Park
Environmental

1993-1994
investigation
summary

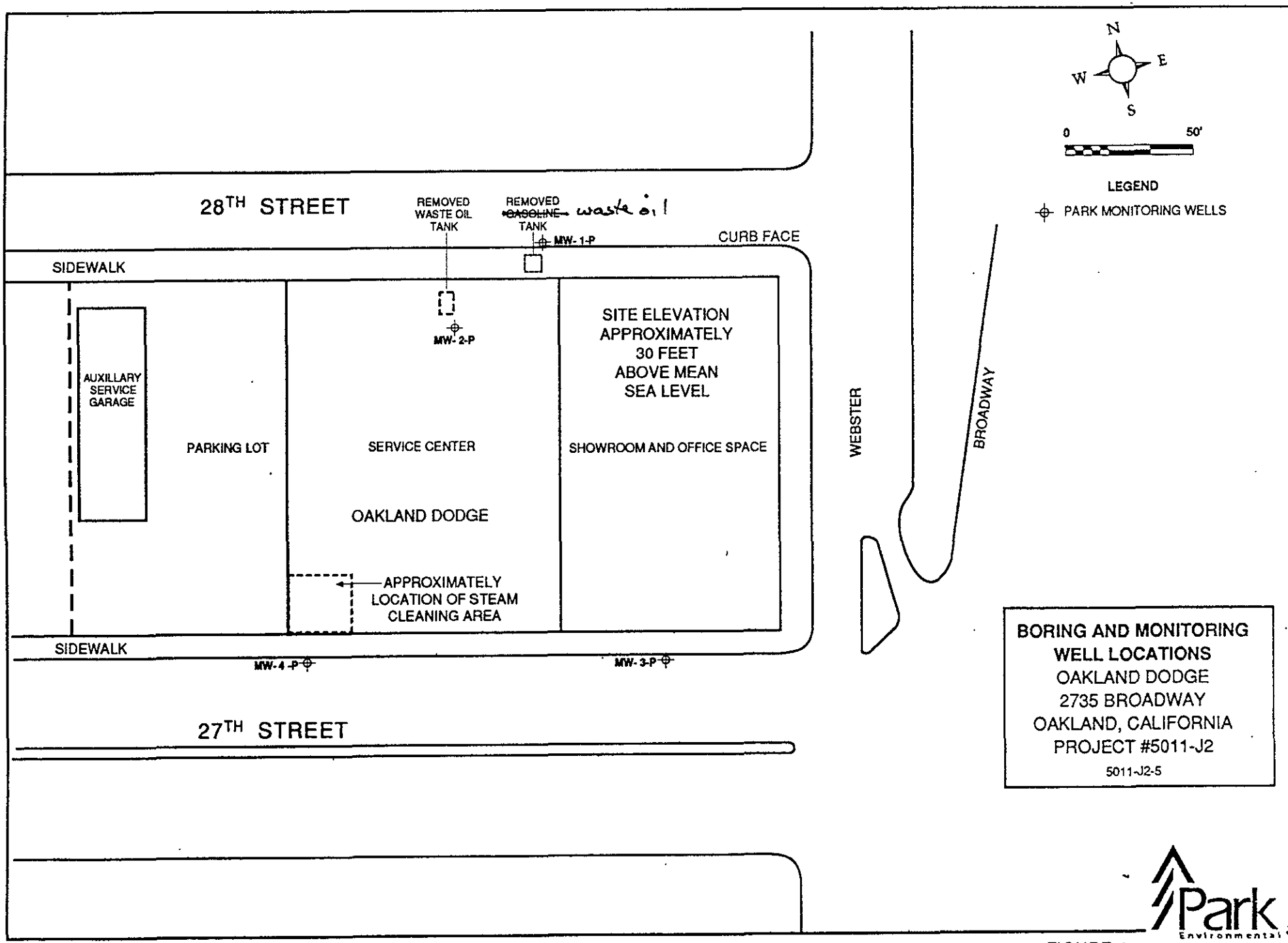
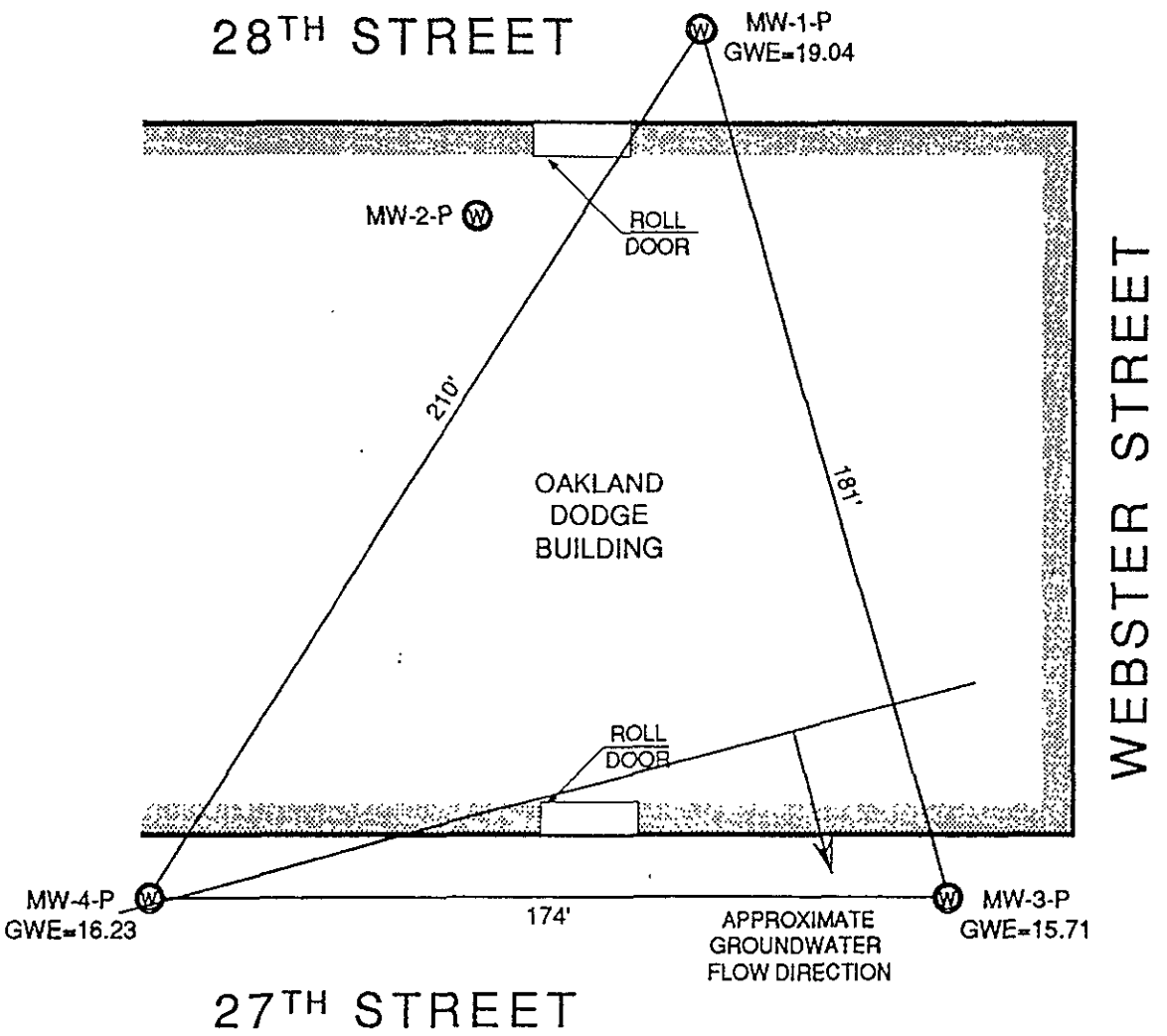
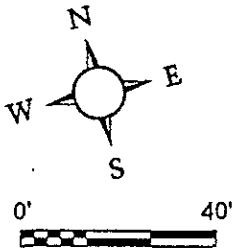

