1995 SECOND QUARTERLY GROUNDWATER MONITORING REPORT

FOR

THE WATSON TRUST PROPERTY 1461 PARK AVENUE EMERYVILLE, CALIFORNIA

PREPARED FOR:

UNION BANK TRUST REAL ESTATE 445 SOUTH FIGUEROA STREET LOS ANGELES, CA 90071

SUBMITTED BY:

BLAKELY ENVIRONMENTAL, INC. 320 SO. MILLIKEN AVENUE, SUITE A ONTARIO, CA 91761 (909) 390-1792

David A. Blakely

Sr. Scientist

REA #01773

A. BLAZE No. 01773

* Expires: 8/98

C 22847

James V. Jäzmin

July 21, 1995 07-95-430

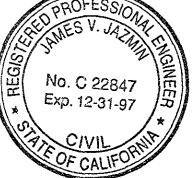


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320 South Milliken Avenue Suite "A" Ontario, CA 91761 (909) 390-1792 • Fax (909) 390-1766

August 2, 1995 07-95-446 95 AUG - 1 1

Susan Hugo
Alameda County Health Care Agency
Dept. of Environmental Health
Hazardous Materials Division
1131 Harbor Bay Parkway
2nd Floor
Alameda, Ca. 94502

RE: Description of site conditions at the Watson Trust property, 1461 Park Ave., Emeryville, Ca., which effect the scope of work described in the June 2, 1995 addendum to the site Corrective Action Plan (March 10, 1995).

Dear Susan,

On June 2, 1995, Blakely Environmental, Inc. (BEI) submitted an "Addendum to March 2, 1995 Corrective Action Plan, Watson Trust property, 1461 Park Avenue, Emeryville, Ca." The addendum described test methods which can be used to verify the capacity for intrinsic biodegradation of residual petroleum contamination identified in a soil sample collected from monitoring well MW-1 at 5' below grade (bg) in October 1990. The isolated area from which the sample was withdrawn may be "...effectively monitored by testing performed on groundwater collected...in MW-1, since groundwater in MW-1..." (addendum report, June 2, 1995, BEI) is currently measured at approximately 3.5' bg.

BEI is unable to collect a vapor headspace sample downwell adjacent to contaminant depth in MW-1 because the depth at which the sample was collected is below the current water table. Therefore, a YSI model 55-12 dissolved oxygen (DO) meter has been used to collect data verifying the capacity of the groundwater at MW-1 to intrinsically biodegrade the detected contaminants (1995 Second Quarterly Groundwater Monitoring Report, BEI). Each subsequent quarterly groundwater monitoring report will contain dissolved oxygen measurements as a continued method of monitoring the capacity for intrinsic biodegradation.

Should the groundwater level at the site decrease sufficiently to enable effective headspace sample collection over the time frame of required quarterly groundwater monitoring, analysis will be performed to identify the ratio of oxygen to carbon dioxide, and available oxygen for aerobic biodegradation. If the ratio of O₂/CO₂ is reversed from that of ambient air, ongoing intrinsic biodegradation will be verified as occurring.



If you have any questions or comments regarding this corespondence, please give me a call at (909) 390-1792.

Sincerely,

Diane Scioli

V.P./Environmental Scientist

REA#06246

cc: Sue McCormack, Union Bank Hazardous Materials Section, City of Industry, Ca.



1. INTRODUCTION

This report presents the results of the 1995 Second Quarterly Groundwater Sampling Program performed on July 5, 1995 at the Watson Trust property located at 1461 Park Avenue, Emeryville, California (Figure 1) by Blakely Environmental, Inc. (BEI). The groundwater monitoring program is required by the California Regional Water Quality Control Board (CRWQCB), Region 2, Mr. Kevin Graves, (510) 286-0435, and the Alameda County Environmental Health Department (ACEHD), Susan Hugo, (510) 567-6700, and was authorized on February 22, 1995 by Union Bank, Trust Real Estate, (818)810-6530, on behalf of the property trustees.

1.1 Site Location and Description

The property, situated approximately a quarter of a mile east of the San Francisco Bay, is in a commercial area of the City of Emeryville, California, at about 122°17′30″ west longitude and 37° 69′ north latitude. The site contains one, concrete block, single story building that covers the entire property. The dominant industries in the area are warehousing and manufacturing.

