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GROUNDWATER MONITORING REPORT
FOURTH QUARTER 1996

HEGENBERGER MAINTENANCE STATION
OAKLAND, CALIFORNIA

PREPARED FOR

CALIFORNIA DEPARTMENT OF TRANSPORTATION
OAKLAND, CALIFORNIA

CALTRANS CONTRACT NO. 53W202
TASK ORDER NO. 04-5T9000-01

GEOCON PROJECT NO. S8100-06-34

DECEMBER 1996

GEOCON
GEOTECHNICAL
&
ENVIRONMENTAL
CONSULTANTS

The contents of this report reflect the views of the author 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.

GEOCON

GEOTECHNICAL AND ENVIRONMENTAL CONSULTANTS

Project No. S8100-06-34
December 20, 1996

California Department of Transportation
District 4
P.O. Box 23660
Oakland, California 94623

Attention: Mr. Christopher Wilson

Subject: HEGENBERGER MAINTENANCE STATION
OAKLAND, CALIFORNIA
CONTRACT NO. 53W202
TASK ORDER NO. 04-5T9000-01
GROUNDWATER MONITORING REPORT-FOURTH QUARTER 1996

Dear Mr. Wilson:

In accordance with Caltrans Contract No. 53W202 and Task Order No. 04-5T9000-01, Geocon Environmental Consultants, Inc. (Geocon) has completed Fourth Quarter 1996 groundwater monitoring services at the subject site. The scope of services provided by Geocon included groundwater level measurements, the sampling of five groundwater monitoring wells, and the submittal of the water samples to a California-certified laboratory for analytical testing.

The site is located east of Route 880 at 555 Hegenberger Road in Oakland, California. The approximate location of the site is depicted on the attached Vicinity Map, Figure 1.

PROJECT SCOPE

Groundwater Elevation Measurements

A representative of Geocon measured groundwater levels within the existing groundwater monitoring wells MW-1 through MW-5 on November 14, 1996. Depth to groundwater measurements were obtained using a battery operated water level meter with measurements obtained from the top of each well casing.

Groundwater was encountered at depths between 6 and 7 feet below the top of the well casings indicating a drop in groundwater levels ranging from 0.25 feet (MW-1) to 0.74 feet (MW-2). Since the last reported groundwater level measurements performed in August 1996, the groundwater levels have decreased an average of 0.57 feet.

Based on the November 14, 1996 groundwater elevation data, the approximate groundwater flow is directed to the northwest with an approximate gradient of 0.02 ft/ft. The interpreted groundwater flow direction and elevation contours are depicted on Figure 2, Groundwater Elevation Map - November 1996. The November 1996 groundwater flow direction and gradient are similar to those measured and evaluated quarterly since October 1995. A summary of the top of well casing elevations, groundwater level measurements and elevations is presented on Table 1.

Well Purging and Sampling

Approximately three casing volumes of water (approximately 20 to 27 gallons) were purged from each monitoring well on November 14, 1996 utilizing a 2-inch diameter submersible pump. Groundwater extraction was performed to allow fresh formation water to infiltrate the wells. During well purging, the pH, temperature, and electrical conductivity of the groundwater was measured and the purging was considered complete when these parameters stabilized to within approximately 10 percent. Groundwater recovery was monitored in order to ensure 80 percent well recovery prior to well sampling. Wells MW-1 and MW-5 were deemed slow recharging wells and only recovered to approximately 50 percent. Dissolved oxygen (DO) measurements were obtained from each well prior to sampling. DO values ranged from 0.7 milligrams per liter (mg/l) in MW-3 to 3.3 mg/l in MW-5. The DO measurements are recorded on the monitoring well sampling data sheets presented in Appendix A. Extracted groundwater was contained in DOT 17-H 55-gallon drums which were labeled and stored onsite pending receipt of laboratory analysis and subsequent disposal following regulatory protocols.

Following well purging and recovery, water samples were collected from each well using polyethylene disposable bailers. The samples were decanted into pre-preserved 40-ml volatile organic analyses (VOA) vials equipped with teflon septums, and one-liter amber bottles. The groundwater samples and a travel blank consisting of one pre-preserved 40-ml VOA vial were sealed, labeled and placed in an ice chest containing blue ice and subsequently transported to Advanced Technology Laboratories (ATL) using standard chain-of-custody documentation.

Laboratory Analyses

The water samples were submitted to ATL for the analysis of total petroleum hydrocarbons as gasoline and diesel fuel (TPHg and TPHd) following EPA Test Method 8015 modified, and benzene, toluene, ethylbenzene and total xylenes (BTEX) following EPA Test Method 8020. A summary of the TPHg, TPHd and BTEX analyses is presented on Table 1. Copies of the laboratory reports and chain-of-custody documentation are presented in Appendix B.

Analytical Results

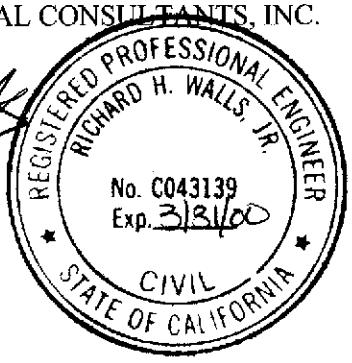
The results of laboratory tests indicate that TPHg was detected in wells MW-1, MW-3, MW-4 and MW-5 at concentrations ranging from 200 to 2,600 micrograms per liter (µg/l). TPHd was detected in each well sampled at concentrations ranging from 56 to 320 µg/l. All BTEX constituents were detected in wells MW-1, MW-3 and MW-5 at concentrations ranging from 0.7 to 500 µg/l; benzene alone was detected in well MW-4 at a concentration of 3.4 µg/l. The maximum concentrations of the target compounds were detected in well MW-1, except for TPHd, which was highest in well MW-5. Nondetected concentrations of the target compounds, excluding diesel, were reported for well MW-2. Toluene, ethylbenzene and total xylenes were not detected in well MW-4.

