2005 ANNUAL GROUNDWATER MONITORING REPORT

FORMER HEGENBERGER MAINTENANCE STATION 555 HEGENBERGER ROAD OAKLAND, CALIFORNIA

PREPARED FOR:
CALIFORNIA DEPARTMENT OF TRANSPORTATION
DISTRICT 4
OFFICE OF ENVIRONMENTAL ENGINEERING
111 GRAND AVENUE
OAKLAND, CALIFORNIA

PREPARED BY:
GEOCON CONSULTANTS, INC.
2356 RESEARCH DRIVE
LIVERMORE, CALIFORNIA

CALTRANS CONTRACT NO. 04A1862
TASK ORDER NO. 17

GEOCON PROJECT NO. E8220-06-17

June 2005

GEOCON
CONSULTANTS, INC
GEOTECHNICAL
ENVIRONMENTAL
MATERIALS

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ENVIRONMENTAL ■ GEOTECHNICAL ■ MATERIALS

Project No. E8220-06-17
June 20, 2005

Mr. Bahram Sazegar
California Department of Transportation
District 4
111 Grand Avenue, 14th Floor
Post Office Box 23660
Oakland, California 94623-0660

Subject: 2005 ANNUAL GROUNDWATER MONITORING REPORT
FORMER HEGENBERGER MAINTENANCE STATION
555 HEGENBERGER ROAD, OAKLAND, CALIFORNIA
CONTRACT NO. 04A1862, TASK ORDER NO. 17

Dear Mr. Sazegar:

In accordance with California Department of Transportation (Caltrans) Contract No. 04A1862 and Task Order No. 17, Geocon has performed environmental engineering services at the project site. The project site consists of the Former Hegenberger Maintenance Station located at 555 Hegenberger Road in Oakland, California.

The accompanying report summarizes the services performed consisting of the collection of groundwater samples and laboratory analyses.

The contents of this report reflect the views of Geocon, who is responsible for the facts and accuracy of the data presented herein. The contents do not necessarily reflect the official views or policies of the State of California or the Federal Highway Administration. This report does not constitute a standard, specification, or regulation.

If there are any questions concerning the contents of this report, or if Geocon may be of further service, please contact the undersigned at your convenience.

Sincerely,

GEOCON CONSULTANTS, INC.

John Love, PG
Sr. Project Geologist

Richard Day, CEG, CHG
Regional Manager

JL:RWD:rjk

Expires 11-30-06

(4) Addressee

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2005 ANNUAL GROUNDWATER MONITORING REPORT

1.0 INTRODUCTION

This Groundwater Monitoring Report for the former Hegenberger California Department of Transportation (Caltrans) Maintenance Station was prepared under Caltrans Contract No. 04A1862 and Task Order (TO) No. 17.

1.1 Site Description

The subject site is located at 555 Hegenberger Road in Oakland, California. The site was formerly used by Caltrans to store and service maintenance vehicles and equipment. Currently, the site is developed as an automobile dealership.

The approximate location of the site is depicted on the attached Vicinity Map presented as Figure 1. The approximate site boundaries and former structures are depicted on the Site Plan presented as Figure 2.

1.2 Background

In September 1994, four underground storage tanks (USTs) and the associated product piping and pump island were removed. The USTs consisted of two 2,000-gallon diesel and two 6,500-gallon gasoline tanks. During the tank removals, the UST areas were over-excavated and the soil was disposed. Soil samples collected from the tank excavation exhibited concentrations of total petroleum hydrocarbons as gasoline (TPHg), as diesel (TPHd), as oil and grease (O&G), and benzene, toluene, ethylbenzene, and xylenes (BTEX).

To evaluate the potential impacts to groundwater and soil beneath the site, a soil and groundwater investigation was conducted by Geocon in September and October 1995. The investigation included the installation of five monitoring wells (MW1 through MW5) at the locations depicted on the Site Plan, Figure 2. The investigation indicated that groundwater and soil beneath the site was impacted by petroleum hydrocarbons.

Based on the findings of the investigation, the Alameda County Department of Environmental Health Services (ACDEHS) requested quarterly groundwater monitoring. The five monitoring wells were monitored quarterly from October 1995 through November 1996. The wells were also sampled in February 1998.

Total petroleum hydrocarbons as motor oil (TPHmo) and O&G were not detected in groundwater samples and analysis of these compounds was discontinued. TPHg, TPHd, BTEX and MTBE have

historically been detected in groundwater. Since the constituent concentrations have not attenuated over time, the ACDEHS has requested annual monitoring of groundwater beneath the site. The requested annual monitoring began in February 2003 and laboratory analysis indicated that MTBE was no longer present in groundwater at the site. Subsequently, ACDEHS stated that MTBE was no longer a contaminant of concern.

Groundwater monitoring has continued at the site on an annual basis since February 2003. Contaminant concentrations have remained relatively stable over that time period with the highest contaminant concentrations consistently reported in monitoring well MW3.

2.0 SCOPE OF SERVICES

The following scope of services was performed:

- Collected depth to groundwater measurements and groundwater samples from five monitoring well locations;
- Submitted groundwater samples for laboratory analysis; and
- Prepared Groundwater Monitoring Report.

3.0 INVESTIGATIVE METHODS

3.1 Groundwater Sampling

Groundwater monitoring was performed on May 12, 2005. Prior to purging each monitoring well, depths to groundwater were determined using an electronic water level indicator (accurate to 0.01ft). Groundwater was purged from each well using a using a centrifugal pump fitted with 3/8-inch diameter disposable polyethylene tubing. At least three well-casing-volumes of groundwater were purged from each well prior to sample collection. Field parameters such as temperature, conductivity and pH were monitored after each casing volume had been removed to insure groundwater from the surrounding formation had entered the well casing prior to sample collection. The water level in each well was allowed to recover approximately 80% prior to sampling. Groundwater samples were collected using disposable polyethylene bailers. A new bailer was used to collect samples from each well. Monitoring well sampling data sheets are included as Appendix A.

Groundwater samples were collected in laboratory-provided containers, labeled and placed in a chilled container and transported to Sparger Technology, Inc. using chain-of-custody protocol. The purged groundwater from the sampling event was containerized and transported back to Geocon's warehouse for temporary storage pending disposal arrangements.

3.2 Laboratory Analyses

Geocon instructed the analytical laboratory to conduct the following laboratory analyses:

- TPHg following EPA Test Method 8015B Modified; and
- BTEX following EPA Test Method 8260B.

