WP_R_2002-8-27

CLEARWATER GROUP

August 27, 2002

AUG 2 9 2002

Mr. Scott O. Seery, CHMM
Alameda County Health Care Services Agency
Environmental Health Service, Environmental Protection
1131 Harbor Bay Parkway, Suite 250
Alameda, CA 94502-6577

Re: **Workplan for Preliminary Site Assessment**
Sunol Tree Gas
3004 Andrade Road, Sunol, California 94586
Project # CB021C

Dear Mr. Seery:

Clearwater Group, Inc. (Clearwater) is pleased to submit this workplan to the Alameda County Health Care Services Agency (ACHCSA) regarding the upcoming activities to initially assess the extent of the petroleum release detected at Sunol Tree Gas, 3004 Andrade Road in Sunol, California. As you requested I have included a revised top sheet to indicate that this work plan is not in draft form.

Sincerely,

Brian Pierskalla
Project Manger
Clearwater Group, Inc.

229 Tewksbury Avenue · Point Richmond, California · 94801 · (510) 307-9943 · FAX (510) 232-2823

#02448

CLEARWATER GROUP

August 23, 2002

AUG 29 2002

Mr. Scott O. Seery, CHMM
Hazardous Materials Specialist
Alameda County Health Care Services Agency
Environmental Health Service, Environmental Protection
1131 Harbor Bay Parkway, Suite 250
Alameda, CA 94502-6577

Re: **Workplan for Preliminary Site Assessment**
Sunol Tree Gas
3004 Andrade Road, Sunol, California 94586
Project # CB021C

Dear Mr. Seery:

Clearwater Group, Inc. (Clearwater) is pleased to submit this workplan to the Alameda County Health Care Services Agency (ACHCSA) regarding the upcoming activities to initially assess the extent of the petroleum release detected at Sunol Tree Gas, 3004 Andrade Road in Sunol, California (site). Mr. Murray Kelsoe, subject property owner, has retained Clearwater to develop and submit this workplan.

BACKGROUND

A letter from Mr. Scott O. Seery to Mr. Murray Kelsoe, dated June 27, 2002 and received by Clearwater on August 21, 2002 from Mr. Murray, stated that "it has been reported that some evidence of an unauthorized (petroleum) release was identified during tank removals in the form of stained soil/backfill that also exhibited hydrocarbon odor." Please see Appendix A, which provides revised tables, figures, and soil boring logs from the Environmental Bio-Systems, Inc. (EBS) "UST (Underground Storage Tank) Removal and Interim Soil and Groundwater Remediation Report," Sunol Tree Service, May 9, 2002. Refer to the EBS report for further information. Eight temporary aboveground water storage tanks for groundwater extracted from the UST excavation pits.

SITE HISTORY

Five 15,000-gallon gasoline USTs of fiberglass and associated piping were removed from the site and disposed of at Ecology Control Industries (ECI) in Richmond, California, on April 12, 2002. The fuel dispensers will be recycled by the property owner. EBS observed the tanks to in good condition with no observable damage on their outer surfaces. EBS noted staining and hydrocarbon odor in the excavated stockpiled soil.

229 Tewksbury Avenue · Point Richmond, California · 94801 · (510) 307-9943 · FAX (510) 232-2823

Superior Underground Tank Service (SUTS) of San Ramon, California, performed an Interim Soil Remediation was performed by SUTS. Approximately 3,500 cubic yards of soil were excavated from above and around the USTs. Excavated overburden soil was transported adjacent to the existing building and placed on visqueen plastic. The stockpiles were also covered with visqueen plastic to prevent run-off and degassing of the soil.

In addition, SUTS performed an Interim Groundwater Remediation. Approximately 176,000 gallons of hydrocarbon- and methyl tert-butyl ether- (MTBE) impacted water was pumped from the excavation and stored on site in eight 21,000-gallon storage tanks, pending proper disposal.

Soil samples were analyzed for total petroleum hydrocarbons as diesel (TPHd); total petroleum hydrocarbons as gasoline (TPHg); benzene, toluene, ethylbenzene and total xylenes (BTEX); and MTBE. The highest soil concentrations in the tank pit were: 9.5 milligrams per kilogram (mg/kg) TPHg; 2.6 mg/kg TPHd, 0.040 mg/kg xylenes in S5, and 0.025 mg/kg MTBE in S6. Most of the samples were below laboratory reporting levels and no benzene, toluene or ethylbenzene was detected in the ten UST soil samples collected April 2, 2002. The grab groundwater sample (WS-1) collected from the pit contained 290 micrograms per liter (ug/L) TPHd, 1.5 ug/L of toluene, 2.7 ug/L total xylenes, and 84 ug/L of MTBE.

Dispenser, pipe trench, and soil stockpile samples were mostly below laboratory reporting levels for the target chemicals. A few sampling locations had elevated levels of contaminants. The highest readings were 150 mg/kg for TPHg (PT-2), 1,300 mg/kg TPHd (DSP7), 87 mg/kg total petroleum hydrocarbons as motor oil (TPHmo, STP-2), and 5.9 mg/kg MTBE (PT2). The soil sample from pit trenching area PT1 had 80 mg/L of TPHd. Lead was detected at background levels. Minor amounts of the toluene, ethylbenzene, and total xylenes were detected. No benzene was detected in the dispenser, pipe trench or soil stockpile samples.

In addition, soil samples SP-1 and SP-2 collected from Geoprobes showed low levels of TPHd as 8.4 to 12 mg/kg TPHd. Water samples collected from the temporary water storage tank, which store removed groundwater, contained 73 to 190 ug/L MTBE and low levels of TPHg as 82 to 170 ug/L TPHg.

The pit was backfilled with clean fill and compacted to near surface. The area of the excavation will be completed by SUTS within building code guidelines.

SITE DESCRIPTION

The site contains a single one-story building used as a service station and mini-mart. It is located at 3004 Andrade Road, in the City of Sunol, County of Alameda, California.

The site is bounded on the west by Andrade Road. A pasture lies west of Andrade Road. A golf driving range lies to the south. Adjacent land to the north and east is used for horse trailers and general outdoor storage. A natural drainage lies about 50 feet south of

the site. The northeast-southwest trending Interstate Highway 680 lies further northwest of the site by about 200 feet.

Onsite soils consist of brown silty clay with find sand, according to soil borings for SP-1 and SP-2 (See Appendix A). Groundwater is estimated to be 15 to 20 feet below ground surface (bgs).

