FIRST 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

April 30, 2004

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

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April 30, 2004
L98184

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

Subject: **First 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 first 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

GROUNDWATER MONITORING REPORT
FIRST QUARTER 2004

Hayward Bulk Petroleum Distribution Facility
Hayward, California

SITE DESCRIPTION

Golden Gate Petroleum's Hayward Bulk Petroleum Distribution Facility 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 (3) 20,000-gallon fiberglass underground fuel storage tanks (USTs); nine (9) dispenser islands that dispense diesel, unleaded regular, plus unleaded, and premium unleaded regular gasoline and seven (7) monitor wells (Figure 2). 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). Seven (7) monitor wells have been installed at the site for the purpose of groundwater monitoring. A history of the site is provided in the Preliminary Site Assessment Report (B&A, 2002). Historical groundwater monitoring data can be found in Tables 1 and 2 of this report.

GROUNDWATER MONITORING FIELD ACTIVITIES

Dates of field activities:	March 9 and 10, 2004 (monitoring and sampling)
Wells inspected:	MW-1 through MW-7
Wells sampled:	MW-1 through 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
Groundwater elevations:	Ranged from -0.89 ft (MW-6) to 0.66 ft (MW-5) above mean sea level
Flow direction/gradient:	0.01 ft/ft toward MW-6
Separate phase hydrocarbons (SPH):	None observed

GROUNDWATER MONITORING RESULTS

Analyte	Concentration
TPHG concentrations:	Up to 0.075 mg/l (MW-2)
TPHD concentrations:	0.39 mg/l (MW-2)
TPHMO concentrations:	<0.50 mg/l in all wells
Benzene concentrations:	Up to 3.1 µg/l (MW-6)
Toluene concentrations:	Up to 0.7 µg/l (MW-1)
Ethylbenzene concentrations:	Up to 0.7 µg/l (MW-2)
Total xylenes concentrations:	Up to 1.4 µg/l (MW-2)
MTBE concentrations:	Up to 1,800 µg/l (MW-7)
TAME concentrations:	18 µg/l in MW-7
TBA concentrations:	180 µg/l in MW-7
ETBE, DIPE, and EDB concentrations:	< 5.0 µg/l in MW-3 and MW-7, <0.50 in all other wells
1,2-DCA concentrations:	90 µg/l in MW-7

DISCUSSION

TPHG was detected in wells MW-2 and MW-7, where its concentration exceeded the State taste and odor threshold. TPHD was detected above Federal taste and odor threshold in well MW-2. The concentration of benzene exceeded the California MCL in well MW-2 and MW-6. MTBE was detected above California's secondary MCL in wells MW-2, MW-3 and MW-7. ETBE, DIPE and EDB were not detected in any well above laboratory reporting limits. The Laboratory Reporting Limit in wells MW-3 and MW-7 increased for ETBE, DIPE, Ethanol and EDB. TBA was detected above the State action level in well MW-7. Lead scavenger 1,2-DCA was detected in the sample collected from well MW-7. Separate phase hydrocarbons were not observed in any wells this quarter.

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, March 9 and 10, 2004
- Figure 5. MTBE Isoconcentration Contours, March 9 and 10, 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.

James Springer, CEG 1827
Project Geologist

Cynthia A. Dittmar, RG 7213
Project Geologist

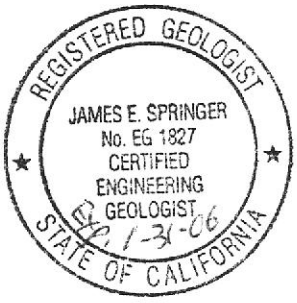

Table 1. Monitor Well Construction and Groundwater Elevation Summary Golden Gate Petroleum, Hayward, California.

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	10.62	-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	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	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	11.03	0.33	3/10/2004
						12.53	-1.17	10/21/2003
						11.69	-0.33	3/13/2003
						12.38	-1.02	12/4/2002
						12.64	-1.28	10/9/2002

