aqua science engineers inc.

November 12, 1998

WORKPLAN
for a
SOIL AND GROUNDWATER ASSESSMENT
at
Hutch's Carwash
17945 Hesperian Boulevard
San Lorenzo, California

Submitted by:
AQUA SCIENCE ENGINEERS, INC.
208 W. El Pintado Road
Danville, CA 94526
(925) 820-9391

INTRODUCTION

This submittal outlines Aqua Science Engineer's, Inc. (ASE) workplan for a soil and groundwater assessment at the Hutch's Carwash property located at 17945 Hesperian Boulevard in San Lorenzo, California (Figure 1). The proposed site assessment activities were initiated by Mr. Kirk Hutchison, owner of the property, in order to obtain case closure of the underground fuel storage tanks (USTs) located at the site. Hutch's Carwash is seeking closure of the three USTs at the site. They plan to use the USTs as part of a water reclamation system for the carwash operation at the site rather than use the USTs to store gasoline.

PROPOSED SCOPE OF WORK

The proposed scope of work for this assessment was previously discussed between Mr. Robert Weston of the Alameda County Health Care Services Agency (ACHCSA) and Mr. David Allen of ASE. The proposed SOW is as follows:

1) Prepare a workplan and health and safety plan for review and approval from the appropriate regulatory agencies.

2) Obtain the necessary drilling permit from the Alameda County Public Works Agency (ACPWA).

3) Drill six soil borings at the site to 15-feet below ground surface (bgs) using a Geoprobe or similar type of drill rig. The 15-foot depth correlates to a depth of 2 to 3 feet below the bottom of the deepest UST. Collect soil samples from the borings for analysis.

4) If groundwater is encountered in the borings, collect a groundwater sample from each boring. If the borings are dry at a depth of 15-feet bgs, and there is no indication of contamination based on odors, staining or organic vapor meter (OVM) readings, no groundwater samples will be required. If the borings are dry and there is evidence of contamination at a depth of 15-feet, drilling will continue to groundwater and groundwater samples will be collected for analysis.

5) At a minimum, one soil sample from each boring will be analyzed at a CAL-EPA certified analytical laboratory for total petroleum hydrocarbons as gasoline (TPH-G) by modified EPA Method 5030/8015, benzene, toluene, ethylbenzene and total xylenes

(collectively known as BTEX) by EPA Method 8020, methyl tertiary butyl ether (MTBE) by EPA Method 8020, and total lead by EPA Method 6010.

6) If collected, groundwater samples will be analyzed for TPH-G by modified EPA Method 5030/8015 and BTEX and MTBE by EPA Method 8020.

7) Backfill each boring with neat cement.

8) Prepare a report presenting the methods and findings of this assessment.

Details of the assessment are presented below.

TASK 1 - PREPARE A SITE SAFETY PLAN

Based on the site history and the scope of work discussed between Mr. Robert Weston of the ACHCSA and David Allen of ASE, ASE has prepared this workplan and a site-specific health and safety plan. A nearby hospital is designated in the site safety plan as the emergency medical facility of first choice. A copy of the site specific Health and Safety Plan is appended to this report (Appendix A).

TASK 2 - OBTAIN NECESSARY PERMITS

ASE will obtain a drilling permit from the Alameda County Public Works Agency (ACPWA). ASE will also notify Underground Service Alert (USA) to have underground utility lines marked in the site vicinity, and will contract with a subsurface utility locating company to locate underground lines at the site.

