Health and Safety Plan
For

Hayward Fire Station No. 8
UST Removal

Prepared For:

ACC Environmental Consultants, Inc.
7977 Capwell Drive, Suite 100
Oakland, CA 94621

Prepared By:

DECON Environmental Services, inc.
23490 Connecticut Street
Hayward, CA 94545

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1.0 Overall Objective of Site Work:

DECON Environmental Services, Inc. (DECON) will remove one 1,000-gallon fiberglass UST last contained diesel fuel at Hayward Fire Station No. 8 located at 24200 Fairview Avenue, Hayward, California. Include in the scope of work is:

- ◊ obtaining appropriate permits,
- ◊ safely remove trees, vegetation, and concrete if necessary,
- ◊ removal of ancillary equipment above the original UST,
- ◊ removal and disposal of overlying concrete pad,
- ◊ excavation, removal, and transportation of the original tank,
- ◊ assist in sampling and analysis of the stockpiled soil,
- ◊ backfilling the excavation to grade,
- ◊ and replacement of a new concrete pad.

DECON will not deviate from the projected and agreed upon scope of work, dated September 30,1998 without prior written acknowledgment from ACC Environmental Consultants, Inc. Any additional scopes of work will be added as an addendum and is subject to the same approval procedures as the original specifications.

1.1 On Site Organization and Coordination: (*For tasks to be completed by DECON)*

The following personnel are designated to carry out the stated job functions on site:

Project Manager: Jason Gulbranson / DECON Environmental Services, Inc.

Site Safety Officer: Jason Gulbranson/ DECON Environmental Services, Inc.

Subcontractors on site: (None currently scheduled)

Proposed Date of Site Work: December 15, 1998

2.0 Background Information:

Project Name: City of Hayward Fire Station No. 5 - UST Removal
DECON Job #: 3006
Project Manager: Jason Gulbranson / DECON Environmental Services, Inc.
Client Contact: Stephen Southern / ACC Environmental Consultants, Inc.

Site Name: City of Hayward Fire Station No. 5
Site Address: 24200 Fairview Avenue
Hayward, California

3.0 Site Description:

Current Site Status: Active Status

Materials Handled or Stored: Diesel Fuel

Industrial processes/ procedures: Fire Station

4.0 Potential Chemical hazards: *Name, Description, Monitoring, and Recognition.*

This plan will provide basic chemical characteristic information and general first aid information for chemical groups. Specific chemical information will be available by referencing the MSDS.

Note: This chart is a standard in this health and safety plan and has been made available to highlight chemical categories that are of primary concern.

Exposure Substance	Physical State	TWA mg/m3	Characteristics
diesel fuel	liquid	ND	Combustible. Inhalation can be irritating to the respiratory passages, and cause the following symptoms: headache, dizziness, nausea, vomiting and loss of coordination, and chemical pneumonitis Prolonged skin contact can cause a rash. Harmful or fatal if swallowed.

5.0 Physical Hazards:

Diesel is a combustible material. Liquid evaporates and forms vapors which can easily be ignited by sources such as pilot lights, welding equipment, electrical motors and switches. Other physical hazards to be expected on this site may include but are not limited to chemical exposure, confined space entry, open trenches, overhead work, elevated heights on man lifts and/or scaffolds, fixed and portable ladder use, powered hand held equipment, high pressure water use, working in close proximity to energized and or heavy equipment, pressurized systems, heat and cold stress, sharp edges, dust, falling objects, slip, trip, and fall hazards. Underground installations present the added hazards of trench cave in and slumping and encountering utility lines. Any number of these hazards may be present in any combination throughout this project. At each work location for each task, the specific physical hazards must be identified by the Project Manager before beginning work. All identifiable hazards will be taken into consideration as part of the risk assessment. Hazards associated with the intended scope of work will be addressed at the daily tailgate safety meeting prior to each day of work.

6.0 Biological Hazards:

In addition to any chemical hazards, DECON personnel will take precautions against insects, snakes, rats, and any other insect or animal life that may be indigenous to a work location. Potential biological hazards may exist in interstitial spaces (rodents). Good common sense and appropriate PPE will minimize the possibility of exposure to most of these hazards.

7.0 Potential Environmental Hazards:

A. Liquid Wastes

Any liquid waste generated in the performance of this installation will be recovered and containerized for appropriate compliant treatment and/or final disposal.

B. Solid Wastes

Excavated soil will be stockpiled for sampling and disposal or use as backfill. All debris will be placed into bins, drums, or bags awaiting final disposal. The original tank will be transported to an appropriate tank processing facility.

Waste labeling will be maintained as an additional safety measure throughout the project.

NOTE: If unexpected hazardous products are discovered on site or unexpected wastes generated, DECON will notify ACC Environmental Consultants, Inc. to coordinate the removal or get approval for the containerization and disposal of the material.

8.0 Overall Hazard Evaluation:

The most significant potential hazards presented by this project are the previously mentioned physical hazards (5.0). Exposure and vapor ignition hazards will be minimized by the implementation of initial and periodic or continual air monitoring. There will be no smoking at anytime in the work zone. DECON will comply with the requirements of Cal/OSHA regulations for fall protection. Personnel will stay at least five feet from the excavation or will maintain and utilize proper fall restraint methods. Hazards will be further minimized by protecting the established work zones from unauthorized entry and providing an egress ladder for excavation pits. Personnel will maintain appropriate distances from operating heavy equipment, adhere to the personal protective equipment requirements, and by the experienced supervision of DECON's Project Management staff. DECON personnel will adhere to DECON standard operating procedures (SOPs) provided in ***Appendix D*** (specifically Parts 1 & 2) of the Site Specific Health and Safety Plan or task specific procedures outlined by the DECON Project Manager during the daily tailgate safety meetings. The approved scope of work will be referenced as a guide for the intended schedule of work to be completed on site. Further hazard estimations will be based on the daily scheduled activities and the risk assessments associated with each activity as viewed by the DECON Project Management staff.

9.0 Spill Contingency Plan:

DECON maintains a fully equipped emergency response vehicle that can be dispatched immediately for emergency equipment needs. DECON also maintains an emergency response network that can dispatch equipment, and personnel upon request to accommodate any emergency needs.

10.0 Required Personal Protective Equipment:

The required level of PPE anticipated for most this scope of work is ***Level D***. In the event that odors or visual discolorations are detected during excavation activities, the PPE will be elevated to a ***Level C*** standard. ***Level B*** protection will be used for confined space entry or if air monitoring indicates elevated vapor levels. These standards of protection will be maintained at all times as designated by the Project Manager until a downgrade has been authorized, or personnel have exited the work zone. No personnel will be authorized to downgrade PPE without the consent of the Project Manager. Levels of protection may vary as additional equipment may be required to complete designated tasks. Additional PPE requirements will be referred to as modified levels of PPE. Personnel operating and working in the vicinity of excavation equipment will utilize hearing protection devices (ear plugs).

10.1 Definition of Levels of Protection.

Level D Protection:

Equipment: Hard hat, safety glasses, steel toed safety boots, gloves, and full-body white Tyvek suits.

Protection Provided: No respiratory protection. Minimal skin protection.

Environmental Qualifications: The atmosphere contains no known hazard. Work functions preclude splashes, immersions, or the potential for unexpected inhalation of or contact with hazardous levels of any chemicals.

Limiting Criteria: This level should not be worn in the Exclusion Zone if the atmosphere contains less than 19.5 percent oxygen, or airborne concentration of contaminants exceed the Permissible Exposure Limit (PEL).

Level C Protection:

Equipment: Hard hat, safety glasses, chemical resistant steel toed boots, gloves, poly coated tyvek, and a half face respirator with organic vapor/acid gas and dust stack cartridges.

Protection Provided: The same level of skin protection as level B, but a lower level of respiratory protection.

Environmental Qualifications: The atmospheric contaminants, liquid splashes, or other direct contact will not adversely affect any exposed skin. The types of air contaminants have been identified, concentrations measured, and a canister is available that can remove the contaminant. All criteria for the use of air-purifying respirators are met.

Limiting Criteria: Atmospheric concentration of chemicals must not exceed IDLH levels. The atmosphere must contain at leas 19.5 percent oxygen.

Level B Protection:

Equipment: The equipment listed in Level C, but in place of a half face respirator, workers Will use supplied air. Air will be supplied from a cascade system or from a compressed supplied air filtration unit. Additional equipment may be selected to be used with the above listed equipment based on the inherent dangers of the space to be occupied.

Protection Provided: The same level of respiratory protection but less skin protection than Level A. It is the minimum level recommended for initial site entries until the hazards have been further identified.

Environmental Qualifications: The type and atmospheric concentration of substances have been identified and require a high level of respiratory protection, but less skin protection. This involves atmospheres: with IDHL concentrations of specific substances that do not represent a severe skin hazard, or that do not meet the criteria for use of air-purifying respirators. Atmosphere contains less than 19.5 percent oxygen. Presence of incompletely identified vapors or gases is indicated by direct reading organic vapor detection instrument, but vapors and gases are not suspected of containing high levels of chemicals harmful to skin or capable of being absorbed through the intact skin.

Limiting Criteria: Use only when the vapor or gases present are not suspected of containing high concentrations of chemicals that are harmful to skin or capable of being absorbed through the inact skin. Use only when it is highly unlikely that the work being done will generate either high concentrations of vapors, gases, or particulates or splashes of material that will affect exposed skin.

NOTE: Project Management staff may upgrade PPE equipment requirements as required by specific tasks.

11.0 Air Monitoring:

The following air monitoring program will be implemented for confined space entry activities and prior to any work activities that could provide a source of ignition. Air monitoring is not expected to be necessary during excavation activities, but in the event that odors and/or visual discolorations are detected, the air monitoring program will be implemented.

Direct reading monitoring equipment:

Specific Equipment:
A programmable photo ionization detector, drager tubes, and a combination percent oxygen meter and explosive gas meter (LEL) will be available on site.

Initial air monitoring will be performed for volatile organic compounds and any other parameters that are deemed appropriate by the Project Manager. Continuous or periodic (at least every 15 minutes) monitoring will be performed while operational motorized equipment and personnel are in the work zone. If the work zone has gone unmonitored for more than one-half hour it will be evaluated before personnel will be permitted entry to resume work activities. Unmonitored periods include **lunch, breaks, and any other period where the space has been unattended for more than one half hour.** Proper personal protective equipment will be selected based on the results of the air monitoring and overall hazard estimation by the Project Manager.

Action levels for monitoring results: If an explosive atmosphere is identified within the exclusion zone, (LEL approaches 10% or above, oxygen enriched atmosphere at levels approaching 25%), personnel will not be permitted to enter the work zone or will be immediately withdrawn until air quality can be restored. Ventilation equipment may be used to provide safe working conditions. In an oxygen deficient atmosphere is being approached, (oxygen 19.5% or less as measured by a percent oxygen meter), personnel will not be permitted to enter the work zone or will be withdrawn until air quality can be restored. If dusts present a hazard or become heavy and dust control measures cannot maintain air quality, work will stop until dust control can be established and maintained. If atmospheric conditions present any form of immediate danger, all personnel will withdraw from the work site and consult the Project Manager for further action.

12.0 Site Access Control:

DECON will temporarily barricade the immediate area of work on site with a combination of caution tapes, orange construction fencing, cones, and movable barricades as needed. If hazardous contamination is determined to be present, personnel leaving the work area will be required to pass through a decontamination reduction zone adjacent to the work or "hot" zone. Standard operating procedures for decontamination will be followed to prevent chemical contamination beyond the barricaded areas. No pedestrian traffic is expected on this project.

12.1 Contamination Reduction:

If it is deemed necessary, DECON will erect a contamination reduction zone where personnel will prepare for entry and doff PPE when egressing from the work zone for breaks and end of day departure. This zone will contain receptacles for spent safety equipment. New supplies will be staged on the outside of the contamination reduction zone and will be available to personnel preparing to enter the work zone. Personnel in need of replacement equipment will have to first meet the minimal decontamination requirements before donning new equipment. These standard practices will minimize the possibility of contamination beyond the designated hot zone and mitigate the possibility of exposure to personnel.

12.2: Emergency Contamination Reduction

In the event of an injury or severe exposure requiring immediate first aid or immediate transportation to the designated hospital for emergency services, the injured party will be subject to an "emergency decontamination". An "emergency decontamination" is performed in one of two ways depending on the exposure substance or nature of the injury. If the injury or exposure is not immediately life threatening, the subject should be assisted through the contamination reduction zone to remove contaminated PPE and then proceed to get medical services as needed. If the injury is life threatening or if the subject is unconscious, an effort should be made to perform a wipe down, cutaway, or rinse off while moving the subject to an emergency service area. The effects of the exposure substance must be understood by the on site personnel handling the subject. Incorrect handling may worsen the condition of the injured person. In the event of a severe injury, all personnel should make themselves available to respond and assist in the handling of the injured person until the situation has been stabilized. Work will be reestablished by the Project Manager or Supervisor when the situation has been resolved and work can continue safely. An incident report package for injuries and illness is available in this plan as ***Appendix C***.

13.0 Emergency Information:

Emergency Telephone Numbers:

Fire: 911

Police: 911

Ambulance: 911

Poison Control Center: (800) 876-4766

Emergency First Aid For Substances On Site:

Exposure Substance	Exposure Symptoms	TWA mg/m3	First Aid
Diesel Fuel	Inhalation can be irritating to the respiratory passages, and cause the following symptoms: headache, dizziness, nausea, vomiting and loss of coordination, and chemical pneumonitis. Prolonged skin contact can cause a rash.	ND 900	**Inhalation** - Remove to fresh air-If necessary aid breathing and seek medical attention. **Eyes** - Immediately flush with water for 15 minutes, separating eyelids with fingers. **Skin** - Wash with soap and water. **Ingestion** - Do not induce vomiting.

NOTE: **Please consult MSDS's and other precautionary information when handling a chemical that has properties with which you are unfamiliar.**

Nearest Emergency Medical Facility:

Facility Name- **Kaiser Permanente Hospital**
27400 Hesparian Blvd.
Hayward, CA 94545

Telephone # **(510) 784-4251**

Location of Emergency Equipment:

Equipment:	**Location:**
First Aid Kit	First aid kits can be found in immediate proximity to the DECON work area.
Fire Extinguisher	Fire extinguishers are mounted in each piece of heavy equipment and will be stationed adjacent to excavations and all hot work locations (if applicable)
Emergency Eye Wash Station.	Eye wash stations can be found in the portable contamination reduction area set up within the work areas. Decontamination stations will be relocated if the tasks become more than 100 yards from the closest emergency decontamination Zone.

Standard On Site Emergency Procedures:

1. *Personal injury or illness:* Administer first aid; call ambulance if necessary.

2. *Fire or explosions:* Turn off all motorized equipment; evacuate working area; meet at designated emergency meeting area. This area should be determined during the first on site safety meeting.

3. *Earthquake:* Turn off all motorized equipment; evacuate working area; meet at designated emergency meeting area.

4. *Hazardous material spill or release:* Turn off all motorized equipment; evacuate work area in an upwind direction of the spill or release. Meet all the designated emergency meeting area.

5. *Personal Protective Equipment Failure:* If any personnel experience as failure or alteration of protective equipment that effects the protection factor that person and his/her buddy shall immediately leave the exclusion zone. Reentry shall not be permitted until the equipment has been repaired or replaced.

6. *Other Equipment Failure:* If any other equipment on site fails to operate properly the project manager and site safety officer will be notified and then shall determine the effect of this failure on continuing operations on site. If failure effects the safety of personnel or prevents completion of the work plan tasks all personnel shall leave the exclusion zone until the situation is evaluated and appropriate actions have been taken.

14.0 Safety Plan Acknowledgment Certification:

Certification:

This Site Specific Health and Safety Plan has been constructed to address hazards known or suspected to be associated with UST removal for ACC Environmental Consultants, Inc. This plan has also been designed to meet the requirements in 29 CFR 1910.120 and 8 CFR 5192. This plan is subject to alterations and additions because of new hazards or additional scopes of work. Any additions to this plan after the commencement of work will be submitted as an addendum to the original plan. Each new addendum will be distributed to all of the companies involved in the intended scope of work on site.

Prepared By: Anais N... *(Safety Coordinator)* — December 03, 1998 **Date**

Reviewed By: D... *(Operations Manager)* — December 3, 1998 **Date**

Approved By: Bruce Jacobsen *(President)* — 12-3-98 **Date**

Personnel on site-

I have read and reviewed this Site Safety Plan and will comply with the requirements stated herein and adhere to directions from the Site Safety Officers.

Name	Signature

Appendix A

Hospital Location Map

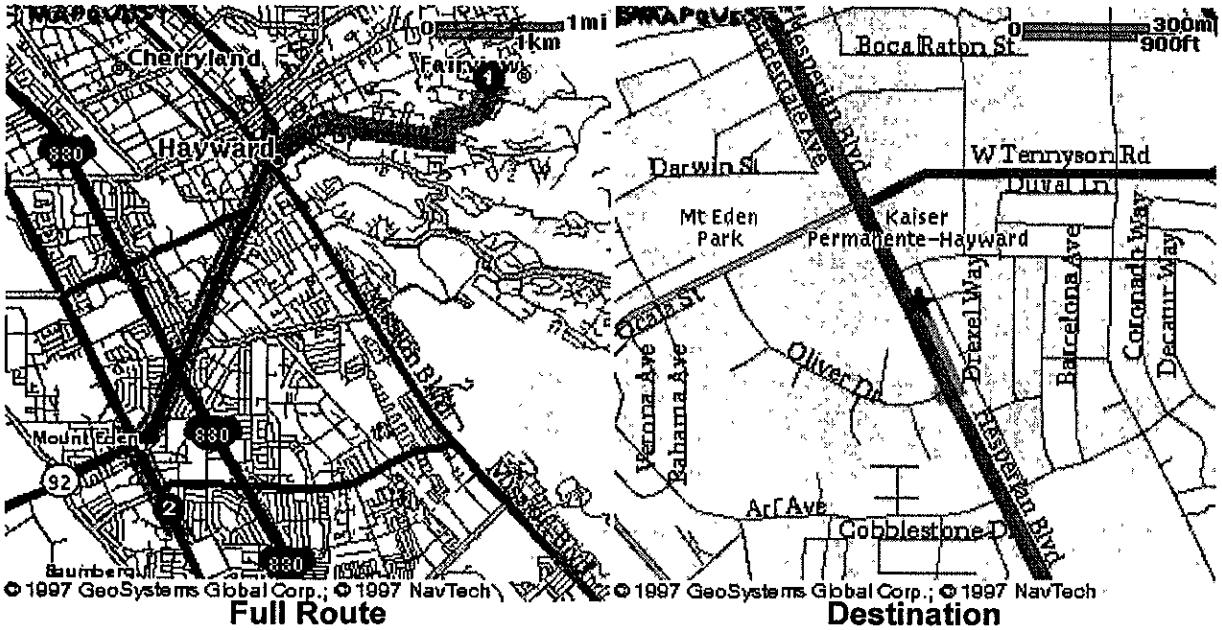
YAHOO! MAPS

Yahoo! Maps - Driving Directions

New Location

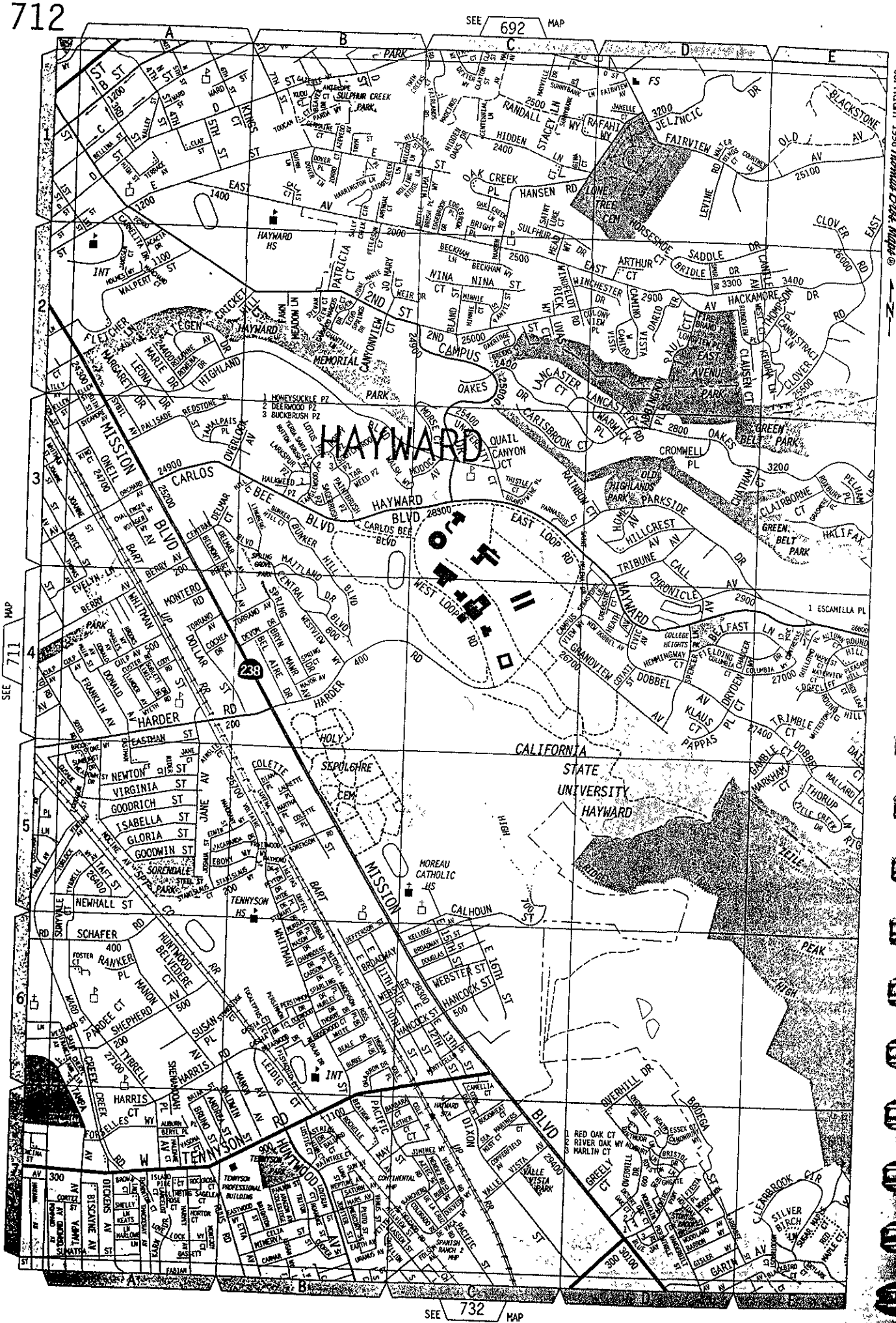
Starting From:	Arriving At:	Distance:	Approximate Travel Time:
24200 Fairview Avenue Hayward, CA 94541	27400 Hesparian Blvd Hayward, CA	5.8 miles	17 mins

