PES Environmental, Inc.
Engineering & Environmental Services

A Report Prepared For:

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

Attention: Mr. Rand Perry

THIRD QUARTER 2000
GROUNDWATER MONITORING REPORT
PACIFIC ELECTRIC MOTOR COMPANY
1009 66TH AVENUE
OAKLAND, CALIFORNIA

OCTOBER 31, 2000

#565

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618.001.02.002

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1.0 INTRODUCTION

This report presents the results of quarterly groundwater monitoring performed by PES Environmental, Inc. (PES) during the third quarter of 2000 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 July 26, 2000. 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.

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 July 26, 2000, 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. 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 July 2000 sampling event.

5.1 Water-Level Measurements

Depth-to-water measurements during the July 2000 event ranged from 4.85 feet (MW-2) to 5.65 feet (MW-4) below TOC. Groundwater water-level elevations ranged from 94.79 feet (MW-3) to 95.39 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 July 26, 2000. Groundwater elevations have historically indicated a southerly groundwater flow direction. Although this is generally the case, there appears to be a groundwater depression in the vicinity of well MW-4. However, the July 2000 water-level elevation for MW-4 may be anomalous. The groundwater gradient is approximately 0.009 foot per foot (ft/ft) between MW-4 and MW-1, and 0.003 ft/ft between MW-2 and MW-4.

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 Well MW-1 and MW-4.

No petroleum hydrocarbon compounds were detected in the samples collected from Wells MW-2, and MW-3 during the current sampling event. Low concentrations had been last detected in these wells during early 1999 sampling events.

At Well MW-1, TPH-g, benzene, toluene, ethyl benzene, and xylenes were detected at concentrations of 6,400, 100, 7.4, 260 and 680 micrograms per liter (μg/L), respectively. MTBE was not detected using EPA Test Method 8020. Although petroleum hydrocarbon concentrations in Well MW-1 have fluctuated over the past year, concentrations have generally decreased since June 1997.

At Well MW-4, TPH-g, benzene, toluene, ethyl benzene, and xylenes were detected at concentrations of 130,000, 11,000, 6,400, 1,700 and 6,500 μg/L, respectively. MTBE was detected at a concentration of 64,000 μg/L using EPA Test Method 8020. The presence of MBTE was not reconfirmed using EPA Test Method 8260.

Current data from the downgradient monitoring wells (MW-2 and MW-3), consistent with that of the November 1999 event, appear to indicate that the petroleum hydrocarbon plume associated with the former UST remains stable and localized. Current data from Well MW-1 indicates an increase in petroleum hydrocarbon concentrations from the May 2000 sampling event, though current data remains consistent with historical concentrations. Petroleum hydrocarbon concentrations detected in Well MW-4 indicate a slight increase since the May 2000 sampling event.

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
Third Quarter 2000
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
Third Quarter 2000
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
	7/30/99	PES	100.67	5.49	95.18
	11/15/99	PES	100.67	6.30	94.37
	3/24/00	PES	100.67	3.47	97.20
	5/18/00	PES	100.67	4.34	96.33
	7/26/00	**PES**	**100.67**	**5.28**	**95.39**
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
	7/30/99	PES	99.85	4.79	95.06
	11/15/99	PES	99.85	5.92	93.93
	3/24/00	PES	99.85	3.55	96.30
	5/18/00	PES	99.85	4.04	95.81
	7/26/00	**PES**	**99.85**	**4.85**	**95.00**
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
	7/30/99	PES	99.93	5.14	94.79
	11/15/99	PES	99.93	6.35	93.58
	3/24/00	PES	99.93	3.29	96.64

Table 2. Water-Level Elevation Data
Quarterly Monitoring Report
Third Quarter 2000
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-3 Cont.	5/18/00	PES	99.93	4.16	95.77
	7/26/00	**PES**	**99.93**	**5.14**	**94.79**
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
	7/30/99	PES	100.32	5.18	95.14
	11/15/99	PES	100.32	6.27	94.05
	3/24/00	PES	100.32	3.59	96.73
	5/18/00	PES	100.32	4.40	95.92
	7/26/00	**PES**	**100.32**	**5.65**	**94.67**

