

**P & D ENVIRONMENTAL**

A Division of Paul H. King, Inc.

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August 14, 2003

Report 0047.R31

Mr. L.B. Patel  
Mr. P. Gupta  
VIP Service  
385 Century Circle  
Danville, CA 94526

Alameda County  
APR 28 2004  
Environmental Health

SUBJECT: SEMI-ANNUAL GROUNDWATER MONITORING AND SAMPLING  
REPORT  
VIP Service  
3889 Castro Valley Blvd.  
Castro Valley, CA

Gentlemen:

P&D Environmental, a division of Paul H. King, Inc. (P&D) is pleased to present this report documenting the results of the semi-annual monitoring and sampling of groundwater monitoring wells MW1, MW2, and MW3 at the subject site. This work was performed in accordance with P&D's proposal 033099.P1 dated March 30, 1999 and requirements set forth in a letter from Mr. Scott Seery of the Alameda County Department of Environmental Health (ACDEH) dated March 18, 1994 for the subject site. Based upon a telephone conversation with Mr. Seery on July 31, 1995, the sampling of monitoring wells MW1 and MW2 was reduced to semi-annually. Based upon subsequent conversations, the sampling and monitoring of well MW3 has also been reduced to semi-annually. In addition, it was agreed that no further analysis for TPH-D will be performed for well MW3.

The monitoring and sampling was performed on June 19, 2003. The reporting period is for December, 2002 through June, 2003. A Site Location Map (Figure 1) and Site Plan (Figure 2) are attached with this report.

**BACKGROUND**

It is P&D's understanding that the site was purchased by VIP Service in December, 1984. Prior to purchase of the property by VIP Service, the site was operated as a retail gasoline station for an undetermined period of time. The site was operated as a retail gasoline station from the time of purchase by VIP Service until the tanks were removed by Accutite on April 26, 1993. The underground tank system consisted of three 10,000 gallon capacity gasoline tanks, two dispenser islands, and one 550 gallon waste oil tank. It is P&D's understanding that the fuel tanks contained leaded and unleaded gasoline while in use by VIP Service. In addition, VIP Service reported that diesel fuel was not stored at the site at any time.

It is P&D's understanding that at the time of tank removal, eight soil samples were collected from the sidewalls of the fuel tank pit, and one soil sample was collected from the waste oil tank pit. Groundwater was reported to have been encountered in the fuel tank pit at a depth of approximately 11 feet. One water sample was collected from the water in the fuel tank pit. On April 28, 1993 Accutite returned to the site and collected seven soil samples from beneath the dispenser islands.

All of the samples were analyzed at Sequoia Analytical in Redwood City, California for Total Petroleum Hydrocarbons as Gasoline (TPH-G); Benzene, Toluene, Ethylbenzene and Xylenes (BTEX); and for Total Lead. In addition, the samples from the waste oil tank were analyzed for Total Petroleum Hydrocarbons as Diesel (TPH-D); Total Oil and Grease (TOG); Halogenated Volatile Organic Compounds using EPA Method 8010; Semi-Volatile Organic Compounds using EPA Method 8270; and for the metals Cadmium, Chromium, Lead, Nickel and Zinc.

The results of the soil samples collected from the fuel tank pit showed TPH-G concentrations ranging from 120 to 6,200 parts per million (ppm), and total lead results ranging from not detected to 13 ppm. The results of the water sample from the fuel tank pit showed 140 ppm TPH-G, and 0.095 ppm total lead.

The results of the soil samples collected from beneath the fuel dispensers showed TPH-G values ranging from not detected to 4.7 ppm, and total lead values ranging from not detected to 7.6 ppm.

The results of the sample collected from the waste oil tank pit showed 670 ppm TPH-G; 410 ppm TPH-D; 1,300 ppm TOG; 0.023 ppm 1,2-Dichloroethane and 0.0094 ppm Tetrachloroethylene in the EPA Method 8010 analysis; 2.7 ppm 2-Methylnaphthalene and 3.8 ppm Naphthalene in the EPA Method 8270 analysis; and various metals concentrations, none of which exceeded ten times their respective STLC values. The laboratory identified the TPH-D results as being a "non-diesel mix," and indicated that the compounds reported as diesel were diesel-range gasoline and diesel-range oil compounds.

Between August 27 and November 1, 1993 P&D personnel collected stockpiled soil samples for stockpiled soil disposal characterization and oversaw the excavation of approximately 680 cubic yards of soil from the vicinity of the fuel tank pit in an effort to remove petroleum hydrocarbon-impacted soil. In addition, during this time the soil which was stockpiled by Accutite during the tank removal activities and during the subsequent soil excavation activities was disposed of at an appropriate disposal facility, and the tank pit backfilled and compacted. A total of eight confirmation soil samples were collected from the sidewalls of the tank pit on November 19, 1993 at a depth of 10 feet after over-excavation and prior to backfilling. The analytical results of the samples ranged from 33 to 3,200 ppm TPH-G. Documentation of excavation, stockpiled soil characterization and disposal, and backfilling of the pit are provided in P&D's report 0047.R1 dated January 24, 1994. The samples results associated with the removal of the tanks by Accutite are also summarized in P&D's report 0047.R1.

On November 10, 1993 P&D personnel oversaw the installation of three groundwater monitoring wells, designated as MW1 through MW3, and one exploratory soil boring, designated as B1, at the subject site. The wells were developed on November 12 and sampled on November 16, 1993. The results of the water samples showed that TPH-G was not detected in wells MW1 and MW2, and that BTEX was not detected in MW2. In well MW1, 0.0022 ppm of benzene was detected. In well MW3, TPH-G was detected at 12 ppm; BTEX was detected with benzene detected at 3.3 ppm; TRPH was not detected; EPA Method 8010 compounds were not detected except for 0.027 ppm 1,2-Dichloroethane; and EPA Method 8270 compounds were not detected except for 0.009

ppm Phenol, 0.006 ppm Benzyl Alcohol, 0.006 2-Methylphenol, 0.007 ppm 2,4-Dimethylphenol, 0.088 ppm Benzoic Acid, 0.042 ppm Naphthalene, and 0.015 2-Methylnaphthalene.

Documentation of the monitoring well and soil boring installation and associated sample results are presented in P&D's report 0047.R2 dated January 24, 1994. The locations of the monitoring wells are shown in Figure 2.

In response to a letter dated March 18, 1994 from Mr. Scott Seery of the ACDEH which commented upon the results of the initial groundwater sampling associated with the installation of the monitoring wells at the subject site, a quarterly groundwater monitoring and sampling program was initiated.

### FIELD ACTIVITIES

On June 19, 2003, all three of the monitoring wells at the site were monitored and sampled by P&D personnel. The wells were monitored for depth to water and the presence of free product or sheen. Depth to water was measured to the nearest 0.01 foot using an electric water level indicator. The presence of free product or sheen was evaluated using a transparent bailer. **No free product or sheen were observed in any of the wells.** However, moderate petroleum hydrocarbon odors were noted in the purge water from well MW3. Depth to water level measurements are presented in Table 1.

Prior to sampling, the monitoring wells were purged of a minimum of three casing volumes of water. During purging operations, the field parameters of electrical conductivity, temperature and pH were monitored. Once the field parameters were observed to stabilize, and a minimum of three casing volumes had been purged, a water sample was collected using a clean Teflon bailer.

The water samples were transferred to 40-milliliter glass Volatile Organic Analysis (VOA) vials and 1-liter amber glass bottles, as appropriate, which were 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 labeled and then transferred to a cooler with ice, until they were transported to McCampbell Analytical, Inc. in Pacheco, California. McCampbell Analytical, Inc. is a State-Certified hazardous waste testing laboratory. Chain of custody documentation accompanied the samples to the laboratory. Records of the field parameters measured during well purging are attached with this report. Water purged from the wells during purging operations was stored in a DOT-approved 55-gallon drum at the site pending appropriate disposal.

### HYDROGEOLOGY

Water levels were measured in the monitoring wells once during the report period. The measured depth to water at the site on June 19, 2003 ranged from 8.48 to 9.00 feet. The groundwater level increased by 0.09 feet in MW1, and decreased in wells MW2 and MW3 by 0.73 and 0.60 feet, respectively, since the previous monitoring on December 21, 2002. The calculated groundwater flow direction at the site on June 19, 2003 was to the west with a gradient of 0.011. The

groundwater flow direction has shifted towards the south, and the gradient has increased since the previous semi-annual monitoring on December 21, 2002.

