PES Environmental, Inc.
Engineering & Environmental Services

137 Fiesta Circle
Orinda 94563

A Report Prepared For:

: Steve Boyd

Pacific Electric Motor Company
1009 66th Avenue
Oakland, California 94601

Attention: Mr. Rand Perry

129 Natalie Dr.
~~Orinda~~ 94556-2422
Moraga,

QUARTERLY MONITORING REPORT
SECOND QUARTER 1999
PACIFIC ELECTRIC MOTOR COMPANY
1009 66TH AVENUE
OAKLAND, CALIFORNIA

#565

JUNE 17, 1999

MW-4, V. high TPH
Clear F.P.? w/ V. high
MTBE - I thought
they were considering
purging or GW extraction
from this well?
7/12/99 BC

By:

Keary D. Knickerbocker
Environmental Specialist

William W. Mast, R.G.
Associate Engineer

REGISTERED GEOLOGIST
WILLIAM W. MAST
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1.0 INTRODUCTION

This report presents the results of quarterly groundwater monitoring performed by PES Environmental, Inc. (PES) during the second quarter of 1999 at Pacific Electric Motor Company (PEM) in Oakland, California (Plate 1). The current groundwater monitoring program consists of measuring the depth to groundwater in four onsite monitoring wells, and purging and sampling the monitoring wells (Wells MW-1, MW-2, MW-3, and MW-4) on a quarterly basis.

The purpose of the groundwater monitoring program is to: (1) evaluate the presence of petroleum hydrocarbons in groundwater; and (2) monitor water-level variations at the site. The quarterly monitoring program was performed in accordance with the sampling program specified in the Alameda County Environmental Health Services (ACEHS) December 1, 1998 letter *Additional Soil and Groundwater Investigation Report, 1009-66th Ave., Oakland, CA 94601* (ACEHS, 1998b) and the procedures outlined in PES' proposal dated December 11, 1998 (PES, 1998b).

2.0 BACKGROUND INFORMATION

The site is located in a residential and light industrial area in Oakland, California and is presently used to repair large electric motors. PEM formerly operated a 2,000-gallon steel gasoline underground storage tank (UST) on the east side of the warehouse building (Plate 2). The tank was reportedly installed in approximately 1975 (ENVIRON, 1997). In February 1995, the UST was removed by W. A. Craig, Inc. (WAC). Observations at the time of removal indicated that the tank was in good condition and no holes were evident. However, free-phase gasoline product was observed on the water surface in the tank excavation. Soil samples collected from the UST excavation and associated piping trenches detected total petroleum hydrocarbons as gasoline (TPH-g) at concentrations up to 10,000 milligrams per kilogram.

In April 1995, WAC performed a soil investigation consisting of nine soil borings to delineate the lateral and vertical extent of the petroleum hydrocarbons in soil. On the basis of the results of the soil investigation, WAC prepared and implemented a remediation program to remove soil affected by petroleum hydrocarbons. Approximately 1,500 cubic yards of soil were excavated and stockpiled onsite, and 116,000 gallons of petroleum hydrocarbon-affected water were pumped from the excavation and disposed. A dewatering sump installed by WAC during soil excavation was later converted to groundwater monitoring well WAC-1 (Plate 2). Because of its uncertain construction, ACEHS stated that no monitoring of Well WAC-1 is required (ACEHS, 1997). WAC summarized the results of their remediation program in a report entitled *Excavation and Sampling Report, Pacific Electric Motor Co., 1009 66th Avenue, Oakland, California*, dated May 12, 1997 (WAC, 1997).

ENVIRON, Inc. (ENVIRON) installed and sampled three shallow monitoring wells (MW-1, MW-2, MW-3) in June 1997 to evaluate groundwater conditions in the vicinity of the former UST. Well completion details are summarized in Table 1. The well installation program and associated soil and groundwater sampling program was summarized in the ENVIRON report *Soil and Ground Water Investigation, Summary Report, Pacific Electric Motor Co., 1009-66th Avenue, Oakland, California*, dated July 17, 1997 (ENVIRON, 1997). ENVIRON concluded that the remediation performed had successfully removed the source of the petroleum hydrocarbons (i.e., the former UST), and that residual concentrations of petroleum hydrocarbons in soil and groundwater were present only in the immediate vicinity of the former UST.

In September 1998 PES conducted additional soil and groundwater sampling in the vicinity of the former UST, as requested by the ACEHS in a May 13, 1998 letter to PEM (ACEHS, 1998a). Two soil borings were drilled within the backfill of the former UST excavation, and one monitoring well was installed downgradient of the former UST. Petroleum hydrocarbons were generally not detected in the excavation backfill, although groundwater samples collected from both soil borings indicated the presence of methyl tert-butyl ether (MTBE), a gasoline additive. Elevated petroleum hydrocarbons were found in soil and groundwater downgradient of the UST excavation during installation and groundwater sampling of monitoring well MW-4. On the basis of the elevated concentrations of petroleum hydrocarbons, PES recommended four quarters of additional groundwater monitoring. The additional investigation was summarized in the PES report *Results of Additional Soil and Groundwater Investigation, 1009 66th Avenue, Oakland, California*, dated November 11, 1998 (PES, 1998a).

3.0 WATER-LEVEL MEASUREMENTS

Water levels in four onsite groundwater monitoring wells (Wells MW-1, MW-2, MW-3, and MW-4) were measured by Blaine Tech Services, Inc. (Blaine Tech) of San Jose, California, under the direct supervision of PES, prior to sampling on April 15, 1999. Depth-to-water in the monitoring wells was measured from the top-of-casing (TOC) reference benchmark to a precision of 0.01-feet using an electronic water-level indicator/interface probe. Depth-to-water measurements were converted to water-level elevations by subtracting the depth to water from the TOC elevation referenced to a site datum established by ENVIRON (ENVIRON, 1997). Free product was not observed in any of the monitoring wells.

