene	ND<500	1000	0.5	Dibromochloromethane	ND<500	1000	0.5
1,2-Dibromo-3-chloropropane	ND<200	1000	0.2	1,2-Dibromoethane (EDB)	ND<500	1000	0.5
Dibromomethane	ND<500	1000	0.5	1,2-Dichlorobenzene	ND<500	1000	0.5
1,3-Dichlorobenzene	ND<500	1000	0.5	1,4-Dichlorobenzene	ND<500	1000	0.5
Dichlorodifluoromethane	ND<500	1000	0.5	1,1-Dichloroethane	ND<500	1000	0.5
1,2-Dichloroethane (1,2-DCA)	ND<500	1000	0.5	1,1-Dichloroethene	ND<500	1000	0.5
cis-1,2-Dichloroethene	14,000	1000	0.5	trans-1,2-Dichloroethene	ND<500	1000	0.5
1,2-Dichloropropane	ND<500	1000	0.5	1,3-Dichloropropane	ND<500	1000	0.5
2,2-Dichloropropane	ND<500	1000	0.5	1,1-Dichloropropene	ND<500	1000	0.5
cis-1,3-Dichloropropene	ND<500	1000	0.5	trans-1,3-Dichloropropene	ND<500	1000	0.5
Diisopropyl ether (DIPE)	ND<500	1000	0.5	Ethylbenzene	ND<500	1000	0.5
Ethyl tert-butyl ether (ETBE)	ND<500	1000	0.5	Freon 113	ND<10,000	1000	10
Hexachlorobutadiene	ND<500	1000	0.5	Hexachloroethane	ND<500	1000	0.5
2-Hexanone	ND<500	1000	0.5	Isopropylbenzene	ND<500	1000	0.5
4-Isopropyl toluene	ND<500	1000	0.5	Methyl-t-butyl ether (MTBE)	ND<500	1000	0.5
Methylene chloride	ND<500	1000	0.5	4-Methyl-2-pentanone (MIBK)	ND<500	1000	0.5
Naphthalene	ND<500	1000	0.5	n-Propyl benzene	ND<500	1000	0.5
Styrene	ND<500	1000	0.5	1,1,1,2-Tetrachloroethane	ND<500	1000	0.5
1,1,2,2-Tetrachloroethane	ND<500	1000	0.5	Tetrachloroethene	ND<500	1000	0.5
Toluene	ND<500	1000	0.5	1,2,3-Trichlorobenzene	ND<500	1000	0.5
1,2,4-Trichlorobenzene	ND<500	1000	0.5	1,1,1-Trichloroethane	ND<500	1000	0.5
1,1,2-Trichloroethane	ND<500	1000	0.5	Trichloroethene	ND<500	1000	0.5
Trichlorofluoromethane	ND<500	1000	0.5	1,2,3-Trichloropropane	ND<500	1000	0.5
1,2,4-Trimethylbenzene	ND<500	1000	0.5	1,3,5-Trimethylbenzene	ND<500	1000	0.5
Vinyl Chloride	ND<500	1000	0.5	Xylenes, Total	ND<500	1000	0.5

**Surrogate Recoveries (%)**

%SS1:	82	%SS2:	97
%SS3:	88		

**Comments:**

\* water and vapor samples are reported in µg/L, soil/sludge/solid samples in mg/kg, product/oil/non-aqueous liquid samples and all TCLP & SPLP extracts are reported in mg/L, wipe samples in µg/wipe.

ND means not detected above the reporting limit/method detection limit; N/A means analyte not applicable to this analysis; %SS = Percent Recovery of Surrogate Standard; DF = Dilution Factor

# surrogate diluted out of range or coelutes with another peak; &) low surrogate due to matrix interference.



P & D Environmental 55 Santa Clara, Ste.240 Oakland, CA 94610	Client Project ID: #0298; Snow Cleaners	Date Sampled: 06/29/12
	Client Contact: Steve Carmack	Date Received: 07/02/12
	Client P.O.:	Date Extracted: 07/06/12
		Date Analyzed: 07/06/12