The property was occupied from 1968 to 1973 by Pic-A-Tune, reportedly a music or record distributor. From 1973 to 1986 it was leased by Stuart Western, Stuart Radiator and Stuart Auto Parts. The Stuart companies were involved in rebuilding brakeshoes and/or warehousing and distributing auto parts. In 1986, Stuart Western was purchased by Modine Southwest Company. This company owns Western Brake Company, which warehouses and distributes vehicle brake parts and radiators. No manufacturing nor repair processes occurred on-site. Electro Coatings, Inc. (ECI), located in the groundwater upgradient direction, appears to have discharged sufficient amounts of hexavalent chromium into groundwater to cause contamination which has migrated onto this site.

1.2 Site Assessment History

In March 1990, two underground storage tanks (USTs) were removed by PCC, Incorporated. A tank closure report was filed with the ACEHD in July 1990. A 3000-gallon tank containing gasoline was found in good condition. The 500-gallon tank, thought to contain diesel, showed evidence of leakage due to failure at the welds. The required reports of contamination were filed with the CRWQCB, Region 2, and with the ACEHD.

During the excavation of the tanks, three soil samples and two water samples were obtained from the tank excavations, as groundwater occurs at a depth of about 6.5 feet below grade (bg). The two tanks were located adjacent to each other. The tanks were excavated separately creating separate pits. The gasoline tank pit was located in about the northern 17 feet and the diesel tank pit in about the southern 13 feet of the former underground storage tank (UST) excavation area. Soil samples were taken at a depth of four feet from the north and south walls of the gasoline tank excavation and one sample was obtained of water standing in the pit. A soil sample was taken at a depth of five feet from the south wall of the diesel tank excavation and one water sample was taken from the groundwater in the pit. After removal of USTs, the contaminated soil was returned to the excavation.

Analysis for total petroleum hydrocarbons (TPH) identified 62.3 mg/kg and 460 mg/kg TPH in the north and south walls of the gasoline tank excavation, respectively, and 1580 mg/kg TPH was detected in the south wall of the diesel tank excavation. Analysis for TPH as diesel was also performed,

but none was detected. Benzene, toluene, xylenes and ethylbenzene (BTXE) were detected in three samples. In the north wall of the gasoline tank excavation, BTXE was detected at concentrations of 9.8, 207, 947, and 32.9 ug/kg, respectively. In the south wall of the gasoline tank excavation, BTXE was found at concentrations of 1600, 9140, 32,300 and 5080 ug/kg, respectively. In the south wall of the diesel tank excavation, BTXE was detected at concentrations of 17.3, 2600, 100,400 and 481 ug/kg, respectively.

Laboratory testing for TPH as gasoline detected 38.1 mg/l in the free-standing water in the gasoline tank excavation. BTXE concentrations were 2750, 2849, 5890, and 1160 ug/l, respectively. In the free-standing water in the diesel tank excavation, TPH as gasoline was detected at a concentration of 110 mg/l and BTXE at concentrations of 5240, 7040, 15000 and 2420 ug/l, respectively. TPH as diesel was non-detectable in the sample collected from the diesel tank excavation and TPH-d was not analyzed for in the sample collected from the gasoline tank excavation.

The results of chemical analysis suggest that the 500-gallon "diesel" tank may have contained gasoline during the period of leakage. The tank may have been used for diesel and gasoline storage, but appears to have leaked gasoline.

Elevated concentrations of TPH and BTXE occur in the north and south walls of the gasoline tank excavation and in the south wall of the diesel tank excavation (the soil was not tested from the north wall of the diesel tank excavation). It is probable that all walls of the tank excavations had elevated concentrations of petroleum hydrocarbons.

In September 1990, three borings (MW-1, MW-2 and MW-3) were drilled to a depth of 20 feet bg on the site (Figure 2). Soil samples were obtained at depths of 5 and 10 feet bg and analyzed for TPH as gasoline and BTXE. The concentrations of TPH ranged from less than 2.5 to 150 mg/kg. Concentrations of benzene were from less than 5 to 5,000 ug/kg, toluene from less than 5 to 2,200 ug/kg, ethylbenzene from less than 5 to 3,100 ug/kg and xylenes from less than 5 to 4,900 ug/kg. Upon completion of drilling and soil sampling, monitoring wells were installed in the boreholes.

Two weeks after installation, the wells were purged and sampled by Alpha Chemical and Biomedical Laboratories. The samples were analyzed for TPH as gasoline and for BTXE. TPH and BTXE were detected in monitoring well MW-2 only. The concentration of TPH was 1.2 mg/l. BTXE concentrations were 209, 33.7, 128 and 5.4 ug/l, respectively.

On May 15 and 16, 1991 seven hand augured borings were advanced by Remedial Action Corporation (RAC) to depths ranging from 4.5' bg to 9.5' bg. Fourteen soil samples were collected and analyzed for petroleums, halogenated compounds, and CAM metals. The maximum TPH-g concentration observed was 97 ppM in boring B103. The maximum benzene concentration identified was 1,580 ppB in boring B102. Composite soil samples from boring B107 identified halogenated compound concentrations below laboratory detection limits. Maximum hexavalent chromium concentration was identified at 17.3 ppM in boring B103.