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

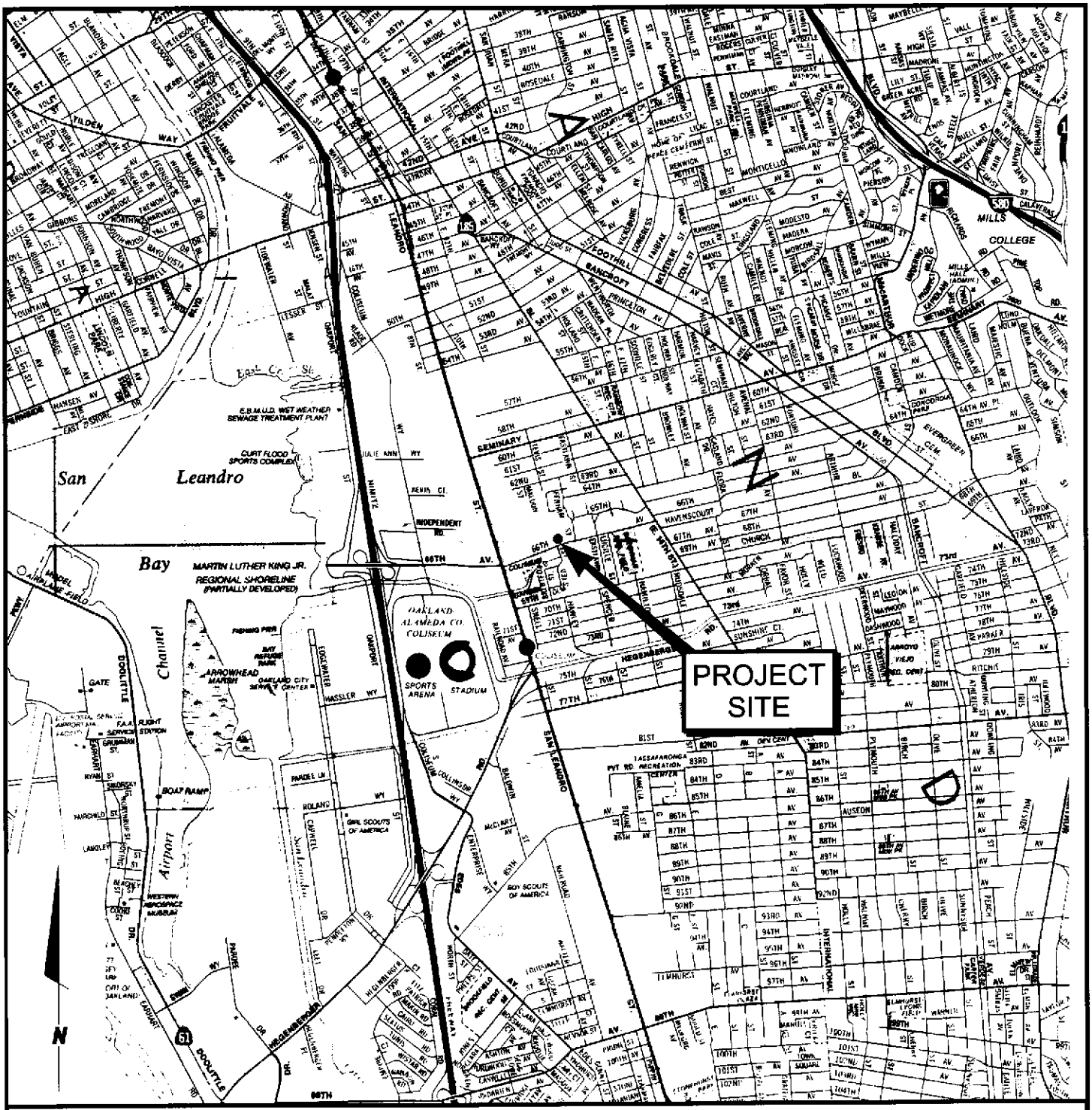
Table 3. Analytical Results for Groundwater Samples
Quarterly Monitoring Report
Third Quarter 2000
Pacific Electric Motor Company
1009 66th Avenue, Oakland, California