Concentrations decreased this quarter for each of the wells for each of the target compounds with the exception of TPHd for wells MW-2 through MW-5. Despite the decrease in contaminant concentrations, the results of the DO measurements and the laboratory analyses suggest that biodegradation of the contaminants is not a significant factor at the site. If biodegradation is occurring, an inverse proportionality between the hydrocarbon contamination and DO levels would result from subsurface microbes utilizing the DO to oxidize the hydrocarbons for energy. No such inverse relationship was observed at the site. The TPHg, TPHd and benzene concentrations are depicted on Figure 3, Petroleum Hydrocarbon Concentrations in Groundwater - November 1996. A cumulative summary of groundwater analytical data is presented on Table 1.

If you have any questions concerning the contents of this groundwater monitoring report, or if we may be of further service, please contact the undersigned at your convenience.

Very truly yours,

GEOCON ENVIRONMENTAL CONSULTANTS, INC.



Richard H. Walls, PE
Sr. Remediation Engineer

Rebecca L. Silva
Sr. Staff Environmental Scientist

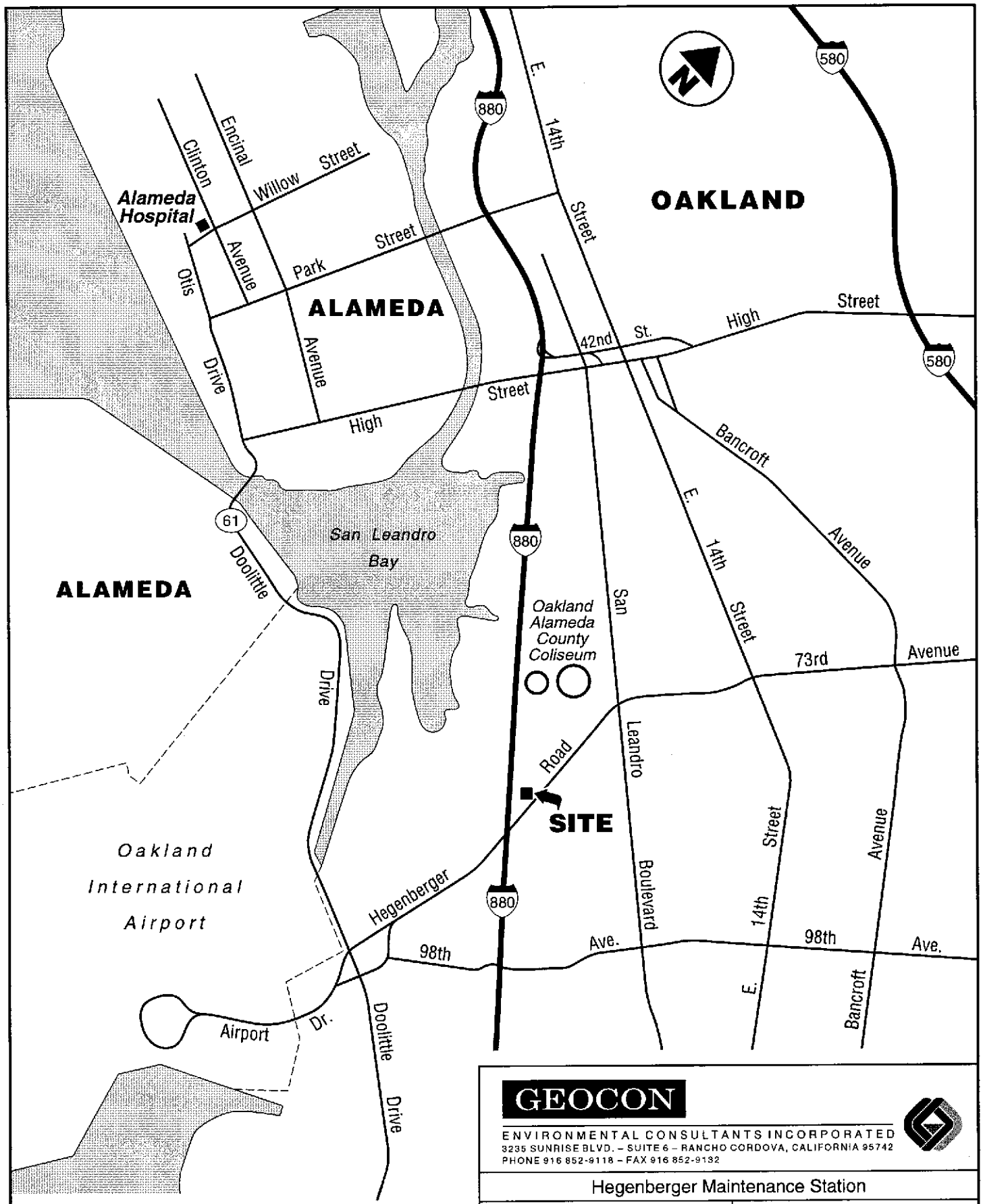
RLS:RHW:ds

(3) Addressee

Attachments: Figure 1 - Vicinity Map
Figure 2 - Groundwater Elevation Map - November 1996
Figure 3 - Petroleum Hydrocarbon Concentrations in Groundwater - November 1996

Table 1 - Cumulative Summary of Groundwater Elevation and Analytical Data

Appendix A: Monitoring Well Sampling Data Sheets
Appendix B: Laboratory Reports and Chain of Custody Documentation