**Volatile Organics by P&T and GC/MS (Basic Target List)\***

Extraction Method: SW5030B

Analytical Method: SW8260B

Work Order: 1207014

Lab ID	1207014-007B
Client ID	DP-3
Matrix	Water

Compound	Concentration *	DF	Reporting Limit	Compound	Concentration *	DF	Reporting Limit
Acetone	ND	1.0	10	tert-Amyl methyl ether (TAME)	ND	1.0	0.5
Benzene	0.77	1.0	0.5	Bromobenzene	ND	1.0	0.5
Bromochloromethane	ND	1.0	0.5	Bromodichloromethane	ND	1.0	0.5
Bromoform	ND	1.0	0.5	Bromomethane	ND	1.0	0.5
2-Butanone (MEK)	ND	1.0	2.0	t-Butyl alcohol (TBA)	ND	1.0	2.0
n-Butyl benzene	2.4	1.0	0.5	sec-Butyl benzene	3.2	1.0	0.5
tert-Butyl benzene	ND	1.0	0.5	Carbon Disulfide	0.73	1.0	0.5
Carbon Tetrachloride	ND	1.0	0.5	Chlorobenzene	ND	1.0	0.5
Chloroethane	ND	1.0	0.5	Chloroform	ND	1.0	0.5
Chloromethane	ND	1.0	0.5	2-Chlorotoluene	ND	1.0	0.5
4-Chlorotoluene	ND	1.0	0.5	Dibromochloromethane	ND	1.0	0.5
1,2-Dibromo-3-chloropropane	ND	1.0	0.2	1,2-Dibromoethane (EDB)	ND	1.0	0.5
Dibromomethane	ND	1.0	0.5	1,2-Dichlorobenzene	ND	1.0	0.5
1,3-Dichlorobenzene	ND	1.0	0.5	1,4-Dichlorobenzene	ND	1.0	0.5
Dichlorodifluoromethane	ND	1.0	0.5	1,1-Dichloroethane	ND	1.0	0.5
1,2-Dichloroethane (1,2-DCA)	ND	1.0	0.5	1,1-Dichloroethene	ND	1.0	0.5
cis-1,2-Dichloroethene	27	1.0	0.5	trans-1,2-Dichloroethene	3.3	1.0	0.5
1,2-Dichloropropane	ND	1.0	0.5	1,3-Dichloropropane	ND	1.0	0.5
2,2-Dichloropropane	ND	1.0	0.5	1,1-Dichloropropene	ND	1.0	0.5
cis-1,3-Dichloropropene	ND	1.0	0.5	trans-1,3-Dichloropropene	ND	1.0	0.5
Diisopropyl ether (DIPE)	ND	1.0	0.5	Ethylbenzene	1.7	1.0	0.5
Ethyl tert-butyl ether (ETBE)	ND	1.0	0.5	Freon 113	ND	1.0	10
Hexachlorobutadiene	ND	1.0	0.5	Hexachloroethane	ND	1.0	0.5
2-Hexanone	ND	1.0	0.5	Isopropylbenzene	4.2	1.0	0.5
4-Isopropyl toluene	1.4	1.0	0.5	Methyl-t-butyl ether (MTBE)	ND	1.0	0.5
Methylene chloride	ND	1.0	0.5	4-Methyl-2-pentanone (MIBK)	ND	1.0	0.5
Naphthalene	5.6	1.0	0.5	n-Propyl benzene	6.0	1.0	0.5
Styrene	ND	1.0	0.5	1,1,1,2-Tetrachloroethane	ND	1.0	0.5
1,1,2,2-Tetrachloroethane	ND	1.0	0.5	Tetrachloroethene	ND	1.0	0.5
Toluene	1.6	1.0	0.5	1,2,3-Trichlorobenzene	ND	1.0	0.5
1,2,4-Trichlorobenzene	ND	1.0	0.5	1,1,1-Trichloroethane	ND	1.0	0.5
1,1,2-Trichloroethane	ND	1.0	0.5	Trichloroethene	0.70	1.0	0.5
Trichlorofluoromethane	ND	1.0	0.5	1,2,3-Trichloropropane	ND	1.0	0.5
1,2,4-Trimethylbenzene	38	1.0	0.5	1,3,5-Trimethylbenzene	9.4	1.0	0.5
Vinyl Chloride	25	1.0	0.5	Xylenes, Total	7.5	1.0	0.5

**Surrogate Recoveries (%)**

%SS1:	89	%SS2:	98
%SS3:	91		

**Comments:**

\* water and vapor samples are reported in µg/L, soil/sludge/solid samples in mg/kg, product/oil/non-aqueous liquid samples and all TCLP & SPLP extracts are reported in mg/L, wipe samples in µg/wipe.