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

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-5	2	31.5	silty gravel, gravelly clay, silty clay, clay, sand	10-30	11.41	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	11.75	-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	10.32	0.46	3/10/2004
						11.81	-1.03	10/21/2003
						11.17	-0.39	3/13/2003
						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	<0.050	<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	<5.0	--	--	<0.5	<0.5	10/9/2002
MW-2	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	<0.050	<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	<0.050	<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
	<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
	ND	0.18[b]	ND	ND	ND	ND	ND	1.0[d]	ND	ND	ND	ND	--	--	ND	ND	10/9/2002
MW-5	<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
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 interferred 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-5	<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
(Cont)	<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	<0.050	<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	0.070[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	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.
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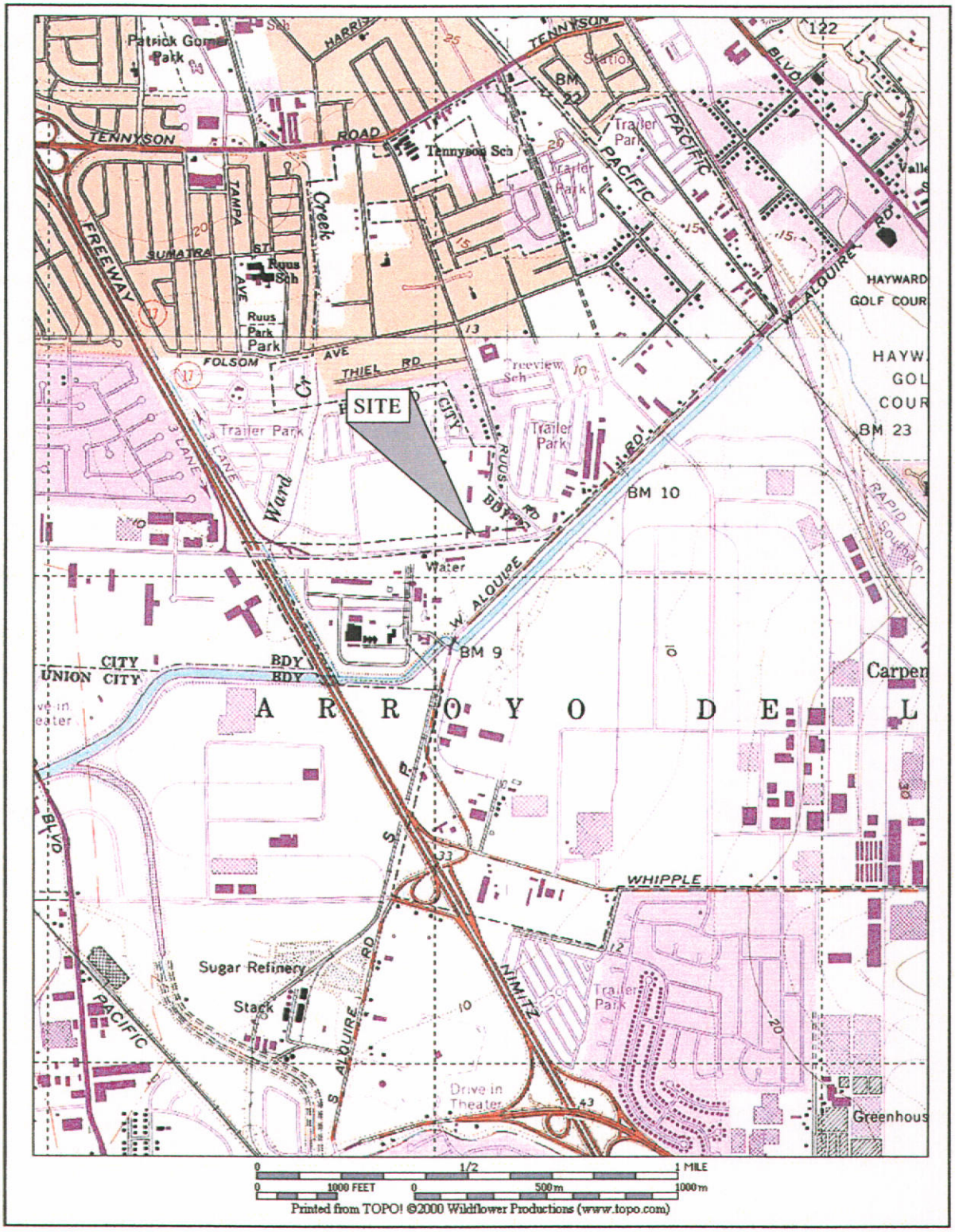
<0.50 -- Not detected above lab reporting limit of 0.50
ND -- Not detected above lab reporting limit
-- Not analyzed