Because of an apparent anomalous water-level measurement collected from Well MW-4 during the April 1999 sampling event, PES collected additional water level measurements at all four wells on May 6, 1999 (results are discussed below in section 5.1).

To prevent cross-contamination between wells, the portion of the water-level indicator that was submerged in the well was cleaned between well measurements using a phosphate-free detergent/deionized water solution and double rinsed with deionized water.

4.0 GROUNDWATER SAMPLING

On April 15, 1999, Blaine Tech under the direct supervision of PES collected groundwater samples from Wells MW-1, MW-2, MW-3, and MW-4. Groundwater samples were collected from each well after removing approximately three well volumes of water with disposable bailers. During well purging, the discharged water was monitored for pH, temperature, electrical conductivity, and turbidity.

Following purging, samples were collected from the wells using a stainless steel or Teflon disposable bailer and transferred to the appropriate laboratory sample containers. The sample containers were filled slowly to minimize sample volatilization and to ensure that the sample was free of air bubbles. The samples were labeled to designate sample number, time and date collected, and analysis required. The samples were immediately placed in a chilled, thermally-insulated cooler. To prevent cross-contamination between wells, the pump and stainless steel bailer were decontaminated using a high-pressure steam cleaner prior to initial use and after sampling at each well. Sampling procedures are documented in the groundwater sampling report prepared by Blaine Tech, included in Appendix A.

Groundwater samples were transported under chain-of-custody protocol to a state-certified laboratory. Entech Analytical Labs of Sunnyvale, California analyzed samples for: (1) total petroleum hydrocarbons quantified as gasoline (TPH-g) using EPA Test Method 8015 Modified; (2) benzene, toluene, ethylbenzene, and total xylenes (BTEX) using EPA Test Method 8020; and (3) methyl tert-butyl ether (MTBE) using EPA Test Method 8020. Detected concentrations of MTBE were confirmed using EPA Test Method 8260. The laboratory reports and chain-of-custody records are included in Appendix B.

5.0 DISCUSSION OF MONITORING RESULTS

This section presents a summary of water-level measurements and groundwater analyses results from the April 1999 sampling event.

5.1 Water-Level Measurements

As described above, the water-level measurement collected at MW-4 on April 15, 1999 was approximately 4 feet lower than anticipated. Because no valid explanation for this water-level elevation was identified, PES considered it anomalous and re-measured water levels in all four wells on May 6, 1999. Depth-to-water measurements during the May 1999 event ranged from 3.91 feet (MW-2) to 4.50 feet (MW-4) below TOCs. Groundwater water-level elevations ranged from 95.81 feet (MW-3) to 96.31 feet (MW-1) referenced to site datum established by ENVIRON (ENVIRON, 1997). Historical and current depth-to-water measurements and calculated water-level elevations are presented in Table 2.

Plate 3 presents water-level elevation contours developed from water levels measured on May 6, 1999. The water-level elevation contours indicate that groundwater flow is generally to the west. The observed flow direction indicates a slight shift from a southwesterly flow direction observed during the January 1999 monitoring event. The groundwater gradient is approximately 0.004 foot per foot (ft/ft).

5.2 Groundwater Chemistry

A summary of current and historical laboratory chemical results for petroleum hydrocarbons is presented in Table 3. The analytical laboratory reports and chain-of-custody forms are presented in Appendix B.

During the current monitoring period petroleum hydrocarbon compounds were detected in groundwater samples from Wells MW-1, MW-2, MW-3 and MW-4.

At Well MW-1, benzene, toluene, ethyl benzene, and xylenes were detected at concentrations of 0.92, 0.90, 0.70, and 0.87 micrograms per liter (μg/L), respectively. TPH-g and MTBE were not detected in samples from Well MW-1. Except for toluene, the detected concentrations are considerably lower than those observed during the January 1999 sampling event.

At Well MW-2, benzene, toluene, and xylenes were detected at concentrations of 0.75, 0.64, and 0.74 μg/L, respectively. TPH-g, MTBE, and ethyl benzene were not detected in samples from Well MW-2. No petroleum hydrocarbon compounds were detected in samples from Well MW-2 prior to the April 1999 sampling event.

At Well MW-3, benzene, toluene, ethyl benzene and xylenes were detected at concentrations of 5.4, 3.9, 1.7, and 5.6 μg/L, respectively. MTBE was detected and confirmed at concentrations of 23 and 25 μg/L using EPA Test Methods 8020 and 8260, respectively. TPH-g was not detected in second quarter samples from Well MW-3. Petroleum hydrocarbon concentrations were first observed in samples from MW-3 in January 1999. Current concentrations are higher than those observed in January 1999.

At Well MW-4, TPH-g, benzene, toluene, ethyl benzene, and xylenes were detected at concentrations of 210,000, 28,000, 15,000, 3,700, and 19,000 μg/L, respectively. MTBE was detected and confirmed at concentrations of 52,000 and 67,000 μg/L using EPA Test Methods 8020 and 8260, respectively. Petroleum hydrocarbon concentrations have fluctuated greatly over the past three sampling events. While concentrations in Well MW-4 decreased between the September 1998 and January 1999 monitoring events, the current concentrations at Well MW-4 are again elevated and similar to those observed in September 1998.

