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QUARTERLY GROUNDWATER MONITORING REPORT

5930 College Avenue
Oakland, California
STID # 514

February 15, 2001

prepared for

William G, Sheaff TTE Trust
Mr. Brian Sheaff
1945 Parkside Drive
Concord, CA 94519

prepared by

Golden Gate Tank Removal
255 Shipley Street
San Francisco, CA 94107

GGTR Job No. 7335

Mark Youngkin
Registered Geologist CEG 1380

REGISTERED GEOLOGIST
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No. 1380
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QUARTERLY GROUNDWATER MONITORING REPORT

5930 College Avenue
Oakland, California
STID # 514

Introduction

This report presents the results and findings of the February 2, 2001 groundwater monitoring conducted by GOLDEN GATE TANK REMOVAL (GGTR) at 5930 College Avenue in Oakland, California. This monitoring episode was the 4th monitoring event of all three wells at the site. Well MW-1 been monitored a total of six times now. The Alameda County Health Services Agency (ACHSA) designated the site as case STID #514. A vicinity map showing the general area of the site is presented on Figure 1, *Vicinity Map.* Features of the site are shown on Figure 2, *Site Plan.* The groundwater gradient is graphically shown on Figure 3, *Groundwater Gradient.* Figure 4, *Groundwater Monitoring Results at 5930 College Avenue*, summarizes the results of historical groundwater monitoring at the site.

Results of Sampling and Laboratory Analysis

Copies of the official laboratory Certificates of Analysis and the Chain-of-Custody Form are included in Appendix A. Documentation of the purging and sampling is contained in the Field Data Sheets of Appendix A.

Table - February 2, 2001 Groundwater Sampling Results

Well Label	TPH-G (ug/L)	MTBE (ug/L)	BTEX (ug/L)
MW1	**128,000**	**780**	**19,000 / 11,000 / 3,800 / 18,000**
MW2	**36,000**	**400**	**4,300 / 530 / 1,800 / 4,500**
MW3	**2,900**	**35**	**35 / 3 / 160 / 298**

NOTES: TPH-G - Total Petroleum Hydrocarbons as Gasoline,
BTEX - Benzene / Toluene / Ethylbenzene / Xylenes,
MTBE - Methyl Tertiary Butyl Ether
ug/L - micrograms per liter (equivalent to parts per billion - ppb)
ND - not detected above laboratory reporting limit

In general, TPH-g, BTEX and MTBE have demonstrated fluctuating concentrations in all three monitoring wells at the site and appear to have stabilized or declining. Total Petroleum Hydrocarbons as gasoline (TPH-g) decreased slightly in well MW-1 to 128,000 ug/L. TPH-g increased slightly in well MW2 to 36,000 ug/L, but did not exceed the maximum historical value of 42,000 ug/L. TPH-g decreased in well MW-3 to 2,900 ug/L, well below the maximum historical value of 6,600 ug/L. BTEX concentrations generally decreased or remained below historical maximum values in all wells.

MTBE decreased in well MW-1 to 780 ug/L well below the maximum historical value of 1,900 ug/L. MTBE decreased in well MW-2 to 400 ug/L, the lowest concentration measured in this well to date. MTBE increased in well MW3 from non-detectable (ND) to 35 ug/L, but still below the historical maximum value of 390 ug/L. No floating free product or noticeable sheen occurred in any of the groundwater wells during this monitoring episode. Gasoline-like odors were noted in purge water from the monitoring wells.

Total Extractable Petroleum Hydrocarbons (TEPH) were not detected in prior sampling episodes and by agreement with the regulatory agency, TEPH was not included in this groundwater sampling. By regulatory agency request, the water samples from all three monitoring wells were analyzed for oxygenates by GC/MS Method 8260 during the last monitoring period. No oxygenates (except MTBE reported separately) were reported in the last monitoring, therefore, no oxygenate analysis (except MTBE) was performed during this monitoring period.

Results of Groundwater Elevation Measurements

The groundwater gradient for the February 2, 2001 monitoring event was measured at 1.1 ft / 100 feet (0.011 ft/ft) in a direction of 31° west of north. The groundwater gradient is graphically shown on figure 3, Groundwater Gradient.

The table shown below lists the historical data on mean groundwater elevation, flow direction and groundwater slope for the site.