In May of 1991, groundwater samples from MW-1, MW-2 and MW-3 were collected by RAC. Maximum dissolved phase petroleum concentrations were observed in monitoring well MW-1. Trichloroethene (TCE) was identified in groundwater monitoring wells MW-1, MW-2, and MW-3 at concentrations of 1.29*, 0.401 and 0.262 mg/l, respectively. (*this concentration was recorded as 1.285 ppb in the RAC draft report). Trichloroethane (TCA) was detected in MW-1 only, at a concentration of 64.3

mg/l. Hexavalent chromium was detected in groundwater in monitoring wells MW-1, MW-2 and MW-3 at concentrations of 0.11 mg/l, 0.26 mg/l and 0.17 mg/l, respectively.

In September and October of 1991, RAC hand augered borings 201 through 224. Maximum TPH and BTEX levels were observed in boring 208 (TPH-g at 3400 mg/kg and BTXE at 13000, 80000, 260000 and 53000 ug/kg, respectively).

BEI sampled groundwater monitoring wells MW-1 through MW-3 on May 25 and July 5, 1995. BEI was denied access to monitoring well MW-6 installed by ECI according to legal counsel representing ECI. Results of these sampling events and previous sampling events are included in Table 1.

1.3 Historical Site Use

No records of underground storage of hexavalent chromium or TCE were identified in a search of site records. No records of usage of hexavalent chromium nor TCE were identified in a search of records of operations of site occupants. A review of generic radiator storage and distributing operations identified no usage of hexavalent chromium nor TCE. Subsurface storage on site was solely petroleum fuel oil, as evidenced by the exclusive identification of residual gasoline compounds in the subsurface soil prior to groundwater.

2. SITE GEOLOGIC CONDITIONS

The Watson site lies on recent alluvial bay muds that are the youngest geological unit in the San Francisco Bay area. Site elevation is approximately 12' above mean sea level and the site is less than 1/4 mile east of the San Francisco Bay. Logs of 29 borings drilled on site and 11 borings drilled on the ECI site adjacent to and east of the Watson site, identified a comprehensive black clay, clay fill and silty clay zone extending from surface to first subsurface water at approximately 7' bg. The black clay is consistently described as plastic, firm and moist.

3. SITE GROUNDWATER CONDITIONS

Groundwater exists in the vicinity of the site at a depth of approximately 7' bg (ECI Facility) and underlays the site at 6.5' to 8' bg. Groundwater pumping wells in the area reportedly utilize water from a depth of 250' bg (CRWQCB, 1991). Area groundwater is reported to flow in a west to southwesterly direction as determined by on site and adjacent site (ECI) investigations. Current depth to groundwater beneath the site was measured between 3.83' and 3.95' bg, a rise in groundwater depth from last quarter. Groundwater flows in a westerly direction as identified by BEI (Figure 5).

4. GROUNDWATER SAMPLING

The 1995 second quarterly collection of groundwater samples proceeded as follows:

- A. Depth to groundwater from the top of the surveyed well casing and total depth of well was measured and recorded in field log book.
- B. A minimum of three (3) casing volumes of water was purged from each well (approximately 8-gallons).

- C. All sampling equipment was thoroughly decontaminated. Each well was allowed to recover to at least 90 percent of its original static level.
- D. Measurements of pH, temperature and conductivity were collected during the purging process prior to sample collection (Appendix A).
- E. Each water sample was collected in a new disposable teflon bailer, then transferred to a 40-ml. glass VOA vial with teflon septa. Care was exercised to avoid disturbances that could cause aeration or pressure variations that may affect volatile compounds.
- F. The VOA vials were labeled and stored on ice in an ice chest for transport to the laboratory. Chain-of-Custody protocol was followed to ensure sample integrity and traceability.
- G. The samples were analyzed by a Department of Health Services Certified Laboratory. EPA 8015M was used to analyze for total petroleum hydrocarbons as gasoline and EPA 8020 was used to analyze for volatile aromatics (BTEX). The laboratory reports and Chain-of-Custody documentation are included in Appendix B.
- H. Dissolved Oxygen (DO) was determined using a YS1 Model 55 meter. For DO determination, groundwater temperature was measured at 21.7° and salinity was 0.5 ppThousand. Calibration of the meter was performed prior to operation as follows:
 - 1. Switch on meter and allow 5 minutes for stabilization;
 - 2. Enter altitude, O' above mean sea level;
 - 3. Enter groundwater salinity.

