McLaren

February 2, 1990

Mr. Gary Mitchell
United Parcel Service
6662 Owens Drive
Pleasanton, California 94566

Dear Mr. Mitchell:

LETTER REPORT SUMMARIZING SOIL AND GROUNDWATER DATA COLLECTED DURING THE RETROFITTING OF A GASOLINE DISPENSER SYSTEM AT THE UNITED PARCEL SERVICE PROPERTY LOCATED AT 8400 PARDEE DRIVE, OAKLAND, CALIFORNIA

This letter report provides a summary of the soil and groundwater data collected between September 19, 1989, and January 12, 1990, at the United Parcel Service (UPS) property, 8400 Pardee Drive, Oakland, California. This report was prepared at the request of Gary Mitchell, Project Engineer for UPS at this site.

Background

In August, 1989, La Sha Construction of San Francisco, California, was contacted by UPS to restructure the gasoline dispense islands at the subject site. Upon removing the concrete around one of the three gasoline pumps, La Sha discovered that the dispensing system was single contained. UPS then instructed La Sha to retrofit the dispenser system with double contained piping. The dispenser system connects three pumps to two 10,000 gallon gasoline tanks.

In September, 1989, during excavating to access the dispensing system, La Sha noted some of the backfill material surrounding the piping emitted a hydrocarbon odor. Groundwater, which is encountered at shallow depths at this site, entered the approximate three foot deep excavation to a depth of approximately eight inches. At this point, Tom Moretti, the Environmental Coordinator for the subject site, requested McLaren to collect soil and water samples from the excavation for analysis of petroleum hydrocarbons.

Review of Soil and Water Quality Data

Between September 25, 1989, and January 12, 1990, a total of two water samples and six soil samples were collected and analyzed by McLaren. Seven of the eight soil and water samples collected were analyzed by EPA Method 8020 for benzene toluene, xylene and ethylbenzene (BTXE) and by total volatile petroleum hydrocarbons (TPH/G). The first water sample collected was analyzed for volatile organic compounds by EPA Method 8240. Each sampling episode was initiated by Mr. Moretti and corresponded to La Sha Construction's progress in excavating and retrofitting the piping. Figure 1 depicts the sample locations relative to the gasoline tanks and dispenser system. The location of the tanks and dispenser system is based on a telephone conversation with John Bernal of La Sha Construction and Gary Mitchell.

Water Analytical Results

The two water samples analyzed were from water that had collected in the bottom two three foot deep excavations. The water sample in September was collected by a peristaltic pump and the water sample collected in January was a grab sample. Water quality data is presented in Table 1. The water quality data for September, 1989, and January, 1990, show concentrations of benzene ranging from 890 to 300 ppb, toluene ranging from 60 to 230 ppb and total xylenes ranging from 2200 to 90 ppb, respectively. Total volatile petroleum hydrocarbons were reported below 500 ppb for the September, 1989, sample and at 5000 ppb from the January, 1990, sample.

Soil Analytical Results

The analytical results of two soil samples, SS-5 and SS-6, show petroleum hydrocarbons in the backfill material below the dispenser lines near dispenser pump #3. Soil analytical data is presented in Table 2. Analytical results from four of the six soil samples collected along the dispenser lines did not show any petroleum hydrocarbon in the backfill material. Figure 1 shows the six sample locations.

The analytical results of soil sample-6 reported concentrations of benzene, toluene and total xylene at 200, 200 and 700 ppm respectively near dispenser pump #3. TPH/G concentrations at this same location were reported at 4,100 ppm. The analytical results from soil sample-5 collected along the dispenser line between pumps 2 and 3, report concentrations of TPH/G at 3300 ppm. Toluene and total xylene were also reported at 60 and 209 ppb respectively at this location.

Soil sample were collected at a depth of approximately 1.5 feet below ground surface. All soil samples were collected from a coarse grained sand which was used for backfill material surrounding the dispenser system. Native soil has not been sampled. Soil samples were collected in brass tubes by using a hand auger sampling device that drove the sampler head, which contained the brass tube, into the backfill material. All soil and water samples were placed on ice and shipped next day delivery in an ice chest for analysis by McLaren Analytical Laboratory (MAL).

Conclusions

The analytical results from soil samples collected from six locations along the gasoline dispenser system show that petroleum hydrocarbon compounds were detected in the backfill material at two locations at 1.5 feet below ground surface near pump dispenser #3. The reported TPH/G results were 3,300 and 41,000 ppm. As shown on Table 2, BTEX compounds were also detected.