	Directions	miles
1.	Start out going Southeast on FAIRVIEW AVE towards HANSEN RD.	0.1
2.	Turn RIGHT onto HANSEN RD.	0.1
3.	Turn SLIGHT LEFT at the intersection of RAFAHI WAY to stay on HANSEN RD.	0.6
4.	Turn RIGHT onto EAST AVE.	0.9
5.	Turn SLIGHT LEFT onto E ST.	0.4
6.	Turn RIGHT onto MAIN ST.	0.1
7.	Turn LEFT onto FOOTHILL BLVD.	0.1
8.	Turn SLIGHT RIGHT onto W JACKSON ST.	1.4
9.	W JACKSON ST becomes SR-92 W.	0.8
10.	Turn SLIGHT RIGHT onto ramp.	0.1
11.	Take the HESPARIAN BLVD SOUTH exit on left.	0.3
12.	Merge onto HESPERIAN BLVD.	0.8
13.	Turn LEFT onto OLIVER DR.	0.0
14.	Turn LEFT onto HESPERIAN BLVD.	0.1



Full Route **Destination**

1) Enter a starting address : 2) and a destination address:


SEE 692 MAP
SEE 711 MAP
SEE 732 MAP
HAYWARD
CALIFORNIA STATE UNIVERSITY HAYWARD
MISSION BLVD
HAYWARD BLVD
CARLOS BEE BLVD
EAST LOOP RD
WEST LOOP RD
CAMPUS DR
HARDER RD
TENNYSON RD
HESPERIAN BLVD
SOUTH HAYWARD BART
HAYWARD HS
TENNYSON HS
MOREAU CATHOLIC HS
MEMORIAL PARK
GREEN BELT PARK
HOLY SEPULCHRE CEM
HORSESHOE CANYON
1 HONEYSUCKLE PZ
2 DEERWOOD PZ
3 BUCKBRUSH PZ
1 ESCAMILLA PL
1 RED OAK CT
2 RIVER OAK WY
3 MARLIN CT
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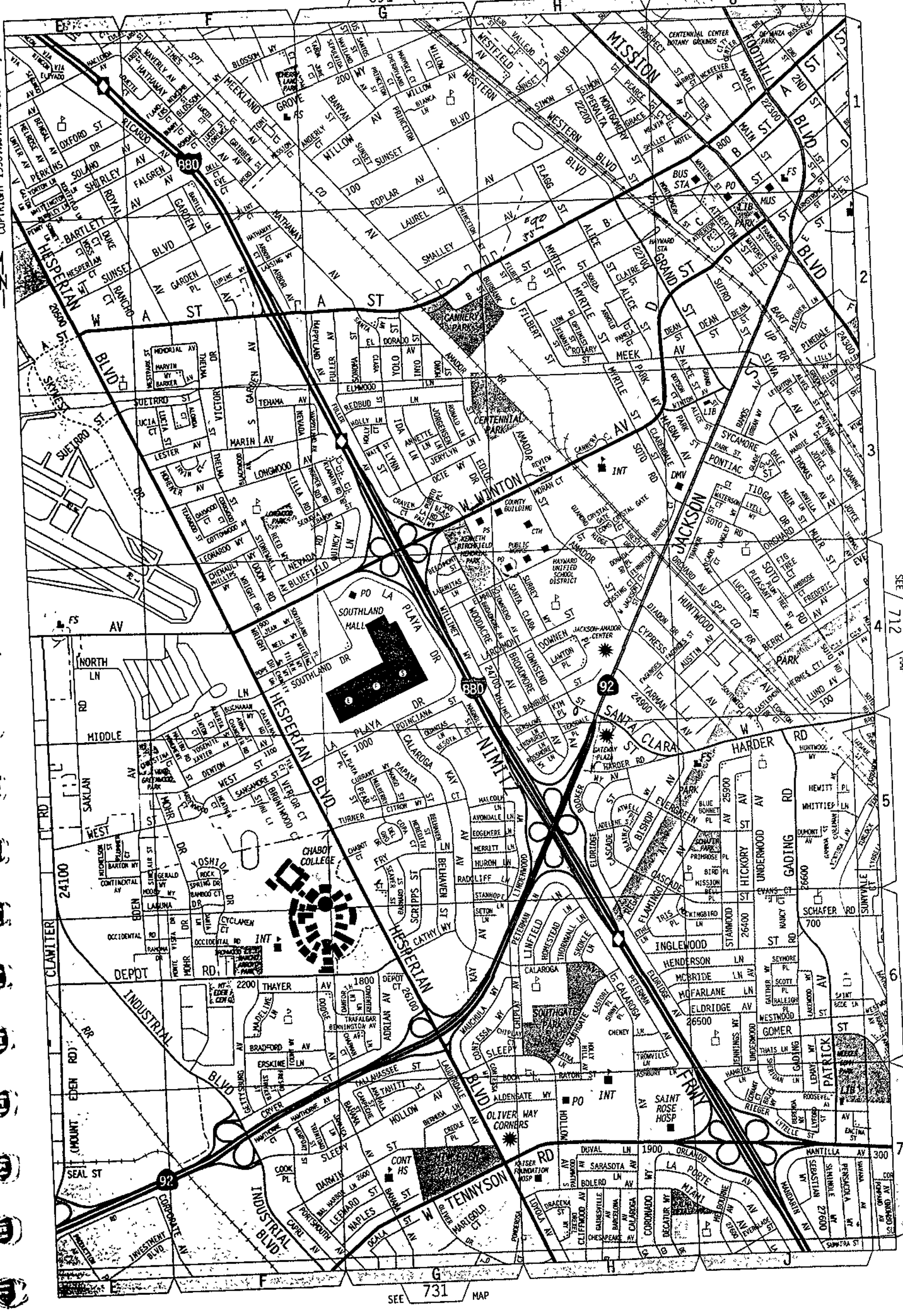

SEE 731 MAP

Appendix B*

Hazardous Materials Inventory Statement

* The Hazardous Materials Inventory List, MSDS's and their locations will be made available as part of the orientation and initial "tailgate" safety meeting for DECON employees working on site.

MATERIAL SAFETY DATA SHEET

CORPORATE RESEARCH & DEVELOPMENT

SCHENECTADY, N. Y. 12305

MATERIALS · INFORMATION · SERVICES

No. 468

FUEL OIL NO. 1

Date March 1982

SECTION I. MATERIAL IDENTIFICATION

MATERIAL NAME: FUEL OIL NO. 1
DESCRIPTION: Kerosine-like mixture of petroleum hydrocarbons; a distillate of controlled sulfur content.
OTHER DESIGNATIONS: Heating Fuel; ASTM D396, Grade No 1; CHEVRON Heating Fuel No. 1
MANUFACTURER: Available from many suppliers, including:
Standard Oil Co. of California
Chevron Research Co.
PO Box 1272
Richmond, CA 94802 Tel: (415) 233-3737

SECTION II. INGREDIENTS AND HAZARDS	%	HAZARD DATA
Fuel Oil No. 1 Mixture of paraffinic, olefinic, naphthenic, and aromatic hydrocarbons Sulfur content	<0.5	8-hr TWA 5 mg/m^3 (mineral oil mist)*

*Current OSHA Standard and ACGIH (1981) TLV.

SECTION III. PHYSICAL DATA

Boiling range, 1 atm, deg C (F) ---------- 166-318 (330-605)
Vapor pressure, 38C (100F) --- ca 5
Solubility in water ----- Insoluble
Specific gravity (H_2O=1) --- ca 0.83
Pour point, deg C, max ----- -18
Volatiles, vol % ---------- >99
Viscosity @ 40C, cSt -------- 1.3-2.1

Appearance and Odor: Light amber liquid with a mild petroleum odor.

SECTION IV. FIRE AND EXPLOSION DATA

Flash Point and Method	Autoignition Temp.	Flammability Limits In Air % by volume	LOWER	UPPER
>100F (CC)	490F		ca 1.0	-

Extinguishing media: Dry chemical, carbon dioxide, foam, water fog or spray. Use a water spray to cool fire exposed containers. Use a smothering technique for extinguishing fire of this combustible liquid. Do not use a forced water stream directly on burning oil as this will scatter the fire.
Firefighters should wear self-contained breathing apparatus and full protective clothing.

SECTION V. REACTIVITY DATA

This is a stable material in closed containers at room temperature under normal storage and handling conditions. It does not polymerize.
Incompatible with strong oxidizing agents; heating greatly increases fire hazard.
Thermal-oxidative degradation products can include hydrocarbons and hydrocarbon derivatives (partial oxidation products), CO_2, CO and SO_2.

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SECTION VI. HEALTH HAZARD INFORMATION

TLV 5 mg/m^3 (mineral oil mist)

Excessive inhalation of vapor or mist irritates the respiratory tract, and can cause headache, dizziness, nausea, stupor, convulsions or loss of consciousness, depending on conc. and time of exposure. High vapor conc. or liquid contact can irritate eyes.
Liquid contact with the skin is irritating; prolonged or repeated contact can cause dermatitis.
Chemical pneumomitis may result when vomiting occurs after ingestion and oil is aspirated into the lungs.
FIRST AID:
Eye Contact: Flush eyes with plenty of running water for at least 15 minutes. If irritation persists, get medical help.
Skin Contact: Remove contaminated clothing. Wash exposed areas of the body with soap and water. Get medical help when large areas of the body have been exposed or if irritation persists.
Inhalation: Remove to fresh air. Restore and/or support breathing as needed. (administer oxygen if necessary). Call a physician.
Ingestion: Contact physician! Do not induce vomiting (aspiration hazard)!

SECTION VII. SPILL, LEAK, AND DISPOSAL PROCEDURES

Notify safety personnel of leaks or spills. Remove sources of heat or ignition.
Evacuate area for large spills. Provide maximum explosion-proof ventilation. Those involved in clean-up should use protection against liquid contact and vapor inhalation. Contain spill. Do not send to sewer or allow to enter streams or surface water. Pick up liquid for reclaim or disposal. Use absorbent solid to pick up small spills or residues. Clean up spills promptly to reduce fire or vapor hazards.
DISPOSAL: Burn in an approved incinerator or furnace or dispose of via a licensed waste disposal company. Follow Federal, State and local regulations. Report large oil spills.

SECTION VIII. SPECIAL PROTECTION INFORMATION

Provide general ventilation and local exhaust ventilation where operating conditions may create excessive workplace vapors or mists. Use explosion-proof equipment. Provide an approved respirator with mist filter & organic vapor cartridge for nonroutine or emergency use when vapor/mist concentrations are high.
Wear impermeable gloves to prevent prolonged liquid contact. Use eye protection where splashing liquid or high mist or vapor conc. may occur. Other protective clothing may be required, depending on working conditions.
An eyewash fountain and washing facilities should be readily available near handling and use areas.
Launder contaminated clothing before reuse (at least weekly routine laundering of work clothes is recommended).

SECTION IX. SPECIAL PRECAUTIONS AND COMMENTS

Store in closed containers in a well-ventilated area away from sources of heat, ignition and strong oxidizing agents. Protect containers from physical damage. Use non-sparking tools and explosion-proof electrical equipment. Prevent static electric sparks. Use and storage conditions should be suitable for OSHA Class II combustible liquid.
Avoid prolonged skin contact and breathing of vapors or mist. No smoking in areas of use. Follow good hygienic practice with this material. Do not wear oil contaminated clothing. Do not put oily rags into pockets. Wash exposed skin areas several times a day with soap and warm water when working with this material. DOT I.D. No. UN1993
DOT Classification: COMBUSTIBLE LIQUID
DATA SOURCE(S) CODE: 1,6,7,12

APPROVALS: MIS CRD J. M. Fuller
Industrial Hygiene and Safety 3-12-82
MEDICAL REVIEW: 21 March 1982

GENERAL ELECTRIC

Appendix C

Incident Report Information

DECON
ENVIRONMENTAL SERVICES, INC.

To: Project Manager/Superintendent

From: DECON Environmental Services, Inc.

Subject: Incident Reporting

Date: June 6, 1996

State Law requires that we report every job related injury and illness, and every injury which takes place should be reported, including minor injuries, in order to protect our workers and ourselves in the workplace. Back injuries, especially, should be reported and dealt with immediately.

Handle injuries and illnesses as follows:

1. When an injury or illness occurs, take or send the injured/ill worker for appropriate medical care. Use a Readicare facility rather than a local emergency room if the injury or illness is not serious. If the injury/illness is life threatening or if you are not sure about the seriousness of the injury/illness, send the worker to the nearest hospital emergency room.

2. State Law requires that we give the injured/ill employee an EMPLOYEE'S CLAIM FOR WORKERS' COMPENSATION BENEFITS form (copies attached). If he or she is able, have him or her fill the employee's portion out immediately and return it to you. You then fill out the employer's portion. Give the employee the employee's copy. THIS MUST BE DONE WITHIN 24 HOURS OF THE INJURY OR ILLNESS.

3. Fill out the DECON Incident Report Form (copies attached). The home office uses this document to prepare our report to our Workers' Compensation insurance company. Note that you must state whether you gave the employee an EMPLOYEE'S CLAIM FOR WORKERS' COMPENSATION BENEFITS form and the date that you did so. You must complete this form within the same work day and turn it into the Operations Manager.

Post the "Notice to Employees" form in a prominent place at the job site. On the "Notice to Employees" form, write the name of the nearest care facility in the appropriate place near the bottom of the form. The Notice should remain posted at the job site at all times.

State of California
Department of Industrial Relations
DIVISION OF WORKERS' COMPENSATION

Estado de California
Departamento de Relaciones Industriales
DIVISION DE COMPENSACIÓN AL TRABAJADOR

EMPLOYEE'S CLAIM FOR WORKERS' COMPENSATION BENEFITS

If you are injured or become ill because of your job, you may be entitled to workers' compensation benefits.

Complete the "Employee" section and give the form to your employer. Keep the copy marked "Employee's Temporary Receipt" until you receive the dated copy from your employer. You may call the Division of Workers' Compensation at 1-800-736-7401 if you need help in filling out this form or in obtaining your benefits. An explanation of workers' compensation benefits is included on the back of this form.

You should also have received a pamphlet from your employer describing workers' compensation benefits and the procedures to obtain them.

Any person who makes or causes to be made any knowingly false or fraudulent material statement or material representation for the purpose of obtaining or denying workers' compensation benefits or payments is guilty of a felony.

PETICION DEL EMPLEADO PARA BENEFICIOS DE COMPENSACIÓN DEL TRABAJADOR

Si Ud. se ha lesionado o se ha enfermado a causa de su trabajo, Ud. tiene derecho a recibir beneficios de compensación al trabajador.

Complete la sección "Empleado" y entregue la forma a su empleador. Quédese con la copia designada "Recibo Temporal del Empleado" hasta que Ud. reciba la copia fechada de su empleador. Si Ud. necesita ayuda para completar esta forma o para obtener sus beneficios, Ud. puede hablar con la División de Compensación al Trabajador llamando al 1-800-736-7401. En la parte de atrás de esta forma se encuentra una explicación de los beneficios de compensación al trabajador.

Ud. también debería haber recibido de su empleador un folleto describiendo los beneficios de compensación al trabajador lesionado y los procedimientos para obtenerlos.

Toda aquella persona que a propósito haga o cause que se produzca cualquier declaración o representación material falsa o fraudulenta con el fin de obtener o negar beneficios o pagos de compensación a trabajadores lesionados es culpable de un crimen mayor "felonía".

Employee: *Empleado:*

1. Name. *Nombre.* _____ Today's Date. *Fecha de Hoy.* _____
2. Home address. *Dirección Residencial.* _____
3. City. *Ciudad.* _____ State. *Estado.* _____ Zip. *Código Postal.* _____
4. Date of Injury. *Fecha de la lesión (accidente).* _____ Time of injury. *Hora en que ocurrió* _____ a.m. _____ p.m
5. Address and description of where injury happened. *Dirección lugar dónde occurió el accidente.* _____
6. Describe injury and part of body affected. *Describa la lesión y parte del cuerpo afectada.* _____
7. Social Security Number. *Número de Seguro Social del Empleado* _____
8. Signature of employee. *Firma del empleado.* _____

Employer - complete this section and give the employee a copy immediately as a receipt.
Empleador - complete esta sección y déle inmediatamente una copia al empleado como recibo.

9. Name of employer. *Nombre del empleador.* DECON ENVIRONMENTAL SERVICES, INC.
10. Address. *Dirección.* 23190 Connecticut Street, Hayward, CA 94545
11. Date employer first knew of injury. *Fecha en que el empleador supo por primera vez de la lesion o accidente* _____
12. Date claim form was provided to employee *Fecha en que se le entrego al empleado la peticion* _____
13. Date employer received claim form. *Fecha en que el empleado devolvio la peticion al empleador.* _____
14. Name and address of insurance carrier or adjusting agency. *Nombre y direccion de la compañia de seguros o agencia administradora de seguros.* STATE COMPENSATION INSURANCE FUND P.O. Box 12971 Oakland, CA 94604
15. Insurance Policy Number. *El número de la póliza del Seguro.* 571-10025-96
16. Signature of employer representative. *Firma del representante del empleador.* _____
17. Title. *Titulo.* _____ 18. Date. *Fecha.* _____ 19 Telephone. *Telefono.* _____

Employer: You are required to date this form and provide copies to your insurer or claims administrator and to the employee, dependent or representative who filed the claim within one working day of receipt of the form from the employee.

SIGNING THIS FORM IS NOT AN ADMISSION OF LIABILITY

STATE COMPENSATION INSURANCE FUND

Empleador: Se requiere que Ud. leche esta forma y que provéa copias a su compañia de seguros, administrador de reclamos, o dependiente representante de reclamos y al empleado que hayan presentado esta petición dentro del plazo de un dia hábil desde el momento de haber sido recibida la forma del empleado.

