



Industrial Compliance

9838 Old Placerville Road Suite 100 Sacramento, CA 95827-3559
916/369-8971 FAX 916/369-8370

October 25, 1995

IC Project No. 05100269

Ms. Jennifer Eberle
Alameda County Health Care Services Agency
Department of Environmental Health
Division of Hazardous Materials
1131 Harbor Bay Parkway
Alameda, California 94501

**Re: Third Quarter 1995 Ground Water Monitoring Report
Southern Pacific Transportation Company
5th Avenue and 7th Street Property - Oakland, California**

Dear Ms. Eberle:

Industrial Compliance (IC), on behalf of Southern Pacific Transportation Company (SPTCo), has prepared the attached Third Quarter 1995 Ground Water Monitoring Report for the SPTCo property located in the East Oakland Yard at 5th Avenue and 7th Street, Oakland, California. This third quarter 1995 report documents the results of the sixth quarterly monitoring event for the site.

If you have any questions regarding this report, please contact the undersigned at (510) 238-9540 or (916) 369-8971.

Sincerely,

INDUSTRIAL COMPLIANCE

James B. Ackerman
Project Geologist

Richard L. Bateman, R.G.
Principal Hydrogeologist

JBA/RLB/ekw

Attachment

i880-300 ltr 10-30-95-u kw rgh kydata i-880 letters

Denver • Phoenix • Kansas City • Dallas • Houston • Los Angeles • Sacramento • Little Rock • Knoxville



Ms. Jennifer Eberle

October 25, 1995

Page 2

cc: Mr. Mike Grant, Southern Pacific Transportation Company (with attachment)
Mr. Darrell J. Maxey, Oakland Program Office, Southern Pacific Transportation
Company (with attachment)
Ms. Gina Kathuria, California Regional Water Quality Control Board, San Francisco
Region (with attachment)



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10/25/95

**THIRD QUARTER 1995
GROUND WATER MONITORING REPORT**

**Southern Pacific Transportation Company
5th Avenue and 7th Street
Oakland, California**

IC Project No. 05100269

Prepared For:

**Southern Pacific Transportation Company
One Market Plaza
San Francisco, CA 94105**

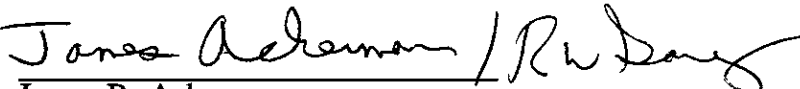
October 25, 1995



**THIRD QUARTER 1995
GROUND WATER MONITORING REPORT**

**Southern Pacific Transportation Company
5th Avenue and 7th Street
Oakland, California**

Prepared By:


James B. Ackerman
Project Geologist

Reviewed By:



Richard L. Bateman, R.G.
Principal Hydrogeologist

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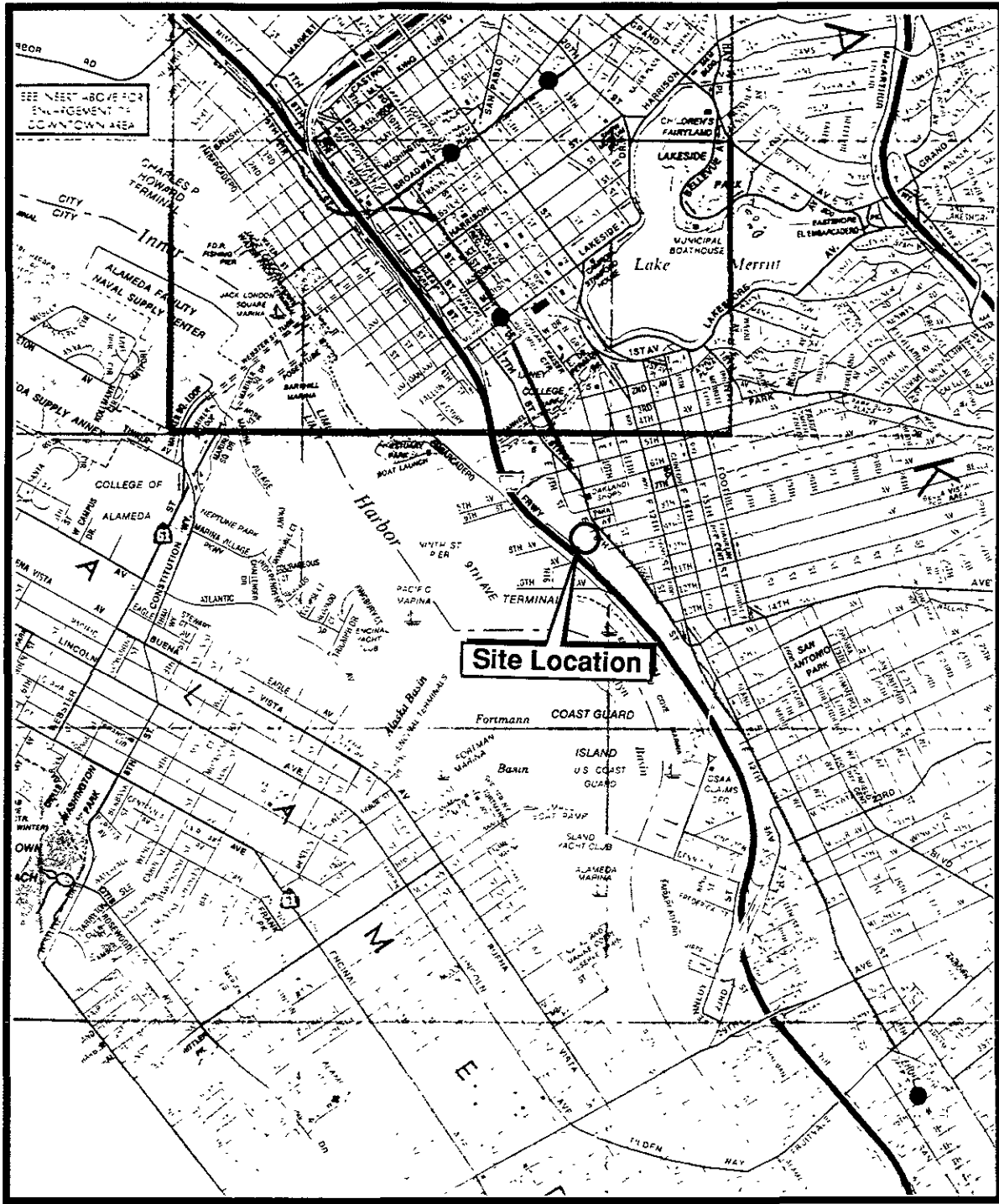
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Approximate Scale in Feet
 0 2000'

Reference
 Map of Oakland, Berkeley, Alameda
 American Automobile Association



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A Subsidiary of SP
 Environmental Systems, Inc.



SITE LOCATION MAP
SOUTHERN PACIFIC TRANSPORTATION COMPANY
5TH AVENUE AND 7TH STREET PROPERTY
OAKLAND, CALIFORNIA

Project No	05100269	Date	12/01/94
Drawn By	Patti Decker	Checked By	James Ackerman

Figure	1
Page No	2
Scale	as shown

2.0 FIELD INVESTIGATION

This section discusses the procedures and protocol used for the collection of monitoring well water level data and ground water samples for laboratory analyses.

2.1 Monitoring Well Water Level Data

On August 8, 1995, prior to purging, the depth to ground water was measured in the three monitoring wells on site. All measurements were taken relative to a surveyed reference point of known elevation at the top of each well casing using a water level indicator with an accuracy to 0.01 feet. The ground water elevation measurement log is included in Appendix A. Ground water elevation data for this and all previous quarters are summarized in Table 1. Ground water elevation data were used to construct a ground water elevation contour map (Figure 2). Ground water elevations this quarter ranged from 0.75 to 3.87 feet above mean sea level (MSL). Ground water flow direction this quarter is to the northeast. The calculated local hydraulic gradient is 0.007.