GEOCON

ENVIRONMENTAL CONSULTANTS INCORPORATED
3235 SUNRISE BLVD. – SUITE 6 – RANCHO CORDOVA, CALIFORNIA 95742
PHONE 916 852-9118 – FAX 916 852-9132

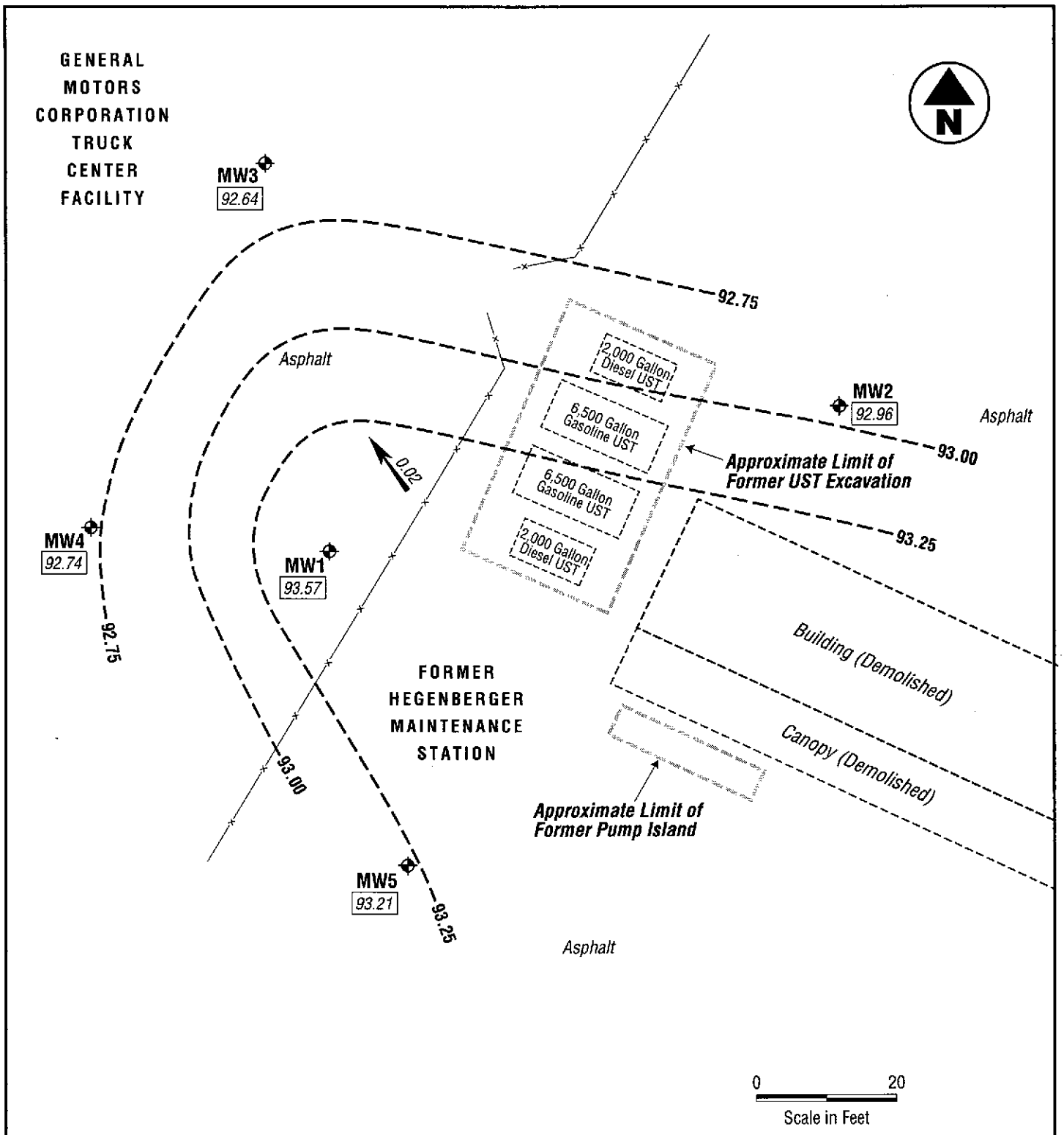
Hegenberger Maintenance Station

555 Hegenberger Road
Oakland, California

VICINITY MAP

GEOCON Proj. No. S8100-06-34

Task Order No. 04-5T9000-01 | December 1996 | Figure 1



LEGEND:

- Location of Former UST
- MW1 — Location of Groundwater Monitoring Well, GEOCON, Sept. 95
- Groundwater Elevation Contour (Interval = 0.25 Ft.)
- 93.70 — Relative Elevation of Groundwater Measured 11/14/96
- 0.02 — Approximate Groundwater Gradient