A copy of the laboratory report and chain of custody documentation is presented as Appendix B.

4.0 FIELD OBSERVATIONS AND INVESTIGATIVE RESULTS

4.1 Depth to Groundwater Measurements

On May 12, 2005, depth to groundwater ranged from 4.55 feet to 6.18 feet below the top of casing (TOC).

Historic depth to groundwater data are presented in Table 1. The groundwater flow direction was not calculated in January 2004, and could not be calculated in May 2005 because the groundwater elevation data do not support a specific flow direction. However, historic flow direction and groundwater sample results data indicates the groundwater flow direction is towards the west-northwest.

4.2 Analytical Results

TPHg was reported in all five monitoring wells at concentrations ranging from 0.33 mg/l in MW-2 to 6.2 mg/l in MW-3. Benzene was reported at concentrations of 20 ug/l, 1,000 ug/l, and 14 ug/l in monitoring wells MW-1, MW-3, and MW-4, respectively.

Toluene, ethylbenzene, and xylenes were reported at concentrations ranging from 5.7 to 30 ug/l in monitoring wells MW-1, MW-3, and MW-4.

5.0 CONCLUSIONS AND RECOMMENDATIONS

Historical groundwater sample results indicate a significant portion of the petroleum hydrocarbon plume has migrated northwest from the former UST excavation towards MW-3. During the recent sample event, TPHg and benzene were reported in MW-3 at concentrations of 6.2 mg/l and 1,000 ug/l, respectively. The next highest TPHg and benzene concentrations were reported in MW-1, located approximately 20 feet west of the former UST excavation. TPHg and benzene were reported in MW-1 at concentrations of 1.2 mg/l and 20 ug/l.

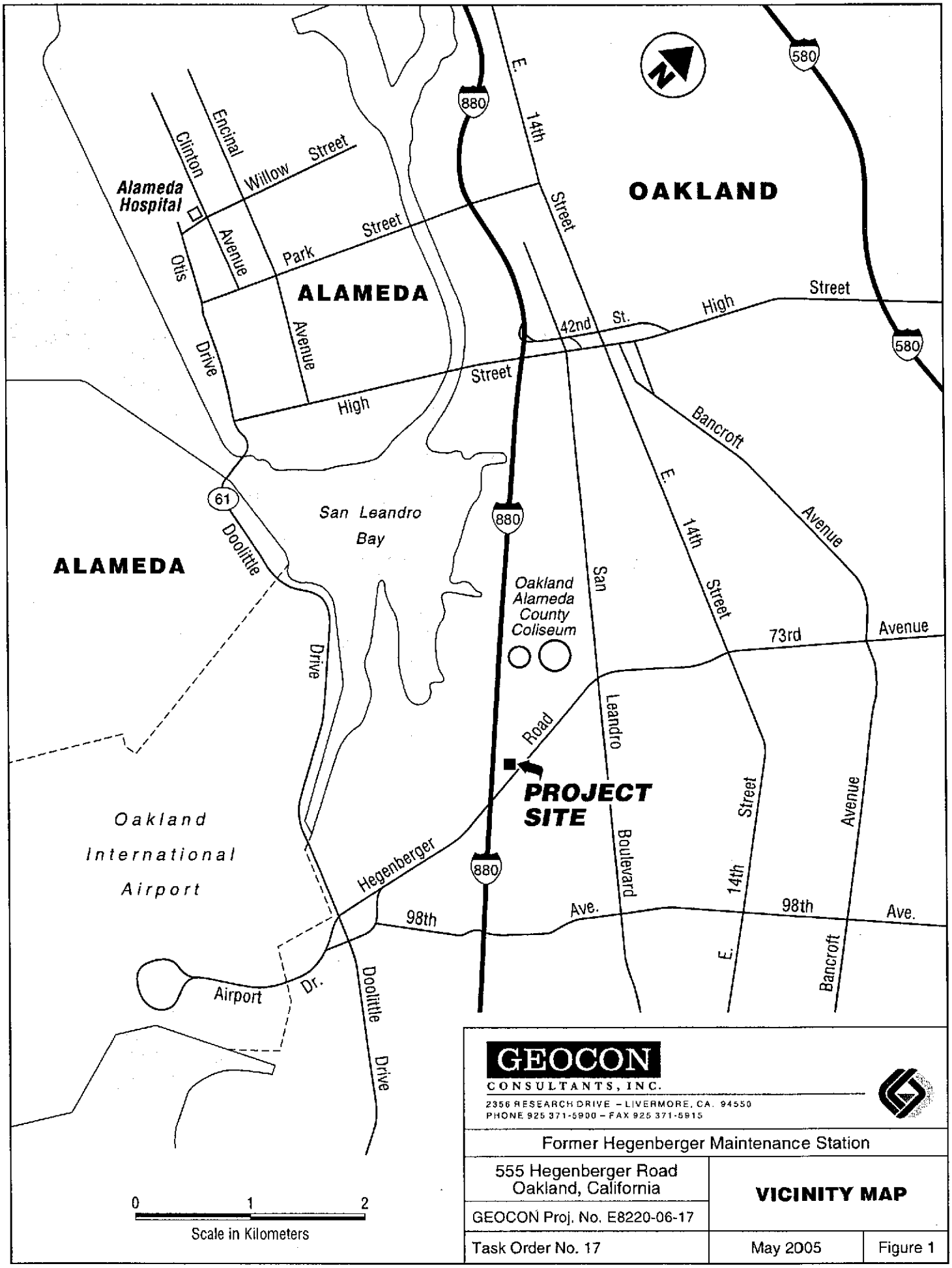
Benzene has been detected in groundwater samples collected from several monitoring wells at concentrations that exceed the maximum contaminant level (MCL) of 1 ug/l. Although groundwater samples collected from several onsite monitoring wells exceed the MCL established for drinking water, shallow groundwater in the vicinity of the site is not used for this purpose. The highest concentration of benzene (3,070 ug/l in 1998) ever reported at the site is below the Tier 1 Environmental Screening Levels (ESLs) established by the Regional Water Quality Control Board – San Francisco Bay Region (RWQCB) for volatilization of compounds from shallow groundwater to indoor air, the only viable exposure pathway at the site, should the plume have migrated northwest beneath the existing building.