N
W
E
S
0
50'
LEGEND
PARK MONITORING WELLS
28TH STREET
REMOVED WASTE OIL TANK
REMOVED ~~GASOLINE~~ waste oil TANK
MW-1-P
CURB FACE
SIDEWALK
MW-2-P
AUXILLARY SERVICE GARAGE
PARKING LOT
SERVICE CENTER
OAKLAND DODGE
SITE ELEVATION APPROXIMATELY 30 FEET ABOVE MEAN SEA LEVEL
SHOWROOM AND OFFICE SPACE
APPROXIMATELY LOCATION OF STEAM CLEANING AREA
SIDEWALK
MW-4-P
MW-3-P
WEBSTER
BROADWAY
27TH STREET
BORING AND MONITORING WELL LOCATIONS
OAKLAND DODGE
2735 BROADWAY
OAKLAND, CALIFORNIA
PROJECT #5011-J2
5011-J2-5
Park Environmental

FIGURE 4





GROUNDWATER MEASUREMENTS
JUNE 29, 1994

WELL	TOC	DTW	GWE
MW-1-P	35.77'	16.73	19.04
MW-2-P	31.54'	13.83	17.71
MW-3-P	28.11'	12.40	15.71
MW-4-P	30.69'	14.46	16.23

LEGEND

Ⓦ WELL
BUILDING LINE

TOC TOP OF CASING ELEVATION
DTW DEPTH TO GROUNDWATER
GWE GROUNDWATER ELEVATION

$$\frac{19.04 - 16.23}{X} = \frac{19.04 - 15.71}{181}$$

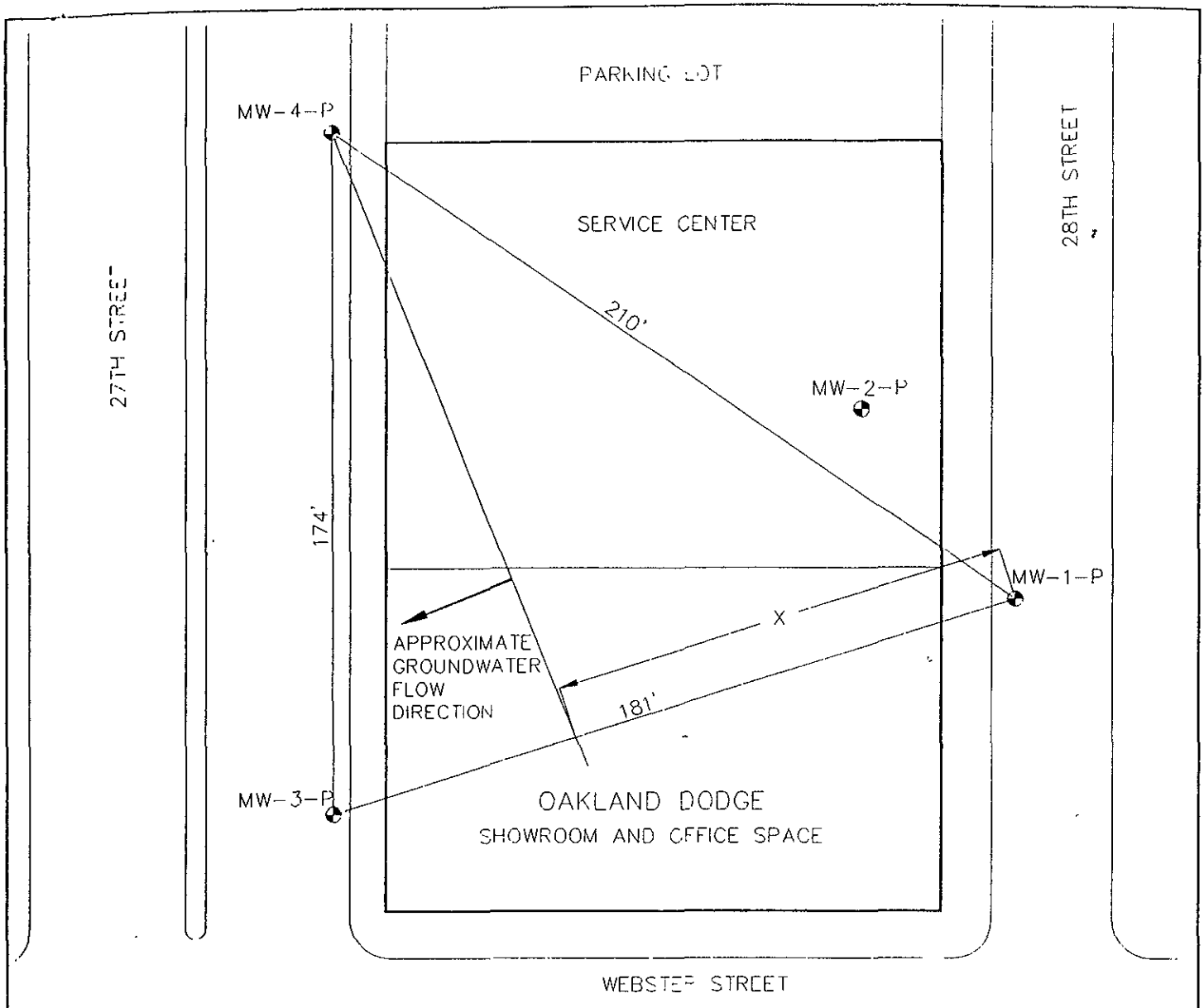
$$\frac{2.81}{X} = \frac{3.33}{181}$$

X ≈152.73'

HYDRAULIC GRADIENT IS APPROXIMATELY 0.018

FIGURE 3

Park Environmental
Leading A Clean Environment



GROUNDWATER MEASUREMENTS NOVEMBER 30, 1994			
WELL	TOC	DWT	GWE
MW-1-P	35 77'	16 30'	19 47'
MW-2-P	31.54'	14 56'	16.98'
MW-3-P	28.11'	10 94'	17.17'
MW-4-P	30.69'	12.70'	17.99'