Groundwater Elevation, Flow Direction and Slope

Date	Mean Groundwater Elevation in feet	Direction of Flow	Slope in ft / 100 ft
10/07/99	39.87	11° west of south (169° west of north)	0.67 feet / 100 feet
01/26/00	43.1	23° west of north	9.12 feet / 100 feet
10/25/00	39.96	40° east of north	0.64 feet / 100 feet
02/02/01	**40.57**	**31° west of north**	**1.1 feet / 100 feet**

Note that the groundwater elevations are referenced to a site-specific datum of 50 feet at well MW1 (no relation to sea level). The February 2, 2001 measurements reveal a shallow groundwater slope (0.011 ft/ft) with groundwater elevations varying by only 0.3 feet across the site. Groundwater flow direction changed with the rise in groundwater elevation and appears to be flowing towards utility trenches along College Avenue.

Discussion of Monitoring Results

We reviewed the results of the February 2, 2001 sampling episode in comparison with the results of the previous monitoring episodes. There was a significant shift in the groundwater flow direction again for the fourth consecutive measurement. The range of historical groundwater flow directions is large (within a range of 209° from 169° west of north to 40° east of north). The determination of a consistent down-gradient direction is problematic at this site.

Dry weather measurements (October) agree in slope (0.6 ft/100 ft) but differ in flow direction. Wet weather measurements show drastic changes in groundwater elevation and slope. Previous measurements suggest that the shallow groundwater changes in response to rainfall. Utility trenches occur along the western margin of the site. The high variability in groundwater flow direction may indicate that utility trenches have an impact on the flow of shallow groundwater across the site.

The concentrations of fuel constituents in the groundwater at all three monitoring wells appear to fluctuate seasonally (apparently in relation to groundwater elevation). Localized smear zone contamination of the groundwater appears evident in the fluctuating chemical concentrations observed in all three monitoring wells. While fluctuating seasonally, the gasoline constituents appear to have stabilized or demonstrate declining concentrations.

GGTR recommends that the monitoring of the three groundwater wells be continued for one more quarterly sampling to further demonstrate stabilized groundwater conditions. The next scheduled quarterly monitoring should occur during May-June 2001. The three samples obtained at that time should be analyzed for TPH-G, BTEX and MTBE.

Water Sample Analytical Methods

The groundwater samples collected from the three monitoring wells were analyzed for the following fuel constituents:

- Total Petroleum Hydrocarbons as Gasoline (TPH-G)
- Benzene, Toluene, Ethylbenzene and total Xylenes (BTEX)
- Methyl Tertiary Butyl Ether (MTBE)

North State Environmental Laboratory of South San Francisco, California analyzed the groundwater samples on February 5, 2001. All analytical results are tabulated on figure 4, *Groundwater Monitoring Results at 5930 College Avenue*. Copies of the Laboratory Certificates of Analysis, Field Data Sheets and Chain of Custody Forms are included in the Appendix.

Field Procedures

The GGTR monitoring of three groundwater wells was performed in accordance with the requirements and procedures of the California Regional Water Quality Control Board, Oakland Region (RWQCB) and the ACHSA. Prior to purging and sampling each well, the depth to groundwater in the well was measured from the top of casing to the nearest 0.01 foot using an electronic sounding probe. A preliminary groundwater sample was also collected at this time and checked for the presence of liquid-phase hydrocarbons or sheen with a clear bailer.

After measuring, each well was purged a minimum of five casing volumes. Groundwater samples for analyses were collected by lowering a disposable, bottom-fill, polyvinyl chloride (PVC) bailer to just below the air-water interface in each well. The sample was then carefully decanted from the bailer into the appropriate containers. All volatile organic analysis (VOA) vials were inverted and checked to insure that no entrapped air was present. The samples were then properly labeled with the sample number, well number, sample date, and the sampler's initials. The samples were then stored in an iced cooler for delivery to a California certified laboratory following proper preservation and chain-of-custody procedures.

Quality Assurance / Quality Control

Quality Assurance and Quality Control (QA/QC) details are shown on the laboratory Certificates of Analysis in the Appendix. The laboratory reported no quality assurance or quality control problems during the laboratory analysis procedures. All samples were analyzed within specified laboratory holding times.

