



Alameda County

NOV 26 2003

Environmental Health

**FOURTH QUARTER 2003
GROUNDWATER MONITORING
REPORT**

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

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

November 21, 2003

November 21, 2003
L98184

Ms. Wenche Lier
Golden Gate Petroleum
501 Shell Avenue
Martinez, CA 94553



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

Corporate Headquarters
6400 Hollis Street, Suite 4
Emeryville, California 94608
Phone: (510) 450-0770
Fax: (510) 450-0801

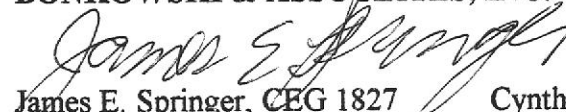
**Subject: Fourth Quarter 2003 Groundwater Monitoring Report,
Hayward Bulk Distribution Facility, Hayward, California**

Dear Ms. Leir:

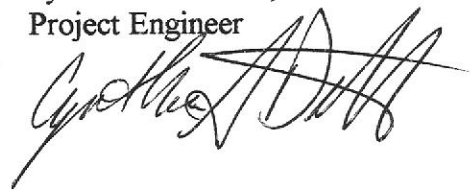
Enclosed is the report summarizing Bonkowski & Associates, Inc. review of the fourth quarter 2003 groundwater monitoring data at the Hayward Bulk Petroleum Distribution Facility in Hayward, California. This report presents the results of the investigative work and the chemical testing, the laboratory 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. Cynthia Dittmar at (510) 450-0770 if you have any questions or need any additional information.

Sincerely,
BONKOWSKI & ASSOCIATES, INC.

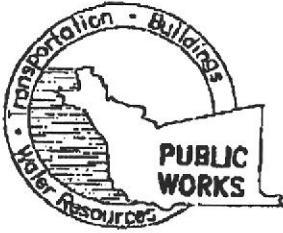

James E. Springer, CEG 1827
Project Geologist

Cynthia A. Dittmar, RG 7216
Project Engineer



Enclosure
JES:jes

cc: Mr. Scott Seery, ACHCS



COUNTY OF ALAMEDA
PUBLIC WORKS AGENCY
WATER RESOURCES SECTION
399 Elmhurst Street, Hayward, CA 94544-1395
James Yoo PH: (510) 670-6633 FAX (510) 782-1939

WELL COMPLETION REPORT RELEASE AGREEMENT—AGENCY
(Government and Regulatory Agencies and their Authorized Agents)

Project/Contract No. ALAMEDA CASE # 1408 County ALAMEDA

Township, Range, and Section 1565 INDUSTRIAL PARKWAY, HAYWARD Radius 2,000
(Must include entire study area and a map that shows the area of interest.)

Under California Water Code Section 13752, the agency named below requests permission from Department of Water Resources to inspect or copy, or for our authorized agent named below to inspect or copy, Well Completion Reports filed pursuant to Section 13751 to (check one):

- Make a study, or,
- Perform an environmental cleanup study associated with an unauthorized release of a contaminant within a distance of 2 miles.

In accordance with Section 13752, information obtained from these reports shall be kept confidential and shall not be disseminated, published, or made available for inspection by the public without written authorization from the owner(s) of the well(s). The information shall be used only for the purpose of conducting the study. Copies obtained shall be stamped CONFIDENTIAL and shall be kept in a restricted file accessible only to agency staff or the authorized agent.

BONKOWSKI & ASSOC. - TONY CHOI
Authorized Agent

6400 HOLLIS STREET, SUITE 4
Address

EMERYVILLE, CA 94608
City, State, and Zip Code


Signature

ASSISTANT PROJECT GEOLOGIST
Title

Telephone (510) 450-0770

Fax (510) 450-0801

4-1-03
Date

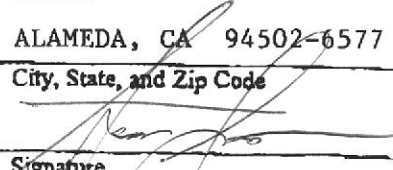
mail@bonkowski.com
E-mail

ALAMEDA COUNTY HEALTH CARE SERVICES

Government or Regulatory Agency

1131 HARBOR BAY PARKWAY, SUITE 250
Address

ALAMEDA, CA 94502-6577
City, State, and Zip Code


Signature

Haz Mat Specialist
Title

Telephone (510) 567-6783

Fax (510) 337-9335

4-2-03
Date

sseery@co.alameda.ca.us
E-mail

Post-it® Fax Note	7671	Date	4-2-03	# of pages	1
To	Tony Choi	From	S. Seery		
Co./Dept.		Co.	ACDEM		
Phone #	450-0801	Phone #			
Fax #		Fax #	510-337-9335		

GROUNDWATER MONITORING REPORT FOURTH QUARTER 2003

Hayward Bulk Petroleum Distribution Facility Hayward, California

B

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:	October 21, 2003 (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 -0.82 ft (MW-5) to -2.45 ft (MW-6) above mean sea level
Flow direction/gradient:	0.008 ft/ft toward MW-6
Separate phase hydrocarbons (SPH):	None observed

GROUNDWATER MONITORING RESULTS

<u>Analyte</u>	<u>Concentration</u>
TPHG concentrations:	0.067 mg/l (MW-2)
TPHD concentrations:	Up to 0.30 mg/l (MW-2)
TPHMO concentrations:	<0.5 mg/l in all wells
Benzene concentrations:	1.9 µg/l (MW-2)
Toluene concentrations:	< 0.5 µg/l in all wells
Ethylbenzene concentrations:	0.5 µg/l (MW-2)
Total xylenes concentrations:	< 1.0 µg/l in all wells
MTBE concentrations:	Up to 940 µg/l (MW-3)
TAME concentrations:	< 50 µg/l in MW-3, <0.50 in all other wells
ETBE, DIPE, 1,2-DCA, and EDB concentrations:	< 50 µg/l in MW-3, <0.50 in all other wells
TBA concentrations:	< 500 µg/l in MW-3, <0.50 in all other wells

