



**SECOND QUARTER 2004
GROUNDWATER MONITORING
REPORT**

**GOLDEN GATE PETROLEUM
HAYWARD BULK PETROLEUM
DISTRIBUTION FACILITY
HAYWARD, CALIFORNIA**

**Bonkowski & Associates, Inc.
6400 Hollis Street, Suite 4
Emeryville, California 94608**

July 14, 2004

July 14, 2004
L98184

Mr. Dennis O'Keefe
Golden Gate Petroleum
501 Shell Avenue
Martinez, CA 94553



BONKOWSKI & ASSOCIATES, INC.
Geotechnical Services and
Hazardous Materials Management

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6400 Hollis Street, Suite 4
Emeryville, California 94608
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**Subject: Second Quarter 2004 Groundwater Monitoring
Report, Hayward Bulk Distribution Facility,
Hayward, California**


Dear Mr. O'Keefe:

Enclosed is the report summarizing Bonkowski & Associates, Inc. review of the second quarter 2004 groundwater monitoring data at the Hayward Bulk Petroleum Distribution Facility in Hayward, California. This report presents the results of the investigative work and the chemical testing, the laboratory reports and Chain-of-Custody records, the groundwater well sampling records, a site location map, and a site plan with groundwater flow direction.

We appreciate the opportunity to be of service on this project. Please call Mr. James Springer or Ms. Catalina Espino Guerrero at (510) 450-0770 if you have any questions or need any additional information.

Sincerely,
BONKOWSKI & ASSOCIATES, INC.


Catalina Espino Guerrero
Staff Engineer


James Springer, CEG 1827
Project Geologist

Enclosure
CEG:js

cc: Mr. Scott Seery, ACHCS
Ms. Eileen Chen, Alameda County Water District



GROUNDWATER MONITORING REPORT SECOND QUARTER 2004

Hayward Bulk Petroleum Distribution Facility Hayward, California

SITE DESCRIPTION

Golden Gate Petroleum's Hayward Bulk Petroleum Distribution Facility (Site) is located at 1565 Industrial Parkway West in Hayward, California (Figure 1). The facility is located along the north side of Industrial Parkway West in an area zoned for industrial and commercial use. The Site has been used for the retail sale of gasoline and petroleum fuel products since approximately 1960. The Site presently has three 20,000-gallon fiberglass underground fuel storage tanks (USTs); nine dispenser islands that dispense diesel, unleaded regular, plus unleaded and premium unleaded regular gasoline and seven monitor wells (Figure 2).

A history of the Site is provided in the Preliminary Site Assessment Report (B&A, 2002). The locations of the former USTs and over excavations are shown on Figure 3. Groundwater occurs beneath the Site in silt, silty clays, and silty sand lithologies from depths of 10 to 18 feet below ground surface (Bonkowski & Associates, Inc. [B&A], 1999). Since October 2002, groundwater monitoring and sampling has been conducted at the Site. Historical groundwater monitoring data and chemical test results are summarized in Tables 1 and 2, respectively.

GROUNDWATER MONITORING FIELD ACTIVITIES

Dates of field activities:	June 13, 2004 (monitoring and sampling)
Wells inspected:	MW-1 through MW-4, MW-6 and MW-7
Wells sampled:	MW-1 through MW-4, MW-6 and MW-7
Water analyses:	TPHD and TPHMO (DHS LUFT), TPHG, BTEX, MTBE, DIPE, ETBE, TAME, EDB and 1,2-DCA (EPA 8260B)
Laboratory:	Excelchem Environmental Laboratory, Roseville, CA



Groundwater elevations: Ranged from -0.75 ft (MW-4) to -0.22 ft (Figure 4) (MW-1) above mean sea level (msl)

Flow direction/gradient: 0.001 ft/ft toward the north and northwest

Separate phase hydrocarbons (SPH): None observed

GROUNDWATER MONITORING RESULTS

TPHG concentrations: 0.10 mg/l (MW-2) and 0.099 mg/l (MW-6); ND* all other sampled wells.

TPHD concentrations: 5.0 mg/l (MW-6), 0.93 mg/l (MW-2), 0.69 (Figure 5) mg/l (MW-7), 0.20 mg/l (MW-3), 0.15 mg/l (MW-4) and 0.14** mg/l (MW-1).

TPHMO concentrations: ND all sampled wells.

Benzene concentrations: 12 µg/l (MW-6), 1.9 µg/l (MW-2); ND all other sampled wells.

Toluene concentrations: ND all sampled wells.

Ethylbenzene concentrations: 1.0 µg/l (MW-6), 0.7 µg/l (MW-2); ND all other sampled wells.

Total xylenes concentrations: ND all sampled wells.

MTBE concentrations: 2,300 µg/l (MW-7), 510 µg/l (MW-3), 43 (Figure 6) µg/l (MW-2); ND all other sampled wells.

TAME, TBA, ETBE, DIPE, EDB and 1,2-DCA concentrations: ND all sampled wells.

* Not detected above laboratory reporting limit

** Hydrocarbon pattern does not resemble typical diesel fuel pattern.

DISCUSSION

This quarter the groundwater gradient decreased to 0.001 feet/foot from 0.01 feet/foot in the previous quarter. The direction changed from southwest to the north-northwest. Groundwater elevations are summarized in Table 1 and presented in Figure 4. Monitor



well MW-5 was inaccessible this quarter and could not be sampled. Monitor well sampling logs are provided in Appendix A.

The laboratory reported that groundwater samples collected from wells MW-2 and MW-6 contained TPHG concentrations above the State taste and odor threshold. The laboratory reported that all the groundwater samples collected this quarter contained TPHD concentrations that exceed the Federal taste and odor threshold (Figure 5). The laboratory reported that the groundwater sample collected from well MW-1 did not resemble the typical diesel fuel pattern.

The laboratory reported that the groundwater samples collected from wells MW-2 and MW-6 contained benzene at concentrations that exceed the State Primary MCL. Groundwater samples collected from wells MW-2 and MW-6 contained ethylbenzene at concentrations below the Federal taste and odor threshold. The laboratory reported that groundwater samples collected from wells MW-2, MW-3 and MW-7 contained MTBE at concentrations that exceed the State Secondary MCL (Figure 6).

All the groundwater samples collected were void of the other analytes tested to the laboratory reporting limits. The laboratory analytical report and chain of custody, and groundwater monitoring and sampling protocols are presented in Appendices B and C, respectively.

ATTACHMENTS

- Table 1 - Monitor Well Construction and Groundwater Elevation Summary
- Table 2 - Groundwater Chemical Test Results (EPA 8260B and DHS LUFT)
- Figure 1 - Site Location Map
- Figure 2 - Site Plan Map
- Figure 3 - Location of Former USTs
- Figure 4 - Potentiometric Surface Elevation Map, June 13, 2004
- Figure 5 - TPHD Isoconcentration Contours, June 13, 2004
- Figure 6 - MTBE Isoconcentration Contours, June 13, 2004
- Appendix A - Monitor Well Sampling Logs
- Appendix B - Laboratory Analytical Report and Chain-of-Custody Forms
- Appendix C - Groundwater Monitoring and Sampling Protocols



CERTIFICATION

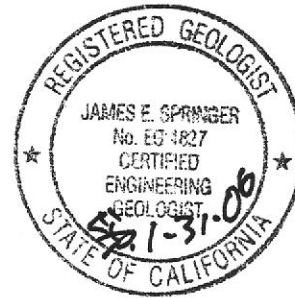
This report has been prepared by the staff of Bonkowski & Associates, Inc. and has been reviewed and approved by the professionals whose signatures appear below.

The findings, recommendations, specifications, or professional opinions are presented, within the limits prescribed by the Client, after being prepared in accordance with generally accepted engineering practice in Northern California at the time this report was prepared. No other warranty is either expressed or implied.

BONKOWSKI & ASSOCIATES, INC.