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	--
	7/30/99	PES	1,400	60	<0.5	63	120	13	<5.0
	11/15/99	PES	3,600	120	<0.5	150	620	<5.0	--
	3/24/00	PES	<50	<0.5	<0.5	<0.5	<0.5	<5.0	--
	5/18/00	PES	1,300	10	1.2	38	130	8.6	<5.0
	7/26/00	**PES**	**6,400**	**100**	**7.4**	**260**	**680**	**<5.0**	**NA**
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	--
	7/30/99	PES	<50	<0.5	<0.5	<0.5	<0.5	<5.0	--
	11/15/99	PES	<50	<0.5	<0.5	<0.5	<0.5	<5.0	--
	3/24/00	PES	<50	<0.5	<0.5	<0.5	<0.5	<5.0	--
	5/18/00	PES	<50	<0.5	<0.5	<0.5	<0.5	<5.0	--
	7/26/00	**PES**	**<50**	**<0.5**	**<0.5**	**<0.5**	**<0.5**	**<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
	7/30/99	PES	<50	<0.5	<0.5	<0.5	<0.5	<5.0	--
	11/15/99	PES	<50	<0.5	<0.5	<0.5	<0.5	<5.0	--
	3/24/00	PES	<50	<0.5	<0.5	<0.5	<0.5	<5.0	--
	5/18/00	PES	<50	<0.5	<0.5	<0.5	<0.5	<5.0	--
	7/26/00	**PES**	**<50**	**<0.5**	**<0.5**	**<0.5**	**<0.5**	**<5.0**	**--**

Table 3. Analytical Results for Groundwater Samples
Quarterly Monitoring Report
Third Quarter 2000
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-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
	7/30/99	PES	91,000	16,000	7,500	2,300	8,500	68,000	67,000
	11/15/99	PES	63,000	8,500	2,400	1,400	4,000	57,000	58,000
	3/24/00	PES	95,000	16,000	13,000	2,500	12,000	44,000	NA
	5/18/00	PES	91,000	15,000	10,000	2,200	9,600	64,000	77,000
	7/26/00	PES	130,000	11,000	6,400	1,700	6,500	80,000	NA

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.



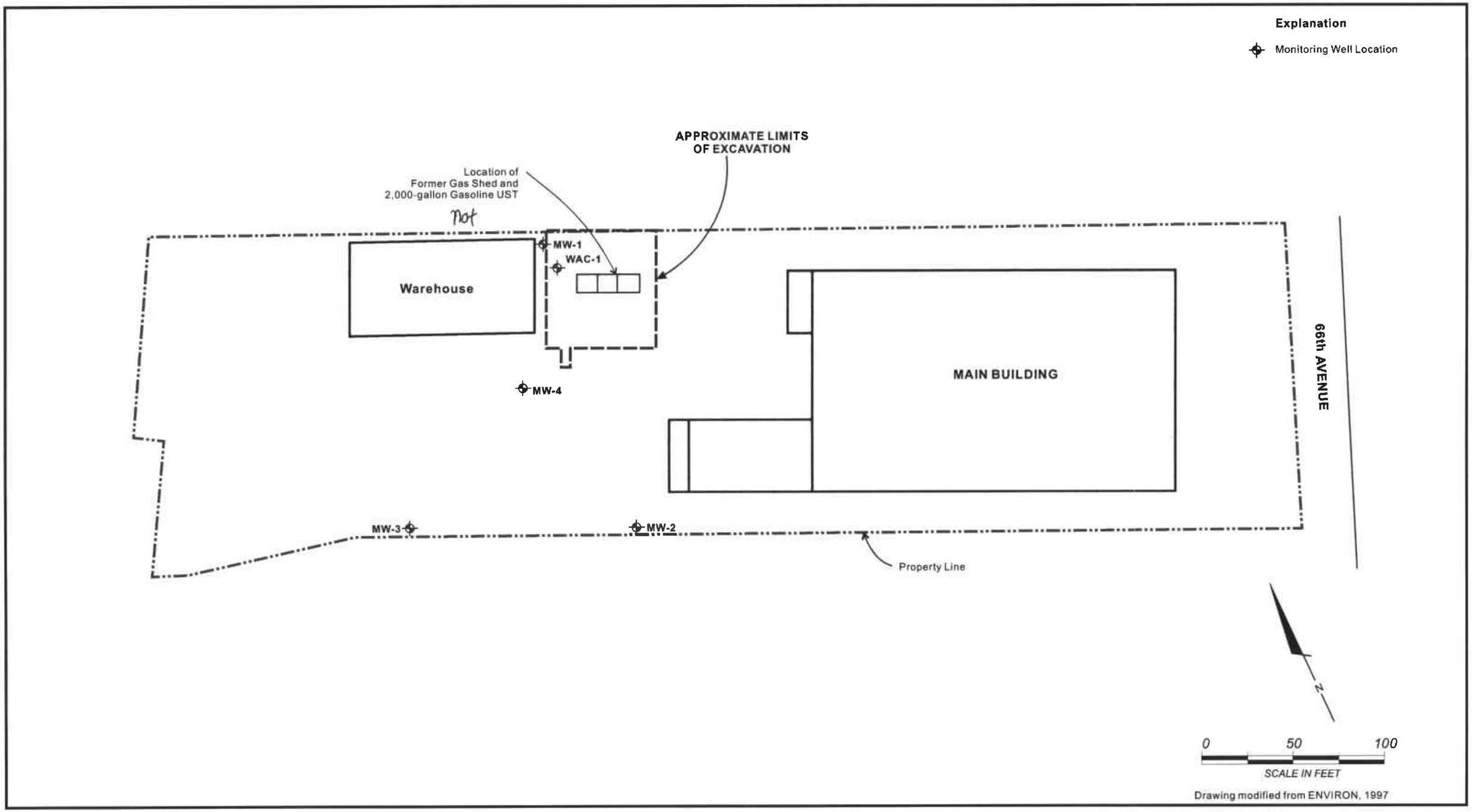
Oakland Map, California State Automobile Association, 1997.