DISCUSSION

TPHG was detected in well MW-2, where its concentration exceeded the State taste and odor threshold. TPHD was detected above Federal taste and odor threshold in wells MW-2 and MW-4. The concentration of benzene exceeded the California MCL in well MW-2. MTBE was detected above California's secondary MCL in wells MW-2, MW-3, and MW-7. Toluene, total xylenes, ETBE, DIPE, TBA, 1,2-DCA, and EDB were not detected in any well above laboratory reporting limits. 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, October 21, 2003
- Figure 5. TPHD Isoconcentration Contours, October 21, 2003
- Figure 6. MTBE Isoconcentration Contours, October 21, 2003
- Appendix A. Monitor Well Sampling Logs
- Appendix B. Laboratory Analytical Report and Chain-of-Custody Forms
- Appendix C. Groundwater Monitoring and Sampling Protocols

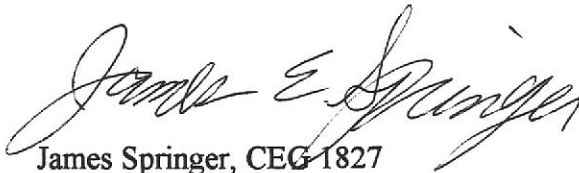
CERTIFICATION


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.

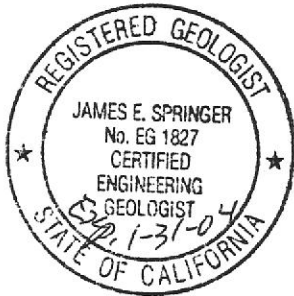
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The findings, recommendations, specifications, or professional opinions are presented, within the limits prescribed by the Client, after being prepared in accordance with generally accepted engineering practice in Northern California at the time this 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	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	11.97	-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	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	12.53	-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
MW-5	2	31.5	silty gravel, gravelly clay, silty clay, clay, sand	10-30	11.41	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

**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-6	2	31.5	fill gravel, clay, clayey gravel	10-30	10.86	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	11.81	-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	<0.5	<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	0.067	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	0.098	<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	0.170	<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	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
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

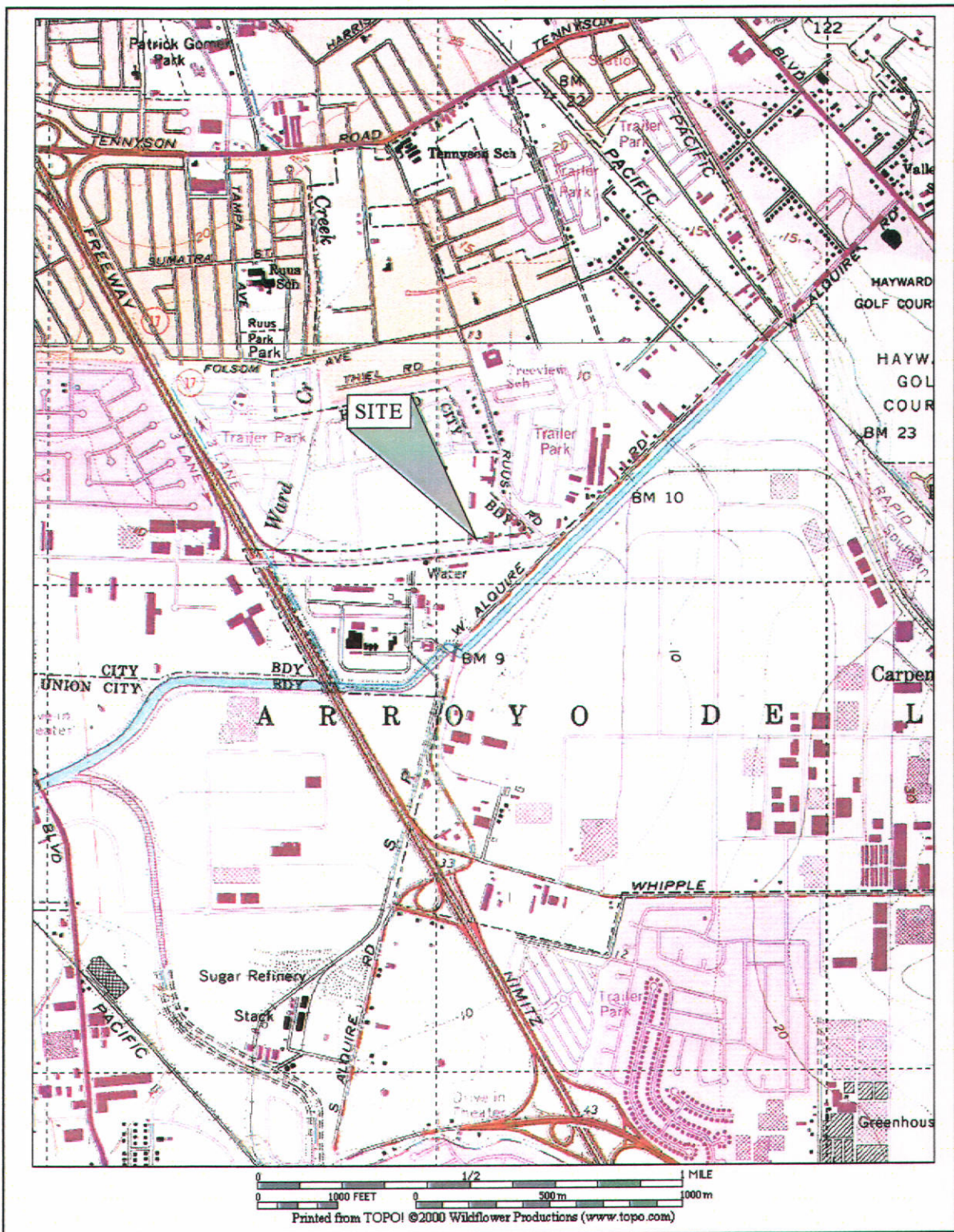
Table 2. Groundwater Chemical Test Results (EPA 8015M and EPA 8260B), Golden Gate Petroleum, Hayward, California.