Catalina Espino Guerrero
Staff Engineer

James Springer, CEG 1827
Project Geologist



**Table 1. Monitor Well Construction and Groundwater Elevation Summary
Golden Gate Petroleum, Hayward, California.**

Well No.	Well Casing Diameter (inches)	Total Depth (feet)	Geologic Units Monitored	Depth of Screened Interval (feet)	Top of Casing Elevation (feet amsl)	Depth to Water (feet)	Potentiometric Surface Elevation (feet amsl)	Date
MW-1	2	31.5	silty clay, organic-rich clay sandy clay, clay	10-30	10.43	10.65	-0.22	6/13/2004
						10.62	-0.19	3/9/2004
						11.76	-1.33	10/21/2003
						10.52	-0.09	3/13/2003
						11.31	-0.88	12/4/2002
						11.38	-0.95	10/9/2002
MW-2	2	26.5	sandy gravel clay, sand	10-25	10.98	11.44	-0.46	6/13/2004
						10.52	0.46	3/9/2004
						11.97	-0.99	10/21/2003
						11.27	-0.29	3/13/2003
						12.05	-1.07	12/4/2002
						12.13	-1.15	10/9/2002
MW-3	2	26.5	base gravel, clay, gravelly sand, silty sand, sandy gravel, clay	10-25	11.17	11.61	-0.44	6/13/2004
						10.75	0.42	3/9/2004
						12.16	-0.99	10/21/2003
						11.46	-0.29	3/13/2003
						12.19	-1.02	12/4/2002
						12.31	-1.14	10/9/2002
MW-4	2	25	pea gravel, sand	10-25	11.36	12.11	-0.75	6/13/2004
						11.03	0.33	3/10/2004
						12.53	-1.17	10/21/2003

amsl - above mean sea level (National Geodetic Vertical Datum 1929)

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Golden Gate Petroleum, Hayward, California.**

Well No.	Well Casing Diameter (inches)	Total Depth (feet)	Geologic Units Monitored	Depth of Screened Interval (feet)	Top of Casing Elevation (feet amsl)	Depth to Water (feet)	Potentiometric Surface Elevation (feet amsl)	Date
MW-4 (Cont.)	2	25	pea gravel, sand	10-25	11.36	11.69	-0.33	3/13/2003
						12.38	-1.02	12/4/2002
						12.64	-1.28	10/9/2002
MW-5	2	31.5	silty gravel, gravelly clay, silty clay, clay, sand	10-30	11.41	NA	--	6/13/2004
						10.75	0.66	3/10/2004
						12.23	-0.82	10/21/2003
						11.27	0.14	3/13/2003
						12.23	-0.82	12/4/2002
12.38	-0.97	10/9/2002						
MW-6	2	31.5	fill gravel, clay, clayey gravel	10-30	10.86	11.46	-0.60	6/13/2004
						11.75	-0.89	3/10/2004
						13.31	-2.45	10/21/2003
						10.91	-0.05	3/13/2003
						11.78	-0.92	12/4/2002
11.92	-1.06	10/9/2002						
MW-7	2	26.5	gravel, silt, clay, sand	10-25	10.78	11.22	-0.44	6/13/2004
						10.32	0.46	3/10/2004
						11.81	-1.03	10/21/2003
						11.17	-0.39	3/13/2003

amsl - above mean sea level (National Geodetic Vertical Datum 1929)

NA - well not accessible

**Table 1. Monitor Well Construction and Groundwater Elevation Summary
Golden Gate Petroleum, Hayward, California.**

Well No.	Well Casing Diameter (inches)	Total Depth (feet)	Geologic Units Monitored	Depth of Screened Interval (feet)	Top of Casing Elevation (feet amsl)	Depth to Water (feet)	Potentiometric Surface Elevation (feet amsl)	Date
MW-7 (Cont.)	2	26.5	gravel, silt, clay, sand	10-25	10.78	11.98	-1.20	12/4/2002
						12.02	-1.24	10/9/2002

amsl - above mean sea level (National Geodetic Vertical Datum 1929)

Table 2. Groundwater Chemical Test Results (EPA 8015M and EPA 8260B), Golden Gate Petroleum, Hayward, California.

Sample Number	TPHG (mg/l)	TPHD (mg/l)	TPHMO (mg/l)	Benzene (µg/l)	Toluene (µg/l)	Ethyl-benzene (µg/l)	Total Xylenes (µg/l)	MTBE (µg/l)	TAME (µg/l)	ETBE (µg/l)	DIPE (µg/l)	TBA (µg/l)	Methanol (µg/l)	Ethanol (µg/l)	1,2-DCA (µg/l)	EDB (µg/l)	Date Sampled
MW-1	<0.050	0.14 ^b	<0.50	<0.5	<0.5	<0.5	<1.0	<0.5	<0.5	<0.5	<0.5	<5.0	<5.0	<20	<0.5	<0.5	6/13/2004
	<0.050	<0.050	<0.50	<0.5	0.7	0.5	1.2	<0.5	<0.5	<0.5	<0.5	<5.0	<5000	<20	<0.5	<0.5	3/9/2004
	<0.050	<0.050	<0.50	<0.5	<0.5	<0.5	<1.0	0.7	<0.5	<0.5	<0.5	<5.0	<5.0	<20	<0.5	<0.5	10/21/2003
	<0.050	<0.050	<0.50	<0.5	<0.5	<0.5	<1.0	0.54	<0.5	<0.5	<0.5	<5.0	<5.0	<20	<0.5	<0.5	3/13/2003
	<0.050	<0.050	<0.10	<0.5	<0.5	<0.5	<1.0	0.54	<0.5	<0.5	<0.5	<5.0	--	--	<0.5	<0.5	12/4/2002
	<0.050	<0.050	<0.10	<0.5	<0.5	<0.5	<1.0	<0.5	<0.5	<0.5	<0.5	<0.5	<5.0	--	--	<0.5	<0.5
MW-2	0.10	0.93	<0.50	1.9	<0.5	0.7	<1.0	43	<0.5	<0.5	<0.5	<5.0	<5.0	<20	<0.5	<0.5	6/13/2004
	0.075	0.39	<0.50	3.0	0.5	0.7	1.4	15	<0.5	<0.5	<0.5	<5.0	<5000	<20	<0.5	<0.5	3/9/2004
	0.067	0.30	<0.50	1.9	<0.5	0.5	<1.0	15	<0.5	<0.5	<0.5	<5.0	<5.0	<20	<0.5	<0.5	10/21/2003
	0.099	0.28	<0.50	2.1	<0.5	<0.5	<0.5	9.6	<0.5	<0.5	<0.5	<5.0	<5.0	<20	<0.5	<0.5	3/13/2003
	<0.050	0.29	<0.10	1.2	<0.5	<0.5	<1.0	7.8	<0.5	<0.5	<0.5	<5.0	--	--	<0.50	<0.50	12/4/2002
	<0.050	0.48	0.12 ^c	1.9	ND	ND	0.54	8.8	<0.5	<0.5	<0.5	<5.0	--	--	ND	ND	10/9/2002
MW-3	<0.050	0.20	<0.50	<0.5	<0.5	<0.5	<1.0	510	<5.0	<5.0	<5.0	<50	<5.0	<200	<5.0	<5.0	6/13/2004
	<0.050	<0.050	<0.50	<0.5	<0.5	<0.5	<1.0	220	<5.0	<5.0	<5.0	<50	<5000	<200	<5.0	<5.0	3/9/2004
	<0.050	0.098	<0.50	<0.5	<0.5	<0.5	<1.0	940	<50	<50	<50	<500	<10	<2000	<50	<50	10/21/2003
	<0.050	0.097	<0.50	<0.5	<0.5	<0.5	<1.0	74	<5.0	<5.0	<5.0	<50	<5.0	<200	<5.0	<5.0	3/13/2003
	0.50	<0.050	0.56 ^c	<0.5	<0.5	<0.5	<1.0	520	1.7	<0.50	<0.50	<5.0	--	--	<0.50	<0.50	12/4/2002
	0.62 ^a	0.17 ^b	<0.50	<0.5	<0.5	<0.5	<1.0	890	2.9	<0.50	<0.50	7.6	--	--	ND	ND	10/9/2002
MW-4	<0.050	0.15	<0.50	<0.5	<0.5	<0.5	<1.0	<0.5	<0.5	<0.5	<0.5	<5.0	<5.0	<20	<0.5	<0.5	6/13/2004
	<0.050	<0.050	<0.50	<0.5	<0.5	<0.5	<1.0	<0.5	<0.5	<0.5	<0.5	<5.0	<5000	<20	<0.5	<0.5	3/10/2004
	<0.050	0.170	<0.50	<0.5	<0.5	<0.5	<1.0	2.6	ND	ND	ND	<5.0	<5.0	<20	ND	ND	10/21/2003
	<0.050	0.090	<0.50	<0.5	<0.5	<0.5	<1.0	ND	ND	ND	ND	<5.0	<5.0	<20	<0.5	<0.5	3/13/2003
Regulatory Standard	0.005 ¹	0.1 ²		1.0 ³	42 ²	29 ²	17 ²	5 ⁴									12 ⁵

- 1 -- Taste and odor threshold (SWRCB)
- 2 -- Taste and odor threshold (U.S. EPA)
- 3 -- California Primary MCL
- 4 -- California Secondary MCL

^a Hydrocarbon pattern does not resemble gasoline.