HYDRAULIC GRADIENTIS APPROXIMATELY 0 011

CALCULATIONS

$$\frac{19.47 - 17.17}{181} = \frac{19.47 - 17.99}{X}$$

$$\frac{2.30}{181} = \frac{1\ 48}{X}$$

$$2.3X = 267.88$$

$$X = 116.47$$

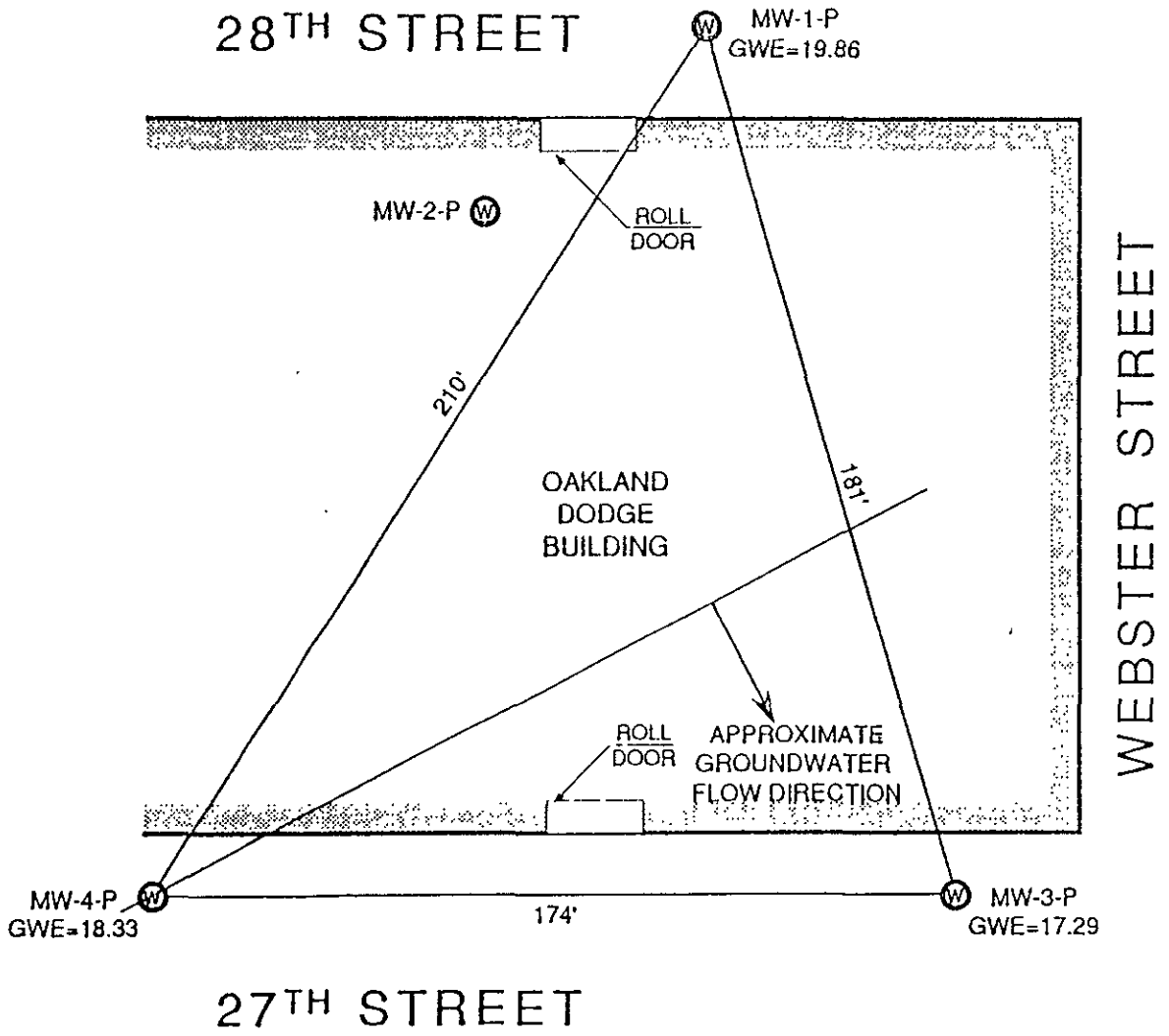
SCALE. 1" = 40'

