

APPENDIX II

AGRICULTURE INDUSTRIES INC.
SCHROPP RANCH
3880 MOUNTAIN HOUSE ROAD, BYRON
ALAMEDA COUNTY, CALIFORNIA

Problem Assessment Report and
Preliminary Site Assessment Work Plan
to Determine Nature and Extent
of Soil and Groundwater Contamination

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1.0 INTRODUCTION

1.1 Executive Summary

WZI Inc. conducted a preliminary environmental assessment and exploratory trenching of a former underground gasoline fuel site at Agriculture Industries Inc. Schropp Ranch, located at 3880 Mountain House Road, Byron, California.

The subject property consists of two contiguous parcels of approximately 488 acres, consisting of Alameda County Assessors Parcel Numbers (APN) 99B-7200-2-4 and 99B-7200-2-3, (Exhibits 1 and 2). Existing improvements on the property consist of one residence with a separate garage, a storage shop, and a barn. In addition, a pole-barn storage structure is present in the shop area (Exhibit 3).

The site information for the subject property revealed the following:

Historical Use - Dark soil staining was possibly present in the shop yard area as depicted on aerial photographs (Exhibits 5,6, and 7). Interviews of persons historically involved in property management have indicated past operation of an underground gasoline fuel storage tank or tanks over a period of at least 20 years. A 550 gallon fuel tank was removed from the subsurface during 1991 and has remained on site. No underground fuel tank has been registered on the property.

Site Investigation - The initial field investigation revealed hydrocarbon contaminated soil at the surface in the area where the underground fuel storage tank had been removed. Exploratory trenching of the subsurface in the area immediately surrounding the former tank location indicated contaminated soil to a depth of at least 26 feet. Approximately 2000 cubic yards of hydrocarbon contaminated soil was removed from the subsurface in an attempt to determine if a very limited amount of soil was contaminated immediately surrounding the

tank. This contaminated soil was stockpiled and covered with visqueen. The vertical and lateral extent of the soil contamination is undetermined at this time. Soil and water samples taken from the excavation indicate gasoline contamination of both soil and groundwater. A proposed soil and groundwater site assessment program to assess the character and extent of the hydrocarbon contamination is proposed as part of this report.

Hazardous Materials - None of the tenants use or store hazardous materials and therefore do not have Hazardous Business Plans on file with Alameda County or other applicable governmental agencies.

Fuel Storage - Both above and underground fuel storage has occurred on the property for gasoline fuel.

Pesticides - No pesticides are known to have been stored on the property.

Transformers - A transformer belonging to Pacific Gas & Electric Company is mounted on a telephone pole on the property.

Surrounding Properties - No neighboring properties are known to have experienced environmental problems.

1.2 **Project Background**

Pursuant to the request of Agriculture Industries Inc., West Sacramento, California, WZI Inc. conducted a Phase 1 Environmental Site Assessment of the Schropp Ranch located at 3880 Mountain House Road, Byron, California. The purpose of the study was to identify any potential environmental related liabilities that may be evident on or immediately adjacent to the above described property in support of a possible property transfer. Past and current land use was reviewed for indications of the manufacture,

generation, use, storage and/or disposal of hazardous substances at the site. The potential for soil and groundwater contamination resulting from past and present site land use activities and adjacent off-site operations was also evaluated. This work was conducted specifically for Agriculture Industries Inc. and their clients, agents, potential purchasers of the property and directly involved lenders, and attorneys representing these parties. Use by other parties is unintended.

In this examination, WZI has assumed the legal capacity of all legal persons, the genuineness of all signatures, the authenticity of all documents submitted to WZI as originals, the conformity to original documents of all documents submitted to WZI as certified, photostatic copies, or telecopies, and the authenticity of the originals. In examining of documents, WZI assumed that all parties had the power, governmental or otherwise, to enter into and perform all obligations under such documents, have further assumed the due authorization by all requisite action, governmental or otherwise, of the execution and delivery by all parties of such documents, and have further assumed the validity and binding effect of such documents against all parties in accordance with the terms thereof. As to any facts, material to the opinions expressed herein which were not independently established or verified by WZI, oral or written statements and representations of Agriculture Industries Inc. and its officers, agents or representatives were relied upon. Unless otherwise stated, WZI has not made independent investigation or inquiry into the accuracy or completeness of the documents and information supplied to WZI.

The members of WZI are State of California Registered Environmental Assessors, Registered Engineers and Certified Engineering Geologists. WZI expresses no opinion as to disciplines, subjects and practice areas outside those specifically enumerated in the first sentence of this paragraph. Further, WZI expresses no opinion herein as to any matters of California law or federal law.

2.0 SITE DESCRIPTION

2.1 Ownership

The subject property is currently owned by Werner R. and Irmgard S. Schropp as registered with Alameda County Assessors office with a mailing address of Post Office Box 1076, West Sacramento, California 95691.

2.2 Location

The subject property is located at 3880 Mountain House Road, Byron, California and consists of approximately 488 acres. The property is composed of two parcels, Alameda Assessors Parcel Number (APN) 99B-7200-24 and 99B-7200-2-3 (Exhibit 4). Existing improvements on the property are mainly in the shop area of the property and include one residence with attached garage, two shop buildings, and a barn. In addition, a pole-barn is present on the property.

The property is located on the U. S. Geological Survey Clifton Court Forebay 1:24,000 scale topographic map (Exhibit 2), near the base of the foothills of the eastern flank of the Diablo Range on a gentle northeast-sloping surface which has been dissected by small northeast flowing streams. The elevations of the property range from approximately 160 feet above mean sea level in the southwest corner of the property to 80 feet above mean sea level in the northeast corner of the property. The topography of much of the property has been modified by agricultural operations to optimize irrigation and control erosion. These modifications reflect only minor changes in the property's overall topography.

2.3 Historical Events

Aerial photographs from October 31, 1963, November 11, 1975, and August 25, 1987 were used to identify past land uses of the property. The photographs reveal the property to be cultivated row-crop agriculture land with a shop area. The shop area appears to have multiple agriculture-related tank trailers in the yard.

The photographs reveal little change in the yard area through time with the exception that between 1963 and 1975 a pole barn was erected on the property. In addition, the 1975 photograph indicates many vehicles and associated equipment stored in the yard compared with the 1963 and 1987 photographs.

3.0 SURROUNDING PROPERTIES

The property is bounded on the north, east, and south sides by agricultural property. The west side of the property is bounded by the Delta Mendota Canal, a regional water supply project. The Mountain House School, a small elementary school, is present approximately 300 feet east of the main shop area. This school is occupied by children 6 to 11 years of age from late September to early June.

Surrounding properties can be seen on Exhibit 4.

This area of eastern Alameda County is comprised of agriculture operations and is very scarcely inhabited.

4.0 REGULATORY COMPLIANCE (PERMITS AND REGISTRATION)

Alameda County Department of Environmental Health

Mr. Brian Olivia, Hazardous Material Inspector (510/271-4320), was contacted concerning underground storage tanks. Mr. Olivia stated that his department has no record of any underground tanks or environmental problems on the site.

Alameda County Department of Environmental Health has no record of any facilities with leaking underground storage tanks within one mile of the site.

Mr. Paul Smith (510/271-4320) was contacted on May 28, 1992. Mr. Smith stated that his department has no available computerized Proposition 65 list.

Mr. Ronald Owcarz was contacted on May 29, 1992. Mr. Owcarz stated that there is no Hazardous Materials Business Plan on file for 3880 Mountain House Road. Mr. Owcarz also stated that in order to perform a registered underground storage tank search specific addresses would have to be supplied.

County of Alameda - Water Resources Department

Ms. Andreas Godfrey (510/370-5575) of the Federal Emergency Management Agency, Hayward, California office was contacted regarding flood potential of the property. Floodplain maps prepared under the National Flood Insurance Program covering the subject area were reviewed. The subject area is located on panel 060 001 0145A and lies completely within an area designated as Zone C.

Comprehensive Environmental Response Compensation and Liability Act

Comprehensive Environmental Response Compensation and Liability Act (CERCLA) lists sites which the federal government has designated as being extremely contaminated and hazardous. The subject property is not listed and no sites within a one mile radius are listed.

Hazardous Waste and Substances Site List

The data for this list was received from the State Water Resources Control Board, the California Waste Management Board and the State Department of Health Services.

The subject property is not listed and no sites within a one mile radius are listed.

Bond Expenditure Plan

The Bond Expenditure Plan (BEP) lists sites targeted by the California Department of Health Services to receive funds for cleanup.

Neither the subject property nor any site within a one mile radius are included on this list.

National Priorities List

The National Priorities List (NPL), compiled by the U. S. Environmental Protection Agency (EPA), lists hazardous waste sites nationwide which have been identified for cleanup under the federal Superfund program. Only NPL sites can receive CERCLA funding.

Neither the subject property nor any site within a one mile radius are included on this list.

Solid Waste Assessment Test Program

This list was adopted by the State Water Resources Control Board in June, 1989. It is a ranked list of solid waste disposal sites. No active or inactive landfills within one mile of the subject property are listed.

Proposition 65

This list was compiled pursuant to the Safe Drinking Water and Toxic Enforcement Act of 1986. It includes incidents, such as spills and leaking underground tanks, which involve hazardous materials. This list was not reviewed for this investigation.

Sanborn Fire Insurance Maps

Environmental Risk Information and Imaging Services (800/989-0402) was contacted regarding past fire insurance maps. None were available for the subject property.

Pacific Gas and Electric Company

Ms. Cathy Doo (209/836-0440) was contacted on May 29, 1992 regarding any distribution transformers on the subject property. Ms. Doo stated that the site has at least two transformers and possibly more since she does not know the exact property boundaries. One of the transformers which serves the farmhouse, shop and a pump is currently being removed.

The manufacture and sale of polychlorinated biphenyl (PCB) was banned in 1976. All electrical equipment containing 50 parts per million (ppm) or more PCB is regulated by the EPA. The distribution of transformers now used in PG&E's electrical system contain mineral oil insulating fluid. Distribution transformers which may contain only minute concentrations of PCB will usually not be removed unless they are due for replacement

through normal utility operations. Since the insulating fluid is contained inside of a sealed transformer it poses very little health risk to the public and the EPA has chosen not to require their removal from service.

If a customer desires a laboratory analysis of the insulating fluid to determine if it is contaminated with PCB, PG&E will do this at the customer's expense which amounts to \$300 per transformer. If the results show a PCB concentration of 50 ppm or more, the transformer for the insulating fluid will be replaced and the cost of the test refunded.

5.0 PRELIMINARY SITE ASSESSMENT RESULTS

5.1 Overview

The site was inspected on April 13, 1992 and substantial field work was conducted during April 20 to 24, 1992. The initial field investigation revealed no signs of natural depressions, chemicals or raw materials, hazardous wastes or solid wastes stored on site, on-site landfills, pits or sumps. There is a high-voltage power transmission line that crosses the west portion of the property (Exhibit 2).

A gasoline dispenser was present approximately 50 feet northeast of the northeast corner of the shop building and immediately next to the reported former location of the underground fuel storage tank (Exhibit 3). A 550 gallon gasoline tank with a stamped number of 680 was present near the northwest corner of the pole barn (Exhibit 3) that was reportedly removed from the subsurface during 1991. The tank bottom is extremely rusty and shows evidence of major integrity loss in ability to hold liquid product.

Minor surface hydrocarbon staining in the shop area in the vicinity of the former underground fuel storage tank that is visible on aerial photographs (Exhibits 5, 6 and 7) was not visible during the surface investigation. Limited exploratory trenching was conducted to determine if soil hydrocarbon contamination was found in the subsurface. A detailed description of the results of the exploratory trenching is presented in Section 5.2 of this report.

With the exception of the underground fuel storage tank, the site investigation did not reveal any natural, cultural, recreational or scientific values of special significance associated with the property pertaining to sole source aquifers, wetlands, coastal dunes and beaches, threatened and endangered species, wild/scenic rivers, critical and unique habitat, archaeological resources, historic buildings, structures and sites, designated natural landmarks and recreational areas.

5.2 Exploratory Trenching

Exploratory trenching was conducted at Schropp Ranch during April 20 to 24, 1992. Two trenches were excavated immediately adjacent to the former underground storage tank location (Exhibit 11). Trenches were excavated to a depth of approximately 32 feet (Exhibits 12 and 13). Soil hydrocarbon contamination was found to be present by physical inspection and odor as well as Organic Vapor Meter (OVM) readings.

Groundwater was present at a depth of 26 feet. The exploratory trenches were expanded to determine if the lateral extent of soil contamination could be identified without further enlarging the excavation. Exhibit 11 depicts the excavation limits as a contour map. Approximately 2000 yards of contaminated and clean soil was excavated from the trenches in order to stabilize the walls of the hole. Clean soil was encountered on the west and southwest walls of the excavation. All other walls showed evidence of soil contamination.

A chain-link-fence was erected to keep people and animals out of the excavation and safety placards were placed around it.

5.3 Soil and Water Sample Analyses

Two soil samples were obtained at depths of 10.5 and 19.5 feet below the ground surface. These samples had the following results

<u>Sample</u>	<u>Benzene</u>	<u>Toluene</u>	<u>Ethyl Benzene</u>	<u>Xylene</u>	<u>TPH-G</u>
	-----(ppm)-----				
SS-1	0.88	10.2	4.8	46	1140
SS-2	22.8	44.4	7.1	33	1050

Sample map locations are depicted on Exhibit 11.

A water sample was taken from groundwater that entered the trench. The sample was analyzed for hydrocarbon contamination. The laboratory results of the sample are outlined below.

<u>Sample</u>	<u>Benzene</u>	<u>Toluene</u>	<u>Ethyl Benzene</u>	<u>Xylene</u>	<u>TPH-G</u>
	-----(ppm)-----				
Water 27	1.18	1.65	.26	.78	27.5

Laboratory results are presented in Appendix IV.

6.0 REGIONAL GEOLOGIC AND HYDROGEOLOGIC SETTINGS

6.1 Regional Geologic Setting

The subject property is located in the northwestern San Joaquin Valley, approximately six miles east of the Diablo Range. The property is underlain by approximately 1,000 feet of alluvial and lacustrine sediments consisting of consolidated and semi-consolidated clays, silts, sands, and gravels of Recent, Pleistocene, and Pliocene Age (Hotchkiss and Balding, 1971). The upper 100 feet of sediment in the property area consists of alluvial deposits, generally comprised of silts and clays with occasional lenses of sand and gravel. These deposits represent a near-surface sequence of Holocene alluvial fan deposits underlain by the upper portion of the thick, hydrologically significant Tulare Formation (Cole and others, 1971). Because of their similar lithology, the contact between these units is indistinguishable in this part of the San Joaquin Valley (Hotchkiss and Balding, 1971). Infiltration rates in the upper alluvial fan deposits range from low to moderate (Cole and others, 1971).

A laterally extensive clay layer known as the Corcoran Clay Member is present within the Tulare Formation, typically at a depth of about 100 feet below ground surface in the vicinity of the property (Hotchkiss and Balding, 1971). The thickness of the clay layer in this portion of the Southern Sacramento Valley is approximately 100 feet. Beneath the Corcoran Clay, the Tulare Formation consists of alluvial clays, silts, sands and gravels to a depth of approximately 1,000 feet below ground surface. These sediments are underlain by sedimentary and crystalline rocks of Tertiary and pre-Tertiary age (Page, 1986).

6.2 Regional Hydrogeologic Setting

In general, two fresh water bearing units are present in the vicinity of the property. These are comprised of the upper and lower zones of the Tulare Formation, which are hydrologically separated by an aquiclude, the Corcoran Clay Member. Groundwater beneath the Corcoran Clay constitutes the major potable groundwater resource in the area. This groundwater is generally not in hydrologic communication with near surface groundwater because of the clay aquiclude. The zone above the Corcoran Clay includes the water table zone, unless local shallow clay lenses produce confined or semi-confined conditions (Hotchkiss and Balding, 1971). In the northern San Joaquin Valley some water wells perforated deep (50 to 100 feet) within the upper Tulare Formation have water levels markedly lower than nearby shallow wells (20 to 50 feet), indicating localized hydrologic separation due to shallow confining clay layers. San Joaquin County Local Health District personal indicate that several intervening clay layers are present in the property area between ground surface and the top of the Corcoran Clay Member (about 100 feet) . It is, therefore extremely likely that semi-confined conditions exist beneath the property area. These clay layers would also discourage downward migration of any surface hydrocarbon spill liquids.

Groundwater flow in the property area appears to be generally to the northeast, toward the San Joaquin River, although locally groundwater may flow north or northwest. Depth to groundwater is on the order of 26 to 30 feet deep. Groundwater levels are known to fluctuate in the area in response to irrigation and seasonal change. However, information on typical ranges of fluctuation is not available.

The water supply for the property consists of two sources. Domestic water supply is from a water well located in the yard portion of the shop area (Exhibit 3). No information is known regarding this water well. This well currently supplies all water needs for the family living in the residence at the property with the exception of drinking needs. The family has been using bottled water for the past two years according to the tenant farmer.

The irrigation water source for agriculture operations is through the Byron Bethany Irrigation District. This district has a 24 inch concrete pipeline that crosses through the main shop area as depicted on Exhibit 3. This pipeline is near the end of the water delivery system and delivers water to the north to one additional farm property.

A water well for the Mountain House Elementary School is located approximately 600 feet east of the shop area. This well produces groundwater from an unknown depth. According to the school principal, this water is not used for drinking purposes. Additional water wells within 2000 feet are located to the north near the Tracy Substation and to the south near residences (Exhibit 2).

7.0 ENVIRONMENTAL STANDARDS AND IMPACTS

7.1 Environmental Standards

As part of this Site Assessment investigation, WZI reviewed what environmental standards currently exist regarding gasoline fuel. Regulations concerned with acceptable levels of gasoline fuel concentrations in soil and drinking water have been established by the EPA and the State of California Office of Environmental Health Hazard Assessment (OEHHA).

7.2 Characteristics of Gasoline Fuel

Gasoline is a mixture of over 200 petroleum derived chemicals plus a few synthetic products that are added to improve fuel performance. The majority of gasoline components range from C4 to C12 hydrocarbons. Analysis of gasoline components is usually limited to detection of benzene, toluene, ethyl benzene and xylene (BTEX) because: (1) they are readily adaptable to gas chromatographic detection, (2) they pose a serious threat to human health, (3) they have the potential to move through soil and contaminate groundwater, and (4) their vapors are highly flammable and explosive.

Acute toxicity from gasoline includes anesthetic effects and mucus membrane irritation. Symptoms of acute exposure include headache, blurred vision, dizziness and nausea. The major toxicity concern is due to benzene. Benzene is a known human carcinogen through inhalation. Gasoline typically contains 0.7 to 1.0 percent benzene. The Occupational Safety and Health Administration (OSHA) Time Weighted Average (TWA) for benzene is currently 10 ppm, however, it has been proposed at 1 ppm, primarily due to the association between benzene and leukemia. The National Institute for Occupational Safety and Health (NIOSH) recommended eight hour level is 1 ppm. NIOSH has recommended lowering exposure limits to the lowest level which could be reliably measured because it is not possible to establish a safe level for a carcinogen.

Gasoline also contains lead which has adverse health effects if inhaled. The OSHA TWA for lead is 50 ug/m³, however, lead is not readily volatilized. The overall Threshold Limit Value (TLV) for gasoline is 300 ppm, based largely upon assumptions about the hydrocarbon content of gasoline. This TLV could result in benzene exposures to 3 to 7.5 ppm depending on the benzene content. If the gasoline TLV were lowered to 25 ppm, it would result in benzene exposures of 0.25 ppm to 0.6 ppm. Lowering the TLV is also supported in the documentation for the TLV if operations involve a gasoline spill rather than the normal bulk handling operations. This is because vaporization will change the relative composition of the constituents of gasoline.

7.3 Potential Environmental Impacts on Site

Potential impacts of the benzene component of gasoline fuel concentrations of groundwater at Schropp Ranch may involve the location or proximity of domestic and/or agricultural water wells and may be significant. A domestic water well is located in the central portion of the shop area (Exhibit 3). No information is available regarding depth to water, total depth, or producing intervals from the well.

According to the tenant, this well has not been used for any drinking purpose because of the extremely poor water quality. No water quality information is available for this well

8.0 HYDROCARBON CONTAMINATED SOIL SITE ASSESSMENT WORK PLAN

Exhibit 17 outlines the standard steps used to complete site assessment and remediation operations.

8.1 Soil Contamination Overview

During the preliminary portion of the Site Assessment of the Schropp Ranch Property, a series of dark, oily stains were observed on the ground in the central portion of the shop area. This area is where an underground fuel storage tank was reported to have been present. Discussions with the tenant, Mr. Don Holek indicated that a 550 gallon underground gasoline fuel tank and fuel dispenser were removed from service approximately two years ago and no fuel has been reportedly stored on the site since that time. No estimate of the total volume of fuel handled at the facility was made. Mr. Holek indicated no other fuel or any solvent was stored at the site.

8.2 Health and Safety Plan Requirements

A Health and Safety Plan for the workers at the site was prepared and is shown as Appendix III of this report.

8.3 Sensitive Receptors within 1,000 Feet

Sensitive receptors are located within 1,000 feet of the site. Receptors are present in the farmhouse within 150 feet of the excavation. Plans call to relocate this family on an immediate basis until the excavation can be completed and backfilled. Additional receptors are present for 8 hours a day at the Mountain House School. This school is located approximately 400 feet east of the excavation and receptors are present during the normal school day. The school is open from September to June of each year.

No additional receptors are closer than 1,000 feet from the site.

8.4 Excavation Procedures

WZI plans to investigate the lateral and vertical extent of soil hydrocarbon contamination at Schropp Ranch by surface excavation procedure with approximate lateral dimensions of 100 by 150 feet. This area is immediately around the location of the previous above ground fuel storage tanks in the shop yard. Subsurface soil hydrocarbon contamination has been identified through exploratory trenching and soil borings. Exhibit 14 depicts an initial lateral estimate of contaminated soil that will be excavated.

Known soil total petroleum hydrocarbon-gasoline (TPH-G) contamination levels vary from 1,050 to 1,400 ppm. It is anticipated that these levels will be typical hydrocarbon concentration ranges encountered during excavation.

Calculations based upon the estimated depth and lateral extent of hydrocarbon contamination found during the preliminary investigations indicate that approximately 25,000 to 40,000 cubic yards of soil affected by contamination or existing as overburden will have to be excavated in order to remove all contamination. Contaminated soil will be excavated to a depth of approximately 32 feet below ground surface. It is anticipated that excavation of contaminated soil two to four feet below the water table will be conducted. The excavation plan will provide for a pit extending downward from the area of maximum surface contamination. It is anticipated that the pit will have one level at about 15 to 20 feet below current ground surface where equipment will be able to excavate material to a maximum depth of approximately 32 feet. The sidewalls of this level will be graded to 1.5:1 slopes.

8.5 Field Determination of Contaminated Soil

A California State Certified Engineering Geologist will supervise the separating and stockpiling of the clean and contaminated soil, make on-site changes in excavation geometry, and record encountered geologic and hydrocarbon contamination conditions as observed in the field. It is anticipated that all hydrocarbon contaminated soil will be excavated.

The field determination regarding the presence or absence of hydrocarbon contamination will be based on visual sample inspection for the presence of staining, odor, and OVM readings. The presence of odor and staining in conjunction with positive OVM readings will be used to establish the presence of hydrocarbon contamination in soil samples from the excavation. Determination of the absence of contamination in a soil sample will be based on absence of odor, absence of staining and OVM readings in the range of background values. Background OVM readings will be established at the top of the excavation to a depth not greater than five feet.

Excavation of contaminated soil will continue until soil that is believed to be uncontaminated is reached both vertically and laterally along the sides and bottom of the pit. Soil samples will be obtained along the walls and floor of the excavation laterally every 50 feet or as appropriate using the procedure outlined in Appendix V and will be analyzed for BTEX and TPH-G. The excavation process will continue until non-detect soil contamination levels are reached for all walls and floors of the pit.

Appropriate fencing material will be placed around the excavation to prevent unauthorized entry.

8.6 Stockpiling of Contaminated Soil

The corral area of the property will be used to stockpile and provide an area for remediation of the contaminated soil. Approximately 20 acres of area is available for stockpiling. A 10 mil reinforced polyethylene sheet will be spread over the area where the stockpiling will occur and six inches of clean, sandy soil will be spread over this sheet to act as a base (Exhibits 15 and 16). The stockpile site will be prepared and graded to prevent surface drainage from rainfall into the soil pads. A berm will be constructed over the entire stockpile site to prevent uncontrolled runoff from rainfall and to prevent unauthorized vehicle traffic.

Contaminated soil will be removed from the excavation site and transported to the stockpile site where it will be sorted and spread into two pads, highly contaminated soil and lightly contaminated soil. The highly contaminated soil pad will be defined as containing 1,000 ppm or more of hydrocarbon contaminants. Both of the contaminated soil pads will be spread in lifts 12 to 24 inches thick and immediately covered with a plastic sheet to prevent atmosphere venting. Continuous OVM readings will be made during the first few days to insure no venting of hydrocarbons to the atmosphere will occur.

The contaminated soil will be maintained in this condition until permits are issued for remedial action by the appropriate governmental entities. During this period the contaminated soil will be inspected on a weekly schedule to insure stability and integrity of the pads.

9.0 HYDROCARBON CONTAMINATED GROUNDWATER SITE ASSESSMENT WORK PLAN

9.1 Overview

Groundwater collected from the excavation at the Schropp Ranch has been contaminated with hydrocarbons. Groundwater concentrations of hydrocarbons indicate concentration levels of benzene at 1.18 ppm. The possibility exists for groundwater contamination of adjacent properties. As a consequence the water well on the property (Exhibit 3) will be sampled along with the water well located at the Mountain House School as outlined by the 1989 California State Regional Water Quality Control Board Leaking Underground Fuel Tank (LUFT) Manual.

WZI Inc. recommends that the soil site assessment work plan be completed prior to initiation of the groundwater site assessment since removal of all contaminated soil from the subsurface appears to be the best alternative.

9.2 Monitoring Well Network

WZI Inc. recommends that at least 3 and as many as 5 groundwater monitoring wells be drilled after all excavation has been completed and the extent of soil contamination has been determined. The locations of the wells will be placed according to LUFT manual guidelines. These wells will be drilled to a total depth of 40 feet below ground surface.

Any water that collects in the bottom of the excavation will be collected in 20,000 gallon Baker tanks until it can be determined if the water is contaminated or clean. Water that is determined to be clean will be discharged on local dirt roads after approval from the California Regional Water Quality Control Board - Central Valley Region (CRWQCB-CVR) staff. Water that is contaminated will be treated according to the remediation plan outlined in this report.

9.3 Monitoring Well Design

The monitoring well completion schematic is presented in Exhibit 18. This design reflects the construction and completion recommendations of the 1989 California LUFT Field Manual.

9.3.1 Soil Sampling Program

Monitoring wells will be drilled to a depth of 45 feet. Boring will be done by 6 1/2 inch hollow stem auger. Sampling will be accomplished by use of a 2 3/8 inch split spoon sampler fitted with three brass tubes. Sampling equipment will be prepared for use each time by washing with non-phosphate detergent and rinsed with distilled water.

The soil sampling interval is proposed for every five feet in accordance with the LUFT Manual. Bulk samples will be retained in labeled plastic bags for future reference.

Upon collection, the cored soil samples will be prepared as follows:

1. All three tubes will be capped with plastic, secured with tape, and labeled with indelible ink.
2. The most representative sample will be stored on ice until transported to the analytical laboratory with Chain of Custody documents, for analysis.
3. The remaining two capped tubes from each sample will be preserved on ice as back up samples.

Excess cuttings from the borings will be placed on the soil remediation pile on-site with appropriate Chain of Custody documents in the event of contamination. Otherwise uncontaminated cuttings will be used to backfill the borehole or disposed of on-site.

Soil samples will be analyzed for BTEX, TPH-G, and lead. Samples will be analyzed by a California State Certified Hazardous Waste Laboratory. The holding time for samples shall not exceed fourteen days and most likely will be analyzed within five days.

9.3.2 Water Sampling Program

All water sampling will be collected according to guidelines outlined in the LUFT Manual (1989) and as in the WZI Inc. Water Sampling Protocol.

The drill rig will be equipped with a bailer and groundwater samples will be collected in a sterile container for analysis.

9.4 Subsurface Lithology and Hydrocarbon Plume Delineation

Upon completion of the groundwater monitoring wells, lithologic logs of each borehole will be prepared. Geologic cross sections will be constructed from all wells to allow review of lab analyses of the samples within the penetrated hydrogeologic framework. A map which graphically depicts the limits of the hydrocarbon plume will be prepared.

The monitoring wells will be constructed through the hollow stem drilling auger using a two or four inch inside diameter, schedule 40 PVC, 0.01 inch slotted well screen and two or four inch schedule 40 PVC well casing. The wells will be over-drilled from five to ten feet past the bottom of the anticipated screened interval to provide lithologic data at total depth. The over-drilled portions of the boreholes will be backfilled with sodium bentonite pellets. Estimated screened intervals and borehole total depths for the monitoring wells are as follow:

<u>Screened Interval</u>	<u>Estimated Total Depth</u>
15-45	35-45

The annular space between the borehole wall and well screen in each boring will be filled from the bottom of the screen to 15 feet below ground surface with Clementine #3 filter sand or sand size as appropriate. A three foot bentonite seal will be installed in each well at the appropriate depth. A PVC slip cap will be placed on the top of each well casing. Well heads will consist of water tight, locking, traffic rated, monitor well vault boxes with a four-inch wide cement pad to grade. Each well will be developed immediately after the bentonite seal is installed and properly hydrated. All grouting operations will be witnessed by Alameda County Health Services Inspector.

10.0 REMEDIATION ACTION ALTERNATIVES FOR SOIL AND GROUNDWATER

10.1 Objectives

The objective of any remedial action is to eliminate risk to human health or the environment. At Schropp Ranch this objective can be achieved by removing all contaminated soil where possible and by reducing the levels of benzene concentrations in the soil and groundwater by treatment. There are several remediation techniques available to achieve this reduction. Alternatives range from no action to treating the contaminated soil by aeration or biological means, following excavation or in-situ, to removing the soil and disposing of it at a designated landfill. Groundwater remediation alternatives range from on-site pumping and treatment with activated carbon filtering or air-stripping. The following section of this report describes the methods available to treat contaminated soil and groundwater at Schropp Ranch and the estimated costs associated with their implementation.

10.2 No Action Alternative

The no action alternative would leave Schropp Ranch in its current condition, with areas of benzene contamination in soil and groundwater at concentrations above mandatory action. The potential consequences of no action may or may not result in increasing benzene concentrations in the groundwater as water percolates through the contaminated soil downward to the water table. Although some of the existing contaminant source has been removed, a significant volume of contaminated soil is present in the subsurface to serve as a continuing reservoir of hydrocarbons to pollute groundwater from downward migrating water. The existing contaminated groundwater may ultimately move off-site following the local groundwater gradient, making future clean up efforts more costly. WZI recommends that the no action alternative not be considered. Since groundwater has already been involved, action based on achieving acceptable clean up levels is in order. Therefore, no action is not an acceptable alternative.

