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# GARRISON LAW CORPORATION

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## FACSIMILE TRANSMITTAL SHEET

TO:	FROM:
Dick Jones Steve Muir	Gregg Garrison
COMPANY:	DATE:
AII WZI	January 13, 1999
FAX NUMBER:	TOTAL NO. OF PAGES INCLUDING COVER:
916/372-5615 209/369-9358	47
PHONE NUMBER:	SENDER'S REFERENCE NUMBER:
916/372-5595 209/369-9421	
RE:	YOUR REFERENCE NUMBER:
Schropp Farms	

- URGENT   
  FOR REVIEW   
  PLEASE COMMENT   
  PLEASE REPLY   
  PLEASE RECYCLE

Dear Gentlemen:

Enclosed herewith for your immediate review and response is the Workplan for Schropp Farms. Thank you.

**BAY AREA**  
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**GARRISON LAW CORPORATION**  
**A PROFESSIONAL CORPORATION**

REFER TO FILE  
SCHROPP

January 13, 1999

Via Facsimile: (916) 372-5615

Dick Jones  
Agriculture Industries, Inc.  
P.O. Box 1076  
3002 Beacon Blvd.  
West Sacramento, CA 95691

Re: Request for Review and Approval of Proposed Workplan

Dear Mr. Jones:

After significant negotiations with Shell, we were able to force them to recognize our position that further site characterization is required. Enclosed herewith is the Proposed Workplan from Brown & Caldwell dated January 11, 1999, for your review and comments. I have also copied WZI for their review and comments.

This Workplan is responsive to the State's letter dated November 5, 1998. As you will remember, the State supported our position that the site was not suitable for closure because it had not been properly characterized.

Mr. Muir, you and I have all agreed that the site has not been properly characterized. As you know, we made this position known to Irv Jenkins of Shell on August 26, 1998, and October 21, 1998. Please see the enclosed letter.

We also vigorously challenged Mr. Jenkins that if he or his consultant ever unilaterally contacted the State, without first conferring with us, that we will treat that act as a willful and an egregious violation of the Access Agreement, and we would seek redress.

The new consultant, Brown & Caldwell, is now under strict order to communicate with our office and our consultant before future communications are made to the State. To this end, Mr. Fojut contacted both my office and Steve Muir in mid-December to discuss the pending submittal of the enclosed Workplan and dates for its submission.

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Dick Jones  
January 13, 1999  
Page 2

The Workplan must be submitted by Friday, January 22, 1999. Therefore, I am requesting both WZI and your office carefully review the Workplan so that I can respond on or before Wednesday, January 20, 1999.

Please note that Mr. Fojut, of Brown & Caldwell, is currently negotiating RIGHT OF ENTRY with the school. I have discussed with Mr. Fojut the school's previous reluctance to allow access. He has stated that he expects they will execute the agreement for entry. I have requested a copy.

Also note that Mr. Fojut advised me that the Workplan does not contemplate site characterization on Mr. Costello's property. Mr. Fojut stated that the work on Mr. Costello's property "depends on results from this work." Mr. Fojut is aware that Mr. Costello is resistant to site access. I would like to know what WZI's position is on this issue.

As you and WZI know, Brown & Caldwell is the third consultant on the site for Shell (PiCES, Weiss Associates and Brown & Caldwell). Mr. Fojut has had experience with the site and the parties when formerly employed by Weiss Associates. While at Weiss Associate, Mr. Fojut was involved with the project prior to Steve Long. Steve Long was the individual responsible for the closure submittals. However, Mr. Long is no longer on the project.

Mr. Fojut is aware of the strict protocol contained in our ACCESS AGREEMENT. He assured me that our client will have an opportunity to review all correspondence from Shell and its consultants before submission to the State. Mr. Fojut believed that the request for closures, which were unacceptable and not reviewed by our client, were "inadvertently" submitted to the State. He stated that there was no intent by Shell to submit without our involvement.

In closing, Mr. Fojut stated that there will not be a reoccurrence of Shell's consultants submitting documents to the State without our prior review. He has confirmed that this will be the protocol pursuant to Irv Jenkins' instructions.

I assured Mr. Fojut we would review the Workplan as soon as practicable. Please do not hesitate to contact me should you have any questions. Thank you.

Sincerely yours,  
GARRISON LAW CORPORATION



Gregg S. Garrison  
Attorney at Law

**COPY**

**BROWN AND  
CALDWELL**

*Environmental Engineering & Consulting*

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January 11, 1999

**FAX TRANSMITTAL COVER SHEET**

**PLEASE DELIVER THE FOLLOWING PAGES TO:**

Name: Greg Garrison  
City/State:

Company: Garrison Law Corporation  
FAX No: 650-726-1388

**THIS TRANSMITTAL IS BEING SENT FROM:**

Name: Tom Fojut  
Employee No: 9295  
Project No: 17323.001  
Task.G/L: 500.01

Return originals: Yes  No   
Stamp: Yes  No   
Staple: Yes  No

**NUMBER OF PAGES BEING TRANSMITTED INCLUDING COVER SHEET:** 35

**SPECIAL INSTRUCTIONS/REMARKS:**

As I mentioned to Vicki on the telephone earlier today, Brown and Caldwell is submitting this draft work plan to you for the Schropp property near Byron, California. Please review and call me at (925) 210-2523 if you have any comments or questions. Thank you.

cc (transmittal only): Irv Jenkins, Shell Oil Company, 713-241-7373

*Environmental Engineering And Consulting*  
SUITE 130, 3480 BUSKIRK AVENUE, PLEASANT HILL, CALIFORNIA 94523-4342  
Tel: (925) 937-9010 FAX: (925) 937-9026

**DRAFT  
SITE ASSESSMENT WORK PLAN**

**Schropp Farms – East Property  
3880 Mountain House Road  
Byron, California**

**Submitted to**

**California Regional Water Quality Control Board  
Central Valley Region**

**January 1999**

*Prepared for*

**Shell Oil Company  
One Shell Plaza  
P.O. Box 2463  
Houston, Texas 77252-2463**

*Prepared by*

**Brown and Caldwell  
P.O. Box 8045  
Walnut Creek, California 94596-1220**

This is a draft report and is not intended to be a final representation of the work done or recommendations made by Brown and Caldwell. It should not be relied upon; consult the final report.

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## CHAPTER 1

### BACKGROUND

Brown and Caldwell has prepared this Site Assessment Work Plan for Shell Oil Company in response to a letter to Shell from the California Regional Water Quality Control Board - Central Valley Region (RWQCB), dated November 5, 1998 (RWQCB, 1998). The RWQCB requested further investigation downgradient of a crude oil release along the former Shell Central Valley Pipeline (CVP) near Byron, California. The investigation objective is to provide the RWQCB with additional downgradient data before it considers the case for regulatory closure. As requested by the RWQCB's letter, this workplan has been prepared in the RWQCB's format for site assessment work plans.

The site of the release is an agricultural field, currently owned by Werner R. and Irmgard S. Schropp and managed by Agriculture Industries, Inc. (All) and referred to as the Schropp Farms - East Property or the "site", located immediately east of Mountain House Road in Byron, California (Figure 1). The Schropp Farms - West Property and Mountain House School are located on the west side of Mountain House Road and are referred to as "adjacent properties." The Schropp Farms - West Property is also owned by the Schropp and managed by All. Much of the investigation described in this work plan is proposed for the Mountain House School property.

The site history and a description of the local topography and hydrogeology are presented below.

#### A. Site History

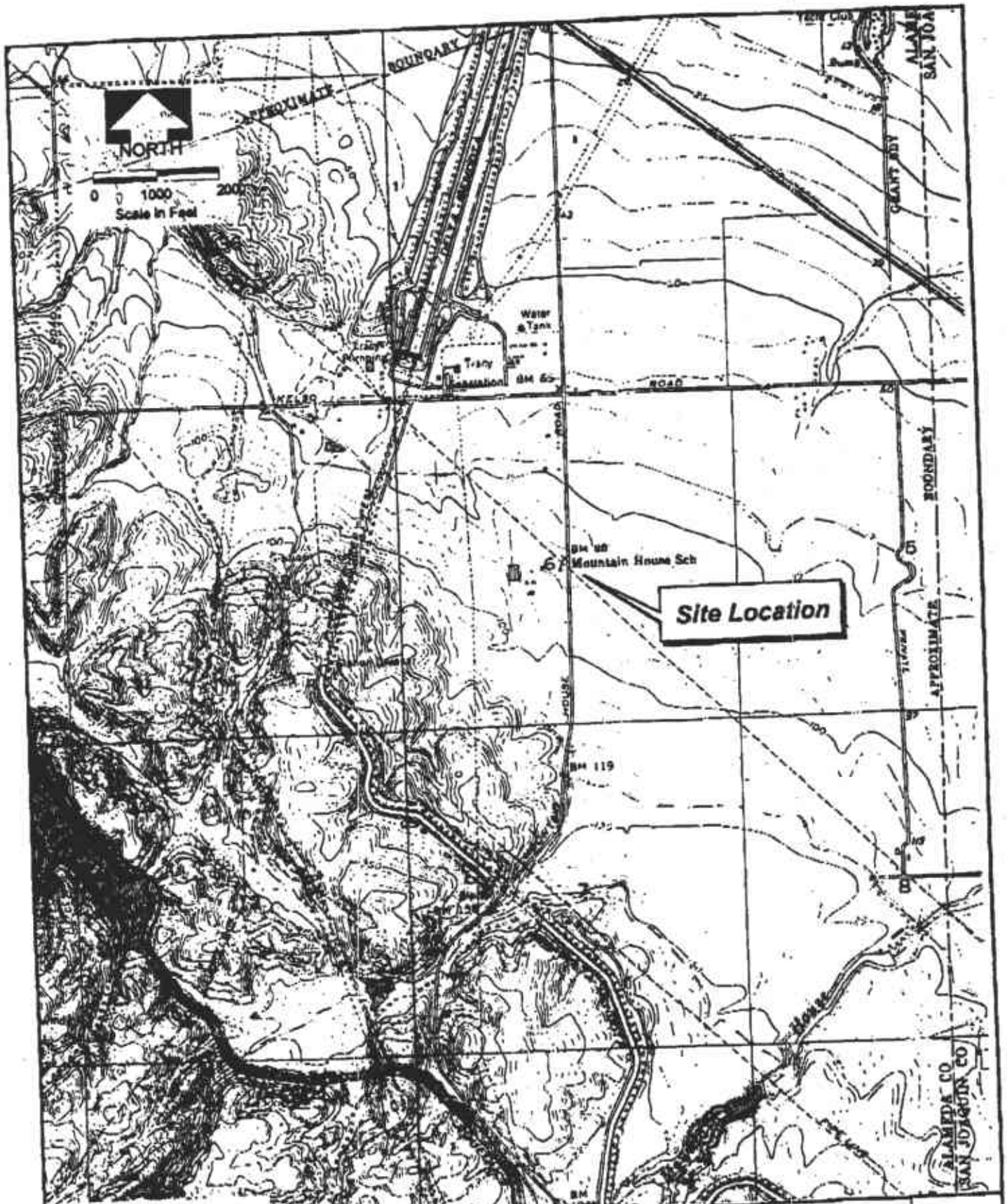
This section describes all known operations conducted at the site, the history and size of the CVP, and the use of other chemicals onsite.

1. **Site Operations.** The site has presumably never been developed, except for the CVP installation and as agricultural land. Recently, alfalfa has been the site's primary crop (WZI, 1994).

The former CVP, which consisted of one 8-inch and one 10-inch diameter underground pipeline, was installed in the early 1900s. Short segments of the 8-inch line were coupled with 12-inch diameter pipe. The CVP ran from the southeast to the northwest beneath the site and transmitted crude oil from oil fields near Coalinga, California to Shell's refinery in Martinez, California. The CVP never transmitted refined product and was decommissioned in 1968. After decommissioning, the CVP was washed and abandoned in place in the site vicinity. In the early 1970's, Shell "quitclaimed" the CVP to Wing Ranch, the site owner at the time. Thus, the site owner elected to leave the abandoned pipeline in place. In 1979, Wing Ranch sold the site to the Schropp.