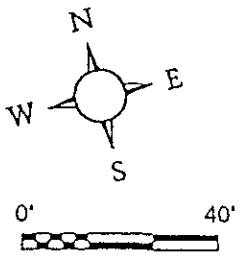
MONITORING WELL LOCATION

OAKLAND DODGE
2735 BROADWAY, OAKLAND
GROUNDWATER FLOW DIRECTION MAP

Park Environmental
Leaving A Clean Environment

INITIAL	M.A.R.
DATE	12/15/94
JOB #	5011-T2
FIG. #	3





GROUNDWATER MEASUREMENTS
MARCH 2, 1994

WELL	TOC	DTW	GWE
MW-1-P	35.77'	15.91	19.86
MW-2-P	31.54'	13.94	17.60
MW-3-P	28.11'	10.82	17.29
MW-4-P	30.69'	12.36	18.33

LEGEND

Ⓦ WELL
BUILDING LINE
TOC TOP OF CASING ELEVATION
DTW DEPTH TO GROUNDWATER
GWE GROUNDWATER ELEVATION

$$\frac{19.86 - 18.33}{X} = \frac{19.86 - 17.29}{181}$$

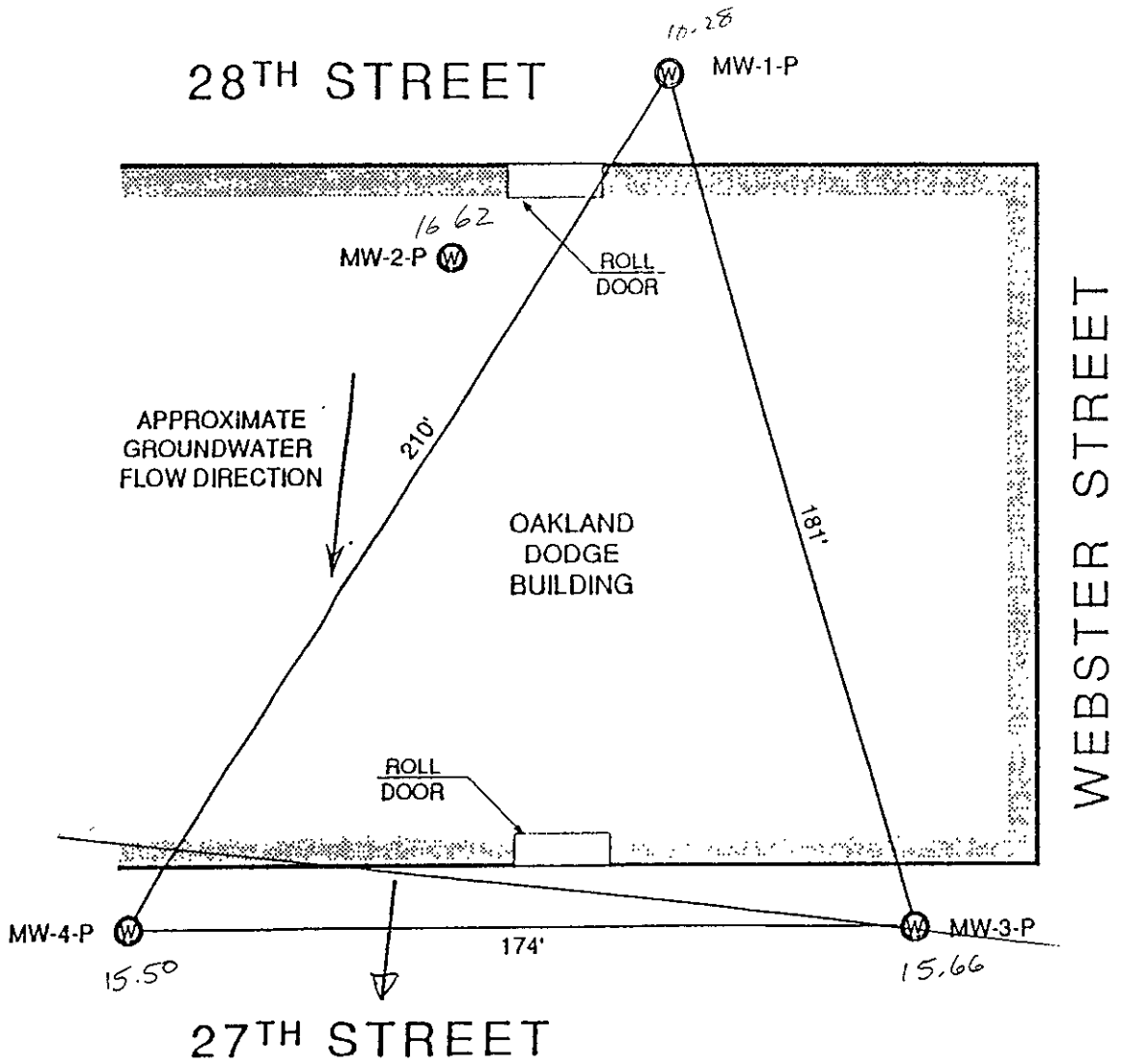
$$\frac{1.53}{X} = \frac{2.57}{181}$$

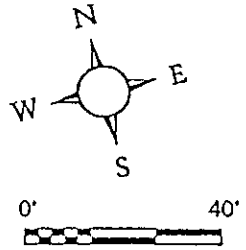
$X \approx 107.75'$

HYDRAULIC GRADIENT IS APPROXIMATELY 0.013

FIGURE 3

Park Environmental
Leaving A Clean Environment





GROUNDWATER MEASUREMENTS
NOVEMBER 9, 1993

WELL	TOC	DTW	GWE
MW-1-P	35.77'	17.49	18.28
MW-2-P	31.54'	14.92	16.62
MW-3-P	28.11'	12.45	15.66
MW-4-P	30.69'	15.19	15.50

LEGEND

(W) WELL
BUILDING LINE
TOC TOP OF CASING ELEVATION
DTW DEPTH TO GROUNDWATER
GWE GROUNDWATER ELEVATION

$$\frac{18.28 - 15.66}{X} = \frac{18.28 - 15.50}{210}$$

$$\frac{2.62}{X} = \frac{2.78}{210}$$

$X \approx 198'$

HYDRAULIC GRADIENT IS APPROXIMATELY 0.013

FIGURE 4

Park Environmental
Leaving A Clean Environment

Table I
Oakland Dodge
Groundwater Measurements

Well ID	Sample Date	Depth to Groundwater	Casing Elevation*	Groundwater Elevation*