10.3 Soil Remediation Alternatives

Table 1 tabulates the soil remediation alternatives.

Excavation and Aeration (S1)

Excavation and aeration of volatile hydrocarbons can remediate benzene, toluene, ethyl benzene and xylene contaminated soils over a period of time. With sufficient heat and oxygen the anticipated volatile hydrocarbon levels can be reduced rapidly. The contaminated soil is placed in a series of piles or pads 12 to 24 inches thick and tilled or disked every week until the desired hydrocarbon concentrations are achieved. The main advantage of this approach is the proven ability to quickly and inexpensively reduce and ultimately eliminate volatile hydrocarbons.

Biological Remediation - Land Farming (S2)

Removal of specific hydrocarbon compounds can be realized by utilizing existing naturally occurring bacteria in the soil and/or supplementing these bacteria with a specific bacterial formulation and adding it to the contaminated soil. The advantages of on-site biological treatment are its proven ability to treat gasoline contaminated soil, avoidance of landfill disposal costs, and the relative simplicity of treatment. Disadvantages of on-site biological treatment are the need for excavation and the length of time required for treatment. Preliminary discussions with concerned regulatory agencies on similar projects in Alameda County indicate a preference for on-site treatment rather than disposal at a landfill.

In Situ Soil Ventilation of Volatile Organics (S3)

In situ soil ventilation using borings with slotted sides is a possible method of remediating the soil without excavation. This method would require the drilling of numerous borings to determine the exact dimension of the contaminated soil in the subsurface. A plan would be generated based on the geologic conditions encountered on about a 20 foot grid pattern over the area of contaminated soil. A series of injection and extraction ventilation wells will be required to be connected by a surface collecting system. A large airpump would provide the necessary injection and extraction vacuum pressures to move the air through the soil column. Contaminated air would be incinerated by a propane burner that would be required by the Bay Area Air Quality Management District (BAAQMD). This method would be fairly expensive to operate and require numerous soil laboratory samples for definition of the contaminated soil for planning purposes plus high operating costs for the burner. In addition, the fine-grained nature of the soil will prohibit rapid ventilation of the contamination and might not be effective at all in areas where clay is present.

Because of the probable fine-grained nature of the soil and high operating costs the technique is not recommended.

Excavation and Removal (S4)

This technique is to excavate all contaminated soil and remove it to a landfill or hazardous waste facility.

This technique uses the same excavation procedure as S1 but does not treat any soil on-site.

An advantage of complete excavation and removal of gasoline affected soil is that no detectable gasoline contaminated soil remains in place. Another advantage of this alternative is that it can be carried out relatively quickly.

The major disadvantage of this method is that transporting the soil to a landfill poses the greatest risk of public exposure, both enroute and once gasoline contaminated soil is disposed of at the landfill. It is estimated that approximately 25,000 to 40,000 cubic yards of soil will need to be excavated. Approximately 8,000 to 15,000 cubic yards of soil are estimated to have contamination levels sufficiently high that it would have to be transported to an approved hazardous waste disposal site. The estimated cost of removal and disposal of soil is approximately \$200 per cubic yard.

10.4 Preliminary Groundwater Remediation Design

The groundwater remediation options are presented in Table 2.

Pump and Treat: Carbon Filtration (G1)

In order to effectively reduce the gasoline fuel contaminant levels in groundwater at Schropp Ranch, the groundwater would be physically removed by pumping, and placed through a treatment system that will separate the gasoline fuel from the water. A proven technology for this type of remediation uses carbon adsorption units for removal of hydrocarbon contaminants. Using a submersible pump in the bottom of the excavation in the vicinity of the former underground storage tank would draw water out of the aquifer and deliver it to the activated carbon treatment system at the rate of one to five gallons per minute. The water would be pumped into a 20,000 gallon holding tank prior to processing. The treatment train would consist of an initial oil/water gravity separator to remove any free products prior to reaching the adsorption units. This pretreatment would help prevent fouling or plugging of the treatment system. After pretreatment, two to four canisters containing 200 pounds of activated carbon would be connected in series to remove dissolved hydrocarbons and reduce the level of contamination to less than 0.1 ppm. Discharge from the canisters can either be directed to the field adjacent to the site, reinjected back into the aquifer, or directed to a surface water conduit. After use, the carbon canisters can either be shipped as is to an appropriate designated landfill, or sent to an incineration facility. The advantage of incineration is the lack of long-term liability

to Schropp Ranch. Costs involved with this alternative include: pumps, piping, power generators, carbon canisters, oil/water separator, incineration and shipping costs.

Pump and Treat: Air Stripping (G2)

Air stripping technology is used for the removal of dissolved volatile organic compounds (VOCs) from groundwater and from water used in industrial treatment processes. Air stripping is a process whereby large volumes of air are passed upward through a column packed with devices that enhance the mass transfer of VOCs. Water with dissolved VOCs flows downward through a packing material forming very thin films, which expose a large surface area to the passing air. The VOCs exit to the atmosphere by way of the upward passing air. The application of this technology is appropriate for such volatile compounds as BTEX or chlorinated solvents. This method may provide a good method of efficiently removing the benzene and other volatiles from the water.

10.5 Comparison of Alternatives

The five alternatives for soil and groundwater remediation discussed in the previous section can be compared in two ways; (1) the costs of implementing the technique, and (2) the applicability and estimated effectiveness at the site. Of the three alternatives presented for the remediation of soil contamination all can be effective in meeting regulatory agency requirements for clean up standards.

Estimated costs for these alternatives are presented in Table 3. Estimated costs for soil remediation range from a low of \$250,000 to \$300,000 for on-site excavation and aeration or biological treatment (S1 and S2), to \$1,200,000 for excavation and off-site disposal. The estimated duration of soil treatment ranges from six months to a year for aeration and biological treatment to immediate for excavation and shipment to a landfill. State agencies currently favor on-site treatment process over off-site excavation disposal. The in-situ treatment alternatives have an uncertain effectiveness with respect to time and are

relatively high cost. On-site aeration will be effective for volatile hydrocarbon contaminated soil. On-site biological treatment or land farming of the gasoline also assures contaminant reduction but requires a longer time period (six to eight months or longer) for effective treatment. In-situ soil ventilation may be possible but not effective because of fine-grained soils. Excavation and removal of soil with concentration levels would completely assure the reduction of acceptable levels but has a higher initial cost, and landfilling requires a long-term financial and legal commitment.

Of the groundwater alternatives examined both pumping and treating by carbon adsorption (G1), and air stripping (G2) appear to be applicable to site conditions, and have low initial and relatively low operating costs.

Table 3 shows a comparison of the estimated costs of each of the remedial alternatives. EPA guidelines for remediation of hazardous waste sites suggest that alternatives with similar efficiencies whose costs are an order of magnitude greater need not be considered unless there are overriding circumstances. The soil remediation alternatives other than no action with the most reasonable costs are (1) S1 and S2 on-site excavation treatment, and aeration or bioremediation. Groundwater remediation alternatives that appear to be most reasonable are pump and treat with carbon adsorption or air stripping.

11.0 RECOMMENDED REMEDIAL ACTION WORK PLAN

11.1 Recommended Remedial Action

Based on review of the technically feasible alternatives and associated costs, WZI recommends excavation and on-site aeration or bioremediation of contaminated soil and extraction and carbon filtering or air stripping of contaminated groundwater. The reasons for recommending these alternatives are:

- **On-site excavation, aeration, biological treatment and pumping with carbon adsorption or air stripping offer a cost effective solution to soil and groundwater site remediation.**
- **Benzene concentrations in the contaminated soil and aquifer will be reduced to acceptable concentrations within a reasonable time.**
- **On-site remediation measures are environmentally acceptable, and reduce the long-term financial and legal responsibilities associated with off-site alternatives.**

Appendix V describes the proposed work plan to be submitted to Alameda County Department of Environmental Health for approval.

11.2 Soil Remediation Tasks Description

The following section describes the site specific tasks that must be accomplished to remediate the soils. To complete site remediation, the gasoline affected soils must be excavated and separated from the unaffected soils. Gasoline affected soils will be transported to a treatment area on-site, and clean soils will be stockpiled adjacent to the excavation. The following is an estimated chronology of tasks to be accomplished including design criteria.

1. The total volume of soil to be excavated has been estimated to be between 25,000 to 40,000 cubic yards, 8,000 to 15,000 cubic yards of which may be treatable by aeration. Because of varying subsurface conditions, the amount of soil containing gasoline fuel in excess of 100 ppm may vary. The excavation at Schropp Ranch shall extend to a depth of approximately 32 feet.
2. Excavated material will be field screened using an OVM and separated into clean, low level contaminated soil (<100 ppm) and high level contaminated (>1000 ppm) soil. The OVM will be calibrated from a spiked soil sample containing 10 ppm gasoline.
3. At the soil aeration site, the contaminated soil will be spread on a 10-mil reinforced polyethylene sheet to a maximum depth of two feet. A berm (eight inches in height, minimum) shall be incorporated around this material using clean soil from the excavation and incorporating the plastic sheeting to prevent runoff from the treatment area.
4. Once the soil is spread out the volume of material that BAAQMD will permit to be aired on a daily basis will be worked. OVM reading will be taken from the pile on daily or tri-weekly basis. When OVM readings are nondetectable than a representative sample will be taken from the pile at the rate of 50 yards per sample or as directed by Alameda County Department of Environmental Health. These samples will be tested for TPH-G, BTEX, and lead by a California State Certified Hazardous Waste Laboratory. If these samples are non-detect then the pile will be declared remediated and the soil placed as fill on the property.
5. It is anticipated that five to ten acres of land will be needed for treatment. This number will depend on the thickness of the spread out soil (one to two feet) and the ultimate volume of material excavated.
6. When laboratory results indicate that agency compliance has been met, official site closure approval will be requested from the governing agency.

7. Following agency approval on remediation compliance for both soils and groundwater (to be discussed in the next section) the excavation shall be backfilled with clean dirt. Backfill will be accomplished by placing the material in six inch lifts, moisture conditioning and compacting to 90 percent relative density or as appropriate, using equipment designed for this purpose. Testing of compacted fill shall be by nuclear density gauge method and testing will be done continuously as fill is placed.

11.3 Groundwater Remediation Tasks Description

Three alternatives for remediation of groundwater were assessed. These alternative were:

- No Action
- Pump and Treat - Carbon Adsorption (G1)
- Pump and Treat - Air Stripping (G2)

Granular activated carbon filtration provides an economically feasible and practical means for water pollution control. The filtration process involves passing contaminated water through porous granules of activated carbon. The organic pollutants are attracted to the surface of the pores where they are held by weak physical forces. The large surface area/mass ratio for activated carbon (approximately 1,000 m²/g) gives it tremendous adsorptive capacity. In the manufacturing process of granular activated carbon, many pores are produced within each granule. It is this internal porosity that provides each grain with such large surface area. Large organic molecules and non-polar substances are preferentially attracted to the pore space walls as the contaminated water passes through the activated carbon. The effluent quality of an activated carbon system is strongly influenced by the:

- Influent Waste Stream Characteristics
- Contact Time
- Carbon Medium Used

Each of these factors are discussed detail below.

Influent Waste Stream Characteristics

Influent waste stream characteristics that affect treatment include pH, turbidity and any other unidentified organic material. The adsorption rate of organics increases with decreasing pH of water. Adsorption is very poor when the pH is greater than nine. When filtering turbid water, suspended solids plug pore openings, occlude porosity, and reduce the surface area of the carbon resulting in decreased efficiency. The adverse effects of treating turbid water in the carbon filtration system may be reduced by first treating the water in a gravity separator and then passing it through an in line filter as determined by the contractor.

Rates and Carbon Medium

The size of the carbon medium used effects the rate of adsorption. Finer grades enhance the rate of adsorption by increasing the number of pore openings thereby reducing the contact time. However, fine grades may reduce efficiency of the system by trapping sediment and closing off pore openings.

The proposed treatment system is designed to reduce benzene and other gasoline related component levels in groundwater to less than 0.1 parts per billion (ppb) at Schropp Ranch. This will be accomplished in four steps which include pumping water from the excavated pit, removing sediment, treating the water with a carbon filtration system or air stripping system and sprinkling the water on roads at the site. The cycle will be repeated until contaminant levels are less than the current 0.1 ppb benzene established by the CRWQCB-CVR. The following is a chronology of tasks to be accomplished including design criteria.

- **A pit will be excavated in the contaminated zone to an approximate depth of 32 feet. Allowing for a seasonal groundwater rise of five feet during the summer months a minimum of two feet of water should be present in the pit. The area surrounding the pit where water treatment operations will be**

conducted will be sloped toward the pit, prohibiting any spillage from flowing off-site. Aquifer withdrawal will be done by placing an inlet pipe within the excavated pit. The inlet pipe will be screened and wrapped in geofabric. Water will be pumped intermittently from the pit into the gravity separator.

- A gravity separator will be installed upstream of the carbon filter units to ensure the filters do not become clogged with sediment. The gravity settling unit will be equipped with a set of erect and hanging baffles to trap floating hydrocarbons and sediments. The gravity separator will be designed with an overflow rate of 150 gpd/ft². Alternative configurations utilizing slating baffles and/or in line filters for silt removal will be reviewed for performance if submitted by the contractor.
- Downstream of the gravity separator an additional pump will be required to deliver flow through the carbon filters. A valve will regulate pump flow to ensure the carbon filters are not pressurized in excess of manufacturer's recommendations.
- Two to four carbon filters will be placed in series after the pump. Calgon 200 pound units with a minimum 20 minute contact time or equal are anticipated to be used. However, the contact time may be varied if on-site bench tests indicate water treatment is enhanced by a longer or shorter contact time.

Each 200 pound filtration unit will contain Calgon Filtrasorb 300 or equal to minimize porosity occlusion. The treated effluent will be stored in a Baker tank or similar device on-site, pending laboratory results. If the stored effluent does not meet Central Valley Regional Water Quality Control Board maximum contaminant levels (MCL) the treatment cycle will be repeated until the water is in compliance. After use, carbon canisters and carbon will be disposed of properly.

Discharge

After the MCL is met, the water will be discharged onto dirt roads along the property where it will be allowed to infiltrate back to the groundwater.

Contaminant Monitoring

Samples of water will be obtained from the Baker tank and submitted for benzene and TPH-G analysis. After set up of the initial treatment process (i.e. the number of reiterations to achieve the MCL is established) effluent monitoring will occur on an as needed basis during the remediation period or as required by CRWQCB-CVR.

In addition to monitoring effluent, the groundwater will be monitored on a quarterly basis. Groundwater samples will be obtained from all monitoring wells. This will ensure all groundwater moving off-site is in compliance with the established MCL.

11.4 Fate and Final Disposition of Contaminated Soil

The ultimate fate and final disposition of the contaminated soil will be left in place on the Schropp Ranch. No contaminated soil will be transported off-site.

12.0 PERMITTING REQUIREMENTS

Permitting requirements will include the following agencies:

Federal: None

State: Regional Water Quality Control Board-Central Valley Region
(Through Alameda County)

Region: Bay Area Air Quality Management District - Authority to Construct for Soil
Aeration

County: Alameda County Department of Environmental Health- Water Well Permits

Alameda County Department of Environmental Health-Permit to Abandon
Water Well

Alameda County Department of Environmental Health- Work Plan for Soil
and Groundwater Remediation

13.0 ESTIMATED PROJECT SCHEDULE

Alameda County will be the acting lead agency and their approval for a work plan will probably take thirty to sixty days. During this period an application for Authority to Construct (ATC) will be made with BAAQMD. BAAQMD will probably take thirty to sixty days to approve the application. Once all permits are approved, WZI can begin operations.

WZI estimates that approximately 20 to 45 field days will be required to complete the excavation and stockpiling of material. Groundwater site assessment will be started after completing the soil excavation. The new wells will be drilled and completed and a final site assessment report prepared within 30 days of the conclusion of drilling.

Soil remediation will begin when BAAQMD has issued the Authority to Construct. The aeration phase (S1) will probably take four to eight months.

The groundwater remediation will begin within 30 days of completion of the site assessment or as appropriate. This process may take 12 to 24 months or longer. Quarterly monitoring of all wells is anticipated until closure is granted by Alameda County Department of Environmental Health and the CRWQCB-CVR.

14.0 PROFESSIONAL SERVICES AGREEMENT

The WZI Inc. Professional Services Agreement for the production of this report is shown in Appendix VI.

15.0 REFERENCES

California State Water Resources Control Board, 1989, LUFT Field Manual Revision for Leaking Underground Fuel Tank Field Manual: Guidelines for Site Assessment, Cleanup, and Underground Storage Tank Closure, 77 p.

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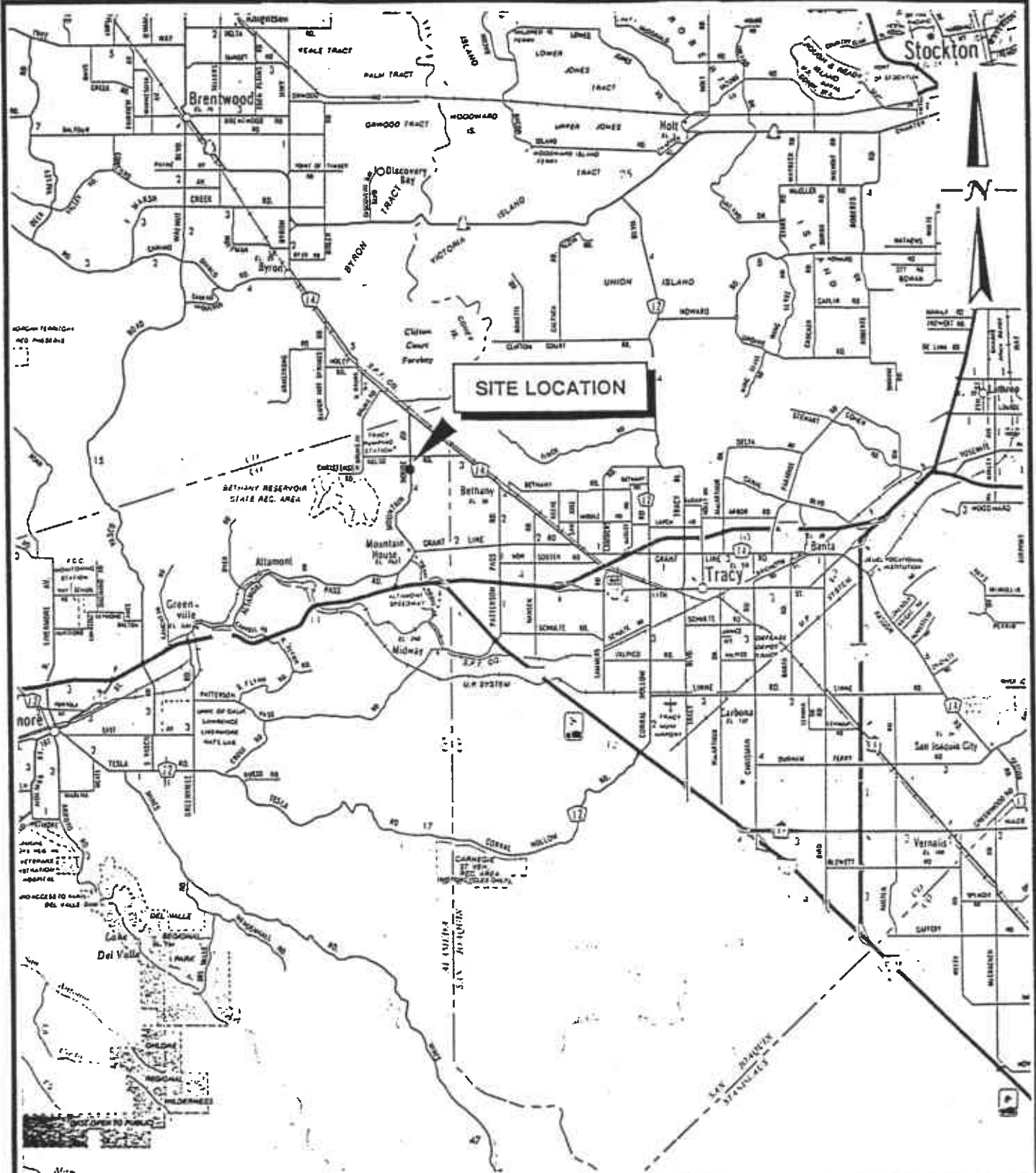
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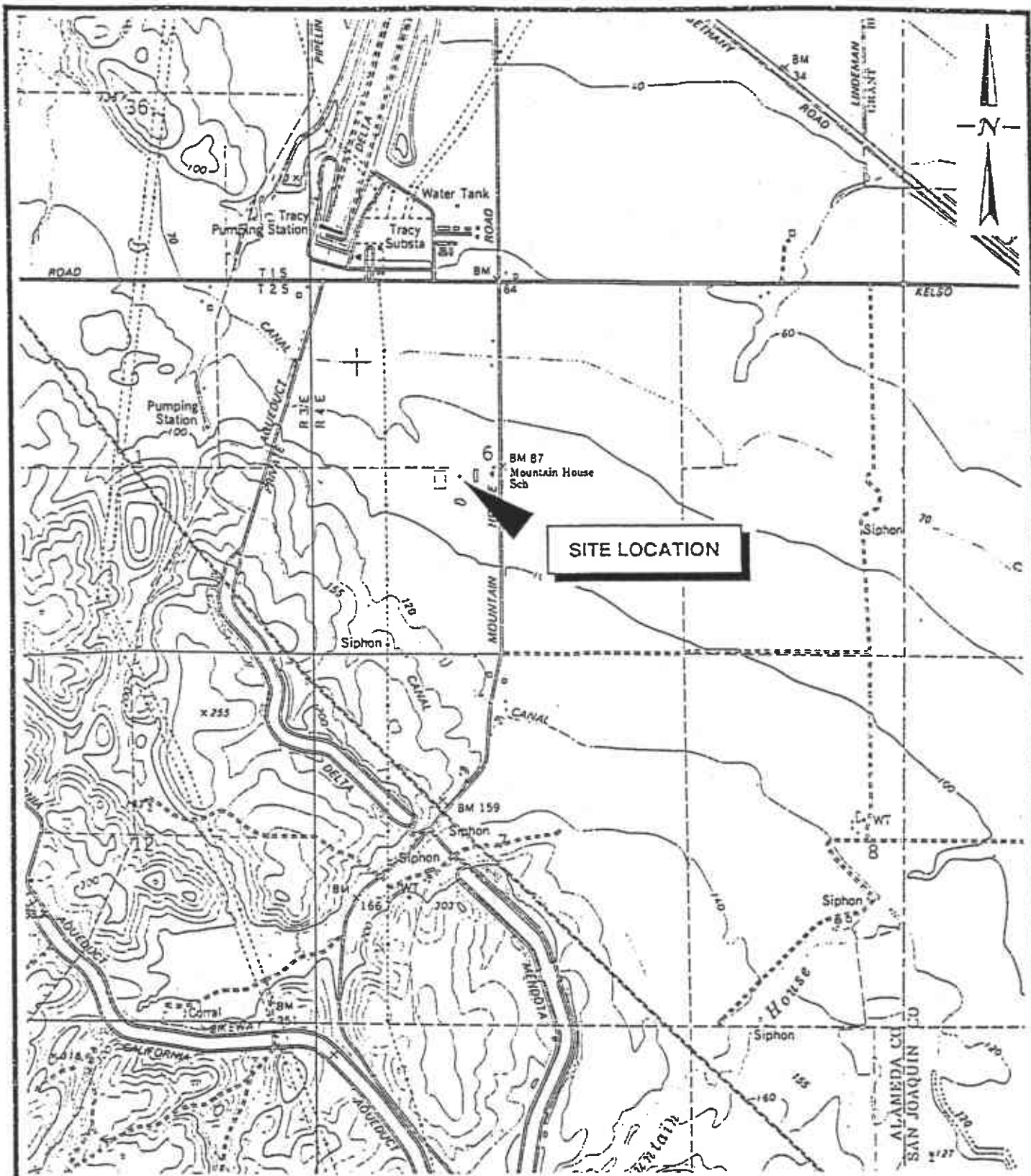
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U. S. Environmental Protection Agency, 1980, SNARL for Fuel Oil #2 or Kerosene, Health Effects Branch, Criteria and Standards Division, Office of Drinking Water.

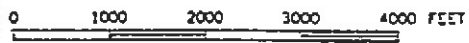
EXHIBITS




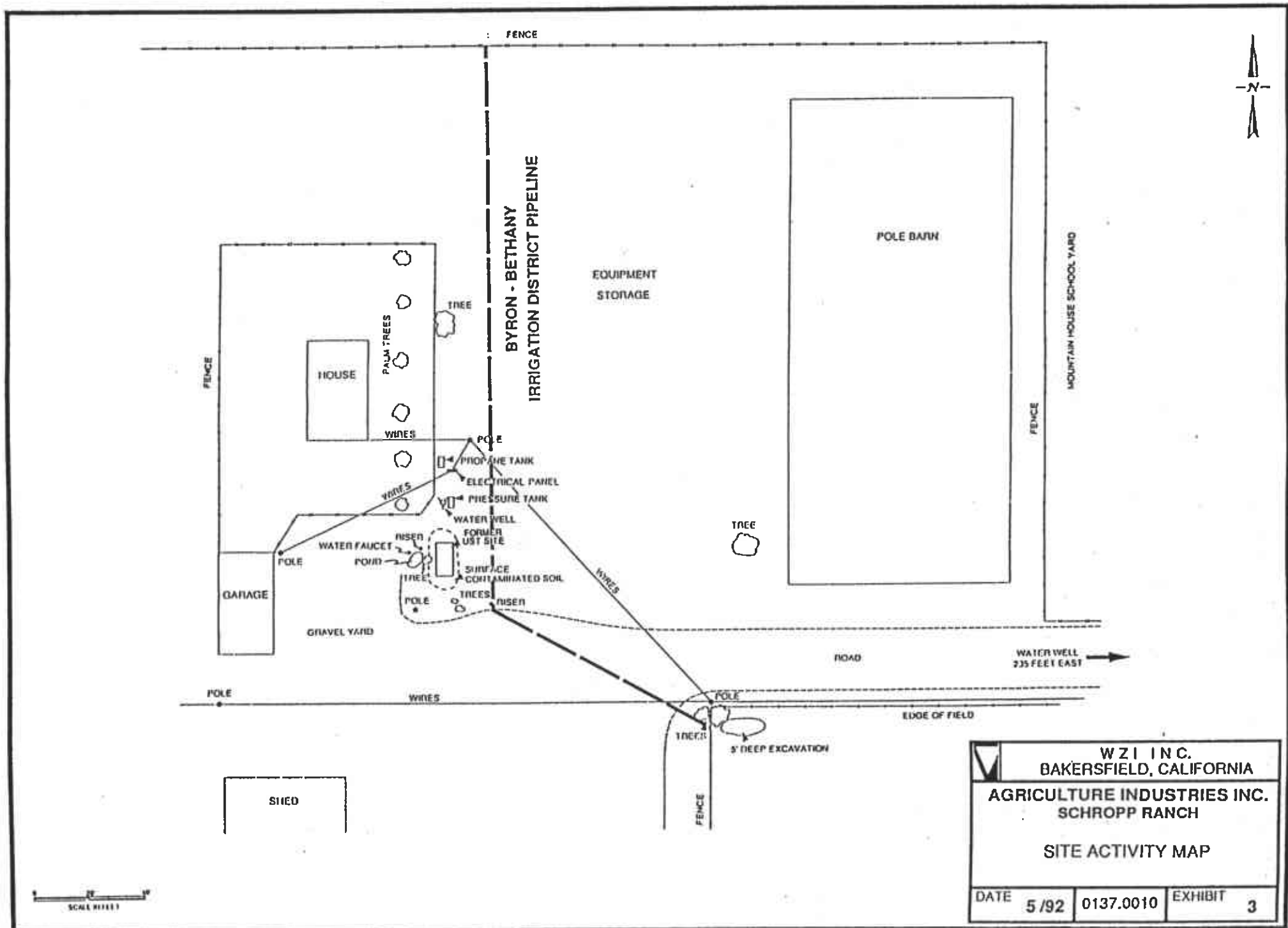
 WZI INC. BAKERSFIELD, CALIFORNIA		
AGRICULTURE INDUSTRIES INC. SCHROPP RANCH		
REGIONAL LOCATION MAP		
DATE	5 /92	0137.0010
		EXHIBIT 1



REF: U.S. GEOLOGICAL SURVEY, CLIFTON COURT
FOREBAY 1:24,000 TOPOGRAPHIC MAP

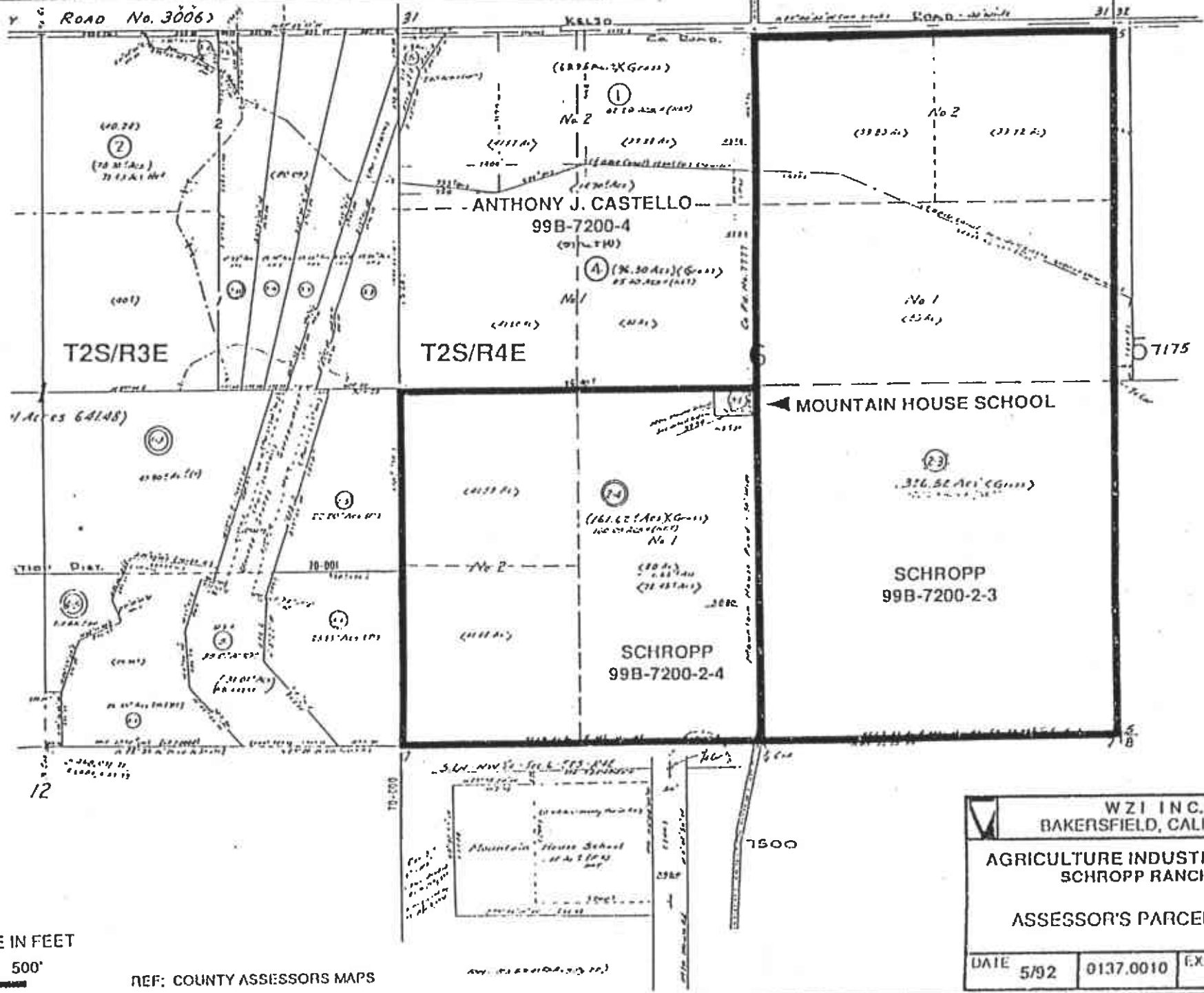


 WZI INC. BAKERSFIELD, CALIFORNIA		
AGRICULTURE INDUSTRIES INC. SCHROPP RANCH		
SITE LOCATION MAP		
DATE	0137.0010	EXHIBIT 2