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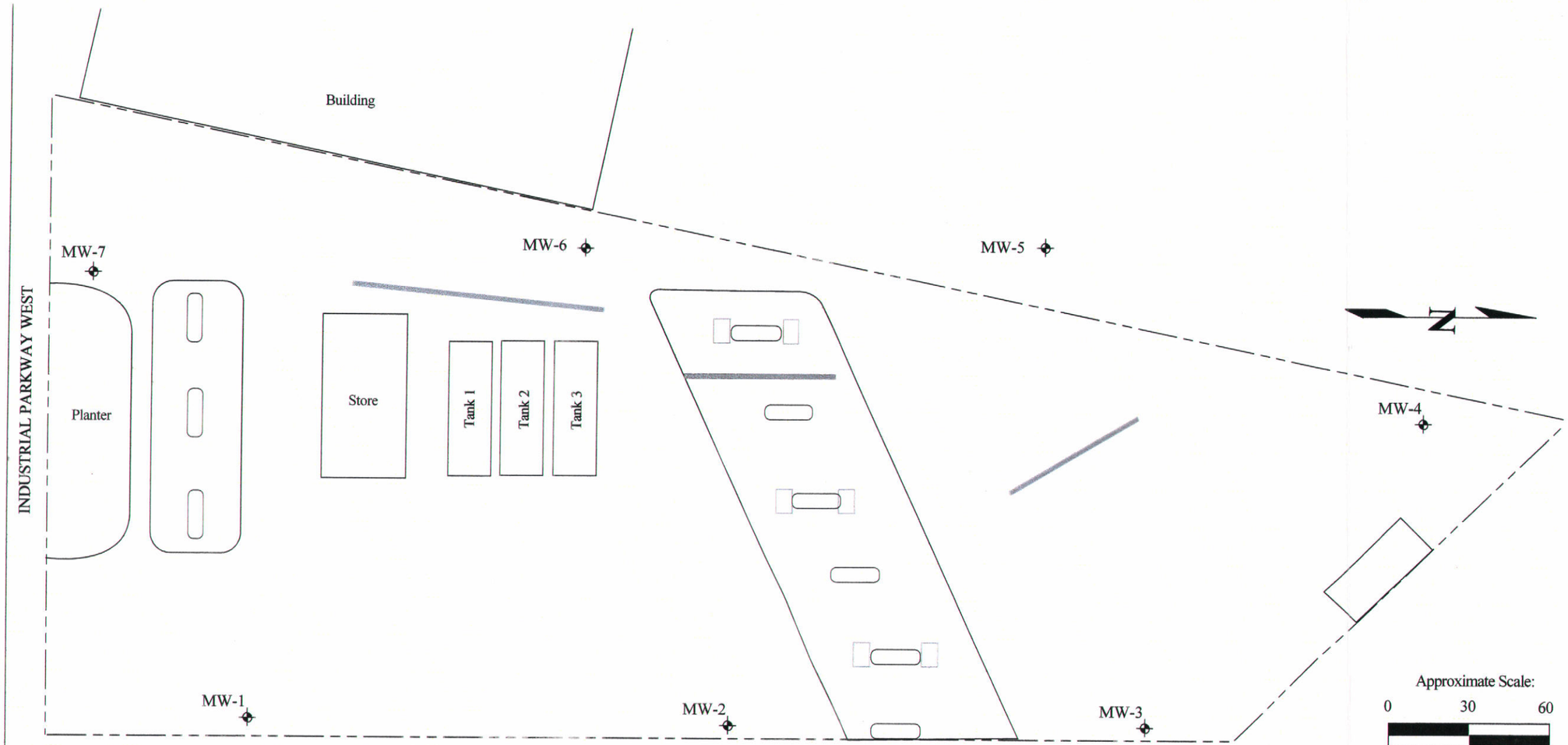
Project No. L98184	Golden Gate Petroleum	SITE LOCATION MAP 1565 INDUSTRIAL PARKWAY WEST HAYWARD, CALIFORNIA	Figure 1
Bonkowski & Associates, Inc.			