APPROACH: Clearwater proposes the following phased approach to initially assess the extent of the petroleum release at the subject property, as defined in tasks below.

TASK 1: WORKPLAN FOR TASKS 1, 2, and 3

TASK 2: DISPOSAL OF STOCKPILED SOILS AND STORED GROUNDWATER IN ABOVEGROUND TANKS

TASK 3: SUBSURFACE INVESTIGATION

PROJECT DETAILS:

TASK 1: WORKPLAN PREPARATION

Clearwater Group has prepared this workplan for the overall project scope.

TASK 1 Schedule: Approximately 5 working days

TASK 2: DISPOSAL OF STOCKPILED SOILS AND STORED GROUNDWATER IN ABOVEGROUND TANKS

Clearwater will compare the analytical results for stockpiled soils and stored groundwater in aboveground tanks to California state standards to determine if the soils and groundwater can be disposed of as non-hazardous waste or as hazardous waste. Based on this comparison, Clearwater will oversee the appropriate disposal using a California-licensed contractor.

TASK 2 Schedule: Approximately 5 working days

TASK 3: SUBSURFACE INVESTIGATION

To initially assess subsurface conditions, Clearwater will drill five soil borings, in native soil if feasible, to confirm or negate previous sampling results (See Appendix A) in areas where previous results indicate the presence of petroleum products significantly above general cleanup goals. These initial borings would be advanced in the vicinity of Diesel Dispenser (DSP7), pipe trenches PT1 and PT2, soil sample location S6 (south end of a newly installed UST tank 3), and tank pit at WS-1 (north end of newly installed UST tank 4) to 15- to 20 feet bgs. Please see Figure 1 for a site plan showing the location of proposed soil borings.

Clearwater will collect soil samples in each boring from the near surface and every 3 to 5 feet or change in soil type for potential analysis. In addition, Clearwater will collect a grab groundwater sample at these locations for analysis. A California State Certified Laboratory will analyze soil and groundwater samples for TPHd, TPHg, TPHmo, BTEX, and MTBE. The laboratory would analyze the soil samples by U.S. EPA Method 015M and the water samples by U.S. EPA Method 8260B.

Clearwater will screen soil samples for organic vapors using a photoionization detector (PID) to assist in the characterization of the vadose zone.

Soil and groundwater samples will be stored on ice and transported under chain-of-custody control to a California State Certified Laboratory.

After sampling, the soil borings will be grouted to the surface with neat cement.

A geologist under the direct supervision of a California Registered Geologist will log the soil borings and soil samples using the Unified Soils Classification System (ASTM D248890). The site geologist will supervise the drilling activities, collect soil and groundwater samples and document field activities. Clearwater's standard operating procedures for direct-push drilling technology (DPT) soil and groundwater sampling are provided in Appendix B. Drilling and sampling equipment will be decontaminated by steam cleaning before and after drilling as well as between borings. Decontamination water and soil cuttings will be stored on-site in labeled DOT-approved containers, pending analytical results.

In addition, Clearwater will review, and submit to the ACHCSA, well completion data for the onsite water-supply well, if available. Potential sources of well completion data include municipal, county, state, driller, and pump service company records.

If the results of soil and groundwater samples analysis are within acceptable limits, Clearwater anticipates no further work will be necessary. If contaminant concentrations in soil and groundwater samples are above acceptable limits, Clearwater will propose either additional delineation, if needed, or a remedial action plan, if appropriate.

After the completion of fieldwork and review of the analytical results, Clearwater will prepare a written report describing the characterization and provide recommendations for further activities, as appropriate, to the ACHCSA.

Permitting

Clearwater will obtain a drilling permit application from ACHCSA with detailed locations prior to commencement of Task 3 work. Underground Service Alert (USA) will locate underground utilities prior to drilling. Clearwater may also provide additional limited magnetic and induction line locating services to aid in locating other buried pipes and utilities prior to drilling.

Site Safety Plan

Clearwater will prepare a Job Hazard Analysis (JHA) and Site Safety Plan (SSP) for this work to be used onsite during field activities. All persons working in the exclusion zone and the contamination reduction zone will be familiar with the safety documents and will be required to comply with its provisions.

TASK 3 Schedule: Approximately 2 to 3 working weeks

Please call Mr. Brian Pierskalla at (510) 307-9942 if you have any questions.