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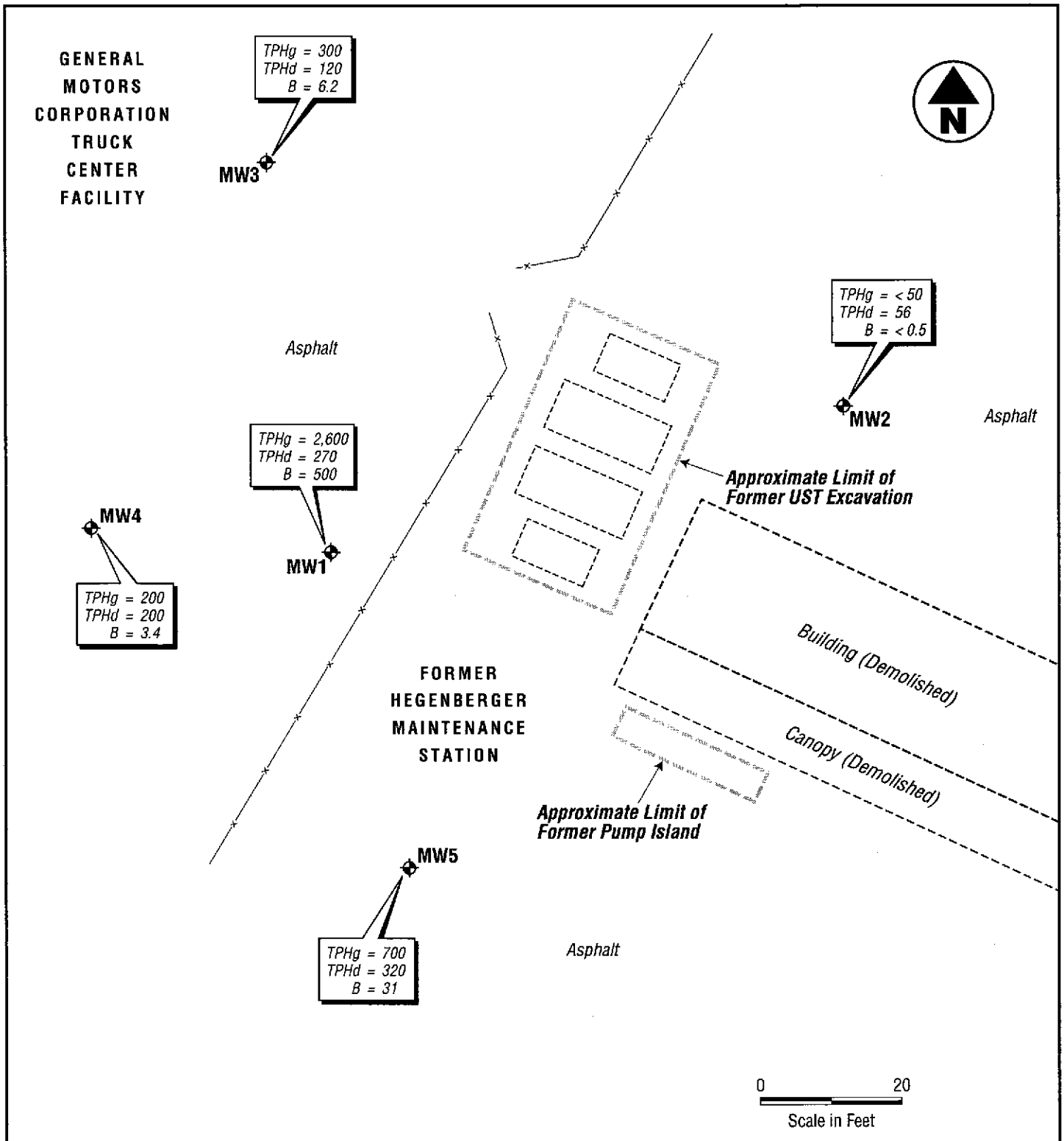
GROUNDWATER ELEVATION MAP – NOVEMBER 1996

GEOCON Proj. No. S8100-06-34

Task Order No. 04-5T9000-01

December 1996

Figure 2



LEGEND:

Location of Former UST

MW1 Location of Groundwater Monitoring Well, GEOCON, Sept. 95

TPHg = Total Petroleum Hydrocarbons as Gasoline
TPHd = Total Petroleum Hydrocarbons as Diesel
B = Benzene
All Concentrations in Micrograms Per Liter (ppb)

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Hegenberger Maintenance Station

555 Hegenberger Road
Oakland, California

PETROLEUM HYDROCARBON CONCENTRATIONS IN GROUNDWATER- NOVEMBER 1996

GEOCON Proj. No. S8100-06-34

Task Order No. 04-5T9000-01 | December 1996 | Figure 3

TABLE 1
CUMULATIVE SUMMARY OF GROUNDWATER ELEVATION AND ANALYTICAL DATA
HEGENBERGER MAINTENANCE STATION
OAKLAND, CALIFORNIA

