CLEARWATER
GROUP, INC.
Environmental Services

October 31, 2000

Mr. Barney Chan
Alameda County Environmental Health Services
Environmental Protection Division
1131 Harbor Bay Parkway, Suite 250
Alameda, CA 94502-6577

2118

RE: Well Installation and Groundwater Monitoring Report of Findings
Eagle Gas, 4301 San Leandro Street, Oakland, California
StID # 2118

Dear Mr. Chan:

Clearwater Group (Clearwater), on behalf of Ms. Farah Naz, is pleased to present this letter report of findings for well installation and groundwater monitoring activities for the above site. The activities reported here correspond with those proposed in the well installation portion of the September 10, 1999, Artesian Environmental *Soil Remediation Pilot Study and Well Installation Workplan.*

Background

Site Location

The subject site is located in the southern portion of Oakland, California at the south corner of San Leandro Street and High Street, approximately 1,000 feet east of Interstate Highway 880. The site is bounded by commercial property to the southeast, southwest, and northwest, and by the BART tracks to the northeast (Figure 1).

Site History

On April 21 and April 22, 1999, Artesian Environmental (now Clearwater) oversaw the removal of five underground storage tanks (USTs) at the subject site. The USTs

included two 6,000 gallon gasoline USTs, two 4,000 gallon diesel USTs, and one 300 gallon used oil UST. Field observations included strong petroleum odors from soils near the former USTs. A total of five confirmation soil samples and three groundwater samples were collected from the UST excavations. Laboratory analytical results confirmed an unauthorized release of petroleum (Table 1, Table 3).

In a letter dated May 10, 1999, the Alameda County Department of Environmental Health recommended that soil be remediated by over-excavation / land disposal and that "as much groundwater as possible" be pumped from the excavation. Subsequently, approximately 800 tons of petroleum impacted soil were excavated and disposed of as Class II non-hazardous waste. Less than 1,000 gallons of petroleum impacted groundwater were pumped from the excavation. Groundwater did not recharge after pumping. Existing structures limited the amount of soil that could be safely excavated. Soil samples collected from the excavation walls and product piping trenches indicated some remaining petroleum and MTBE contamination.

On August 4 and August 5, 1999, approximately 100 linear feet of product piping was removed. Vent piping from between the former USTs and the south corner of the onsite building was also removed. All piping was cut and disposed of as scrap metal.

On August 5, 1999, Confirmation soil samples were collected along the piping trench. Six samples were collected from approximately three feet bgs. An additional four samples were collected, one for each of four former fuel dispensers. Laboratory analytical results indicated the presence of hydrocarbon related contamination along piping trenches (Table 1).

Purpose of Additional Work

The purpose of the most recent field activities at this site was to more adequately determine the extent of petroleum related contamination in groundwater, and to determine the direction and magnitude of hydraulic gradient. To accomplish this goal, three groundwater monitoring wells were installed on the subject property, each to a depth of approximately 25 feet below ground surface.

Methods

Soil Borehole Drilling, Sampling, and Well Installation

Prior to field activities, monitoring well installation permits were obtained from the County of Alameda Public Works Agency. Underground utilities were located by Underground Service Alert (USA) prior to the scheduled drill date. Prior to initiating drilling activities, Clearwater and drilling subcontractor personnel reviewed and signed a Site Safety Plan (attached). All fieldwork was performed in accordance with Clearwater's Field Procedures (attached).

On September 26, 2000, West Hazmat of Rancho Cordova, California, used a CME 75 drill rig to advance three borings to approximately 25 feet bgs (Figure 2). Soil samples were collected at 5 foot depth intervals from all borings. Portions of each soil sample were retained for a visual sedimentologic description by a Clearwater geologist using the Unified Soil Classification System, and for volatile organic headspace analysis using a Thermo 580B photo-ionizing organic vapor meter (OVM). A total of three soil samples were submitted for laboratory analysis. Soil samples were analyzed for TPHg by EPA method 8015 (modified), Total Petroleum Hydrocarbons as diesel (TPHd) by EPA method 8015, BTEX by EPA method 8260 (modified), fuel oxygenates MTBE, ETBE, TAME, TBA, DIPE, ethanol and methanol by EPA method 8260B, and the fuel additives 1,2-DCA and EDB by EPA method 8260.

Each of the three borings was converted to a groundwater monitoring well using clean, flush-threaded, two-inch diameter PVC well materials. Well screen, with 0.01-inch perforations, was extended from 25 feet bgs to approximately 10 feet bgs in each boring. Blank well casing was then extended to ground surface. A filter pack of #2/12 Lonestar sand was installed in the annular space from the bottom of each boring to four feet above the screened interval, and sealed by a three-foot layer of hydrated bentonite. The remaining annular space was filled with neat cement and a tamper-resistant box was concreted in place over each wellhead. Well construction details are included with soil boring logs (attached).

Augers and samplers were cleaned between use by either steam cleaning or an Alconox® wash followed by double rinse in clean tap water to prevent cross-

contamination. Soil cuttings and auger/sampler rinseate was stored on-site in labeled 55-gallons drums pending future removal and disposal.

Monitoring Well Survey, Development and Sampling (Third Quarter 2,000)

On October 3, 2000, Clearwater surveyed the top of casings elevations for each well relative to an arbitrary benchmark. Survey measurements were determined using instrumentation accurate to within ±0.01-feet (Table 4).

Prior to well development, all wells were checked for the presence of SPH. No measurable thicknesses of SPH was observed. Also prior to well development, an electronic water level indicator, accurate to within ±0.01-foot, was used to gauge depth to water in each well.

Following well development, groundwater samples were collected from the wells using dedicated polyethylene bailers and transferred to laboratory supplied containers. Sample containers were labeled, documented on a chain-of-custody form, and placed on ice in a cooler for transport to the project laboratory. Groundwater samples for all monitoring wells were analyzed for concentrations of TPHd, TPHg and BTEX, using EPA methods 8015 (modified) and 8020 (modified), and for concentrations of MTBE, ETBE, TAME, TBA, DIPE, methanol, ethanol, EDB and 1,2-DCA by EPA method 8260B.

All monitoring wells were developed by a combination surging and bailing. Clearwater attempted to develop all wells on October 3, 2000. Recharge in monitoring wells MW-1 and MW-2 was slow. Monitoring well MW-3 was dry. Approximately 9 casing volumes of groundwater was purged from MW-1. Monitoring well MW-2 was purged dry after purging approximately 4 gallons of groundwater. Monitoring well MW-3 was re-developed on October 10, 2000.

Groundwater monitoring and well purging information are presented on Gauge Data/Purge Calculations and Purge Data sheets (attached). Purging devices were cleaned between use by an Alconox® wash followed by double rinse in clean tap water to prevent cross-contamination. Rinseate was stored on-site in labeled 55-gallons drums pending future removal and disposal.

Results Of Investigation

Subsurface Sedimentology and Hydrogeology

The site is predominantly underlain by clays. A Clearwater field geologist observed some clayey gravel and clayey sand in shallower depths, to approximately 10' bgs. Silty sand was observed in borings MW-2 and MW-3 below 20' bgs. Complete descriptions of field observations may be found in soil boring / well construction logs (attached).

On October 3, 2000, static groundwater was measured to be 8.96' bgs in MW-1 and 20.26' bgs in MW-2. Monitoring well MW-3 was dry. On October 27, 2000, Clearwater repeated well monitoring. Static groundwater levels were again highly variable, measuring 18.75 ' bgs in MW-3, 13.88' bgs in MW-2, and 7.27' bgs in MW-1 (Table 4). Using this data, groundwater gradient calculations indicate a gradient of 0.13 feet/foot towards the northeast (Figure 4).

Soil Sample Analytical Results

Three soil samples, one from each borehole, were submitted for laboratory analysis. The samples were collected at 10' bgs, assumed to be just above the capillary fringe. None of the samples contained levels of DIPE, ETBE, TAME, methanol, ethanol, 1,2-DCA, or EDB at concentrations above laboratory detection limits. MTBE was found in soils samples in concentrations ranging between 1.0 mg/Kg (MW-2-10') to 6.9 mg/Kg (MW-1-10'). Soil samples from each boring contained concentrations of TPHg, in concentrations ranging from 32 mg/Kg (MW-3-10') to 630 mg/Kg (MW-1-10'). Soil samples collected from monitoring wells MW-1-10' and MW-2-10' contained TPHd in concentrations of 87 mg/Kg and 210 mg/Kg, respectively. Sample MW-3-10' did not contain THPd in concentrations above laboratory detection limits. Only trace amounts of benzene (less than 1 mg/Kg) were noted from MW-1-10' and MW-2-10' (Table 2).

Groundwater Sample Analytical Results

Laboratory analytical results confirmed petroleum related contamination in groundwater samples from all wells. Concentrations of TPHg ranged from 8,300 µg/L (MW-3) to 250,000 µg/L (MW-2). The highest concentrations of TPHd was 460 µg/L (MW-1) and the lowest was 120 µg/L (MW-3). The fuel oxygenate MTBE was present in concentrations ranging from 33,000 µg/L (MW-3) to 400,000 µg/L (MW-2).

Concentrations for other analytes were not detected above laboratory detection limits (Table 4).

Summary and Conclusions

Laboratory analytical results confirm petroleum related soil and groundwater contamination remain at this site. Soil contamination is greatest near the former UST excavation. Previous data indicate that some contaminated soil may remain underneath existing structures or near the former dispensers. The groundwater contaminant plume has not yet been delineated, and requires further investigation.

Field observations during drilling activities indicated that first observed groundwater was similar for all wells, ranging between 17' bgs in MW-1 to 19' bgs in MW-2. Static groundwater levels, however, varied considerably between the three wells. If measured static water levels are accurate, groundwater appears to flow towards the northeast, at a steep gradient (i = 0.13 f/f). This groundwater flow directions is approximately opposite to the direction of San Francisco Bay.

Three operating USTs buried in artificial fill material currently occupy the former UST cavity, potentially acting as a groundwater sink interfering with normal groundwater flow patterns. Soil or other subsurface conditions may be influencing well recharge or groundwater gradient, producing anomalous groundwater elevation and gradient data.

Recommendations

Clearwater recommends additional site investigative activities to more completely delineate the groundwater contaminant plume and to determine if residual secondary source material remains on site. We recommend the continuation of quarterly monitoring as planned, with well redevelopment as needed to accurately determine the magnitude and direction of hydraulic gradient.

Certification

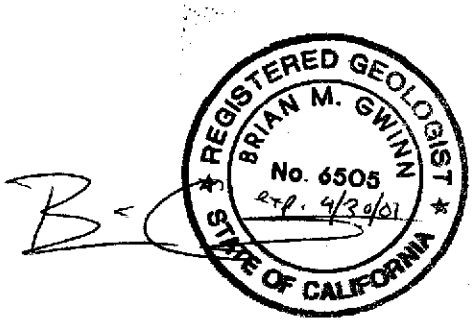
This report was prepared under the supervision of a professional Registered Geologist in the state of California. All statements, conclusions and recommendations are based solely upon published results from previous consultants, field observations by Clearwater Group, Inc. and laboratory analysis performed by a California DOHS-

certified laboratory related to the work performed by Clearwater Group, Inc. Information and interpretation presented herein are for the sole use of the client and regulating agency. The information and interpretation contained in this document should not be relied upon by a third party. The service provided by Clearwater Group, Inc. has been conducted in a manner consistent with the level of care and skill ordinarily exercised by members of our profession currently practicing under similar conditions in the area of the site. No other warranty, expressed or implied, is made.

Clearwater Group, Inc.

Prepared by:

Judi Fox
Project Scientist



Brian Gwinn, R.G.
Senior Geologist

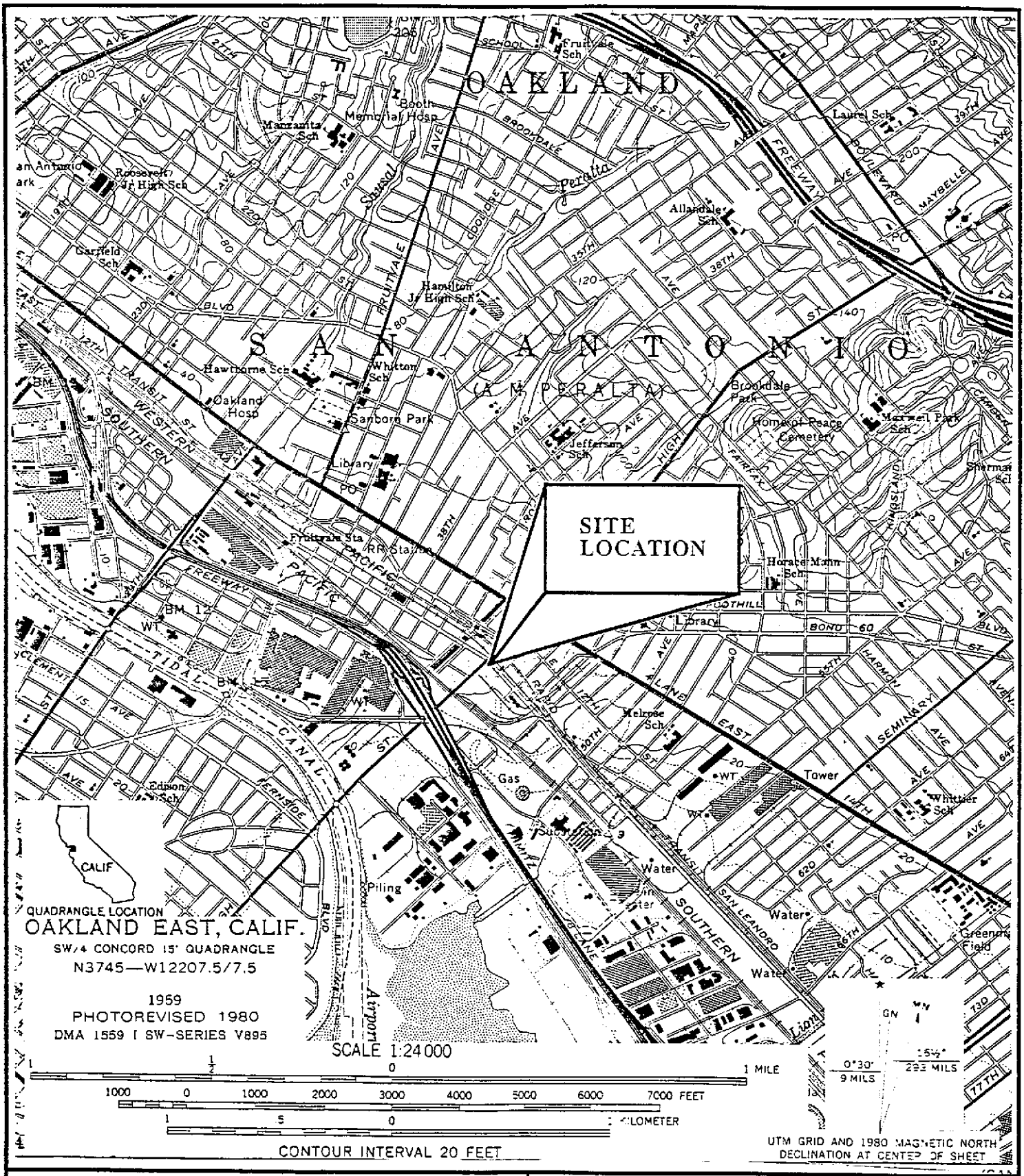
cc: Inspector Hernan Gomez, Oakland Fire
Mr. Muhammad Jamil and Ms. Farah Naz, 40092 Davis Street, Fremont, CA 94538

Attachments

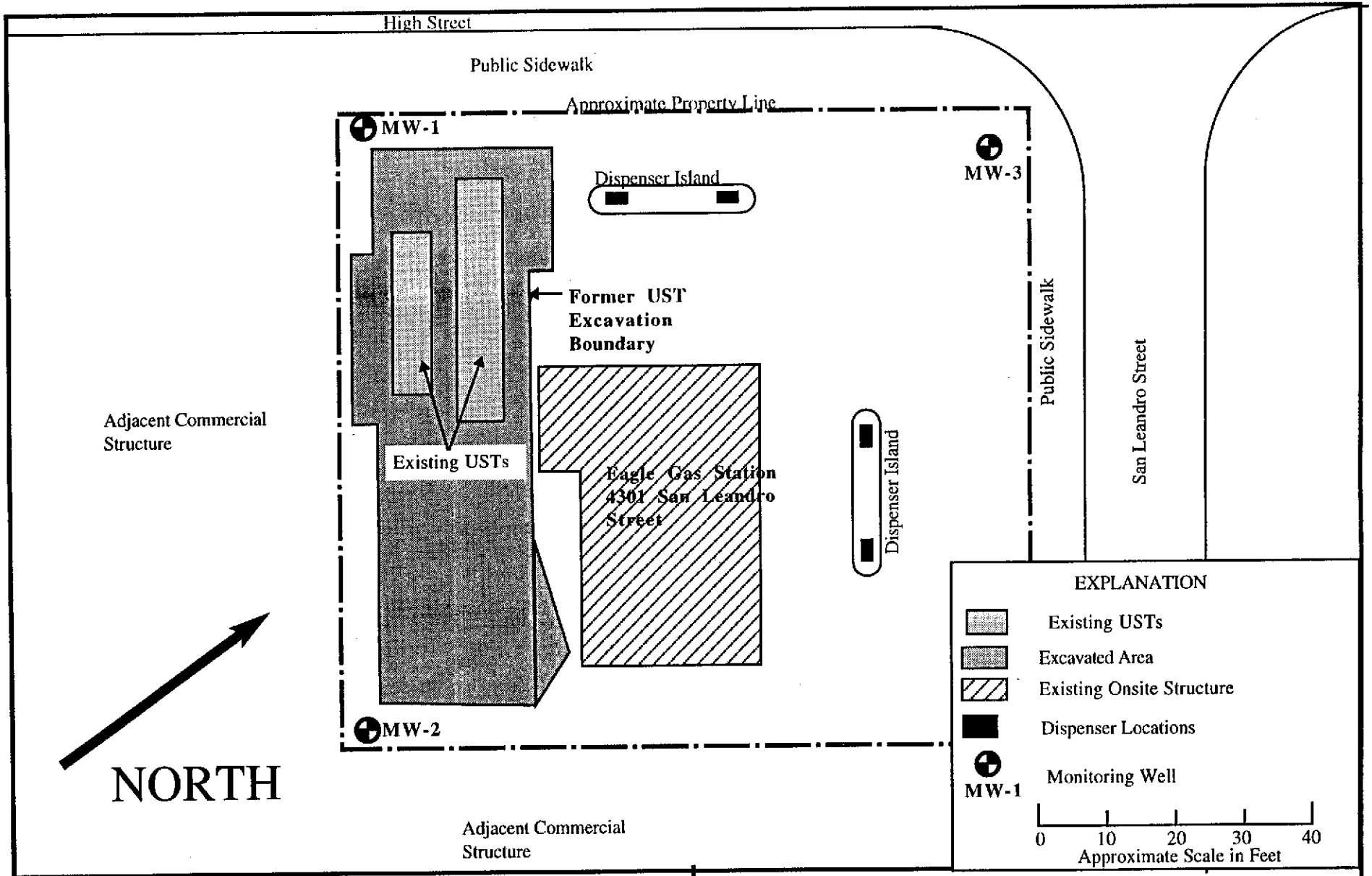
Attachment A:	Figures
Attachment B:	Tables
Attachment C:	Clearwater Site Safety Plan
Attachment D:	Clearwater Field Procedures
Attachment E:	Soil Boring / Well Construction Logs
Attachment F:	Well Gauging Data / Purge Calculations and Well Purging Data
Attachment G:	Laboratory Reports and Chain-of-Custody Forms