The results of previous groundwater monitoring data appeared to indicate that natural attenuation of the petroleum hydrocarbons was occurring at the site. The groundwater plume associated with former UST appeared to be static and localized. On the basis of petroleum

hydrocarbons detected in the two downgradient monitoring wells (MW-2 and MW-3) during the current monitoring event, groundwater affected with petroleum hydrocarbons appears to be migrating west to southwest toward the property boundary.

6.0 REFERENCES

Alameda County Environmental Health Services (ACEHS), 1997. *Soil and Groundwater Investigation for Pacific Electric Motor Co., 1009-66th Ave., Oakland, CA 94601.* August 19.

_____, 1998a. *Evaluation of Residual Health Risks at Pacific Electric Motor Company, 1009 66th Avenue, Oakland, CA 94601.* May 13.

_____, 1998b. *Additional Soil and Groundwater Investigation Report, 1009 66th Ave., Oakland, 94601.* December 1.

ENVIRON Corporation, 1997. *Soil and Groundwater Investigation, Summary Report, Pacific Electric Motor Co., 1009-66th Avenue, Oakland, California.* July 17.

PES Environmental, Inc. (PES), 1998a. *Results of Additional Soil and Groundwater Investigation, 1009 66th Avenue, Oakland, California.* November 11.

_____, 1998b. *Proposal, Quarterly Groundwater Sampling, Pacific Electric Motor Company, Oakland, California.* December 11.

W. A. Craig, Inc. (*WAC*), 1997. *Excavation and Sampling Report, Pacific Electric Motor Co., 1009 66th Avenue, Oakland, California.* May 12. (Partial)

Table 1. Monitoring Well Completion Details
Quarterly Monitoring Report
Second Quarter 1999
Pacific Electric Motor Company
1009 66th Avenue, Oakland, California

Well Number	Date Installed	Installed By	TOC Elevation (feet*)	Boring Diameter (inches)	Casing Diameter (inches)	Total Depth Boring (feet bgs)	Total Depth of Casing (feet bgs)	Screened Interval Depth (feet bgs)	
								Top	Bottom
MW-1	6/10/97	ENVIRON	101.04	8	2	26.5	25.5	5	25
MW-2	6/10/97	ENVIRON	100.12	8	2	25.5	25.5	5	25
MW-3	6/10/97	ENVIRON	100.23	8	2	25.5	25.5	5	25
MW-4	9/14/98	PES	100.32	8	2	25.0	25.0	15	25

Notes:

* = Referenced to site datum established by ENVIRON (1997).
bgs = Below ground surface.

Table 2. Water-Level Elevation Data
Quarterly Monitoring Report
Second Quarter 1999
Pacific Electric Motor Company
1009 66th Avenue, Oakland, California

Well Number	Date	Measured By	Top of Casing Elevation (feet*)	Depth to Water (feet BTOC)	Water-level Elevation (feet*)
MW-1	6/19/97	ENVIRON	100.67	5.87	94.80
	7/1/97	ENVIRON	100.67	5.88	94.79
	9/29/97	PES	100.67	6.45	94.22
	12/16/97	PES	100.67	3.42	97.25
	3/10/98	PES	100.67	3.06	97.61
	10/1/98	PES	100.67	6.36	94.31
	1/19/99	PES	100.67	5.33	95.34
	4/15/99	PES	100.67	3.23	97.44
	5/6/99	PES	100.67	4.36	96.31
MW-2	6/19/97	ENVIRON	99.85	5.30	94.55
	7/1/97	ENVIRON	99.85	5.37	94.48
	9/29/97	PES	99.85	6.05	93.80
	12/16/97	PES	99.85	3.81	96.04
	3/10/98	PES	99.85	2.89	96.96
	10/1/98	PES	99.85	5.83	94.02
	1/19/99	PES	99.85	5.26	94.59
	4/15/99	PES	99.85	3.19	96.66
	5/6/99	PES	99.85	3.91	95.94
MW-3	6/19/97	ENVIRON	99.93	5.50	94.43
	7/1/97	ENVIRON	99.93	5.52	94.41
	9/29/97	PES	99.93	6.16	93.77
	12/16/97	PES	99.93	5.52	94.41
	3/10/98	PES	99.93	3.11	96.82
	10/1/98	PES	99.93	5.96	93.97
	1/19/99	PES	99.93	5.45	94.48
	4/15/99	PES	99.93	3.85	96.08
	5/6/99	PES	99.93	4.12	95.81
MW-4	10/1/98	PES	100.32	6.32	94.00
	1/19/99	PES	100.32	5.59	94.73
	4/15/99	PES	100.32	7.71 #	92.61 #
	5/6/99	PES	100.32	4.50	95.82

Notes:

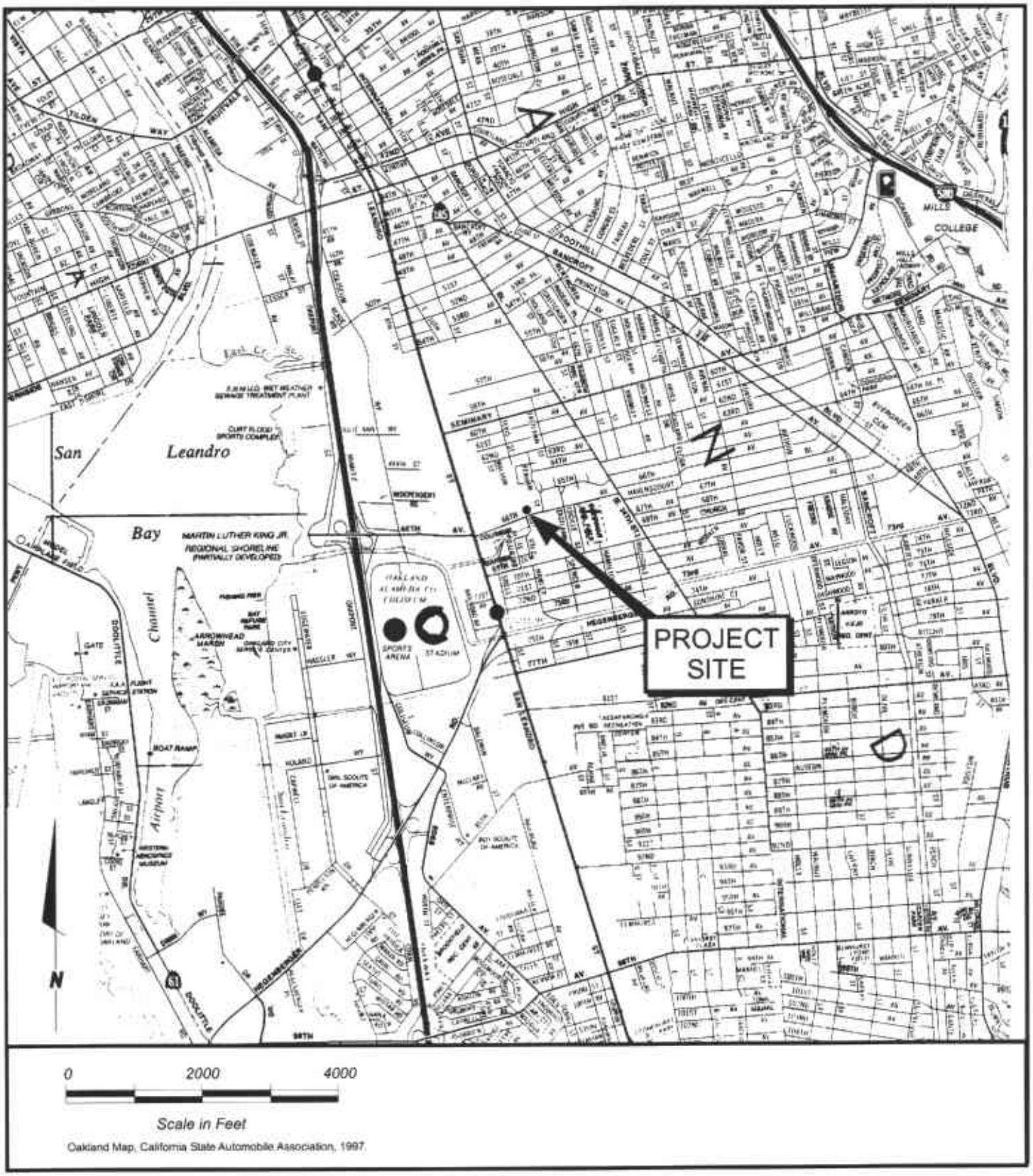
* = Referenced to site datum established by ENVIRON (1997).
BTOC = Below top of casing.
# = Anomalous data, not used for water-level elevation contouring.

Table 3. Analytical Results for Groundwater Samples
Quarterly Monitoring Report
Second Quarter 1999
Pacific Electric Motor Company
1009 66th Avenue, Oakland, California

Sample Location	Date Sampled	Sampled By	TPH-g (µg/L)	Benzene (µg/L)	Toluene (µg/L)	Ethyl-benzene (µg/L)	Xylenes (µg/L)	MTBE EPA 8020 (µg/L)	MTBE EPA 8260 (µg/L)
MW-1	6/19/97	ENVIRON	18,000	3,300	200	1,100	4,900	<250	--
	9/29/97	PES	29,000	4,800	<25	2,000	3,500	<250	--
	12/16/97	PES	<50	1.3	<0.5	0.6	0.7	<5	--
	3/10/98	PES	190	2.0	<0.5	5.7	1.7	<5	--
	1/19/99	PES	1,000	40	<0.5	18	68	8.3	6.9
	4/15/99	PES	<50	0.92	0.9	0.7	0.87	<5.0	--
MW-2	6/19/97	ENVIRON	<50	<0.5	<0.5	<0.5	<0.5	<5.0	--
	9/29/97	PES	<50	<0.5	<0.5	<0.5	<0.5	<5	--
	12/16/97	PES	<50	<0.5	<0.5	<0.5	<0.5	<5	--
	3/10/98	PES	<50	<0.5	<0.5	<0.5	<0.5	<5.0	--
	1/19/99	PES	<50	<0.5	<0.5	<0.5	<0.5	<5.0	<5.0
	4/15/99	PES	<50	0.75	0.64	<0.5	0.74	<5.0	--
MW-3	6/19/97	ENVIRON	<50	<0.5	<0.5	<0.5	<0.5	<5.0	--
	9/29/97	PES	<50	<0.5	<0.5	<0.5	<0.5	<5	--
	12/16/97	PES	<50	<0.5	<0.5	<0.5	<0.5	<5	--
	3/10/98	PES	<50	<0.5	<0.5	<0.5	<0.5	<5.0	--
	1/19/99	PES	<50	0.78	<0.5	<0.5	<0.5	8.7	<5.0
	4/15/99	PES	<50	5.4	3.9	1.7	5.6	23	25
MW-4	9/15/98	PES	170,000	26,000	32,000	2,900	18,000	26,000	--
	1/19/99	PES	2,600	1,700	3.8	25	29	13,000	16,000
	4/15/99	PES	210,000	28,000	15,000	3,700	19,000	52,000	67,000

Notes:

TPH-g = Total petroleum hydrocarbons quantified as gasoline (EPA 8015M)
MTBE = Methyl tert-butyl ether (EPA 8020; detected concentrations were confirmed by EPA 8260)
µg/L = Micrograms per liter
<50 = Not detected at or above the indicated laboratory reporting limit



Oakland Map, California State Automobile Association, 1997.