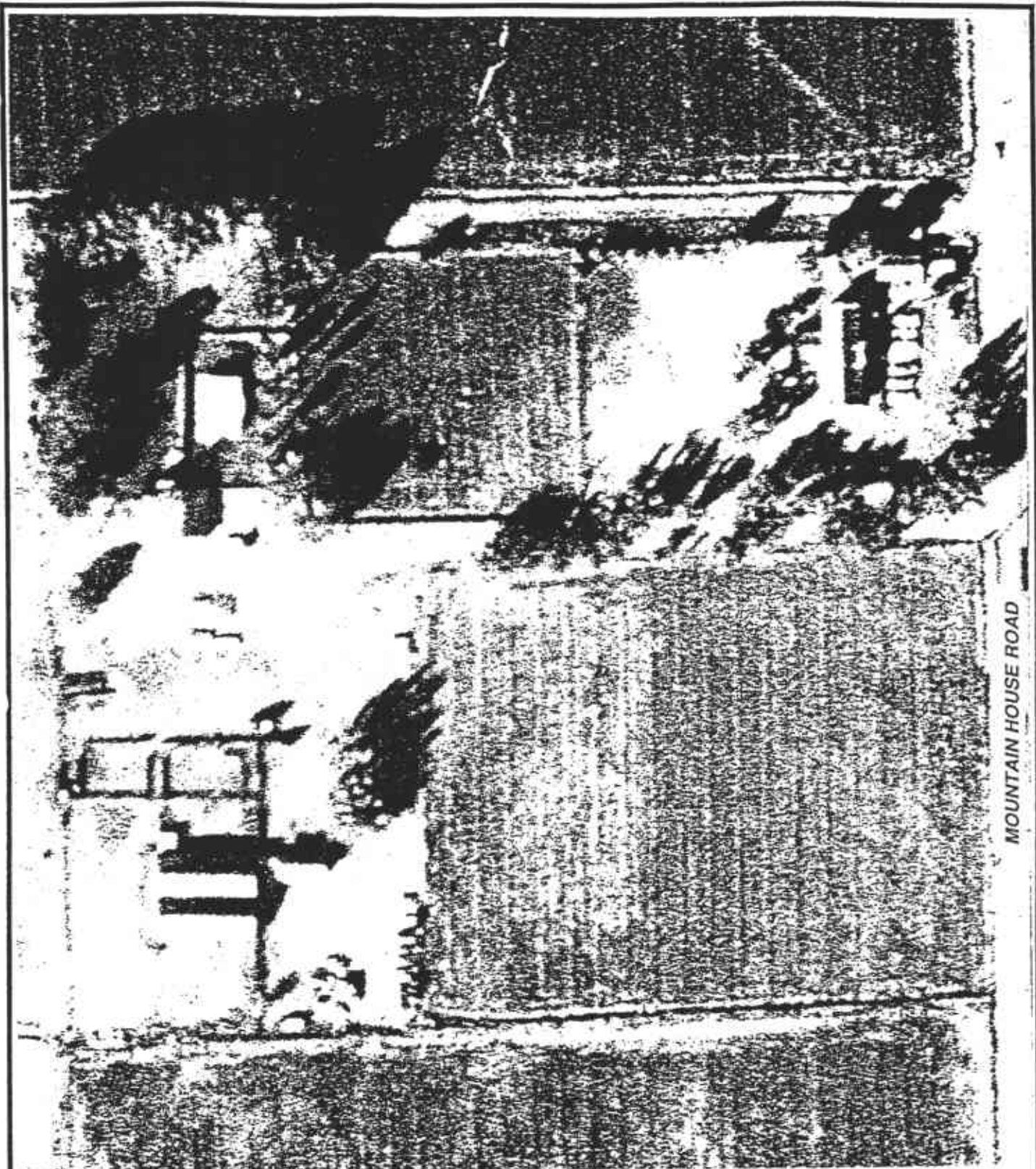


BYRON - BETHANY
IRRIGATION DISTRICT PIPELINE

<p>W Z I I N C. BAKERSFIELD, CALIFORNIA</p>		
<p>AGRICULTURE INDUSTRIES INC. SCHROPP RANCH</p>		
<p>SITE ACTIVITY MAP</p>		
DATE	0137.0010	EXHIBIT
5/92		3



WZI INC. BAKERSFIELD, CALIFORNIA		
AGRICULTURE INDUSTRIES INC. SCHROPP RANCH		
ASSESSOR'S PARCEL MAP		
DATE	0137.0010	EXHIBIT
5/92		4



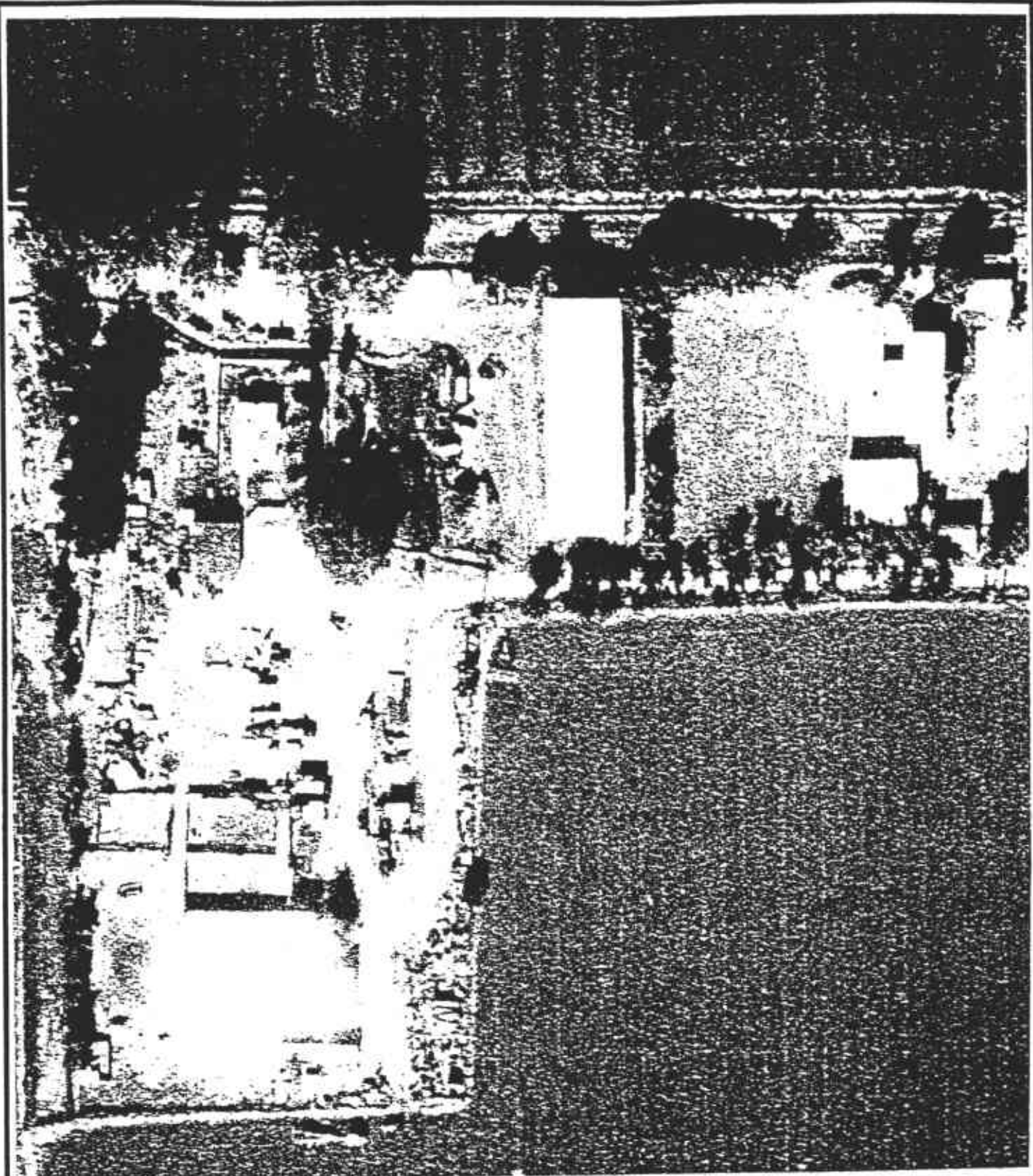
SEC. 6 - T2S / R4E
ALAMEDA COUNTY

OCTOBER 31, 1963

0 100' 200'
SCALE IN FEET



WZI INC. BAKERSFIELD, CALIFORNIA		
AGRICULTURE INDUSTRIES INC. SCHROPP RANCH		
AERIAL PHOTOGRAPH 1963		
DATE	5/92	0137.0010
		EXHIBIT 5



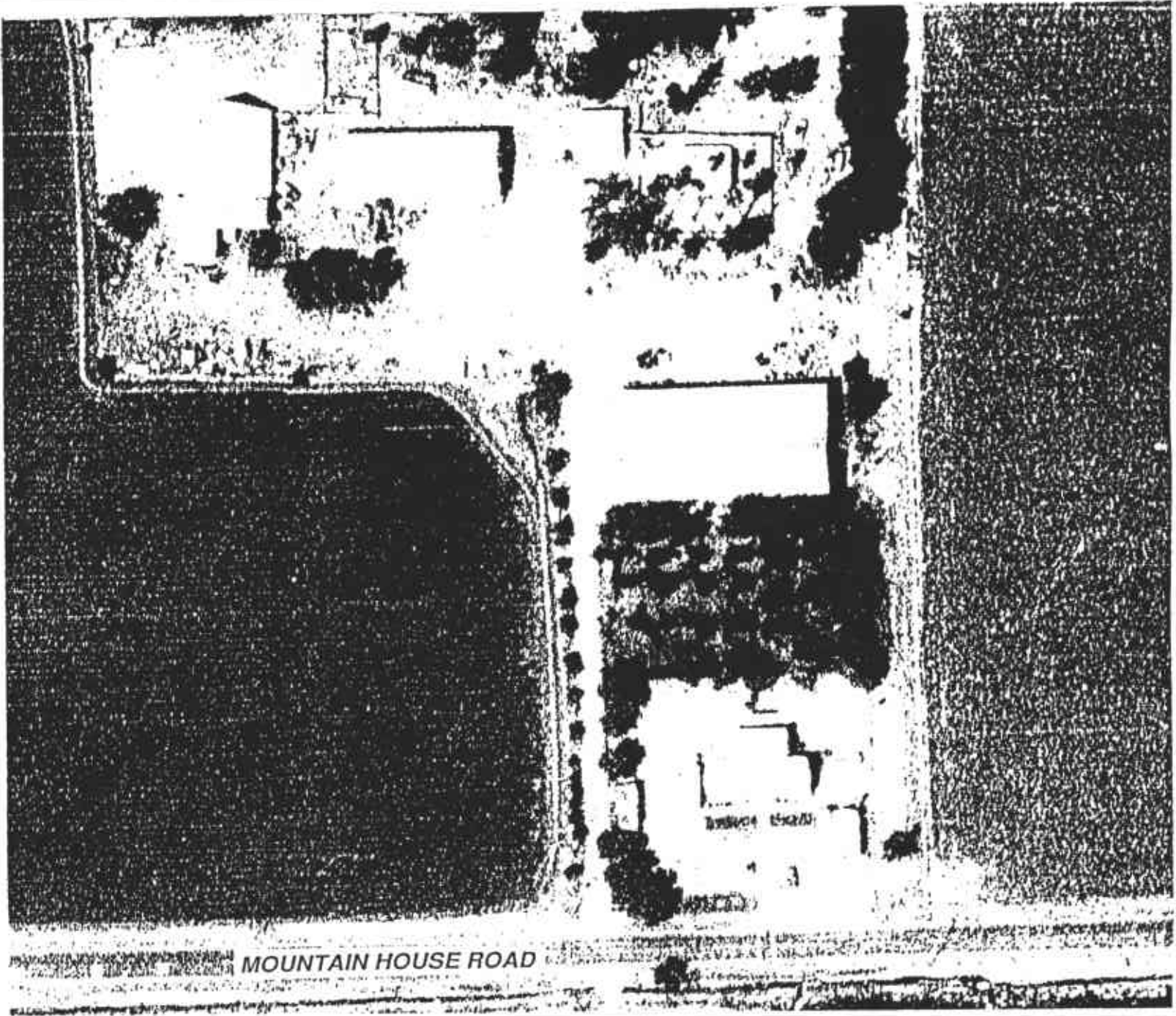
SEC. 6 - T2S / R4E
ALAMEDA COUNTY

NOVEMBER 11, 1975

0 100' 200'
SCALE IN FEET

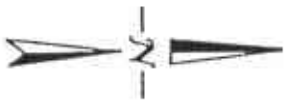


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AGRICULTURE INDUSTRIES INC. SCHROPP RANCH		
AERIAL PHOTOGRAPH 1975		
DATE	5/92	0137.0010
		EXHIBIT 6



SEC. 6 - T2S / R4E
ALAMEDA COUNTY

AUGUST 25, 1987

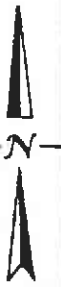
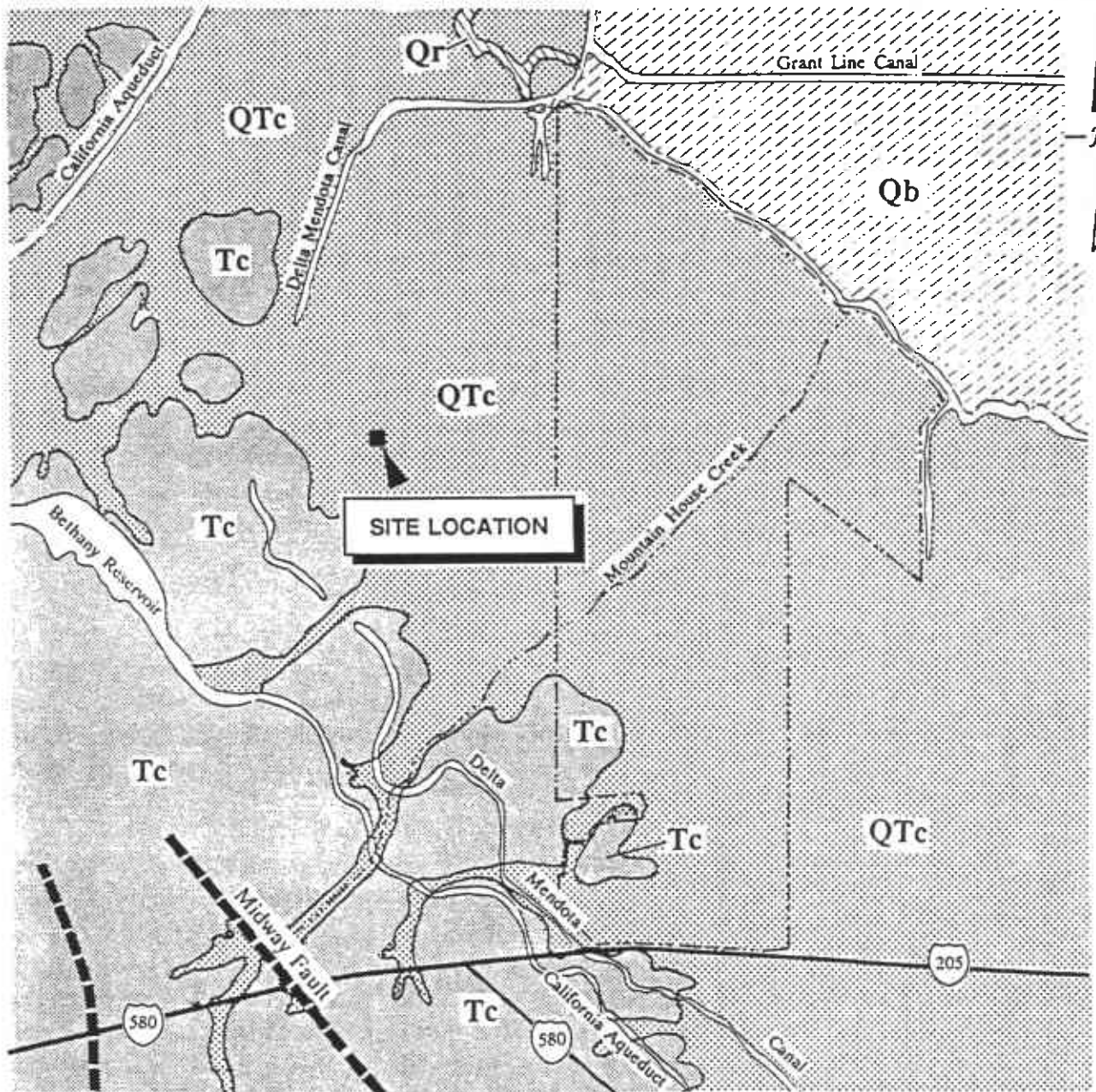


WZ I INC.
BAKERSFIELD, CALIFORNIA

AGRICULTURE INDUSTRIES INC.
SCHROPP RANCH

AERIAL PHOTOGRAPH 1987

DATE	5/92	0137.0010	EXHIBIT	7
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Legend

- Qr Recent (Holocene) River Deposits
- Qb Recent (Holocene) Flood Basin Deposits
- QTc Young (Quaternary to Tertiary) Alluvial Deposits
- Tc Older (Tertiary and Pre-Tertiary) Marine and Continental Sedimentary Rocks

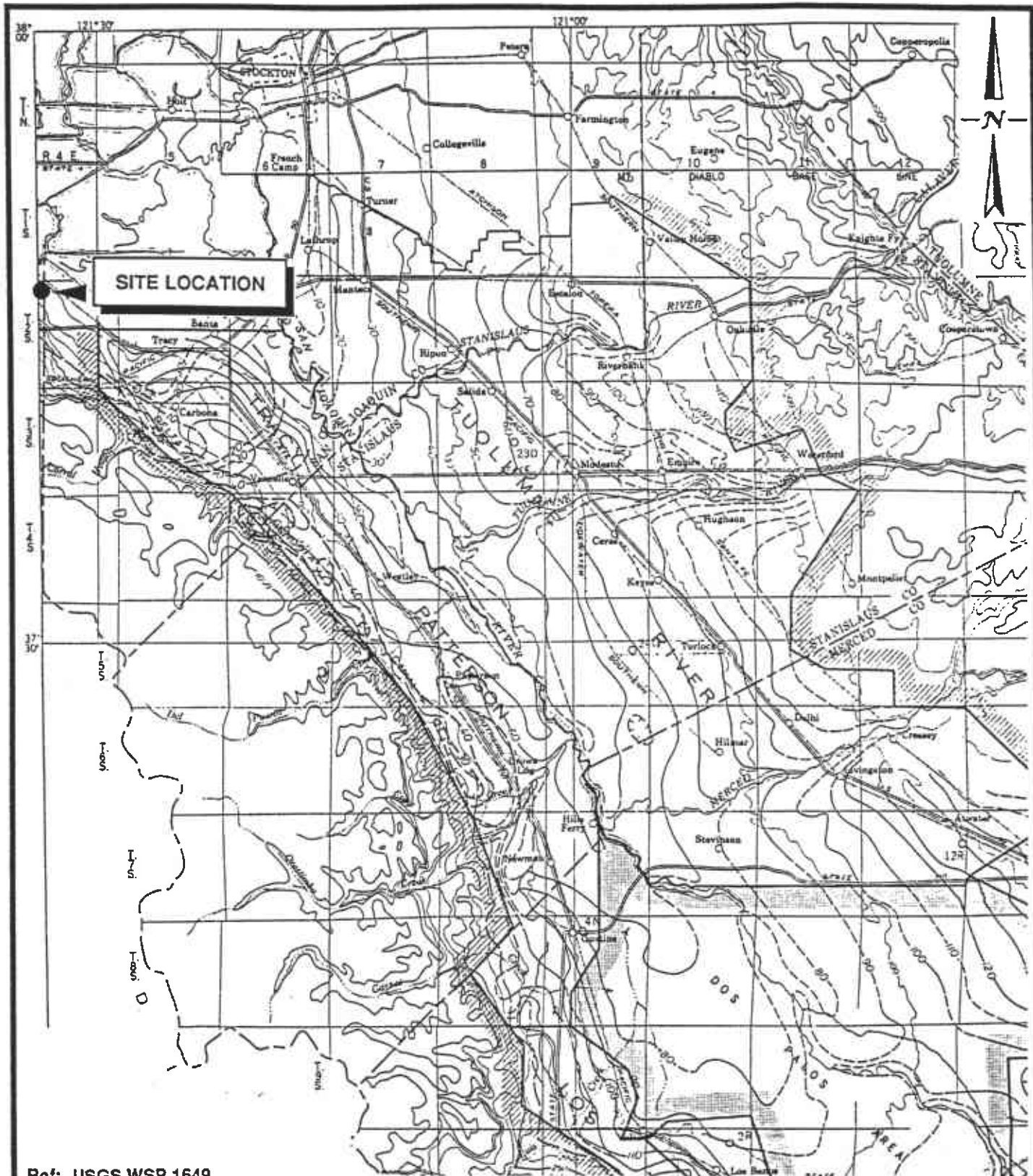
- Potentially Active Faults
- Proposed Mountain House Project Site Boundary

Source: USGS, 1972 Miscellaneous Field Studies Map, MF-338
 USGS, Open File Report, 80-535
 USGS, 1986 Professional Paper, 140 1-C

SCALE 1:62,500



WZI INC. BAKERSFIELD, CALIFORNIA		
AGRICULTURE INDUSTRIES INC. SCHROPP RANCH		
GEOLOGIC MAP OF SITE		
DATE	5/92	0137.0010
		EXHIBIT 9

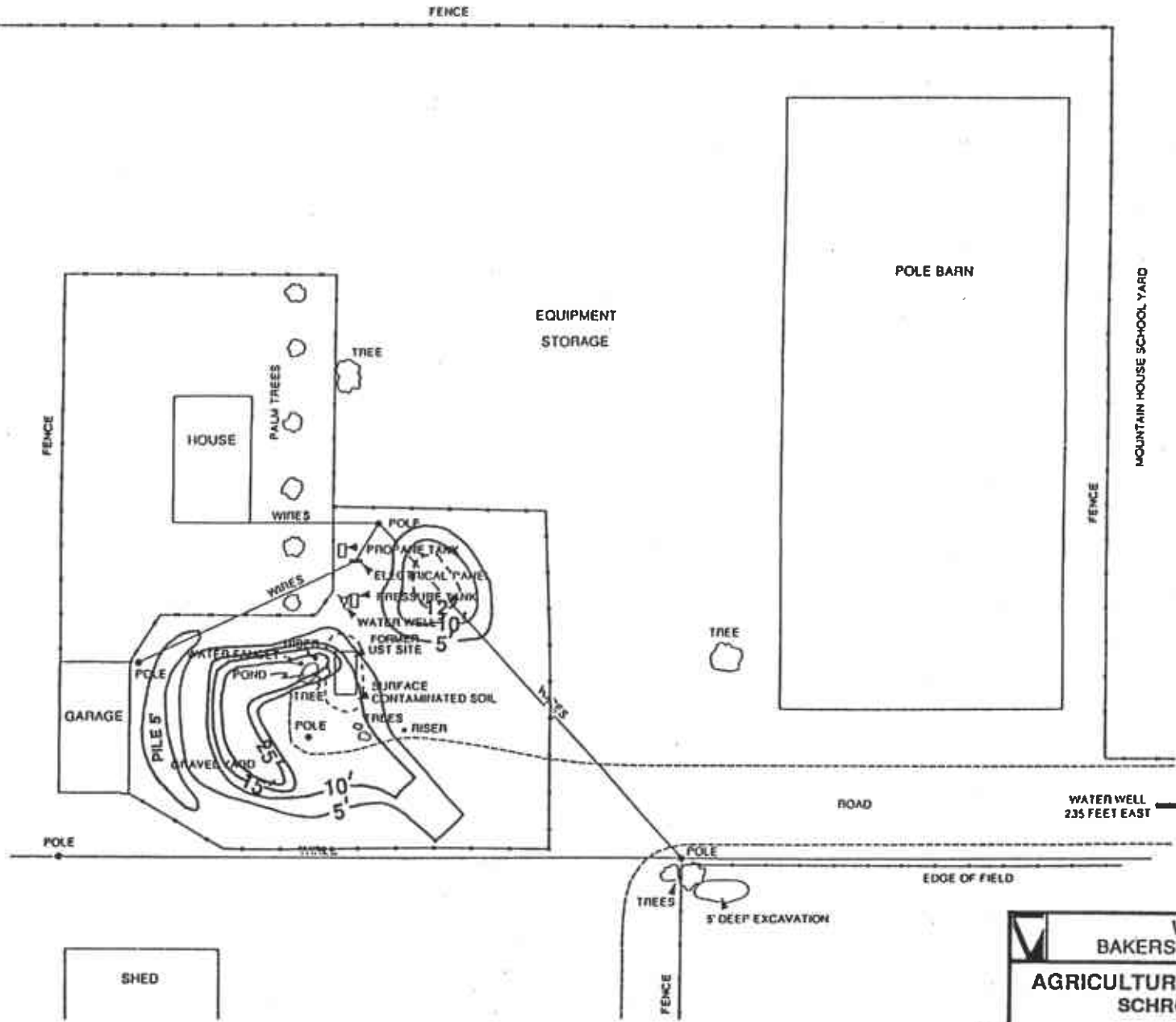


Ref: USGS WSP 1649
DAVIS AND OTHERS, 1959

 W Z I N C. BAKERSFIELD, CALIFORNIA		
AGRICULTURE INDUSTRIES INC. SCHROPP RANCH REGIONAL MAP SHOWING GENERALIZED WATER LEVEL CONTOURS AS OF SPRING 1952		
DATE	5/92	0137.0010
EXHIBIT	10	

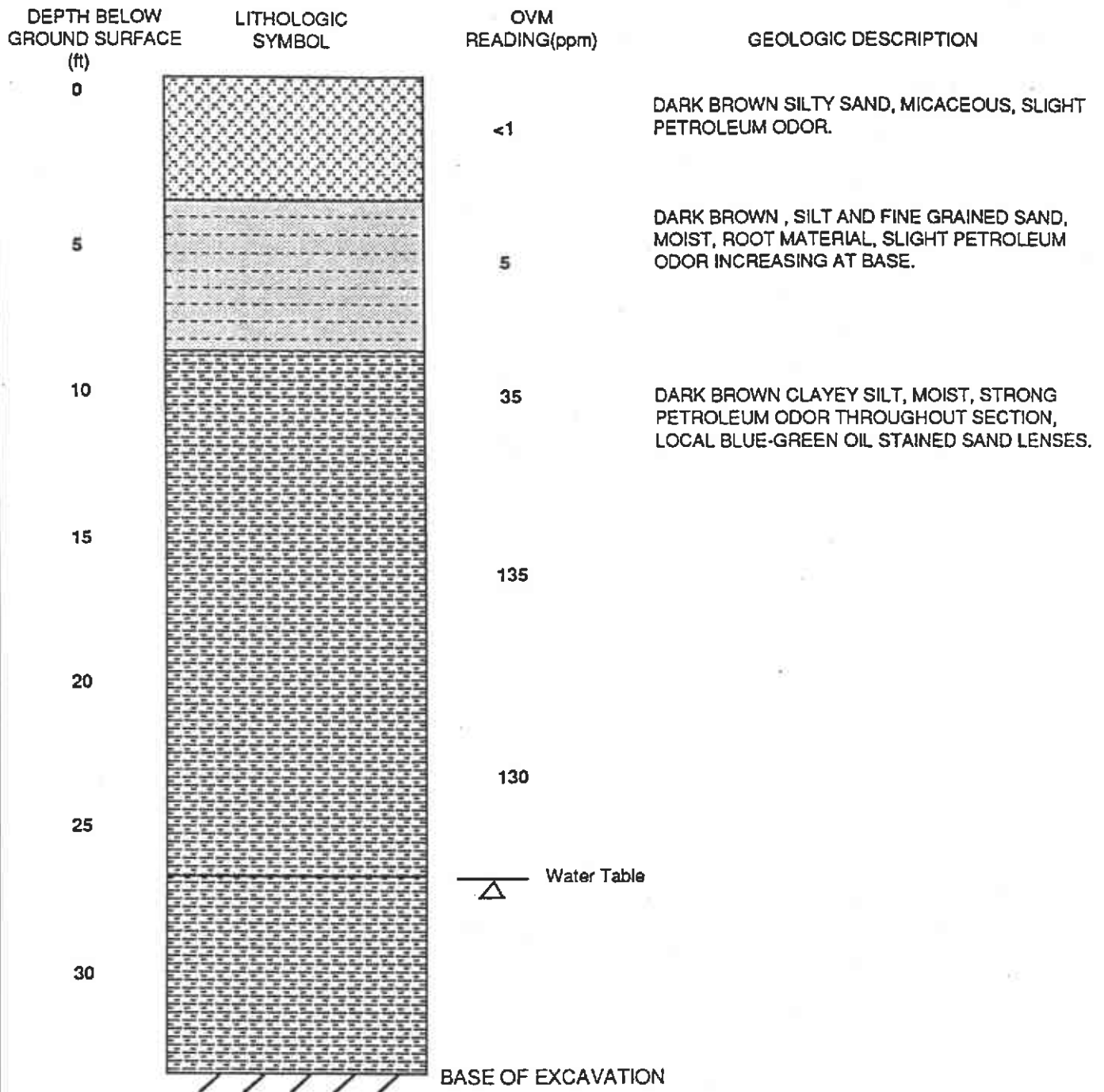
0 32 Miles









Contour interval 30 feet
Datum is mean sea level



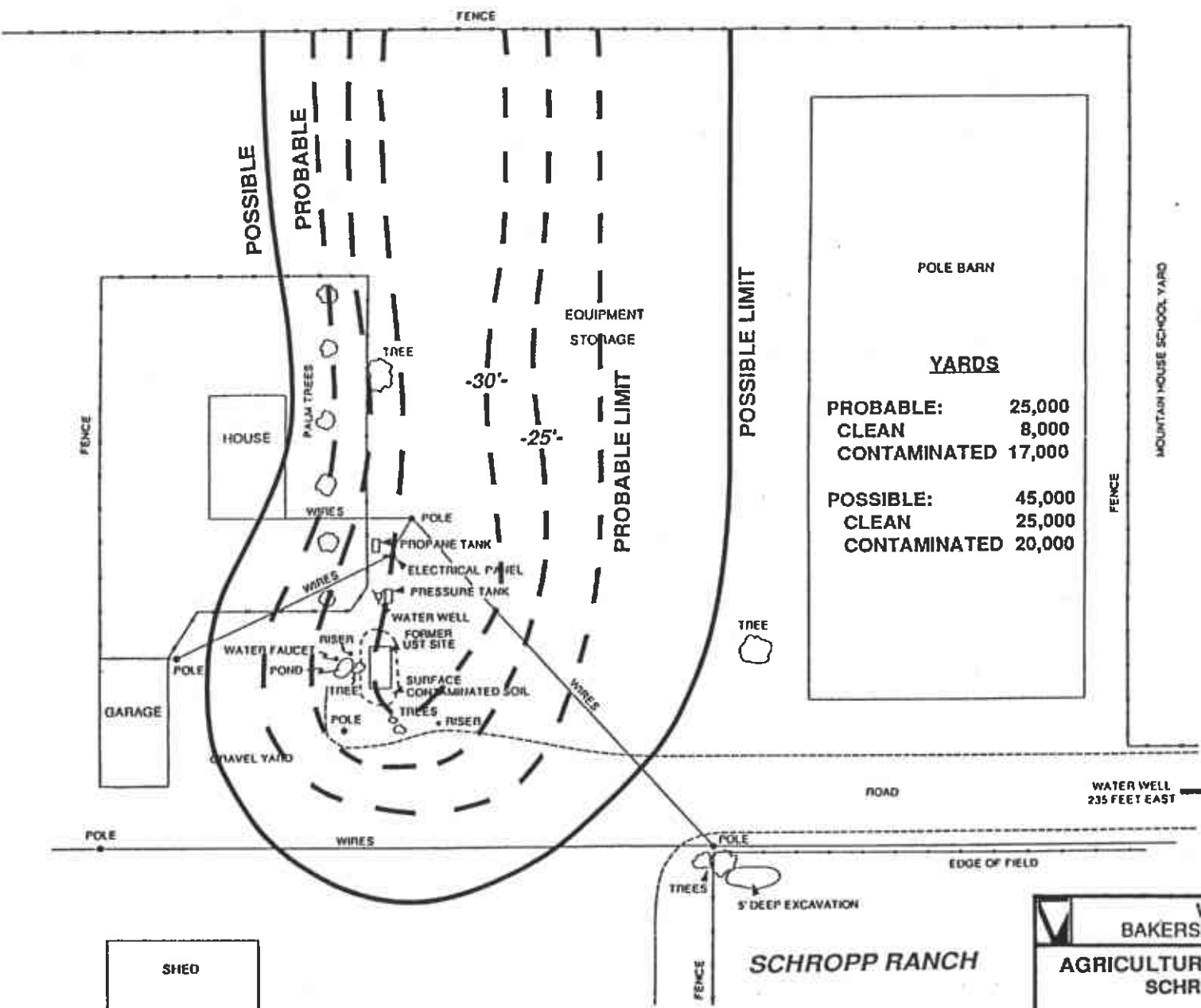
WZI INC. BAKERSFIELD, CALIFORNIA		
AGRICULTURE INDUSTRIES INC. SCHROPP RANCH		
MAP SHOWING EXCAVATION LIMITS TO DATE		
DATE	0137.0010	EXHIBIT 11
5/92		