5. ANALYTICAL RESULTS

The following table exhibits a summary of the analytical results obtained from previous works and from the current quarterly sampling program with respect to TPH-g and BTEX:

TABLE 1
SUMMARY OF GROUNDWATER ANALYTICAL RESULTS

Date MW-1	TPH-g EPA 8015	Benzene EPA 8020	Toluene EPA 8020	Ethylbenzene EPA 8020	Xylene EPA 8020	DTW	DO
10/90 05/91 05/95 07/95	ND 3.418 0.6 4.4	1.9 1454 540 700	1.1 273 28 14	ND 9.4 8 5	3.3 599 180 130	 4.47 3.83	 2.98
MW-2			•				
10/90 05/91 05/95 07/95	1200 0.11 ND 1.6	209 11.2 ND ND	33.7 1.2 ND 26	5.4 <0.5 ND ND	128 1.0 ND ND	 4.52 3.88	 3.20

TABLE 1 (Continued) SUMMARY OF GROUNDWATER ANALYTICAL RESULTS

Date	TPH-g EPA 8015	Benzene EPA 8020	Toluene EPA 8020	Ethylbenzene	Xylene	DTW	DO
MW-3							
10/90 05/91 05/95 07/95	ND <0.01 ND ND	5.1 <2.7 7.4 5.6	ND <0.5 ND ND	ND <0.5 ND ND	ND <0.5 ND ND	 4.43 3.95	 6.10

ND - Not detected

Detection limits for 5/95 and 7/95 sample analysis are 0.5 mg/l for TPH-g, 0.6 ug/l for benzene, 1.0 ug/l for toluene and ethylbenzene and 3.0 ug/l for xylene.

TPH-g concentration given in mg/l. BTEX concentration given in ug/l

DTW - Depth to water in feet

DO · Dissolved oxygen in ppm

The current action levels for drinking water set by Department of Health Services, Title 22 are as follows:

Benzene	1 ug/l
Toluene	100 ug/l
Ethylbenzene	680 ug/l
Total xylenes	1750 ug/l

6. CONCLUSIONS

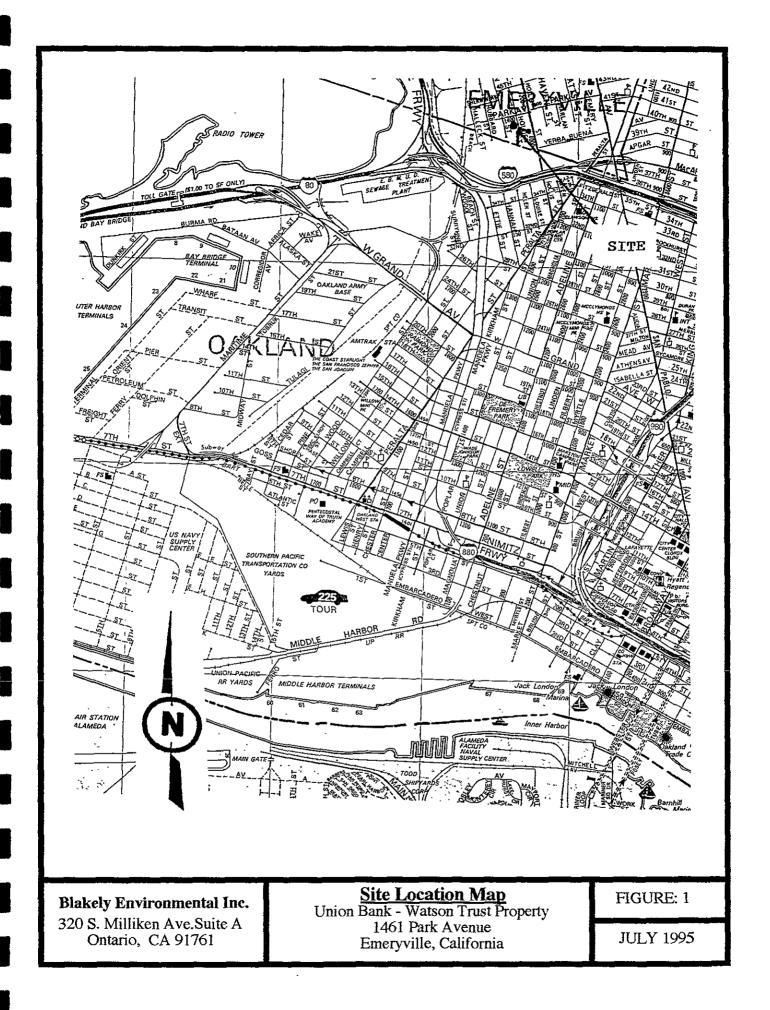
Groundwater samples obtained from monitoring wells MW-1 through MW-3 identified dissolved phase TPH-g in MW-1 and MW-2. Monitoring well MW-1 contained TPH-g and benzene concentrations of 4.4 mg/l and 700 ug/l, respectively. Monitoring well MW-2 identified low level TPH-g (1.6 mg/l) and a non detectable level of benzene. Monitoring well MW-3 identified only benzene at a concentration of 5.6 ug/l, a 25% attenuation from last quarter.