LEGEND

MW-1 Monitor well

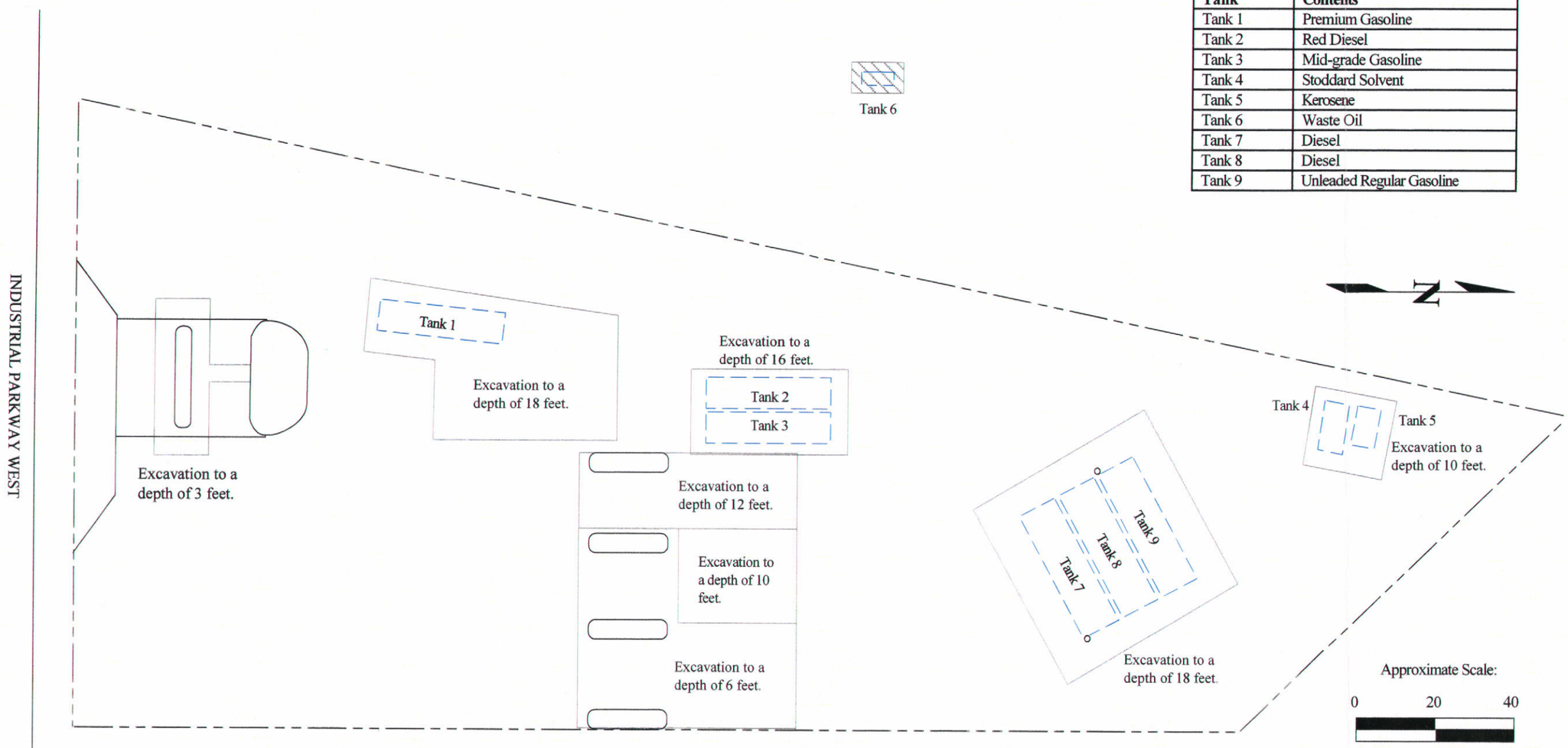
Dispenser Island

Conopy footing

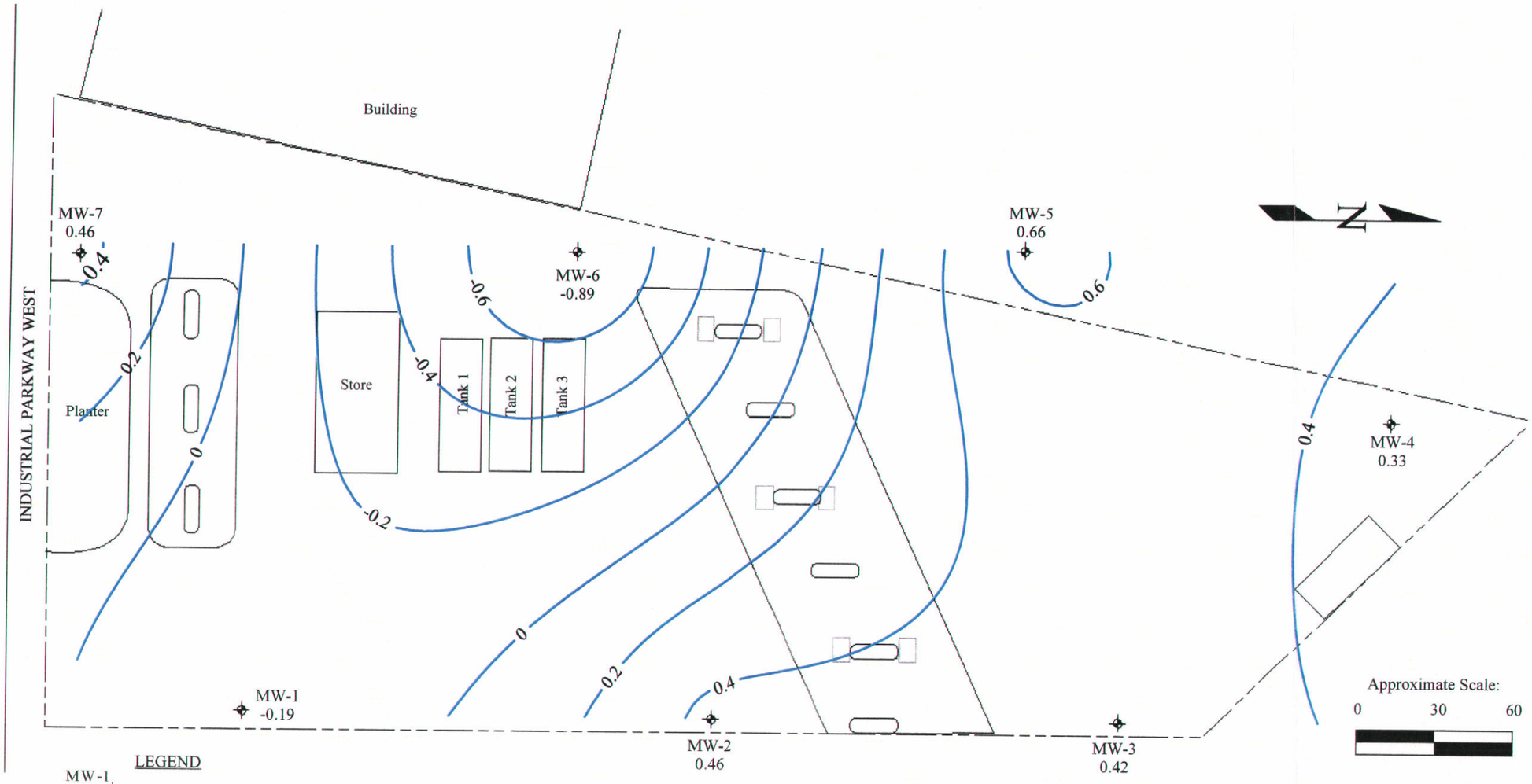
Collector Trench

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.			