Sincerely,
Clearwater Group

Brian Pierskalla
Project Manager

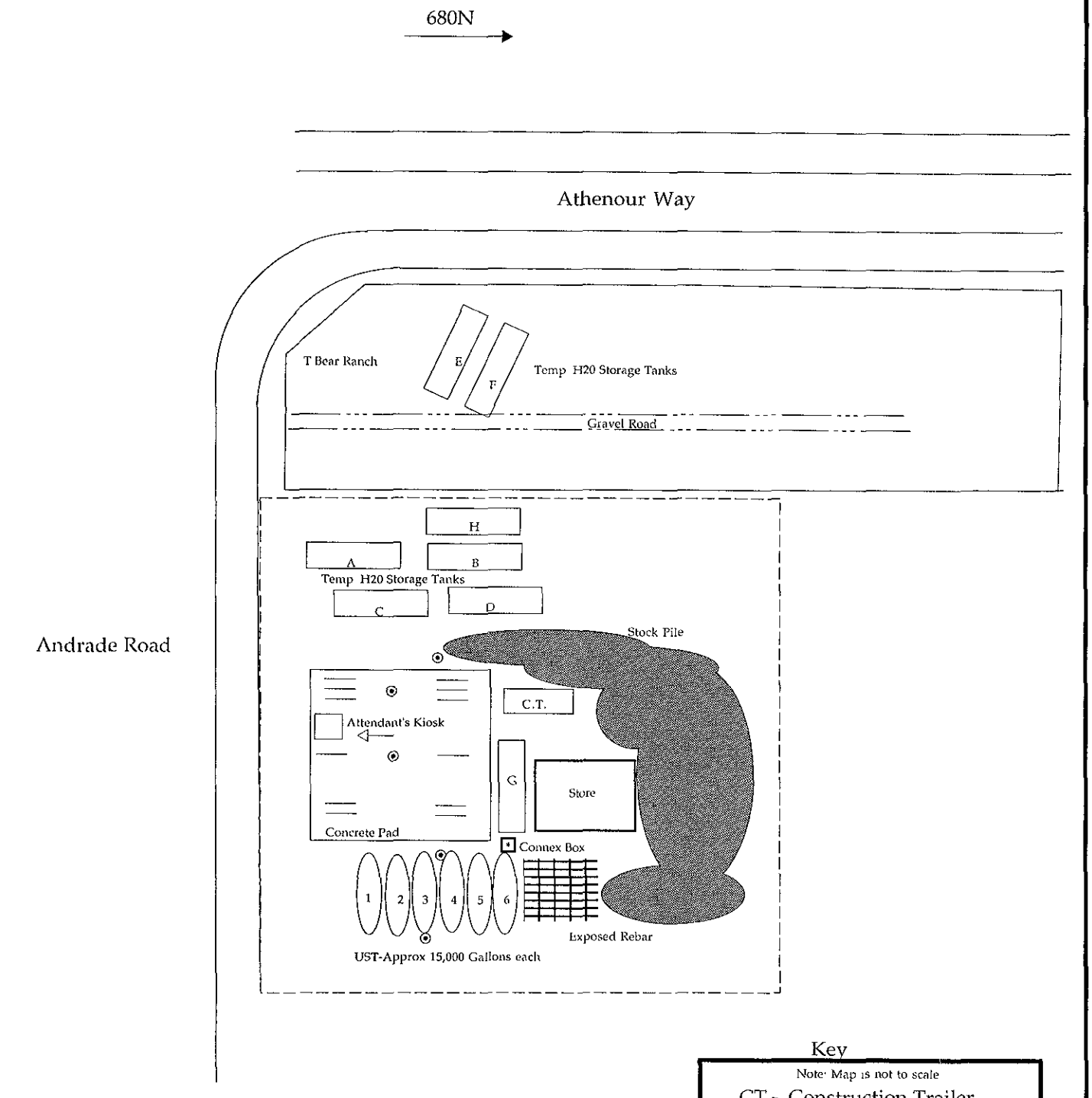
Barney P. Popkin, California Registered Geologist No. 5585, CHMM

Figure 1. Site Plan Showing Proposed Soil Boring Locations
Appendix A. Boring logs, revised tables, and figures from EBS report
Appendix B. Direct-Push Drilling Investigation Procedures

Cc: Mr. Murray Kelsoe, Sunol Tree Gas, 3004 Andrade Road, Sunol, CA 94586
Chuck Headlee, RWQCB
Shari Knieriem, SWRCB UST Fund
Robert Weston, ACDEH

FIGURES

Site Plan Showing Proposed Soil Boring Locations



SITE PLAN

Sunol Tree Gas
3004 Andrade Road
Sunol, CA

CLEARWATER GROUP, INC.

Project No.	Report Date	Figure
CB021C	**8/23/02**	**1.**

APPENDIX A

Soil Boring Log, SP-1
Soil Boring Log, SP-2
Figure 1, Site Location
Figure 2, Site Plan
Figure 3, Site Sampling Plan
Figure 4, Soil Stockpile Sampling Map
Table 1, Summary of Laboratory Analyses, Underground Storage Tank Samples, revised
Table 2, Summary of Laboratory Analyses, Soil Samples from Dispenser and Piping Areas, and Soil Stockpiles, revised
Table 3, Summary of Water Sampling Results from Temporary Water Storage Tanks, revised

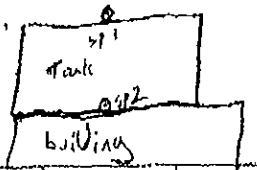
CP004A

SOIL BORING AND WELL CONSTRUCTION LOG:

Project No. EBS-0100-SOTS

Sheet 1 of 2

FIELD LOCATION OF BORING: SP-1



CLIENT/LOCATION: Murray Kehoe 3004 Windcrest, Sunol, Ca	PLANNED USE: Soil Sampling	BORING DEPTH: 16.5 ft	BORING/WELL NO.: SP-1
DRILLING CONTRACTOR: Fast-Tek	DRILL RIG TYPE: Power Probe	WELL DEPTH:	BORING DIAMETER: 2"
DRILL RIG OPERATOR: Abdullah	WELL MATERIAL:	SCREEN SLOT SIZE:	FILTER PACK:
WELL SEAL:			DRILLING DATE: 3-27-02

SAMPLING METHOD: 2' Tube Sampler

MONITORING INSTRUMENT:

FIRST ENCOUNTERED WATER DEPTH

STATIC WATER DEPTH - DATE:

WELL CONSTRUCTION DETAIL	SAMPLING: BLOWS/6" INTERVAL	SAMPLING: INTERVAL	SAMPLING: RECOVERY	SAMPLING: ANALYTICAL	WATER LEVEL	DEPTH (FEET)	OVM READING (PPM)	ESTIMATED PERCENT: GRAVEL	ESTIMATED PERCENT: SAND	ESTIMATED PERCENT: FINES	GRAPHIC LOG
						1–30					

Silty CLAY, brown, hard moderate plasticity with small to medium gravel

FINISH: 9/6

DRILLING START:

LOGGED BY: Scott Robertson

APPROVED BY:

Jim Jacobs, President
Environmental Bio-Systems, Inc.
707 View Point Road
Mill Valley, CA 94941

8/27/02

C8004A

SOIL BORING AND WELL CONSTRUCTION LOG: SP-2

Project No. EBS-0100-SUTS

Sheet 2 of 2

FIELD LOCATION OF BORING:

Tank

SP-2

building

CLIENT/LOCATION: 3004 Anderson Road, Sunol, Ca	PLANNED USE: Soil sampling	BORING DEPTH: 16.5ft	BORING/WELL NO.: SP-2
DRILLING CONTRACTOR: Fast-Tek	DRILL RIG TYPE: power probe	WELL DEPTH:	BORING DIAMETER: 2"
DRILL RIG OPERATOR: Dallal	WELL MATERIAL:	SCREEN SLOT SIZE:	FILTER PACK:
WELL SEAL			DRILLING DATE: 3-22-02

SAMPLING METHOD: 2' tube sampler

MONITORING INSTRUMENT:

FIRST ENCOUNTERED WATER DEPTH:

STATIC WATER DEPTH - DATE:

FINISH:

DRILLING START:

LOGGED BY: Scott Rabe/Ba

APPROVED BY:

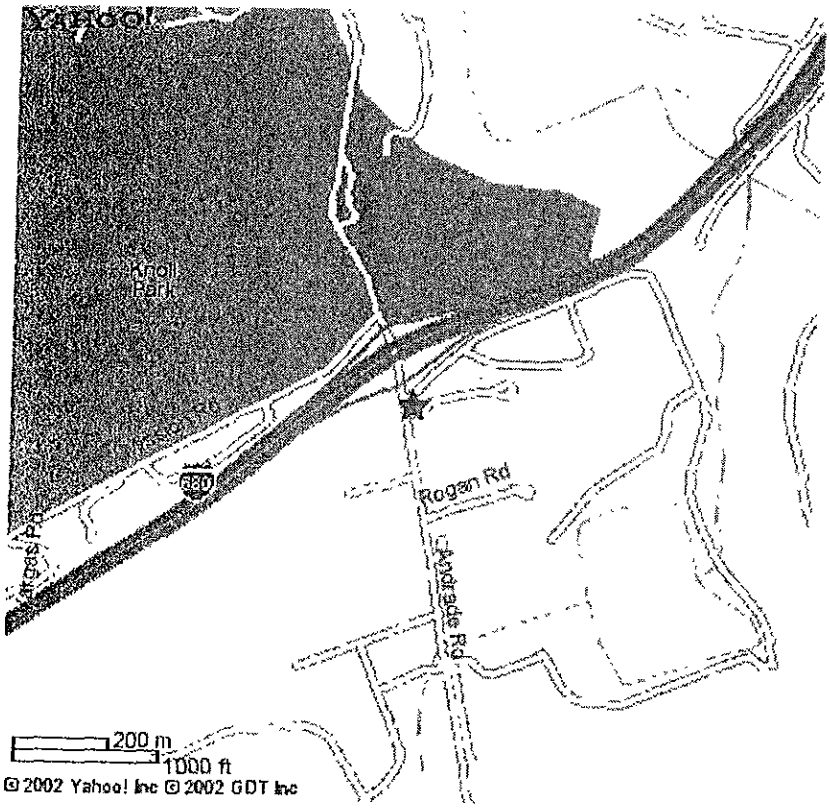
WELL CONSTRUCTION DETAIL	SAMPLING: BLOWS/6" INTERVAL	SAMPLING: INTERVAL	SAMPLING: RECOVERY	SAMPLING: ANALYTICAL	WATER LEVEL	DEPTH (FEET)	OVM READING (PPM)	ESTIMATED PERCENT: GRAVEL	ESTIMATED PERCENT: SAND	ESTIMATED PERCENT: FINES	GRAPHIC LOG
						1–30					

Silty CLAY, brown, low to moderate plasticity, some fine sand

Jim Jacobs, President
Environmental Bio-Systems, Inc.
707 View Point Road
Mill Valley, CA 94941

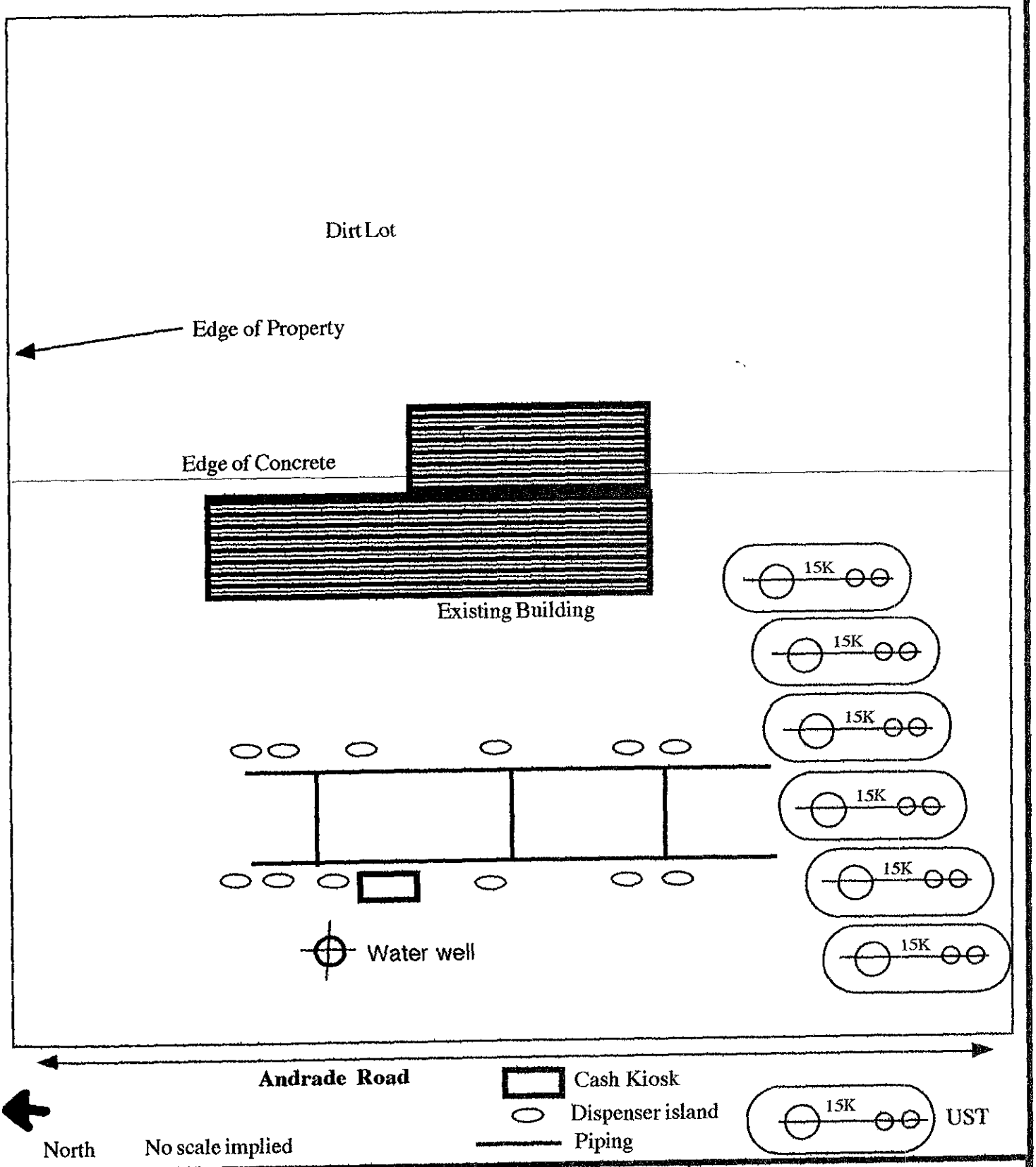
8/27/02

3004 Andrade Rd, Sunol, CA 94586-9453



North

Environmental Bio-Systems, Inc 707 View Point Road Mill Valley, CA 94941 Tel: 415-381-5195 Fax: 415-381-5816	Sunol Tree Service 3004 Andrade Road Sunol, California		**FIGURE 1 - SITE LOCATION**
	JAJ	050902	EBS Project # 586