Based on the results of this and previous groundwater monitoring events, it appears the lateral extent of petroleum hydrocarbon impacts to shallow groundwater have not been defined to the north and west of the former UST excavation. Therefore, Geocon recommends advancing up to eight soil borings west of MW-4, northwest of MW-3, and north of the former UST excavation to characterize the lateral extent of the petroleum hydrocarbon plume. Once completed, additional monitoring wells may be constructed (if necessary) to monitor the down gradient extent, as well as stability of the plume. Should future groundwater monitoring confirm that the plume is stable, then the Alameda County Department of Environmental Health Services may consider the site for case closure as a low risk groundwater site.

6.0 REPORT LIMITATIONS

This report has been prepared exclusively for Caltrans. The information contained herein is only valid as of the date of the report, and will require an update to reflect additional information obtained.

This report is not a comprehensive site characterization and should not be construed as such. The findings as presented in this report are predicated on the results of the limited sampling and laboratory testing performed. In addition, the information obtained is not intended to address potential impacts related to sources other than those specified herein. Therefore, the report should be deemed conclusive with respect to only the information obtained. We make no warranty, express or implied, with respect to the content of this report or any subsequent reports, correspondence or consultation. Geocon strived to perform the services summarized herein in accordance with the local standard of care in the geographic region at the time the services were rendered.



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2356 RESEARCH DRIVE – LIVERMORE, CA. 94550
PHONE 925 371-5900 – FAX 925 371-5915

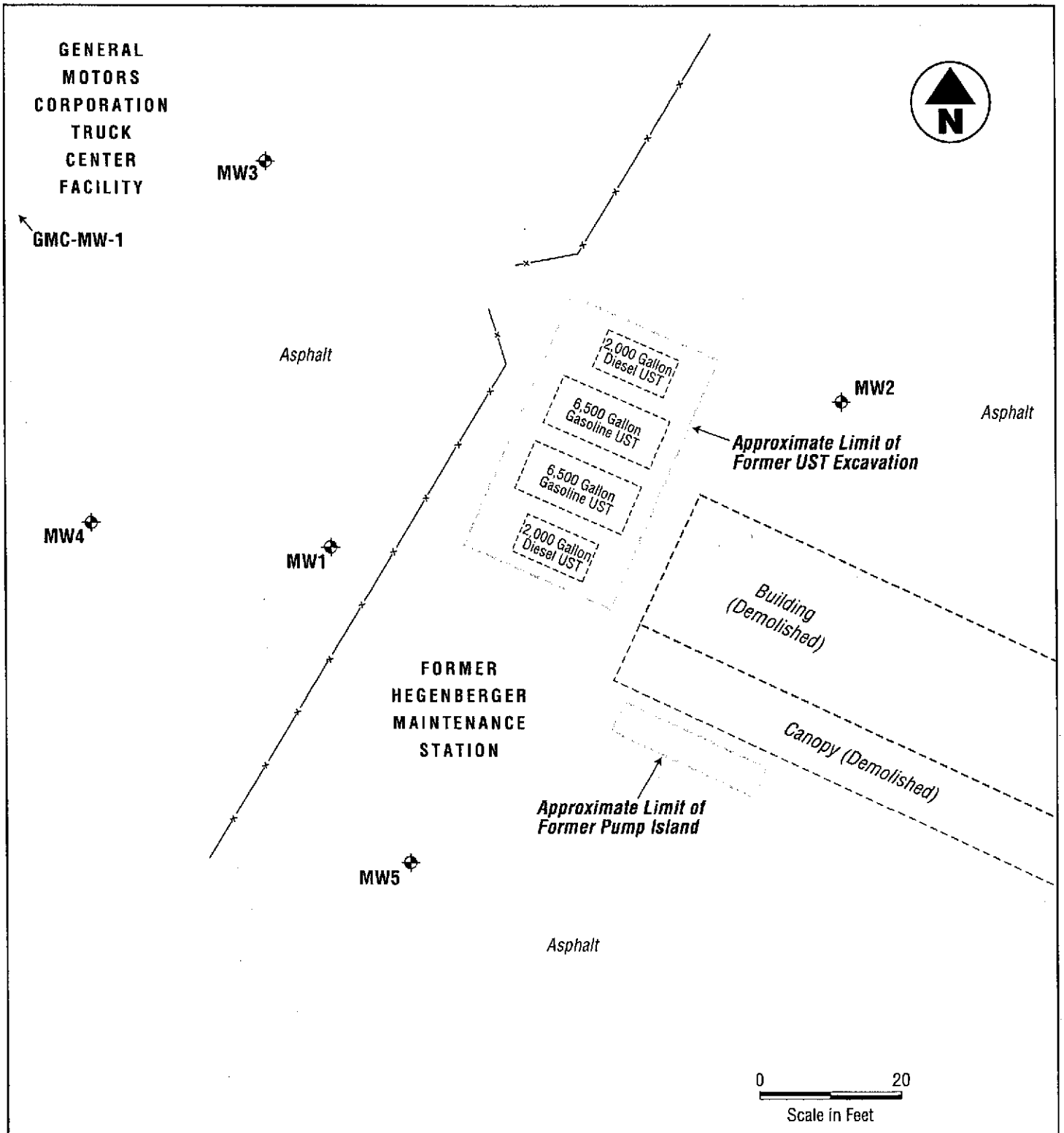
Former Hegenberger Maintenance Station

555 Hegenberger Road
Oakland, California

VICINITY MAP

GEOCON Proj. No. E8220-06-17

Task Order No. 17 | May 2005 | Figure 1



LEGEND:

- Location of Former UST
- MW1 — Location of Groundwater Monitoring Well, GEOCON, Sept. 95

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PHONE 925 371-5900 – FAX 925 371-5915

Former Hegenberger Maintenance Station

555 Hegenberger Road
Oakland, California

SITE PLAN

GEOCON Proj. No. E8220-06-17

Task Order No. 17 | May 2005 | Figure 2

Table 1
Historical Depth to Groundwater and Sample Results
Former Hegenberger Maintenance Station