MW-1-P	11-9-93	17.49	35.77	18.28
	3-2-94	15.91		19.86
	6-29-94	16.73		19.04
	11-30-94	16.30		19.47
MW-2-P	11-9-93	14.92	31.54	16.62
	3-2-94	13.94		17.60
	6-29-94	13.83		17.71
	11-30-94	14.56		16.98
MW-3-P	11-9-93	12.45	28.11	15.66
	3-2-94	10.82		17.29
	6-29-94	12.40		15.71
	11-30-94	10.94		17.17
MW-4-P	11-9-93	15.19	30.69	15.50
	3-2-94	12.36		18.33
	6-29-94	14.46		16.23
	11-30-94	12.70		17.99

NOTE: All values in feet

* - Values above mean sea level

TABLE II
SOIL TEST RESULTS SUMMARY
EPA METHODS 8015, 413.2 AND 8020

Sample ID	EPA METHOD						
	8015	8015	413.2	8020			
	TPH as Gasoline mg/kg	TPH as Diesel mg/kg	Total Oil and Grease mg/kg	B mg/kg	T mg/kg	E mg/kg	X mg/kg
MW-1-P @ 5'	-----	-----	-----	-----	-----	-----	-----
10'	3300*	-----	-----	5.3	24	6.8	54
15'	ND	-----	-----	ND	0.022	ND	ND
20'	ND	-----	-----	ND	0.021	ND	ND
25'	-----	-----	-----	NA	-----	-----	-----
MW-2-P @ 5'	0.83	22**	17	ND	0.084	ND	ND
10'	-----	-----	-----	-----	-----	-----	-----
15'	ND	ND	ND	ND	0.042	ND	0.007
20'	-----	-----	-----	-----	-----	-----	-----
MW-3-P @ 5'	-----	-----	-----	-----	-----	-----	-----
10'	-----	-----	-----	-----	-----	-----	-----
15'	-----	-----	-----	-----	-----	-----	-----
MW-4-P @ 5'	-----	-----	-----	-----	-----	-----	-----
10'	-----	-----	-----	-----	-----	-----	-----
15'	ND	ND	ND	ND	0.008	ND	ND
DETECTION LIMIT	0.5	10	5	0.005	0.005	0.005	0.005