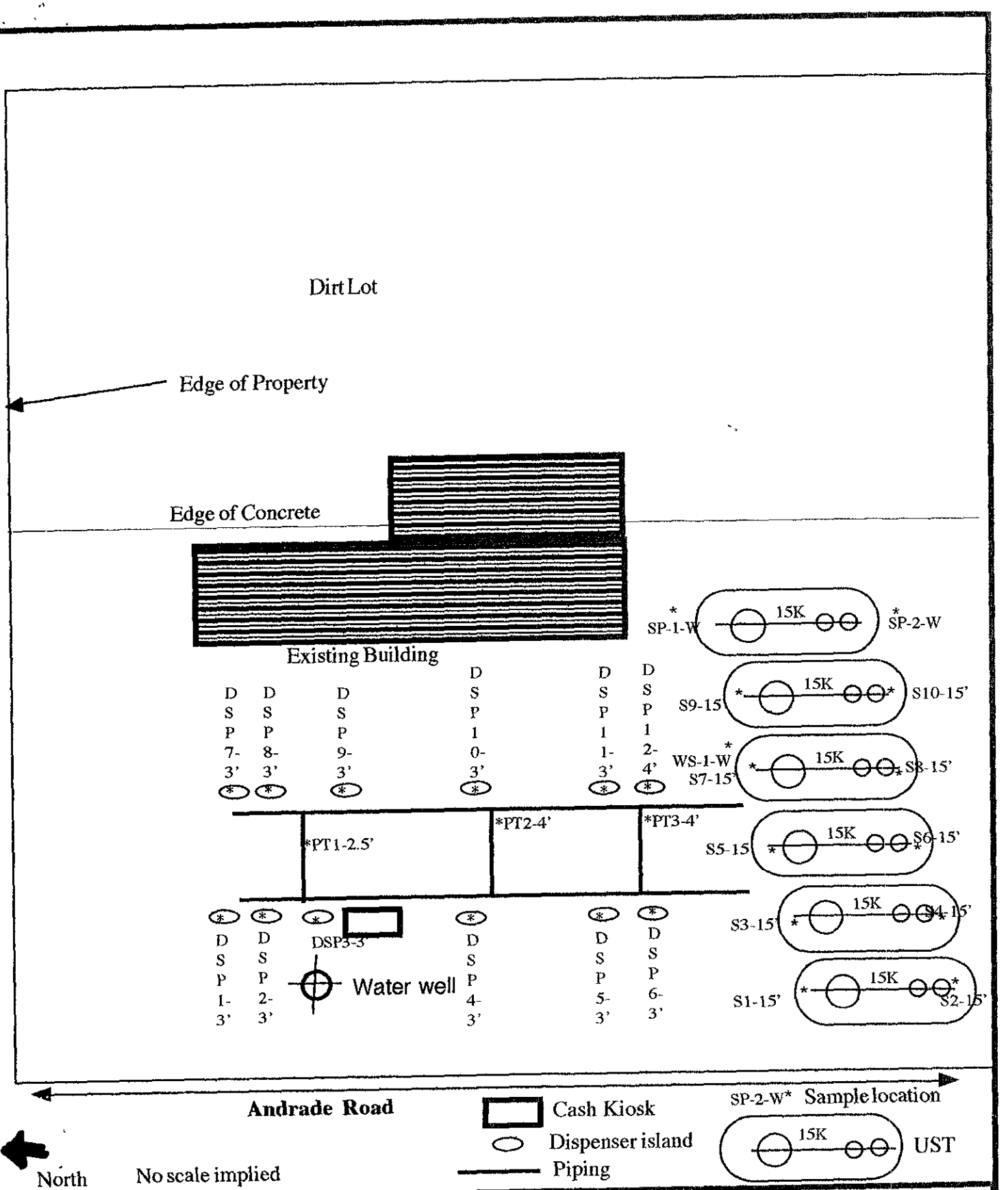


Environmental Bio-Systems, Inc
707 View Point Road
Mill Valley, CA 94941
Tel: 415-381-5195
Fax: 415-381-5816