PES Environmental, Inc.
Engineering & Environmental Services

Site Location Map
Pacific Electric Motor Company
1009 66th Avenue
Oakland, California

PLATE
1

618.0101.004	6180101002_V1.CDR		5/99
JOB NUMBER	DRAWING NUMBER	REVIEWED BY	DATE

Explanation

Monitoring Well Location

APPROXIMATE LIMITS OF EXCAVATION

Location of Former Gas Shed and 2,000-gallon Gasoline UST

MW-1

WAC-1

Warehouse

MW-4

MAIN BUILDING

66th AVENUE

MW-3

MW-2

Property Line

N

0 50 100

SCALE IN FEET

Drawing modified from ENVIRON, 1997

PES Environmental, Inc.
Engineering & Environmental Services

Site Plan and Monitoring Well Locations
Pacific Electric Motor Company
1009 66th Avenue
Oakland, California

PLATE 2

618.0101.004	6180101003_S99-2q.CDR	
JOB NUMBER	DRAWING NUMBER	REVIEWED BY

5/99
DATE

Explanation

- Monitoring Well Location
- 96.31 Water-Level Elevation (in feet, referenced to site datum.
- Groundwater contour (in feet referenced to site datum: dashed where inferred)

Water levels measured on May 6, 1999.

APPROXIMATE LIMITS OF EXCAVATION

Location of Former Gas Shed and 2,000-gallon Gasoline UST

Warehouse

MAIN BUILDING

66th AVENUE

96.31
MW-1
WAC-1
96.3
96.2
96.1
96.0
95.9
MW-4
95.82
95.81
MW-3
95.94
MW-2

Property Line

N

0 50 100

SCALE IN FEET

Drawing modified from ENVIRON, 1997

PES Environmental, Inc.
Engineering & Environmental Services

Water-Level Elevation Map
Pacific Electric Motor Company
1009 66th Avenue
Oakland, California

PLATE 3

618.0101.004	6180101003_S99.CDR	
JOB NUMBER	DRAWING NUMBER	REVIEWED BY

5/99
DATE

APPENDIX A

GROUNDWATER SAMPLING REPORT

BLAINE
TECH SERVICES INC.

1680 ROGERS AVENUE
SAN JOSE, CA 95112-1105
(408) 573-7771 FAX
(408) 573-0555 PHONE

April 30, 1999

PES Environmental, Inc.
1682 Novato Blvd., Suite 100
Novato, CA 94947

ATTN: Will Mast

Site:
Pacific Electric Motor Company
1099 66th Ave.
Oakland, California

Date:
April 15, 1999

GROUNDWATER SAMPLING REPORT 990415-P-2

Blaine Tech Services, Inc. performs specialized environmental sampling and documentation as an independent third party. In order to avoid compromising the objectivity necessary for the proper and disinterested performance of this work, Blaine Tech Services, Inc. does not participate in the interpretation of analytical results, or become involved with the marketing or installation of remedial systems.

This report deals with the groundwater well sampling performed by our firm in response to your request. Data collected in the course of our work at the site are presented in the TABLE OF WELL MONITORING DATA. This information was collected during our inspection, well evacuation and sample collection. Measurements include the total depth of the well and the depth to water. Water surfaces were further inspected for the presence of immiscibles. A series of electrical conductivity, pH, turbidity, and temperature readings were obtained during well evacuation and at the time of sample collection.

STANDARD PRACTICES

Evacuation and Sampling Equipment

As shown in the TABLE OF WELL MONITORING DATA, the wells at this site were evacuated according to a protocol requirement for the removal of three case volumes of water, before sampling. The wells were evacuated using disposable bailers.

Samples were collected using bailers.

Bailers: A bailer, in its simplest form, is a hollow tube which has been fitted with a check valve at the lower end. The device can be lowered into a well by means of a cord. When the bailer enters the water, the check valve opens and liquid flows into the interior of the bailer. The bottom check valve prevents water from escaping when the bailer is drawn up and out of the well.

Two types of bailers are used in groundwater wells at sites where fuel hydrocarbons are of concern. The first type of bailer is made of a clear material such as acrylic plastic and is used to obtain a sample of the surface and the near surface liquids, in order to detect the presence of visible or measurable fuel hydrocarbon floating on the surface. The second type of bailer is made of Teflon or stainless steel, and is used as an evacuation and/or sampling device.

Bailers are inexpensive and relatively easy to clean. Because they are manually operated, variations in operator technique may have a greater influence than would be found with more automated sampling equipment. Also, where fuel hydrocarbons are involved, the bailer may include near surface contaminants that are not representative of water deeper in the well.

Decontamination

All apparatus is brought to the site in clean and serviceable condition. The equipment is decontaminated after each use and before leaving the site.

Effluent Materials

The evacuation process creates a volume of effluent water which must be contained. Blaine Tech Services, Inc. will place this water in appropriate containers of the client's choice or bring new 55 gallon DOT 17 E drums to the site, which are appropriate for the containment of the effluent materials. The determination of how to properly dispose of the effluent water must usually await the results of laboratory analyses of the sample collected from the groundwater well. If that sample does not establish whether or not the effluent water is contaminated, or if

effluent from more than one source has been combined in the same container, it may be necessary to conduct additional analyses on the effluent material.