TASK 3 - DRILL SIX SOIL BORINGS AT THE SITE

ASE will drill six soil borings to a depth of 15-feet bgs at the locations shown on Figure 2. The 15-foot depth correlates to a depth of 2 to 3 feet below the bottom of the deepest UST. The borings will be drilled using a Geoprobe or similar type drill rig. The drilling will be directed by a qualified ASE geologist. Undisturbed soil samples will be collected at least every 5-feet, at lithographic changes, and from just above the water table for subsurface hydrogeologic description and possible chemical analysis. The samples will be described by the ASE geologist according to the

Unified Soil Classification System. The samples will be collected in brass or acetate tubes using a drive sampler advanced ahead of the boring as the boring progresses. Each sample will be immediately removed from the sampler, trimmed, sealed with Teflon tape and plastic caps, secured with duct tape, labeled with the site location, sample designation, date and time the sample was collected, and the initials of the person collecting the sample. The samples will be placed into an ice chest containing wet ice for delivery under chain of custody to a CAL-EPA certified analytical laboratory.

Soil from the remaining tubes not sealed for analysis will be removed for hydrogeologic description and will be screened for volatile compounds with an organic vapor meter (OVM). The soil will be screened by emptying soil from one of the tubes into a plastic bag. The bag will be sealed and placed in the sun for approximately 10 minutes. After the hydrocarbons have been allowed to volatilize, the OVM will measure the vapor through a small hole, punched in the bag. These OVM readings will be used as a screening tool only since these procedures are not as rigorous as those used in an analytical laboratory.

All sampling equipment will be cleaned in buckets with brushes and a trisodium phosphate (TSP) or Alconox solution, then rinsed twice with tap water. Rinsates will be contained on-site in 55-gallon steel drums for future disposal by the client.

TASK 4 - GROUNDWATER SAMPLE COLLECTION

If groundwater is encountered in the borings, groundwater samples will be collected for analysis. If the boring is dry at 15-feet bgs and there is an indication of contamination from odors, staining or OVM readings, drilling will continue deeper until groundwater is encountered and a groundwater sample will be collected from the boring. If there are no indications of contamination, the drilling will be halted at 15-feet bgs and no groundwater sample will be collected from that boring.

When groundwater samples are to be collected, the groundwater samples will be collected using a pre-cleaned bailer or dedicated polyethylene tubing with a check valve at the bottom. The samples will be contained in 40-ml volatile organic analysis (VOA) vials without headspace and preserved with hydrochloric acid. The samples will then be labeled with the site location, sample designation, date and time the samples were collected, and the initials of the person collecting the samples, placed in

protective foam sleeves, and cooled in an ice chest with wet ice for transport to a state-certified analytical laboratory under chain-of-custody.

TASK 5 - ANALYZE THE SOIL SAMPLES

The soil sample collected from 15-feet bgs in each boring will be analyzed at a CAL-EPA certified analytical laboratory for TPH-G by modified EPA Method 5030/8015, BTEX and MTBE by EPA Method 8020, and total lead by EPA Method 6010.

TASK 6 - ANALYZE THE GROUNDWATER SAMPLES

Any groundwater samples collected during this assessment will be analyzed at a CAL-EPA certified analytical laboratory for TPH-G by modified EPA Method 5030/8015 and BTEX and MTBE by EPA Method 8020.

TASK 7 - BACKFILL THE BORINGS WITH NEAT CEMENT

Following collection of the soil and groundwater samples, the boreholes will be backfilled with neat cement placed by tremie pipe.

TASK 8 -PREPARE A SUBSURFACE ASSESSMENT REPORT

ASE will prepare a report outlining the methods and findings of this assessment. The report will be submitted under the seal of state registered civil engineer or geologist. This report will include a summary of all work completed during this assessment including tabulated soil and groundwater analytical results, conclusions and recommendations. Copies of the analytical report and chain of custody will be included as appendices.

SCHEDULE

ASE plans to begin field activities immediately upon approval of this workplan by the ACHCSA.

Should you have any questions or comments, please call us at (925) 820-9391.

Respectfully submitted,

AQUA SCIENCE ENGINEERS, INC.