ND = Not detected mg/kg = Milligrams per kilogram ----- = Not Analyzed

* Result was quantified with respect to a gasoline standard. Result appears to be an unknown hydrocarbon mixture (see laboratory report in Appendix G)

** Result was quantified with respect to a diesel standard.
Sample more closely resembles a waste oil mixture (see laboratory report in Appendix G).

Table III
Petroleum Hydrocarbon
Groundwater Sample Analyses Summary

Sample ID	Date Sampled	EPA Method						
		8015		413.1	8020			
		TPH as Gasoline µg/l	TPH as Diesel mg/l	Total Oil and Grease mg/l	Benzene µg/l	Toluene µg/l	Ethylbenzene µg/l	Total Xylenes µg/l
MW-1-P	11/9/93	ND	-	-	ND	ND	ND	1.5
	3/2/94	ND	ND	0.10	ND	ND	ND	ND
	6/29/94	ND	-	-	ND	ND	ND	ND
	11/30/94	ND	-	-	ND	ND	ND	ND
MW-2-P	11/9/93	ND	ND	ND	ND	ND	ND	1.3
	3/2/94	ND	ND	0.15	ND	ND	ND	ND
	6/29/94	ND	ND	1.9	ND	0.6	ND	0.59
	11/30/94	ND	ND	1.9	ND	ND	ND	ND
MW-3-P	11/9/93	ND	ND	-	ND	ND	ND	ND
	3/2/94	ND	ND	-	ND	ND	ND	ND
	6/29/94	ND	ND	-	ND	ND	ND	ND
	11/30/94	ND	ND	-	ND	ND	ND	ND
MW-4-P	11/9/93	ND	ND	ND	ND	ND	ND	ND
	3/2/94	ND	ND	ND*	ND	ND	ND	ND
	6/29/94	ND	ND	1.0	ND	ND	ND	ND
	11/30/94	ND	ND	ND	ND	ND	ND	ND
Detection Limits	11/9/93	100	10	5	1.0	1.0	1.0	1.0
	3/2/94	20	5	0.1	0.5	0.5	0.5	0.5
	6/29/94	50	20	1.0	0.5	0.5	0.5	0.5
	11/30/94	50	20	1.0	0.5	0.5	0.5	0.5

* Analyzed by EPA Method 8015 modified (extractable)
ug/l Micrograms per liter or parts per billion
mg/l Milligrams per liter or parts per million
- Not Analyzed

Table IV
Groundwater Metals Analyses Summary
Sampled November

Monitoring Well Date	EPA Method	Total Cadmium mg/l	Total Chromium mg/l	Total Lead mg/l	Total Nickel mg/l	Total Zinc mg/l
MW-1-P						
11/9/93	6010	ND	ND	ND	ND	ND
3/2/94	200.7	ND	ND	ND	ND	0.118
6/29/94	200.7	ND	ND	0.001*	ND	0.110
11/30/94	200.7	ND	ND	ND	ND	0.03
MW-2-P						
11/9/93	6010	ND	ND	ND	ND	ND
3/2/94	200.7	ND	ND	ND	0.023	0.023
6/29/94	200.7	ND	ND	ND	ND	ND
11/30/94	200.7	ND	ND	ND	ND	ND
MW-3-P						
11/9/93	6010	-----	-----	-----	-----	-----
3/2/94	200.7	-----	-----	-----	-----	-----
6/29/94	200.7	-----	-----	-----	-----	-----
11/30/94	200.7	-----	-----	-----	-----	-----
MW-4-P						
11/9/93	6010	-----	-----	-----	-----	-----
3/2/94	200.7	-----	-----	-----	-----	-----
6/29/94	200.7	-----	-----	-----	-----	-----
11/30/94	200.7	-----	-----	-----	-----	-----
Detection Limits						
11/9/93	6010	0.04	0.02	0.02	0.03	0.04
3/2/94	200.7	0.01	0.01	0.05	0.02	0.005
6/29/94	200.7	0.02	0.04	0.001*	0.05	0.025
11/30/94	200.7	0.02	0.04	0.001*	0.04	0.02

mg/l - milligrams per liter or parts per million
ND - Not Detected at listed detection limit
----- - Not Analyzed
* - Analyzed by EPA method 239.2 GFAA