EL FIRMAR ESTA FORMA NO SIGNIFICA ADMISION DE RESPONSABILIDAD

DECON Environmental Services, Inc.
INCIDENT REPORT FORM

SUPPLEMENTARY RECORD OF OCCUPATIONAL INJURIES AND ILLNESSES

*NOTE: COMPLETED REPORT TO BE SUBMITTED TO OPERATIONS MANAGER AT THE END OF THE WORK SHIFT.

INJURED OR ILL EMPLOYEE

1. Name:_____

2. Home Address:_____

_____

3. Age:_____ 4. Sex:____ Male ____ Female Employee No._____

5. _____ (enter regular job title, not job title at time of injury)

ACCIDENT/INJURY/INCIDENT

6. Place of accident/injury/incident: (Give address or describe place as accurately as possible).____

_____

_____

7. Was place of accident/injury/incident on DECON's premises? (Circle One)

Yes or No

8. What was employee doing when accident or injury occurred? (Specify any tools/equipment/materials involved and what was being done.) _____

_____

_____

9. How did the accident/injury/incident occur (Describe fully the event which resulted in the accident/injury/incident) (attach additional pages if necessary)? _____

_____

_____

_____

10. List names of witness(es):_____

_____

11. If the injury was due to an automobile accident, attach automobile accident information report.

12. List outside service agencies (e.g., fire department, ambulance, police) involved in response to injury illness and the agencies' role in treatment._____

_____

_____

OCCUPATIONAL INJURY OR OCCUPATIONAL ILLNESS

13. Describe the injury or illness (Describe in detail and indicate the part of the body affected.):_____

_____

_____

14. Name the object or substance which directly injured the employee:_____

Describe the first aid given to the employee:_____

_____

15. Date of injury or initial diagnosis of occupational illness:

_____

Time of injury:_____ Date of return to work:_____

16. Date/time reported to OP.MGR.:_____(date) _____ (time)

17. Did the employee die? (Circle One) Yes or No

OTHER

18. Site Safety Officer:_____

19. Project Manager:_____

20. Foreman:_____

21. List details of any existing chemical hazards or contamination:_____

_____

_____

22. List any property damage (if applicable):_____

_____

_____

23. Estimated cost of damage:_____

24. How will this accident/injury/incident effect the contract schedule:_____

_____

_____

25. List protective equipment and clothing used by employee:

_____

_____

_____

26. Did limitations of protective equipment/clothing contribute to injury? If so, explain:_____

_____

_____

27. Name and address of treating physician:_____

_____

_____

Indicate length of stay:_____

28. If hospitalized, name and address of hospital:_____

_____

_____

Indicate length of stay:_____

29. Did you give the employee an "EMPLOYEE's CLAIM FOR WORKERS' COMPENSATION BENEFITS" form? _____ (Yes or No)

DATE _____ TIME _____

CORRECTIVE ACTION

30. Explain corrective actions taken/to be taken which will prevent similar occurrences (attach additional pages if required):_____

_____

_____

_____

31. Explain action taken to ensure safety and security:_____

_____

_____

32. Initial Review by:

_____ _____ _____

Site Safety Officer Signature Date

REVIEW AND COMMENTS:_____

_____

_____

_____

33. Are additional corrective actions required? (Yes or No) List:

_____

_____

_____

_____ (Date Due: _____)

34. Date corrective actions accomplished: _____

Incident Analysis - First Aid Only _____. OSHA Recordable _____.

DOCUMENTATION OF REVIEW/Acknowledgement of Report Contents

Employee Involved:

Print Name	Signature	Date

Site Safety Officer present during incident/accident:

Print Name	Signature	Date

Project Management Review (Project Manager/Foreman):

Print Name	Signature	Date
Print Name	Signature	Date

DECON Environmental Services, Inc. Health and Safety

Reviewed by:

Health & Safety Manager	Signature	Date

Comments:

_____

_____

_____

_____

Appendix D

Standard Operating Procedures (SOP)

DECON ENVIRONMENTAL SERVICES, INC.

STANDARD OPERATING PROCEDURES
(SOP's)

DECON Environmental Services, Inc.
Standard Operating Procedures*

PART	TITLE
1.	Confined Space Entry
2.	Standard Operating Procedures Excavating/Trenching
3.	Demolition
4.	Noise Protection
5.	Hand and Power Tools
6.	Fixed Ladders
7.	Portable Ladders
8.	Hot Work, Welding, Cutting, Burning, And Heating
9.	Heavy Equipment Operation
10.	Manual Lifting and Handling of Heavy Objects
11.	Material Handling, Storage, and Disposal
12.	Illumination
13.	Ropes, Slings, Chains and Hooks
14.	Hot Processes - Steam
15.	Electrical Safety
16.	Pressure Washing
17.	Hazard Communication
18.	Housekeeping
19.	Personal Protective Equipment
20.	Vision Conservation
21.	Respiratory Protection
22.	Use of Compressed Air - General
23.	Compressed Gas Cylinders
24.	Air Tools
25.	Scaffolds (General)
26.	Stairs
27.	Lockout/Tagout
28.	Sanitation

DECON ENVIRONMENTAL SERVICES, INCORPORATED

CONFINED SPACE ENTRY TECHNIQUES

Approval Notation:

Proceedure Number/Name: DECON-SOP-#01 **Confined Space Entry** has been reviewed and approved by the following:

APPROVAL SIGNATURES:

Clarance L. McIlvaine/ Operations Manager — 11-3-98 Date

Bruce Jacobsen, President — 11-3-98 Date

This program describes the requirements necessary for preventing employee exposure to dangerous air contamination, oxygen deficiency, and physical hazards in confined spaces. Examples of Confined Spaces are tanks, vats, compartments, ducts, pipelines, vaults, bins, pits, degreasers, tunnels, utility trenches, manholes, and other such confined areas not intended for continuous human occupancy. Because of the varied and unpredictable nature of confined spaces, entry into these location must be controlled to prevent serious injury or death. The following are characteristics of Confined Spaces include but are not limited to:

1. An atmosphere containing less that 19.5% oxygen (normal air contains 20.9% oxygen). This is usually the result of oxygen displacement by gases such as nitrogen, argon, helium, or sulfur hexafluoride, or oxidation.

2. Flammable gases and vapors (eg: methane, ethane, propane, gasoline, methyl-ethyl ketone, alcohols).

3. Toxic gases and vapors (eg: hydrogen sulfide, nitrogen dioxide, 1,1,1-trichloroethane, perchloroethane, methylene chloride).

4. Physical hazards such as radiation, high voltage, or crushing or engulfment by liquids or particulate matter.

This Section describes the program which meets the requirements of the California Code of Regulations Title 8, Article 108.

Air monitoring shall be employed to determine if a workspace shall be designated as a confined space requiring a self contained breathing apparatus (SCBA) or line air. If the atmospheric status of the work area is established to be suitable enough to not use SCBAs or line air, work in the space shall proceed as follows.

RESPONSIBILITIES:

Supervisors:

Supervisors & Managers responsible for personnel entering confined spaces shall:

1. Ensure that their employees have been trained adequately for entry into confined spaces.

2. Ensure that equipment used for confined space entries is kept in good operational condition and is calibrated according to manufacturers' recommendations.

3. Administering and auditing the performance of the Confined Space Entry Program.

Employees:

Employees are responsible for:

1. Following written Confined Space Entry Procedures.

2. Notifying their Supervisor and the SSO immediately of any unusual hazards associated with confined spaces not addressed by these Confined Space Entry Procedures.

3. Reporting all emergency conditions immediately to their Supervisor.

General Provisions:

1. A Confined Space Entry Permit (CSEP) will be obtained before any work begins. The CSEP will be put on official record of the site and submitted to the SSE by the end of the day's shift.

2. Confined spaces will be identified with a posted sign which reads: "Caution - Confined Space."

3. An observer will be posted at all times work is being conducted in a confined space.

4. Only personnel trained and knowledgeable of the requirements of these Confined Space Entry Procedures will be authorized to enter a confined space or be a confined space observer.

5. Natural ventilation will be provided for the confined space prior to initial entry and for the duration of the CSEP. Positive/forced mechanical ventilation may be required. Care will be taken to not spread contamination outside the enclosed area.

6. Explosion proof equipment will be used if flammable liquids, gases, or vapors are contained within the confined space. All equipment shall be positively grounded.

7. Remove the contents of any confined space prior to entry. All sources of ignition must be removed prior to entry.

8. Break and blank-out feed lines to confined spaces. Lock-out/tag-out identified sources of electrical or mechanical energy which could activate any area of the confined space prior to entering a confined space. Document the lock-out/tag-out procedure in the CSEP.

9. Lights used in the confined spaces will be equipped with guards preventing contact with the bulb and will be explosion proof.

10. Only SCBA gas cylinders will be permitted in the confined spaces. Remove gas hoses from the space and turn off the supply at the cylinder valve when personnel exit from the confined space.

11. Lifelines, safety belts, and body harnesses will be used in confined spaces which require respiratory equipment or where rescue may be difficult.

12. Entry into an untested or IDLH confined space will be prohibited.

13. Remove all chemicals from the vicinity if air-moving equipment is used to provide ventilation.

14. NO SMOKING in confined spaces.

15. Monitor oxygen, LEL, or contaminant concentration prior to and during entry into the confined space.

16. Obtain prior permission from the Corporate Health and Safety Director for deviation from Confined Space Entry Procedures.

Confined Space Evaluation:

This section of the permit is designed to ensure that all necessary steps and precautions have been taken to reduce the potential for chemical and physical hazards prior to entry. Key points to be recognized are:

Atmospheric Testing:

Required for all confined spaces posing potential atmospheric hazards. Atmospheric hazards include: lack of oxygen (limiting atmosphere), presence of toxic gases or chemicals (toxic atmospheres), the presence of flammable gases or particulates (explosive atmospheres), or oxygen enriched atmospheres (explosive atmospheres). Atmospheric testing is required before mechanical ventilation is put into operation. These results will give you a baseline reading to identify the hazards and give you the expected worst possible case if the mechanical ventilation fails. Additional atmospheric monitoring must be performed after breaks during the permitted period. The atmospheric testing required must be performed by personnel who have been trained in the use of gas and vapor detection instruments. A decision must be made by the SSO as to the need for continuous monitoring of the space during occupancy.

Mechanical Ventilation:

Required for all confined spaces with atmospheric hazards and must be utilized until all work is completed and occupants have exited the space.

If ventilation is needed but cannot be utilized then the space will automatically become a Permit Required Confined Space.

SSO:

For high hazard permit required confined space entries, the SSO must be present to ensure that the appropriate rescue equipment such as a hoist, lifeline and harness are being utilized. Prior to entry of such a space, a planning session and a simulated field exercise shall be coordinated. For confined space entry where air supplied respiratory protection is required, the personnel entering the space shall be properly trained in its use, fit tested, and under medical surveillance.

Prior to Entry:

The confined space shall be emptied and purged of all hazardous materials to the extent possible by personnel prior to entry.

Personnel entering the space shall be trained prior to entrance. In addition to training in the hazards and classification of confined spaces, personnel shall review any pertinent special procedures written for the space(s) to be entered.

Standby:

At least one standby person must be present at all times while the confined space is occupied. If only one standby person is present at the site of confined space work, that person shall have a means of communication (ie: a radio) to summon help in the case of an emergency. The primary responsibility of the standby personnel is the safety of the occupants of the confined space. Standby personnel must be trained in basic first aid and CPR. Standby personnel must be in constant visual or audible contact with the occupants.

In the event on an emergency, the observer must NEVER enter the confined space prior to contacting and receiving assistance from a helper. In the event safety equipment failure occurs and the victim is in a confined space, the standby will attempt to remove the victim from the confined space if it is not possible for the victim to do so. A hand-operated or mechanical wench (lifeline) will be used to pull the victim from the confined space. If necessary, the standby will don the emergency Level B PPE and enter the confined space to rescue the victim.

Communication:

Special communications such as bone microphones allowing an individual to communicate with the standby person due to the use of an air supplied respirator may be required. If "Hot Work" will be performed, it must have the approval of the SSO, and the appropriate permit shall be completed and posted at the entrance to the space. Exceptions to requirements for confined space entry shall be justified in writing.

Exceptions to requirements for confined space entry shall be justified in writing.

Procedure for Entry:

The following procedures will be used for confined space entry:

1. Evaluate the job to be done and identify all potential hazards before scheduling work in a confined space as outlined immediately above.

2. Ensure that all process piping, mechanical and electrical equipment, etc. have been disconnected, purged, blanked-off or locked and tagged as necessary.

3. Complete and submit a Confined Space Entry Permit.

4. Ventilation must be provided for the duration of the task in the confined space.

5. The personnel who enter the confined space and the confined space observer must be familiar with the contents and the requirements of this instruction.

6. Atmospheric testing of the confined space will be performed prior to validation of a CSEP. The test will test for oxygen, combustible gases, toxins, corrosives, and

other irritants. If remote testing is not possible, Level B PPE will be utilized. Oxygen and combustible gas monitors will be used by the entry team.

7. The CSEP will be posted at the work site and a copy placed in the health and safety file.

Any procedures that entail entering a vault then subsequently entering a tank will require two confined space entries, thus requiring two Confined Space Entry Permits and Level B emergency standby for both entries.

DECON ENVIRONMENTAL SERVICES, INCORPORATED

EXCAVATING AND TRENCHING

Approval Notation:

Proceedure Number/Name: DECON-SOP-#02 **Excavating and Trenching** has been reviewed and approved by the following:

APPROVAL SIGNATURES:

Clarance L. McIlvaine/ Operations Manager — Date: 11-3-98

Bruce Jacobsen, President — Date: 11-3-98

All excavating and trenching operations and work done in excavations and trenches must conform with established standards.

Before opening any excavation, efforts will be made (including utility company contact) to determine if there are underground utility installations in the area. If utilities are in the area, the installation will be located and supported during the excavation operations.

Any excavation or trench greater than five feet in depth into which employees will need to enter must have a permit allowing such actions issued by CAL-OSHA and complying with regulations and conditions specified with 8 CCR 341, and 8 CCR 1540/1541, Appendix A.

The walls and faces of trenches 5 feet or more deep and all excavations, in which employees are exposed to danger from moving ground or cave-in will be shored or sloped back to the angle of repose as defined in Appendix B to Subpart P of 29 CFR 1926 and 8 CCR 1540/1541, Appendix A.

No person may enter a trench or work at the foot of the face of an excavation until the Contractor SSO has inspected and determined whether sloping or shoring is required to protect against cave-in or subsidence and the appropriate protection have been installed, and the DECON Environmental Services, Inc. SSE has been notified.

Daily inspections of excavations will be made by the Contractor SSO. If evidence of possible cave-ins or slides is apparent, all work in the excavation will cease until the necessary precautions have been taken to safeguard employees.

Trench and excavations must be inspected regularly to ensure that changes in temperature, precipitation, shallow groundwater, overburden or nearby building weight, vibration or nearby equipment operation has caused weakening of sides, face and floors and that protection is being maintained.

Sufficient ramps or ladders must be provided to trenches or excavations to allow quick egress. Ladders may be placed no more than 25 feet apart, must be secured from shifting and must extend at least three feet above the landing point. Use, construction and maintenance of ladders must conform to ladder safety requirements of this section.

A competent person must design and supervise construction of shoring, sheeting, and/or sloping.

Material removed from a trench or excavation must be placed far enough from the edge (at least 2 feet) to prevent its sliding into the excavation and/or from stressing the trench or excavation walls.

Trenches and excavations must be assessed by a competent person, regardless of whether personnel will be working within, when heavy equipment must work nearby prior to and during use, to ensure the trench or excavation will support the weight of the equipment without subsiding and possibly causing the equipment to tip.

Access to trenching areas must be controlled and limited to those persons who are authorized. Prior to entering a trench or excavation, workers must notify the site supervisor, SSO and nearby equipment operators whose activities could affect the trench or excavation.

Where vehicles or equipment operate near excavations or trenches, the slide of the excavation must be shored or braced as necessary to withstand the forces exerted by the superimposed load. Stop logs or other substantial barricades must be installed at the edge of such excavations.

Materials used for sheeting, shoring or bracing must be in good condition. Timbers must be sound, free of large or loose knots, and of adequate dimensions.

Employees working in bell-bottom pier holes must be protected by a substantial casing which extends the full depth of the shaft. When working in such holes, employee's must wear a shoulder harness secured to a lifeline which is tended full-time.

Safe access must be provided into all excavations by means of ladders, stairs, or ramps.

Trenches 4 feet or more in depth must have ladders spaced so that employees' lateral travel does not exceed 25 feet. Such ladders must extend at least 3 feet above grade level.

Walkways or bridges with standard guardrails must be provided where employees or equipment are required or permitted to crossover excavations or trenches.

In locations where oxygen deficiencies or concentrations of hazardous or explosive gases or dusts are possible, the atmosphere in the excavation must be tested by the Supervisor prior to start of work and at intervals, as required by law. When such conditions exist or may develop, emergency rescue equipment must be dept readily available at the excavation/trenching location.

If trenches or excavations are near walkways or roadways, guard or warning barriers must be placed to alert pedestrians and drivers of the presence of the trench or excavation.

If possible, trenches or excavations should be covered or filled in when unattended. Otherwise, strong barriers must be placed around the trench or excavation and lighting must be provided at night if the trench or excavation is near walkways or roadways.

The Contractor SSO must make regular inspections of all trenches or excavations to determine if conditions, such as weather, changes in temperature, groundwater, proximity of other construction activity or soil characteristics, have altered stability and additional precautions are necessary.

METHODS TO PROTECT WORKERS IN A TRENCH OR EXCAVATION

One method is to slope the sides of the cut. The slope varies with different kinds of soil, and must be determined on each project. When an excavation has water conditions, silty material, loose boulders, erosion, deep frost, or slide planes are apparent, the slope must be flattened.

A second method of support is shoring-sheeting. Tightly placed timber shores, bracing, trench jacks, piles, or other materials are installed in a manner to resist the pressures surrounding the excavation.

A third method is trench box. This is a prefabricated movable trench shield composed of steel plates welded to heavy steel frame.

TRENCH SHIELD

1. When designing a support system, consideration should be given to the following:

    a. Soil structure
    b. Depth of cut
    c. Water content of soil
    d. Changes due to weather and climate
    e. Superimposed loads
    f. Vibration
    g. Other operations in the vicinity

2. The soil structure must be identified. Excavations in wet soil, sandy soil, or areas that have been backfilled are relatively unstable and must be supported. Faults in rock strata may be unstable when cut.

3. Changing weather conditions can affect a shoring system. Water from rain loosens the soil, increasing the pressure on the shoring system. A rainstorm can turn a stable trench into a mass of loose soil. Dry conditions can reduce the cohesiveness of the soil. Large excavations are subject to changing weather conditions because they are generally open for longer periods of time than are trenches. Shoring for these excavations should provide protection for a variety of weather conditions.

4. Superimposed loads in the vicinity of the trench or excavation increase the pressure on excavation walls. Heavy equipment and materials such as pipes or timbers should be kept back from the excavation. When heavy loads are located near an excavation, the walls must be braced, sheet-piled, or shored to safely support the extra weight. Pile drivers, cranes or heavy equipment should be mounted on wooden mats or heavy planking to spread the weight evenly. Buildings, curbs, trees, utility poles, spoils and excavation material place stress on a trench. Shoring. bracing or underpinning should be provided to protect workers and prevent dislocation of the soil beneath the structures.

5. Vibration, sudden shock from vehicles or railways, blasting, trucks, equipment and tools can contribute to cave-ins by loosening the soil. If these conditions exist, stronger support is necessary.

6. Install shoring starting from the top of the trench or excavation and work down. Exercise care to place the cross beams or trench jacks in the horizontal position and to space them vertically at appropriate intervals. Braces must be secured to prevent sliding, falling or kickout.

7. For work in trenches 4 feet or more, adequate means of exit, such as a ladder or steps, shall be provided that require no more than 25 feet lateral travel. Ladders must be in good condition, extend from the floor of the trench to 3 feet above the top of the excavation and be secured at the top.

8. Shoring systems must be inspected daily by a competent person. All deficiencies with the shoring system must be corrected.

9. As soon as the work is completed, the trench should be backfilled as the shoring is dismantled. Remove the shoring from the bottom up, taking care to release jacks or braces slowly. In unstable soil, use rope to pull jacks and braces from the trench or excavation.