Well	Date	TOC Elevation (feet)	Depth to Water (feet)	Groundwater Elevation (feet amsl)	TPHg (mg/l)	TPHd (mg/l)	Benzene (ug/l)	Toluene (ug/l)	Ethylbenzene (ug/l)	Xylenes (ug/l)	MTBE (ug/l)
MW-1	10/11/1995	99.73	6.55	93.18	0.72	< 0.05	660	13	4.7	2.8	---
	1/17/1996	99.73	5.64	94.09	4.4	< 0.05	1,000	30	21	17	---
	4/16/1996	99.73	5.46	94.27	6.05	7.45	914	34.7	34.4	15.8	---
	8/26/1996	99.73	5.91	93.82	3.8	0.43	780	23	21	20	---
	11/14/1996	99.73	6.16	93.57	2.6	0.27	500	18	14	8.9	---
	2/18/1998	99.73	3.82	95.91	3.1	0.90	240	18	7.8	11	20
	3/30/2001	99.73	6.19	93.54	3.6	0.48	150	13	0.69	10.8	ND
	9/30/2002	10.26	5.79	4.47	0.59	< 0.05	12	2.7	<0.5	1.6	<0.5
	2/20/2003	10.26	4.49	5.77	2.65	---	36.9	10.6	7	18.1	<5
	1/12/2004	10.26	4.41	5.85	1.61	---	5.6	1.8	1.6	1.4	---
	5/12/2005	10.26	4.45	5.81	1.2	---	20	<5.0	<5.0	<5.0	---
MW-2	10/11/1995	99.68	6.88	92.8	< 0.05	< 0.05	<0.3	<0.3	<0.3	<0.5	---
	1/17/1996	99.68	5.32	94.36	4.9	< 0.05	2,100	<15	<15	<15	---
	4/16/1996	99.68	5.81	93.87	< 0.05	< 0.05	1.02	<0.5	<0.5	<0.5	---
	8/26/1996	99.68	5.98	93.70	< 0.05	< 0.05	<0.5	<0.5	<0.5	<0.5	---
	11/14/1996	99.68	6.72	92.96	< 0.05	0.056	<0.5	<0.5	<0.5	<0.5	---
	2/18/1998	99.68	5.01	94.67	< 0.05	0.260	<0.5	<0.5	<0.5	<0.5	<0.5
	3/30/2001	99.68	6.54	93.14	< 0.20	0.37	2.7	0.82	< 0.5	0.84	ND
	9/30/2002	10.22	6.48	3.74	< 0.05	< 0.05	<0.5	<0.5	<0.5	<1.5	<0.5
	2/20/2003	10.22	5.98	4.24	0.11	---	6.6	<0.5	<0.5	<1.0	<0.5
	1/12/2004	10.22	5.69	4.53	0.067	---	<0.5	<0.5	<0.5	<1.0	---
	5/12/2005	10.22	5.55	4.67	0.33	---	<1.0	<1.0	<1.0	<1.0	---

Table 1
Historical Depth to Groundwater and Sample Results
Former Hegenberger Maintenance Station

Well	Date	TOC Elevation (feet)	Depth to Water (feet)	Groundwater Elevation (feet amsl)	TPHg (mg/l)	TPHd (mg/l)	Benzene (ug/l)	Toluene (ug/l)	Ethylbenzene (ug/l)	Xylenes (ug/l)	MTBE (ug/l)
MW-3	10/11/1995	98.92	6.42	92.5	1.3	< 0.05	1.0	<0.3	<0.3	<0.3	---
	1/17/1996	98.92	5.82	93.1	0.171	< 0.05	64	<0.3	1.0	<0.3	---
	4/16/1996	98.92	5.85	93.07	6.74	0.565	2,770	31	13.9	21.9	---
	8/26/1996	98.92	5.72	93.2	0.7	0.70	180	4.2	1.0	4.6	---
	11/14/1996	98.92	6.28	92.64	0.3	0.12	6.2	1.2	0.7	1.4	---
	2/18/1998	98.92	4.65	94.27	11	2.5	3,070	50	54	19	25
	3/30/2001	98.92	5.62	93.30	9.9	0.49	2,000	48	39	39	ND
	9/30/2002	9.46	5.84	3.62	2.02	0.57	775	17.2	1.0	9.4	<0.5
	2/20/2003	9.46	5.55	3.91	4.01	---	1,120	<50	<50	<100	<50
	1/12/2004	9.46	4.77	4.69	3.32	---	632	26.9	<25	<50	---
	5/12/2005	9.46	4.63	4.83	6.2	---	1,000	30.0	20.0	10.0	---
MW-4	10/11/1995	99.46	6.63	92.83	0.5	< 0.05	17	1.1	<0.3	0.48	---
	1/17/1996	99.46	5.77	93.69	0.46	< 0.05	72	4.1	<0.3	1.7	---
	4/16/1996	99.46	5.89	93.57	2.20	< 0.05	851	7.67	1.41	5.72	---
	8/26/1996	99.46	6.14	93.32	0.30	0.11	55	4.9	1.2	<0.5	---
	11/14/1996	99.46	6.72	92.74	0.20	0.20	3.4	<0.5	<0.5	<0.5	---
	2/18/1998	99.46	5.02	94.44	1.60	0.28	320	9.1	1.0	0.59	1.7
	3/30/2001	99.46	6.21	93.25	2.7	0.35	320	16	5.3	13.6	ND
	9/30/2002	10.00	6.40	3.6	0.067	< 0.05	<0.5	<0.5	<0.5	<1.5	<0.5
	2/20/2003	10.00	5.83	4.17	0.57	---	107	<10	<10	<20	<10
	1/12/2004	10.00	5.41	4.59	0.70	---	122	13.5	0.6	8.8	---
	5/12/2005	10.00	5.59	4.41	0.76	---	14.0	5.70	<5.0	<5.0	---

Table 1
Historical Depth to Groundwater and Sample Results
Former Hegenberger Maintenance Station

Well	Date	TOC Elevation (feet)	Depth to Water (feet)	Groundwater Elevation (feet amsl)	TPHg (mg/l)	TPHd (mg/l)	Benzene (ug/l)	Toluene (ug/l)	Ethylbenzene (ug/l)	Xylenes (ug/l)	MTBE (ug/l)
MW-5	10/11/1995	99.91	6.68	93.23	1.0	< 0.05	45	15	1.9	6.1	---
	1/17/1996	99.91	5.74	94.17	< 0.05	< 0.05	2	<0.3	<0.3	<0.3	---
	4/16/1996	99.91	5.85	94.06	1.74	0.855	157	20.1	3.92	22.4	---
	8/26/1996	99.91	5.99	93.92	0.90	0.27	55	6.4	0.9	3.7	---
	11/14/1996	99.91	6.70	93.21	0.70	0.32	31	5.7	0.7	3.6	---
	2/18/1998	99.91	5.74	94.17	1.20	0.58	14	5.2	0.76	5.5	9.5
	3/30/2001	99.91	6.73	93.18	1.5	0.48	7.2	6.5	< 0.50	10.7	ND
	9/30/2002	10.34	6.18	4.16	0.56	0.43	1.8	5.2	<0.5	6.5	<0.5
	2/20/2003	10.34	5.80	4.54	1.04	---	<2.5	8.6	<2.5	11.3	<2.5
	1/12/2004	10.34	5.60	4.74	1.82	---	4.2	8.0	0.6	12.8	---
	5/12/2005	10.34	6.18	4.16	1.3	---	<5.0	<5.0	<5.0	<5.0	---