^b Hydrocarbon pattern does not resemble diesel.

^c Hydrocarbon pattern does not resemble motor oil.

^d Coeluting compounds interfered with surrogate recovery

<0.50 -- Not detected above lab reporting limit of 0.50

ND -- Not detected above lab reporting limit

-- Not analyzed

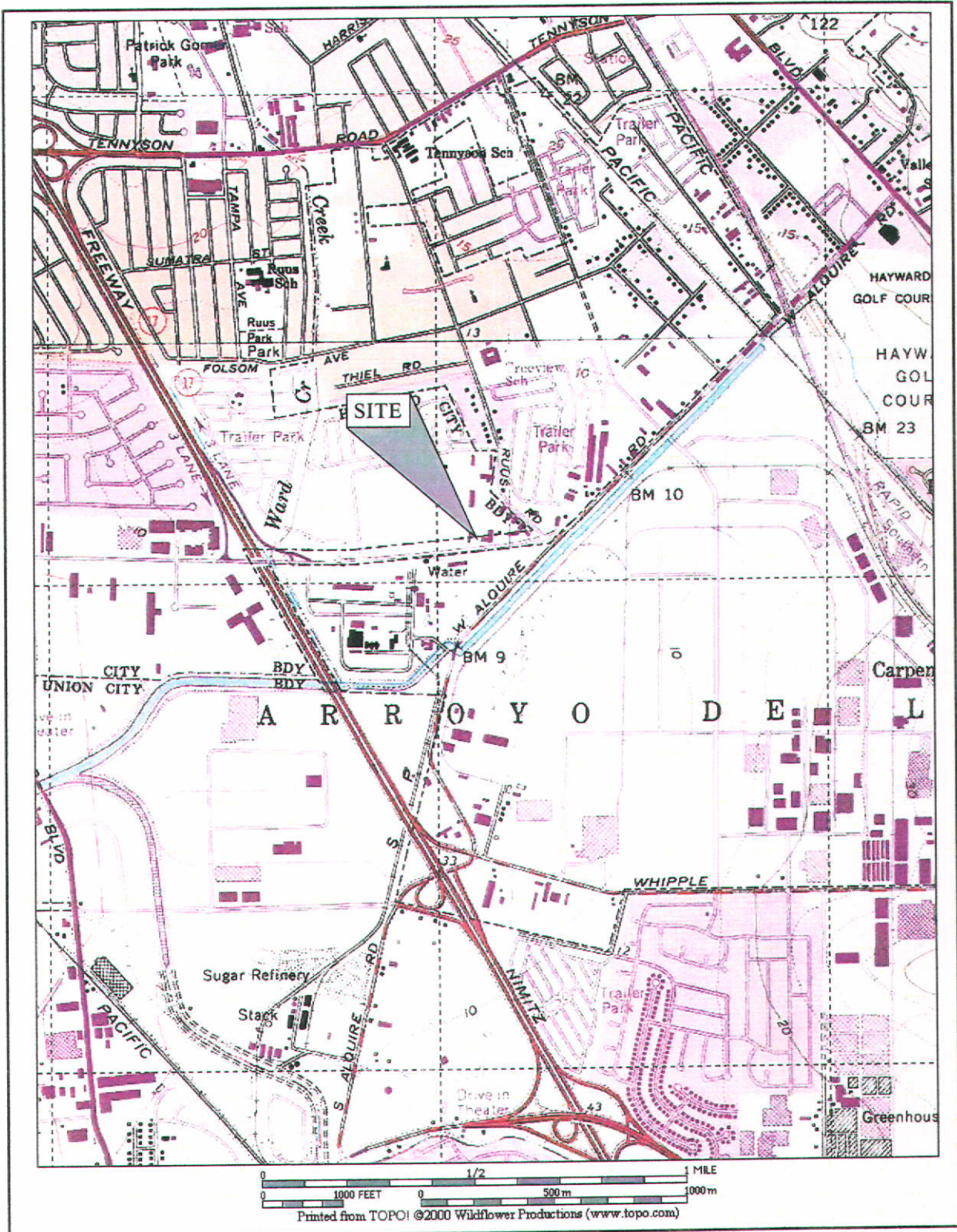
Table 2. Groundwater Chemical Test Results (EPA 8015M and EPA 8260B), Golden Gate Petroleum, Hayward, California.

Sample Number	TPHG (mg/l)	TPHD (mg/l)	TPHMO (mg/l)	Benzene (µg/l)	Toluene (µg/l)	Ethyl-benzene (µg/l)	Total Xylenes (µg/l)	MTBE (µg/l)	TAME (µg/l)	ETBE (µg/l)	DIPE (µg/l)	TBA (µg/l)	Methanol (µg/l)	Ethanol (µg/l)	1,2-DCA (µg/l)	EDB (µg/l)	Date Sampled	
MW-4	<0.050	<0.25	5.0 ^{c,d}	<0.5	<0.5	<0.5	<1.0	<0.50	<0.50	<0.50	<0.50	<5.0	--	--	<0.50	<0.50	12/4/2002	
(Cont.)	ND	0.18 ^b	ND	ND	ND	ND	ND	1.0 ^d	ND	ND	ND	ND	--	--	ND	ND	10/9/2002	
MW-5	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	6/13/2004	
	<0.050	<0.050	<0.50	<0.5	<0.5	<0.5	<1.0	2.9	<0.5	<0.5	<0.5	<5.0	<5000	<20	<0.5	<0.5	3/10/2004	
	<0.050	<0.050	<0.50	<0.5	<0.5	<0.5	<1.0	3.7	<0.5	<0.5	<0.5	<5.0	<5.0	<20	<0.5	<0.5	10/21/2003	
	<0.050	<0.050	<0.50	<0.5	<0.5	<0.5	<1.0	1.3	<0.5	<0.5	<0.5	<5.0	<5.0	<20	<0.5	<0.5	3/13/2003	
	<0.050	<0.050	0.22 ^d	<0.5	<0.5	<0.5	<1.0	2.0	<0.5	<0.5	<0.5	<5.0	--	--	<0.50	<0.50	12/4/2002	
	ND	ND	ND	ND	ND	ND	ND	0.59	<0.5	<0.5	<0.5	<5.0	--	--	ND	ND	10/9/2002	
MW-6	0.099	5.0	<0.50	12	<0.5	1.0	<1.0	<0.5	<0.5	<0.5	<0.5	<5.0	<5.0	<20	<0.5	<0.5	6/13/2004	
	<0.050	<0.050	<0.50	3.1	<0.5	0.5	<1.0	<0.5	<0.5	<0.5	<0.5	<5.0	<5000	<20	<0.5	<0.5	3/10/2004	
	<0.050	<0.050	<0.50	<0.5	<0.5	<0.5	<1.0	0.6	<0.5	<0.5	<0.5	<5.0	<5.0	<20	<0.5	<0.5	10/21/2003	
	0.066	0.098	<0.50	2.4	<0.5	<0.5	<1.0	<0.5	<0.5	<0.5	<0.5	<5.0	<5.0	<20	<0.5	<0.5	3/13/2003	
	<0.050	0.053 ^b	<0.10	<0.5	<0.5	<0.5	<1.0	<0.50	<0.5	<0.5	<0.5	<5.0	--	--	<0.50	<0.50	12/4/2002	
	<0.50	0.73	0.16 ^c	110	11	<0.5	<1.0	<5.0	<5.0	<5.0	<5.0	<5.0	--	--	ND	ND	10/9/2002	
MW-7	<0.050	0.69	<0.50	<0.5	<0.5	<0.5	<1.0	2,300	<50	<50	<50	<500	<5.0	<2000	<50	<50	6/13/2004	
	0.070 ^a	<0.050	<0.50	<0.5	<0.5	<0.5	<1.0	1,800	18	<5.0	<5.0	180	<5000	<200	90	<5.0	<5.0	3/10/2004
	<0.050	<0.050	<0.50	<0.5	<0.5	<0.5	<1.0	200	<5.0	<5.0	<5.0	<50	<5.0	<200	<5.0	<5.0	10/21/2003	
	<0.050	0.064	<0.50	<0.5	<0.5	<0.5	<1.0	81	<0.5	<0.5	<0.5	<5.0	<5.0	<20	<0.5	<0.5	3/13/2003	
	<0.050	0.14 ^b	<0.10	<0.5	<0.5	<0.5	<1.0	170	1.7	<0.50	<0.50	<5.0	--	--	<0.5	<0.5	12/4/2002	
	0.34 ^a	0.49	0.13 ^c	ND	ND	ND	ND	480	5.1	<0.5	<0.5	<5.0	--	--	<0.5	<0.5	10/9/2002	
Regulatory Standard	0.005 ¹	0.1 ²		1.0 ³	42 ²	29 ²	17 ²	5 ⁴							12 ⁵			