ND means not detected above the reporting limit/method detection limit; N/A means analyte not applicable to this analysis; %SS = Percent Recovery of Surrogate Standard; DF = Dilution Factor

# surrogate diluted out of range or coelutes with another peak; &) low surrogate due to matrix interference.



Table with 4 columns: Client Project ID: #0298; Snow Cleaners, Date Sampled: 06/29/12, Date Received: 07/02/12, Client Contact: Steve Carmack, Date Extracted: 07/06/12, Client P.O., Date Analyzed: 07/06/12

Volatile Organics by P&T and GC/MS (Basic Target List)\*

Extraction Method: SW5030B

Analytical Method: SW8260B

Work Order: 1207014

Table with 2 columns: Lab ID (1207014-008B), Client ID (DP-4), Matrix (Water)

Main data table with 8 columns: Compound, Concentration \*, DF, Reporting Limit, Compound, Concentration \*, DF, Reporting Limit. Lists various organic compounds and their detection results.

Surrogate Recoveries (%)

Table with 2 columns: %SS1 (89), %SS2 (100), %SS3 (101)

Comments:

\* water and vapor samples are reported in µg/L, soil/sludge/solid samples in mg/kg, product/oil/non-aqueous liquid samples and all TCLP & SPLP extracts are reported in mg/L, wipe samples in µg/wipe.
ND means not detected above the reporting limit/method detection limit; N/A means analyte not applicable to this analysis; %SS = Percent Recovery of Surrogate Standard; DF = Dilution Factor
# surrogate diluted out of range or coelutes with another peak; &) low surrogate due to matrix interference.



P & D Environmental  55 Santa Clara, Ste.240  Oakland, CA 94610	Client Project ID: #0298; Snow Cleaners	Date Sampled: 06/29/12
	Client Contact: Steve Carmack	Date Received: 07/02/12
	Client P.O.:	Date Extracted: 07/03/12-07/06/12
		Date Analyzed: 07/03/12-07/06/12

**Gasoline Range (C6-C12) and Stoddard Solvent Range (C9-C12) Volatile Hydrocarbons as Gasoline and Stoddard Solvent\***

Extraction method: SW5030B

Analytical methods: SW8015Bm

Work Order: 1207014

Lab ID	Client ID	Matrix	TPH(g)	TPH(ss)	DF	% SS	Comments
001A	MW-1	W	ND	ND	1	105	
002A	MW-2	W	600	970	1	112	d5,d6
003A	MW-3	W	ND	ND	1	97	
004A	MW-4	W	ND	ND	1	100	
005A	DP-1	W	1100	73	1	---#	d6,c1
006A	DP-2	W	1500	990	3.3	---#	d5,d6
007A	DP-3	W	770	1300	1	78	d5
008A	DP-4	W	53	68	1	101	d5

Reporting Limit for DF =1; ND means not detected at or above the reporting limit	W	50	50	µg/L
	S	NA	NA	NA

\* water and vapor samples are reported in ug/L, soil/sludge/solid samples in mg/kg, wipe samples in µg/wipe, product/oil/non-aqueous liquid samples and all TCLP & SPLP extracts in mg/L.