DECON ENVIRONMENTAL SERVICES, INCORPORATED

DEMOLITION

Approval Notation:

Proceedure Number/Name: DECON-SOP-#03 **Demolition** has been reviewed and approved by the following:

APPROVAL SIGNATURES:

C. L. McIlvaine — 11-3-98

Clarance L. McIlvaine/ Operations Manager — Date

Bruce Jacobsen — 11-3-98

Bruce Jacobsen, President — Date

Prior to permitting employees to start demolition, an engineering survey of the structure and demolition plan shall be made by a competent person. To determine the condition of the framing, floors, walls, and possibility of unplanned collapse of any portion of the structure where employees may be exposed shall be checked in a similar manner. The employer shall have evidence in writing that such a survey has been performed.

When employees work within a structure to be demolished which has been damaged by fire, flood, explosion, or other cause, the walls or floor shall be shored or braced.

All electric, gas, water, steam, sewer, and other service lines shall be shut off, capped, or otherwise controlled outside the building line before demolition is started. In each case, any utility company which is involved shall be notified in advance.

If it is necessary to maintain any power, water or other utilities during demolition, such lines shall be temporarily relocated, protected, and tagged.

It shall be determined if any hazardous chemicals, gases, explosives, flammable materials, or dangerous substances have been used in any pipes, tanks, or other equipment on the property. When any such substance is apparent or suspected, testing, and purging shall eliminate the hazard, before demolition is started.

Hazards to anyone from fragmentation of glass shall be removed.

Where a hazard exists to employees falling through wall openings, the opening shall be protected to a height of approximately 42 inches.

All floor openings, not used as material drops, shall be covered over with materials substantial enough to support the weight of any load which may be imposed. Such material shall be secured to prevent accidental movement.

Except for cutting of holes in floors for chutes, holes through which to drop materials, preparation of storage space, and similar preparatory work, the demolition of exterior walls and floor construction shall begin at the top of the structure and proceed downward. Each story of exterior wall and floor construction shall be removed and dropped into the storage space before commencing the removal of exterior walls and floors in the story next below.

Employee entrances to multistory structures being demolished shall be protected by sidewalk sheds or canopies, or both, providing protection from the face of the building for a minimum of 8 feet. All such canopies shall be at least 2 feet wider than the building entrances or openings (1 foot wider on each side), and shall be capable of sustaining a load of 150 pounds per square foot.

Mechanical equipment shall not be used on floors on working surfaces unless such floors or surfaces are of sufficient strength to support the imposed load.

Stairs, Passageways, and Ladders

Only those stairways, passageways, and ladders designated as means of access to the structure of a building shall be used. Other access ways shall be closed at all times.

All stairs, passageways, ladders and incidental equipment covered by this section, shall be periodically inspected and maintained in a clean and safe condition.

In a multistory building, a stairwell being used shall be illuminated by either natural or artificial means and covered over at a point not less than two floors below the floor on which work is being performed. Access to the floor where the work is in progress shall be through a lighted, protected and separate passageway.

Debris Removal

When debris is dropped through holes in the floors without chutes, the area onto which the material is dropped shall be enclosed with barricades not less than 42 inches high and not less than 6 feet back from the projected edge of the opening above. Signs warning of the hazard of falling materials shall be posted at each level. Removal shall not be permitted in this lower area until debris handling ceases above.

All material chutes or sections thereof, at an angle of more than 45 degrees from the horizontal, shall be enclosed, except for opening equipped with closure at or about floor level for the insertion of materials. The openings shall not exceed 48 inches in height measured along the wall of the chute. Such openings, when not in use, shall be kept closed at all floors below the top floor.

A substantial gate shall be installed in each chute at or near the discharge end. A competent employee shall be assigned to control the operation of the gate, and the backing and loading of trucks.

When operations are not in progress, the area surrounding the discharge end of a chute shall be closed.

Any chute opening, into which personnel dump debris, shall be protected by a guardrail 42 inches above the floor or other surface on which personnel stand to dump the material. Any space between the chute and the edge of openings in the floors through which it passes shall be covered.
Where the material is dumped from mechanical equipment or wheelbarrows, as attached toeboard or bumper, not less than 4 inches thick and 6 inches high, shall be provided at each chute opening.

Chutes shall be designed and constructed of such strength as to eliminate failure due to impact of materials of debris loaded therein.

The storage of waste and debris on any floor shall not exceed the allowable floor loads.

In buildings having wood floor construction, the floor hoists may be removed from not more than one floor above grade to provide storage space for debris provided falling material is not permitted to endanger the stability of the structure.

When wood floor beams serve to brace interior walls of free-standing exterior walls, such beams shall be left in place until other support can be installed to replace them.

Floor arches, to an elevation of not more than 25 feet above grade, may be removed to provide storage for debris provided such removal does not endanger the stability of the structure.

Storage space into which material is dumped shall be blocked off, except for openings for the removal of materials. Such openings shall be kept closed when material is not being removed.

Floor openings shall have curbs or stops to prevent equipment from running over the edge.

Any opening cut in a floor for the disposal of materials shall be not longer in size than 25 percent of the aggregate of the total floor area, unless the lateral supports of the removed flooring remain in place. Floors weakened or otherwise made unsafe by demolition shall be shored to carry safely the intended imposed load for demolition.

Wall Removal

Masonry walls, or sections of masonry, shall not be permitted to fall upon the floors of the building in such masses as to exceed the safe carrying capacities of the floors.

No wall section, which is more than one story in height, shall be permitted to stand without lateral bracing, unless such wall was designed and constructed to stand without such lateral support, and is in a condition safe enough to be self-supporting. All walls shall be left in a stable condition at the end of each shift.

Employees shall not be permitted to work on the top of a wall when weather constitutes a hazard.

Structural or load-supporting members on any floor shall not be cut or removed until all stories above such a floor have been demolished and removed. This shall not prohibit the cutting of floor beams for the disposal of materials or for the installation of equipment, providing all other requirements are met.

Floor openings within 10 feet of any wall being demolished shall be planked solid, except when employees are kept out of the area below.

In building of "skeleton-steel" construction, the steel framing may be left in place during the demolition of masonry. Where this is done, all steel beams, girders, and structural supports shall be cleared of all loose material as the masonry demolition progresses downward.

Walkways or ladders shall be provided to enable employees to safely reach or leave any scaffold or wall.

Walls which serve as retaining walls to support earth or adjoining structures shall not be demolished until such earth has been braced or adjoining structures have been underpinned.

Walls to retain debris shall not be so used unless capable of safely supporting the imposed load.

Floor Removal

Openings cut in a floor shall extend the full span of the arch between supports.

Before demolishing any floor arch, debris and other material shall be removed from such arch and other adjacent floor area. Planks not less than 2 inches by 10 inches in cross section, full sized undressed, shall be provided for and shall be used by employees to stand on while breaking down floor arches between beams. Such planks shall be so located as to provide a safe support for personnel should the arch between the beams collapse. Straddle space between planks shall not exceed 16 inches.

Safe walkways, not less than 18 inches wide, formed of wood planks not less than 2 inches thick or of equivalent strength shall be provided and used by personnel when necessary to enable them to reach any point without walking upon exposed beams.

Stringers of ample strength shall support the flooring planks and the ends of such stringers shall be supported by floor beams of girders and not be floor arches alone. Planks shall

be laid together over solid bearings with the ends overlapping at least 1 foot. When floor arches are being removed, employees shall not be allowed in the area directly underneath, and such an area shall be barricaded to prevent access to it.

Steel Removal

When floor arches have been removed, planking shall be provided for the workers razing the steel framing. Steel construction shall be dismantled column by column and tier by tier (columns may be in two-story lengths). Any structural member being dismembered shall not be overstressed.

Mechanical Demolition

No person shall be permitted in any area which can be affected by demolition when balling or clamming is being performed. Only those persons necessary for the operations shall be permitted in this area at any other time. The weight of the demolition ball shall not exceed 50 percent of the crane's rated load, based on the length of the boom and the maximum angle of operation at which the demolition ball will be used, or it shall not exceed 25 percent of the nominal breaking strength of the line by which it is suspended, whichever is less. The crane boom and load line shall be as short as possible. The ball shall be attached to the loadline with a swivel connection to prevent twisting of the loadline and shall be attached by positive means so that the weight cannot accidentally disconnect.

When pulling over walls or portions thereof, all steel members affected shall have been cut free. All roof cornices or other ornamental stonework shall be removed prior to pulling walls over. During demolition, continuing inspections by a competent person shall detect hazards resulting from weakened or deteriorated floor walls, or loosened material. No employee shall be permitted to work where such hazards exist until they are corrected by shoring, bracing, or other means.

DECON ENVIRONMENTAL SERVICES, INCORPORATED

NOISE PROTECTION

Approval Notation:

Proceedure Number/Name: DECON-SOP-#04 **Noise Protection** has been reviewed and approved by the following:

APPROVAL SIGNATURES:

Clarance L. McIlvaine/ Operations Manager — 11-3-98 Date

Bruce Jacobsen, President — 11-3-98 Date

Protection against the effects of noise exposure shall be provided when the sound levels exceed those shown in Table 1 below. When employees are subjected to sound levels exceeding those listed in Table 1, feasible engineering or administrative controls shall be employed to reduce the noise levels. If such controls prove inadequate, hearing protection shall be used to reduce sound levels within the levels of Table 1.

Table 1:

Permissible Noise Exposure

Duration day (hr)	Sound level (dBA Slow response)
8	90
6	92
4	95
3	97
2	100
1.5	102
1	105
0.5	110
0.25 or less	115

If the variations in maximum noise levels are at intervals of one second or less, the noise is to be considered continuous. Exposure to impulsive or impact noise should not exceed the 140dB peak sound pressure level.

As part of DECON's medical examination procedures, an audiometric testing program shall be maintained for all employees whose exposure equals or exceeds an 8-hr TWA of

85dBA. This testing shall be repeated annually. Testing will conform to California Code of Regulation Title 8, Article 105. Hearing protectors shall be made available to all employees exposed. Employees exposed to 90dBA TWA or more shall be *required* to wear such protective devices. All employees shall attend an annual hearing conservation training program. Information provided in the training program shall be updated regularly and shall include the effects of noise on hearing, purpose of hearing protectors, and purpose, and explanation of audiometric testing.

Unusual decreases in an employee's hearing detected during periodic evaluations will be brought to the attention of the employee, employee's supervisor, and the SSO. The SSO will reassess noise exposures in the area to which the employee is assigned and issue additional control measures as required.

The SSO will have the following responsibilities concerning hearing conservation:

1. Enforce the use of ear protection by employees who are exposed to noise levels in excess of limits noted above.

2. Supervise schedules for annual audiometric examinations.

3. Ensuring the availability of engineering controls for noise in specific areas and/or operation in accordance with the above stated requirements.

4. Providing training in conformity with that requested above and specified in 8 CCR Article 105.

5. Analyzing noise exposure and recommending controls when exposures of employees exceed noise levels listed in this procedures.

6. Approve ear protective devices.

DECON ENVIRONMENTAL SERVICES, INCORPORATED

HAND AND POWER TOOLS

Approval Notation:

Proceedure Number/Name: DECON-SOP-#05 **Hand and Power Tools** has been reviewed and approved by the following:

APPROVAL SIGNATURES:

C. L. McIlvaine III

Clarance L. McIlvaine/ Operations Manager — 11-3-98 Date

Bruce Jacobsen

Bruce Jacobsen, President — 11-3-98 Date

All hand tools shall be in good repair and used only for the purpose for which designed. Tools having defects that will impair their strength or render them unsafe shall be removed from service. When work is being performed overhead, tools not in use shall be secured or placed in holders.

Throwing tools or materials from one location to another, from one person to another, or dropping them to lower levels, shall not be permitted.

Only nonsparking tools shall be used in locations where sources of ignition may cause a fire or explosion.

Tools requiring heat treating shall be tempered formed, dressed, and sharpened by personnel who are experienced in these operations.

Power tools shall be inspected, tested and determined to be in safe operating condition prior to use. Continued periodic inspections shall be made to assure safe operating condition and proper maintenance.

Rotating or reciprocating portable power tools shall have a constant pressure switch that will shut off the power when the tool is released by the operator. A portable power tool may have a lock-on control provided turn-off can be accomplished by a single motion of the same finger or fingers that turned it on. Hand held, powered platen sanders, grinders with wheels 2-inch diameter or less, routers, planers, laminate trimmers, nibblers, shears, scroll saws, and jigsaws with blade shanks one-forth of an inch wide or less may be equipped with only a positive on-off control.

The use of cranks on hand-powered winches or hoists is prohibited unless the hoists or winches are provided with positive self-locking dogs. Hand wheels without projecting spokes, pins, or knobs shall be used.

Portable power nailing and stapling tools shall be operable only when held against the work surface with a force of at least five pounds more than the height of the fully-loaded tool. In addition, it shall be necessary to operate a trigger or switch for each fastener driven. These two actions shall be separate.

Hydraulic fluid used in powered tools shall retain its operating characteristics at the most extreme temperatures to which it will be exposed.

Manufacturers safe operating pressures for hydraulic hoses, valves, pipes, filters and other fittings shall not be exceeded.

All hydraulic or pneumatic tools which are used on or around energized lines or equipment shall have nonconducting hoses having adequate strength for the normal operating pressures.

When fuel powered tools are used in enclosed spaces, the requirements for concentrations of toxic gases and use of personal protective equipment, shall apply.

Loose and frayed clothing, loose long hair, dangling jewelry, rings, chains, and wrist watches shall not be worn while working with any power tool or machine.

All woodworking tools and machinery shall meet applicable requirements of ANSI 01.1, Safety Code for Woodworking Machinery.

Grinding Tools

Guarding, use, care, and protection of abrasive wheels shall be in accordance with ANSI B7.1.

Work or tool rests shall not be adjusted while grinding wheel is in motion.

Tool rests on power grinders shall not be more than one-eight inch distance from the wheel. All abrasive wheels shall be closely inspected and ring-tested before mounting. Cracked or damaged grinding wheels shall be destroyed.

Grinding wheels shall not be operated in excess of their rated safe speed.

Floor stand and bench mounted abrasive wheels, used for external grinding, shall be provided with safety guards (protective hoods).

Tongue guards on hand held power grinders shall be adjustable to within one-fourth inch of the constantly decreasing diameter of the wheel at the upper opening. Hand held power grinders shall have a guard to cover the spindle end, nut, and flange projection.

Power Saws

Circular saws shall be equipped with guards that automatically and completely enclose the cutting edges, splitters, and anti-kickback devices.

Cracked, bent, or damaged blades shall be destroyed. Power saws shall not be left running unattended. Radial arm power saws shall be equipped with an automatic brake. The table of radial arm or swing saws shall extend beyond the leading edge of the saw blade.

Radial arm power saws shall be installed in such a manner that the cutting head will return to the starting position when released by the operator. All swing cutoff and radial saws or similar machines which are drawn across a table shall be equipped with limit stops to prevent the leading edge of the tool from traveling beyond the edge of the table.
Each hand-fed crosscut table saw and each hand-fed circular ripsaw shall have a spreader to prevent the material from squeezing the saw or being thrown back on the operator.

All portable, power-driven circular saws shall be equipped with guards above and below the base plate or shoe. The upper guard shall cover the saw to the depth of the teeth, except for the minimum arc required to permit the base to be titled for bevel cuts. The lower guard shall cover the saw to the depth of the teeth, except for the minimum arc required to allow proper retraction and contact with work. When the tool is withdrawn from the work, the lower guard shall automatically and instantly return to the covering position.

The operating speed shall be etched or permanently marked on all circular saws over 20 inches diameter or operating at over 10,000 peripheral feet per minute. Any saw so marked shall not be operated at a greater speed. When a marked saw is retensioned for a different speed, the marking shall be corrected to show the new speed.

Woodworking Machinery

A brush shall be provided for the removal of sawdust, chips, and shavings on all woodworking machinery.

The power control for each machine shall be located to prevent accidental startings and to enable the operator to cut off the power without leaving the operating position. All fixed power driven woodworking tools shall be provided with a disconnect switch that can either be locked or tagged in the off position.

Blades of planers and joiners shall be fully guarded and have cylindrical heads with throats in the cylinder.

A push-stick, block, or other safe means shall be used on all operations close to high-speed cutting edges. Bandsaw blades shall be fully enclosed except at point of operation.

Bandsaws and other machinery requiring warmup for safe operation shall be permitted to warm up before being put into operation whenever the temperature is below 45°F.

The use of cracked, bent, or otherwise defective parts such as saw blades, cutters, and knives is prohibited.

Automatic feeding devices shall be installed on machines whenever possible. Feeder attachments shall have the feed rolls or other moving parts covered or guarded so as to protect the operator from hazardous points.

Pneumatic Tools and Equipment

Safety clips or retainers shall be installed and maintained on pneumatic impact tools to prevent dies and tools from being accidentally expelled from the barrel.
Pressure shall be shut off and exhausted from the line before disconnecting the line from any tool or connection.

Safety lashing shall be provided at connection between tool and hose, and at all quick makeup-type connections.

Air hoses, pipes, valves, filters, and other fittings shall be pressure rated by the manufacturer and this pressure shall not be exceeded. Defective hose shall be removed from service.

Hoses shall not be laid over ladders, steps, scaffolds, or walkways to create a tripping hazard.

The use of compressed air for blowing dirt from hands, face, or clothing is prohibited.

Compressed air shall not be used for other cleaning purposes except where reduced to less than 30 psi and then only with effective chip guarding and personal protective equipment. The 30 psi requirement does not apply for concrete forms, mill scale and similar cleaning purposes.

Hoses shall not be used for hoisting or lowering tools.

All airlines exceeding 1/2-inch inside diameter when used on tools and equipment such as track drills shall have a safety device at the source of supply or branch line to reduce pressure in case of hose failure.

Airless spray guns of the type which atomize paints and fluids at high pressures (1,000 psi or greater) shall be equipped with automatic or visible manual safety devices which will prevent pulling of the trigger to prevent release of the paint or fluid until the safety device is manually released.

In lieu of the above, a diffuser nut which will prevent high pressure high velocity release while the nozzle tip is removed plus a nozzle tip guard which will prevent the tip from coming into contact with the operator or other equivalent protection, may be provided.

Impact wrenches shall be provided with a locking device for retaining the socket.

Explosive-Actuated Tools

Explosive-actuated (powder-actuated) tools and their use shall conform to the Safety Requirements for Explosive Actuated Tools (ANSI A.10.3) except where modified herein.

Explosive-actuated tools shall be used, operated, repaired, serviced, and handled only by authorized personnel and when permission to operate on a specific work site has been granted by the designated authority.

The use of explosive actuated tools is prohibited in explosive or flammable atmospheres. The tool operator shall wear safety goggles or other face and eye protection.

Explosive actuated tools and the charges shall be secured at all times to prevent unauthorized possession.

All tools shall be so constructed as not to be operable other than against a work surface with a force at least 5 pounds greater than the total weight of the tool.

The firing mechanism of all tools shall be constructed so that the tool cannot fire during loading or preparation to fire or it the tool is dropped while loaded.

Firing of the tool shall depend on at least two separate and distinct operations, with the final firing movement being separate from the operation of bringing the tool into the firing position.

Driving into soft or easily penetrable materials is prohibited unless they are backed by a substance that will prevent the pin or fastener from passing through it, creating a flying missile hazard on the other side.

Explosive actuated tools shall be inspected, thoroughly cleaned and tested after each 1,000 fastenings. Daily inspection, cleaning, and testing shall be performed as recommended by the manufacturer.

High velocity explosive actuated tools shall be used only for those applications where low velocity tools will not meet the job requirements. A high velocity tool is defined as a tool which propels or discharges a fastener at velocities in excess of 300 feet per second when measured at 6.5 feet from the muzzle.

Explosive actuated tools shall not be used in reinforced concrete when the fastener will strike the rebar, cast iron, glazed tile, surface-hardened steel, glass block, live rock, face bricks or similar materials.

Explosive actuated tools shall be tested each day before loading to see that safety devices are in proper working condition. The method of testing shall be in accordance with the manufacturer's recommended procedure.

Explosive actuated tools shall not be loaded until just prior to the intended firing time. Neither loaded nor empty tools are to be pointed at any employees. Hands shall be kept clear of the open barrel end.

