P & D ENVIRONMENTAL

300 Monte Vista, #101
Oakland, CA 94611
Telephone (510) 658-6916

September 10, 1993
Workplan 0047.W1

Mr. Scott Seery
Alameda County Department of Environmental Health
80 Swan Way, Room 200
Oakland, CA 94621

SUBJECT: SOIL EXCAVATION AND MONITORING WELL INSTALLATION WORKPLAN
VIP Service Station
3889 Castro Valley Blvd.
Castro Valley, CA 94546

Dear Mr. Seery:

P&D Environmental (P&D) has been retained by VIP Service Station to perform remedial activities at the subject site. All work will be performed under the supervision of Don R. Braun, Certified Engineering Geologist. The proposed scope of work entails the following:

1) Removal of existing stockpiled soil to an appropriate disposal facility.

2) Excavation of petroleum hydrocarbon-impacted soil in the vicinity of the former fuel tank pit and former waste oil tank pit.

3) Removal of abandoned product piping discovered during tank removal activities.

4) Removal of water from the former fuel tank pit.

5) Disposal of the soil from the tank pit excavations.

6) Backfilling, compacting and resurfacing of the tank pits.

7) Installation of three groundwater monitoring wells.

8) Report preparation.

Each of these is discussed below in more detail.

BACKGROUND

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 May 23, 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, it is P&D's understanding that diesel fuel was not stored at the site.

It is P&D's understanding that at the time that the tanks were removed, 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 tank pit at a depth of approximately 11 feet. One water sample was collected from the water in the fuel pit. On May 28, 1993 Accutite returned to the site and collected seven soil samples from beneath the dispenser islands. A copy of the Site Plan provided by Accutite showing the sample collection locations is attached with this workplan as Figure 1.

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 soil sample results from the fuel tank pit are summarized in Table 1 and the groundwater sample results are summarized in Table 2.

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 soil sample results from beneath the dispenser islands are summarized in Table 3.

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; 23 parts per billion (ppb) 1,2-Dichloroethane and 9.4 ppb Tetrachloroethene 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. [redacted] exceeding STLC values. The laboratory identified the TPH-D results as being a "non-diesel mix," and [redacted] reported as diesel were diesel-range gasoline and diesel-range oil compounds. The soil sample results for the sample from the waste oil tank pit are summarized in Table 4.

It is P&D's understanding that the soil removed from the fuel tank pit and dispenser islands was stockpiled on site separately from the soil removed from the waste oil tank pit. The soil is still stockpiled at the site.

SCOPE OF WORK

1) Removal of the Existing Stockpiled Soil

P&D has collected soil samples from the stockpiled soil in accordance with appropriate landfill requirements to evaluate the appropriate disposition of the soil. Once the appropriate disposition of the soil has been determined, the soil will be hauled to a Class II or Class III landfill.

2) Excavation of Contaminated Soil in the Vicinity of the Tank Pits

Following removal of the existing stockpiled soil, notification will be provided to the Bay Area Air Quality Management District and the Alameda County Department of Environmental Health for the beginning of excavation activities. The sidewalls of the tank pits will be excavated in an attempt to remove all petroleum hydrocarbon-impacted soil located in the vicinity of the tank pits. All excavated soil will be stockpiled onsite on a sheet of visqueen and covered at the end of each day, pending determination of appropriate disposal. Soil excavated from the vicinity of the waste oil tank pit will be segregated from soil excavated from other portions of the site.

Confirmation soil samples will be collected every 20 linear feet along the perimeter of the tank pits, approximately 6 inches above the water table and at any areas of suspected contamination to confirm that the removal of the contaminated soil was successfully completed. Confirmation soil samples in the vicinity of the fuel tank pit will be analyzed for TPH-G and BTEX. Soil samples

collected from the vicinity of the waste oil tank pit will be analyzed for TPH-G, BTEX, TOG, EPA Method 8010 compounds, and EPA Method 8270 compounds.

3) Removal of Abandoned Product Piping

Abandoned product piping discovered during removal of the tanks will be removed during over-excavation activities. **Soil samples will be collected every 20 linear feet and at any areas of obvious contamination at the time of the pipe removal.** Soil samples collected from beneath the piping will be analyzed for TPH-G, BTEX and Total Lead.