Notes:
TOC = Top of well casing
feet amsl - Feet above mean sea level
mg/l - Milligrams per liter
ug/l - Micrograms per liter

GROUNDWATER MONITORING WELL PURGE/SAMPLING WORK SHEET

Project Name: Former Hegenberger Station
Address: 555 Hegenberger RD. Oakland, CA
Well Number: MW-1
Development/Purge/Sampler(s): P. Arroyo

Project Number: E8220-06-17
Date: 5-12-05
Well Lock Number:
Well Integrity: Good
Ambient Conditions: Cloudy

Pre-Purge DO (mg/L) N/A

WELL VOLUME CALCULATION

Well Casing Diameter (in.)	Total Well Depth (ft.)		Depth to Goundwater (GW)		Linear Feet of GW		Gallons Per Linear Foot		1 Well Volume (gal.)
2		-		=		X	0.17	=	
3		-		=		X	0.38	=	
(4)	19.50	-	4.45	=	15.05	X	0.66	=	9.93
4.5		-		=		X	0.83	=	
6		-		=		X	1.5	=	

GROUNDWATER SURFACE INSPECTION

Floating Product (ft.) (in.): NONE Sheen/Iridescence: NONE Odor: YES

GROUNDWATER PURGING PURGE METHOD

Submersible Pump; Air Diaphragm Pump; (Honda Pump); Other _____

Stagnant Volumes Purged	Volume Purged (gal.)	Time	pH	Conductivity (µs/umhos)	Temp. (°C)	Color/Turbidity (other)
0	0	0914	7.19	520	19.9	CLEAR
1	10.0	0917	7.12	557	19.6	↓
2	20.0	0920	7.10	629	19.7	↓
3	30.0	0924	7.13	684	20.1	↓
4						
5						
6						
7						
8						
9						
10						

Recovery Rate:
Fast
Medium
(Slow)

GROUNDWATER SAMPLING

Sampling Equipment: Disposable Bailer

Water Level Recovery

	Depth to GW (ft.)
(I) Initially	4.45
(P) After Purging	19.00
P - 0.8 (P-I) =	2.36 80% Recovery
(S) Before Sampling	2.36
(P-S) / (P-I) X 100 =	80 % Total Recovery

Sample Containers

	No.	Preservation Method/pH
1 liter (L), amber glass		
40 ml VOA	4	HCl
500 ml polypropylene		
Trip Blank		

Sample Date/Time: 5-12-05 / 1032 Turbidity (NTU): N/A

Calibrate Date 5-12-05

PURGED WATER CONTAINMENT

Total drums at site: Water Ø Soil Ø Water pump through treatment system —

Remarks:

GROUNDWATER MONITORING WELL PURGE/SAMPLING WORK SHEET

Project Name: Former Hegenberger Station
Address: 555 Hegenberger RD. Oakland, CA
Well Number: MW-2
Development/Purge/Sampler(s): P. Arroyo

Project Number: E8220-06-17
Date: 5-12-05
Well Lock Number:
Well Integrity: Good
Ambient Conditions: Sunny

Pre-Purge DO (mg/L) N/A

WELL VOLUME CALCULATION

Well Casing Diameter (in.)	Total Well Depth (ft.)		Depth to Goundwater (GW)		Linear Feet of GW		Gallons Per Linear Foot		1 Well Volume (gal.)
2		-		=		X	0.17	=	
3		-		=		X	0.38	=	
(4)	19.15	-	5.55	=	13.60	X	0.66	=	8.97
4.5		-		=		X	0.83	=	
6		-		=		X	1.5	=	

GROUNDWATER SURFACE INSPECTION

Floating Product (ft.) (in.): None Sheen/Iridescence: None Odor: Yes

GROUNDWATER PURGING PURGE METHOD

Submersible Pump; Air Diaphragm Pump; (Honda Pump;) Other _____

Stagnant Volumes Purged	Volume Purged (gal.)	Time	pH	Conductivity (µs/umhos)	Temp. (°C)	Color/Turbidity (other)
0	0	1009	6.96	1042	22.7	CLEAR
1	9.0	1011	6.92	996	22.3	↓
2	18.0	1014	6.92	1023	22.2	↓
3	22.0	1017	6.97	1014	23.3	↓
4						
5						
6						
7						
8						
9						
10						

Recovery Rate:
Fast
(Medium)
Slow

GROUNDWATER SAMPLING

Sampling Equipment: Disposable Bailer

Water Level Recovery

	Depth to GW (ft.)	
(I) Initially	5.55	
(P) After Purging	17.00	
P - 0.8 (P-I) =	7.84	80% Recovery
(S) Before Sampling	5.55	
(P-S) / (P-I) X 100 =	100	% Total Recovery

Sample Containers

	No.	Preservation Method/pH
1 liter (L), amber glass		
40 ml VOA	4	HCl
500 ml polypropylene		
Trip Blank		

Sample Date/Time: 5-12-05 / 1055 Turbidity (NTU): N/A

Calibrate Date 5-12-05

PURGED WATER CONTAINMENT

Total drums at site: Water Ø Soil Ø Water pump through treatment system —

Remarks:

GROUNDWATER MONITORING WELL PURGE/SAMPLING WORK SHEET

Project Name: Former Hegenberger Station
Address: 555 Hegenberger RD Oakland, CA
Well Number: MW-3
Development/Purge/Sampler(s): P. Arroyo

Project Number: E8220-06-17
Date: 5-12-05
Well Lock Number:
Well Integrity: Good
Ambient Conditions: Sunny