SCALE 1"=111'



- | | |
|--|---|
|  Sand, fine grained |  Silt |
|  Sand, medium grained |  Silty sand |
|  Sand, coarse grained |  Sandy clay or clayey sand |
|  Clay |  Silty clay or clayey silt |

W Z I I N C. BAKERSFIELD, CALIFORNIA		
AGRICULTURE INDUSTRIES INC. SCHROPP RANCH		
COMPOSITE GEOLOGIC SECTION		
DATE	EXHIBIT	
6/92	0137.0010A	12



POLE BARN

YARDS

PROBABLE:	25,000
CLEAN	8,000
CONTAMINATED	17,000
POSSIBLE:	45,000
CLEAN	25,000
CONTAMINATED	20,000



WZI INC. BAKERSFIELD, CALIFORNIA		
AGRICULTURE INDUSTRIES INC. SCHROPP RANCH		
MAP OF POTENTIAL SOIL EXCAVATION		
DATE	5/92	0137.0010
		EXHIBIT



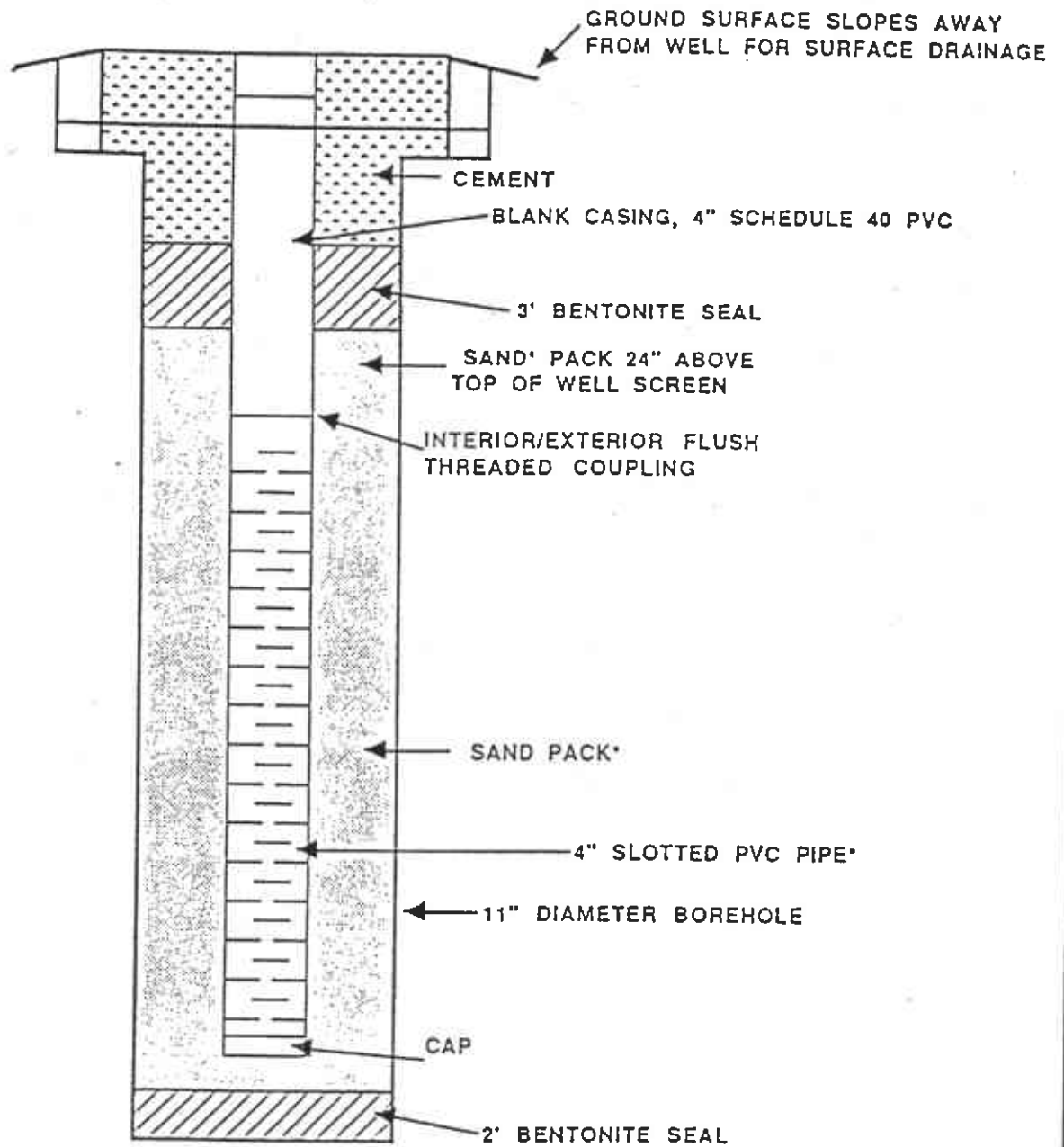
SOIL STOCKPILE LOOKING EAST.
NOTE: VISQUEEN SHEETING ON SURFACE.

WZI INC. BAKERSFIELD, CALIFORNIA		
AGRICULTURE INDUSTRIES INC. SCHROPP RANCH PHOTOGRAPH OF SOIL REMEDATION AREA BEFORE SOIL PLACEMENT		
DATE	5/92	0137.0010 EXHIBIT 15



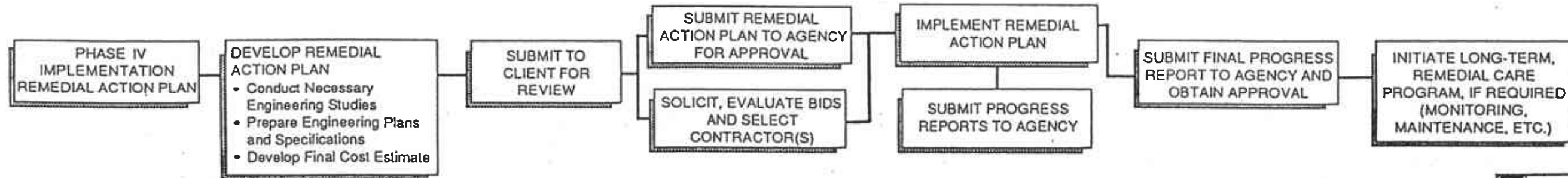
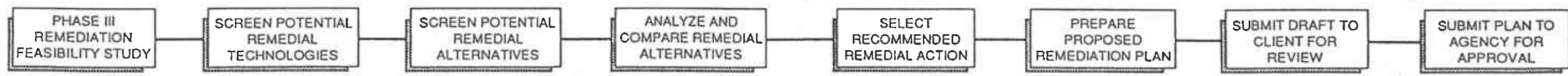
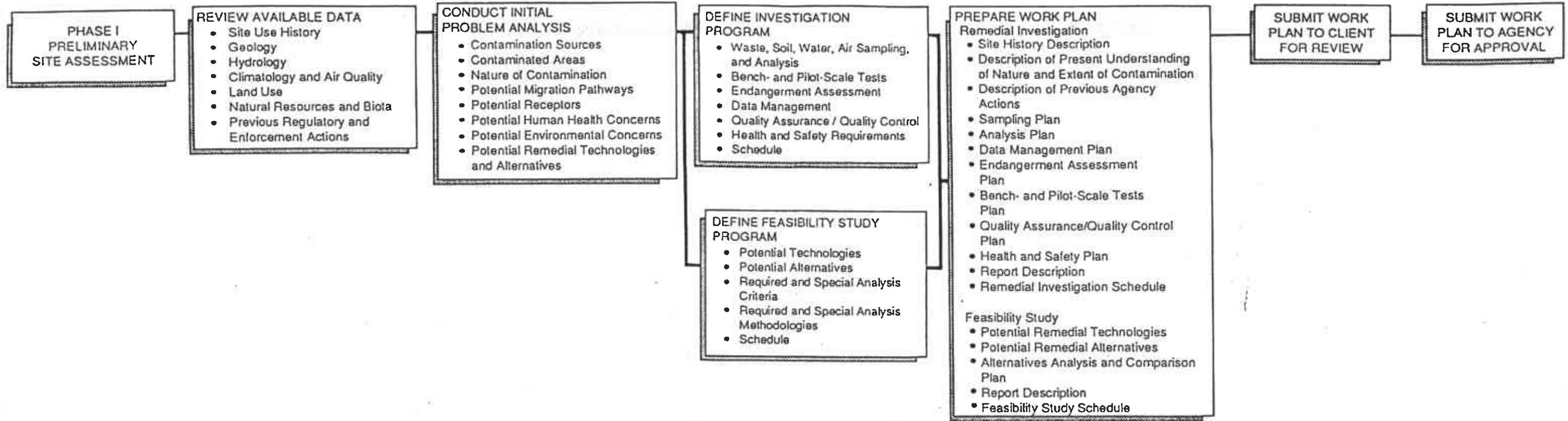
SOIL STOCKPILE LOOKING EAST.

W Z I I N C. BAKERSFIELD, CALIFORNIA		
AGRICULTURE INDUSTRIES INC. SCHROPP RANCH		
PHOTOGRAPH OF SOIL REMEDATION STOCKPILE		
DATE	5/92	0137.0010
		EXHIBIT 16



*NOTE: SLOT AND SAND SIZE TO BE DETERMINED DURING DRILLING OF THE WELL.

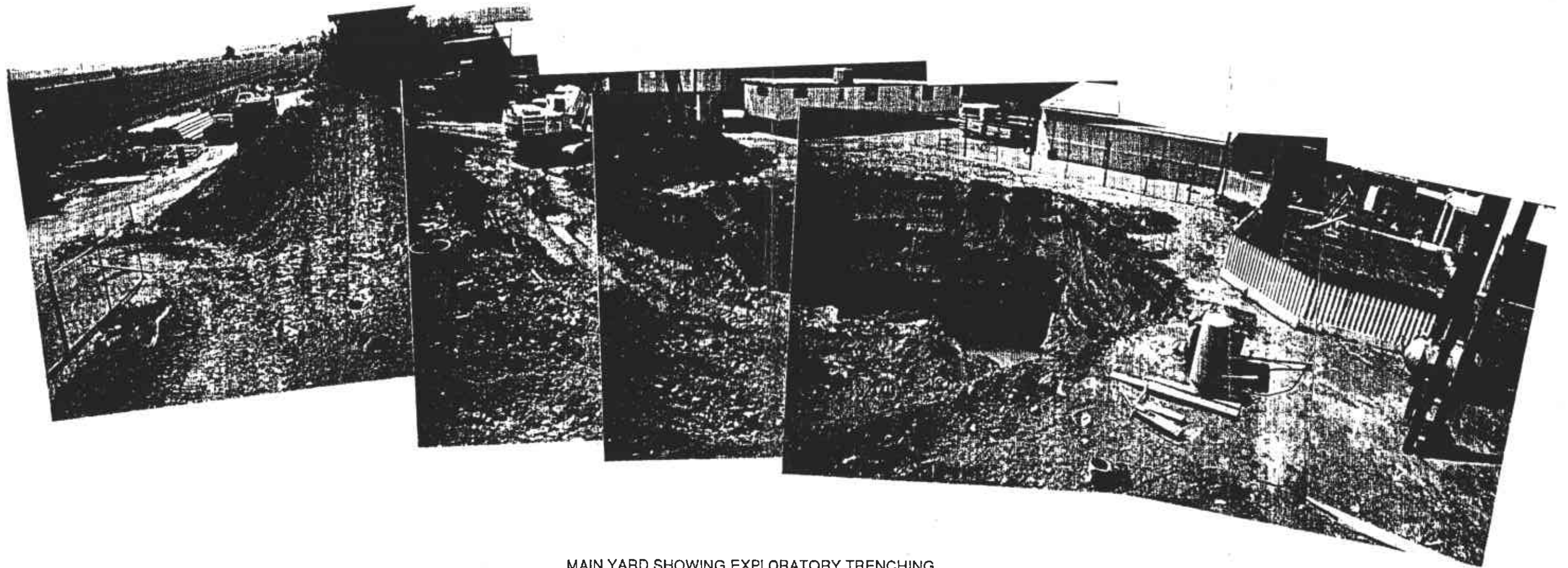
 W Z I I N C. BAKERSFIELD, CALIFORNIA			
AGRICULTURE INDUSTRIES INC. SCHROPP RANCH GROUNDWATER MONITORING WELL DESIGN			
DATE	6/92	0317.0010	EXHIBIT 18





MAIN YARD AREA LOOKING NORTH .
CENTER OF PICTURE DEPICTS FORMER UNDERGROUND FUEL STORAGE TANK.
DISPENSER AND WATER WELL AREA.

W Z I I N C . BAKERSFIELD, CALIFORNIA		
AGRICULTURE INDUSTRIES INC.		
SCHROPP RANCH		
DATE	5/92	0137.0010
EXHIBIT	8	



MAIN YARD SHOWING EXPLORATORY TRENCHING.
LOOKING SOUTHWEST.

W Z I I N C. BAKERSFIELD, CALIFORNIA		
AGRICULTURE INDUSTRIES INC. SCHROPP RANCH		
PHOTOGRAPH OF EXPLORATORY TRENCHING		
DATE	5/92	0137.0010 EXHIBIT 13

TABLE 1
SUMMMARY OF SOIL REMEDIATION ALTERNATIVES

Technique	Effectiveness	Time Frame	Operation & Maintenance	Future Responsibility	Relative* Cost	Future Monitoring	Applicability To Site
1) Aeration (S1)	Reduction to 0 ppm	3 - 6 months	Medium	None	\$30-40 K	None	Yes
2) Biological-Land Farming (S2)	Reduction to 0 ppm	6 - 8 months	Medium	None	\$250-350 K	None	Yes
3) In-Situ Soil Ventilation (S3)	Reduction to 0 ppm	1 - 2 years	High	None	\$500 K	None	Yes
4) Remove All Soils (S4)	Total Reduction	2 weeks	None	Financial	Prohibitive	None	Yes

* Relative Cost Estimates for Comparison of Alternatives

TABLE 2
SUMMARY OF WATER REMEDIATION ALTERNATIVES

Technique	Effectiveness	Time Frame	Operation & Maintenance	Future Responsibility	Relative* Cost	Future Monitoring	Applicability To Site
1. Carbon Filtration (G1)	Reduction to 1 ppm	7 - 9 months	Medium	None	\$70 - 140 K	None	Yes
2. Air-Stripping (G2)	Reduction to 1 ppm	7 - 9 months	Medium	None	\$70 - 140 K	None	Yes

*Relative Cost Estimated For Comparison Purposes

**TABLE 3
COST COMPARISON OF
REMEDIALTION ALTERNATIVES**

SOIL

<u>Alternative</u>	<u>Estimated Cost</u>
S1. Aeration	\$30-40 K
S2. Biological Land Farming	\$250-350 K
S3. In-Situ Soil Ventilation	\$400 K
S4. Excavate and Remove	\$1.2 MM

GROUNDWATER

<u>Alternative</u>	<u>Estimated Cost</u>
S1. Pump and Treat: Carbon Filtration	\$70 - 140 K
S2. Pump and Treat: Air-Stripping	\$70 - 140 K

ENCY

The U.S.
Department of
SF.

APPENDIX I
ALAMEDA COUNTY
UNDERGROUND TANK CLOSURE PLAN

*

ne

72-559

Schro

POSE
SM

ALAMEDA COUNTY HEALTH CARE SERVICES AGENCY
 DEPARTMENT OF ENVIRONMENTAL HEALTH
 HAZARDOUS MATERIALS DIVISION
 80 SWAN WAY, ROOM 200
 OAKLAND, CA 94621
 PHONE NO. 415/271-4320

Project Specialist (print) Brian P. Alvar

ACCEPTED

DEPARTMENT OF ENVIRONMENTAL HEALTH
 470 - 27th Street, Third Floor
 Oakland, CA 94612
 Telephone: (415) 874-7237

These plans have been reviewed and found to be acceptable and essentially meet the requirements of State and local health laws. Changes to your plans indicated by this Department are to assure compliance with State and local laws. The project proposed herein is now approved for issuance of any required building permits and construction.

One copy of these accepted plans must be on the job and available to all contractors and craftsmen involved with the removal.

Any change or alterations of these plans and specifications must be submitted to this Department and to the fire and Building Inspection Department for determination if such changes meet the requirements of State and local laws. Notify this Department at least 48 hours prior to the following required inspections:

- ↓ Removal of Tank and Piping
- ↓ Scraping
- ↓ Final Inspection

Issuance of a permit to operate is dependant on compliance with accepted plans and all applicable laws and regulations.

THERE IS A FINANCIAL PENALTY FOR NOT OBTAINING THESE INSPECTIONS.

*Regarding the Underground Tank
 Provide manifest following
 any litigation concerning
 the U.S.T.*

UNDERGROUND TANK CLOSURE PLAN

* * * Complete according to attached instructions * * *

1. Business Name Agriculture Industries Inc.
 Business Owner Richard Jones
 2. Site Address 3880 Mountain House Road, G
 City Byron Zip Phone None
 3. Mailing Address 3002 Beacon Blvd
 City West Sacramento Zip 95691 Phone 916-372-5595
 4. Land Owner ^{Rt. Warner} Manfred Schropp
 Address 3002 Beacon Blvd West Sacramento, CA 95691
 City, State Zip
 5. Generator name under which tank will be manifested ^{Rt. Warner} Manfred Schropp
- EPA I.D. No. under which tank will be manifested

TANK TO REMAIN ON-SITE FOR LITIGATION PURPOSES.

6. Contractor Kent S. Murray and Associates
Address 5051 Lexington Circle
City Loomis, CA 95650 Phone 916-652-0458
License Type A HAZ ID# 631513

7. Consultant WZI Inc.
Address 4800 Easton Drive, Suite 114
City Bakersfield, CA 93309 Phone 805-326-1112

8. Contact Person for Investigation
Name Stephen G. Muir Title Site Manager, Geologist
Phone (209)-339-8791 or (805) 326-1112

9. Number of tanks being closed under this plan 1
Length of piping being removed under this plan unknown
Total number of tanks at facility 1

10. State Registered Hazardous Waste Transporters/Facilities (see instructions).

** Underground tanks are hazardous waste and must be handled **
as hazardous waste

a) Product/Residual Sludge/Rinsate Transporter

Name TO BE DETERMINED EPA I.D. No. _____

Hauler License No. _____ License Exp. Date _____

Address _____

City _____ State _____ Zip _____

b) Product/Residual Sludge/Rinsate Disposal Site

Name TO BE DETERMINED EPA I.D. No. _____

Address _____

City _____ State _____ Zip _____

c) Tank and Piping Transporter

Name TO BE DETERMINED EPA I.D. No. _____

Hauler License No. _____ License Exp. Date _____

Address _____

City _____ State _____ Zip _____

d) Tank and Piping Disposal Site

Name TO BE DETERMINED EPA I.D. No. _____

Address _____

City _____ State _____ Zip _____

11. Experienced Sample Collector

Name Stephen G. Muir California Registered Geologist #3769

Company WZI Inc. California Registered Environmental Assessor 191

Address 4800 Easton Drive Suite 114

City Bakersfield State CA Zip 93309 Phone 805-326-1112

12. Laboratory

Name Sherwood Labs

Address 8071 North Lander Ave.

City Hilmar State CA Zip 95324

State Certification No. DHS Certification # 1400

13. Have tanks or pipes leaked in the past? Yes [] No [] Unknown (X)

If yes, describe. _____

14. Describe methods to be used for rendering tank inert
 TO BE DETERMINED

Before tanks are pumped out and inerted, all associated piping must be flushed out into the tanks. All accessible associated piping must then be removed. Inaccessible piping must be plugged.

The Bay Area Air Quality Management District (771-6000), along with local Fire and Building Departments, must also be contacted for tank removal permits. Fire departments typically require the use of explosion proof combustible gas meters to verify tank inertness. It is the contractor's responsibility to bring a working combustible gas meter on site to verify tank inertness.

15. Tank History and Sampling Information

Tank		Material to be sampled (tank contents, soil, ground-water, etc.)	Location and Depth of Samples
Capacity	Use History (see instructions)		
550 gallon	Unknown	Soil	Below and adjacent to former tank site Estimated 3 to 5 samples total.

One soil sample must be collected for every 20 feet of piping that is removed. A ground water sample must be collected should any ground water be present in the excavation.

Excavated/Stockpiled Soil	
Stockpiled Soil Volume (Estimated) Will be about 500 yd ³	Sampling Plan Sampling in accordance with LUFT manual or as appropriate to adequately define level of hydrocarbon contaminated soil that is excavated.

Stockpiled soil must be placed on bermed plastic and must be completely covered by plastic sheeting.

16. Chemical methods and associated detection limits to be used for analyzing samples

The Tri-Regional Board recommended minimum verification analyses and practical quantitation reporting limits should be followed. See attached Table 2.

Contaminant Sought	EPA, DHS, or Other Sample Preparation Method Number	EPA, DHS, or Other Analysis Method Number	Method Detection Limit
Unk fuel	GCFID (5030) TPH-G 8020 BTX&E		1 ppm 0.05 ppm

17. Submit Site Health and Safety Plan (See Instructions)
See Attached Sheet.

18. Submit Worker's Compensation Certificate copy

Name of Insurer State Fund Policy #425731-91

19. Submit Plot Plan (See Instructions) See Attached Sheet

20. Enclose Deposit (See Instructions) Enclosed

21. Report any leaks or contamination to this office within 5 days of discovery. The report shall be made on an Underground Storage Tank Unauthorized Leak/Contamination Site Report form. (see Instructions)

22. Submit a closure report to this office within 60 days of the tank removal. This report must contain all the information listed in item 22 of the instructions.

I declare that to the best of my knowledge and belief the statements and information provided above are correct and true.

I understand that information in addition to that provided above may be needed in order to obtain an approval from the Department of Environmental Health and that no work is to begin on this project until this plan is approved.

I understand that any changes in design, materials or equipment will void this plan if prior approval is not obtained.

I understand that all work performed during this project will be done in compliance with all applicable OSHA (Occupational Safety and Health Administration) requirements concerning personnel health and safety. I understand that site and worker safety are solely the responsibility of the property owner or his agent and that this responsibility is not shared nor assumed by the County of Alameda.

Once I have received my stamped, accepted closure plan, I will contact the project Hazardous Materials Specialist at least three working days in advance of site work to schedule the required inspections.

Signature of Contractor

Name (please type) Kent S. Murray and Associates

Signature *Kent S. Murray*

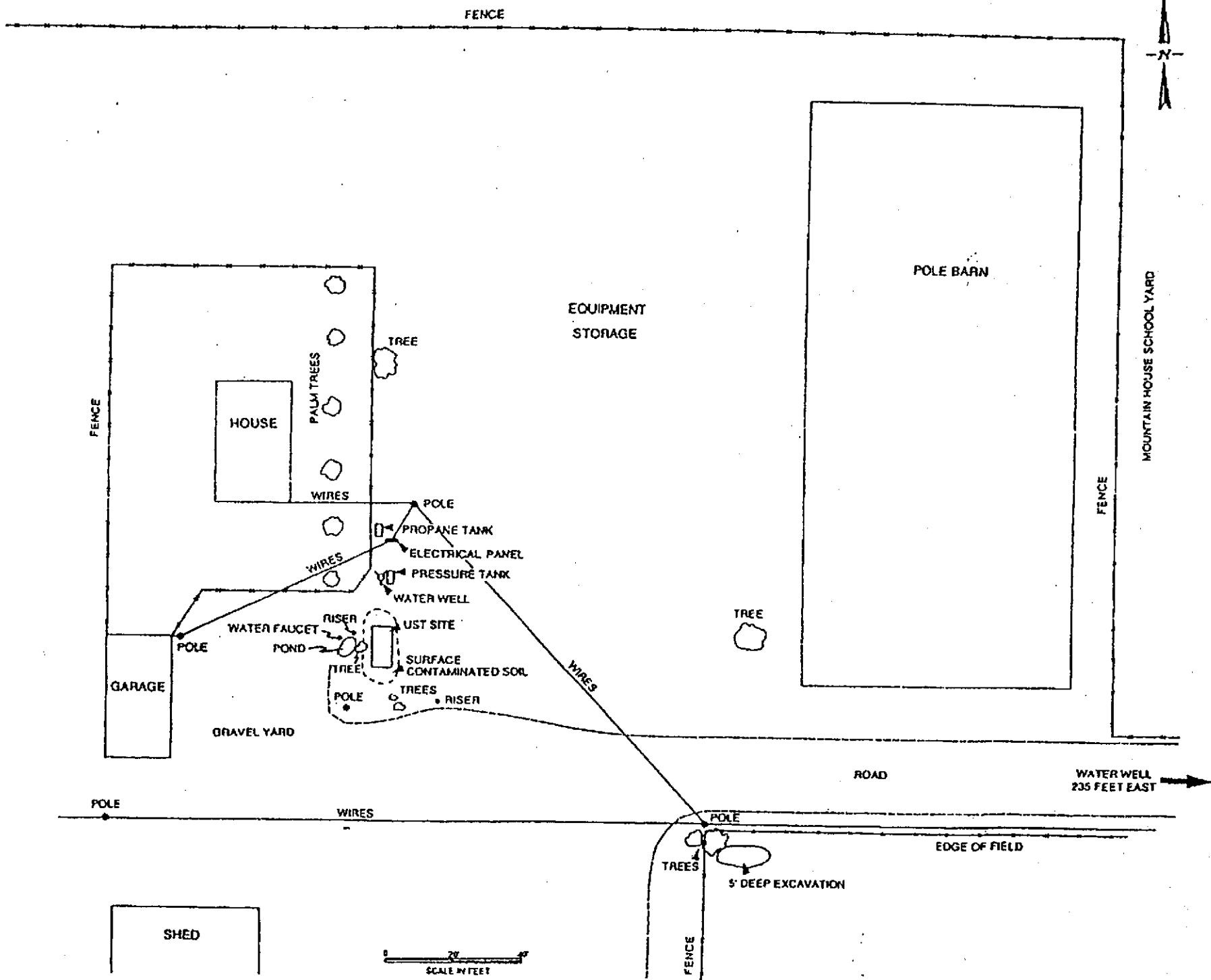
Date April 4, 1992

Signature of Site Owner or Operator

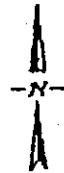
Name (please type) Richard Jones

Signature *Richard G. J.*

Date 5 April 1992



FENCE



POLE BARN

EQUIPMENT STORAGE

TREE

HOUSE

PALM TREES

WIRES

FENCE

POLE

PROANE TANK

ELECTRICAL PANEL

PRESSURE TANK

WATER WELL

UST SITE

SURFACE CONTAMINATED SOIL

TREES

RISER

GRAVEL YARD

WATER FAUCET

POND

RISER

POLE

GARAGE



WIRES

TREE

POLE

ROAD

WATER WELL
235 FEET EAST

POLE

WIRES

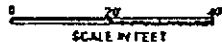
POLE

EDGE OF FIELD

TREES

5' DEEP EXCAVATION

SHED



FENCE

**STATE
COMPENSATION
INSURANCE
FUND**

HOME OFFICE
SAN FRANCISCO

RENEWAL
NK
2-41-17-92 F
PAGE 1

ENDORSEMENT AGREEMENT

EFFECTIVE JUNE 28, 1991 AT 12.01 A.M.