4) Removal of Water From the Fuel Tank Pit

Prior to the backfilling of the fuel tank pit, the water in the pit will be pumped out by a vacuum truck and hauled to either the H&H Environmental Services or Erickson Environmental facility for disposal. The water will be hauled by a State-registered hazardous waste hauler.

5) Disposal of Soil From the Tank Pit Excavations

Following characterization of the soil from the tank pits, the soil will be disposed of at an appropriate Class II or Class III disposal facility.

6) Backfilling and Compacting of the Tank Pits

Following receipt of tank pit excavation and product piping removal sample results which indicate that petroleum hydrocarbon-impacted soil has been successfully removed, the tank pits will be backfilled and compacted. In addition, the pipe trenches excavated in the vicinity of pump islands at the time of tank removal will be backfilled and compacted. Compaction testing will be performed during backfilling activities.

7) Installation, Development, Surveying and Sampling of Three Groundwater Monitoring Wells

To determine groundwater flow direction and to characterize the presence or extent of groundwater contamination at the site, P&D proposes to install three groundwater monitoring wells. The proposed locations of the monitoring wells are shown on the attached P&D Site Plan, Figure 2. The wells will be installed after excavation activities described above have been completed. Prior to installation of the wells, P&D will obtain all necessary permits from Alameda County Flood Control and Prevention District Zone 7.

The wells will be two-inch diameter PVC and will be installed to a depth of approximately ten feet below the groundwater surface. Soil samples will be collected at five foot intervals in the boreholes for the monitoring wells from above the water table (a total of two soil samples per well) using a California Modified split spoon sampler lined with brass tubes.

Following sample collection, the tubes will be removed from the sampler, the ends of the tubes sequentially covered with aluminum foil and plastic end caps, the tubes labeled and then placed into a cooler with ice, pending delivery to McCampbell Analytical in Pacheco, California. McCampbell Analytical is a State-accredited hazardous waste testing laboratory. Chain of custody procedures will be observed for sample handling. **The soil samples will be analyzed for TPH-G and BTEX.**

The hollow stem augers will be steam cleaned prior to use in each borehole. Soil generated during drilling will be stored onsite and covered with a sheet of visqueen.

At least 24 hours after installation, the wells will be developed by surging and overpumping until the water discharged from the wells is relatively clear. At least 24 hours after the wells have been developed, the wells will be purged and sampled, and groundwater samples collected using a Teflon bailer. The samples will be transferred to appropriate containers and stored in a cooler with ice pending delivery to McCampbell Analytical. Chain of custody procedures will be observed for sample handling. The groundwater samples analyzed for TPH-G and BTEX.

All water generated from steam cleaning, well development and well purging will be stored onsite in DOT-approved 55-gallon drums, pending appropriate disposal. The tops of the wells will be surveyed relative to a Mean Sea Level Datum by a State-licensed surveyor for groundwater flow direction determination.

8) Report Preparation

A report documenting stockpiled soil characterization, water disposal, soil disposal, soil excavation, soil sample collection, removal and disposal of remaining tank-related piping, backfilling, compaction and resurfacing will be prepared upon work completion. Soil and water sample results will be summarized in a tabulated format. The report will contain a site plan showing areas of excavation and sample collection locations and will have the stamp of an appropriately registered professional (Mr. Braun).

In addition, a report documenting groundwater monitoring well installation, development, surveying and sampling will be prepared. The report will summarize soil and groundwater sample results in a tabulated format and will contain a discussion of local geologic conditions, a site plan showing the well locations, boring logs, well construction diagrams, geologic cross sections and the stamp of an appropriately registered professional (Mr. Braun). Well Completion Reports will be completed and filed with the California Department of Water Resources (DWR), in accordance with DWR requirements.

SCHEDULE

Stockpiled Soil Disposal	In Progress
Workplan Approval by Alameda County	In Progress
Mobilization Following Workplan Approval	1 Week
Soil Excavation	1 Week (Space Dependent)
Report Submittal	45 Days After Excavation Completion
Monitoring Well Installation	1 Week After Excavation Completion
Monitoring Well Groundwater Sample Collection	1 Week After Well Installation
Monitoring Well Installation Report	45 Days After Receipt of Groundwater Sample Results

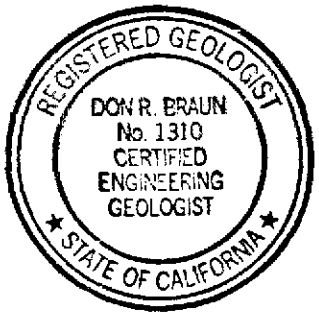
Should you have any questions, please do not hesitate to contact us at (510) 658-6916.