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-5 (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	<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	<0.050	<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		

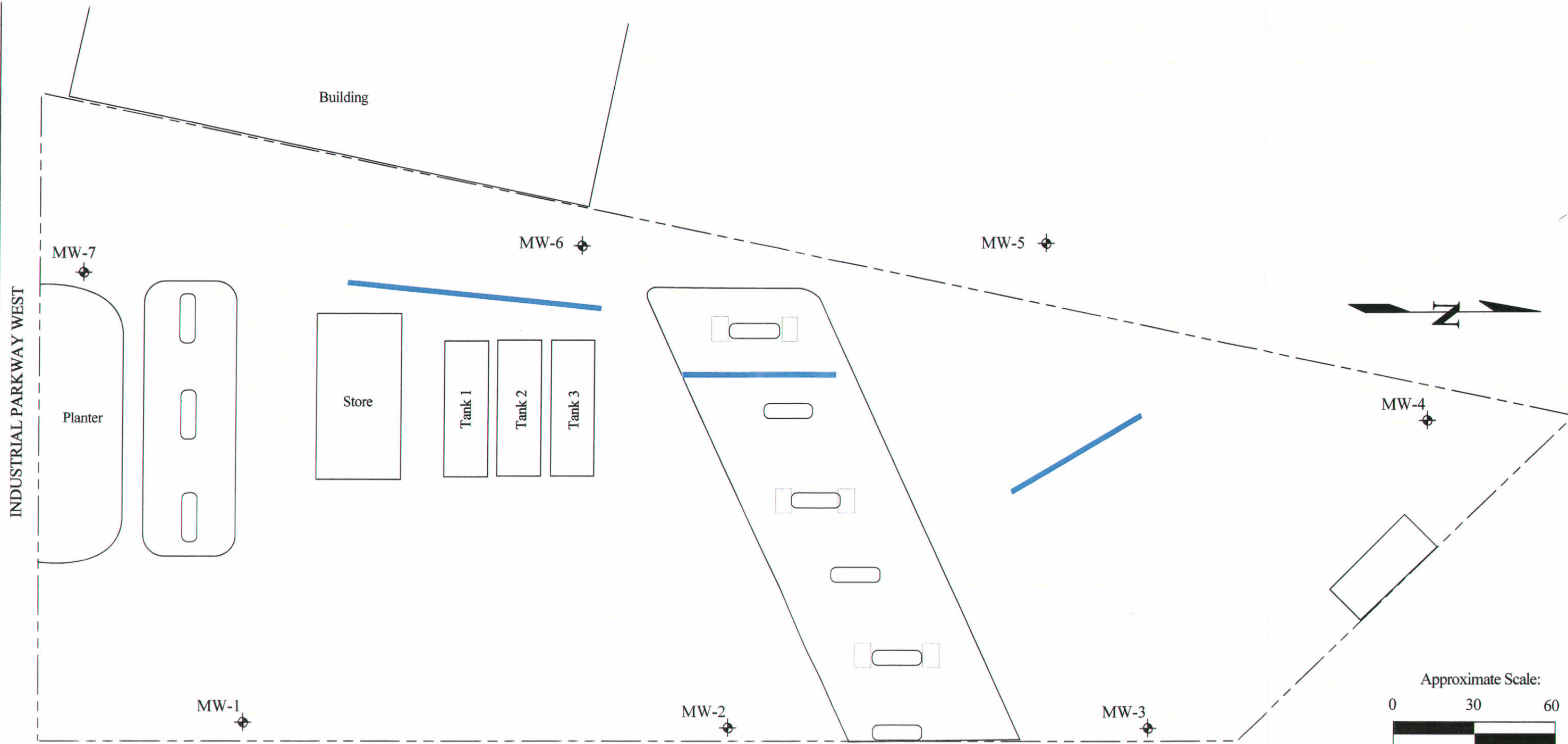
- 1 -- Taste and odor threshold (SWRCB)
- 2 -- Taste and odor threshold (U.S. EPA)
- 3 -- California Primary MCL
- 4 -- California Secondary MCL
- 5 -- California Action Level

- ^a Hydrocarbon pattern does not resemble gasoline.
- ^b Hydrocarbon pattern does not resemble diesel.
- ^c Hydrocarbon pattern does not resemble motor oil.
- ^d 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