Project History and Chronology

During 1996, GGTR removed two underground storage tanks (UST) and fuel dispenser from a common location at the site. The following table shows a summary of the tank designations, size, type of construction and contents:

Designation	Construction	diameter	length	size	contents
		(feet)	(feet)	(gallons)	
TANK 1	steel	4	7	675	gasoline
TANK 2	steel	4	3.5	340	waste oil

The ages of the tanks are unknown but are believed to be between 40 and 60 years old. During the UST removal there was evidence of a gasoline leak in surrounding soils and GGTR over-excavated gasoline-contaminated soil from surrounding the former UST location. The removal and over-excavation was documented in the GGTR report dated October 11, 1996.

The following list of activities shows the significant investigation and remedial action performed at the site:

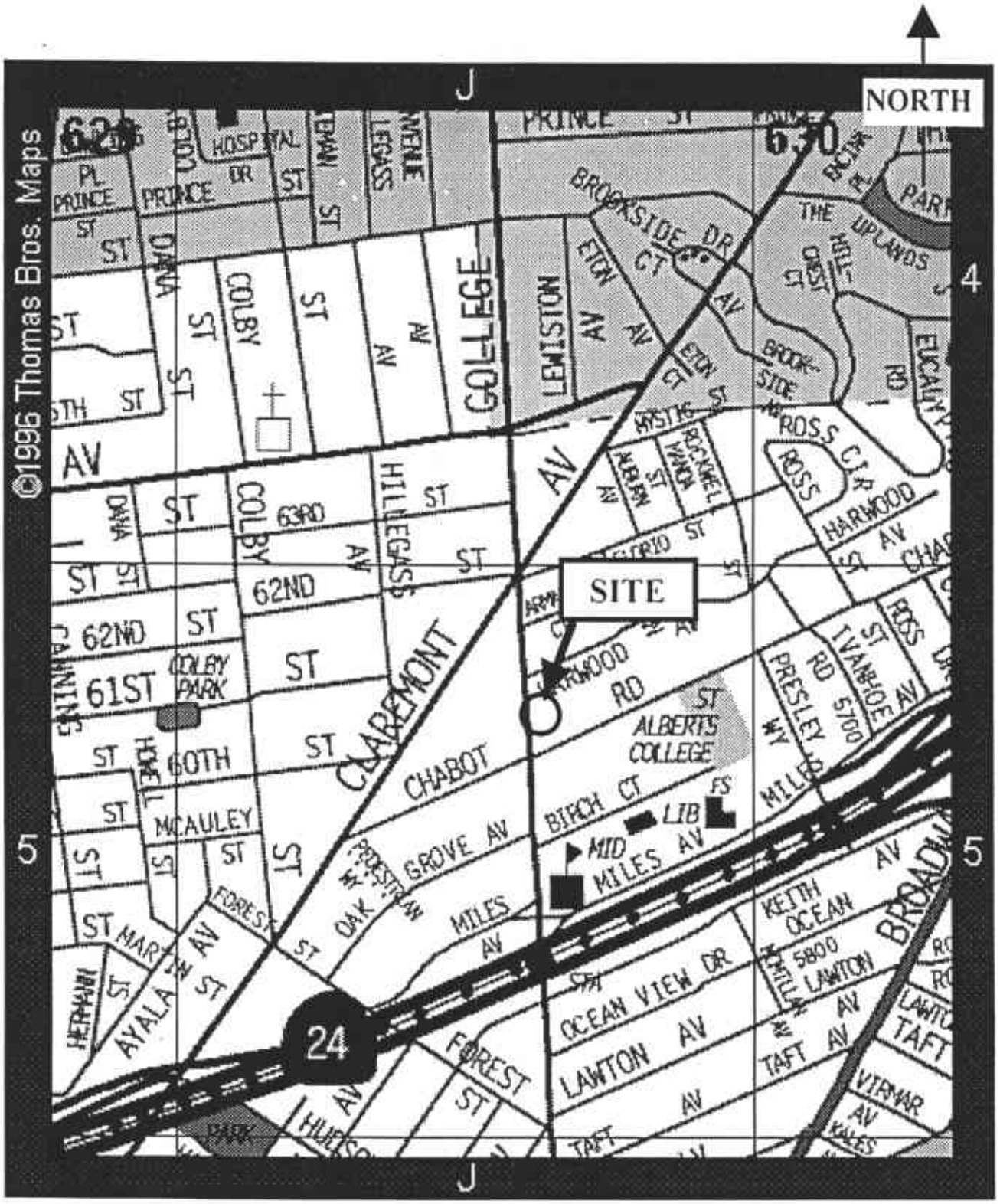
08/06/96	Underground storage tanks 1 and 2 were removed and samples recovered
08/15/96	A work plan was submitted by GGTR for over excavation and disposal of gasoline-contaminated soil surrounding the UST
09/30/96	Over-excavation of gasoline-contaminated soil performed
10/01/96	Last of additional excavation soil disposed of at a Class II facility
10/11/96	TANK REMOVAL REPORT published by GGTR
12/30/96	ACHSA submitted letter requiring soil and groundwater investigation
03/10/97	GGTR authorized to prepare a work plan for additional investigation
04/01/97	GGTR submitted work plan for a Soil and Groundwater Investigation
04/21/97	ACHSA submitted letter authorizing work plan
05/06/98	GGTR drills borings B! through B3
05/20/98	GGTR drills borings B4 (Monitoring Well MW1)
05/27/98	GGTR develops monitoring well MW1
06/01/98	GGTR measures, purges and samples monitoring well MW1
06/17/98	GGTR submitted Soil and Groundwater Investigation Report
07/21/98	GGTR submitted Work Plan Addendum for installation of two additional groundwater monitoring wells
09/10/98	GGTR measures, purges and samples monitoring well MW1 then submits a groundwater monitoring report
10/02/99	GGTR drills two borings (B5 and B6) and converts them to groundwater monitoring Wells (MW2 and MW3)
10/04/99	GGTR develops monitoring wells MW2 and MW3
10/07/99	GGTR surveys monitoring wells MW2 / MW3; measures, purges and samples monitoring wells MW1, MW2 and MW3 then submits a groundwater monitoring report
10/22/99	GGTR submitted Summary Report
11/24/99	HCS submitted letter requiring quarterly monitoring and setting parameters for January 2000 analyses
01/26/00	GGTR measures, purges and samples monitoring wells MW1, MW2 and MW3 then submits a groundwater monitoring report
10/25/00	GGTR re-surveys, measures, purges and samples monitoring wells MW1, MW2 and MW3, then submits a groundwater monitoring report