TABLE III
SOIL TEST RESULTS SUMMARY
TOTAL METALS

Sample ID	EPA METHOD				
	6010	6010	6010	7520	6010
	Cadmium mg/kg	Chromium mg/kg	Lead mg/kg	Nickel mg/kg	Zinc mg/kg
MW-1-P @ 5'	-----	-----	-----	-----	-----
10'	ND	36	ND	53	34
15'	ND	52	ND	100	67
20'	ND	79	ND	94	74
25'	------	-----	-----	-----	-----
MW-2-P @ 5'	ND	48	ND	77	19
10'	-----	-----	-----	-----	-----
15'	ND	55	18	87	58
20'	-----	-----	-----	-----	-----
MW-3-P @ 5'	-----	-----	-----	-----	-----
10'	-----	-----	-----	-----	-----
15'	-----	-----	-----	-----	-----
MW-4-P @ 5'	-----	-----	-----	-----	-----
10'	-----	-----	-----	-----	-----
15'	-----	-----	-----	-----	-----
Detection Limits	2.0	0.75	10	2.5	2.0

----- not analyzed
mg/kg milligrams per kilogram

11/9/93

TABLE VI
MW-2-P GROUNDWATER RESULTS
SEMI-VOLATILE ORGANIC COMPOUNDS
EPA METHOD 8270

EPA 8270 Compounds Detected	CAS	Sample Result ug/l	Detection Limit
Bis (2-ethylhexyl) phthalate	[illegible]	14	1
4-chloro-3-methylphenol	59-50-7	130	1
2-chlorophenol	95-57-8	87	1
Di-n-butyl phthalate		3	1
Pentachlorophenol	87-86-5	35	5
Phenol	108-95-2	21	1

ug/l- micrograms per liter or parts per billion

Project: Oakland Dodge Oakland, California	Log of Well No. **MW-1-P**
Date Started: 10/26/93	Total Depth: 38.0-ft; Casing Elev: ; GW ATD: 27.0ft/
Date Completed: 10/26/93	Perforation: .020 inch — from 18′ to 38′
Logged By: Peter Frank; Checked By: Dick Zipp	Pack: #3 Sand — from 16′ to 38′
Drilling Co: Gregg Drilling; Driller: Chris	Seal: Concrete — from Surface to 15′
Drilling Method: Hollow Stem	Bentonite — from 15′ to 16′
Drilling Equipment: M-11	Casing: Sch. 40 PVC 4"; Drill Bit Diameter: 10"
	Sampler: Split Spoon

Depth (feet)	Surface Elevation: Lithologic Description	Lithology	Monitoring Well Construction	Sample	Blow Counts	Remarks
	ASPHALT 2 INCHES 8 INCH BASE MATERIAL	SM				OVA
5	SILTY FINE SAND, OLIVE GRAY, MOIST, MEDIUM DENSE				21	0
10	SILTY CLAY, LIGHT GRAY AND LIGHT BROWN TO TAN, MOIST, VERY STIFF	CL			29	300 ppm
15	CLAYEY SILT, LIGHT BROWN WITH SOME LIGHT GRAY, MOIST, VERY STIFF	ML			29	10 ppm
20	SILTY CLAY AND CLAYEY SILT, STRONG BROWN, MOIST, HARD	CL ML			34	10 ppm
25	FINE SAND, YELLOWISH BROWN, MOIST TO WET, DENSE	SW			40	1 ppm
30	SILTY FINE SAND, YELLOWISH, BROWN, SATURATED	SM				No Sample Collect
35						

Continued Next Page

Park Environmental
5100 East Hunter Avenue
Anaheim, California 92807
Tel: (714) 777-1001
Fax: (714) 777-1262

Project: 5011-J2

Project: Oakland Dodge
Oakland, California

Log of Well No. **MW-1-P**

Depth (feet)	Lithologic Description	Lithology	Monitoring Well Construction	Sample	Blow Counts	Remarks
	FROM CUTTINGS: SAME AS ABOVE					No Sample Collected
						No Sample Collected
40	BORING COMPLETED AT 38 FEET BELOW GROUND SURFACE FIRST GROUNDWATER ENCOUNTERED AT APPROXIMATELY 27 FEET - WAS LATER MEASURED AT 19 FEET BELOW GROUND SURFACE					
45						
50						
55						
60						
65						
70						

Park Environmental
5100 East Hunter Avenue
Anaheim, California 92807
Tel: (714) 777-1001
Fax: (714) 777-1262

Project: 5011-J2

Project: Oakland Dodge
Oakland, California

Log of Well No. **MW-2-P**

Date Started: 10/29/93

Total Depth: 25.0-ft | Casing Elev: | GW ATD: 19.0ft/

Date Completed: 10/29/93

Perforation: .020 inch — from 5' to 25'

Logged By: Peter Frank — Checked By: Dick Zipp

Pack: #3 Sand — from 3.5' to 25'

Drilling Co: Gregg Drilling — Driller: Chris

Seal: Concrete — from Surface to 2'

Bentonite — from 2' to 3.5'

Drilling Method: Hollow Stem

Casing: Sch. 40 PVC 4" — Drill Bit Diameter: 10"