Sunol Tree Service
3004 Andrade Road
Sunol, California

FIGURE 2 - SITE PLAN

JAJ	050902		EBS Project # 586

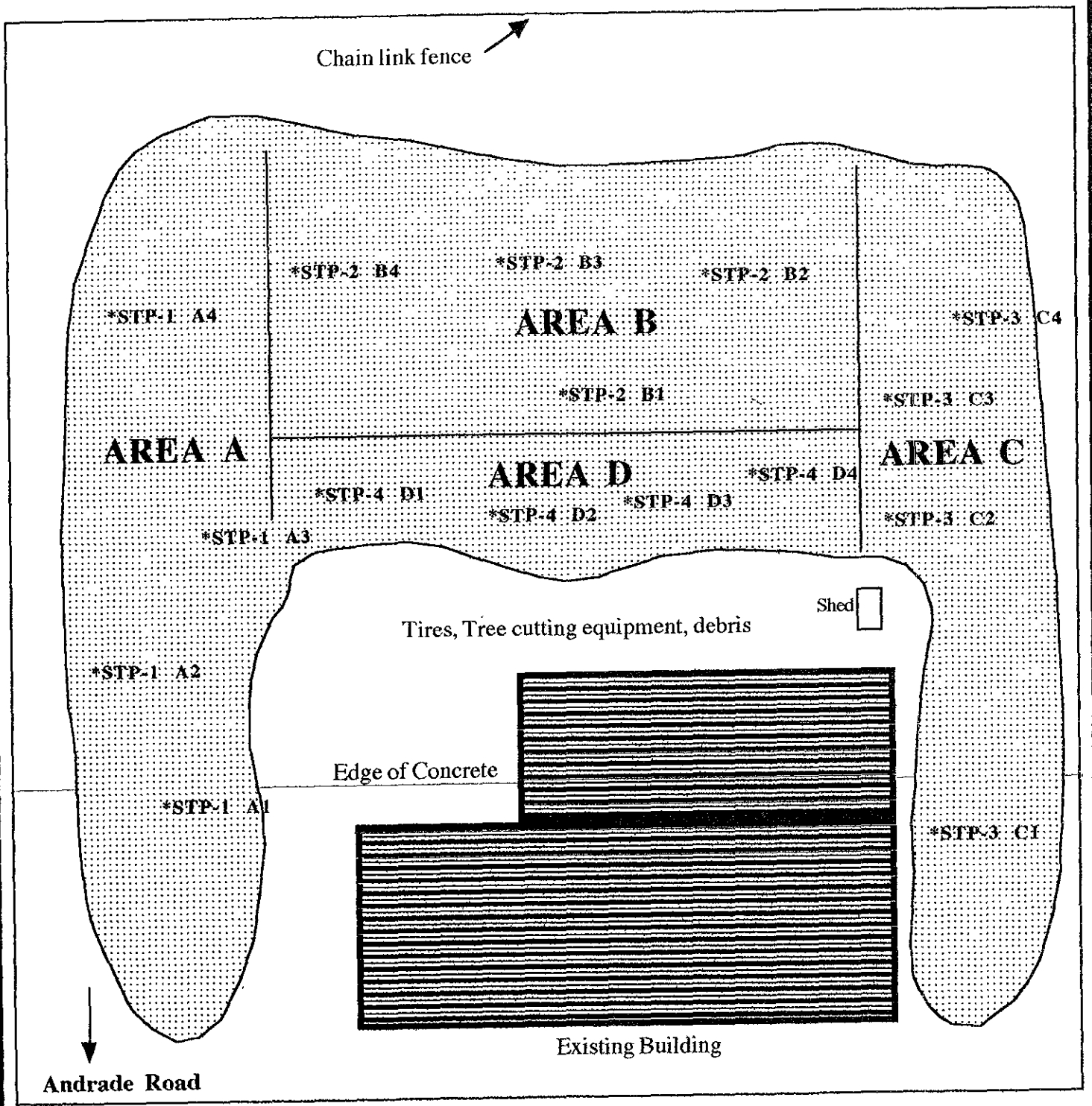


Environmental Bio-Systems, Inc
707 View Point Road
Mill Valley, CA 94941
Tel: 415-381-5195
Fax: 415-381-5816

Sunol Tree Service
3004 Andrade Road
Sunol, California

FIGURE 3 - SITE SAMPLING MAP

JAJ	050902		EBS Project # 586



Environmental Bio-Systems, Inc
707 View Point Road
Mill Valley, CA 94941
Tel: 415-381-5195
Fax: 415-381-5816

Sunol Tree Service
3004 Andrade Road
Sunol, California

FIGURE 4 - SOIL STOCKPILE SAMPLING MAP

JAJ	050902		EBS Project # 586

TABLE 1
SUMMARY OF LABORATORY ANALYSES
UNDERGROUND STORAGE TANK SAMPLES

Sunol Tree Gas
3004 Andrade Road
Sunol, California 94586

Sample No.	TPHg	TPHd	Benzene	Toluene	Ethylbenzene	Xylenes	MTBE	Lead
Geoprobe samples for UST converted into water storage tank (collected March 27, 2002), in mg/kg								
SP-1 - Soil	ND	**12***	ND	ND	ND	ND	ND	NA
SP-2 - Soil	ND	**8.4***	ND	ND	ND	ND	ND	NA
Reporting Limits	1.0	1.0	0.0050	0.0050	0.0050	0.0050	0.0050	
Underground Storage Tank Removal Soil Samples (collected April 2, 2002), in mg/kg								
S1-15' - Soil	ND	ND	ND	ND	ND	ND	ND	**6.8**
S2-15' - Soil	ND	ND	ND	ND	ND	ND	ND	**4.4**
S3-15' - Soil	ND	**1.1***	ND	ND	ND	ND	ND	**4.1**
S4-15' - Soil	ND	ND	ND	ND	ND	ND	ND	**4.5**
S5-15' - Soil	**9.5**	**2.6***	ND	ND	ND	**0.040**	ND	ND
S6-15' - Soil	ND	ND	ND	ND	ND	ND	**0.025**	**4.7**
S7-15' - Soil	ND	ND	ND	ND	ND	ND	ND	**3.8**
S8-15' - Soil	ND	ND	ND	ND	ND	ND	ND	**5.1**
S9-15' - Soil	ND	ND	ND	ND	ND	ND	**0.0058**	**4.3**
S10-15' - Soil	ND	ND	ND	ND	ND	ND	ND	**5.3**
Reporting Limits	1.0	1.0	0.0050	0.0050	0.0050	0.0050	0.0050	2.5
WS-1 - Water	ND	**290**	ND	**1.5**	ND	**2.7**	**84**	ND
Reporting Limits	50	50	0.50	0.50	0.50	0.50	0.50	5.0

* Hydrocarbons reported as TPHd do not exhibit typical diesel chromatographic pattern for samples SP-1, SP-2, S3-15', and S5

Notes:

BTEX	Benzene, Toluene, Ethylbenzene and Total Xylenes by U.S. EPA Method 8260B
Lead	Lead by U.S. EPA Method 6010
MTBE	Methyl tert-butyl ether by EPA Method 8260B
NA	Not analyzed
ND	Not detected in concentrations exceeding the indicated laboratory reporting limit
S1-15'	Soil sample from underground tank removal, collected April 2, 2002.
SP	Soil sample from Geoprobe, collected March 27, 2002.
TPHd	Total petroleum hydrocarbons as diesel by U.S. EPA Method 8015 modified
TPHg	Total petroleum hydrocarbons as gasoline by U.S. EPA Method 8260B
UST	Underground Storage Tank
WS	Water sample from tank pit, collected April 2, 2002.
mg/kg	milligrams per kilogram (approximately equivalent to ppm)
µg/L	micrograms per liter (approximately equivalent to ppb)

When depths are listed in sample name (ex. S1-15'), depth is below grade.
Samples were collected by Jim Jacobs, Environmental Bio-Systems, Mill Valley, California.
Samples were analyzed for petroleum by Kiff Analytical, Davis, California,
and for lead by California Laboratory Services, Sacramento, California.
Samples were prepared by U.S. EPA Method 5030, and analyzed by U.S. EPA Methods 8015M and 8021B.