PES Environmental, Inc.
Engineering & Environmental Services

Site Location Map
Third Quarter 2000 Groundwater Monitoring Report
Pacific Electric Motor Company
1009 66th Avenue, Oakland, California

PLATE 1

618.00102.002	61800101004 V1.CDR		10/00
JOB NUMBER	DRAWING NUMBER	REVIEWED BY	DATE



PES Environmental, Inc.
Engineering & Environmental Services

Site Plan and Sampling Location Map
Third Quarter 2000 Groundwater Monitoring Report
Pacific Electric Motor Company
1009 66th Avenue, Oakland, California

PLATE
2

618.00102.003	61800101004_S00-3q.CDR	
JOB NUMBER	DRAWING NUMBER	REVIEWED BY

10/00
DATE

Explanation

- Monitoring Well Location
- *96.33* Water-Level Elevation (in feet, referenced to site datum.
- Groundwater contour (in feet referenced to site datum; dashed where inferred)
- Water levels measured on July 26, 2000.

APPROXIMATE LIMITS OF EXCAVATION

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

Warehouse

MAIN BUILDING

66th AVENUE

Property Line

95.39 MW-1

WAC-1

95.3

95.2

95.1

95.0

94.9

MW-4 *94.67*

94.8

94.7

94.7

94.79 MW-3

94.8

94.9

95.0

95.00 MW-2

?

N

0 50 100

SCALE IN FEET

Drawing modified from ENVIRON, 1997

PES Environmental, Inc.
Engineering & Environmental Services

Water-Level Elevation Map
Third Quarter 2000 Groundwater Monitoring Report
Pacific Electric Motor Company
1009 66th Avenue, Oakland, California

PLATE 3

618.00102.002	61800101004_S00-2q.CDR	
JOB NUMBER	DRAWING NUMBER	REVIEWED BY

10/00
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
CONTRACTOR'S LICENSE #746684
www.blainetech.com