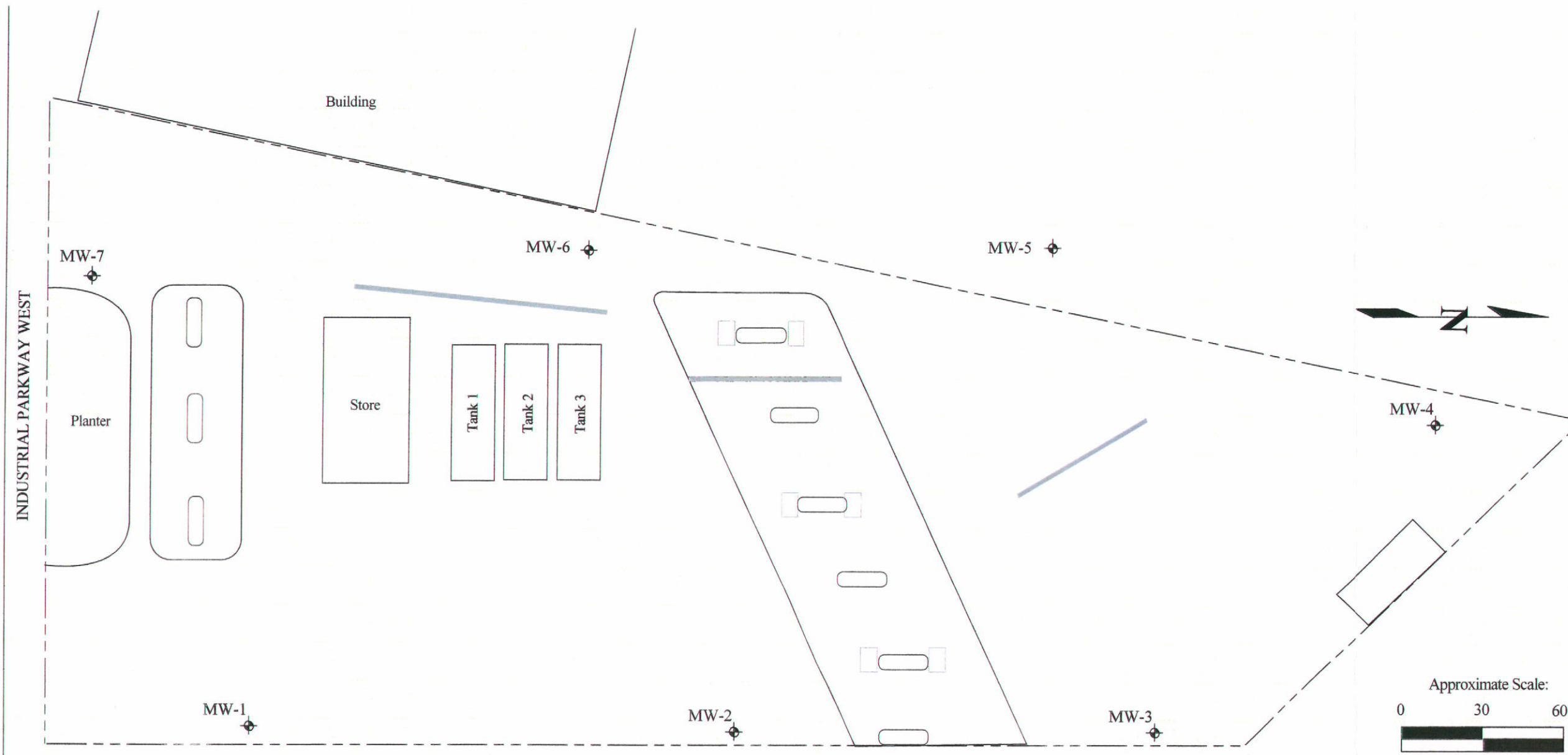
- 1 -- Taste and odor threshold (SWRCB)
- 2 -- Taste and odor threshold (U.S. EPA)
- 3 -- California Primary MCL
- 4 -- California Secondary MCL
- 5 -- California Action Level

- ^a Hydrocarbon pattern does not resemble gasoline.
- ^b Hydrocarbon pattern does not resemble diesel.
- ^c Hydrocarbon pattern does not resemble motor oil.
- ^d Coluting compounds interfered with surrogate recovery





<0.50 -- Not detected above lab reporting limit of 0.50
 ND -- Not detected above lab reporting limit
 -- Not analyzed



Project No. L98184	Golden Gate Petroleum	SITE LOCATION MAP 1565 INDUSTRIAL PARKWAY WEST HAYWARD, CALIFORNIA	Figure 1
Bonkowski & Associates, Inc.			