Sincerely,

P&D Environmental

Paul H. King

Paul H. King
Hydrogeologist



Don R. Braun

Don R. Braun
Certified Engineering Geologist
Registration No. : 1310
Expires: 6/30/94

PHK
0047.W1

Attachment: Tables 1,2,3,4
Figure 1 (Accutite Site Plan)
Figure 2 (P&D Site Plan)

cc: Mr. Patel & Mr. Gupta, VIP Service

TABLE 1
SUMMARY OF LABORATORY ANALYTICAL RESULTS
FUEL TANK PIT SOIL SAMPLES
(Samples Collected on May 23, 1993)

Sample No.	Total Lead	TPH-G	Benzene	Toluene	Ethyl-benzene	Total Xylenes
NE	5.8	4,000	47	300	85	490
NW	6.0	1,100	8.1	41	20	120
SE	13	6,200	92	360	110	610
SW	ND	120	4.1	5.4	1.7	8.5
EN	5.6	3,300	11	170	70	420
ES	ND	2,700	10	95	38	220
WN	8.0	290	3.4	16	4.7	26
WS	ND	330	4.5	12	5.7	30

TPH-G = Total Petroleum Hydrocarbons as Gasoline.
ND = Not Detected.
Results are in parts per million (ppm), unless otherwise indicated.

TABLE 2
SUMMARY OF LABORATORY ANALYTICAL RESULTS
FUEL TANK PIT GROUNDWATER SAMPLE
(Sample Collected on May 23, 1993)

Sample No.	Total Lead	TPH-G	Benzene	Toluene	Ethyl-benzene	Total Xylenes
Water-VIP	0.095	140	13	22	3.2	19

TPH-G = Total Petroleum Hydrocarbons as Gasoline.
Results are in parts per million (ppm), unless otherwise indicated.

TABLE 3
SUMMARY OF LABORATORY ANALYTICAL RESULTS
DISPENSER ISLAND SOIL SAMPLES
(Samples Collected on May 28, 1993)

Sample No.	Total Lead	TPH-G	Benzene	Toluene	Ethyl-benzene	Total Xylenes
I-1	ND	ND	0.0080	ND	ND	ND
I-2	ND	1.7	0.097	ND	0.052	0.020
I-3	ND	4.7	0.21	0.038	0.10	0.37
I-4	ND	3.4	0.27	0.031	0.14	0.45
I-5	ND	2.7	0.075	ND	0.058	0.12
I-6	7.6	ND	ND	ND	ND	ND
I-7	5.8	ND	0.020	ND	0.017	0.015

TPH-G = Total Petroleum Hydrocarbons as Gasoline.
ND = Not Detected.
Results are in parts per million (ppm), unless otherwise indicated.