August 8, 2000

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:
July 26, 2000

GROUNDWATER SAMPLING REPORT 000726-Y-1

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 disposable 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 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	07/26/00			07/26/00			07/26/00			07/26/00		
Well Diameter (in.)	2			2			2			2		
Total Well Depth (ft.)	24.87			24.90			24.77			24.75		
Depth To Water (ft.)	5.28			4.85			5.14			5.65		
Free Product (in.)	NONE			NONE			NONE			NONE		
Reason If Not Sampled	--			--			--			--		
1 Case Volume (gal.)	3.1			3.2			3.1			2.8		
Did Well Dewater?	NO			NO			NO			NO		
Gallons Actually Evacuated	9.50			10.00			9.50			8.50		
Purging Device	DISPOSABLE BAILER			DISPOSABLE BAILER			DISPOSABLE BAILER			DISPOSABLE BAILER		
Sampling Device	DISPOSABLE BAILER			DISPOSABLE BAILER			DISPOSABLE BAILER			DISPOSABLE BAILER		
Time	8:52	8:57	9:01	10:20	10:24	10:28	9:56	9:59	10:03	9:25	9:28	9:32
Temperature (Fahrenheit)	66.7	65.5	65.0	66.5	66.1	66.0	64.4	64.6	64.5	67.3	67.9	67.8
pH	6.6	6.5	6.6	7.2	7.0	6.9	6.9	6.8	6.8	6.3	6.4	6.5
Conductivity (micromhos/cm)	483	490	538	1180	1148	1145	3809	4717	5196	6393	6618	6665
Nephelometric Turbidity Units	>200	>200	>200	>200	>200	>200	>200	>200	>200	>200	>200	>200
BTS Chain of Custody	000726-Y1			000726-Y1			000726-Y1			000726-Y1		
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		

BLAINE
TECH SERVICES, INC.

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

CHAIN OF CUSTODY BTS # 000726-Y1

CLIENT: PES

SITE: Pacific Electric Motor
1099 66th Avenue
Oakland, CA

SAMPLE I.D.	DATE	TIME	MATRIX S= SOIL W=H_2O	CONTAINERS TOTAL	C = COMPOSITE ALL CONTAINERS	CONDUCT ANALYSIS TO DETECT: TPH - Gas (8015)	BTEX (8020)	MTBE (8020) *
MW-1	7/26/00	905	W	6		X	X	X
MW-2		1032				X	X	X
MW-3		1006				X	X	X
MW-4		936				X	X	X

LAB: Entech DHS #

ALL ANALYSES MUST MEET SPECIFICATIONS AND DETECTION LIMITS SET BY CALIFORNIA DHS AND
☐ EPA ☐ LIA ☐ OTHER ☐ RWQCB REGION

SPECIAL INSTRUCTIONS

Invoice and Report to : PES
Attn: Will Mast
* Confirm MTBE hits by EPA 8240/8260

ADD'L INFORMATION	STATUS	CONDITION	LAB SAMPLE #
* CONFIRM MTBE HITS W 8240/8260 (Not done)			

SAMPLING COMPLETED: DATE 7/26/00 TIME 1240
SAMPLING PERFORMED BY: LEON G.

RESULTS NEEDED NO LATER THAN: Per Client

	DATE	TIME		DATE	TIME
RELEASED BY	7/27/00	9-15	RECEIVED BY K. Allen	7/27/00	0910
RELEASED BY			RECEIVED BY		
RELEASED BY			RECEIVED BY		

SHIPPED VIA	DATE SENT	TIME SENT	COOLER #

APPENDIX B

LABORATORY REPORTS
AND
CHAIN-OF-CUSTODY RECORDS

Entech Analytical Labs, Inc.

CA ELAP# 2346

525 Del Rey Avenue, Suite E • Sunnyvale, CA 94085 • (408) 735-1550 • Fax (408) 735-1554

August 03, 2000

RECEIVED AUG 15 2000

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

Order: 21566
Project Name:
Project Number: 000726-41
Project Notes:

Date Collected: 7/26/00
Date Received: 7/27/00
P.O. Number:

On July 27, 2000, samples were received under documentented chain of custody. Results for the following analyses are attached:

Matrix	Test	Method
Liquid	Gas/BTEX/MTBE	EPA 8015 MOD. (Purgeable)
		EPA 8020

Chemical analysis of these samples has been completed. Summaries of the data are contained on the following pages. USEPA protocols for sample storage and preservation were followed.

Entech Analytical Labs, Inc. is certified by the State of California (#2346). If you have any questions regarding procedures or results, please call me at 408-735-1550.