Groundwater level data collected during the monitoring period are presented in Table 1. The groundwater flow direction at the site on June 19, 2003 is shown on Figure 2.

### LABORATORY RESULTS

The groundwater samples from monitoring wells MW1, MW2, and MW3 were analyzed for TPH-G using EPA Method 5030 in conjunction with Modified EPA Method 8015 (GCFID), and for BTEX and MTBE using EPA Method 8021B. In addition, the groundwater sample from MW3 (near the former waste oil tank) was analyzed for Halogenated Volatile Organic Compounds using EPA Method 8021B and for Semi-Volatile Organic Compounds using EPA Method 8270D.

The laboratory analytical results of the groundwater samples collected from wells MW1 and MW2 show that TPH-G, MTBE, and BTEX were not detected. The laboratory analytical results of the groundwater sample collected from monitoring well MW3 show that TPH-G was detected at a concentration of 16 ppm; benzene was detected at a concentration of 3.5 ppm; and that MTBE was not detected. In addition, EPA Method 8021B and EPA Method 8270D compounds were not detected with the exception of 0.024 ppm phenol, 0.056 ppm naphthalene, and 0.027 ppm 2-methyl naphthalene in monitoring well MW3. The laboratory analytical results are summarized in Table 2. Copies of the laboratory analytical reports and chain of custody documentation are attached with this report.

### DISCUSSION AND RECOMMENDATIONS

Based on the sample results, P&D recommends that the semi-annual monitoring and sampling be continued. Continuation of the monitoring and sampling program should be re-evaluated upon regulatory agency review of corrective action plan implementation results.

### DISTRIBUTION

Copies of this report should be distributed to Mr. Scott Seery at the Alameda County Department of Environmental Health. Copies of the report should be accompanied by a transmittal letter signed by the principal executive officer of VIP Service.

### LIMITATIONS

This report was prepared solely for the use of VIP Service. 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 site owner, regulatory agencies and other pertinent individuals; review of available public documents; subsurface exploration and our professional judgment based on said information at the time of preparation of this document. Any subsurface sample results and observations presented herein are considered to be representative of the area of investigation; however, geological conditions

may vary between borings and may not necessarily apply to the general site as a whole. If future subsurface or other conditions are revealed which vary from these findings, the newly-revealed conditions must be evaluated and may invalidate the findings of this report.

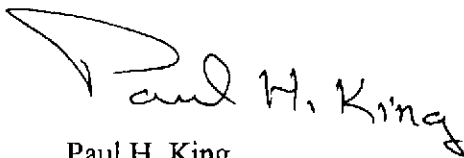
This report is issued with the understanding that it is the responsibility of the owner, or his representative, to ensure that the information contained herein is brought to the attention of the appropriate regulatory agencies, where required by law. Additionally, it is the sole responsibility of the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

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

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

Sincerely,

P&D Environmental



Paul H. King  
President  
California Registered Geologist  
Registration No. : 5901  
Expires: 12/31/03

Attachments: Tables 1 & 2  
Site Location Map (Figure 1)  
Site Plan (Figure 2)  
Field Parameter Forms  
Laboratory Analytical Reports  
Chain of Custody Documentation

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0047.R31

TABLE 1  
WELL MONITORING DATA

Well No.	Date Monitored	Top of Casing Elev. (ft.)	Depth to Water (ft.)	Water Table Elev. (ft.)
MW1	06/19/03	180.83	9.00	171.83
	12/21/02		9.09	171.74
	04/30/02		9.03	171.80
	10/16/01		9.33	171.50
	11/08/00		9.04	171.79
	05/24/00		7.97	172.86
	09/10/99		8.79	172.04
	02/10/99		7.72	173.11
	02/24/98		6.61	174.22
	11/18/97		9.71	171.12
	08/12/97		9.39	171.44
	04/25/97		8.37	172.46
	01/31/97		7.62	173.21
	07/19/96		8.81	172.02
	04/23/96		8.17	172.66
	01/17/96		9.66	171.17
	10/26/95		10.00	170.83
	08/15/95		9.23	171.60
	05/02/95		8.56	172.27
	01/30/95		9.50	171.33
	10/31/94		11.55	169.28
	07/29/94		10.86	169.97
	04/25/94		10.70	170.13
	11/16/93		11.63	169.20
	11/12/93*		11.53	169.30

NOTES:

Elevations are in feet Mean Sea Level.

ft. = Feet.

\* = Depth to water measurements prior to groundwater monitoring well development.

TABLE 1  
WELL MONITORING DATA  
(Continued)

Well No.	Date Monitored	Top of Casing Elev. (ft.)	Depth to Water (ft.)	Water Table Elev. (ft.)
MW2	06/19/03	179.70	8.68	171.02
	12/21/02		7.95	171.75
	04/30/02		8.76	170.94
	10/16/01		9.76	169.94
	11/08/00		8.63	171.07
	05/24/00		7.65	172.05
	09/10/99		8.48	171.22
	02/10/99		7.05	172.65
	02/24/98		6.20	173.50
	11/18/97		9.26	170.44
	08/12/97		9.06	170.64
	04/25/97		8.10	171.60
	01/31/97		7.22	172.48
	07/19/96		8.57	171.13
	04/23/96		7.85	171.85
	01/17/96		8.94	170.76
	10/26/95		9.68	170.02
	08/15/95		8.91	170.79
	05/02/95		8.17	171.53
	01/30/95		8.68	171.02
	10/31/94		10.99	168.71
	07/29/94		10.34	169.36
	04/25/94		10.04	169.66
	11/16/93		11.10	168.60
	11/12/93*		10.95	168.75

NOTES:

Elevations are in feet Mean Sea Level.

ft. = Feet.

\* = Depth to water measurements prior to groundwater monitoring well development.

TABLE 1  
WELL MONITORING DATA  
(Continued)

Well No.	Date Monitored	Top of Casing Elev. (ft.)	Depth to Water (ft.)	Water Table Elev. (ft.)
MW3	06/19/03	178.98	8.48	170.50
	12/21/02		7.88	171.10
	04/30/02		8.56	170.42
	10/16/01		10.14	168.84
	11/08/00		8.45	170.53
	05/24/00		7.62	171.36
	09/10/99		8.34	170.64
	02/10/99		7.12	171.86
	02/24/98		6.55	172.43
	11/18/97		8.97	170.01
	08/12/97		8.85	170.13
	04/25/97		7.99	170.99
	01/31/97		7.30	171.68
	07/19/96		8.42	170.56
	04/23/96		7.76	171.22
	01/17/96		8.61	170.37
	10/26/95		9.39	169.59
	08/15/95		8.62	170.36
	05/02/95		8.04	170.94
	01/30/95		8.46	170.52
	10/31/94		10.58	168.40
	07/29/94		10.03	168.95
	04/25/94		9.64	169.34
	11/16/93		10.63	168.35
	11/12/93*		10.66	168.32

NOTES:

Elevations are in feet Mean Sea Level.

ft. = Feet.

\* = Depth to water measurements prior to groundwater monitoring well development.



TABLE 2  
GROUNDWATER  
LABORATORY ANALYTICAL RESULTS

Sample Location	TPH-G	MTBE	Benzene	Toluene	Ethyl-benzene	Xylenes
	Samples Collected on June 19, 2003					
MW1	ND<0.05	ND<0.005	ND<0.0005	ND<0.0005	ND<0.0005	ND<0.0005
MW2	ND<0.05	ND<0.005	ND<0.0005	ND<0.0005	ND<0.0005	ND<0.0005
MW3 <sup>a</sup>	16,d	ND<0.25	3.5	0.11	0.43	0.64

NOTES:

TPH-D = Total Petroleum Hydrocarbons as Diesel.

TPH-G = Total Petroleum Hydrocarbons as Gasoline.

MTBE = Methyl tert-Butyl Ether.

ND = Not Detected.

NA = Not Analyzed.

a = EPA Method 8010 compounds were not detected; and EPA Method 8270D compounds were not detected except for 0.024 ppm phenol, 0.056 ppm naphthalene, and 0.027 ppm 2-methyl naphthalene.

d = Laboratory Analytical Report Note: lighter than water immiscible sheen on sample.