Attachment A

Figures

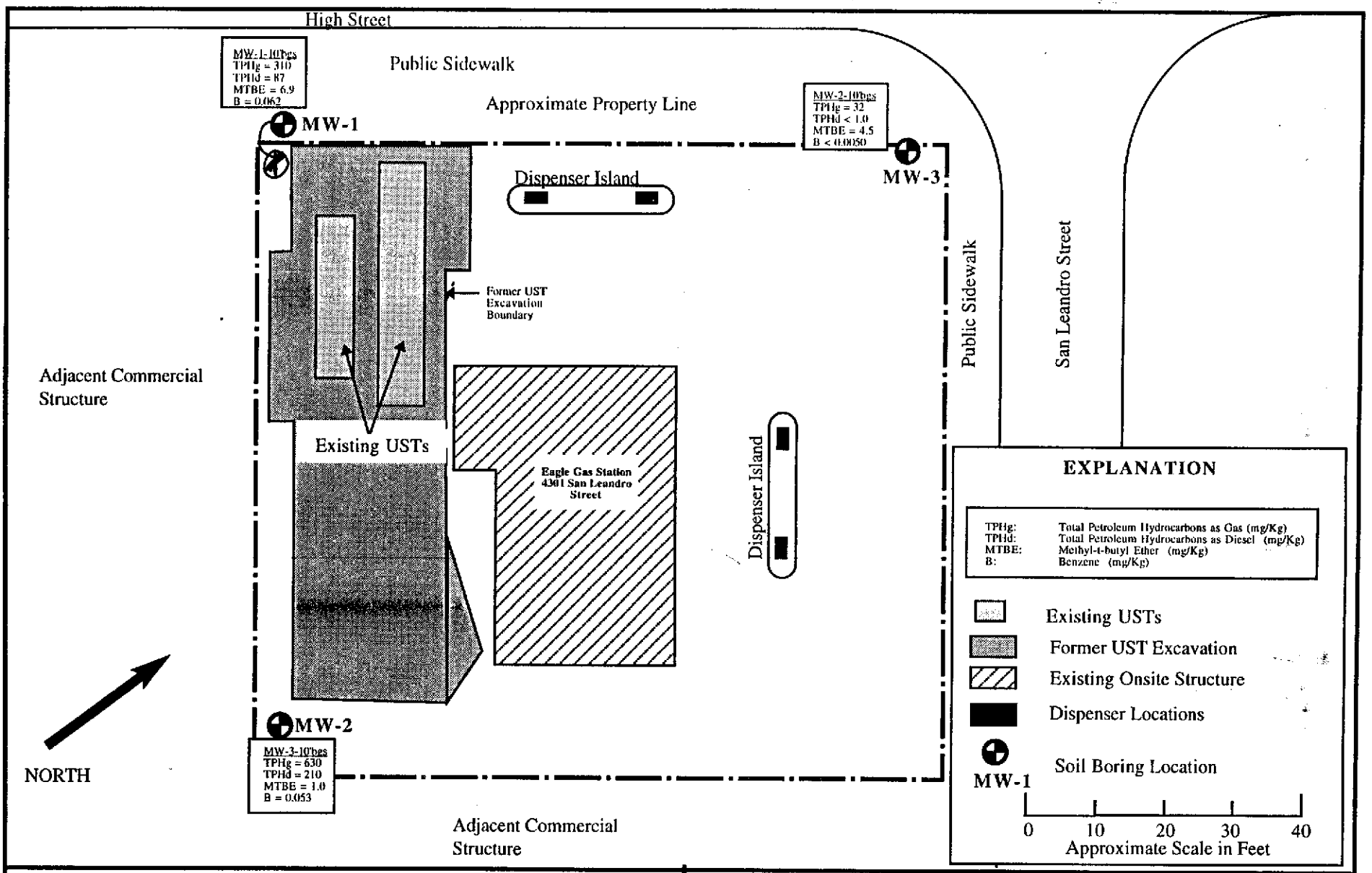


Clearwater Group, Inc. **520 3rd. St. Suite 104** **Oakland, California 94607** **Phone (510) 307-9943 Fax (510) 232-2823**		**Vicinity Map** **Eagle Gas** **4301 San Leandro** **Oakland, California**	
Project No. ZP 046A	Date Prepared: 10/00	Prepared by: Judi Fox	Figure 1



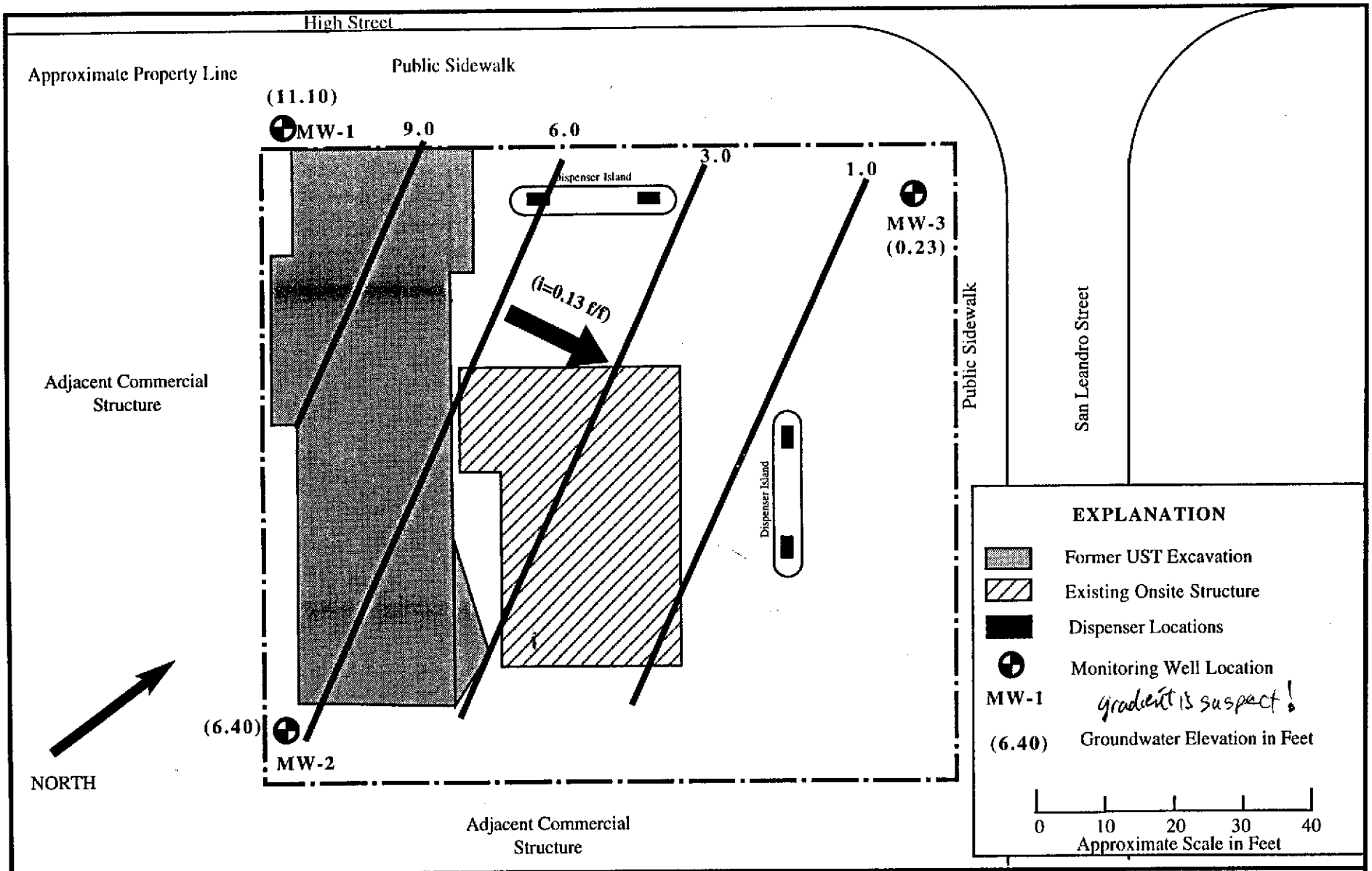
CLEARWATER GROUP **520 Third Street, Suite 104** **Oakland California** **510.893.5160**	**Site Map** **Eagle Gas** **4301 San Leandro Street** **Oakland California**

Project No. ZP 046A	**Date: 10/00**	**Prepared by: Judi Fox**	**Figure 2**



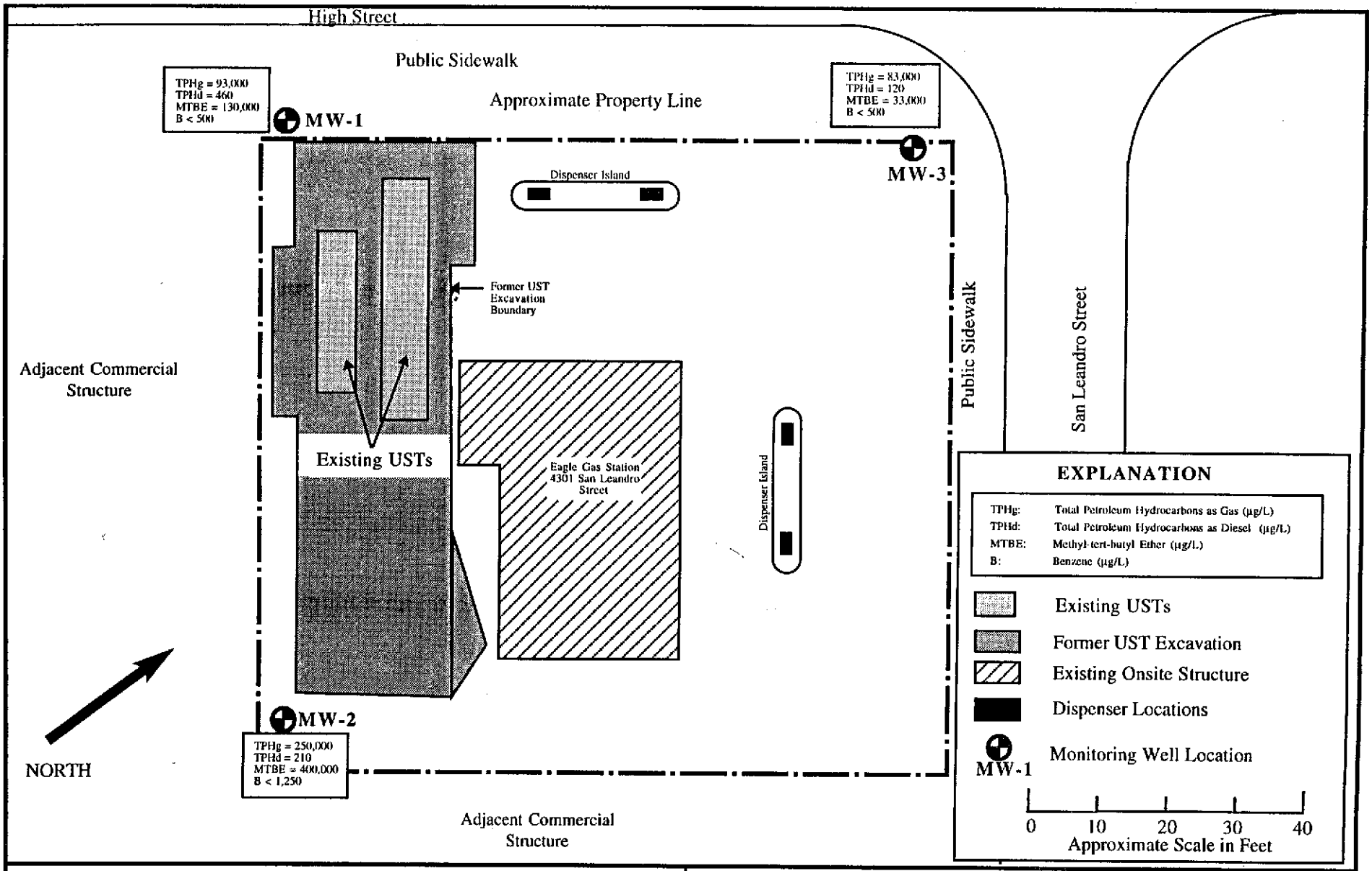
CLEARWATER GROUP **520 Third Street, Suite 104** **Oakland California** **510.893.5160**	**Petroleum Related Contamination in Soil - 9/00** **Eagle Gas** **4301 San Leandro Street** **Oakland California**

Project No. ZP 046A	**Date: 10/00**	**Prepared by: Judi Fox**	**Figure 3**



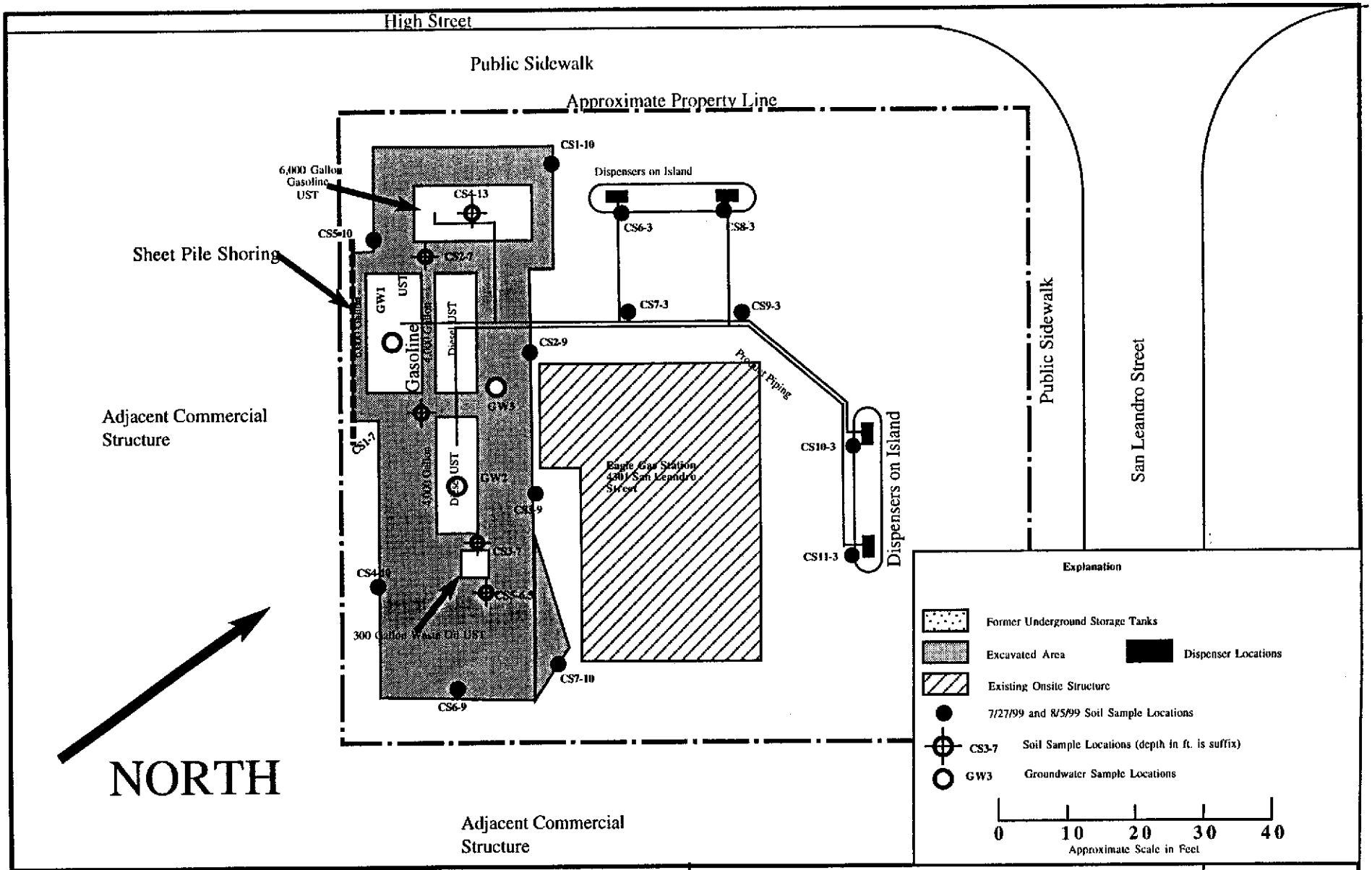
CLEARWATER GROUP **520 Third Street, Suite 104** **Oakland, California** **510.893.5160**	**Groundwater Elevation Map (10/27/00)** **Eagle Gas** **4301 San Leandro Street** **Oakland, California**

Project No. ZP 046A	**Date: 10/00**	**Prepared by: Judi Fox**	**Figure 4**



CLEARWATER GROUP **520 Third Street, Suite 104** **Oakland, California** **510.893.5160**	**Petroleum Related Contamination in Goundwater - 10/00** **Eagle Gas** **4301 San Leandro Street** **Oakland, California**

Project No. ZP 046A	**Date: 10/00**	**Prepared by: Judi Fox**	**Figure 5**



CLEARWATER GROUP **520 Third Street, Suite 104** **Oakland, California** **510.893.5160**	**Historical Sample Locations** **Eagle Gas** **4301 San Leandro** **Oakland, California**

Project No. ZP 046A	**Date Revised: 10/30/00**	**Drawn by: P.Jones** **Revised By: J.Fox**	**Figure 6**

Attachment B

Tables

Table 1
HISTORICAL ANALYTICAL RESULTS - SOIL
Eagle Gas
4301 San Leandro Street
Oakland California

Sample Date	Sample ID	TPHd (mg/Kg)	TPHg (mg/Kg)	Benzene (mg/Kg)	Toluene (mg/Kg)	Ethylbenzene (mg/Kg)	Xylenes (mg/Kg)	MTBE (mg/Kg)
4/21/99	CS1-7	840	770	8.9	4.8	5.8	16	86
4/21/99	CS2-7	1,900	880	3.3	5.7	15	45	16
4/22/99	CS3-7	780	1,600	4.3	110	42	220	92
4/22/99	CS5-6.5	33	20	0.22	1.8	0.54	3	52
4/22/99	Stockpile 1	770	610	0.28	4.7	6.9	36	<10
4/22/99	Stockpile 2	670	480	0.23	2.3	3.9	18	<4
4/22/00	CS4-13	<1.0	<1.0	<0.005	<0.005	<0.005	<0.005	0.08
8/5/99	CS6-3	1,300	4,300	11	130	82	420	70
8/5/99	CS7-3	200	50	<0.020	2.40	0.85	4	14
8/5/99	CS8-3	3,400	250	0.32	0.72	0.81	1.00	3.80
8/5/99	CS9-3	1,900	380	<0.010	<0.010	<0.010	<0.010	9.5
8/5/99	CS10-3	350	930	<0.50	78	17	99	310
8/5/99	CS11-3	5,200	1,400	3.20	13	25	90	62