Sampling Methodology

Samples were obtained by standardized sampling procedures that follow an evacuation and sample collection protocol. The sampling methodology conforms to both State and Regional Water Quality Control Board standards and specifically adheres to EPA requirements for apparatus, sample containers and sample handling as specified in publication SW 846 and T.E.G.D. which is published separately.

Sample Containers

Sample containers are supplied by the laboratory performing the analyses.

Sample Handling Procedures

Following collection, samples are promptly placed in an ice chest containing deionized ice or an inert ice substitute such as Blue Ice or Super Ice. The samples are maintained in either an ice chest or a refrigerator until delivered into the custody of the laboratory.

Sample Designations

All sample containers are identified with both a sampling event number and a discrete sample identification number. Please note that the sampling event number is the number that appears on our chain of custody. It is roughly equivalent to a job number, but applies only to work done on a particular day of the year rather than spanning several days, as jobs and projects often do.

Chain of Custody

Samples are continuously maintained in an appropriate cooled container while in our custody and until delivered to the laboratory under our standard chain of custody. If the samples are taken charge of by a different party (such as another person from our office, a courier, etc.) prior to being delivered to the laboratory, appropriate release and acceptance records are made on the chain of custody (time, date and signature of person accepting custody of the samples).

Hazardous Materials Testing Laboratory

The samples obtained at this site were analyzed at Entech in Sunnyvale, California. Entech is certified by the California Department of Health Services under the Environmental Laboratory Accreditation Program (ELAP), and is listed as ELAP #I-2346.

Personnel

All Blaine Tech Services, Inc. personnel receive 29 CFR 1910.120(e)(2) training as soon after being hired as is practical. In addition, many of our personnel have additional certifications that include specialized training in level B supplied air apparatus and the supervision of employees working on hazardous materials sites. Employees are not sent to a site unless we are confident they can adhere to any site safety provisions in force at the site and unless we know that they can follow the written provisions of an SSP and the verbal directions of an SSO.

In general, employees sent to a site to perform groundwater well sampling will assume an OSHA level D (wet) environment exists unless otherwise informed. The use of gloves and double glove protocols protects both our employees and the integrity of the samples being collected. Additional protective gear and procedures for higher OSHA levels of protection are available.

Reportage

Submission to the Regional Water Quality Control Board and the local implementing agency should include copies of the sampling report, the chain of custody and the certified analytical report issued by the Hazardous Materials Testing Laboratory.

Please call if we can be of any further assistance.

William Jones

WRJ/pb

attachments: table of well monitoring data
chain of custody

TABLE OF WELL MONITORING DATA

Well I.D.	MW-1			MW-2			MW-3			MW-4		
Date Sampled	4/15/99			4/15/99			4/15/99			4/15/99		
Well Diameter (in.)	2			2			2			2		
Total Well Depth (ft.)	25.06			25.15			25.02			25.00		
Depth To Water (ft.)	3.23			3.19			3.85			7.71		
Free Product (in.)	NONE			NONE			NONE			NONE		
Reason If Not Sampled	--			--			--			--		
1 Case Volume (gal.)	3.4			3.5			3.3			2.7		
Did Well Dewater?	NO			NO			NO			NO		
Gallons Actually Evacuated	10.50			10.50			10.0			8.0		
Purging Device	BAILER			BAILER			BAILER			BAILER		
Sampling Device	BAILER			BAILER			BAILER			BAILER		
Time	12:36	12:40	12:47	12:05	12:10	12:17	11:33	11:38	11:45	11:05	11:10	11:15
Temperature (Fahrenheit)	68.8	68.6	68.4	69.4	68.8	68.6	69.6	69.4	68.8	68.4	68.2	68.0
pH	7.4	7.1	7.1	7.1	7.0	7	6.9	7.0	7.0	6.7	6.8	6.8
Conductivity (micromhos/cm)	521	487	456	1342	1296	1246	6421	6387	6452	6742	6696	6615
Nephelometric Turbidity Units	>200	>200	>200	>200	>200	>200	>200	>200	>200	>200	>200	>200
Dissolved Oxygen (D.O) (mg/L)	--			--			--			--		
Oxidation Reduction Potential (:	--			--			--			--		
BTS Chain of Custody	990415-P2			990415-P2			990415-P2			990415-P2		
BTS Sample I.D.	MW-1			MW-2			MW-3			MW-4		
DOHS HMTL Laboratory	ENTECH			ENTECH			ENTECH			ENTECH		
Analysis	TPH-G, BTEX, MTBE			TPH-G, BTEX, MTBE			TPH-G, BTEX, MTBE			TPH-G, BTEX, MTBE		

APPENDIX B

LABORATORY REPORT
AND
CHAIN-OF-CUSTODY RECORDS

RECEIVED APR 2 9 1999

Entech Analytical Labs, Inc.