ALL EFFECTIVE DATES ARE
AT 12:01 AM PACIFIC
STANDARD TIME OR THE
TIME INDICATED AT
PACIFIC STANDARD TIME

D & S DRAGLINE SERVICE, INC

P. O. BOX 705
LOS BANOS, CA 93635

ANYTHING IN THIS POLICY TO THE CONTRARY NOTWITHSTANDING, IT IS
AGREED THAT THE ESTIMATED ANNUAL PREMIUM APPEARING IN THIS POLICY
IS CHANGED TO READ-

9,772.00

NOTHING IN THIS ENDORSEMENT CONTAINED SHALL BE HELD TO VARY, ALTER, WAIVE
OR EXTEND ANY OF THE TERMS, CONDITIONS, AGREEMENTS, OR LIMITATIONS OF THIS
POLICY OTHER THAN AS STATED. NOTHING ELSEWHERE IN THIS POLICY SHALL BE
HELD TO VARY, ALTER, WAIVE OR LIMIT THE TERMS, CONDITIONS, AGREEMENTS OR
LIMITATIONS OF THIS ENDORSEMENT.

COUNTERSIGNED AND ISSUED AT SAN FRANCISCO:

NOVEMBER 25, 1991

991:

LE Hams
AUTHORIZED REPRESENTATIVE

John A. Platt
PRESIDENT

TOTAL P.04

010



AGRICULTURE INDUSTRIES, INC.

P.O. Box 1076, 3002 Beacon Blvd., West Sacramento, California 95691

(916) 372-5595 FAX: (916) 372-5615

March 2, 1992

Mr. Steve Muir
21030 North Davis Road
Lodi, California 95242

Dear Steve:

Re: Site Assessment 3880 Mountain House Road
Tracy, California (Schropp Farm)

Per our telephone conversation this afternoon, enclosed is a Schropp Farm check in the amount of \$459.00. This is for the permit for the excavation of the tank.

Please let me know when you need anything further.

Best regards,

Diane L. Hemminghaus
Executive Secretary

dlh

Enclosure

SCHROPP FARM
P. O. BOX 1076 372-5595
WEST SACRAMENTO, CA 95691

0769

3-2 19 92

11-57
1210

PAY TO THE
ORDER OF

Alameda County

\$ 459 00/100

THE SUM 459 DOLLARS 00 CENTS

DOLLARS



First Interstate Bank
of California #659
Tenth and K Streets
P.O. Box 1228
Sacramento, CA 95806-1228

Clare J. Hammerhaus
Michael Schropp

FOR

Bank Account Permit

⑆ 210005781659916978 ⑆ 0769 ⑆ ⑆



MURRAY & ASSOCIATES
ENVIRONMENTAL SERVICES

KENT S. MURRAY, Ph.D.
PRESIDENT & CEO
R.G. #3264
REA #01637

FAX (916) 652-0464

BUS. (916) 652-0458

5051 Lexington Circle, Loomis, CA 95650



Stephen G. Muir, C.E.G., R.G.P.
Manager, Geotechnical Services

Northern California Office
21030 North Davis Road
Lodi, California 95242
209/339-8791

Southern California Office
805/326-1112
805/326-0191 FAX

WZI INC

WZI

QUESTIONNAIRE

CA, 95376

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you are

CEOPS

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APPENDIX II
PRELIMINARY SITE ASSESSMENT
QUESTIONNAIRE REPORTS WITH INDIVIDUALS

PRELIMINARY ENVIRONMENTAL SITE ASSESSMENT QUESTIONNAIRE

WZI Client and Project: AG INDUSTRIES

Project No: _____

Person Interviewed: DON HOLCK

Date: 6/20/92

Company: DON HOLCK FARMS

Address: 15638 W. VON SOSTEN RD. TRACY CA, CA

Interviewed by: _____

1. Affiliation of interviewee with project or property being evaluated and approximate dates of knowledge of operations:

RENTED PROPERTY SINCE 1980

2. What was the past usage or operations history of the property as best you are aware of

FARMING OF MISC FIELD CROPS

3. Are you presently, or have you ever used or stored any regulated hazardous materials on the property? If you please explain.

NO

4. Do you have knowledge of any person or persons in the past who have ever stored any regulated hazardous materials on the property?

NO

5. Are you presently, or have you ever generated/stored any hazardous wastes on the property?

NO

6. Are you (have you ever been) a United States Environmental Protection Agency registered hazardous waste generator?

NO

7. Have you ever filed a 2185 Material Data Safety Sheet plan

NO

8. Are you aware of any known or suspected environmental problem involving this property?

YES - FUEL TANK LEAK

9. Are you aware of any known or suspected environmental problem on any of the adjacent properties?

NO

10. To your knowledge has there ever been an investigation of the property or adjacent properties for:

Hazardous Materials: NO

Hazardous Wastes: NO

Spills, Leaks, or Any Type of Pollution: NO

Known or Suspected Environmental Problems NO

11. Has there ever been any communication (to or from) the United States Environmental Protection Agency or any other federal governmental agency regarding environmental affairs of the property? NO

12. Has there ever been any communication (to or from) the California Regional Water Quality Control Board, California Environmental Protection Agency, California Solid Waste Management Board, California Department of Health Services or any other California State Agency regarding environmental affairs of the property? NO

13. Has there ever been any communication (to or from) the County, City, or Local Air Pollution Control District, Environmental Health Department, Fire Department, Environmental Protection Agency, or any other regulatory or governmental agency? NO

14. Are there or to your knowledge has there ever been materials used or generated on the property (including wastes) which require special transportation (delivery or removal) other than regular parcel/mail services or regular trash removal?

NO

15. Have there ever been any materials on the property to your knowledge that exhibit any of the following characteristics?

Explosive

NO

Flammable

FUEL

Corrosive (acids, bases, oxidizers, etc.)

NO

Reactive

NO

Compressed (gases)

NO

Radioactive

NO

Poisonous

NO

Irritating (fumes, dusts, smoke, powders, smells, etc.)

NO

Etiological (disease causing biological organisms)

NO

Toxic (hazardous to human health)

NO

16. Are there any groundwater wells located on the property?

YES

17. Does the property have a septic tank or sewer disposal system?

YES

18. Are there any easements through the property? YES - HIGH
VOLTAGE TRANSMISSION LINES - WATER -
BYRON BETHANEY IRR. DIST.

19. Do you have knowledge of any pipelines, utility lines, telephone lines or other buried objects that may be on the property? _____

YES - WATER PIPELINE
TELEPHONE LINE ALONG MT HOUSE RD

20. Do you have any knowledge of any past oil and gas related operations on the property? _____

NO

MATERIALS CHECKLIST FOR COMMON CLASSES OF SUBSTANCES

Category	Item	Volume	Location
FUELS	Alcohol	<u>NONE</u>	
	Gasoline	<u>NONE</u>	
	Diesel	<u>NONE</u>	
	Kerosene	<u>NONE</u>	
	Propane	<u>NONE</u>	
OIL/GREASE	Motor Oil	<u>NONE</u>	
	Other Oil	<u>NONE</u>	
	ATF	<u>NONE</u>	
	Grease	<u>NONE</u>	
	Lubricants	<u>NONE</u>	
	Vegetable Oil	<u>NONE</u>	
	Mineral Oil	<u>NONE</u>	
	Soaps	<u>NONE</u>	
	Detergents	<u>NONE</u>	
SOLVENTS	Turpentine	<u>NONE</u>	
	Mineral Spirits	<u>NONE</u>	
	Alcohol	<u>NONE</u>	
	Ether	<u>NONE</u>	
	Carbon Tetrachloride	<u>NONE</u>	

Category	Item	Volume	Location
----------	------	--------	----------

AEROSOLS/FLAMMABLE LIQUIDS

Spray Cans NONEPaints/Inks/Dyes NONE

COMPRESSED/BOTTLED GASES:

Hydrogen NONEOxygen NONEAcetylene NONEPropane NONEButane NONEChlorine NONECarbon Dioxide NONEAir NONE

EXPLOSIVE/MUNITIONS

Dynamite NONEBlasting Caps NONEDetonation Cord NONE

PESTICIDES/HERBICIDES

NONE

FERTILIZERS

Liquid NONE

Category	Item	Volume	Location
	Solid	NONE	
ACIDS/BASES/OXIDIZERS			
	Chlorine	NONE	
	Peroxide	NONE	
RADIONUCLIDES			
	Liquid	NONE	
	Solid	NONE	
BIOLOGICAL AGENTS		NONE	
POISONS		NONE	
IRRITANTS		NONE	

FACILITIES CHECKLIST FOR COMMON USAGES

ITEM	NUMBER	VOLUME	LOCATION
Underground Storage Tanks		NONE	
Aboveground Storage Tanks		NONE	
Washing/Steam-Cleaning Facilities		NONE	
Sumps/Collection Drains		YES - IRRIGATION	
Materials Storage Areas		NONE	
Waste Storage Areas		NONE	
Other Storage Areas		NONE	
Power Transformers		YES - P.G. + E	
Spray-Painting Equipment		NONE	
Fabrication Equipment		NONE	
Welding Equipment		NONE	
Other Manufacturing Equipment		NONE	
Other Equipment		NONE	
Other			

APPENDIX III
WZI INC.
SITE HEALTH AND SAFETY PLAN

APPENDIX III
WZI INC.
SITE HEALTH AND SAFETY PLAN

I. GENERAL INFORMATION

Client: *Agriculture Industries, Inc.*
Project Number: *0137.0010/Schropp Ranch*
Project Manager: *Stephen G. Muir*
Health and Safety Officer: *Patrick O. Dunn Jr.*
Site Safety Officer: *Stephen G. Muir*
Health and Safety Plan Prepared by: *Stephen G. Muir/Patrick O. Dunn Jr.*
Issue Date: *February 25, 1992*
Effective Period: *180 days*

II. SCOPE AND APPLICATION

The provisions of this Health and Safety Plan (HSP) are based upon an evaluation of known and/or suspected site contamination only, and are designed to minimize health and safety hazards of site activities as described in the Scope of Work. If during the course of site work new chemical contamination is discovered, or additional site activities not described in the Scope of Work become necessary, all work shall stop pending an evaluation of the new information and appropriate modification of this Plan. The Health and Safety Officer shall direct this evaluation.

III. HEALTH AND SAFETY ORGANIZATION

Minimum qualifications, duties, and responsibilities of all site personnel:

Project Manager

Hazardous Waste Field Investigation Experience
Knowledge of Work Plan Procedures and Equipment
Knowledge of Standard Site Safety Procedures and Equipment
Training (40 Hour, 3 Day Site Specific)
Respirator Fit Tested and Trained

Health and Safety Officer

Trained Health and Safety Professional or Equivalent
Site Safety Experience In Hazardous Waste Field Investigations
Knowledge of Work Plan Procedures and Equipment
Knowledge of Standard Site Safety Procedures and Equipment
Training (40 Hour, 3 Day Site Specific)
Respirator Fit Tested and Trained

Site Safety Officer

Site Safety Experience in Hazardous Waste Field Investigations
Knowledge of Work Plan Procedures and Equipment
Knowledge of Standard Site Safety Procedures and Equipment
Air Monitoring Instrument Calibration and Use
Respiratory Protective Equipment Maintenance and Use
Training (40 Hour, 3 Day Site Specific, CPR, First Aid)
Respirator Fit Tested and Trained

Project Personnel

Training (40 Hour, 3 Day Site Specific, 8 Hour Refresher)

Respirator Fit Tested and Trained

Air Monitoring Instrument Calibration

IV. SITE DESCRIPTION AND CHARACTERISTICS

Site Description:

3880 Mountain House Road, Alameda County, California. Ranch shop area in rural area site is flat. A school is present 400 feet east of proposed excavation site.

Topographic Map Attached: _____ yes X no Attached to Work Plan

Location Map Attached: _____ yes X no Attached to Work Plan

V. WORK PLAN

Objectives:

Exploratory trenching to determine if gasoline contaminated soil is present. Minor amounts of contaminated soil will be excavated and stockpiled if found.

Tasks:

1. *Preparation of Phase I Investigation*
2. *Preparation of Work and Health and Safety Plan*
3. *Exploratory Trenching*

VI. HAZARD EVALUATION

Known and/or Suspected Chemical Contaminants on the Site:

<u>Name</u>	<u>CAS #</u>	<u>PEL</u>	<u>IDLH</u>	<u>Health Effects</u>
Gasoline	8006619	300 ppm	5,000 ppm	Central Nervous System
(Benzene)	71432	1 ppm	5,000 ppm	Central Nervous System - Cancer
(Toluene)	108883	100 ppm	5,000 ppm	Central Nervous System
(Xylenes)	1330207	100 ppm	5,000 ppm	Central Nervous System

Chemical Hazards:

Toxic X Ignitable X Corrosive _____ Reactive _____
Medical or Biological Waste _____

Forms of Chemical Hazards:

Solid X Dust X Fiber _____ Fume _____
Liquid _____ Vapor X Gas _____

Special Characteristics:

i.e. shock sensitive or explosives: _____ yes X no

Explain:

Possible Gasoline Contaminated Soil

Physical Agents:

Radiation _____

Noise X

Heat Stress _____

Describe:

Noise around heavy equipment.

Safety Hazards:

Heavy equipment operations.

Trenching cave-ins.

Anticipated Hazards by Job Task:

<u>Task</u>	<u>Chemical Hazards</u>	<u>Physical Agents</u>	<u>Safety Hazards</u>
1. Phase I Investigation	None	None	None
2. Work Plan Preparation	None	None	None
3. Exploratory Trenching	Gasoline	Soil and Vapor, Noise	Heavy Equipment, Trenching Cave-Ins

VII. SITE STANDARD OPERATING PROCEDURES

A. Personal Protective Equipment (PPE)

WZI Inc. follows the standard U. S. Environmental Protection Agency (EPA) personal protective equipment convention for all hazardous waste field work, described as follows:

Level A PPE

Full encapsulating chemical protective suit, positive pressure demand self-contained breathing apparatus, disposable Tyvek coveralls as the undergarment.

Level B PPE

Positive pressure-demand self-contained breathing apparatus or supplied-air respirator in positive pressure mode, 5 minute escape bottle worn at the hip, chemical protective suit (permeable Tyvek or impermeable coated Tyvek or Saranex coveralls for splash hazards), chemical protective gloves, inner surgical gloves, chemical protective boots with steel toe and steel shank, hard hat.

Level C PPE

Full face or half face air purifying respirator, chemical protective suit (permeable or impermeable coated Tyvek or Saranex coveralls for splash hazards), chemical protective gloves, inner surgical gloves, chemical protective boots with steel toe and steel shank, hard hat, safety glasses if half face respirator is worn.

Level D PPE

Tyvek coveralls, hard hat, steel toed, steel shank work boots, safety glasses, work gloves.

PPE required for each job task depends on the chemical and physical hazards expected of that task, as described above. The following PPE ensembles are assigned to project tasks:

<u>Task</u>	<u>Assigned PPE Ensemble</u>
1. <i>Phase I Investigation</i>	<i>N/A</i>
2. <i>Work Plan Preparation</i>	<i>N/A</i>
3. <i>Exploratory Trenching</i>	<i>Level D</i>

B. Site Control

Initial Site Entry

The WZI Project Manager shall arrange an initial site briefing with the WZI Health and Safety Officer (HSO). Based on the information provided in this initial site briefing and on the nature of magnitude of known or suspected site contaminants and the work plan tasks, the HSO shall determine initial site entry procedures and shall specify them below. It is the responsibility of the Site Safety Officer (SSO) to implement these procedures and direct proper site entry.

Personal Protective Equipment (PPE) ensemble for personnel to wear during initial site entry:

Level D with respirator available. Respirator shall be half mask with organic vapor cartridges (color-coded black and gray)

If Level C PPE is required for initial site entry, then all personnel MUST carry a 5 minute escape air bottle.

Initial Site Entry Procedures:

Level D PPE and as outlined below. Air monitoring with portable photoionization detector (OVM).

Prior to entering the site, the SSO shall calibrate the portable direct-reading air monitoring instruments upwind from site in an uncontaminated area.

The SSO shall then determine background readings for all air monitoring instruments in this same upwind, off-site, uncontaminated area.

The SSO shall record the instrument calibration procedures and results and all background readings in the Site Safety Log Book.

All personnel must enter the site from an upwind position if possible.

C. Work Zones

At the beginning of each work shift the WZI SSO shall perform initial air monitoring with portable direct-reading instruments to identify the area(s) on-site where gas and vapor contamination is present.

Based on these initial air monitoring readings, the SSO shall establish discrete work zones as follows:

Exclusion Zone or "Hot" Zone

The Exclusion Zone or "Hot" Zone shall be defined as follows:

1. Wherever portable direct-reading air monitoring instruments register anything above the background readings established upwind off-site in uncontaminated areas.
2. If portable direct-reading air monitoring instruments read background throughout the site, the exclusion zone shall be defined around the area(s) of known or suspected chemical contamination, or where drilling, excavation, soil sampling, or other invasive activity is to be performed.

Decontamination Zones

The SSO shall establish a decontamination corridor adjacent to and upwind from identified exclusion zones. The SSO shall set up both equipment and personnel decontamination areas outlined under "Decontamination Procedures" below.

Support Zone

The SSO shall establish support zones upwind from the decontamination corridor where all portable direct-reading air monitoring instruments read background, at a distance of at least 20 meters from the exclusion zone.

The support zone shall be established such that support personnel may observe all personnel in the exclusion zone at all times.

If personnel must enter trenches or other excavations, a "buddy" shall remain near the excavation to maintain visual contact ("line of sight") with the personnel inside the excavation at all times. The SSO shall develop and teach all site personnel a system of hand signals that will enable the "buddy" to indicate to support zone personnel that an emergency exists inside the excavation.

The SSO shall monitor the area at least every 15 minutes with the portable direct-reading air monitoring instruments to detect any changes in gas or vapor contaminant dispersion on-site. In addition, the Action Levels and corresponding Actions as described in the HSP shall be followed.

If the wind changes direction and/or gas, vapor, or dust contamination moves into the established decontamination or support zones in concentrations that exceed permissible Action Levels established by the HSP, then the SSO shall direct site personnel to move the support zone to the new upwind area, confirming the absence of gas or vapor contamination with the portable direct-reading air monitoring instruments.

D. Air Monitoring

Direct-Reading Air Monitoring Instruments

The follow direct-reading instruments are available for field work (check all that apply):

Organic Gases and Vapors:

Thermo Environmental Organic Vapor Meter (OVM)	<u> X </u>
HNu Photoionizer	_____
Photovac Microtip	_____
Foxboro Organic Vapor Analyzer	_____
Colorimetric Detector Tubes	<u> X </u>

Inorganic Gases:

Hydrogen Sulfide Detector _____

Hydrogen Cyanide Detector _____

Combustible Gases, Vapors, and Oxygen Detector

Combination Combustible Gas / Oxygen Detector, (calibrated to the combustible gas or vapor expected).

Ionizing Radiation

Geiger-Mueller counter capable of detecting alpha, beta, and gamma radiation.

U. S. EPA Direct-Reading Air Monitoring Instrument Action Levels and Actions for Hazardous Waste Operations

Monitoring Results (Action Level) Action

Total Organic Vapors:

0 ppm or "background" (BG)	Level D PPE
Above BG to 5 ppm breathing zone	Level C PPE
5-500 ppm breathing zone	Level B PPE
500-1000 ppm breathing zone	Level A PPE
>1000 ppm breathing zone	Evacuate

Inorganic Gases (H2S, HCN)

Background to 5 ppm breathing zone	Level D PPE
5-40 ppm breathing zone	Level B PPE
>40 ppm breathing zone	Level A PPE or evacuate

Flammable Gases and Vapors

Background	Level D PPE
BG-20% LEL	Level D PPE if methane; evacuate if organic vapors also read > 1000 ppm
>20% LEL	Ventilate below 20% LEL; stop work if unsuccessful

Oxygen

19.5%-21%	Level D or Level C PPE
<19.5%	Level B PPE

Radiation

Background	Continue work
Two times background	Stop work. Call Environmental Health Department. Monitor area thoroughly. Call HSO.

Site Specific Air Monitoring Equipment and Procedures

<u>Air Monitoring Instrument</u>	<u>Contaminants</u>	<u>Where Monitored</u>	<u>Frequency of Monitoring</u>	<u>Action Level</u>	<u>Action</u>
HNu, OVM or Microtip Photoionizer	Organic Vapors				
Foxboro OVA	Organic Vapors				
Combustible Gases Indicator	Combustible Gases and Vapors and Oxygen				
Hydrogen Sulfide Detector	Hydrogen Sulfide				
Colorimetric Tubes	Organic and Inorganic Gases and Vapors				
Radiation Detector	Ionizing Radiation				
Other					

Special Air Sampling Procedures:

None.

E. Site Safe Work Practices

1. *Daily Safety Meeting*
2. *On-Site Health and Safety Monitoring*
3. *All trenches shall be sloped at or beyond the angle of repose.*

F. Trenching and Excavation Safety Procedures

G. Decontamination

Personnel

Personnel will wear Tyvek garments and gloves. These will be disposed of on-site.

Equipment

1. *Wash down on-site and rinse with clean water.*

H. Procedures for Disposal of Wastes and Derived Materials

1. *All waste water and soil will be placed on contaminated soil pile and covered.*

I. Site Safety Meetings

Before beginning site work the SSO shall conduct a site safety meeting to discuss the following:

the tasks to be performed;

the safe work practices to be followed to minimize exposure to chemical and physical agents and to minimize accidents

The SSO shall document the date, time, and attendance of all site safety meetings together with a short description of the topics discussed in Appendix A of this Plan.

J. Prohibited Activities and Work Limitations

- o No eating, drinking, smoking, or chewing of tobacco
- o Enter exclusion zones with a buddy at all times
- o No "Hot Work" - Welding, Cutting, Grinding without permission from SOS (Hot Work Permit)
- o Daylight hours only

K. Health and Safety Equipment and Materials

Respirators

Coated or Uncoated Tyvek

Chemical Protective Gloves

Duct Tape

Safety Glasses

Hard Hat

Steel-Toed Steel Shank Chemical Protective Boots

Decontamination Materials

Drinking Water and Cups

Folding Table and Chairs

Parasol

Clock

Walkie Talkies

First Air Kit

Blue Ice

ABC Fire Extinguishers

Emergency Alarm Equipment

L Record Keeping

Site Safety Log

Site Conditions

Work Progress

Air Monitoring Instrument Readings

Air Monitoring Instrument Calibration

Personnel Training Documentation

Respirator Fit Testing Records

VIII. MEDICAL SURVEILLANCE

All site employees must be enrolled in a medical surveillance program if they meet any of the following conditions: (Title 8 CCR 5192(f))

1. If an employee is or may be exposed at or above the Cal-OSHA Permissible Exposure Limit (PEL) (or to other published exposure limits if a PEL doesn't exist for a specific chemical) or 30 days or more per year, without regard to the use of respirators;
2. If any employee wears a respirator for any part of any day for 30 days or more per year;
3. If an employee becomes, injured, ill, or develops signs or symptoms due to possible overexposure involving hazardous substances or health hazards from an emergency response or hazardous waste operation.

IX. SPILL CONTAINMENT PLAN

Not Applicable

X. EMERGENCY CONTINGENCY PLAN

Attach Map Showing Evacuation Route from Site to Nearest Hospital *Attached*

Emergency Telephone Numbers

Ambulance 911
Fire 911
Police 911
WZI Office (805) 326-1112

Emergency Alarm and Communication Procedures

1. *Hand signals shall be developed before site work begins to communicate at a distance in noisy areas.*
2. *Radio communication with emergency teams.*

Emergency evacuation and equipment shutdown procedures must be developed, understood, and rehearsed by all site personnel before project work begins.

Emergency Evacuation Procedures

1. *Shut all equipment down.*
2. *Evacuate site upwind.*
3. *Meet at safety point.*
4. *Determine status of personnel.*
5. *Advise authorities/WZI as appropriate.*

XI. APPROVALS

Health and Safety Plan Prepared by:

Name

Signature

Date

Health and Safety Plan Approved by:

WZI Project Manager

Signature

Date

WZI Health and Safety Officer

Signature

Date

WZI Site Safety Officer

Signature

Date

APPENDIX IV

LABORATORY ANALYTICAL RESULTS



8071 NORTH LANDER AVENUE HILMAR, CALIFORNIA 95324

FACSIMILE TRANSMITTAL

DATE: 4, 27, 92

TRANSMITTED TO: W21

ORGANIZATION: Steve Muir

FACSIMILE PHONE #: () -

FROM: 4

NUMBER OF PAGES: _____ (INCLUDING THIS SHEET)

OPERATOR: _____

TIME SENT: _____:

IF YOU HAVE ANY PROBLEMS WITH THIS TRANSMISSION PLEASE CALL (209) 667-5258.



**Sherwood
Labs**
CORPORATION

8071 NORTH LANDER AVENUE
P.O. BOX 837
HILMAR, CALIFORNIA 95324

Date: 4/24/92

DHS Certification #: 1400

ANALYSIS REPORT: BTEX/Total Petro. Hydrocarbons as Gasoline

CLIENT: McIsaac Co.
P.O. Box 788
Los Banos, CA 93635

Contact: Tim McIsaac

Project Name: Ag. Industries, Tracy

Date Received: 4/21/92

Date Started: 4/22/92

Project Number:

Date Completed: 4/24/92

Sampled by: Don Light

Sample ID: SS-1, 10'6"

Time: 1100

Date: 4/20/92

Lab ID: PH2042578

Method: 8020

Analyte	Amount Found (ug/Kg)	MDL (ug/Kg)
Benzene	.880	3.0
Toluene	10200	3.0
Ethyl Benzene	4800	3.0
Total Xylene	46000	3.0

Method: 5030/Mod. 8015

Analyte	Amount Found (mg/Kg)	MDL (mg/Kg)
TPH as Gasoline	1140	1

QC:

BTEX MS/MSD Avg. Recovery: 102%, RPD<11%
TPH MS/MSD Avg. Recovery: 100%, RPD<1%

Paul Freehauf
Paul Freehauf
Laboratory Director



**Sherwood
Labs**
CORPORATION

8071 NORTH LANDER AVENUE
P.O. BOX 937
HILMAR, CALIFORNIA 95324

Date: 4/22/92

DHS Certification #: 1400

ANALYSIS REPORT: BTEX/Total Petro. Hydrocarbons as Gasoline

CLIENT: McIsaac Co.
P.O. Box 788
Los Banos, CA 93635

Contact: Tim McIsaac

Project Name: Ag. Industries, Tracy

Date Received: 4/21/92

Date Started: 4/22/92

Project Number:

Date Completed: 4/24/92

Sampled by: Don Light

Sample ID: Water, 27'

Time: 1602

Date: 4/21/92

Lab ID: PH2042580

Method: 602

Analyte	Amount Found (ug/L)	MDL (ug/L)
Benzene	1180	0.3
Toluene	1650	0.3
Ethyl Benzene	265	0.3
Total Xylene	775	0.3

Method: 5030/Mod. 8015

Analyte	Amount Found (ug/L)	MDL (ug/L)
TPH as Gasoline	27500	50

GC:

BTEX MS/MSD Avg. Recovery: 102%, RPD<11%
TPH MS/MSD Avg. Recovery: 100%, RPD<1%

Paul Freehaut
Paul Freehaut
Laboratory Director



**Sherwood
Labs**
CORPORATION

8071 NORTH LANDER AVENUE
P.O. BOX 937
HILMAR, CALIFORNIA 95324

Date: 4/24/92

DHS Certification #: 1400

ANALYSIS REPORT: BTEX/Total Petro. Hydrocarbons as Gasoline

CLIENT: McIsaac Co.
P.O. Box 788
Los Banos, CA 93635

Contact: Tim McIsaac

Project Name: Ag. Industries, Tracy

Date Received: 4/21/92

Date Started: 4/22/92

Date Completed: 4/24/92

Project Number:

Sampled by: Don Light

Sample ID: SS-2, 19'6"

Time: 1435

Date: 4/20/92

Lab ID: PH2042579

Method: 8020

Analyte	Amount Found (ug/Kg)	MDL (ug/Kg)
Benzene	22800	3.0
Toluene	44400	3.0
Ethyl Benzene	7100	3.0
Total Xylene	33000	3.0

Method: 5030/Mod. 8015

Analyte	Amount Found (mg/Kg)	MDL (mg/Kg)
TPH as Gasoline	1050	1

QC:

BTEX MS/MSD Avg. Recovery: 102%, RPD<11%
TPH MS/MSD Avg. Recovery: 100%, RPD<1%

Paul Freehauf
Paul Freehauf
Laboratory Director

APPENDIX V
SOIL AND GROUNDWATER SAMPLING PROTOCOL

APPENDIX V
WZI SOIL AND WATER SAMPLE PROTOCOL

Soil Sampling with Drill Rig

A two and one-half split spoon sampler fitted with three (3) six inch stainless steel or brass sample tubes will be used to collect samples. In each borehole, samples will be collected at five foot intervals at a predetermined depth. After drilling to each sampling depth, the sampling apparatus will be inserted into the hollow auger and driven into the undisturbed soil beneath the borehole.

Upon recovery, the lower two (2) sample tubes, designated A and B, will be sealed by covering with aluminum foil, capping with plastic and sealing with cloth tape. This sample recovery method minimizes head space in the sample tubes. The samples will then be stored on ice pending delivery to a certified laboratory for chemical analysis and accompanied by appropriate Chain of Custody documents. The material in the third tube and in the sample "shoe" will be examined and described, then discarded. Sample descriptions will include lithology, moisture content, fossil content, and odor. Samples will also be checked with an Organic Vapor Meter (OVM). Lithologic logs for each borehole will be compiled utilizing the sample descriptions.

The sample will be washed with a non-phosphate cleaner and double rinsed with water after each use. Auger flights will be steam cleaned after drilling each borehole. This will assure that contamination is not transferred to other boreholes. The cleaning will take place on established cleaning sites and the effluent will be contained.

Uncontaminated boreholes (as determined by OVM filed tests) will be backfilled with the same material or cuttings extracted from the hole during drilling after placing five feet of bentonite in the bottom of the hole. Boreholes found to have contaminated soil will be

backfilled with a cement and sand slurry containing no more than five percent bentonite. The cuttings from these holes will be placed in U. S. Environmental Protection Agency (EPA) approved, 55 gallon barrels with lids, stored on-site pending laboratory analysis and disposed of at an approved facility if necessary, with the appropriate Chain of Custody documents. Within 30 days a mitigation report will be submitted to the Department of Environmental Health Services which will include three (3) remediation methods. The report will be signed by a Registered Geologist or a Registered Civil Engineer.

Water Sampling

All equipment that is used in a monitoring well for purging, sampling or depth measurement shall be decontaminated by steam cleaning or a TSP wash and triple rinse procedure prior to use and before reusing when purging or sampling.

1. Start at the furthest up gradient well and work down gradient. When contamination is suspected, sample the clean wells first.
2. Obtain access to well and check well head for damage or tampering.
3. Measure depth to groundwater and calculate well volume.
4. Check and record pH, temperature and conductivity.
5. Purge a minimum of three to five well volumes, cleaning the bailer between runs. The purging rate should not be so great as to dry the well or have the formation water cascade down the casing. If purging causes the well to be pumped dry allow it to recharge for up to 24 hours prior to sampling. If it does not recharge within 24 hours, it is considered a dry well.
6. Dump or pump purged water directly into barrels on-site and hold for proper disposal.