2.2 Monitoring Well Purging

After measurement of the ground water level in each well, the saturated well volume was calculated by subtracting the depth to ground water from the total depth of the well and multiplying the resultant length by the number of gallons per foot of casing. Prior to sample collection, each well was purged to ensure that the water sample obtained from the well was representative of the formation water. Each well was purged by hand-bailing a minimum of three times the saturated casing volume in the well. Purging equipment was cleaned with Alconox and rinsed with deionized (DI) water prior to each use. Ground water characterization data, consisting of electrical conductivity, temperature and pH, were measured from the initial water removed and at least three times during purging. The

TABLE 1
GROUND WATER ELEVATION DATA

Monitoring Well ^a	Date Measured	Time Measured	Top of Casing Elevation ^b (feet MSL)	Depth to Ground Water ^c (feet TOC)	Ground Water Elevation ^d (feet MSL)
MW-1	04/28/94	0900	8.20	4.68	3.52
	08/16/94	0815		10.50	-2.30
	11/09/94	0755		2.08	6.12
	02/28/95	1259		6.60	1.60
	05/11/95	0757		5.41	2.79
	08/08/95	0845		7.45	0.75
MW-2	04/28/94	0913	6.36	2.01	4.35
	08/16/94	0845		3.16	3.20
	11/09/94	0815		1.22	5.14
	02/28/95	1312		2.48	3.88
	05/11/95	0808		2.26	4.10
	08/08/95	0920		2.91	3.45
MW-3	04/28/94	0920	6.84	2.99	3.85
	08/16/94	0910		3.06	3.78
	11/09/94	0810		1.10	5.74
	02/28/95	1259		2.62	4.22
	05/11/95	0812		2.34	4.50
	08/08/95	0915		2.97	3.87

a See Figure 2 for approximate location of monitoring wells.

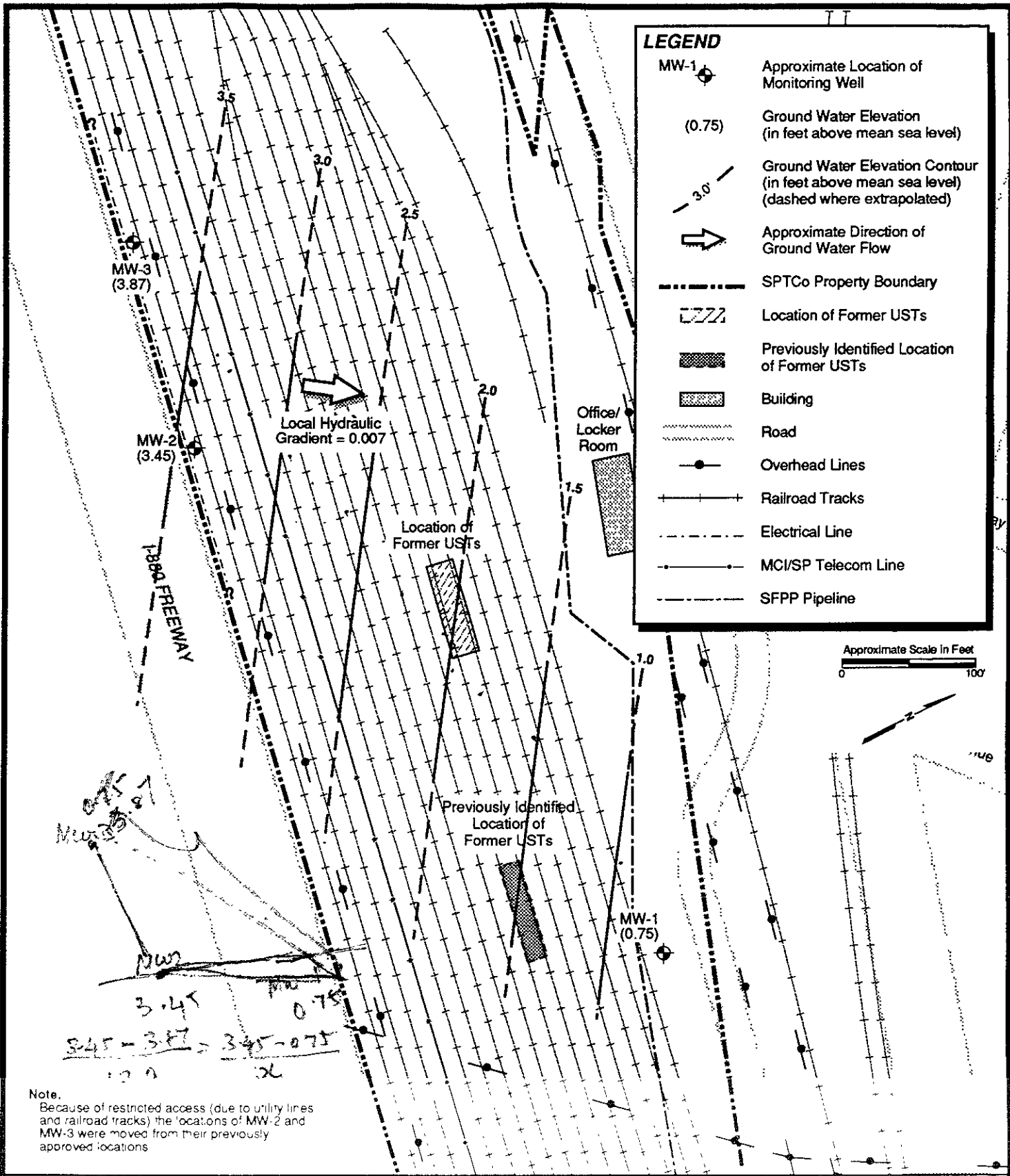
b Top of casing elevation is the elevation, in feet above mean sea level, of a point marked on the top of the well casing (generally north side) which has been surveyed by a licensed surveyor.

c Depth to ground water measured from top of casing.

d Ground water elevation calculated by subtracting the depth to ground water from the top of casing elevation.

MSL Mean sea level

TOC Top of casing



LEGEND

- MW-1 Approximate Location of Monitoring Well
- (0.75) Ground Water Elevation (in feet above mean sea level)
- Ground Water Elevation Contour (in feet above mean sea level) (dashed where extrapolated)
- Approximate Direction of Ground Water Flow
- SPTCo Property Boundary
- Location of Former USTs
- Previously Identified Location of Former USTs
- Building
- Road
- Overhead Lines
- Railroad Tracks
- Electrical Line
- MCI/SP Telecom Line
- SFPP Pipeline

Approximate Scale in Feet
 0 100'

Handwritten notes:
 MW-2
 3.45
 MW-3
 3.87
 $3.45 - 0.75 = 2.7$
 $3.87 - 0.75 = 3.12$

Note.
 Because of restricted access (due to utility lines and railroad tracks) the locations of MW-2 and MW-3 were moved from their previously approved locations

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Project No: 05100269 Date: 09/26/95

Drawn By: Patti Decker Checked By: Richard Bateman

CONTOUR MAP OF GROUND WATER ELEVATION
 AUGUST, 1995
 SOUTHERN PACIFIC TRANSPORTATION COMPANY
 5TH AVENUE AND 7TH STREET PROPERTY
 OAKLAND, CALIFORNIA

Figure	2
Page No	5
Scale	as shown

ground water in each well was assumed to be representative of the formation when a minimum of three well volumes had been removed¹ and consecutive parameter readings were within 10 percent, or four well volumes were removed. After purging was complete, each well was allowed to recover to at least 90 percent of the original water level. Due to the slow recharge rate, well MW-3 was bailed dry and subsequently sampled before recovering to 90 percent of the pre-purge water level. Ground water purge characterization data are summarized in Table 2. Purge characterization logs are included in Appendix A.