SAMPLE I.D.	DATE	TOC ELEVATION (REF)	DEPTH TO GROUNDWATER (feet)	GROUNDWATER ELEVATION (REF)	TPHg (µg/l)	TPHd (µg/l)	TPHmo (µg/l)	O&G (µg/l)	B (µg/l)	T (µg/l)	E (µg/l)	X (µg/l)
MW-1	10/11/95	99.73	6.55	93.18	720	<50	<50	<5,000	660	13	4.7	2.8
MW-1	01/17/96	99.73	5.64	94.09	4,400	<50	<50	---	1,000	30	21	17
MW-1	04/16/96	99.73	5.46	94.27	6,050	7,450	---	---	914	34.7	34.4	15.8
MW-1	08/26/96	99.73	5.91	93.82	3,800	430	---	---	780	23	21	20
MW-1	11/14/96	99.73	6.16	93.57	2,600	270	---	---	500	18	14	8.9
MW-2	10/11/95	99.68	6.88	92.80	<50	<50	<50	<5,000	<0.3	<0.3	<0.3	<0.5
MW-2	01/17/96	99.68	5.32	94.36	4,900	<50	<50	---	2,100	<15	<15	<15
MW-2	04/16/96	99.68	5.81	93.87	<50	<50	---	---	1.02	<0.5	<0.5	<0.5
MW-2	08/26/96	99.68	5.98	93.70	<50	<50	---	---	<0.5	<0.5	<0.5	<0.5
MW-2dup	08/26/96	99.68	---	---	<50	<50	---	---	<0.5	<0.5	<0.5	<0.5
MW-2	11/14/96	99.68	6.72	92.96	<50	56	---	---	<0.5	<0.5	<0.5	<0.5
MW-2dup	11/14/96	99.68	---	---	<50	59	---	---	<0.5	<0.5	<0.5	<0.5
MW-3	10/11/95	98.92	6.42	92.50	1,300*	<50	<50	<5,000	1.0	<0.3	<0.3	<0.3
MW-3	01/17/96	98.92	5.82	93.10	171	<50	<50	---	64	<0.3	1.0	<0.3
MW-3	04/16/96	98.92	5.85	93.07	**6,740**	565**	---	---	**2,770**	31.0	13.9	21.9
MW-3dup	04/16/96	98.92	---	---	6,710	540**	---	---	**2,790**	31.1	13.9	21.8
MW-3	08/26/96	98.92	5.72	93.20	**700**	70	---	---	**180**	4.2	1.0	4.6
MW-3	11/14/96	98.92	6.28	92.64	**300**	120	---	---	**6.2**	1.2	0.7	1.4
MW-4	10/11/95	99.46	6.63	92.83	500	<50	<50	<5,000	17	1.1	<0.3	0.48
MW-4	01/17/96	99.46	5.77	93.69	459	<50	<50	---	72	4.1	<0.3	1.7
MW-4	04/16/96	99.46	5.89	93.57	2,200	<50	---	---	**851**	7.67	1.41	5.72
MW-4	08/26/96	99.46	6.14	93.32	300	110	---	---	**55**	4.9	1.2	<0.5
MW-4	11/14/96	99.46	6.72	92.74	200	200	---	---	**3.4**	<0.5	<0.5	<0.5
MW-5	10/11/95	99.91	6.68	93.23	1,000	<50	<50	<5,000	45	15	1.9	6.1
MW-5	01/17/96	99.91	5.74	94.17	<50	<50	<50	---	2.0	<0.3	<0.3	<0.3
MW-5	04/16/96	99.91	5.85	94.06	1,740	855**	---	---	157	20.1	3.92	22.4
MW-5	08/26/96	99.91	5.99	93.92	900	270	---	---	55	6.4	0.9	3.7
MW-5	11/14/96	99.91	6.70	93.21	700	320	---	---	31	5.7	0.7	3.6

Notes:
TOC = Top of casing
REF = Top of casing elevations referenced to an onsite arbitrary elevation of 100.00 feet
TPHg = Total petroleum hydrocarbons as gasoline
TPHd = Total petroleum hydrocarbons as diesel
TPHmo = Total petroleum hydrocarbons as motor oil
O&G = Oil and grease
BTEX = Benzene, toluene, ethylbenzene and total xylenes

* = Laboratory report notation "Weathered gas detected"
** = Laboratory report notation "Peaks in the diesel range"
µg/l = Micrograms per liter
< = Less than laboratory test method detection limit
--- = Not tested

MONITORING WELL SAMPLING DATA

Project Name: Hegenberger Maint. Station	**Project Number:** S8100-06-34
Well No.: MW-1	Date: 11/14/96
Well Diameter: 4 in.	Field Personnel: IM
Total Well Depth: 20 feet	Screened Casing Length
Well Elevation: feet MSL measured from	

PURGE CHARACTERISTICS		
Water Depth Before Pumping: 6.16 ft.	2 in.=.1632 Gal/ft. 4 in. = .6528 Gal/ft.	
Calculated Water Column Volume: 9.0 Gal.		Volumes Purged: 3
Start Pumping Time: 1401	End Pumping Time: 1440	
Total Time: 39 min.	Flow Gauge: -- to --	
Total Volume Pumped: 27 Gal.	Avg. Flow Rate: 0.7 gpm	
Water Depth After Pumping: 18.30 feet	Time: 1443	

SAMPLING CHARACTERISTICS

Sampling Method: disposable bailer

Laboratory Analysis: TPHgas-BTEX, TPHdiesel

TIME	TEMPERATURE	CONDUCTIVITY	pH	Gallons Purged
1413	65.8	1790	7.49	9
1419	59.6	1630	7.09	18
1440	63.8	1890	7.34	27
1610				sample

comments: water clear; strong odor; dry after 22 gallons

Drawdown: 12.14 ft D.O.: 2.7 mg/l

Water Depth at Sample: 12.20 ft

Recovery: 50% (After 1.5 hrs of recovery; slow recharging well)

MONITORING WELL SAMPLING DATA

Project Name: Hegenberger Maint. Station	**Project Number**: S8100-06-34
Well No.: MW-2	Date: 11/14/96
Well Diameter: 4 in.	Field Personnel: IM
Total Well Depth: 20 feet	Screened Casing Length
Well Elevation: feet MSL measured from	

PURGE CHARACTERISTICS	
Water Depth Before Pumping: 6.72 ft.	2 in.=.1632 Gal/ft. 4 in. = .6528 Gal/ft.
Calculated Water Column Volume: 8.7 Gal.	Volumes Purged: 3
Start Pumping Time: 1117	End Pumping Time: 1133
Total Time: 16 min.	Flow Gauge: -- to --
Total Volume Pumped: 26 Gal.	Avg. Flow Rate: 1.6 gpm
Water Depth After Pumping: 16.40 feet	Time: 1135

SAMPLING CHARACTERISTICS

Sampling Method: disposable bailer

Laboratory Analysis: TPHgas-BTEX, TPHdiesel

TIME	TEMPERATURE	CONDUCTIVITY	pH	Gallons Purged
1123	67.2	3710	7.33	9
1128	69.0	3660	7.27	16
1133	68.1	3440	7.24	26
1150				sample

comments: water clear; strong odor	
Drawdown: 9.68 ft	D.O.: 2.2 mg/l
Water Depth at Sample: 8.52 ft	
Recovery: 81%	