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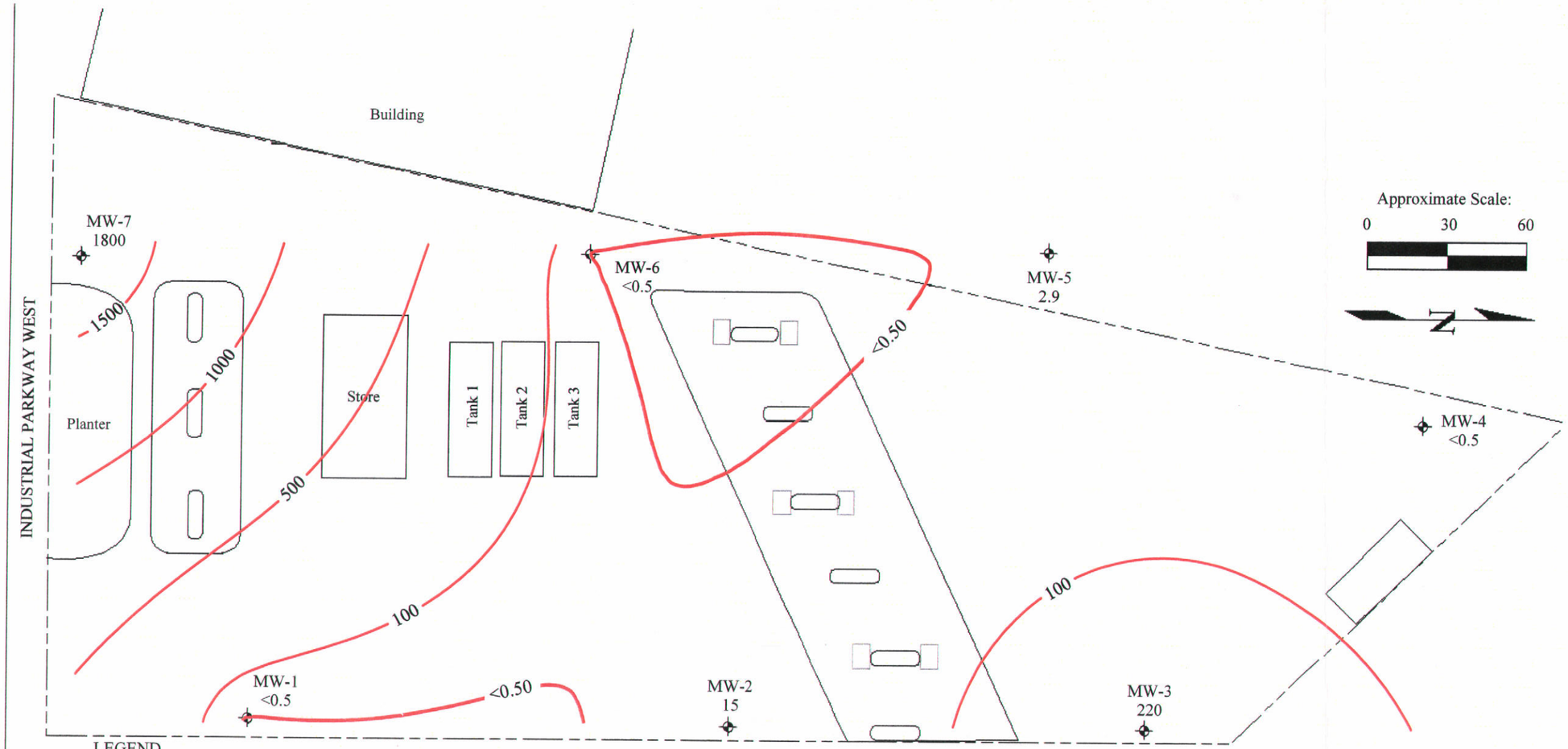
MW-1 — Monitor well

-1.07 — Potentiometric Surface Elevation Above Mean Sea Level (National Geodetic Vertical Datum 1929)

Dispenser Island

Canopy Footing

Project No. L98184	Golden Gate Petroleum	POTENTIOMETRIC SURFACE ELEVATION MAP MARCH 9 AND 10, 2004 1565 INDUSTRIAL PARKWAY WEST HAYWARD, CALIFORNIA	Figure 4
Bonkowski & Associates, Inc.			



LEGEND

MW-1 — Monitor well

5.5 — Groundwater MTBE Concentration (ug/l)

5.5 — Groundwater MTBE Isoconcentration Contour (ug/l)

Dispenser Island

Canopy Footing

Project No. L98184	Golden Gate Petroleum	MTBE ISOCONCENTRATION CONTOURS MARCH 9 AND 10, 2004 1565 INDUSTRIAL PARKWAY WEST HAYWARD, CALIFORNIA	Figure 5
Bonkowski & Associates, Inc.			

MONITOR WELL SAMPLING

File No./Site: GGP - Hayward - L98184 Well No.: MW-1
Field Tech.: J. Springer Date: 3-9-04

DATA FROM IMMEDIATELY BEFORE AND AFTER DEVELOPMENT

Depth to water measured from TOC (ft.):	Total depth of casing (ft.): 30
Before Purging: 10.62'	Linear feet of water: 19.38
After Purging: 10.62'	Area of casing x-sect: 0.0218 ft^2
Thickness of FP (ft): 0	Volume of water in 1 casing (ft^3): 0.422
Total purging time (min.)	1 ft^3 = 7.48 gal. 3.16
Begin:	Volume of water in 1 casing (gal): 3.16
End:	

Time	Cumulative Volume Removed	Water Temp (°F)	Conductivity (µohm/cm)	pH of Water	* Water Appearance	** Primary Particulate
1315		~~67~~	2140	7.13	clear	0
		77	2090	7.43	↓	↓
		77	2066	7.26	↓	↓
		74	2070	7.31	↓	↓
1330	2 gal	77	2042	7.29		

* Appearance
CL = clear
CO = cloudy
TU = turbid

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

Comments: No odor. No FP.