2.3 Monitoring Well Sampling

Ground water samples were collected using new, disposable polyethylene bailers. The water samples from the bailers were transferred to laboratory-supplied containers of appropriate volumes and with required preservatives for the intended analyses. Volatile organic analysis (VOA) sample containers were filled to capacity, sealed with Teflon-lined lids, and checked for air bubbles. If air bubbles were detected, the vial was re-opened, additional sample water added, and the vial resealed.

After sample collection was completed, each sample was labeled with a unique sample number, the site name, date of collection, time of collection, initials of collector, and any other pertinent information. The samples were then placed in a chilled ice chest for transport to Chromalab, Inc. Environmental Services (Chromalab). A chain-of-custody document was completed concurrent with sample collection and accompanied the samples upon transport to the laboratory. Sample logs are included in Appendix A. The chain-of-custody document is included as Appendix B.

¹ Dewatering in MW-3 prevented purging of the entire third casing volume

TABLE 2
GROUND WATER PURGE CHARACTERIZATION DATA
AUGUST, 1995

Monitoring Well ^a	Date Measured	Purge Volume (gallons)	Electrical Conductivity (μ mhos)/cm	Temperature ($^{\circ}$ F)	Field pH (units)
MW-1	08/08/95	0	7250	79.4	8.02
		4	6810	78.3	7.50
		8	6460	76.3	7.16
		12	6870	78.1	7.09
MW-2	08/08/95	0	3060	78.8	7.08
		7	2970	78.7	6.92
		14	1420	83.0	7.18
		21	1400	80.2	6.99
MW-3	08/08/95	0	2710	84.8	7.71
		7	2900	78.8	6.99
		14	3570	77.3	6.74
		18*	3250	73.3	7.03

a See Figure 2 for approximate location of monitoring wells.

μ mhos/cm Micromhos per centimeters

$^{\circ}$ F Degrees Fahrenheit

* The well was purged dry and the third casing volume was not fully recovered.

NOTE: Purge characterization logs included in Appendix A.

All ground water samples were analyzed for the following constituents:

<u>Constituent</u>	<u>Analytical Method</u>
Total Extractable Petroleum Hydrocarbons (TEPH)	EPA Method 8015 Modified
Benzene, toluene, ethylbenzene, and xylenes (BTEX)	EPA Method 8020

2.4 Quality Assurance/Quality Control

To evaluate the integrity of the ground water sampling/analysis process, a duplicate ground water sample was collected from MW-2 using the procedures described in Section 2.3. The duplicate ground water sample was analyzed for TEPH, and BTEX.

To assess the potential for cross-contamination of the ground water samples during transport to the laboratory, one trip blank was prepared by the lab prior to sample collection with DI water and accompanied the ground water samples during shipment to the laboratory. The trip blank was submitted to the laboratory for BTEX analysis only.

In addition, one equipment blank was collected by pouring DI water through the sampling equipment into the appropriate sample bottles. The equipment blank was analyzed for TEPH, and BTEX.

3.0 ANALYTICAL RESULTS

Third quarter 1995 ground water samples were analyzed by Chromalab for the suite of constituents listed in Section 2.3. Analytical results are summarized in Table 3. Figure 3 is a chemical distribution map. Analytical laboratory reports are included as Appendix C. The following is a summary of the third quarter, 1995 analytical results:

- * TEPH and BTEX were not detected at or above their respective reporting limits in any of the wells sampled.

The analytical results for the duplicate ground water sample collected from MW-2 were consistent with those of the original ground water sample.

None of the analyzed constituents were detected at or above their respective reporting limits in either the trip blank or the equipment blank.

All laboratory procedures (holding times, methods used, method blanks, documentation, etc.) and subsequent results were monitored throughout the analytical process according to standard quality assurance/quality control (QA/QC) procedures. In addition, all laboratory reports were evaluated as part of QA/QC procedures for ground water monitoring. The analytical data included in this third quarter, 1995 report are considered quantitatively valid.



**TABLE 3
GROUND WATER ANALYTICAL RESULTS**

Sample Location	Date Sampled	TEPH ($\mu\text{g/L}$)		Volatile Organic Compounds ^c ($\mu\text{g/L}$)				Sodium Chloride ^d (mg/L)	Total Dissolved Solids ^e (mg/L)
		Diesel ^a	Motor Oil ^b	Benzene	Toluene	Ethylbenzene	Xylenes		
MW-1	04/28/94	<50	<200	<0.5	<0.5	<0.5	<0.5	61	530
	08/16/94	<120	<750	<0.3	<0.3	<0.5	<0.5	86	600
	11/09/94	<50	<500	<0.5	<0.5	<0.5	<0.5	25	470
	02/16/95 ^f	NS	NS	NS	NS	NS	NS	NS	NS
	05/11/95	<50	<500	<0.5	<0.5	<0.5	<0.5	46	550
	08/08/95	<50	<50	<0.5	<0.5	<0.5	<0.5	NA	NA
MW-2	04/28/94	<50	<200	<0.5	<0.5	<0.5	<0.5	77	460
	08/16/94	<120	750	<0.3	<0.3	<0.5	<0.5	170	690
	11/10/94	<50	<500	<0.5	<0.5	<0.5	<0.5	35	370
	02/16/95	<50	<500	<0.5	<0.5	<0.5	<0.5	190	370
	05/11/95	<50	<500	<0.5	<0.5	<0.5	<0.5	112	490
	08/08/95	<50	<50	<0.5	<0.5	<0.5	<0.5	NA	NA
MW-3	04/28/94	<50	<200	<0.5	<0.5	<0.5	<0.5	300	680
	08/16/94	<120	<750	<0.3	<0.3	<0.5	<0.5	1,200	3,700
	11/10/94	<50	<500	<0.5	<0.5	<0.5	<0.5	140	620
	02/16/95	<50	<500	<0.5	<0.5	<0.5	<0.5	630	1,330
	05/11/95	<50	<500	<0.5	<0.5	<0.5	<0.5	692	1,350
	08/08/95	<50	<50	<0.5	<0.5	<0.5	<0.5	NA	NA
Duplicate (MW-2)	08/08/95	<50	<50	<0.5	<0.5	<0.5	<0.5	NA	NA
Trip Blank	08/08/95	NA	NA	<0.5	<0.5	<0.5	<0.5	NA	NA
Equipment Blank	08/08/95	<50	<50	<0.5	<0.5	<0.5	<0.5	NA	NA
Cal DHS MCLs ^g		NE	NE	1	100 ^h	680	1,750	NE	500

a Analyzed by EPA Method 8015 (April 1994 samples analyzed by EPA Method 8260).

b Analyzed by EPA method 8015 (April 1994 samples analyzed by EPA Method 8270).

c Analyzed by EPA Method 8020 (April 1994 samples analyzed by EPA Method 8270).

d Sodium chloride concentrations determined by calculation, after analyzing for sodium and chloride separately.

e Total dissolved solids analyzed by EPA Method 160.1

f MW-1 was not sampled on February 16, 1995 due to inaccessibility resulting from construction activities.

g California Department of Health Services (DHS) Maximum Contaminant Levels (MCLs) for drinking water (California RWQCB, May, 1993, Compilation of Water Quality Goals).

h California DHS action level for drinking water (California RWQCB, May, 1993, Compilation of Water Quality Goals).

TEPH Total extractable petroleum hydrocarbons

NA Not analyzed.

NE No MCL established.

NS Not sampled

mg/L Milligrams per liter

$\mu\text{g/L}$ Micrograms per liter

< Indicates the constituent was not detected at a concentration above the reporting or method detection limit as listed.

Notes:

1. Total petroleum hydrocarbons (TPH) as diesel analyzed by EPA Method 8015 modified.
2. VOCs analyzed by EPA Method 8010/8020.
3. All sample results reported in micrograms per liter (µg/L) or in milligrams per liter (mg/L).
4. < Indicates constituent not detected at or above method practical quantitation limit as noted.