# cluttered chromatogram; sample peak coelutes w/surrogate peak; low surrogate recovery due to matrix interference. %SS = Percent Recovery of Surrogate Standard; DF = Dilution Factor

The following descriptions of the TPH chromatogram are cursory in nature and McC Campbell Analytical is not responsible for their interpretation:  
 c1) surrogate recovery exceeds the control limits due to dilution / matrix interference / coelution / presence of surrogate compound in the sample  
 d5) TPH pattern that does not appear to be derived from gasoline (stoddard solvent / mineral spirit?)  
 d6) one to a few isolated non-target peaks present in the TPH(g) chromatogram



**McC Campbell Analytical, Inc.**

"When Quality Counts"

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http://www.mccampbell.com / E-mail: main@mccampbell.com

P & D Environmental  55 Santa Clara, Ste.240  Oakland, CA 94610	Client Project ID: #0298; Snow Cleaners	Date Sampled: 06/29/12
	Client Contact: Steve Carmack	Date Received: 07/02/12
	Client P.O.:	Date Extracted: 07/02/12
		Date Analyzed: 07/02/12-07/03/12

**Total Extractable Petroleum Hydrocarbons\***

Extraction method: SW3510C

Analytical methods: SW8015B

Work Order: 1207014

Lab ID	Client ID	Matrix	TPH-Diesel (C10-C23)	TPH-Bunker Oil (C10-C36)	DF	% SS	Comments
1207014-001A	MW-1	W	ND	ND	1	89	
1207014-002A	MW-2	W	1400	1600	1	89	e2,e4,e7
1207014-003A	MW-3	W	ND	ND	1	90	
1207014-004A	MW-4	W	ND	ND	1	89	
1207014-005A	DP-1	W	84	190	1	89	e2
1207014-006A	DP-2	W	1000	1200	1	90	e8/e11
1207014-007A	DP-3	W	1400	1600	1	89	e2,e4,e7
1207014-008A	DP-4	W	ND	ND	1	87	

Reporting Limit for DF =1; ND means not detected at or above the reporting limit	W	50	100	µg/L
	S	NA	NA	mg/Kg

\* water samples are reported in µg/L, wipe samples in µg/wipe, soil/solid/sludge samples in mg/kg, product/oil/non-aqueous liquid samples in mg/L, and all DISTLC / STLC / SPLP / TCLP extracts are reported in µg/L.

# cluttered chromatogram resulting in coeluted surrogate and sample peaks, or; surrogate peak is on elevated baseline, or; surrogate has been diminished by dilution of original extract.

%SS = Percent Recovery of Surrogate Standard. DF = Dilution Factor

The following descriptions of the TPH chromatogram are cursory in nature and McC Campbell Analytical is not responsible for their interpretation:  
e2) diesel range compounds are significant; no recognizable pattern  
e4) gasoline range compounds are significant.  
e7) oil range compounds are significant  
e8) kerosene/kerosene range/jet fuel range; and/or e11) stoddard solvent/mineral spirit (?)



**QC SUMMARY REPORT FOR SW8260B**

W.O. Sample Matrix: Water

QC Matrix: Water

BatchID: 68829

WorkOrder: 1207014

Analyte	Sample	Spiked	MS	MSD	MS-MSD	LCS	Acceptance Criteria (%)		
	µg/L	µg/L	% Rec.	% Rec.	% RPD	% Rec.	MS / MSD	RPD	LCS
tert-Amyl methyl ether (TAME)	ND	10	97.1	94.7	2.46	82.1	70 - 130	20	70 - 130
Benzene	ND	10	89.9	88	2.08	84.1	70 - 130	20	70 - 130
t-Butyl alcohol (TBA)	ND	40	112	113	0.990	86.5	70 - 130	20	70 - 130
Chlorobenzene	ND	10	93.5	91.4	2.22	89.4	70 - 130	20	70 - 130
1,2-Dibromoethane (EDB)	ND	10	106	101	4.89	90	70 - 130	20	70 - 130
1,2-Dichloroethane (1,2-DCA)	ND	10	113	108	4.40	97.8	70 - 130	20	70 - 130
1,1-Dichloroethene	ND	10	85.3	84.3	1.15	80.7	70 - 130	20	70 - 130
Diisopropyl ether (DIPE)	ND	10	100	98.5	1.57	89.9	70 - 130	20	70 - 130
Ethyl tert-butyl ether (ETBE)	ND	10	101	98.3	2.27	86.9	70 - 130	20	70 - 130
Methyl-t-butyl ether (MTBE)	ND	10	104	101	3.18	88.1	70 - 130	20	70 - 130
Toluene	ND	10	89	85.7	3.79	84.8	70 - 130	20	70 - 130
Trichloroethene	ND	10	94.7	92.5	2.38	89.4	70 - 130	20	70 - 130
%SS1:	113	25	113	113	0	109	70 - 130	20	70 - 130
%SS2:	94	25	95	93	1.15	96	70 - 130	20	70 - 130
%SS3:	112	2.5	111	111	0	113	70 - 130	20	70 - 130