Top of Casing Elevation:

Time Sampled: 1330 Groundwater Elevation:

MONITOR WELL SAMPLING

File No./Site: GGP - Hayward - L98184 Well No.: MW-2
Field Tech.: J. Springer Date: 3-9-04

DATA FROM IMMEDIATELY BEFORE AND AFTER DEVELOPMENT

Depth to water measured from TOC (ft.):	Total depth of casing (ft.): 25
Before Purging: 10.52	Linear feet of water: 14.48
After Purging: 10.52	Area of casing x-sect: 0.0218 ft^2
Thickness of FP (ft):	Volume of water in 1 casing (ft^3): 0.316
Total purging time (min.)	1 ft^3 = 7.48 gal.
Begin:	Volume of water in 1 casing (gal): 2.36
End:	

Time	Cumulative Volume Removed	Water Temp (°F)	Conductivity (µohm/cm)	pH of Water	* Water Appearance	** Primary Particulate
1400		81.3	3612	6.91	CL	
		82.8	3596	7.12	↓	
		78	3924	6.90		
		76	3960	6.87	↓	
1425	2gal	74	3968	6.91		

* Appearance
CL = clear
CO = cloudy
TU = turbid

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

Comments: No odor / No FP.

Top of Casing Elevation:

Time Sampled: 1430 Groundwater Elevation:

MONITOR WELL SAMPLING

File No./Site: GGP - Hayward - L98184 Well No.: MW-3
Field Tech.: J. Springer Date: 3-9-04

DATA FROM IMMEDIATELY BEFORE AND AFTER DEVELOPMENT

Depth to water measured from TOC (ft.):	Total depth of casing (ft.): 25
Before Purging: 10.75'	Linear feet of water: 14.25
After Purging:	Area of casing x-sect: 0.0218 ft^2
Thickness of FP (ft):	Volume of water in 1 casing (ft^3): 0.311
Total purging time (min.)	1 ft^3 = 7.48 gal.
Begin:	Volume of water in 1 casing (gal): 2.32
End:	

Time	Cumulative Volume Removed	Water Temp (°F)	Conductivity (µohm/cm)	pH of Water	* Water Appearance	** Primary Particulate
1440		80	1187	7.36	Clear	
		71	1117	7.35	↓	
		74	1085	7.28	↓	
		71	1081	7.28	↓	
1450	2gal	71	1049	7.29		

* Appearance
CL = clear
CO = cloudy
TU = turbid

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

No odor / No FP

Comments:

Top of Casing Elevation:

Time Sampled: 1450 Groundwater Elevation:

MONITOR WELL SAMPLING

File No./Site: GGP - Hayward - L98184 Well No.: MW-4
Field Tech.: J. Springer Date: 4-10-04

DATA FROM IMMEDIATELY BEFORE AND AFTER DEVELOPMENT

Depth to water measured from TOC (ft.):	Total depth of casing (ft.): 25
Before Purging: 11.03ft	Linear feet of water: 13.97
After Purging: 11.03ft	Area of casing x-sect: 0.0218 ft^2
Thickness of FP (ft):	Volume of water in 1 casing (ft^3): 0.305
Total purging time (min.)	1 ft^3 = 7.48 gal.
Begin:	Volume of water in 1 casing (gal): 2.28
End:	

Time	Cumulative Volume Removed	Water Temp (°F)	Conductivity (µohm/cm)	pH of Water	* Water Appearance	** Primary Particulate
1120		76	960	7.02	Clear	
		72	736	7.25	↓	
		72	710	6.90		
		72	715	6.90	↓	
1130	2gal	71	714	6.85		

* Appearance
CL = clear
CO = cloudy
TU = turbid

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

Comments: No FP / No odor.

Top of Casing Elevation:

Time Sampled: 1130 Groundwater Elevation:

MONITOR WELL SAMPLING

File No./Site: GGP - Hayward - L98184 Well No.: MW-5
Field Tech.: J. Springer Date: 8-10-04

DATA FROM IMMEDIATELY BEFORE AND AFTER DEVELOPMENT

Depth to water measured from TOC (ft.):	Total depth of casing (ft.): 30
Before Purging: 10.75 ft	Linear feet of water: 19.25
After Purging: 10.75 ft	Area of casing x-sect: 0.0218 ft^2
Thickness of FP (ft):	Volume of water in 1 casing (ft^3): 0.42
Total purging time (min.)	1 ft^3 = 7.48 gal.
Begin:	Volume of water in 1 casing (gal): 3.14
End:	

Time	Cumulative Volume Removed	Water Temp (°F)	Conductivity (µohm/cm)	pH of Water	* Water Appearance	** Primary Particulate
1159		78	2000	6.9	clear	
		73	4000	6.9		
		73		6.9		
		73		6.9		
1215	299l	73		6.9		

* Appearance
CL = clear
CO = cloudy
TU = turbid

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

Comments: No odor / No FP.