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

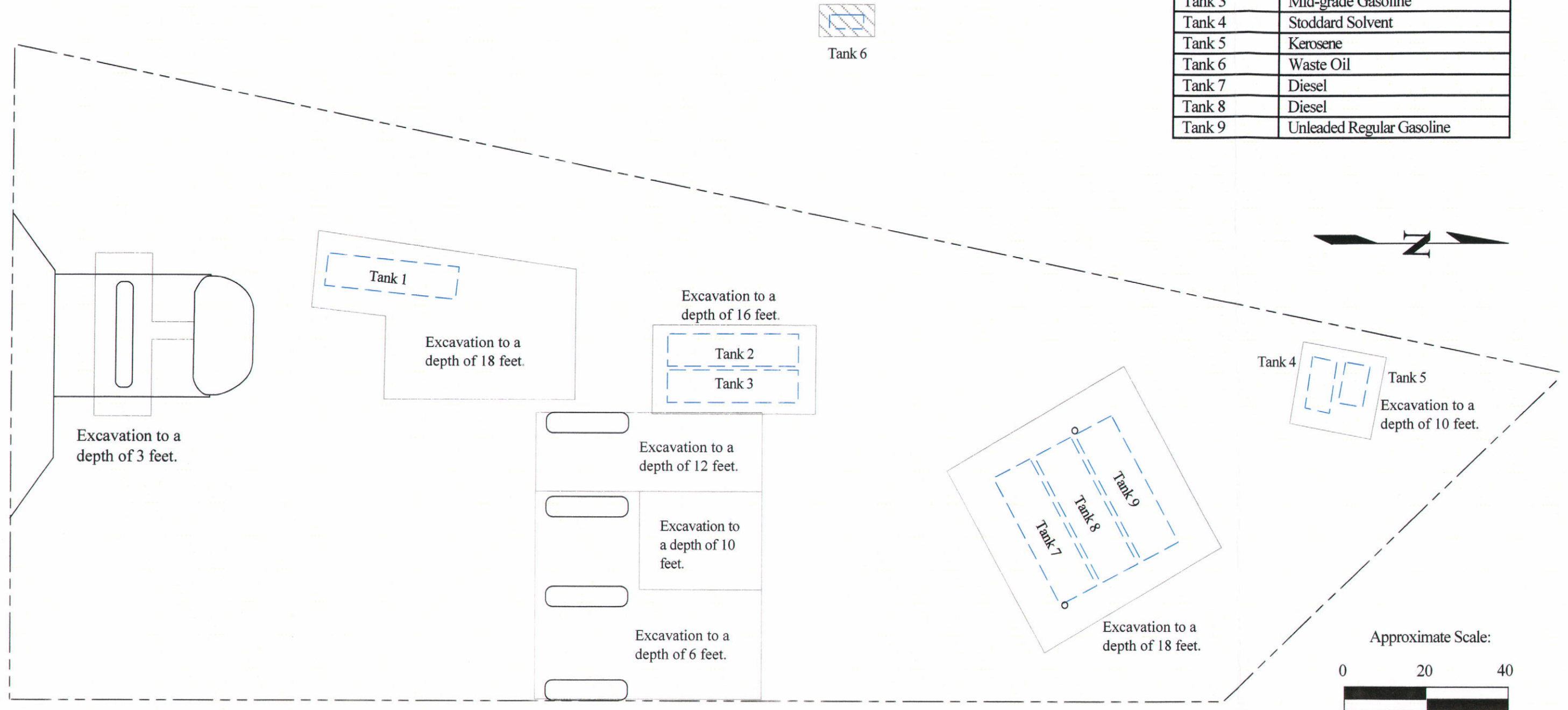


LEGEND

- 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.			

INDUSTRIAL PARKWAY WEST

Building

MW-7
-1.03

MW-6
-2.45

MW-5
-0.82

MW-4
-1.17

Planter

Store

Tank 1

Tank 2

Tank 3

-1.5

-1.5

-1

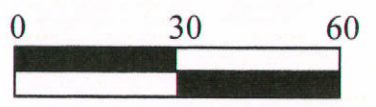
MW-1
-1.33

MW-2
-0.99

MW-3
-0.99



Approximate Scale:



LEGEND

Monitor well

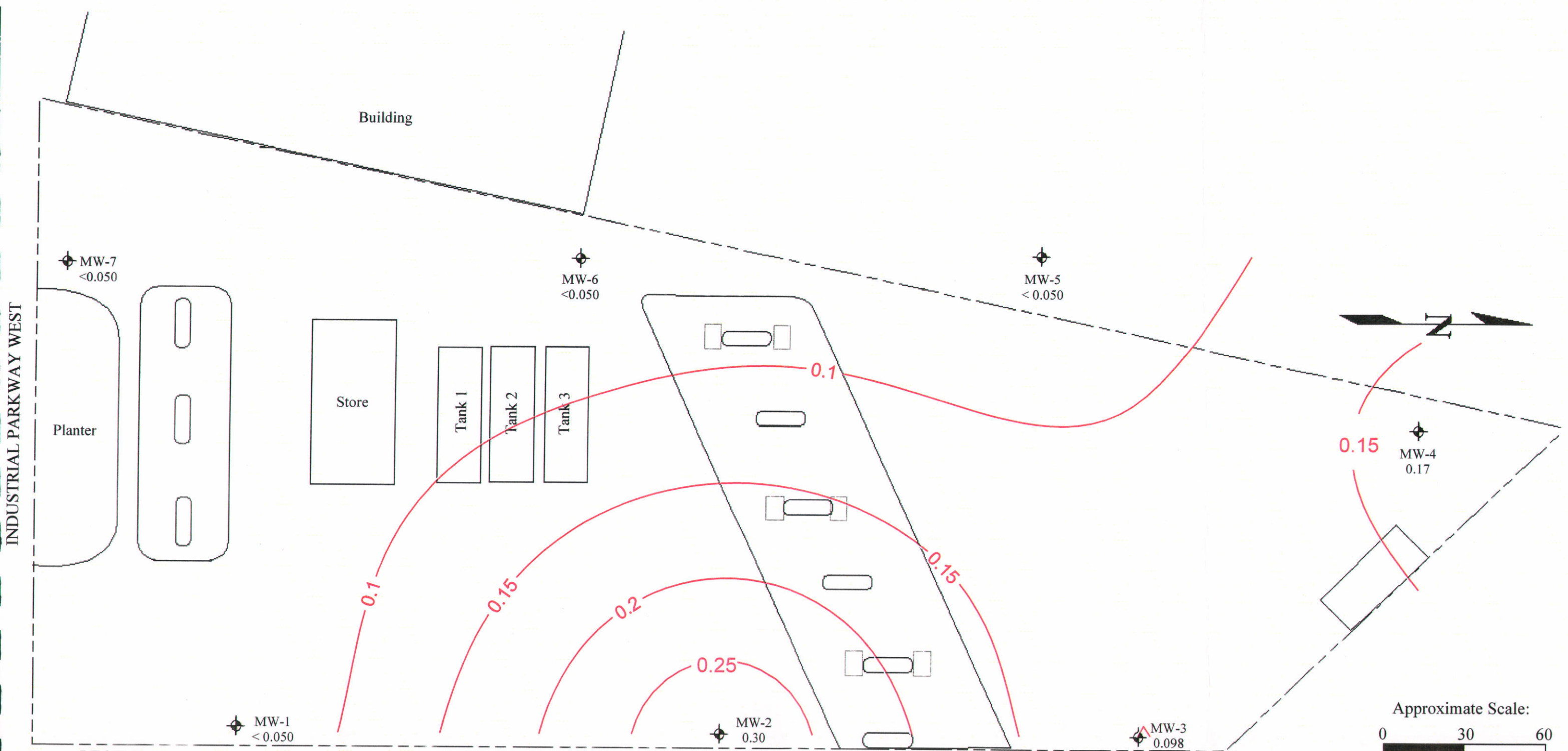
Potentiometric Surface Elevation Above Mean Sea Level
(National Geodetic Vertical Datum 1929)