Chain Saws

Chain saw operators shall follow manufacturer's operating instructions and shall carefully inspect saws prior to use. The saw shall be kept in sound mechanical condition with all guards, spark arrestors, mufflers, handles, etc., properly installed and adjusted.

The chain saw will not be fueled while running or hot or near open flame. The saw will not be started within 10 feet of a fuel container.

The operator will hold the saw with both hands during all cutting operations.

Operators will wear personal protective equipment as prescribed by the designated authority. Head, eye, ear, hand, foot (safety shoes), and leg protection are required as a minimum unless specifically waived by the designated authority.

The chain saw must never be used to cut above the operator's shoulder height.

The idle speed shall be adjusted so that the chain does not move when the engine is idling.

Before starting to cut, the operator must be sure of footing and must clear away fallen trees, brush or other materials that might interfere with cutting operations.

The operator will shut off the saw when carrying it over slippery surfaces, through heavy brush, and when adjacent to personnel. The saw may be carried running (idle speed) for short distances (less than 50 feet) as long as it is carried to prevent contact with the chain or muffler.

All chain saws used on the job site shall have an automatic chain brake or anti-kickback device.

Abrasive Blasting Equipment

Hose and hose connections shall be designed to prevent build-up of static electricity.

All connections and nozzles shall be designed to prevent accidental disengagement. All connections shall be equipped with safety lashings.

Nozzle attachments shall be of metal and fit on the outside of the hose. A deadman type control device shall be provided at the nozzle, to cut off the flow if the operator loses control of hose. A support shall be provided on which the nozzle may be mounted when it is not is use.

DECON ENVIRONMENTAL SERVICES, INCORPORATED

FIXED LADDERS

Approval Notation:

Proceedure Number/Name: DECON-SOP-#06 **Fixed Ladders** has been reviewed and approved by the following:

APPROVAL SIGNATURES:

Clarance L. McIlvaine/ Operations Manager — 11-3-98 Date

Bruce Jacobsen, President — 11-3-98 Date

Fixed ladders shall be constructed and used in accordance with OSHA Standards, 29 CFR 1910.27 and ANSI Standard A-14.3 and 8 CCR 1629.

Requirements for Construction

Loading Requirements

Minimum live load capacity of 200 lbs concentrated at the points of maximum stress. Capacity must be increased by 200 lb increments for each additional person based upon the rate of use and potential for more than one person using a ladder or ladder section at the same time.

Weight of ladder itself and appurtenances must be considered in designing the railings and fastenings.

Wooden ladders must meet design stress requirements of 29 CFR 1910.25 and 8 CCR 1629.

Feature Requirements

Except where metal rungs of ladders are exposed to corrosive atmospheres and must be 1 inch in diameter or coated to prevent corrosion, metal rungs must be a minimum diameter of 3/4 inch. Wooden rungs must be a minimum of 1 inch in diameter.

The distance between rungs, cleats or steps must be no more than 12 inches. Rungs, cleats or steps must be uniformly spaced throughout the length of the ladder.

The minimum clean width of rungs, cleats or steps is 16 inches.

Rungs, cleats or steps and side rails which may be used for handholds when climbing must offer adequate gripping surface and be free of splinters, slivers or burrs and substances which could cause slipping.

Ladders using different metals which could conduct electric shock must incorporate shock protection. Ladders in atmospheres which could affect the integrity of the ladder must be treated to prevent corrosion or deterioration.

Fixed ladders (unless of sufficient height to use caging or a well construction as fall protection) must have a minimum of 15 inches of clearance from the centerline of the rungs to each side, 30 to 36 inches from the rungs to any obstruction on the climbing side of the ladder, 7 inches between the rungs and any obstruction on the non-climbing side of the ladder, have grab rails or extensions of side rails reaching a minimum of 40 inches above the landing and be oriented so that it is not necessary to step across more than 12 inches to a point of landing through or to the side of the ladder.

Ladders of greater than 20 feet must have cages or other approved fall protection devices. Where cages or wells are used for fall protection, the cage must begin no lower than 7 feet from the "ground" landing. but no higher than 8 feet. If more than 30 feet, sections must be offset with side accessed landings (minimum dimensions 24-inch wide by 30-inch length) located at least four feet below the top of a 30 foot or fraction thereof section. The distance from the rungs to the cage back on the climbing side must be between 27 and 28 inches and the width of the cage or well no less than 27 inches. There should be no projections through the cage. Projections in wells may reduce space from rung to projection to no less than 24 inches and projections must have deflectors for head protection.

DECON ENVIRONMENTAL SERVICES, INCORPORATED

HOT WORK, WELDING, CUTTING, BURNING, AND HEATING

Approval Notation:

Proceedure Number/Name: DECON-SOP-#08 **Hot Work, Welding, Cutting, Burning, And Heating** has been reviewed and approved by the following:

APPROVAL SIGNATURES:

C. L. C. [illegible] — 11-3-98

Clarance L. McIlvaine/ Operations Manager — Date

Bruce Jacobsen — 11-3-98

Bruce Jacobsen, President — Date

Hot Work General Requirements

No tasks which produce heat, sparks, or energy sufficient to serve as an ignition source may being in any location which could potentially have ignitable atmospheres, until a Hot Work Protection Procedure has been instituted and a Hot Work Permit has been issued.

Examples of Hot Work include welding, cutting, burning, soldering, grinding, use of power tools and internal combustion engines.

Contractors will have internal hot work permitting practices. The SSE must approve the use of a Contractor's Hot Work Permitting System.

The Contractor SSO is responsible for issuing hot work permits. (See FORM 2-3)

Permits must be reissued at the beginning of each day, each work shift or if the area has not been monitored with 1/2 hour. Copies of permits must be submitted to the DECON SSE or SSO at the completion of the days shift.

Hot Work Permit Procedures

1. The Contractor SSO is responsible for inspecting each site and determining the need for a Hot Work Permit Procedure.

2. All DECON Environmental Services, Inc. employees, DECON Environmental Services, Inc. subcontractor employees, and any employees for whom DECON Environmental Services, Inc. has Safety oversight must be formally notified and

instructed of the requirements for, need for, and procedures for obtaining hot work permits.

3. A fire watch is required for every activity where hot work could result in other than a minor fire due to ignition of combustibles.

4. Fire extinguishing equipment commensurate with the ignitable matrix and training level of the firewatch must be immediately available at the Hot Work location.

5. A combustible gas meter must be used to survey the Hot Work location and then must be left to constantly monitor the air between the flammable material and the immediate vicinity of the hot work.

Straight ladders may not be lashed together to make sectional ladders.

Metal ladders must not be used near electrical conductors.

Workers must use both hands and face the ladder when ascending and descending.

No more than one person may use a straight portable ladder at a time.

Standing on the top rung/step or above the manufacturer's safe indication is prohibited.

Ladders should be positioned so workers do not have to lean so that more than half of their body is beyond (outside of) either handrail.

Ladders must not be placed in front of doors which open toward the ladder unless the door is locked and the person(s) using the ladder has the key, the door is blocked open and other persons are warned of the presence of the ladder or a guard is posted at the door.

Ladders must be inspected after each use and if acceptable, stored in a manner not to damage or stress the ladder. Ideally ladders should be hung from a side rail in an area where sunlight or extremes in temperature or humidity will not affect them.

Ladders must never be used as scaffolding or as storage racks or shelves.

Requirements for construction or portable ladders include:

1. Construction of purchased portable ladders must conform to construction criteria of ANSI Standards A-14.1 and A-14.2.

2. Ladders must have a least 12 inches between side rails and should have 12 inches between rungs.

3. Single section ladders must not exceed 30 feet in length, two-section ladders more than 48 feet and ladders with more than two sections more than 60 feet in length. The minimum overlap for extension ladders must be 36 inches for up to 36 feet, 48 inches for 36 to 48 feet and 60 inches for up to 60 feet. There must be positive stops to ensure proper overlap.

4. Metal ladders must be of sufficient strength and corrosion resistant.

5. Steps or rungs of metal ladders must be treated to prevent climbers' hands and feet from slipping.

Welding, Cutting, Burning, and Heating

1. Welding, cutting, burning, and heating operations have a high potential for personal injuries and fires. Precautions must be taken to assure a safe work environment.

2. Employees will be instructed in the safe use of welding equipment. Employees who have not received instructions will not be allowed to use equipment.

3. Proper precautions (isolating welding and cutting, removing fire hazards from the vicinity, providing a fire watch, etc.) for fire prevention will be taken in areas where welding or other "hot work" is being done. No welding, cutting or heating will be done where the application of flammable paints, or the presence of other flammable compounds, or heavy dust concentrations creates a fire hazard. If you cannot provide the necessary safeguards, check with the supervisor.

4. Arc welding and cutting operations will be shielded by noncombustible or flameproof shields to protect employees from direct arc rays.

5. When electrode holders are to be left unattended, the electrodes will be removed and the holder will be placed or protected so they cannot make electrical contact with employees or conducting objects.

6. All arc welding and cutting cables will be completely insulated and be capable of handling the maximum current requirements for the job. There will be no repairs or splices within 100 feet of the electrode holder, except where splices are insulated equal to the insulation of the cable. Defective cable will be repaired or replaced.

7. Fuel gas and oxygen hose will be easily distinguishable and will not be interchangeable. Hoses will be inspected at the beginning of each shift and will be repaired or replaced if defective.

8. No welding or burning is allowed in a hazardous area.

9. Suitable fire-extinguishing equipment must be available in all work areas.

10. Burning or welding equipment is to be maintained in a safe operating condition.

11. When burning or welding, employees must wear approved eye protection with suitable filter lenses. If employees' eyes are exposed to flying objects from chipping slag or other weld-cleaning activity, employees must wear approved eye protection. When employees arc weld near other workers, all employees must be

protected from the arc rays by non-combustible screens or must wear adequate eye protection.

12. Keep all welding leads and burning hoses up off floors, walkways, and stairways or appropriately protect such leads and hoses.

13. Never weld or burn on barrels, tanks, piping, or other system which may have contained either combustible or unknown products without first properly purging and venting the container and obtaining approval from the appropriate supervisor. The frames of all welding machines must be grounded.

14. Do not use matches or cigarette lighters or light torches. spark igniters must be used. Torches must be used to light smoking materials. Employees must wear appropriate protective gloves.

15. When a crescent or special wrench is required to operate an acetylene cylinder valve, the wrench must be kept in position on the valve.

16. General mechanical or local exhaust ventilation or airline respirators will be provided as required, when welding, cooling or heating.

17. In the open air, when welding, cutting, heating, burning metals have toxic significance, (such as zinc, lead, cadmium, or chromium-bearing metals), a filter-type respirator must be worn.

DECON ENVIRONMENTAL SERVICES, INCORPORATED

HEAVY EQUIPMENT OPERATION

Approval Notation:

Proceedure Number/Name: DECON-SOP-#09 **Heavy Equipment Operation** has been reviewed and approved by the following:

APPROVAL SIGNATURES:

Clarance L. McIlvaine/ Operations Manager — 11-3-98 Date

Bruce Jacobsen, President — 11-3-98 Date

Before any machinery or mechanized equipment is used, it will be inspected and tested by a competent mechanic and certified to be in safe operating condition.

The employer will designate a competent person to be responsible for the inspection of all machinery and equipment daily and during use to make sure it is in safe operating condition. Tests will be made at the beginning of each shift during which the equipment is to be used to determine that the brakes and operating systems are in proper working condition. See attached form for inspection documentation.

Preventative maintenance procedures recommended by the manufacturer will be followed.

Any machinery or equipment found to be unsafe will be deadlined and its use prohibited until unsafe conditions have been corrected.

Inspections or determinations of read conditions and structures will be made in advance to assure that clearances and load capacities are safe for the passing or placing of any machinery or equipment.

Machinery and mechanized equipment will be operated only by designated personnel. Equipment deficiencies observed at any time that affect their safe operation will be corrected before continuing operation.

Seats or equal protection will be provided for each person required to ride on equipment.

Getting off or on any equipment while it is in motion is prohibited.

Machinery or equipment requiring an operator will not be permitted to run unattended.

Machinery or equipment will not be operated in a manner that will endanger persons or property nor will the safe operating speeds or loads be exceeded.

All machinery or equipment will be shut down and positive means taken to prevent its operation while repairs or manual lubrications are being done. Exemption: Equipment designated to be serviced while running.

All repairs on machinery or equipment will be made at a location which will provide protection from traffic for repair persons.

Heavy machinery, equipment, or parts thereof which are suspended or held apart by slings, hoists, or jacks also will be substantially blocked or cribbed before personnel are permitted to work underneath or between them.

Bulldozer and scraper blades, end-loader buckets, dump bodies, and similar equipment will be either fully lowered or blocked when being repaired or when not in use. All controls will be in a neutral position, with the engines stopped and brakes set, unless work being performed on the machine requires otherwise.

Stationary machinery and equipment will be placed on a stable foundation and secured before being operated.

All points requiring lubricating during operation will have fittings so located or guarded to be accessible without hazardous exposure.

When necessary, all mobile equipment and the operating area will be adequately illuminated while work is in progress.

Mechanized equipment will be shut down prior to and during fueling operations. Closed systems, with automatic shut-off which will prevent spillage if connections are broken, may be used to fuel diesel powered equipment left running.

All towing devices used on any combinations of equipment will be structurally adequate for the weight drawn and securely mounted.

Persons will not be permitted to get between a towed and towing piece of equipment until the towing equipment has been stopped.

All equipment with windshield will be equipped with powered wipers. Vehicles that operate under conditions that cause fogging or frosting of windshields will be equipped with operable defogging and defrosting devices.

All equipment left unattended at night, adjacent to a highway in normal use, or adjacent to construction areas where work is in progress, will have lights or reflectors, or barricades equipped with lights or reflectors, to identify the location of the equipment.

Whenever the equipment is parked, the parking brake will be set. Equipment parked on inclines will have wheels chocked or track mechanism blocked and the parking brake set.

Lift trucks, stackers, etc., will have the rated capacity posted on the vehicle so as to be clearly visible to the operator. When auxiliary removable counterweights are provided by the manufacturer, corresponding alternate rated capacities also will be clearly shown on the vehicle. The capacity rating will not be exceeded.

Steering or spinner knobs will not be attached to the steering wheel unless the steering mechanism prevents road reactions from causing the steering handwheel to spin. When permitted the steering knob will be mounted within the periphery of the wheel.
All industrial trucks in use will meet the requirements of design, construction, stability, inspection, testing, maintenance, and operation, defined in ANSI B56.1, Safety Standards for Powered Industrial Trucks.

The installation of live booms on material and personnel hoists is prohibited.

The controls of loaders, excavators, or similar equipment with folding booms or lift arms will not be operated from a ground position unless so designed.

Personnel will not work or pass under the buckets or booms of loaders in operation.

Motor Vehicles and Mechanized Equipment(1926.600/8 CCR 1597)

1. All vehicles in use should be checked at the beginning of each shift to assure that all parts, equipment, and accessories that affect safe operation are in proper operating condition and free from defects. All defects should be corrected before the vehicle is placed in service.

2. No employee should use any motor vehicle, earth-moving, or compacting equipment having an obstructed view to the rear unless:

   a. The vehicle has a reverse signal alarm distinguishable from the surrounding noise level, or

   b. The vehicle is backed up only when an observer signals that it is safe to do so.

3. Heavy machinery, equipment, or parts thereof which are suspended or held aloft should be substantially blocked to prevent falling or shifting before employees are permitted to work under or between them.

4. Set the parking brake whenever the vehicle is parked.

5. Seat belts shall be worn when the vehicle is in operation.

6. Riding in the bed of a truck is prohibited unless the truck has been appropriately outfitted for the transportation of personnel.

7. Riding on loads, fenders, running boards, or tailgates is prohibited. Legs or arms should be inside the vehicle at all times when the vehicle is in motion except to give appropriate hand signals.

8. Drivers should not operate vehicles until riders comply with all safety precautions.

Rollover Protective Structures (ROPS) (1926.1000/8 CCR 1596)

1. The requirements for the installation of rollover protective structures (ROPS) applies to the following types of materials handling equipment:

   To all rubber-tired, self-propelled scrapers, rubber-tired front-end loaders, rubber-tired dozers, wheel-type agricultural and industrial tractors, crawler tractors, crawler-type loaders, and motor graders, with or without attachments, that are used in construction work. This requirement does not apply to sideboom pipelaying tractors.

2. Rollover protective structures and supporting attachment shall meet the minimum performance criteria detailed in 29 CFR 1926.1001, 1926.1002, and 8 CCR 1596, as applicable or shall be designed, fabricated, and installed in a manner which will support, based on the ultimate strength of the metal, at least two times the weight of the prime mover applied at the point of impact.

3. The design objective shall be to minimize the likelihood of a complete overturn and thereby minimize the possibility of the operator being crushed as a result of a rollover or upset.

4. The design shall provide a vertical clearance of at least 52 inches from the work deck to the ROPS at the point of ingress or egress.

5. **Remounting**. ROPS removed for any reason, shall be remounted with equal quality, or better, bolts or welding as required for the original mounting.

6. **Labeling**. Each ROPS shall have the following information permanently affixed to the structure:

   a. Manufacturer or fabricator's name and address.

   b. ROPS model number, if any;

   c. Machine make, model, or series number that the structure is designed to fit.

7. **Machines meeting certain existing governmental requirements**. Any machine in use, equipped with rollover protective structures, shall be deemed in compliance with this section if it meets the rollover protective structure requirements of the State of California, the U.S. Army Corps of Engineers, or the Bureau of Reclamation of the U.S. Department of the Interior in effect on April 5, 1972. The requirements in effect are:

a. State of California: Title 8 of California Code of Regulations, Construction Safety Orders, issued by the Department of Industrial relations pursuant to Division 5, Labor Code, Section 6312, State of California.

b. U.S. Army Corps of Engineers: General Safety Requirements, EM-385-1-1 (March 1967).

c. Bureau of Reclamation, U.S. Department of the Interior: Safety and Health Regulations for Construction. Part II (September 1971).

8. Minimum performance criteria for rollover protective structures for designated scrapers, loaders, dozers, graders, and crawler tractors can be found in 29 CFR 1926.1001 and 8 CCR 1596.

DECON ENVIRONMENTAL SERVICES, INCORPORATED

MANUAL LIFTING AND HANDLING OF HEAVY OBJECTS

Approval Notation:

Proceedure Number/Name: DECON-SOP-#10 **Manual Lifting and Handling of Heavy Objects** has been reviewed and approved by the following:

APPROVAL SIGNATURES:

C. McIlvaine

Clarance L. McIlvaine, Operations Manager — 11-3-98 Date

Bruce Jacobsen

Bruce Jacobsen, President — 11-3-98 Date

Hazard

Improper lifting can result in cuts, pinches, crushing and serious back, abdomen, arm and leg muscle and joint injury.

Even "light" objects, lifted improperly, can contribute to injury causing cuts, and muscle injuries.

Cuts, Pinching and Crushing

Splinters, slivers and sharp edges on objects to be lifted can result in cuts. Heavy objects can pinch or crush fingers, toes, arm and legs between the object and nearby objects, walls, tables, counters, railings and obstructions or if dropped.

Insects or other biological hazards on or under objects to be lifted can result in bites or scratches. Contamination of objects can lead to chemical or radioactive materials exposure.

Muscle and Joint Injuries

Muscle and joint injuries occur when objects to be lifted are too heavy or awkward, in restricted access areas or are lifted improperly.

Lifting tasks, which are awkward and repetitive, involving even light objects can lead to nerve and joint damage.

Recognition and Hazard Assessment

The need for manual lifting must be identified as a physical hazard when project tasks specifically require manual handling or use of heavy equipment and safe lifting techniques, as follows, must be instituted.

Plan any lifting task, noting:

1. Contact hazards - Check each object before lifting for presence of splinters, slivers, sharp edges or parts, cracks and loose joints, signs of biological hazards, chemical or radioactive material contamination.

2. Weight of object - Unless involved in weight training, recommended safe lifting weights for an average man or woman are 50 and 35 pounds, respectively.

3. Size and shape of object - large and oddly shaped objects are more difficult to lift even within safe limits due to imbalanced center of gravity.

4. Area in which lifting is to be done Check for pinch points such as other objects close by and that there is room for safe lifting.

5. Conditions under which lifting is to be accomplished - Check for wet or slippery surfaces. Also consider level of protection to be used and that level B or A protection may add up to 40 lbs to be lifted as well as restricting range of motion and adding to area restriction by increasing bulk.