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1982 photorevised 1980  
 Bathery, California 7.5 minute quadrangle

DATE	12-17-98	PROJECT	1_7323_001
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**BROWN AND CALDWELL**

3880 Mountain House Road, Bryon, California

Site Location Map

Figure 1

Schropp Farms – East Property - Site Assessment Work Plan –Background

1-3

2. **Storage Tanks.** To the best of Brown and Caldwell's knowledge, no storage tanks have existed on the site. Information regarding tanks at the Schropp Farms – West Property is presented in Chapter 2. The tanks on this adjacent property were not operated by or in association with Shell.
3. **Test and Repair Records.** No records of tests or repairs on the CVP are available. It does not appear that any records exist considering that the CVP last operated more than 30 years ago.
4. **Other Site Chemicals.** Except for the possible use of herbicides, pesticides and fertilizers, Brown and Caldwell is not aware of the use or storage of any other chemicals on the site. It is not likely that any maintenance shops have existed on the site.

**B. Local Topography**

1. **Site Drainage.** The site gently slopes down to the northeast and is between about 75 and 95 feet above mean sea level (Figure 1). A drainage canal runs along the site's western boundary. A small creek flows eastward about 1,500 feet north of the site, and another small creek flows southeastward about 3,500 feet south of the site. Both of these creeks flow into Mountain House Creek, which drains northwest into Old River, a channel that eventually empties into the San Joaquin River.

Pipelines that connect two portions of the Delta-Mendota Canal are about 3,000 feet west of the site. This canal and the Governor Edmund G. "Pat" Brown California Aqueduct, located about two miles west of the site, pump water from Clifton Court Forebay, a former levee-ringed island about two miles north of the site. The canals are generally concrete-lined and channel water to Central and Southern California.

2. **Wells in the Site Vicinity.** A search of California Department of Water Resources (DWR) well records identified eight wells near the site (WA, 1997). Two and six of the wells were registered for "household" and "observation" uses, respectively. At least five of the observation wells appear to have been associated with the Schropp Farms – West Property and were apparently installed to monitor ground water near former underground storage tanks (USTs) on that property.

In 1992 or 1993, WZI, Inc. of Lodi, California abandoned one of the household wells listed on the DWR database. This well was a domestic well also on the Schropp Farms – West Property and was located about 500 feet west of the site. The well was adjacent to the West Property's USTs and was screened between 50 and 140 feet depth. The well was the domestic water supply for a house located near the well. Prior to its abandonment, occupants of the house had complained of a strong gasoline-like odor from the house's water supply lines.

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Schropp Farms - East Property - Site Assessment Work Plan - Background

1-4

An irrigation supply well for Mountain House School is 160 feet southwest of the former CVP and does not appear to be listed on the DWR database. The school does not have construction details for this well, but does sample it monthly for volatile organic compounds (VOCs), metals and general minerals in accordance with California Department of Health Services (DHS) requirements. The school uses the well solely for irrigation and sanitation. According to school staff, students, employees and visitors drink bottled water because of the well water's poor taste. Sampling this well is part of this work plan's scope of work (Chapter 3).

Three existing site groundwater monitoring wells were not present on the DWR database. More information about these wells is provided in Chapter 2.

### C. Hydrogeology

1. **Regional Hydrogeology.** The site is located in the northwestern portion of the San Joaquin Valley about 20 miles southeast of the Sacramento - San Joaquin River Delta. Recent, Pleistocene and Pliocene sediments underlie this portion of the valley (WZI, 1994; WA, 1997). These sediments are underlain by the Tulare Formation, which consists of alluvial clay, silt, sand and gravel to approximately 1,000 feet depth. The Corcoran Clay Member, a unit within the Tulare Formation and an extensive clay aquitard, is approximately 100 feet beneath ground surface (bgs). Tertiary and pre-Tertiary sedimentary and crystalline rocks underlie the Tulare formation (WZI, 1994).

Two major aquifers, separated by the Corcoran Clay Member, are present in the site vicinity. These are the upper and lower zones of the Tulare Formation and vary in thickness and groundwater quality. Groundwater in the lower zone is a drinking water source. Groundwater from the upper zone has a poorer quality and is confined only in some areas. The regional groundwater flow direction in the upper aquifer is northward but may vary locally due to extensive pumping for agriculture (WZI, 1994).

2. **Local Hydrogeology.** According to previous investigations, soil beneath the site consists primarily of fine sand from the surface to approximately 25 feet bgs. A one-foot thick gravel unit underlies the sand at 25 feet bgs. Fine to medium sand was encountered below the 26 foot depth to the total depth explored of about 35 feet bgs (PiCES, 1996; WA, 1997).

The water table has been measured between 12 to 15 feet bgs in 1996 and 1997. The groundwater flow direction at the site has consistency been to the west with a gradient of about 0.019 ft/ft (WA, 1997).

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## CHAPTER 2

### PREVIOUS SITE ASSESSMENTS

Previous site assessments and remedial activities are described below for the site and adjacent properties. Previous soil and ground water analytic results for previous site investigations are included as Appendices A and B, respectively.

#### A. Site

- 1. April 1992 Phase I Environmental Site Assessment.** WZI Inc. (WZI) completed a Phase I Environmental Site Assessment of the site (Schropp Farms - East Property) and the adjacent Schropp Farms - West Property for AII (WZI, 1992). The site assessment reported the presence of two former gasoline USTs and an electrical transformer and that pesticides were not known to have been stored on the site. The report did not identify the presence of the former CVP.
- 2. May 1994 Exploratory Trench.** In May 1994, WZI was retained by AII to dig an exploratory trench on the site adjacent to where the former CVP crossed beneath Mountain House Road (WZI, 1994). The trench was dug to assess whether petroleum hydrocarbons were in the subsurface after WZI had recently observed an exposed portion of the CVP about one-half mile north of the site. A soil sample from five feet below ground surface (bgs) contained 8,000 milligrams per kilogram (mg/kg) total petroleum hydrocarbons as diesel (TPH-D). Although the chromatogram for this sample is not available, it is probable that this TPH-D value represents unrefined crude oil hydrocarbons in the diesel range because refined product was never transmitted through the CVP.
- 3. October 1994 Exploratory Trenches.** Shell retained Professional Integrated Consulting & Environmental Services Associates (PiCES) of Tustin, California, to investigate the extent of hydrocarbons in the subsurface and to excavate the source area (PiCES, 1996). In October 1994, PiCES excavated trenches T-1, T-2, and T-3 and collected five soil samples from 7 to 8 feet bgs from the trenches to verify the May 1994 sample results. Each of the soil samples was analyzed for total recoverable petroleum hydrocarbon (TRPH); benzene, toluene, ethylbenzene and total xylenes (BTEX); TPH-D; and total petroleum hydrocarbons as gasoline (TPH-G). Up to 2,362 mg/kg TRPH and up to 6,917 mg/kg TPH-D were detected in the soil samples. No TPH-G or BTEX were detected above laboratory reporting limits (LRLs) in the five samples except for 12 mg/ $\mu$ g TPH-G in one sample and up to 0.03 mg/ $\mu$ g in two samples.

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Schropp Farms - East Property - Site Assessment Work Plan - Previous Site Assessments 2-2

4. **November 1994 Soil Borings.** In November 1994, PiCES drove soil borings SB-1 through SB-6 to depths between 16 and 20 feet to assess the extent of petroleum hydrocarbons in the subsurface (PiCES, 1996). One soil sample from between 16 and 20 feet bgs was collected from each boring. Up to 340 mg/kg TRPH, up to 4,632 mg/kg TPH-D and up to 433 mg/kg TPH-G were detected in the samples. Although concentrations of toluene, ethylbenzene, and xylenes were detected slightly above LRLs in three of the six soil samples, no benzene was detected above LRLs in any of the samples. Also, no petroleum hydrocarbons were detected above LRLs in the samples from borings SB-1, SB-2 and SB-5. Soil borings SB-3 and SB-4 were driven to ground water, which was between 16 to 19 feet bgs. A light non-aqueous phase liquid (LNAPL) was observed on the water table in those borings, and therefore no groundwater samples were collected.
5. **October 1995 Soil Borings.** In October 1995, PiCES drilled 35 soil borings on the site along 3,500 feet of the former CVP southeast of the release area (PiCES, 1996). The objective of the borings was to assess whether petroleum hydrocarbons were in soil along other portions of the former CVP beneath the site. PiCES collected one soil sample from each boring between six and seven feet bgs. The samples were composited into seven samples, each of which was analyzed for TPH-D, TPH-G and BTEX. Because no petroleum hydrocarbons were detected in any of the soil samples above LRLs, PiCES concluded that no further investigation was warranted along this portion of the former CVP.
6. **November 1995 Soil Excavation.** In November 1995, PiCES directed NG Chemical of Santa Maria, California, to excavate and dispose of hydrocarbon-bearing soil from the area outlined on Figure 1 (PiCES, 1996). Soil was transported to the McKittrick Waste Treatment Site in McKittrick, California and the Altamont Landfill in Livermore, California. Average excavation depths were 25 and 12 feet bgs in the western and eastern portions of the excavation, respectively. The maximum excavation depth was 35 feet bgs. Thirty-five confirmation samples were analyzed for TRPH, BTEX, TPH-D and TPH-G. Confirmation soil samples from the final northern, eastern and southern walls contained up to 64 mg/kg TPH-D and 13.0 mg/kg TRPH. Because of the presence of Mountain House Road, soil from the excavation's western wall that contained higher petroleum hydrocarbon concentrations could not be excavated. These samples contained up to 1,400 mg/kg TPH-D and up to 670 mg/kg TRPH. About 4,000 tons of fill was used to backfill the excavation.
7. **March 1996 Well Installations.** On March 29, 1996, PiCES installed groundwater monitoring wells MW-1, MW-2, and MW-3 to determine whether petroleum hydrocarbons were present in groundwater north of the former CVP (PiCES, 1996). The wells were installed to a maximum depth of 30 feet and were completed with 4-inch diameter polyvinyl chloride (PVC) casing and screens extending approximately 20 feet below and 5 feet above the water table. Apparently, no soil

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Schropp Farms - East Property - Site Assessment Work Plan - Previous Site Assessments 2-3

samples from the borings for the wells were analyzed by an analytical laboratory. The well locations are shown on Figure 2.

8. **1996-7 Ground Water Monitoring.** In April 1996, PiCES collected ground water samples from wells MW-1, MW-2 and MW-3. No TPH-D or BTEX were detected above LRLs in any of the samples, except for 1,000 µg/L TPH-D in the sample from well MW-2. Subsequently, Shell retained Weiss Associates (WA) of Emeryville, California, to sample the wells in January, February, March, May and July 1997. No BTEX were detected above LRLs in groundwater samples from any well. Up to 1,500 µg/L total petroleum hydrocarbons as crude oil (TPH-CO) and up to 190 µg/L TPH-D were detected in the ground water samples from these sampling events. It is likely that the TPH-D is due to the crude oil constituents because crude oil was never transmitted through the CVP (WA, 1997).
9. **July 1997 Soil Borings.** In July 1997, WA advanced soil borings B-1 through B-5 along the site's western boundary to assess whether petroleum hydrocarbons were in soil and ground water on the downgradient edge of the former excavation (WA, 1997). Two soil and one ground water sample were collected from each boring. No BTEX or TPH-G was detected above LRLs in any sample. Three samples contained TPH-CO above LRLs. A maximum of 49 mg/kg were detected in the sample from 7.5 feet depth in boring B-2, located immediately adjacent to the former excavation. Although the soil samples contained up to 2.6 mg/kg TPH-D, the positive laboratory result is probably due to crude oil constituents because diesel was not transmitted through the CVP.