Results are in parts per million (ppm), unless otherwise specified.

TABLE 2 (CONT.)  
GROUNDWATER  
LABORATORY ANALYTICAL RESULTS

Sample Location	TPH-G	MTBE	Benzene	Toluene	Ethyl-benzene	Xylenes
Samples Collected on December 21, 2002						
MW1	ND	ND	ND	ND	ND	ND
MW2	ND	ND	ND	ND	ND	ND
MW3 <sup>a</sup>	15	ND<0.45	3.3	0.18	0.48	1.0
Samples Collected on April 30, 2002						
MW1	ND	ND	ND	ND	ND	ND
MW2	ND	ND	ND	ND	ND	ND
MW3 <sup>b</sup>	11	ND<200	2.2	0.12	0.37	0.59
Samples Collected on October 16, 2001						
MW1	ND	ND	ND	ND	ND	ND
MW2	ND	ND	ND	ND	ND	ND
MW3 <sup>c</sup>	2.1	ND	0.52	0.030	0.077	0.130

NOTES:

TPH-D = Total Petroleum Hydrocarbons as Diesel.

TPH-G = Total Petroleum Hydrocarbons as Gasoline.

MTBE = Methyl tert-Butyl Ether.

ND = Not Detected.

NA = Not Analyzed.

a = In MW3 EPA Method 8021B compounds were not detected except for 0.011 ppm 1,2-dichloroethane; and EPA Method 8270D compounds were not detected except for 0.035 ppm naphthalene and 0.014 ppm 2-methyl naphthalene.

b = In MW3, EPA Method 8010 compounds were not detected; and EPA Method 8270 compounds were not detected except for 0.053 ppm naphthalene.

c = In MW3 EPA Method 8010 compounds were not detected except for 0.0013 ppm 1,2-dichloroethane; and EPA Method 8270 compounds were not detected.

Results are in parts per million (ppm), unless otherwise specified.

TABLE 2  
GROUNDWATER  
LABORATORY ANALYTICAL RESULTS  
(Continued)

Sample Location	TPH-G	MTBE	Benzene	Toluene	Ethyl-benzene	Xylenes
Samples Collected on November 8, 2000						
MW1	ND	ND	ND	ND	ND	ND
MW2	ND	ND	ND	ND	ND	ND
MW3**	0.54	ND	0.15	0.0069	0.018	0.029
Samples Collected on May 24, 2000						
MW1	ND	ND	ND	ND	ND	ND
MW2	ND	ND	ND	ND	ND	ND
MW3***	2.1	0.032	0.47	0.027	0.062	0.13
Samples Collected on September 10, 1999						
MW1	ND	0.049	ND	ND	ND	ND
MW2	ND	ND	ND	ND	ND	ND
MW3****	0.39	ND	0.098	0.0073	0.012	0.028

NOTES:

TPH-D = Total Petroleum Hydrocarbons as Diesel.

TPH-G = Total Petroleum Hydrocarbons as Gasoline.

MTBE = Methyl tert-Butyl Ether.

ND = Not Detected.

NA = Not Analyzed.

\*\* = In MW3 EPA Method 8010 compounds were not detected except for 0.0013 ppm 1,2-dichloroethane; and EPA Method 8270 compounds were not detected.

\*\*\* = In MW3 EPA Method 8010 compounds were not detected except for 0.0017 ppm 1,2-Dichloroethane; and EPA Method 8270 compounds were not detected.

\*\*\*\* = In MW3 EPA Method 8010 compounds were not detected except for 0.002 ppm 1,2-Dichloroethane; and EPA Method 8270 compounds were not detected.

Results are in parts per million (ppm), unless otherwise specified.

TABLE 2  
GROUNDWATER  
LABORATORY ANALYTICAL RESULTS  
(Continued)

Sample Location	TPH-D	TPH-G	Benzene	Toluene	Ethylbenzene	Xylenes
Samples Collected on February 10, 1999						
MW1	NA	ND	ND	ND	ND	ND
MW2	NA	ND	ND	ND	ND	ND
MW3*****	NA	4.1	1.7	0.96	0.27	0.42
Samples Collected on February 24, 1998						
MW1	ND	ND	ND	ND	ND	ND
MW2	ND	ND	ND	ND	ND	ND
MW3+	NA	19	4.6	0.33	0.65	1.8
Samples Collected on November 18, 1997						
MW1	NA	NA	NA	NA	NA	NA
MW2	NA	NA	NA	NA	NA	NA
MW3++	NA	2.1	0.48	0.052	0.071	0.19

NOTES:

TPH-D = Total Petroleum Hydrocarbons as Diesel.

TPH-G = Total Petroleum Hydrocarbons as Gasoline.

ND = Not Detected.

NA = Not Analyzed.

\*\*\*\*\* = In MW3, MTBE was not detected; EPA Method 8010 compounds were not detected except for 0.0028 ppm 1,2-Dichloroethane; and EPA Method 8270 compounds were not detected except for 0.021 ppm Naphthalene.

+ = In MW3, MTBE was not detected; EPA Method 8010 compounds were not detected except for 0.011 ppm 1,2-Dichloroethane; and EPA Method 8270 compounds were not detected except for Naphthalene, 2-Methylnaphthalene and Phenol which were detected at concentrations of 0.083, 0.019, and 0.023 ppm, respectively.

++ = In MW3, MTBE was not detected; EPA Method 8010 compounds were not detected except for 0.0021 ppm 1,2 Dichloroethane; and EPA Method 8270 compounds were not detected except for Naphthalene and 2-Methylnaphthalene which were detected at concentrations of 0.058 and 0.026 ppm, respectively.

Results are in parts per million (ppm), unless otherwise specified.

TABLE 2  
 GROUNDWATER  
 LABORATORY ANALYTICAL RESULTS  
 (Continued)

Sample Location	TPH-D	TPH-G	Benzene	Toluene	Ethylbenzene	Xylenes
Samples Collected on August 12, 1997						
MW1	ND	ND	ND	ND	ND	ND
MW2	ND	ND	ND	ND	ND	ND
MW3+++	NA	16	4.2	0.45	0.54	1.9
Samples Collected on April 25, 1997						
MW1	NA	NA	NA	NA	NA	NA
MW2	NA	NA	NA	NA	NA	NA
MW3++++	NA	30	5.3	0.52	0.95	3.0
Samples Collected on January 31, 1997						
MW1	NA	ND	ND	ND	ND	ND
MW2	NA	ND	ND	ND	ND	ND
MW3+++++	NA	5.5	1.6	0.10	0.19	0.41

NOTES:

TPH-D = Total Petroleum Hydrocarbons as Diesel.

TPH-G = Total Petroleum Hydrocarbons as Gasoline.

ND = Not Detected.

NA = Not Analyzed.

+++ = In MW3, MTBE was not detected; EPA Method 8010 compounds were not detected except for 0.0091 ppm 1,2-Dichloroethane; and EPA Method 8270 compounds were not detected except for Bis(2-ethylhexyl) Phthalate, Naphthalene, and 2-Methylnaphthalene which were detected at concentrations of 0.021, 0.087, and 0.024 ppm, respectively.

++++ = In MW3, MTBE was not detected; EPA Method 8010 compounds were not detected except for 0.012 ppm 1,2 Dichloroethane; and EPA Method 8270 compounds were not detected except for Phenol, 4-Methylphenol, 2,4-Dimethylphenol, Naphthalene, and 2-Methylnaphthalene which were detected at concentrations of 0.0028, 0.0024, 0.0028, 0.066 ppm, and 0.015 ppm, respectively.

+++++ = In MW3, MTBE was detected at a concentration of 0.063 ppm; EPA Method 8010 compounds were not detected except for 0.014 ppm 1,2 Dichloroethane; and EPA Method 8270 compounds were not detected except for Phenol, 2,4-Dimethylphenol, Naphthalene, and 2-Methylnaphthalene which were detected at concentrations of 0.0094, 0.0028, 0.031, and 0.0048 ppm, respectively.

Results are in parts per million (ppm), unless otherwise specified.