Dispenser Island

Canopy Footing

Project No. L98184	Golden Gate Petroleum	POTENTIOMETRIC SURFACE ELEVATION MAP OCTOBER 21, 2003 1565 INDUSTRIAL PARKWAY WEST HAYWARD, CALIFORNIA	Figure 4
Bonkowski & Associates, Inc.			

-1.07



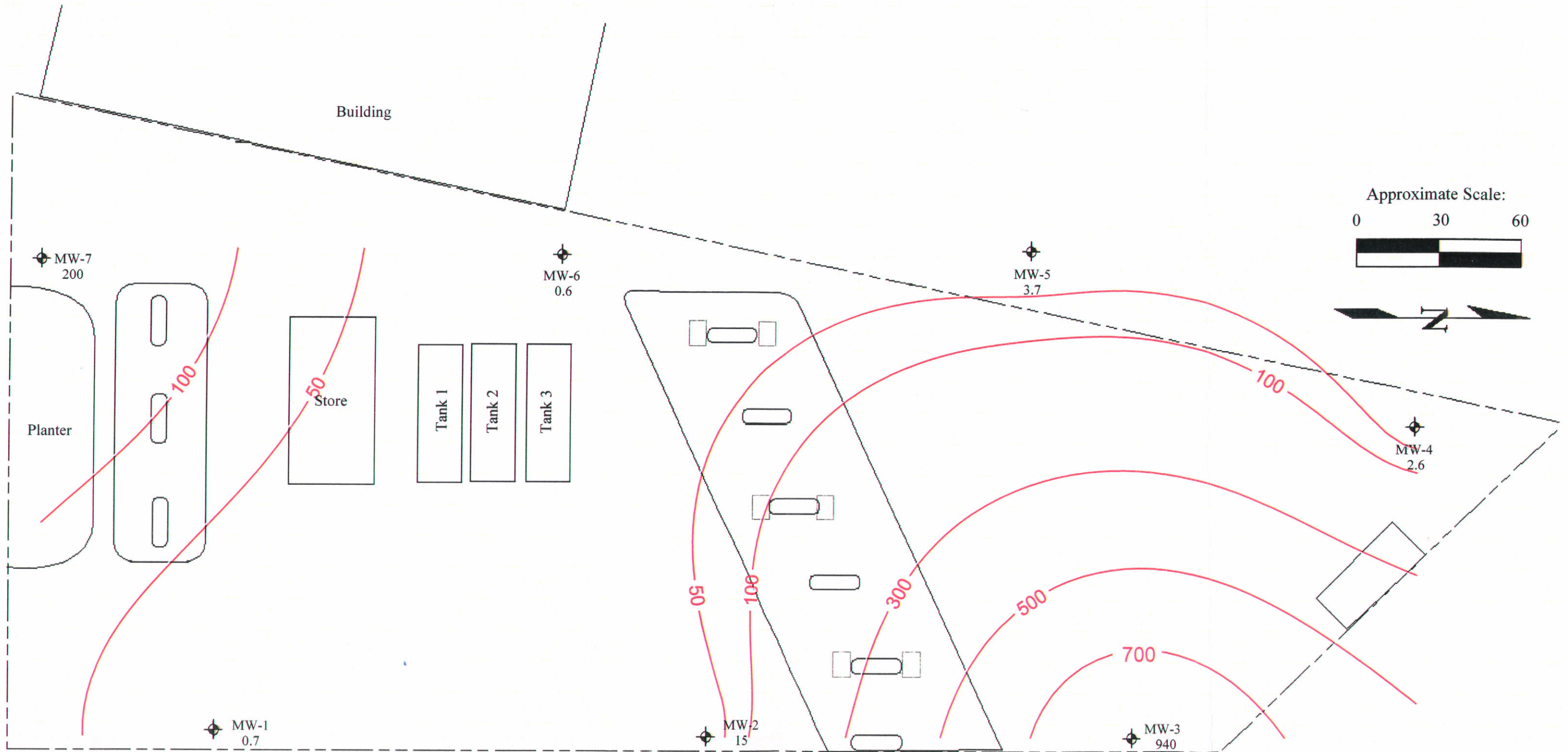
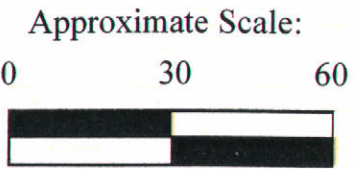
LEGEND

- MW-1 Monitor well
- 5.5 Groundwater TPHD Concentration (mg/l)
- 5.5 Groundwater TPHD Isoconcentration Contour (mg/l)
- Dispenser Island
- Canopy Footing

Project No. L98184	Golden Gate Petroleum	TPHD ISOCONCENTRATION CONTOURS OCTOBER 21, 2003 1565 INDUSTRIAL PARKWAY WEST HAYWARD, CALIFORNIA	Figure 5
Bonkowski & Associates, Inc.			