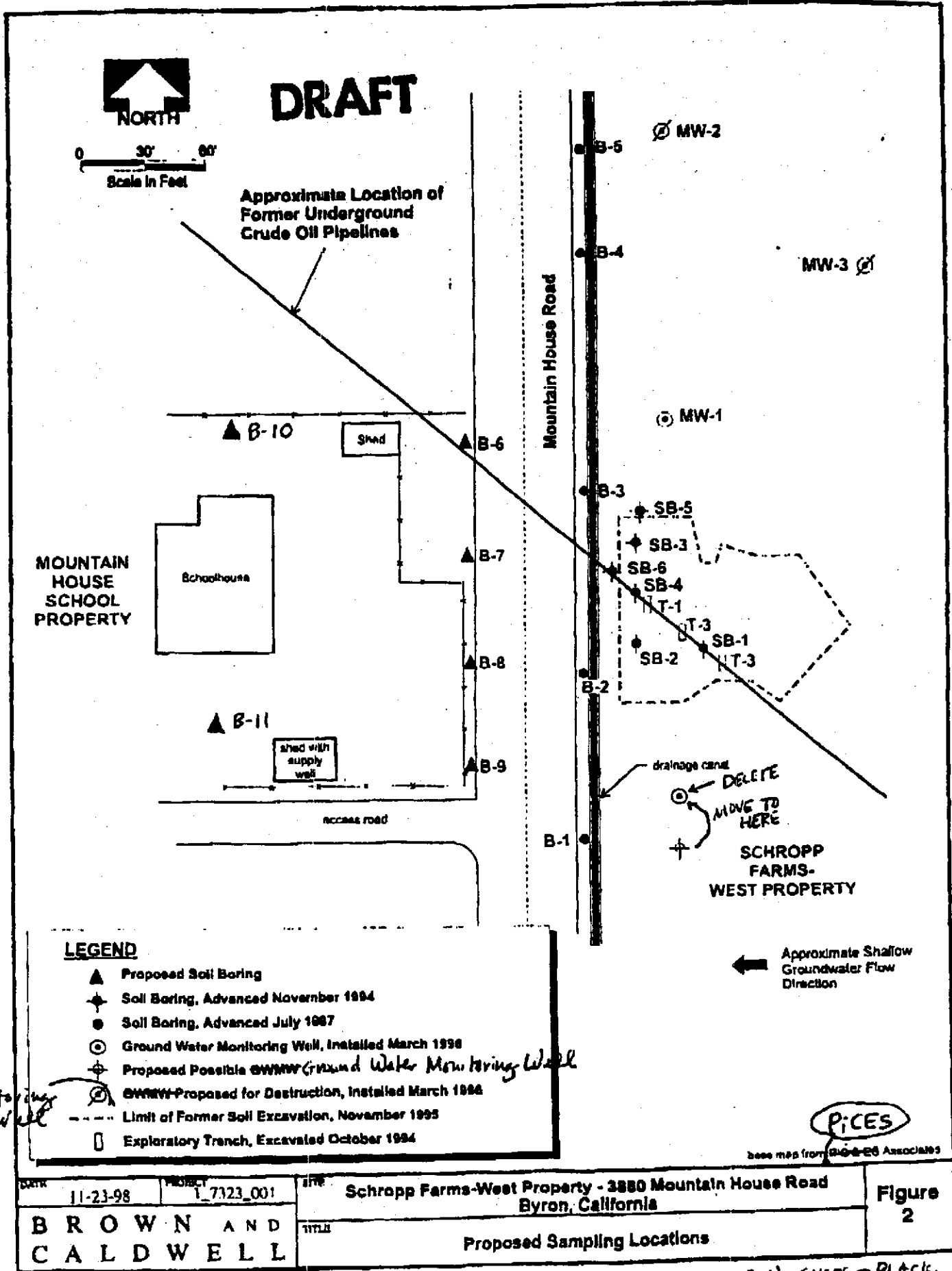
No TPH-D, TPH-G, BTEX or methyl tertiary-butyl ether (MTBE) were detected above LRLs in the ground water samples from any of the borings. Between 410 and 1,600 µg/L TPH-CO were detected in the water samples.

#### B. Adjacent Properties

1. The former Schropp Farms - West Property had two former USTs that were located about 500 feet west to southwest of the site (WZI, 1994). The first UST was reportedly installed in the 1950s or earlier. Because this UST was believed to be leaking, it was removed and replaced around 1970 with a 550-gallon UST. Both tanks reportedly only stored gasoline. In 1991, the second UST, a dispenser and associated product piping were removed and not replaced.

In April 1992, WZI, Inc. of Lodi, California excavated exploratory trenches for AII near the former USTs. Samples from 10.5 and 19.5 feet bgs contained up to 23 mg/kg benzene and 1,140 mg/kg total petroleum hydrocarbons as gasoline (TPH-G). A groundwater sample from one trench contained 1,200 µg/L benzene.

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**Schropp Farms - East Property - Site Assessment Work Plan - Previous Site Assessments 2-5**

In late 1992 and early 1993, AII disposed of the UST that had been excavated in 1991. WZI overexcavated about 2,000 cubic yards of petroleum hydrocarbon-impacted soil from the former UST area. WZI also abandoned a domestic well that supplied water to an adjacent farmhouse. This well abandonment is discussed in more detail in Chapter 1, Section B, Subsection 2 of this workplan.

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## CHAPTER 3

### FIELD INVESTIGATION

#### A. General

1. **Rationale.** The general purpose of the subsurface investigation proposed by this work plan is to assess the horizontal extent of petroleum hydrocarbons downgradient from the site. To achieve this objective, Brown and Caldwell proposes to:

- Advance soil borings B-6 through B-9 in the locations shown on Figure 2. If field observations indicate that soil and ground water samples from these borings contain petroleum hydrocarbon concentrations, then Brown and Caldwell will also advance borings B-10 and B-11 and collect soil and ground water samples from these borings.
- Install one ground water monitoring well downgradient from the site only if petroleum hydrocarbons are observed in any soil or ground water samples from borings B-6 through B-11. If possible, the well will be located downgradient of the downgradient extent of petroleum hydrocarbons in ground water.
- Properly destroy monitoring wells MW-2 and MW-3. Well MW-1 is sufficient to monitor the northern extent of petroleum hydrocarbons in ground water. Destroying these wells will eliminate two potential vertical conduits to ground water.
- Install one ground water monitoring well on the southern side of the former excavation only if a downgradient well is installed. The objective of this well will be to: 1) assess the southern (crossgradient) extent of petroleum hydrocarbons in ground water; and 2) provide adequate triangulation for determining the ground water flow direction in case a downgradient monitoring well is installed.
- Inspect and sample the irrigation supply well on the Mountain House School property (Figure 2). Brown and Caldwell will document the well's condition, measure the well's water depth and total depth and collect ground water samples for laboratory analysis.

2. **Equipment Decontamination Procedures.** All sampling equipment will be unused and disposable or will be reusable equipment that will be thoroughly decontaminated prior to each use. Any pre-used equipment, such as soil sampling tubes or split spoon samplers, will be cleaned prior to use and between each sampling. This equipment will be thoroughly scrubbed in a hot Alconox-tap water solution and rinsed in two successive de-ionized water rinses.

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Schropp Farms - East Property - Site Assessment Work Plan - Field Investigation

3-2

Equipment that may come into contact with ground water or saturated sediments, including measurement probes, well construction materials, augers and downhole sampling rods, will be previously unused or will be decontaminated prior to each use. Equipment will be steam-cleaned or scrubbed in a hot Alconox-tap water solution.

All equipment that has come into contact with soil and ground water will be cleaned before it leaves the work area. Steam-cleaning rinsate will be contained and stored in sealed drums onsite. Vehicles will be sufficiently cleaned to prevent tracking mud outside of the work area.

- 3. Health and Safety Plan.** Prior to commencing the field work, Brown and Caldwell will prepare a site-specific health and safety plan (HSP) to minimize health and safety risks to site workers and the general public. The HSP will be written to comply with 8 CCR 5192, Hazardous Waste Operations and Emergency Response, and will provide site control methods, air monitoring procedures, guidance on the appropriate personal protective equipment, decontamination procedures, heat stress monitoring, emergency procedures, a hospital route map, information about the anticipated chemicals of concern and a designated site safety officer.

As will be required by the HSP and state regulations, Brown and Caldwell will notify Underground Service Alert between 48 hours and 14 days prior to the field work. A private line-locating firm will also be retained to identify underground utility lines. During the field work, all equipment and personnel will remain a safe distance from overhead electrical lines.

- 4. Permits and Right-of-Entry Agreements.** Prior to the field work, Brown and Caldwell will secure a drilling permit for the proposed borings, well destructions and possible well installations from the Alameda County Zone 7 Water Agency. As required, well logs for any new wells and notices of destruction for the abandoned wells will be submitted to Zone 7 and to DWR.

Shell will perform the site work under an existing right-of-entry (ROE) agreement with the site owners, Werner R. and Irmgard S. Schropp. Shell is negotiating a separate ROE agreement with the Mountain House Board of Trustees, the owner of the Mountain House School, for legal access to the school property.

## B. Drilling Details

A California C-57 licensed contractor will advance the soil borings using a direct-push technology (DPT) soil probing rig. Soil cores will be logged by removing the cores continuously in 48-inch long, 2-inch diameter "Macro-Core" barrels containing PETG clear plastic liners. The

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Schropp Farms - East Property - Site Assessment Work Plan - Field Investigation

3-3

core barrel will be hydraulically pushed and/or hammered to a maximum of four feet per drive. The core barrel will then be removed from the boring, and the plastic liner containing the core will be moved out. A new section of core barrel will be added, the assembly decontaminated and lowered down the boring, and the process repeated until the desired total depth is reached.

A California C-57 licensed contractor will use a hollow-stem auger rig to install any ground water monitoring wells. Soil samples from these borings will be collected by driving a split spoon sampler, lined with brass or stainless steel tubes, at the desired depths. Once the sampler is full, the sampler will be removed from the boring, the sampler opened and the tubes removed. The sampler will be lowered after it is decontaminated for sampling at the next sample depth.

A field geologist or civil engineer will describe all soil samples according to the Unified Soil Classification System. Soil descriptions and notes will be recorded onto boring log forms. Soil samples will also be screened with a portable photoionization detector (PID) to assess if the samples contain VOCs.

Borings that are not converted into monitoring wells will be backfilled with hydrated bentonite chips or neat cement grout, mixed with 3 to 5 percent bentonite powder. If necessary, neat cement grout will be backfilled through a tremie pipe. Each boring top will be completed to match the surrounding surface.