02/02/01 GGTR measures, purges and samples monitoring wells MW1, MW2 and MW3 then submits a groundwater monitoring report

Report Submittal to Regulatory Agencies

As per local environmental guidelines, GGTR recommends that a copy of this quarterly groundwater monitoring report be submitted to the local regulatory agency as soon as possible:

Alameda County Health Care Services
Environmental Health Services
Environmental Protection (LOP)
1131 Harbor Bay Parkway Suite 250
Alameda, CA 94502
Attention: Eva Chu



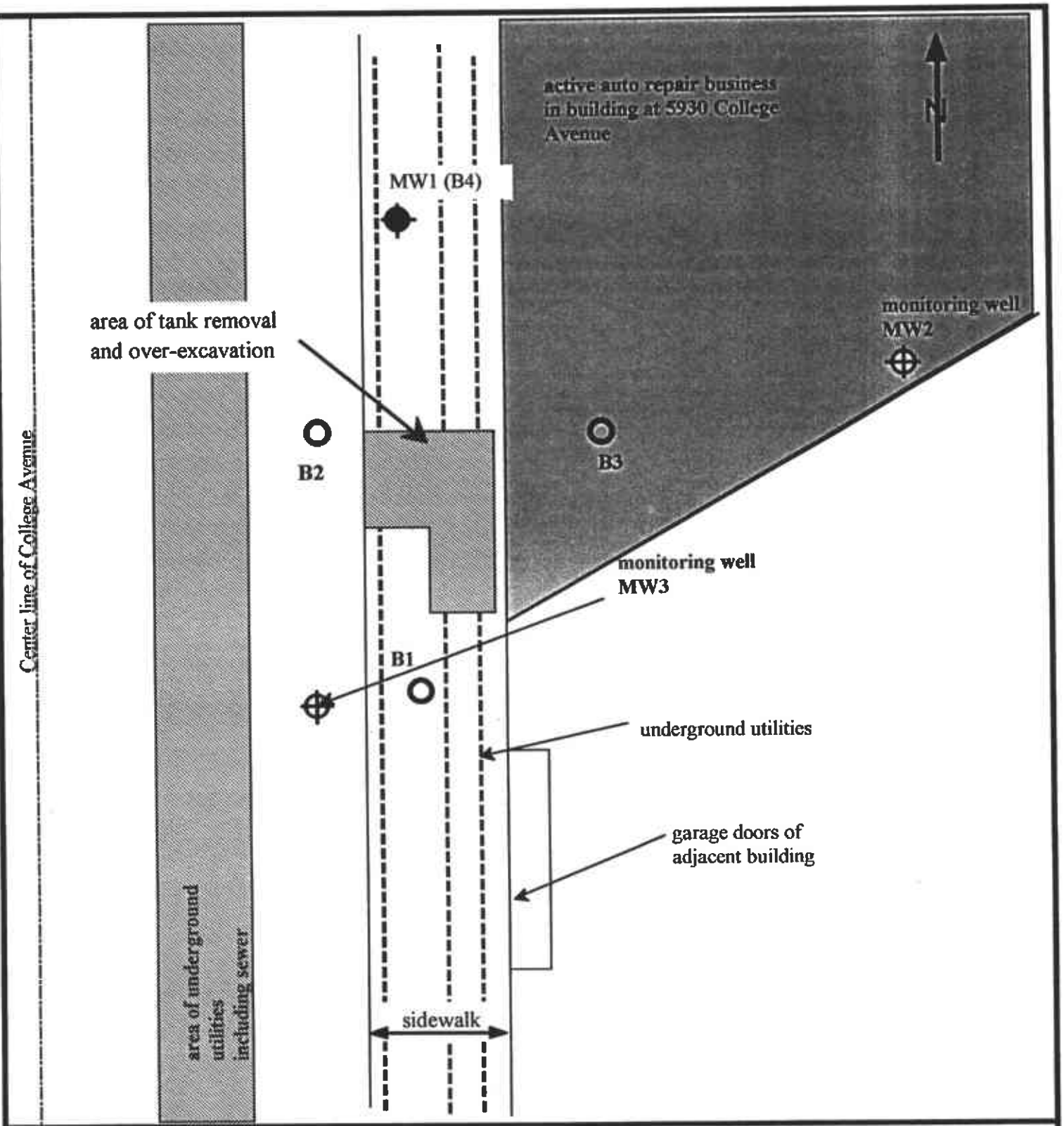
GOLDEN GATE TANK REMOVAL

255 Shipley Street
San Francisco, California 94107
Telephone (415) 512 1555 Fax (415) 512 0964

VICINITY MAP

5930 College Avenue
Oakland, California

Project 7335	By: jnc	Not to scale	January, 2000	Figure 1



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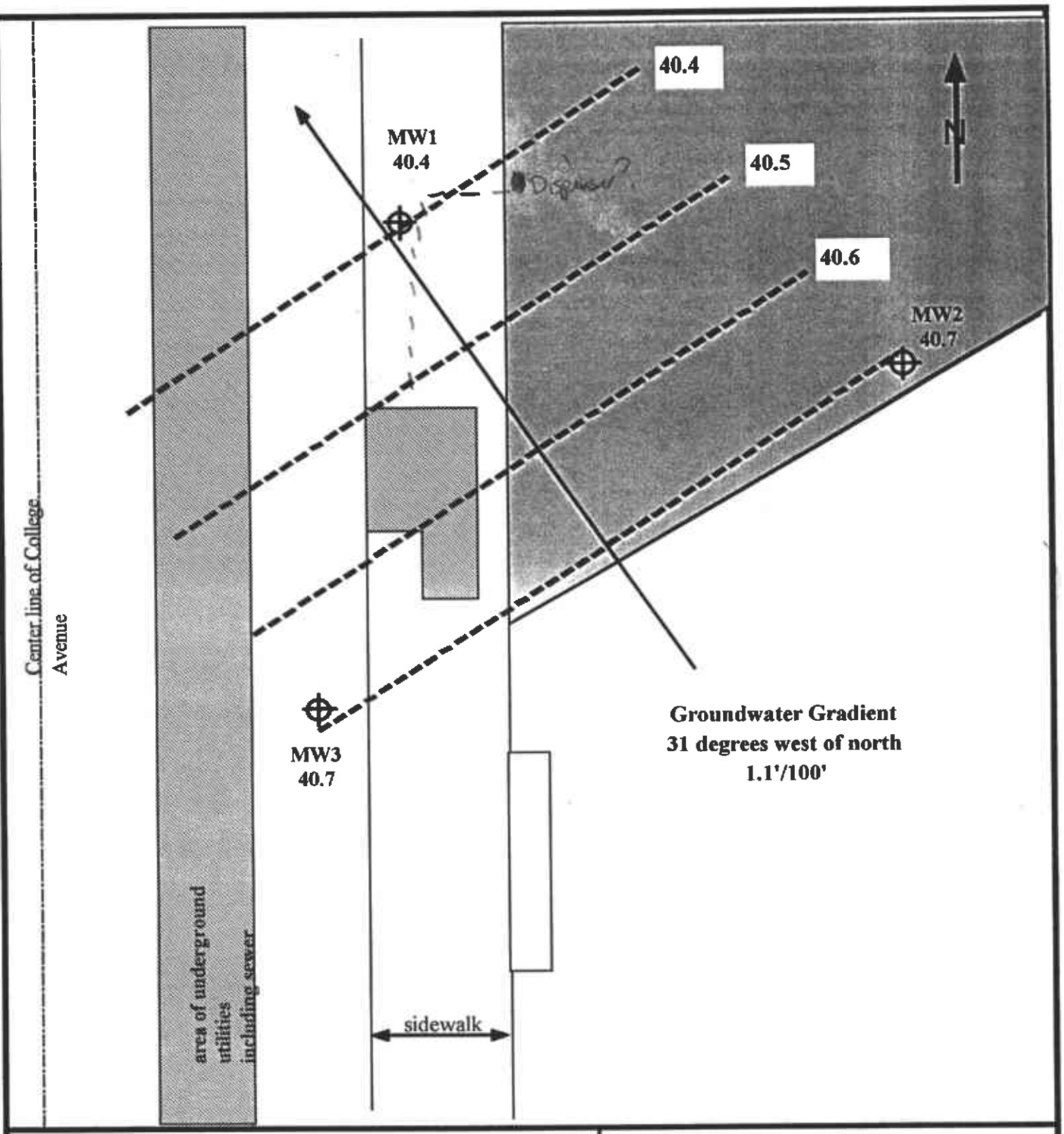
SITE PLAN
5930 College Avenue
Oakland, California