Top of Casing Elevation:

Time Sampled: 1215 Groundwater Elevation:

MONITOR WELL SAMPLING

File No./Site: GGP - Hayward - L98184 Well No.: MW-6
Field Tech.: J. Springer Date: 3-10-04

DATA FROM IMMEDIATELY BEFORE AND AFTER DEVELOPMENT

Depth to water measured from TOC (ft.):	Total depth of casing (ft.): 30
Before Purging: 11.75 ft	Linear feet of water: 18.25
After Purging: 11.75 ft	Area of casing x-sect: 0.0218 ft^2
Thickness of FP (ft):	Volume of water in 1 casing (ft^3): .398
Total purging time (min.)	1 ft^3 = 7.48 gal.
Begin:	Volume of water in 1 casing (gal): 2.98
End:	

Time	Cumulative Volume Removed	Water Temp (°F)	Conductivity (µohm/cm)	pH of Water	* Water Appearance	** Primary Particulate
1300		78	2869	7.30	clear	
		73	2601	7.20	↓	
		71	2643	7.33		
		72	2614	7.40	↓	
1315	2gal	71	2643	7.20		

* Appearance
CL = clear
CO = cloudy
TU = turbid

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

Comments: No odor / No FP.

Top of Casing Elevation:

Time Sampled: 1300 Groundwater Elevation:

MONITOR WELL SAMPLING

File No./Site: GGP - Hayward - L98184 Well No.: MW-7
Field Tech.: J. Springer Date: 3-10-04

DATA FROM IMMEDIATELY BEFORE AND AFTER DEVELOPMENT

Depth to water measured from TOC (ft.):	Total depth of casing (ft.): 25
Before Purging: 10.32 ft	Linear feet of water: 14.68
After Purging: 10.32 ft.	Area of casing x-sect: 0.0218 ft^2
Thickness of FP (ft):	Volume of water in 1 casing (ft^3): 0.320
Total purging time (min.)	1 ft^3 = 7.48 gal.
Begin:	Volume of water in 1 casing (gal): 2.39
End:	

Time	Cumulative Volume Removed	Water Temp (°F)	Conductivity (µohm/cm)	pH of Water	* Water Appearance	** Primary Particulate
1330		76	2878	7.00	Clear	
		71	2721	7.00		
		71	2712	6.96		
		70	2715	6.94		
1345	2gal	70	2724	6.92		

* Appearance
CL = clear
CO = cloudy
TU = turbid

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

Comments: No odor / No FP

Top of Casing Elevation:

Time Sampled: 1345

Groundwater 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	Date Sampled:	03/09,10/04
	Bonkowski & Assoc.	Date Received:	03/12/04
	6400 Hollis St. Suite 4	BTEX/TPHg Analyzed:	03/18,19/04
	Emeryville, CA 94608	TPHd Analyzed:	03/17/04
Project:	GGP Hayward / L98184	TPHo Analyzed:	03/17/04
Method:	EPA 8020/8015m	Methanol Analyzed:	03/15/04

Client Sample I.D.	MW-1		MW-2		MW-3		MW-4	
LAB. NO.	W0304450		W0304451		W0304452		W0304453	
ANALYTE	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
Benzene	0.5	ND	0.5	3.0	0.5	ND	0.5	ND
Toluene	0.5	0.7	0.5	0.5	0.5	ND	0.5	ND
Ethylbenzene	0.5	0.5	0.5	0.7	0.5	ND	0.5	ND
Total Xylenes	1.0	1.2	1.0	1.4	1.0	ND	1.0	ND
TPH as Gasoline	50	ND	50	75	50	ND	50	ND
TPH as Diesel	50	ND	50	390	50	ND	50	ND
TPH as Oil	500	ND	500	ND	500	ND	500	ND

Client Sample I.D.	MW-5		MW-6		MW-7	
LAB. NO.	W0304454		W0304455		W0304456	
ANALYTE	R/L	Results	R/L	Results	R/L	Results
Methanol	5.0	ND	5.0	ND	5.0	ND
Benzene	0.5	ND	0.5	3.1	0.5	ND
Toluene	0.5	ND	0.5	ND	0.5	ND
Ethylbenzene	0.5	ND	0.5	0.5	0.5	ND
Total Xylenes	1.0	ND	1.0	ND	1.0	ND
TPH as Gasoline	50	ND	50	ND	50	70*
TPH as Diesel	50	ND	50	ND	50	ND
TPH as Oil	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
*Chromatograph does not resemble a typical gasoline standard chromatograph.
The value is due to one single peak integrated within the gasoline range.