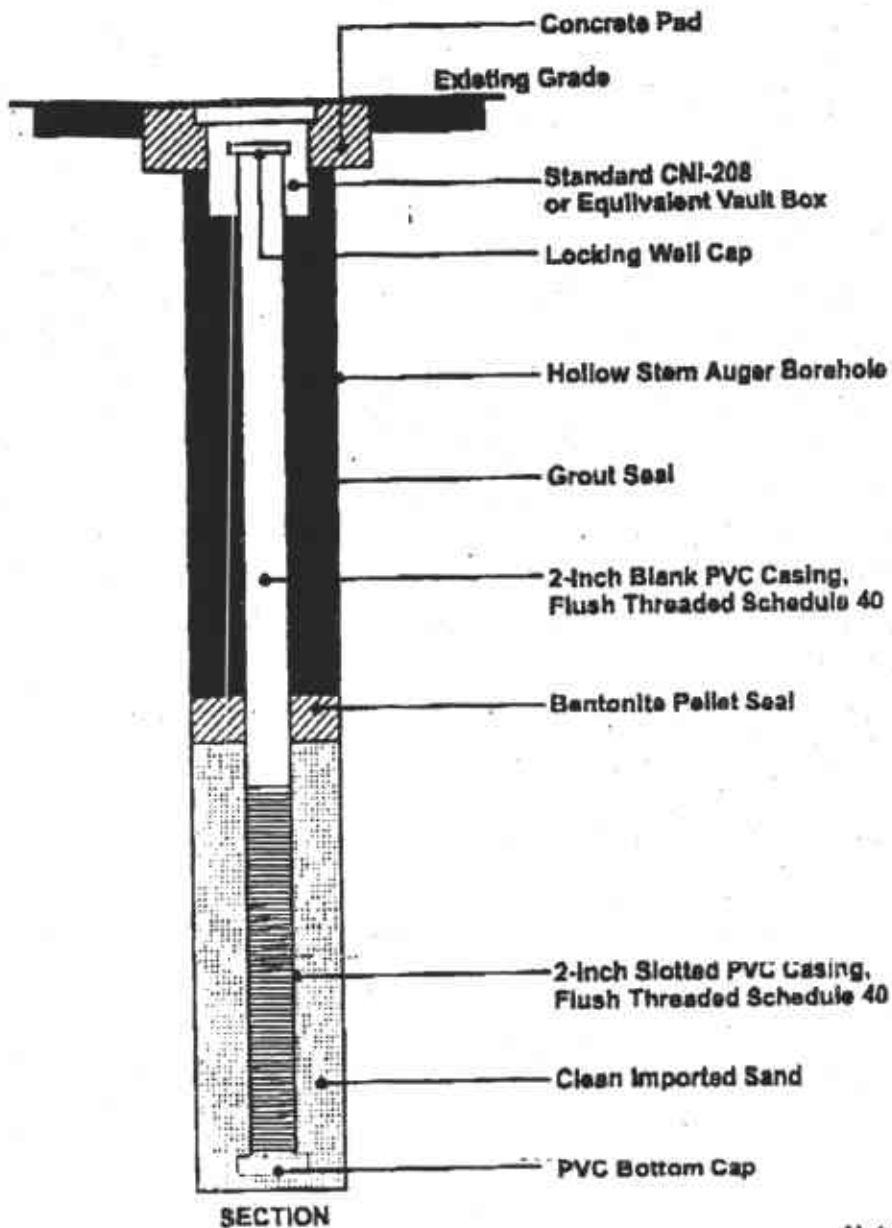
### C. Monitoring Well Design

If monitoring wells are installed, they will be constructed similar to the site's existing wells, except that any new wells will be constructed using two-inch diameter PVC casing and well screen. Borehole for the wells will be a minimum of 6.5 inches in diameter to allow at least two inches of annular space around each well screen.

Well screens will be installed to intersect the water table, which was between 12 and 15 feet bgs in 1996 and 1997. Brown and Caldwell will measure the water depth in one of the site wells prior to any well installations. Screened intervals for any new wells will be similar to the interval of well MW-1, which is screened between 5 to 35 feet bgs, but will allow for the local lithology and a deeper sanitary seal. Because it appears unlikely that the water table will rise above 10 feet bgs in the near future, the top of the screened intervals for any new wells will be around 10 feet bgs. Surface seals, which will consist of a minimum one-foot thick hydrated bentonite pellet plug and neat cement with 3 to 5 percent bentonite powder, will extend from near ground surface to about 9 feet bgs. A generalized well construction diagram is provided on Figure 3.

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Not to Scale

DATE 11-23-98	PROJECT I_7323_001	SITE Schropp Farms-West Property - 3880 Mountain House Road Byron, California	Figure 3
BROWN AND CALDWELL		TITLE Proposed Well Construction Details	

Schropp Farms - East Property - Site Assessment Work Plan - Field Investigation

3-4

The filter pack, which will likely extend from about 9 feet bgs to the wells' total depths, will consist of #2/16 Lonestar Monterey sand or equivalent. The screened portion of each well will consist of machine-slotted 0.010-inch wide perforations. Given the large amount of silt and clay on boring logs for previous site borings and wells, this sand and slot size combination should minimize the amount of fines that enter the wells.

Each new well will be capped and locked with a water-tight expandable plug. Wells installed onsite will be covered with a locking, above ground stovepipe and will be flagged with fluorescent tape to reduce the chance of well damage from agricultural equipment. Wells installed in the Mountain House Schoolyard will be covered with flushed-mounted, traffic-rated well vaults. The vaults will have bolt down lids to minimize the chance of tampering or vandalism.

#### D. Well Development

New wells will be developed immediately after installation but before the installation of the neat cement sanitary seal. The wells will be agitated in ten-minute intervals with a two-inch diameter surge block to loosen fines that may have settled in the well or filter pack during installation. After each surge interval, an unused disposable bailer will evacuate as much water as possible in an attempt to remove the suspended solids. This process will be repeated until water removed from the well appears clear or ten well-casing volumes have been removed.

Well development purge water and steam-cleaning rinsate will be stored onsite in 55-gallon sealed, Department of Transportation (DOT)-approved drums. The drums will be immediately labeled and purged within 90 days of generation. Water from the drums will be transported to an appropriate water recycling or disposal facility.

#### E. Soil Sample Analysis

Soil samples will be collected at least every five feet from each boring. Samples will be collected from 7.5 and 11.5 feet bgs and the capillary fringe for possible laboratory analysis. Soil samples will be collected into PETG plastic, stainless steel or brass liners, immediately capped with Teflon sheeting and plastic caps, hermetically sealed with Teflon tape, labeled, refrigerated and delivered under chain-of-custody to Sequoia Analytical, Inc. in Sacramento, California, a DHS-certified analytical laboratory. At least two soil samples from each boring will be analyzed for:

- TPH-CO by modified USEPA Method 8015;
- BTEX by USEPA Method 8020; and

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Schropp Farms - East Property - Site Assessment Work Plan - Field Investigation

3-5

- Polynuclear aromatic hydrocarbons (PAHs) by USEPA Method 8270.

BTEX and PAHs are potential crude oil constituents. One or two soil samples from the investigation will also be analyzed for various geotechnical parameters, including fraction organic carbon, bulk density, total moisture, and permeability. These analyses will provide site-specific data that may be useful for any future fate and transport modeling.

Drill cuttings will be temporarily stored onsite in DOT approved 55-gallon drums. Each drum will be labeled with the generator name, date and source. One composite sample will be collected from each drum for laboratory analysis. Brown and Caldwell will consult with an offsite, licensed disposal facility for the appropriate laboratory analyses to characterize the soil. After receiving acceptance from a facility, the soil will be transported by a licensed waste hauler within 90 days of generation. Brown and Caldwell will report the disposal method of the soil to the RWQCB.

#### F. Ground Water Sampling

For the soil borings, a Hydropunch sampler will be driven to collect ground water samples. The drive interval will begin just above the water table, and the sampler will be driven a minimum of two feet. Ground water will be allowed to infiltrate into the Hydropunch screen. A bailer will be dropped into the screen or a peristaltic pump will be employed to remove water from the sampler.

Ground water samples will be collected from ground water monitoring wells after at least three well-casing volumes of water are purged from each well. Purge water from each monitoring well will be manually bailed or pumped. During purging, the electrical conductivity, temperature and pH of the purge water will be monitored. Sampling will occur only after these parameters have stabilized. Monitoring well samples will be collected from unused, disposable bailers.

Sampling of the Mountain House School irrigation well will occur immediately after a pumping cycle so that the well is thoroughly purged. Because the school samples the well monthly to meet DHS requirements, a sampling port is likely available. Brown and Caldwell will follow the same applicable sampling requirements that are stipulated by the DHS for this well.

All water samples will be decanted into the appropriate sampling containers. The containers will be labeled, refrigerated and transported under chain-of-custody to Sequoia Analytical, Inc., in Sacramento, California, a DHS-certified analytical laboratory. Each ground water sample will be analyzed for:

- TPH-CO by modified EPA Method 8015;

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Schropp Farms - East Property - Site Assessment Work Plan - Field Investigation

3-6

- BTEX by USEPA Method 8020; and
- PAHs by USEPA Method 8270.

Because Hydropunch samples do not always yield sufficient water for a large number of samples, collecting samples for all these analyses may not be practical. Brown and Caldwell will allow infiltration into the sampler for each boring for at least 30 minutes.

Hydrochloric acid will be added to the BTEX sample containers. No chemical preservatives will be added to the sample containers for TPH-CO and PAHs. The PAH samples will be passed through a 45-micron filter within 24 hours of sample collection to remove suspended solids prior to analysis.

### G. Water Level Measurements

A California-licensed land surveyor will survey any new wells. Each well's location will be surveyed horizontally to the nearest 0.1 foot, and each well's top-of-casing and ground surface elevation will be surveyed to the nearest 0.01 and 0.1 foot, respectively, relative to mean sea level. The survey will use a United States Geological Survey (USGS) monument as a benchmark, which is located adjacent to the site on Mountain House Road.

Water level measurements will be measured to the nearest 0.01 foot using an electric sounder. The sounder will be decontaminated between measurements. Based on the measurements, Brown and Caldwell will calculate the water table elevation in each well relative to mean sea level. If new wells are installed, then Brown and Caldwell will determine the ground water flow direction and gradient.

Brown and Caldwell will attempt to measure the static water level in the Mountain House School well. Obtaining a static water level, however, may not be possible because it may depend on the frequency of the well's pumping cycles.

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**CHAPTER 4****LABORATORY QA/QC PROCEDURES**

Laboratory quality assurance/quality control (QA/QC) procedures will include trip blanks and duplicate samples for water samples and laboratory method blanks for soil and ground water samples.

One duplicate ground water sample will be collected from one soil boring if at least one boring yields sufficient water for the duplicate sample containers. If new ground water monitoring wells are installed, then one duplicate water sample will be collected from one well. The duplicate samples will be analyzed for TPH-CO, BTEX and PAHs.

One trip blank will be submitted to the laboratory for each cooler containing water samples. The blank will be analyzed for BTEX only if all water samples from the cooler contain BTEX above LRLs.

The laboratory will analyze at least one method blank for each requested analysis. The laboratory will also report matrix spike data and surrogate recovery rates and will include the TPH-CO chromatograms in the certified analytical report. The laboratory will follow standard DHS QA/QC requirements.

Brown and Caldwell will follow all field sampling decontamination and sample handling and preservation procedures outlined in Chapter 3. All QA/QC procedures and results will be presented in the final site assessment report.

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**CHAPTER 5****SCHEDULE**

Brown and Caldwell is currently negotiating a ROE agreement with the Mountain House School Board of Trustees for access to the school property. Within 30 days of the RWQCB's acceptance of this work plan and a secured ROE agreement with the school, Brown and Caldwell will obtain the necessary drilling permit from the Alameda County Zone 7 Water Agency and begin the field work. The field work should take about two weeks, and the laboratory analytic results will be available two weeks after the field work is complete. A Site Assessment Report will be prepared in accordance with the RWQCB's outline, will be signed by a California-registered geologist or civil engineer and will be submitted within 60 days of receiving the certified analytical reports from the analytical laboratory.

*This is a draft report and is not intended to be a final representation of the work done or recommendations made by Brown and Caldwell. It should not be relied upon; consult the final report.*

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**REFERENCES**

PICES, 1996, Crude Oil Impacted Soil Remedial Action Report, Former Shell Pipeline, Mountain House Road, Byron, California, Prepared for Shell Pipe Line Corporation, 15 pages, 4 tables, 6 plates and 5 appendices, September 30, 1996.

WA, 1997, Subsurface Investigation/Quarterly Monitoring Report, Third Quarter 1997 for Schropp Farms Property, 3880 Mountain House Road, Byron, California, Prepared for Shell Oil Products, 9 pages, 2 figures, 3 tables, 5 appendices, September 19, 1997.