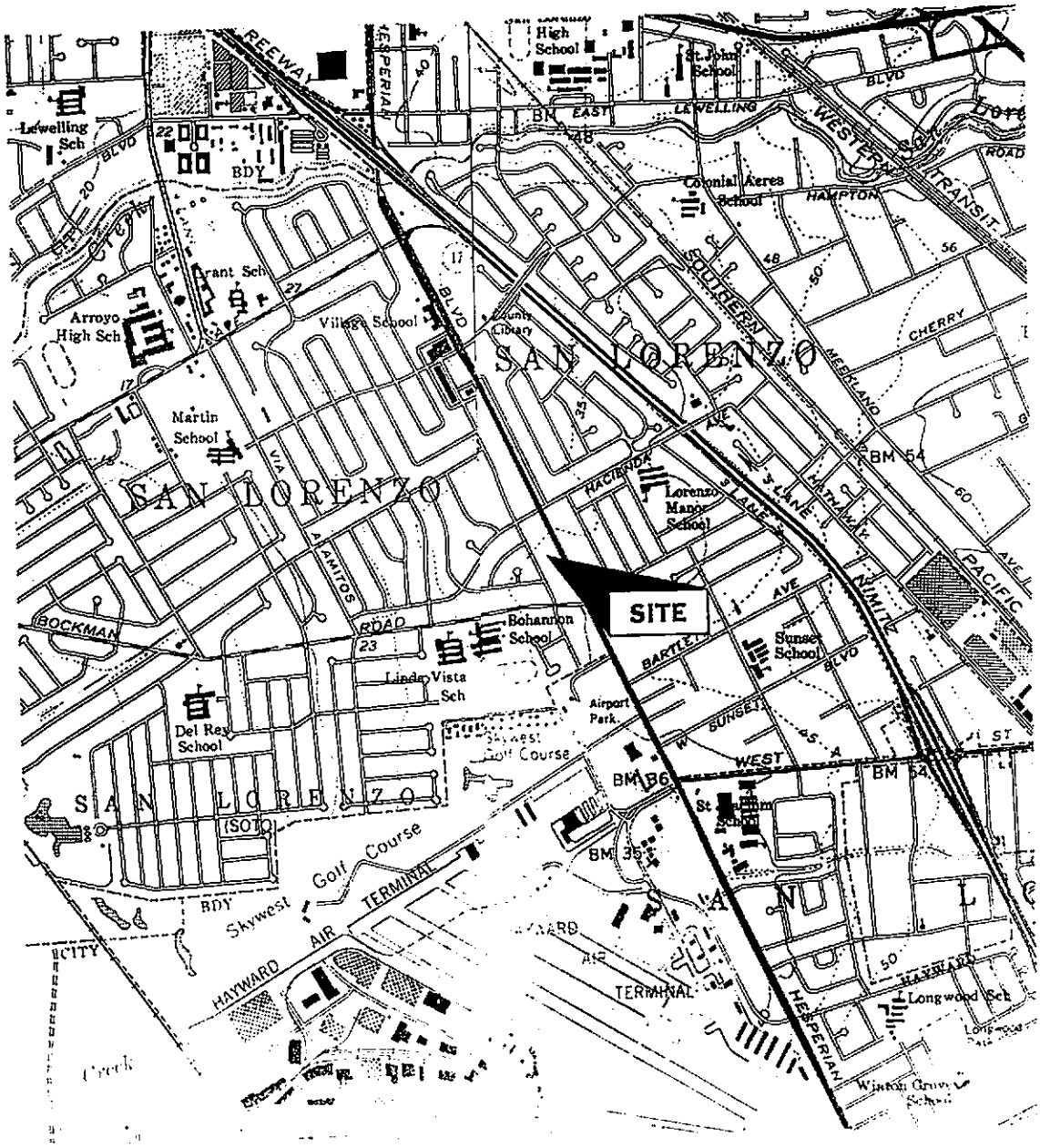
Robert E. Kitay, R.G., R.E.A.
Senior Geologist

cc: Mr. Robert Weston, Alameda County Health Care Services Agency, 1131 Harbor Bay Parkway, Suite 250, Alameda, CA 94502

Mr. Kirk Hutchison, Hutch's Carwash, 17945 Hesperian Boulevard, San Lorenzo, CA 94541

NORTH

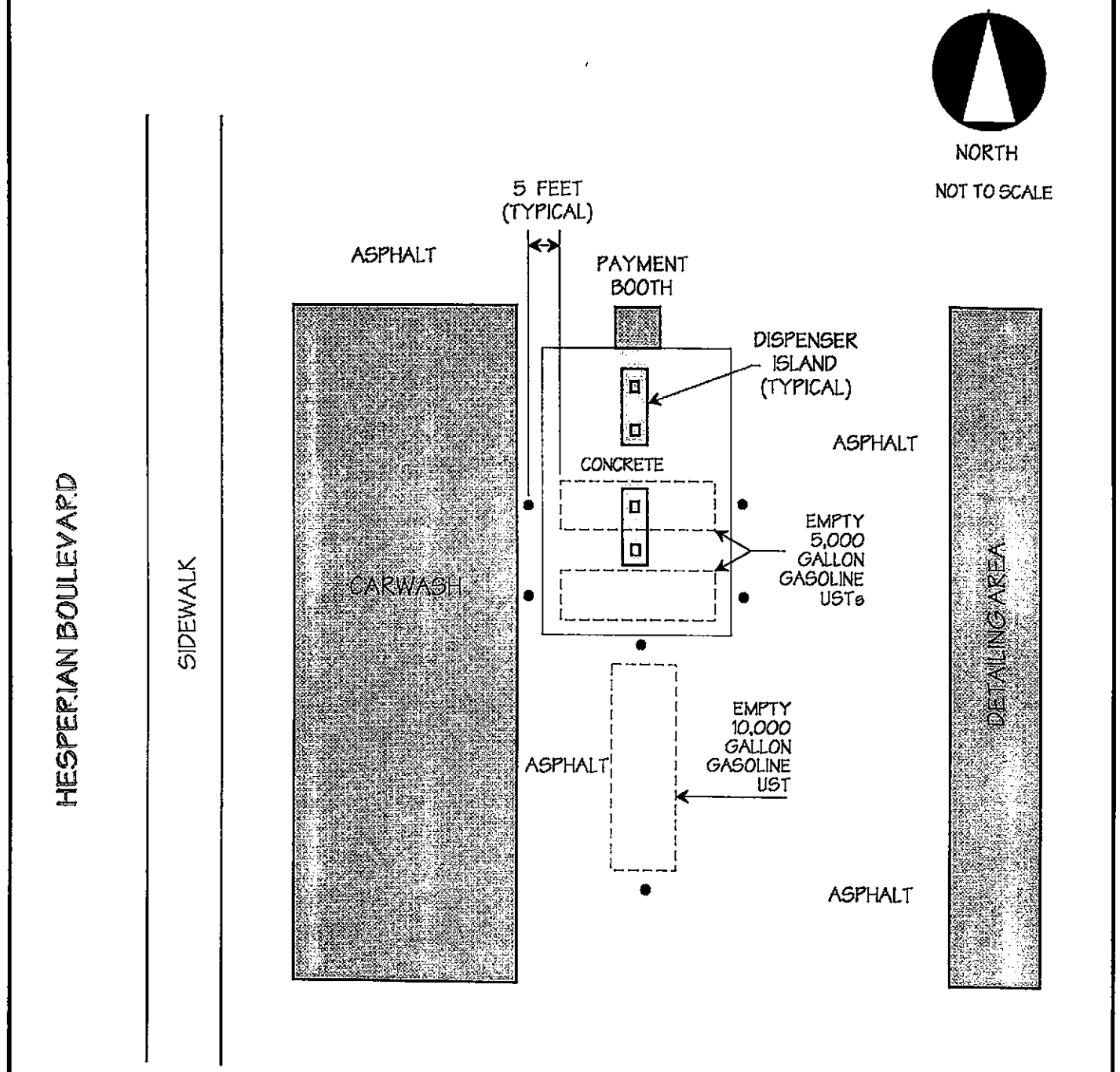
NOT TO SCALE



LOCATION MAP

Hutch's Carwash
17945 Hesperian Boulevard
San Lorenzo, California

AQUA SCIENCE ENGINEERS, INC. Figure 1



LEGEND

EMPTY UNDERGROUND STORAGE TANK (UST)

PROPOSED SOIL BORING LOCATION

PROPOSED BORING LOCATION MAP

Hutch's Carwash
17945 Hesperian Boulevard
San Lorenzo, California

AQUA SCIENCE ENGINEERS, INC. | Figure 2

APPENDIX A

Health and Safety Plan

aqua science engineers inc.

HEALTH & SAFETY PLAN

for:

Hutch's Carwash
17945 Hesperian Boulevard
San Lorenzo, California

prepared by:

Aqua Science Engineers, Inc.
208 W. El Pintado Road
Danville, California 94526
(925) 820-9391

AQUA SCIENCE ENGINEERS, INC.
HEALTH & SAFETY PLAN
for the
HUTCH'S CARWASH JOBSITE

A. GENERAL DESCRIPTION

Site: Hutch's Carwash, 17945 Hesperian Blvd, San Lorenzo, CA

Work Scope:

ASE will drill six soil borings at the site and collect soil and groundwater samples for analyses.

SAFETY POLICY:

This Health and Safety Plan is written specifically for the Hutch's Carwash jobsite, located at 17945 Hesperian Boulevard in San Lorenzo, California. All persons on site will follow OSHA safe operating practices as outlined in 29 CFR 1910 and 1926, as well as established guidelines from their respective companies or organizations.

Plan Prepared by: Robert Kitay Date: 11/12/98

Plan Approved by: David Schultz Date: 11/12/98

Background Review Done? Complete: 11/12/98
Preliminary:

Overall Hazard Level: Serious: Low: XXX
Moderate: Unknown:

Project Organization:
Site Manager for A.S.E.: David Allen
A.S.E. Safety Officer: David Allen
Other A.S.E Personnel: Greg Schramm

B. SITE/WASTE CHARACTERISTICS

Waste Type(s): Solid: XXX Sludge: Liquid: XXX Gas:

Characteristics: HYDROCARBON RESIDUALS, TOXIC

Site Parameter:

A MINIMUM BOUNDARY OF THREE FEET SURROUNDING THE BORINGS IS TO BE MAINTAINED IN AS MUCH AS IS POSSIBLE.

C. HAZARD EVALUATION

CHEMICAL HAZARDS

Potential chemical hazards include skin and eye contact or inhalation exposure to potentially toxic concentrations of hydrocarbon vapors. The potential toxic compounds that may exist at the site are listed below, with descriptions of specific health effects of each. The list includes the primary potential toxic constituents of gasoline known to be on site. Exposure levels and symptoms are taken from the NIOSH Pocket Guide to Chemical Hazards.

1. BENZENE

a. Colorless, clear, highly flammable liquid with characteristic odor.
b. High exposure levels may cause acute restlessness, convulsions, depression, respiratory failure. BENZENE IS A KNOWN CARCINOGEN.
c. Permissible exposure level (PEL) for a time weighted average (TWA) over an eight hour period is 1.0 ppm.

2. TOLUENE

a. Colorless liquid with a benzene-like odor.
b. High exposure levels may cause fatigue, euphoria, confusion, dizziness. TOLUENE IS LESS TOXIC THEN BENZENE.
c. PEL for a ten hour TWA is 100 ppm.

3. XYLENE

a. Colorless, flammable liquid with aromatic odors.
b. high exposure levels may case dizziness, drowsiness, narcosis.
c. PEL for a ten hour TWA is 100 ppm.

4. ETHYLBENZENE

a. Clear, colorless, highly flammable liquid with characteristic odor.
b. High exposure levels may cause irritation to skin, nose and throat, dizziness, constriction in chest, loss of consciousness, respiratory failure.
c. PEL for an eight hour TWA is 100 ppm.

ALL SUBSTANCES AS THEY EXIST ON SITE ARE EXPECTED TO BE STABLE.
PHYSICAL HAZARDS

Personnel shall maintain the maximum distance possible from the borings while performing their activities. Other on-site hazards include physical injuries due to the proximity of workers to engine-driven heavy equipment and tools. Heavy equipment used during drilling will include a drill rig. Only trained personnel will operate machines, tools and equipment; all will be kept clean and in good repair. Minimum safety apparel required around heavy equipment will include a hardhat, steel-toed boots and hearing conservation devices. ALL WORK WILL BE PERFORMED IN ACCORDANCE WITH OSHA GUIDELINES.

1. USE SAFETY EQUIPMENT, MASK RESPIRATORS WITH NIOSH APPROVED C-21 CARTRIDGES FOR ORGANIC VAPORS, AS NECESSARY.

2. HAVE AT LEAST ONE DRY CHEMICAL MODEL PA-200 A-B-C FIRE EXTINGUISHER PRESENT.

LEVEL OF PROTECTION

A contamination Reduction Zone (CRZ) will be maintained and adjusted as work proceeds and moves around the site. The workers on site will wear level 'D' protective clothing. (This protection level may be upgraded after on-site conclusions of data are completed). THE LEVEL OF PROTECTION FOR PERSONNEL WORKING IN THE AREA WILL BE UPGRADED IF; the organic vapor levels in the operator's breathing zone exceeds 5 ppm above background levels continuously for more then five minutes. This will be monitored by use of a hand-held Organic Vapor Meter (Gastech 1314 Oxygen/ppm Concentration Meter (PID) calibrated with Hexane). In this event, personnel protective equipment will include full face respirators with double-cartridge filters for organic vapors and particulates, in addition to hardhat, steel-toed boots and coveralls. If work proceeds in an environment where vapor concentrations exceed 200 ppm, a self contained breathing apparatus or airline respirator will be utilized by the personnel.

Levels of Protective Clothing are defined on the following pages as described in the "EPA Standard Operating Safety Guidelines":

LEVEL A PROTECTION

Components:

1) Pressure-demand, supplied air respirator that is MSHA and NIOSH approved. Respirators may be pressure demand, self contained breathing apparatus (SCBA), or pressure demand, airline respirator with an escape bottle for atmospheres with an extreme IDLH.

2) Fully encapsulating chemical resistant suit.

3) Inner, chemical resistant gloves.

4) Disposable gloves and boot covers, worn over the fully encapsulating suit.

5) 2-way radio communications is highly recommended.

LEVEL B PROTECTION

Components:

1) Pressure-demand, supplied air respirator that is MSHA and NIOSH approved. Respirators may be pressure demand, self contained breathing apparatus (SCBA), or pressure demand, airline respirator with an escape bottle for atmospheres with an extreme IDLH.

2) Chemical resistant clothing which includes overalls and long sleeved jacket or, hooded one or two piece chemical splash suit or disposable chemical resistant one piece suit..

3) Outer chemical resistant gloves.

4) Inner chemical resistant gloves.

5) Chemical resistant, steel toed and shank boots.

6) Disposable chemical resistant boot covers.

7) Hardhat.

8) 2-way radio communications is highly recommended.

LEVEL C PROTECTION

Components:

1) Air purifying respirator, full face, with twin cartridge or cannister equipped filters, that are MSHA and NIOSH approved.

2) Chemical resistant clothing which includes coveralls or, hooded one-piece or two-piece chemical splash suit or chemical resistant hood and apron; disposable chemical resistant coveralls.

3) Outer chemical resistant gloves.

4) Inner chemical resistant gloves.

5) Chemical resistant, steel toed and shank boots.

6) Disposable chemical resistant boot covers.

7) Hardhat.

LEVEL D PROTECTION

Components:

1) Coveralls.

2) Gloves.

3) Leather boots, shoes or chemical resistant, with steel toe and shank.

4) Safety glasses or chemical splash goggles.

5) Hardhat or face shield.

SITE ENTRY PROCEDURES

Any personnel entering the site will observe all conditions set forth by the owners/operators of the property, including vehicle travel speeds, restricted areas and conduct. Eating, drinking, smoking and other practices which increase the probability of hand-to-mouth transfer of contamination is prohibited in the work zone. All field personnel will be instructed to thoroughly wash their hands and face upon leaving the work area for breaks or cessation of day's activities.

DECONTAMINATION PROCEDURES

If required, equipment and personnel decontamination areas will be designated by the Project Manager at the start of the project. To prevent the transfer of contamination from the work site into clean areas, all tools will be cleaned adequately prior to final removal from the work zone. Disposable protective clothing such as Tyvek coveralls, latex gloves, boot covers, etc. will be changed on a daily basis or at the discretion of the Project Manager on site. All disposable protective clothing will be put into plastic bags and disposed of in a proper manner. All respirator cartridges will be discarded and replaced with fresh units on a daily basis, disposal will be in the same manner as the protective clothing. Soil will be stockpiled in an area designated by the Project Manager, to be handled as agreed upon in the scope of work contract with the client.

In the event of a medical emergency, the injured party will be taken through decontamination procedures, if possible. However, the procedures may be omitted when it may aggravate or cause further harm to the injured party. Member of the work team will accompany the injured party to the medical facility to advise on matters concerning chemical exposure. The injured person will not transport themselves to the medical facility!

Personnel Protection Level will be Level 'D'. Protective clothing levels may be upgraded in the event that on site conclusions determine a greater then anticipated danger to personnel.

Site Entry: BARRICADES, CONES, OR BANNER GUARD MAY BE ERECTED TO CONTROL FOOT TRAFFIC AWAY FROM THE WORK ACTIVITY.

Decontamination-

Personnel and Equipment: IF REQUIRED, PERSONNEL AND EQUIPMENT WILL BE DECONTAMINATED A PER USEPA STANDARD OPERATING SAFETY GUIDELINES. A SMALLER MODIFIED DECONTAMINATION LINE MAY BE USED DUE TO SPACE RESTRICTIONS.

Work Limitations (time, weather):

NONE ARE ANTICIPATED, HOWEVER, PERSONNEL WORKING ON SITE MAY EXPERIENCE ELEVATED TEMPERATURES DURING THE WORK DAY. IN THE EVENT THAT AMBIENT TEMPERATURES REACH OR EXCEED 80 DEGREES FAHRENHEIT, THE FOLLOWING GUIDELINES ARE RECOMMENDED.

1. Periods of work should be reduced to no less then one hour time frames and separated by breaks intended to reduce personnel stress due to reduced natural ventilation from wearing protective clothing.

2. All personnel wearing level C protective clothing or greater, will be subject to medical monitoring of body temperature after work periods, by the following guidelines;

a. Heart Rate (HR) should be measured by counting the radial pulse rate for 30 seconds and doubling count for the correct pulse rate. This should be done as early as possible in the resting period. The HR at the beginning of the rest period should not exceed 110 beats per minute. If the HR is higher, the next work period should be shortened by 10 minutes, while the length of the rest period remains the same. If the HR is 100 beats per minute at the beginning of the next rest period, the following work period should be shortened by an additional 10 minutes.

b. Body temperatures should be measured orally with a clinical thermometer as soon as possible in each resting period. Oral Temperatures (OT) should not exceed 99 degrees Fahrenheit. If it does, the next work period should be reduced by 10 minutes while the length of the resting period remains the same. If the OT exceeds 99 degrees Fahrenheit at the beginning of the next work period, the following work period should be reduced by an additional 10 minutes. OT should be measured at the end of each rest period to ensure that the body's temperature has dropped below 99 degrees Fahrenheit.

Body Water Loss (BWL) from sweating, could result in dehydration and further complications and stress on personnel working in protective clothing under adverse weather conditions. It is strongly recommended that plenty of stress relief beverages be available on site to replace body fluids. Commercial drink mixes that provide electrolyte balancing solutions or water are adequate for replacing body fluids.

Alternate methods of heat stress reduction can be made available such as,

Portable showers or hose-down facilities,
Shelter cover to protect against direct sunlight,
Rotating teams of personnel wearing protective clothing,
Performing extremely arduous tasks early in the workday.

EMERGENCY INFORMATION

In the event of an injury or suspected chemical exposure, the first responsibility of the Project Manager will be to prevent any further injury. This objective will normally require an immediate stop to work until the situation is remedied. The Project Manager may order the evacuation of the work party. Other primary responsibilities in the event of an accident will be the first aid and decontamination of the injured team member(s). The injured party will be moved to a designated safe area and initial first aid will be rendered.

Employees are asked to make every effort and take personnel responsibility to prevent accidents involving machinery or any other aspect of the job, either by individual action or by notifying the Project Manager immediately of any unsafe condition that may exist.

In the event of an unexpected hazardous material discovery on site, the following actions will be taken by any employee involved;

1. The person having uncovered the unexpected material will notify the Project Manager and other workers of the danger. The site will be cleared of personnel if deemed necessary by the Project Manager. If site evacuation is required, appropriate local agencies such as the Fire Department or Health Department will be notified as well.

2. Immediate action will be taken to contain the hazardous material, provided the workers involved are properly attired with adequate protective clothing to avoid exposure.

3. Proper containment procedures will be determined for the hazardous material encountered prior to cleanup commencing. All personnel involved in the containment effort will be properly protected to prevent exposure. Backup personnel will be similarly protected while monitoring the work being done for any additional dangers.

4. The container(s) will be staged on site, away from the major activity areas and in such a way that if loss of containment occurs, the material will be withheld from further spread by a secondary containment berm or vessel.

5. The owner or agent controller of the property will be notified promptly of the incident and will be apprised as to the options available for proper disposal.

EXPOSURE SYMPTOMS AND FIRST AID

EXPOSURE ROUTE	SYMPTOMS	FIRST AID
Skin	Dermatitis, itching redness, swelling	Wash immediately with soap and water contact ambulance if evacuation is needed.
Eyes	Irritation, watering	Flush with water, transport directly to emergency room, if necessary.
Inhalation	Vertigo, tremors	Move person to fresh air, cover source of exposure.
Ingestion	Nausea, vomiting	Call Poison Control Center, DO NOT INDUCE VOMITING, transport to medical facility.

Local Resources:
HEALTH AND SAFETY CONTACT FOR ASE:

David Allen
Office: (925) 820-9391

Police: **911**
Fire: **911**

POISON CONTROL: SF (415) 476-6600
SJ (800) 798-0720

ROUTE TO NEAREST HOSPITAL

SOUTH on Hesperian Boulevard
LEFT onto W. Tennyson Road
LEFT onto CALAROGA AVENUE
HOSPITAL IS ON THE RIGHT SIDE

Hospital: ST. ROSE HOSPITAL
27200 CALAROGA AVENUE, HAYWARD, CA

(510) 782-6200

AQUA SCIENCE ENGINEERS INC.

HAZARDOUS MATERIALS SITE SAFETY PLAN

The below signed personnel have read this plan, understand it's contents and agree to follow the guidelines set forth;

EMPLOYEE NAME (print)	SIGNATURE	DATE

aqua science engineers inc.

FAX BEING SENT BY:

Aqua Science Engineers, Inc.
208 W. El Pintado Road
Danville, CA 94526
Phone (925) 820-9391
Fax (925) 837-4853

DATE: 11/12/98

TO: Mr. Robert Weston

FROM: Dave Allen

NUMBER OF PAGES TO FOLLOW: 8

**********Please Phone If This Fax Is Received Incomplete**********

MESSAGE:

Workplan for Hutchis. The health and safety plan will be included in the mailed copy.

Thanks,
Dave