Date Sampled	TPH (µg/L)		Volatile Organic Compounds (µg/L)			
	Diesel	Motor Oil	Benzene	Toluene	Ethyl-benzene	Xylenes
8/8/95	<50	<50	<0.5	<0.5	<0.5	<0.5

Date Sampled	TPH (µg/L)		Volatile Organic Compounds (µg/L)			
	Diesel	Motor Oil	Benzene	Toluene	Ethyl-benzene	Xylenes
8/8/95	<50	<50	<0.5	<0.5	<0.5	<0.5

Date Sampled	TPH (µg/L)		Volatile Organic Compounds (µg/L)			
	Diesel	Motor Oil	Benzene	Toluene	Ethyl-benzene	Xylenes
8/8/95	<50	<50	<0.5	<0.5	<0.5	<0.5



LEGEND

- MW-1 Approximate Location of Monitoring Well
- SPTCo Property Boundary
- Location of Former USTs
- Previously Identified Location of Former USTs
- Building
- Road
- Overhead Lines
- Railroad Tracks
- Electrical Line
- MCI/SP Telecom Line
- SFPP Pipeline

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Project No	05100269	Date	09/26/95
Drawn By	Patti Decker	Checked By	Richard Bateman

**CHEMICAL DISTRIBUTION MAP FOR
CONSTITUENTS IN GROUND WATER SAMPLES
AUGUST, 1995
SOUTHERN PACIFIC TRANSPORTATION COMPANY
5TH AVENUE AND 7TH STREET PROPERTY
OAKLAND, CALIFORNIA**

Figure	3
Page No	11
Scale	as shown

4.0 DISCUSSION

The following sections discuss the occurrence and distribution of chemical compounds in site ground water, and ground water elevation and flow direction.

4.1 Chemical Distribution

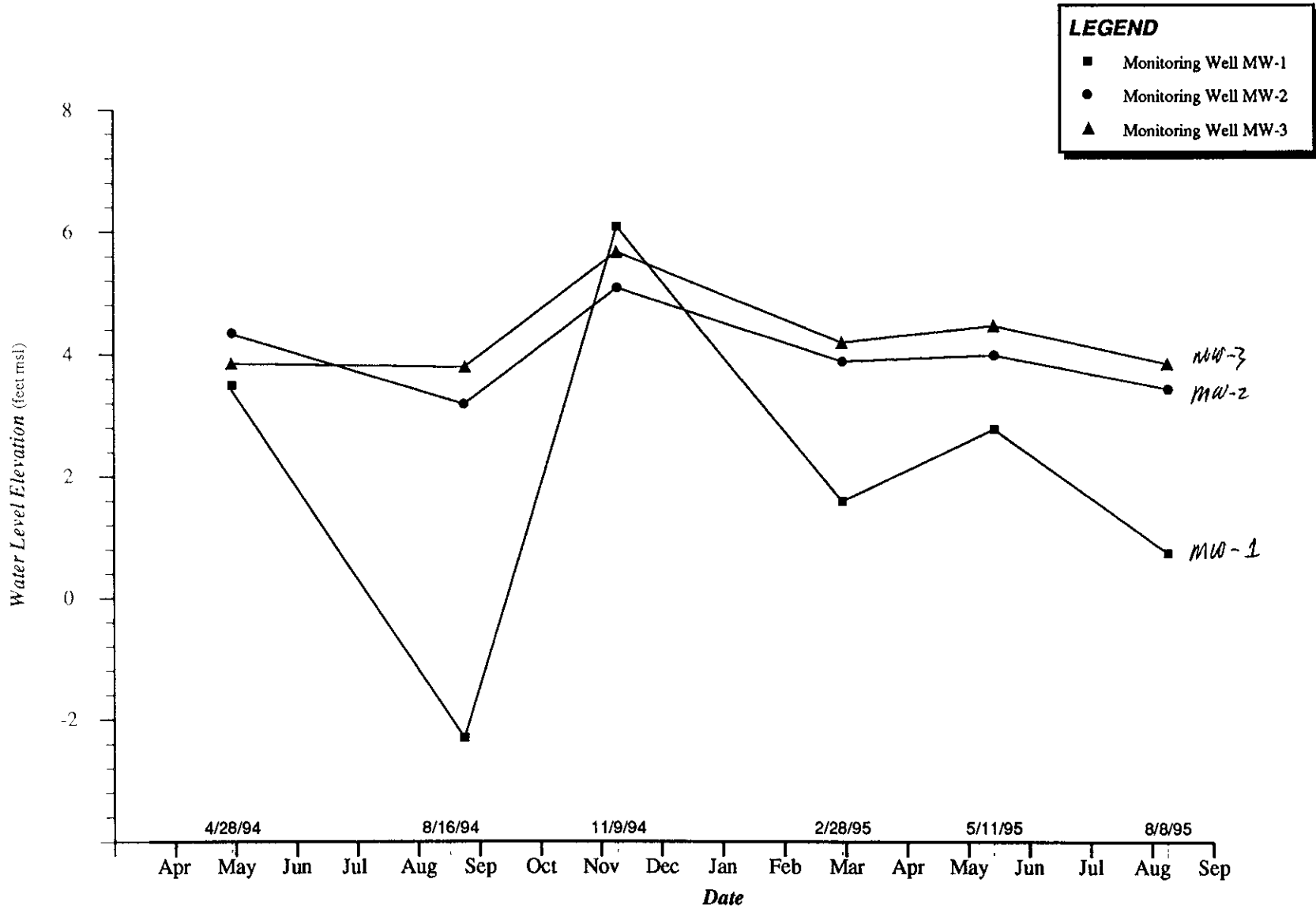
No petroleum hydrocarbons or related volatile organic compounds were detected in ground water samples collected during the third quarter, 1995 ground water monitoring event at the SPTCo 5th Avenue and 7th Street property. This result is generally consistent with analytical results from all previous monitoring events (Table 3). TPH-MO was detected in MW-2 at a concentration of 750 milligrams per liter during the third quarter 1994 monitoring event. Third quarter 1994 samples were analyzed by a different analytical laboratory and resulted in detections at this and several other monitoring sites which have not been duplicated in any subsequent monitoring. None of the constituents analyzed this or any preceding quarter has exceeded established California Department of Health Services (DHS) maximum contaminant levels (MCLs) or action levels (ALs) for drinking water.

4.2 Ground Water Elevation and Flow

Ground water elevation contour maps for all previous monitoring events are included in Appendix D. Table 1 lists all ground water elevation data collected to date. A comparison of ground water elevation data collected during the third quarter, 1995 sampling event with ground water elevations measured during the second quarter 1995, indicate a slight decrease of ground water elevations in all three monitoring wells. Ground water elevations measured during the third quarter 1995, show an average decrease of 1.11 feet over second quarter 1995 water levels. The local hydraulic gradient for the third quarter, 1995 was calculated to be 0.007 which is slightly higher than the gradient calculated for May, 1995 of 0.002. The



ground water flow direction has changed from a easterly direction during the second quarter 1995, to a northeasterly direction this quarter. The observed decrease in ground water elevation is most likely due to seasonal variation. The change in flow direction may be due to seasonal variation or tidal influence. Figure 4 shows hydrographs of ground water elevations for all monitoring wells.