WZI, 1992, Problem Assessment Report and Preliminary Site Assessment Work Plan to Determine Nature and Extent of Soil and Groundwater Contamination, Prepared for Agriculture Industries, Inc., Schropp Ranch, 3880 Mountain House Road, Byron, Alameda County, California, 42 pages, 18 exhibits, 3 tables, 7 appendices, June 1992.

WZI, 1994, Final Assessment Report Describing the Nature and Extent of Hydrocarbon Contaminated Soil and Ground Water, Prepared for Agricultural Industries, Inc., Schropp Ranch Number 1, 3880 Mountain House Road, Byron, Alameda County, California, 28 pages, 7 exhibits, 7 tables and 7 appendices, October 1994.

**APPENDIX A**  
**ANALYTIC RESULTS FOR SOIL**

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**TABLE 1: RESULTS OF SITE INVESTIGATION SOIL SAMPLE CHEMICAL ANALYSIS**  
 SCHROPP FARMS  
 BYRON, CALIFORNIA  
 PROJECT NO. 405-005

Sample No.	Date of Collection	Depth (ft.)	Asbestos (ppm)	Lead (ppm)	Cadmium (ppm)	Total Arsenic (ppm)	TPH-C	TPH-M	TPH-H
GB-1	Oct 11, 1994	7	ND	ND	0.03	ND	ND	4781	842
GB-2	Oct 11, 1994	8	ND	ND	0.02	ND	ND	3457	1589
GB-3	Oct 11, 1994	7	ND	ND	ND	ND	12	3137	579
GB-4	Oct 11, 1994	8	ND	ND	ND	ND	ND	6917	2382
GB-5	Oct 11, 1994	8	ND	ND	ND	ND	ND	854	97
SB-1	Nov 17, 1994	16-18	ND	ND	ND	ND	ND	ND	ND
SB-2	Nov 17, 1994	14-16	ND	ND	ND	ND	159	ND	ND
SB-3	Nov 17, 1994	17-19	ND	0.165	0.598	ND	433	1268	216
SB-4	Nov 17, 1994	18-20	ND	0.377	3.338	1.309	ND	4632	ND
SB-5	Nov 17, 1994	16-18	ND	ND	ND	ND	ND	ND	ND
SB-6	Nov 17, 1994	16-18	ND	0.224	1.009	0.835	90	958	340
Limit of Quantitation			0.005	0.005	0.005	0.015	10	10	10

All results in ppm by weight (mg/kg)  
 ND denotes Not Detected at the limit of Quantitation

DATE REVISID APPROVED PROJECT NUMBER DRAWN CMB

DATE 8/96 REVISED DATE 8/96 APPROVED PROJECT NUMBER 405-005

BYRON, CALIFORNIA

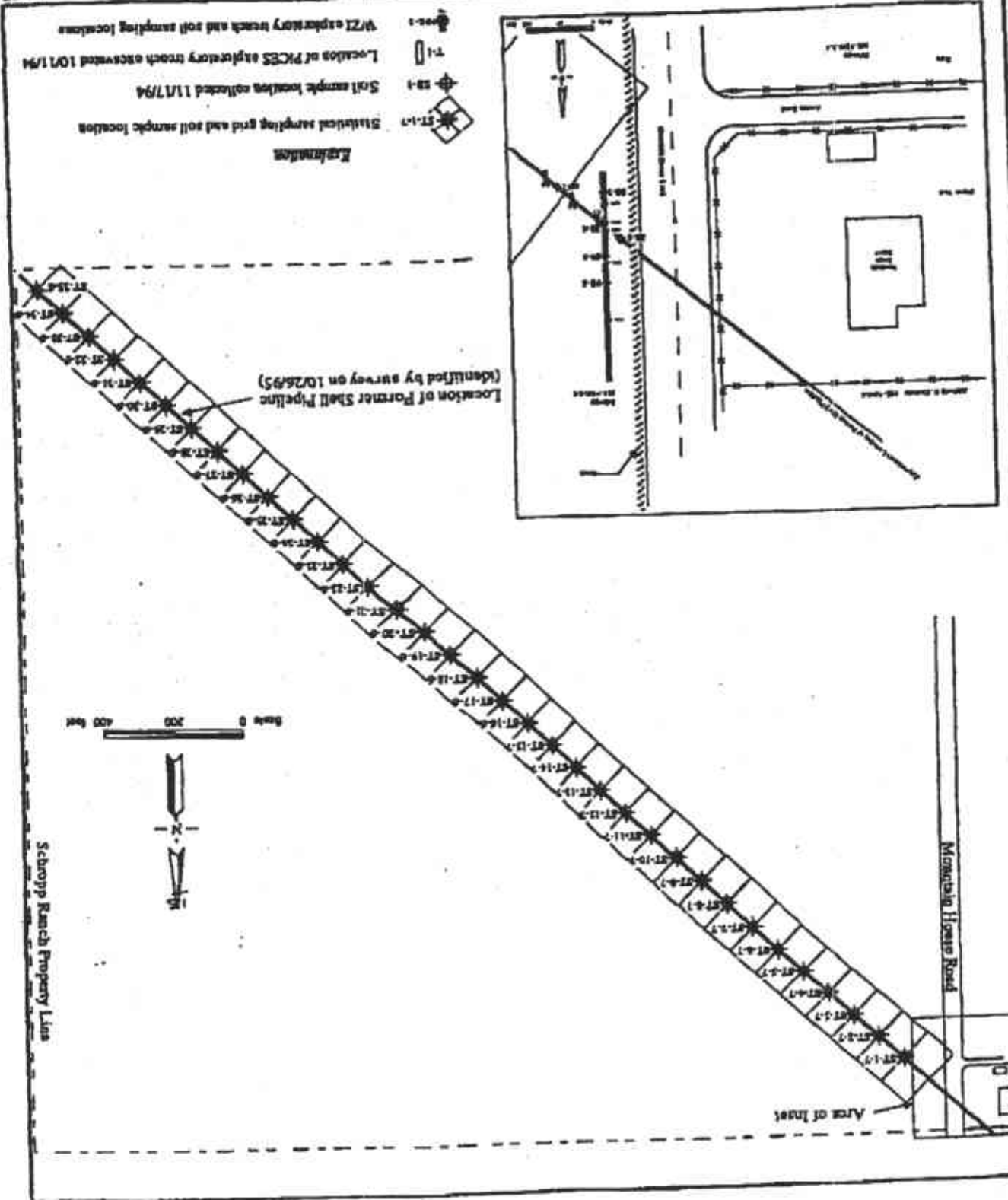
"A Pledge to Quality"

3880 Mountain House Road  
Agricultural Industries Inc. (Schropp Ranch)  
SITE AND SOIL SAMPLE LOCATION MAP

PROFESSIONAL INTEGRATED CONSULTING & ENVIRONMENTAL SERVICES



3 DATE



- Explanation**
- ST-1.1 Statistical sampling grid and soil sample location
  - ST-1 Soil sample location collected 11/17/94
  - Locations of P.C.E.S. exploratory trench excavated 10/11/94
  - WZI exploratory trench and soil sampling locations



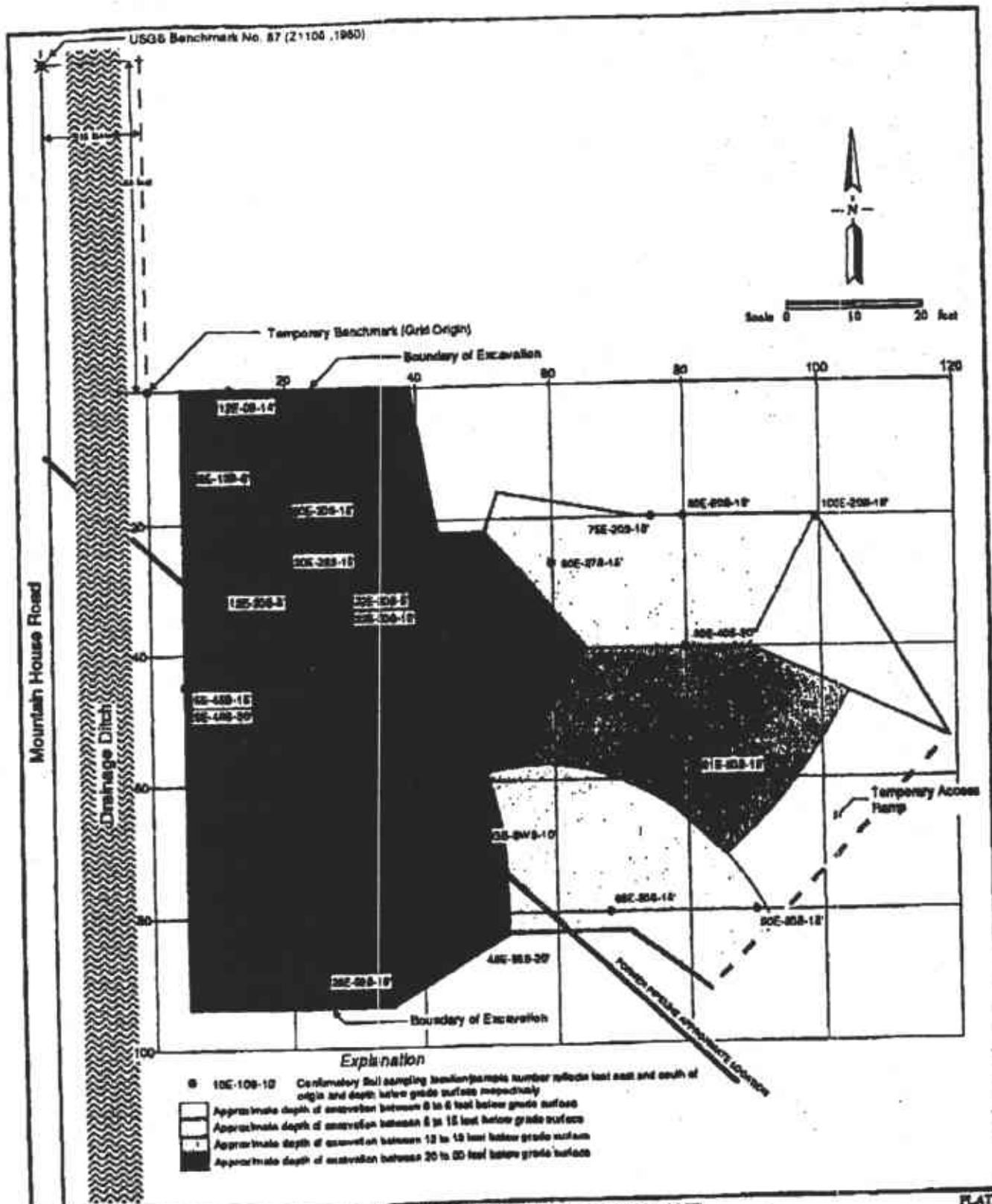
**TABLE 1: RESULTS OF SUPPLEMENTARY SITE INVESTIGATION  
SOIL SAMPLE CHEMICAL ANALYSIS**  
SCHROPP RANCH  
BYRON, CALIFORNIA  
PROJECT NO. 405-005

Sample No.	Collection Date	Depth (ft)	Benzene	Toluene	Ethylbenzene	Total Xylenes	TPH-GU	TPH-D
Composite-1	Oct 26, 1995	7	ND	ND	ND	ND	ND	ND
Composite-2	Oct 26, 1995	7	ND	ND	ND	ND	ND	ND
Composite-3	Oct 26, 1995	7	ND	ND	ND	ND	ND	ND
Composite-4	10/26, 27/1995	6	ND	ND	ND	ND	ND	ND
Composite-5	Oct 26, 1995	6	ND	ND	ND	ND	ND	ND
Composite-6	Oct 27, 1995	6	ND	ND	ND	ND	ND	ND
Composite-7	Oct 27, 1995	6	ND	ND	ND	ND	ND	ND
Limit of Quantitation			0.005	0.005	0.005	0.015	10	10