INDUSTRIAL PARKWAY WEST

Building



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 OCTOBER 21, 2003	Figure 6
Bonkowski & Associates, Inc.		1565 INDUSTRIAL PARKWAY WEST HAYWARD, CALIFORNIA	

MONITOR WELL SAMPLING

File No./Site: GGP - Hayward - L98184

Well No.: MW-1

Field Tech.: J. Springer

Date: 10-21-03

DATA FROM IMMEDIATELY BEFORE AND AFTER DEVELOPMENT

Depth to water measured from TOC (ft.):	Total depth of casing (ft.): 30
Before Purging: <u>11.76'</u>	Linear feet of water:
After Purging: <u>11.76'</u>	Area of casing x-sect: 0.0218 ft ²
Thickness of FP (ft):	Volume of water in 1 casing (ft ³):
Total purging time (min.):	1 ft ³ = 7.48 gal.
Begin:	Volume of water in 1 casing (gal):
End:	

Time	Cumulative Volume Removed	Water Temp (°F)	Conductivity (µohm/cm)	pH of Water	* Water Appearance	** Primary Particulate
<u>1643</u>	<u>-</u>	<u>74</u>	<u>1290</u>	<u>7.2</u>	<u>clear</u>	
<u>1646</u>	<u>0.9 g</u>	<u>72</u>	<u>1190</u>	<u>7.0</u>	↓	
<u>1648</u>	<u>1.5 g</u>	<u>71</u>	<u>1190</u>	<u>7.0</u>		
<u>1650</u>	<u>2.1 g</u>	<u>71</u>	<u>1160</u>	<u>6.9</u>		
<u>1652</u>	<u>2.7 g</u>	<u>70</u>	<u>1150</u>	<u>6.9</u>		

* Appearance

CL = clear
CO = cloudy
TU = turbid

** Particle

S = sand
ML = silt
CL = clay

Comments: No FP / No odor.

Micropurged @ ~ 0.3 ppm

Top of Casing Elevation:

Time Sampled: 1655

Groundwater Elevation:

MONITOR WELL SAMPLING

File No./Site: GGP - Hayward - L98184

Well No.: MW-2

Field Tech.: J. Springer

Date: 10-21-03

DATA FROM IMMEDIATELY BEFORE AND AFTER DEVELOPMENT

Depth to water measured from TOC (ft.):	Total depth of casing (ft.): 25
Before Purging: <u>11.97</u>	Linear feet of water:
After Purging: <u>11.97</u>	Area of casing x-sect: 0.0218 ft ²
Thickness of FP (ft):	Volume of water in 1 casing (ft ³):
Total purging time (min.):	1 ft ³ = 7.48 gal.
Begin:	Volume of water in 1 casing (gal):
End:	

Time	Cumulative Volume Removed	Water Temp (°F)	Conductivity (µohm/cm)	pH of Water	* Water Appearance	** Primary Particulate
<u>1609</u>	<u>—</u>	<u>80</u>	<u>2690</u>	<u>6.8</u>	<u>Clear</u>	
<u>1612</u>	<u>0.99</u>	<u>78</u>	<u>2520</u>	<u>6.2</u>	↓	
<u>1614</u>	<u>1.59</u>	<u>76</u>	<u>2530</u>	<u>5.8</u>		
<u>1617</u>	<u>2.49</u>	<u>76</u>	<u>2440</u>	<u>5.5</u>		
<u>1619</u>	<u>3.09</u>	<u>75</u>	<u>2460</u>	<u>5.6</u>		
<u>1620</u>	<u>3.99</u>	<u>75</u>	<u>2520</u>	<u>5.5</u>		

* Appearance: CL = clear, CO = cloudy, TU = turbid
 ** Particulate: S = sand, ML = silt, CL = clay

Comments: No FP / No odor

Micropurged at ~ 0.39pm

Time Sampled: 1623 Top of Casing Elevation: _____
 Groundwater Elevation: _____

MONITOR WELL SAMPLING

File No./Site: GGP - Hayward - L98184

Well No.: MW-3

Field Tech.: J. Spring et

Date: 10-21-03

DATA FROM IMMEDIATELY BEFORE AND AFTER DEVELOPMENT

Depth to water measured from TOC (ft.):	Total depth of casing (ft.): 25
Before Purging: 12.16	Linear feet of water:
After Purging: 12.16	Area of casing x-sect: 0.0218 ft ²
Thickness of FP (ft): 0	Volume of water in 1 casing (ft ³):
Total purging time (min.):	1 ft ³ = 7.48 gal.
Begin:	Volume of water in 1 casing (gal):
End:	

Time	Cumulative Volume Removed	Water Temp (°F)	Conductivity (µohm/cm)	pH of Water	* Water Appearance	** Primary Particulate
1200	—	74	2110	7.04	Clear	
1202	0.6	73.5	2160	6.84	✓	
1204	1.2	73	2030	6.75	✓	
1206	1.8	72.7	2040	6.70	✓	
1208	2.4g	72.8	2040	6.65		

* Appearance

CL = clear
CO = cloudy
TU = turbid

** Particle

S = sand
ML = silt
CL = clay

Comments:

NO FP / NO odor

Micropurge.

Top of Casing Elevation:

Time Sampled:

1220

Groundwater Elevation:

MONITOR WELL SAMPLING

File No./Site: GGP - Hayward - L98184

Well No.: MW-4

Field Tech.: J. Springer

Date: 10-21-03

DATA FROM IMMEDIATELY BEFORE AND AFTER DEVELOPMENT

Depth to water measured from TOC (ft.):	Total depth of casing (ft.): 25
Before Purging: 12.53	Linear feet of water:
After Purging: 12.53	Area of casing x-sect: 0.0218 ft ²
Thickness of FP (ft): 0	Volume of water in 1 casing (ft ³):
Total purging time (min.):	1 ft ³ = 7.48 gal.
Begin:	Volume of water in 1 casing (gal):
End:	

Time	Cumulative Volume Removed	Water Temp (°F)	Conductivity (µohm/cm)	pH of Water	* Water Appearance	** Primary Particulate
1313	-	78	640	7.5	Clear	
1315	0.69	76	450	6.9	↓	
1317	0.70	75.0	460	6.8		
1319	0.86	75.0	450	6.7		
1321	2.49	75	450	6.7		

* Appearance

CL = clear
CO = cloudy
TU = turbid

** Particle

S = sand
ML = silt
CL = clay

Comments:

No FP / No odor
Micropurged.