The analytical results for the two water samples collected from two excavations approximately three feet deep reported concentrations of BTEX compounds and TPH/G. Reported concentrations of benzene were at 890 and 380 ppb, the remaining compounds detected are shown on Table 1.

Recommendations

McLaren proposes that a work plan be prepared to outline a soil and groundwater investigation to be conducted next to the underground fuel tank and dispenser system. This investigation would be done in compliance with Regional Water Quality Control Board (RWQCB) guidelines for underground fuel tank investigations. The lead agency in this investigation would be the Alameda County Hazardous Material Division.

The scope of work would involve the construction of three groundwater monitor wells to determine water quality and groundwater flow direction. Soil samples would be collected to delineate the lateral and vertical extent of petroleum hydrocarbons in the vicinity of gasoline dispenser #3.

If you have any questions, please call me at (415) 521-5200.

Sincerely,

Campbell McLeod

Campbell McLeod
Senior Geologist

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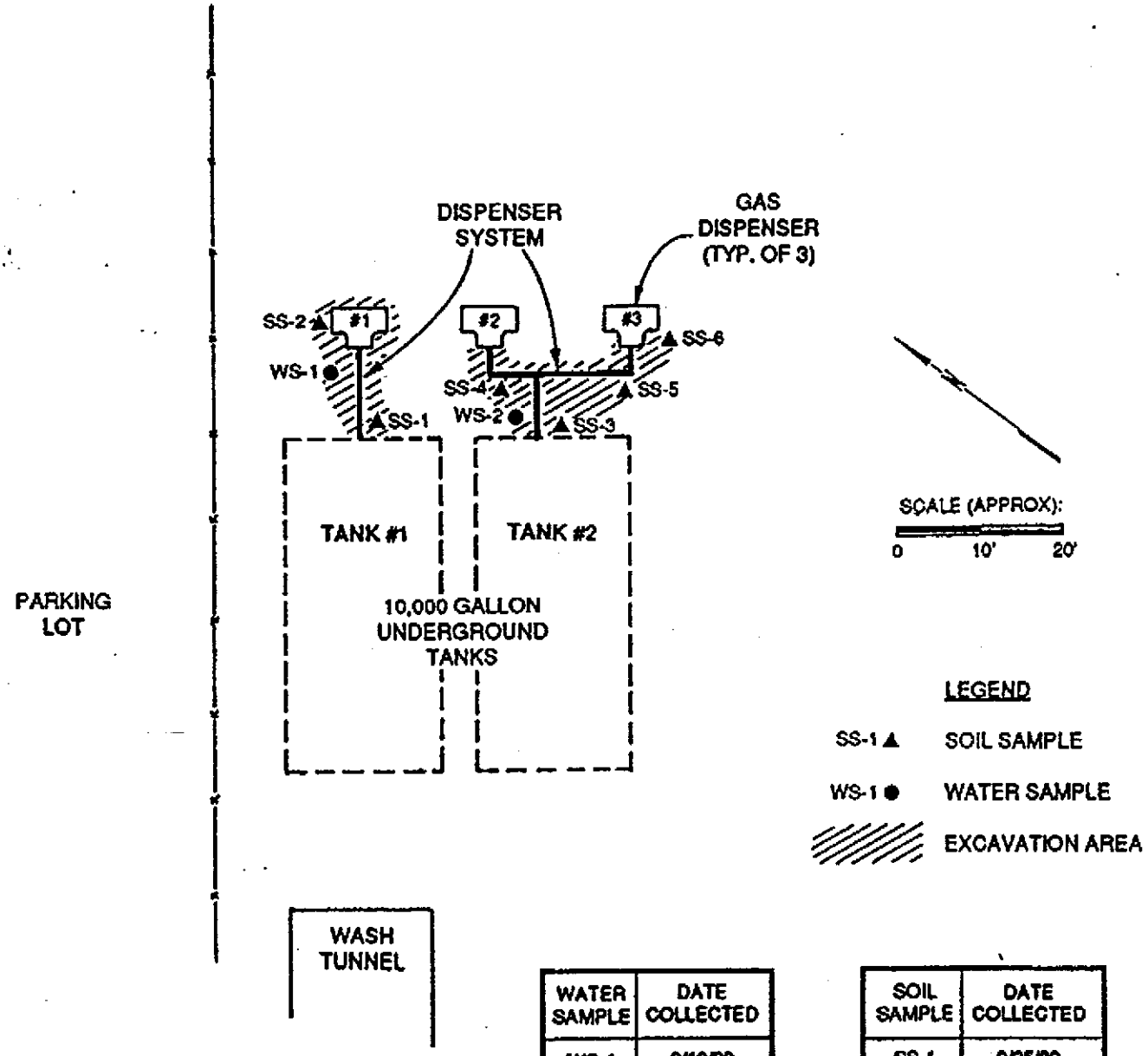
FIGURE 1
UNDERGROUND TANKS
AND DISPENSER SYSTEM
UPS, 8400 PARDEE DR.
OAKLAND, CA