All results in ppm by weight (mg/kg)  
ND denotes Not Detected at the limit of Quantitation


**Composite Sample Summary:**

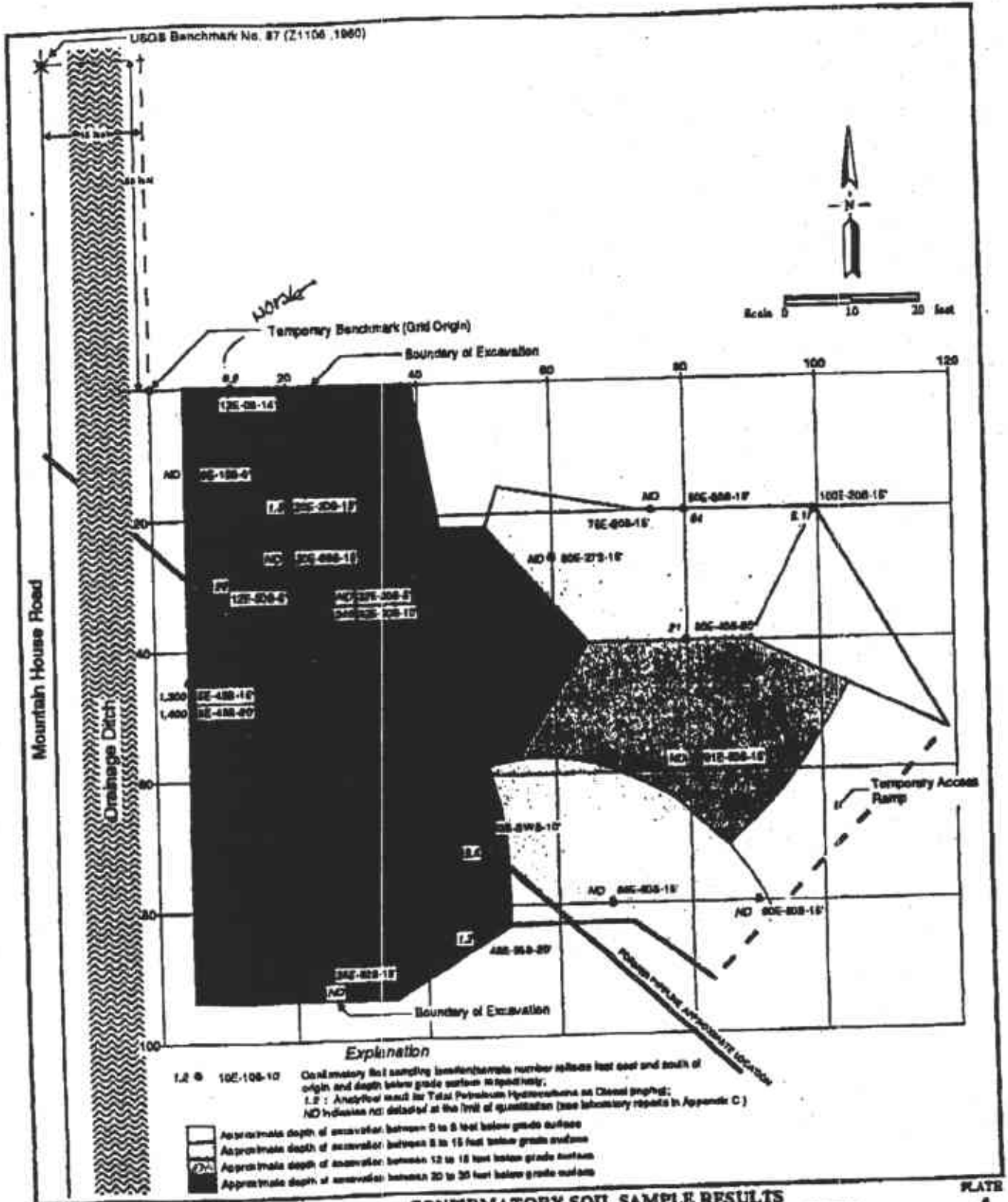
- Composite-1 : ST-1-7, ST-2-7, ST-3-7, ST-4-7, ST-5-7
- Composite-2 : ST-6-7, ST-7-7, ST-8-7, ST-9-7, ST-10-7
- Composite-3 : ST-11-7, ST-12-7, ST-13-7, ST-14-7, ST-15-7
- Composite-4 : ST-16-6, ST-17-6, ST-18-6, ST-19-6, ST-20-6
- Composite-5 : ST-21-6, ST-22-6, ST-23-6, ST-24-6, ST-25-6
- Composite-6 : ST-26-6, ST-27-6, ST-28-6, ST-29-6, ST-30-6
- Composite-7 : ST-31-6, ST-32-6, ST-33-6, ST-34-6, ST-35-6



**Explanation**

- 100E-100-10 Preliminary soil sampling location/sample number reflects east and south of origin and depth below grade surface respectively
- [White Box] Approximate depth of excavation between 0 to 6 feet below grade surface
- [Light Grey Box] Approximate depth of excavation between 6 to 15 feet below grade surface
- [Medium Grey Box] Approximate depth of excavation between 15 to 20 feet below grade surface
- [Black Box] Approximate depth of excavation between 20 to 30 feet below grade surface

 <p><b>PROFESSIONAL HYDROLOGY CONSULTING &amp; ENVIRONMENTAL SERVICES</b> "A Pledge to Quality"</p>	<p><b>EXCAVATION DIMENSIONS AND CONFIRMATION SOIL SAMPLING LOCATIONS</b></p> <p>Schropp Farms Mountain House Road, Byron, California</p>	<p>PLATE <b>3</b></p>
DRAWN CMB	PROJECT NUMBER 405-005	APPROVED
	DATE 8/96	REVISIONS
		DATE



**Explanation**

1.2 @ 10E-108-10 Confirmatory soil sampling location/depth number indicates feet east and south of origin and depth below grade system respectively.  
 1.2 : Analyzed result for Total Petroleum Hydrocarbons as Diesel (ppm);  
 ND indicates not detected at the limit of quantitation (see laboratory reports in Appendix C)

Approximate depth of excavator: between 0 to 8 feet below grade surface  
 Approximate depth of excavator: between 8 to 15 feet below grade surface  
 Approximate depth of excavator: between 12 to 18 feet below grade surface  
 Approximate depth of excavator: between 20 to 30 feet below grade surface



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**CONFIRMATORY SOIL SAMPLE RESULTS**  
**TOTAL PETROLEUM HYDROCARBONS AS DIESEL**  
 Schropp Farms  
 Mountain House Road, Byron, California

PLATE  
**4**

DRAWN CMB	PROJECT NUMBER 405-005	APPROVED	DATE 8/96	REVISED	DATE
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**TABLE 2: RESULTS OF CONFORMATION SOIL SAMPLE CHEMICAL ANALYSIS**  
 SCHROPP FARMS  
 BYRON, CALIFORNIA  
 PROJECT NO. 405-005

Sample ID	Date	Depth (ft)	Lead	Cadmium	Chromium	Copper	Total Arsenic	PH	TPH (ppm)	IR (ppm)
GB-06E-13S-05'	Nov 4, 1995	5	ND	ND	ND	ND	ND	ND	1.8	30
GB-12E-30S-05'	Nov 4, 1995	5	ND	ND	ND	ND	ND	ND	26	33
GB-32E-30S-05'	Nov 4, 1995	5	ND	ND	ND	ND	ND	ND	ND	33
GB-32E-30S-10'	Nov 4, 1995	10	0.016	0.022	0.026	0.083	21	340	120	
GB-SWS-10'	Nov 4, 1995	10	ND	ND	ND	ND	ND	ND	3.6	27
GB-100E-20S-15'	Nov 4, 1995	15	ND	ND	ND	ND	ND	ND	6.1	26
GB-80E-40S-20'	Nov 4, 1995	20	ND	ND	ND	ND	ND	ND	21	38
GB-80E-20S-15'	Nov 4, 1995	15	ND	ND	ND	ND	ND	ND	64	130
GB-48E-85S-20'	Nov 5, 1995	20	ND	ND	ND	ND	ND	ND	1.2	38
GB-20E-20S-18'	Nov 5, 1995	18	ND	ND	ND	ND	ND	ND	1.3	26
GB-28E-92S-18'	Nov 5, 1995	18	ND	ND	ND	ND	ND	ND	ND	29
GB-90E-80S-15'	Nov 5, 1995	15	ND	ND	ND	ND	ND	ND	ND	32
GB-75E-20S-15'	Nov 5, 1995	15	ND	ND	ND	ND	ND	ND	ND	ND
GB-81E-60S-15'	Nov 5, 1995	15	ND	ND	ND	ND	ND	ND	ND	ND
GB-68E-80S-15'	Nov 5, 1995	15	ND	ND	ND	ND	ND	ND	ND	ND
GB-12E-00S-14'	Nov 5, 1995	14	ND	ND	ND	ND	0.2	ND	ND	ND
GB-20E-26S-15'	Nov 5, 1995	15	ND	ND	ND	ND	ND	ND	ND	ND
GB-05E-45S-15'	Nov 5, 1995	15	ND	ND	ND	ND	140	1300	670	
GB-05E-45S-20'	Nov 5, 1995	20	ND	ND	ND	ND	35	1400	460	
GB-60E-27S-15'	Nov 6, 1995	15	ND	ND	ND	ND	ND	ND	ND	ND
Limit of Quantitation			0.005	0.005	0.005	0.005	1.0	1.0	25	

All results in ppm by weight (mg/kg)  
 ND denotes Not Detected at the limit of Quantitation  
 SWS denotes a composite sample collected over a 5-foot wall section of the excavation at 50E-70S.

F-223  
 P-25  
 T-205  
 +0250370026  
 From BC PLEASANT HILL  
 00:33am  
 00-12-00  
 00-1-10





Table 1. Results of analyses performed on soil samples collected during geoprobe investigation on July 2, 1997

Sample I.D.	TPH-CO	TPH-D	TPH-G	BTEX
B-1, 6 ft.	22	1.4	ND	ND
B-1, 10 ft.	ND	ND	ND	ND
B-2, 7.5 ft.	49	2.0	ND	ND
B-2, 11.5 ft.	ND	ND	ND	ND
B-3, 7.5 ft.	14	ND	ND	ND
B-3, 11.5 ft.	ND	ND	ND	ND
B-4, 7.5 ft.	ND	ND	ND	ND
B-4, 11.5 ft.	ND	2.6	ND	ND
B-5, 7.5 ft.	ND	1.3	ND	ND
B-5, 11.5 ft.	ND	ND	ND	ND

**Notes:**

All concentrations reported in mg/kg  
Soil samples collected 7/2/97

**Reporting Limits:**

TPH-CO 10 mg/kg  
TPH-D 1.0 mg/kg  
TPH-G 1.0 mg/kg  
BTEX 0.005 mg/kg for each compound

Table 2. Results of analyses performed on groundwater samples collected during geoprobe investigation on July 2, 1997

Sample I.D.	TPH-CO	TPH-D	TPH-G	BTEX	MTBE
B-1	720	ND	ND	ND	ND
B-2	1,300	ND	ND	ND	ND
B-3	1,600	ND	ND	ND	ND
B-4	410	ND	ND	ND	ND
B-5	610	ND	ND	ND	ND

**Notes:**

All concentrations reported in ug/L  
Ground water grab samples collected 7/2/97

**Reporting Limits**

TPH-CO 250 ug/L  
TPH-D 50 ug/L  
TPH-G 50 ug/L  
BTEX 0.5 ug/L for each compound  
MTBE 2.5 ug/L

**APPENDIX B**  
**ANALYTIC RESULTS FOR GROUND WATER**

Weiss Associates



Table 1. Results of analyses performed on soil samples collected during geoprobe investigation on July 2, 1997