6. Route to be traveled if lifting involves carrying - Check walking and working surfaces for slip and trip hazards, note ramps, changes on level of elevation, ladder or stairways which need to be negotiated.

Prevention and Protection Programs

Identify the potential for contact hazards on objects to be lifted before lifting. Check each object before lifting, remove any noted hazards as feasible, wear gloves (at a minimum cotton), leather or kevlar, chemical resistant, etc., depending on the nature of the hazard. Also wear safety boots, coveralls and chemical protection as appropriate.

Avoid contact with cracks or loose joints or cover if hands or body can come into contact to reduce hazards of pinching.

Workers must know their lifting limitations, plan lifting, keep themselves reasonable in shape and get help if uncertain that they can lift safely, and, managers must plan and allow for safe lifting. **Safe lifting takes time.**

Lifting an object from the floor.

Determine that object is within safe weight limit.

Check for contact hazards.

Check floor for slip hazards.

Check that there is ample space between the object to be lifted and other objects to avoid pinching or crushing.

Check that there is ample room to squat, lift, turn or maneuver without twisting the back or other muscles or joints.

Walk the intended route of travel to identify, and remove slip and fall hazards, if possible.

Identify changes in elevation, steps, ramps, stairs and ladders which must be negotiated.

To lift objects which are square or rectangular in shape or form:

> Place one foot slightly in front of the other, squat as close to the object as possible, grasp one of the top corners away from the body and the opposite bottom corner closest to the body, tilt the object slightly away from the body, tilt forward at the hips, keep the back straight and tuck in the chin, test to be sure the object is loose from floor and will lift without snagging, straighten the legs, keeping the back bone straight, pull the object into the body and stand up slowly and evenly without jerking or twisting, if turning or change of direction is required, turn with feet without twisting the torso and step in the direction to travel, to set an object down, reverse the sequence, being sure not to trap the bottom hand between the object and the surface on which the object is set.

This system, at first, feels and seems awkward. Workers must be trained and have the opportunity to use the system with lighter objects before performing heavy lifting. **For other shaped objects, the only modification needed should be hand hold position.** When two or more persons are lifting, have a plan and set signals so lifting occurs simultaneously.

Do not carry objects in a manner which obstruct vision in line of travel and of feet and footing.

Carry objects so one hand is free for travel on stairs or there is unobstructed view of footing and two hands are free for travel on ladders.

Manual Handling of Heavy Objects

Hazard

Manual maneuvering or handling of heavy objects without actually lifting is often required on hazardous materials, RCRA facilities and Construction sites. This often involves

moving drums or other containers. Manual handling of heavy objects, even when not actually lifting, can pose all of the hazards of lifting including, cuts, pinches, bruises, crushing, muscle and joint strain, hazardous material and biological hazard contact.

Recognition and Risk Assessment

The need for manual handling of heavy objects must be addressed in the planning stages of a project HASP. Drums and other containers which must be maneuvered, for access to information or sampling locations, which are inaccessible to mechanical handling equipment, require manual handling and special precautions. When handling of heavy objects does not actually involve lifting, workers can handle heavier objects, even those weighing several hundred pounds, safely if proper techniques are used. In many instances, the procedures involve balancing and taking advantage of the shape of the object.

Prevention and Protection Programs

Prior to performing manual handling, it must be determined that it can be done safely and that mechanical assistance is infeasible.

Mechanical equipment or assistance such as dollies, carts, come-alongs or rollers are to be used whenever possible. Mechanical assistance must be of proper size, have wheels sized for the terrain and be designed to prevent pinching or undue stress on wrists. Objects to be moved must be secured to prevent falling and properly balanced to prevent tipping.

The minimum protection for manual handling is heavy cotton or leather gloves, safety boots and coveralls. Metatarsal guards, chemical protective clothing and metal mesh or kevlar gloves may be appropriate as risk of heavy items falling, hazardous materials contact any sharp edges, splinters or slivers increases.

Workers must be aware of their handling capacities and work within their capacities.

Objects to be manually handled must be checked prior to beginning movement for contact hazards and ensure handling will not trap hands, arms legs or feet between the object and other objects, walls, or railings.

Round or cylindrical objects may be rolled if rolling will not damage the structural integrity. Rolling must be controlled by chutes, tag-lines or other means of limiting acceleration. Workers must not be positioned down hill from rolled objects.

Use of the legs for pushing and tag-line control of rolled objects must be stressed.

Cylindrical objects, such as drums which must remain upright, are handled manually by slightly tilting the object using the legs for control and balancing the object on the bottom edge. The handler than walks beside the object, with the object tilted toward the body, positioning the hands on the top edge away from the body and moving so they do not cross, thus, maintaining the balance and steady controlled forward motion. Motion must be controlled so that stopping, walking, and moving the hands will stop forward motion.

Prior to moving cylindrical object in this way, the route of travel must be walked to identify any changes of elevation, pot holes or other obstructions which could cause the object to snag, tip or get out of control.

Flat, square or rectangular objects are most easily handled using make-shift rollers or skids to break the friction with the resting surface and pushing, using the legs.

DECON ENVIRONMENTAL SERVICES, INCORPORATED

MATERIAL HANDLING, STORAGE, AND DISPOSAL

Approval Notation:

Proceedure Number/Name: DECON-SOP-#11 **Material Handling, Stoage, And Disposal** has been *reviewed and approved by the following:*

APPROVAL SIGNATURES:

C. McIlvaine — 11-3-98

Clarence L. McIlvaine/ Operations Manager — Date

Bruce Jacobsen — 11-3-98

Bruce Jacobsen, President

All material in bags, containers, bundles, or stored in tiers shall be stacked, blocked, interlocked, and limited in height so that it is stable and secured against sliding or collapse.

a. Bagged materials shall be stacked by stepping back the layers and crosskeying the bags at least every 10 bags high.

b. Material shall be stacked as low as practical and in no case higher than 20 feet unless otherwise specified in this section.

Material stored inside buildings under construction shall not be placed within 6 feet of any hoistway or floor opening, nor within 10 feet of an exterior wall which does not extend above the material stored.

Accessways shall be kept clear.

Flammable and combustible liquids in a storage building shall be in a NO SMOKING area and separated from combustible construction and other stored materials by 50 feet.

Unauthorized persons shall be prohibited from entering storage areas. All persons shall be in a safe position while materials are being loaded or unloaded from railroad cars, trucks, or barges.

Only the brake operator shall be in or on railroad cars while they are being moved.

Materials shall not be stored on scaffolds or runways in excess of needs for normal placement operations, or in excess of safe load limits.

Incompatible materials shall be segregated in storage.

Materials will not be moved over or suspended above personnel unless positive precautions have been taken to protect the personnel from falling objects.

Persons shall not work or pass under elevated work areas unless protected by overhead protection.

A clearance of 24 inches shall be maintained around the path of travel of fire doors unless a barricade is provided. Material shall not be stored within 36 inches of a fire door opening.

Where the movement of materials may be hazardous to persons, taglines or other devices shall be used to control the loads being handled by hoisting equipment. They shall be nonconductive when used near energized lines.

The hoist rope shall not be wrapped around the load. This requirement shall not apply to electric construction when setting or removing poles.

When moving equipment under or near energized lines, a designated person shall assure that required clearance is maintained.

Lumber

Lumber shall be stacked level and be supported on stable sills. Lumber shall be stacked to be stable and self-supporting.

Reusable lumber shall have all nails withdrawn before it is stacked for storage.

Lumber piles shall not exceed 20 feet in height provided that lumber to be handled manually shall not be stacked more than 16 feet high.

Cement and Lime

Bags of cement and lime shall not be stacked more than 10 high within setback, except when restrained by walls of appropriate strength.

The bags around the outside of the stack shall be placed with the mouths of the bags facing the center of the stack.

During unstacking, the top of the stack shall be kept nearly level and the necessary setback maintained.

Brick

Brick shall be stacked on an even, solid surface.

Brick stacks shall not be more than 7 feet high. When a loose brick stack reaches a height of 4 feet, it shall be tapered back 2 inches in every foot of height above the 4-foot level.

Unitized brick shall not be stacked more than 3 units high.

Floor, Walls, and Partition Blocks

Blocks shall be stacked in tiers on solid, level surfaces.

When masonry blocks are stacked higher than 6 feet, the stack shall be tapered back one-half block per tier above the 6-foot level.

Reinforcing, Sheet and Structural Steel

Reinforcing steel shall be stored in orderly piles away from walkways and roadways.

Structural steel shall be securely piled to prevent members sliding off or the pile toppling over.

Cylindrical Material

Structural steel, poles, pipe, bar stock, and other cylindrical materials, unless racked, shall be stacked and blocked so as to prevent spreading or tilting.

Pipe, unless racked, shall not be stacked higher than 5 feet.

Either a pyramid stack or battened stack shall be used.

Where battened stack is used, the outside pile or pole shall be securely chocked.

Battened stacks shall be tapered back at least one pile or pole in each tier.

Unloading of round material shall be done so that no person is required to be on the unloading side of the carrier after the tie wires have been cut or during unlocking of the stakes.

Sand, Gravel, and Crushed Stone Operations

Standards for the safe sloping and control of pit walls shall be established and followed by the operator.

Loose, unconsolidated material shall be stripped for a safe distance (at least 10 feet) from the top of pit or quarry walls, and shall be sloped to the angle of repose.

To insure safe operation, the width and height of benches shall be determined by the equipment to be used and the operation being performed.

Safe means for scaling pit-banks shall be provided. Hazardous banks shall be scaled before other work is performed.

Persons shall not work near or under dangerous banks. Overhanging banks shall be removed and unsafe ground conditions shall be corrected, or the areas shall be barricaded and posted.

Persons shall approach from above loose rock and areas to be scaled and shall scale from a safe location.

Baffle boards, screens, cribbing, or other suitable barriers should be provided where movement of material into cuts constitutes a safety hazard.

Persons shall not work between equipment and the pit wall or bank where the equipment may hinder escape from falls or slides of the bank.

Unless the operator is otherwise protected, slushers in excess of 10 horsepower shall be provided with backlash guards. All slushers shall be equipped with rollers and drum covers, and anchored securely before slushing operations are started.

Track guardrails, lead rails, and frogs shall be protected or blocked to prevent a person's foot from becoming wedged.

Positive-acting stopblocks, derail devices, track skates, or other adequate means shall be installed wherever necessary to protect persons from runaway or moving railroad equipment.

A quick-close type air valve shall be provided on each piece of pneumatic-powered loading, hauling, and dumping equipment. The valve shall be closed except when the equipment is being operated.

Housekeeping

All stairways, passageways, gangways, and accessways shall be kept free of materials, supplies, and obstructions at all times.

Loose or light material shall not be stored or left on roofs or floors that are not closed in, unless it is safely secured.

Tools. materials, extension cords, hoses, or debris shall not cause tripping or other hazard.

Tools. materials, and equipment subject to displacement or falling shall be adequately secured.

Empty bags having contained lime, cement, and other dust-producing material shall be removed periodically as specified by the designated authority.

Protruding nails in scrap boards. planks, and timbers shall be removed, hammered in, or bent over flush with the wood unless placed in containers or trucks for removal.

Walkways, runways, and sidewalks shall be kept clear of excavated material or other obstructions and no sidewalls shall be undermined unless shored to carry a minimum live load of one hundred and twenty-five (125) pounds per square foot.

Containers shall be provided for storing or carrying rivets, bolts and drift pins, and secured against accidental displacement when aloft.

When rivet heads are knocked off, or backed out, they shall be kept from falling.

Form and scrap lumber and debris shall be cleared from work areas, passageways, and stairs in and around building storage yards and other structures.
All storage and construction sites shall be kept free from the accumulation of combustible materials.
Weeds and grass shall be kept down. A standard procedure shall be established for cleanup of the area as specified by the designated authority.

Rubbish, brush, long grass, or other combustible material shall be kept from areas where flammable and combustible liquids are stored, handled, or processed.

Accumulation of flammable and combustible liquids on floors, walls, etc., is prohibited. All spills of flammable and combustible liquids shall be cleaned up immediately.

Contractors shall provide sufficient personnel and equipment to insure compliance with all housekeeping requirements.

Work will not be allowed in those areas that do not comply with the requirements of this section.

Contractors will inspect the work area daily for adequate housekeeping and record unsatisfactory findings on the daily inspection report.

Waste Material Disposal

Scrap lumber shall be placed in piles or containers. Waste material and rubbish shall be placed in containers.

Waste material and rubbish shall not be thrown down from a height of more than 6 feet.

Chutes for debris shall be enclosed except for openings equipped with closures at or about floor level for the insertion of materials. The openings shall not exceed 48 inches in height measured along the wall of the chute. Openings at all stories below the top floor shall be kept closed when not in use.

Whenever materials are dropped to any point lying outside the exterior walls of the building, an enclosed chute of wood, or equivalent material, shall be used.

When debris that cannot be handled by chutes is dropped, the area onto which the material is dropped shall be enclosed with barricades not less than 42 inches high and not less than 6 feet back from the projected edge of the opening above. Signs warning of the hazard of falling material shall be posted at each level.

Separate covered non-flammable/non-reactive labeled containers shall be provided for the collection of garbage, oily, flammable, and hazardous wastes (suck as caustics, acids, and harmful dust). The contents shall be properly disposed of daily.

Used roofing mops shall be stored outside the building and away from combustible materials.

DECON ENVIRONMENTAL SERVICES, INCORPORATED

ILLUMINATION

Approval Notation:

Proceedure Number/Name: DECON-SOP-#12 **Illumination** has been reviewed and approved by the following:

APPROVAL SIGNATURES:

C L E Mc

Clarance L. McIlvaine/ Operations Manager — 11-3-98 Date

Bruce Jacobsen

Bruce Jacobsen, President — 11-3-98 Date

Construction site offices, stairways, passageways, construction roads, and working areas shall be lighted while work is in progress by at least the following minimum light intensities:

Facility Name or Function	Lighting Intensity (Foot Candles)
Accessways-General Indoor	5
Accessways-General Outdoor	3
Administrative Areas (Offices, Drafting Rooms, Conference Rooms, etc.)	50
Construction Areas	5
Indoor - General	5
Outdoor - General	3
Concrete Placement Operation	3
Excavation and Fill Areas	3
Docks and Loading Platforms	3
Exitways, Walkways, Ladders, Stairways	10
Locker and Dressing Rooms	10
Maintenance, Operating and Construction Shops	
Carpenter Shops	10
Field Maintenance Area Outside	5
Refueling - Outside	5
Shops - Fine Work	50
Shops - Medium Work	30
Mechanical and Electrical Equipment Rooms	10
Toilets and Wash Rooms	10
Tunnels and General Underground Work Areas	5 (10) at work site)

Facility Name or Function		Lighting Intensity (Foot Candles)
Warehouses and Storage Rooms and Areas		
Active or Bulk Storage - Inside	10	
Inactive Storage - Inside		5
Rack Storage - Inside		25
Stockrooms		10
Outside Storage - Active		3
Welding		30
Work Areas - General	30	

Where artificial light is required, it shall be maintained until personnel have had an opportunity to leave the area.

Temporary lighting used in damp and/or hazardous locations must be operated at a maximum of 12 volts.

DECON ENVIRONMENTAL SERVICES, INCORPORATED

ROPES,SLINGS,CHAINS, AND HOOKS

Approval Notation:

Proceedure Number/Name: DECON-SOP-#13 **Ropes, Slings, Chains, and Hooks** has been reviewed and approved by the following:

APPROVAL SIGNATURES:

C. McIlvaine

Clarance L. McIlvaine/ Operations Manager — 11-3-98 Date

Bruce Jacobsen

Bruce Jacobsen, President — 11-3-98 Date

General

The use of ropes, slings, and chains shall be in accordance with the safe recommendations of their manufacturer and the equipment manufacturer when used in conjunction therewith. Rigging equipment shall not be loaded in excess of its recommended safe working load. All hooks used to support human loads or loads that pass over personnel shall be closed.

The use of open hooks is prohibited in rigging to lift any load where there is danger or relieving the tension on the hook due to the load or hook catching or fouling.

All eye splices shall be made in approved manner and rope thimbles of proper size shall be fitted in the eye except that in slings the use of thimbles shall be optional.

Hooks, shackles, rings, pad eyes, and other fittings that show excessive wear or that have been bent, twisted, or otherwise damaged shall be removed from service.

Running lines located within 6 feet, 6 inches of ground or working level shall be boxed off, guarded, or the area restricted.

Hoisting hooks rated at 10 tons or larger shall be provided with safe handling means.

Rigging equipment for material handling shall be inspected prior to use on each shift and as necessary during its use to insure that it is safe. Defective rigging equipment shall be removed from service.

Rigging equipment, when not in use, shall be removed from the immediate work area and properly stored so as not to present a hazard.

Custom designed grabs, hooks, clamps, or other lifting accessories, for such units as modular panels, prefabricated structures, and similar materials shall be marked to indicate the safe working loads and shall be proof-tested prior to use to 125 percent of their rated load.

Slings

Slings, their fittings and fastenings, shall be inspected prior to use on each shift and as necessary during its use by a competent craft person for evidence of overloading, excessive wear, or damage.

Defective slings shall be removed from service.

Protection shall be provided between the sling and sharp unyielding surfaces of the load to be lifted.

Wire rope slings shall have.a minimum clear length of braided body equal to 40 times the diameter of component ropes between each end fitting or eye splice.

The use of slings will be such that the entire load is positively secured.

Wire Rope

Wire rope shall be inspected by a competent person at the time of installation and at scheduled intervals thereafter. Wire rope shall not be used if, in any length of eight diameters, the total number of visible broken wires exceeds 10 percent of the total number of wires or if the tope shows other signs of excessive wear, corrosion, or defect.

Wire rope shall be removed from hoisting and load-carrying service when one of the following conditions exists:

a. In running ropes, six randomly distributed broken wires in one lay or three broken wires in one strand in one lay.

b. Abrasion, scrubbing, or peeling causing loss or more than one-third of the original diameter of the outside individual wires.

c. Evidence of corrosion.

d. Kinking, crushing, bird caging, or other damage resulting in distortion of the rope structure.

e. Reductions from nominal diameter or more than one-sixty-fourth inch for diameters up to and including five-sixteenth inch, one-thirty-second inch for diameters three-eights inch to and including one-half inch, three-sixty-fourths inch for diameters nine-sixteenth inch to and including three-fourths, one-sixteenth inch for diameters seven-eights inch to 1-1/8 inches inclusive, three-thirty-seconds inch for diameters 1-1/4 to 1-1/2 inches inclusive.

f. Evidence of any hear damage from any cause.

g. In standing ropes, more than two broken wires in one lay in sections beyond end connections or more than one broken wire at an end connection.

h. Wire rope safety factors shall be in accordance with American National Standards Institute B 30.5 or SAE J959.

When two wires are broken or rust or corrosion is found adjacent to socket or end fitting, wire rope shall be removed from service or resocketed. Special attention shall be given to the inspection of end fittings on boom, support, pendants, and guy ropes.

Wire rope removed from service due to defects shall be cut up or plainly marked as being unfit for further use on cranes, hoists, or other load-carrying service.

The ratio between the tope diameter and the drum, block, sheave, or pulley thread diameter shall be such that the rope will adjust itself to the bend without excessive wear, deformation, or injury.

In no case will the safe diameters of drums, blocks, sheaves, or pulleys be reduced in replacement of such items unless compensating changes are made for rope used and safe loading limits.

Drums, sheaves, and pulleys shall be smooth and free of surface defects liable to injure ropes.

Drums, sheaves, or pulleys having eccentric bores, cracked hubs, spokes, or flanges shall be removed from service.

Connections, fittings, fastenings. parts, etc., used in connection with ropes shall be of good quality and of proper size and strength. and shall be installed in accordance with recommendations of the manufacturer.

Wire rope clips attached with U-bolts shall have the U-bolts on the dead or short end of the rope. The clip nuts shall be retightened immediately with initial load carrying use and at frequent intervals thereafter.

When a wedge socket fastening is used the dead or short end of the rope shall have a clip attached to it or looped back and secured to itself by a clip. The clip shall not be directly attached to the live end. (See ANSI B30.5)

The safe working load of various sizes and classifications of improved plow steel wire rope and wire rope slings with various terminals shall be determined by using latest edition of ANSI B 30.9 tables. For sizes, classifications, and grades not included in these tables, the safe working load recommended by the manufacturer shall be followed. provided that a safety factor of not less than 5 is maintained.