7. After purging check and record pH, temperature and conductivity every ten minutes until they stabilize. Stability is indicated by having two consecutive measurements within 0.5 units of pH, within 2 °F for temperature and within five percent for conductivity.
8. Pour samples from bailer directly into sample bottles. For bottles without preservation - rinse cap and bottle two to three times with well water and fill keeping the head space to a minimum. For bottles with a preservative DO NOT RINSE just fill and maintain a minimum head space.
9. Place samples in cooler with 'dry ice' or 'blue ice' for transportation to the laboratory.
10. Deliver samples to the laboratory the same day of sampling, whenever practical. If next day delivery is necessary, the samples are to be kept refrigerated at 39 °F (4 °C) overnight and delivered to the laboratory the following morning.
11. A 'Chain of Custody Document' will accompany the samples at all times.
12. Repeat depth measurements, and record values.
13. Secure well head.

SGM/jb

0137.0010.011

APPENDIX VI
ALAMEDA COUNTY
DEPARTMENT OF ENVIRONMENTAL HEALTH
HAZARDOUS MATERIALS INSPECTION FORM

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 pink -files

ALAMEDA COUNTY, DEPARTMENT OF ENVIRONMENTAL HEALTH

80 Swan Way, #200
 Oakland, CA 94621
 (415) 271-4320

Hazardous Materials Inspection Form

1 of 3

II, III

Send to Ag Industries

II.A BUSINESS PLANS (Title 19)

- ___ 1. Immediate Reporting 2703
- ___ 2. Bus. Plan Stds. 25503(b)
- ___ 3. RR Cars > 30 days 25503.7
- ___ 4. Inventory Information 25504(a)
- ___ 5. Inventory Complete 2730
- ___ 6. Emergency Response 25504(b)
- ___ 7. Training 25504(c)
- ___ 8. Deficiency 25505(a)
- ___ 9. Modification 25505(b)

II.B ACUTELY HAZ. MATLS

- ___ 10. Registration Form Filed 25533(a)
- ___ 11. Form Complete 25533(b)
- ___ 12. RMPP Contents 25534(c)
- ___ 13. Implement Sch. Req'd? (Y/N)
- ___ 14. OnSite Conseq. Assess. 25524(c)
- ___ 15. Probable Risk Assessment 25534(d)
- ___ 16. Persons Responsible 25534(g)
- ___ 17. Certification 25534(f)
- ___ 18. Exemption Request? (Y/N) 25536(b)
- ___ 19. Trade Secret Requested? 25536

III. UNDERGROUND TANKS (Title 23) 530

- General
 - ___ 1. Permit Application 25284 (H&S)
 - ___ 2. Pipeline Leak Detection 25292 (H&S)
 - ___ 3. Records Maintenance 2712
 - ___ 4. Release Report 2651
 - ___ 5. Closure Plans 2670
- Monitoring for Existing Tanks
 - ___ 6. Method
 - 1) Monthly Test
 - 2) Daily Vadose
 - Semi-annual groundwater
 - One time soils
 - 3) Daily Vadose
 - One time soils
 - Annual tank test
 - 4) Monthly Groundwater
 - One time soils
 - 5) Daily Inventory
 - Annual tank testing
 - Cont pipe leak det
 - Vadose/groundwater mon.
 - 6) Daily Inventory
 - Annual tank testing
 - Cont pipe leak det
 - 7) Weekly Tank Gauge
 - Annual tank tising
 - 8) Annual Tank Testing
 - Daily Inventory
 - 9) Other
- New Tanks
 - ___ 7. Prets Tank Test Date: 2643
 - ___ 8. Inventory Rec. 2644
 - ___ 9. Soil Testing 2645
 - ___ 10. Ground Water. 2647
 - ___ 11. Monitor Plan 2632
 - ___ 12. Access. Secure 2634
 - ___ 13. Plans Submit Date: 2711
 - ___ 14. As Built Date: 2635

Site ID # _____ Site Name Shopp Project Today's Date 12/1/92

Site Address 3880 Mountain House Road

City Byard Zip 94514 Phone _____

MAX AMT stored > 500 lbs, 55 gal., 200 cft.?

Inspection Categories:

- ___ I. Haz. Mat/Waste GENERATOR/TRANSPORTER 40x60
- ___ II. Business Plans, Acute Hazardous Materials
- III. Underground Tanks Set up 8-10 Photos taken (Pet is 25 feet deep)

* Calif. Administration Code (CAC) or the Health & Safety Code (HS&C)

Comments:

On site for investigation of removed UST on worker's farm. Following contact with Mrs. Stevenson a closure plan was submitted to this office. The closure included sampling of area and removal of any possible contaminated soil. Upon arrival for investigation there appears local contamination exists at the site. The site is next to a domestic well (photographs taken and there is a schoolyard). 75' from the excavated pit. I spoke with the administrator of the Mountain House School (Deborah Kuhn) and advised her of the possibility of contaminated water in the domestic well & they are on bottled water also and will utilize the bottled water at this end. Several photographs also taken of the area. Red building of the Birm 11/22 district is also at the site.

note: Water encountered in headwater at 25 feet

Contact: STEPHEN G. MUIR

Title: MANAGER GEOTECHNICAL SERVICES

Signature: Stephen G. Muir

Inspector: Bern P. Owen

Signature: Ron Owen

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ALAMEDA COUNTY, DEPARTMENT OF ENVIRONMENTAL HEALTH

80 Swan Way, #200
 Oakland, CA 94621
 (415) 271-4320

Hazardous Materials Inspection Form

Page 2 of

II, III

II.A BUSINESS PLANS (Title 19)

- 1. Immediate Reporting 2703
- 2. Bus. Plan Stds. 25503(b)
- 3. RR Cars > 30 days 25503.7
- 4. Inventory Information 25504(a)
- 5. Inventory Complete 2730
- 6. Emergency Response 25504(b)
- 7. Training 25504(c)
- 8. Deficiency 25505(a)
- 9. Modification 25505(b)

II.B ACUTELY HAZ. MATLS

- 10. Registration Form Filed 25533(a)
- 11. Form Complete 25533(b)
- 12. RMPP Contents 25534(c)
- 13. Implement Sch. Req'd? (Y/N)
- 14. OffSite Conseq. Assess. 25524(c)
- 15. Probable Risk Assessment 25534(d)
- 16. Persons Responsible 25534(g)
- 17. Certification 25534(f)
- 18. Exemption Request? (Y/N) 25536(b)
- 19. Trade Secret Requested? 25538

Site ID # _____ Site Name Schools four Today's Date 1/22/92

Site Address 3880 Mountain Horse Road

City _____ Zip 94 Phone _____

MAX AMT stored > 500 lbs., 55 gal., 200 cft.?

Inspection Categories:

- I. Haz. Mat/Waste GENERATOR/TRANSPORTER
- II. Business Plans, Acute Hazardous Materials
- III. Underground Tanks also multiple

* Calif. Administration Code (CAC) or the Health & Safety Code (HS&C)

Comments:

Required action

III. UNDERGROUND TANKS (Title 23)

- | | |
|-------------------------------|---|
| General | 1. Permit Application 25284 (H&S) |
| | 2. Pipeline Leak Detection 25292 (H&S) |
| | 3. Records Maintenance 2712 |
| | 4. Release Report 2651 |
| | 5. Closure Plans 2670 |
| Monitoring for Existing Tanks | 6. Method |
| | 1) Monthly Test |
| | 2) Daily Vadose
Semi-annual groundwater
One time soil |
| | 3) Daily Vadose
One time soil
Annual tank test |
| | 4) Monthly Groundwater
One time soil |
| | 5) Daily Inventory
Annual tank testing
Cont pipe leak det
Vadose/gndwater mon. |
| | 6) Daily Inventory
Annual tank testing
Cont pipe leak det |
| | 7) Weekly Tank Gauge
Annual tank test |
| | 8) Annual Tank Testing
Daily Inventory |
| | 9) Other _____ |
| New Tanks | 7. Precs Tank Test
Date: _____ 2643 |
| | 8. Inventory Rec. 2644 |
| | 9. Soil Testing 2646 |
| | 10. Ground Water. 2647 |
| | 11. Monitor Plan 2632 |
| | 12. Access, Secure 2634 |
| | 13. Plans Submit
Date: _____ 2711 |
| | 14. As Built
Date: _____ 2635 |

① Submit a workplan, indicating the scope of work, in investigating the release of 1 Hazardous Material. This workplan should follow the In-Council Board Recommendations and Appendix "A".

② Provide this office with an unredacted Release form (attached).

③ Provide this office with a sampling plan for the domestic wells in the area indicating the possible levels of contamination including the adjacent school. (immediately)

④ remove and cover contaminated soil and sludge on driveway that has already been removed.

⑤ discontinue further excavation until a workplan is received by this office.

⑥ discontinue use of domestic well until samples indicated levels of contamination below State DOTIS standards.

II, III

Contact: STEPHEN G. MUIR

Title: MANAGER Geotechnical Services Inspector: Brian P. Olson

Signature: Stephen G. Muir Signature: Ryan Owens

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ALAMEDA COUNTY, DEPARTMENT OF ENVIRONMENTAL HEALTH

80 Swan Way, #200
 Oakland, CA 94621
 (415) 271-4320

Hazardous Materials Inspection Form

3 of 3

II, III

Site ID # _____ Site Name Schwarz Properties Today's Date 12/19/92

Site Address 3880 Moritan House Road

City _____ Zip 94 Phone _____

MAX AMT stored > 500 lbs, 55 gal., 200 cft.?

Inspection Categories:

- I. Haz. Mat/Waste GENERATOR/TRANSPORTER
- II. Business Plans, Acute Hazardous Materials
- III. Underground Tanks UST removal investigation

* Calif. Administration Code (CAC) or the Health & Safety Code (HS&C)

Comments:

laboratory analysis of
 (7) submit envt. samples to this office for soil/water taken at the site and in the surroundings
 (8) Complete any excavation required for the structural integrity/stability of the excavation.
 (9) Provide safety fence and otherwise secure area.

II.A BUSINESS PLANS (Title 19)

- 1. Immediate Reporting 2703
- 2. Bus. Plan Stds. 25503(b)
- 3. RR Cars > 30 days 25503.7
- 4. Inventory Information 25504(a)
- 5. Inventory Complete 2730
- 6. Emergency Response 25504(b)
- 7. Training 25504(c)
- 8. Deficiency 25505(a)
- 9. Modification 25505(b)

II.B ACUTELY HAZ. MATLS

- 10. Registration Form Filed 25533(a)
- 11. Form Complete 25533(b)
- 12. RMPP Contents 25534(c)
- 13. Implement Sch. Req'd? (Y/N)
- 14. OnSite Conseq. Assess. 25524(c)
- 15. Probable Risk Assessment 25534(d)
- 16. Persons Responsible 25534(a)
- 17. Certification 25534(b)
- 18. Exemption Request? (Y/N) 25536(b)
- 19. Trade Secret Requested? 25538

III. UNDERGROUND TANKS (Title 23)

- | | |
|--|---|
| General | <input type="checkbox"/> 1. Permit Application 25284 (H&S) |
| | <input type="checkbox"/> 2. Pipeline Leak Detection 25292 (H&S) |
| | <input type="checkbox"/> 3. Records Maintenance 2712 |
| | <input type="checkbox"/> 4. Release Report 2651 |
| | <input type="checkbox"/> 5. Closure Plans 2670 |
| Monitoring for Existing Tanks | <input type="checkbox"/> 6. Method |
| | 1) Monthly Test |
| | 2) Daily Vadose
Semi-annual groundwater
One time soils |
| | 3) Daily Vadose
One time soils
Annual tank test |
| | 4) Monthly Gndwater
One time soils |
| | 5) Daily Inventory
Annual tank testing
Cont pipe leak det
Vadose/gndwater mon. |
| | 6) Daily Inventory
Annual tank testing
Cont pipe leak det |
| | 7) Weekly Tank Gauge
Annual tank testing |
| | 8) Annual Tank Testing
Daily Inventory |
| | 9) Other _____ |
| <input type="checkbox"/> 7. Precs Tank Test 2643 | |
| Date: _____ | |
| <input type="checkbox"/> 8. Inventory Rec. 2644 | |
| <input type="checkbox"/> 9. Soil Testing 2646 | |
| <input type="checkbox"/> 10. Ground Water. 2647 | |
| New Tanks | <input type="checkbox"/> 11. Monitor Plan 2632 |
| | <input type="checkbox"/> 12. Access, Secure 2634 |
| | <input type="checkbox"/> 13. Plans Submit 2711 |
| | Date: _____ |
| <input type="checkbox"/> 14. As Built 2635 | |
| Date: _____ | |

Rev 6/88

Contact: STEPHEN G. MUIR

Title: MANAGER GEOTECHNICAL SERVICES Inspector: Ben P. Allen

Signature: Stephen G. Muir Signature: Ron O'Carroll

II, III

APPENDIX VII
PROFESSIONAL SERVICES AGREEMENT



WZI INC.

4800 Easton Drive, Suite 114
Bakersfield, California 93309

Post Office Box 9217
Bakersfield, California 93389

805-326-1112
805-326-0191 FAX

83 East Shaw Avenue, Suite 250
Fresno, California 93710

209-222-1667
209-222-2630 FAX

May 27, 1992

Mr. Dick Jones
Agriculture Industries Inc.
Post Office Box 1076
West Sacramento, California 95691

**Re: Schropp Ranch Environmental Study Progress
Byron, California**

Dear Dick:

I apologize for not having this letter to you and Manfred earlier but we have had a series of seemingly endless fire drills in the past two weeks. We have put together a Problem Assessment Report for you and Manfred to review. This will be delivered to you later this week or early next week. This report will outline all of the basic information needed for background studies on the Schropp Ranch. I do not anticipate any further significant background review to support any future phase or phases of this project. In essence, the homework has been done and what needs to be addressed now is what options the Schropp's wish to exercise.

A summary of the significant findings of the Problem Assessment Report are identified below:

1. Both soil and groundwater contamination are present at levels that will require action. Immediate action to determine if contamination is present in water wells at the Mountain House school and in the Ranch well is necessary.
2. Preliminary soil auguring has identified a probable minimum of 25,000 cubic yards of contaminated soil and a possible minimum of 45,000 yards of contaminated soil. The approximate outline of what I currently consider the "most likely" limit of subsurface soil contamination is shown on the accompanying map. This map is preliminary and may or may not reflect the actual subsurface conditions.
3. The Schropp's can decide various approaches to remediate the contaminated soil. Several alternatives for soil remediation are outlined in the report being prepared, including a No-Action alternative. We do not recommend a No-Action Alternative because of the potential for a long-term liability and probable mandated regulatory agency action. We believe the only feasible and economically sound approach is to excavate the contaminated soil and remediate it using surface aeration techniques.

4. The water well will have to be removed and abandoned whether the soil is excavated or a No-Action alternative is adopted. The soil around the well is almost surely contaminated and the well may provide a conduit for contaminated groundwater to migrate vertically into deeper aquifers. Alameda County will probably require this. A cost to plug and abandon the water well has not yet been determined.
5. Alameda County will want to have the issues raised in the Hazardous Materials Inspection Form dated April 22, 1992 answered as soon as possible. A work plan will need to be prepared to address these issues and this should be done fairly quickly. This can be part of a larger scope of work plan to address the soil and groundwater problems or a specific report for this response. I have enclosed a flow chart of the elements of site assessment/remediation operations in order to help you understand the process.

Estimated costs to finish a final site assessment of the property will involve deciding how the assessment will be conducted. The steps I believe will yield the best results for smallest amount of money expended are as follows:

1. Submit a Work Plan to Alameda County for approval showing planned operations and timing.
2. Conduct soil borings to determine the vertical and lateral extent of contamination in the yard area. I estimate approximately 10 to 15 borings will be needed. Samples will be taken as appropriate for the borings and analyzed for total petroleum hydrocarbon as gasoline, benzene, toluene, ethylbenzene and xylene. In addition, lead will be analyzed for as appropriate. This will establish the limits of the contamination and identify specifically what dimensions of a pit will have to be dug to remove the soil. Additional borings may be necessary if the lateral extent of the contaminated soil extends off the property, northward.
3. Based on results from 2 above, excavate the contaminated soil to the groundwater table at a depth of about 32 feet. The Byron-Bethany Irrigation Pipeline will need to be moved and other site preparation efforts done. This effort would take approximately two to three weeks to conduct. I would recommend that all water from the bottom of the excavation be pumped into Baker tanks at the site. Since this water will probably be contaminated, it will be tested and if approved by Alameda County, released on the surface by sprinkler.
4. The contaminated soil will be stockpiled and spread according to what Alameda County Air Pollution Control District will allow us to do. A final plan will need to be submitted to them for approval before we can conduct a major operation. A provision is present for small amounts of aeration that can begin immediately for existing stockpiled soil that we can discuss.

5. The excavation should be backfilled with dirt from elsewhere on the property. I do not recommend that contaminated dirt that has been remediated be placed back in the subsurface.
6. A series of two or four inch groundwater monitoring wells should be drilled after the soil site assessment has been completed and the excavation backfilled. Once the soil is cleaned up, an contaminated groundwater should rapidly clean itself up as water cannot hold much dissolved petroleum products. I would anticipate approximately five to six monitoring wells to a depth of about 50 feet based on the data we have available at this time. More wells than this may have to be drilled in the event that the plume extends further than I currently anticipate. The wells will have to be monitored quarterly until four successive rounds of monitoring with non-detection levels have been achieved. The wells can then be plugged and abandoned.
7. A final report on site assessment for soil and groundwater will need to be prepared and presented to both Alameda County and the California Regional Water Quality Control Board. This would incorporate all site assessment documentation. They will review the assessment and when remediation operations are complete to their satisfaction will declare the site closed. This will conclude the expenditure of funds on Schropp Ranch.

A preliminary cost estimate is shown below. It should be stressed this is an estimate only and is to be used for planning purposes only. The cost may increase or decrease depending on how extensive the soil and water contamination is found to be.

1. Preliminary Soil Site Assessment Program:

Geologist:	40 hours @ \$90/hour	\$3,600
Technician:	20 hours @ \$45/hour	900
Laboratory:	10 to 20 samples @ \$75-100/sample	750 - 2,000
Field Supplies		<u>500</u>
	Subtotal	\$5,750 - 7,000

2. Work Plan Submission:

Geologist:	20 hours @ \$90/hour	\$1,800
Support:	5 hours @ \$40/hour	<u>200</u>
	Subtotal	\$2,000

3. Contaminated Soil Site Assessment:

PG&E Line Relocation		\$5,000
Byron-Bethany Pipe Relocation		8,000
Basic Excavation and Backfill Cost of \$5/yard		
	Assume 25,000 yards	137,500
	Assume 45,000 yards	247,500
Geologist Oversight 40 hours @ \$90/hour		3,600
Laboratory Supplies 50 - 70 samples @ \$75-100/sample		3,750 - 7,000
County Fees		5,000
Miscellaneous		<u>5,000</u>
	Subtotal	\$167,850 - 281,100

4. Groundwater Site Assessment:

Drilling Rig	50 hours @ \$150/hour	\$7,500
Geologist	80 hours @ \$90/hour	7,200
Technician	50 hours @ \$50/hour	2,500
Laboratory	40 - 70 Samples @ \$75-100/sample	3,000 - 7,000
Well Completion Supplies		5,000
Field Supplies		2,500
Permits		<u>Not Included</u>
	Subtotal	\$27,700 - 31,700

5. Site Assessment Report and Remediation Plan

Geologist	40 hours @ \$90/hour	\$3,600
Support	60 hours @ \$60/hour	<u>3,600</u>
	Subtotal	\$7,200

3. Contaminated Soil Site Assessment:

PG&E Line Relocation		\$5,000
Byron-Bethany Pipe Relocation		8,000
Basic Excavation and Backfill Cost of \$5/yard		
	Assume 25,000 yards	137,500
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Well Completion Supplies		5,000
Field Supplies		2,500
Permits		<u>Not Included</u>
	Subtotal	\$27,700 - 31,700

5. Site Assessment Report and Remediation Plan

Geologist	40 hours @ \$90/hour	\$3,600
Support	60 hours @ \$60/hour	<u>3,600</u>
	Subtotal	\$7,200

6. Soil Remediation by Aeration Basic Cost @ \$10/Yard

Assume 8,000 yards	\$80,000
Assume 15,000 yards	150,000
Laboratory Supplies 100 Samples @ \$75/Sample	7,500 - 10,000
Air Pollution Control District Permit	<u>Not Included</u>
Subtotal	\$87,500 - 160,000

7. County/State Fees \$5,000

8. Miscellaneous \$5,000

You should be aware that these estimates may increase or decrease as more information is gained. The above cost estimate information will assist legal review of options available by any counsel retained.

I will be in Bakersfield this week and will call you later this week and discuss what additional options are available. This should suffice to assist Manfred in reviewing possible business decisions that will be upcoming very shortly.

I wish I could have had happier news to share with you but this is where I see things stand at this point in a realistic view. Hope to talk with you shortly.

Sincerely,



Stephen G. Muir
Manager, Geotechnical Services

SGM/jb
Enclosure
0137.0010.004



WZI INC.

4800 Easton Drive, Suite 114
Bakersfield, California 93309

Post Office Box 9217
Bakersfield, California 93389

805-326-1112
805-326-0191 FAX

83 East Shaw Avenue, Suite 250
Fresno, California 93710

209-222-1667
209-222-2630 FAX

February 18, 1992

Mr. Richard G. Jones
Agriculture Industries Inc.
Post Office Box 1076
West Sacramento, California 95691

Re: Site Assessment
3880 Mountain House Road
Tracy, California

Dear Dick:

WZI Inc. is pleased to submit this proposal to conduct a phased Site Assessment and Remediation of gasoline contaminated soil at one of your management properties located at 3880 Mountain House Road, Alameda County, California. WZI Inc. has significant experience in performing environmental site assessments for real estate transactions, liability reduction, regulatory compliance and expert second opinion, as well as being fully insured. As per your request, we have attempted to design a plan that will combine as many of the elements of soil remediation efforts with site assessment requirements in an attempt to keep overall project costs as low as possible.

Site Description

The information you have given me and other information I have obtained from our Bakersfield office and Alameda County Department of Environmental Health indicate:

1. A 550 gallon underground storage tank (UST) that was used for gasoline fueling operations at the shop site was removed during January, 1992. No permit was obtained from Alameda County nor was the tank registered as per California State underground storage tank regulations. The tank is physically intact and is still present on the property.
2. Soil found at the surface where the tank was removed appears to have a faint odor of hydrocarbon. The soil is probably contaminated with gasoline fuel.
3. A water well is present adjacent to the former tank site and may pose a possible health hazard if gasoline has contaminated the local groundwater. This is a likely possibility if the water table is near the ground surface.

Regulatory Requirements

As you are probably already aware, the owner of this property will be required by Alameda County Department of Health and the California Regional Water Quality Control Board to complete certain actions in order to "close" the underground tank status. These actions will most likely include the following items:

1. Obtain a permit from Alameda County for the tank pull and register the tank. This will require payment of back fees and coordinating a permit to pull the tank with Alameda County Department of Environmental Health. Since the tank was previously unknown to you and was pulled out without your permission a permit may be obtainable without too much difficulty. We believe that the county health department will not complicate things as long as the current efforts are fully disclosing of what has happened and that you will proceed in the future with the regulations in place. The current condition of the tank will need to be documented prior to disposal of the tank. As part of the tank pull process Alameda County will want to obtain an independent soil sample from the subsurface where the tank was located. This will require reexcavation of the former tank site. This excavation can be combined with a county required Site Assessment Investigation.
2. Since soil contamination is likely, a Site Assessment Investigation will be necessary. This action is to be required to define the nature and extent of the soil hydrocarbon contamination problem on the property. Prior to conducting this investigation, the county will require that a Work Plan be designed and reviewed by a California Registered Geologist. The Work Plan will define what the investigation shall cover and how it shall be executed. The county has the option of approving or disapproving the Work Plan. Upon county approval of the Work Plan, the subsurface portion of the investigation can start.

If groundwater has been affected, a series of monitoring wells to collect water samples will be required by the county to define the lateral and vertical extent of any contamination.

3. Preparation of a Problem Assessment Report and Soil and/or Groundwater Remediation Plan to be submitted to the County. This document will report the findings of the Site Assessment Investigation and propose how the contaminated soil and/or groundwater will be cleaned up. This report must be signed by a California Registered Geologist or Certified Engineering Geologist.
4. Actual remediation of the contaminated soil and/or groundwater according to the Remediation Plan. The Work Plan would most likely call for excavation of all contaminated soil from the subsurface and stockpiling on the surface. It is likely that a portion of the surface objects in the shop yard may have to be removed for this to occur. Once all contaminated soil has been removed the excavation can be backfilled with pea gravel provided the size of the excavation is relatively small. If backfilling with clean dirt is desired then a compaction report will be required

from a Registered Geotechnical Engineer in order for future building permits to be issued over the excavation.

Contaminated soil placed on the plastic sheet may be remediated by controlled aeration after a permit from the Air Pollution Control District has been obtained. The air pollution regulations are changing very rapidly and depending on how fast the project proceeds soil aeration may or may not be a viable remediation alternative. Other soil remediation options for this size project are available but are more expensive.

If groundwater has been contaminated then a plan to clean it up will be required. Various options are available to conduct this effort and can be discussed at the appropriate time, if required.

5. Preparation and submittal of a Site Closure Document to the County reporting all findings and status of contamination and resulting cleanup activities. This report will be reviewed by both the County and State of California Water Resources Control Board. Their acceptance of the document will grant the property owner closure status and will not require any additional work to be done.

Proposed Work Plan

Because of the probable small scale of the soil contamination at your site, WZI Inc. proposes to combine the Site Assessment and Remediation phases into one effort. A reexcavation of the former tank site and removal of all contaminated soil will identify the subsurface extent of the gasoline contamination and at the same time remove that contaminated material. If soil contamination is found then exploratory trenching can be conducted immediately to define the lateral and vertical extent of the contamination. Any contaminated soil identified can be excavated and stockpiled at an appropriate site on the property. This contaminated soil can then be covered until a remediation plan is approved.

We have the necessary personnel and equipment available to us to handle the excavation process if you wish. If the owner wishes to do some or all of the excavation work himself we would not have problem with this provided that excavation is not required to go any deeper than about twenty feet and that certain liability waivers will be granted to us.

Our specific approach will be the following:

1. Prepare appropriate applications for the tank pull and submit a Work Plan to Alameda County. We will provide the necessary Registered Geologist and Certified Engineering Geologist on-site support during the excavation process and subsequent soil sampling. WZI will supervise excavation and stockpiling of all contaminated soil and will collect samples as appropriate. Contaminated soil will be stockpiled on sheets of visqueen and prepared for aeration. The excavation will have to stay open until a confirmed sampling of the soil shows nondetection levels of contaminations and Alameda County grants permission to backfill.

2. Prepare a Phase I Site Assessment Report of the property which will provide all investigative background information the County will require and in addition will also provide the bulk of the information required for preparation of the Problem Assessment Report.
3. An Authority to Construct Air Permit will be applied for in this effort to allow the start of aeration of contaminated soil that will be removed during the reexcavation. Samples will be taken from the stockpile to determine concentration levels of contamination and if required, modification of the Air Permit, WZI will supervise the sampling and process of the soil aeration until nondetection levels are achieved.
4. WZI will prepare the Problem Assessment Report and Soil Remediation Plan to be submitted to the County as soon as the excavation is backfilled. This report will provide the County all significant data they will want regarding the Site Assessment investigation results and the final plan for remediation of the soil. It is likely this report will be submitted to the County prior to the conclusion of the aeration process removing all of the gasoline from the soil.

WZI Inc. will implement a Health and Safety Program as required by 29 CFR 1910.120 during any hazardous waste field inspection of the property and during excavation operations to assure that the health and safety of personnel are protected while on-site. Based on available data, this site will be designed as a OSHA outlined Level D site for protective clothing purposes.

COST ESTIMATE AND CONTRACT TERMS

The cost to perform the effort as outlined above is estimated as follows:

Phase I Preliminary Site Assessment and Work Plan Preparation	\$3,000
Supervise Excavation and On-Site Work Including Sampling, Mapping, and Other Associated Professional Work (Based on three days of field work)	2,900
Preparation of Problem Assessment Report and Soil Remediation Plan (Based on two days work)	<u>2,000</u>
Total Professional Costs	\$7,900

This cost does not include any heavy equipment costs, laboratory analysis of samples collected, any equipment costs for additional studies that the County may require such as shallow borings or any associated governmental permit costs. The estimate assumes that the contaminated soil will be easy to excavate and does not exceed a large volume.

In addition, we also assume that groundwater is not affected. We estimate that these additional costs will be dependant upon how much work the property owner wishes to conduct himself but an estimate of \$3,000 to \$7,000 to complete these items is reasonable. These costs will be billed to you directly and not through WZI Inc.

WZI Inc. is prepared to commence work upon receipt of your authorization to proceed with the Phase I Preliminary Site Assessment and Work Plan Preparation for a fixed price of \$3,000 on an immediate basis. The field work will require one (1) day and the final report will be delivered within ten (10) working days after completion of the field work.

The additional work outlined above will be done under another letter contract agreement once a determination has been made on how your client wants to execute the excavation procedure. We cannot forecast how long it will take Stanislaus County to review the Work Plan but approximately thirty days should be a reasonable estimate. We can begin the excavation process immediately after receiving approval.

All of the work will be conducted under our attached General Terms and Conditions. Please sign both copies of this proposal if you are in agreement and return one in the enclosed envelope provided for your convenience.

As with all projects of this nature, we require a partial payment of \$1,500 prior to commencement.

Please contact me should you have any questions or require additional information. We look forward to being of service to you.

Sincerely,

Susan Chandler Kiser for

Stephen G. Muir
 Manager, Geotechnical Services
 Certified Engineering Geologist #1224

SGM/jb
 Attachment/Enclosure
 0137.0010.001

Proposal accepted this _____ day of _____, 1992.

Mr. Richard G. Jones
 for
 Agriculture Industries Inc.

GENERAL TERMS & CONDITIONS

Effective January 25, 1989

The Terms & Conditions set forth below shall apply to all Contracts between WZI Inc. (WZI) and any Client, except as may otherwise be specifically agreed in writing by WZI.