Sincerely,

Michelle L. Anderson
Lab Director

Entech Analytical Labs, Inc.

CA ELAP# 2346

525 Del Rey Avenue, Suite E • Sunnyvale, CA 94085 • (408) 735-1550 • Fax (408) 735-1554

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

Date: 8/03/00
Date Received: 7/27/00
Project Name:
Project Number: 000726-41
P.O. Number:
Sampled By: Blaine Tech

Certified Analytical Report

Order ID: 21566 **Lab Sample ID:** 21566-001 **Client Sample ID:** MW-1

Sample Time: 9:05 AM **Sample Date:** 7/26/00 **Matrix:** Liquid

Parameter	Result	Flag	DF	PQL	DLR	Units	Extraction Date	Analysis Date	QC Batch ID	Method
Benzene	100		10	0.5	5	µg/L	N/A	7/31/00	WGC4000731	EPA 8020
Toluene	7.4		10	0.5	5	µg/L	N/A	7/31/00	WGC4000731	EPA 8020
Ethyl Benzene	260		10	0.5	5	µg/L	N/A	7/31/00	WGC4000731	EPA 8020
Xylenes, Total	680		10	0.5	5	µg/L	N/A	7/31/00	WGC4000731	EPA 8020

Surrogate	Surrogate Recovery	Control Limits (%)
aaa-Trifluorotoluene	93	65 - 135

Parameter	Result	Flag	DF	PQL	DLR	Units	Extraction Date	Analysis Date	QC Batch ID	Method
Methyl-t-butyl Ether	ND		10	5	50	µg/L	N/A	7/31/00	WGC4000731	EPA 8020

Surrogate	Surrogate Recovery	Control Limits (%)
aaa-Trifluorotoluene	93	65 - 135

Parameter	Result	Flag	DF	PQL	DLR	Units	Extraction Date	Analysis Date	QC Batch ID	Method
TPH as Gasoline	6400		10	50	500	µg/L	N/A	7/31/00	WGC4000731	EPA 8015 MOD. (Purgeable)

Surrogate	Surrogate Recovery	Control Limits (%)
aaa-Trifluorotoluene	93	65 - 135

DF = Dilution Factor ND = Not Detected DLR = Detection Limit Reported PQL = Practical Quantitation Limit

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

Michelle L. Anderson, Laboratory Director

Environmental Analysis Since 1983

Entech Analytical Labs, Inc.

CA ELAP# 2346

525 Del Rey Avenue, Suite E • Sunnyvale, CA 94085 • (408) 735-1550 • Fax (408) 735-1554

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

Date: 8/03/00
Date Received: 7/27/00
Project Name:
Project Number: 000726-41
P.O. Number:
Sampled By: Blaine Tech

Certified Analytical Report

Order ID: 21566 **Lab Sample ID:** 21566-002 **Client Sample ID:** MW-2

Sample Time: 10:32 AM **Sample Date:** 7/26/00 **Matrix:** Liquid

Parameter	Result	Flag	DF	PQL	DLR	Units	Extraction Date	Analysis Date	QC Batch ID	Method
Benzene	ND		1	0.5	0.5	µg/L	N/A	7/31/00	WGC4000731	EPA 8020
Toluene	ND		1	0.5	0.5	µg/L	N/A	7/31/00	WGC4000731	EPA 8020
Ethyl Benzene	ND		1	0.5	0.5	µg/L	N/A	7/31/00	WGC4000731	EPA 8020
Xylenes, Total	ND		1	0.5	0.5	µg/L	N/A	7/31/00	WGC4000731	EPA 8020

Surrogate	Surrogate Recovery	Control Limits (%)
aaa-Trifluorotoluene	99	65 - 135

Parameter	Result	Flag	DF	PQL	DLR	Units	Extraction Date	Analysis Date	QC Batch ID	Method
Methyl-t-butyl Ether	ND		1	5	5	µg/L	N/A	7/31/00	WGC4000731	EPA 8020

Surrogate	Surrogate Recovery	Control Limits (%)
aaa-Trifluorotoluene	99	65 - 135

Parameter	Result	Flag	DF	PQL	DLR	Units	Extraction Date	Analysis Date	QC Batch ID	Method
TPH as Gasoline	ND		1	50	50	µg/L	N/A	7/31/00	WGC4000731	EPA 8015 MOD. (Purgeable)

Surrogate	Surrogate Recovery	Control Limits (%)
aaa-Trifluorotoluene	109	65 - 135

DF = Dilution Factor ND = Not Detected DLR = Detection Limit Reported PQL = Practical Quantitation Limit

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

Michelle D. Anderson, Laboratory Director

Environmental Analysis Since 1983

Entech Analytical Labs, Inc.