Project 7335	By: my	1" = 10'	February 2001	Figure 2



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GROUNDWATER GRADIENT
02/15/2001
5930 College Avenue
Oakland, California

Project 7335	By: my	1" = 10'	February 2001	Figure 3

Figure 4 - Groundwater Monitoring Results at 5930 College Avenue

Well Label	Date of Sampling	Casing Elevation (feet) *	Depth to Water (feet)	Water Elevation (feet)	Free Product, Odor or Sheen	TPH-G (ug/L)	TEPH (ug/L)	VO (ug/L)	MTBE (ug/L)	BTEX (ug/L)
MW1	06/01/98	50.00*	4.81	45.19	slight sheen	160,000	ND	--	1,900	28,000 / 21,000 / 3,800 / 21,000
	09/10/98	50.00	7.50	42.50	odor	290,000	ND	--	440	<50 / 25,000 / 7,100 / 32,000
	10/07/99	50.00	10.04	39.96	odor	85,000	ND	--	1,100	20,000 / 13,000 / 3,800 / 17,000
	01/26/00	50.00	8.26	41.74	slight sheen	130,000	--	--	470	25,000 / 18,000 / 4,500 / 22,000
	10/25/00	50.00	10.10	39.90	odor	130,000	--	ND	1,300	23,000 / 12,000 / 3,900 / 18,000
	02/02/01	**50.00**	**9.61**	**40.39**	**odor**	**128,000**	**--**	**--**	**780**	**19,000 / 11,000 / 3,800 / 18,000**
MW2	10/07/99	51.42	11.49	39.93	slight odor	18,000	ND	--	490	3,000 / 1,700 / 1,000 / 3,900
	01/26/00	51.42	7.85	43.57	none	42,000	--	--	560	9,300 / 2,200 / 2,300 / 7,700
	10/25/00	51.42	11.57	39.85	slight odor	31,000	--	ND	500	5,500 / 370 / 1,700 / 2,600
	02/02/01	**51.42**	**10.77**	**40.65**	**slight odor**	**36,000**	**--**	**--**	**400**	**4,300 / 530 / 1,800 / 4,500**
MW3	10/07/99	49.39	9.67	39.72	none	6,600	ND	--	390	310 / 110 / 430 / 1,000
	01/26/00	49.39	5.40	43.99	none	3,300	--	--	40	110 / 8 / 100 / 32
	10/25/00	49.39	9.24	40.15	slight odor	4,500	--	ND	ND	100 / 2 / 120 / 130
	02/02/01	**49.39**	**8.73**	**40.66**	**slight odor**	**2,900**	**--**	**--**	**35**	**35 / 3 / 160 / 298**