Pre-Purge DO (mg/L) N/A

WELL VOLUME CALCULATION

Well Casing Diameter (in.)	Total Well Depth (ft.)		Depth to Goundwater (GW)		Linear Feet of GW		Gallons Per Linear Foot		1 Well Volume (gal.)
2		-		=		X	0.17	=	
3		-		=		X	0.38	=	
(4)	19.50	-	4.63	=	14.87	X	0.66	=	9.81
4.5		-		=		X	0.83	=	
6		-		=		X	1.5	=	

GROUNDWATER SURFACE INSPECTION

Floating Product (ft.) (in.): None Sheen/Iridescence: None Odor: YES

GROUNDWATER PURGING PURGE METHOD

Submersible Pump; Air Diaphragm Pump; (Honda Pump;) Other _____

Stagnant Volumes Purged	Volume Purged (gal.)	Time	pH	Conductivity (µs/umhos)	Temp. (°C)	Color/Turbidity (other)
0	0	0954	7.17	1273	22.9	CLEAR
1	10.0	0956	7.01	1212	23.4	↓
2	20.0	0958	6.97	1361	22.5	↓
3	30.0	1000	6.97	1307	22.3	↓
4						
5						
6						
7						
8						
9						
10						

Recovery Rate:
Fast
Medium
(Slow)

GROUNDWATER SAMPLING

Sampling Equipment: Disposable Bailer

Water Level Recovery

	Depth to GW (ft.)	
(I) Initially	4.63	
(P) After Purging	19.00	
P - 0.8 (P-I) =	2.50	80% Recovery
(S) Before Sampling	7.50	
(P-S) / (P-I) X 100 =	80	% Total Recovery

Sample Containers

	No.	Preservation Method/pH
1 liter (L), amber glass		
40 ml VOA	4	HCL
500 ml polypropylene		
Trip Blank		

Sample Date/Time: 5-12-05 / 1045 Turbidity (NTU): N/A

Calibrate Date 5-12-05

PURGED WATER CONTAINMENT

Total drums at site: Water 0 Soil 0 Water pump through treatment system —

Remarks: _____

GROUNDWATER MONITORING WELL PURGE/SAMPLING WORK SHEET

Project Name: Former Hegenberger Station
Address: 555 Hegenberger RD. Oakland, CA
Well Number: MW-4
Development/Purge/Sampler(s): P. Arroyo

Project Number: E822C-06-17
Date: 5-12-05
Well Lock Number:
Well Integrity: Good
Ambient Conditions: Cloudy

Pre-Purge DO (mg/L) N/A

WELL VOLUME CALCULATION

Well Casing Diameter (in.)	Total Well Depth (ft.)		Depth to Goundwater (GW)		Linear Feet of GW		Gallons Per Linear Foot		1 Well Volume (gal.)
2		-		=		X	0.17	=	
3		-		=		X	0.38	=	
(4)	16.65	-	5.59	=	11.06	X	0.66	=	7.29
4.5		-		=		X	0.83	=	
6		-		=		X	1.5	=	

GROUNDWATER SURFACE INSPECTION

Floating Product (ft.) (in.): None Sheen/Iridescence: None Odor: Yes

GROUNDWATER PURGING PURGE METHOD

Submersible Pump; Air Diaphragm Pump; (Honda Pump;) Other _____

Stagnant Volumes Purged	Volume Purged (gal.)	Time	pH	Conductivity (µs/umhos)	Temp. (°C)	Color/Turbidity (other)
0	0	0933	6.84	1886	22.3	CLEAR
1	7.5	0936	6.90	1879	22.3	↓
2	15.0	0939	6.90	2025	21.7	
3	22.5	0942	7.01	2083	22.3	↓
4						
5						
6						
7						
8						
9						
10						

Recovery Rate:
Fast
Medium
(Slow)

GROUNDWATER SAMPLING

Sampling Equipment: Disposable Bailer

Water Level Recovery

	Depth to GW (ft.)
(I) Initially	5.59
(P) After Purging	16.10
P - 0.8 (P-I) =	7.69 80% Recovery
(S) Before Sampling	7.00
(P-S) / (P-I) X 100 =	_____ % Total Recovery

Sample Containers

	No.	Preservation Method/pH
1 liter (L), amber glass		
40 ml VOA	4	HCl
500 ml polypropylene		
Trip Blank		

Sample Date/Time: 5-12-05 / 1040 Turbidity (NTU): N/A

Calibrate Date: 5-12-05

PURGED WATER CONTAINMENT

Total drums at site: Water Ø Soil Ø Water pump through treatment system —

Remarks: _____

GROUNDWATER MONITORING WELL PURGE/SAMPLING WORK SHEET

Project Name: Former Hegenberger Station
Address: 555 Hegenberger RD. Oakland, CA
Well Number: MW-5
Development/Purge/Sampler(s): P. Arroyo

Project Number: E8220-06-17
Date: 5-12-05
Well Lock Number:
Well Integrity: Good
Ambient Conditions: Cloudy

Pre-Purge DO (mg/L) N/A

WELL VOLUME CALCULATION

Well Casing Diameter (in.)	Total Well Depth (ft.)		Depth to Goundwater (GW)		Linear Feet of GW		Gallons Per Linear Foot		1 Well Volume (gal.)
2		-		=		X	0.17	=	
3		-		=		X	0.38	=	
(4)	19.35	-	6.18	=	13.17	X	0.66	=	8.69
4.5		-		=		X	0.83	=	
6		-		=		X	1.5	=	

GROUNDWATER SURFACE INSPECTION

Floating Product (ft.) (in.): NONE Sheen/Iridescence: NONE Odor: YES

GROUNDWATER PURGING PURGE METHOD

Submersible Pump; Air Diaphragm Pump; (Honda Pump); Other _____

Stagnant Volumes Purged	Volume Purged (gal.)	Time	pH	Conductivity (µs/umhos)	Temp. (°C)	Color/Turbidity (other)
0	0	0848	6.97	749	19.3	CLEAR
1	9.0	0852	6.97	797	19.8	↓
2	18.0	0857	6.92	817	20.0	
3	27.0	0859	6.94	840	20.2	Dry @ ~24 GAL
4						
5						
6						
7						
8						
9						
10						

Recovery Rate:
Fast
Medium
(Slow)