Pentachlorophenol

Sample Date	Sample ID	TOG (mg/Kg)	VOC (mg/Kg)	Metals (mg/Kg)	PCP (mg/Kg)	PCB (mg/Kg)	Creosote (mg/Kg)	PAH (mg/Kg)
4/22/99	CS5-6.5	<50	<250	Cd<0.5 Cr=82 Pb=8.1 Ni=130 Zn=61	4.8	5.8	16	86

Table 2
SOIL SAMPLE ANALYTICAL RESULTS - SEPTEMBER, 2000
Eagle Gas
4301 San Leandro Street
Oakland, California

Sample ID	Sampling Date	TPHg (mg/Kg)	TPHd (mg/Kg)	B (mg/Kg)	T (mg/Kg)	E (mg/Kg)	X (mg/Kg)	MTBE (mg/Kg)	DIPE (mg/Kg)	ETBE (mg/Kg)	TAME (mg/Kg)	TBA (mg/Kg)	Methanol (mg/Kg)	Ethanol (mg/Kg)	1,2-DCA (mg/Kg)	EDB (mg/Kg)
MW-1-10' bgs	9/26/00	310	87	0.062	0.022	1.3	3.4	6.9	<0.0050	<0.0050	0.019	2.9	<5.0	<0.050	<0.0050	<0.0050
MW-2-10' bgs	9/26/00	630	210	0.053	0.052	2.0	14	1.0	<0.050	<0.050	<0.050	3.5	<10	<1.0	<0.050	<0.050
MW-3-10' bgs	9/26/00	32	<1.0	<0.0050	<0.0050	<0.0050	<0.0050	4.5	<0.0050	<0.0050	0.043	0.58	<1.0	<0.050	<0.0050	<0.0050

NOTES:

TPHd	Total petroleum hydrocarbons as diesel by EPA Method 8015 (modified)
TPHg	Total petroleum hydrocarbons as gasoline by EPA Method 8015 (modified)
BTEX	Benzene, toluene, ethylbenzene and total xylenes by EPA Method 8260 (modified)
MTBE	Methyl tert-Butyl Ether by EPA Method 8260B
ETBE	Ethyl-tert-Butyl Ether by EPA 8260B
TAME	tert-Amyl Methyl Ether by EPA 8260B
TBA	tert-Butanol by EPA 8260B
DIPE	Diisopropyl Ether by EPA 8260B
---	Not Tested / No Data Available
nd	not detected above laboratory detection limits

Table 3

HISTORICAL ANALYTICAL RESULTS - WATER

Eagle Gas

4301 San Leandro Street

Oakland, California

Sample Date	Sample ID	TPHd (µg/L)	TPHg (µg/Kg)	Benzene (µg/Kg)	Toluene (µg/Kg)	Ethylbenzene (µg/Kg)	Xylenes (µg/Kg)	MTBE (µg/Kg)
4/22/99	GW-1	59,000	22,000	1,600	1,000	860	710	380,000
4/22/99	GW-2	26,000	7,800	790	410	210	302	470,000
4/22/99	GW-3	82,000	12,000	1,100	330	100	410	880,000

PAH CONSTITUENTS IN GW-3 *	µg/L
Anthracene	37
Benzo(a)anthracene	98
Benzo(b)anthracene	47
Benzo(a)pyrene	38
Chrysene	10
Fluorene	90
Naphthalene	55
Phenanthrene	190
Pyrene	110

Table 4
GROUNDWATER ELEVATIONS AND SAMPLE ANALYTICAL RESULTS
Eagle Gas
4301 San Leandro Street
Oakland, California

Sample ID	Sampling Date	TOC (feet)	DTW (feet)	GWE (feet)	SPH (feet)	TPHg (µg/L)	TPHd (µg/L)	B (µg/L)	T (µg/L)	E (µg/L)	X (µg/L)	MTBE (µg/L)	EDB (µg/L)	1,2-DCA (µg/L)	DIPE (µg/L)	ETBE (µg/L)	TAME (µg/L)	TBA (µg/L)
MW-1	10/3/00	18.37	8.96	9.41	0	93,000	460	<500	<500	<500	<500	130,000	<10,000	<10,000	<10,000	<10,000	<10,000	<2,000
most reasonable DTW	10/27/00	18.37	7.27	11.10	0	---	---	---	---	---	---	---	---	---	---	---	---	---
MW-2	10/3/00	20.28	20.26	0.02	0	250,000	210	<1,250	<1,250	<1,250	<1,250	400,000	<25,000	<25,000	<25,000	<25,000	<25,000	<100,000
	10/27/00	20.28	13.88	6.40	0	---	---	---	---	---	---	---	---	---	---	---	---	---
MW-3	10/10/00	18.98	---	---	0	83,000	120	<500	<500	<500	<500	33,000	<2,500	<2,500	<2,500	<2,500	<2,500	<10,000
	10/27/00	18.98	18.75	0.23	0	---	---	---	---	---	---	---	---	---	---	---	---	---

NOTES:

TOC Top of well casing referenced to mean sea level
DTW Depth to water
GWE Groundwater elevation
SPH Separate phase hydrocarbons (floating product); no samples taken
BTEX Benzene, toluene, ethylbenzene and total xylenes by EPA Method 8020 (modified)
TPHg Total petroleum hydrocarbons as gasoline by EPA Method 8015 (modified)
MTBE Methyl tert-Butyl Ether by EPA Method 8260B
EDB 1,2-Dibromoethane by EPA Method 8260B
DIPE Diisopropyl Ether by EPA Method 8260B
1,2-DCA 1,2-Dichloroethane by EPA Method 8260B
ETBE Ethyl-t-butyl Ether by EPA Method 8260B
TAME tert-Amyl Methyl Ether by EPA Method 8260B
TBA tert-Butanol by EPA Method 8260B
(µg/L) Micrograms per liter
ND Not detected; method detection limit not reported
<# Not detected in quantities greater than indicated method detection limit
--- not tested/no data available

Attachment C

Clearwater Site Safety Plan

CLEARWATER GROUP, INC.
SITE SAFETY PLAN
FOR

CLIENT: Ms Farah Naz ; Mr. Muhammad Jamil

SITE: Eagle Gas - Job No: ZP046

ADDRESS: 4301 San Leandro St.

Oakland CA

FIELD DATE(S): Sept 26, 2000

SCOPE OF WORK (Check all that apply):

- Soil Excavation/Tank Pull. ☐
- Drilling..... ☒
- Testing
  - Aquifer..... ☐
  - Vapor Extraction..... ☐
  - Air Sparging..... ☐
- System Operation and Maintenance... ☐
- Soil Stockpile Sampling..... ☐
- Monitoring Well Sampling..... ☐
- System Installation
  - Ground Water..... ☐
  - Vapor Extraction..... ☐
  - Air Sparging..... ☐

TABLE OF CONTENTS

1.0 PURPOSE

This Site Safety Plan (SSP) establishes the basic safety guidelines and requirements for the above scope(s) of work at the above site (see Site Location Map - Figure 1). This SSP addresses the expected potential hazards that may be encountered during this project.

The provisions set-forth in this SSP will apply to Clearwater Group, Inc. (Clearwater) employees and any subcontractors working for Clearwater at the job site. All personnel working for Clearwater, including subcontractors, at the job site must read this SSP, and sign the attached Compliance Agreement (Appendix A) before entering the work area.

2.0 FACILITY BACKGROUND

2.1 Site Layout and History (Site location is shown on Fig. 1, site map on Fig. 2)

Previous Site Operations: Operating UST facility From:____ To:____

____ From:____ To:____

Is site currently active? (Yes) No

Work surface is: Asphalt Concrete Gravel/Dirt

ASTs/(USTs) present?: (Yes) No Location: Southwest edge of property (see map)

Number of USTs removed: 5 Location:____ Date removed: 4/22/99

2.2 Soil Contamination

Maximum benzene concentration in soil: 11 ppm Location: ~~former~~ JF CSC-3

Maximum TPH concentration in soil: 4300 ppm Location: CSC-3

2.3 Groundwater Wells and Contamination

Number of monitoring wells at the site: 0

Maximum dissolved benzene concentration to date: 1.6 ppb Well:____

Latest maximum dissolved benzene concentration: ____ Well:____

2.4 Remediation

Previous remedial system operation: n/a (over ex) From____ To:____

____ From____ To:____

Active remediation: n/a

Number of SVE wells: n/a AS wells:____ GWE wells:____

Other (trenches, sumps,..): n/a

Remediation equipment on site: n/a

3.0 SCOPE OF WORK

__X__This work is being performed as part of a site assessment, to: better quantify MTBE contamination; make adequately define plume; det. gw gradient

_____This work is being performed for quarterly monitoring

_____This work is being performed as part of the remedial action at the site, and includes:_____

_____

The workplan discussing detailed field procedures and methods is attached.

4.0 JOB HAZARD ANALYSIS / SITE CHARACTERIZATION

4.1 Chemical Hazards

The hazardous chemicals which may be encountered at the site are listed on Table 1, attached. A summary of relevant chemical, physical and toxicological properties for each chemical hazard are summarized in Appendix A.

The controls to limit potential for exposure to chemical hazards are addressed below:

- o Inhalation of contaminants will be controlled by air monitoring of breathing zones.
- o Ingestion of contaminants will be controlled by prohibiting eating, drinking, smoking, and chewing while working. In addition, workers shall wash their hands and face before engaging in any of the above activities.
- o Absorption of contaminants will be controlled by wearing protective clothing as necessary
- o Injection of contaminants will be controlled by wearing work gloves in the work area.

4.1.1 Exposure Monitoring

The Site Safety Officer shall monitor the ambient air in the work area with an organic vapor photoionization meter. All air monitoring data and equipment type and callibration information will be recorded in the field. Monitoring points will include:

- Air above open borehole in worker's breathing zone
- Air downwind of the work space
- Air upgradient of the work space

If the organic vapor meter indicates petroleum hydrocarbon concentrations in the area exceed 300 ppm, the Site Safety Officer shall require personnel in the work area to wear respirators with organic vapor cartridges .

Field personnel shall be cautioned to inform each other of non-visual effects of the presence of toxins on the attached table.

4.2 Physical Hazards
The potential physical hazards expected at the job site are addressed below:

- The potential for physical injury exists from the operation of moving equipment such as drill rigs, forklifts and trucks. Use of steel toe boots, hard hats, and safety glasses will be required when in the work area. Backup alarms are required on all trucks and forklifts.

- The potential for physical injury exists from public traffic on the site. The site is ☐ is not ☒ open to public vehicles. Work will ☐ will not ☐ be performed in the public right-of-way. If work is performed in the public right-of-way, orange vests shall be worn, a traffic control plan shall be prepared and followed and an encroachment permit from the appropriate government agency shall be obtained.

- The potential for burns from hot surfaces may exist from the operation of an internal combustion engine and/or an air compressor. Compressed air piping is hot. All hot surfaces shall be allowed to cool and/or be handled with thick cloth work gloves.

- The potential for noise hazards exist at the site from the operation of _____. It is not expected that noise levels will exceed the acceptable CAL-OSHA permissible exposure level of 90 dB. However, workers should be aware of the presence of these hazards and take steps to avoid them. Ear / noise protection, though not required, shall be available to all personnel within the job site in the event noise levels exceed worker comfort or protection levels.

- Personnel should be cognizant of the fact that when protective equipment such as respirators, gloves, and/or protective clothing are worn, visibility, hearing, and manual dexterity are impaired.

4.3 Heat Stress:
The potential for heat stress is present if the temperature exceeds 80°F. Some signs and symptoms of heat stress are presented below:

- Heat rash may result from continuous exposure to heat or humid air.

- Heat cramps are caused by heavy sweating with inadequate electrolyte replacement. Signs and symptoms include: muscle spasms, heavy sweating, dizziness, nausea and fainting.

- Heat exhaustion occurs from increased stress on various body organs including inadequate blood circulation due to cardiovascular insufficiency or dehydration. Signs and symptoms include: pale, cool, moist skin; heavy sweating; dizziness; nausea and fainting.

- Heat stroke is the most serious form of heat stress. Temperature regulation fails and the body temperature rises to critical levels. Immediate action must be taken to cool the body before serious injury and death occurs. Competent medical help must be obtained. Signs and symptoms are: red, hot, unusually dry skin; lack of or reduced perspiration; nausea; dizziness and confusion; strong, rapid pulse and coma.

4.3.1 Heat Stress Monitoring

All personnel working for Clearwater at the job site shall be monitored for heat stress. Because workers at the job site are expected to be wearing permeable clothing (e.g. standard cotton or synthetic work clothes), monitoring for heat stress will consist of personnel constantly observing each other for any of the heat stress symptoms discussed above. The Site Safety Officer shall mandate work slowdowns as needed.

4.4 Fire Hazards:

The potential for fire or explosion exists whenever flammable liquids or vapors are present above lower explosions limit (LEL) concentrations and sufficient oxygen is present to support combustion. These potential fire hazards are addressed below:

o The potential exists for petroleum hydrocarbon vapors to exceed LEL concentrations within the wells. However, well-gas generally does not contain sufficient oxygen to support combustion.

o In addition to the above, an operative fire extinguisher will be provided by Clearwater or Clearwater's subcontractor at the site. All personnel shall be familiar with its location and use.

4.5 Electrical Hazards:

No electrical enclosures will be opened unless power is disconnected. Power will be verified disconnected with a meter prior to working on any circuits.

5.0 PERSONAL PROTECTIVE EQUIPMENT

Level D personal protection equipment is expected to be the highest protective level required to complete the field activities for this project. Modified Level C protection may also be required at the discretion of the Site Safety Officer. The following lists summarize the personal protective equipment that shall be available to all field personnel working in the work area:

Level D Protection (shall be worn at all times)

- Boots, steel toe
- Safety glasses, chemical splash goggles, or face shield
- Hard hat
- Work gloves required _____ optional ✓
- Long leg trousers
- Long sleeves required _____ optional ✓

Modified Level C Protection (available at all times.)

- Half-face air purifying respirator with organic vapor cartridges to be used should organic vapor concentrations exceed 300 ppm as discussed in Section V of this SSP.
- Hearing protection

6.0. SITE CONTROL

The exclusion, contamination reduction, and support zones shall be set up at the site. These zones shall be marked with natural barriers, cones or tape as appropriate. Personnel without the proper training, personal protective equipment or who have not agreed to follow this SSP shall not be allowed into the exclusion or contamination reduction zones.

7.0 TRAINING REQUIREMENTS

All site personnel will be required to have completed the 40 hours of basic OSHA-SARA training for personnel assigned to hazardous waste sites in compliance with OSHA Standard 29 CFR 1910.120, Hazardous Waste Operations and Emergency Response, and all are required to participate in the annual OSHA-SARA 8-hour refresher courses.

8.0 MEDICAL SURVEILLANCE PROGRAM

Clearwater personnel and subcontractors engaged in field operations shall be participants in their company Medical Surveillance program, and must be cleared by the examining physician(s) to wear respiratory protection devices and protective clothing for working with hazardous materials. The applicable requirements under California Administrative Code (CAC) Title 8, Section 5216, which is available at the Clearwater office for review, shall be observed.

9.0. EMERGENCY RESPONSE PLAN

In the event of an accident resulting in physical injury, first aid will be administered and the injured worker will be transported to

~~Oakland Hospital~~ Alameda County Med. Center - Highland Campus

In the event of a fire or explosion, local fire or response agencies will be called by dialling 9-1-1. The Project Manager shall also be notified.

Emergency Telephone Numbers:

Fire and Police 911
Hospital ..... (510) 437-4800

Directions to Hospital: See Figure 3

High St. to International Blvd: (L) turn
to 14th: (R) turn
to 31st St.: (L) turn
1411 E. 31st Street
(Emergency entrance is on 31st St.)

A fire extinguisher will be located on-site during all installation, testing and servicing activities.

Additional Contingency Telephone Numbers:

CLEARWATER ..... (510) 893-5160
All cases where an accident has occurred will require filling out an incident / accident report and submitting it within 48 hours of the accident.

10.0 KEY SAFETY PERSONNEL AND RESPONSIBILITIES

All personnel working for Clearwater at the job site are responsible for project safety. Specific individual responsibilities are listed below:

Project Manager: Jud. Fox

The Project Manager is responsible for preparation of this SSP. He/she has the authority to provide for the auditing of compliance with the provisions of this SSP, suspend or modify work practices, and to report to the Regional Manager any individuals whose conduct does not meet the provisions presented in this SSP. The Project Manager can be reached at (510) 337-8730.

Site Safety Officer: Loren Taylor

The Site Safety Officer (SSO) is responsible for the dissemination of the information contained in this SSP to all Clearwater personnel working at the job site, and to the responsible representative(s) of each subcontractor firm working for Clearwater at the job site.

The SSO is responsible for ensuring the following items are adequately addressed:

- Inspection of tools, drilling equipment and safety equipment
- Safety supplies & equipment inventory
- Site-specific training/hazard communication
- Accident/incident reporting
- Decontamination/contamination reduction procedures

The Site Safety Officer shall be responsible to take necessary steps to ensure that employees are protected from physical hazards, which could include;

- Falling objects such as tools or equipment
- Falls from elevations
- Tripping over hoses, pipes, tools, or equipment
- Slipping on wet or oily surfaces
- Insufficient or faulty protective equipment
- Insufficient or faulty operations, equipment, or tools
- Noise

The SSO has the authority to suspend work anytime he/she determines the safety provisions set-forth in this SSP are inadequate to ensure worker safety. The SSO or Project Manager must be present during all phases of the site work.

SSO Pager Number: ( )

11.0 DOCUMENTATION

All personnel shall sign the compliance agreement (Section 12.0).

Daily documentation shall be provided by a daily log, completed by the Site Safety Officer in his/her field notebook. The Site Safety Officer shall record the names of all personnel working for Clearwater and any site visitor(s). (S)he shall also record accidents, illness and other safety related matters. In the case of an accident, or injury, during field operations, (s)he will prepare and submit an Incident/Accident Report.

Air monitoring shall be recorded in the daily log or on the attached data sheet.

SSP prepared by: J. Fox Date: 8/28/00

SSP Approved by: _____ Date: _____

Project Manager

12.0 COMPLIANCE AGREEMENT

I have read and understand the Site Safety Plan.

I will comply with the minimum safety requirements set forth in this Site Safety Plan. I agree to notify the responsible employee of Clearwater should any unsafe acts be witnessed by me while I am on this site.