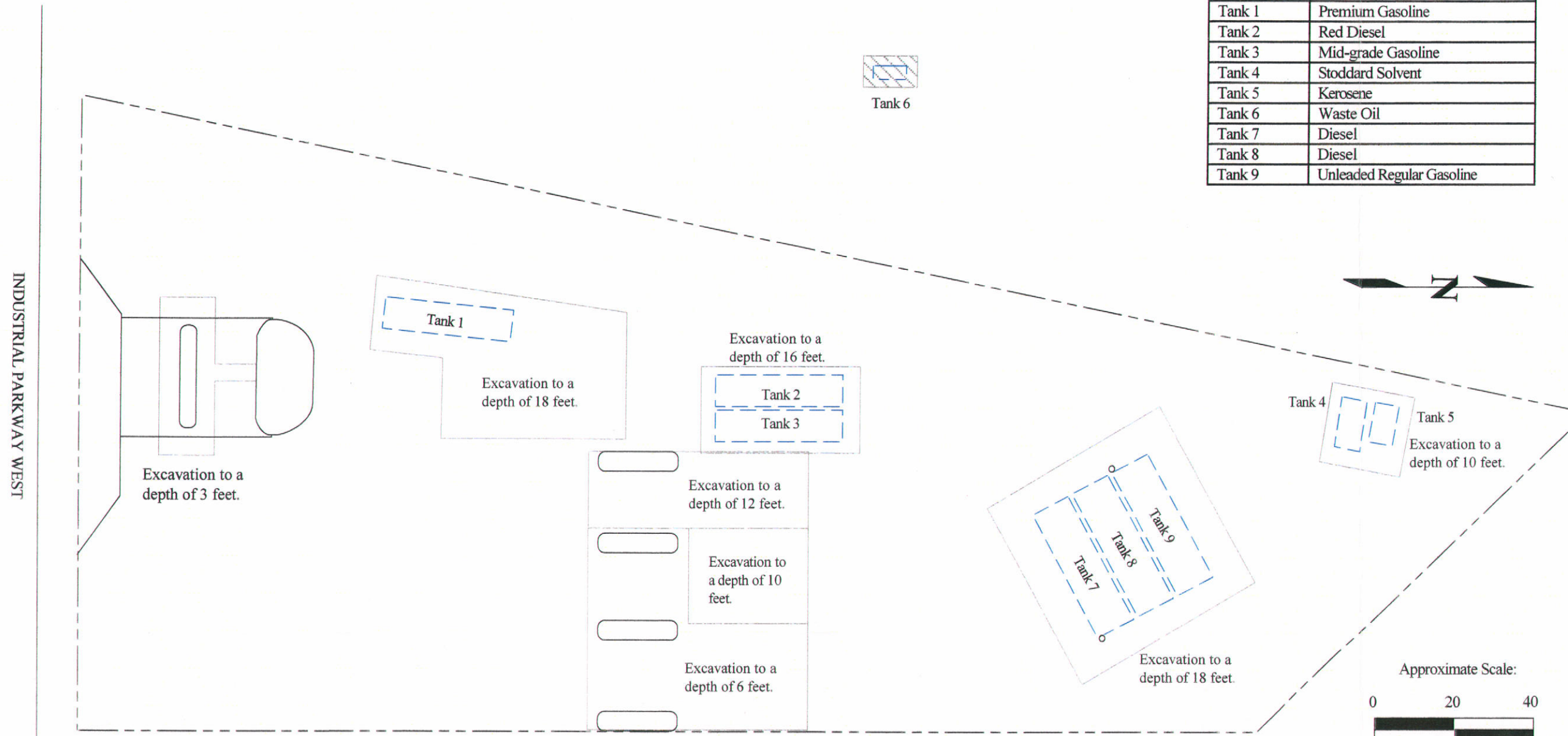


LEGEND

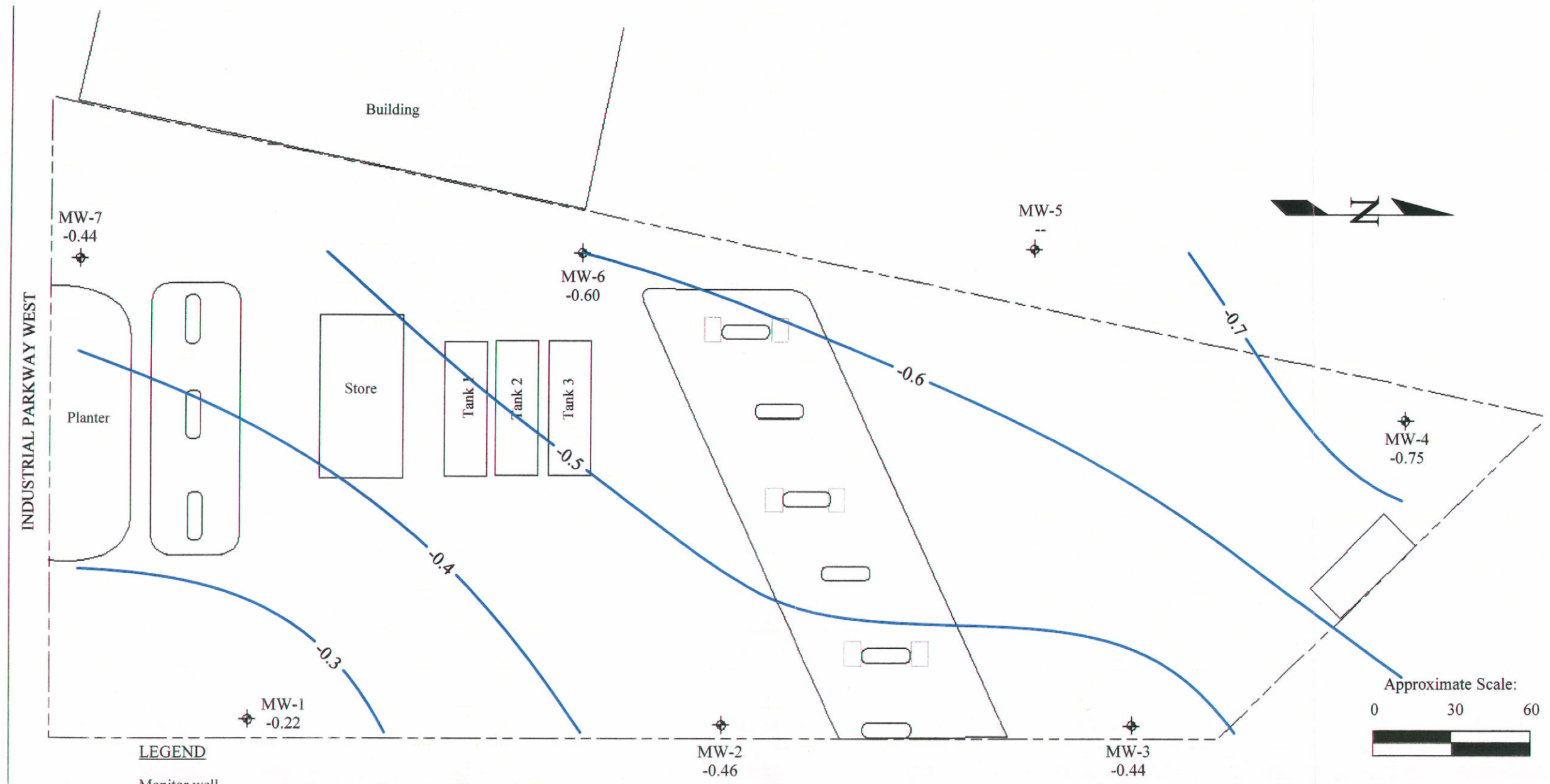
- MW-1  Monitor well
-  Dispenser Island
-  Conopy footing
-  Collector Trench

Project No. L98184	Golden Gate Petroleum	SITE PLAN 1565 INDUSTRIAL PARKWAY WEST HAYWARD, CALIFORNIA	Figure 2
Bonkowski & Associates, Inc.			

Tank	Contents
Tank 1	Premium Gasoline
Tank 2	Red Diesel
Tank 3	Mid-grade Gasoline
Tank 4	Stoddard Solvent
Tank 5	Kerosene
Tank 6	Waste Oil
Tank 7	Diesel
Tank 8	Diesel
Tank 9	Unleaded Regular Gasoline



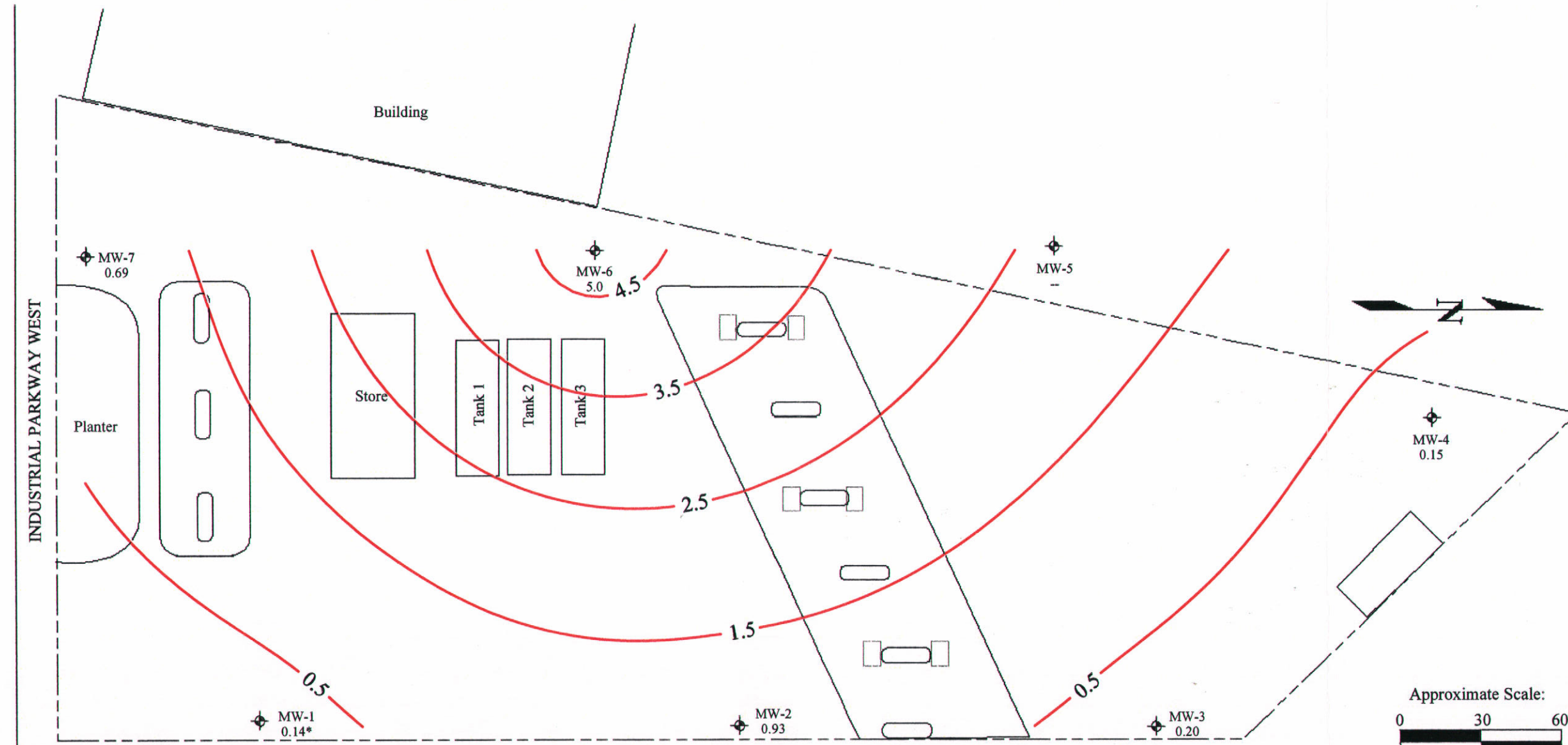
Project No. L98184	Golden Gate Petroleum	LOCATION OF FORMER USTs 1565 INDUSTRIAL PARKWAY WEST HAYWARD, CALIFORNIA	Figure 3
Bonkowski & Associates, Inc.			