GROUNDWATER SAMPLING

Sampling Equipment: Disposable Bailer

Water Level Recovery

	Depth to GW (ft.)
(I) Initially	6.18
(P) After Purging	19.35 (Dry)
P - 0.8 (P-I) =	8.81 80% Recovery
(S) Before Sampling	8.81
(P-S) / (P-I) X 100 =	80 % Total Recovery

Sample Containers

	No.	Preservation Method/pH
1 liter (L), amber glass		
40 ml VOA	4	HCl
500 ml polypropylene		
Trip Blank		

Sample Date/Time: 5-12-05 / 1023 Turbidity (NTU): N/A

Calibrate Date: 5-12-05

PURGED WATER CONTAINMENT

Total drums at site: Water Ø Soil Ø Water pump through treatment system —

Remarks:

Sparger Technology, Inc.
Environmental Laboratories

Analytical Laboratory Division
Mobile Laboratory Division
Scientific Division

John Love
Geocon Consultants, Inc.
2356 Research Dr
Livermore, CA 94550

Client	Geocon Consultants, Inc.
Workorder	16879 Former Hegenberger Maint Stat.
Received	05/13/05

The samples were received in EPA specified containers. The samples were transported and received under documented chain of custody and stored at four (4) degrees C until analysis was performed.

Sparger Technology, Inc. ID Suffix Keys - These descriptors will follow the Sparger Technology, Inc. ID numbers and help identify the specific sample and clarify the report.

DUP - Matrix Duplicate
MS - Matrix Spike
MSD - Matrix Spike Duplicate
LCS - Lab Control Sample
LCSD - Lab Control Sample Duplicate
RPD - Relative Percent Difference
QC - Additional Quality Control
DIL - Results from a diluted sample
ND - None Detected
RL - Reporting Limit

Note: In an effort to conserve paper, the results are printed on both sides of the paper.

Ray James
Laboratory Director

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Environmental Laboratories

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Mobile Laboratory Division
Scientific Division

Test Certificate of Analysis

Client ID	Geocon Consultants, Inc.	**Workorder ID**	Former Hegenberger Maint Stat.
Workorder #	16879	**Sampled**	05/12/05
Laboratory ID	16879001	**Received**	05/13/05
Sample ID	MW-1	**Reported**	05/25/05
Matrix	Water		

8260B Oxygenates - 8260B

Parameter	Prep Date	Analyzed	Result	RL	Units	Dilution
Benzene	05/24/05	05/24/05	20.0	5.00	ug/L	1:5
Toluene	05/24/05	05/24/05	ND	5.00	ug/L	1:5
Ethylbenzene	05/24/05	05/24/05	ND	5.00	ug/L	1:5
Xylene (Total)	05/24/05	05/24/05	ND	5.00	ug/L	1:5

Surrogates	Result	Recovery	Limits
1,2-Dichloroethane-d4	44 ug/L	88 %	(65 - 135)

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Test Certificate of Analysis

Client ID	Geocon Consultants, Inc.	**Workorder ID**	Former Hegenberger Maint Stat.
Workorder #	16879	**Sampled**	05/12/05
Laboratory ID	16879002	**Received**	05/13/05
Sample ID	MW-2	**Reported**	05/25/05
Matrix	Water		

8260B Oxygenates - 8260B

Parameter	Prep Date	Analyzed	Result	RL	Units	Dilution
Benzene	05/24/05	05/24/05	ND	1.00	ug/L	1:1
Toluene	05/24/05	05/24/05	ND	1.00	ug/L	1:1
Ethylbenzene	05/24/05	05/24/05	ND	1.00	ug/L	1:1
Xylene (Total)	05/24/05	05/24/05	ND	1.00	ug/L	1:1

Surrogates	Result	Recovery	Limits
1,2-Dichloroethane-d4	44 ug/L	88 %	(65 - 135)

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Test Certificate of Analysis

Client ID	Geocon Consultants, Inc.	**Workorder ID**	Former Hegenberger Maint Stat.
Workorder #	16879	**Sampled**	05/12/05
Laboratory ID	16879003	**Received**	05/13/05
Sample ID	MW-3	**Reported**	05/25/05
Matrix	Water		

8260B Oxygenates - 8260B

Parameter	Prep Date	Analyzed	Result	RL	Units	Dilution
Benzene	05/24/05	05/24/05	1000	10.0	ug/L	1:10
Toluene	05/24/05	05/24/05	30.0	10.0	ug/L	1:10
Ethylbenzene	05/24/05	05/24/05	20.0	10.0	ug/L	1:10
Xylene (Total)	05/24/05	05/24/05	10.0	10.0	ug/L	1:10

Surrogates	Result	Recovery	Limits
1,2-Dichloroethane-d4	45 ug/L	90 %	(65 - 135)

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Test Certificate of Analysis

Client ID	Geocon Consultants, Inc.	**Workorder ID**	Former Hegenberger Maint Stat.
Workorder #	16879	**Sampled**	05/12/05
Laboratory ID	16879004	**Received**	05/13/05
Sample ID	MW-4	**Reported**	05/25/05
Matrix	Water		

8260B Oxygenates - 8260B

Parameter	Prep Date	Analyzed	Result	RL	Units	Dilution
Benzene	05/24/05	05/24/05	14.0	5.00	ug/L	1:5
Toluene	05/24/05	05/24/05	5.70	5.00	ug/L	1:5
Ethylbenzene	05/24/05	05/24/05	ND	5.00	ug/L	1:5
Xylene (Total)	05/24/05	05/24/05	ND	5.00	ug/L	1:5

Surrogates	Result	Recovery	Limits
1,2-Dichloroethane-d4	46 ug/L	92 %	(65 - 135)

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Test Certificate of Analysis

Client ID	Geocon Consultants, Inc.	**Workorder ID**	Former Hegenberger Maint Stat.
Workorder #	16879	**Sampled**	05/12/05
Laboratory ID	16879005	**Received**	05/13/05
Sample ID	MW-5	**Reported**	05/25/05
Matrix	Water		

8260B Oxygenates - 8260B

Parameter	Prep Date	Analyzed	Result	RL	Units	Dilution
Benzene	05/24/05	05/24/05	ND	5.00	ug/L	1:5
Toluene	05/24/05	05/24/05	ND	5.00	ug/L	1:5
Ethylbenzene	05/24/05	05/24/05	ND	5.00	ug/L	1:5
Xylene (Total)	05/24/05	05/24/05	ND	5.00	ug/L	1:5

Surrogates	Result	Recovery	Limits
1,2-Dichloroethane-d4	45 ug/L	90 %	(65 - 135)

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Test Certificate of Analysis

Client ID Geocon Consultants, Inc.
Workorder # 16879 **Workorder ID** Former Hegenberger Maint Stat.