Top of Casing Elevation:

Time Sampled:

1325

Groundwater Elevation:

MONITOR WELL SAMPLING

File No./Site: GGP - Hayward - L98184

Well No.: MW-5

Field Tech.: J. Springer

Date: 10-21-03

DATA FROM IMMEDIATELY BEFORE AND AFTER DEVELOPMENT

Depth to water measured from TOC (ft.):	Total depth of casing (ft.): 30
Before Purging: <u>12.23</u>	Linear feet of water:
After Purging: <u>12.23</u>	Area of casing x-sect: 0.0218 ft ²
Thickness of FP (ft):	Volume of water in 1 casing (ft ³):
Total purging time (min.):	1 ft ³ = 7.48 gal.
Begin:	Volume of water in 1 casing (gal):
End:	

Time	Cumulative Volume Removed	Water Temp (°F)	Conductivity (µohm/cm)	pH of Water	* Water Appearance	** Primary Particulate
<u>1352</u>	<u>—</u>	<u>72</u>	<u>2500</u>	<u>7.4</u>	<u>clear</u>	
<u>1354</u>	<u>0.6g</u>	<u>72</u>	<u>2490</u>	<u>7.0</u>	↓	
<u>1356</u>	<u>1.2g</u>	<u>71</u>	<u>2510</u>	<u>6.9</u>		
<u>1358</u>	<u>1.8g</u>	<u>71</u>	<u>2410</u>	<u>6.8</u>		
<u>1400</u>	<u>2.4g</u>	<u>71</u>	<u>2460</u>	<u>6.7</u>		

* Appearance

CL = clear
CO = cloudy
TU = turbid

** Particle

S = sand
ML = silt
CL = clay

Comments: NO FP / NO odor

micropurged.

Time Sampled: 1410

Top of Casing Elevation:

Groundwater Elevation:

MONITOR WELL SAMPLING

File No./Site: GGP - Hayward - L98184

Well No.: MW-6

Field Tech.: J. Springer

Date: 10-21-03

DATA FROM IMMEDIATELY BEFORE AND AFTER DEVELOPMENT

Depth to water measured from TOC (ft.):	Total depth of casing (ft.): 30
Before Purging: 13.31	Linear feet of water:
After Purging: 13.31	Area of casing x-sect: 0.0218 ft ²
Thickness of FP (ft):	Volume of water in 1 casing (ft ³):
Total purging time (min.):	1 ft ³ = 7.48 gal.
Begin:	Volume of water in 1 casing (gal):
End:	

Time	Cumulative Volume Removed	Water Temp (°F)	Conductivity (µohm/cm)	pH of Water	* Water Appearance	** Primary Particulate
1442	—	73	1600	7.3	Clear	
1444	0.6g	72	1600	6.95	↓	
1446	1.2g	71	1595	6.75		
1448	1.8g	71	1550	6.6		
1450	2.4g	71	1490	6.65		

* Appearance

CL = clear
CO = cloudy
TU = turbid

** Particle

S = sand
ML = silt
CL = clay

Comments:

No FP / ^{No} slight odor.

Micropurged.

Top of Casing Elevation:

Time Sampled:

1500

Groundwater Elevation:

MONITOR WELL SAMPLING

File No./Site: GGP - Hayward - L98184

Well No.: MW-7

Field Tech.: J. Springer

Date: 10-21-03

DATA FROM IMMEDIATELY BEFORE AND AFTER DEVELOPMENT

Depth to water measured from TOC (ft.):	Total depth of casing (ft.): 25
Before Purging: <u>11.81</u>	Linear feet of water:
After Purging: <u>11.81</u>	Area of casing x-sect: 0.0218 ft ²
Thickness of FP (ft):	Volume of water in 1 casing (ft ³):
Total purging time (min.):	1 ft ³ = 7.48 gal.
Begin:	Volume of water in 1 casing (gal):
End:	

Time	Cumulative Volume Removed	Water Temp (°F)	Conductivity (µohm/cm)	pH of Water	* Water Appearance	** Primary Particulate
<u>1524</u>	<u>—</u>	<u>76.3</u>	<u>2590</u>	<u>7.11</u>	<u>clear</u>	
<u>1526</u>	<u>0.69</u>	<u>75</u>	<u>2540</u>	<u>6.5</u>	↓	
<u>1528</u>	<u>1.29</u>	<u>74</u>	<u>2450</u>	<u>6.4</u>		
<u>1530</u>	<u>1.89</u>	<u>73.6</u>	<u>24.50</u>	<u>6.4</u>		
<u>1532</u>	<u>2.49</u>	<u>73.6</u>	<u>2520</u>	<u>6.3</u>		

* 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: 1538

Groundwater Elevation:

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 8020/8015m

Date Sampled: 10/21/03
Date Received: 10/23/03
BTEX/TPHg Analyzed: 10/24/03
TPHd Analyzed: 10/30,31/03
TPHo Analyzed: 10/30,31/03
Methanol Analyzed: 10/27/03