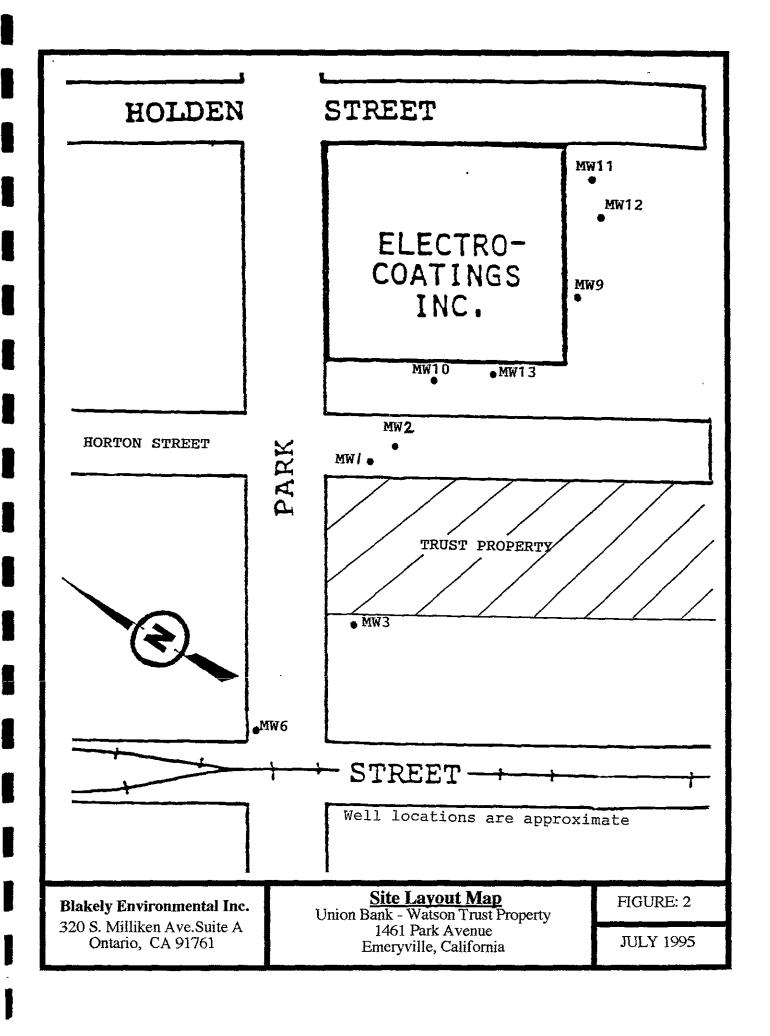
Dissolved oxygen levels in each well at approximately 3 ppm or greater are adequate for intrinsic biodegradation of the dissolved phase benzene component of the residual gasoline isolated to that area of the site defined by MW-1 and MW-2, upgradient of MW-3. This finding of sufficient oxygen for efficient biodegradation is supported by the decrease in the maximum benzene level of 1,454 ppb observed in MW-1 during monitoring in May 1991, to a level of 540 and 700 ppb in May and July of 1995, respectively. The benzene level of 11.2 ppb identified in MW-2 in May 1991 has decreased to less than detectable levels in May and July of 1995 (detection limit 0.6 ppb). The decrease in benzene concentrations to 50% of levels identified in 1991 in MW-1 and the decrease to non-detectable levels in MW-2 in that period indicate that the residual benzene concentrations are intrinsically degrading and not diffusing in MW-1 since no increase, but rather complete attenuation was observed in MW-2 approximately 20' side gradient of MW-1. Also, continued low levels of benzene (7.4 and 5.6 ppb) in downgradient well MW-3 identified in May and July of 1995 confirm that benzene migration is not occurring.