CA ELAP# 2346

525 Del Rey Avenue, Suite E • Sunnyvale, CA 94085 • (408) 735-1550 • Fax (408) 735-1554

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

Date: 8/03/00
Date Received: 7/27/00
Project Name:
Project Number: 000726-41
P.O. Number:
Sampled By: Blaine Tech

Certified Analytical Report

Order ID: 21566 **Lab Sample ID:** 21566-003 **Client Sample ID:** MW-3

Sample Time: 10:06 AM **Sample Date:** 7/26/00 **Matrix:** Liquid

Parameter	Result	Flag	DF	PQL	DLR	Units	Extraction Date	Analysis Date	QC Batch ID	Method
Benzene	ND		1	0.5	0.5	µg/L	N/A	7/31/00	WGC4000731	EPA 8020
Toluene	ND		1	0.5	0.5	µg/L	N/A	7/31/00	WGC4000731	EPA 8020
Ethyl Benzene	ND		1	0.5	0.5	µg/L	N/A	7/31/00	WGC4000731	EPA 8020
Xylenes, Total	ND		1	0.5	0.5	µg/L	N/A	7/31/00	WGC4000731	EPA 8020

Surrogate	Surrogate Recovery	Control Limits (%)
aaa-Trifluorotoluene	101	65 - 135

Parameter	Result	Flag	DF	PQL	DLR	Units	Extraction Date	Analysis Date	QC Batch ID	Method
Methyl-t-butyl Ether	ND		1	5	5	µg/L	N/A	7/31/00	WGC4000731	EPA 8020

Surrogate	Surrogate Recovery	Control Limits (%)
aaa-Trifluorotoluene	101	65 - 135

Parameter	Result	Flag	DF	PQL	DLR	Units	Extraction Date	Analysis Date	QC Batch ID	Method
TPH as Gasoline	ND		1	50	50	µg/L	N/A	7/31/00	WGC4000731	EPA 8015 MOD. (Purgeable)

Surrogate	Surrogate Recovery	Control Limits (%)
aaa-Trifluorotoluene	112	65 - 135

DF = Dilution Factor ND = Not Detected DLR = Detection Limit Reported PQL = Practical Quantitation Limit

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

Michelle D. Anderson, Laboratory Director

Environmental Analysis Since 1983

Entech Analytical Labs, Inc.

CA ELAP# 2346

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

Date: 8/03/00
Date Received: 7/27/00
Project Name:
Project Number: 000726-41
P.O. Number:
Sampled By: Blaine Tech

Certified Analytical Report

Order ID: 21566 **Lab Sample ID:** 21566-004 **Client Sample ID:** MW-4

Sample Time: 9:36 AM **Sample Date:** 7/26/00 **Matrix:** Liquid

Parameter	Result	Flag	DF	PQL	DLR	Units	Extraction Date	Analysis Date	QC Batch ID	Method
Benzene	11000		1000	0.5	500	µg/L	N/A	8/1/00	WGC4000731	EPA 8020
Toluene	6400		1000	0.5	500	µg/L	N/A	8/1/00	WGC4000731	EPA 8020
Ethyl Benzene	1700		1000	0.5	500	µg/L	N/A	8/1/00	WGC4000731	EPA 8020
Xylenes, Total	6500		1000	0.5	500	µg/L	N/A	8/1/00	WGC4000731	EPA 8020

Surrogate	Surrogate Recovery	Control Limits (%)
aaa-Trifluorotoluene	97	65 - 135

Parameter	Result	Flag	DF	PQL	DLR	Units	Extraction Date	Analysis Date	QC Batch ID	Method
Methyl-t-butyl Ether	80000		1000	5	5000	µg/L	N/A	8/1/00	WGC4000731	EPA 8020

Surrogate	Surrogate Recovery	Control Limits (%)
aaa-Trifluorotoluene	97	65 - 135

Parameter	Result	Flag	DF	PQL	DLR	Units	Extraction Date	Analysis Date	QC Batch ID	Method
TPH as Gasoline	130000		1000	50	50000	µg/L	N/A	8/1/00	WGC4000731	EPA 8015 MOD. (Purgeable)

Surrogate	Surrogate Recovery	Control Limits (%)
aaa-Trifluorotoluene	106	65 - 135

DF = Dilution Factor ND = Not Detected DLR = Detection Limit Reported PQL = Practical Quantitation Limit

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

Michelle L. Anderson, Laboratory 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
Laboratory Control Sample

QC Batch #: WGC4000731
Matrix: Liquid
Units: µg/Liter

Date Analyzed: 07/31/00
Quality Control Sample: Blank Spike

PARAMETER	Method #	MB µg/Liter	SA µg/Liter	SR µg/Liter	SP µg/Liter	**SP % R**	SPD µg/Liter	**SPD %R**	% RPD	QC LIMITS RPD	QC LIMITS %R
Benzene	8020	<0.50	5.2	ND	5.1	**97**	5.1	**99**	1.5	25	70-130
Toluene	8020	<0.50	29	ND	29	**101**	31	**107**	5.7	25	70-130
Ethyl Benzene	8020	<0.50	5.6	ND	5.5	**98**	5.6	**99**	1.8	25	70-130
Xylenes	8020	<0.50	32	ND	30	**93**	30	**92**	1.2	25	70-130
Gasoline	8015	<50.0	469	ND	472	**101**	442	**94**	6.6	25	70-130
aaa-TFT(S.S.)-FID	8020			111%	107%		106%				65-135
aaa-TFT(S.S.)-PID	8015			101%	106%		102%				65-135

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 # 000726-Y1

CLIENT: PES

SITE: Pacific Electric Motor
1099 66th Avenue
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 and Report to : PES
Attn: Will Mast
* Confirm MTBE hits by EPA 8240/8260

SAMPLE I.D.	DATE	TIME	MATRIX S= SOIL W=H_2O	CONTAINERS TOTAL	C = COMPOSITE ALL CONTAINERS	TPH - Gas (8015)	BTEX (8020)	MTBE (8020) *					ADD'L INFORMATION	STATUS	CONDITION	LAB SAMPLE #
mw-1	7/26/00	905	W	6		X	X	X	2	15	66	-001				
mw-2		1032				X	X	X				-002				
mw-3		1006				X	X	X				-003				
mw-4		936				X	X	X				-004				
													* CONFIRM MTBE HITS W/ 8240/8260			

SAMPLING COMPLETED	DATE	TIME	SAMPLING PERFORMED BY
	7/26/00	1040	LEON G.

RESULTS NEEDED NO LATER THAN: Per Client

RELEASED BY	DATE	TIME	RECEIVED BY	DATE	TIME
	7/27/00	9-15	K. Allen	7/27/00	0910
K Allen	7-27-00	0930	Maria Gusis	7/27/00	930

SHIPPED VIA	DATE SENT	TIME SENT	COOLER #

DISTRIBUTION

THIRD QUARTER 2000
GROUNDWATER MONITORING REPORT
PACIFIC ELECTRIC MOTOR COMPANY
1009 66TH AVENUE
OAKLAND, CALIFORNIA

OCTOBER 31, 2000

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		Copy No.
1 Copy	Pacific Electric Motor Company 137 Fiesta Circle Orinda, California 94563 Attention: Mr. Steve Boyd	1
2 Copies	Pacific Electric Motor Company 129 Natalie Drive Moraga, California 94556-2422 Attention: Mr. Rand Perry	2 - 3
2 Copies	Alameda County Health Care Service Agency Department of Environmental Health 1131 Harbor Bay Parkway, Suite 250 Alameda, California 94502-6577 Attention: Mr. Barney Chan	4 - 5
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