Laboratory Representative

03/22/04
Date Reported

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 8260B

Date Sampled: 03/09,10/04
Date Received: 03/12/04
Date Analyzed: 03/20/04

Client Sample I.D.	MW-1		MW-2		MW-3		MW-4	
LAB. NO.	W0304450		W0304451		W0304452		W0304453	
ANALYTE	R/L	Results	R/L	Results	R/L	Results	R/L	Results
Ethanol	20	ND	20	ND	200	ND	20	ND
tert-Butanol	5.0	ND	5.0	ND	50	ND	5.0	ND
MTBE	0.5	ND	0.5	15	5.0	220	0.5	ND
Diisopropyl ether	0.5	ND	0.5	ND	5.0	ND	0.5	ND
Ethyl tert-butyl ether	0.5	ND	0.5	ND	5.0	ND	0.5	ND
tert-Amyl methyl ether	0.5	ND	0.5	ND	5.0	ND	0.5	ND
1,2-Dichloroethane	0.5	ND	0.5	ND	5.0	ND	0.5	ND
1,2-Dibromoethane	0.5	ND	0.5	ND	5.0	ND	0.5	ND
SURROGATE %RECOVERY								
Dibromoflouromethane	100		103		102		106	
Toluene-d8	95		93		97		95	
4-Bromofluorobenzene	107		108		105		104	

Client Sample I.D.	MW-5		MW-6		MW-7	
LAB. NO.	W0304454		W0304455		W0304456	
ANALYTE	R/L	Results	R/L	Results	R/L	Results
Ethanol	20	ND	20	ND	200	ND
tert-Butanol	5.0	ND	5.0	ND	50	180
MTBE	0.5	2.9	0.5	ND	50	1800
Diisopropyl ether	0.5	ND	0.5	ND	5.0	ND
Ethyl tert-butyl ether	0.5	ND	0.5	ND	5.0	ND
tert-Amyl methyl ether	0.5	ND	0.5	ND	5.0	18
1,2-Dichloroethane	0.5	ND	0.5	ND	5.0	90
1,2-Dibromoethane	0.5	ND	0.5	ND	5.0	ND
SURROGATE %RECOVERY						
Dibromoflouromethane	102		102		101	
Toluene-d8	97		96		96	
4-Bromofluorobenzene	103		103		101	

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

Laboratory Representative

03/22/04
Date Reported

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

QA/QC %RECOVERY		
	LCS	LCSD
Benzene	100	103
Toluene	94	97
Ethylbenzene	93	96
Total Xylenes	95	98
TPH as Diesel	74	76
TPH as Oil	74	68

QA/QC Analyzed: 03/18/04
TPHd QA/QC Analyzed: 03/18/04
TPHo QA/QC Analyzed: 03/18/04

QA/QC %RECOVERY		
	LCS	LCSD
Methanol	100	100

QA/QC Analyzed: 03/15/04

Laboratory Representative

03/22/04
Date Reported

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 8260B

QA/QC %RECOVERY		
	LCS	LCSD
1,1-Dichloroethene	102	93
Benzene	92	92
Trichloroethene	97	95
Toluene	90	86
Chlorobenzene	91	89

QA/QC Analyzed: 03/20/04

Laboratory Representative

03/22/04
Date Reported

Excelchem
Environmental Labs

EXCELCHEM LABS
500 Giuseppe Ct., #3
Roseville, CA 95678
Phone: (916)-773-3664

CHAIN-OF-CUSTODY RECORD AND ANALYSIS REQUEST

Project Manager: James Springer
510 450-0770

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

Fax #: 510 450-0801

Project Number/P.O#: L98187

Project Name: GEP Hayward

Project Location: 1565 Industrial Pkwy Hayward

Sampler Signature: James E Springer

Electronic Data Deliverables Request:
Global I.D.#:
COC #:
Location I.D.#: 304040
Email Address:

ANALYSIS REQUEST

Page ___ of ___

Sample ID	Sampling Date	Sampling Time	Container VOA	SLEEVE	1L GLASS	PLASTIC	Method Preserved HCl	HNO3	ICE	NONE	Matrix WATER	SOIL	AIR	BTEX/TPH as Gasoline (602/8020/8015)	MTBE (8020/8260B)	TPH as Diesel (8015m)	TPH as Oil (8015m)	Total Oil & Grease (SM-18th Ed 5520B,F)/166	Pesticides (608/8081A)	PCBs (8082)	VOC Full list (8260B)	5 Oxygenates (8260B)	Methanol/Ethanol (8015/8260)	Lead Scavengers DCA/EDB (8260B)	Semi VOC Full List (8270C)	CAM 17 Metals	Lead	Cd, Cr, Pb, Zn, Ni (CAM 5)	7 Oxygenates (8260B)							Requested TAT: 12hr/24hr/48hr/72hr/1wk	Bin# / LAB USE ONLY:
														Wet												Total										
MW-1	3-9	1330	3		1		✓		✓		✓			X		X	X							X					X								WO304450
MW-2	3-9	1430	3		1		✓		✓		✓			X		X	X							X					X								WO304451
MW-3	3-9	1450	3		1		✓		✓		✓																										WO304452
MW-4	3-10	1130	3		1		✓		✓		✓																										WO304453
MW-5	3-10	1215	3		1		✓		✓		✓																										WO304454
MW-6	3-10	1300	3		1		✓		✓		✓																										WO304455
MW-7	3-10	1345	3		1		✓		✓		✓																										WO304456

VOA's 0312B
Ambers A-8

Relinquished by:	Date	Time	Received by:
James E Springer	3-11	10:55	
Relinquished by:	Date	Time	Received by:
Relinquished by:	Date	Time	Received by Laboratory:
	3/12/04	10:55	Shannon Beale

Remarks/Condition of Sample:

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.