LEGEND

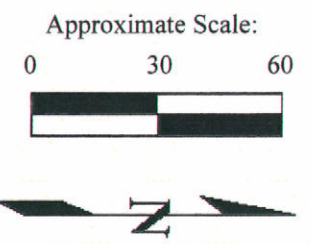
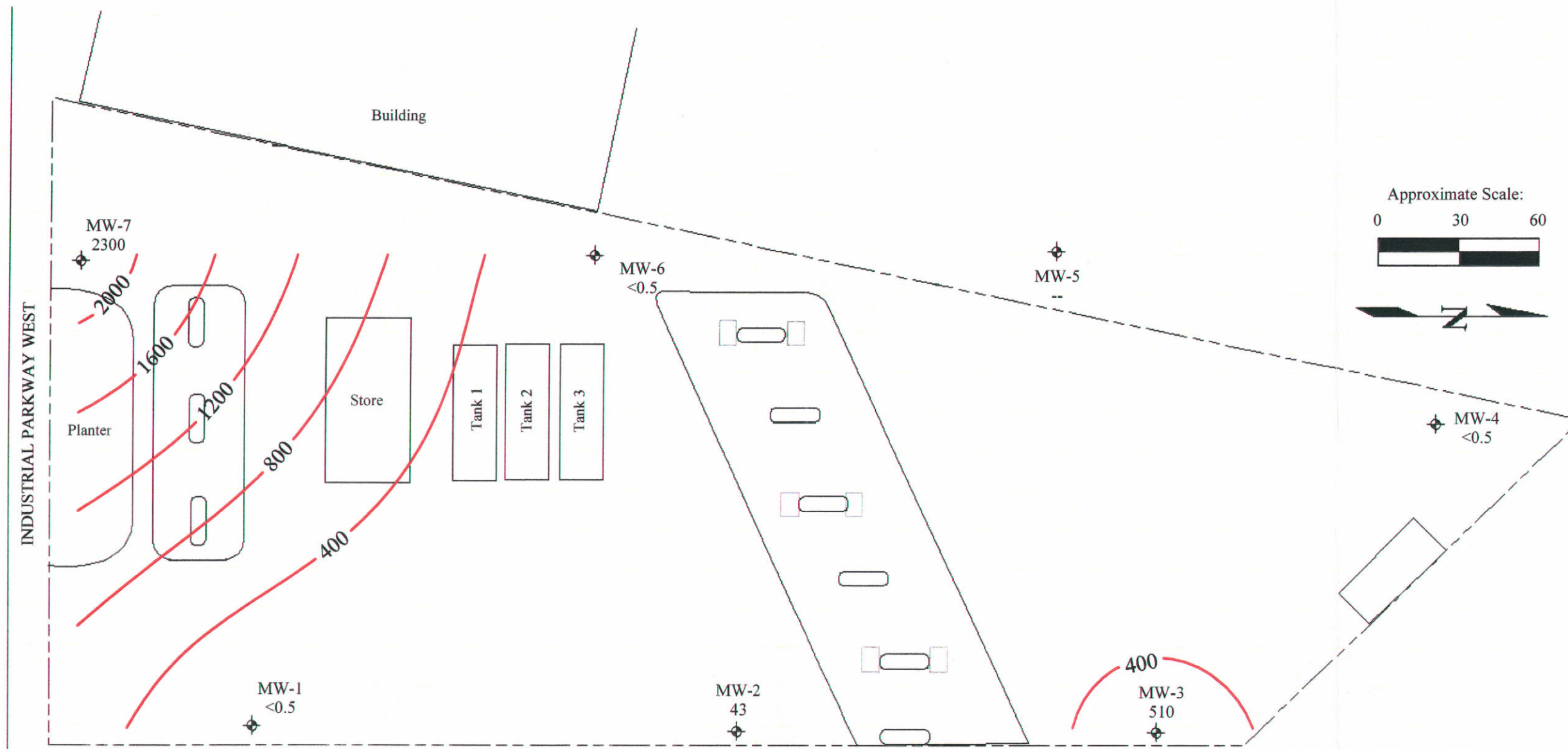
- Monitor well
- 1.07 Potentiometric Surface Elevation Above Mean Sea Level (National Geodetic Vertical Datum 1929)
- Dispenser Island
- Canopy Footing
- Well Not Accessible

Project No. L98184	Golden Gate Petroleum	POTENTIOMETRIC SURFACE ELEVATION MAP JUNE 13, 2004 1565 INDUSTRIAL PARKWAY WEST HAYWARD, CALIFORNIA	Figure 4
Bonkowski & Associates, Inc.			



- LEGEND**
- MW-1 Monitor well
 - 5.5 Groundwater TPHD Concentration (mg/l)
 - Groundwater TPHD Isoconcentration Contour (mg/l)
 - Dispenser Island
 - Canopy Footing
 - * Hydrocarbon Pattern Does Not Resemble Diesel
 - Well Not Accessible

Project No. L98184	Golden Gate Petroleum	TPHD ISOCONCENTRATION CONTOURS JUNE 13, 2004	Figure 5
Bonkowski & Associates, Inc.		1565 INDUSTRIAL PARKWAY WEST HAYWARD, CALIFORNIA	



- LEGEND**
- MW-1 Monitor well
 - 5.5 Groundwater MTBE Concentration (ug/l)
 - 5.5 Groundwater MTBE Isoconcentration Contour (ug/l)
 - Dispenser Island
 - Canopy Footing
 - Well Not Accessible

Project No. L98184	Golden Gate Petroleum	MTBE ISOCONCENTRATION CONTOURS JUNE 13, 2004	Figure 6
Bonkowski & Associates, Inc.		1565 INDUSTRIAL PARKWAY WEST HAYWARD, CALIFORNIA	

MONITORING WELL SAMPLING

File No./Site: L98184 - GGP Hayward Well No.: MW-1
 Field Tech.: PH Date: 6/13/04

DATA FROM IMMEDIATELY BEFORE AND AFTER DEVELOPMENT

Depth to water measured from TOC (ft.):	Total depth of casing (ft.):
Before Purging: <u>10.63</u>	Linear feet of water:
After Purging:	Area of casing x-sect:
Thickness of FP (ft):	Volume of water in 1 casing (ft ³):
	1 ft ³ = 7.48 gal
	Volume of water in 1 casing (gal):

Time since Purging Started	Time	Cumulative Volume Removed	Water Temp (°C)	Conductivity (mS/cm)	pH of Water	* Water Appearance	** Primary Particulate
	<u>1050</u>	<u>0</u>	<u>68</u>	<u>2.1x10³</u>	<u>7.41</u>	<u>GL</u>	
	<u>1055</u>	<u>1</u>	<u>67</u>	<u>2.1x10²</u>	<u>7.32</u>	<u>U</u>	<u>LI</u>
	<u>1010</u>	<u>2</u>	<u>67</u>	<u>2.09x10²</u>	<u>7.39</u>	<u>U</u>	<u>LI</u>

* Appearance
 CL = clear
 CO = cloudy
 TU = turbid

** Particle
 S = sand
 ML = silt
 CL = clay

Comments: No FP (No odor)

Time Sampled: 1120 TOC Elevation: _____
 GW Elevation: _____

MONITORING WELL SAMPLING

File No./Site: L98184 - Hayward Well No.: MW-2
 Field Tech.: PH Date: 6/13/04

DATA FROM IMMEDIATELY BEFORE AND AFTER DEVELOPMENT

Depth to water measured from TOC (ft.):	Total depth of casing (ft.):
Before Purging: <u>11.44</u>	Linear feet of water:
After Purging:	Area of casing x-sect:
Thickness of FP (ft):	Volume of water in 1 casing (ft ³):
	1 ft ³ = 7.48 gal
	Volume of water in 1 casing (gal):

Time since Purging Started	Time	Cumulative Volume Removed	Water Temp (°C)	Conductivity (mS/cm)	pH of Water	* Water Appearance	** Primary Particulate
	<u>0</u>	<u>1210</u>	<u>67.3</u>	<u>2.31x10³</u>	<u>7.15</u>	<u>CL</u>	<u>CL</u>
	<u>1</u>	<u>1208</u>	<u>68.2</u>	<u>2.32x10³</u>	<u>7.08</u>	<u>CL</u>	<u>CL</u>
	<u>1.5</u>	<u>1215</u>	<u>68.4</u>	<u>2.31x10³</u>	<u>7.13</u>	<u>CL</u>	<u>CO</u>
	<u>2</u>	<u>1220</u>	<u>68.3</u>	<u>2.31x10²</u>	<u>7.02</u>	<u>CL</u>	<u>CL</u>