Print Name	Company	Signature	Date
Noah Leiter	WHD	Noah Leiter	9-26-00
OSCAR GONZALEZ	WHD	Oscar Gonzalez	9-26-00
Loren Taylor	CGI	Loren Taylor	9-26-00

Attachment A

ANTICIPATED HAZARDOUS CHEMICALS

Volatile Fuel Constituents (See attached chart for health risks and exposure levels):

- X Benzene
- X Toluene
- X Ethylbenzene
- X Xylenes

Nonvolatile Fuel Constituents

- X Naphthalene
- X Benzo(a)pyrene (PAHs)
- _____ Chlorobenzene??
- X Other: MTBE
- X Other: Benzo(b)anthracene
- X Other: Fluorene

- X Anthracene
- X Benzo(a) anthracene
- X Chrysene
- X Phenanthrene
- X pyrene

Fuel Additives:

- _____ Ethylyne Dibromide (EDB)
- _____ 1,2-Dichloroethylene (EDC)
- _____ Other: _____

Solvents:

- _____ Trichloroethylene (TCE)
- _____ Tetrachloroethylene, "Perc" (PCE)
- _____ Methylene Chloride
- _____ Carbon Tetrachloride
- _____ Other: _____
- _____ Other: _____
- _____ Other: _____

Pesticides:

- _____ Malathion
- _____ Parathion
- _____ Other: _____
- _____ Other: _____
- _____ Other: _____

Attachment B

TAIL-GATE PRE-FIELD BRIEFING AND SAFETY PLAN REVIEW

Purpose of Field Work and Site Details

1._____Review purpose and scope of work
2._____Review anticipated contamination and concentrations
3._____Review location of former tanks, known depth to water, flow direction
4._____Locate emergency shut-off switch
5._____Locate water shut-off valve

Safety Plan Review

1._____Review chemical hazards (PELs) and exposure limiting controls:
- air in breathing zones will be monitored (Level C : OVs > 300 ppm)
- no eating, drinking, smoking and chewing while in the work area
- work gloves should be worn in the work area

2. ____Identify physical hazards:
- traffic
- burns
- noise (CAL-OSHA PEL is 90 dB)
- visibility, hearing and dexterity (may be impaired by PPE)

3._____Be aware of heat stress if temperature >80 dgrees farenheit
4._____Identify possible fire hazards and electrical hazards
5._____Review PPE: Level D to be worn at all times
- steel toe boots
- safety glasses
- hard hat
- long pants
- impermeable gloves and long sleeves may be required

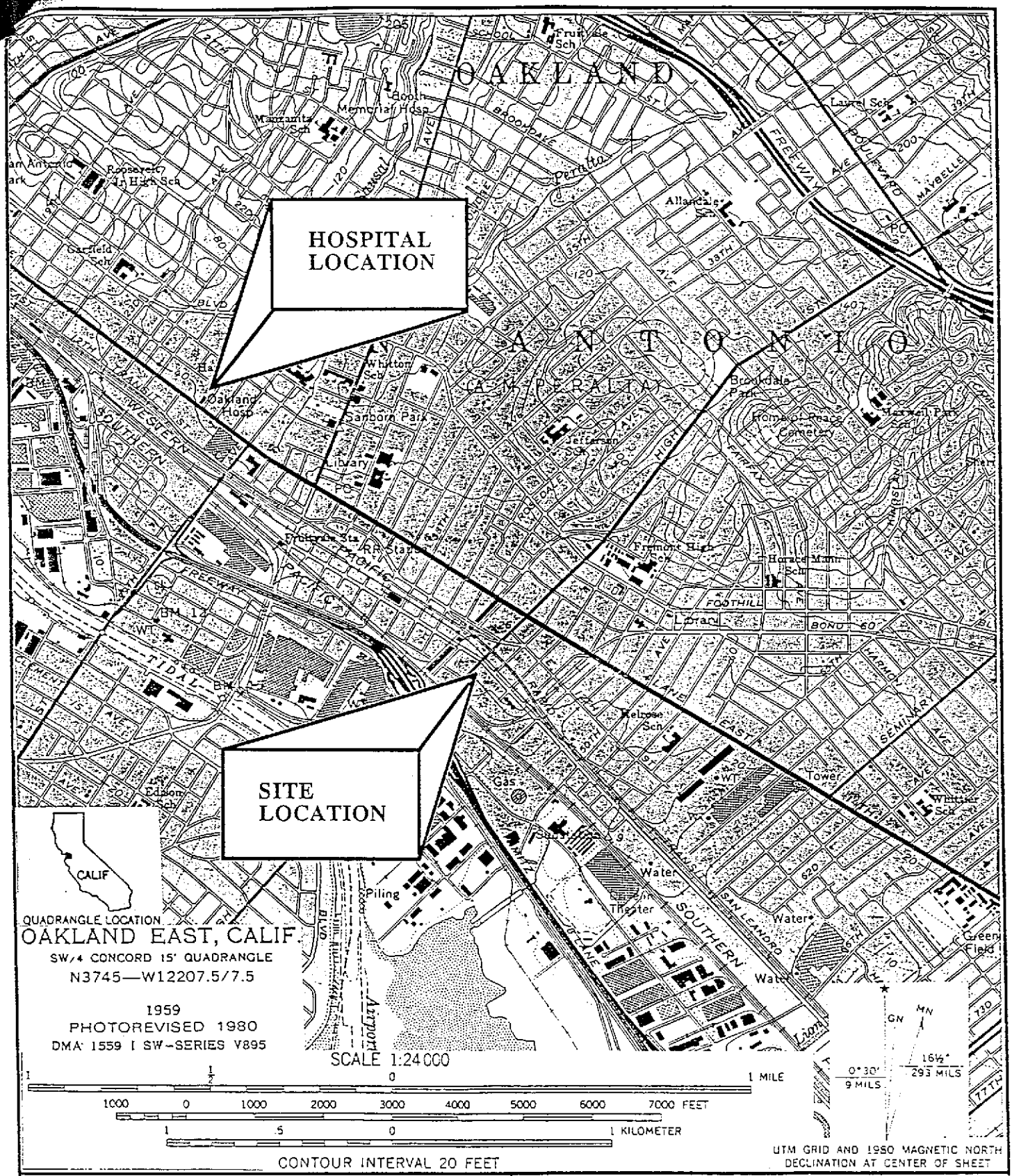
6._____Modified Level C PPE should be available at all times:
- half-face respirator with organic vapor cartridges (to be used if organic vapors > 300 ppm)
- Hearing protection

7._____Review site control plan (decontamination & exclusion zones)
8._____All field personnel should have completed 40-hour OSHA-SARA training
9._____All field personnel should be in their company's Medical Surveillance program
10.____Review emergency procedures and directions to nearest hospital

GASOLINE CONSTITUENTS

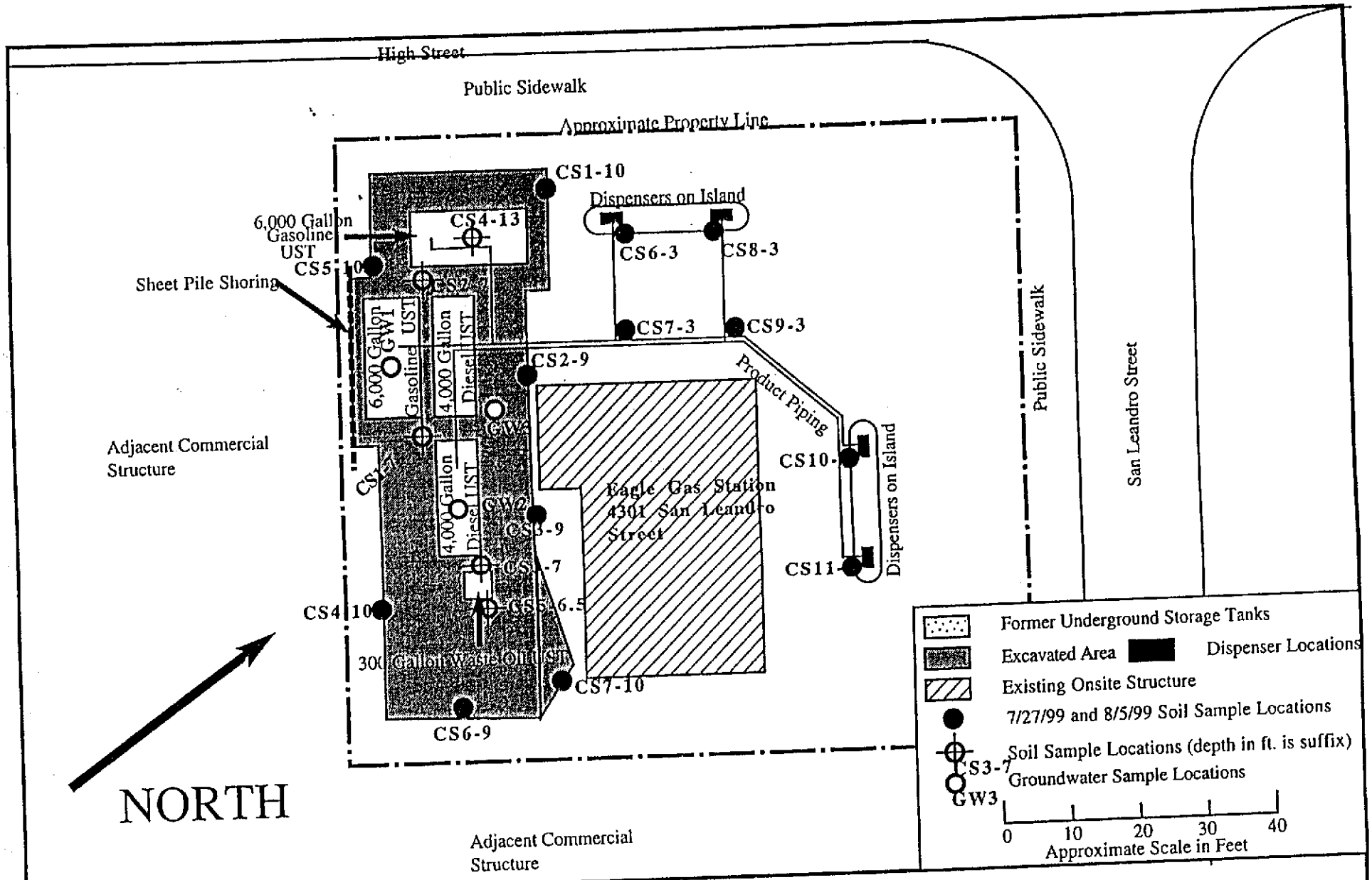
Chemical	Flash Point	Pv	Class	PEL	LEL	Carcinogen	Routes of Exposure				Target Organs	Acute Exposure Effects
							Adsorption	Ingestion	Injection	Inhalation		
Benzene	12	75	F	0 ppm	1.3%	yes	x	x	x	x	blood nervous system skin bone marrow eyes respiratory	irritation of the eyes, nose and respiratory system, headache, nausea, dizziness, depression, abdominal pain.
Toluene	40	22	F	100 ppm	1.2%	no	x	x	x	x	nervous system kidneys liver skin	fatigue, dizziness, headache euphoria, dilated pupils paralysis
Ethylbenzene	55	7.1	F	100 ppm	1.0%	no	x	x	x	x	eyes respiratory skin nervous system	irritation of eyes, mucous membranes, nose, & respiratory system. Headache, nausea dizziness, dermatitis, narcosis, coma
Xylenes	63-81	8	F	100 ppm	1.1%	no	x	x	x	x	nervous system eyes, blood, liver, kidneys skin, gastroint.	dizziness, excitement drowsiness, incoordination abdominal pain vomiting, irritation of eyes, nose & throat.

Flash Point, measured in degrees farenheit, is the temperature at which a flammable material will ignite in the presence of a flame.
Vapor Pressure, measured in millimeters of mercury (mm Hg) at 65 degrees farenheit, indicates the volatility of the material.
Class. = Hazard classification: F=Flammable, C=Corrosive,
PEL = Permissible exposure limit. Time-weighted average concentrations that must not be exceeded in any 8-hour work shift.
LEL = Lower explosive limit. The minimum % concentration in air that is required for combustion or explosion.



ARTESIAN ENVIRONMENTAL 229 Tewksbury Avenue Point Richmond, California 94801 Phone (510) 307-9943 Fax (510) 232-2823	HOSPITAL ROUTE MAP Eagle Gas 4301 San Leandro Street Oakland, California

Project No.:422-001-01	Date: 05/26/99	Prepared by: P. Jones	Figure 1



ARTESIAN ENVIRONMENTAL
229 Tewksbury Avenue
Point Richmond, California 94801
Phone (510) 307-9943 Fax (510) 232-2823

Soil Sampling Location Map
Eagle Gas
4301 San Leandro Street
Oakland, California

Figure 1

Attachment D

Clearwater Field Procedures

CLEARWATER GROUP, INC.

Soil Borehole Drilling, Monitoring Well Installation and Development, and Groundwater Sampling Field Procedures

Drilling and Soil Sampling

Permits, Site Safety Plan, Utility Clearance

Clearwater Group, Inc. (CGI) obtains all the required permits, unless otherwise contractually directed. CGI prepares a site specific Site Safety Plan detailing site hazards, site safety and control, decontamination procedures, and emergency response procedures to be employed throughout the defined phase of work. At least 48 hours prior to drilling, Underground Service Alert (USA) or an equivalent agency is notified of the planned work. CGI, attempts to locate all underground and above ground utilities by site inspection (in conjunction with its' subcontractors and knowledgeable site managers, if available), and review of site as-built drawings. CGI may employ a private, professional utility locator to refine the site utility inspection.

Drilling Equipment

All soil borings are drilled using a truck-mounted hollow-stem auger drill rig, unless site conditions warrant a different drilling method. Subsurface conditions permitting, the first five feet of each boring is advanced using a hand-auger or post-hole digger. All drilling equipment is inspected daily and maintained in safe working condition by the operator. All down-hole drilling equipment is steam cleaned prior to arriving on site. Working components of the drill rig near the borehole, as well as augers and drill rods are thoroughly steam cleaned between each boring location. All CGI drilling and sampling methods are consistent with ASTM Method D-1452-80, and local, state and federal regulations.

Soil Sampling and Lithologic Description

Whenever possible, the first Clearwater boring to be drilled at a site is continuously cored to obtain a complete lithologic description. Otherwise, soil samples are typically collected every 5 feet to the total depth explored, using brass tubes fitted in a California-modified split spoon sampler. If copper or zinc contamination is the subject of the investigation, stainless steel liners are used instead of brass. Additional soil samples may be collected based upon significant changes in lithology or in areas of obvious soil contamination. During soil sample collection, the split spoon sampler is driven 18 to 24 inches past the lead auger by a 140-pound hammer falling a minimum of 30 inches. The number of blows necessary to drive the sampler and the amount of soil recovered is recorded on the Field Exploratory Soil Boring Log. The soil sampler and liners are cleaned with an Alconox® solution and rinsed with tap water prior to each sampling event. New liners are used whenever a soil sample may be retained for laboratory analysis.

Soil samples selected for laboratory analysis are sealed on both ends with teflon tape and plastic end caps. The samples are labeled, documented on a chain-of-custody form and placed in a cooler for transport to a state certified analytical laboratory. Soil contained in remaining liners is removed for lithologic descriptions (according to the Unified Soil Classification System). Additional soil is screened for organic vapors by placing approximately 30 grams of soil in a sealed plastic bag or a glass jar sealed with aluminum foil. The bag or jar is left undisturbed for approximately 15 minutes, in the sun if possible. The head space in the bag is accessed in a manner to minimize entry of outside air, and is tested for total organic vapor using a calibrated organic vapor meter (OVM). The results of the field screening are noted with the lithologic descriptions on the Field Exploratory Soil Boring Log.

On encountering an impermeable (clayey) layer three feet or more in thickness below a saturated permeable layer, where the impermeable layer is considered to be a possible confining layer for an underlying aquifer, drilling is halted until a decision to proceed is obtained from the project manager. This process minimizes the chance of introducing contamination to an underlying, clean aquifer.

Soil Waste Managment

Soil cuttings are stockpiled on and covered with plastic sheeting to control runoff, or contained in 55-gallon D.O.T.-approved drums on site. Waste soil is sampled to chemically profile it for disposable, and hauled by a licensed waste hauler to an appropriate landfill. All waste stored on site is properly labeled at the time of production.

Soil Boring Abandonment

Soil borings which are not to be converted into monitoring wells are sealed to the ground surface using neat cement or sand-cement slurry in accordance with federal, state and local regulations. Native soil may be used to fill the top two to three feet for cosmetic purposes, as permitted.

Monitoring Well Installation

Well Casing, Screen and Filter Pack Construction

All well construction is performed in accordance with Department of Water Resources "California Well Standards" and all requirements of local oversight agencies. Soil borings to be converted into single-cased monitoring wells are a minimum of eight inches in diameter for 2-inch diameter wells and a minimum of ten inches in diameter for 4-inch diameter wells. Monitoring wells are constructed with schedule 40, threaded, polyvinyl chloride (PVC) casing unless site geochemistry or contamination necessitates an alternative material. The wells are constructed with factory-slotted screen and threaded end caps.

The screened interval is placed such that it extends approximately ten feet into the water bearing zone, and at least five feet above the expected maximum water level. The screened interval may extend less than five feet above the maximum water level, only to prevent intersection of the screened interval with the top of the confining layer of a confined aquifer, or where the water table is too shallow to allow this construction.

A graded sand filter pack is placed in the annular space across the screened interval and extended approximately one to two feet above the screen, as site conditions permit, so as to prevent extension of the sand pack into an overlying water-bearing unit. The well screen slot size is the maximum size capable of retaining 90% of the filter pack. Typically, 0.010-inch screen is used where the formation is predominantly clay and/or silt or poorly-graded fine sand. 0.020-inch screen is used where the formation is predominantly well-graded or medium to coarse sand and/or gravel.

The filter pack grade (mean grain size) is selected according to native sediment type as follows: a) for poorly graded fine sand or silt/clay - 4 times the 70% retained grain size of the formation b) for medium to coarse sand, gravel or well graded sediments - 6 times the 70% retained grain size. Since results of particle size analysis are not always available, Clearwater often selects screen size and filter pack on the basis of general site stratigraphy, and specifically the finest significantly thick layer of sediment to be screened. Commonly selected grades are Lone Star® 3, 2/12 or 2/16 (or equivalent) with 0.020-inch slotted screen and Lone Star® 1/20 with 0.010-inch slotted screen.

Well Seal and Completion

A minimum two foot seal of bentonite is placed above the sand pack. The bentonite seal is hydrated by either formation water or potable water. Neat cement or a cement/bentonite grout mixture seals the remaining annular space to the surface. If bentonite is used in the grout mixture, it does not exceed 5% by weight. The grout is placed using a tremie pipe, if the top of the bentonite is more than 20 feet below grade, or if water is present in the boring above the bentonite seal. A watertight locking cap and protective traffic-rated vault box is installed on top of each well. Well construction details are presented on the Field Exploratory Soil Boring Log. Following completion of a well, Clearwater completes and submits, or ensures that the driller has sufficient information to complete and submit, the state-required Well Completion Report or equivalent document.

Well Development

All newly installed wells are developed prior to sampling to remove fine grained sediments from the well and stabilize the filter pack and the disturbed aquifer materials. Development takes place prior to or at least 24 hours after setting the seal on the well, unless otherwise directed by a local oversight agency. Well development consists of surging with a surge block and removing water from the well with either a pump or bailer, until the well is free of sediment, or until at least 10 well casing volumes have been removed. Depth to bottom is measured to determine casing volume. If the well is sampled immediately following development, temperature, pH, specific conductance and turbidity (qualitative) are monitored during well development (see section "Groundwater Sampling"). All development equipment is cleaned prior to use and between wells with an Alconox® solution, then rinsed in potable water. All data collected during development are recorded on the Well Development Data Sheet and, if necessary, the Purging Data Sheet.