Protruding ends of strands in splices on slings and bridles shall be covered or blunted.

Wire rope shall not be secured by knots except on haul back liens on scrapers.

An eye splice made in any wire rope shall have not less than three full tucks. However, this requirement shall not preclude the use of another form of splice or connection which can be shown to be as efficient and which is not otherwise prohibited.

Except for eye splices in the ends of wires and for endless rope slings, each wire rope used in hoising or lowering, or in pulling loads, shall consist of one continuous piece without know(s) or splice(s).

Eyes in wire rope bridles, slings, or bull wires shall not be formed by wire rope clips or knots.

Wire rope clips shall not be used to splice rope.

Chains

Chains used in load carrying service shall be inspected before initial use and weekly thereafter.

Chains shall be normalized or annealed periodically as recommended by the manufacturer.

Chains shall be removed from service when showing of cracks, nicks, lifting of any linkweld, more than 10 percent elongation of any link or section, or when wear of 20 percent of the diameter of any link has occurred.

Welded alloy steel chain slings shall have affixed durable permanent identification stating size, grade, rated capacity, and sling manufacturer.

Hooks, rings, oblong links, pear-shaped links, welded or mechanical coupling links, or other attachments, when used with alloy steel chains, shall have a rated capacity at least equal to that of the chain.

Job or shop hooks and links, or makeshift fasteners, formed from bolts, rods, etc., or other such attachments, shall not be used.

Rated capacity (working load limit) for alloy steel chain slings shall conform to the values in ANSI B 30.9.

Fiber Rope (Natural and Synthetic)

Frozen fiber rope shall not be used.

Fiber rope that has been subjected to acids or excessive heat shall not be used for load carrying.

Fiber rope shall be protected from abrasion by padding where it is fastened or drawn over square corners or sharp or rough surfaces.

When using natural or synthetic fiber rope slings, ANSI B 309 will apply.

All splices in rope slings provided by the employer shall be made in accordance with fiber rope manufacturers' recommendations.

In manila rope, eye splices shall contain at least three full tucks, and short splices shall contain at least six full tucks (three on each side of the centerline of the splice).

In layed synthetic fiber rope, eye splices shall contain at least four full tucks, and short splices shall contain at least eight full tucks (four on each side of the centerline of the splice).

Strand end tails shall not be trimmed short (flush with the surface of the rope) immediately adjacent to the full tucks. This applies to both eye and short splices and all types of fiber rope. For fiber ropes under 1-inch diameter, the tails shall project at least six rope diameters beyond the last full tuck. For fiber ropes under 1-inch diameter, the tails shall project at least six rope diameters beyond the last full tuck. For fiber ropes 1-inch diameter and larger, the tails shall project at least 6 inches beyond the last full tuck. In applications where the projecting tails may be objectionable, the tails shall be tapered and spliced into the body of the rope using at least two additional tucks (which will require a tail length of approximately six rope diameters beyond the last full tuck).

For all eye splices, the eye shall be sufficiently large to provide an included angle of not greater than 60 degrees at the splice when the eye is placed over the load or support.

Knots shall not be used in lieu of splices.

The employer shall have each synthetic web sling marked or coded to show:

a. Name or trademark of manufacturer.
b. Rated capacities for the type of hitch.
c. Type of material.

Shackles and Hooks

The following table shall be used to determine the safe working loads of various sizes of shackles, except that higher safe working loads are permissible when recommended by the manufacturer for specific identifiable products, provided that a safety factor of not less than 5 is maintained.

SAFE WORKING LOADS FOR SHACKLES
(In tons of 2000 pounds)

Material Size (inches)	Pin Diameter (inches)	Safe Working Load
1/2	5/8	1.4
5/8	3/4	2.2
3/4	7/8	3.2
7/8	1	4.3
1	1-1/8	5.6
1-1/8	1-1/4	6.7
1-1/4	1-3/8	8.2
1-3/8	1-1/2	10.0
1/1/2	1-5/8	11.9
1-3/4	2	16.2
2	2-1/4	21.2

The manufacturer's recommendations shall be followed in determining the safe working loads of the various sizes and types of specific and identifiable hooks. All hooks for which no manufacturer's recommendations are available shall be tested to twice the intended safe working load before they are put into use. The employer shall maintain a record of the dates and results of such tests.

DECON ENVIRONMENTAL SERVICES, INCORPORATED

HOT PROCESS STEAM

Approval Notation:

Proceedure Number/Name: DECON-SOP-#14 **Hot Process Steam** has been reviewed and approved by the following:

APPROVAL SIGNATURES:

C. L. McIlvaine

Clarance L. McIlvaine/ Operations Manager — 11-3-98 Date

Bruce Jacobsen

Bruce Jacobsen, President — 11-3-98 Date

Steam may be present in many forms and circumstances. Steam represents a severe thermal burn hazard. It may condense and leave wet work surfaces and will displace oxygen in enclosed areas. The heat and high humidity associated with steam affect instrument and PPE function.

Manufacturing, Energy Production and Laboratory/Research Facilities

Steam may be conveyed at high or low pressure in manufacturing, energy production and laboratory/research facilities. Exposed surfaced of lines are hot and represent thermal burn hazards from contact. Even line insulation can be hot if wet or otherwise damaged. Steam lines are often covered with asbestos containing materials which represents a corollary toxic hazard. Steam lines are prone to leakage and are often vented and may release steam suddenly and noisily. Steam at high or low pressure can very quickly cause severe burns. The noise from high pressure steam vents can startle workers causing them to slip and fall. Leakage from condensate traps or lines themselves can also represent slip and fall hazards. Steam lines are often enclosed in pipe runs, tunnels or are underground. These areas must be considered as potential confined spaces. Enclosed areas around steam lines or areas around large steam using equipment may also represent increased risk of heat stress.

Steam Cleaning Equipment

Steam is often used in equipment decontamination and may be used in site remediation. Steam cleaning equipment has the same hazards as facility steam lines in that there are hot surfaces to contact, the steam itself is a thermal burn hazard, steam cleaners are often augmented by high pressure and in enclosed areas steam may displace oxygen and increase heat stress risk.

Recognition and Risk Assessment

The presence of steam lines and use of steam equipment must be recognized at the onset of a project. Facility or appropriate utility management must be contacted before site work begins to determine whether there are steam hazards in work areas. At the earliest opportunity, work areas must be surveyed for the presence of all "utilities" including steam.

When steam hazards are identified, an assessment of risk of contact must be made and appropriate Safeguards added to the Safety Plan.
This assessment must take into account the likelihood of surface contact, high pressure venting, accidental release, leakage and condensation, adequacy and type of insulation, elevation of ambient heat and presence of confined areas.

Prevention and Protection Programs

The most effective method of preventing exposure and protecting workers from adverse effects of exposure to steam or steam line is use of engineering controls. Guards or barriers placed between workers and steam jets or lines and directing vents away from work areas to minimize change of contact, placing drip plans or sumps and slip resistant grating under condensate traps and where condensation or leaks wet work area floors or walkways ensuring wet work areas are dried to prevent slips and falls and ventilation to reduce heat stress and ensure adequate oxygen are samples of engineering controls.

Work assignments, clients and work places do not always allow for the protection of workers from steam by engineering controls. Work often involves close proximity with utilities in the normal course of facilities, clients who need our support in implementing safety practices and facilities which due to time, spill, release, fire or explosion are not in ideal states of repair.

A most important element of the Health and Safety Plan for these instances is recognition and careful assessment of risk of exposure and communication to all workers of the sources and points of exposure and of appropriate protection protocols. In these instances, protection will in much part be afforded by use of personnel protection and good work practices.

Contact

Whenever possible, guards and barriers preventing contact with steam lines or equipment must be left in place and workers must not pass.

When it is necessary to remove guards or work in close proximity to steam lines or equipment, wearing work clothes with long sleeves and long pants legs, heat insulated work gloves and leather safety shoes or boots will reduce the risk of contact. Prior to beginning work near a steam line check for sign of leakage and have someone familiar with the lines or equipment point out potential leak points and any pressure vents. It steam lines are at or above eye level and subject to leakage or there are pressure vents, wearing of hard hats and face shields will reduce the risk of contact with hot surfaces as well as drips of hot water and steam sprays.

Steam Jennies and other steam cleaning equipment use steam and often high pressure to increase cleaning power and reduce liquid waste production. The bodies of steam jennies are hot and not well protected. Workers can also be exposed to steam at the cleaning nozzles. Workers must be trained in proper use and safety practices prior to being assigned to use steam cleaning equipment.

Safety practices to be included in the training are:

1. Avoid contact with the surfaces of the equipment

2. Always work so steam spray is directed away from the body

3. Do not hold equipment being steamed

4. Wear appropriate Personal Protective Equipment (kept dry)*

    a. Long sleeved and pant legged clothing (with rain gear)*
    b. Leather work safety boots (with rubber boots over)*
    c. Heat insulating gloves (with rubber gloves over)*
    d. Face Shield

*As Necessary

Steam equipment users must be cautioned that PPE will provide protection from incidental contact, but may not protect for prolonged periods.

High pressure systems can also cause bruising if directed at the body and can project particles able to penetrate PPE.

Slips and Falls

Steam may condense and fall or leak from steam lines and equipment forming puddles and making floors, stairs, ladders and platforms slippery. Steam cleaning will also produce wet working surfaces with increased risk of slip and fall hazards. These conditions must be identified in pre and preliminary site safety surveys and included in the physical hazard recognition portion of the Site Specific Health and Safety Plan. During the preliminary Site Safety Survey, the risk of employees having to work in areas where steam leakage or use occurs must be made and appropriate Safety procedures must be instituted including:

1. Drying wet surfaces immediately upon notice.

2. Placing drip plans under vents or leaks to prevent water from accumulating in general work areas.

3. Constructing sumps with slip resistant gratings, placing slip resistant mats or floor boards where leakage or use of steam results in wet work surfaces.

4. Checking ladders and stairs prior to ascending and descending and platforms prior to occupancy to identify the presence of slipping hazards and using extra caution.

5. Wear shoes or boots which are slip resistant in water, and if working in wet soil, have soles which will not accumulate mud and increased risk of slipping.

Workers must be trained in recognizing these hazards and use of the appropriate protection. Workers must also be cautioned that in cold weather, steam can condense and the resultant water freeze often very imperceptible so that climbing ladders and stairs as well as flat work surfaces become treacherous.

Asbestos

Steam lines and equipment, especially if older, are often insulated with asbestos containing material. Prior to working on steam equipment, determine by questioning knowledgeable people or bulk testing.

Noise

Steam equipment often has associated high noise levels and high pressure vents can suddenly produce very loud noises. High noise areas and presence of pressure vents must be identified in the Site Safety survey. Workers must be alerted to the possible loud noise of vents and must be provided with appropriate hearing protection when noise levels exceed limits in accord with an acceptable Hearing Conservation Program.

Heat, High Humidity and Moisture

Steam equipment use will often increase the ambient air temperature and humidity adding to risk of heat stress. The potential for elevated heat levels must be identified in pre and preliminary site safety surveys and Heat Stress Prevention measures consistent with DECON's Standard Safety Procedures must be instituted.

Workers must keep feet dry to prevent immersion or trench foot.

Heat, high humidity and moisture will affect the function and reliability of many monitoring instruments. Instruments must be used according to Manufacturers directions and appropriate response factors or pre conditioners applied. Contractor SSOs must recognize when conditions will make instruments unusable. The SSE or an SSO must be contacted when onsite instruments are determined to be unusable for any purpose.

Heat, high humidity and moisture will affect performance of respirators, particularly APR cartridges and canisters, and chemical protective clothing, making rubbery materials pliable and inelastic and penetrating seams of stitched coveralls. Workers must be alerted to increased likelihood of respirator and protective clothing break through. Inspection, doffing, and donning procedures must be modified to take these effects into account.

Confined Spaces

Steam or heat from steam released in poorly ventilated areas may reduce oxygen levels and create a Confined Space situation. In the site safety survey, areas where contract personnel will work, which contain steam lines or other steam equipment must be assessed to ensure there is adequate ventilation to provide sufficient oxygen and determine whether contractor's activities will add to the potential for decreased oxygen levels.

It if can not be reliably ascertained that there will be adequate oxygen, DECON's Confined Spaces Entry procedures must be instituted.

Steam line galleries and underground steam line tunnels are considered confined spaces.

DECON ENVIRONMENTAL SERVICES, INCORPORATED

ELECTRICAL SAFETY

Approval Notation:

Proceedure Number/Name: DECON-SOP-#15 **Electrical Safety** and approved by the following:

APPROVAL SIGNATURES:

Clarance L. McIlvaine/ Operations Manager — 11-3-98 Date

Bruce Jacobsen, President — 11-3-98 Date

General (1926.400/8 CCR 1670)

Work areas shall be checked for the presence of high voltage and other hazardous electricity sources. Sources shall be labelled and work areas provided with shielding or located at sufficient distance from the sources to prevent contact or arcing to personnel or equipment.

Locate and ensure there will be no adverse contact with overhead utilities, prior to positioning or moving any elevated work platform or rig superstructure.

When high voltage electrical service is required for site or project activities, service shall be connected by certified electricians in accordance with all applicable local and National Electric Codes.

Ground Fault Circuit Interrupters shall be used in the absence of properly grounded circuitry or when portable tools must be used around wet areas.

Electric lines, cables and extension cords must be appropriately guarded and maintained in good condition.

No employer shall permit an employee to work in the proximity to any part of an electric power circuit that the employee could contact the electric power circuit in the course of work unless the employee is protected against electrical shock by de-energizing the circuit and grounding it or by guarding it effectively by insulation or other means.

All underground electric power lines must be identified and marked before employees perform any ground breaking.

Before work is begun, the contractor shall ascertain by inquiry or direct observation, or by instruments, whether any part of an energized electric power circuit, exposed or concealed, is so located that the performance of the work may bring any person, tool or machine into physical or electrical contact with the electric power circuit. The Contractor shall post and maintain proper

warning signs where such a circuit exists. The Contractors shall advise his employees of the location of such lines, the hazards involved, and the protective measures to be taken.

Power equipment must be locked out of service prior to work commencement. These procedures shall apply to all electrical circuits, electric power equipment, steam systems, hydraulic systems, compressed air and gas systems, and any other systems which have the potential for causing injury or damage if they are improperly or accidentally energized.

The DECON Project Manager must determine if the work to be performed requires that the equipment be locked-out.

Once it is determined that a lock-out is needed, the DECON Project Manager shall check that the equipment is shut down and is in the "zero energy" condition. That it, that all power to the equipment (or system) is positively turned off AND that all stores energy such a springs or compressed air tanks are de-energized.

When "zero energy" condition has been established, the DECON Project Manager shall install a lock and tag at any point where the equipment can be energized. He/she shall hold the keys for his/her locks and keep a record of all of his lock-outs. On large jobs the DECON Project Manager may delegate the locking, tagging, and recordkeeping, but he/she still is responsible to see they are done correctly.

If multiple employees are to work on a piece of equipment, gang locks shall be used and each employee shall lock and tag the equipment while their work is in progress.

When work on a piece of equipment is complete, the DECON Project Manager in charge of that equipment shall inspect the equipment to ensure that all personnel are clear before the final locks are removed and equipment is re-energized.

Contractor will demonstrate to the SSE positive disconnect of all electrical supply to any building prior to the onset of demolition.

All temporary electrical equipment used on the project site should be listed by an approved testing laboratory (Underwriters Laboratories, inc. or Factory Mutual Laboratories) for the specific application. All temporary installations should conform to the National Electric Code, unless otherwise provided by OSHA regulations. No damaged or defective tools should be used.

Extension cords used with portable electric tools should be the 3-wire type, should be protected from damage, and should not be fastened with staples, hung from nails, or suspended from wires. Splices should be soldered wire connections with insulation equal to the cable. Worn or frayed cables should not be used.

Except where bulbs are deeply recessed in the reflector, bulbs on temporary lights should be equipped with guards. Temporary lights should not be suspended by their electric cords unless designed for suspension. Broken and burned-out lamps must be replaced immediately.

Receptacles for attachment plugs should be of the approved, concealed contact type. Where different voltages, frequencies, or type of current are supplied, receptacles should be of such design that attachment plugs are not interchangeable.

Each disconnecting means for motors and appliances and each service feeder or branch circuit at the point where it originates should be legibly marked to indicate its purpose, unless located and arranged so the purpose is evident.

Cable passing through work areas should be covered or elevated to protect it from damage which would create a hazard to employees. Cables and cords should be kept clear or walkways and other locations where they may be exposed to damage or create tripping hazards.

Receptacles for attachment plugs will be of the approved, concealed contact type. Where different voltages, frequencies, or types of current are supplies, receptacles will be of such design that attachment plugs are not interchangeable.

Each disconnecting means for motors and appliances and each service feeder or branch circuit at the point where it originates will be legibly marked to indicate its purpose, unless located and arranged so the purpose is evident.

Cable passing through work areas will be covered or elevated to protect it from damage which would create a hazard to employees. Cables and cords must be kept clear of walkways and other locations where they may be exposed to damage or create tripping hazards.

Boxes for disconnecting means will be securely and rigidly fastened to the surface upon which they are mounted and fitted with covers.

No work will be permitted in such proximity to any part of an electric power circuit that an employee may contact the same in the course of the work unless the employee is protected against electric shock by de-energizing the circuit and grounding it or by guarding it by effective insulation or other means. This includes using insulated protective gloves, blankets, mats and other protective devices. In work areas where the exact location of underground electric power lines in unknown, workers using jackhammers, bars, or other hand tools which may contact an energized line will be provided with insulated protective gloves.

Hazardous areas must be barricaded and appropriate warning signs provided.

Energized wiring in junction boxes, circuit breaker panels, and similar places must be covered at all times.

Splices in electrical cords must retain the mechanical and dielectric strength of the original cable.

Grounding

All electrical tools and equipment must be approved double-insulated, properly grounded or used with ground fault circuit interrupters.

For 15- and 20-ampere receptacle outlets on single-phase, 120-volt circuits for constructions sites which are not a part of the permanent wiring of the building or structure, either ground-fault circuit interrupters or an assured equipment grounding conductor program will be used.

An assured equipment grounding conductor program will include:

All cord sets, receptacles are not a part of the permanent wiring of the building or structure, and equipment connected by cord and plug. A written description of the program will be available at

the jobsite. Each contractor will designate one or more competent persons to implement the program.

Each cord set, attachment cap, plug and receptacle of cord sets, and any equipment connected by cord and plug, except cord sets and receptacles which are fixed and not exposed to damage, will be inspected before each day's use for external defects and possible internal damage.

Tests will be performed on all cord sets, receptacles which are not a part of the permanent wiring of the building or structure, and cord- and plug-connected equipment required to be grounded. Grounding conductors will be tested for continuity. Each receptacle and attachment cap or plug will be tested for correct attachment of the equipment grounding conductor.

Tests will be recorded. The test record will identify each receptacle, cord set, and cord- and plug-connected equipment that passed the test, and will indicate the last date it was tested or the interval for which it was tested. The record will be available on the jobsite for inspection.

DECON ENVIRONMENTAL SERVICES, INCORPORATED

PRESSURE WASHING

Approval Notation:

Proceedure Number/Name: DECON-SOP-#16 **Pressure Washing** has been reviewed and approved by the following:

APPROVAL SIGNATURES:

Clarance L. McIlvaine/ Operations Manager — Date: 11-3-98

Bruce Jacobsen, President — Date: 11-3-98

Introduction and Definition of Pressure Washing

High pressure water washing (or cleaning, jetting) is defined as the use of high pressure water, with or without the addition of other liquids or solid particles, to remove unwanted matter from various surfaces, where the pressure of the liquid jet exceeds 1000 PSIG at the orifice (or nozzle). The lower limit of 1000 PSIG does not mean that pressures below 1000 PSIG cannot cause injury or require any less attention to the principal of these recommended practices. Adequate precautions, similar to those of these recommended practices, are required at all pressures. As a guideline, these recommended practices are *applicable where the product of pressure times flow exceed 2000 PSIG.*

This standard operating procedure provides only minimum general requirements. In addition the equipment manufacturer's manual should be read and followed.