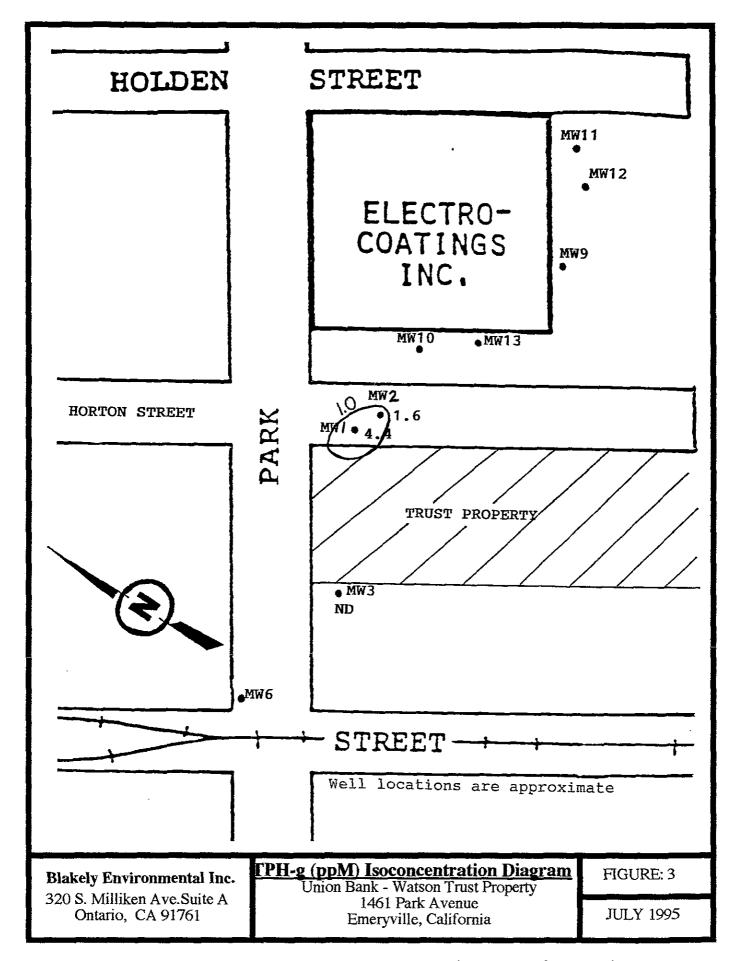
Isoconcentration diagrams of TPH-g and benzene are included as Figures 3 and 4, respectively. Groundwater beneath the site flows in a westerly direction based on data acquired on July 5, 1995 (See Figure 5).