TABLE 2
SUMMARY OF LABORATORY ANALYSES
SOIL SAMPLES FROM DISPENSER AND PIPING AREAS, AND SOIL STOCKPILES

Sunol Tree Gas
3004 Andrade Road
Sunol, California 94586

Sample No.	TPHg (mg/kg)	TPHd (mg/kg)	TPHmo (mg/kg)	Benzene (mg/kg)	Toluene (mg/kg)	Ethylbenzene (mg/kg)	Xylenes (mg/kg)	MTBE (mg/kg)	Lead (mg/kg)
Soil Samples from Piping Trench Area									
PT1-2.5'	1.5	80	53***	ND	ND	0.0072	0.053	0.095	10.5
PT2-4'	150	61**	65***	ND	1.0	2.4	20	5.9	8.01
PT3-4'	9.2	14**	36***	ND	ND	0.039	0.67	1.1	9.33
Soil Samples from under Dispenser Area									
DSP1-3'	ND	65	26***	ND	ND	ND	ND	ND	10.3
DSP2-3'	ND	38	45***	ND	ND	ND	ND	0.79	9.27
DSP3-3'	ND	3.5	21***	ND	ND	ND	ND	0.0058	9.51
DSP4-3'	ND	5.3	20***	ND	ND	ND	ND	ND	12.0
DSP5-3'	ND	60	39***	ND	ND	ND	ND	ND	13.9
DSP6-3'	ND	8.4	26***	ND	ND	ND	ND	ND	9.88
DSP7-3'	3.9*	1,300	ND	ND	ND	ND	0.030	0.090	7.36
DSP8-3'	ND	10	9.9***	ND	ND	ND	ND	ND	6.02
DSP9-3'	ND	4.9**	19***	ND	ND	ND	ND	ND	8.66
DSP10-3'	13	7.4**	12***	ND	0.17	0.19	1.7	0.078	7.53
DSP11-3'	ND	ND	14***	ND	ND	ND	ND	0.13	8.38
DSP12-4'	ND	ND	ND	ND	ND	ND	ND	0.0064	7.54
Soil Samples from Soil Stockpiles									
STP-1 A1,A2,A3,A4	ND	ND	ND	ND	ND	ND	ND	ND	7.04
STP-2 B1,B2,B3,B4	ND	ND	87	ND	ND	ND	ND	ND	7.38
STP-3 C1,C2,C3,C4	ND	ND	16***	ND	ND	ND	ND	ND	4.24
STP-4 D1,D2,D3,D4	ND	30**	20***	ND	ND	ND	ND	ND	5.81
Reporting Limits	1.0	1.0	10	0.0050	0.0050	0.0050	0.0050	0.0050	0.50

* Hydrocarbons reported as TPHg do not exhibit typical gasoline chromatographic pattern for sample DSP7-3'
** Hydrocarbons reported as TPHd do not exhibit typical diesel chromatographic pattern for samples PT2-4', PT3-4', DSP9-3', DSP10-3' and STP-4 D1,D2,D3,D4
*** Hydrocarbons reported as TPHd do not exhibit typical motor oil chromatographic pattern for samples PT1-2.5', PT2-4', PT3-4' , DSP1-3', DSP2-3', DSP3-3', DSP4-3', DSP5-3', DSP6-3', DSP8-3', DSP9-3', DSP10-3', DSP11-3', STP-3 C1,C2,C3,C4, and STP-4

Notes:

BTEX	Benzene, Toluene, Ethylbenzene and Total Xylenes by U.S. EPA Method 8260B
Lead	Lead by U.S. EPA Method 6010
MTBE	Methyl tert-butyl ether by EPA Method 8260B
TPHd	Total petroleum hydrocarbons as diesel by U.S. EPA Method 8015 modified
TPHg	Total petroleum hydrocarbons as gasoline by U.S. EPA Method 8260B
TPHmo	Total petroleum hydrocarbons as motor oil by U.S. EPA Method 8015 modified
mg/kg	milligrams per kilogram (approximately equivalent to ppm)
ND	Not detected in concentrations exceeding the indicated laboratory reporting limit
PT	Pipe Trench Soil Sample, collected April 22, 2002
DSP	Dispenser soil sample, collected April 22,2002
STP	Stockpile Soil Sample, composited in lab from 4 samples , collected April 22, 20002

When depths are listed in sample name (ex. PT2-4'), depth is below grade.
Samples were collected by Jim Jacobs, Environmental Bio-Systems, Mill Valley, California, on April 22, 2002
Samples were analyzed for petroleum by Kiff Analytical, Davis, California,
and for lead by California Laboratory Services, Sacramento, California.
Samples were prepared by U.S. EPA Method 5030, and analyzed by U.S. EPA Methods 8015M and 8021B.

TABLE 3
SUMMARY OF WATER SAMPLING RESULTS
FROM TEMPORARY WATER STORAGE TANKS

Sunol Tree Gas
3004 Andrade Road
Sunol, California 94586

Sample No.	Tank No.	TPHg (µg/L)	Benzene (µg/L)	Toluene (µg/L)	Ethylbenzene (µg/L)	Xylenes (µg/L)	MTBE (µg/L)	TPHd (µg/L)
Tank 1, G	255557	**65***	ND	ND	ND	ND	**73**	ND
Tank 2, C	254100	**110***	ND	ND	ND	ND	**100**	ND
Tank 3, A	254288	**170***	ND	ND	ND	ND	**190**	**110**
Tank 4, D	255565	**82***	ND	ND	ND	ND	**82**	ND
Reporting Limits	NA	50	0.5	0.5	0.5	0.5	5	50

* Hydrocarbons reported as TPHg do not match the laboratory's gasoline standard for all samples.

Notes:

MTBE	Methyl tert-butyl ether
NA	Not applicable
ND	Not detected in concentrations exceeding the indicated laboratory reporting limit
TPHd	Total petroleum hydrocarbons as diesel
TPHg	Total petroleum hydrocarbons as gasoline
µg/L	micrograms per liter (approximately equivalent to ppb)

A, C, D, and G Symbols assigned to temporary water storage tanks, as shown on Figure 1

Samples were collected by Jim Jacobs, Environmental Bio-Systems, Mill Valley, California, on April 9, 2002, and analyzed by Severn Trent Services, Pleasanton, California, on April 10, 2002.
Samples were prepared by U.S. EPA Method 5030, and analyzed by U.S. EPA Methods 8015M and 8021B.