TABLE 2  
GROUNDWATER  
LABORATORY ANALYTICAL RESULTS  
(Continued)

Sample Location	TPH-D	TPH-G	Benzene	Toluene	Ethylbenzene	Xylenes
Samples Collected on July 19, 1996						
MW1	NA	NA	NA	NA	NA	NA
MW2	NA	NA	NA	NA	NA	NA
MW3@	NA	18	4.8	0.61	0.76	2.8
Samples Collected on April 23, 1996						
MW1	NA	ND	ND	ND	ND	ND
MW2	NA	ND	ND	ND	ND	ND
MW3@@	NA	9.7	2.9	0.17	0.38	0.68
Samples Collected on January 17, 1996						
MW1	NA	NA	NA	NA	NA	NA
MW2	NA	NA	NA	NA	NA	NA
MW3@@@	NA	21	4.1	0.37	0.52	1.5

NOTES:

TPH-D = Total Petroleum Hydrocarbons as Diesel.

TPH-G = Total Petroleum Hydrocarbons as Gasoline.

ND = Not Detected.

NA = Not Analyzed.

@ = In MW3, EPA Method 8010 compounds were not detected; EPA Method 8270 compounds were not detected except for 0.0022 ppm 2,4-Dimethylphenol, 0.1 ppm Naphthalene, and 0.022 ppm 2-Methylnaphthalene. The EPA Method 8020 showed that MTBE was detected in MW3 at a concentration of 0.21 ppm.

@@ = In MW3, EPA 8010 compounds were not detected except for 0.0051 ppm 1,2-Dichloroethane; EPA 8270 compounds were not detected except for Naphthalene and Phenol which were detected at concentrations of 0.056 and 0.025 ppm, respectively. The EPA Method 8020 results showed that MTBE was not detected in MW1 or MW2, and was detected in MW3 at a concentration of 0.15 ppm.

@@@ = In MW3, EPA 8010 compounds were not detected except for 0.011 ppm 1,2-Dichloroethane; EPA 8270 compounds were not detected except for 0.0022 ppm Phenol, 0.0051 ppm 4-Methylphenol, 0.0029 ppm 2,4-Dimethylphenol, 0.032 ppm Naphthalene, and 0.010 ppm 2-Methylnaphthalene.

Results are in parts per million (ppm), unless otherwise specified.

TABLE 2  
GROUNDWATER  
LABORATORY ANALYTICAL RESULTS  
(Continued)

Sample Location	TPH-D	TPH-G	Benzene	Toluene	Ethylbenzene	Xylenes
Samples Collected on October 26, 1995						
MW1	NA	ND	ND	ND	ND	ND
MW2	NA	ND	ND	ND	ND	ND
MW3@@@@	NA	19	4.0	0.48	0.64	1.8
Samples Collected on August 15, 1995						
MW1	NA	NA	NA	NA	NA	NA
MW2	NA	NA	NA	NA	NA	NA
MW3@@@@@	NA	7.0	2.4	0.23	0.26	0.73
Samples Collected on May 2, 1995						
MW1	NA	ND	ND	ND	ND	ND
MW2	NA	ND	ND	ND	ND	ND
MW3#	0.84	18	5.4	0.39	0.65	1.7

NOTES:

TPH-D = Total Petroleum Hydrocarbons as Diesel.

TPH-G = Total Petroleum Hydrocarbons as Gasoline.

ND = Not Detected.

NA = Not Analyzed.

@@@@ = In MW3, EPA 8010 compounds were not detected except for 0.011 ppm 1,2-Dichloroethane; EPA 8270 compounds were not detected except for 0.043 ppm Naphthalene. The EPA Method 8020 results showed that MTBE was not detected in MW1 or MW2, and was detected in MW3 at a concentration of 0.24 ppm.

@@@@@ = EPA 8010 compounds were not detected except for 0.0091 ppm 1,2-Dichloroethane; EPA 8270 compounds were not detected except for 0.003 ppm 4-Methylphenol, 0.005 ppm 2,4-Dimethyl Phenol, 0.019 ppm Naphthalene, and 0.003 ppm 2-Methylnaphthalene.

# = Review of the laboratory report and discussions with the laboratory indicate that the results reported as TPH-D are gasoline-range compounds. EPA 8010 compounds not detected except for 0.014 ppm 1,2-Dichloroethane; EPA 8270 compounds were not detected except for 0.010 ppm 2-Methyl naphthalene and 0.062 ppm Naphthalene.

Results are in parts per million (ppm), unless otherwise specified.

TABLE 2  
GROUNDWATER  
LABORATORY ANALYTICAL RESULTS  
(Continued)

Sample Location	TPH-D	TPH-G	Benzene	Toluene	Ethylbenzene	Xylenes
Samples Collected on January 30, 1995						
MW1	NA	ND	ND	ND	ND	ND
MW2	NA	ND	ND	ND	ND	ND
MW3##	0.70	24	7.6	0.35	0.90	2.2
Samples Collected on October 31, 1994						
MW1	NA	ND	ND	ND	ND	ND
MW2	NA	ND	ND	ND	ND	ND
MW3###	0.60	8.7	2.6	0.26	0.32	0.92
Samples Collected on July 29, 1994						
MW1	NA	ND	0.0012	ND	ND	ND
MW2	NA	ND	ND	ND	ND	ND
MW3####	0.67	6.3	2.0	0.13	0.22	0.52

NOTES:

TPH-D = Total Petroleum Hydrocarbons as Diesel.

TPH-G = Total Petroleum Hydrocarbons as Gasoline.

ND = Not Detected.

NA = Not Analyzed.

## = Review of the laboratory report and discussions with the laboratory indicate that the results reported as TPH-D are gasoline-range compounds. EPA 8010 compounds not detected except for 0.018 ppm 1,2-Dichloroethane; EPA 8270 compounds were not detected except for 0.014 ppm 2-Methyl naphthalene and 0.11 ppm Naphthalene.

### = Review of the laboratory report and discussions with the laboratory indicate that the results reported as TPH-D are gasoline-range compounds. EPA 8010 compounds not detected except for 0.019 ppm 1,2-Dichloroethane; EPA 8270 compounds were not detected except for 0.008 ppm 2-Methyl naphthalene, 0.047 ppm Naphthalene, and 0.002 ppm Bis(2-Ethylhexyl) Phthalate.

#### = Review of the laboratory report and discussions with the laboratory indicate that the results reported as TPH-D are gasoline-range compounds. EPA 8010 compounds not detected except for 0.0077 ppm 1,2-Dichloroethane; EPA 8270 compounds not detected except for 0.008 ppm 2-Methylnaphthalene and 0.044 ppm Naphthalene.

Results are in parts per million (ppm), unless otherwise specified.



TABLE 2  
GROUNDWATER  
LABORATORY ANALYTICAL RESULTS  
(Continued)

Sample Location	TPH-D	TPH-G	Benzene	Toluene	Ethyl-benzene	Xylenes
Samples Collected on April 25, 1994						
MW1	ND	ND	ND	ND	ND	ND
MW2	ND	ND	ND	ND	ND	ND
MW3#####	2.1	17	4.8	0.47	0.29	1.6
Samples Collected on November 16, 1993						
MW1	NA	ND	0.0022	ND	ND	ND
MW2	NA	ND	ND	ND	ND	ND
MW3^	NA	12	3.3	0.66	0.24	1.6

NOTES:

TPH-D = Total Petroleum Hydrocarbons as Diesel.

TPH-G = Total Petroleum Hydrocarbons as Gasoline.

ND = Not Detected.

NA = Not Analyzed.

##### = Review of the laboratory report and discussions with the laboratory indicate that the results reported as TPH-D are gasoline-range compounds. EPA 8010 compounds not detected except for 0.28 ppm 1,2-Dichloroethane; EPA 8270 compounds not detected except for 0.013 ppm 2-Methylnaphthalene and 0.084 ppm Naphthalene.

^ = TRPH not detected; EPA 8010 compounds not detected except for 0.027 ppm 1,2-Dichloroethane; EPA 8270 compounds not detected except for 0.009 ppm Phenol, 0.006 ppm Benzyl Alcohol, 0.006 2-Methylphenol, 0.007 ppm 2,4-Dimethylphenol, 0.088 ppm Benzoic Acid, 0.042 ppm Naphthalene, and 0.015 ppm 2-Methylnaphthalene.