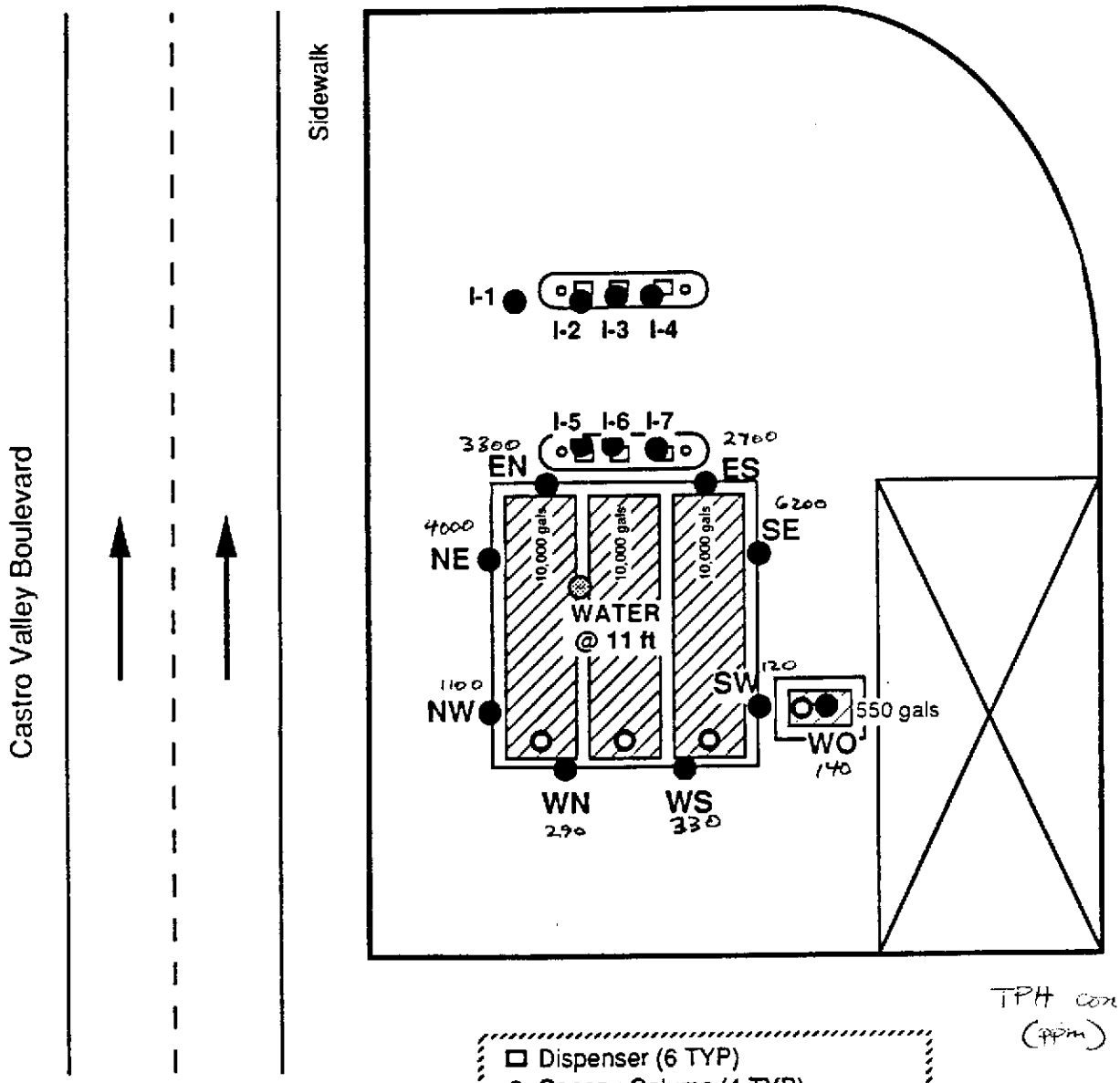
TABLE 4
SUMMARY OF LABORATORY ANALYTICAL RESULTS
WASTE OIL TANK PIT SOIL SAMPLE
(Sample Collected on May 23, 1993)

Sample No.	Total Lead	TPH-G	Benzene	Toluene	Ethyl-benzene	Total Xylenes
WO*	21	670	7.3	21	8.7	44

TPH-G = Total Petroleum Hydrocarbons as Gasoline.

* Total Petroleum Hydrocarbons as Diesel was reported at a concentration of 410 ppm, however 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; Total Oil and Grease was reported at a concentration of 1,300 ppm; 23 parts per billion (ppb) 1,2-Dichloroethane and 9.4 ppb Tetrachloroethene were detected in the EPA Method 8010 analysis; 2.7 ppm 2-Methylnapthalene and 3.8 ppm Naphthalene were detected in the EPA Method 8270 analysis; and Cadmium, Chromium, Nickel and Zinc were reported at not detected, 41, 63, and 50 ppm, respectively.