WATER SAMPLE	DATE COLLECTED
WS-1	9/19/89
WS-2	1/4/90

SOIL SAMPLE	DATE COLLECTED
SS-1	9/25/89
SS-2	12/4/89
SS-3	1/4/90
SS-4	1/12/90
SS-5	1/12/90
SS-6	1/12/90

Anlab
ANALYTICAL LABORATORY
A DIVISION OF DEWANTE & STOWELL

1914 S STREET, SACRAMENTO, CALIFORNIA 95814 • 916-447-2946

September 27, 1989
Sample Date: 09/25/89
Sample Rec'd: 09/26/89
Report #123308

McLaren Analytical Laboratory
11101 White Rock Road
Rancho Cordova, CA 95670

Attn: Shakoora Azimi-Galloway

Project Name: UPS
Project #2257
COC #003391

SAMPLE DESCRIPTION	SAMPLE DATE	ANLAB ID#	TOTAL PETROLEUM HYDROCARBONS, BY 8015 MODIFIED	mg/kg MDL
006301	09/25/89	123308-1	<10	10

Data Certified by Kendra Tarvey

Report Approved by Franklin J. Haywood

nl

VOLATILE ORGANICS
MODIFIED EPA METHOD 624
(Continued)

Lab ID:
Number 30973

COMPOUND	ANALYTE CONCENTRATION ug/L (ppb)	REPORTING LIMIT ug/L (ppb)
Toluene	60.	50.
Chlorobenzene	BRL	50.
Ethyl Benzene	BRL	50.
Styrene	BRL	50.
Total Xylenes	2200.	50.

GCMS 624 SURROGATE % RECOVERY

COMPOUND NAME	% RECOVERY	RANGE
S1 = 1,2-Dichloroethane-D4	84	76-114
S2 = Toluene-D8	99	88-110
S3 = 4-Bromofluorobenzene	95	86-115

Comments: 1:10 dilution used in analysis.

Approved By: J. Wenskoff Date: 09/26/89

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TABLE 1

ANALYTICAL RESULTS OF WATER SAMPLES IN ppb

Location	Sampling Date	Analysis	Compounds Detected
Excavation Pit for Dispenser System from Tank #1	9/19/89	EPA Method 624	Benzene 890 Toluene 60 Total Xylenes 2200
		Total Volatile Hydrocarbons (TPH/G)	<500
Excavation for Dispenser System from Tank #2	1/04/89	EPA Method 8020 (BTEX)	Benzene 380 Toluene 230 O-Xylene 90
		Total Volatile Hydrocarbons (TPH/G)	5000

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TABLE 2

ANALYTICAL RESULTS OF SOIL SAMPLES

Location	Depth (in feet)	Sampling Date	Analysis	COMPOUNDS IN PPM Benzene	Toluene	Ethyl Benzene	Total Xylene	Total Volatile Hydrocarbons
Tank Dispenser Pump #1	1.0 - 1.5	9/25/89	EPA Modified 8015 (TPH)	---	---	---	---	<10
Tank Dispenser Line for Tank #1	1.0 - 1.5	12/04/89	EPA Method 8020 (BTEX) TPH/G	<0.02	<0.02	<0.02	<0.02	<1.0
Dispenser Line for Tank #2	1.0 - 1.5	1/04/89	EPA Method 8020 (BTEX) TPH/G	<0.02	<0.02	<0.02	<0.02	<1.0
Pump #2	1.5 - 2.0	1/12/90	EPA Method 8020 (BTEX) TPH/G	<100	<100	<100	<100[a]	<5000
Dispenser System Pump #2 and #3	1.5 - 2.0	1/12/90	EPA Method 8020 (BTEX) TPH/G	<100	60[b]	<100	209[b]	3300[b]
Pump #3	1.5 - 2.0	1/12/90	EPA Method 8020 (BTEX) TPH/G	200	200	<100	700	4100[b]

-- Not analyzed

a <100 ppm for each xylene

b Analytical results below reporting limit, reported analytical results based on recovered amount.