	Industrial Compliance A Subsidiary of SP Environmental Systems, Inc.	
	Project No.: 05100269	Date: 09/26/95
Drawn By: Patti Decker	Checked By: Richard Bateman	

**HYDROGRAPHS OF GROUND WATER ELEVATION
 SOUTHERN PACIFIC TRANSPORTATION COMPANY
 5TH AVENUE AND 7TH STREET PROPERTY
 OAKLAND, CALIFORNIA**

Figure:	4
Page No.:	14
Scale:	as shown

006# 70 -J/M-55560 1682-NEO

5.0 GLOSSARY OF ACRONYMS

ALs	Action levels
BTEX	Benzene, toluene, ethylbenzene, and xylenes
DHS	California Department of Health Services
DI	Deionized
IC	Industrial Compliance
MCLs	Maximum contaminant levels
MSL	Mean sea level
QA/QC	Quality Assurance/Quality Control
SPTCo	Southern Pacific Transportation Company
TEPH	Total extractable petroleum hydrocarbons
VOA	Volatile organic analysis

APPENDIX A

**GROUND WATER ELEVATION MEASUREMENT AND
PURGE CHARACTERIZATION AND SAMPLE LOGS**

GROUND WATER ELEVATION MEASUREMENT LOG

Sheet 1 of 1

Project Name: EAST OAKLAND
 Date: 8-8-95

Project No. 05100269

Task/Phase: 01 / 98000

Equipment: WATER LEVEL INDICATOR

Weather: SUNNY

Well Number	Reference Elevation (feet-MSL)	Elev (military)	Depth to Water (feet)	Depth to Product (feet)	Total Depth (feet)	PT (feet)	PT x 0.8 (feet)	Adjusted DTW (feet)	Ground Water Elevation (feet-MSL)
MWD-1	8.20	845	7.45	—	13.68	—	—		0.75
MWD-2	6.36	920	2.91	—	13.64	—	—		3.45
MWD-3	6.84	915	2.97	—	13.60	—	—		3.87
Comments:									

- 1 Adjusted depth to water = DTW - (PT x 0.8)
- 2 Ground water elevation = Reference elevation - Adjusted DTW
- MSL Mean sea level
- DTW Depth to water (to 0.01 foot)
- PT Product thickness (0.01 foot)

Signature 



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A Subsidiary of SP Environmental Systems, Inc.



PURGE CHARACTERIZATION AND SAMPLE LOG

Project Number: 05100209

Project Name: EAST OAKLAND YARD

Date: 8-8-95

Well Number: MW-1

Sampler: M. ERICSON / J. ROTH

Weather: SCARCY

Military Time	853	858	912	1001	1025	1030	
Gallons Purged	0	4.0	8.0	12.0	S	E	Depth to bottom (DB): 13.68
Purge Rate	-	-	-	-	S	E	Depth to water (DW): 7.45
pH	8.92	7.50	7.16	7.09	A	U	Height of water column (H) = DB - DW: 6.23
Conductivity	225	681	646	6.87	M	I	One casing volume (CV) = H x multiplier: 4.0
Temperature (°F)	79.4	78.3	76.3	78.1	P	P	Three casing volumes (3CV): 12.
Salinity (0/00)	-	-	-	-	L	M	Multipliers = 2" well = 0.16 gallons/foot
Turbidity	CLEAR	CLEAR	CLEAR	CLEAR	E	E	4" well = 0.65 gallons/foot
Color	CLEAR	CLEAR	CLEAR	CLEAR	D	N	6" well = 1.47 gallons/foot
Water Level Casing							8" well = 2.61 gallons/foot
Calibration	pH:						S.C.:

Sample #	Quantity	Volume	Type	Preserv.	Analysis	Lab	Sample Equip.	Purge Equip.	Field Comments
MW-1	2	40ml	VOA	HCL	BTXE	CHROM	DISP. BAILER	TEF. BAILER	
	1	1 LT	AMBER	NONE	TEPH	"			
MW-1E	2	40ml	VOA	HCL	BTXE	CHROM			EQUIPMENT BLANKS
	1	1 LT	AMBER	NONE	TEPH	"			"
TRIP	2	40ml	VOA	HCL	BTXE	CHROM			LAB PREPARED TRIP BLANK

Cleaning: WASHED TEFLON BAILER W/ TSP - RINSED W/ DI WATER

Comments:

Sampler's Signature: J. Roth



Industrial Compliance

A Subsidiary of SP Environmental Systems, Inc.



PURGE CHARACTERIZATION AND SAMPLE LOG

Project Number: 05100269

Project Name: EAST OAKLAND YARD

Date: 8-8-95

Well Number: MW-2

Sampler: M ENDICOTT / J ROTH

Weather: SUNNY

Military Time	1116	1117	1138	1142	1205	1210	
Gallons Purged	0	7.0	14.0	21.0			Depth to bottom (DB): <u>13.64</u>
Purge Rate	-	-	-	-	S	D	Depth to water (DW): <u>+3.64 2.91</u>
pH	2.08	6.92	7.18	6.99	A	U	Height of water column (H) = DB - DW: <u>10.7</u>
Conductivity	3.86	2.47	1.42	1.40	M	P	One casing volume (CV) = H x multiplier: <u>7.0</u>
Temperature (°F)	78.8	78.7	83.0	86.2	P	L	Three casing volumes (3CV): <u>21.0</u>
Salinity (0/00)	-	-	-	-	E	L	Multipliers = 2" well = 0.16 gallons/foot
Turbidity	CLEAR	CLEAR	CLEAR	CLEAR	D	A	4" well = 0.65 gallons/foot
Color	CLEAR	CLEAR	CLEAR	CLEAR		T	6" well = 1.47 gallons/foot
Water Level Casing						E	8" well = 2.61 gallons/foot
Calibration	pH:						S.C.:

Sample #	Quantity	Volume	Type	Preserv.	Analysis	Lab	Sample Equip.	Purge Equip.	Field Comments
MW-2	2	40ml	VOA	HCl	BTXE	CHROM	DISP. BAILER	TEF. BAILER	
	1	1 LT	AMBER	NONE	TEPH	"	↓	↓	
MW-2D	2	40ml	VOA	HCl	BTXE	CHROM	↓	↓	DUPPLICATE SAMPLE
	1	1 LT	AMBER	NONE	TEPH	"	↓	↓	" "

Cleaning: WASHED TEFLON BAILER w/ TSP - RINSED w/ DI WATER

Comments:

Sampler's Signature: J Roth

APPENDIX B
CHAIN-OF-CUSTODY DOCUMENT

23301

126/98571-98536

CHAIN-OF-CUSTODY RECORD

P.O. Box 24374 Oakland CA 94623-1374

No. 20862

INDUSTRIAL COMPLIANCE • 9838 OLD PLACERVILLE ROAD, SUITE 100 • SACRAMENTO, CA 95827-3559 • Phone 916-869-8971 • FAX 916-869-8370

PROJECT NAME EAST OAKLAND YARD					PROJECT LOCATION DATE 8-8-95					NUMBER OF CONTAINERS	ANALYSIS DESIRED (INDICATE SEPARATE CONTAINERS) <i>BTX TEPH</i>					SUBM #: 9508126 REP: GC CLIENT: INDCOMP-OAK DUE: 08/16/95 REF #: 23301				
PROJ NO 05100-269		PROJECT CONTACT JAMES ACKERMAN			PROJECT TELEPHONE NO. 510-238-9540															
CLIENT'S REPRESENTATIVE JAMES ACKERMAN					PROJECT MANAGER/SUPERVISOR CARL TAYLOR															
ITEM NO	SAMPLE NUMBER	DATE	TIME	COMP	GRAB	SAMPLE LOCATION (INCLUDE MATRIX AND POINT OF SAMPLE)														
1	MW 1	8-8	1025		X	MONITOR WELL # 1					3 X X									
2	MW 2	8-8	1205		X	MONITOR WELL # 2					3 X X									
3	MW 3	8-8	1155		X	MONITOR WELL # 3					3 X X									
4	MW 1E	8-8	1030		X	EQUIPMENT BLANK					3 X X									
5	MW 2D	8-8	1210		X	DUPLICATE SAMPLE OF MW 2					3 X X									
6	TRIP	8-8	1000		X	TRIP BLANK LAB PREPARED					2 X	BTX ONLY								
7																				
8																				
9																				
10																				

TRANSFER NUMBER	ITEM NUMBER	TRANSFERS RELINQUISHED BY	TRANSFERS ACCEPTED BY	DATE	TIME	REMARKS
1	1-6	JULIE ROTH	<i>[Signature]</i>	8-9-95	151	NORM TAT
2						
3						P.O.# 00905
4						SAMPLER'S NAME <i>[Signature]</i> SAMPLER'S SIGNATURE

APPENDIX C
ANALYTICAL LABORATORY REPORTS,
GROUND WATER SAMPLES

CHROMALAB, INC.