NOTES:

TPH-G - Total Petroleum Hydrocarbons as Gasoline
BTEX - Benzene / Toluene / Ethylbenzene / Xylenes
TEPH - Total Extractable Petroleum Hydrocarbons
VO - Oxygenates or Volatile Organics by GC/MS Method 8260
MTBE - Methyl Tertiary Butyl Ether
ug/L - micrograms per liter (equivalent to parts per billion - ppb)
* - assumed local datum
-- not analyzed
ND - not detected above laboratory detection limits

APPENDIX

LABORATORY CERTIFICATES OF ANALYSIS, FIELD DATA SHEETS & CHAIN OF CUSTODY FORMS

GROUNDWATER MONITORING

FOR

5930 College Avenue
Oakland, California
STID # 514

Project No. 7335

North State Environmental Laboratory
CA ELAP # 1753
90 South Spruce Avenue, Suite V • South San Francisco, CA 94080 • **(650) 266-4563** • FAX (650) 266-4560

C E R T I F I C A T E O F A N A L Y S I S

Lab Number: 01-0158
Client: Golden Gate Tank
Project: #7335/5930 COLLEGE AVE, OAK CA

Date Reported: 02/08/2001

Gasoline, BTEX and MTBE by Methods 8015M and 8020

Analyte	Method	Result	Unit	Date Sampled	Date Analyzed
Sample: 01-0158-01 Client ID: 7335-MW1				02/02/2001	WATER
Gasoline	8015M	128000	ug/L		02/05/2001
Benzene	8020	19000	ug/L		
Ethylbenzene	8020	3800	ug/L		
MTBE	8020	*780	ug/L		
Toluene	8020	11000	ug/L		
Xylenes	8020	18000	ug/L		
Sample: 01-0158-02 Client ID: 7335-MW2				02/02/2001	WATER
Gasoline	8015M	36000	ug/L		02/05/2001
Benzene	8020	4300	ug/L		
Ethylbenzene	8020	1800	ug/L		
MTBE	8020	400	ug/L		
Toluene	8020	530	ug/L		
Xylenes	8020	4500	ug/L		
Sample: 01-0158-03 Client ID: 7335-MW3				02/02/2001	WATER
Gasoline	8015M	2900	ug/L		02/05/2001
Benzene	8020	35	ug/L		
Ethylbenzene	8020	160	ug/L		
MTBE	8020	35	ug/L		
Toluene	8020	3	ug/L		
Xylenes	8020	298	ug/L		

*Confirmed by GC/MS method 8260

North State Environmental Laboratory
CA ELAP # 1753
90 South Spruce Avenue, Suite V • South San Francisco, CA 94080 • **(650) 266-4563** • FAX (650) 266-4560

C E R T I F I C A T E O F A N A L Y S I S

Quality Control/Quality Assurance

Lab Number: 01-0158
Client: Golden Gate Tank
Project: #7335/5930 COLLEGE AVE, OAK CA

Date Reported: 02/08/2001

Gasoline,BTEX and MTBE by Methods 8015M and 8020

Analyte	Method	Reporting Limit	Unit	Blank	Avg MS/MSD Recovery	RPD
Gasoline	8015M	50	ug/L	ND	131	2
Benzene	8020	0.5	ug/L	ND	100	2
Toluene	8020	0.5	ug/L	ND	105	3
Ethylbenzene	8020	0.5	ug/L	ND	107	3
Xylenes	8020	1.0	ug/L	ND	109	3
MTBE	8020	0.5	ug/L	ND	91	2

ELAP Certificate NO:1753
Reviewed and Approved

John A.Murphy,Laboratory Director

North State Environmental Analytical Laboratory

90 South Spruce Avenue, Suite W, South San Francisco, CA 94080
Phone: (650) 266-4563 Fax: (650) 266-4560

01-0158

Chain of Custody / Request for Analysis

Lab Job No.:_____ Page___ of___

Client: GOLDEN GATE TANK REMOVAL	Report to: T. WALLACE	Phone: 415-512-1555	Turnaround Time
Mailing Address: 255 SHIPLEY ST. SAN FRANCISCO, CA 94107	Billing to:	Fax: 415-512-0964	Date: 02-02-01
		PO# / Billing Reference: #7335	Sampler: T. WALLACE