Well Surveying

All well elevations are surveyed at the north side of the top of casing to the nearest ±0.01 foot. The exact survey point (at the center of the survey rod or, if the casing stub is uneven, the point of contact between casing and rod) is clearly marked and maintained on the casing rim. Elevations are referenced either to mean sea level or to a project datum. A project datum is typically chosen so as to minimize the possibility of its' later disturbance. For instance, fire hydrants are commonly selected. Where required, the wells are surveyed by a licensed land surveyor, relative to mean sea level.

Groundwater Sampling

Groundwater Monitoring

Prior to beginning, a decontamination area is established. Decontamination procedures consist of scrubbing downhole equipment in an Alconox® solution wash (wash solution is pumped through any purging pumps used), and rinsing in a first rinse of potable water and a second rinse of potable water or deionized water if the latter is required. Any non-dedicated down hole equipment is decontaminated prior to use.

Prior to purging and sampling a well, the static water level is measured to the nearest 0.01 feet with an electronic water sounder. Depth to bottom is typically measured once per year, at the request of the project manager, and during Clearwater's first visit to a site. If historical analytical data are not available, with which to establish a reliable order of increasing well contamination, the water sounder and tape will be decontaminated between each well. If floating separate-phase hydrocarbons (SPH) are suspected or observed, SPH is collected using a clear, open-ended product bailer, and the thickness is measured to the nearest 0.01 feet in the bailer. SPH may alternatively be measured with an electronic interface probe. Any monitoring well containing a measurable thickness of SPH before or during purging is not additionally purged and no sample is collected from that well. Wells containing a hydrocarbon sheen are sampled unless otherwise specified by the project manager. Field observations such as well integrity as well as water level measurements and floating product thicknesses are noted on the Gauging Data/Purge Calculations form.

Well Purging

Each monitoring well to be sampled is purged using either a PVC bailer or a submersible pump. Physical parameters (pH, temperature and conductivity) of the purge water are monitored during purging activities to assess if the water sample collected is representative of the aquifer. If required, parameters such as dissolved oxygen, turbidity, salinity etc. are also measured. Samples are considered representative if parameter stability is achieved. Stability is defined as a change of less than 0.25 pH units, less than 10% change in conductivity in micro mhos, and less than 1.0 degree centigrade (1.8 degrees Fahrenheit) change in temperature. Parameters are measured in a discreet sample decanted from the bailer separately from the rest of the purge water. Parameters are measured at least four times during purging; initially, and at volume intervals of one well volume. Purging continues until three well casing volumes have been removed or until the well completely dewaters. Wells which dewater or demonstrate a slow recharge, may be sampled after fewer than three well volumes have been removed. Well purging information is recorded on the Purge Data sheet. All meters used to measure parameters are calibrated daily. Purge water is sealed, labeled, and stored on site in D.O.T.-approved 55-gallon drums. After being chemically profiled, the water is removed to an appropriate disposal facility by a licensed waste hauler.

Groundwater Sample Collection

Groundwater samples are collected immediately after purging or, if purging rate exceeds well recharge rate, when the well has recharged to at least 80% of its static water level. If recharge is extremely slow, the well is allowed to recharge for at least two hours, if practicable, or until sufficient volume has accumulated for sampling. The well is sampled within 24 hours of purging or repurged. Samples are collected using polyethylene bailers, either disposable or dedicated to the well. Samples being analyzed for compounds most sensitive to volatilization are collected first. Water samples are placed in appropriate laboratory-supplied containers, labeled, documented on a chain of custody form and placed on ice in a cooler for transport to a state-certified analytical laboratory. Analytical detection limits match or surpass standards required by relevant local or regional guidelines.

Quality Assurance Procedures

To prevent contamination of the samples, CGI personnel adhere to the following procedures in the field:

- A new, clean pair of latex gloves are put on prior to sampling each well.
- Wells are gauged, purged and groundwater samples are collected in the expected order of increasing degree of contamination based on historical analytical results.
- All purging equipment will be thoroughly decontaminated between each well, using the procedures previously described at the beginning of this section.
- During sample collection for volatile organic analysis, the amount of air passing through the sample is minimized. This helps prevent the air from stripping the volatiles from the water. Sample bottles are filled by slowly running the sample down the side of the bottle until there is a convex meniscus over the mouth of the bottle. The lid is carefully screwed onto the bottle such that no air bubbles are present within the bottle. If a bubble is present, the cap is removed and additional water is added to the sample container. After resealing the sample container, if bubbles still are present inside, the sample container is discarded and the procedure is repeated with a new container.

Laboratory and field handling procedures may be monitored, if required by the client or regulators, by including quality control (QC) samples for analysis with the groundwater samples. Examples of different types of QC samples are as follows:

- Trip blanks are prepared at the analytical laboratory by laboratory personnel to check field handling procedures. Trip blanks are transported to the project site in the same manner as the laboratory-supplied sample containers to be filled. They are not opened, and are returned to the laboratory with the samples collected. Trip blanks are analyzed for purgable organic compounds.
- Equipment blanks are prepared in the field to determine if decontamination of field sampling equipment has been effective. The sampling equipment used to collect the groundwater samples is rinsed with distilled water which is then decanted into laboratory-supplied containers. The equipment blanks are transported to the laboratory, and are analyzed for the same chemical constituents as the samples collected at the site.
- Duplicates are collected at the same time that the standard groundwater samples are being collected and are analyzed for the same compounds in order to check the reproducibility of laboratory data. They are typically only collected from one well per sampling event. The duplicate is assigned an identification number that will not associate it with the source well.

Generally, trip blanks and field blanks check field handling and transportation procedures. Duplicates check laboratory procedures. The configuration of QC samples is determined by CGI depending on site conditions and regulatory requirements.

Attachment E

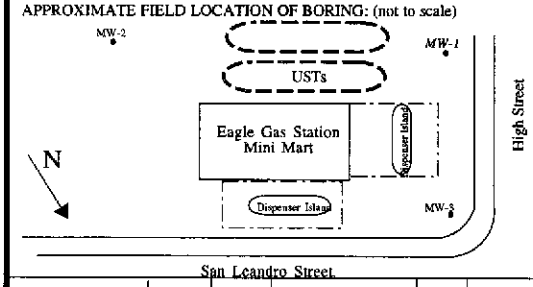
Soil Boring / Well Construction Logs

SOIL BORING AND WELL CONSTRUCTION LOG: MW-1

CLEARWATER GROUP INC.

Project: ZP046

APPROXIMATE FIELD LOCATION OF BORING: (not to scale)



DRILLING CONTRACTOR: West Hazmat	BORING DIAMETER: 8 inches	CLIENT/LOCATION: Eagle Gas /Oakland, California	
DRILL RIG OPERATOR: Oscar Gonzales	BORING DEPTH: 25 feet	SCREEN SLOT SIZE: 0.01 inches	DRILLING DATE: 9/26/00
DRILL RIG TYPE: CME 75	WELL DEPTH: 25 feet	WELL MATERIAL: 2-in. PVC	FILTER PACK: #2/12 Lonestar Sand
WELL SEAL: Neat Cement over hydrated bentonite		PLANNED USE: Monitoring	LOGGED BY: Loren Taylor
SAMPLING METHOD: Cal. Mod. Split-spoon		MONITORING INST: Thermo 580B PID	APPROVED BY: Brian Gwinn, R.G.
FIRST ENCOUNTERED WATER DEPTH: 17 feet below ground surface (bgs) ▼		STATIC WATER DEPTH - DATE: 8.96 feet below TOC - 10/3/00 ▽	

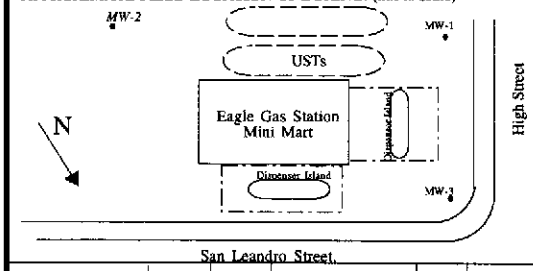
WELL CONSTRUCTION DETAIL	WATER LEVEL	DEPTH (FEET)	SAMPLING: INTERVAL	SAMPLING: RECOVERY	SAMPLING: ANALYTICA L	OVM READING (PPM)	GRAPHIC LOG OR USCS CODE	
		1–4						Concrete and fill material.
		4–10				9.7		Sandy CLAY(CL) some gravel; tan; stiff; low plasticity;sand poorly graded; gravel 5-18mm; dry-damp.
	▽	10–15				1.995		Gravely CLAY(CL) with sand; greenish -blue grey;gravel 5-22 mm; sand poorly graded: medium stiff: moderate plasticity: moist.
	▼	15–25				20.8 143.8 32.6		Silty CLAY(CL) ; greenish -tan; medium stiff; moderate plasticity; black mottling: moist to wet.
		25–30						END OF BORING

SOIL BORING AND WELL CONSTRUCTION LOG: MW-2

CLEARWATER GROUP INC.

Project: ZP046

APPROXIMATE FIELD LOCATION OF BORING: (not to scale)



DRILLING CONTRACTOR: West Hazmat	BORING DIAMETER: 8 inches	CLIENT/LOCATION: Eagle Gas /Oakland, California	
DRILL RIG OPERATOR: Oscar Gonzales	BORING DEPTH: 25 feet	SCREEN SLOT SIZE: 0.01 inches	DRILLING DATE: 9/26/00
DRILL RIG TYPE: CME 75	WELL DEPTH: 25 feet	WELL MATERIAL: 2-in. PVC	FILTER PACK: #2/12 Lonestar Sand
WELL SEAL: Neat Cement over hydrated bentonite		PLANNED USE: Monitoring	LOGGED BY: Loren Taylor
SAMPLING METHOD: Cal. Mod. Split-spoon		MONITORING INST: Thermo 580B PID	APPROVED BY: Brian Gwinn, R.G.
FIRST ENCOUNTERED WATER DEPTH: 19 feet below ground surface (bgs) ▼		STATIC WATER DEPTH - DATE: 20.26 feet below TOC - 10/3/00 ▽	

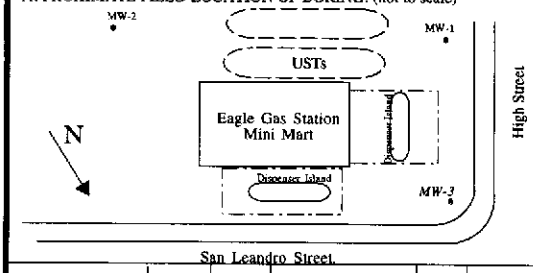
WELL CONSTRUCTION DETAIL	WATER LEVEL	DEPTH (FEET)	SAMPLING: INTERVAL	SAMPLING: RECOVERY	SAMPLING: ANALYTICA	OVM READING (PPM)	GRAPHIC LOG OR USCS CODE	
		1						Concrete and fill material.
		2						Sandy CLAY(CL) some gravel; tan; stiff; low plasticity;sand poorly graded; gravel 5-18mm; dry-damp.
		3						
		4						
		5				8.7		
		6						Gravely CLAY(CL) with sand; greenish -blue grey;gravel 5-22 mm; sand poorly graded: medium stiff: moderate plasticity: moist.
		7						
		8						
		9						
		10				1.609		
		11						
		12						
		13						Silty CLAY(CL) ; greenish -tan; medium stiff; moderate plasticity; black and green mottling: moist to wet.
		14						
		15						
		16				135.6		
		17						
		18						
		19						
	▽	20				43.2		
		21						Silty SAND(SM) ;tan; poorly graded; medium dense; wet.
		22						
		23						
		24						
		25						
		26						END OF BORING
		27						
		28						
		29						
		30						

SOIL BORING AND WELL CONSTRUCTION LOG: MW-3

CLEARWATER GROUP INC.

Project: ZP046

APPROXIMATE FIELD LOCATION OF BORING: (not to scale)



DRILLING CONTRACTOR: West Hazmat	BORING DIAMETER: 8 inches	CLIENT/LOCATION: Eagle Gas /Oakland, California	
DRILL RIG OPERATOR: Oscar Gonzales	BORING DEPTH: 25 feet	SCREEN SLOT SIZE: 0.01 inches	DRILLING DATE: 9/26/00
DRILL RIG TYPE: CME 75	WELL DEPTH: 25 feet	WELL MATERIAL: 2-in. PVC	FILTER PACK: #2/12 Lonestar Sand
WELL SEAL: Neat Cement over hydrated bentonite		PLANNED USE: Monitoring	LOGGED BY: Loren Taylor
SAMPLING METHOD: Cal. Mod. Split-spoon		MONITORING INST: Thermo 580B PID	APPROVED BY: Brian Gwinn, R.G.
FIRST ENCOUNTERED WATER DEPTH: 18.5 feet below ground surface (bgs) ▼		STATIC WATER DEPTH - DATE: Dry - 10/3/00	

WELL CONSTRUCTION DETAIL	WATER LEVEL	DEPTH (FEET)	SAMPLING: INTERVAL	SAMPLING: RECOVERY	SAMPLING: ANALYTICAL	OVM READING (PPM)	GRAPHIC LOG OR USCS CODE	
		1						Concrete and fill material.
		2						Sandy CLAY(CL) some gravel; tan; stiff; low plasticity;sand poorly graded; gravel 5-18mm; dry-damp.
		3						
		4						
		5				8.7		
		6						Gravely CLAY(CL) with sand; greenish -blue grey;gravel 5-22 mm; sand poorly graded; medium stiff; moderate plasticity; moist. Coarsening upward sequense
		7						
		8						
		9						
		10				1,609		
		11						
		12						
		13						
		14						
		15						
		16				135.6		Silty CLAY(CL) ; greenish-tan; medium stiff; moderate plasticity; black and green mottling; moist to wet.
		17						
	▼	18						
		19						
		20						
		21				43.2		
		22						
		23						Silty SAND(SM) ;tan; poorly graded; medium dense; wet.
		24						
		25						
		26						END OF BORING
		27						
		28						
		29						
		30						

Attachment F

Well Gauging Data
Purge Calculations and Well Purging Data

WELL PURGING DATA

SHEET OF

Job No.: Location: Date: Tech:

WELL No.	TIME (24-hr)	VOLUME (gal)	TEMP. (deg. F.)	COND. (mS/cm)	pH
MW-2	0920	2	65.4	1.711	7.55
Calc. purge		4 3.5	64.8	1.694	7.44
volume		6 Dry @ 3.5 gal Purged			
6.50		7			

Sample time: 1145

Sample for: (circle)

TPHg TPHd TPHmo

BTEX MTBE 8010

Other: Fuel Oxys, 1,2-DCA, EDB

Sampling Method:

Dedicated / Disposable bailer

COMMENTS: color, turbidity, recharge, etc.

Purging Method:

PVC bailer / Pump

WELL No.	TIME (24-hr)	VOLUME (gal)	TEMP. (deg. F.)	COND. (mS/cm)	pH
MW-1	935	6	67.1	0.960	7.62
Calc. purge	940	12	66.4	0.870	7.59
volume	943	~~15~~	66.9	0.925	7.61
24.9		25 Dry @ 15 gal purged			

Sample time: 1130

Sample for: (circle)

TPHg TPHd TPHmo

BTEX MTBE 8010

Other:

Sampling Method:

Dedicated / Disposable bailer

COMMENTS: color, turbidity, recharge, etc.

Purging Method:

PVC bailer / Pump

WELL No.	TIME (24-hr)	VOLUME (gal)	TEMP. (deg. F.)	COND. (mS/cm)	pH
Calc. purge					
volume					

Sample time:

Sample for: (circle)

TPHg TPHd TPHmo

BTEX MTBE 8010

Other:

Sampling Method:

Dedicated / Disposable bailer

COMMENTS: color, turbidity, recharge, etc.

Purging Method:

PVC bailer / Pump

CLEARWATER GROUP INC., 520 Third St., Ste. 104, Oakland, California 94607

Phone: (510) 893-5160 Fax: (510) 893-5947

CLEARWATER GROUP, INC.

520 3rd Street, Suite 104 Oakland CA, 94607
Phone: (510)893-5160 Fax: (510) 893-5947

WELL GAUGING/PURGING CALCULATIONS DATA SHEET

Date	Job No.	Location
10-	28046	4301 San Leandro Street Oakland, CA

Tech(s): LT/SR

Drums on Site @TOA — Soil: 5 Water: 1

Drums on Site @ TOD — Soil: 5 Water: 1

Well No	Diameter (in)	DTB (ft)	DTW (ft)	ST (ft)	CV (gal)	PV (gal)	SPL (ft)	Notes
MW-1	2	24.5	7.5	Sampled and Purged			9-gal	
MW-2	2	24.5	18.91	Sampled Purged 4gal dry				
MW-3	2	23						dry

MW-3 Recharge

DTW	Time
22.62	9:19
22.55	9:21
22.47	9:23
22.40	9:25
22.31	9:27
22.26	9:29
22.20	9:31
21.99	9:41

Recharge rate ~~0.035~~ 16 ~~/min~~ 0.035'/min

Explanation:
DTB = Depth to Bottom
DTW = Depth to Water
ST = Saturated Thickness (DTB-DTW)
CV = Casing Volume (ST x cf)
PV = Purge Volume (standard 3 x CV, well development 10 x CV)
SPL = Thickness of Separate Phase Liquid

Conversion Factors (cf)
2-inch diameter well cf=0.16 gal/ft
4-inch diameter well cf=0.65 gal/ft
6-inch diameter well cf=1.44 gal/ft

Attachment G

Laboratory Reports and Chain-of-Custody Forms

Entech Analytical Labs, Inc.

CA ELAP# 2346

525 Del Rey Avenue, Suite E • Sunnyvale, CA 94085 • (408) 735-1550 • Fax (408) 735-1554

October 05, 2000

Judi Fox
Clearwater Group, Inc.
520 Third Street, Suite 104
Oakland, CA 94607

Order: 22470
Project Name:
Project Number: ZP046A
Project Notes:

Date Collected: 9/26/00
Date Received: 9/27/00
P.O. Number:

On September 27, 2000, samples were received under documentented chain of custody. Results for the following analyses are attached:

Matrix	Test	Method
Solid	EPA 8260B-Kiff	EPA 8260B
	TPH as Diesel	EPA 8015 MOD. (Extractable)
	TPH as Gasoline	EPA 8015 MOD. (Purgeable)

Chemical analysis of these samples has been completed. Summaries of the data are contained on the following pages. USEPA protocols for sample storage and preservation were followed.

Entech Analytical Labs, Inc. is certified by the State of California (#2346). If you have any questions regarding procedures or results, please call me at 408-735-1550.

Sincerely,

Michelle L. Anderson
Lab Director

Entech Analytical Labs, Inc.