MONITORING WELL SAMPLING DATA

Project Name: Hegenberger Maint. Station	**Project Number**: S8100-06-34
Well No.: MW-3	Date: 11/14/96
Well Diameter: 4 in.	Field Personnel: IM
Total Well Depth: 20 feet	Screened Casing Length
Well Elevation: feet MSL measured from	

PURGE CHARACTERISTICS	
Water Depth Before Pumping: 6.28 ft.	2 in.=.1632 Gal/ft. 4 in. = .6528 Gal/ft.
Calculated Water Column Volume: 8.95 Gal.	Volumes Purged: 3
Start Pumping Time: 1214	End Pumping Time: 1235
Total Time: 21 min.	Flow Gauge: -- to --
Total Volume Pumped: 27 Gal.	Avg. Flow Rate: 1.3 gpm
Water Depth After Pumping: 16.18 feet	Time: 1238

SAMPLING CHARACTERISTICS

Sampling Method: disposable bailer

Laboratory Analysis: TPHgas-BTEX, TPHdiesel

TIME	TEMPERATURE	CONDUCTIVITY	pH	Gallons Purged
1221	68.7	9460	7.25	9
1229	70.6	9350	6.97	18
1235	70.3	8800	6.99	27
1255				sample

comments: water clear; strong odor	
Drawdown: 9.90 ft	D.O.: 0.7 mg/l
Water Depth at Sample: 8.25 ft	
Recovery: 80%	

MONITORING WELL SAMPLING DATA

Project Name: Hegenberger Maint. Station	**Project Number**: S8100-06-34
Well No.: MW-4	Date: 11/14/96
Well Diameter: 4 in.	Field Personnel: IM
Casing Length: 20 feet/T.D. = 17 ft.	Screened Casing Length
Well Elevation: feet MSL measured from	

PURGE CHARACTERISTICS	
Water Depth Before Pumping: 6.72 ft.	2 in.=.1632 Gal/ft. 4 in. = .6528 Gal/ft.
Calculated Water Column Volume: 6.7 Gal.	Volumes Purged: 3
Start Pumping Time: 1306	End Pumping Time: 1331
Total Time: 25 min.	Flow Gauge: -- to --
Total Volume Pumped: 20 Gal.	Avg. Flow Rate: 0.8 gpm
Water Depth After Pumping: 15.60 feet	Time: 1333

SAMPLING CHARACTERISTICS

Sampling Method: disposable bailer

Laboratory Analysis: TPHgas-BTEX, TPHdiesel

TIME	TEMPERATURE	CONDUCTIVITY	pH	Gallons Purged
1312	69.2	3700	7.19	6
1320	67.6	4400	6.98	13
1331	67.6	4800	7.04	20
1355				sample

comments: water clear; strong odor (3-4 feet of silt in well)	
Drawdown: 8.88 ft	D.O.: 1.2 mg/l
Water Depth at Sample: 8.50 ft	
Recovery: 80%	

MONITORING WELL SAMPLING DATA

Project Name: Hegenberger Maint. Station	**Project Number**: S8100-06-34
Well No.: MW-5	Date: 11/14/96
Well Diameter: 4 in.	Field Personnel: lM
Total Well Depth: 20 feet	Screened Casing Length
Well Elevation: feet MSL measured from	

PURGE CHARACTERISTICS	
Water Depth Before Pumping: 6.70 ft.	2 in.=.1632 Gal/ft. 4 in. = .6528 Gal/ft.
Calculated Water Column Volume: 8.7 Gal.	Volumes Purged: 2.5
Start Pumping Time: 1045	End Pumping Time: 1102
Total Time: 17 min.	Flow Gauge: -- to --
Total Volume Pumped: 22 Gal.	Avg. Flow Rate: 1.3 gpm
Water Depth After Pumping: 18.50 feet	Time: 1104

SAMPLING CHARACTERISTICS

Sampling Method: disposable bailer

Laboratory Analysis: TPHgas-BTEX, TPHdiesel

TIME	TEMPERATURE	CONDUCTIVITY	pH	Gallons Purged
1048	69.9	1476	7.91	6
1053	68.7	4110	6.99	16
1102	68.5	1570	7.11	22
1420				sample

comments: water clear; strong odor; dry after 22 gallons

Drawdown: 11.80 ft D.O.: 3.3 mg/l

Water Depth at Sample: 11.62 ft

Recovery: 58% (After 3 hrs of recovery; slow recharging well)

Advanced Technology
Laboratories

November 21, 1996

ELAP No.: 1838

Geocon Environmental
3235 Sunrise Blvd. #6
Rancho Cordova, CA 95742

ATTN: Mr. Rick Walls

Client's Project: Hegenberger, S8130-06-01
Lab No.: 14181-001/006

Gentlemen:

Enclosed are the results for sample(s) received by Advanced Technology Laboratories and tested for the parameters indicated in the enclosed chain of custody.

Thank you for the opportunity to service the needs of your company. Please feel free to call me at (310) 989 - 4045 if I can be of further assistance to your company.

Sincerely,

Edgar P. Caballero
Laboratory Director
EPC/ms

Enclosures

This cover letter is an integral part of this analytical report.