Project / Site Address: #7335 – 5930 COLLEGE AVE, OAK CA

Analysis Requested

Sample ID	Sample Type	Container No. / Type	Pres.	Sampling Date / Time	TPH-D	BTEX	MTBE					Comments / Hazards
7335-MW1	WATER	2 VOA	ICE	02-02-01 / 11:40A	X	X	X					
7335-MW2	WATER	2 VOA	ICE	02-02-01 / 12:20P	X	X	X					
7335-MW3	WATER	2 VOA	ICE	02-02-01 / 1:10P	X	X	X					

Relinquished by:	Date: 02-02-01	Time: 12 20	Received by:	Lab Comments
Relinquished by:	Date:	Time:	Received by:	
Relinquished by:	Date:	Time:	Received by:	

GROUNDWATER WELL MONITORING
FIELD DATA SHEET

Project Number 7335 Site Name 5930 College Date 02-02-01
Well Number MW1 Sampler T. WALLACE

Notes, including field conditions, persons on site, methods used, weather
WELL IN GOOD CONDITION! SEALED. CLEAR WEATHER - NO RAIN IN 8 DAYS. USED HYDAC METER FOR COND, TEMP & PH. USED DISPOSABLE BAILER FOR PURGING & SAMPLING.

Well Depth 14.5 ft. time of sample 12:20 Depth to water 9.61 ft
Well Diameter 2" sheen or free product

Volume Height of water		Diameter 2 inch	4 inch	Volume	Number of well volumes	total gallons to purge
Column	4.84 ft.	(0.16)	0.65	.78 gals.	5	4 gal

Quality of purge water

TIME	VOLUME PURGED	pH	CONDUCTIVITY	TEMP	NOTES
12:05	1 gals	7.19	7.41	61.9	
12:10	3 gals	7.21	7.50	62.0	
12:20	4 gals	7.03	7.56	62.3	
	gals				
	gals				
	gals				
	gals				
	gals				

Additional comments MODERATE TO SLOW RECHARGE

GROUNDWATER WELL MONITORING
FIELD DATA SHEET

Project Number 7335 Site Name 5930 College Date 02-02-01
Well Number MW2 Sampler T. WALLACE

Notes, including field conditions, persons on site, methods used, weather
SAME AS MW1

Well Depth 19.8 ft. time of sample 11:40 Depth to water 10.77 ft
Well Diameter 2" sheen or free product

Volume Height of water	Diameter 2 inch	4 inch	Volume	Number of well volumes	total gallons to purge
Column 9.03 ft.	(0.16)	0.65	1.44 gals.	5	7 gal

Quality of purge water NO SHEEN, SLIGHT ODOR, CLEAR

TIME	VOLUME PURGED	pH	CONDUCTIVITY	TEMP	NOTES
11:10	1 gals	7.80	7.19	61.4	
11:15	3 gals	7.75	7.74	61.9	
11:25	5 gals	7.60	7.855	61.8	
11:40	7 gals	7.62	8.88	61.62	
	gals				
	gals				
	gals				
	gals				

Additional comments MODERATE RECHARGE

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General Engineering Contractors License No. 616521

GOLDEN GATE TANK REMOVAL

GROUNDWATER WELL MONITORING FIELD DATA SHEET

Project Number 7335 Site Name 5950 College Date 02-02-01
Well Number MW3 Sampler T. WALLACE

Notes, including field conditions, persons on site, methods used, weather
SAME AS MW1

Well Depth 19.2 ft. time of sample 1:10 pm Depth to water 8.73 ft
Well Diameter 2" sheen or free product

Volume Height of water	Diameter 2 inch	4 inch	Volume	Number of well volumes	total gallons to purge
Column 10.47 ft.	(0.16)	0.65	1.67 gals.	5	- 8 gal

Quality of purge water NO ODOR, NO SHEEN CLEAR

TIME	VOLUME PURGED	pH	CONDUCTIVITY	TEMP	NOTES
12:35	2 gals	7.62	5.60	62.3	
12:40	4 gals	7.53	5.24	63.7	
12:50	6 gals	7.54	5.30	63.4	
1:10	8 gals	7.50	5.41	63.3	
	gals				
	gals				
	gals				
	gals				

Additional comments MODERATE TO SLOW RECHARGE

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