CA ELAP# 2346

525 Del Rey Avenue, Suite E • Sunnyvale, CA 94085 • (408) 735-1550 • Fax (408) 735-1554

Clearwater Group, Inc.
520 Third Street, Suite 104
Oakland, CA 94607
Attn: Judi Fox

Date: 10/04/00
Date Received: 9/27/00
Project Name:
Project Number: ZP046A
P.O. Number:
Sampled By: Client

Certified Analytical Report

Order ID: 22470 **Lab Sample ID:** 22470-001 **Client Sample ID:** MW-1-10'
Sample Time: 12:00 PM **Sample Date:** 9/26/00 **Matrix:** Solid

Parameter	Result	Flag	DF	PQL	DLR	Units	Extraction Date	Analysis Date	QC Batch ID	Method
TPH as Diesel	87		1	1	1	mg/Kg	9/29/00	9/29/00	DS000912	EPA 8015 MOD. (Extractable)

Surrogate	Surrogate Recovery	Control Limits (%)
Hexacosane	93	65 - 135

Order ID: 22470 **Lab Sample ID:** 22470-002 **Client Sample ID:** MW-2-10'
Sample Time: 2:00 PM **Sample Date:** 9/26/00 **Matrix:** Solid

Parameter	Result	Flag	DF	PQL	DLR	Units	Extraction Date	Analysis Date	QC Batch ID	Method
TPH as Diesel	210	x	5	1	5	mg/Kg	9/29/00	10/2/00	DS000912	EPA 8015 MOD. (Extractable)

Surrogate	Surrogate Recovery	Control Limits (%)
Hexacosane	97	65 - 135

Order ID: 22470 **Lab Sample ID:** 22470-003 **Client Sample ID:** MW-3-10'
Sample Time: 9:30 AM **Sample Date:** 9/26/00 **Matrix:** Solid

Parameter	Result	Flag	DF	PQL	DLR	Units	Extraction Date	Analysis Date	QC Batch ID	Method
TPH as Diesel	ND		1	1	1	mg/Kg	9/29/00	10/2/00	DS000912	EPA 8015 MOD. (Extractable)

Surrogate	Surrogate Recovery	Control Limits (%)
Hexacosane	104	65 - 135

DF = Dilution Factor ND = Not Detected DLR = Detection Limit Reported PQL = Practical Quantitation Limit

Analysis performed by Entech Analytical Labs, Inc. (CA ELAP #2346)

Michelle L. Anderson, Laboratory Director

Environmental Analysis Since 1983

Entech Analytical Labs, Inc.

CA ELAP# 2346

525 Del Rey Avenue, Suite E • Sunnyvale, CA 94085 • (408) 735-1550 • Fax (408) 735-1554

Clearwater Group, Inc.
520 Third Street, Suite 104
Oakland, CA 94607
Attn: Judi Fox

Date: 10/04/00
Date Received: 9/27/00
Project Name:
Project Number: ZP046A
P.O. Number:
Sampled By: Client

Certified Analytical Report

Order ID: 22470 **Lab Sample ID:** 22470-001 **Client Sample ID:** MW-1-10'
Sample Time: 12:00 PM **Sample Date:** 9/26/00 **Matrix:** Solid

Parameter	Result	Flag	DF	PQL	DLR	Units	Extraction Date	Analysis Date	QC Batch ID	Method
TPH as Gasoline	310		200	0.050	10	mg/Kg	N/A	9/29/00	SGC2000929	EPA 8015 MOD. (Purgeable)

Surrogate	Surrogate Recovery	Control Limits (%)
aaa-Trifluorotoluene	70	65 - 135

Comment: Sample required methanol extraction due to high concentrations of target hydrocarbons

Order ID: 22470 **Lab Sample ID:** 22470-002 **Client Sample ID:** MW-2-10'
Sample Time: 2:00 PM **Sample Date:** 9/26/00 **Matrix:** Solid

Parameter	Result	Flag	DF	PQL	DLR	Units	Extraction Date	Analysis Date	QC Batch ID	Method
TPH as Gasoline	630		500	0.050	25	mg/Kg	N/A	9/29/00	SGC2000929	EPA 8015 MOD. (Purgeable)

Surrogate	Surrogate Recovery	Control Limits (%)
aaa-Trifluorotoluene	69	65 - 135

Comment: Sample required methanol extraction due to high concentrations of target hydrocarbons

Order ID: 22470 **Lab Sample ID:** 22470-003 **Client Sample ID:** MW-3-10'
Sample Time: 9:30 AM **Sample Date:** 9/26/00 **Matrix:** Solid

Parameter	Result	Flag	DF	PQL	DLR	Units	Extraction Date	Analysis Date	QC Batch ID	Method
TPH as Gasoline	32		100	0.050	5	mg/Kg	N/A	9/29/00	SGC2000928	EPA 8015 MOD. (Purgeable)

Surrogate	Surrogate Recovery	Control Limits (%)
aaa-Trifluorotoluene	114	65 - 135

Comment: Sample required methanol extraction due to high concentrations of target hydrocarbons

DF = Dilution Factor ND = Not Detected DLR = Detection Limit Reported PQL = Practical Quantitation Limit

Analysis performed by Entech Analytical Labs, Inc. (CA ELAP #2346)

Michelle L. Anderson, Laboratory Director

Environmental Analysis Since 1983

Entech Analytical Labs, Inc.

CA ELAP# 2346

525 Del Rey Avenue, Suite E • Sunnyvale, CA 94085 • (408) 735-1550 • Fax (408) 735-1554

STANDARD LAB QUALIFIERS (FLAGS)

All Entech lab reports now reference standard lab qualifiers. These qualifiers are noted in the adjacent column to the analytical result and are adapted from the U.S. EPA CLP program. The current qualifier list is as follows:

Qualifier (Flag)	Description
U	Compound was analyzed for but not detected
J	Estimated value for tentatively identified compounds or if result is below PQL but above MDL
N	Presumptive evidence of a compound (for Tentatively Identified Compounds)
B	Analyte is found in the associated Method Blank
E	Compounds whose concentrations exceed the upper level of the calibration range
D	Multiple dilutions reported for analysis; discrepancies between analytes may be due to dilution
X	Results within quantitation range; chromatographic pattern not typical of fuel

Entech Analytical Labs, Inc.

525 Del Rey Avenue, Suite E
Sunnyvale, CA 94086

QUALITY CONTROL RESULTS SUMMARY

METHOD: Gas Chromatography
Laboratory Control Sample

QC Batch #: SGC2000928
Matrix: Soil
Units: µg/kg

Date Analyzed: 09/28/00
Quality Control Sample: Blank Spike

PARAMETER	Method #	MB µg/kg	SA µg/kg	SR µg/kg	SP	**SP % R**	SPD µg/kg	**SPD %R**	RPD	QC LIMITS RPD	QC LIMITS %R
Benzene	8020	<5.0	4.3	ND	4.0	**93**	4.5	**103**	10.2	25	75-125
Toluene	8020	<5.0	28.0	ND	30	**109**	32	**115**	5.5	25	75-125
Ethyl Benzene	8020	<5.0	6.8	ND	6.0	**88**	6.4	**94**	7.0	25	75-125
Xylenes	8020	<5.0	26.0	ND	30	**114**	29	**113**	0.3	25	75-125
Gasoline	8015	<1000	484	ND	545	**113**	567	**117**	3.9	25	75-125
aaa-TFT(S.S.)-PID	8020			120%	110%		114%				65-135
aaa-TFT(S.S.)-FID	8015			104%	99%		105%				65-135

Definition of Terms:

- na: Not Analyzed in QC batch
- MB: Method Blank
- SA: Spike Added
- SR: Sample Result
- RPD(%): Duplicate Analysis - Relative Percent Difference
- SP: Spike Result
- SP (%R): Spike % Recovery
- SPD: Spike Duplicate Result
- SPD (%R): Spike % Recovery
- NC: Not Calculated

Entech Analytical Labs, Inc.

525 Del Rey Avenue, Suite E
Sunnyvale, CA 94086

QUALITY CONTROL RESULTS SUMMARY
Laboratory Control Spikes

QC Batch #: DS000912
Matrix: Solid
Units: mg/Kg

Date analyzed: 09/27/00
Date extracted: 09/26/00
Quality Control Sample: Blank Spike

PARAMETER	Method #	MB mg/Kg	SA mg/Kg	SR mg/Kg	SP mg/Kg	**SP %R**	SPD mg/Kg	**SPD %R**	RPD	QC LIMITS RPD	QC LIMITS %R
Diesel	8015M	<1.0	25	ND	21	**84**	22	**86**	3.1	30	50-150
Hexocosane				91%	96%		98%				65-135

Calculated Recovery Outside of Control Limits:

Definition of Terms:

MB: Method Blank
na: Not Analyzed in QC batch
SA: Spike Added
SR: Sample Result
RPD(%): Duplicate Analysis - Relative Percent Difference
SP: Spike Result
SP (%R): Spike % Recovery
SPD: Spike Duplicate Result
SPD (%R): Spike Duplicate % Recovery
NC: Not Calculated

Entech Analytical Labs, Inc.

525 Del Rey Avenue, Suite E
Sunnyvale, CA 94086

QUALITY CONTROL RESULTS SUMMARY

METHOD: Gas Chromatography
Laboratory Control Sample

QC Batch #: SGC2000929
Matrix: Soil
Units: µg/kg

Date Analyzed: 09/29/00
Quality Control Sample: Blank Spike

PARAMETER	Method #	MB µg/kg	SA µg/kg	SR µg/kg	SP	**SP % R**	SPD µg/kg	**SPD %R**	RPD	QC LIMITS RPD	QC LIMITS %R
Benzene	8020	<5.0	4.3	ND	3.8	**88**	3.7	**86**	1.7	25	75-125
Toluene	8020	<5.0	28.0	ND	31	**110**	30	**107**	2.5	25	75-125
Ethyl Benzene	8020	<5.0	6.8	ND	6.6	**98**	6.0	**88**	10.0	25	75-125
Xylenes	8020	<5.0	26.0	ND	31	**118**	29	**113**	5.1	25	75-125
Gasoline	8015	<1000	484	ND	596	**123**	545	**113**	9.0	25	75-125
aaa-TFT(S.S.)-PID	8020			122%	118%		112%				65-135
aaa-TFT(S.S.)-FID	8015			105%	99%		100%				65-135

Definition of Terms:

- na: Not Analyzed in QC batch
- MB: Method Blank
- SA: Spike Added
- SR: Sample Result
- RPD(%): Duplicate Analysis - Relative Percent Difference
- SP: Spike Result
- SP (%R): Spike % Recovery
- SPD: Spike Duplicate Result
- SPD (%R): Spike % Recovery
- NC: Not Calculated

KIFF ANALYTICAL LLC

Report Number : 17932
Date : 10/4/00

Michelle Anderson
Entech Analytical Labs, Inc.
525 Del Rey Avenue, Suite E
Sunnyvale, CA 94086

Subject : 3 Soil Samples
Project Name : 22470
Project Number :
P.O. Number : 22470

Dear Ms. Anderson,

Chemical analysis of the samples referenced above has been completed. Summaries of the data are contained on the following pages. Sample(s) were received under documented chain-of-custody. US EPA protocols for sample storage and preservation were followed.

Kiff Analytical is certified by the State of California (# 2236). If you have any questions regarding procedures or results, please call me at 530-297-4800.

Sincerely,

Joel Kiff

Joel Kiff

KIFF ANALYTICAL LLC

Report Number : 17932

Date : 10/4/00

Project Name : **22470**

Project Number :

Sample : **MW-1-10'** Matrix : Soil Lab Number : 17932-01

Sample Date :9/26/00

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date Analyzed
Benzene	**0.062**	0.020	mg/Kg	EPA 8260B	10/3/00
Toluene	**0.022**	0.020	mg/Kg	EPA 8260B	10/3/00
Ethylbenzene	**1.3**	0.020	mg/Kg	EPA 8260B	10/3/00
Total Xylenes	**3.4**	0.020	mg/Kg	EPA 8260B	10/3/00
Methyl-t-butyl ether (MTBE)	**6.9**	0.020	mg/Kg	EPA 8260B	10/3/00
Diisopropyl ether (DIPE)	**< 0.0050**	0.0050	mg/Kg	EPA 8260B	10/4/00
Ethyl-t-butyl ether (ETBE)	**< 0.0050**	0.0050	mg/Kg	EPA 8260B	10/4/00
Tert-amyl methyl ether (TAME)	**0.019**	0.0050	mg/Kg	EPA 8260B	10/4/00
Tert-Butanol	**2.9**	0.050	mg/Kg	EPA 8260B	10/4/00
Methanol	**< 5.0**	5.0	mg/Kg	EPA 8260B	10/4/00
Ethanol	**< 0.050**	0.050	mg/Kg	EPA 8260B	10/4/00
1,2-Dichloroethane	**< 0.0050**	0.0050	mg/Kg	EPA 8260B	10/4/00
1,2-Dibromoethane	**< 0.0050**	0.0050	mg/Kg	EPA 8260B	10/4/00
Toluene - d8 (Surr)	103		% Recovery	EPA 8260B	10/4/00
4-Bromofluorobenzene (Surr)	98.4		% Recovery	EPA 8260B	10/4/00

Approved By: Joel Kiff

720 Olive Drive, Suite D Davis, CA 95616 530-297-4800

KIFF ANALYTICAL LLC

Report Number : 17932

Date : 10/4/00

Project Name : **22470**

Project Number :

Sample : **MW-2-10'** Matrix : Soil Lab Number : 17932-02

Sample Date :9/26/00

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date Analyzed
Benzene	**0.053**	0.050	mg/Kg	EPA 8260B	10/3/00
Toluene	**0.052**	0.050	mg/Kg	EPA 8260B	10/3/00
Ethylbenzene	**2.0**	0.050	mg/Kg	EPA 8260B	10/3/00
Total Xylenes	**14**	0.050	mg/Kg	EPA 8260B	10/3/00
Methyl-t-butyl ether (MTBE)	**1.0**	0.050	mg/Kg	EPA 8260B	10/3/00
Diisopropyl ether (DIPE)	**< 0.050**	0.050	mg/Kg	EPA 8260B	10/3/00
Ethyl-t-butyl ether (ETBE)	**< 0.050**	0.050	mg/Kg	EPA 8260B	10/3/00
Tert-amyl methyl ether (TAME)	**< 0.050**	0.050	mg/Kg	EPA 8260B	10/3/00
Tert-Butanol	**3.5**	0.50	mg/Kg	EPA 8260B	10/3/00
Methanol	**< 10**	10	mg/Kg	EPA 8260B	10/3/00
Ethanol	**< 1.0**	1.0	mg/Kg	EPA 8260B	10/3/00
1,2-Dichloroethane	**< 0.050**	0.050	mg/Kg	EPA 8260B	10/3/00
1,2-Dibromoethane	**< 0.050**	0.050	mg/Kg	EPA 8260B	10/3/00
Toluene - d8 (Surr)	102		% Recovery	EPA 8260B	10/3/00
4-Bromofluorobenzene (Surr)	95.9		% Recovery	EPA 8260B	10/3/00

Approved By: Joel Kiff

720 Olive Drive, Suite D Davis, CA 95616 530-297-4800

KIFF ANALYTICAL LLC

Report Number : 17932

Date : 10/4/00

Project Name : **22470**

Project Number :

Sample : **MW-3-10'** Matrix : Soil Lab Number : 17932-03

Sample Date :9/26/00

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date Analyzed
Benzene	**< 0.0050**	0.0050	mg/Kg	EPA 8260B	10/2/00
Toluene	**< 0.0050**	0.0050	mg/Kg	EPA 8260B	10/2/00
Ethylbenzene	**< 0.0050**	0.0050	mg/Kg	EPA 8260B	10/2/00
Total Xylenes	**< 0.0050**	0.0050	mg/Kg	EPA 8260B	10/2/00
Methyl-t-butyl ether (MTBE)	**4.5**	0.050	mg/Kg	EPA 8260B	10/1/00
Diisopropyl ether (DIPE)	**< 0.0050**	0.0050	mg/Kg	EPA 8260B	10/2/00
Ethyl-t-butyl ether (ETBE)	**< 0.0050**	0.0050	mg/Kg	EPA 8260B	10/2/00
Tert-amyl methyl ether (TAME)	**0.043**	0.0050	mg/Kg	EPA 8260B	10/2/00
Tert-Butanol	**0.58**	0.050	mg/Kg	EPA 8260B	10/2/00
Methanol	**< 1.0**	1.0	mg/Kg	EPA 8260B	10/2/00
Ethanol	**< 0.050**	0.050	mg/Kg	EPA 8260B	10/2/00
1,2-Dichloroethane	**< 0.0050**	0.0050	mg/Kg	EPA 8260B	10/2/00
1,2-Dibromoethane	**< 0.0050**	0.0050	mg/Kg	EPA 8260B	10/2/00
Toluene - d8 (Surr)	101		% Recovery	EPA 8260B	10/2/00
4-Bromofluorobenzene (Surr)	104		% Recovery	EPA 8260B	10/2/00

Approved By: Joel Kiff

720 Olive Drive, Suite D Davis, CA 95616 530-297-4800

Report Number : 17932

Date : 10/4/00

Project Name : **22470**

Project Number :

Quality Control Data - Method Blank

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date Analyzed
Benzene	**< 0.0050**	0.0050	mg/Kg	EPA 8260B	10/1/00
Toluene	**< 0.0050**	0.0050	mg/Kg	EPA 8260B	10/1/00
Ethylbenzene	**< 0.0050**	0.0050	mg/Kg	EPA 8260B	10/1/00
Total Xylenes	**< 0.0050**	0.0050	mg/Kg	EPA 8260B	10/1/00
Methyl-t-butyl ether (MTBE)	**< 0.0050**	0.0050	mg/Kg	EPA 8260B	10/1/00
Diisopropyl ether (DIPE)	**< 0.0050**	0.0050	mg/Kg	EPA 8260B	10/1/00
Ethyl-t-butyl ether (ETBE)	**< 0.0050**	0.0050	mg/Kg	EPA 8260B	10/1/00
Tert-amyl methyl ether (TAME)	**< 0.0050**	0.0050	mg/Kg	EPA 8260B	10/1/00
Tert-Butanol	**< 0.0050**	0.0050	mg/Kg	EPA 8260B	10/1/00
Methanol	**< 0.20**	0.20	mg/Kg	EPA 8260B	10/1/00
Ethanol	**< 0.010**	0.010	mg/Kg	EPA 8260B	10/1/00
1,2-Dichloroethane	**< 0.0050**	0.0050	mg/Kg	EPA 8260B	10/1/00
1,2-Dibromoethane	**< 0.0050**	0.0050	mg/Kg	EPA 8260B	10/1/00
Toluene - d8 (Surr)	101		% Recovery	EPA 8260B	10/1/00
4-Bromofluorobenzene (Surr)	106		% Recovery	EPA 8260B	10/1/00

Approved By: Joel Kiff

Report Number : 17932

Date : 10/4/00

QC Report : Matrix Spike/ Matrix Spike Duplicate

Project Name : **22470**

Project Number :

Parameter	Spiked Sample	Sample Value	Spike Level	Spike Dup. Level	Spiked Sample Value	Duplicate Spiked Sample Value	Units	Analysis Method	Date Analyzed	Spiked Sample Percent Recov.	Duplicate Spiked Sample Percent Recov.	Relative Percent Diff.	Spiked Sample Percent Recov. Limit	Relative Percent Diff. Limit
Spike Recovery Data														
Benzene	17941-02	<0.0050	0.0495	0.0500	0.0459	0.0457	mg/Kg	EPA 8260B	10/1/00	92.6	91.5	1.26	70-130	25
Toluene	17941-02	<0.0050	0.0495	0.0500	0.0435	0.0439	mg/Kg	EPA 8260B	10/1/00	87.8	87.8	0.00	70-130	25
Tert-Butanol	17941-02	<0.0050	0.0495	0.0500	0.0482	0.0452	mg/Kg	EPA 8260B	10/1/00	97.3	90.4	7.37	70-130	25
Methyl-t-Butyl Ether	17941-02	<0.0050	0.0495	0.0500	0.0433	0.0412	mg/Kg	EPA 8260B	10/1/00	87.5	82.5	5.86	70-130	25

Approved By: Joel Kiff

Report Number : 17932

QC Report : Laboratory Control Sample (LCS)

Date : 10/4/00

Project Name : **22470**

Project Number :

Parameter	Spike Level	Units	Analysis Method	Date Analyzed	LCS Percent Recov.	LCS Percent Recov. Limit
Benzene	0.0398	mg/Kg	EPA 8260B	10/1/00	90.8	70-130
Toluene	0.0398	mg/Kg	EPA 8260B	10/1/00	87.0	70-130
Tert-Butanol	0.0398	mg/Kg	EPA 8260B	10/1/00	88.0	70-130
Methyl-t-Butyl Ether	0.0398	mg/Kg	EPA 8260B	10/1/00	74.1	70-130

KIFF ANALYTICAL, LLC

Approved By: Joel Kiff

Entech Analytical Labs, Inc.