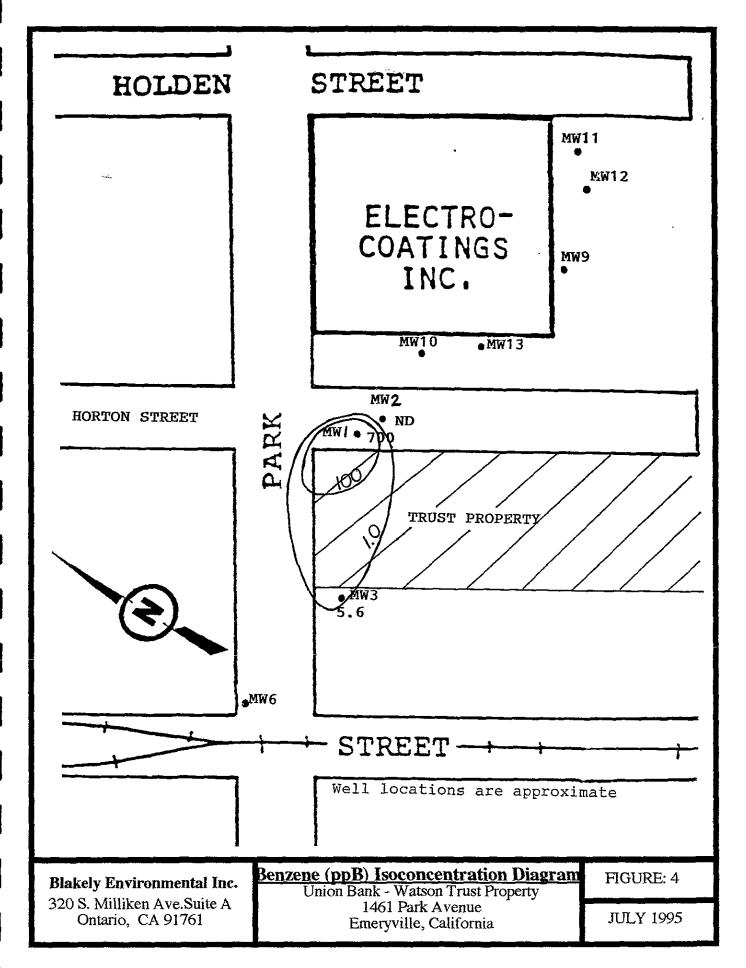
FIGURES		
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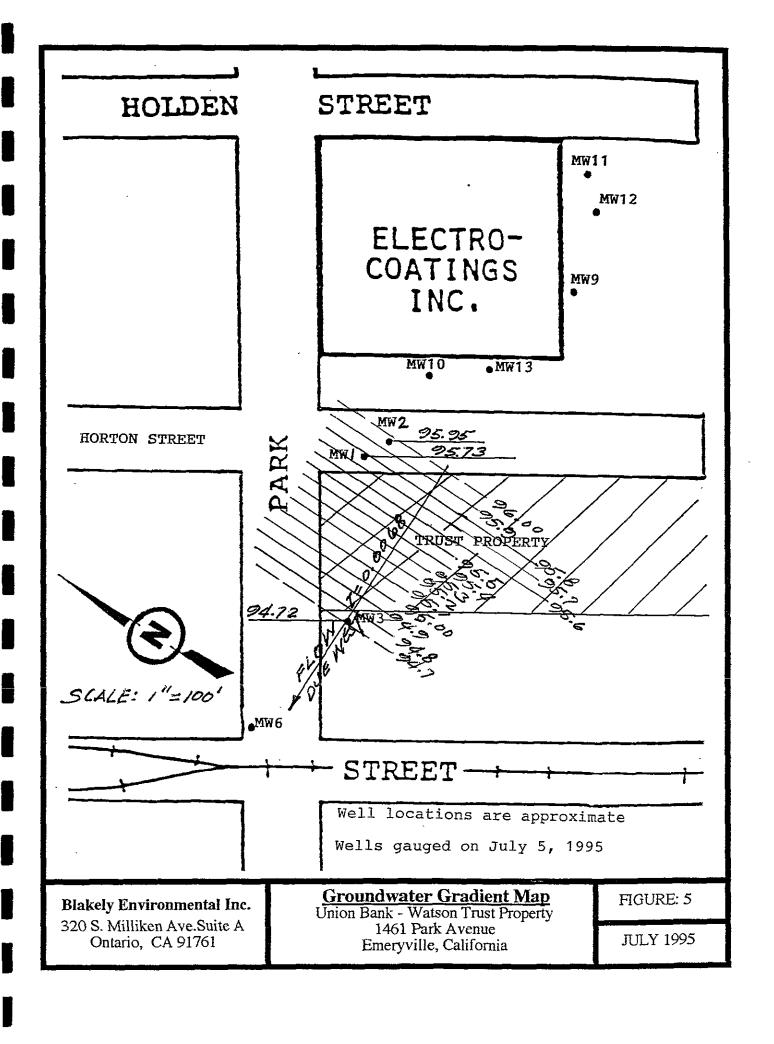
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APPENDICE	ES	

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	APPENDIX A	
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Groundwater Parameters

Site Name: Watson Trust Date: July 7, 1995
Site Address: 1461 Park Avenue Client: Union Bank
Emeryville, California Trust Real Estate

Time	Development	Conductivity	Temp.	Turbidity	рН		
	Status			_			
Date Sampled: July 5, 1995		Monitoring We	g Well: MW-1				
12:40	Before Dev.	1595	78.9	24.4	6.83		
12:50	During Dev.	1616	76.5	71.5	6.7		
2:21	After Dev.	1559	68.2	58.5	6.65		
Date Sampled: July (5, 1995	Monitoring We	ii: MW-2				
12:05	Before Dev.	1609	81	15.9	6.67		
12:14	During Dev.	1815	77.4	200	6.61		
2:05	After Dev.	1498	69.4	62.5	6.62		
Date Sampled: July	5, 1995	Monitoring Well: MW-3					
1:28	Before Dev.	1550	70.5	34.7	7		
1:36	During Dev.	1575	68. 1	149.5	6.79		
2:38	After Dev.	1618	68.5	58.2	6.69		
MW#:	MW-1	MW-2	MW-3				
Grndwtr,ft.(from TOC)	3.83	3.88	3.95				
Depth Corrected, ft.:	95.73	95.95	94.72				
Survey:	99.56	99.83	98.67				
Free Product,in. thick:	00	0	o				

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APP	ENDIX B		
			<u></u>
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Modified 8015 - Total Volatile Hydrocarbons as Gasoline

Client:

Blakely Environmental

Project:

Watson Trust

Job No.:

8465 Water

Matrix: Analyst:

GB

Date Sampled:

1: 07/05/95

. .