Parameter TPHgas
Method 8015M DHS

Lab ID	Sample ID	Result	RL	Units	Collected	Analyzed	Matrix	Dilution
16879001	MW-1	1200	50	ug/L	05/12/05	05/23/05	Water	1:1
16879002	MW-2	330	50	ug/L	05/12/05	05/23/05	Water	1:1
16879003	MW-3	6200	50	ug/L	05/12/05	05/23/05	Water	1:1
16879004	MW-4	760	50	ug/L	05/12/05	05/23/05	Water	1:1
16879005	MW-5	1300	50	ug/L	05/12/05	05/23/05	Water	1:1

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Method Blank Report

Client ID	Geocon Consultants, Inc.
Workorder ID	Former Hegenberger Maint Stat.
Laboratory ID	68904
Sample ID	MB for HBN 266350 [VGXV/2696]
Matrix	Water

Parameter	Method	Prep Date	Analyzed	Result	RL	Units	Dilution
TPHgas	8015M DHS	05/23/05	05/23/05	ND	50	ug/L	1:1

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Lab Control Sample Report

Client ID	Geocon Consultants, Inc.
Workorder ID	Former Hegenberger Maint Stat.
Laboratory ID	68905
Sample ID	LCS for HBN 266350 [VGXV/2696]
Matrix	Water

Parameter	Method	Prep Date	Analyzed	Result	RL	Units	Dilution
TPHgas	8015M DHS	05/23/05	05/23/05	1010	50	ug/L	1:1

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Lab Control Sample Duplicate Report

Client ID	Geocon Consultants, Inc.
Workorder ID	Former Hegenberger Maint Stat.
Laboratory ID	68906
Sample ID	LCSD for HBN 266350 [VGXV/2696
Matrix	Water

Parameter	Method	Prep Date	Analyzed	Result	RL	Units	Dilution
TPHgas	8015M DHS	05/23/05	05/23/05	1080	50	ug/L	1:1

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Matrix Spike Report

Client ID	Geocon Consultants, Inc.
Workorder ID	Former Hegenberger Maint Stat.
Laboratory ID	68907
Sample ID	MS for HBN 266350 [VGXV/2696]
Matrix	Water

Parameter	Method	Prep Date	Analyzed	Result	RL	Units	Dilution
TPHgas	8015M DHS	05/23/05	05/23/05	900	50	ug/L	1:1

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Matrix Spike Duplicate Report

Client ID	Geocon Consultants, Inc.
Workorder ID	Former Hegenberger Maint Stat.
Laboratory ID	68908
Sample ID	MSD for HBN 266350 [VGXV/2696]
Matrix	Water

Parameter	Method	Prep Date	Analyzed	Result	RL	Units	Dilution
TPHgas	8015M DHS	05/23/05	05/23/05	1020	50	ug/L	1:1

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QC SUMMARY

Client ID Geocon Consultants, Inc.
Workorder ID Former Hegenberger Maint Stat.
QC Batch VGX 2809
Matrix Water

Original Samples 16888001
Matrix Spike [68907]
Matrix Spike Duplicate [68908]

Parameter	Spike %Recovery	Spike Dup %Recovery	Recovery Limits	RPD	RPD Limits
TPHgas	90	102	(65-135)	13	(20 MAX)

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QC SUMMARY

Client ID Geocon Consultants, Inc.
Workorder ID Former Hegenberger Maint Stat.
QC Batch VGX 2809
Matrix Water

Samples Lab Control Sample [68905]
Lab Control Sample Duplicate [68906]

Parameter	Check %Recovery	Check Dup %Recovery	Recovery Limits	RPD	RPD Limits
TPHgas	101	108	(65-135)	6.7	(20 MAX)

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[redacted] C.O.C. No. 13425 [redacted] 16679

ytical Laboratory
le Circle, #112 Sacramento, CA 95827
Phone: (916) 362-8947
FAX: (916) 362-0947

Page 1 of 1
STAL Invoice Number:

any: Geocon | Phone: (925) 371-5900
Manager: John Love | FAX: (925) 371-5115
Address: | Billing Name & Address:
ic Research Dr. Livermore, CA 94550

Name: r Hegenberger Maint Station | Project/Job#: E8220-06-17
Location: Oakland, CA | P.O.#:

ANALYSIS REQUEST

REMARKS:

Sampler's Name: D Amigo

		All OK	None OK	Some OK
Cooler Temp.	°C			
Sample Condition				
pH				

WET(STLC)
TCLP
TCLP
Total

SAMPLE ID	Sampling: Date	Sampling: Time	Container: 40 mL VOA	Container: Brass Sleeve	Container: 1 L amber bottle	Container: 250 mL Plastic	Container: Other:	Preservative Used: HCl/HNO3/ICE	Preservative Used: None	Preservative Used: Other:	Matrix: Water	Matrix: Soil	Matrix: Air	Matrix: Other:	BTEX (602/8020)503.1 8021B	BTEX/TPHgas (602/8020/8015) M	TPHdiesel/TPHmotor oil/kerosene(8015)	EPA 601/8010/502.2/504	EPA 602/8020	EPA 608/8080 (Pesticides)/505/508	EPA 608/8080 (PCB'S)	EPA 624/8240/524.2	EPA 625/8270/525	Total Oil & Grease (5520)	Non-Polar O & G/TRPH (418.1)	Organic Lead	RCI	CAM-17 Metals	CAM-5 Metals (Cd, Cr, Pb, Ni, Zn)	Lead		TAT: Standard	TAT: Rush Services (72hr/48hr/24hr/12hr)
MW-1	5/12/05	1032	X					X			X				X	X																X	
MW-2			1055	X					X			X				X	X																	
MW-3			1045	X					X			X				X	X																	
MW-4			1040	X					X			X				X	X																	
MW-5	↓	1023	X					X			X				X	X																↓	

Relinquished by:	Received by:	Relinquished by:	Received by:
[signature]	[signature]	[signature]	
Date: 5/12/05 Time:	Date: 5/13/05 Time: 12:20	Date: 5/13/05 Time: 2:20	Date: Time:

PLEASE READ REVERSE SIDE FOR TERMS AND CONDITIONS