1. **CONTRACT** • WZI's acceptance of any purchase order, work order, letter of authorization, verbal authorization, or other contractual agreement is specifically conditional upon Client's assent to these Terms & Conditions and Rate Schedule (except for a completed fixed price contract), which shall form part of any agreement between WZI and Client (the "Contract"), and shall supersede any and all conflicting provisions of any such other document or oral understanding heretofore generated by WZI and/or Client.
2. **INVOICES AND SERVICES CHARGES** • All WZI invoices to Client for services rendered and direct charges incurred under the Contract shall be promptly payable as set forth in the Rate Schedule. In the event Client fails to pay an invoice within 35 days of its submittal or otherwise breaches the Contract, WZI's contractual obligations may be immediately suspended or terminated, at WZI's option, upon mailing of written notice to Client. Should Client dispute any portion of an invoice, Client agrees to immediately pay the undisputed amounts. WZI and Client agree the loss due to untimely payment of WZI's invoices, including accounting and management time and for the use of money, make it impractical and extremely difficult to presently fix its actual damages and further agree the service charge set forth in the Rate Schedule is a reasonable estimate of the actual incurred and foreseeable loss.
3. **OBLIGATION** • WZI's obligation under the Contract is limited to the preparation of acceptable and workmanlike project plans and specifications under Client's direction and approval and to render any other services hereunder in a professional manner consistent with industry standards. In no event shall WZI be responsible for any failure on the part of any contractor, subcontractor, or other person to perform work on the Project according to plans and specifications except to provide a work product in accordance with industry standards. WZI's sole liability to Client shall be limited to the correction of any errors in WZI's work product, and consequential damages resulting therefrom. In no event shall WZI be in any way liable for consequential damages or damages due to errors in Client's designs or specifications.
4. **INDEMNIFICATION** • Client agrees to release WZI from any and all claims, losses, liabilities, and expenses of any nature whatsoever, including WZI's actual attorneys' fees, incurred on account of bodily injury, disease, death, damage to property, loss of profits, or other losses arising out of non-performance, negligence, or fault, in whole or in part or active or passive, of any person, including WZI, in connection with the Project, so long as the liability is not the result of WZI's negligence or willful misconduct.
5. **TERMINATION** • WZI has a right to complete all services agreed to be rendered pursuant to this Contract. In the event this Contract is terminated before the completion of all services, unless WZI is responsible for such early termination, Client agrees to release WZI from all liability for work performed. In the event of Contract termination prior to completion, including fixed price contracts, Client shall pay WZI: all professional fees per this Rate Schedule on a time and materials basis and all direct charges incurred pursuant to or as a result of the Contract and prior to the effective date of termination; and all demobilization, project reconciliation, and personnel reassignment costs resulting from such termination. WZI will deliver work product completed to the effective date of termination.
6. **NON-SOLICITATION** • Client agrees they will not at any time during which WZI is performing services pursuant to the Contract and for 180 days thereafter, hire, solicit, or accept solicitation for the services, by way of employment or any other means, of any WZI employee or independent contractor with whom Client has direct contact pursuant to the Contract; it is further agreed and understood if Client in any way violates this covenant, WZI will incur substantial damages which would be impractical or extremely difficult to presently fix and Client shall then pay WZI an amount equal to the annual compensation and benefits last received from WZI by the subject employee or independent contractor, which sum is a reasonable estimate of WZI's actual and foreseeable damages.
7. **DELAYS** • WZI shall not be responsible for damages or be in default or be deemed to be in default by reason of, delays in performance by reason of strikes, lockouts, accidents, Acts of God, and other delays unavoidable or beyond WZI's reasonable control, or due to shortages or unavailability of labor at established area wage rates or delays caused by failure of Client or Client's agents to furnish information or to approve or disapprove WZI's work promptly, or due to late or slow or faulty performance by Client, other contractors or governmental agencies, the performance of whose work is precedent to or concurrent with the performance of WZI's work.
8. **ATTORNEYS' FEES** • In any court action arising out of or relating to the Contract, each nonprevailing party shall pay each prevailing party's costs, expenses, and actual attorneys' fees incurred to prepare for, prosecute or defend and for appeal of, any such proceeding or action and to obtain collection on any such award or judgement. Said sums shall be included as part of any such award or judgement and are not subject to any arbitration or court fee schedule or guideline.
9. **GOVERNING LAW AND VENUE** • The Contract shall be governed by and construed according to the laws of the State of California. It is agreed WZI's performance is and shall be deemed to be in the County of Kern and this Contract was therein consummated. Any action or proceeding arising out of or relating to the Contract shall be commenced and maintained in Kern County and the parties hereto consent to personal jurisdiction and venue in said county and waive any right to have said matters heard elsewhere.
10. **SEVERABILITY** • If any of the terms hereof are determined to be invalid or unenforceable in whole or in part, such determination shall not have the effect of rendering any other terms invalid or unenforceable; and any partially invalid terms shall remain valid and enforceable to the fullest extent allowable by law.
11. **CONTRACT BINDING** • Client and WZI each binds itself, its partners, successors, executors, administrators, and assigns to the other in respect to all of the terms and conditions of this Contract.
12. **VALIDITY** • No conditions or representations altering, detracting from or adding to the terms hereof shall be valid unless printed or written hereon or evidenced in writing by either party to this Contract and accepted in writing by the other.
13. **GOVERNMENTAL AGENCIES** • WZI shall not be liable for damages resulting from the actions or inactions of governmental agencies, including, but not limited to, permit processing, environmental impact reports, dedications, general plans and amendments thereto, zoning matters, annexations or consolidations, use or conditional use permits and building permits; and WZI shall only act as an advisor in all governmental relations.
14. **CHANGES** • In the event any changes are made in the plans and/or specifications by Client or persons other than WZI, which affect WZI's work, any and all liability arising out of such changes is waived as against WZI, and Client assumes full responsibility for such changes unless Client has given WZI prior notice and has received from WZI written consent for such changes.
15. **USE OF PLANS OR DRAWINGS** • WZI is not responsible and liability is waived by Client as against WZI, for use by Client or any other person of any plans or drawings not signed by WZI.

APPENDIX III

d-10,001

STATE OF CALIFORNIA

REGIONAL WATER QUALITY CONTROL BOARD
DEPARTMENT OF HEALTH SERVICES
SOLID WASTE MANAGEMENT BOARD
DEPARTMENT OF FORESTRY



APPLICATION FOR
FACILITY PERMIT/WASTE DISCHARGE

This form is to be used for filing a/an: (check all appropriate)

- 1. REPORT OF WASTE DISCHARGE
(pursuant to Division 7 of the State Water Code)
- 2. APPLICATION FOR A HAZARDOUS WASTE FACILITY PERMIT
(pursuant to Health and Safety Code Section 25200)
- 3. APPLICATION FOR A SOLID WASTE FACILITIES PERMIT
(pursuant to Government Code Section 66796.30)
- 4. APPLICATION FOR A RUBBISH DUMP PERMIT
(pursuant to Public Resources Code Sections 4371-4375 and 4438)

FOR OFFICE USE ONLY	
Form 200 Rec'd	_____
Fee (RWOCB)	_____ (SWMB) _____
Letter to Discharger	_____
Report Rec'd	_____
Effective Date	_____
CDF Notified	_____
DDHS No.	_____
SWMB No.	_____

I. FACILITY		TELEPHONE #
A. NAME OF FACILITY	Schropp Ranch	(916) 372-5595
ADDRESS	3880 Mountain House Road Byron, California	ZIP CODE 95668
B. NAME OF LEGAL OWNER OF FACILITY	Agriculture Industries Inc.	TELEPHONE # (916) 372-5595
ADDRESS	Post Office Box 1076 West Sacramento, California	ZIP CODE 95691
C. NAME OF BUSINESS OPERATING FACILITY	Same as Owner	TELEPHONE # ()
ADDRESS		ZIP CODE
D. TYPE OF BUSINESS OPERATING FACILITY	<input type="checkbox"/> Sole Proprietorship <input type="checkbox"/> Partnership <input checked="" type="checkbox"/> Corporation <input type="checkbox"/> Government Agency	
E. NAME OF OWNER(S) OF BUSINESS OPERATING FACILITY	Same as Owner	TELEPHONE # ()
ADDRESS WHERE LEGAL NOTICE MAY BE SERVED		ZIP CODE

II. REASON FOR FILING

CHECK ALL APPROPRIATE:

A. <input checked="" type="checkbox"/> New discharge or facility	D. <input type="checkbox"/> Change in character of discharge	G. <input type="checkbox"/> Change in business operating facility
B. <input type="checkbox"/> Existing discharge or facility	E. <input type="checkbox"/> Change in place or method of disposal	H. <input type="checkbox"/> Enlargement of existing facility
C. <input type="checkbox"/> Increase in quantity of discharge	F. <input type="checkbox"/> Change in design or operation	I. <input type="checkbox"/> Other (explain below)

III. TYPE OF OPERATION

CHECK ALL APPROPRIATE:

A. <input type="checkbox"/> Transfer station	D. <input type="checkbox"/> Sewage treatment	G. <input type="checkbox"/> Woodwaste site
B. <input type="checkbox"/> Solid waste disposal site	E. <input type="checkbox"/> Industry (on-site disposal facility)	H. <input checked="" type="checkbox"/> Other (explain below)
C. <input type="checkbox"/> Hazardous waste disposal site	F. <input type="checkbox"/> Industry (discharge to sewer)	

Working Ranch

IV. TYPE OF WASTE

CHECK ALL APPROPRIATE:

A. <input type="checkbox"/> Sewage, sewage sludge, and/or septic tank pumpings	E. <input type="checkbox"/> Agricultural wastes	I. <input type="checkbox"/> Inert materials
B. <input type="checkbox"/> Industrial wastes	F. <input type="checkbox"/> Animal wastes	J. <input type="checkbox"/> Dead animals
C. <input type="checkbox"/> Municipal solid wastes	G. <input type="checkbox"/> Forest product wastes	K. <input type="checkbox"/> Tires
D. <input type="checkbox"/> Hazardous wastes	H. <input type="checkbox"/> Construction/demolition wastes	L. <input checked="" type="checkbox"/> Other (explain below)

Petroleum contaminated soil and treated groundwater

V. SITE DESIGN CAPACITY

A. PRESENT POPULATION OR CAPACITY	B. DESIGN POPULATION OR ULTIMATE CAPACITY	C. LIFE EXPECTANCY (YEARS)
20 acres	10 acres	1 year

REGIONAL WATER QUALITY CONTROL BOARD
DEPARTMENT OF HEALTH SERVICES
SOLID WASTE MANAGEMENT BOARD
DEPARTMENT OF FORESTRY

**INSTRUCTIONS FOR COMPLETING APPLICATION
FOR FACILITY PERMIT/WASTE DISCHARGE**

This application form is for a permit (and/or waste discharge requirements) to discharge, receive, or dispose of liquid or solid wastes regulated by the California Regional Water Quality Control Boards (RWQCB), the Department of Health Services (DOHS), the State Solid Waste Management Board (SWMB), or the California Department of Forestry (CDF). This form and the filing fee¹ should be sent to the appropriate agency(s) as indicated below:

FOR USE	APPROPRIATE AGENCY			
	RWQCB	DOHS	SWMB ²	CDF ³
Report of Waste Discharge	X			
Application for a Hazardous Waste Facility Permit		X		
Application for a Solid Waste Facilities Permit			X	
Application for a Rubbish Dump Permit				X

If you have any questions on the completion of this form, please contact the appropriate agency for assistance.

For a direct discharge (point source discharge) to surface waters, a different application form is required in place of this Form 200. Please contact the appropriate Regional Water Quality Control Board for a National Pollutant Discharge Elimination System (NPDES) application form to apply for a permit for this type of discharge.

This application for waste disposal provides initial notice of a waste discharge. In most instances, additional information will be required, and should be submitted on 8½" x 11" paper. Complete the enclosed form and return it with any required report^{4,5} and the filing fee to each appropriate agency(s). The agency(s) will advise you of any additional information that may be required to complete this application and waste disposal report.

The effective date of the application is the date when all required information and the correct fee are received by the agency(s). You will be notified of this effective date by each agency.

¹ AMOUNT OF FILING FEES

RWQCB

Use flow or units reported in Item VI (Form WRCB 200) and the appropriate class schedule A, B, B1, B2, B3, or C (attached Filing Fee Schedule).

Make check payable to: STATE WATER RESOURCES CONTROL BOARD and mail, together with report of waste discharge, to the appropriate Regional Board. No report can be accepted without the fee.

SWMB

Local solid waste enforcement agencies shall determine the exact fee. The maximum application fee that can be required is five hundred dollars (\$500).

DOHS and CDF

No fee is required

² Check with local or county enforcement agency for specific permit requirements and/or exemptions.

³ If the site is within an incorporated city or on federal land, a copy need *not* be sent to CDF.

⁴ **REQUIRED REPORT FOR DOHS:** An Operation Plan.

⁵ **REQUIRED REPORT FOR SWMB:**

A "Report of Disposal Site Information" is required to obtain a permit to operate a disposal site.

A "Report of Station Information" is required to obtain a permit to operate a large volume transfer station (greater than 100 cubic yards per operating day).

A "Plan of Operation" is required to obtain a permit to operate a small volume transfer station (less than 100 cubic yards per operating day).

Where there is a significant change in design, operation, operator, or size of facility, details of the changes must be submitted to amend previous report.

See attachments for information to be contained in reports.

ADDITIONAL INFORMATION REQUIREMENTS

LOCATION OF DISCHARGE

The subject property is located at 3880 Mountain House Road, Byron, California and consists of approximately 488 acres. The property is composed of two parcels, Alameda Assessors Parcel Number (APN) 99B-7200-24 and 99B-7200-2-3. Existing improvements on the property are mainly in the shop area of the property and include one residence with attached garage, two shop buildings, and a barn. In addition, a pole-barn is present on the property.

The property is located on the U. S. Geological Survey Clifton Court Forebay 1:24,000 scale topographic map, near the base of the foothills of the eastern flank of the Diablo Range on a gentle northeast-sloping surface which has been dissected by small northeast flowing streams. The elevations of the property range from approximately 160 feet above mean sea level in the southwest corner of the property to 80 feet above mean sea level in the northeast corner of the property. The topography of much of the property has been modified by agricultural operations to optimize irrigation and control erosion. These modifications reflect only minor changes in the property's overall topography.

The one water well located within 1000 feet of the excavation of contaminated soil on the ranch is not used.

TYPE OF DISCHARGE

The discharge will be composed entirely of gasoline contaminated water which has been treated to remove contamination to below Maximum Contaminant Levels (MCLs).

QUANTITY

The total volume of waste water to be discharged on the ground is 600,000 gallons over a one year period at a maximum discharge rate of 72,000 gallons per day. This volume of water will be comprised of groundwater pumped from an excavation underway on the ranch. The water must be pumped to allow the excavation to continue.

QUALITY

Groundwater collected from the excavation at the Schropp Ranch has been contaminated with hydrocarbons. Groundwater concentrations of hydrocarbons indicate concentration levels of benzene at 1.18 ppm.

TREATMENT

Two to four carbon filters will be placed in series after the pump to filter the water. Calgon 200 pound units with a minimum 20 minute contact time or equal are anticipated to be used. However, the contact time may be varied if on-site bench tests indicate water treatment is enhanced by a longer or shorter contact time.

Each 200 pound filtration unit will contain Calgon Filtrasorb 300 or equal to minimize porosity occlusion. The treated effluent will be stored in a Baker tank or similar device on-site, pending laboratory results. If the stored effluent does not meet Central Valley Regional Water Quality Control Board maximum contaminant levels (MCL) the treatment cycle will be repeated until the water is in compliance. After use, carbon canisters and carbon will be disposed of properly.

WATER SUPPLY

Waste water generated in this project is gasoline-contaminated groundwater pumped from the base of an excavation.

FLOOD PROTECTION

Not applicable

Contacts

Agriculture Industries
Post Office Box 1076
West Sacramento, California 95691
(916)372-5595

CEQA/NEPA

Not applicable

SPILL PLAN

Not applicable

Liquid Waste Discharge to Surface Waters or Water Courses:

None.

Liquid Waste Discharge to Land:

All groundwater removed from the excavation will be pumped through carbon filtration. discharge to the land will be through the use of Rainbird sprinklers on an alfalfa field located on the ranch.

2. Narrative of Systems:

Preliminary Groundwater Extraction Design

Pump and Treat: Carbon Filtration (G1)

In order to effectively reduce the gasoline fuel contaminant levels in groundwater at Schropp Ranch, the groundwater would be physically removed by pumping, and placed through a treatment system that will separate the gasoline fuel from the water. A proven technology for this type of remediation uses carbon adsorption units for removal of hydrocarbon contaminants. Using a submersible pump in the bottom of the excavation in the vicinity of the former underground storage tank would draw water out of the aquifer and deliver it to the activated carbon treatment system at the rate of one to five gallons per minute. The water would be pumped into a 20,000 gallon holding tank prior to processing. The treatment train would consist of an initial oil/water gravity separator to remove any free products prior to reaching the adsorption units. This pretreatment would help prevent fouling or plugging of the treatment system. After pretreatment, two to four canisters containing 200 pounds of activated carbon would be connected in series to remove dissolved hydrocarbons and reduce the level of contamination to less than 0.1 ppm. Discharge from the canisters can either be directed to the field adjacent to the site, reinjected back into the aquifer, or directed to a surface water conduit. After use, the carbon canisters can either be shipped as is to an appropriate designated landfill, or sent to an incineration facility.

Granular activated carbon filtration provides an economically feasible and practical means for water pollution control. The filtration process involves passing contaminated water through porous granules of activated carbon. The organic pollutants are attracted to the surface of the pores where they are held by weak physical forces. The large surface area/mass ratio for activated carbon (approximately 1,000 m²/g) gives it tremendous adsorptive capacity. In the manufacturing process of granular activated carbon, many pores are produced within each granule. It is this internal porosity that provides each grain with such large surface area. Large organic molecules and non-polar substances are preferentially attracted to the pore space walls as the contaminated water passes through the activated carbon. The effluent quality of an activated carbon system is strongly influenced by the:

- **Influent Waste Stream Characteristics**
- **Contact Time**
- **Carbon Medium Used**

Each of these factors are discussed detail below.

Influent Waste Stream Characteristics

Influent waste stream characteristics that affect treatment include pH, turbidity and any other unidentified organic material. The adsorption rate of organics increases with

**Attachment A to
General Order For Land Disposal
of Groundwater From Cleanup of
Petroleum Fuel Pollution**

A. Wastewater Treatment System and Characteristics

1. Description of Events:

The site was inspected on April 13, 1992 and substantial field work was conducted during April 20 to 24, 1992. The initial field investigation revealed no signs of natural depressions, chemicals or raw materials, hazardous wastes or solid wastes stored on site, on-site landfills, pits or sumps. There is a high-voltage power transmission line that crosses the west portion of the property.

A gasoline dispenser was present approximately 50 feet northeast of the northeast corner of the shop building and immediately next to the reported former location of the underground fuel storage tank. A 550 gallon gasoline tank with a stamped number of 680 was present near the northwest corner of the pole barn that was reportedly removed from the subsurface during January, 1992. The tank bottom is extremely rusty and shows evidence of major integrity loss in ability to hold liquid product.

Minor surface hydrocarbon staining in the shop area in the vicinity of the former underground fuel storage tank that is visible on aerial photographs was not visible during the surface investigation. Limited exploratory trenching was conducted to determine if soil hydrocarbon contamination was found in the subsurface.

With the exception of the underground fuel storage tank, the site investigation did not reveal any natural, cultural, recreational or scientific values of special significance associated with the property pertaining to sole source aquifers, wetlands, coastal dunes and beaches, threatened and endangered species, wild/scenic rivers, critical and unique habitat, archaeological resources, historic buildings, structures and sites, designated natural landmarks and recreational areas.

Groundwater collected from the excavation at the Schropp Ranch has been contaminated with hydrocarbons. Groundwater concentrations of hydrocarbons indicate concentration levels of benzene at 1.18 ppm.

decreasing pH of water. Adsorption is very poor when the pH is greater than nine. When filtering turbid water, suspended solids plug pore openings, occlude porosity, and reduce the surface area of the carbon resulting in decreased efficiency. The adverse effects of treating turbid water in the carbon filtration system may be reduced by first treating the water in a gravity separator and then passing it through an in line filter as determined by the contractor.

Rates and Carbon Medium

The size of the carbon medium used effects the rate of adsorption. Finer grades enhance the rate of adsorption by increasing the number of pore openings thereby reducing the contact time. However, fine grades may reduce efficiency of the system by trapping sediment and closing off pore openings.

The proposed groundwater treatment system is designed to reduce benzene and other gasoline related component levels in groundwater to less than 0.1 parts per billion (ppb) at Schropp Ranch prior to discharge. This will be accomplished in four steps which include pumping water from the excavated pit, removing sediment, treating the water with a carbon filtration system or air stripping system and sprinkling the water on roads at the site. The cycle will be repeated until contaminant levels are less than the current 0.1 ppb benzene established by the CRWQCB-CVR. The following is a chronology of tasks to be accomplished including design criteria.

- **A pit will be excavated in the contaminated zone to an approximate depth of 32 feet. Allowing for a seasonal groundwater rise of five feet during the summer months a minimum of two feet of water should be present in the pit. The area surrounding the pit where water treatment operations will be conducted will be sloped toward the pit, prohibiting any spillage from flowing off-site. In order to proceed with excavation on contaminated soil, aquifer withdrawal will be done by placing an inlet pipe within the excavated pit. The inlet pipe will be screened and wrapped in geofabric. Water will be pumped intermittently from the pit into the gravity separator.**
- **A gravity separator will be installed upstream of the carbon filter units to ensure the filters do not become clogged with sediment. The gravity settling unit will be equipped with a set of erect and hanging baffles to trap floating hydrocarbons and sediments. The gravity separator will be designed with an overflow rate of 150 gpd/ft². Alternative configurations utilizing slating baffles and/or in line filters for silt removal will be reviewed for performance if submitted by the contractor.**
- **Downstream of the gravity separator an additional pump will be required to deliver flow through the carbon filters. A valve will regulate pump flow to ensure the carbon filters are not pressurized in excess of manufacturer's recommendations.**
- **Two to four carbon filters will be placed in series after the pump. Calgon 200 pound units with a minimum 20 minute contact time or equal are anticipated to be used. However, the contact time may be varied if on-site bench tests indicate water treatment is enhanced by a longer or shorter contact time.**

3. Water Supply Wells

The water supply for the property consists of two sources. Domestic water supply is from a water well located in the yard portion of the shop area. No information is known regarding this water well. This well currently supplies all water needs for the family living in the residence at the property with the exception of drinking needs. The family has been using bottled water for the past two years according to the tenant farmer. The irrigation water source for agriculture operations is through the Byron Bethany Irrigation District. This district has a 24 inch concrete pipeline that crosses through the main shop area. This pipeline is near the end of the water delivery system and delivers water to the north to one additional farm property.

A water well for the Mountain House Elementary School is located approximately 600 feet east of the shop area. This well produces groundwater from an unknown depth. According to the school principal, this water is not used for drinking purposes. Additional water wells within 2000 feet are located to the north near the Tracy Substation and to the south near residences.

Each 200 pound filtration unit will contain Calgon Filtrasorb 300 or equal to minimize porosity occlusion. The treated effluent will be stored in a Baker tank or similar device on-site, pending laboratory results. If the stored effluent does not meet Central Valley Regional Water Quality Control Board maximum contaminant levels (MCL) the treatment cycle will be repeated until the water is in compliance. After use, carbon canisters and carbon will be disposed of properly.

Discharge

After the MCL is met, the water discharged used was irrigation water on the property.

Contaminant Monitoring

Samples of water will be obtained from the Baker tank and submitted for benzene and TPH-G analysis. After set up of the initial treatment process (i.e. the number of reiterations to achieve the MCL is established) effluent monitoring will occur on an as needed basis during the remediation period or as required by CRWQCB-CVR.

Water Sampling

All equipment that is used during this project for sampling or depth measurement shall be decontaminated by steam cleaning or a TSP wash and triple rinse procedure prior to use and before reusing when purging or sampling.

5. Treatment System Average and Maximum Flows

Discharge will not exceed 72,000 gallons per day or a total volume for the project of 600,000 gallons.

6. Operation Plan

See #2; Narrative

7. The following analyses will be performed prior to discharge. No discharge will be made without RWQCB approval.

- a. Chlorinated volatile hydrocarbons (EPA Method 601 or 8010)
- b. Aromatic volatile hydrocarbons (EPA Method 602 or 8020)
- c. Total Petroleum Hydrocarbons in the Gasoline and Diesel ranges (3550 GCFID)
- d. Lead, Soluble lead or tetraethyl lead (Graphite Furnace AA or equivalent)
- e. Chlorinated pesticides (EPA Method 608 or 8080)
- f. General mineral analysis, including electric conductivity, total dissolved solids, chloride, sulfate, nitrate and pH.

4. Location Maps

Exhibit 1.	Location Map
Exhibit 2.	Assessors Parcel Map
Exhibit 3.	Site Map
Exhibit 4.	Topographic Map
Exhibit 5.	Current Excavation Limits
Exhibit 6.	Map of Potential Excavation Limits

B. Site Hydrogeology

In general, two fresh water bearing units are present in the vicinity of the property. These are comprised of the upper and lower zones of the Tulare Formation, which are hydrologically separated by an aquiclude, the Corcoran Clay Member. Groundwater beneath the Corcoran Clay constitutes the major potable groundwater resource in the area. This groundwater is generally not in hydrologic communication with near surface groundwater because of the clay aquiclude. The zone above the Corcoran Clay includes the water table zone, unless local shallow clay lenses produce confined or semi-confined conditions (Hotchkiss and Balding, 1971). In the northern San Joaquin Valley some water wells perforated deep (50 to 100 feet) within the upper Tulare Formation have water levels markedly lower than nearby shallow wells (20 to 50 feet), indicating localized hydrologic separation due to shallow confining clay layers. San Joaquin County Local Health District personal indicate that several intervening clay layers are present in the property area between ground surface and the top of the Corcoran Clay Member (about 100 feet) . It is, therefore extremely likely that semi-confined conditions exist beneath the property area. These clay layers would also discourage downward migration of any surface hydrocarbon spill liquids.

Groundwater flow in the property area appears to be generally to the northeast, toward the San Joaquin River, although locally groundwater may flow north or northwest. Depth to groundwater is on the order of 26 to 30 feet deep. Groundwater levels are known to fluctuate in the area in response to irrigation and seasonal change. However, information on typical ranges of fluctuation is not available.

FILE #

0137,0010A

California Regional Water Quality Control Board Central Valley Region

3443 Rautier Road, Suite A
phone: (916) 255-3000

Sacramento, CA 95827-3098
fax: (916) 255-3015



FAX TRANSMITTAL PAGE

Date: 4-15-93

To: Sue Kaisee / Bob Beaylock

From: Alex McDonald

Sender's Phone: (916) 255- 3025 or CALNET 8-494 _____

Number of Pages
(including cover): 4

Subject: SEWER RAIN

Comments: _____

If any problems occur in receiving, please call one of the numbers listed above.

**CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD —
CENTRAL VALLEY REGION**

3443 ROUTIER ROAD, SUITE A
SACRAMENTO, CA 95827-3098
PHONE: (916) 255-3000
FAX: (916) 255-3015



15 April 1993

Mr. Richard G. Jones
President
Agricultural Industries, Inc.,
P. O. Box 1076
West Sacramento, CA 95691

APPLICATION FOR WASTE DISCHARGE REQUIREMENTS, SCHROPP RANCH, ALAMEDA COUNTY

Thank you for the submittal of the subject application. Regional Board staff have reviewed it and provide the following comments:

1. The application contains the information that the ground water has been found to contain up to 1.18 mg/l benzene. The concentrations of other contaminants that will be in the extracted ground water must also be supplied. This would include EPA Method 601 and 602 (or 8010 and 8020) constituents, total petroleum hydrocarbons, and lead.

Without this information, the proposed treatment and discharge system cannot be evaluated for adequacy.

2. The proposal states that ground water will be treated to below MCLs prior to discharge. Enclosed is a copy of the general permit with the effluent limitations that must be met.
3. There are several proposals included in the application dealing with disposal of the treated ground water. Of all the proposals, irrigation of alfalfa would be the only option allowed under the general permit for land disposal. The option of surface water discharge would be allowed only under an NPDES permit. The NPDES permit would require substantial additional information and should only be pursued if absolutely necessary. If irrigation is to be used, then the fields on which the disposal will occur needs to be indicated a map of the site. In addition, off-site runoff from the fields will not be allowed during and after disposal.
4. It is proposed to dewater the excavation and discharge the ground water into a holding tank prior to the carbon units to remove sediments. The ground water would then be treated in the carbon vessels prior to discharge to another holding tank. The water would then be tested prior to assure that the water meets permit limits prior to disposal. If the water did not meet limits it would then be run through the carbon units again until

Mr. Richard Jones

-2-

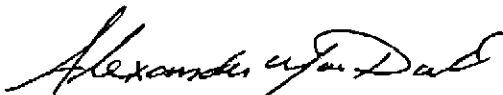
15 April 1993

the concentrations of pollutants was reduced to below the permit limits. This approach is acceptable, however, refinement of actual field operations will need to be made to make this approach work. For example, will dewatering be performed only in batches of volumes that storage has been provided for? How much turnaround time will allowed for analysis of the wastewater? It may be better to have more than one storage tank available so that dewatering/treatment can keep going while awaiting the results of sample analysis.

5. How frequently will the samples be collected? What will be analyzed for in the samples? Where will the samples be collected? What will the sample collection method? Standard sampling protocols, chain of custody procedures, and sample QA/QC procedures need to be specified.

These questions need to be addressed and the information supplied before the waste discharge requirements for the discharge can be completed. I have spoken to your consultants at WZI and they have answered some of the questions listed and not listed here. I have also faxed them a copy of this letter to speed up the transmission of the information.

If you have any questions regarding this matter, please call me at (916) 255-3025.



ALEXANDER MACDONALD
Project Engineer

AMM

cc: Mr. Brian Oliva, Alameda County Environmental Health Dept., Oakland

WASTE DISCHARGE REQUIREMENTS
GENERAL ORDER FOR LAND DISPOSAL
OF GROUND WATER FROM CLEANUP OF
PETROLEUM FUEL POLLUTION

-4-

3. If the Executive Officer finds that the proposed discharge qualifies for coverage under this Order, the Discharger shall be issued a Notification of Applicability statement. Individual dischargers are not covered by this Order until they have been issued a Notification of Applicability by the Executive Officer.

B. DISCHARGE PROHIBITIONS

1. Discharge of material other than ground water from the investigation and cleanup of petroleum fuel pollution, or discharge from the investigation of petroleum fuel pollution where other contaminants exist in the ground water, is prohibited.
2. The discharge of wastes or wastewater into any surface water or surface water drainage course is prohibited.
3. Creation of pollution, contamination, or nuisance, as defined by Section 13050 of the California Water Code, is prohibited.

C. EFFLUENT LIMITATIONS

1. The discharge of an effluent in excess of the following limits is prohibited:

<u>Constituents</u>	<u>Units</u>	<u>30-Day Median</u>	<u>Daily Maximum</u>
Total Petroleum Hydrocarbons (3050 GCFID)	µg/l	<50	100
Benzene	µg/l	<0.5	5*
Ethyl Benzene	µg/l	<0.5	5*
Toluene	µg/l	<0.5	5*
Xylene	µg/l	<0.5	5*
Lead	µg/l	5	50

* The sum of the concentrations of benzene, ethyl benzene, toluene, and xylene in any single sample shall not exceed 5 µg/l.

2. The discharge shall not have a pH of less than 6.5 nor greater than 8.5.
3. By-pass or overflow of untreated or partially treated wastewater is prohibited.
4. The discharge shall remain within the designated disposal area at all times.

RECEIVED MAR 23 1993



AGRICULTURE INDUSTRIES, INC.