Drilling Equipment: Simco

Sampler: Split Spoon

Depth (feet)	Lithologic Description (Surface Elevation:)	Lithology	Monitoring Well Construction	Sample	Blow Counts	Remarks
	4-6 INCHES CONCRETE BASE MATERIAL APPROXIMATELY 6 INCHES	SM				OVA
5	SILTY, FINE TO MEDIUM SAND, WITH CLAY AND GRAVELS, REDDISH BROWN, MOIST					0 ppm
10	SILTY CLAY, LIGHT OLIVE BROWN AND LIGHT GRAY, MOIST	CL				0 ppm
15	SAME AS ABOVE					
20	SILTY FINE SAND, WITH TRACE CLAY, REDDISH BROWN AND GRAY, MOIST TO SATURATED	SM				0 ppm
25	CLAYEY SILT, MOIST TO WET, REDDISH BROWN WITH SOME GRAY	ML				No Sample Collected
30	BORING COMPLETED AT 30 FEET BELOW GROUND SURFACE GROUNDWATER ENCOUNTERED AT APPROXIMATELY 19 FEET					
35						

Park Environmental
5100 East Hunter Avenue
Anaheim, California 92807
Tel: (714) 777-1001
Fax: (714) 777-1262

Project: 5011-J2

Project: Oakland Dodge
Oakland, California

Log of Well No. MW-3-P

Date Started: 10/27/93

Date Completed: 10/27/93

Logged By: Peter Frank Checked By: Dick Zipp

Drilling Co: Gregg Drilling Driller: Chris

Drilling Method: Hollow Stem

Drilling Equipment: M-11

Total Depth: 30.0-ft Casing Elev: GW ATD: 19.5ft/

Perforation: .020 inch from 5' to 30'

Pack: #3 Sand from 3.5' to 30'

Seal: Concrete from Surface to 2'

Bentonite from 2' to 3.5'

Casing: Sch. 40 PVC 4" Drill Bit Diameter: 10"

Sampler: Split Spoon

Surface Elevation:

Depth (feet)	Lithologic Description	Lithology	Monitoring Well Construction	Sample	Blow Counts	Remarks
	8 INCHES CONCRETE	ML				OVA
5	CLAYEY SILT, DARK YELLOWISH BROWN, MOIST, VERY STIFF				18	0 ppm
10	FINE TO COARSE SAND WITH SOME GRAVELS AND SILTY CLAY VARIABLE COLOR WITH A DOMINANT YELLOWISH TO REDDISH BROWN, MOIST, MEDIUM DENSE	SM SP			27	0-1 ppm
15	SILTY FINE SAND WITH TRACE CLAY, LIGHT GRAY AND REDDISH BROWN, MOIST TO WET, DENSE	SM SC			31	0 ppm
20	SILTY FINE SAND WITH SOME CLAY, REDDISH BROWN TO LIGHT BROWN, SATURATED					No Sample Collect
25	FROM CUTTINGS: SAME AS ABOVE					No Sample Collect
30	BORING COMPLETED AT 30' FEET BELOW GROUND SURFACE GROUNDWATER ENCOUNTERED AT APPROXIMATELY 19.5 FEET					
35						

Park Environmental
5100 East Hunter Avenue
Anaheim, California 92807
Tel: (714) 777-1001
Fax: (714) 777-1262

Project: 5011-J2

Project: Oakland Dodge
Oakland, California

Log of Well No. **MW-4-P**

Date Started: 10/26/93

Total Depth: 30.0-ft | Casing Elev: | GW ATD: 20.0ft/

Date Completed: 10/26/93

Perforation: .020 inch — from 10' to 30'

Logged By: Peter Frank | Checked By: Dick Zipp

Pack: #3 Sand — from 7.5' to 30'

Drilling Co: Gregg Drilling | Driller: Chris

Seal: Concrete — from Surface to 5'

Bentonite — from 5' to 7.5'

Drilling Method: Hollow Stem

Casing: Sch. 40 PVC 4" | Drill Bit Diameter: 10"

Drilling Equipment: M-11

Sampler: Split Spoon

Depth (feet)	Surface Elevation: Lithologic Description	Lithology	Monitoring Well Construction	Sample	Blow Counts	Remarks
	8 INCHES CONCRETE 1 INCH BASE MATERIAL	SP				OVA
5	FINE TO MEDIUM SAND WITH SOME COARSE SAND, REDDISH BROWN, MOIST					0 ppm
10	SILTY CLAY, GRAYISH BROWN TO STRONG BROWN, MOIST, STIFF	CL			16	1 ppm
15	SILTY FINE SAND, GRADING TO FINE SAND WITH SOME GRAVELS, GRAY TO LIGHT GRAY AND REDDISH BROWN, MOIST TO WET, DENSE	SM			30	0 ppm
20	SILTY FINE SAND WITH TRACE CLAY, REDDISH BROWN, SATURATED					No Sample Collected
25	FROM CUTTINGS: SAME AS ABOVE					
30	BORING COMPLETED AT 30 FEET BELOW GROUND SURFACE FIRST GROUNDWATER ENCOUNTERED AT 20 FEET					
35	Continued Next Page					

Park Environmental
5100 East Hunter Avenue
Anaheim, California 92807
Tel: (714) 777-1001
Fax: (714) 777-1262

Project: 5011-J2

Project: Oakland Dodge
Oakland, California

Log of Well No. MW-4-P

Depth (feet)	Lithologic Description	Lithology	Monitoring Well Construction	Sample	Blow Counts	Remarks
	WAS LATER MEASURED AT APPROXIMATELY 15.5 FEET BELOW GROUND SURFACE					
40						
45						
50						
55						
60						
65						
70						

Park Environmental
5100 East Hunter Avenue
Anaheim, California 92807
Tel: (714) 777-1001
Fax: (714) 777-1262

Project: 5011-J2