Sample I.D.	TPH-CO	TPH-D	TPH-G	BTEX
B-1, 6 ft.	22	1.4	ND	ND
B-1, 10 ft.	ND	ND	ND	ND
B-2, 7.5 ft.	49	2.0	ND	ND
B-2, 11.5 ft.	ND	ND	ND	ND
B-3, 7.5 ft.	14	ND	ND	ND
B-3, 11.5 ft.	ND	ND	ND	ND
B-4, 7.5 ft.	ND	ND	ND	ND
B-4, 11.5 ft.	ND	2.6	ND	ND
B-5, 7.5 ft.	ND	1.3	ND	ND
B-5, 11.5 ft.	ND	ND	ND	ND

**Notes:**

All concentrations reported in mg/kg  
Soil samples collected 7/2/97

**Reporting Limits:**

TPH-CO 10 mg/kg  
TPH-D 1.0 mg/kg  
TPH-G 1.0 mg/kg  
BTEX 0.005 mg/kg for each compound

Table 2. Results of analyses performed on groundwater samples collected during geoprobe investigation on July 2, 1997

Sample I.D.	TPH-CO	TPH-D	TPH-G	BTEX	MTBE
B-1	720	ND	ND	ND	ND
B-2	1,300	ND	ND	ND	ND
B-3	1,600	ND	ND	ND	ND
B-4	410	ND	ND	ND	ND
B-5	610	ND	ND	ND	ND

**Notes:**

All concentrations reported in ug/L  
Ground water grab samples collected 7/2/97

**Reporting Limits**

TPH-CO 250 ug/L  
TPH-D 50 ug/L  
TPH-G 50 ug/L  
BTEX 0.5 ug/L for each compound  
MTBE 2.5 ug/L

**Table 3. Ground Water Elevations and Analytic Data - Schropp Farms, 3880 Mountain House Road, Byron, California**

Well	Top-of-Casing Elevation (ft above msl)	Date	Water Depth (ft)	Ground Water Elevation (ft above msl)	TPH-CO	TPH-D	parts per billion (µg/L)			
							B	T	E	X
MW-1	97.99	04/26/96	13.00	84.99	—	<500	0.5	0.5	0.5	0.5
		01/20/97	15.09	82.90	<100	<50	0.5	0.5	0.5	0.5
		02/24/97	13.58	84.41	360	<50	0.5	0.5	0.5	0.5
		03/24/97	12.14	85.85	270	<50	0.5	0.5	0.5	0.5
		05/07/97	13.30	97.99	<250	<50	0.5	0.5	0.5	0.5
		07/30/97	13.63	84.36	580	70	0.5	0.5	0.5	0.5
MW-2	98.08	04/26/96	13.17	84.91	—	1,000	0.5	0.5	0.5	0.5
		01/20/97	14.99	83.09	<100	<50	0.5	0.5	0.5	0.5
		02/24/97	13.59	84.49	<100	<50	0.5	0.5	0.5	0.5
		03/24/97	12.40	85.68	<100	<50	0.5	0.5	0.5	0.5
		05/07/97	13.41	98.08	<250	<50	0.5	0.5	0.5	0.5
		07/30/97	13.58	84.50	530	70	0.5	0.5	0.5	0.5
MW-3	99.28	04/26/96	12.80	86.48	—	<500	0.5	0.5	0.5	0.5
		01/20/97	14.68	84.60	320	>50	0.5	0.5	0.5	0.5
		02/24/97	13.31	85.97	390	>50	0.5	0.5	0.5	0.5
		03/24/97	11.99	87.29	380	>50	0.5	0.5	0.5	0.5
		05/07/97	13.25	99.28	<250	>50	0.5	0.5	0.5	0.5
		07/30/97	13.13	86.15	1,500	190	0.5	0.5	0.5	0.5

**Abbreviations:**

- msl = Mean sea level
- TPH-CO = Total Petroleum hydrocarbons as crude oil by modified EPA Method 8015. Shell Central Valley crude oil used as crude oil standard.
- TPH-D = Total Petroleum hydrocarbons as diesel by modified EPA Method 8015
- B = Benzene by EPA Method 8020
- T = Toluene by EPA Method 8020
- E = Ethylbenzene by EPA Method 8020
- X = Xylenes by EPA Method 8020
- < = Not detected above laboratory limit of quantification of a parts per billion
- = Not analyzed



F-223  
 T-205 P-29  
 T-205 L  
 8200LE65224  
 771R LMSV3739-30-1  
 08:35am  
 01-12-99 08-21-10



Peter M. Rooney  
Secretary for  
Environmental  
Protection

# California Regional Water Quality Control Board

## Central Valley Region



Ed J. Schnat  
Chair

Sacramento Main Office  
Internet Address: <http://www.swrcb.ca.gov/~rwqcb5>  
3443 Router Road, Suite A, Sacramento, California 95827-3003  
Phone (916) 255-3000 • FAX (916) 255-3015

5 November 1998

Mr. Irv Jenkins  
Shell Oil Company  
One Shell Plaza  
P.O. Box 2463  
Houston, TX 77252-2463

**FILE**

### REQUEST FOR NO FURTHER ACTION, SCHROPP FARMS, 3880 MOUNTAIN HOUSE ROAD, BYRON, ALAMEDA COUNTY

The enclosed memo summarizes the history of investigation and remediation at the Schropp Farms property near Byron. The memo also describes the current status of the site, and a request from Shell Oil Company for a "No Further Action" letter.

As discussed in the memo, additional investigation is needed west of Mountain House Road. Therefore, by 30 November 1998, please submit a work plan for a soil and groundwater investigation, including a time schedule to conduct the work and submit a report of the results. The work plan should include all the items in the enclosed outline for site assessment work plans submitted to the Board.

If you have any questions, you may call Kristen Rocha at (916) 255-3076.

*Wendy L. Cohen*

WENDY L. COHEN  
Senior Engineer

#### Enclosures

cc: Alameda County, Department of Environmental Health, Alameda  
Mr. Greg Garrison, Garrison Law Corporation, Half Moon Bay  
Mr. Richard Jones, Agriculture Industries, Inc., West Sacramento  
Mr. Richard Weiss, Weiss Associates, Emeryville  
Mr. Steve Muir, WZI, Inc., Bakersfield



Peter M. Rooney  
Secretary for  
Environmental  
Protection

# California Regional Water Quality Control Board

## Central Valley Region



Ed J. Schnab  
Chair

Sacramento Main Office  
Internet Address: <http://www.swrcb.ca.gov/rwqcb5>  
3443 Rautier Road, Suite A, Sacramento, California 95827-3003  
Phone (916) 255-3000 • FAX (916) 255-3015

TO: Wendy L. Cohen <sup>WLC</sup>  
Senior Engineer

FROM: Kristen Rocha  
Student Assistant

DATE: 5 November 1998

SIGNATURE: Kristen Rocha

SUBJECT: REQUEST FOR NO FURTHER ACTION, SCHROPP FARMS, 3880 MOUNTAIN HOUSE ROAD, BYRON, ALAMEDA COUNTY

### History

The site is an agricultural field east of Mountain House Road, owned by Schropp Farms. Shell Oil Company's Central Valley Pipeline (CVP) consisted of parallel pipelines beneath the property which transmitted crude oil to the Martinez refinery. Both lines were decommissioned in 1968 according to Weiss Associates.

In 1992, WZI, Inc. conducted a soil excavation and treatment due to residual contamination derived from an underground gasoline storage tank which had been removed earlier and stored on the property. The tank was approximately 500 feet southwest of the Shell pipeline intersection with Mountain House Road. The cleanup required a temporary water discharge permit from the Board for the treatment of contaminated groundwater that entered the pit during excavation activities. Initial levels of 1,180 µg/l benzene and other gasoline constituents were measured in the water. The pit was backfilled with clean soil. The contaminated soil was placed between layers of Visqueen plastic and left on site. As part of its report, WZI stated that the regional geology created a groundwater flow towards the north.

In May 1994, WZI, Inc. dug an exploratory trench east of the former pipeline. A soil sample from a five-foot depth contained 8,000 parts per million (ppm) total petroleum hydrocarbons as diesel (TPHd). Shell hired Professional Integrated Consulting & Environmental Services Associates (PiCES) to mitigate the contaminated soil derived from the crude oil exposure and to install groundwater monitoring wells.

### Investigation

The initial investigation was based on three trenches and six soil borings, probed to depths of 16 to 18 feet below ground surface (bgs). The chemical analysis defined a soil plume extending 80 feet in the southeasterly direction from the pipeline intersection with the Mountain House Road. A copy of the PiCES groundwater contour map is attached for reference. The western side of Mountain House Road was not explored. The soil sampling indicated hydrocarbon impacted soils extending vertically from a few feet bgs down to the groundwater. Although it fluctuates with seasonal changes between nine and 25 feet bgs, in November 1994 the soil borings encountered groundwater between 16 to 19 feet bgs.

The soil samples taken during explorations were from six to seven feet bgs. Concentrations of TPHd ranged from 854,000 µg/l to 6,917,000 µg/l, while benzene, toluene, ethylbenzene and total xylenes (BTEX) and TPH as gasoline (TPHg) were low to nondetectable. The chemical analysis of SB4, located at the center of the plume (see attached PiCES map) revealed the following constituents:



Wendy L. Cohen

- 3 -

15 October 1998

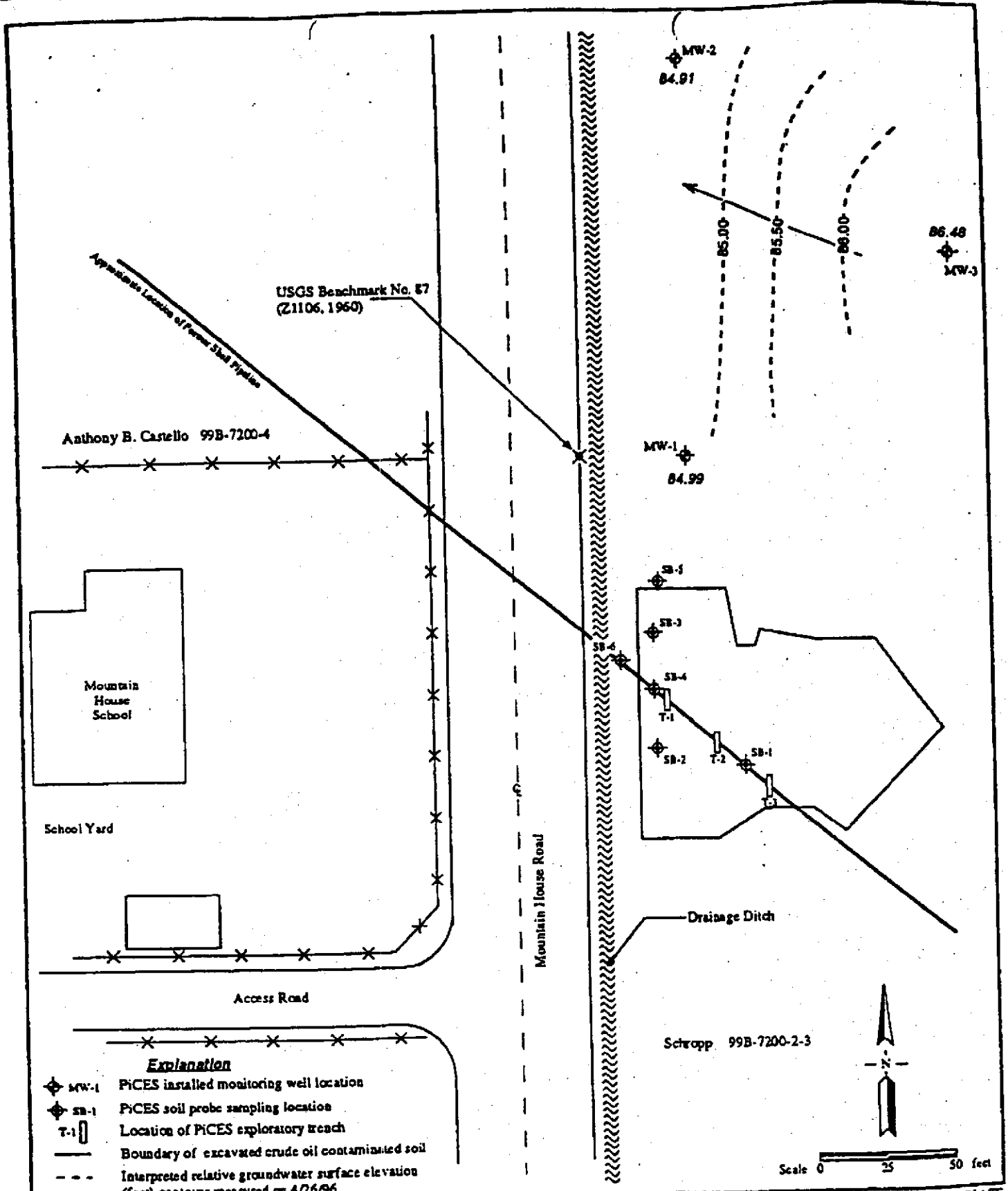
The July 1997 Geoprobe borings should have included a sample near the plume center and a sample from greater depth, such as 25 feet bgs, to help characterize the extent of contamination. The levels of TPHc in the groundwater were high, 1,600 ug/l at B-3, which points to a need to define the full extent of TPH constituents in the groundwater.