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VOLATILE ORGANICS
MODIFIED EPA METHOD 624

Project: UPS-1

Lab Project Number: 2234

Sample Location: Excavation Pit

Lab ID Number: 30973

Sample Number: 106377-80

Date Received: 09/20/89

Date Sampled: 09/19/89

Date Analyzed: 09/22/89

COMPOUND	ANALYTE CONCENTRATION ug/L (ppb)	REPORTING LIMIT ug/L (ppb)
Chloromethane	BRL	100.
Bromomethane	BRL	100.
Vinyl Chloride	BRL	100.
Chloroethane	BRL	100.
Methylene Chloride	BRL	250.
Acetone	BRL	250.
Carbon Disulfide	BRL	50.
1,1-Dichloroethene	BRL	50.
1,1-Dichloroethane	BRL	50.
1,2-Dichloroethene(cis/trans)	BRL	50.
Chloroform	BRL	50.
Freon 113	BRL	50.
1,2-Dichloroethane	BRL	50.
2-Butanone	BRL	250.
1,1,1-Trichloroethane	BRL	50.
Carbon Tetrachloride	BRL	50.
Bromodichloromethane	BRL	50.
1,2-Dichloropropane	BRL	50.
trans-1,3-Dichloropropene	BRL	50.
Trichloroethene	BRL	50.
Benzene	890.	50.
1,1,2-Trichloroethane	BRL	50.
Dibromochloromethane	BRL	50.
cis-1,3-Dichloropropene	BRL	50.
Bromoform	BRL	50.
4-Methyl-2-Pentanone	BRL	250.
2-Hexanone	BRL	250.
1,1,2,2-Tetrachloroethane	BRL	50.
Tetrachloroethylene	BRL	100.

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TOTAL VOLATILE HYDROCARBONS

Project: UPS-1

Lab Project Number: 2234

Sample Location: Excavation Pit

Lab ID Number: 30974

Sample Number: 106381

Date Received: 09/20/89

Date Sampled: 09/19/89

Date Analyzed: 09/25/89

COMPOUND	ANALYTE CONCENTRATION ug/L (ppb)	REPORTING LIMIT ug/L (ppb)
Total Volatile Hydrocarbons	BRL	500.
Surrogate recovery (percent) a,a,a-Trifluorotoluene	111	

Comments: 1:10 dilution used in analysis due to foaming.

Approved By: A. Putnam Date: 09/26/89

A. Putnam

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VOLATILE AROMATIC COMPOUNDS
MODIFIED EPA METHOD 8020 (BTEX)
AND
TOTAL VOLATILE HYDROCARBONS

Project: UPS 1.0

Lab Project Number: 2510

Sample Location: Soil

Lab ID Number: 34409

Sample Number: 007251

Date Received: 12/05/89

Date Sampled: 12/04/89

Date Analyzed: 12/11/89

COMPOUND	ANALYTE CONCENTRATION ug/g (ppm)	REPORTING LIMIT ug/g (ppm)
Benzene	BRL	0.02
Toluene	BRL	0.02
Ethyl Benzene	BRL	0.02
p-Xylene	BRL	0.02
m-Xylene	BRL	0.02
o-Xylene	BRL	0.02
Total Volatile Hydrocarbons	BRL	1.
Surrogate recovery (percent): a,a,a-Trifluorotoluene	101	

Comments:

Approved By: A. Putnam Date: 12/13/89

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VOLATILE AROMATIC COMPOUNDS
MODIFIED EPA METHOD 8020 (BTEX)
AND
TOTAL VOLATILE HYDROCARBONS

Project: UPS 1.0 26401

Lab Project Number: 2597

Sample Location: Under Dispenser Pipe

Lab ID Number: 35217

Sample Number: 028576

Date Received: 01/05/90

Date Sampled: 01/04/90

Date Analyzed: 01/10/90

COMPOUND	ANALYTE CONCENTRATION ug/g (ppm)	REPORTING LIMIT ug/g (ppm)
Benzene	BRL	0.02
Toluene	BRL	0.02
Ethyl Benzene	BRL	0.02
p-Xylene	BRL	0.02
m-Xylene	BRL	0.02
o-Xylene	BRL	0.02
Total Volatile Hydrocarbons	BRL	1.
Surrogate recovery (percent): a,a,a-Trifluorotoluene	77	

Comments:

Approved By: A. Putnam Date: 01/11/90

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VOLATILE AROMATIC COMPOUNDS
MODIFIED EPA METHOD 602 (BTEX)
AND
TOTAL VOLATILE HYDROCARBONS

Project: UPS 1.0 26401

Lab Project Number: 2597

Sample Location: Surface Grab

Lab ID Number: 35218

Sample Number: 028577-84

Date Received: 01/05/90

Date Sampled: 01/04/90

Date Analyzed: 01/06/90

COMPOUND	ANALYTE CONCENTRATION ug/L (ppb)	REPORTING LIMIT ug/L (ppb)
Benzene	380.	50.
Toluene	230.	50.
Ethyl Benzene	BRL	50.
p-Xylene	BRL	50.
m-Xylene	BRL	50.
o-Xylene	90.	50.
Total Volatile Hydrocarbons	5000.	5000.
Surrogate recovery (percent) a,a,a-Trifluorotoluene	83	

Comments: 1:100 dilution used in analysis.

Approved By: A. Putnam Date: 01/09/90

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VOLATILE AROMATIC COMPOUNDS
MODIFIED EPA METHOD 8020 (BTEX)
AND
TOTAL VOLATILE HYDROCARBONS

Project: UPS 1.0 26401

Sample Location: GSM-1

Sample Number: 007385

Date Sampled: 01/12/90

Lab Project Number: 2639

Lab ID Number: 35658

Date Received: 01/15/90

Date Analyzed: 01/16/90

COMPOUND	ANALYTE CONCENTRATION ug/g (ppm)	REPORTING LIMIT ug/g (ppm)
Benzene	BRL	100.
Toluene	BRL	100.
Ethyl Benzene	BRL	100.
p-Xylene	BRL	100.
m-Xylene	BRL	100.
o-Xylene	BRL	100.
Total Volatile Hydrocarbons	BRL	5000.
Surrogate recovery (percent): a,a,a-Trifluorotoluene	117	

Comments: 1:5000 dilution required due to heavy late eluting matrix, possibly diesel.

Approved By: A. Putnam Date: 01/17/90

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VOLATILE AROMATIC COMPOUNDS
MODIFIED EPA METHOD 8020 (BTEX)
AND
TOTAL VOLATILE HYDROCARBONS

Project: UPS 1.0 26401

Lab Project Number: 2639

Sample Location: GSM-2

Lab ID Number: 35659

Sample Number: 007386

Date Received: 01/15/90

Date Sampled: 01/12/90

Date Analyzed: 01/16/90

COMPOUND	ANALYTE CONCENTRATION ug/g (ppm)	REPORTING LIMIT ug/g (ppm)
Benzene	BRL	100.
Toluene	BRL *	100.
Ethyl Benzene	BRL	100.
p-Xylene	BRL *	100.
m-Xylene	100.	100.
o-Xylene	BRL *	100.
Total Volatile Hydrocarbons	BRL *	5000.
Surrogate recovery (percent): a,a,a-Trifluorotoluene	120	

Comments: 1:5000 dilution used in analysis.

* Toluene, p-Xylene, o-Xylene and TVH were recovered at 60 ppm, 43 ppm, 66 ppm and 3300 ppm, respectively; all are below reporting limit.

Heavy late eluting matrix interference present, possibly diesel.

Approved By: A. Putnam Date: 01/17/90

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VOLATILE AROMATIC COMPOUNDS
MODIFIED EPA METHOD 8020 (BTEX)
AND
TOTAL VOLATILE HYDROCARBONS

Project: UPS 1.0 26401

Lab Project Number: 2639

Sample Location: GSM-3

Lab ID Number: 35660

Sample Number: 007387

Date Received: 01/15/90

Date Sampled: 01/12/90

Date Analyzed: 01/16/90

COMPOUND	ANALYTE CONCENTRATION ug/g (ppm)	REPORTING LIMIT ug/g (ppm)
Benzene	200.	100.
Toluene	200.	100.
Ethyl Benzene	BRL	100.
p-Xylene	100.	100.
m-Xylene	400.	100.
o-Xylene	200.	100.
Total Volatile Hydrocarbons	BRL *	5000.
Surrogate recovery (percent): a,a,a-Trifluorotoluene	100	

Comments: 1:5000 dilution used in analysis.

* TVH was recovered at 4100 ppm which is below reporting limit.

Heavy late eluting matrix interference present, possibly diesel.

Approved By: A. Putnam Date: 01/17/90

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