APPENDIX B

CLEARWATER GROUP
Direct-Push Drilling Investigation Procedures

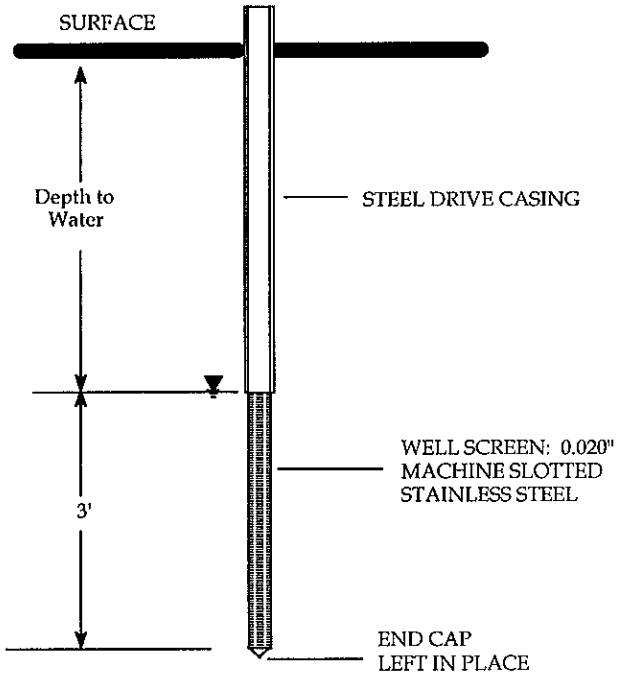
The direct push method of soil boring has several advantages over hollow-stem auger drill rigs. The direct push method produce no drill cuttings, is capable of 150 to 200 feet of boring or well installation per work day. Direct push can be used for soil gas surveys, soil sampling, groundwater sampling, installation of small-diameter monitoring wells, and components of remediation systems such as air sparge points. The equipment required to perform direct push work is varied ranging from a roto-hammer and operator to a pickup truck-mounted rig capable of substantial static downward force combined with percussion force. This method allows subsurface investigation work to be performed in areas inaccessible to conventional drill rigs such as in basements, beneath canopies, or below power lines. Direct push equipment is ideal at sites with unconsolidated soil or overburden, and sampling depths of less than 30 feet. This method is not appropriate for boring through bedrock or gravelly soils.

Permitting and Site Preparation
Prior to direct push boring work, Clearwater Group will obtain all necessary permits and locate all underground and above ground utilities through Underground Service Alert (USA) and a thorough site inspection. All drilling equipment will be inspected daily and will be maintained in safe operating condition. All down-hole drilling equipment will be cleaned prior to arriving on-site. Working components of the rig near the borehole, as well as driven casing and sampling equipment will be thoroughly decontaminated between each boring location by either steam cleaning or washing with an Alconox solution. All drilling and sampling methods will be consistent with ASTM Method D-1452-80 and county, state and federal regulations.

Boring Installation and Soil Sampling
Direct push uses a 1.5-inch outer barrel with an inner rod held in place during pushing. Soil samples are collected by penetrating to the desired depth, retracting the inner rod and attaching a spoon sampler. The sampler is then thrust beyond the outer barrel into native soil. Soil samples are recovered in brass or stainless containers lining the spoon.

Soil removed from the upper tube section is used for lithologic descriptions (according to the unified soil classification system) and for organic vapor field analysis. If organic vapors will be analyzed in the field, a portion of each soil sample will be placed in a plastic zip-lock bag. The bag will be sealed and warmed for approximately 10 minutes to allow vapors to be released from the soil sample and diffuse into the head space of the bag. The bag is then pierced with the probe of a calibrated organic vapor detector. The results of the field testing will be noted with the lithologic descriptions on field exploratory soil boring log. Soil samples selected for laboratory analysis will be covered on both ends with Teflon™ tape and plastic end caps. The samples will then be labeled, documented on a chain-of-custody form and placed in a cooler for transport to a state certified analytical laboratory.

Temporary Well Installation and Groundwater Sampling



Groundwater samples are collected by removing the inner rod and attaching a 4 foot stainless steel screen with a drive point at the end (above figure). The screen and rod is then inserted in the outer barrel and driven to the desired depth where the outer rod is retracted to expose the screen. If the stainless well screen does not produce enough water for sampling a 1-inch PVC screen can be installed in the boring and the outer rod retracted to leave a temporary well point for collecting groundwater samples or water levels.

Monitoring Well Installation and Development

Permanent small-diameter monitoring wells are installed by driving the outer barrel and inner rod as described above. Upon reaching the desired depth the system is removed and 2-inch OD (1/2-inch ID) pre-packed PCV piping is installed. The well plug is created using granular bentonite. The well seal is constructed of cement and sealed at the surface with a conventional "Christy Box" or similar vault. Monitoring wells are developed by surging the well with a small diameter bailer and removing 3 to 5 volumes until the produced water is clear.

Groundwater Sample Collection and Water Level Measurement

Prior to collecting groundwater from the wells the water levels are measured in all wells using an electronic water level gauge. Monitoring wells are prepared for sampling by purging three well bore volumes. Water is removed using small diameter bailers, a peristaltic pump, or manually using tubing with a check valve at the bottom. Once during removal of each volume the temperature, pH and conductivity are checked and noted on the field sampling form. Successive well volumes are removed until the parameters have stabilized or the well has gone dry. Prior to sampling the well is allowed to recover to within 90% of the stabilized water levels.

Groundwater samples[1] are collected using small diameter bailers. Groundwater samples are decanted into laboratory supplied containers. labeled, noted on a chain-of-custody form and placed on ice for transport to a laboratory.

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[1] Small diameter wells often produce small quantity samples and are appropriate for analysis of volatile and aromatic compounds using VOA vials and dissolved metals analysis. Obtaining liter samples can be difficult and time consuming. Monitoring wells installed by the direct push method are most effective at sites where the subsurface soils are more coarse than silt, gasoline components are the key contaminants of concern, and water levels are not