CA ELAP# I-2346

525 Del Rey Avenue, Suite E • Sunnyvale, CA 94086 • (408) 735-1550 • Fax (408) 735-1554

PES Environmental, Inc.
1682 Novato Boulevard, Suite 100
Novato, CA 94947
Attn: Will Mast

Date: 4/27/99
Date Received: 4/19/99
Project: Pacific Electric Motor
PO #:
Sampled By: Client

Certified Analytical Report

Water Sample Analysis:

Sample ID	MW-1			MW-2			MW-3				
Sample Date	4/15/99			4/15/99			4/15/99				
Sample Time	12:55			12:25			11:50				
Lab #	G9468			G9469			G9470				
	Result	DF	DLR	Result	DF	DLR	Result	DF	DLR	PQL	Method
Results in µg/Liter:											
Analysis Date	4/22/99			4/22/99			4/22/99				
TPH-Gas	**ND**	1.0	50	**ND**	1.0	50	**ND**	1.0	50	50	8015M
MTBE	**ND**	1.0	5.0	**ND**	1.0	5.0	**23**	1.0	5.0	5.0	8020
Benzene	**0.92**	1.0	0.50	**0.75**	1.0	0.50	**5.4**	1.0	0.50	0.50	8020
Toluene	**0.90**	1.0	0.50	**0.64**	1.0	0.50	**3.9**	1.0	0.50	0.50	8020
Ethyl Benzene	**0.70**	1.0	0.50	**ND**	1.0	0.50	**1.7**	1.0	0.50	0.50	8020
Xylenes (total)	**0.87**	1.0	0.50	**0.74**	1.0	0.50	**5.6**	1.0	0.50	0.50	8020

DF=Dilution Factor ND= None Detected above DLR PQL=Practical Quantitation Limit DLR=Detection Reporting Limit

· Analysis performed by Entech Analytical Labs, Inc. (CA ELAP #I-2346)

Michelle L. Anderson, Lab Director

Environmental Analysis Since 1983

Entech Analytical Labs, Inc.

CA ELAP# I-2346

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PES Environmental, Inc.
1682 Novato Boulevard, Suite 100
Novato, CA 94947
Attn: Will Mast

Date: 4/27/99
Date Received: 4/19/99
Project: Pacific Electric Motor
PO #:
Sampled By: Client

Certified Analytical Report

Water Sample Analysis:

Sample ID	MW-4										
Sample Date	4/15/99										
Sample Time	11:20										
Lab #	G9471										
	Result	DF	DLR							PQL	Method
Results in µg/Liter:											
Analysis Date	4/22-4/23/99										
TPH-Gas	**210,000**	100	5000							50	8015M
MTBE	**52,000**	400	2000							5.0	8020
Benzene	**28,000**	100	50							0.50	8020
Toluene	**15,000**	100	50							0.50	8020
Ethyl Benzene	**3,700**	100	50							0.50	8020
Xylenes (total)	**19,000**	100	50							0.50	8020

DF=Dilution Factor ND= None Detected above DLR PQL=Practical Quantitation Limit DLR=Detection Reporting Limit

· Analysis performed by Entech Analytical Labs, Inc. (CA ELAP #I-2346)

Michelle L. Anderson, Lab Director

Environmental Analysis Since 1983

Entech Analytical Labs, Inc.

525 Del Rey Avenue, Suite E
Sunnyvale, CA 94086

QUALITY CONTROL RESULTS SUMMARY

METHOD: Gas Chromatography

QC Batch #: GBG4990422
Matrix: Water
Units: µg/L

Date Analyzed: 04/22/99
Quality Control Sample: Blank Spike

PARAMETER	Method #	MB µg/L	SA µg/L	SR µg/L	SP µg/L	**SP % R**	SPD µg/L	**SPD %R**	RPD	QC LIMITS RPD	QC LIMITS %R
Benzene	8020	<0.50	40	ND	38	**96**	37	**93**	3.2	25	83-109
Toluene	8020	<0.50	40	ND	38	**94**	36	**91**	3.7	25	65-112
Ethyl Benzene	8020	<0.50	40	ND	37	**91**	35	**88**	3.2	25	82-110
Xylenes	8020	<0.50	120	ND	110	**92**	108	**90**	2	25	83-110
Gasoline	8015	<50.0	500	ND	483	**97**	478	**96**	1.0	25	73-128

Note: LCS and LCSD results reported for the following Parameters:
All

Definition of Terms:

na: Not Analyzed in QC batch
MB: Method Blank
SA: Spike Added
SR: Sample Result
RPD(%): Duplicate Analysis - Relative Percent Difference
SP: Spike Result
SP (%R): Spike % Recovery
SPD: Spike Duplicate Result
SPD (%R): Spike % Recovery
NC: Not Calculated

BLAINE TECH SERVICES INC.

1680 ROGERS AVENUE
SAN JOSE, CALIFORNIA 95112-1105
FAX (408) 573-7771
PHONE (408) 573-0555

CHAIN OF CUSTODY BTS # 990415-P2

CLIENT PES

SITE PACIFIC ELECTRIC MOTOR
1099 66TH AVE
OAKLAND, CA

CONDUCT ANALYSIS TO DETECT

LAB ENTECH DHS #

ALL ANALYSES MUST MEET SPECIFICATIONS AND DETECTION LIMITS SET BY CALIFORNIA DHS AND

☐ EPA ☐ RWQCB REGION ____
☐ LIA
☐ OTHER

SPECIAL INSTRUCTIONS
INVOICE & REPORT TO
PES
ATTN: WILL MAST
* CONFIRM MTBE HITS BY 8240/8260

SAMPLE I.D.			MATRIX S = SOIL W = H2O	CONTAINERS TOTAL		C = COMPOSITE ALL CONTAINERS	TPH-G	BTEX	MTBE *					ADD'L INFORMATION	STATUS	CONDITION	LAB SAMPLE #
MW-1	4/15	12:55	W	3	G9468		X	X	X								
MW-2		12:25			G9469												
MW-3		11:50			G9470												
MW-4		11:20			G9471												

"Confirm MTBE Hits by EPA 8240/8260"

SAMPLING COMPLETED DATE 4/15/99 TIME 13:00

SAMPLING PERFORMED BY Paul Sanna

RESULTS NEEDED NO LATER THAN Per Client

RELEASED BY Paul Sanna	DATE 4/19/99	TIME 1129	RECEIVED BY T. Madsen	DATE 4-19-99	TIME 11:30
RELEASED BY T. Madsen	DATE 4/19/99	TIME 12:21	RECEIVED BY	DATE	TIME
RELEASED BY	DATE	TIME	RECEIVED BY nathaizo	DATE 4/19/99	TIME 12:25

SHIPPED VIA	DATE SENT	TIME SENT	COOLER #	

RECEIVED MAY 0 6 1999

Entech Analytical Labs, Inc.