All target compounds in the Method Blank of this extraction batch were ND less than the method RL with the following exceptions:  
 NONE

BATCH 68829 SUMMARY

Lab ID	Date Sampled	Date Extracted	Date Analyzed	Lab ID	Date Sampled	Date Extracted	Date Analyzed
1207014-001B	06/29/12 4:45 PM	07/04/12	07/04/12 2:53 AM	1207014-002B	06/29/12 5:25 PM	07/06/12	07/06/12 12:57 AM
1207014-003B	06/29/12 6:25 PM	07/06/12	07/06/12 1:35 AM				

MS = Matrix Spike; MSD = Matrix Spike Duplicate; LCS = Laboratory Control Sample; LCSD = Laboratory Control Sample Duplicate; RPD = Relative Percent Deviation.  
 $\% \text{ Recovery} = 100 * (\text{MS-Sample}) / (\text{Amount Spiked}); \text{RPD} = 100 * (\text{MS} - \text{MSD}) / ((\text{MS} + \text{MSD}) / 2).$   
 MS / MSD spike recoveries and / or %RPD may fall outside of laboratory acceptance criteria due to one or more of the following reasons: a) the sample is inhomogenous AND contains significant concentrations of analyte relative to the amount spiked, or b) the spiked sample's matrix interferes with the spike recovery.  
 N/A = not enough sample to perform matrix spike and matrix spike duplicate.  
 NR = analyte concentration in sample exceeds spike amount for soil matrix or exceeds 2x spike amount for water matrix or sample diluted due to high matrix or analyte content.  
 # surrogate diluted out of range or coelutes with another peak; &) low surrogate due to matrix interference.  
 Laboratory extraction solvents such as methylene chloride and acetone may occasionally appear in the method blank at low levels.



**QC SUMMARY REPORT FOR SW8260B**

W.O. Sample Matrix: Water

QC Matrix: Water

BatchID: 68877

WorkOrder: 1207014

Analyte	Sample	Spiked	MS	MSD	MS-MSD	LCS	Acceptance Criteria (%)		
	µg/L	µg/L	% Rec.	% Rec.	% RPD	% Rec.	MS / MSD	RPD	LCS
tert-Amyl methyl ether (TAME)	ND	10	100	103	3.06	89.7	70 - 130	20	70 - 130
Benzene	ND	10	88.5	90.7	2.44	85.7	70 - 130	20	70 - 130
t-Butyl alcohol (TBA)	ND	40	118	121	2.60	83.3	70 - 130	20	70 - 130
Chlorobenzene	ND	10	88.9	92	3.32	84	70 - 130	20	70 - 130
1,2-Dibromoethane (EDB)	ND	10	101	101	0	83.5	70 - 130	20	70 - 130
1,2-Dichloroethane (1,2-DCA)	ND	10	88.8	88.7	0.104	79.2	70 - 130	20	70 - 130
1,1-Dichloroethene	ND	10	81.5	82.5	1.21	85.2	70 - 130	20	70 - 130
Diisopropyl ether (DIPE)	ND	10	93.7	95.8	2.23	92.1	70 - 130	20	70 - 130
Ethyl tert-butyl ether (ETBE)	ND	10	100	102	1.91	94.1	70 - 130	20	70 - 130
Methyl-t-butyl ether (MTBE)	ND	10	99	102	3.34	89.9	70 - 130	20	70 - 130
Toluene	ND	10	93	93.4	0.454	91.1	70 - 130	20	70 - 130
Trichloroethene	1.3	10	85.9	88.7	2.78	86.8	70 - 130	20	70 - 130
%SS1:	89	25	94	91	3.02	90	70 - 130	20	70 - 130
%SS2:	100	25	101	98	2.74	104	70 - 130	20	70 - 130
%SS3:	101	2.5	102	101	0.804	98	70 - 130	20	70 - 130