Results are in parts per million (ppm), unless otherwise specified.

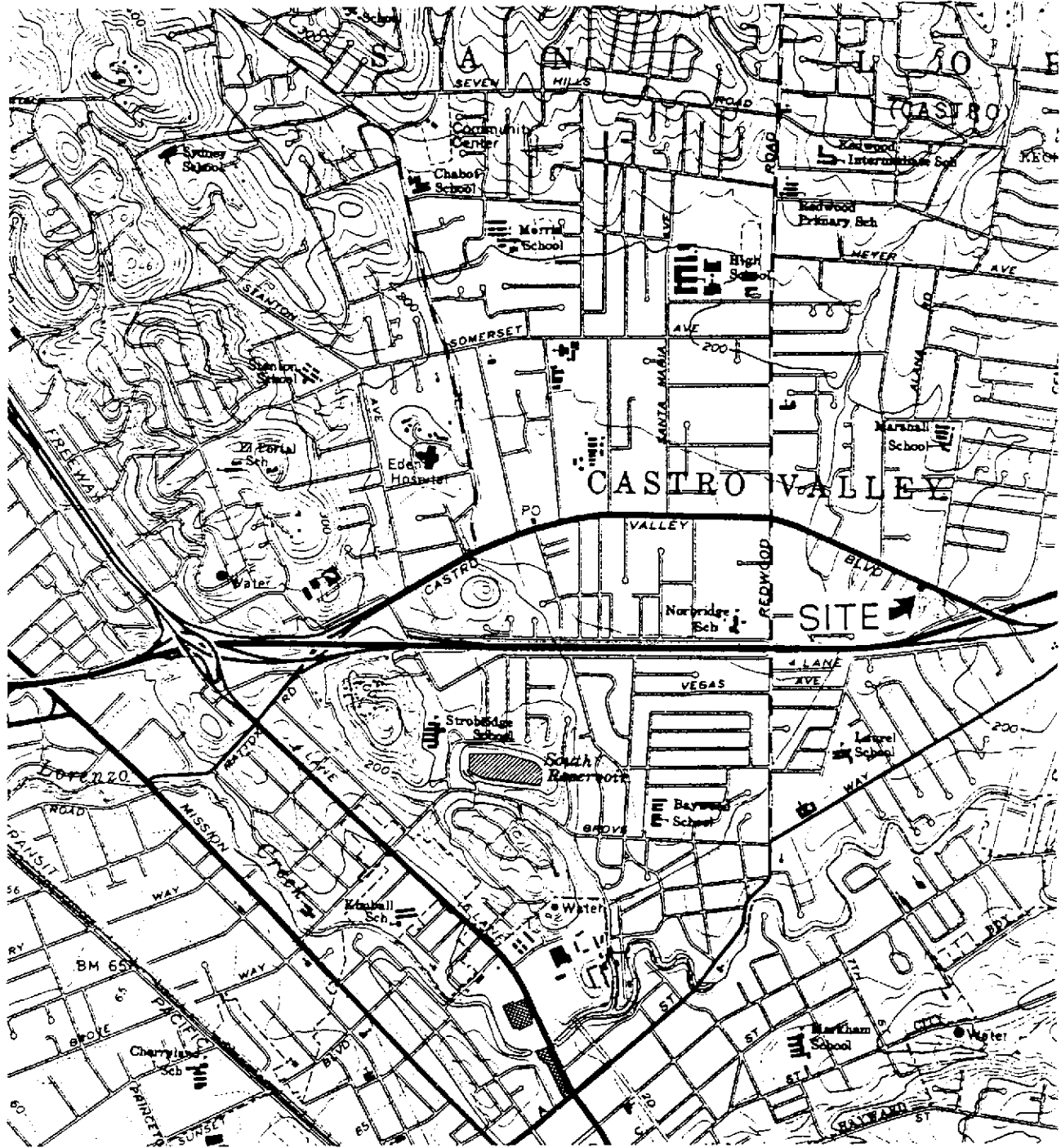
# P & D ENVIRONMENTAL

A Division of Paul H. King, Inc.

4020 Panama Court

Oakland, CA 94611

(510) 658-6916



Base Map From  
U.S. Geological Survey  
Hayward, Calif.  
7.5 Minute Quadrangle  
Photorevised 1980

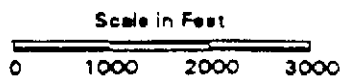


Figure 1  
SITE LOCATION MAP  
VIP Service  
3889 Castro Valley Blvd.  
Castro Valley, California

# P & D ENVIRONMENTAL

A Division of Paul H. King, Inc.

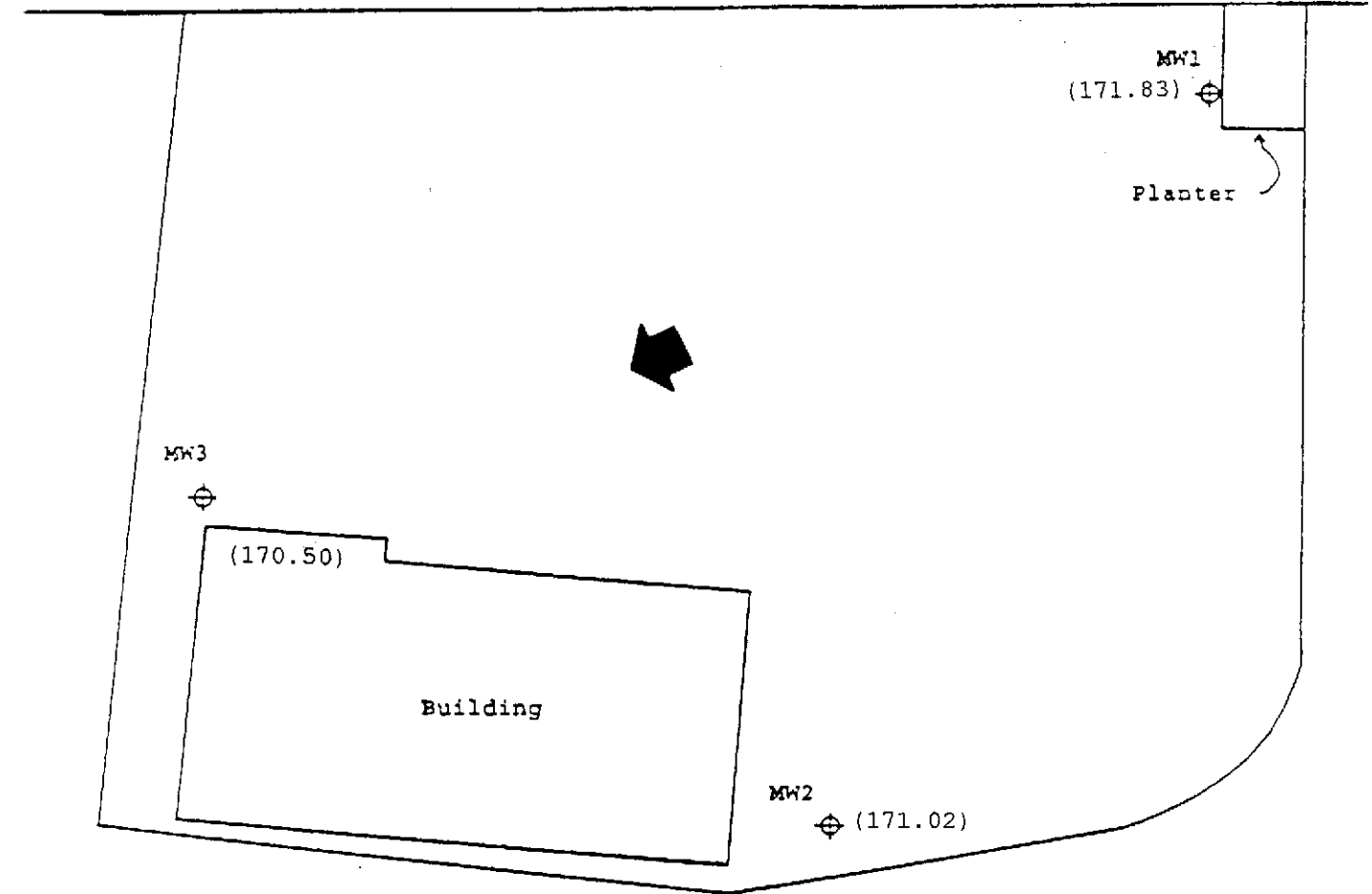
4020 Panama Court

Oakland, CA 94611





(510) 658-6916

Castro Valley Boulevard

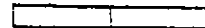
Sidewalk



### LEGEND

-  Monitoring Well Location
-  Exploratory Boring Location
-  ( ) Groundwater Surface Elevation in Feet on June 19, 2003
-  Groundwater Flow Direction

