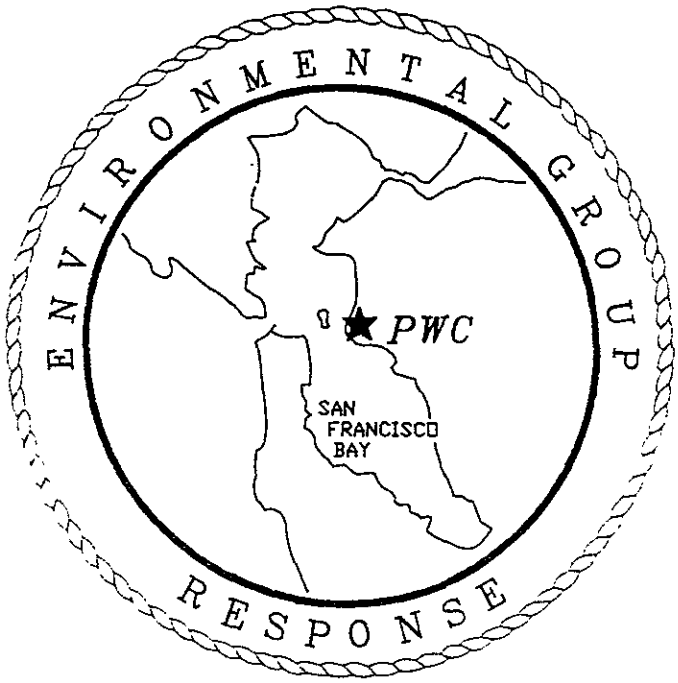
TANK CLOSURE PLAN
FOR THE REMOVAL OF TANK 109-1
PARKS RESERVE FORCES TRAINING AREA (PARKS RFTA), DUBLIN, CA
May 1994



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BACKGROUND INFORMATION

Introduction

The purpose of this closure project is to safely and permanently remove UST B-109-1, examine and remediate as required the extent of contamination, if any, prior to properly back filling the excavation.

This Tank Closure Plan contains the necessary information required to obtain a tank excavation and removal permit prior to commencement of the removal of one underground storage tank (UST) at the RFTA at Camp Parks. The plan includes background information, a site specific Health and Safety Plan, and other information required by the Alameda County Health Care Services Agency Department of Environmental Health, Hazardous Materials Division.

The Navy Public Works Center San Francisco Bay (PWCSFB) will be the prime contractor removing the tank. All work is being conducted on behalf of the RFTA Camp Parks. The removed tanks and piping will be emptied, transported and disposed of as Hazardous Waste (HW) by a licensed Hazardous Waste (HW) contractor. Soil and ground water sampling will be done by PWCSFB and the analysis will be performed by Sequoia Analytical (or other equal laboratory certified by the State of California).

Scope of Work

The UST's, associated piping, holding straps and electrical wiring will be excavated and removed by PWCSFB personnel and heavy equipment operators who have the training (see training certificates in Health and Safety Plan (Appendix A), and experience required by the Federal, State and Local authorities. The removed tanks will be emptied, transported and disposed of as Hazardous Waste (HW) by a licensed contractor. As applicable, the tank cleaning, triple rinsing and inerting with 15-20 lbs dry ice per 1,000 gallon tank capacity, will be done by the subcontractor in their state permitted facility. The soil and ground water sampling will be conducted by PWCSFB, and the analysis will be performed by Sequoia Analytical. The handling of excavated soil and water contamination, if any, will be accomplished as indicated in the attached Health and Safety Plan. For a more detailed description of the Scope of Work, see the Health and Safety Plan.

APPENDIX A

Health & Safety Plan

1.0 INTRODUCTION

1.1 Purpose

This Health and Safety Plan has been prepared to outline the minimum required standards to be applied to the site. The Health and Safety Plan will be followed by the Navy Public Works Center, San Francisco Bay (PWCSFB) and their sub-contractors during their involvement in this project. Job site name and address:

Parks RFTA,
Building 109
Dublin, CA 94568

This plan includes the required environmental and safety controls, job hazard analysis and site safety control required to execute this project.

1.2 Site Description

The Parks Reserve Forces Training Area (Parks RFTA) is adjacent to the East Bay city of Dublin, 45 miles from San Francisco and 18 miles southeast of Oakland near the intersection of Highways 580 and 680. Camp Park is presently used as a training area for more than 16,000 Army Reserve and National Guard soldiers assigned to some 215 units in the bay area. This camp consist of 2,268 acres, 635 of which are used for administration, support and logistics. The remaining 1,633 acres are used for small unit field training and small arms weapons training and are predominantly open space and hilly. UST'S B-109-1 and associated piping to be removed in this project were uncovered by a previous contractor. The tank was not known to exist until the contractor punctured it while demolishing Building 109. The tank is currently approximately half uncovered. Limited information is available on the history of the tank. The tank was used as a fuel source to power an incineration unit.

1.3 Key Personnel and Responsibilities

Engineer in Charge (EIC) - Hemant Patel (510) 302-5417 has the overall responsibility for the administration of the design and construction, he or his designee will also serve as EIC.

Construction Foreman/Site Safety Officer - Gil Fletcher or his designee (510) 302-6593 has the overall responsibility for the coordination of the tank removal project.

Project Team Leader/Site Safety Officer - Carlos Butler, (510) 302-6593 has the overall responsibility for the assembly and coordination of the tank removal team, equipment and material required to execute the tank removal, sampling, and disposal. He will also serve as the site Safety and Health Officer. Technical

assistance will be provided by Code 956AV.

Emergency Coordinator - Carlos Butler or his designee (510) 302-6593 will be the site emergency coordinator until the Camp Parks Fire Department arrives on scene. The Camp Parks Fire Department, Chief Calvin Hardy (510) 828-3817, has the responsibility to coordinate security/fire and spill dispatching (510) 828-3817 in routine and emergency situations. Call 911 for emergency fire or large spill.

Safety Specialist - Aida Villagracia (510) 302-5453 will be the technical consultant and will assist in oversight and implementation of the health and safety plan and related health and safety issues.

1.4 Subcontractor Operations

Navy GFE personnel WILL NOT certify contractor operations which involve confined or enclosed spaces, except where failure to do so would create an extreme emergency, endangering PWCSFB personnel and/or property, in which case authorization of the Commanding Officer shall be obtained.

When Navy and contractor personnel occupy the same space, the space shall be gas freed by the Navy GFE personnel; the contractor shall be informed, in writing, that he retains legal obligation for inspection and testing required to ensure the safety of his/her personnel, and that contractor personnel shall not be permitted to enter the space until testing by the contractor's competent person using appropriate equipment is completed and documented.

1.5 Background Characteristics

Tank #	Age	Type	Size (Gal)	Original Content	Present Content
B-109-1	Unknown	Steel	3,000	Diesel	<100 gallons of sludge

2.0 DESCRIPTION OF WORK REQUIREMENTS AND METHODS (WORKPLAN)

PWCSFB Environmental Engineering (Code 950) has prepared the permit application and closure plan. The Safety Department (Code 09A) prepared and will implement the Health and Safety Plan.

2.1 Site Preparation

Prior to any excavation work, PWCSFB Code 957 surveyors or if feasible, the U.S.A. CO. will lay out all under ground utilities in the vicinity of the tank site and identify the utilities that might interfere with the work, including overhead lines within 20 feet distance minimum.

Samples have been collected from the sludge and analyzed by Sequoia Analytical, a California state certified laboratory.

PWCSFB Code 958 will break the concrete and asphalt and put the debris aside for reuse or disposal as needed.

2.2 Tank Emptying

The tank will be emptied of its content prior to excavation, as practicable. PWCSFB Code 958 will pump and remove remaining hazardous materials from the tank. Tank contents will be appropriately characterized and disposed. Any hazardous waste (HW) will be removed and handled pursuant to the applicable provisions of 40 CFR 261-265, CCR Title 22 and Chapter 6.5 of division 20 of the health and safety code.

2.3 Tank Cleaning

Prior to tank removal, if significant quantities of sludge are present, the tank may require rinsing. PWCSFB may rinse the tank as needed to reduce the vapor content below the Lower Explosive Limit (LEL). If tank entry is required, strict adherence to Occupational Safety and Health Agency (OSHA) confined space entry requirements will be necessary. If PWCSFB adds a cleaner to the tank to remove residual product within the tank on-site prior to disposal, the cleaning agent will be documented. The HW contractor shall be considered the generator of cleaning rinse generated after transportation to his facility. He will use his HW Generator's Identification Number if cleaning is done at the contractor's permitted facility. The rinsate will be analyzed and disposed of as HW unless the analysis shows otherwise.

2.4 Tank Inerting

If tank monitoring with a LEL meter indicates that the tank contains flammable or combustible vapors in excess of 10%, the tank will require purging. Purging ignitable vapors will be performed in accordance with the local fire department requirements. An example of a generally accepted method

performed by the PWCSFB Gas Free Engineer (GFE) is to fill the tank with a minimum of 15 pounds of solid dry ice (CO_2) per 1,000 gallons of tank volume. The dry ice is broken to provide good evaporation. All openings are capped, except for a 1/8 - 1/4 inch pressure relief hole in one cap. If regulations require, the tank will be certified "gas free" by a PWCSFB qualified GFE and a copy of the test result filed in the work plan. Additionally, gas from CO_2 cylinders may be added to the tank to purge remaining flammable vapors.

2.5 Excavation and Removal

After the tank is emptied, PWCSFB Heavy Equipment Division, Code 959 will excavate around the perimeter of the tank to a distance of approximately 3 feet. The asphalt, concrete, and/or soil will be removed and placed away from the excavation.

The soil will be stored separately from any asphalt or concrete. In the case of suspected, known, or obvious soil contamination, the soil will be placed on a plastic sheets, covered, labeled and posted with precautions for site security. Disposal will be conducted in accordance with applicable regulations.

The Alameda County Health Care Services Agency, Hazardous Materials Division, will be contacted for site inspection at least 48 hours prior to commencement of the tank closure work. The BAAQMD (415-771-6000) will also be contacted five days prior to any tank removal. Any organic compound aeration will be conducted in accordance with BAAQMD Regulation 8 Rule 40.

After the tank top and sides are exposed, connecting pipes (vent, fill, suction, etc.) will be emptied and removed to allow the tank to be pulled from the excavation. For piping that cannot be removed, the ends of lines will be capped. Particular care will be used to ensure removed pipes do not spill any hazardous materials into the excavation or surrounding soil. Care will also be taken in removing the tank from the ground to reduce the possibility of spilling any residual tank contents into the excavation and surrounding areas.

The excavated asphalt, concrete and/or soils will be stockpiled while laboratory analysis of soil and/or groundwater samples are being completed. Barricades will be placed around the excavation at a distance sufficient to prevent erosion, caving and sloughing into the excavation from vehicle traffic. PWCSFB Code 958 will provide shoring as needed. Pedestrian hazards and personnel safety are also a major concern.

2.6 Tank Disposal

The UST and associated piping will be transported and disposed by a licensed hazardous waste contractor. The tank hauler will ensure enough dry ice remains in the tank to keep the

tank inert until the tank is offloaded and final treatment occurs. The tank and associated piping will be removed and disposed pursuant to the applicable provisions of Chapter 6.5 of Division 20 of the Health and Safety Code. Additionally, cleaning at the HW subcontractors permitted facility may render the tank non-hazardous.

2.7 Site Sampling

Soil and ground water samples will be collected from the excavation pit by PWCSFB to determine if contamination is present. If visible soil or ground water contaminations is present after tank removal, the contaminated soil will be analyzed and excavated. After excavation of contaminated soil, additional soil and ground water samples will be collected to determine the remaining level of contamination. When laboratory analysis of soil samples indicate that acceptable levels of contaminants remain in the excavation pit, it will be backfilled with clean soil. Soil samples will be collected from both ends of the tank, underneath every twenty feet of piping, and from ground water as encountered. Sequoia Analytical (or equal) will analyze soil and groundwater samples as necessary, during excavation.

2.8 Investigation

After the tank is removed, soil samples will be taken from within the excavation. Two soil samples will be taken from one to two feet below the soil surface under the tank. The soil will be analyzed for hazardous constituents identified from the tank contents and regulatory agency policy. If there is water within the excavation water samples will be collected and analyzed for the same parameters. A composite sample will be taken from the excavated soil to determine if the soil is acceptable as backfill. If the soil or water do not indicate any hazardous constituents beyond regulatory action levels the site will be backfilled and restored upon approval of the regulatory agency(s) involved. If the samples indicate hazardous constituents beyond regulatory action levels, a site investigation will be required to determine the extent of contamination and characteristics of the site.

2.9 Site Restoration

If no contamination is found or if the contamination has been sufficiently removed, the excavation will be backfilled and restored. Approval from the Alameda County Hazardous Materials Division will be obtained prior to restoration. Any soil that is not contaminated with hazardous material will be returned to the excavation upon regulatory approval. PWCSFB will replace disturbed concrete and asphalt surfaces.

If contamination is found, the excavation will be lined with plastic and filled with new fill. A site investigation will be

required to determine the extent of contamination and characteristics of the site.

3.0 RISK ANALYSIS

3.1 Chemical Hazards

The following chemicals have been identified in the sludge inside the tank and may be present in the soil surrounding the tank:

Napthalene - also known as napthalin, tar camphor, white tar. In excessive exposures, it can cause dermatitis, jaundice, headache among other things. It's route of exposure is through inhalation, absorption, ingestion and skin contact. The organs affected are the skin, red blood cells, central nervous system, eyes. It is not considered a carcinogen. OSHA PEL is 10 ppm.

Diesel - the routes of exposure here is through inhalation, ingestion and skin contact. High exposure levels may affect the skin and central nervous systems. Symptoms include depression, irritation of skin and mucous membranes and hypersensitivity.

Fluorene - the routes of entry for this chemical are through inhalation, skin contact, and ingestion of contaminated water. In excessive exposure, the chemical is considered a mutagen. 1981 exposure standard was 0.2 mg/m^3 in coal tar pitch.

2-methylnaphthelene - No OSHA PEL

Phenanthrene - the routes of exposure this chemical are through skin contact and inhalation. Signs and symptoms include burning and irritation of the eye. OSHA PEL is 0.2 mg/m^3

3.2 Physical Safety Hazards

Physical injuries may due to proximity of workers to engine-driven heavy equipment and tools, site activities and conditions. Heavy equipment used during the excavation will include PWCSFB backhoe and/or excavator. Only trained PWCSFB personnel will operate machines, tools and equipment. All equipment will be kept clean and in good repair as part of the PWCSFB Shop Operations Procedures (SOP). Standard operating procedures are included in Appendix A1. Safety apparel required around heavy equipment will include a hard hat, safety shoes, glasses, coveralls and gloves.

3.2.1 Clearing/Grading/Site Survey

Includes mobilization, site walk-through, site surveys, and sampling grid layout.

Hazards:

- Back strain from clearing vegetation and carrying equipment.
- Irritation from dust generated from excavation and soil clearing.
- Driving vehicles, placing trailers, and collecting rubbish on uneven surfaces creates a possibility of the vehicle rolling, getting stuck in the soil, or of an accident due to flat tires or striking obstacles.
- Crushing or pinching hazard due to trailer placement.

Hazard Prevention:

- Back strain can be prevented by frequent breaks in routine. Use slow, even, movements and proper lifting techniques (i.e., with the legs). Use gloves to reduce the incidence of hand injury and blisters.
- Wet the soil with water to reduce dust exposure.
- A site surveillance should be performed on foot to choose a clear driving path to prevent accidents from uneven terrain, obstacles.
- Seatbelts shall be worn at all times.
- All heavy equipment shall have the safety features outlined in OSHA 29 CFR 1910/1926 Subpart O.

3.2.2 Soil Excavations

Hazards:

- Exposure to airborne contaminants released during intrusive activities. Flammable atmospheres encountered in excavation.
- Falling during access/egress or while monitoring, or stumbling into excavation.
- An overhead hazard can result from material, tools, rock, and/or soil falling into the excavation.

Hazard Prevention:

- Monitor for airborne contaminants and use personal protective equipment.
- Provide ramps or ladders into trench to allow safe access and egress.

- Provide an adequate barrier around open pits. Material from pit must be placed away from edge to prevent cave in and instability of pit.

3.2.3 Air Sampling/Monitoring

Hazards:

- Electrical hazards as a result of power sources to run sampling pumps.
- Placing sampling pumps in elevated areas or areas where slip/trip and fall hazards exist.
- Exposure to contaminants being released by intrusive activities.
- Readings indicating nonexplosive atmospheres, low concentrations of toxic substances, or other conditions may increase or decrease suddenly, changing the associated risks.
- Air sampling matrix solutions may be acidic or basic, causing a corrosive hazard, and broken glass collection tubes can cut hands if mishandled.

Hazard Prevention:

- Grounded plugs should be used when a power source is needed to reduce the hazard of electric shock.
- Generators or air pumps should be used in dry areas, away from possible ignition sources. Do not stand in water or other liquids when handling equipment. Electrical equipment shall conform with OSHA 1910.303(a), 1910.305(a), (f), (f)(3).
- Ground fault interrupters are used in the absence of properly grounded circuitry or when portable tools must be used in wet areas.
- Extension cords should be protected from damage and maintained in good condition.
- Air pumps should be placed within easy reach using an OSHA approved ladder, elevated platform or by placing the pump on the stake.
- Personnel should be thoroughly familiar with the use, limitations and operating characteristics of the monitoring instruments.
- Perform continuous monitoring in variable atmospheres.

- Use intrinsically safe instruments until the absence of combustible gases or vapors is anticipated.

- Proper protective clothing such as gloves and goggles should be used when handling corrosive substances. 15-minute eyewash/portable shower and first aid should be available. Handle and store corrosives in appropriate areas.

3.2.4 Heat/Cold Stress

Heat stress is considered a hazard due to the potential for work to be scheduled during summer months, the physical work load associated with construction activities, and the use of personal protective clothing. When ambient temperatures reach 70 F and workers are wearing impervious clothing, work/rest cycles will be scheduled on a regular basis and liquids with electrolytes will be available to replenish body fluids. Because of the incidence of heat stress depends upon a variety off factors, all workers, even those not wearing protective equipment, will be observed and encouraged to report any symptoms of heat stress. In addition, all personnel are specifically instructed to take breaks when they feel they are necessary. Cold Stress is not anticipated in this project.

3.2.5 Noise Hazards

Noise hazard maybe encountered in this project. Protective hearing devices are available to the employees when needed and at all times.

4.0 SITE CONTROL

4.1 Work Zone Definition

Three work zones shall be established at the Site. These zones are the Exclusion Zone, the Contamination Reduction Zone, and the Support Zone.

The Exclusion Zone is the area where contamination is likely to be present. Anyone who enters into this zone must have Level C personal protective equipment. No smoking, eating, drinking, matches/lighters are allowed in this zone. This zone requires check-in at the entrance and check-out at the exit.

The Contamination Reduction Zone is the area where personnel conduct personal and equipment decontamination. No smoking, eating, drinking, matches or lighters are allowed in this zone. Activities to be conducted in this zone will require Level C personal protective equipment.

The Support Zone is situated in clean areas where the chances of encountering hazardous materials or hazardous site conditions are minimal. Personal protective equipment is not required.

4.2 Underground Utilities

Underground utilities will be identified prior to the commencement of excavation. Overhead utilities will be identified and a minimum distance of 20 ft will be maintained at all times.

4.3 Buddy System

During all Level C activities or when some conditions present a risk to personnel, the implementation of the buddy system is mandatory. The buddy system requires at least two people to work as a team; each looking out for each other.

4.4 Site Communications Plan

Communications between field team and contact with personnel in the support zone is essential. The following communication systems will be available during activities at the Site.

- Cellular phone
- Whistle
- Hand signals

Personnel will also be familiar with the following emergency signals:

Signal	Definition
Hands clutching throat	Out of air/cannot breath
Hands on top of head	Need assistance
Thumbs up	OK/I am all right/I understand
Thumbs down	No/negative
Arms waving upright	Send backup support
Grip partners wrist	Exit area immediately

4.5 Traffic warning devices

Traffic warning devices shall be placed at all excavations which are adjacent to pedestrian or vehicle thoroughfares in accordance with the U. S. Department of Transportation Federal Highway Administration "Work Zone Traffic Control" standards and guidelines. Streets shall be blocked and rerouted with visible signs from 100 ft apart. If excavation is to remain overnight, standard trenching, shoring, guardrails, fences, or barricades shall be in place. Warning mediums shall be lighted at night. Alternately, excavations may be covered by steel plates anchored into the ground, with suitable ramping, where required. The steel plates must be able to withstand four times the maximum anticipated load. Notify Camp Parks Security Officer at 510/828-6817 and Fire Department at the same number for the street closure at the Camp Parks, Dublin.

5.0 AIR MONITORING

Approved sample collecting media and/or instrumentation will be used for personnel monitoring using any of the following instruments/methods, as appropriate, based on the judgment of the site Navy BUMED IH and/or Gas Free Engineer:

- o HNU
- o Combustible gas/oxygen meter
- o Draeger tubes for specific constituents

Specific methods that will be used depending on the actual field conditions or potential working conditions are the following:

- o Dust (total nuisance) - NIOSH 0500 method using tared 5um PVC filter with 25 l @ 15mg/m3 133l with 1.5-2.0 lpm rate of sampling with filter 225-8-01 or 225-8202 matched wt, field analyzed.
- o Dust (nuisance & respirable) - NIOSH 0600 method with tared 5um PVC plus cyclone media & 75l@5mg/m3 -1000l air volume with 1.7 lpm with filter 225-8-01 or 225-8202 matched weight.

All the above are to be analyzed by accredited laboratories.

5.1 Instrumentation

The equipment owner (Department Head) shall ensure that instrumentation and equipment consistent with the nature of the operations and potential exposures are available in sufficient and properly maintained quantities to meet the minimum needs. The GFE shall monitor the availability of equipment and other measuring devices. As a minimum, instruments for conducting the following tests shall be available:

- o Oxygen content.
- o Combustible atmospheres.
- o Toxic atmosphere - capability to test for known or potential exposures (e.g. CO, Carbon Dioxide (CO2), H2S etc).
- o Air flow - capability to test ventilation systems to ensure prescribed ventilation is being maintained.

5.2 Calibration

Instruments shall be maintained in good operating condition. As a minimum, the following procedures will be followed:

1. Instruments shall be calibrated in accordance with manufacturer's instructions.

2. Instruments shall be field calibrated before and after use.

3. Calibration records shall be maintained for each instrument.

NOTE: IF THE INSTRUMENT FAILS TO RESPOND OR RESPONDS INCORRECTLY TO KNOWN CALIBRATION CONDITIONS, THE INSTRUMENT SHALL BE REMOVED FROM SERVICE.

5.3 Maintenance

Maintenance of the monitoring equipment will be conducted in accordance with the manufacturers' recommendations. All monitoring with battery operated equipment will be initiated with the equipment fully charged. Monitoring equipment will be calibrated according to the manufacturer's specifications prior to each use, or more often as deemed necessary. The calibration will be checked after each use.

6.0 PERSONAL PROTECTIVE EQUIPMENT

Personnel wear protective equipment when response activities involve known or suspected atmospheric contaminant vapors, gases, or particulates that may be generated by site activities, or when direct contact with the skin-affecting substances may occur. Full facepiece respirators protect the lungs, gastrointestinal tract, and eyes against airborne toxicants. Chemical-resistant clothing protects the skin from contact with chemicals that can destructive or be absorbed.

The specific levels of protection and necessary components for each have been divided into four categories, Level A, Level B, Level C, and Level D, according to the degrees of protection afforded. The level of protection shall not exceed level C for this project. However, level A & B protection shall be available at all times, even if it is not used. Level C protection has been selected for this project. However, the level of chemical protective equipment will depend upon contaminants, degrees of contact, type and measured concentration of the chemical substance in the ambient atmosphere, its toxicity, and potential for exposure to substances in air, liquids, or other direct contact with material due to work being done.

When a significant change occurs, PPE shall be upgraded or downgraded based upon a change in site conditions or findings of investigations at that time. The hazards should be reassessed. Some indicators of the need for reassessment are:

- Commencement of new work phase.
- Change in job tasks during a work phase.
- Change of season/weather.
- When the temperature extremes or individual medical considerations limit the effectiveness of PPE.
- Contaminants other than those previously identified are encountered.
- Change in ambient levels of contaminants.
- Change in work scope which effects the degree of contact with contaminants.

6.1 Level A Protection

Level A protection should be worn when the highest level of respiratory, skin, and eye protection is needed. Level A is the primary level of choice when encountering known highly toxic chemicals, or toxic chemical with a high degree of hazard to the skin, or unknown chemicals/environments.

Level A Personal Protective Equipment:

- o OSHA and NIOSH approved pressure-demand, self-contained breathing apparatus (SCBA)
- o Fully encapsulating neoprene suit.
- o neoprene coverall
- o Butyl rubber gloves (inner)
- o neoprene gloves (outer)
- o Boots (inner) with steel toe and shank
- o neoprene boots (outer)
- o Hard hat (under suit)
- o cellular phones

Criteria for use of Level A:

- o Atmospheres that are IDLH levels, with a potential for severe skin hazard.
- o Known atmospheres or potential situations that would affect the skin or eyes, or could be absorbed into the body through these surfaces. Potential situations are those where vapors may be generated or splashing occurs through site activities.
- o The atmosphere contains less than 19.5% oxygen.
- o When the type(s) and/or potential concentration(s) of toxic substances are completely unknown.
- o When total vapor levels of unknown organic substances range from 500 to 1,000 PPM above background on air monitoring instruments such as an OVA or HNU.

6.2 Level B Protection

Level B protection should be worn when the highest level of respiratory protection is needed, but a lesser level of skin protection than Level A.

Level B Personal Protective Equipment:

- o MSHA/NIOSH approved pressure-demand, self-contained breathing apparatus (SCBA)
- o Long sleeved neoprene coverall with hood

- o Butyl rubber gloves (inner)
- o Neoprene gloves (outer)
- o Boots (inner) with steel toe and shank
- o Neoprene boots (outer)
- o Hard hat
- o cellular phones

Criteria for use of Level B:

- o Atmospheres with IDLH concentrations, but the chemical or its concentration in air does not present a severe skin hazard, or
- o Chemicals or concentrations involved do not meet the selection criteria permitting the use of air-purifying respirators.
- o The atmosphere contains less than 19.5% oxygen.
- o The work will generate high concentrations of vapors, gases or particulates, or splashes of material that will affect the skin.
- o Atmospheric concentrations of unidentified vapors or gases are indicated by direct readings on instruments such as GCI, PID, colorimetric indicator tube or similar instruments, but vapors and gases are not suspected of containing concentrations of skin toxicants.

6.3 Level C Protection

Level C protection should be worn when the criteria for using air-purifying respirators are met.

Level C Personal Protective Equipment:

- o OSHA/NIOSH approved full face air-purifying dual cartridges respirator with combination filters for organic vapors/acid gas/HEPA (yellow and purple stacked cartridge)
- o Tyvek clothing (overalls and long-sleeved jacket; hooded)
- o Tyvek coverall
- o Tyvek gloves (outer)
- o Rubber gloves (inner)

- o Boots (inner), steel toe and shank
- o Tyvek boots (outer)
- o Hard hat
- o 2-way radio communications (intrinsically safe)

Criteria for use of Level C:

- o The oxygen concentrations are not less than 20% by volume.
- o Measured air concentrations of identified substances will be reduced by the respirator below the substance's TLV and the concentration is within the service limit of the canister.
- o Atmospheric contaminant concentrations do not exceed IDLH levels.
- o Atmospheric contaminants, liquid splashes, or other direct contact will not adversely affect any body area left unprotected by chemical-resistant clothing.
- o Job functions do not require self-contained breathing apparatus.
- o Direct readings are a few PPMs above background on instruments such as PID, colorimetric indicator tube or similar instrument.
- o HNU readings are less than 1 ppm above background in the breathing zone.

6.4 Level D Protection

Level D protection should be worn only as a work uniform and not in any area with respiratory or skin hazards (no contaminants are present). Modifications of these levels are permitted, and routinely employed during site work activities to maximize efficiency.

Level D Personal Protective Equipment

- o Tyvex coveralls
- o Gloves
- o Steel toe and shank boots (inner)
- o Safety glass
- o Hard hat

Criteria for use of Level D:

- o HNU readings are less than 1 ppm above background in the breathing zone.
- o Combustible gas levels in the ambient air are less than 0% LEL. Oxygen levels are maintained at 16% & lower.
- o Draeger tube readings for specific constituents are below their corresponding TLVs.

6.5 Specific Safety Equipment

The Scott 2.2 SCBA or whatever is currently available at the supply system shall be chosen for use at work sites requiring SCBAs. Scott includes a full-face mask and 30-minute air supply in a back pack harness. However, this is not necessary for this job.

Eye wear - Safety eyeglasses and/or goggles shall be scratch resistant polycarbonate lens with side shields and brow guard. Eye wear shall be impact resistant, nylon frames and fog resistant glass/lens.

Hard hats - Shall be of durable polyethylene, lightweight, with headgear suspension to provide a snug fit.

Tripod, body harness, lifelines, lanyards, industrial safety belts shall be available when there is a potential for a fall.

Eye wash/shower stations are inside decontamination trailer located in the contamination reduction zone.

Respirators - As a minimum half mask or full mask with HEPA organic vapors/dusts/mists/cartridge with HEPA filter cartridge and a HEPA prefilter for potential exposure to organic vapors, gases and dusts shall be available. Masks shall be either supplied air or air purifying.

Hand gloves - Gloves with high permeation resistance shall be used to handle contamination, if any, and utility type gloves shall be used to absorb moisture and cushion the hands to prevent chafing.

In addition to tyvek coveralls, cloth coveralls shall be provided at all times for employees use.

Safety shoes - Steel toe shoes shall be worn at all times. Shoes shall be of skid resistant soles and cushioned insoles.

6.6 Respiratory Equipment

Since respiratory protection may be needed in this project, its availability for employee requests is required. It is expected that the entire operation shall require Level D protection, and at the most not beyond Level C. The kind of respirators available shall be of the following, in different name brands and models:

Half mask
Full face mask
Powered air purifying
Gas mask
Airline respirator
Pressure demand SCBA
Emergency escape unit

The cartridges and filters to be used is indicated below.

HEPA Organic Vapors, Organic vapors; dusts, fumes & mists
Dusts, Mists, Fumes/with a TWA not less than 0.05 mg/m3

All workers must receive Respirator Fit Test approved by HSO. See Appendix A1 for standard operating procedure.

6.7 SOP for Personal Protective Equipment (PPE): See Appendix A1.

The primary inspection of PPE in use at the site shall occur prior to immediate use and should be conducted by user.

6.8 In-Use Monitoring of Personal Protective Equipment

The wearer must understand all aspects of the clothing operation and its limitations. During equipment use, workers is encouraged to report any perceived problems or difficulties to site supervisor or HSO. These malfunctions include, but are not limited to:

- Degradation of the protective ensemble
- Perception of odors
- Skin irritation
- Unusual residues on personal protective equipment
- Discomfort such as resistance to breathing or fatigue due to respirator use.
- Interference with vision or communication
- Restriction of movement

- Personal responses such as rapid pulse, nausea, and chest pain.

7.0 DECONTAMINATION

Decontamination involves the orderly controlled removal of contaminants. All site personnel should minimize contact with contaminants in order to minimize the need for extensive decontamination. The HSO is responsible for monitoring decontamination procedures and determining their effectiveness. Decontamination shall be set up in reduction zone.

7.1 Equipment Decontamination

All equipment coming in contact with potentially contaminated material at the site shall be decontaminated prior to being removed from the site or being reused.

7.2 Personnel Protective Equipment Decontamination

Criteria for Level C Decontamination:

Step 1 Segregated equipment drop

Step 2 Boot cover and glove wash

Step 3 Boot cover and glove rinse

Step 4 Tape removal

Step 5 Boot cover removal

Step 6 Outer glove removal

Step 7 Suit and safety boot wash

Step 8 Suit and safety boot rinse

Step 9 Safety boot removal

Step 10 Splash suit removal

Step 11 Inner glove wash

Step 12 Inner glove rinse

Step 13 Face piece removal

Step 14 Inner glove removal

Step 15 Inner clothing removal

Step 16 Field wash

Step 17 Redress

Criteria for Level D Decontamination:

Step 1 Remove coveralls

Step 2 Remove gloves

Step 3 Wash hand and face

7.3 Disposition of Decontamination Wastes

All equipment and materials used for decontamination shall be separately disposed of in 55 gallon barrels and treated as hazardous waste.

Water used in decontamination may be collected in a portable 5,000 gallon tank. Rinse water placed in the tank and all barrels used in the decontamination area shall be labeled and collected on site for subsequent analysis and disposal.

Storage of PPE shall be away from dust, moisture, sunlight, damaging chemicals, extreme temperatures, and impact. PPE shall be stored and maintained in the support area.

8.0 GENERAL SITE HEALTH AND SAFETY AND WORK RULES

The following items are outlined as general guidelines governing all phases of work at Camp Parks:

1. No drinking, gambling, or illegal drugs shall be allowed on site. Anyone reporting to work under the influence of alcohol and/or illegal drugs shall be subjected to disciplinary action. Any employee under a physicians care and/or taking prescribed narcotics must notify the HSO and the site supervisor.

2. Personal protective equipment is required in designated areas. Such equipment may include, but is not limited to, respiratory protection, earplugs, hard hat, boots, gloves, safety glasses and coveralls.

3. Eating, drinking, smoking, and chewing gum or tobacco are allowed only in the support zone.

4. Changes in work practices or work rules shall be implemented only after approval by site supervisor and the HSO.

5. Construction equipment always has the right of way over regular vehicles.

6. All employees shall clean up at the end of their shift before leaving the site.

7. All protective clothing required shall be supplied by the HSO. None of this equipment shall be permitted to leave the site until the completion of the project.

8. Employees are responsible to clean and maintain the protective equipment issued to them. Any noted defects in the equipment shall immediately be reported to the HSO.

9. Employees shall listen for warning signals or construction equipment and shall yield to construction equipment.

10. All equipment operators shall pay deliberate attention to watching for workers on the ground who may be in their path and provide warning to these people before moving.

11. All workers shall follow emergency procedures explicitly.

12. Employees must report all injuries and/or illness to site supervisor. This includes minor or slight injuries.

9.0 CONDITIONS OF EMPLOYMENT

The following items are outlined as general guidelines governing the conditions of employment for all PWCSFB employees.

1. All prospective employees must pass a pre employment physical. Failure to submit to any additional medical surveillance requirements shall constitute grounds for non employment in this project and/or disciplinary actions.

2. All employees must participate in the air quality exposure monitoring program by wearing the personal monitors or sampling devices, if required and specified by the site HSO. Any employee refusing to participate in the program or who tampers with a sample shall be subject to disciplinary action.

3. No beards or long sideburns shall be allowed since they interfere with respiratory protection. Trimmed sideburns and mustaches are acceptable. All employees must report to work clean shaven when there is a potential need for the use of respiratory protection.

4. All employees must complete a required training program, including 40 hour "Hazwopper" training, prior to starting work.

5. All employees are required to use the PPE specified for their work. This may include, but is not limited to, a cartridge respirator, gloves, boots, hard hat, hearing protection, safety glasses, and coveralls.

6. All employees must abide by all safety rules and procedures as described in the work rules, developed throughout this project, and as discussed in daily tailgate safety meetings.

7. All employees shall perform their job assignments according to the "buddy" system within sight of co-workers being maintained at all times.

10.0 CONTINGENCY PLAN

10.1 Evacuation Routes/Procedures

In the event of an emergency which necessitates an evacuation of the site. The HSO should notify everyone on site to vacate the area verbally supplemented using the hand held radios. All personnel should evacuate upwind of any activities. Personnel will remain at that area for further instructions until the HSO authorizes to re-enter.

10.2 Emergency Medical Treatment Procedures

Any person who becomes ill or injured in the exclusion zone must be decontaminated to the maximum extent possible. If the injury or illness is minor, full decontamination should be completed and first aid administered prior to transport. If the patient's condition is serious, at least partial decontamination should be completed (i.e. complete disrobing of the victim and redressing in clean overalls or wrapping in the blanket). First aid should be administered while awaiting an ambulance or paramedics. All injuries and illnesses must immediately report to the project manager.

Any person being transported to a clinic or hospital for treatment should take with them list of chemicals (Chemical Hazards in Section 3.1, Risk Analysis of this Health and Safety Plan & the analytical results found in Appendix D) they have been exposed to at the site.

10.3 Fire or Explosion

In the event of a fire or explosion, the base fire department should be summoned immediately. Upon their arrival, the HSO will advise the fire chief of the location, nature, and identification of the chemicals on site.

Use fire extinguisher if it is safe to control or extinguish fire and remove flammable and hazardous materials which may contribute to the fire meanwhile awaiting for the fire crew arrival.

The following emergency equipment will be found in the decontamination trailer:

- o First aid kit
- o Fire extinguisher
- o Cellular phone
- o Eye wash
- o Emergency shower

10.4 Local Emergency Contacts

	ON BASE	OFF BASE
Ambulance	(510) 828-3817	911
Medical Clinic	(510) 828-5123	911
Valley Care Hospital	(510) 847-3000	911
Fire Department	(510) 828-3817	911
Security	(209) 998-4749	911

10.5 Hospital Emergency Route

Employees will be provided maps showing the route to Valley Care Hospital as it relates to the work site. (Appendix A2)

11.0 TRAINING REQUIREMENT

All personnel on-site shall have training and prior experience which meets the applicable requirements of 29 CFR 1910.120. In addition to annual Safety Training, all technical field personnel must received mandatory 40 hr Hazardous Waste Operations Training program which includes:

- o Chemical hazards
- o Physical hazards (heat stress, noise, material handling, etc.)
- o Hazard recognition
- o Toxicology
- o Permissible exposure limits
- o Personal protective equipment and protection levels
- o Respiratory protection (20 CFR 1910.134)
- o Air monitoring
- o Supervision of health and safety
- o Site control
- o Health and safety plans
- o Medical monitoring
- o OSHA compliance
- o Personnel training
- o Decontamination
- o Drum handling
- o Hazardous material sampling

All on-site personnel shall receive site-specific training which includes:

- o Site chemical hazards (including acute and chronic effects)
- o Site control and decontamination procedures
- o Contingency plan
- o Protection levels and equipment

- o Proper use and maintenance of protective equipment
- o Review of health and safety plan
- o Emergency route to hospital

Periodic on-site safety meetings must be held to inform site personnel of changes in the Health and Safety Plan, air monitoring results, PPE, evacuation route and other related information. Scheduling of these meetings shall be at minimum of once at start of work shift and as determined by the site HSO. All regulatory personnel and visitors needing access to an active work area shall be expected to demonstrate compliance with the applicable training requirements. The training certificates for personnel currently scheduled to execute this project are included in Appendix A3.

12.0 MEDICAL SURVEILLANCE

All on-site technical personnel are subject to a medical surveillance program which meets or exceeds the requirements or 29 CFR 1910.120. This includes an annual physical examination which includes:

- o Medical history
- o Physical examination
- o Urinalysis
- o Blood chemistry
- o Complete blood count including platelets and differential Pulmonary function test
- o Audiogram
- o Eye exam including glaucoma

All personnel hired specifically for work on-site receive a pre-employment examination which includes a chest X-ray in addition to the examination described above. End of employment physicals shall be conducted when the employee leaves the Federal service.

All visitors and regulatory personnel who will enter the active work areas are expected to demonstrate participation in a medical program which is equivalent to or exceeds the requirements of 29 CFR 1910.120.

13.0 DOCUMENTATION

The record-keeping program shall consist of the following documents containing the information described:

- Training/Safety Meeting Record - This record shall include the date, topics covered, persons attending, and the signature of the person holding the meeting or training session.

- OSHA 200 Log - This record contains the required information for recording on-site injuries and illnesses. This record is generated by the health and safety staff and a copy is maintained on-site.

- Medical Records - Employee medical records are maintained by the examining physician and copies are kept at the Oakland Army Base facility clinic, Oakland, California. No medical records are maintained on-site.

- Air Monitoring - Direct reading results instrumentation and any full duration monitoring shall be noted in the field log. Data included is location, time span, calibration method and results, instrumentation used, and weather factors. These logs shall contain the name of the person generating this data. A request form is included in Appendix A4.

- Tank inerting Documentation - The Gas Free Certificate is prepared in quadruplicate with copies distributed as follows:

  1. White - Post at job site. NOTE: COPIES Shall BE POSTED AT THE MAIN ENTRANCE OR MOST COMMONLY USED ACCESS TO THE SPACE.

  2. Yellow - Shop/unit requesting GFE services.

  3. Pink - PWCSFB GFE (Safety Office).

  4. Green - GFET Record file.

  GFE personnel shall place, as a minimum the following information on all certificates they issue:

  1. Time and date of tests.

  2. Time and date of expiration.

  3. Time and date of testing/retesting of certificate.

  4. GFE personnel performing tests.

  5. Location of space tested.

6. Type of operation to be conducted.

7. Category of conditions found to exist within the space.

8. Type and serial number of detection instrument used.

9. Atmosphere test results.

10. GFE personnel and work crew representatives signatures.

APPENDIX A1

Standard Operating Procedures

Standard Operation Procedure for Respiratory Protection Devices

Purpose: The following sections define the standard operating procedures for air purifying respirators.

Qualifications for Use

I. Medical Qualification

A. Supervisors shall insure that all personnel required to use respirators shall have a respiratory protection physical examination prior to use and annually thereafter.

B. The Occupational Medicine Division, Naval Hospital, Oakland shall determine medical qualifications policy and conduct the physical examination.

II. Fit Testing

A. Qualitative Fit Testing. The respirator is not functioning properly unless the air comes only through the cartridge(s), canister, or airline in the case of supplied air respirators. Each individual who is required to use a respirator shall be tested at time of initial fitting and annually thereafter except for those who work with or may be exposed to asbestos or lead which require semiannual testing. As a minimum, the following procedures shall be used to insure an adequate fit:

1. All respirators shall be donned in accordance with manufacturer recommendations.

2. The face piece seal shall be checked by the wearer each time the respirator is used. A positive or negative pressure test shall be used.

a. Positive Pressure Test. For most respirators place the palm of the hand or thumb over the exhalation valve and press lightly. Exhale gently to increase pressure inside the face piece. Respirator is properly fitted if no air leaks out around the edges and slight positive pressure can be felt inside the face piece.

b. Negative Pressure Test. Inhale while covering the cartridge or canister inlet lightly with the palm(s) of the hand(s) being careful to minimize pressure on the respirator. No air should leak into the face piece.

3. No respiratory protection equipment, except positive pressure supplied air hoods, where

appropriate, shall be worn by individuals when conditions such as beards, sideburns, etc., prevent a good face seal. Where the user's facial hair, etc. interferes with the proper performance of the respiratory protection equipment, the user (employee) shall be removed/transferred from his position until he can be satisfactorily fit tested and protected. Other items which may interfere with proper fit of the respiratory protection equipment could be a skull cap which projects under the face piece, temple pieces on eye glasses, or the absence of one or both dentures.

4. During respirator fit testing, isoamyl acetate (banana oil), saccharin mist or irritant smoke shall be used.

B. Quantitative Fit Testing. Respirators shall be quantitatively fit tested where facilities are available, and where legally required, respirators are used for protection against lead. Testing shall be conducted in accordance with the test equipment manufacturers instructions and in accordance with reference 15-1 of Navy regulations.

C. Recordkeeping . Respirator fit testing shall be documented and shall include the type of respirator, brand name and model, method of test and test date.

III. Training

A. All supervisors and Project Team Leaders shall ensure that personnel utilizing respirators shall be trained as specified in each project.

B. Training shall be conducted by a qualified instructor. Training shall usually be conducted by industrial hygienist or personnel who have attended NIOSH or OSHA courses on respiratory protection.

C. All supervisors and their personnel who will use or issue respiratory protection shall be instructed in its use.

D. Training shall include:

1. Information on airborne contaminants to which personnel may be exposed and the effect on health due to such exposures.

2. Discussion of the reason why a respirator is required in lieu of engineering controls and information concerning selection.

3. Proper selection of respirators and filter types, respirator capability, limitations and protection

factors.

4. Description of respirators construction, operating principles and limitations.

5. Respiratory protection equipment issue procedures.

6. Instructions in pre use inspection, fitting the respirator properly, and operating principles.

7. Storage, inspection, maintenance and cleaning of respirators.

8. Significance of and requirements for maintenance of NIOSH/MSHA approval.

9. Method of denoting end of service life of filters and periodic replacement.

10. Training shall be conducted prior to use for supervisors and their employees utilizing respiratory protection and annually thereafter.

11. During training, personnel shall be given an opportunity to handle the respirator, have it fitted properly, test its face piece to seal, wear it in ambient air for a familiarity period, and wear it in a test atmosphere.

IV. Maintenance and Care of Respirators

A. Inspection for Defects

1. All respirators shall be inspected routinely before and after each use. The respirator inspection shall include the condition of the face piece, head bands, valves, canister, and connection tubes, where applicable.

2. Respirators kept ready for emergency use shall be inspected after each use and at least monthly to assure that they are in satisfactory working condition. A record shall be kept of inspection dates and findings.

3. Self-contained breathing apparatus shall be inspected monthly. Air cylinders shall be fully charged according to manufacturer's instructions. It shall be determined that the regulator and warning devices function properly.

B. Cleaning and Disinfecting

1. Respirators, other than those for emergency use shall be turned in, cleaned, and disinfected as frequently as necessary, preferable daily, but at periods no longer than 30 days.

2. Respirators maintained for emergency use shall be cleaned and disinfected after each use.

3. Each respirator user should be briefed on the cleaning procedure and be assured that he/she shall always receive a clean and disinfected respirator.

4. Cleaning procedures shall be in accordance with the procedures set forth by the manufacturer and relevant Navy regulations. The elements of the cleaning procedure shall be:

a. Disassembly of the respirator.

b. Cleaning of the respirator, in cleaner disinfectant or detergent solution. Cleaner disinfectant shall be chosen in accordance with manufacturer's recommendations or as specified by the Safety Manager (Code 09A).

c. Rinsing with clean, warm water.

d. Drying in a clean area. Air Drying preferred.

e. Inspection of component parts.

f. Assembly of the respirator and replacement with approved new parts as necessary.

g. Placing respirator in a clean plastic bag and sealing.

C. Repair

1. Replacement shall be done only by trained, experienced persons with parts designed for the respirator.

2. No attempt shall be made to replace components or to make adjustments or repairs beyond the manufacturer's recommendations.

3. Reducing or admission valves on regulators shall be returned to the manufacturer or to a trained technician for adjustment or repair.

D. Storage

1. Cleaned respirators shall be stored to protect against dust, sunlight, heat, extreme cold, excessive

moisture or damaging chemicals.

2. Respirators shall be packed or stored so that the face piece and exhalation valve shall rest in a normal position and function shall not be impaired by the elastomer setting in an abnormal position.

E. Storage of Issued Respirators. Respirators issued to individuals shall be stored in a clean plastic bag, carton, or carrying case, as appropriate. The area selected for storage shall not be exposed to dust, sunlight, extreme heat or cold, excessive moisture or damaging chemicals, or in a location where they would be subjected to punctures.

IV. Purchase

A. All respirators purchased shall have NIOSH/MSHA approval.

B. To ensure that all parts furnished are approved, i.e., they are identical to those in the original model, style, and number, all replacement respirator component parts, filter, and cartridges shall be purchased from the same manufacturer who supplied the original respirator. Supervisors ordering replacement component parts for respirators shall include a "no substitute" clause in purchase requests, citing this instruction as the authority.

C. Respirators purchases shall be approved by the HSO.

V. Surveillance of Work Area. Supervisors who assign personnel to operations requiring the use of respiratory protection shall inspect the operation frequently to ensure that personnel are utilizing respirators when required. Supervisors shall also inspect the operation to ensure conditions of employee exposure have not changed.

VI. Respirator Issue

A. Respirators shall only be issued at PWC Tool Cribs.

B. Personnel engaged in issuing respirators shall be trained and familiarized with each type of respirator available to ensure that the correct respirator is issued. In cases of uncertainty, assistance shall be sought from the Code 09A Safety Office.

VII. Respirator Use

A. Only respiratory protective equipment specified by the HSO for this project shall be used.

B. Respirators shall be used as issued. No modifications or substitutions to issued equipment shall be permitted.

Any modification, no matter how slight, will result in voiding of respirator approval.

C. Respirators shall be used only by persons to whom issued.

D. Respirators shall be inspected prior to each use. If the respirator is found to be damaged, the employee shall bring the respirator to an appropriate tool crib for repair or replacement. Respirators infrequently used (including emergency use respirators) shall be inspected as least once a month.

E. Face fitting respirators shall not be worn when a condition, such as a beard or sideburns, or wearing a skull cap, prevents a good face seal.

F. The wearing of contact lenses with a respirator is not permitted. Individuals using corrective lenses shall not be permitted to wear respirators where the glasses temple bars interfere with the respirators seal.

Standard Operating Procedure for Personal Protective Equipment (PPE)

1. Clothing:

Before use:

o Determine that the clothing material is correct for the specified task at hand.

o Visually inspect for:

- imperfect seams
- non-uniform coatings
- tears
- malfunctioning closures

o Hold up to light and check for pinholes.

o Flex product:

- observe for cracks
- observe for other signs of shelf deterioration

o If the product has been used previously, inspect inside and out for signs of chemical attack:

- discoloration
- swelling
- stiffness

During the work task:

o Evidence of chemical attack such as discoloration, swelling, stiffening, and softening. Keep in mind, however, that chemical permeation can occur without any visible effects.

o Closure failure.

o Tears.

o Punctures.

o Seam discontinuities.

2. Gloves:

Before use:

o Visually inspect for:

- imperfect seams

- tears
- non-uniform coating
- pressurize glove with air; listen for pin-hole leaks

Standard Operating Procedure for Tank Closure Work

1. Inspect the job site.

2. Discuss necessary procedures and possible safety/health hazards with co-workers daily. Obtain necessary PPE (rubber boots, rubber gloves, safety glasses, tyveks, etc.).

3. Contact PWCSFB Code 959 to obtain proper equipment for excavation.

4. Notify necessary authorities for street closure or other necessary action (Security, Fire Department, etc.).

5. Barricade and Caution Tape area to be worked in.

6. Excavate using standard excavation SOP.

7. Empty tanks of any contents using a vacuum truck.

8. Remove excavated tanks, straps and associated piping.

9. Transport, triple rinse and cut up all tanks, straps and associated piping.

10. Remove shoring as in SOP.

11. Backfill and compact as in SOP.

12. Remove debris from area.

13. Contact PWCSFB Code 959 to transport and install steel plates if excavation is in a roadway.

14. If excavation is in lawn area, follow back filling SOP for reseeding and landscaping.

Standard Operating Procedure for Trenching

1. Before digging, utilities must be located.

2. On the day of the excavation, call Base Security at (510) 828-3817 to notify them of possible interim open excavations and manholes.

3. Traffic warning devices shall be placed at all excavations which are adjacent to pedestrian or vehicle thoroughfares in accordance with the U.S. Department of Transportation Federal Highway Administration "Work Zone Traffic Control" standards and guidelines.

4. Trenches over 4 feet deep must be shored or trench walls must be cut back to the angle of repose. Shoring may be required in unstable soil at depths less than 4 feet.

5. No one shall be allowed to enter an unshored trench, if shoring is required, as described above.

6. Shoring must be installed from the top down. It must be removed from the bottom up.

7. Sheeting must be flush with and extend above the trench walls.

8. Jacks or cross braces must be installed perpendicular to and firmly abutting straight stringers.

9. The ladder shall extend at least 3 feet above the top of the trench.

10. Utilities shall be exposed by hand digging.

11. Keep excavated soil, tools, and other material more than two feet from trench edge. Keep vehicles from trench edge.

12. No one shall be allowed under excavating, pipe handling and other heavy equipment.

13. Superimposed loads increase trench wall pressures. Underpinning may be needed near utility poles and trees.

14. If excavation is to remain overnight, standard guardrails, fences, or barricades shall be in place. Warning mediums shall be lighted at night. Alternately, excavations may be covered by steel plates anchored into the ground, with suitable ramping where required. The steel plates must be able to withstand 4 times the maximum anticipated load.

15. Daily inspect the trench for signs of failure, especially

after rainfall. Water and vibrations weaken trench walls. Pump out water accumulations.

16. Unless specified otherwise by the environmental closure plan, backfill the trench immediately after shoring is removed. Call Base Security at (510) 828-3817 done.

Standard Operating Procedure for Backhoe Operation

A pre-inspection of all equipment must be completed before operation of unit is begun. Listed below are the things that should be checked on every piece of equipment before any work is started and prior to leaving job site:

1. Check oil

2. Check water (if air cooled engine)

3. Transmission oil

4. Hydraulic fluid levels

5. Check tires for inflation and/or abnormal wear

6. Check all hoses

7. Check for leaks

8. Clean unit if necessary

9. Daily meetings shall be held with all on site to discuss procedure of the job for that day. Plan the job so that it can be accomplished the safest and most efficient way.

10. Check the area in which you will be working for possible problems including uneven terrains, utilities that pose a danger, including any overhead utilities.

11. Provide cones or barricades where construction is to take place both during and whenever the job site is vacated for any significant length of time. A flagman on the jobsite is not considered likely but may be required if necessary.

12. After job is completed or workers are securing for the day, cover any open holes or trenches, fence the excavation areas and rope off the construction area with caution tape. Lower all buckets or out-riggers to the ground and secure units in a safe location.

The following are responsibilities of the backhoe operator:

1. The operator is responsible to check equipment thoroughly using operator inspection guides and trouble reports of PWCSFB. Report any unusual malfunction or unsafe condition of equipment to the site supervisor.

2. Be on time for job assignments and make sure you understand what needs to be done, where and when to be

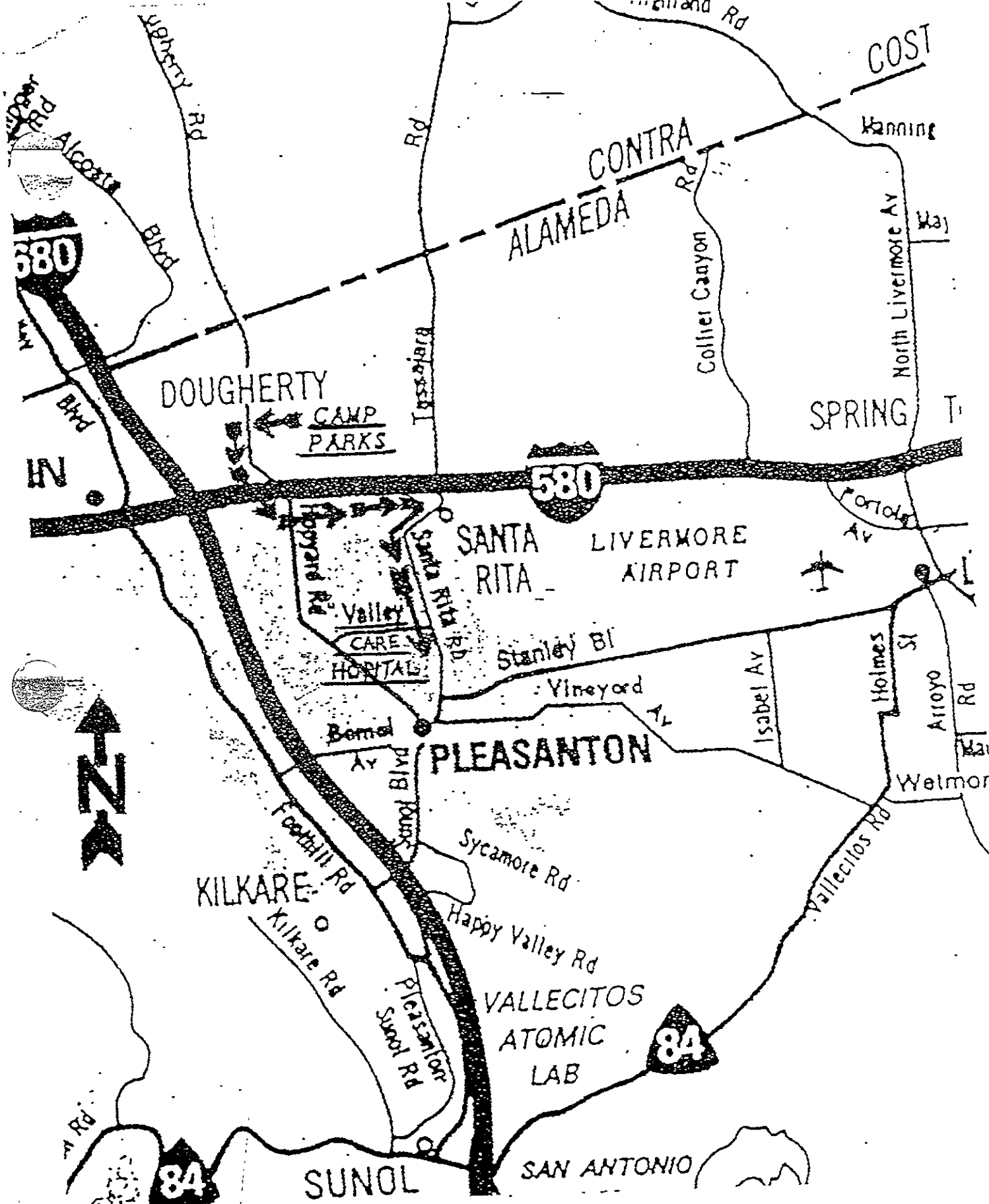
there. Use the most direct route to jobsite and when a delay is encountered, notify the site supervisor at the first opportunity available via radio or telephone.

3. When transporting soil or debris, ensure vehicle is not overloaded and material is secured from blowing dust and debris.

4. When picking up material from vendor with pump or dump trailers, pull onto scales to take in then follow vendor procedures for picking up the materials. At end of shift turn paper work into the site supervisor.

APPENDIX A2

Valley Care Hospital Route



EMERGENCY HOSPITAL ROUTE FROM CAMP PARKS
TO VALLEY CARE HOSPITAL
(AT 55 SANTA RITA ROAD, PLEASANTON)

APPENDIX A3

Training Certificates

Certificate of Completion

This Certifies That

Gil Fletcher

has successfully completed the

40 HR Installation Restoration

Health and Safety Course that Meets 29 CFR 1910.120(e)(3)(i)

Given this ***5th*** *day of* ***March, 1993***

T.M. Destafney, LCDR, CEC, USN
Environmental Officer
Naval Energy and Environmental
Support Activity, Port Hueneme, CA

Joseph W. Taylor, CDR, CEC, USN
Commanding Officer
Naval Energy and Environmental
Support Activity, Port Hueneme, CA

ERICKSON ENTERPRISES

May it be known that this **Certificate of Attendance** *has been presented to*

SCOTT COPPLER

for Successful Completion of

40 - Hour Hazwoper Training Course

Presented this 26th *day of* June, 92

Thomas Dorsch

Director of Risk Management & Safety

ERICKSON ENTERPRISES

May it be known that this **Certificate of Attendance** *has been presented to*

BURT COOPER

for Successful Completion of

40 - Hour Hazwoper Training Course

Presented this
26th day of
June, 92

Director of Risk Management & Safety

ERICKSON ENTERPRISES

May it be known that this ***Certificate of Attendance*** *has been presented to*

CARLOS BUTLER

for Successful Completion of

40 - Hour Hazwoper Training Course

Presented this
27th day of
March , 19 *92*

Director of Risk Management & Safety

Rice Services Institute, Inc.

RSI

Certificate of Training

CURTIS A. BROWN

has successfully completed

The Combined Resource Conservation Recovery Act (RCRA) and Hazardous Material/Waste Transportation Familiarization Course (4 1/2 days) (36 Hours)

conducted at

Naval Aviation Depot, Alameda, CA.

Susan J. Rice, Secretary/Treasurer

date completed

4 December 1992

Henry E. Rice, President

ERICKSON ENTERPRISES

May it be known that this ***Certificate of Attendance*** *has been presented to*

JOHN ATKINSON

for Successful Completion of

40 - Hour Hazwoper Training Course

Presented this
27th day of
March, 19 92

Director of Risk Management & Safety

APPENDIX A4

BUMED IH Request Form

6260
Date_____

MEMORANDUM

From:
To: NAVHOSP, IH Branch

Subj: INDUSTRIAL HYGIENE SERVICES

Code_____, PWCSFB requests Industrial Hygiene services regarding:

Lead_____ Asbestos_____ Other(name stressor/chem.)_____

Date of operation/process:_____

Location:_____

Pt. of Contact_____

Phone number:_____

BUMED reason for non-monitoring if not done_____

_____

Signed_____

Note: This form must be sent or called to IH at least 24 hours before the work starts. Their phone and fax numbers are as follows:

IH-OAB: 7-466-3631/2 FAX: 7-466-2917
IH-Moffett Field: 1-415-404-4664/54 or 1-415-404-8353/54
FAX: 1-415-404-4588
IH-Concord: 7-246-2933/4 Fax: 7-246-2716
IH-Mare Island: 1-707-646-9714/41 Fax: 1-707-646-2248

APPENDIX B

Worker's Compensation and License Exemption

Tank Closure Permit Application/Closure Plan

OWNER-BUILDER DECLARATION

I hereby affirm that I am exempt from the Contractor's License Law for the following reason
(Sec. 7031.5, Business and Professions Code: "Any city or county which requires a permit to construct, alter, improve, demolish, or repair any structure, prior to its issuance, also requires the applicant for such permit to file a signed statement that he is licensed pursuant to the provisions of the Contractor's Law [Chapter 9, commencing with Sec. 7000 of Division 3 of the Business and Professions Code] or that he is exempt therefrom and the basis for the alleged exemption." Any violation of Section 7031.5 by any applicant for a permit subjects the applicant to a civil penalty of not more than five hundred ($500) dollars.")

(✓) I, as owner of the property, or my employees with wages as their sole compensation, will do the work, and the structure is not intended or offered for sale.
(Sec. 7044, Business and Professions Code: "The Contractor's License Law does not apply to an owner of property who builds or improves thereon, and who does such work himself or through his own employees, provided that such improvements are not intended or offered for sale. If however, the building or improvement is sold within one year of completion, the owner-builder will have the burden of proving that he did not build or improve for the purpose of sale.")

(✓) I, as owner of the property, am exclusively contracting with licensed contractors to construct the project.
(Sec. 7044, Business and Professions Code: "The Contractor's License Law does not apply to an owner of property who builds or improves thereon, and who contracts for such projects with a contractor licensed pursuant to the Contractor's License Law.")

( ) I am exempt under Sec. _____ B & PC for this reason:

Date: 8/12/92 Owner: Harley Rucker

WORKER'S COMPENSATION DECLARATION

I hereby affirm that I have a certificate of consent to self-insure, or a certificate of Worker's Compensation Insurance, or a certified copy thereof (Sec. 3800, Lab. C).

Policy No. N/A Company THE FEDERAL GOVERNMENT IS SELF INSURED

( ) Copy is hereby furnished.
( ) Copy is filed with the Santa Clara County Building Department.
Date: N/A

Tank Closure Permit Application/Closure Plan

CERTIFICATE OF EXEMPTION FROM WORKER'S COMPENSATION INSURANCE

(This section need not be completed if the permit is for one hundred [$100] dollars or less.) I certify that in the performance of the work for which this permit is issued, I shall not employ any person in any manner so as to become subject to the Worker's Compensation Laws of California.

Date: N/A Applicant: N/A

NOTICE TO APPLICANT: If, after making this Certificate of Exemption, you should become subject to the Worker's Compensation provisions of the Labor Code, you must forthwith comply with such provisions or this permit shall be deemed revoked.

CONSTRUCTION LENDING AGENCY
I hereby affirm that there is a construction lending agency for the performance of the work for which this permit is issued (Sec. 3097, Civ. C).

Lender's Name N/A

Lender's Address N/A

8/16/92
Date

Pacifico M. Ocampo
Signature of Applicant

APPENDIX C

Underground Storage Tank Unauthorized Release (Leak)/Contamination Site Report

DEPARTMENT OF THE ARMY
PARKS RESERVE FORCES TRAINING AREA
BUILDING 790
DUBLIN, CALIFORNIA 94568-5201

REPLY TO ATTENTION OF:

March 24, 1994

Office of the Commander

SUBJECT: Spill Release Notification

Alameda County Department of Environment
Hazardous Materials Divsion, Room 200
Attention: Ms. Elaine Olson
80 Swan Street
Oakland, CA 94621

Dear Ms. Swan:

The following information is submitted:

Identity of Caller: Mervin Alley, (510) 829-8780.

Location: Camp Parks; Date: 22 March 1994; 1300 hours.

Substance and quantity involved: Diesel fuel.

Description of what happened: Contractor demolishing old incinerator building 109 unearthed a previously unknown 3000 gallon underground fuel tank on Friday, 18 March. On Tuesday, 22 March, oil was discovered leaking from puncture holes in the tank into an adjacent 12 foot deep pit. On the same day, Petroleum Recycling Company was called and pumped 442 gallons of oil from the pit and emptied the tank of another 1,077 gallons of oil. Arrangements were made with Navy Public Works Center, Oakland to remove the tank and clean up the site.

Mervin Alley
MERVIN ALLEY
Facilities Mgt Spec

APPENDIX D

Copies of Analytical Results and Chain of Custody Reports

Sequoia Analytical

680 Chesapeake Drive, Redwood City, CA 94063, (415) 364-9600, FAX (415) 364-9233
1900 Bates Avenue, Suite L, Concord, CA 94520, (510) 686-9600, FAX (510) 686-9689
819 Striker Avenue, Suite 8, Sacramento, CA 95834, (916) 921-9600, FAX (916) 921-0100

Navy Public Works Center	Client Project ID:	H02928, Chit #424	Sampled: May 10, 1994
NPWC-Code 613, P.O. Box 24003	Sample Descript:	Water, B-109	Received: May 11, 1994
Oakland, CA 94623-1003		Camp Parks, B-109	Analyzed: see below
Attention: Mona McCarty	Lab Number:	4E61401 COC #1	Reported: May 12, 1994

LABORATORY ANALYSIS

Analyte	Date Analyzed	Detection Limit	Sample Result
Flash Point, °C	5/11/94	25	>100

Analytes reported as N.D. were not present above the stated limit of detection.

SEQUOIA ANALYTICAL

M Balatti

Mario A. Balatti
Project Manager

D1

Sequoia Analytical

680 Chesapeake Drive, Redwood City, CA 94063, (415) 364-9600, FAX (415) 364-9233
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819 Striker Avenue, Suite 8, Sacramento, CA 95834, (916) 921-9600, FAX (916) 921-0100

Navy Public Works Center	Client Project ID:	H02928, Chit #424	Sampled:	May 10, 1994
NPWC-Code 613, P.O. Box 24003	Sample Matrix:	Water, Camp Parks, B-109	Received:	May 11, 1994
Oakland, CA 94623-1003	Analysis Method:	EPA 3550/8015	Reported:	May 12, 1994
Attention: Mona McCarty	First Sample #:	4E61401		

TOTAL EXTRACTABLE PETROLEUM HYDROCARBONS (Diesel)

Analyte	Reporting Limit mg/kg	Sample I.D. 4E61401 B-109 COC #1
Extractable Hydrocarbons	1.0	560,000
Chromatogram Pattern:		Diesel

Quality Control Data

Report Limit Multiplication Factor:	20,000
Date Extracted:	5/12/94
Date Analyzed:	5/12/94
Instrument Identification:	GCHP-5A

Extractable Hydrocarbons are quantitated against a fresh diesel standard.
Analytes reported as N.D. were not detected above the stated reporting limit.

SEQUOIA ANALYTICAL

M. Balatti

Mario A. Balatti
Project Manager

4E61401.NPW <2>

D2

Sequoia Analytical

680 Chesapeake Drive, Redwood City, CA 94063, (415) 364-9600, FAX (415) 364-9233
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819 Striker Avenue, Suite 8, Sacramento, CA 95834, (916) 921-9600, FAX (916) 921-0100

Navy Public Works Center	Client Project ID:	H02928, Chit #424	Sampled:	May 10, 1994
NPWC-Code 613, P.O. Box 24003	Sample Descript:	Water, B-109	Received:	May 11, 1994
Oakland, CA 94623-1003	Analysis Method:	EPA 8270	Extracted:	May 11, 1994
Attention: Mona McCarty	Lab Number:	4E61401 COC #1 Camp Parks, B-109	Analyzed:	May 12, 1994
			Reported:	May 12, 1994

SEMI-VOLATILE ORGANICS by GC/MS (EPA 8270)

Analyte	Detection Limit µg/Kg	Sample Results µg/Kg
Acenaphthene	100,000	N.D.
Acenaphthylene	100,000	N.D.
Anthracene	100,000	N.D.
Benzoic Acid	500,000	N.D.
Benzo(a)anthracene	100,000	N.D.
Benzo(b)fluoranthene	100,000	N.D.
Benzo(k)fluoranthene	100,000	N.D.
Benzo(g,h,i)perylene	100,000	N.D.
Benzo(a)pyrene	100,000	N.D.
Benzyl alcohol	100,000	N.D.
Bis(2-chloroethoxy)methane	100,000	N.D.
Bis(2-chloroethyl)ether	100,000	N.D.
Bis(2-chloroisopropyl)ether	100,000	N.D.
Bis(2-ethylhexyl)phthalate	500,000	N.D.
4-Bromophenyl phenyl ether	100,000	N.D.
Butyl benzyl phthalate	100,000	N.D.
4-Chloroaniline	100,000	N.D.
2-Chloronaphthalene	100,000	N.D.
4-Chloro-3-methylphenol	100,000	N.D.
2-Chlorophenol	100,000	N.D.
4-Chlorophenyl phenyl ether	100,000	N.D.
Chrysene	100,000	N.D.
Dibenz(a,h)anthracene	100,000	N.D.
Dibenzofuran	100,000	N.D.
Di-N-butyl phthalate	500,000	N.D.
1,3-Dichlorobenzene	100,000	N.D.
1,4-Dichlorobenzene	100,000	N.D.
1,2-Dichlorobenzene	100,000	N.D.
3,3-Dichlorobenzidine	500,000	N.D.
2,4-Dichlorophenol	100,000	N.D.
Diethyl phthalate	100,000	N.D.
2,4-Dimethylphenol	100,000	N.D.
Dimethyl phthalate	100,000	N.D.
4,6-Dinitro-2-methylphenol	500,000	N.D.
2,4-Dinitrophenol	500,000	N.D.
2,4-Dinitrotoluene	100,000	N.D.
2,6-Dinitrotoluene	100,000	N.D.

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Navy Public Works Center	Client Project ID:	H02928, Chit #424	Sampled:	May 10, 1994
NPWC-Code 613, P.O. Box 24003	Sample Descript:	Water, B-109	Received:	May 11, 1994
Oakland, CA 94623-1003	Analysis Method:	EPA 8270	Extracted:	May 11, 1994
Attention: Mona McCarty	Lab Number:	4E61401	Analyzed:	May 12, 1994
		Camp Parks, B-109	Reported:	May 12, 1994

SEMI-VOLATILE ORGANICS by GC/MS (EPA 8270)

Analyte	Detection Limit µg/Kg	Sample Results µg/Kg
Di-N-octyl phthalate	100,000	N.D.
Fluoranthene	100,000	N.D.
Fluorene	100,000	320,000
Hexachlorobenzene	100,000	N.D.
Hexachlorobutadiene	100,000	N.D.
Hexachlorocyclopentadiene	100,000	N.D.
Hexachloroethane	100,000	N.D.
Indeno(1,2,3-cd)pyrene	100,000	N.D.
Isophorone	100,000	N.D.
2-Methylnaphthalene	100,000	2,100,000
2-Methylphenol	100,000	N.D.
4-Methylphenol	100,000	N.D.
Naphthalene	100,000	570,000
2-Nitroaniline	500,000	N.D.
3-Nitroaniline	500,000	N.D.
4-Nitroaniline	500,000	N.D.
Nitrobenzene	100,000	N.D.
2-Nitrophenol	100,000	N.D.
4-Nitrophenol	500,000	N.D.
N-Nitrosodiphenylamine	100,000	N.D.
N-Nitroso-di-N-propylamine	100,000	N.D.
Pentachlorophenol	500,000	N.D.
Phenanthrene	100,000	410,000
Phenol	100,000	N.D.
Pyrene	100,000	N.D.
1,2,4-Trichlorobenzene	100,000	N.D.
2,4,5-Trichlorophenol	500,000	N.D.
2,4,6-Trichlorophenol	100,000	N.D.

Analytes reported as N.D. were not present above the stated limit of detection. Because matrix effects and/or other factors required additional sample dilution, detection limits for this sample have been raised.

SEQUOIA ANALYTICAL

M Balatti

Mario A. Balatti
Project Manager

D4

Sequoia Analytical

680 Chesapeake Drive, Redwood City, CA 94063, (415) 364-9600, FAX (415) 364-9233
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819 Striker Avenue, Suite 8, Sacramento, CA 95834, (916) 921-9600, FAX (916) 921-0100

Navy Public Works Center	Client Project ID:	H02928, Chit #424	Sampled: May 10, 1994
NPWC-Code 613, P.O. Box 24003	Sample Descript:	Water, B-109	Received: May 11, 1994
Oakland, CA 94623-1003	Analysis Method:	EPA 8240	Analyzed: May 12, 1994
Attention: Mona McCarty	Lab Number:	4E61401 COC #1	Reported: May 12, 1994
		Camp Parks, B-109	

VOLATILE ORGANICS by GC/MS (EPA 8240)

Analyte	Detection Limit µg/Kg	Sample Results µg/Kg
Acetone	500,000	N.D.
Benzene	100,000	N.D.
Bromodichloromethane	100,000	N.D.
Bromoform	100,000	N.D.
Bromomethane	100,000	N.D.
2-Butanone	500,000	N.D.
Carbon disulfide	100,000	N.D.
Carbon tetrachloride	100,000	N.D.
Chlorobenzene	100,000	N.D.
Chloroethane	100,000	N.D.
2-Chloroethyl vinyl ether	500,000	N.D.
Chloroform	100,000	N.D.
Chloromethane	100,000	N.D.
Bromochloromethane	100,000	N.D.
1,1-Dichloroethane	100,000	N.D.
1,2-Dichloroethane	100,000	N.D.
1,1-Dichloroethene	100,000	N.D.
cis-1,2-Dichloroethene	100,000	N.D.
trans-1,2-Dichloroethene	100,000	N.D.
1,2-Dichloropropane	100,000	N.D.
cis-1,3-Dichloropropene	100,000	N.D.
trans-1,3-Dichloropropene	100,000	N.D.
Ethylbenzene	100,000	N.D.
2-Hexanone	500,000	N.D.
Methylene chloride	250,000	N.D.
4-Methyl-2-pentanone	500,000	N.D.
Styrene	100,000	N.D.
1,1,2,2-Tetrachloroethane	100,000	N.D.
Tetrachloroethene	100,000	N.D.
Toluene	100,000	N.D.
1,1,1-Trichloroethane	100,000	N.D.
1,1,2-Trichloroethane	100,000	N.D.
Trichloroethene	100,000	N.D.
Trichlorofluoromethane	100,000	N.D.
Vinyl acetate	100,000	N.D.
Vinyl chloride	100,000	N.D.
Total Xylenes	100,000	N.D.

Analytes reported as N.D. were not present above the stated limit of detection. Because matrix effects and/or other factors required additional sample dilution, detection limits for this sample have been raised.

SEQUOIA ANALYTICAL

M. Balatti

Mario A. Balatti
Project Manager

4E61401.NPW <5>

Sequoia Analytical

680 Chesapeake Drive, Redwood City, CA 94063, (415) 364-9600, FAX (415) 364-9233
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Navy Public Works Center	Client Project ID:	H02928, Chit #424	Sampled: May 10, 1994
NPWC-Code 613, P.O. Box 24003	Sample Descript:	Water, B-109	Received: May 11, 1994
Oakland, CA 94623-1003		Camp Parks, B-109	
Attention: Mona McCarty	Lab Number:	4E61401 COC #1	Reported: May 12, 1994

INORGANIC PERSISTENT AND BIOACCUMULATIVE TOXIC SUBSTANCES

Analyte	Soluble Threshold Limit Concentration (Waste Extraction Test) STLC Max. Limit (mg/L)	Detection Limit (mg/L)	Analysis Result (mg/L)	Total Threshold Limit Concentration TTLC Max. Limit (mg/L)	Detection Limit (mg/L)	Analysis Result (mg/L)
Antimony	15	0.10	N.D.	500	0.10	-
Arsenic	5	0.10	N.D.	500	0.10	-
Barium	100	0.10	10	10,000	0.10	-
Beryllium	0.75	0.010	N.D.	75	0.010	-
Cadmium	1	0.010	N.D.	100	0.010	-
Chromium (VI)	5	0.0050	N.D.	500	0.0050	-
Chromium	560	0.010	N.D.	2,500	0.010	-
Cobalt	80	0.050	N.D.	8,000	0.050	-
Copper	25	0.010	0.12	2,500	0.010	-
Lead	5	0.10	9.7	1,000	0.10	-
Mercury	0.2	0.00050	N.D.	20	0.00020	-
Molybdenum	350	0.050	N.D.	3,500	0.050	-
Nickel	20	0.050	N.D.	2,000	0.050	-
Selenium	1	0.10	N.D.	100	0.10	-
Silver	5	0.010	N.D.	500	0.010	-
Thallium	7	0.10	N.D.	700	0.10	-
Vanadium	24	0.050	N.D.	2,400	0.050	-
Zinc	250	0.010	0.67	5,000	0.010	-
Asbestos	-	10	-	10,000	10	-
Fluoride	180	0.10	-	18,000	0.10	-

Asbestos results are reported as fibers/g.
Analytes reported as N.D. were not present above the stated limit of detection.

SEQUOIA ANALYTICAL

Mario A. Balatti
Project Manager

4E61401.NPW <6>

D6

Sequoia Analytical

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Navy Public Works Center
NPWC-Code 613, P.O. Box 24003
Oakland, CA 94623-1003
Attention: Mona McCarty

Client Project ID: H02928, Chit #424
Matrix: Solid
QC Sample Group: 4E61401

Reported: May 12, 1994

QUALITY CONTROL DATA REPORT

ANALYTE	Diesel	Beryllium	Cadmium	Chromium	Nickel	Mercury
Method:	EPA 8015	EPA 200.7	EPA 200.7	EPA 200.7	EPA 200.7	EPA 254.1
Analyst:	AN	CM	CM	CM	CM	MS
MS/MSD Batch#:	BLK051294	9405791-2	9405791-2	9405791-2	9405791-2	9405274-2
Date Prepared:	5/12/94	5/19/94	5/19/94	5/19/94	5/19/94	5/17/94
Date Analyzed:	5/12/94	5/16/94	5/16/94	5/16/94	5/16/94	5/18/94
Instrument I.D.#:	GCHP-5A	MTJA-2	MTJA-2	MTJA-2	MTJA-2	MV-1
Conc. Spiked:	3000 mg/kg	1.0 mg/L	1.0 mg/L	1.0 mg/L	1.0 mg/L	0.0020 mg/L
Matrix Spike % Recovery:	100	101	102	101	99	90
Matrix Spike Duplicate % Recovery:	*	99	100	98	97	94
Relative % Difference:	*	2.0	2.0	3.0	2.0	4.3
LCS Batch#:		Blk051694	Blk051694	Blk051694	Blk051694	STLC051394
Date Prepared:		5/16/94	5/16/94	5/16/94	5/16/94	5/17/94
Date Analyzed:		5/16/94	5/16/94	5/16/94	5/16/94	5/18/94
Instrument I.D.#:						MV-1
LCS % Recovery:		102	103	102	103	96
% Recovery Control Limits:	38-122					

* Waste-Dilution

Please Note:
The LCS is a control sample of known, interferent free matrix that is analyzed using the same reagents, preparation, and analytical methods employed for the samples. The matrix spike is an aliquot of sample fortified with known quantities of specific compounds and subjected to the entire analytical procedure. If the recovery of analytes from the matrix spike does not fall within specified control limits due to matrix interference, the LCS recovery is to be used to validate the batch.

SEQUOIA ANALYTICAL

M. Balatti

Mario A. Balatti
Project Manager

4E61401.NPW <7>

D7

Sequoia Analytical

680 Chesapeake Drive, Redwood City, CA 94063, (415) 364-9600, FAX (415) 364-9233
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Navy Public Works Center
NPWC-Code 613, P.O. Box 24003
Oakland, CA 94623-1003
Attention: Mona McCarty

Client Project ID: H02928, Chit #424
Matrix: Solid
QC Sample Group: 4E61401

Reported: May 12, 1994

QUALITY CONTROL DATA REPORT

ANALYTE	1,1-Dichloroethene	Trichloroethene	Benzene	Toluene	Chloro-benzene
Method:	EPA 8240	EPA 8240	EPA 8240	EPA 8240	EPA 8240
Analyst:	L. Duong	L. Duong	L. Duong	L. Duong	L. Duong
MS/MSD Batch#:	V4E47103	V4E47103	V4E47103	V4E47103	V4E47103
Date Prepared:	5/11/94	5/11/94	5/11/94	5/11/94	5/11/94
Date Analyzed:	5/11/94	5/11/94	5/11/94	5/11/94	5/11/94
Instrument I.D.#:	MS-F3	MS-F3	MS-F3	MS-F3	MS-F3
Conc. Spiked:	2500 µg/kg	2500 µg/kg	2500 µg/kg	2500 µg/kg	2500 µg/kg
Matrix Spike % Recovery:	72	84	80	84	84
Matrix Spike Duplicate % Recovery:	72	84	84	88	88
Relative % Difference:					
LCS Batch#:					
Date Prepared:					
Date Analyzed:					
Instrument I.D.#:					
LCS % Recovery:					
% Recovery Control Limits:	DL-234	71-157	37-151	47-150	37-160

Please Note:
The LCS is a control sample of known, interferent free matrix that is analyzed using the same reagents, preparation, and analytical methods employed for the samples. The matrix spike is an aliquot of sample fortified with known quantities of specific compounds and subjected to the entire analytical procedure. If the recovery of analytes from the matrix spike does not fall within specified control limits due to matrix interference, the LCS recovery is to be used to validate the batch.

SEQUOIA ANALYTICAL

Mario A. Balatti
Project Manager

4E61401.NPW <8>

PUBLIC WORKS

NAVY PUBLIC WORKS CENTER
SAN FRANCISCO BAY
P.O. BOX 24003
OAKLAND, CA. 94623

CHEMICAL ANALYSIS CHAIN OF CUSTODY FORM H 528

CUSTOMER: U.S. ARMY | PROJECT # | CHIT# 424

LOCATION/SITE: B-109, CAMP PARKS | DATE: 5/10/94 | PERMIT # | JON: 158(10

SAMPLE ID	DESCRIPTION MATRIX	DATE/TIME	PRESERVATIVE HNO_3	NAOH	H_2SO_4	HCL	NONE	CONTAINER TYPE	ANALYSIS REQUIRED
B109-LIQ	LIQUID	5/10/94 @ 3:10					X	AMBER GLASS	METALS, FULL TPH, FLASH, VOLATILES & SEMI-VOLATILES

COMMENTS:

TURN AROUND TIME:
ROUTINE
24 HR.
WEEKEND

RELINQUISHED BY: David C. Tedrow
DELIVERED BY: David C. Tedrow
RECEIVED IN OFFICE BY: [illegible] 5/11/94 @ 0900
RECEIVED BY LAB REP:
RECEIVED IN LAB BY:

SAMPLER SIGN: David C. Tedrow
DATE/TIME: 5/10/94 15:05

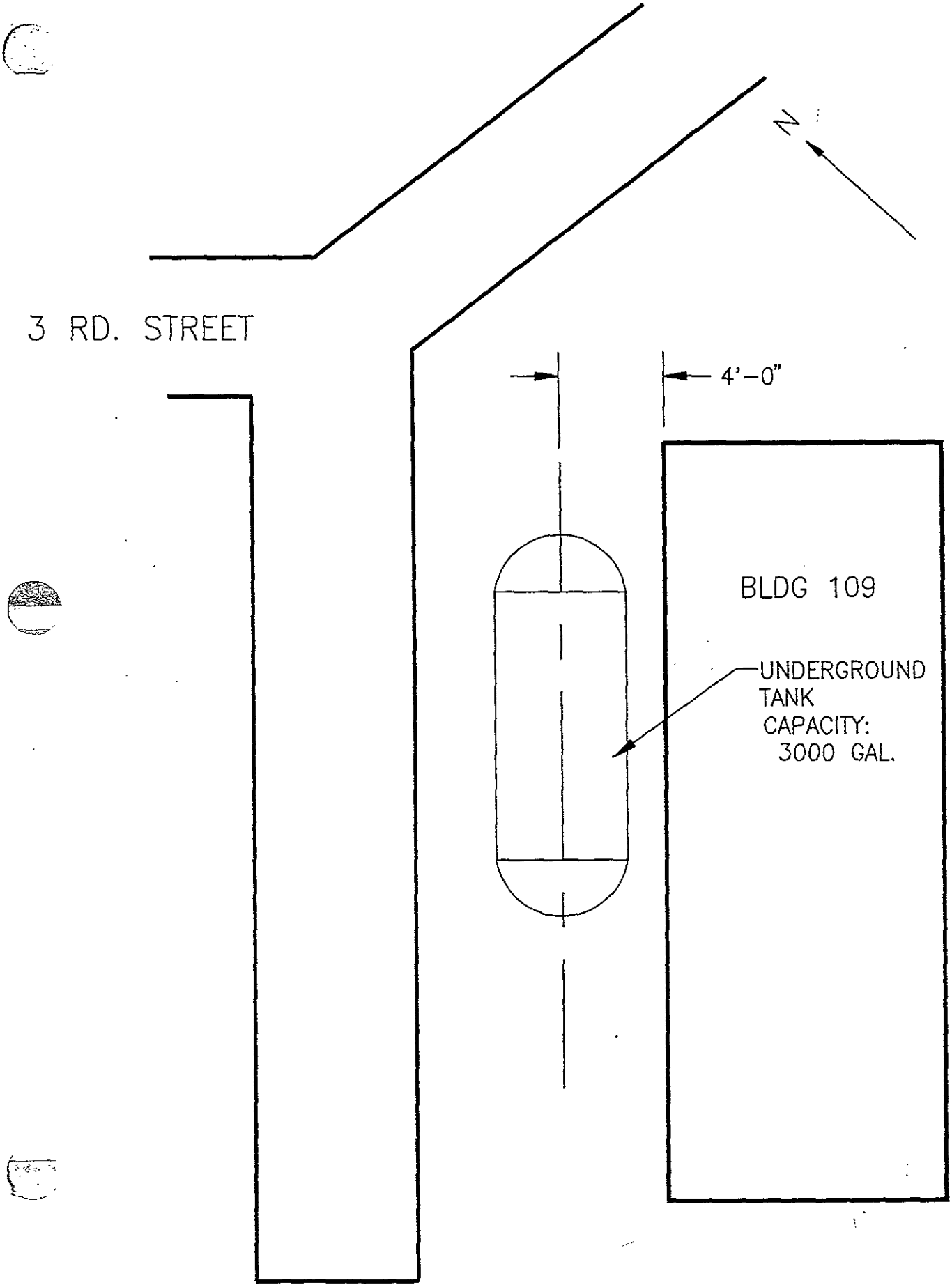
COPY TO CUSTOMER

APPENDIX E

Figures

BLDG NO. BLDG 109

J.O. 1586125



DRAWING NOT TO SCAL

DEPARTMENT OF THE NAVY
NAVY PUBLIC WORKS CENTER
SAN FRANCISCO BAY
P.O. BOX 24003
OAKLAND, CALIFORNIA 94623-0003

IN REPLY REFER TO:

ENVIRONMENTAL DEPARTMENT

FACSIMILE TRANSMISSION RECORD

FAX COVER SHEET

TO:

DEPT/CODE: Alameda County

ATTN: Eva Chu

PHONE: 271-4320

FAX: 569-4757

FROM:

DEPT/CODE: ** *ENVIRONMENTAL DEPARTMENT* **

NAME: H. Rotel

PHONE: 302-5417

FAX (510) 302-4285

WE ARE TRANSMITTING 3 *PAGES INCLUDING THIS COVER PAGE*

ADDITIONAL INFORMATION

We would like to pull the tank on Friday @ 1:30. Please give me a call. If I am not @ my desk please leave a message.