All target compounds in the Method Blank of this extraction batch were ND less than the method RL with the following exceptions:  
 NONE

BATCH 68877 SUMMARY

Lab ID	Date Sampled	Date Extracted	Date Analyzed	Lab ID	Date Sampled	Date Extracted	Date Analyzed
1207014-004B	06/29/12 5:56 PM	07/05/12	07/05/12 11:54 AM	1207014-005B	06/29/12 2:05 PM	07/06/12	07/06/12 4:49 AM
1207014-006B	06/29/12 3:35 PM	07/07/12	07/07/12 2:42 AM	1207014-007B	06/29/12 4:15 PM	07/06/12	07/06/12 6:12 AM
1207014-008B	06/29/12 2:46 PM	07/06/12	07/06/12 6:53 AM				

MS = Matrix Spike; MSD = Matrix Spike Duplicate; LCS = Laboratory Control Sample; LCSD = Laboratory Control Sample Duplicate; RPD = Relative Percent Deviation.  
 % Recovery = 100 \* (MS-Sample) / (Amount Spiked); RPD = 100 \* (MS - MSD) / ((MS + MSD) / 2).  
 MS / MSD spike recoveries and / or %RPD may fall outside of laboratory acceptance criteria due to one or more of the following reasons: a) the sample is inhomogenous AND contains significant concentrations of analyte relative to the amount spiked, or b) the spiked sample's matrix interferes with the spike recovery.  
 N/A = not enough sample to perform matrix spike and matrix spike duplicate.  
 NR = analyte concentration in sample exceeds spike amount for soil matrix or exceeds 2x spike amount for water matrix or sample diluted due to high matrix or analyte content.  
 # surrogate diluted out of range or coelutes with another peak; &) low surrogate due to matrix interference.  
 Laboratory extraction solvents such as methylene chloride and acetone may occasionally appear in the method blank at low levels.



**QC SUMMARY REPORT FOR SW8021B/8015Bm**

W.O. Sample Matrix: Water

QC Matrix: Water

BatchID: 68845

WorkOrder: 1207014

EPA Method: SW8021B/8015Bm		Extraction: SW5030B					Spiked Sample ID: 1207014-001A			
Analyte	Sample	Spiked	MS	MSD	MS-MSD	LCS	Acceptance Criteria (%)			
	µg/L	µg/L	% Rec.	% Rec.	% RPD	% Rec.	MS / MSD	RPD	LCS	
TPH(btex) £	ND	60	108	101	7.08	110	70 - 130	20	70 - 130	
MTBE	ND	10	103	104	0.661	101	70 - 130	20	70 - 130	
Benzene	ND	10	100	106	6.02	104	70 - 130	20	70 - 130	
Toluene	ND	10	99.4	106	6.84	104	70 - 130	20	70 - 130	
Ethylbenzene	ND	10	98.7	102	3.50	104	70 - 130	20	70 - 130	
Xylenes	ND	30	93.9	98.7	5.02	100	70 - 130	20	70 - 130	
%SS:	105	10	100	98	2.45	100	70 - 130	20	70 - 130	

All target compounds in the Method Blank of this extraction batch were ND less than the method RL with the following exceptions:  
 NONE

BATCH 68845 SUMMARY

Lab ID	Date Sampled	Date Extracted	Date Analyzed	Lab ID	Date Sampled	Date Extracted	Date Analyzed
1207014-001A	06/29/12 4:45 PM	07/03/12	07/03/12 8:27 PM	1207014-002A	06/29/12 5:25 PM	07/03/12	07/03/12 9:33 PM
1207014-003A	06/29/12 6:25 PM	07/03/12	07/03/12 10:05 PM	1207014-004A	06/29/12 5:56 PM	07/03/12	07/03/12 10:37 PM
1207014-005A	06/29/12 2:05 PM	07/04/12	07/04/12 12:09 AM	1207014-006A	06/29/12 3:35 PM	07/05/12	07/05/12 8:23 PM
1207014-007A	06/29/12 4:15 PM	07/06/12	07/06/12 6:44 PM	1207014-008A	06/29/12 2:46 PM	07/06/12	07/06/12 5:58 PM