CA ELAP# I-2346

525 Del Rey Avenue, Suite E • Sunnyvale, CA 94086 • (408) 735-1550 • Fax (408) 735-1554

PES Environmental, Inc.
1682 Novato Boulevard, Suite 100
Novato, CA 94947
Attn: Will Mast

Date: 5/3/99
Date Received: 4/19/99
Project: Pacific Electric Motor
PO #:
Sampled By: Client

Certified Analytical Report

Water Sample Analysis:

Sample ID	MW-3			MW-4							
Sample Date	4/15/99			4/15/99							
Sample Time	11:50			11:20							
Lab #	G9470			G9471							
	Result	DF	DLR	Result	DF	DLR				PQL	Method
Results in µg/Liter:											
Analysis Date	4/26/99			4/26/99							
MTBE	**25**	1.0	5.0	**67,000**	500	2500				5.0	8260

DF=Dilution Factor ND= None Detected above DLR PQL=Practical Quantitation Limit DLR=Detection Reporting Limit

· Analysis performed by Entech Analytical Labs, Inc. (CA ELAP #I-2346)

Michelle L. Anderson, Lab Director

Environmental Analysis Since 1983

Entech Analytical Labs, Inc.

525 Del Rey Ave., Suite E
Sunnyvale, CA 94086

QUALITY CONTROL RESULTS SUMMARY

Volatile Organic Compounds

QC Batch #: WGCMS990427
Matrix: Water
Units: µg/L

Date analyzed: 04/27/99
Spiked Sample: Blank Spike

PARAMETER	Method #	SA µg/L	SR µg/L	SP µg/L	**SP %R**	SPD µg/L	**SPD %R**	RPD	QC LIMITS RPD	QC LIMITS %R
1,1- Dichloroethene	8240/8260	25	ND	28	**111**	27	**110**	1.4	25	50-150
Methyl-tert-butyl ether	8240/8260	25	ND	28	**113**	28	**111**	1.8	25	50-150
Benzene	8240/8260	25	ND	29	**118**	29	**116**	1.4	25	50-150
Trichloroethene	8240/8260	25	ND	27	**109**	26	**105**	3.4	25	50-150
Toluene	8240/8260	25	ND	28	**111**	28	**110**	1.1	25	50-150
Chlorobenzene	8240/8260	25	ND	28	**112**	27	**110**	1.8	25	50-150
Surrogates										
Dibromofluoromethane	8240/8260		117%	123%		118%				65-135
1,2-Dichloroethane	8240/8260		124%	129%		125%				65-135
Toluene -d8	8240/8260		99%	100%		99%				65-135
4-Bromofluorobenzene	8240/8260		82%	84%		83%				65-135

Definition of Terms:

na: Not Analyzed in QC batch
SA: Spike Added
SR: Sample Result
RPD(%): Duplicate Analysis - Relative Percent Difference
SP Spike Result
SP (%R) Spike % Recovery
SPD: Spike Duplicate Result
SPD (%R) Spike Duplicate % Recovery
NC: Not Calculated

BLAINE TECH SERVICES INC.

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FAX (408) 573-7771
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CHAIN OF CUSTODY BTS # 990415-P2

CLIENT PES

SITE PACIFIC ELECTRIC MOTOR
1099 66TH AVE
OAKLAND, CA

LAB ENTECH DHS #

ALL ANALYSES MUST MEET SPECIFICATIONS AND DETECTION LIMITS SET BY CALIFORNIA DHS AND

☐ EPA ☐ RWQCB REGION ____
☐ LIA
☐ OTHER

SPECIAL INSTRUCTIONS
INVOICE & REPORT TO
PES
ATTN: WILL MAST
* CONFIRM MTBE HITS BY 8240/8260

SAMPLE I.D.		MATRIX S = SOIL W = H2O	CONTAINERS TOTAL		C = COMPOSITE ALL CONTAINERS	CONDUCT ANALYSIS TO DETECT: TPH-G	BTEX	* MTBE	MTBE Confirmation by 8260 sample xpnin 4/29/99				ADD'L INFORMATION	STATUS	CONDITION	LAB SAMPLE #
MW-1	4/15 12:55	W	3	G9468		X	X	X								
MW-2	12:25			G9469												
MW-3	11:50			G9470					X							
MW-4	11:20			G9471					X							

"Confirm MTBE Hits by EPA 8240/8260"

SAMPLING COMPLETED	DATE	TIME
	4/15/99	13:00

SAMPLING PERFORMED BY Paul Sanna

RESULTS NEEDED NO LATER THAN Per Client

RELEASED BY	DATE	TIME	RECEIVED BY	DATE	TIME
Paul Sanna	4/19/99	1129		4-19-99	11:30
T. Maltz	4/19/99	12:21			
			nafmazo	4/19/99	12:25

SHIPPED VIA	DATE SENT	TIME SENT	COOLER #

DISTRIBUTION

QUARTERLY MONITORING REPORT
SECOND QUARTER 1999
PACIFIC ELECTRIC MOTOR COMPANY
1009 66TH AVENUE
OAKLAND, CALIFORNIA

JUNE 17, 1999

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