CA ELAP # I-2346

525 Del Rey Avenue, Suite E, Sunnyvale, CA 94086 (408) 735-1550 FAX (408) 735-1554

Subcontract Chain of Custody

Subcontract Lab:	Project Name:	Date Sent:	Due Date:	PO Number:
Kiff	22470	9/28/00	10/4/00	22470

Sample Number:	Customer Sample Number:	Matrix:	Test:	Method:	Collect Date:	Collect Time:	Bottle Type:	Preservative:
22470-001	MW-1-10'	Solid	EPA 8260B-Kiff	EPA 8260B	9/26/00	12:00 PM	Brass	
22470-002	MW-2-10'	Solid	EPA 8260B-Kiff	EPA 8260B	9/26/00	2:00 PM	Brass	
22470-003	MW-3-10'	Solid	EPA 8260B-Kiff	EPA 8260B	9/26/00	9:30 AM	Brass	

Relinquished By:	Received By:	Date:	Time:
Clay Dambach	Golden State	9/28/00	1800
Relinquished By:	Received By:	Date:	Time:
Relinquished By:	Received By:	Date:	Time:

Notes: Report Oxygenates,ethanol,methanol,1,2-DCA,EDB+Btex by 8260

17932

Entech Analytical Labs, Inc.

CA ELAP # I-2346

525 Del Rey Avenue, Suite E, Sunnyvale, CA 94086 (408) 735-1550 FAX (408) 735-1554

Subcontract Chain of Custody

Subcontract Lab:	Project Name:	Date Sent:	Due Date:	PO Number:
Kiff	22470	9/28/00	10/4/00	22470

	Sample Number:	Customer Sample Number:	Matrix:	Test:	Method:	Collect Date:	Collect Time:	Bottle Type:	Preservative:
-01	22470-001	MW-1-10'	Solid	EPA 8260B-Kiff	EPA 8260B	9/26/00	12:00 PM	Brass	
-02	22470-002	MW-2-10'	Solid	EPA 8260B-Kiff	EPA 8260B	9/26/00	2:00 PM	Brass	
-03	22470-003	MW-3-10'	Solid	EPA 8260B-Kiff	EPA 8260B	9/26/00	9:30 AM	Brass	

Relinquished By:	Received By:	Date:	Time:
Clay Dambach	Golden State	9/28/00	1800
Relinquished By:	Received By:	Date:	Time:
Relinquished By:	Received By:	Date:	Time:
	Becky Miller	092900	0810

Notes: Report Oxygenates,ethanol,methanol,1,2-DCA,EDB+Btex by 8260

Received at 11°C via Golden State Overnight. 092900 0810

Entech Analytical Labs, Inc.

CA ELAP# 2346

525 Del Rey Avenue, Suite E • Sunnyvale, CA 94085 • (408) 735-1550 • Fax (408) 735-1554

October 10, 2000

Judi Fox
Clearwater Group, Inc.
520 Third Street, Suite 104
Oakland, CA 94607

Order:	22562	**Date Collected:**	10/3/00
Project Name:	Eagle Gas	**Date Received:**	10/3/00
Project Number:	ZP046	**P.O. Number:**	
Project Notes:			

On October 03, 2000, samples were received under documentented chain of custody. Results for the following analyses are attached:

Matrix	Test	Method
Liquid	1,2 DCA + EDB by EPA 8260	EPA 8260B
	Gas/BTEX	EPA 8015 MOD. (Purgeable)
		EPA 8020
	Oxygenates by EPA 8260B	EPA 8260B
	TPH as Diesel	EPA 8015 MOD. (Extractable)

Chemical analysis of these samples has been completed. Summaries of the data are contained on the following pages. USEPA protocols for sample storage and preservation were followed.

Entech Analytical Labs, Inc. is certified by the State of California (#2346). If you have any questions regarding procedures or results, please call me at 408-735-1550.

Sincerely,

Michelle L. Anderson
Lab Director

Entech Analytical Labs, Inc.

CA ELAP# 2346

525 Del Rey Avenue, Suite E • Sunnyvale, CA 94085 • (408) 735-1550 • Fax (408) 735-1554

Clearwater Group, Inc.
520 Third Street, Suite 104
Oakland, CA 94607
Attn: Judi Fox

Date: 10/10/00
Date Received: 10/3/00
Project Name: Eagle Gas
Project Number: ZP046
P.O. Number:
Sampled By: Client

Certified Analytical Report

Order ID: 22562 **Lab Sample ID:** 22562-001 **Client Sample ID:** MW-1
Sample Time: 11:30 AM **Sample Date:** 10/3/00 **Matrix:** Liquid

Parameter	Result	Flag	DF	PQL	DLR	Units	Extraction Date	Analysis Date	QC Batch ID	Method
TPH as Diesel	460	x	1	59	59	µg/L	10/5/00	10/6/00	DW001001	EPA 8015 MOD. (Extractable)

Surrogate	Surrogate Recovery	Control Limits (%)
Hexacosane	100	65 - 135

Order ID: 22562 **Lab Sample ID:** 22562-002 **Client Sample ID:** MW-2
Sample Time: 11:45 AM **Sample Date:** 10/3/00 **Matrix:** Liquid

Parameter	Result	Flag	DF	PQL	DLR	Units	Extraction Date	Analysis Date	QC Batch ID	Method
TPH as Diesel	210	x	1	63	63	µg/L	10/5/00	10/6/00	DW001001	EPA 8015 MOD. (Extractable)

Surrogate	Surrogate Recovery	Control Limits (%)
Hexacosane	104	65 - 135

Comment: Reporting limits raised due to limited sample volume

DF = Dilution Factor ND = Not Detected DLR = Detection Limit Reported PQL = Practical Quantitation Limit

Analysis performed by Entech Analytical Labs, Inc. (CA ELAP #2346)

Michelle L. Anderson, Laboratory Director

Environmental Analysis Since 1983

Entech Analytical Labs, Inc.

CA ELAP# 2346

525 Del Rey Avenue, Suite E • Sunnyvale, CA 94085 • (408) 735-1550 • Fax (408) 735-1554

Clearwater Group, Inc.
520 Third Street, Suite 104
Oakland, CA 94607
Attn: Judi Fox

Date: 10/10/00
Date Received: 10/3/00
Project Name: Eagle Gas
Project Number: ZP046
P.O. Number:
Sampled By: Client

Certified Analytical Report

Order ID: 22562 **Lab Sample ID:** 22562-001 **Client Sample ID:** MW-1

Sample Time: 11:30 AM **Sample Date:** 10/3/00 **Matrix:** Liquid

Parameter	Result	Flag	DF	PQL	DLR	Units	Extraction Date	Analysis Date	QC Batch ID	Method
Benzene	ND		1000	0.5	500	µg/L	N/A	10/6/00	WGC2001005B	EPA 8020
Toluene	ND		1000	0.5	500	µg/L	N/A	10/6/00	WGC2001005B	EPA 8020
Ethyl Benzene	ND		1000	0.5	500	µg/L	N/A	10/6/00	WGC2001005B	EPA 8020
Xylenes, Total	ND		1000	0.5	500	µg/L	N/A	10/6/00	WGC2001005B	EPA 8020

Surrogate	Surrogate Recovery	Control Limits (%)
aaa-Trifluorotoluene	98	65 - 135

Parameter	Result	Flag	DF	PQL	DLR	Units	Extraction Date	Analysis Date	QC Batch ID	Method
TPH as Gasoline	93000	x	1000	50	50000	µg/L	N/A	10/6/00	WGC2001005B	EPA 8015 MOD. (Purgeable)

Surrogate	Surrogate Recovery	Control Limits (%)
aaa-Trifluorotoluene	114	65 - 135

DF = Dilution Factor ND = Not Detected DLR = Detection Limit Reported PQL = Practical Quantitation Limit

Analysis performed by Entech Analytical Labs, Inc. (CA ELAP #2346)

Michelle L. Anderson, Laboratory Director

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Entech Analytical Labs, Inc.

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Clearwater Group, Inc.
520 Third Street, Suite 104
Oakland, CA 94607
Attn: Judi Fox

Date: 10/10/00
Date Received: 10/3/00
Project Name: Eagle Gas
Project Number: ZP046
P.O. Number:
Sampled By: Client

Certified Analytical Report

Order ID: 22562 **Lab Sample ID:** 22562-002 **Client Sample ID:** MW-2

Sample Time: 11:45 AM **Sample Date:** 10/3/00 **Matrix:** Liquid

Parameter	Result	Flag	DF	PQL	DLR	Units	Extraction Date	Analysis Date	QC Batch ID	Method
Benzene	ND		2500	0.5	1250	µg/L	N/A	10/6/00	WGC2001005B	EPA 8020
Toluene	ND		2500	0.5	1250	µg/L	N/A	10/6/00	WGC2001005B	EPA 8020
Ethyl Benzene	ND		2500	0.5	1250	µg/L	N/A	10/6/00	WGC2001005B	EPA 8020
Xylenes, Total	ND		2500	0.5	1250	µg/L	N/A	10/6/00	WGC2001005B	EPA 8020

Surrogate	Surrogate Recovery	Control Limits (%)
aaa-Trifluorotoluene	99	65 - 135

Parameter	Result	Flag	DF	PQL	DLR	Units	Extraction Date	Analysis Date	QC Batch ID	Method
TPH as Gasoline	250000	x	2500	50	125000	µg/L	N/A	10/6/00	WGC2001005B	EPA 8015 MOD. (Purgeable)

Surrogate	Surrogate Recovery	Control Limits (%)
aaa-Trifluorotoluene	115	65 - 135

DF = Dilution Factor ND = Not Detected DLR = Detection Limit Reported PQL = Practical Quantitation Limit

Analysis performed by Entech Analytical Labs, Inc. (CA ELAP #2346)

Michelle L. Anderson, Laboratory Director

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Clearwater Group, Inc.
520 Third Street, Suite 104
Oakland, CA 94607
Attn: Judi Fox

Date: 10/10/00
Date Received: 10/3/00
Project Name: Eagle Gas
Project Number: ZP046
P.O. Number:
Sampled By: Client

Certified Analytical Report

Order ID: 22562 **Lab Sample ID:** 22562-001 **Client Sample ID:** MW-1

Sample Time: 11:30 AM **Sample Date:** 10/3/00 **Matrix:** Liquid

Parameter	Result	Flag	DF	PQL	DLR	Units	Analysis Date	QC Batch ID	Method
1,2-Dibromoethane (EDB)	ND		2000	5	10000	µg/L	10/6/00	WMS1001006	EPA 8260B
1,2-Dichloroethane	ND		2000	5	10000	µg/L	10/6/00	WMS1001006	EPA 8260B

Surrogate	Surrogate Recovery	Control Limits (%)
4-Bromofluorobenzene	91	65 - 135
Dibromofluoromethane	90	65 - 135
Toluene-d8	89	65 - 135

Comment: Sample diluted due to high concentrations of non-target hydrocarbons

DF = Dilution Factor ND = Not Detected DLR = Detection Limit Reported PQL = Practical Quantitation Limit

Analysis performed by Entech Analytical Labs, Inc. (CA ELAP #2346)

Michelle L. Anderson, Laboratory Director

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CA ELAP# 2346

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Clearwater Group, Inc.
520 Third Street, Suite 104
Oakland, CA 94607
Attn: Judi Fox

Date: 10/10/00
Date Received: 10/3/00
Project Name: Eagle Gas
Project Number: ZP046
P.O. Number:
Sampled By: Client

Certified Analytical Report

Order ID: 22562 **Lab Sample ID:** 22562-002 **Client Sample ID:** MW-2

Sample Time: 11:45 AM **Sample Date:** 10/3/00 **Matrix:** Liquid

Parameter	Result	Flag	DF	PQL	DLR	Units	Analysis Date	QC Batch ID	Method
1,2-Dibromoethane (EDB)	ND		5000	5	25000	µg/L	10/6/00	WMS1001006	EPA 8260B
1,2-Dichloroethane	ND		5000	5	25000	µg/L	10/6/00	WMS1001006	EPA 8260B

Surrogate	Surrogate Recovery	Control Limits (%)
4-Bromofluorobenzene	90	65 - 135
Dibromofluoromethane	90	65 - 135
Toluene-d8	89	65 - 135

Comment: Sample diluted due to high concentrations of non-target hydrocarbons

DF = Dilution Factor ND = Not Detected DLR = Detection Limit Reported PQL = Practical Quantitation Limit

Analysis performed by Entech Analytical Labs, Inc. (CA ELAP #2346)

Michelle D. Anderson, Laboratory Director

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CA ELAP# 2346

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Clearwater Group, Inc.
520 Third Street, Suite 104
Oakland, CA 94607
Attn: Judi Fox

Date: 10/10/00
Date Received: 10/3/00
Project Name: Eagle Gas
Project Number: ZP046
P.O. Number:
Sampled By: Client

Certified Analytical Report

Order ID: 22562 **Lab Sample ID:** 22562-001 **Client Sample ID:** MW-1

Sample Time: 11:30 AM **Sample Date:** 10/3/00 **Matrix:** Liquid

Parameter	Result	Flag	DF	PQL	DLR	Units	Analysis Date	QC Batch ID	Method
Diisopropyl Ether	ND		2000	5	10000	µg/L	10/6/00	WMS1001006	EPA 8260B
Ethyl-t-butyl Ether	ND		2000	5	10000	µg/L	10/6/00	WMS1001006	EPA 8260B
Methyl-t-butyl Ether	130000		2000	5	10000	µg/L	10/6/00	WMS1001006	EPA 8260B
tert-Amyl Methyl Ether	ND		2000	5	10000	µg/L	10/6/00	WMS1001006	EPA 8260B
tert-Butanol	ND		2000	20	40000	µg/L	10/6/00	WMS1001006	EPA 8260B

Surrogate	Surrogate Recovery	Control Limits (%)
4-Bromofluorobenzene	91	65 - 135
Dibromofluoromethane	90	65 - 135
Toluene-d8	89	65 - 135

DF = Dilution Factor ND = Not Detected DLR = Detection Limit Reported PQL = Practical Quantitation Limit

Analysis performed by Entech Analytical Labs, Inc. (CA ELAP #2346)

Michelle L. Anderson, Laboratory Director

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CA ELAP# 2346

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Clearwater Group, Inc.
520 Third Street, Suite 104
Oakland, CA 94607
Attn: Judi Fox

Date: 10/10/00
Date Received: 10/3/00
Project Name: Eagle Gas
Project Number: ZP046
P.O. Number:
Sampled By: Client

Certified Analytical Report

Order ID: 22562 **Lab Sample ID:** 22562-002 **Client Sample ID:** MW-2

Sample Time: 11:45 AM **Sample Date:** 10/3/00 **Matrix:** Liquid

Parameter	Result	Flag	DF	PQL	DLR	Units	Analysis Date	QC Batch ID	Method
Diisopropyl Ether	ND		5000	5	25000	µg/L	10/6/00	WMS1001006	EPA 8260B
Ethyl-t-butyl Ether	ND		5000	5	25000	µg/L	10/6/00	WMS1001006	EPA 8260B
Methyl-t-butyl Ether	400000		5000	5	25000	µg/L	10/6/00	WMS1001006	EPA 8260B
tert-Amyl Methyl Ether	ND		5000	5	25000	µg/L	10/6/00	WMS1001006	EPA 8260B
tert-Butanol	ND		5000	20	100000	µg/L	10/6/00	WMS1001006	EPA 8260B

Surrogate	Surrogate Recovery	Control Limits (%)
4-Bromofluorobenzene	90	65 - 135
Dibromofluoromethane	90	65 - 135
Toluene-d8	89	65 - 135

DF = Dilution Factor ND = Not Detected DLR = Detection Limit Reported PQL = Practical Quantitation Limit

Analysis performed by Entech Analytical Labs, Inc. (CA ELAP #2346)

Michelle C. Anderson, Laboratory Director

Entech Analytical Labs, Inc.

CA ELAP# 2346

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STANDARD LAB QUALIFIERS (FLAGS)

All Entech lab reports now reference standard lab qualifiers. These qualifiers are noted in the adjacent column to the analytical result and are adapted from the U.S. EPA CLP program. The current qualifier list is as follows:

Qualifier (Flag)	Description
U	Compound was analyzed for but not detected
J	Estimated value for tentatively identified compounds or if result is below PQL but above MDL
N	Presumptive evidence of a compound (for Tentatively Identified Compounds)
B	Analyte is found in the associated Method Blank
E	Compounds whose concentrations exceed the upper level of the calibration range
D	Multiple dilutions reported for analysis; discrepancies between analytes may be due to dilution
X	Results within quantitation range; chromatographic pattern not typical of fuel

Entech Analytical Labs, Inc.

525 Del Rey Avenue, Suite E
Sunnyvale, CA 94086

QUALITY CONTROL RESULTS SUMMARY

Volatile Organic Compounds
Laboratory Control Sample

QC Batch #: WMS1001006
Matrix: Liquid
Units: µg/L

Date analyzed: 10/06/00
Spiked Sample: Blank Spike

PARAMETER	Method #	SA µg/L	SR µg/L	SP µg/L	SP %R	SPD µg/L	SPD %R	RPD	QC LIMITS RPD	QC LIMITS %R
1,1- Dichloroethene	8240/8260	40	ND	47.8	**120**	43.9	**110**	8.5	25	50-150
Benzene	8240/8260	40	ND	49.3	**123**	47.3	**118**	4.1	25	50-150
Trichloroethene	8240/8260	40	ND	52.0	**130**	54.0	**135**	3.8	25	50-150
Toluene	8240/8260	40	ND	48.3	**121**	44.8	**112**	7.5	25	50-150
Chlorobenzene	8240/8260	40	ND	50.3	**126**	47.8	**120**	5.1	25	50-150
Surrogates										
Toluene -d8	8240/8260		91%	93%		91%				65-135
Dibromofluoromethane	8240/8260		90%	92%		93%				65-135
4-Bromofluorobenzene	8240/8260		86%	93%		93%				65-135
MTBE-d3	8240/8260		93%	95%		93%				65-135

Definition of Terms:

na: Not Analyzed in QC batch
SA: Spike Added
SR: Sample Result
RPD(%): Duplicate Analysis - Relative Percent Difference
SP: Spike Result
SP (%R): Spike % Recovery
SPD: Spike Duplicate Result
SPD (%R): Spike Duplicate % Recovery

Entech Analytical Labs, Inc.