* Appearance
 CL = clear
 CO = cloudy
 TU = turbid

** Particle
 S = sand
 ML = silt
 CL = clay

Comments: _____

No FP / No odor

Time Sampled: 1230 TOC Elevation: _____
 GW Elevation: _____

MONITORING WELL SAMPLING

File No./Site: 198184-GGP-Hayward Well No.: MW-3
 Field Tech.: PH Date: 6/13/04

DATA FROM IMMEDIATELY BEFORE AND AFTER DEVELOPMENT

Depth to water measured from TOC (ft.):	Total depth of casing (ft.):
Before Purging: <u>11.61</u>	Linear feet of water:
After Purging:	Area of casing x-sect:
Thickness of FP (ft):	Volume of water in 1 casing (ft ³):
	1 ft ³ = 7.48 gal
	Volume of water in 1 casing (gal):

Time since Purging Started	Time	Cumulative Volume Removed	Water Temp (°C)	Conductivity (mS/cm)	pH of Water	* Water Appearance	** Primary Particulate
	<u>1315</u>	<u>0</u>	<u>67.2</u>	<u>1.87x10³</u>	<u>7.35</u>	<u>CL</u>	
	<u>1320</u>	<u>0.5</u>	<u>68.3</u>	<u>1.79x10³</u>	<u>7.38</u>	<u>CL</u>	
	<u>1325</u>	<u>1</u>	<u>67.1</u>	<u>1.73x10³</u>	<u>7.41</u>	<u>CC</u>	<u>CO</u>
	<u>1335</u>	<u>1.5</u>	<u>67.6</u>	<u>1.85x10³</u>	<u>7.31</u>	<u>CL</u>	<u>CL</u>

* Appearance

- CL = clear
- CO = cloudy
- TU = turbid

** Particle

- S = sand
- ML = silt
- CL = clay

Comments:

No FP / No odor

TOC Elevation:

Time Sampled:

1340

GW Elevation:

MONITORING WELL SAMPLING

File No./Site: L98184-66P-Hayward Well No.: MW-4
 Field Tech.: PH Date: 6/13/04

DATA FROM IMMEDIATELY BEFORE AND AFTER DEVELOPMENT

Depth to water measured from TOC (ft.):	Total depth of casing (ft.):
Before Purging: <u>12-11</u>	Linear feet of water:
After Purging:	Area of casing x-sect:
Thickness of FP (ft):	Volume of water in 1 casing (ft ³):
	1 ft ³ = 7.48 gal
	Volume of water in 1 casing (gal):

Time since Purging Started	Time	Cumulative Volume Removed	Water Temp (°C)	Conductivity (mS/cm)	pH of Water	* Water Appearance	** Primary Particulate
	<u>1135</u>	<u>0</u>	<u>65.2</u>	<u>8.01x10²</u>	<u>6.77</u>	<u>CL</u>	
	<u>1145</u>	<u>1</u>	<u>61.3</u>	<u>7.65x10²</u>	<u>6.91</u>	<u>CO</u>	<u>CL</u>
	<u>1155</u>	<u>2</u>	<u>62.0</u>	<u>7.81x10²</u>	<u>6.83</u>	<u>CL</u>	<u>CL</u>

* Appearance
 CL = clear
 CO = cloudy
 TU = turbid

** Particle
 S = sand
 ML = silt
 CL = clay

Comments: No FP / No odor

Time Sampled: 1200 TOC Elevation: _____
 GW Elevation: _____

MONITORING WELL SAMPLING

File No./Site: L98184-GGP-Hayward Well No.: MW-5
 Field Tech.: PH Date: 6/13/04

DATA FROM IMMEDIATELY BEFORE AND AFTER DEVELOPMENT

Depth to water measured from TOC (ft.):	Total depth of casing (ft.):
Before Purging:	Linear feet of water:
After Purging:	Area of casing x-sect:
Thickness of FP (ft):	Volume of water in 1 casing (ft ³):
	1 ft ³ = 7.48 gal
	Volume of water in 1 casing (gal):

Time since Purging Started	Time	Cumulative Volume Removed	Water Temp (°C)	Conductivity (mS/cm)	pH of Water	* Water Appearance	** Primary Particulate

* Appearance

- CL = clear
- CO = cloudy
- TU = turbid

** Particle

- S = sand
- ML = silt
- CL = clay

Comments: Could not access, gate locked

TOC Elevation: _____

Time Sampled: _____ GW Elevation: _____

MONITORING WELL SAMPLING

File No./Site: GGP - Hayward Well No.: MW-6
 Field Tech.: P. Holland Date: 6/13/04

DATA FROM IMMEDIATELY BEFORE AND AFTER DEVELOPMENT

Depth to water measured from TOC (ft.):	Total depth of casing (ft.):
Before Purging: <u>11.46</u>	Linear feet of water:
After Purging:	Area of casing x-sect:
Thickness of FP (ft):	Volume of water in 1 casing (ft ³):
	1 ft ³ = 7.48 gal
	Volume of water in 1 casing (gal):

Time since Purging Started	Time	Cumulative Volume Removed	Water Temp (°C)	Conductivity (mS/cm)	pH of Water	* Water Appearance	** Primary Particulate
	<u>1240</u>	<u>0</u>	<u>68.2</u>	<u>2.71x10³</u>	<u>7.21</u>	<u>CL</u>	
	<u>1245</u>	<u>1</u>	<u>67.3</u>	<u>2.73x10³</u>	<u>7.25</u>	<u>CO</u>	<u>CL</u>
	<u>1250</u>	<u>1.5</u>	<u>68.4</u>	<u>2.70x10³</u>	<u>7.18</u>	<u> </u>	<u> </u>
	<u>1255</u>	<u>2</u>	<u>68.5</u>	<u>2.71x10³</u>	<u>7.19</u>	<u> </u>	<u> </u>

* Appearance
 CL = clear
 CO = cloudy
 TU = turbid

** Particle
 S = sand
 ML = silt
 CL = clay

Comments: No FP/No odor

Time Sampled: 1300 TOC Elevation: _____
 GW Elevation: _____

MONITORING WELL SAMPLING

File No./Site: GGP - Hayward 198184 Well No.: MW-7
 Field Tech.: PH Date: 6/13/04

DATA FROM IMMEDIATELY BEFORE AND AFTER DEVELOPMENT

Depth to water measured from TOC (ft.):	Total depth of casing (ft.):
Before Purging: 17.67 <u>11.22</u>	Linear feet of water:
After Purging:	Area of casing x-sect:
Thickness of FP (ft):	Volume of water in 1 casing (ft ³):
	1 ft ³ = 7.48 gal
	Volume of water in 1 casing (gal):

Time since Purging Started	Time	Cumulative Volume Removed	Water Temp (°C)	Conductivity (mS/cm)	pH of Water	* Water Appearance	** Primary Particulate
	<u>1350</u>	<u>0</u>	<u>68.2</u>	<u>2.91 x 10³</u>	<u>6.91</u>	<u>CL</u>	
	<u>1355</u>	<u>0.5</u>	<u>69.0</u>	<u>2.93 x 10³</u>	<u>6.90</u>	<u>CL</u>	
	<u>1400</u>	<u>1.5</u>	<u>68.3</u>	<u>2.95 x 10³</u>	<u>6.95</u>	<u>CL</u>	
	<u>1405</u>	<u>2</u>	<u>68.2</u>	<u>2.90 x 10³</u>	<u>6.96</u>	<u>CL</u>	

* Appearance

CL = clear
 CO = cloudy
 TU = turbid

** Particle

S = sand
 ML = silt
 CL = clay

Comments: _____

No odor / No FP

TOC Elevation: _____

Time Sampled: 1415

GW Elevation: _____

EXCELCHEM ENVIRONMENTAL LABS



500 Giuseppe Court, Suite 3
Roseville, CA 95678

Phone#: (916) 773-3664 Fax#: (916) 773-4784

ANALYSIS REPORT

Attention: James Springer
Bonkowski & Assoc.
6400 Hollis St. Suite 4
Emeryville, CA 94608
Project: GGP-Hayward / L98184
Method: EPA 8020/8015m