0 10 20



Scale in Feet

North



Base Map From  
P&D Environmental  
October, 1993

Figure 2  
SITE PLAN  
VIP Service  
3889 Castro Valley Blvd.  
Castro Valley, California

P&D ENVIRONMENTAL  
GROUNDWATER MONITORING/WELL PURGING  
DATA SHEET

Site Name VIP Service  
 Job No. 0047  
 TOC to Water (ft.) 9.00  
 Well Depth (ft.) 20  
 Well Diameter 2 in.  
 Gal./Casing Vol. 1.79  
 $E = 5.4$

Well No. MW1  
 Date 6/19/03  
 Sheen NONE  
 Free Product Thickness Ø  
 Sample Collection Method Teflon bailer

TIME	GAL. PURGED	pH	TEMPERATURE (°F)	ELECTRICAL CONDUCTIVITY (µS/cm) X 100
<u>11:01</u>	<u>0.5</u>	<u>10.09</u>	<u>80.1</u>	<u>2.93</u>
<u>11:02</u>	<u>1</u>	<u>10.11</u>	<u>80.6</u>	<u>2.98</u>
<u>11:02</u>	<u>2.5</u>	<u>10.10</u>	<u>81.3</u>	<u>3.02</u>
<u>11:03</u>	<u>4</u>	<u>10.16</u>	<u>81.7</u>	<u>3.02</u>
<u>11:04</u>	<u>5</u>	<u>10.20</u>	<u>83.0</u>	<u>3.16</u>
<u>11:05</u>	<u>6</u>	<u>10.29</u>	<u>84.6</u>	<u>3.31</u>
<u>11:07</u>	<u>7</u>	<u>10.27</u>	<u>84.3</u>	<u>3.28</u>
<u>11:15</u>	<u>Wells</u>	<u>Sampled.</u>		

NOTES: Water in Christie box. No odor or sheen on  
purge water.

P&D ENVIRONMENTAL  
 GROUNDWATER MONITORING/WELL PURGING  
 DATA SHEET

Site Name VIP Service  
 Job No. 0047  
 TOC to Water (ft.) 8.68  
 Well Depth (ft.) 20  
 Well Diameter 2 in  
 Gal./Casing Vol. 1.85  
     ε = 5.5

Well No. MW2  
 Date 6/19/03  
 Sheen NONE  
 Free Product Thickness Ø  
 Sample Collection Method Teflon bailer

TIME	GAL. PURGED	DH	TEMPERATURE (°F)	ELECTRICAL CONDUCTIVITY (µS/cm) × 100
<u>11:45</u>	<u>0.5</u>	<u>10.25</u>	<u>84.0</u>	<u>3.10</u>
<u>11:45</u>	<u>1</u>	<u>10.19</u>	<u>83.5</u>	<u>3.20</u>
<u>11:46</u>	<u>2.5</u>	<u>10.16</u>	<u>82.9</u>	<u>3.09</u>
<u>11:46</u>	<u>4</u>	<u>10.16</u>	<u>81.8</u>	<u>3.08</u>
<u>11:47</u>	<u>5</u>	<u>10.15</u>	<u>81.5</u>	<u>2.99</u>
<u>11:48</u>	<u>6</u>	<u>10.15</u>	<u>81.2</u>	<u>2.98</u>
<u>12:00</u>		<u>Sampling time.</u>		

NOTES: No odor or sheen on purge water.

P&D ENVIRONMENTAL  
GROUNDWATER MONITORING/WELL PURGING  
DATA SHEET

Site Name VIP Service

Well No. MW3

Job No. 0047

Date 6/19/03

TOC to Water (ft.) 8.48

Sheen NONE

Well Depth (ft.) 20

Free Product Thickness 0

Well Diameter 2 in.

Sample Collection Method Teflon bailer

Gal./Casing Vol. 1.88

$\Sigma = 5.6$

TIME	GAL. PURGED	pH	TEMPERATURE (°F)	ELECTRICAL CONDUCTIVITY (µS/cm) × 100
12:30	0.5	10.27	84.3	3.08
12:30	1	10.08	83.2	3.12
12:31	2.5	10.04	81.9	2.94
12:32	4	9.92	80.08	2.94
12:33	5	9.92	79.8	2.83
12:33	6	9.87	78.8	2.80
12:34	7	9.81	78.4	2.75
12:35	8	9.84	78.3	2.71
12:45		Sampling time.		

NOTES: Moderate PTH odor on purge water.



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P & D Environmental  
 4020 Panama Court  
 Oakland, CA 94611-4931

Client Project ID: #0047; VIP Service

Date Sampled: 06/19/03

Date Received: 06/20/03

Client Contact: Paul King

Date Extracted: 06/24/03-06/25/03

Client P.O.:

Date Analyzed: 06/24/03-06/25/03

**Gasoline Range (C6-C12) Volatile Hydrocarbons as Gasoline with BTEX and MTBE\***

Extraction method: SW5030B

Analytical methods: SW8021B/8015Cm

Work Order: 0306447

Lab ID	Client ID	Matrix	TPH(g)	MTBE	Benzene	Toluene	Ethylbenzene	Xylenes	DF	% SS
001A	MW1	W	ND	ND	ND	ND	ND	ND	1	104
002A	MW2	W	ND	ND	ND	ND	ND	ND	1	100
003A	MW3	W	16,000,a,h	ND<250	3500	110	430	640	50	119
Reporting Limit for DF =1; ND means not detected at or above the reporting limit	W		50	5.0	0.5	0.5	0.5	0.5	1	μg/L
	S		NA	NA	NA	NA	NA	NA	1	mg/Kg

\*water and vapor samples are reported in μg/L, soil and sludge samples in mg/kg, wipe samples in μg/wipe, and TCLP extracts in μg/L.

# cluttered chromatogram; sample peak coelutes with surrogate peak.

+The following descriptions of the TPH chromatogram are cursory in nature and McC Campbell Analytical is not responsible for their interpretation: a) unmodified or weakly modified gasoline is significant; b) heavier gasoline range compounds are significant(aged gasoline?); c) lighter gasoline range compounds (the most mobile fraction) are significant; d) gasoline range compounds having broad chromatographic peaks are significant; biologically altered gasoline?; e) TPH pattern that does not appear to be derived from gasoline (stoddard solvent / mineral spirit?); f) one to a few isolated non-target peaks present; g) strongly aged gasoline or diesel range compounds are significant; h) lighter than water immiscible sheen/product is present; i) liquid sample that contains greater than ~2 vol. % sediment; j) reporting limit raised due to high MTBE content; k) TPH pattern that does not appear to be derived from gasoline (aviation gas). m) no recognizable pattern.