Ambient conditions are not equally comparable when assessing underground conditions for crude oil, specifically when a leaky pipeline allowed flow into subsurface sediments. The 30 years of deposit time, perhaps longer at this site during the pipelines' operation, allows for a much greater extent of contamination, especially in the downgradient direction towards the west. This possibility is supported by the evidence of soil contamination at the deepest point exhibited along the western side of the excavation. The lack of clear evidence that the contaminant source has been fully removed points to the need for further delineation of the soil contamination.

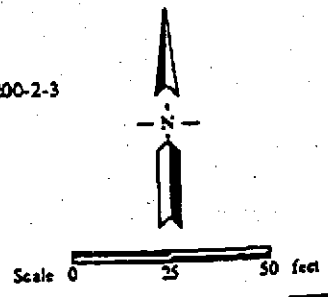
Soil and groundwater samples from adequate depths, such as 15 and 25 feet bgs, need to be taken across Mountain House Road in the downgradient direction near the old pipeline. The closure of the well used by the Mountain House school across the road to the west, raises the question as to the extent of affected groundwater. Therefore, further information is needed before a NFA letter can be issued.

KR

Attachments: PICES map and Weiss map



- Explanation**
- ◆ MW-1 PiCES installed monitoring well location
  - ◆ SB-1 PiCES soil probe sampling location
  - T-1 Location of PiCES exploratory trench
  - Boundary of excavated crude oil contaminated soil
  - - - Interpreted relative groundwater surface elevation (feet) contours measured on 4/26/96



PROFESSIONAL INTEGRATED CONSULTING & ENVIRONMENTAL SERVICES  
 "A Pledge to Quality"

**GROUNDWATER CONTOUR MAP**  
 Schropp Farms  
 Mountain House Road  
 Byron, California

PLATE 6

DRAWN CME	PROJECT NUMBER 405-005	APPROVED	DATE 8/96	REVISED	DATE
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**CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD  
CENTRAL VALLEY REGION**

3443 Roubier Road, Suite A  
Sacramento, CA 95827-3098  
Phone (916) 255-3000  
FAX (916) 255-3015


**ITEMS TO BE INCLUDED IN A SITE ASSESSMENT WORK PLAN**

**FILE**

The outline below is a minimum requirement for items to be included and discussed in the text of all site assessment work plans submitted to the Board. All work plans must be signed by a registered geologist, certified engineering geologist, or civil engineer registered or certified by the State of California.

**I. BACKGROUND**
**A. Site History**

State all operations conducted at the site.  
Identify all past and present above ground and under ground tank locations.  
Identify tank capacities and other specifications as necessary.  
Identify tank contents, past and present.  
Submit all records of tests or repairs on fuel lines and tanks.  
Identify locations of maintenance shops, chemicals used in the shops, method of chemical storage and disposal.

**B. Topographic map of site vicinity showing:**

All natural and man-made drainage features including ditches and surface impoundments, and the drainages destination;  
Utilities, especially storm drain system;  
Location of existing monitoring wells, including those installed by other parties;  
Location of above ground and underground storage tanks, other waste-handling facilities, and/or spill site;  
Location of a major body of water relative to the site;  
Location of any nearby private, municipal, or irrigation wells; and  
Other major physical and man-made features.

**C. Geology/Hydrogeology**

Include proposal for logging of boreholes and characterizing site geology, and identifying unconfined or confined aquifers and contaminant flowpaths.

**II. PREVIOUS SITE ASSESSMENTS**

Provide a detailed description of any previous site assessment conducted to determine if there is any soil or ground water contamination. Include analytical results of soil and water samples analyzed, and water level and floating product measurements.

**III. FIELD INVESTIGATION**
**A. General**

Monitoring well locations and rationale  
Survey details  
Equipment decontamination procedures  
Health and safety plan


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Pete Wilson, Governor

## ITEMS TO BE INCLUDED IN A SITE ASSESSMENT REPORT

The outline below is a minimum requirement for items to be included and discussed in the text of all site assessment reports submitted to the Board. Other supporting data to be included in the report, either within the text of the report or in appendices, are italicized at the end of each section. All reports must be signed by a registered geologist, certified engineering geologist, or civil engineer registered or certified by the State of California.

### I. INTRODUCTION

Summary of past investigations  
Purpose of the recent investigation  
Scope of the recent investigation  
Time period in which the recent investigation was carried out

### II. SUMMARY

Number of wells drilled  
Results of soil and water analyses  
Ground water flow direction and gradient  
Possible source determination

### III. FIELD INVESTIGATION

Well Construction  
Number and depth of wells drilled  
Date(s) wells drilled  
Description of drilling and construction  
Approximate locations relative to facility site(s)

#### *Supporting Data:*

*A well construction diagram for each well should be included in the report which shows the following details:*

*Total depth drilled  
Depth of open hole (same as total depth drilled if no caving occurs)  
Footage of hole collapsed  
Length of slotted casing installed  
Depth of bottom of casing  
Depth to top of sand pack  
Thickness of sand pack  
Depth to top of bentonite seal  
Thickness of bentonite seal  
Thickness of concrete grout  
Boring diameter  
Casing diameter  
Casing material  
Size of perforations*

## Site Assessment Report Outline

- 3 -

*Supporting Data:*

*Dates of water level measurement, depths to ground water, and ground water elevations should be tabulated and included in the report.*

**Ground Water Gradient and Flow Direction**

Ground water gradient and flow direction determined by the investigation should be discussed and compared to the regional gradient and flow direction.

*Supporting Data:*

*A ground water contour map, drawn to scale, should be provided which shows each well, its ground water elevation, and lines of equal ground water elevation. Ground water gradient and flow direction should be shown on the map. The calculation of the gradient should be included.*

**V. RESULTS OF QA/QC**

Field blank analyses

Comparison of duplicate sample results

**VI. CONCLUSIONS AND RECOMMENDATIONS**

Note any contamination found

Identify any suspected source of contamination, if possible

Recommend any further investigative needs

The topics listed above are only the minimum which need to be included in site assessment reports for the Board. All other pertinent information specific to each individual investigation also should be included.

**GARRISON LAW CORPORATION**  
**A PROFESSIONAL CORPORATION**

October 21, 1998

VIA FACSIMILE: 713/241-7373

Irv Jenkins  
Shell Oil Products Company  
P.O. Box 2463  
Houston, TX 77210-2463

Site: Schropp Farms, Inc.  
3800 Mountain House Road, Byron, CA

Re: Shell's unilateral request for Site Closure

Dear Mr. Jenkins:

I received via your letter of September 23, 1998 via facsimile on October 7, 1998. We appreciate your offering an opinion on the matter of site closure. However, my client was quite shocked to find that you had rendered this opinion, by copy, to the Regional Water Quality Control Board directly.

Pursuant to the access agreement, there is no provision for your directly communicating your findings to the regional board without first gaining the input and recommendations of Schropp Farms and its consultant. The agreement clearly defines Shell's responsibilities to Schropp and in so doing, prevents Schropp's exposure to unsubstantiated and unresolved claims. Therefore, Shell's letter is in violation of the contract signed on October 11, 1995.

The specific sections of the Access Agreement that I refer to include:

Section 3a) Investigation and Remediation: "If Shell undertakes Remediation Activities, Shell shall also submit its proposed plans for Remediation to Schropp for Schropp's approval that approval shall not be unreasonably withheld. Schropp shall notify Shell of its disapproval of such plan within ten (10) days after receipt by Schropp, or Schropp shall be deemed to have approved such plans.

Section 3 b) " Shell shall provide to Schropp copies of all draft workplans, supporting documents, and technical correspondence under which any Investigation or Remediation Activities is proposed to be performed at the Property by or at the direction of Shell, at least 30 days before such work is commenced".

Please take notice of these sections and then undertake compliance with the contract. We believe you should reconsider your indemnification of the Schropp property as per our previous discussion as you have already compromised our position with the California Regional Water Quality Control Board. Thank you for your attention to this matter.

Sincerely,



Gregg S. Garrison  
Attorney at Law

GSG:vcb

691 MYRTLE STREET HALF MOON BAY, CALIFORNIA 94019  
TELEPHONE: 650/726-1111 FACSIMILE: 650/726-1388 EMAIL: COASTLAW@AOL.COM

**GARRISON LAW CORPORATION**  
A PROFESSIONAL CORPORATION

August 26, 1998

VIA FACSIMILE 713/241-1124

Irv Jenkins  
Shell Oil Products Company  
P.O. Box 4320  
Houston, TX 77210-4320

Site: Schropp Farms, Inc.  
3800 Mountain House Road, Byron, CA  
Re: Site Closure, Access Agreement & Compensation for Damages

Dear Mr. Jenkins:

This letter memorializes our telephone conversation on August 24, 1998 which was a follow-up to my letters dated July 23, 1998 and May 11, 1998.

If closure is sought with contamination left in place, the Schropps must be compensated for the stigma associated with this type of closure and their associated costs, business losses and damages. By way of this letter and at your request, I am asking Mr. Muir of WZI to contact you to discuss his knowledge and understanding as to the nature and extent of the contamination left in place by Shell. I will participate in this conference so that we can arrive at a mutually acceptable timeline and action plan.

As we also discussed, the Mountain House Project owners and planners are very concerned with the regional degradation due to petroleum hydrocarbon products left in place.

You agreed that Shell supports this request to resolve the site closure and damages issues. As I emphasized, there is an urgency to conclude this matter. In the fact that Mr. Long has left Weiss & Associates, my fears are that this project will be further delayed. Although Weiss & Associates had requested closure, it is my understanding that this request was made in an effort to "get the attention" of the regulators rather than to actually receive site closure. If this is the case, we need immediate action so that my client's property does not continue to suffer the cloud on title that the contamination continues to cast on it. Please contact me immediately if the above does not comport with your understanding. Shell's immediate response is expected and appreciated.

Very truly yours,  
GARRISON LAW CORPORATION



G. S. Garrison  
Attorney at Law

cc: Dick Jones, AII, via facsimile, 916/372-5615  
Steve Muir, WZI, via facsimile, 805/326-1112  
Ron Kawczynski, Shell Pipe Line Corp., PO Box 6249, Carson, CA 90749  
Ron Weiss, Weiss & Associates

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