Environmental Services (SDB)

August 16, 1995

Submission #: 9508126

INDUSTRIAL COMPLIANCE-OAKLAND

Atten: Carl Taylor

Project: EAST OAKLAND YARD

Project#: 05100-269

Received: August 9, 1995

re: 5 samples for Total Extractable Petroleum Hydrocarbons (TEPH) analysis.

Method: EPA 3510/8015M

Sampled: August 8, 1995

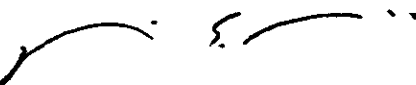
Matrix: WATER


Extracted: August 11, 1995

Run: 8030-D

Analyzed: August 15, 1995

Spl #	Sample ID	Kerosene (ug/L)	Diesel (ug/L)	Motor Oil (ug/L)
98571	MW 1	N.D.	N.D.	N.D.
98572	MW 2	N.D.	N.D.	N.D.
98573	MW 3	N.D.	N.D.	N.D.
98574	MW 1E	N.D.	N.D.	N.D.
98575	MW 2D	N.D.	N.D.	N.D.
Reporting Limits		50	50	500
Blank Result		N.D.	86.00	N.D.
Blank Spike Result (%)		--	--	--


Dennis Mayugba
Chemist


Ali Kharrazi
Organic Manager

CHROMALAB, INC.

Environmental Services (SDB)

August 15, 1995

Submission #: 9508126

INDUSTRIAL COMPLIANCE-OAKLAND

Atten: Carl Taylor

Project: EAST OAKLAND YARD

Project#: 05100-269

Received: August 9, 1995

re: 6 samples for BTEX analysis.

Method: EPA 8020

Sampled: August 8, 1995

Matrix: WATER

Run: 8015-4

Analyzed: August 11, 1995

Spl #	Sample ID	Benzene (ug/L)	Toluene (ug/L)	Ethyl Benzene (ug/L)	Total Xylenes (ug/L)
98571	MW 1	N.D.	N.D.	N.D.	N.D.
98572	MW 2	N.D.	N.D.	N.D.	N.D.
98573	MW 3	N.D.	N.D.	N.D.	N.D.
98574	MW 1E	N.D.	N.D.	N.D.	N.D.
98575	MW 2D	N.D.	N.D.	N.D.	N.D.

Sampled: August 8, 1995

Matrix: WATER

Run: 8015-4

Analyzed: August 11, 1995

Spl #	Sample ID	Benzene (ug/L)	Toluene (ug/L)	Ethyl Benzene (ug/L)	Total Xylenes (ug/L)
98576	TRIP	N.D.	N.D.	N.D.	N.D.

Reporting Limits

0.5

0.5

0.5

0.5

Blank Result

N.D.

N.D.

N.D.

N.D.

Blank Spike Result (%)

113

103

111

109






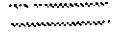


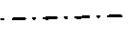


Jack Kelly
Chemist

Ali Kharrazi
Organic Manager

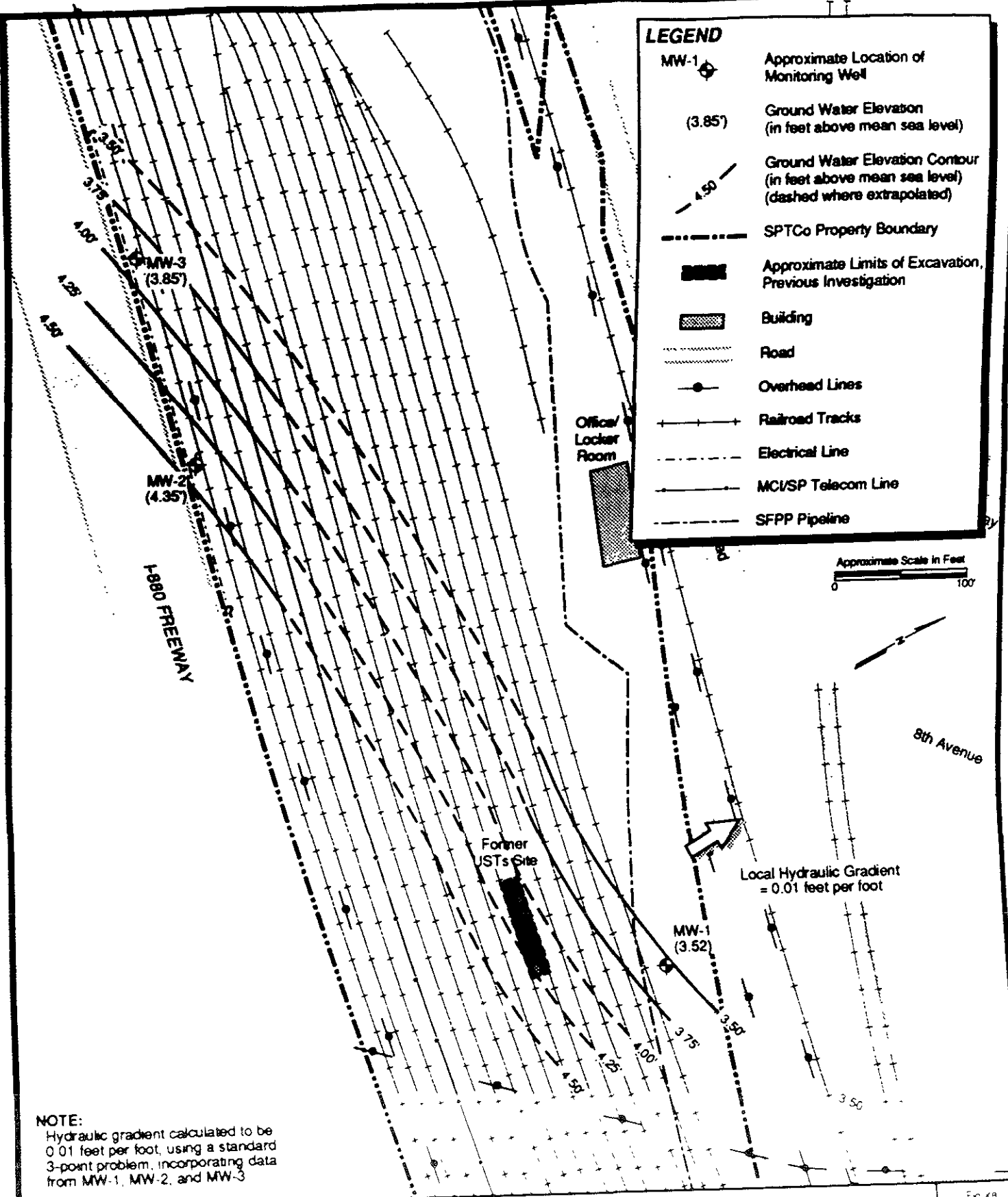
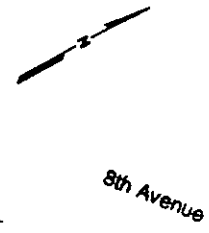
APPENDIX D

**GROUND WATER ELEVATION CONTOUR MAPS
PREVIOUS MONITORING EVENTS**

LEGEND

- MW-1  Approximate Location of Monitoring Well
- (3.85') Ground Water Elevation (in feet above mean sea level)
-  Ground Water Elevation Contour (in feet above mean sea level) (dashed where extrapolated)
-  SPTCo Property Boundary
-  Approximate Limits of Excavation, Previous Investigation
-  Building
-  Road
-  Overhead Lines
-  Railroad Tracks
-  Electrical Line
-  MCI/SP Telecom Line
-  SFPP Pipeline