P & D Environmental  4020 Panama Court  Oakland, CA 94611-4931	Client Project ID: #0047; VIP Service	Date Sampled: 06/19/03
		Date Received: 06/20/03
	Client Contact: Paul King	Date Extracted: 06/23/03
	Client P.O.:	Date Analyzed: 06/23/03

**Halogenated Volatile Organics by P&T and GC-ELCD (8010 Basic Target List)\***

Extraction Method: SW5030B

Analytical Method: SW8021B

Work Order: 0306447

Lab ID	0306447-003B	Reporting Limit for DF =1		
Client ID	MW3	S	W	
Matrix	W			
DF	10			
Compound	Concentration		µg/kg	µg/L
Bromodichloromethane	ND<5.0		NA	0.5
Bromoform	ND<5.0		NA	0.5
Bromomethane	ND<5.0		NA	0.5
Carbon Tetrachloride	ND<5.0		NA	0.5
Chlorobenzene	ND<5.0		NA	0.5
Chloroethane	ND<5.0		NA	0.5
2-Chloroethyl vinyl ether	ND<5.0		NA	0.5
Chloroform	ND<5.0		NA	0.5
Chloromethane	ND<5.0		NA	0.5
Dibromochloromethane	ND<5.0		NA	0.5
1,2-Dichlorobenzene	ND<5.0		NA	0.5
1,3-Dichlorobenzene	ND<5.0		NA	0.5
1,4-Dichlorobenzene	ND<5.0		NA	0.5
Dichlorodifluoromethane	ND<5.0		NA	0.5
1,1-Dichloroethane	ND<5.0		NA	0.5
1,2-Dichloroethane	ND<5.0		NA	0.5
1,1-Dichloroethene	ND<5.0		NA	0.5
cis-1,2-Dichloroethene	ND<5.0		NA	0.5
trans-1,2-Dichloroethene	ND<5.0		NA	0.5
1,2-Dichloropropane	ND<5.0		NA	0.5
cis-1,3-Dichloropropene	ND<5.0		NA	0.5
trans-1,3-Dichloropropene	ND<5.0		NA	0.5
Methylene chloride	ND<5.0		NA	0.5
1,1,2,2-Tetrachloroethane	ND<5.0		NA	0.5
Tetrachloroethene	ND<5.0		NA	0.5
1,1,1-Trichloroethane	ND<5.0		NA	0.5
1,1,2-Trichloroethane	ND<5.0		NA	0.5
Trichloroethene	ND<5.0		NA	0.5
Trichlorofluoromethane	ND<5.0		NA	0.5
Vinyl Chloride	ND<5.0		NA	0.5
Surrogate Recoveries (%)				
%SS:	106			
Comments	j,h			

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

ND means not detected above the reporting limit; N/A means analyte not applicable to this analysis.

h) lighter than water immiscible sheen/product is present; i) liquid sample that contains greater than ~2 vol. % sediment; j) sample diluted due to high organic content; k) reporting limit raised due to insufficient sample amount.





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P & D Environmental  4020 Panama Court  Oakland, CA 94611-4931	Client Project ID: #0047; VIP Service	Date Sampled: 06/19/03
		Date Received: 06/20/03
	Client Contact: Paul King	Date Extracted: 06/20/03
	Client P.O.:	Date Analyzed: 06/24/03

**Semi-Volatile Organics by GC/MS (Basic Target List)\***

Extraction Method: SW3510C

Analytical Method: SW8270D

Work Order: 0306447

Lab ID	0306447-003C
Client ID	MW3
Matrix	Water

Compound	Concentration *	DF	Reporting Limit	Compound	Concentration *	DF	Reporting Limit
Acenaphthene	ND	1.0	10	Acenaphthylene	ND	1.0	10
Anthracene	ND	1.0	10	Benzidine	ND	1.0	50
Benzoic Acid	ND	1.0	50	Benz(a)anthracene	ND	1.0	10
Benzo(b)fluoranthene	ND	1.0	10	Benzo(k)fluoranthene	ND	1.0	10
Benzo(g,h,i)perylene	ND	1.0	10	Benzo(a)pyrene	ND	1.0	10
Benzyl Alcohol	ND	1.0	20	Bis (2-chloroethoxy) Methane	ND	1.0	10
Bis (2-chloroethyl) Ether	ND	1.0	10	Bis (2-chloroisopropyl) Ether	ND	1.0	10
Bis (2-ethylhexyl) Phthalate	ND	1.0	10	4-Bromophenyl Phenyl Ether	ND	1.0	10
Butylbenzyl Phthalate	ND	1.0	10	4-Chloroaniline	ND	1.0	20
4-Chloro-3-methylphenol	ND	1.0	10	2-Chloronaphthalene	ND	1.0	10
2-Chlorophenol	ND	1.0	10	4-Chlorophenyl Phenyl Ether	ND	1.0	10
Chrysene	ND	1.0	10	Dibenzo(a,h)anthracene	ND	1.0	10
Dibenzofuran	ND	1.0	10	Di-n-butyl Phthalate	ND	1.0	10
1,2-Dichlorobenzene	ND	1.0	10	1,3-Dichlorobenzene	ND	1.0	10
1,4-Dichlorobenzene	ND	1.0	10	3,3-Dichlorobenzidine	ND	1.0	20
2,4-Dichlorophenol	ND	1.0	10	Diethyl Phthalate	ND	1.0	10
2,4-Dimethylphenol	ND	1.0	10	Dimethyl Phthalate	ND	1.0	10
4,6-Dinitro-2-methylphenol	ND	1.0	50	2,4-Dinitrophenol	ND	1.0	50
2,4-Dinitrotoluene	ND	1.0	10	2,6-Dinitrotoluene	ND	1.0	10
Di-n-octyl Phthalate	ND	1.0	10	1,2-Diphenylhydrazine	ND	1.0	10
Fluoranthene	ND	1.0	10	Fluorene	ND	1.0	10
Hexachlorobenzene	ND	1.0	10	Hexachlorobutadiene	ND	1.0	10
Hexachlorocyclopentadiene	ND	1.0	50	Hexachloroethane	ND	1.0	10
Indeno (1,2,3-cd) pyrene	ND	1.0	10	Isophorone	ND	1.0	10
2-Methylnaphthalene	27	1.0	10	2-Methylphenol (o-Cresol)	ND	1.0	10
3 &/or 4-Methylphenol (m,p-Cresol)	ND	1.0	10	Naphthalene	56	1.0	10
2-Nitroaniline	ND	1.0	50	3-Nitroaniline	ND	1.0	50
4-Nitroaniline	ND	1.0	50	2-Nitrophenol	ND	1.0	50
4-Nitrophenol	ND	1.0	50	Nitrobenzene	ND	1.0	10
N-Nitrosodiphenylamine	ND	1.0	10	N-Nitrosodi-n-propylamine	ND	1.0	10
Pentachlorophenol	ND	1.0	50	Phenanthrene	ND	1.0	10
Phenol	24	1.0	10	Pyrene	ND	1.0	10
1,2,4-Trichlorobenzene	ND	1.0	10	2,4,5-Trichlorophenol	ND	1.0	10
2,4,6-Trichlorophenol	ND	1.0	10				

**Surrogate Recoveries (%)**

%SS1:	50.2	%SS2:	51.7
%SS3:	54.3	%SS4:	56.5
%SS5:	60.7	%SS6:	60.5

Comments: h

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

ND means not detected above the reporting limit; N/A means analyte not applicable to this analysis.

# surrogate diluted out of range; &) low or no surrogate due to matrix interference.

h) lighter than water immiscible sheen/product is present; i) liquid sample that contains greater than ~2 vol. % sediment; j) sample diluted due to high organic content.



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## QC SUMMARY REPORT FOR SW8021B/8015Cm

Matrix: W

WorkOrder: 0306447

EPA Method: SW8021B/8015Cm		Extraction: SW5030B		BatchID: 7461		Spiked Sample ID: 0306444-007A				
	Sample	Spiked	MS*	MSD*	MS-MSD*	LCS	LCSD	LCS-LCSD	Acceptance Criteria (%)	
	µg/L	µg/L	% Rec.	% Rec.	% RPD	% Rec.	% Rec.	% RPD	Low	High
TPH(btex) <sup>£</sup>	ND	60	98.2	99.7	1.48	112	99	12.5	70	130
MTBE	387.5	10	NR	NR	NR	105	102	2.80	70	130
Benzene	ND	10	96.9	95.4	1.62	102	99.6	2.47	70	130
Toluene	ND	10	100	98.4	1.80	99.1	93.5	5.75	70	130
Ethylbenzene	ND	10	102	99.6	1.97	106	103	2.59	70	130
Xylenes	ND	30	103	100	3.28	100	96.3	3.74	70	130
%SS:	---#	100	99.5	99	0.540	98.3	99.7	1.44	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

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 and / or MSD spike recoveries may not be near 100% or the RPDs near 0% if: a) the sample is inhomogenous AND contains significant concentrations of analyte relative to the amount spiked, or b) if that specific sample matrix interferes with 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 = 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.