Mailing Address: P.O. Box 9108 Newport Beach, CA 92658
1510 E. 33rd Street Signal Hill, CA 90807 Tel: 310 989-4045 Fax: 310 989-4040

Client:	**Geocon Environmental**	**QC Batch #:**	**968015DW377**
Attn:	**Mr. Rick Walls**	**Date Sampled:**	**11/14/96**
		Date Received:	**11/16/96**
Client's Project:	**Hegenberger, S8130-06-01**	**Date Extracted:**	**11/20/96**
		Date Analyzed:	**11/20/96**
		Extraction Method:	**3510**
Matrix:	**Water**	**Extraction Material:**	**Methylene**
Analyst Initials:	**DC**		**Chloride**

Method 8015M/TPH (Diesel)

Lab No.:	Sample ID:	Results, mg/l	DLR, mg/l	Dilution Factor
Method Blank	--	ND	0.05	1.0
14181-002	MW-2	0.056	0.05	1.0
14181-002Dup	MW-2	0.059	0.05	1.0
14181-003	MW-3	0.12	0.05	1.0
14181-004	MW-4	0.20	0.05	1.0
14181-005	MW-5	0.32	0.05	1.0
14181-006	MW-1	0.27	0.05	1.0
		%Recovery	Limits	
LCS	------	75	50-150	1.0

MDL = Method Detection Limit
ND = Not Detected (Below DLR).
DLR = MDL X Dilution Factor

Reviewed/Approved By: _____ **Date:** 11/22/96

Yun Pan
Department Supervisor

The cover letter is an integral part of this analytical report.

Advanced Technology Laboratories
1510 E. 33rd Street Signal Hill, CA 90807 Tel: 310 989-4045 Fax: 310 989-4040

Spike Recovery and RPD Summary Report - WATER(MG/L)

Method : C:\HPCHEM\5\METHODS\DIESEL.M
Title : Diesel
Last Update : Mon Nov 18 17:22:40 1996
Response via : Initial Calibration

Non-Spiked Sample: DB11243.D

	Spike Sample	Spike Duplicate Sample
File ID :	DS11245.D	DS11246.D
Sample :	BLK MS 1L-1ML E-11/20/96	BLK MSD 1L-1ML E-11/20/96
Acq Time:	20 Nov 96 10:18 PM	20 Nov 96 10:41 PM

Compound	Sample Conc	Spike Added	Spike Res	Dup Res	Spike %Rec	Dup %Rec	RPD	QC Limits RPD	QC Limits % Rec
Diesel	ND	1.0	0.76	0.74	76	74	3	50	50-150

QC Batch # : 968015DW377

Reviewed/Approved by: _____ Date: 11/22/96

Yun Pan
Organics Supervisor

Advanced Technology Laboratories
1510 E. 33rd Street Signal Hill, CA 90807 Tel: 310 989-4045 Fax: 310 989-4040

Client: Geocon Environmental
Attn: Mr. Rick Walls

Client's Project: Hegenberger, S8130-06-01

Date Received: 11/16/96
Matrix: Water

METHOD 8015M (Gasoline)/EPA 8020 (BTEX)

Lab No.:	Method Blank		14181-002		14181-003		14181-004		14181-005		14181-006		14181-002Dup		LCS			
Client Sample I.D.:	--		MW-2		MW-3		MW-4		MW-5		MW-1		MW-2		---			
Date Sampled:	--		11/14/96		11/14/96		11/14/96		11/14/96		11/14/96		11/14/96		---			
QC Batch #:	968G20W2248		968G20W2248		968G20W2248		968G20W2248		968G20W2248		968G20W2248		968G20W2248		968G20W2248			
Date Analyzed:	11/18/96		11/18/96		11/18/96		11/18/96		11/18/96		11/18/96		11/18/96		11/18/96			
Analyst Initials:	DT		DT		DT		DT		DT		DT		DT		DT			
Dilution Factor:	1.0		1.0		1.0		1.0		1.0		1.0		1.0		1.0			
Analyte	MDL	Units	DLR	Results	DLR	Results	DLR	Results	DLR	Results	DLR	Results	DLR	Results	DLR	Results	%Rec	Limit
TPH (Gas)	0.05	mg/l	0.05	ND	0.05	ND	0.05	0.3	0.05	0.2	0.05	0.7	0.05	2.6	0.05	ND	80	50-150
Benzene	0.5	ug/l	0.5	ND	0.5	ND	0.5	6.2	0.5	3.4	0.5	31	0.5	500	0.5	ND	73	50-150
Toluene	0.5	ug/l	0.5	ND	0.5	ND	0.5	1.2	0.5	ND	0.5	5.7	0.5	18	0.5	ND	85	50-150
Ethylbenzene	0.5	ug/l	0.5	ND	0.5	ND	0.5	0.7	0.5	ND	0.5	0.7	0.5	14	0.5	ND	83	50-150
Xylenes (total)	0.5	ug/l	0.5	ND	0.5	ND	0.5	1.4	0.5	ND	0.5	3.6	0.5	8.9	0.5	ND	95	50-150

Lab No.:																		
Client Sample I.D.:																		
Date Sampled:																		
QC Batch #:																		
Date Analyzed:																		
Analyst Initials:																		
Dilution Factor:																		
Analyte	MDL	Units																
TPH (Gas)	0.05	mg/l																
Benzene	0.5	ug/l																
Toluene	0.5	ug/l																
Ethylbenzene	0.5	ug/l																
Xylenes (total)	0.5	ug/l																

MDL = Method Detection Limit
ND = Not Detected. (Below DLR)
DLR = MDL X Dilution Factor
NA = Not Analyzed

Reviewed/Approved By: _____
Yun Pan
Department Supervisor

Date: 11/22/96

The cover letter is an integral part of this analytical report.