Approximate Scale in Feet
0 100



NOTE:
Hydraulic gradient calculated to be 0.01 feet per foot, using a standard 3-point problem, incorporating data from MW-1, MW-2, and MW-3








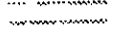

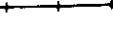
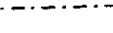


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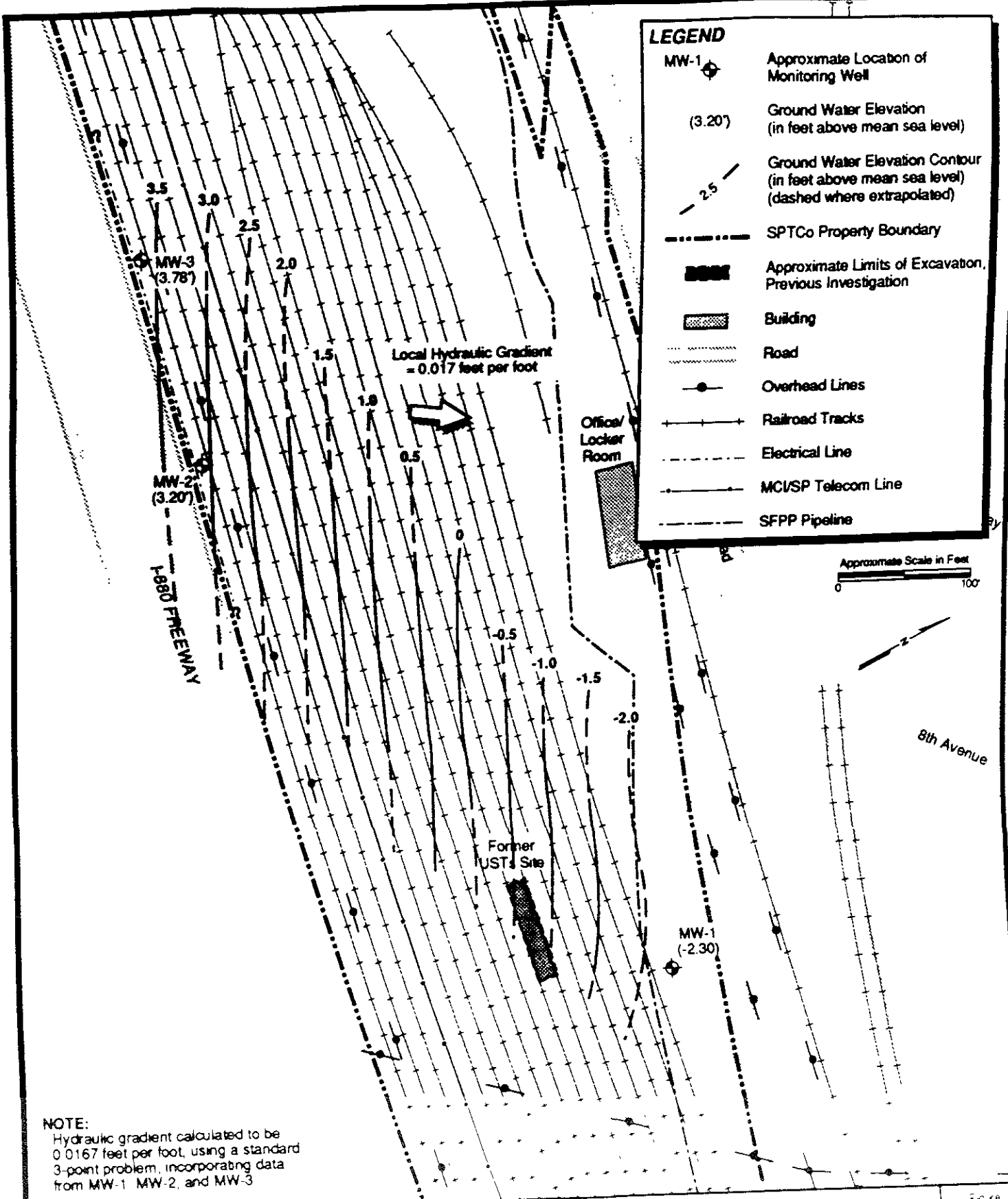
**CONTOUR MAP OF GROUND WATER ELEVATIONS WITH HYDRAULIC GRADIENT, APRIL, 1994
SOUTHERN PACIFIC TRANSPORTATION COMPANY
5TH AVENUE AND 7TH STREET PROPERTY
OAKLAND, CALIFORNIA**

Project No.	05100269	Date	08/01/94
Drawn By	Patti Decker	Checked By	James G. Jensen

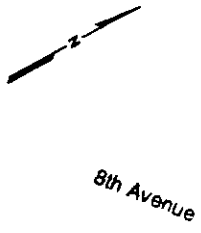
Figure 8
Page No
Scale as shown

LEGEND

- MW-1  Approximate Location of Monitoring Well
- (3.20) Ground Water Elevation (in feet above mean sea level)
-  Ground Water Elevation Contour (in feet above mean sea level) (dashed where extrapolated)
-  SPTCo Property Boundary
-  Approximate Limits of Excavation, Previous Investigation
-  Building
-  Road
-  Overhead Lines
-  Railroad Tracks
-  Electrical Line
-  MCVSP Telecom Line
-  SFPP Pipeline



Approximate Scale in Feet
0 100'



NOTE:
Hydraulic gradient calculated to be 0.0167 feet per foot, using a standard 3-point problem, incorporating data from MW-1, MW-2, and MW-3.



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A Subsidiary of SP Environmental Systems, Inc.