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



TPH concentration (ppm)

- Dispenser (6 TYP)
- Canopy Colums (4 TYP)
- Tank Fill Locations (4 TYP)
- Soil Sampling Locations (16 TYP)
- Water Sampling Location

Figure 1
SITE PLAN

Revisions	Date	Page	VIP Service Station c/o Patel, Lalji B. 385 Century Circle Danville, CA 94526	By: ACCUTITE 35 South Linden Avenue South San Francisco California 94080
0	26 APR 93	1		
		of		
		1		
← N	SCALE: 1"=20' (sampling locations only)		Site: **VIP SERVICE STATAION** **3889 Castro Valley Blvd** **Castro Valley, CA**	

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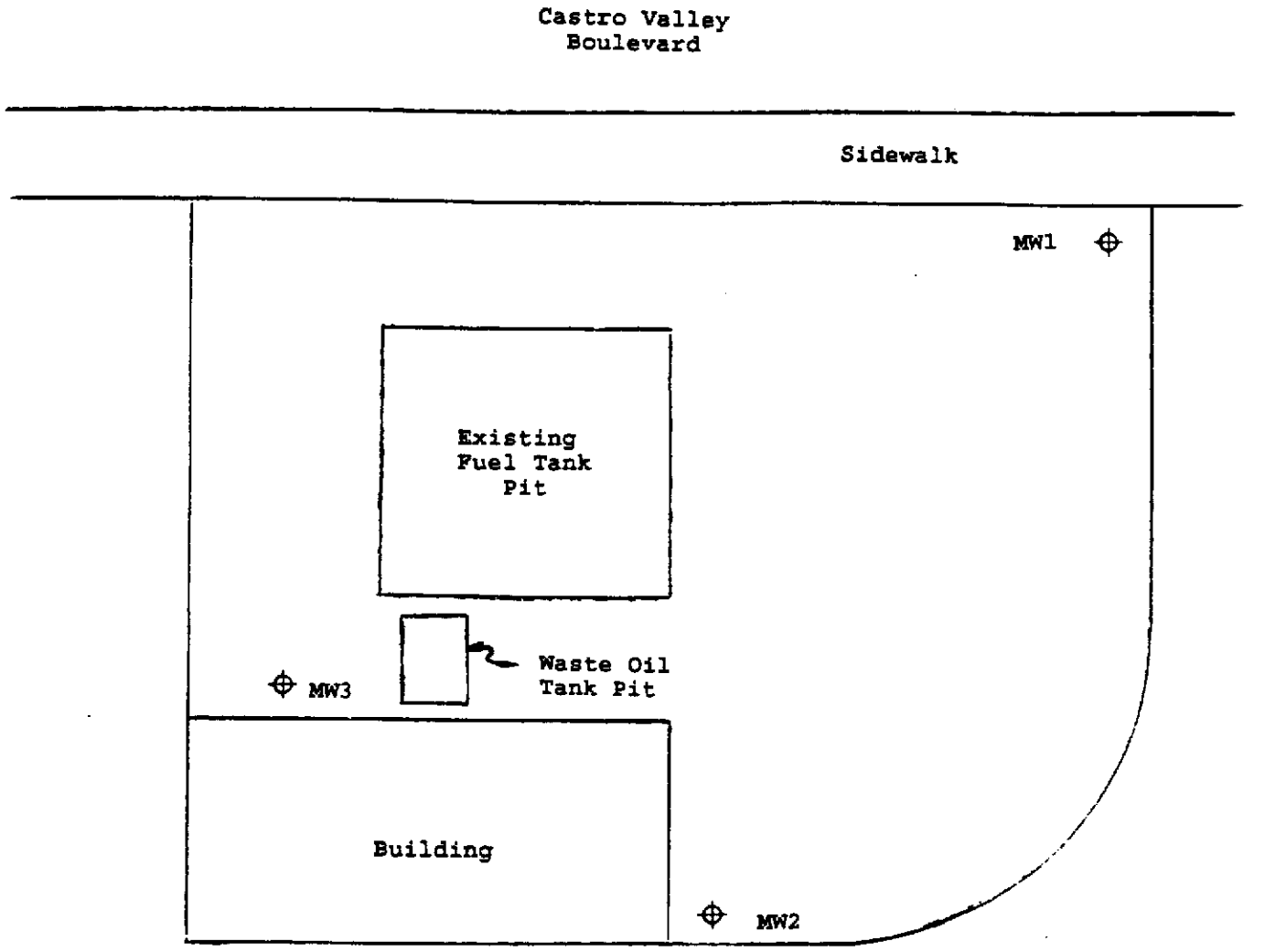

Base Map from:
Accutite dated
April 26, 1993

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