PACIFIC RIM ENVIRONMENTAL

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Site Health & Safety Plan

Removal of Underground Fuel Storage Tank EF-10 Berth 63 1395 Middle Harbor Road Oakland, California 94607

Prepared By:

Pacific Rim Environmental
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Taimi Barty
Site Safety Officer

Reviewed by:

Mimi D'Iorio
Director of Health and Safety

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1.0 SITE HEALTH AND SAFETY PLAN (HASP) DATA FORM

Pacific Rim Project #: 7100

Client: Port of Oakland
530 Water Street
Jack London's Waterfront
Oakland, CA 94604-2064

Site Name: Port of Oakland, Tank EF-10, Berth 63
Address: ~~1640 N Street, Merced, CA~~ ? 1395 Middle Harbor Rd. Oakland 94607

Site History: One underground storage tank containing diesel product is to be removed from the above referenced site. The tank has a capacity of four thousand (4,000) gallons and is constructed of steel.

SCOPE OF WORK:

Describe Briefly: Pacific Rim Environmental will mobilize its equipment and begin project. The overlying concrete and overburden soil covering the tank will be removed and stockpiled on site. ~~The tank will be removed by a truck licensed to haul hazardous wastes.~~ The pit will be backfilled and resurfaced. immediately ?

The following personnel are responsible for safety and health on this project:

Project Manager: Taimi Barty

Site Safety Officer: Taimi Barty

Field Supervisor: John Carver

Principal: John Carver

Director of Health and Safety: Mimi D'Iorio

REVIEW AND APPROVAL DOCUMENTATION:

Reviewed By: Mimi D'Iorio

Mimi D'Iorio
Director of Health and Safety

6/22/95
Date

Approved By: Donald James

Project Supervisor

6-22-95
Date

1.1 PURPOSE

This document has been prepared to serve as the site specific Health and Safety plan for the identified tasks relating to work encountering petroleum hydrocarbon products. The purpose of this document is to provide consistent and comprehensive procedures to protect human health and safety of PACIFIC RIM ENVIRONMENTAL (Pacific Rim) personnel, subcontractors, and the public during these field activities. Through this plan, it is expected that the high standard of PACIFIC RIM safety will be maintained by ensuring consistent application of the safety practices described herein.

1.2 SCOPE AND APPLICABILITY

This Health and Safety Plan has been developed to cover selected activities relating to petroleum hydrocarbon projects. This plan applies only to petroleum hydrocarbon products such as gasoline, diesel fuel, heating fuels, lubricants, turbine fuel, or waste oil. Tasks involving chemicals or materials other than those mentioned are NOT covered under this plan. Therefore, this plan applies to the following activities.

- Field Survey / Walkover
- Drilling / Boring/ Sampling
- Well Installation / Monitoring / Maintenance
- Soil Gas Survey
- Aquifer Pump Test
- Tank Removal
- Excavation/ Trenching

This plan is valid only when used to support the identified activities, and will not be accepted for use on projects other than described.

2.0 HAZARD IDENTIFICATION

The job safety analysis of the physical and chemical hazards encountered on petroleum hydrocarbon sites can be found in TABLE 2.1. These hazard controls have been put into summary form for ease of use in the field.

2.1 JOB SAFETY ANALYSIS

Precautions must be taken to prevent injuries and exposures to the following potential health hazards.

TABLE 2.1
POTENTIAL HAZARDS AND CONTROL

Potential Hazard	Control
Exposure to Petroleum Products	1. Stand up-wind of petroleum products whenever possible. 2. Minimize contact and contact time with petroleum products. 3. Avoid walking through discolored areas, puddles, leaning on drums, or contacting anything that is likely to be contaminated. 4. Do not eat, drink, smoke, and/or apply cosmetics in the hot or warm zones. 5. Wear gloves when in contact with contaminated surfaces. 6. Safety glasses must be worn at a minimum. 7. Splash goggles must be worn when working with liquids. 8. >50 ppm organic vapors in breathing zone requires upgrade to Level C. 9. >500 ppm organic vapors in breathing zone requires upgrade from Level C to Level B. 10. If unknown materials are encountered, call the HSR.
Vehicular Traffic	1. Wear traffic safety vest when vehicle hazard exists. 2. Use cones, flags, barricades, and caution tape to define work area. 3. Use vehicle to block work area. 4. Engage police detail for high-traffic situations.
Vault Entry	1. Follow confined space entry procedures. 2. Obtain confined space entry permit. Post sign. 3. Remove vault cover using proper lifting techniques. 4. Promote natural ventilation by opening the space to fresh air. 5. Conduct remote air monitoring prior to entry. 6. Have standby attendant if necessary. 7. Enter if safe; conduct continuous air monitoring.
Inclement Weather	1. Stop outdoor work during electrical storms and other extreme weather conditions such as extreme heat or cold temperatures. 2. Take cover indoors or in vehicle. 3. Listen to local forecasts for warnings about specific weather hazards such as tornadoes, hurricanes, and flash floods.
Noise	1. Wear hearing protection when equipment such as a drill rig, jackhammer, cut saw, air compressor, blower, or other heavy equipment is operating on the site. 2. Wear hearing protection whenever you need to raise your voice above normal conversational speech due to a loud noise source; this much noise indicates the need for protection.