MS = Matrix Spike; MSD = Matrix Spike Duplicate; LCS = Laboratory Control Sample; LCSD = Laboratory Control Sample Duplicate; RPD = Relative Percent Deviation.  
 % Recovery = 100 \* (MS-Sample) / (Amount Spiked); RPD = 100 \* (MS - MSD) / ((MS + MSD) / 2).  
 MS / MSD spike recoveries and / or %RPD may fall outside of laboratory acceptance criteria due to one or more of the following reasons: a) the sample is inhomogenous AND contains significant concentrations of analyte relative to the amount spiked, or b) the spiked sample's matrix interferes with the spike recovery.  
 £ TPH(btex) = sum of BTEX areas from the FID.  
 # cluttered chromatogram; sample peak coelutes with surrogate peak.  
 N/A = not enough sample to perform matrix spike and matrix spike duplicate.  
 NR = matrix interference and/or analyte concentration in sample exceeds spike amount for soil matrix or exceeds 2x spike amount for water matrix or sample diluted due to high matrix or analyte content, or inconsistency in sample containers.





**QC SUMMARY REPORT FOR SW8015B**

W.O. Sample Matrix: Water

QC Matrix: Water

BatchID: 68759

WorkOrder: 1207014

EPA Method: SW8015B		Extraction: SW3510C					Spiked Sample ID: N/A			
Analyte	Sample	Spiked	MS	MSD	MS-MSD	LCS	Acceptance Criteria (%)			
	µg/L	µg/L	% Rec.	% Rec.	% RPD	% Rec.	MS / MSD	RPD	LCS	
TPH-Diesel (C10-C23)	N/A	1000	N/A	N/A	N/A	118	N/A	N/A	70 - 130	
%SS:	N/A	625	N/A	N/A	N/A	97	N/A	N/A	70 - 130	

All target compounds in the Method Blank of this extraction batch were ND less than the method RL with the following exceptions:  
 NONE

BATCH 68759 SUMMARY

Lab ID	Date Sampled	Date Extracted	Date Analyzed	Lab ID	Date Sampled	Date Extracted	Date Analyzed
1207014-001A	06/29/12 4:45 PM	07/02/12	07/02/12 9:59 PM	1207014-002A	06/29/12 5:25 PM	07/02/12	07/02/12 7:42 PM
1207014-003A	06/29/12 6:25 PM	07/02/12	07/03/12 3:41 AM	1207014-004A	06/29/12 5:56 PM	07/02/12	07/02/12 11:07 PM
1207014-005A	06/29/12 2:05 PM	07/02/12	07/03/12 4:54 PM	1207014-006A	06/29/12 3:35 PM	07/02/12	07/03/12 12:16 AM
1207014-007A	06/29/12 4:15 PM	07/02/12	07/02/12 6:33 PM	1207014-008A	06/29/12 2:46 PM	07/02/12	07/02/12 5:23 PM

MS = Matrix Spike; MSD = Matrix Spike Duplicate; LCS = Laboratory Control Sample; LCSD = Laboratory Control Sample Duplicate; RPD = Relative Percent Deviation.  
 $\% \text{ Recovery} = 100 * (\text{MS} - \text{Sample}) / (\text{Amount Spiked})$ ;  $\text{RPD} = 100 * (\text{MS} - \text{MSD}) / ((\text{MS} + \text{MSD}) / 2)$ .  
 MS / MSD spike recoveries and / or %RPD may fall outside of laboratory acceptance criteria due to one or more of the following reasons: a) the sample is inhomogenous AND contains significant concentrations of analyte relative to the amount spiked, or b) the spiked sample's matrix interferes with the spike recovery.  
 N/A = not enough sample to perform matrix spike and matrix spike duplicate.  
 NR = analyte concentration in sample exceeds spike amount for soil matrix or exceeds 2x spike amount for water matrix or sample diluted due to high matrix or analyte content.