### QC SUMMARY REPORT FOR SW8021B

Matrix: W

WorkOrder: 0306447

EPA Method: SW8021B		Extraction: SW5030B			BatchID: 7453		Spiked Sample ID: 0306429-004A			
	Sample	Spiked	MS*	MSD*	MS-MSD*	LCS	LCSD	LCS-LCSD	Acceptance Criteria (%)	
	µg/L	µg/L	% Rec.	% Rec.	% RPD	% Rec.	% Rec.	% RPD	Low	High
Chlorobenzene	ND	10	99.2	99.7	0.492	86.8	94.6	8.60	70	130
1,1-Dichloroethene	ND	10	119	120	0.533	105	109	3.16	70	130
Trichloroethene	ND	10	93.3	92.3	1.03	81.8	88.6	8.01	70	130
%SS:	97.2	100	108	104	3.57	85.8	93.9	9.05	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

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 and / or MSD spike recoveries may not be near 100% or the RPDs near 0% if: a) the sample is inhomogenous AND contains significant concentrations of analyte relative to the amount spiked, or b) if that specific sample matrix interferes with 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.

Laboratory extraction solvents such as methylene chloride and acetone may occasionally appear in the method blank at low levels.



## QC SUMMARY REPORT FOR SW8270D

Matrix: W

WorkOrder: 0306447

EPA Method: SW8270D		Extraction: SW3510C			BatchID: 7459			Spiked Sample ID: N/A		
	Sample	Spiked	MS*	MSD*	MS-MSD*	LCS	LCSD	LCS-LCSD	Acceptance Criteria (%)	
	µg/L	µg/L	% Rec.	% Rec.	% RPD	% Rec.	% Rec.	% RPD	Low	High
Acenaphthene	N/A	50	N/A	N/A	N/A	68.8	68.9	0.0290	30	130
4-Chloro-3-methylphenol	N/A	100	N/A	N/A	N/A	68	68.6	0.900	30	130
2-Chlorophenol	N/A	100	N/A	N/A	N/A	68.1	68.9	1.22	30	130
1,4-Dichlorobenzene	N/A	50	N/A	N/A	N/A	68.4	68.6	0.277	30	130
2,4-Dinitrotoluene	N/A	50	N/A	N/A	N/A	76.5	77.2	0.820	30	130
4-Nitrophenol	N/A	100	N/A	N/A	N/A	50.9	50.9	0	30	130
N-Nitrosodi-n-propylamine	N/A	50	N/A	N/A	N/A	67.5	69.5	2.99	30	130
Pentachlorophenol	N/A	100	N/A	N/A	N/A	62.3	62.2	0.152	30	130
Phenol	N/A	100	N/A	N/A	N/A	56.6	58.2	2.70	30	130
Pyrene	N/A	50	N/A	N/A	N/A	64	64.7	1.10	30	130
1,2,4-Trichlorobenzene	N/A	50	N/A	N/A	N/A	74.7	74.8	0.0936	30	130
%SS1:	N/A	100	N/A	N/A	N/A	61.3	61.6	0.532	30	130
%SS2:	N/A	100	N/A	N/A	N/A	61.6	63.8	3.44	30	130
%SS3:	N/A	100	N/A	N/A	N/A	69.7	69.6	0.0837	30	130
%SS4:	N/A	100	N/A	N/A	N/A	71.9	71.6	0.464	30	130
%SS5:	N/A	100	N/A	N/A	N/A	61	60.5	0.764	30	130
%SS6:	N/A	100	N/A	N/A	N/A	64.2	65	1.30	30	130

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

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 and / or MSD spike recoveries may not be near 100% or the RPDs near 0% if: a) the sample is inhomogenous AND contains significant concentrations of analyte relative to the amount spiked, or b) if that specific sample matrix interferes with spike recovery.

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Laboratory extraction solvents such as methylene chloride and acetone may occasionally appear in the method blank at low levels.

**McC Campbell Analytical Inc.**



110 Second Avenue South, #D7  
 Pacheco, CA 94553-5560  
 (925) 798-1620

**CHAIN-OF-CUSTODY RECORD**

WorkOrder: 0306447

**Client:**

P & D Environmental  
 4020 Panama Court  
 Oakland, CA 94611-4931

TEL: (510) 658-6916  
 FAX: (510) 658-9074  
 ProjectNo: #0047; VIP Service  
 PO:

*Date Received:* 6/20/03  
*Date Printed:* 6/20/03

Sample ID	ClientSampID	Matrix	Collection Date	Hold	Requested Tests					
					SW8021B	N8021B/8015C	SW8270D			
0306447-001	MW1	Water	6/19/03	<input type="checkbox"/>		A				
0306447-002	MW2	Water	6/19/03	<input type="checkbox"/>		A				
0306447-003	MW3	Water	6/19/03	<input type="checkbox"/>	B	A	C			

Prepared by: Michelle Miller

**Comments:**

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

2100

# P & D ENVIRONMENTAL

A Division of Paul H. King, Inc.  
4020 Panama Court  
Oakland, CA 94611  
(510) 658-6916

0306447

## CHAIN OF CUSTODY RECORD

PROJECT NUMBER: 0047		PROJECT NAME: VIP Service			NUMBER OF CONTAINERS	ANALYSIS(ES):				PRESERVATIVE	REMARKS																																																		
SAMPLED BY: (PRINTED AND SIGNATURE) Wilhelm Welzenbach <i>Wilhelm Welzenbach</i>						TPH-G/BTEX/MIBT	EPA 8010	EPA 8270																																																					
SAMPLE NUMBER	DATE	TIME	TYPE	SAMPLE LOCATION																																																									
+ MW1	6/19/03		water		7	X				ICE	Normal Turnaround Time																																																		
+ MW2	"		"		7	X				"	"																																																		
+ MW3	"		"		7	X	X	X		"	"																																																		
<table border="1"> <tr> <td>ICE/</td> <td><input checked="" type="checkbox"/></td> <td>PRESERVATION</td> <td><input checked="" type="checkbox"/></td> <td>VOAS</td> <td><input checked="" type="checkbox"/></td> <td>ORG</td> <td><input type="checkbox"/></td> <td>METALS</td> <td><input type="checkbox"/></td> <td>OTHER</td> <td><input type="checkbox"/></td> </tr> <tr> <td>GOOD CONDITION</td> <td><input checked="" type="checkbox"/></td> <td>APPROPRIATE</td> <td><input checked="" type="checkbox"/></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>HEAD SPACE ABSENT</td> <td><input checked="" type="checkbox"/></td> <td>CONTAINERS</td> <td><input checked="" type="checkbox"/></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>DECHLORINATED IN LAB</td> <td><input checked="" type="checkbox"/></td> <td>PRESERVED IN LAB</td> <td><input checked="" type="checkbox"/></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> </table>					ICE/	<input checked="" type="checkbox"/>	PRESERVATION	<input checked="" type="checkbox"/>	VOAS	<input checked="" type="checkbox"/>	ORG	<input type="checkbox"/>	METALS	<input type="checkbox"/>	OTHER	<input type="checkbox"/>	GOOD CONDITION	<input checked="" type="checkbox"/>	APPROPRIATE	<input checked="" type="checkbox"/>									HEAD SPACE ABSENT	<input checked="" type="checkbox"/>	CONTAINERS	<input checked="" type="checkbox"/>									DECHLORINATED IN LAB	<input checked="" type="checkbox"/>	PRESERVED IN LAB	<input checked="" type="checkbox"/>																	
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RELINQUISHED BY: (SIGNATURE) <i>Wilhelm Welzenbach</i>		DATE 6/20/03	TIME 0927	RECEIVED BY: (SIGNATURE) <i>Jim King</i>		TOTAL NO. OF SAMPLES (THIS SHIPMENT)	3	LABORATORY: McCampbell Analytical																																																					
RELINQUISHED BY: (SIGNATURE) <i>Jim King 298</i>		DATE 6/20/03	TIME 1540	RECEIVED BY: (SIGNATURE)		TOTAL NO. OF CONTAINERS (THIS SHIPMENT)	21	LABORATORY CONTACT: Angela Rydelius LABORATORY PHONE NUMBER: (925) 798-1620																																																					
RELINQUISHED BY: (SIGNATURE)		DATE	TIME	RECEIVED FOR LABORATORY BY: (SIGNATURE) <i>V. Jones</i>		SAMPLE ANALYSIS REQUEST SHEET ATTACHED: ( ) YES (X) NO																																																							
REMARKS: VOAs preserved with HCl.																																																													