Date Sampled: 06/13/04
Date Received: 06/14/04
BTEX/TPHg Analyzed: 06/16, 17/04
TPHd Analyzed: 06/18/04
TPHo Analyzed: 06/18/04
Methanol Analyzed: 06/21/04

Client Sample I.D.	L98184-MW-1		L98184-MW-2		L98184-MW-3		L98184-MW-4		L98184-MW-6		L98184-MW-7	
LAB. NO.	W0604518		W0604519		W0604520		W0604521		W0604522		W0604523	
ANALYTE	R/L	Results	R/L	Results	R/L	Results	R/L	Results	R/L	Results	R/L	Results
Methanol	5.0	ND	5.0	ND	5.0	ND	5.0	ND	5.0	ND	5.0	ND
Benzene	0.5	ND	0.5	1.9	0.5	ND	0.5	ND	0.5	12	0.5	ND
Toluene	0.5	ND	0.5	ND	0.5	ND	0.5	ND	0.5	ND	0.5	ND
Ethylbenzene	0.5	ND	0.5	0.7	0.5	ND	0.5	ND	0.5	1.0	0.5	ND
Total Xylenes	1.0	ND	1.0	ND	1.0	ND	1.0	ND	1.0	ND	1.0	ND
TPH as Gasoline	50	ND	50	100	50	ND	50	ND	50	99	50	ND
TPH as Diesel	50	140*	50	930	50	200	50	150	50	5000	50	690
TPH as Oil	500	ND	500	ND	500	ND	500	ND	500	ND	500	ND

ND = Not detected. Compound(s) may be present at concentrations below the reporting limit.

R/L = Reporting Limit

Water samples reported in µg/L

Methanol reported in mg/L

* The sample chromatogram does not match the standard diesel chromatogram.

All peaks were integrated within the diesel range. The result is an estimated value.

QA/QC %RECOVERY		
	LCS	LCSD
Benzene	95	100
Toluene	95	100
Ethylbenzene	90	95
Total Xylenes	94	99
TPH as Diesel	90	82
TPH as Oil	82	92

QA/QC Analyzed: 06/18/04

TPHd QA/QC Analyzed: 06/21/04

TPHo QA/QC Analyzed: 06/21/04

QA/QC %RECOVERY		
	LCS	LCSD
Methanol	110	111

QA/QC Analyzed: 06/21/04


Laboratory Representative

06/22/04
Date Reported

**EXCELICHEM
ENVIRONMENTAL LABS**



500 Giuseppe Court, Suite 3
Roseville, CA 95678

Phone#: (916) 773-3664 Fax#: (916) 773-4784

ANALYSIS REPORT

Attention: James Springer
Bonkowski & Assoc.
6400 Hollis St. Suite 4
Emeryville, CA 94608
Project: GGP-Hayward / L98184
Method: EPA 8260B

Date Sampled: 06/13/04
Date Received: 06/14/04
Date Analyzed: 08/21/04

Client Sample I.D.	L98184-MW-1		L98184-MW-2		L98184-MW-3		L98184-MW-4		L98184-MW-6		L98184-MW-7	
LAB. NO.	W0604518		W0604519		W0604520		W0604521		W0604522		W0604523	
ANALYTE	R/L	Results	R/L	Results	R/L	Results	R/L	Results	R/L	Results	R/L	Results
Ethanol	20	ND	20	ND	200	ND	20	ND	20	ND	2000	ND
tert-Butanol	5.0	ND	5.0	ND	50	ND	5.0	ND	5.0	ND	500	ND
MTBE	0.5	ND	0.5	43	5.0	510	0.5	ND	0.5	ND	50	2300
Diisopropyl ether	0.5	ND	0.5	ND	5.0	ND	0.5	ND	0.5	ND	50	ND
Ethyl tert-butyl ether	0.5	ND	0.5	ND	5.0	ND	0.5	ND	0.5	ND	50	ND
tert-Amyl methyl ether	0.5	ND	0.5	ND	5.0	ND	0.5	ND	0.5	ND	50	ND
1,2-Dichloroethane	0.5	ND	0.5	ND	5.0	ND	0.5	ND	0.5	ND	50	ND
1,2-Dibromoethane	0.5	ND	0.5	ND	5.0	ND	0.5	ND	0.5	ND	50	ND
SURROGATE %RECOVERY												
Dibromofluoromethane	110		110		109		107		109		108	
Toluene-d8	102		101		101		101		102		101	
4-Bromofluorobenzene	108		107		102		107		105		104	

QA/QC %RECOVERY		
	MS	MSD
1,1-Dichloroethene	101	101
Benzene	115	100
Trichloroethene	93	93
Toluene	94	95
Chlorobenzene	94	96

QA/QC Analyzed: 06/21/04

ND = Not detected. Compound(s) may be present at concentrations below the reporting limit.
R/L = Reporting Limit
Water samples reported in µg/L

James Springer
Laboratory Representative

06/22/04
Date Reported

Excelchem

500 Giuseppe Court, Suite 3
Roseville, CA 95878

Environmental Labs

Ph: 916-773-3664 Fx: 916-773-4784

CHAIN-OF-CUSTODY RECORD AND ANALYSIS REQUEST

Project Manager: *James Springer*

Phone #: *510 450-0770*

Electronic Data Deliverables Request:

Global I.D.#: *T060010274*

COC #:

Location I.D.#:

Email Address:

marie.bonkowski.com
mstewart@bonkowski.com

Company/Address: *Bonkowski & Assoc.*
6400 Hollis St. Ste 4
Emeryville, CA 94608

Fax #: *510 450-0801*

ANALYSIS REQUEST

Page *1* of *1*

Project Number/P.O.#: *L98184*

Project Name: *66P-Hayward*

Project Location: *1565 Industrial Pkwy*
Hayward

Sampler Signature: *[Signature]*

Sample ID	Sampling		Container			Method Preserved				Matrix			BTEX/TPH as Gasoline (602/6020/8015)	MTBE (8020/8260B)	TPH as Diesel (8015m)	TPH as Oil (8015m)	Total Oil & Grease (SM-18th Ed 5520B.FY/166)	Pesticides (808/8081A)	PCBs (8082)	VOC Full list (8260B)	5 Oxygenates (8260B)	Methanol/Ethanol (8015/8260)	Lead Scavengers DCA/EDB (8280B)	Semi VOC Full List (8270C)	CAM 17 Metals	Wet		Requested TAT: 12hr/24hr/48hr/72hr/10d	Bin#	Due Date:
	Date	Time	VOA	SLEEVE	1L GLASS	PLASTIC	HCl	HNO3	ICE	NONE	WATER	SOIL														AIR	Lead			
<i>L98184-MW-1</i>	<i>6/13/04</i>	<i>1120</i>	<i>3</i>	<i>1</i>			<i>X</i>	<i>X</i>		<i>X</i>																		<i>74</i>	<i>06/21</i>	
<i>-MW-2</i>		<i>1230</i>																										<i>X</i>	<i>W0604518</i>	
<i>-MW-3</i>		<i>1340</i>																										<i>X</i>	<i>W0604519</i>	
<i>-MW-4</i>		<i>1200</i>																										<i>X</i>	<i>W0604520</i>	
<i>-MW-6</i>		<i>1300</i>																										<i>X</i>	<i>W0604521</i>	
<i>-MW-7</i>		<i>1420</i>																										<i>X</i>	<i>W0604522</i>	
																												<i>X</i>	<i>W0604523</i>	

Relinquished by: *M. Scott*

Date Time: *6/4/12:13*

Received by:

Remarks/Condition of Sample:

Relinquished by:

Date Time:

Received by:

Relinquished by:

Date Time: *06/14/04 12:13p*

Received by Laboratory: *J. Seale*

Bill To:

Groundwater Monitoring and Sampling Protocols

Prior to purging and sampling a well, the static water level is measured to the nearest 0.01 feet with an electronic water sounder. After measuring the depth to water and checking for floating product, the monitor wells are purged and a sample collected from each one. The pH, temperature and conductivity of the purge water are measured during well purging. A "micropurging" procedure is used. Water is pumped from the well at approximately 0.03 gallons per minute. During pumping, the well sounder is left in the well just below the surface of the water. The pump rate is low enough so that the water is not drawn down. The pH, temperature, and conductivity are measured during pumping until they stabilize. Groundwater samples are then collected from the pump. The samples are contained in laboratory provided 40-milliliter glass vials with Teflon-lined septa. After labeling, they are placed on ice in a refrigerator cooler. Chain-of-Custody protocols are followed throughout sample acquisition, storage, transport and delivery to the laboratory.