P.O. Box 1076, 3002 Beacon Blvd., West Sacramento, California 95691

(916) 372-5595 FAX: (916) 372-5615

DATE: March 19, 1993
MEMO TO: Steve Muir
WZI, Inc.
FROM: Richard G. Jones
RE: Schropp I Cleanup

01370010

Enclosed please find Schropp Farm Check No. 860 in the amount of \$1,000.00 made payable to California Regional Water Quality Control Board that you requested.

If you have any questions, or need anything further, please let me know.

Richard G. Jones

SCHROPP FARM
P. O. BOX 1076 372-5595
WEST SACRAMENTO, CA 95691

0860

March 19 19 93

11-57
1210

PAY TO THE
ORDER OF

California Regional Water
Quality Control Board

\$ 1,000.00

THE SUM I  DOLLARS  CENTS

DOLLARS



First Interstate Bank
of California #659
Tenth and K Streets
P.O. Box 1228
Sacramento, CA 95806-1228

Blaine L. Hemmingsham
Richard G. S.

FOR

⑆ 121000578⑆ 659916978⑆ 0860 11

INTERMEDS - SAFETY

01370010



WZI INC.

Bakersfield
4700 Stockdale Highway, Suite 120
Post Office Box 9217
Bakersfield, California 93389
805/326-1112 805/326-0191 FAX

Fresno
470 East Herndon Avenue, Suite 203
Fresno, California 93720
209/261-9160
209/261-9171 FAX

April 30, 1993

Mr. Alexander MacDonald
California Regional Water Quality Control Board-Central Valley Region
3443 Routier Road, Suite A
Sacramento, California 95827-3098

**Re: Response to CRWQCB-CVR Staff Questions Regarding
Request for Waste Discharge Permit to Support Site Assessment Operations
Schropp Ranch, Alameda County
R.C. # 1678**

Dear Alexander:

WZI Inc. is pleased to respond to CRWQCB-CVR staff review questions for the application for waste discharge of ground water to support site assessment excavation completion at Schropp Ranch, 3880 Mountain House Road, Byron, California. A copy of the staff response letter dated April 15, 1993 is attached for reference. The responses are numbered in the same order as the questions.

1. Concentrations of other potential contaminants in the ground water proposed to be removed from the excavation have been sampled and analyzed by EPA Test Methods 601, 602, 3510, and organic lead by a California state certified laboratory. A water sample was obtained on April 21, 1993, from the central portion of the excavation at a depth of approximately 1 foot below water surface. This sample should be representative of the water contained in the excavation. Analytical results and chain of custody documents for the sample are attached to this letter. All constituents were reported to be below detection limits or below daily maximum limits set forth in the CRWQCB General Permit limitations as set forth in the attached letter. It should be stressed that this water sample is judged typical of excavation water containing the hydrocarbon constituents prior to entering the carbon filter system.
2. MCL's of the ground water to be discharged have been recognized by WZI and Agriculture Industries as indicated on the attached CRWQCB letter. All water to be discharged will be in compliance with the daily and 30-day median concentrations or discharge operations will cease immediately.

3. Water being discharged from this proposed system will be applied to the acreage on the Responsible Party property only. All water will be sprinkled onto the alfalfa crop. A map is included to show the location of the discharge by sprinkler onto the alfalfa field. No surface runoff will occur. All discharged water will remain on the Responsible Party property.
4. Four 20,000 gallon holding tanks will be utilized in the system to hold water prior to carbon treatment and post-treatment water awaiting sprinkler discharge on the alfalfa field. It is anticipated that after dewatering of the main excavation and backfilling only small volumes of water (10,000 gallons or less) will be handled in support of future excavation activities. As the excavation progresses, the removed contaminated soil will be backfilled immediately with clean fill dirt to approximately 2 feet above the water table. This will substantially reduce the volume of ground water filling the excavation bottom.

We estimate the water removed from the excavation and pumped into one or possibly two 20,000 gallon holding tanks will suffice for the pre-carbon filter holding system. We will have an additional 20,000 gallon holding tank kept in reserve.

It should be stressed that the system we propose will not be in continuous use. The system will only be used when water is encountered that must be removed in order to excavate contaminated soil below the water table.

5. Water filtered by the carbon canisters will be passed into a single 20,000 gallon tank and held until discharge. It is anticipated that one water sample per week during the active portion of the system will be collected and submitted for analyses to a California state certified laboratory and analyzed for EPA Method 602 and 5030/8015M. Samples will be obtained using criteria established in the Tri-Regional Board Staff Recommendations for Preliminary Evaluation and Investigation of Underground Tank Sites. Water samples will be collected from a depth of one foot under the water surface from the tank awaiting final discharge. A copy of the WZI Standard Operating Procedure for collection of water samples is attached to this letter for reference. These procedures will be followed.

CRWQCB-CVR staff will be provided copies of water sample analytical results upon request or can be included as part of a planned quarterly ground water monitoring well program for the site that will start after the first monitoring wells are drilled in June, 1993.

If water to be discharged does not meet the MCL standards as outlined in the attached CRWQCB letter, then the water will be recycled through the carbon canister system until it meets MCL standards prior to discharge.

If you have any additional questions either Sue Kiser or myself will be happy to respond to them. We can be contacted at (805) 326-1112. We would appreciate your speedy review and approval of the plan as we would like to conclude the excavation phase of this project immediately. Thank you very much.

Very truly yours,



Stephen G. Muir
Manager, Geotechnical Services
Certified Engineering Geology # 1224

SGM/er
0137.0010.027
Attachments/Enclosures
WZI water sampling protocol
CRWQCB-CVR staff letter dated April 15, 1993
Analytical results from water sample taken April 21, 1993
Map showing proposed waste water discharge

**CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD —
CENTRAL VALLEY REGION**

3443 ROUTIER ROAD, SUITE A
SACRAMENTO, CA 95827-3098
PHONE: (916) 255-3000
FAX: (916) 255-3015



4 May 1993

Mr. Richard G. Jones, President
Agriculture Industries, Inc.
P.O. Box 1076
West Sacramento, CA 95691

NOTIFICATION OF APPLICABILITY OF GENERAL WASTE DISCHARGE REQUIREMENTS (ORDER NO. 91-25000) - AGRICULTURE INDUSTRIES, INC., SCHROPP RANCH, ALAMEDA COUNTY (ORDER NO. 91-25005)

You have submitted information to complete the Report of Waste Discharge for the above referenced project. Based on the information in your submittal, it is approved under our General Order for Land Disposal of Ground Water from Cleanup of Petroleum Fuel Pollution Waste Discharge Requirements (General Order). Enclosed is a copy of the General Order. All the requirements contained in the General Order will be applicable to your project. You are hereby assigned General Order No. 91-25005 for the Schropp Ranch Soil Cleanup and Dewatering Project

Enclosed is a copy of Monitoring and Reporting Program No. 91-25005 which prescribes minimum wastewater monitoring requirements for compliance with the General Order. Please note that the Monitoring and Reporting program sets forth minimum requirements, and that additional monitoring may be necessary for process control or for evaluating the effectiveness of the ground water system at your site.

PROJECT LOCATION

The ground water contamination plume, treatment system, and disposal area are at 3880 Mountain House Road, Byron, California in Section 6, T2S, R4E, MDB&M, with surface water drainage to Old River, as shown in Attachments A and B, which are attached and part of the Order by reference. Schropp Ranch is an active farm, currently growing alfalfa.

PROJECT DESCRIPTION

Agricultural Industries, Inc., proposes to discharge treated ground water from dewatering during cleanup of soils at an underground storage tank leak site by spray irrigation to a crop of alfalfa. Extracted ground water will pass through a series of 20,000 gallon Baker Tanks after removal of any free product. The water is then passed through activated carbon trains, which consist of carbon vessels containing 200 pounds of carbon. The discharge from the carbon trains will be to 20,000 gallon Baker Tanks. Each batch of water will be tested to determine if waste discharge limitations will be met prior

Mr. Richard Jones
Agriculture Industries, Inc.

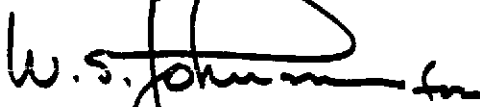
-2-

to discharge to the dredge disposal area. If limitations are potentially exceeded, then the water will be sent through the carbon vessels again. It is anticipated that the maximum discharge volume during any one time will be 10,000 gallons. No runoff from the alfalfa fields will occur during and after irrigation.

GENERAL INFORMATION

1. The project shall be constructed and operated in accordance with the requirements contained in the General Order and in accordance with the information submitted in the Report of Waste Discharge.
2. Regional Board staff shall be notified at least 24 hours prior to the start of project construction activities.
3. The required annual fee (as specified in the annual billing you will receive from the State Water Resources Control Board) shall be submitted until this Notice of Applicability is officially revoked.
4. Discharge of material other than ground water from the investigation and cleanup of petroleum fuel pollution is prohibited.
5. The discharge of wastes or wastewater into any surface water or surface water drainage course is prohibited.
6. Failure to abide by the conditions of General Order could result in an enforcement action as authorized by provisions of the California Water Code.

If you have any questions or comments regarding this permit, please contact Alexander MacDonald at (916) 255-3025.

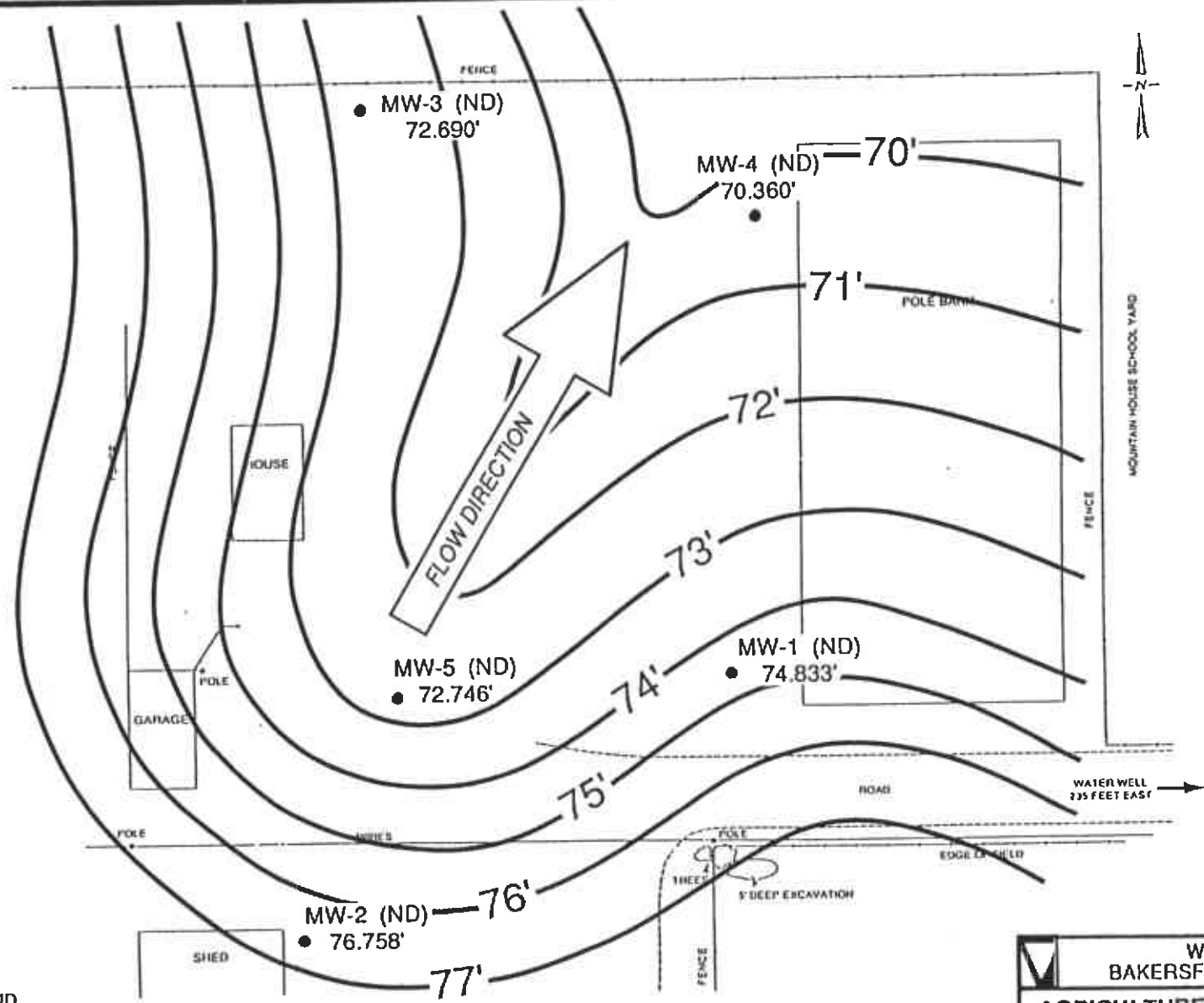


WILLIAM H. CROOKS
Executive Officer

Enclosure: General Order No. 91-25000
Standard Provisions

cc: Mr. Brian Oliva, Alameda County Environmental Health Department, Oakland
Mr. Stever Muir, WZI, Inc., Bakersfield


APPENDIX VII

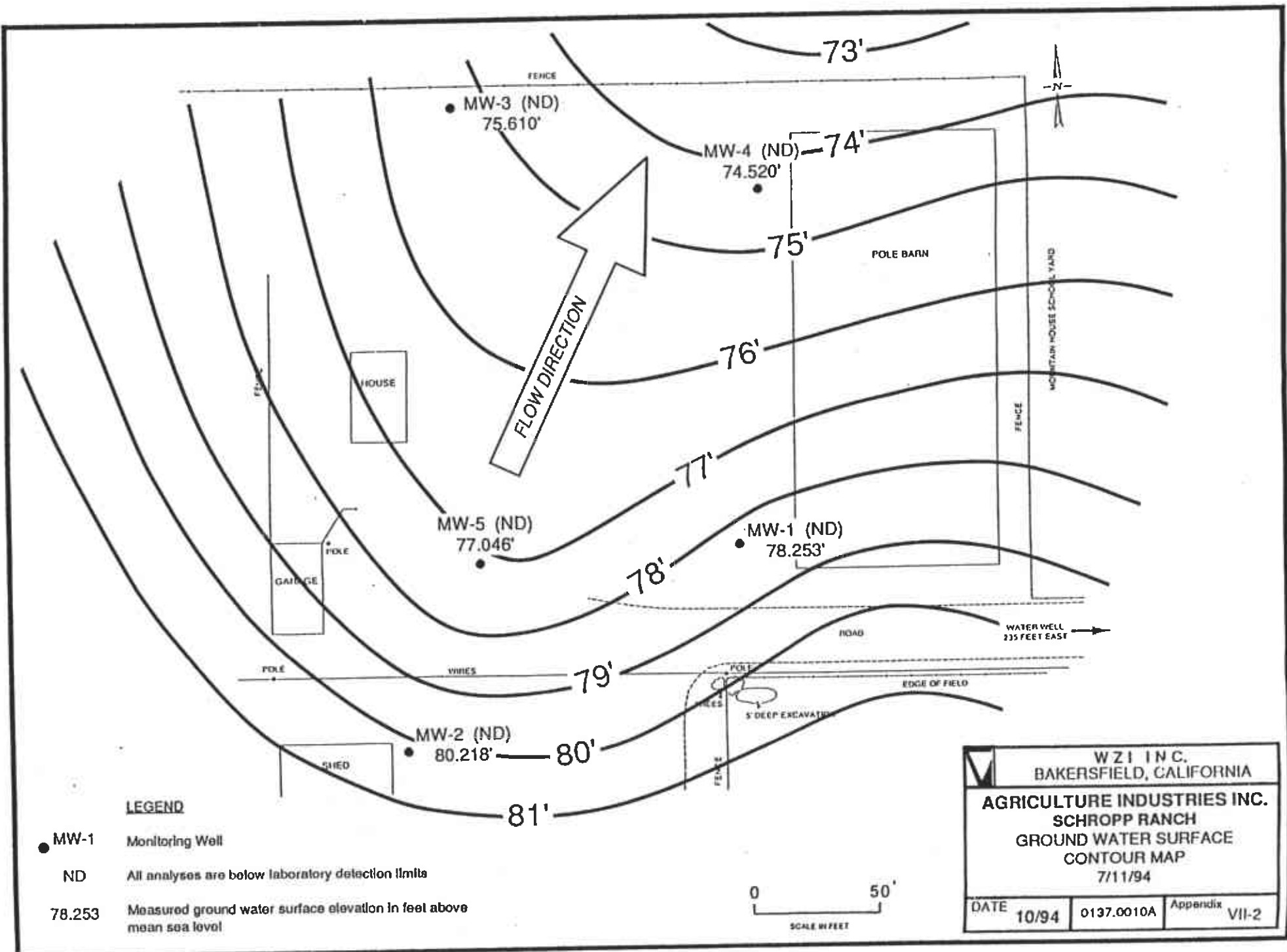


LEGEND

- MW-1 Monitoring Well
- ND All analyses are below laboratory detection limits
- 78.253 Measured ground water surface elevation in feet above mean sea level



 WZI INC. BAKERSFIELD, CALIFORNIA		
AGRICULTURE INDUSTRIES INC. SCHROPP RANCH GROUND WATER SURFACE CONTOUR MAP 3/29/94		
DATE	0137.0010A	Appendix VII-1
10/94		



LEGEND

- MW-1 Monitoring Well
- ND All analyses are below laboratory detection limits
- 78.253 Measured ground water surface elevation in feet above mean sea level



WZI INC. BAKERSFIELD, CALIFORNIA		
AGRICULTURE INDUSTRIES INC. SCHROPP RANCH GROUND WATER SURFACE CONTOUR MAP 7/11/94		
DATE	10/94	0137.0010A Appendix VII-2

APPENDIX IV

LOG OF MW - 1

WELL COMPLETION DIAGRAM	ANALYSES		Blowcount	DEPTH (feet)	SAMPLE		lithology symbol	u.s.c.s. desig	SOIL DESCRIPTION
	Lab	Field			INTERVAL	NUMBER			
	Benzene TPH ppm	Hnu P.I.D. ppm							
Locking Well Cap				0					
<p style="text-align: center;">BENTONITE SEAL</p> <p> 1 BLANK CASING 2" SCHEDULE 40 PVC 2 CEMENT SURFACE SEAL 3 3' BENTONITE SEAL 4 MONTEREY NO. 2 SAND PACK 5 SCREENED CASING </p>	ND	0	6	10	X	MW-1-11.5			DARK BROWN, FINE GRAINED SAND AND SILT, MOIST, MICACEOUS. NO PETROLEUM ODOR.
	ND	0	11	15	X	MW-1-16.5			DARK BROWN, FINE GRAINED SAND AND SILT, MOIST, MICACEOUS. NO PETROLEUM ODOR.
	ND	0	12	20	X	MW-1-21.5			DARK BROWN, FINE GRAINED SAND AND SILT, MOIST, MICACEOUS. NO PETROLEUM ODOR.
	ND	0	13	25	X	WL-1-26.5			DARK BROWN, FINE TO MEDIUM GRAINED SAND, LOCAL GRAVEL BED TO 1 FOOT THICK. NO PETROLEUM ODOR.
	ND	0	15	30	X	MW-1-31.5			DARK BROWN, FINE GRAINED SAND AND SILT, MOIST, MICACEOUS. NO PETROLEUM ODOR.
	ND	0	17	35					

SURFACE ELEVATION: 89.853
 TOTAL DEPTH: 31.5 FEET
 DATE DRILLED: 9-26-93

LOGGED BY: S. G. MUIR
 DIAMETER OF BORING: 8"
 WATER ENCOUNTERED AT: 15.020'

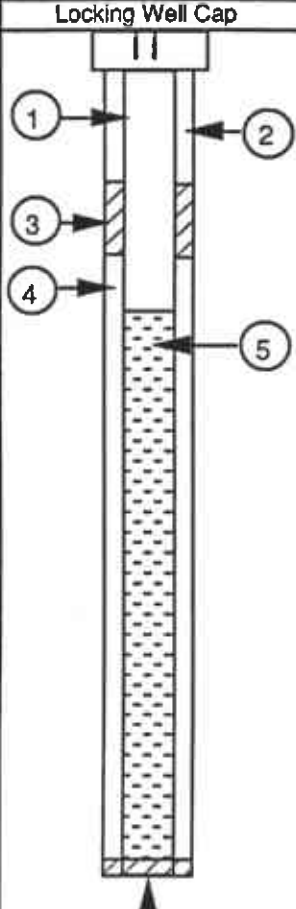


AGRICULTURE INDUSTRIES
 SCHROPP RANCH
 0137.0010

LOCATION: SOUTHEAST CORNER MAIN YARD

WZI

LOG OF MW - 2

WELL COMPLETION DIAGRAM	ANALYSES		Blowcount	DEPTH (feet)	SAMPLE		lithology symbol	u.s.c.s. desig	SOIL DESCRIPTION
	Lab	Field			INTERVAL	NUMBER			
	Benzene TPH ppm	Hnu P.I.D. ppm							
 <p style="text-align: center;">Locking Well Cap</p> <p style="text-align: center;">BENTONITE SEAL</p> <p> ① BLANK CASING 2" SCHEDULE 40 PVC ② CEMENT SURFACE SEAL ③ 3' BENTONITE SEAL ④ MONTEREY NO. 2 SAND PACK ⑤ SCREENED CASING </p>				0					DARK BROWN, FINE GRAINED SAND AND SILT, MOIST, MICACEOUS. NO PETROLEUM ODOR.
		0		5					
	ND ND	0	5 10 21	10	X	MW-2-11.5			DARK BROWN, FINE GRAINED SAND AND SILT, MOIST, MICACEOUS. NO PETROLEUM ODOR.
	ND ND	0	5 11 21	15	X	MW-2-16.5			DARK BROWN, FINE GRAINED SAND AND SILT, MOIST, MICACEOUS. NO PETROLEUM ODOR.
	ND ND	0	6 14 23	20	X	MW-2-21.5			DARK BROWN, FINE GRAINED SAND AND SILT, MOIST, MICACEOUS. NO PETROLEUM ODOR.
	ND ND	0	8 16 30	25	X	WL-2-26.5			DARK BROWN, FINE GRAINED SAND AND SILT, MOIST, MICACEOUS. NO PETROLEUM ODOR.
	ND ND	0	8 18 34	30	X	MW-2-31.5			DARK BROWN, FINE GRAINED SAND AND SILT, MOIST, MICACEOUS. NO PETROLEUM ODOR.
				35					
				40					
				45					

SURFACE ELEVATION: 91.848
 TOTAL DEPTH: 31.5 FEET
 DATE DRILLED: 9-26-93

LOGGED BY: S. G. MUIR
 DIAMETER OF BORING: 8"
 WATER ENCOUNTERED AT: 15.0900'

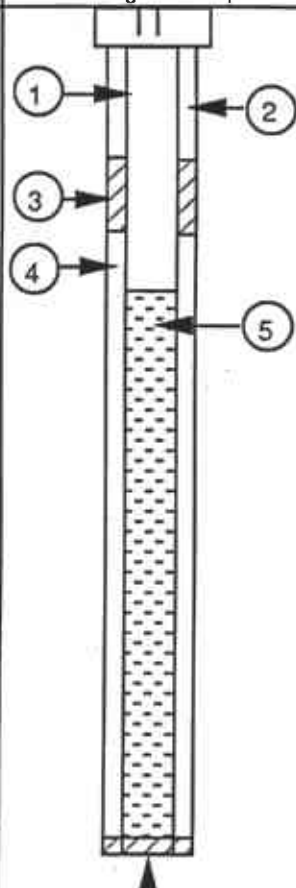


AGRICULTURE INDUSTRIES
 SCHROPP RANCH
 0137.0010

LOCATION: SOUTHWEST CORNER MAIN YARD

WZI

LOG OF MW - 3

WELL COMPLETION DIAGRAM	ANALYSES		Blowcount	DEPTH (feet)	SAMPLE		lithology symbol	u.s.c.s. desig	SOIL DESCRIPTION
	Lab	Field			INTERVAL	NUMBER			
	Benzene TPH ppm	Hnu P.I.D. ppm							
Locking Well Cap									
 <p style="text-align: center;">BENTONITE SEAL</p> <p> ① BLANK CASING 2" SCHEDULE 40 PVC ② CEMENT SURFACE SEAL ③ 3' BENTONITE SEAL ④ MONTEREY NO. 2 SAND PACK ⑤ SCREENED CASING </p>	ND	0	6	0					DARK BROWN, FINE GRAINED SAND AND SILT, MOIST, MICACEOUS. NO PETROLEUM ODOR.
	ND	ND	10	10	X	MW-3-11.5			DARK BROWN, FINE GRAINED SAND AND SILT, MOIST, MICACEOUS. NO PETROLEUM ODOR.
	ND	ND	21	15	X	MW-3-16.5			DARK BROWN, FINE GRAINED SAND AND SILT, MOIST, MICACEOUS. NO PETROLEUM ODOR.
	ND	ND	5	20	X	MW-3-21.5			DARK BROWN, FINE GRAINED SAND AND SILT, MOIST, MICACEOUS. NO PETROLEUM ODOR.
	ND	ND	14	25	X	WL-3-26.5			DARK BROWN, FINE TO MEDIUM GRAINED SAND, LOCAL GRAVEL BEDS UP TO 2 FEET THICK. NO PETROLEUM ODOR.
	ND	ND	8	30	X	MW-3-31.5			DARK BROWN, FINE GRAINED SAND AND SILT, MOIST, MICACEOUS. NO PETROLEUM ODOR.
	ND	ND	18	35					
			37	40					
				45					

SURFACE ELEVATION: 89.240
 TOTAL DEPTH: 31.5 FEET
 DATE DRILLED: 9-26-93

LOGGED BY: S. G. MUIR
 DIAMETER OF BORING: 8"
 WATER ENCOUNTERED AT: 16.550'

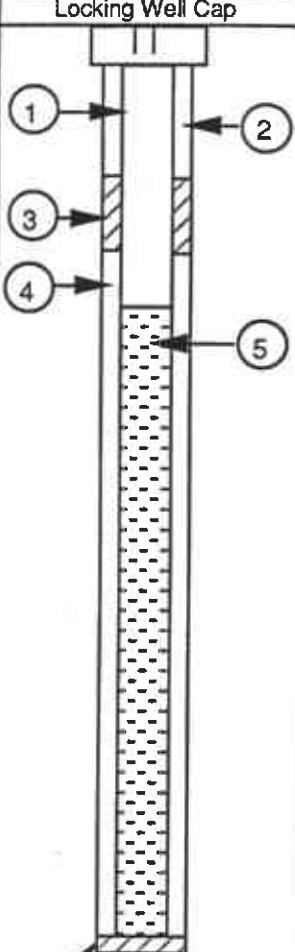


AGRICULTURE INDUSTRIES
 SCHROPP RANCH
 0137.0010

LOCATION: NORTHWEST CORNER MAIN YARD

WZI

LOG OF MW - 4

WELL COMPLETION DIAGRAM	ANALYSES		Blowcount	DEPTH (feet)	SAMPLE		lithology symbol	u.s.c.s. desig	SOIL DESCRIPTION	
	Lab	Field			INTERVAL	NUMBER				
	Ben-zene TPH ppm	Hnu P.I.D. ppm								
Locking Well Cap				0						
 <p> 1 BLANK CASING 2" SCHEDULE 40 PVC 2 CEMENT SURFACE SEAL 3 3' BENTONITE SEAL 4 MONTEREY NO. 2 SAND PACK 5 SCREENED CASING </p>	ND	0	5	10	X	MW-4-11.5			DARK BROWN, FINE GRAINED SAND AND SILT, MOIST, MICACEOUS. NO PETROLEUM ODOR.	
	ND	ND	10	21					DARK BROWN, FINE GRAINED SAND AND SILT, MOIST, MICACEOUS. NO PETROLEUM ODOR.	
	ND	ND	0	5	15	X	MW-4-16.5			DARK BROWN, FINE GRAINED SAND AND SILT, MOIST, MICACEOUS. NO PETROLEUM ODOR.
	ND	ND	11	20						DARK BROWN, FINE GRAINED SAND AND SILT, MOIST, MICACEOUS. NO PETROLEUM ODOR.
	ND	ND	0	6	20	X	MW-4-21.5			DARK BROWN, FINE GRAINED SAND AND SILT, MOIST, MICACEOUS. NO PETROLEUM ODOR.
	ND	ND	14	21						DARK BROWN, FINE GRAINED SAND AND SILT, MOIST, MICACEOUS. NO PETROLEUM ODOR.
	ND	ND	8	25	X	WL-4-26.5			DARK BROWN, FINE GRAINED SAND AND SILT, MOIST, MICACEOUS. NO PETROLEUM ODOR.	
	ND	ND	14	30						
	ND	ND	0	8	30	X	MW-4-31.5			DARK BROWN, FINE TO MEDIUM GRAINED SAND, LOCAL GRAVEL BEDS UP TO 4 FEET THICK. NO PETROLEUM ODOR.
	ND	ND	18	36						
	ND	1.3	8	35	X	MW-4-31.5			DARK BROWN, FINE GRAINED SAND AND SILT, MOIST, MICACEOUS. NO PETROLEUM ODOR.	
			19	40						

SURFACE ELEVATION: 88.180
 TOTAL DEPTH: 36.5 FEET
 DATE DRILLED: 10-14-93

LOGGED BY: S. G. MUIR
 DIAMETER OF BORING: 8"
 WATER ENCOUNTERED AT: 17.820'



AGRICULTURE INDUSTRIES
 SCHROPP RANCH
 0137.0010

LOCATION: NORTHEAST CORNER MAIN YARD

LOG OF MW - 5

WELL COMPLETION DIAGRAM	ANALYSES		Blowcount	DEPTH (feet)	SAMPLE		lithology symbol	u.s.c.s. desig	SOIL DESCRIPTION
	Lab	Field			INTERVAL	NUMBER			
	Benzene TPH ppm	Hnu P.I.D. ppm							
Locking Well Cap				0					DARK BROWN, FINE GRAINED SAND AND SILT, MOIST, MICACEOUS. NO PETROLEUM ODOR. ARTIFICIAL FILL PLACED IN EXCAVATION TO 35 FEET.
1 → ← 2				5					
3 → ← 4			0	6	10				
4 → ← 5	0		10	10	23				
	0		15	15	22				
	0		20	20	23				
	0		25	25	32				
	0		30	30	36				
BENTONITE SEAL				35					
1				40					
2				45					
3									
4									
5									

- ① BLANK CASING
2" SCHEDULE 40 PVC
- ② CEMENT SURFACE SEAL
- ③ 3' BENTONITE SEAL
- ④ MONTEREY NO. 2 SAND PACK
- ⑤ SCREENED CASING

SURFACE ELEVATION: 90.166
 TOTAL DEPTH: 31.5 FEET
 DATE DRILLED: 10-14-93

LOGGED BY: S. G. MUIR
 DIAMETER OF BORING: 8"
 WATER ENCOUNTERED AT: 17.420'



AGRICULTURE INDUSTRIES
 SCHROPP RANCH
 0137.0010

LOCATION: CENTER OF MAIN YARD

WZI