Date Received:

07/06/95

Date Analyzed:

07/07-10/95

Batch Number:

1701-1000

015GW0566

	Detection Limit	Petroleum Hydrocarbons as Gasoline
Sample ID	mg/L	mg/L
Method Blank	0,5	ND .
MW-1	0.5	4.4
MW-2	0.5	1.6
MW-3	0.5	ND
1 1 1 2 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1		



EPA 8020 - BTEX

Client:

Blakely Environmental

Project:

Watson Trust

Job No.:

8465 Water

Matrix:

GB

Analyst:

Date Sampled:

07/05/95

Date Received:

07/06/95

Date Analyzed:

07/07-10/95

Batch Number:

8020W0771

	Benzene	Toluene	Ethyl Benzene	Total Xylenes	Surrogate (BFB)
Detection Limit:	0.0006	0.001	0.001	0.003	_Limit: >50%
Sample ID	mg/L	mg/L	mg/L	mg/L	
Method Blank	ND	ND	ND	ND	87 %
MW-1	0.70	0.014	0.005	0.13	94 %
MW-2	ND	0.026	ND .	ND	93 %
MW-3	0.0056	ND	ND	ND	89 %



QC Sample Report - EPA 8015 Gasoline

Matrix: Water

Batch #: 8015GW0566

MS/MSD Laboratory Sample ID #: 8468-4
MS/MSD Client Sample ID #: Not Applicable

LCS(s):	1				<u> </u>	
Compound	Spike Concentration mg/L	% Recovery LCS	% Recovery LCSD	Acceptance Limits % Recovery	Relative % Difference	Acceptance Limits RPD
Gasoline	5	90	NA .	42-122	NA	24

An	alyti	ical N	lotes	5:-			
						,	
	,	•			•		

RPD is calculated on the recovery of the laboratory control samples.

7.7	Q.	/R/	C	D٠

Compound	Spike Concentration mg/L	% Recovery MS	% Recovery MSD	Acceptance Limits % Recovery	Relative % Difference	Acceptance Limits RPD
Gasoline	5	93	90	42-122	3	24
		. .				

Analytical	Notes:
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RPD is calculated on the concentration of the spiked samples.

LCS: Laboratory Control Sample

LCSD: Laboratory Control Sample Duplicate

MS: Matrix Spike Sample MSD: Matrix Spike Duplicate RPD: Relative Percent Difference



QC Sample Report - EPA 8020

Matrix: Water

Batch #: 8020W0771

MS/MSD Laboratory Sample ID #: 8468-4 MS/MSD Client Sample ID #: Not Applicable

LCS(s):						
Compound	Spike Concentration mg/L	% Recovery LCS	% Recovery LCSD	Acceptance Limits % Recovery	Relative % Difference	Acceptance Limits RPD
Benzene	0.1	100	NA	70 - 130	NA	25
Toluene	0.1	100	, NA	70 - 130	NA	- 25
Ethyl Benzene	0.1	97	NA	70 - 130	NA NA	25
Xylene (total)	0.3	92	NA	70 ~ 130	· NA	25

Analytical Notes:

RPD is calculated on the recovery of the laboratory control samples.

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Compound	Spike Concentration mg/L	% Recovery MS	% Recovery MSD	Acceptance Limits % Recovery	Relative % Difference	Acceptance Limits RPD
Benzene	0.1	90	94	70 - 130	4	25
Toluene	0.1*	85	- 88	70 - 130	4.	25
Ethyl Benzene	0.1	89	92	70 - 130	4	25
Xylene (total)	0.3	84 .	87	70 - 130	2	25
						į

Analytical Notes:

RPD is calculated on the concentration of the spiked samples.

LCS: Laboratory Control Sample

LCSD: Laboratory Control Sample Duplicate

MS: Matrix Spike Sample MSD: Matrix Spike Duplicate RPD: Relative Percent Difference



CHAIN OF CUSTODY RECORD

PAGE ____ OF ___

Sampler: Ho Phone: Marsen Trust Analyses required	
Sample Number Date/Time Sampled Sampled Sampled Site Location # and type of containers and observations	
Sample Number Date/Time Sampled Site Location # and type of containers Remarks and observations	İ
1.4.1.1.1.1.1.1.1.1.1.1.1.1.1.1.1.1.1.1	
MW-2 7-5-45 X 2-40ml X X cannot be s	in
M/11-3 7-5-45 V	
Vials 1 1 - not enough	_
sample - Ok	31
	_
	-
	\dashv
	\dashv
Relinquished by: (Signature) Date/Time Received by: (Signature) Relinquished by: (Signature) Date/Time Received by: (Signature)	\dashv
Relinquished by: (Signature) Date/Time Samples chilled Samples sealed Method of Shipment	