525 Del Rey Avenue, Suite E
Sunnyvale, CA 94086

QUALITY CONTROL RESULTS SUMMARY

METHOD: Gas Chromatography
Laboratory Control Sample

QC Batch #: WGC2001005B
Matrix: Water
Units: µg/Liter

Date Analyzed: 10/05/00
Quality Control Sample: Blank Spike

PARAMETER	Method #	MB µg/Liter	SA µg/Liter	SR µg/Liter	SP µg/Liter	**SP % R**	SPD µg/Liter	**SPD %R**	RPD	QC LIMITS RPD	QC LIMITS %R
Benzene	8020	<0.50	4.3	ND	3.9	**90**	3.9	**91**	0.8	25	67-115
Toluene	8020	<0.50	28.0	ND	28	**100**	29	**103**	3.4	25	82-122
Ethyl Benzene	8020	<0.50	6.8	ND	5.4	**79**	5.6	**82**	3.0	25	77-114
Xylenes	8020	<0.50	26.0	ND	29	**111**	29	**113**	1.1	25	86-126
Gasoline	8015	<50.0	484	ND	541	**112**	524	**108**	3.2	25	74-122
aaa-TFT(S.S.)-PID	8020			118%	112%		110%				65-135
aaa-TFT(S.S.)-FID	8015			102%	100%		101%				65-135

Definition of Terms:

- na: Not Analyzed in QC batch
- MB: Method Blank
- SA: Spike Added
- SR: Sample Result
- RPD(%): Duplicate Analysis - Relative Percent Difference
- SP: Spike Result
- SP (%R): Spike % Recovery
- SPD: Spike Duplicate Result
- SPD (%R): Spike % Recovery
- nc: Not Calculated

Entech Analytical Labs, Inc.

525 Del Rey Avenue, Suite E
Sunnyvale, CA 94086

QUALITY CONTROL RESULTS SUMMARY

METHOD: Gas Chromatography
Laboratory Control Spikes

QC Batch #: DW001001
Matrix: Liquid
Units: µg/L

Date analyzed: 10/02/00
Date extracted: 10/02/00
Quality Control Sample: Blank Spike

PARAMETER	Method #	MB µg/L	SA µg/L	SR µg/L	SP µg/L	**SP %R**	SPD µg/L	**SPD %R**	RPD	QC LIMITS RPD	QC LIMITS %R
Diesel	8015M	<50.0	1000	ND	1033	**103**	1028	**103**	0.4	25	61-121
Hexocosane(S.S.)				103%	97%		99%				65-135

Definition of Terms:

- na: Not Analyzed in QC batch
- MB: Method Blank
- SA: Spike Added
- SR: Sample Result
- RPD(%): Duplicate Analysis - Relative Percent Difference
- SP: Spike Result
- SP (%R) Spike % Recovery
- SPD: Spike Duplicate Result
- SPD (%R) Spike Duplicate % Recovery
- NC: Not Calculated

Entech Analytical Labs, Inc.

QUALITY CONTROL RESULTS SUMMARY

METHOD: Gas Chromatography
Laboratory Control Spikes

QC Batch #: DW001001B
Matrix: Liquid
Units: µg/L

Date analyzed: 10/05/00
Date extracted: 10/05/00
Quality Control Sample: Blank Spike

PARAMETER	Method #	MB µg/L	SA µg/L	SR µg/L	SP µg/L	**SP %R**	QC LIMITS RPD	QC LIMITS %R
Diesel*	8015M	<50.0	1000	0.0	916	**92**	N/A	61-121
Hexocosane(S.S.)				106%	98%			65-135

Definition of Terms:

- na: Not Analyzed in QC batch
- MB: Method Blank
- SA: Spike Added
- SR: Sample Result
- RPD(%): Duplicate Analysis - Relative Percent Difference
- SP: Spike Result
- SP (%R) Spike % Recovery
- SPD: Spike Duplicate Result
- SPD (%R) Spike Duplicate % Recovery
- NC: Not Calculated

Entech Analytical Labs, Inc.

525 Del Rey Avenue, Suite E • Sunnyvale, CA 94086 • Telephone: (408) 735-1550 (800) 287-1799 • Fax: (408) 735-1554

Chain of Custody/Analysis Work Order

Client: Clearwater Group
Address: 520 3rd St, Ste 104
Oakland, CA 94607
Contact: Judi Fox
Telephone #: (510) 893-5160
Date Received:
Turn Around: Standard

Project ID: ZP046A
Purchase Order #:

Sampler/Company: Telephone #:

Special Instructions/Comments
Note: 7 oxys, 1,2 DCA, EDB & BTEX by 8260. 7 oxys = 0xys + ethanol, methanol per client. mg 9/28

LAB USE ONLY

Samples arrived chilled and intact:
Yes No
Notes:

08 SEP 27 12

Lab #	Sample ID	Grab/ Composite	Matrix	Date Collected	Time Collected	Pres.	Sample Container	Requested Analysis: TPH-P 4015	TPH-D 4015	8260 (see note)
22470-001	MW-1-10'	Grab	Soil	9-26-00	1200	ICE	Brass Tube	X	X	X
-002	MW-2-10'	↓	↓	↓	1400	↓	↓	X	X	X
-003	MW-3-10'	↓	↓	↓	0930	↓	↓	X	X	X

Relinq. By:	Received By:	Date	Time
[signature]	595 MIKE - WORLD COURIER	09270	0945
595 MIKE - World Courier	[signature]	9/27/00	1208

Entech Analytical Labs, Inc.

525 Del Rey, Suite E (408) 735-1550
Sunnyvale, CA 94085 (408) 735-1554 - Fax

Chain of Custody / Analysis Request

Send Report to: Judi Fox	Phone No.: (510) 893-5160	Purchase Order No.: —	Send Invoice to (if Different): / Phone:
Client: Clearwater Group	Fax No.: (510) 893-5947	Project Number: ZP046	Company:
Mailing Address: 520 3rd St., Ste. 104		Project Name: Eagle Gas	Billing Address (if Different):
City: Oakland	State: CA / Zip: 94607	Project Location: Oakland	City: / State: / Zip:

Sampler: Loren Taylor

Date: 10-3-00

Turn Around Time: Same Day ☐ 24 Hour ☐ 48 Hour ☐ 72 Hour ☐ Standard ☒

Order ID: 22562

Client ID	Laboratory No.	Sampling Date	Sampling Time	Matrix	Composite	Grab	Containers	Preservative	Volatile Organics by GCMS: 624 ☐ 8240 ☐ Freon 113 ☐	Fuel Oxygenates by 8260B ☒ MTBE by 8260B ☒ 8260B ☐	Pesticides-8081 ☐ PCBs - 8082 ☐	Halogenated or Aromatic Volatiles: 601/8010 ☐ 602/8020 ☐ F113 ☐	TPH as Gas/BTEX ☒ TPH as Gas/BTEX/MTBE ☐ 8021 ☐ BTEX 8015	Base/Neutral/Acid Organics 8270 ☐ 8270-SIMS ☐	Fuel Scan	Diesel w/ Si-gel Standard Cleanup ☐ w/ Si-gel Column Cleanup ☐	TPHd (8015)	1,2 DCA, EDB (8260)	TRPH ☐ Oil & Grease ☐	pH, EC, SO4, F, TDS, TSS, Cyanide Alk, NO3, NO2 (Please Circle)	NH3-N, COD, TKN, Total P, TOC NO3/NO2, Phenols (Please Circle)	THM (502.2)	Metals - Circle Below Total ☐ Dissolved ☐		Remarks
MW-1	22562-001	10/3/00	1130	W			7	HCl/Ice		X			X				x	x							
MW-2	↓ 002	↓	1145	↓			5	↓		X			X				x	x							

00 OCT 3 15:

Relinquished by:	Received by:	Date:	Time:
[signature]	[signature] #1013	10/3/00	15:15
	[signature]	10/3/00	1625

Special Instructions or Comments ☐ NPDES Detection Limits

MW-2 has limited volume (only 4x VOA)

Metals: Al, As, Sb, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Mo, Ni, K, Si, Ag, Na, Se, Sr, Tl, Sn, Ti, V, Zn, W : CAM-17 ☐ Plating ☐ PPM-13 ☐ LUFT-5 ☐

Entech Analytical Labs, Inc.

CA ELAP# 2346

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October 23, 2000

MW3 : HVO

Judi Fox
Clearwater Group, Inc.
520 Third Street, Suite 104
Oakland, CA 94607

Order:	22744	**Date Collected:**	10/10/00
Project Name:	Eagle Gas	**Date Received:**	10/13/00
Project Number:	ZP046A	**P.O. Number:**	
Project Notes:			

On October 13, 2000, sample was received under documentented chain of custody. Results for the following analyses are attached:

Matrix	Test	Method
Liquid	Gas/BTEX	EPA 8015 MOD. (Purgeable)
		EPA 8020
	TPH as Diesel	EPA 8015 MOD. (Extractable)

Chemical analysis of these samples has been completed. Summaries of the data are contained on the following pages. USEPA protocols for sample storage and preservation were followed.

Entech Analytical Labs, Inc. is certified by the State of California (#2346). If you have any questions regarding procedures or results, please call me at 408-735-1550.

Sincerely,

Michelle L. Anderson
Lab Director

Entech Analytical Labs, Inc.

CA ELAP# 2346

525 Del Rey Avenue, Suite E • Sunnyvale, CA 94085 • (408) 735-1550 • Fax (408) 735-1554

Clearwater Group, Inc.
520 Third Street, Suite 104
Oakland, CA 94607
Attn: Judi Fox

Date: 10/23/00
Date Received: 10/13/00
Project Name: Eagle Gas
Project Number: ZP046A
P.O. Number:
Sampled By: Client

Certified Analytical Report

Order ID: 22744 **Lab Sample ID:** 22744-001 **Client Sample ID:** MW-3

Sample Time: 1:20 PM **Sample Date:** 10/10/00 **Matrix:** Liquid

Parameter	Result	Flag	DF	PQL	DLR	Units	Extraction Date	Analysis Date	QC Batch ID	Method
TPH as Diesel	120	x	1	91	91	µg/L	10/16/00	10/17/00	DW001003	EPA 8015 MOD. (Extractable)

Surrogate	Surrogate Recovery	Control Limits (%)
Hexacosane	103	65 - 135

Comment: Reporting limit raised due to limited sample volume

DF = Dilution Factor ND = Not Detected DLR = Detection Limit Reported PQL = Practical Quantitation Limit

Analysis performed by Entech Analytical Labs, Inc. (CA ELAP #2346)

Michelle L. Anderson, Laboratory Director

Environmental Analysis Since 1983

Entech Analytical Labs, Inc.

CA ELAP# 2346

525 Del Rey Avenue, Suite E • Sunnyvale, CA 94085 • (408) 735-1550 • Fax (408) 735-1554

Clearwater Group, Inc.
520 Third Street, Suite 104
Oakland, CA 94607
Attn: Judi Fox

Date: 10/23/00
Date Received: 10/13/00
Project Name: Eagle Gas
Project Number: ZP046A
P.O. Number:
Sampled By: Client

Certified Analytical Report

Order ID: 22744 **Lab Sample ID:** 22744-001 **Client Sample ID:** MW-3

Sample Time: 1:20 PM **Sample Date:** 10/10/00 **Matrix:** Liquid

Parameter	Result	Flag	DF	PQL	DLR	Units	Extraction Date	Analysis Date	QC Batch ID	Method
Benzene	ND		1000	0.5	500	µg/L	N/A	10/19/00	WGC2001018	EPA 8020
Toluene	ND		1000	0.5	500	µg/L	N/A	10/19/00	WGC2001018	EPA 8020
Ethyl Benzene	ND		1000	0.5	500	µg/L	N/A	10/19/00	WGC2001018	EPA 8020
Xylenes, Total	ND		1000	0.5	500	µg/L	N/A	10/19/00	WGC2001018	EPA 8020

Surrogate	Surrogate Recovery	Control Limits (%)
aaa-Trifluorotoluene	101	65 - 135

Parameter	Result	Flag	DF	PQL	DLR	Units	Extraction Date	Analysis Date	QC Batch ID	Method
TPH as Gasoline	83000	x	1000	50	50000	µg/L	N/A	10/19/00	WGC2001018	EPA 8015 MOD. (Purgeable)

Surrogate	Surrogate Recovery	Control Limits (%)
aaa-Trifluorotoluene	116	65 - 135

DF = Dilution Factor ND = Not Detected DLR = Detection Limit Reported PQL = Practical Quantitation Limit

Analysis performed by Entech Analytical Labs, Inc. (CA ELAP #2346)

Michelle L. Anderson, Laboratory Director

Environmental Analysis Since 1983

Entech Analytical Labs, Inc.

3334 Victor Court • Santa Clara, CA 95054 • (408) 588-0200 • Fax (408) 588-0201

October 26, 2000

Judi Fox
Clearwater Group, Inc.
520 Third Street, Suite 104
Oakland, CA 94607

Order: 22744
Project Name: Eagle Gas
Project Number: ZP046A
Project Notes:

Date Collected: 10/10/00
Date Received: 10/13/00
P.O. Number:

On October 13, 2000, sample was received under documentented chain of custody. Results for the following analyses are attached:

Matrix	Test	Method
Liquid	1,2 DCA + EDB by EPA 8260	EPA 8260B
	Oxygenates by EPA 8260B	EPA 8260B

Chemical analysis of these samples has been completed. Summaries of the data are contained on the following pages. USEPA protocols for sample storage and preservation were followed.

Entech Analytical Labs, Inc. is certified by the State of California (#2346). If you have any questions regarding procedures or results, please call me at 408-735-1550.

Sincerely,

Michelle L. Anderson
Lab Director

Entech Analytical Labs, Inc.

3334 Victor Court • Santa Clara, CA 95054 • (408) 588-0200 • Fax (408) 588-0201

Clearwater Group, Inc.
520 Third Street, Suite 104
Oakland, CA 94607
Attn: Judi Fox

Date: 10/26/00
Date Received: 10/13/00
Project Name: Eagle Gas
Project Number: ZP046A
P.O. Number:
Sampled By: Client

Certified Analytical Report

Order ID: 22744 **Lab Sample ID:** 22744-001 **Client Sample ID:** MW-3

Sample Time: 1:20 PM **Sample Date:** 10/10/00 **Matrix:** Liquid

Parameter	Result	Flag	DF	PQL	DLR	Units	Analysis Date	QC Batch ID	Method
1,2-Dibromoethane (EDB)	ND		500	5	2500	µg/L	10/19/00	WMS1001018	EPA 8260B
1,2-Dichloroethane	ND		500	5	2500	µg/L	10/19/00	WMS1001018	EPA 8260B
Diisopropyl Ether	ND		500	5	2500	µg/L	10/19/00	WMS1001018	EPA 8260B
Ethyl-t-butyl Ether	ND		500	5	2500	µg/L	10/19/00	WMS1001018	EPA 8260B
Methyl-t-butyl Ether	33000		500	5	2500	µg/L	10/19/00	WMS1001018	EPA 8260B
tert-Amyl Methyl Ether	ND		500	5	2500	µg/L	10/19/00	WMS1001018	EPA 8260B
tert-Butanol	ND		500	20	10000	µg/L	10/19/00	WMS1001018	EPA 8260B

Surrogate	Surrogate Recovery	Control Limits (%)
4-Bromofluorobenzene	97	65 - 135
Dibromofluoromethane	86	65 - 135
Toluene-d8	93	65 - 135

DF = Dilution Factor ND = Not Detected DLR = Detection Limit Reported PQL = Practical Quantitation Limit

Analysis performed by Entech Analytical Labs, Inc. (CA ELAP #2346)

Michelle L. Anderson, Laboratory Director

Environmental Analysis Since 1983

Entech Analytical Labs, Inc.

525 Del Rey, Suite E (408) 735-1550
Sunnyvale, CA 94085 (408) 735-1554 - Fax

Chain of Custody / Analysis Request

Send Report to: J. Fox	Phone No.: 510.893.5160	Purchase Order No.:	Send Invoice to (if Different)	Phone	
Client: F. Naz - Eagle Gas	Fax No.: 510.893 5947	Project Number: 2P046A	Company		
Mailing Address: 520 Third St. Ste 104		Project Name: Eagle Gas	Billing Address (if Different)		
City: Oakland	State: CA Zip: 94607	Project Location: 4301 San Leandro	City	State	Zip

Sampler: SR

Date: 10/13/00

Turn Around Time: Same Day ☐ 24 Hour ☐ 48 Hour ☐ 72 Hour ☐ Standard ☑

Order ID: EAGLE GAS 2P046

Client ID	Laboratory No.	Sampling Date	Sampling Time	Matrix	Composite	Grab	Containers	Preservative
MW-3		10/10/00	13:20	W				
MW-3		10/10/00	13:10	W				

Preservative / Analysis columns: Volatile Organics by GC/MS: Freon 113 ☐ 8240 ☐ 8260B ☐; Fuel Oxygenates by 8260B ☐; MTBE by 8260B ☐; Pesticides-8081 ☐; PCBs - 8082 ☐; Halogenated or Aromatic Volatiles: P113 ☐ 8021 ☐ 601/8010 ☐ 602/8020 ☐; TPH as Gas/BTEX ☐ 8015 ☐; TPH as Gas/BTEX/MTBE ☐; Base/Neutral/Acid Organics 8270 ☐ 8270-SIMS ☐; Fuel Scan ☐; Diesel 8015 w/ Silgel Standard Cleanup ☐ w/ Silgel Column Cleanup ☐; 12 LUFT 5 (Gas) + EDB (Gas); TRPH ☐ Oil & Grease ☐; pH, EC, SO4, F, TDS, TSS, Cyanide; Alk, HCO3, NO2, (Please Circle); NH3-N, COD, TKN, Total P, TOC; NO3/NO2, Phenols (Please Circle); THM (502.2); Metals - Circle Below ☐ Total ☐ Dissolved ☐

Client ID	Laboratory No.	Date	Time	Matrix	Composite	Grab	Containers	Preservative	Remarks
MW-3		10/10/00	13:20	W				X 1 X	22744-001 low volume
MW-3		10/10/00	13:10	W					

Relinquished by:	Received by:	Date:	Time:
	SINGH	10/13	12:50
Relinquished by: Singh	Received by: Mona Gandhi	Date: 10/13	Time: 2:00
Relinquished by:	Received by:	Date:	Time:
Relinquished by:	Received by:	Date:	Time:

Special Instructions or Comments

If you sub this out pls. call us - we may opt for a different lab suite to keep costs down.

☐ NPDES Detection Limits

Metals: Al, As, Sb, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Mo, Ni, K, Si, Ag, Na, Se, Sr, Tl, Sn, Ti, V, Zn, W : CAM-17 ☐ Plating ☐ PPM-13 ☐ LUFT-5 ☐

Oct-26-2000 3:47PM

No.0030 P. 7/7