Advanced Technology Laboratories

Spike Recovery and RPD Summary Report - WATER

Method : C:\HPCHEM\5\METHODS\8025WAT.M
Title : EPA M8015 (Gasoline) / EPA 602 (BTEX)
Last Update : Mon Nov 18 13:42:49 1996
Response via : Initial Calibration

Non-Spiked Sample: V01828.D

	Spike Sample	Spike Duplicate Sample
File ID :	VS1840.D	VS1841.D
Sample :	14180-001 1ppm MS Gas(+BTEX)	14180-001 1ppm MSD Gas(+BTEX)
Acq Time:	19 Nov 96 08:02 AM	19 Nov 96 08:31 AM

Compound	Sample Conc	Spike Added	Spike Res	Dup Res	Spike %Rec	Dup %Rec	RPD	QC Limits RPD	QC Limits % Rec
Gasoline (mg/l)	0.0	1	1	1	117	116	0	20	66-129
Benzene (ug/l)	0.0	23	21	21	92	90	3	20	73-121
Toluene (ug/l)	ND	85	79	78	93	92	1	20	70-127

QC Batch #:968G20W2248

Reviewed and Approved by: _____ Date: 11/22/96

Yun Pan
Organics Supervisor

Advanced Technology Laboratories
1510 E. 33rd Street Signal Hill, CA 90807 Tel: 310 989-4045 Fax: 310 989-4040

CHAIN OF CUSTODY RECORD

Advanced Technology Laboratories
1510 E. 33rd Street
Signal Hill, CA 90807
(310) 989-4045 • FAX (310) 989-4040

FOR LABORATORY USE ONLY:

Logged By: _____ Date: _____ Time: _____
Batch #: _____ D.O. #: _____
P.O. #:

Method of Transport: Walk-in ☐ Courier ☒ UPS ☐ FED. EXP. ☐ ATL ☐

Sample Condition Upon Receipt:
1. COOLER TEMP °C 4 (2-6) 5. SEALED Y☐ N☒
2. CHILLED Y☒ N☐ 6. # OF SPLS MATCH COC Y☒ N☐
3. HEADSPACE (VOA) Y☐ N☒ 7. PRESERVED Y☐ N☐
4. CONTAINER INTACT Y☒ N☐ 8. CONTR. LOT # _____

Client: GEOCON ENVIRONMENTAL - SACRAMENTO
Attn: RICK WALLS
Address: 3235 Sunrise Blvd. #6
City Rancho Cordova State CA Zip Code 95742
TEL: (916) 852-9118
FAX: (916) 852-9132

Project Name: HEGENBERGER Project #: 58130-06-01 Sampler: (Printed Name) IAN MOORHEAD (Signature) I. Moorhead

Relinquished by: (Signature and Printed Name) I. Moorhead / GEOCON Received by: (Signature and Printed Name) CALIFORNIA OVERNIGHT Date: 11-15-96 Time: 1630
Relinquished by: (Signature and Printed Name) Received by: (Signature and Printed Name) Date: Time:
Relinquished by: (Signature and Printed Name) Received by: (Signature and Printed Name) Date: Time:

Unless otherwise requested, all samples will be disposed 45 days after receipt.

I hereby authorize ATL to perform the work indicated below:
Project Mgr /Submitter: I. MOORHEAD Date: 11, 14, 96
Print Name
Signature

Send Report To:
Attn: RICK WALLS
Co: GEOCON
Address
City State Zip

Special Instructions/Comments:
CALTRANS CONTRACT 53W202
RUN DUPLICATE ON MW-2
1. TPHg - BTEX
2. TPHd.
DISCOUNT (4%: 21-50 Samples)

SHIP TO LAB: (SUB CONTRACT) TEST: ATL #: DATE: CLIENT I.D.
SHIP TO LAB: (SUB CONTRACT) TEST: ATL #: DATE: CLIENT I.D.
SHIP TO LAB: (SUB CONTRACT) TEST: ATL #: DATE: CLIENT I.D.

Circle or Add Analysis(es) Requested: 601/8010 (Halogenated Volatiles-GC); 602/8020/BTEX (Aromatic Volatiles-GC); 608/8080 (Pesticides/PCB-GC); 624/8240/8260 (Volatiles-GC/MS); 625/8270 (BNA-GC/MS); 8015M TPHG/BTEX COMBINATION); 8015M TPHD (Diesel-GC); 418.1 (TPH-IR); Metals: Total (CAC-6010/7000); HOLD

CIRCLE APPROPRIATE MATRIX: SOLID • SOIL • SLUDGE; OIL • SOLVENT • LIQUID; WATER • WASTEWATER; DRINKING WATER; AIR; WIPE • FILTER; OTHER

ITEM	LAB USE ONLY: Batch #: / Lab No.	Sample Description: Sample I.D.	Date	Time	TAT	Container(s): #	Type	PRESERVATION	REMARKS
	14181-001	TRIP BLANK	11/14	0800	E			C	
	002	MW-2	11/14	1150					
	003	MW-3		1255					
	004	MW-4		1355					
	005	MW-5		1420					
	006	MW-1		1610					

QA / QC: RTNE ☐ RWQCB ☐ WIP ☐ NAVY ☐ CT ☐ OTHER _____

Sample Archive/Disposal:
☒ Laboratory Standard
☐ Other _____
☐ Return To: _____

TAT: A= Overnight ≤ 24 hr B= Emergency Next workday C= Critical 2 Workdays D= Urgent 3 Workdays E= Routine 7 Workdays
• TAT starts 8 a.m. following day if samples received after 3 p.m.

Container Types: T=Tube V=VOA L=Liter P=Pint J=Jar B=Tedlar G=Glass P=Plastic M=Metal

Preservatives: H=HCl N=HNO_3 S=H_2SO_4 C=4°C Z=$Zn(AC)_2$ O=NaOH T=$Na_2S_2O_3$

* $10.00 FEE PER HAZARDOUS SAMPLE DISPOSAL.

DISTRIBUTION: White with report, Yellow to folder, Pink to submitter.