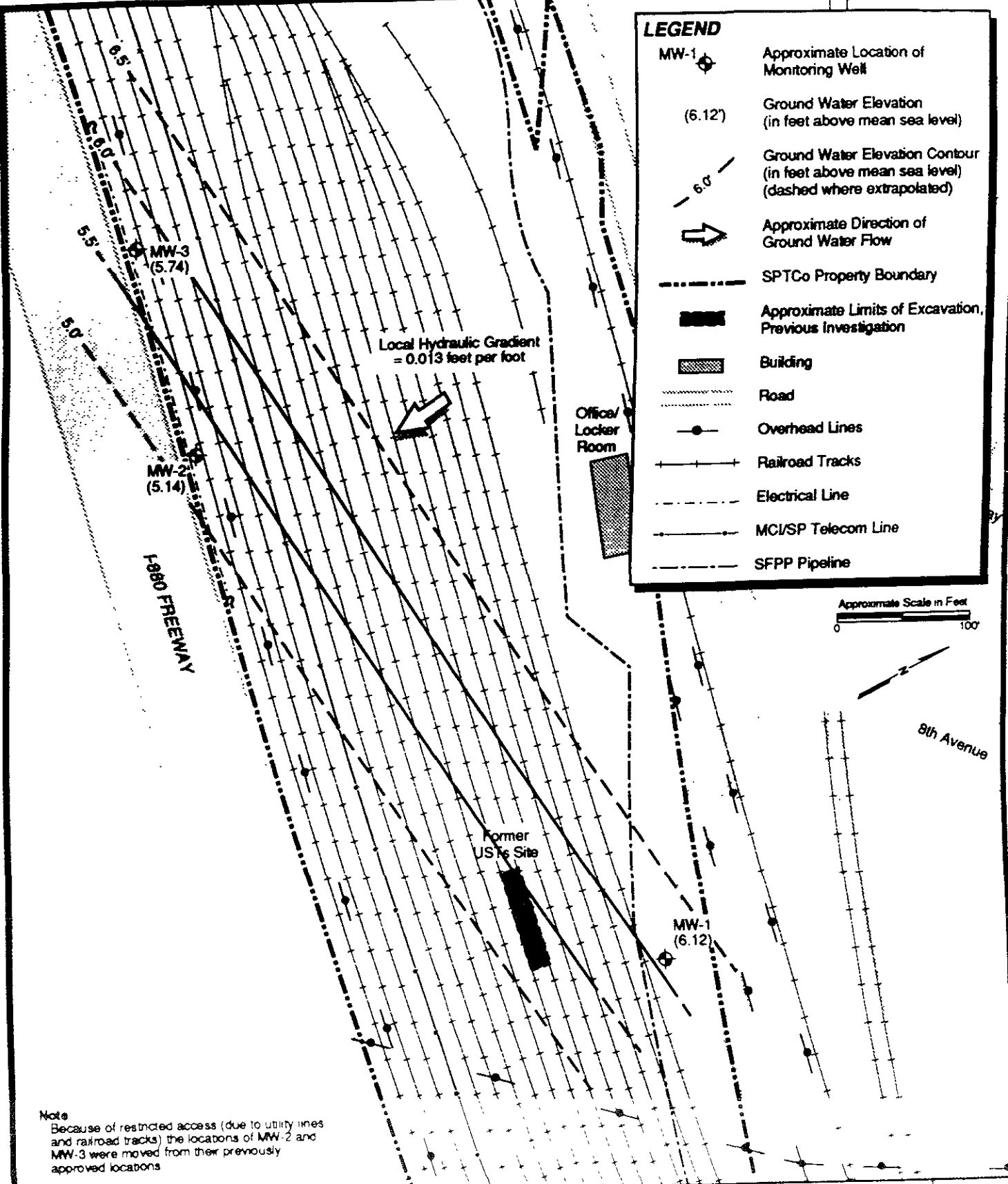
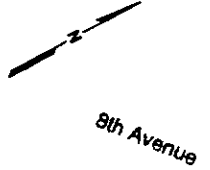
**CONTOUR MAP OF GROUND WATER ELEVATIONS
AUGUST, 1994
SOUTHERN PACIFIC TRANSPORTATION COMPANY
5TH AVENUE AND 7TH STREET PROPERTY
OAKLAND, CALIFORNIA**

Figure 4
Page No
Scale as shown

Project No. 05100269	Date 12/01/94
Drawn By Patti Decker	Checked By James Ackerman

LEGEND

- MW-1 Approximate Location of Monitoring Well
- (6.12') Ground Water Elevation (in feet above mean sea level)
- 6.0' Ground Water Elevation Contour (in feet above mean sea level) (dashed where extrapolated)
- Approximate Direction of Ground Water Flow
- SPTCo Property Boundary
- Approximate Limits of Excavation, Previous Investigation
- Building
- Road
- Overhead Lines
- Railroad Tracks
- Electrical Line
- MCI/SP Telecom Line
- SFPP Pipeline



Note
 Because of restricted access (due to utility lines and railroad tracks) the locations of MW-2 and MW-3 were moved from their previously approved locations

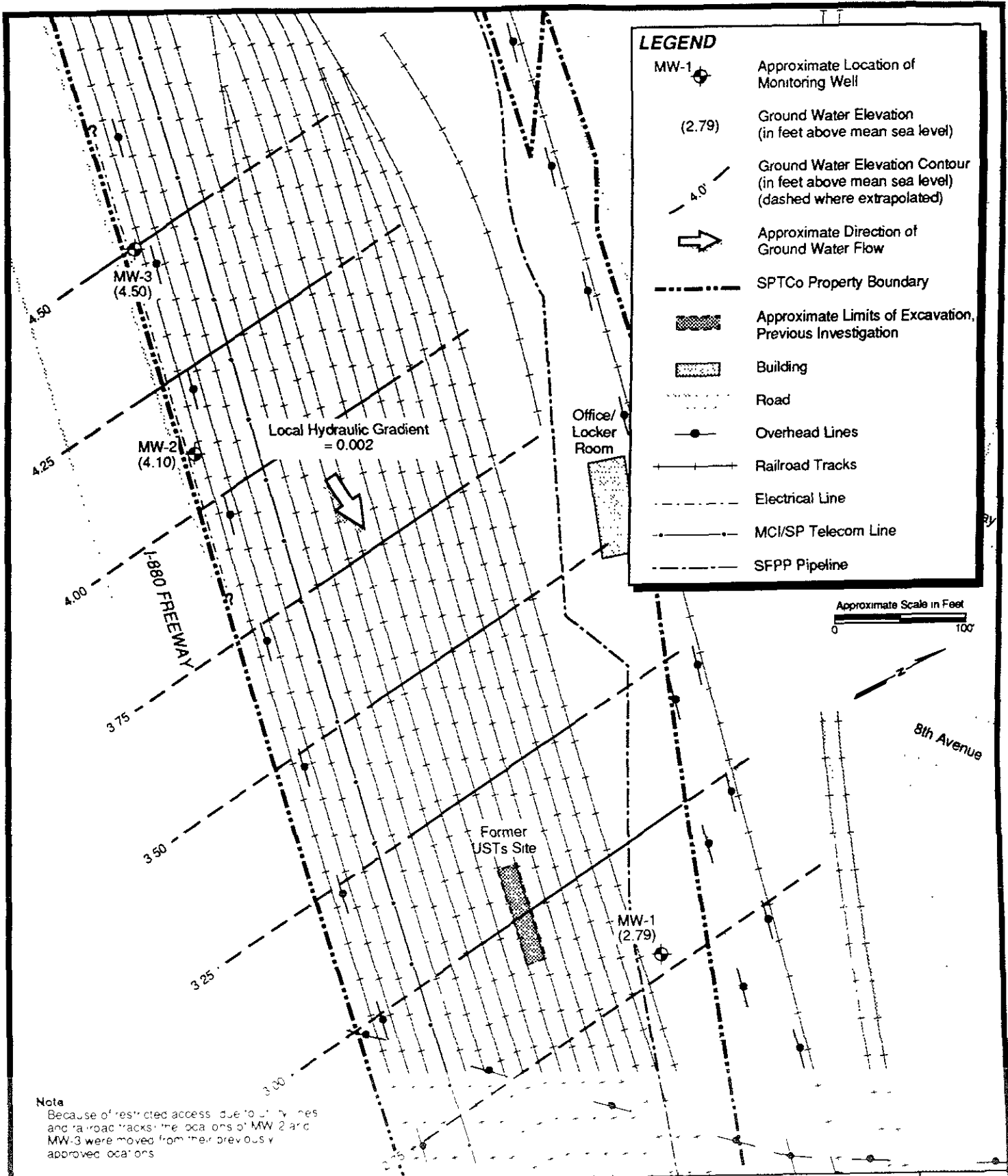
Industrial Compliance
 A Subsidiary of SP Environmental Systems, Inc.

Project No. 05100269 Date 02/13/95

Drawn By: Patti Decker Checked By: Richard Bateman

**CONTOUR MAP OF GROUND WATER ELEVATION
 NOVEMBER, 1994
 SOUTHERN PACIFIC TRANSPORTATION COMPANY
 5TH AVENUE AND 7TH STREET PROPERTY
 OAKLAND, CALIFORNIA**

Figure	4
Page No.	9
Scale	as shown



Note
 Because of restricted access due to utility lines and railroad tracks, the locations of MW-2 and MW-3 were moved from their previously approved locations.



Industrial Compliance
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**CONTOUR MAP OF GROUND WATER ELEVATION
 MAY, 1995
 SOUTHERN PACIFIC TRANSPORTATION COMPANY
 5TH AVENUE AND 7TH STREET PROPERTY
 OAKLAND, CALIFORNIA**

Project No	05100269	Date	06 28 95
Drawn By	Patti Decker	Checked By	Richard Bateman

Figure	2
Page No	5
Scale	as shown