(more)

TABLE 2.1
POTENTIAL HAZARDS AND CONTROL

Potential Hazard	Control
Electric Shock	1. Maintain appropriate distance from overhead utilities; 20-foot minimum clearance from power lines required; 10-foot minimum clearance from shielded power lines. 2. Use ground-fault circuit interrupters as required. 3. Perform lockout/tagout procedures. 4. Use three-pronged plugs and extension cords. 5. Contact your local underground utility-locating service. 6. Follow code requirements for electrical installations in hazardous locations.
Physical Injury	1. Wear hard hats and safety glasses when on site. 2. Maintain visual contact with the equipment operator and wear orange safety vest when heavy equipment is used on site. 3. Avoid loose-fitting clothing (driller and driller's helper). 4. Prevent slips, trips, and falls; keep work area uncluttered. 5. Keep your hands away from moving parts (i.e. augers). 6. Test the emergency shutoff switch on the drill rig daily.
Back Injury	1. Use a mechanical lifting device or a lifting aid where appropriate. 2. If you must lift, plan the lift before doing it. 3. Check your route for clearance. 4. Bend at the knees and use leg muscles when lifting. 5. Use the buddy system when lifting heavy or awkward objects. 6. Do not twist your body while lifting.
Heat Stress	1. Increase water intake while working. 2. Increase number of rest breaks and/or rotate workers in shorter work shifts. 3. Watch for signs and symptoms of heat exhaustion and fatigue. 4. Plan work for early morning or evening during hot months. 5. Use ice vests when necessary. 6. Rest in cool, dry areas. 7. In the event of heat stroke, bring the victim to a cool environment and initiate first aid procedures.
Cold Stress	1. Take breaks in heated shelters when working in extremely cold temperatures. 2. Remove the outer layer of clothing and loosen other layers to promote evaporation of perspiration, upon entering the shelter. 3. Drink warm liquids to reduce the susceptibility to cold stress.
High Crime Areas	1. Be aware of surroundings. 2. Use the buddy system. 3. Request police detail when appropriate.
Insects	1. Tuck pants into socks. 2. Wear long sleeves. 3. Use insect repellent.

(more)

TABLE 2.1
POTENTIAL HAZARDS AND CONTROL

Potential Hazard	Control
Poisonous Plants (such as poison ivy, oak, or sumac)	1. Don't enter areas infested with poisonous plants. 2. Immediately wash any areas that come into contact with poisonous plants.
Ladders	1. Make sure ladder rungs are sturdy and free of cracks. 2. Use ladders with secure safety feet. 3. Pitch ladders at a 4:1 ratio. 4. Secure ladders at the top when possible. 5. Do not use ladders for access to air stripper towers. 6. Use non-conductive ladders near electrical wires.
Fire Control	1. Smoke only in designated areas. 2. Keep flammable liquids in closed containers. 3. Keep site clean; avoid accumulating combustible debris such as paper. 4. Follow Hot Work Safety Procedures when welding or performing other activities requiring an open flame. 5. Isolate flammable and combustible materials from ignition sources. 6. Ensure fire safety integrity of equipment installations according to Hazard Classification Diagram.
Static Electricity	1. Do not create static discharge in flammable atmosphere. 2. Electrically bond and ground pumps transfer vessels, tanks, drums, bailers, and probes when moving liquids. 3. Electrically bond and ground vacuum trucks and the tanks they are emptying. 4. Do not splash fill containers with flammable liquids.
Tank Removal:	1. Employ method such as inerting or purging the tank interior to allow for safe removal. 2. Prepare for safe dispersion of vapors. 3. Continously monitor the tank before cutting or moving. O_2 ↓ 8%, LEL ↓ 20%.

2.2 CHEMICAL HAZARDS

In petroleum hydrocarbon activities, flammability and explosion hazards are of paramount concern. Precautions will be taken to eliminate build-up of combustible vapors by properly purging or inerting tanks and venting displaced vapors. During these operations, all potential sources of ignition will be removed from the area. Frequent monitoring with a combustible gas indicator (CGI) is required. Additional explosion potential is present during drilling operations.

Due to lower vapor pressures and higher flashpoints, diesel fuel and heating oils do not present the extreme explosion hazard as that of gasoline. However, vapors from these fuels can accumulate in confined or low-lying spaces and, in the presence of an ignition source, cause an explosion. Benzene, toluene, ethyl benzene, and xylenes are regular constituents of gasoline, and present the potential for ill health affects. Routes of exposure include inhalation, ingestion, and absorption through the skin and eyes. When high concentrations of these chemicals are inhaled, symptoms of intoxication may result. These symptoms, ranging from simple dizziness to excitement or unconsciousness, are similar to those produced by alcohol or anesthetic gases. If such effects occur, the individual should be removed to fresh air. Benzene and tetraethyl lead, an additional fuel additive, require special toxicity considerations and are discussed below.

Benzene is a known animal carcinogen and human leukemogen, as well as a suspected human carcinogen. The present exposure limit for benzene is 1 ppm as set by the Occupational Safety and Health Administration (OSHA) with a Short Term Exposure Limit (STEL) of 5 ppm.

Tetraethyl lead, an organic form of lead, can cause diseases of the central nervous system, the kidneys, and the blood. Skin absorption of this compound is a major route of entry into the body, however, it can also be inhaled as a constituent of dust. Care should be taken to avoid inhalation of and contact with dust on UST sites. The OSHA exposure limit is 0.075 mg/m^3 of air while the ACGIH exposure limit is 0.1 mg/m^3.

3.0 HAZARD CONTROL

Air monitoring must be performed on all sites in accordance with Pacific Rim practices. Organic vapor concentrations are monitored in the field with a flame ionization detector (FID) or photoionization detector (PID). All readings are taken in the worker' breathing zone to determine whether an action level has been met and / or exceeded. Air monitoring results must be documented on the Vapor Monitoring Form or in the field notebook for the site.

Air monitoring action levels (Table 3.1) have been developed by Pacific Rim to indicate the chemical concentrations in the breathing zone that require an upgrade in level of personal protective equipment (PPE). The action levels apply to all tasks performed on this site.

TABLE 3.1
AIR MONITORING ACTION LEVELS

Instrument*	Function	Measurement	Action
Photoionization Detector (PID) Flame Ionization Detector (FID) Measures total organic vapors			
		0-50 ppm	Level D required
		51-500 ppm	Upgrade to Level C
		>500 ppm	Stop work. Contact PM and HSR for guidance.
Oxygen/Combustimeter (O^2/LEL) Measures oxygen level (O^2) and lower explosive limit (LEL)			
	O^2	19.5-22%	▪ Acceptable conditions. Continue normal activity.
	O^2	< 19.5%	▪ Ventilate the space. ▪ Notify PM or HSR if unable to achieve acceptable conditions.
	O^2	> 22%	▪ Leave area immediately; this atmosphere is extremely flammable. ▪ Notify PM or HSR.
	LEL	< 10%	▪ Acceptable conditions. Continue normal activity.
	LEL	> 10%	▪ Leave area immediately. ▪ Contact PM or HSR for guidance on venting and other safety measures.
* Note: Instruments must be calibrated according to manufacturer's recommendations.			

* Benzene monitoring must be performed if VOC levels exceed 25 units for 15 minutes. Reference Figure 3.3.

PERSONAL PROTECTIVE EQUIPMENT

The following combinations of personal protective clothing will be employed in accordance with the Action Levels prescribed below.

3.2 Personal Protective Ensembles

	LEVEL D	LEVEL C (modified*)
Head	Hard Hat (when overhead hazards are present)	Hard Hat (when overhead hazards are present
Eye and Face	Safety Glasses with Sideshields	Safety Glasses with Sideshields (with Half Face APR)
Whole Body	Cotton Coveralls or similar Work Ensemble	Cotton or Tyvek Coveralls
Hand	Cotton (if necessary) Vinyl Surgical (when sampling)	Cotton (if necessary) Vinyl Surgical (when sampling)
Foot	Steel toe	Steel toe Latex outer (when in contact with contaminated soils)
Respiratory	Not Required	Full/Half-Face APR with Organic vapor/acid gas/HEPA Cartridges

* Modified Level C using a Half-Face APR may be used according to the Action Levels stated below.

Action Levels for Personal Protective Ensembles

The following levels of protection shall be implemented based on the action levels and monitoring scheme described below. Table 2 provides a graphic illustration of these action levels, the necessary exposure monitoring practice, and the required personal protective equipment.

Level D - Organic vapor concentrations in the Breathing Zone no greater than fifty (50) units above measured background as detected with direct reading instrumentation sensitive to aromatic hydrocarbon compounds (eg. OVA, HNU, OVM). VOC concentrations greater than 50 units will require upgrade to either Modified Level C or full Level C protection. However, when organic vapor concentrations exceed 25 units above background in the breathing zone over a fifteen minute period then site personnel shall initiate benzene specific monitoring using colorimetric detector tubes sensitive to 0.5 ppm benzene. Specific Action Levels for benzene are graphically depicted in Table 2. In lieu of PPE upgrade, site personnel may evacuate to a position upwind where organic vapor concentrations return to that of background.

Modified Level C - Sustained organic vapor concentrations in the Breathing Zone greater than 50 units above recorded background readings. At this point, Benzene-specific monitoring shall already have been initiated, and the conditions of Modified Level C shall be subject to these action levels as well. Modified Level C shall employ the use of a half-face APR instead of a full-face model (full Level C), while all other level C PPE requirements are employed. VOC concentrations greater than 75 units will require upgrade to full Level C protection. This plan does NOT cover operations requiring Level B protection.

Level C - Organic vapor concentrations in the Breathing Zone greater than 75 units but less than 500 units above recorded background readings. Benzene-specific monitoring shall already have been initiated. Level C shall employ the use of a full-face APR as well as the other specified PPE. VOC concentrations greater than 500 units will require evacuation of the site. This plan does NOT cover operations requiring Level B protection.

3.3 Air Monitoring Instrumentation

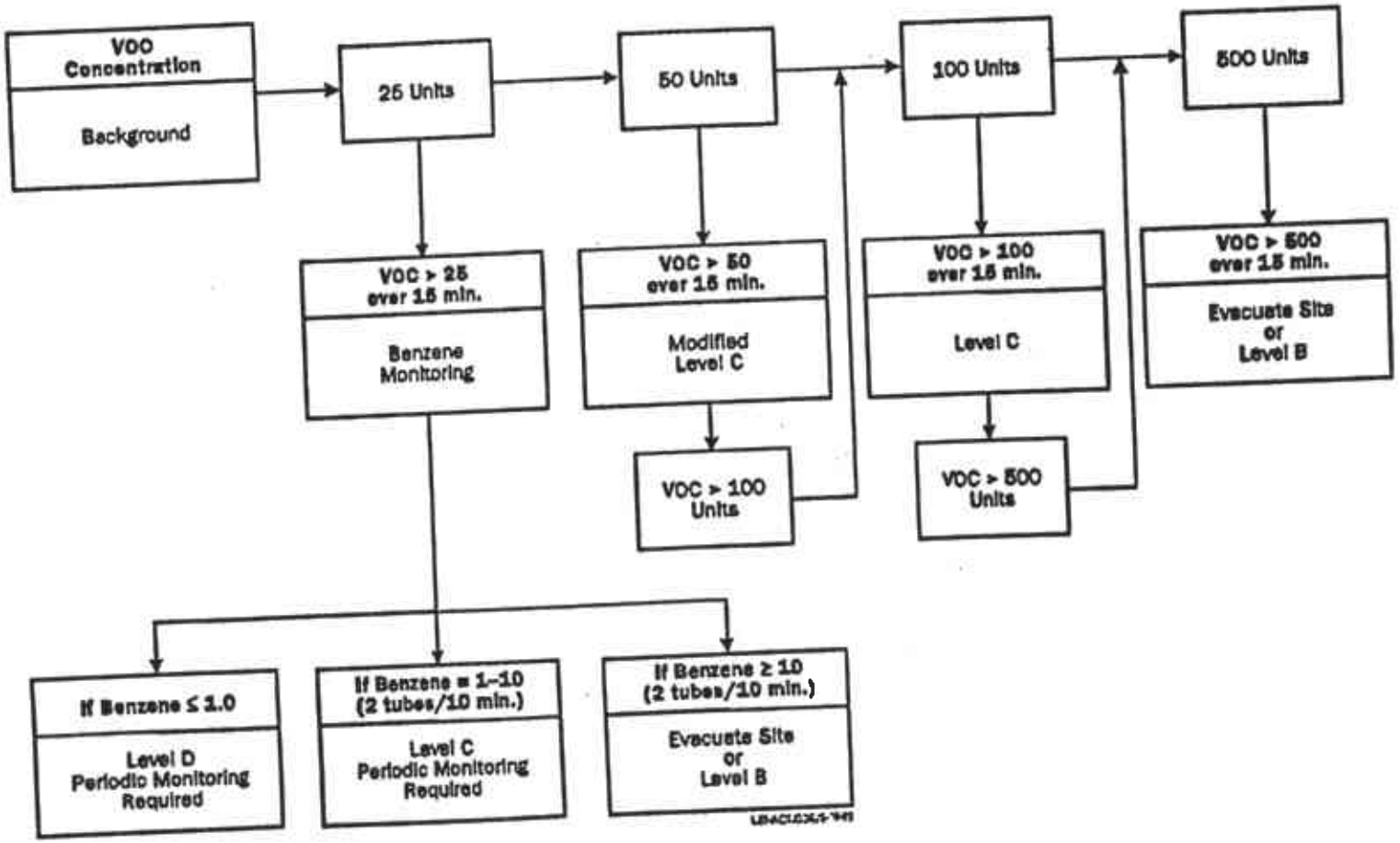
The following instruments shall be used on site to ensure personal protection against the forementioned hazards. All air monitoring equipment will be calibrated daily prior to use on site (and ideally, once more during the course of the work day).

- Organic vapor detectors (PID / FID). On standard petroleum hydrocarbon sites, either photoionization or flame ionization detectors will be used to perform real-time evaluations of airborne concentrations of VOC. Monitoring with organic vapor detectors will be conducted continuously while in the vicinity of site operations, with periodic monitoring in the breathing zone(s) of site personnel. Response to detected VOC concentrations will follow the stated Action Levels.

- Combustible Gas Indicator/Oxygen Meter (CGI/O_2). This instrument will be employed on site to detect the presence of flammable vapors in the work zone.

- Colorimetric Detector Tubes. Detector tubes sensitive to 0.5 ppm benzene in air will be employed on site as described in Table 2.

TABLE 2
ACTION LEVEL GUIDELINES FOR PETROLEUM HYDROCARBON FIELD ACTIVITIES



3.4 Decontamination Procedures

Operations conducted at this site have the potential to contaminate field equipment and personal protective equipment. To prevent the transfer of contamination to vehicles, administrative offices and personnel, the procedure presented in Table 3.4 must be followed.

TABLE 3.4
DECONTAMINATION PROCEDURES

Item	Examples	Procedure
Field Equipment	Bailers, interface probes, hand tools, drill augers and miscellaneous sampling equipment	▪ Decontaminate with a solution of detergent and water; rinse with water prior to leaving the site. ▪ Protect from exposure by covering with disposable covers such as plastic to minimize required decontamination activities.
Disposable PPE	Tyvek® suits, inner latex gloves, respirator cartridges	▪ Dispose of according to the requirements of the client and state and federal agencies.
Nondisposable PPE	Respirator	▪ Wipe out respirator with disinfecting pad prior to donning. ▪ Decontaminate on site at the close of each day with a solution of an approved sanitizing powder and water.

3.5 Site Control: Work Zones

Work zones will be established in order to: (1) delineate high-traffic locations, (2) identify hazardous locations and (3) contain contamination within the smallest area possible. Employees entering the work zone must wear the proper personal protective equipment for that area. Work and support areas will be established based on ambient air data, necessary security measures, and site-specific conditions.

4.0 Specific Work Procedures

4.1 Confined Space Entry

Site work may require personnel to enter confined spaces. No Pacific Rim employee or subcontractor shall enter an area identified as a confined space without using the confined space entry described below. If it is necessary to enter a confined space that contains hazardous concentrations, a procedure utilizing p.p.e., lifelines, and standby personnel must be used. Notify Corporate Health and Safety for Support. This is out of the scope of this procedure. A permit is required.

CONFINED SPACES
Definition
Pits or open-topped tanks that are more than four feet (1.2M) deep, or any other enclosed space that is not designed for continuous employee occupancy.
Examples
Excavation pits, trenches, storage tanks, subsurface vaults, basements, silos, manholes, and sewers.
Characteristics
▪ Limited access and egress ▪ Limited natural ventilation ▪ Not designed for human occupancy
Protocol for Confined Space Entry
▪ Perform the appropriate air monitoring activity at various depths in the space prior to entry. Monitor for: (1) oxygen level, (2) flammable vapors, (3) toxic vapors. ▪ Ventilate the atmosphere in the space so that entry may be made safely without respiratory protection. Continuous monitoring and ventilation must continue during the work task. ▪ When ventilation alone can not achieve acceptable atmospheric levels of oxygen or flammable or toxic vapors, stop work. Contact Corporate Health and Safety. This is an out of scope work task for this Health and Safety Plan. A permit is required for safe entry.

EXCAVATION/TRENCHING SAFETY PROCEDURES

Egress: Excavation areas four feet or more deep

- Ladders must be spaced no more than 50 feet apart so that a person in the trench is always within 25 feet of a ladder for egress.

Shoring: Excavation areas five feet or more deep

- Excavations must be sloped or shored if personnel will be entering the excavation.
- Soil classification may be done only by a competent* person using both a visual and manual test.

WARNING: One soil classification may not be enough. Outside disturbances during excavation may change even the best classification.
Inspect the soil after any condition change.

Storage: All excavations

- Spills and heavy equipment must be stored a minimum of two feet from the edge of the excavation.
- Store spoils on the downhill side.

*Competent Person:

1. Knowledge of OSHA Excavation Standard
2. Knowledge of Soils Classification
   - Soil Type A, B, C
   - Visual and Manual Tests
3. Knowledge of Protection Devices
   - Shoring, sloping, shielding

Table 5.1 (Sections 5-1 through 5-4) presents contingency plans for potential emergency situations.

TABLE 5.1
CONTINGENCY PLANS FOR SITE EMERGENCIES

Situation	Action
5-1 Evacuation	1. Immediately notify all on-site personnel of an emergency requiring evacuation. 2. Leave the dangerous area and report to a designated rally point. 3. Notify Emergency Services as appropriate. 4. Account for all personnel. 5. Contact the PM and HSR as soon as possible. 6. Maintain site security and control measures for community safety until emergency responders arrive.
5-2 Medical Emergency	1. Survey the situation **Do not enter an area that may jeopardize your safety.** ▪ Establish the patient's level of consciousness. ▪ Call for help. ▪ Contact Emergency Medical Services and inform them of patient's condition. 2. Primary Assessment (patient unconscious) ▪ Arousal ▪ Airway ▪ Breathing ▪ Circulation **Only trained personnel should perform CPR or First Aid.** 3. Secondary Assessment (patient conscious) ▪ Check for bleeding: Control with direct pressure. ▪ Do not move patient (unless location is not secure). ▪ Monitor vital signs. ▪ Provide First Aid to the level of your training. ▪ Contact the PM and HSR as soon as possible. ▪ Document the incident using the Accident/Incident Form.
5-3 Fire Emergency	1. Evacuate the area. 2. Notify the Emergency Services. 3. Extinguish small fires with an all-purpose extinguisher. 4. Contact the PM and HSR. 5. Document the incident using the Accident/Incident Form.

TABLE 5.1
CONTINGENCY PLANS FOR SITE EMERGENCIES

Situation	Action
5-4 Spill/Release	Prevent problems by documenting the location of underground lines (e.g. product, sewer, telephone) before starting site work. If you drill through a line or tank or another leak occurs, document the spill/release in writing. Include dates, times, actions taken, agreements reached and names of people involved. In the event of a spill/release, follow this plan. 1. Wear appropriate PPE; stay upwind of the spill/release. 2. Turn off equipment and other sources of ignition. 3. Turn off pumps and shut valves to stop the flow/leak. 4. Plug the leak or collect drippings in a bucket, when possible. 5. Place sorbent pads to collect product, if possible. 6. Call Fire Department immediately if fire emergency develops. 7. Inform Pacific Rim Project Manager about the situation. 8. Determine if the client wants Pacific Rim to repair the damage or if the client will use an emergency repair contractor. 9. Based on agreements, contact emergency spill contractor for containment of free product. 10. Advise the client of spill discharge notification requirements and determine who will complete and submit forms. Do not submit or report to agencies without the client's consent. Document each interaction with the client and regulators and note, in writing: name, title, authorizations, refusals, decisions, and commitments to actions. 11. Do not transport or approve transportation of contaminated soils or product until proper manifests have been completed and approved. Be aware that soils/product may meet criteria for hazardous waste. 12. Do not sign manifests as generator of waste; contact the regional compliance manager to discuss waste transportation.

Notifications

The Project Manager must contact the client or generator. The generator is under obligation to report to the proper government agencies. If the spill extends into waterways, the Coast Guard and the National Guard Response Center (1-800-424-8802) must be notified immediately by the client or with his permission.

6.1 EMERGENCY FIRST AID

1. Survey the situation. Do not endanger your own life. **DO NOT ENTER A CONFINED SPACE TO RESCUE SOMEONE ELSE WHO HAS BEEN OVERCOME UNLESS PROPERLY EQUIPPED AND A STANDBY PERSON IS PRESENT.**

2. Call 911 (if available) or the fire department **IMMEDIATELY.** Explain the physical injury, chemical exposure, fire, or release.

3. Decontaminate the victim without delaying life-saving procedures.

4. If the victim's condition appears to be noncritical, but seems to be more severe than minor cuts, he/she should be transported to the nearest hospital by trained Emergency Medial Services (EMS) personnel: Let the doctor assume the responsibility for determining the severity of the injury. If the condition is obviously serious, EMS must transport the victim.

5. Notify the Project Manager and the Health and Safety Director. Complete the Accident/Incident Form within 24 hours.

EMERGENCY FIRST AID PROCEDURES	
To Stop Bleeding	**Cardiopulmonary Resuscitation (CPR)**
1. Give medical statement. 2. Assure airway, breathing, circulation. 3. Use **DIRECT PRESSURE** over the wound with clean dressing or your hand (use nonpermeable gloves). Direct pressure will control most bleeding. 4. Bleeding from an artery or several injury sites may require **DIRECT PRESSURE** on a **PRESSURE POINT.** Use pressure points for 30-60 seconds to help control severe bleeding. 5. Continue primary care and seek medical aid as needed.	1. Call for help. 2. Arousal: Check for consciousness. 3. Open airway with chin-lift. 4. Look, listen, and feel for breathing. 5. If breathing is absent, give 2 slow, full rescue breaths. 6. Check the pulse for 5 to 10 seconds. 7. If pulse is present, continue rescue breathing: 1 breath every 5 seconds 8. If pulse is absent, start CPR: 15 compressions, 2 breaths (1 man)

6.2 SITE EMERGENCY FORM

Contaminants of Concern: Petroleum Hydrocarbons
Minimum Level of Protection: Modified Level D

Do not endanger your life. Survey the situation before taking any action.

Office Telephone: (415) 255-0860
Site Location Address: Port of Oakland, Berth 63
1395 Middle Harbor Road
Oakland, California
Hospital Directions: Summit Medical Center
350 Hawthorne Avenue, Oakland, California 94609
East on Embarcadero. North on Broadway. West on 30th Street. North on Summit Street. West on Hawthorne.
Telephone Location: On site cellular phone.

EMERGENCY PHONE NUMBERS

Ambulance: 911
Fire: 911
Police: 911

Project Manager: Taimi Barty
Health and Safety Rep: Taimi Barty
Client Contact: Bob Mannagio

Poison Control: (800) 523 2222
Hospital Phone: (510) 655-4000

Hospital Name: Summit Medical Center

FIRST AID FOR CHEMICAL EMERGENCIES

Ingestion: DO NOT INDUCE VOMITING. Call Poison Control; follow instructions. Administer CPR, if necessary. Seek medical attention.

Inhalation: Remove person from contaminated environment. DO NOT ENTER A CONFINE SPACE TO RESCUE SOMEONE WHO HAS BEEN OVERCOME UNLESS PROPERLY EQUIPPED AND A STANDBY PERSON IS PRESENT. Administer CPR if necessary. Seek medical attention.

Skin Contact: Brush off dry material, remove wet or contaminated clothing. Flush skin thoroughly with water. Seek medical attention if irritation persists.

Eye Contact: Flush eyes with water for 15 minutes. Seek medical attention.

Exposure Symptoms: Headache, dizziness, nausea, drowsiness, irritation of eyes, nose, throat, breathing difficulties.

Contingency Plan: Report incident to Project Manager and Health and Safety Director after emergency procedures have been implemented.

7.0 Training

All on-site personnel working in the exclusion zone will have the appropriate prior experience and training, in compliance with 29 CFR 1910.120, 8 CCR 5192 and 8 CCR 1432.1. Such training includes the 40-hour basic training, three days of supervised field experience, 8-hour update training, 8-hour supervisory training, as appropriate.

A project-specific training session will be provided prior to startup of on-site activities. This training will include:

a. Site health and safety plan
b. Decontamination
c. Personal protection levels
d. Chemical hazards including lead
e. Physical hazards
f. Medical monitoring
g. Air monitoring
h. Use and maintenance of personal protective equipment
I. Work zones
j. Site safety rules and conditions of employment
k. Emergency provisions
l. Buddy system

On-site tailgate meetings will be held before each work day to reinforce pertinent topics from the above list and to anticipate problems that may arise during the day. The HSO and Project Supervisors will conduct these meetings for their respective crews. These meetings may be combined into a single meeting at the discretion of the HSO. This training will be documented as part of the daily documentation for the site.

8.0 Medical Monitoring

All on-site personnel regularly working in the exclusion zone will participate in a medical monitoring program. Any site personnel and visitors who have not received medical clearance must be excluded from the active work areas.

For those employees regularly working in the Exclusion Zone, the monitoring program will consist of either a corporate annual physical examination or a pre-employment physical (if the employee was hired specifically for this job) which includes:

a. Medical history
b. Physical Exam
c. Pulmonary function test
d. EKG
e. Audiogram
f. Blood chemistry
g. CBC with differential and platelets
h. urinalysis with dipstick and microscopic morphology

For those employees who work infrequently in the Exclusion Zone (i.e. site visitors and those needing only occasional access) and/or those who may be expected to use respirators, the medical exam will be that which the examining physician determines is sufficient for clearance to use respiratory protection.

Employees not directly involved with the structure excavation, disposal, dewatering and pile drilling are not subject to the medical monitoring requirements.

Post-project exams will be conducted at the discretion of the site HSO in light of actual site conditions and exposures.

9.0 Documentation

Documentation of each employee's compliance with the training and medical monitoring requirements, and their signature indicating they have reviewed and will comply with this Health and Safely Plan, will be maintained on site and tracked on the Agreement and Acknowledgment Form, in Appendix A.2. In addition, the required permits for excavation, copies of tailgate meeting minutes, air monitoring data, and accident reports will be maintained on site.

APPENDIX A.1

AMENDMENT FORM

APPENDIX A.1: AMENDMENT FORM

Project Name: _____

Project Number: _____

Project Manager: _____

Location: _____

Changes in field activities or hazards:

Approved by: _____ _____
Health and Safety Representative **Date**

APPENDIX A.2

AGREEMENT AND ACKNOWLEDGEMENT FORM

APPENDIX A.2 : AGREEMENT AND ACKNOWLEDGMENT FORM

Pacific Rim personnel have the authority to stop field activities at this site if any activity is not performed in accordance with e the requirements oft he Health and Safety Plan. All Pacific Rim project personnel, subcontractor personnel and visitors are required to sign the Agreement and Acknowledgment Sheet prior to conducting field activities at this site.

APPENDIX A.2
AGREEMENT AND ACKNOWLEDGEMENT SHEET

Name	Signature
Company	Date
Name	Signature
Company	Date
Name	Signature
Company	Date
Name	Signature
Company	Date
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Company	Date
Name	Signature
Company	Date

APPENDIX A.3

ACCIDENT REPORT FORM

Exposure/Injury Incident Report

Employee's Name:_____ Date Report Completed:_____

Employee's Title:_____ Office:_____

Incident

Type of incident: Possible Exposure_____ Exposure_____ Injury_____

Date and time of incident:_____

Location of incident:_____ Client:_____

Person to whom incident was reported:_____

Nature of Exposure/Injury

Did employee receive first aid_____ medical treatment_____? If yes, when, where and by whom?_____

Did employee lose time from work? Yes_____ No_____ If yes, how long?_____

List the names of persons who witnessed the incident:_____

List the names of other persons affected during this incident:_____

Names of Materials Potentially Encountered

Chemical (liquid, soils, gas, vapor, fume, mist):_____

Radiological:_____

Other:_____

Possible Cause(s) of the Exposure/Injury

Task being performed when incident occurred:_____

_____

_____

Describe how incident occurred:_____

_____

_____

Was the operation being conducted under an established Health and Safety Plan?

Yes____ No_____ If yes, attach a copy. If no, explain:_____

_____

Was employee using safety equipment and protective clothing? Yes____ No_____ If yes, list items. If no, explain why not._____

_____

Did any limitation in safety equipment or protective clothing contribute or affect exposure? If so, explain:

_____

_____

Name and title of field team leader or immediate supervisor at the site of the incident:_____

_____

Attach any other relevant data and information regarding this incident.

_____

Name, title and telephone number of person initiating Exposure/Injury Incident report:_____

_____

Employee Signature:_____ Date:_____

Field Team Leader or Supervisor Signature:_____ Date:_____

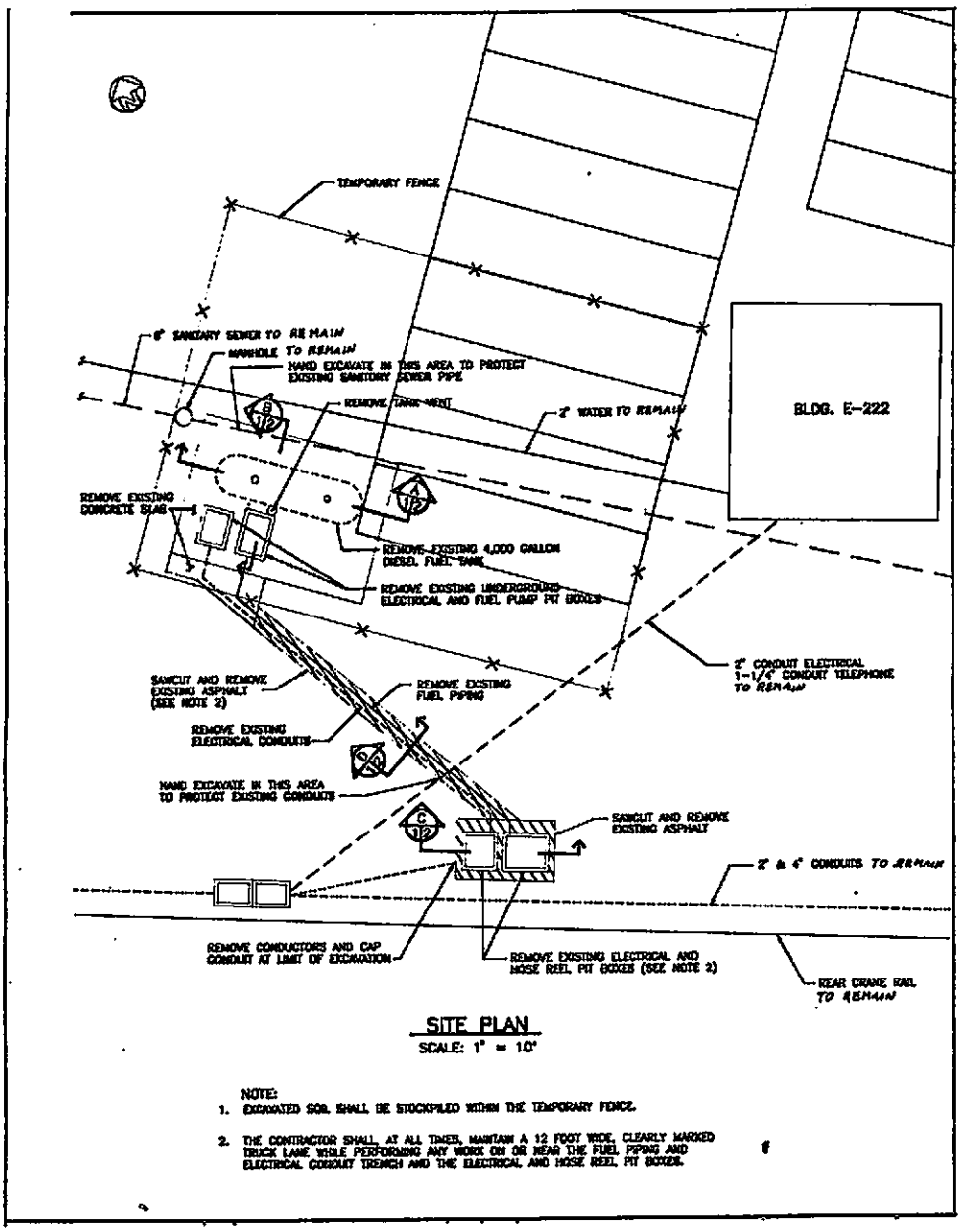
DISTRIBUTION:
Corporate Human Resources Director
Corporate Health and Safety Director

APPENDIX B

SITE MAPS

APPENDIX B: MAPS

- Site map
- Route to Hospital



SITE PLAN
SCALE: 1" = 10'

NOTE:
1. EXCAVATED SOIL SHALL BE STOCKPILED WITHIN THE TEMPORARY FENCE.
2. THE CONTRACTOR SHALL, AT ALL TIMES, MAINTAIN A 12 FOOT WIDE, CLEARLY MARKED TRUCK LANE WHILE PERFORMING ANY WORK ON OR NEAR THE FUEL PIPING AND ELECTRICAL CONDUIT TRENCH AND THE ELECTRICAL AND HOSE REEL PIT BOXES.

Site Location: **Port of Oakland, Berth 63** **1395 Middle Harbor Road, Oakland, California**	**Site Map**	**Project7100**
PACIFIC RIM ENVIRONMENTAL		**Appendix A**
June, 1995		

Site Location: **Underground Fuel Storage Tank EF-10** **Berth 63, Oakland, California**	**Map to Nearest Hospital**	**Project 7112**
PACIFIC RIM ENVIRONMENTAL		**Appendix A**
June, 1995		

APPENDIX C

MATERIAL SAFETY DATA SHEETS

(TLV-TWA) *Threshold Limit Value - Time Weighted Average.* The time-weighted average concentration for a normal 8-hour work day and a 40-hour work week, to which nearly all workers may be repeatedly exposed without adverse effect.

(PEL) Time-weighted average concentrations similar to (and in many cases derived from) the Threshold Limit Values.

(REL) *Recommended Exposure Limit* as defined by NIOSH similar to the Threshold Limit Values.

(IDLH) *Immediately dangerous to life or health* - Any atmospheric condition that poses an immediate threat to life, or which is likely to result in acute or immediate severe health effects. Oxygen deficiency is IDLH.

(LEL) *Lower Explosive Limit* - The minimum concentration of vapor in air below which propagation of a flame will not occur in the presence of an ignition source.

(UEL) *Upper Explosive Limit* - The maximum concentration of vapor in air above which propagation of a flame will not occur in the presence of an ignition source.

Flash Point (F.P.) The lowest temperature at which the vapor of a combustible liquid can be made to ignite momentarily in air.

Vapor Pressure (V.P.) The pressure characteristic at any given temperature of a vapor in equilibrium with its liquid or solid form, often expressed in millimeters of mercury (mm Hg).

Odor Threshold A property displayed by a particular compound. Low detection indicates a physiological sensation due to molecular contact with the olfactory nervous system (based on 50% of the population).

Ionization Potential (I.P.) The amount of ionization characteristic a particular chemical compound displays.

CONTAMINANTS PROFILE

Chemical	Exposure Route	Symptoms of Overexposure	Incompatibilities
Gasoline	Inhalation	• Intense burning of mucous membranes, throat, and respiratory tract, flushing of face, staggering gait, slurred speech, mental confusion	Oxidizing agents such as hydrogen peroxide, nitric acid
	Ingestion	• Inebriation, drowsiness, blurred vision, dizziness, confusion, vomiting, cyanosis.	
	Skin Contact	• Prolonged skin contact may cause dermatitis	
Diesel Fuel Jet Fuel Fuel Oils	Inhalation and/or ingestion	• Irritation to respiratory passages, headache, dizziness and nausea, vomiting, loss of coordination • Chemical pneumonitis (when oil is aspirated in the lungs)	Oxidizing agents such as hydrogen peroxide, nitric acid
	Skin Contact	• Irrigation, rash of acne pimples and spots	