Client Sample I.D.	MW-3		MW-4		MW-5		MW-6		MW-7	
LAB. NO.	W1003677		W1003678		W1003679		W1003680		W1003681	
ANALYTE	R/L	Results	R/L	Results	R/L	Results	R/L	Results	R/L	Results
Methanol	10	ND	5.0	ND	5.0	ND	5.0	ND	5.0	ND
Benzene	0.5	ND	0.5	ND	0.5	ND	0.5	ND	0.5	ND
Toluene	0.5	ND	0.5	ND	0.5	ND	0.5	ND	0.5	ND
Ethylbenzene	0.5	ND	0.5	ND	0.5	ND	0.5	ND	0.5	ND
Total Xylenes	1.0	ND	1.0	ND	1.0	ND	1.0	ND	1.0	ND
TPH as Gasoline	50	ND	50	ND	50	ND	50	ND	50	ND
TPH as Diesel	50	98	50	170	50	ND	50	ND	50	ND
TPH as Oil	500	ND	500	ND	500	ND	500	ND	500	ND

Client Sample I.D.	MW-2		MW-1	
LAB. NO.	W1003682		W1003683	
ANALYTE	R/L	Results	R/L	Results
Methanol	5.0	ND	5.0	ND
Benzene	0.5	1.9	0.5	ND
Toluene	0.5	ND	0.5	ND
Ethylbenzene	0.5	0.5	0.5	ND
Total Xylenes	1.0	ND	1.0	ND
TPH as Gasoline	50	67	50	ND
TPH as Diesel	50	300	50	ND
TPH as Oil	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


Laboratory Representative

11/04/03
Date Reported

**EXCELCHEM
ENVIRONMENTAL LABS**



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Roseville, CA 95678

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ANALYSIS REPORT


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

QA/QC %RECOVERY		
	LCS	LCSD
Benzene	91	92
Toluene	94	91
Ethylbenzene	92	93
Total Xylenes	92	93
TPH as Diesel	86	88
TPH as Oil	83	79

QA/QC Analyzed: 10/24/03
TPHd QA/QC Analyzed: 10/31/03
TPHoQA/QC Analyzed: 10/31/03

QA/QC %RECOVERY		
	LCS	LCSD
Methanol	80	85

QA/QC Analyzed: 10/27/03


Laboratory Representative

11/04/03
Date Reported

EXCELCHEM ENVIRONMENTAL LABS



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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

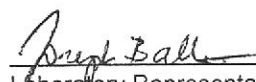
Project: GGP Hayward / L98184
Method: EPA 8260B

Date Sampled: 10/21/03
Date Received: 10/23/03
Date Analyzed: 10/28,29/03

Client Sample I.D.	MW-3		MW-4		MW-5		MW-6		MW-7	
LAB. NO.	W1003677		W1003678		W1003679		W1003680		W1003681	
ANALYTE	R/L	Results	R/L	Results	R/L	Results	R/L	Results	R/L	Results
Ethanol	2000	ND	20	ND	20	ND	20	ND	200	ND
tert-Butanol	500	ND	5.0	ND	5.0	ND	5.0	ND	50	ND
MTBE	50	940	0.5	2.6	0.5	3.7	0.5	0.6	5.0	200
Diisopropyl ether	50	ND	0.5	ND	0.5	ND	0.5	ND	5.0	ND
Ethyl tert-butyl ether	50	ND	0.5	ND	0.5	ND	0.5	ND	5.0	ND
tert-Amyl methyl ether	50	ND	0.5	ND	0.5	ND	0.5	ND	5.0	ND
1,2-Dichloroethane	50	ND	0.5	ND	0.5	ND	0.5	ND	5.0	ND
1,2-Dibromoethane	50	ND	0.5	ND	0.5	ND	0.5	ND	5.0	ND
SURROGATE %RECOVERY										
Dibromoflouromethane	98		98		96		96		91	
Toluene-d8	99		102		101		98		100	
4-Bromofluorobenzene	106		104		107		105		107	

Client Sample I.D.	MW-2		MW-1	
LAB. NO.	W1003682		W1003683	
ANALYTE	R/L	Results	R/L	Results
Ethanol	20	ND	20	ND
tert-Butanol	5.0	ND	5.0	ND
MTBE	0.5	15	0.5	0.7
Diisopropyl ether	0.5	ND	0.5	ND
Ethyl tert-butyl ether	0.5	ND	0.5	ND
tert-Amyl methyl ether	0.5	ND	0.5	ND
1,2-Dichloroethane	0.5	ND	0.5	ND
1,2-Dibromoethane	0.5	ND	0.5	ND
SURROGATE %RECOVERY				
Dibromoflouromethane	98		98	
Toluene-d8	100		102	
4-Bromofluorobenzene	108		103	

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

11/04/03
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	97	87
Benzene	107	96
Trichloroethene	105	97
Toluene	104	95
Chlorobenzene	97	91

QA/QC Analyzed: 10/28/03


Laboratory Representative

11/04/03
Date Reported

Excelchem

500 Giuseppe Court, Suite 3

Roseville, CA 95678

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.#:

Email Address:

COC #:

Location I.D.#:

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

Fax #: 510 450-0800

ANALYSIS REQUEST

INV# 1003026

Page of

Project Number/P.O#: L98184

Project Name: 66P Hayward

Project Location: 1565 Industrial Pkwy. W., Hayward
Sampler Signature: James Springer

Sample ID	Sampling		Container				Method Preserved				Matrix			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 (twk)	Bin#	Due Date:
	Date	Time	VOA	SLEEVE	1L GLASS	PLASTIC	HCl	HNO3	ICE	NONE	WATER	SOIL	AIR																		Wet	Total
MW-3	10/21	1220	3		1			X			X			X								X							W1003677			
MW-4	10/21	1325	3		1																								W1003678			
MW-5	10/21	1410	3		1																								W1003679			
MW-6	10/21	1500	3		1																								W1003680			
MW-7	10/21	1538	3		1																								W1003681			
MW-2	10/21	1623	3		1																								W1003682			
MW-1	10/21	1655	3		1																								W1003683			
																													W1003684			
																													W1003685			

Relinquished by: James Springer

Date Time: 10-23-03 1:22

Received by:

Remarks/Condition of Sample:

Relinquished by:

Date Time:

Received by:

Relinquished by:

Date Time: 10-23-03 1:22

Received by Laboratory: Michael Pallarin

Bill To: