AMERICAN CONSTRUCTION & ENVIRONMENTAL SERVICES, INC.
567 EXCHANGE COURT
LIVERMORE, CA 94550
(510) 447-2484 • FAX (510) 447-4145

SITE WORK HEALTH AND SAFETY PLAN

JOB NAME: **Arco Station Shattuck Ave. Oakland CA**

EMERGENCY TELEPHONE NUMBERS

FIRE.....**911**

FIRST AID.....**911**

AMBULANCE.....**911**

POLICE.....**911**

POISON CONTROL CENTER.....**911**

HOSPITAL

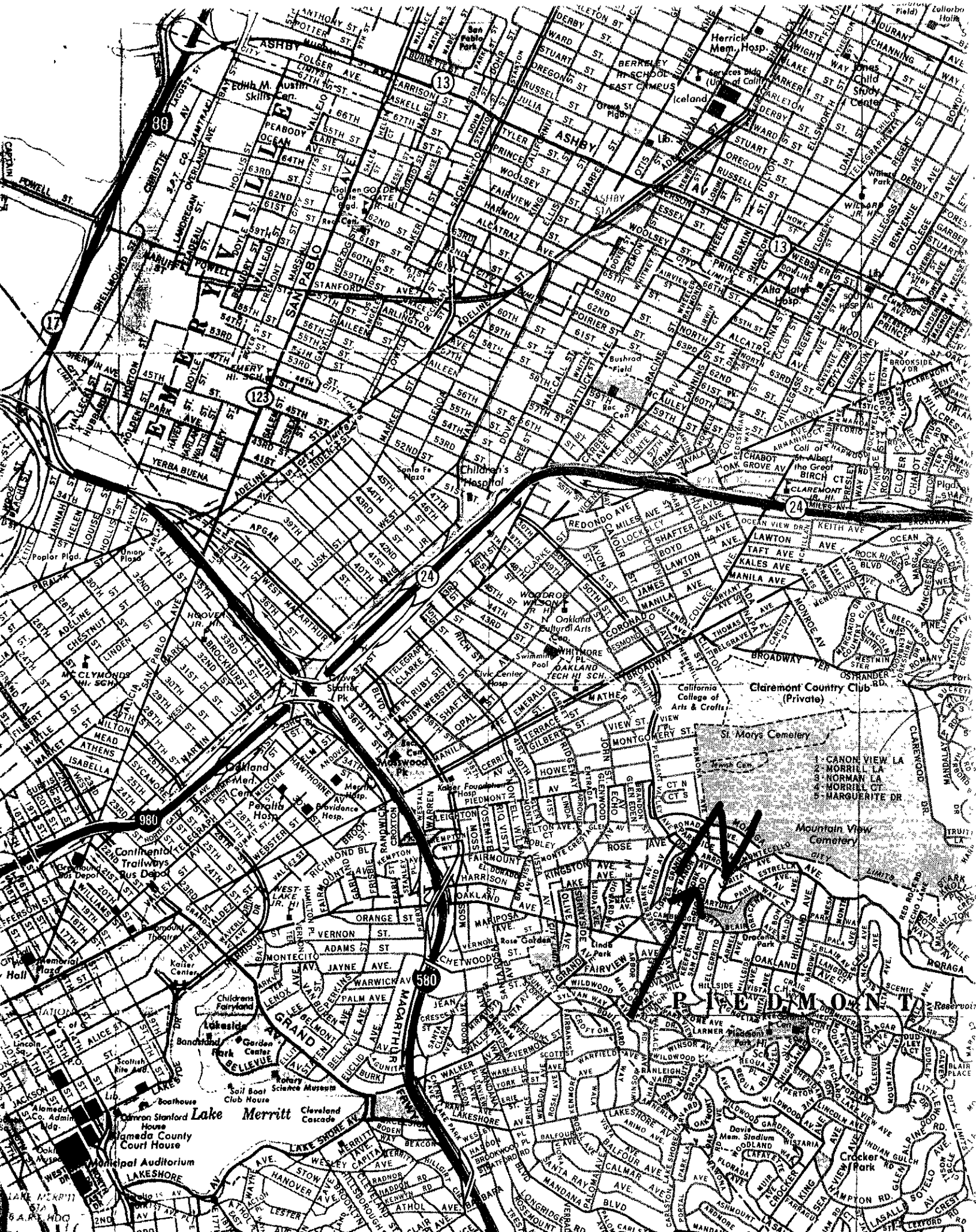
Name: Kaiser Foundation Hospital
Address: 280 West Macarthur Blvd., Oakland, CA cr: Broadway
Phone: (510)596-1000

From Site:

Proceed south on Shattuck Ave. it will turn into Telegraph Ave. Turn left on West Macarthur Blvd. Hospital is on the left side, approx. 1 mile from site.

American Construction & Environmental Services, Inc.

D. Bailey Neff.....(510) 447-2484 ext. 102
Rick Henderson.....(510) 447-2484 ext. 106


EMERYVILLE
SAN PABLO
PIEDMONT
ASHBY
Oakland
Alameda
Lake Merritt
Mountain View Cemetery
St. Mary's Cemetery
Claremont Country Club (Private)
1 - CANON VIEW LA
2 - MORRILL LA
3 - NORMAN LA
4 - MORRILL CT
5 - MARGUERITE DR
80
580
980
24
13
17
123

SITE WORK HEALTH AND SAFETY PLAN

1. GENERAL

This Health and Safety Plan has been designed to conform to and/or exceed guidance standards promulgated by EPA and the California Department of Health Services, Federal OSHA regulations (29CFR1910.120) and CAL/OSHA regulations. Because considerable experienced judgement must be applied to decisions that will be made while actually working on site, it is the goal of this plan to provide maximum work efficiency while maintaining an uncompromisingly safe working environment. This plan is not a substitute for experienced judgement and direction, or for common sense during construction activities.

American Construction will provide services and equipment for the completion of the scope of work. American Construction (as well as all subcontractors and independent contractors) will adhere to the Site Work Health and Safety Plan.

2. WORK OBJECTIVE

The overall work objective is to provide for proper and safe completion of scope of work.

3. SAFETY MANAGEMENT

The field supervisor, Harold S., is the site and safety officer and will ensure that all personnel comply with all applicable regulations and requirements of this plan. Due to the various aspects of the work, specific personnel are not assigned to this project at present. Basic requirements are:

a. Personnel shall be physically able (and mentally willing) to comply with safety requirements.

b. A copy of this safety plan shall be posted at the job site and a copy made available to each individual who will work at the site.

c. These plans should also include and/or address as a separate plan, the following:

a. A Worker Hazard Communication Program

d. Periodically scheduled "tailgate safety" meetings shall be held to review the safety program. Attenders will sign the Safety Meeting Notice.

e. Unsafe acts shall be stopped when discovered.

f. Required safety equipment shall be present on site and shall be checked to verify completeness and function prior to being put into service.

g. Sources of ignitions will be eliminated where possible. Smoking will be strictly forbidden on site.

h. The field supervisor is Harold S.____. Personnel may change depending on field conditions. Changes will be noted in the field log book.

Employee Training Assignments

All on-site employees will be trained in accordance with T8 CCR 5192 (e). The person serving as Site Safety and Health Supervisor will have completed a standard first aid course.

4. HAZARDS

Identified Physical Hazards

The presence of **heavy equipment** at this site presents the potential for physical injury during the permanent closure. All heavy equipment operators and workers around the equipment must be constantly aware of the hazards associated with the operation of that equipment. The following precautions will be taken during any construction activity to prevent physical harm:

1. All heavy equipment at the site (backhoes, front-end loaders, utility trucks, etc.) must be used only for the purposes for which it was designed. Under no circumstances will a piece of heavy equipment be used for personnel lifts.

2. All vehicles with a haulage capacity of 2-1/2 cubic yards or more must be equipped with an automatic electric back-up alarm which is audible at a distance of 200 feet.
3. All heavy equipment and service vehicles should be checked at the beginning of each shift to ensure all parts, equipment and accessories are in good working condition and free of damage.

4. All heavy equipment and service vehicles on the site must conform with the applicable inspection codes:

a. All mobile equipment will be equipped with an approved roll-over protection device.

b. All mobile equipment must be equipped with seat belts which must be worn by the operator at all times.

c. All job site vehicles will be equipped with a service brake, parking brake and emergency brake system.

In the event of **open excavations**, which is a hazard to on-site workers, the following policy regarding excavations will be followed:

_ Entry into excavations greater than 4 feet deep is prohibited, unless the requirements of T8 CCR 1541 are met.

_ Hazards associated with general construction may occur during the course of construction. Personnel should be alert and prevent as well as avoid these hazards.

_ When tank removal is part of scope of work, there is a significant potential for hazards from falling loads when lifting and removing tanks. Workers must be especially alert to this hazard.

- During general construction activities, there is also a potential for general (construction type) safety hazards. This plan does not address general safety in detail. If personnel are frequently reminded and will cooperate in being courteous, careful, alert, and thoughtful of outlines safety procedures, and it they use common sense in actions and in considering probable consequences, much will already have been accomplished to insure a safe working environment.

- Fires may occur from sources of ignition.

- If Contamination exposure is encountered on this project, activities will cease and proper notifications and procedures will be followed.

5. EXCLUDED WORK ZONE

The boundary of the site shall be an excluded work zone. Personnel not actively involved in site work activities (other than inspectors from concerned regulatory agencies) shall not be allowed within the excluded work zone.

6. HAZARD COMMUNICATION

All personnel are to be familiar with this Site Work Health and Safety Plan.

Field supervisor will telephone for emergency service and notify office when needed.

7. EQUIPMENT

Personal Safety Equipment

Workers engaged in the remediation work shall wear/have available personal protective safety equipment as minimum:

_ Hard hats

_ Safety glasses and/or goggles

_ Respirators

_ Work boots

_ Gloves

_ Coveralls

Facility Safety Equipment

The following safety equipment shall be continuously available at the job site:

_ First aid kit (20-unit).

_ Fire extinguishers (2) ABC.

_ "No Smoking" signs.

_ Barricade tape.

_ Explosimeter (LEL)/Organic Vapor Analyzer.

8. PERSONAL HEALTH AND HYGIENE

Personal safety and the safety of fellow workers require mental alertness on the part of all employees. No alcohol or drugs shall be permitted at any job site. Intake of alcohol and prescription drugs should be limited when and employee is assigned to hazardous material remediation projects due to the potential for synergistic effects. Prescription drugs should not be taken without the express approval of a physician with knowledge of project/site activities. Eating and smoking will only take place in an approved break area.

SIGN OFF SHEET

WORK PARTY: Members of the work party must initial to indicate that they have and will comply with the American Construction Site Health and Safety Plan.

NAME	RESPONSIBILITY	LEVEL OF PROTECTION	INITIAL

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Attachment
(Tank/Piping Removal)

ON-SITE WORK PLAN
FOR TANK/PIPING REMOVAL AND EXCAVATION

Removal of Flammable Vapors and Removal of Tanks

Removal of flammable vapors and removal of tanks will be performed in accordance with the requirements of Local Regulatory Agencies. The following are general guide lines.

A review of available codes, standards, and recommended procedures produces the following consensus:

A. All possible sources of ignition must be kept from impacting the tank or the area in which flammable vapors may reside during excavation or after removal.

B. Drain and flush all piping into tank. Flammable or combustible free standing liquid production stock will be removed from the tank prior to removal. Avoid spilling product on the ground during disconnection of the tank from its associated lines.

C. Vent lines should not be sealed and should be cut last. Keep all sources of ignition away from vent lines as well as tanks.

D. Once all liquid has been removed from the tank, any tank with flammable vapors in excess of 10% of the LEL or 5% oxygen will be purged with dry ice (CO_2). Thirty pounds of dry ice per 1,000 gallons of tank capacity is added to render the tank inert. All piping except the vent pipe should be disconnected.

Emergency Services

The address and telephone number of the local hospital, ambulance and medical emergency room should be prominently posted. In addition, the telephone number of the fire department/rescue unit should be posted.

General information regarding emergency services may be found on front page.

Emergency Equipment

The following emergency equipment will be available:

_ A 20-unit first aid kit.
_ ABC fire extinguishers (2).

DECONTAMINATION

The requirement for decontamination will be determined by the specific site conditions.

Pre-moistened tissues will be available.

SAFETY TRAINING REQUIREMENTS

The minimum training requirements specified in Federal OSHA 1910.120 Hazardous Waste Operations and Emergency Response will be met for all remediation personnel. (if required)

All on-site employees will be trained in accordance with T8 CCR 5192 (e), First Aid and CPR.

INFORMATIONAL PROGRAMS:

Employees, contractors and subcontractors engaged in hazardous waste operations at the site will be informed of the nature, level and degree of exposure likely as a result of participation in these operations in accordance with T8 CCR 5192 (i).

MEDICAL SURVEILLANCE:

All on-site employees who meet the conditions specified by T8 CCR 5192 (f)(2)(a) - (c) will be covered by a medical surveillance program with meets the requirements of T8 CCR 5192 (f).

SAFETY AND HEALTH RISK ANALYSIS

The following potential impacts to the safety and health of on-site employees have been identified from a review of the comprehensive workplan for this project.

A. Exposure to Toxic Substances

1. BENZENE

Exposure to benzene is primarily by inhalation of skin absorption. Benzene is irritating to the eyes and skin and can produce erythema, burning, edema and blistering of the skin. Inhalation of

high concentrations of benzene can produce central nervous system depression characterized by confusion, dizziness, tightening of the leg muscle, excitation, stupification and coma. Benzene is a known leukemogen and suspected human mutagen, carcinogen and teratogen. It is also a severe fire hazard. TLV = 10ppm, PEL = 1ppm, Odor Threshold Concentration = 4.7 ppm. Ionization Potential = 9.245.

2. NAPHTHALENE

Naphthalene can affect the body by inhalation, eye or skin contact or by ingestion; it is also absorbed by the skin. Inhalation or ingestion may cause gastrointestinal disorders an bloody or dark urine. Exposure to naphthalene may also cause destruction of red blood cells resulting in anemia, jaundice, and kidney and liver damage. Naphthalene may also cause skin irritation and, possible, and allergic rash. Repeated exposure may cause cataracts. TLV = 10 ppm, PEL = 10 ppm, Threshold Odor Concentration = 0.003 to 0.3 ppm. Ionization Potential = 8.12.

3. ETHYL BENZENE

Liquid ethyl benzene is an irritant to the skin and mucous membranes. Ethyl benzene vapors are irritating to the eyes and can cause dizziness, irritation to the nose and throat, and a sense of constriction of the chest. Exposure to high vapor concentrations can cause ataxia, loss of consciousness, tremor of the extremities and death due to respiratory failure. It is also and experimental teratogen. TLV = 100 ppm, PEL = 100 ppm, Odor Threshold Concentration = 0.25 to 200 ppm. Ionization potential = 8.76.

4. TOLUENE

Toluene is a skin and eye irritant. It can cause central nervous system depression which is characterized by headaches, nausea, loss of appetite, lassitude and impairment of coordination and reaction time. It may affect the liver and blood, and it may also be a mutagen. TLV = 100 ppm, PEL =100 ppm. Odor Threshold Concentration = 0.17 to 40 ppm.
Ionization Potential = 8.82.

5. XYLENE

Xylene is a skin, eye and respiratory system irritant. It is moderately toxic by inhalation and ingestion and may cause pulmonary edema if inhaled in high concentrations. TLV = 100 ppm, PEL = 100 ppm. Odor Threshold Concentration = 0.5 to 3.8 ppm. Ionization Potential = 8.45 - 8.56.

B. Fire and Explosion

The presence of volatile liquids and vapors at this site presents the potential for fire or explosion during the excavation. The following precautions will be taken during the project to prevent fire or explosion:

1. There will be *NO SMOKING* within a 50 foot radius from the source of any vapors.

2. The atmosphere at the site will be continually monitored for the presence and concentration of flammable vapors and measurements will be documented in writing.

3. Two 10 A-20 B:C fire extinguishers will be maintained on site within 50 feet of the line of travel of the on-ground person designated as fire watch at all times.

4. During refueling of vehicles and heavy equipment, the engines of the equipment will be required to be off. There must be metal to metal contact between the refueling equipment and vehicle/heavy equipment being refueled. No combustion sources will be allowed with 25 feet of refueling operations.

PERSONAL PROTECTIVE EQUIPMENT

Level D PPE will be required on site at all times. The following table will guide upgrades from this level of protection:

Consistent-Sustained Breathing Zone PID Reading	Level of Protection
<10 ppm	Level D
10 - 100 ppm	Level D + half-mask air purifying respirator
50 - 500 ppm	Level D + full-face air purifying respirator
>500 ppm	Level D + SCBA

Descriptions of the different levels of protection are found in Appendix A.

C. Air Monitoring, Personnel Monitoring, Environmental Sampling Techniques and Instrumentation

The following monitoring will be performed at this site.

_ A **combustible gas indicator (CGI)** will be used to monitor the atmosphere at the site for flammable vapors.

_ A **Photoionization Detector (PID)** or equivalent will be used to determine the appropriate level of protection.

_ A **Photoionization Detector (PID)** or equivalent will be used to screen soils for contamination as they are removed from the excavation.

Monitoring with the CGI, for flammable vapors, and the PID, to determine levels of protection, will be performed continually and documented in writing. Monitoring with the PID to screen for soil contamination will be performed as needed. When the PID is being used to screen soils, breathing zone measurements will be alternated with soil screening measurements. Breathing zone measurements from the person screening the soils will be used to guide levels of protection for all workers within the exclusion zone.

All environmental monitoring and sampling at the sire will be performed in accordance with Federal, State, and Local Regulations and accepted standards. Monitoring instruments will be calibrated and maintained in accordance with the manufacturer's instructions. Calibration will be documented in writing.

SPILL CONTAINMENT PROGRAM

If there is no health threat from containing a spill, the following spill control measures will be implemented immediately:

a. Take measures to stop the release.

b. Construct a containment barrier using excavated soil to prevent the contaminant from spreading.

c. Remove as much of the liquid portion of the substance as possible using a pump truck and/or adsorbent material.

d. Place contaminated containment soil into an appropriate container for disposal.

e. Place all contaminated materials which cannot be decontaminated into appropriate containers for disposal.

f. Decontaminate all tools used in the spill control procedures.

g. Properly dispose of all contaminated materials including decontamination rinse water.

h. Notify the appropriate authorities.

Appendix A

Levels of Protection

Level A

1. Positive pressure, full-facedpiece, self-contained breathing apparatus (SCBA), or positive pressure supplied air respirator with escape SCBA.

2. Totally-encapsulating chemical-protective suit.

3. Gloves, outer, chemical-resistant.

4. Gloves, inner, chemical-resistant.

5. Boots, outer, chemical-resistant steel toe and shank.

6. Optional Level A:

_ Coveralls
_ Long Underwear
_ Hard hat*

Level B

1. Positive pressure, full-facedpiece, self-contained breathing apparatus (SCBA), or positive pressure supplied air respirator with escape SCBA.

2. Hooded chemical-resistant clothing.

3. Gloves, outer, chemical-resistant.

4. Gloves, inner, chemical-resistant.

5. Boots, outer, chemical-resistant steel toe and shank.

6. Optional Level B:

_ Coveralls
_ Boot covers, outer, chemical-resistant, disposal
_ Hard hat
_ Face shield

Level C

1. Full-face or half-mask air purifying respirator.

2. Hooded chemical-resistant clothing.

3. Gloves, outer, chemical-resistant.

4. Gloves, inner, chemical-resistant.

5. Optional Level C:

_ Coveralls
_ Boot covers, outer, chemical resistant, disposal
_ Hard hat
_ Face shield
_ Boots, outer, chemical-resistant steel toe and shank
_ Escape Mask

Level D

1. Coveralls

2. Boots/shoes, chemical-resistant steel toe and shank.

3. Safety glasses or chemical splash goggles.

4. Gloves, inner, chemical-resistant.

5. Optional Level D:

_ Gloves
_ Boots, outer, chemical-resistant, disposal
_ Hard hat*
_ Face shield
_ Escape Mask

*Required