Pressure Washing Equipment Requirements

Automatic pressure relief: The system shall be quipped with an automatic pressure relief *device on the discharge side of the pump, adjusted so that the manufacturer's maximum* allowable system pressure is not exceeded.

Pressure gauge: The system shall be quipped with a gauge to indicate the pressure being developed.

Electrical controls: All electrical controls shall be either fail safe, low voltage, or protected *with an approved ground fault circuit interrupter.*

Personal Protection Equipment

Each operator shall wear, as a minimum, the following personnel protection equipment. Additional equipment may be necessary if chemical or other hazards are present.

Whole Body:	Liquid/Chemical resistant suits
Head:	Hard hat
Eyes and Face:	Face shield
Foot:	Waterproof steel toe/steel shank boots
Hearing:	Ear plugs or ear muffs

Operator Training

Only trained (experienced) personnel shall operate high pressure washing equipment, and supervise the training of new operators. Where equipment is rented or newly purchased and no one on the project team has prior experience with this equipment, the vendor shall be required to provide training in the proper use of the equipment.

Injuries-Special Hazards

Injuries caused by the impact of a water jet may appear insignificant and give little indication of the extent of the injury beneath the skin and the damage to deeper tissues. Large quantities of water may have punctured the skin, flesh, and organs through a very small hole that may not bleed.

Immediate hospital attention is required and medical staff must be informed of the cause of the injury. To insure that this is not overlooked, medical staff should be advised that, in previous cases of water jet punctures, unusual infections with micro-aerophillic organisms occurring at lower temperatures have been reported. These may be gram negative pathogen such as are found in sewage. Bacterial swabs and blood cultures may therefore be helpful.

Operational Rules

1. Never operate the equipment above the manufacturer's rated pressure maximum.
2. Increase pressure slowly until required working pressure is reached.
3. Always rope off the area to be cleaned.
4. Never point nozzle at a person. Remember that a water jet can puncture splash suits and other personal protective clothing.

DECON ENVIRONMENTAL SERVICES, INCORPORATED

HAZARD COMMUNICATION

Approval Notation:

Proceedure Number/Name: DECON-SOP-#17 **Hazard Communication** has been reviewed and approved by the following:

APPROVAL SIGNATURES:

C. L. McIlvaine

Clarance L. McIlvaine/ Operations Manager — 11-3-98. Date

Bruce Jacobsen

Bruce Jacobsen, President — 11-3-98 Date

Summary

In the course of employment, employees may be required to work with chemicals that may present some degree of hazard. A Hazard Communication program has been developed to communicate the hazard and identify control measures you should implement to protect your health and safety. A safe operating depends of being aware and informed of the hazards associated with chemical products. Where hazards are known and recognized, injuries and illnesses are less likely to occur.

Our Hazard communication Program consists of three major components:

1. Labels - To identify the materials and warn of their hazards.

2. Material Safety Data Sheets (MSDS's) - Explain in detail the hazardous properties of the chemical products along with control measures recommended for safe use.

3. Training and Information - Explains where hazardous chemicals are present in the work areas, the methods and observations that may be used to detect the presence of a hazardous chemical, the health hazards of the chemical, and measures employees can take to protect themselves from these hazards.

Labels

Each container of hazardous chemical must be labeled, tagged, or marked with the following information:

- Identity of the hazardous material
- Appropriate hazard warning
- Name and address of the chemical manufacturer, importer, or other responsible party

Signs, placards, process sheets, batch tickets, operating procedures, or other written materials may be used in lieu of labels to individual stationary process containers, as long as the method identified the hazard.

Material Safety Data Sheets (MSDS)

The MSDS is a written document which contains detailed information concerning the hazardous properties of the chemical which make up a product, including their identity, the health effects from exposure, emergency and first aid procedures, and precautions for safe use.

MSDSs are provided by materials suppliers. The manufacturer or distributor of these chemical products has evaluated the product for their hazards. Employees shall compile MSDSs for those materials determined to be hazardous. MSDSs can be found at a central location in your work area or are accessible through your SSE.

Material Safety Data Sheet Components

Section I - Identification

This section identifies the chemical name or trade name and synonyms, the manufacturer's name and address, emergency telephone number, telephone number for additional information, and the date the Material Safety Data Sheet was prepared.

Section II - Hazardous Ingredients

A hazardous ingredient is a hazardous material in a mixture in sufficient concentration to produce enough flammable vapor or gas to ignite or to produce acute or chronic adverse effects in doses which could result from normal use or predictable misuse of the mixture. The hazardous ingredient must be listed with the associated Permissible Exposure Limit (PEL), or Threshold Limit Value (TLV), or other recommended limit and the percentage of each hazardous ingredient.

Hazardous ingredients are listed when they comprise 1 percent of greater of the composition or 0.1 percent as a carcinogen. Hazardous ingredients are carcinogens or potential carcinogens when listed by 29 CFR Part 1910, Subpart Z, National Toxicology Program or International AGency for Research on Cancer.

Section III - Physical/Chemical Characteristics

Boiling Point - Refers to the temperature at which the liquid boils, in degrees Fahrenheit, at a pressure of 760 mm Hg. Materials with low boiling points tend to evaporate quickly and may dissipate toxic or flammable components.

Vapor Pressure - Refers to the pressure of saturated vapor above the liquid in mm of Hg at 20 degrees Centigrade. Materials with high vapor pressure evaporate rapidly and may dissipate toxic or flammable components.

Vapor Density - Refers to the relative density or weight of a vapor or gas compared with an equal volume of air. Materials with vapor densities greater than one will tend to accumulate on the floor, while those with vapor densities less than one will rise.

Solubility in Water - The amount of a chemical that can be dissolved in water.

Specific Gravity - Refers to the ratio of the weight of a volume of material to the weight of an equal volume of water. A material with a specific gravity less than one will float on water, while those with specific gravities greater than one are heavier than water and will sink.

Melting Point - The temperature at which a solid changes into a liquid.

Evaporation Rate - Refers to the time for a liquid to be converted into its vapor at a given temperature, relative to ether or butyl acetate.

Appearance and Odor - Refer to a physical description.

Section IV - Fire and Explosion Hazard Data.

Flash Point - Refers to the temperature in degrees Fahrenheit, at which a liquid will give off enough flammable vapor to ignite.

Flammable or Explosive Limits - Refers to the range of gas or vapor concentrations, percent by volume in air, which will burn or explode if an ignition source is present.

Lower Explosive Limit (LEL) - Refers to the concentration of vapor in air below which ignition will not occur.

Upper Explosive Limit (UEL) - Refers to the concentration of vapor in air above which ignition will not occur.

Extinguishing Media - List the firefighting media suitable for use on the burning material.

Special Fire Fighting Procedures - If water is unsuitable, specify the firefighting media to be used. Lists only necessary personal protective equipment.

Unusual Fire and Explosion Hazards - Specifies any unusual fire and explosion hazards and any special conditions that govern them.

Section V - Reactivity Data

Stability - Refers to whether the material is stable or unstable under reasonably foreseeable conditions of storage, use, or misuse. If unstable, list those conditions which may cause a dangerous reaction.

Incompatibility - Refers to materials and contaminants with which the product may reasonably come into contact to product a reaction which would release energy.

Hazardous Decomposition Products - Refers to hazardous materials produced by burning, oxidation, or by heating.

Hazardous Polymerization - Refers to a reaction which takes place at a rate which releases energy. List those reasonably foreseeable storage conditions which would start polymerization.

Section VI - Health Hazard Data

This section describes how the material would be expected to enter the body, including inhalation, ingestion, or skin absorption. The section describes recognized health hazards and symptoms due to acute (short-term) and chronic (long-term) overexposure to the material. The section identifies known or suspected carcinogens used as an ingredient in concentrations greater than 0.1 percent of the material. Signs and symptoms of exposure are described. Any common medical condition an employee may have which would be aggravated by exposure to the material is described. Emergency and first aid procedures are described.

Section VII - Precautions for Safe Handling and Use

This section refers to the precautionary measures to be taken in the event of accidental spoils, releases, or leaks. Appropriate cleanup and disposal are defined. Precautions include avoiding breathing vapor or gas from a toxic materials and removing sources of ignition when a flammable liquid is spilled. Handling and storage precautionary information is described.

Section VIII - Control Measures

This section describes the types of personal protective equipment, including clothing, respirators, eye protection, face shield. gloves and boots, and other controls including ventilation which are needed when working with the material. Since the conditions of use including contaminant, contaminant concentration, application method. and degree of confinement will vary from one work place to another, the control measures will also vary. Generally, the protective equipment and controls recommended by the manufacturer in the Material Safety Data Sheet usually apply to the most hazardous conditions of use. Contact your supervisor concerning the control measures for your job.

Training and Information

Before your work with hazardous materials, you will be provided with training to safely use these materials. The training will include:

1. The methods and observations that may be used to detect the presence or release of a hazardous chemical in the work area. These methods and observations include monitoring conducted by the employees, continuous monitoring devices, visual appearance or odor of hazardous chemical when being released.

2. The physical and health hazards of the chemicals in the work area.

3. The measures employees can take to protect themselves from these hazards, including specific procedures the employer has implemented to protect employees from exposure to hazardous chemicals, such as appropriate work practices, emergency procedures, and personal protective equipment to be used.

DECON ENVIRONMENTAL SERVICES, INCORPORATED

HOUSEKEEPING

Approval Notation:

Proceedure Number/Name: DECON-SOP-#18 **Housekeeping** has been reviewed and approved by the following:

APPROVAL SIGNATURES:

C L McIlvaine

Clarance L. McIlvaine/ Operations Manager — 11-3-98 Date

Bruce Jacobsen

Bruce Jacobsen, President — 11-3-98 Date

DECON employees will follow good housekeeping practices. Good housekeeping is an important part of all safety programs. In both the office and at the site, poor housekeeping results in substandard working conditions and poor attitudes. It is the responsibility of all employees to maintain a clean and safe work environment. the following good housekeeping practices should be implemented in all areas. All subcontractors of DECON will also adhere to these housekeeping guidelines.

General:

1. Scrap lumber with protruding nails and all other debris should be kept clear from all work areas. All nails should be removed from lumber when wooden structures are dismantled.
2. Combustible scrap and debris should be removed at regular intervals.
3. Trash containers should be provided for collection and separation of all refuse. Covers should be provided on containers used for flammable or harmful substances.
4. Chemical and hazardous wastes should be disposed of as required by environmental regulations.

Storage:

1. All materials stored in tiers should be secured to prevent sliding, falling or collapse.
2. Aisles and passageways should be kept clear and in good repair.
3. Storage of materials should not obstruct exits.
4. Materials should be stored with due regard for their fire characteristics.
5. Weeds and grass in outside storage areas should be kept under control.

DECON ENVIRONMENTAL SERVICES, INCORPORATED

PERSONAL PROTECTIVE EQUIPMENT

Approval Notation:

Proceedure Number/Name:. DECON-SOP-#19 **Personal Protective Equipment** has been reviewed and approved by the following:

APPROVAL SIGNATURES:

C. L. McIlvaine — 11-3-98

Clarance L. McIlvaine/ Operations Manager — Date

Bruce Jacobsen — 11-3-98

Bruce Jacobsen, President — Date

DECON shall provide the following personal protective equipment (PPE), as required, for all employees that work at construction sites: *head protection, safety shoes, hearing protection,* and eye and face protection. Additional protective equipment that may be required includes: *respiratory protection, safety belts, and life jackets.*

Where personal protective equipment is required, it shall comply with Subpart E - Personal Protective and Life Saving Equipment of Part 1926 and 8 CCR Article 3. The following paragraphs outline the general requirement for and use of personal protective equipment. Additionally, these guidelines can be usee as a basis for monitoring subcontractor conformance with contract requirements when appropriate.

General

1. Where appropriate personal protective equipment is required of all employees in all operations where there is an exposure to hazardous conditions.

2. All employees, visitors, and vendors must wear a hard hat in designated hard hat areas. These include areas where there is a possible danger of head injuries from impact, flying or falling objects or electrical shock and burns. Designated locations include the general construction site and all shop areas.

3. Long pants and shirts with sleeves are required on the construction site.

4. On construction sites, safety shoes are required at all times. Sneakers and sandals are not permitted.

5. Generally, eye protection is required when the work involves operations where sparks, chips, dirt, chemicals, etc., may enter the eyes. **On this particular job, eye protection will be worn at all times.**

6. Approved hearing protective devices will be used when controls fail to reduce sound levels within the limits specified by OSHA. Exposure to impulsive or impact noise should not exceed 140 dB peak sounds pressure level.

7. Respirator equipment will be required in areas where health hazards exist due to the accumulation of dust, fumes, mists, or vapors. Respiratory protective devices will be approved by the National Institute of Occupational Safety and Health (NIOSH) or the Mine Safety and Health Administration (MSHA) and will be appropriate for the hazardous material involved and the extent and nature of the work requirements and conditions. Thorough training in the use of respiratory protective equipment will be inspected regularly and maintained in good condition.

8. Safety belts and lifelines must be used when other safeguards such as nets, planking, or scaffolding cannot be used. Safety lines must be independent of other rigging.

9. Gloves must be worn when handling objects or substances which could cut, tear, or burn the hands.

10. Rubber boots should be work for work in concrete, mud or water.

11. Employees working over or near water will wear U.S. Coast Guard approved life jackets or buoyant work vests.

DECON ENVIRONMENTAL SERVICES, INCORPORATED

VISION CONSERVATION

Approval Notation:

Proceedure Number/Name: DECON-SOP-#20 **Vision Conservation** has been reviewed and approved by the following:

APPROVAL SIGNATURES:

Clarance L. McIlvaine/ Operations Manager — 11-3-98 Date

Bruce Jacobsen, President — 11-3-98 Date

The safety requirements for eye protection on construction sites are specified in 29 CFR Part 1926.102 "Eye and Face Protection", and 8 CCR 1516. This standard recommends specific types of eye and face protection for the hazard involved. Additionally, eye and face protection equipment must meet the requirements of ANSI Z87.1-1968, "Practice for Occupational and Educational Eye and Face Protection".

In addition to the above requirement, each site shall establish a Vision Conservation Program as part of the site specific safety plan which includes the following procedures and responsibilities:

The Contractors Site Health and Safety Officer shall:

1. Assure that the necessary type and amount of eye and face protective devices are available for all employees and visitors.

2. Evaluate the potential eye hazards for a particular area or activity.

3. Identify the type of eye protection required in areas or during operations when eye hazards cannot be eliminated.

4. Inspect assigned areas to identify potential eye hazards.

5. Initiate those actions which are necessary to minimize and, where possible, to eliminate eye hazards.

6. Affix signs and placards and/or other identifications as applicable to appropriately identify areas where eye protection is required.

Employees Responsibility

1. Use only eye protective devices which are serviceable (i.e., free from scratches and contaminants which could impair vision). TURN IN UNSERVICEABLE EQUIPMENT.

2. Store eye protective devices in a manner which will protect them from scratches and contaminants when not in use.

3. Utilize the appropriate eye protective device when working in an area or performing an operation which presents an eye hazard.

4. Report potential eye hazards to the responsible supervisor.

Visitors

All visitors shall wear eye protection while on the construction site.

DECON ENVIRONMENTAL SERVICES, INCORPORATED

RESPIRATORY PROTECTION

Approval Notation:

Proceedure Number/Name: DECON-SOP-#21 **Respiratory Protection** has been reviewed and approved by the following:

APPROVAL SIGNATURES:

Clarance L. McIlvaine/Operations Manager — 11-3-98 Date

Bruce Jacobsen, President — 11-3-98 Date

Respiratory protective equipment is required when employees are exposed to possible inhalation of gases. vapors, fumes. dusts. and mists that exceed the "Threshold Limit Value" (TLV) of airborne contaminants as determined by the American Conference of Governmental Industrial Hygienists (ACGIH). All Contractors should comply with the requirements of OSHA Part 1926.55/8 CCR Article 4 "Gases, Vapors, Fumes, Dusts, and Mists" and Part 1926.103/8 CCR 1531 "Respiratory Protection" whenever any employee is exposed to airborne asbestos dust, the requirements of Part 1910.1001/8 CCR 5208 shall apply.

In all cases, the exposure to air contaminants should be reduced through the use of administrative procedures and engineering controls whenever feasible. When such controls are not feasible to achieve full compliance, respiratory protective equipment is required.

A Respiratory Protection Program, based on Part 1910.134/8 CCR 5144 "Respiratory Protection" should include the following:

1. Written standard operating procedures governing the selection and use of respirators in accordance with the American National Standard Practices for Respiratory Protection Z88.2-1969.

2. Respirator protective devices should be approved by the NIOSH or MSHA for the specific contaminant to which the employee is exposed.

3. Respiratory selection should fit the intended use for the contaminant, toxicity, and concentration.

4. Employees required to use respirators should be thoroughly trained in its use, care, inspection, and limitations. Every respirator wearer should receive fitting

instructions, including demonstrations and practice in how the respirator should be worn, how to adjust it, how to determine it if fits properly, and when to obtain service or a new respirator. Respirators should not be worn when conditions prevent a good face seal. Such conditions include beards, sideburns, etc. Training should include wearing the respirator in normal air and in a test atmosphere. Training shall be documented.

5. Persons required to wear respirators should be physically able to perform the work and use the equipment as determined by a physician. Medical status should be reviewed annually.

6. Respirators should be regularly cleaned and disinfected and stored in a clean and sanitary location. Whenever possible, respirators should be issued to and used by one individual. The respirator should also be identified as to whom it is assigned. Those used by more than one person shall be thoroughly cleaned and disinfected after each use.

7. Respirators used routinely should be inspected during cleaning and before and after each use. Worn or deteriorated parts should be replaced only be experienced persons.

8. Monitoring of work area conditions, employee exposure, or stress and compliance with care and use of respirators shall be maintained.

9. A regular inspection and evaluation of the Respirator Program should be performed to ensure continued effectiveness.

10. Written procedures should be prepared for the use of respirators in dangerous atmospheres that might be encountered in normal operations or in emergencies.

Additional information and requirements concerning respirator use and supplied ar respirators are identified in OSHA 1910.134 and 8 CCR 5144.

DECON ENVIRONMENTAL SERVICES, INCORPORATED

USE OF COMPRESSED AIR-(GENERAL)

Approval Notation:

Proceedure Number/Name: DECON-SOP-#22 **Use of Compressed Air-(General)** has been reviewed and approved by the following:

APPROVAL SIGNATURES:

C. McIlvaine — 11-3-98

Clarance L. McIlvaine/ Operations Manager — Date

Bruce Jacobsen — 11-3-98

Bruce Jacobsen, President — Date

Compressed air used for cleaning purposes should not exceed 30 psi and then only with effective ship guarding and personal protective equipment. For cleaning of concrete form work, mill scale, and similar operations, higher pressure and special protective equipment is required.

DECON ENVIRONMENTAL SERVICES, INCORPORATED

COMPRESSED GAS CYLINDERS

Approval Notation:

Procedure Number/Name: DECON-SOP-#23 **Compressed Gas Cylinders** has been reviewed and approved by the following:

APPROVAL SIGNATURES:

Clarance L. McIlvaine/ Operations Manager — Date: 11-02-98

Bruce Jacobsen, President — Date: 11-2-98

- ◊ Valve protection caps should be in place when compressed gas cylinders are transported, moved or stored.
- ◊ Cylinder valves should be closed when work is finished and when cylinders are empty or are moved.
- ◊ Compressed gas cylinders should be secured in an upright position at all times, except if necessary for short periods of time when cylinders are actually being hoisted or carried.
- ◊ Cylinders should be kept at a safe distance or shielded from welding or cutting operation. Cylinders should be placed where they cannot become part of an electrical circuit.
- ◊ Oxygen and fuel gas regulators should be in proper working order while in use.
- ◊ Oxygen and acetylene (or other fuel gas) cylinders in storage should be separated from each other by 20 feet or by a five-foot barrier with a one-hour fire rating.
- ◊ Acetylene cylinders shall not be used unless they have remained the upright position for a period to exceed 30 minutes.
- ◊ Cylinders shall never be carried, moved, or restrained by the valve.
- ◊ All cylinders shall be stored, nested, and chained, unless in a cylinder rack.
- ◊ When transporting cylinders, a cylinder rack will be utilized. In lieu of a cylinder rack the cylinder will be securely fastened upright to the vehicle.
- ◊ Cylinders should not be taken into confined spaces, except for SCBAs or Airline SAR emergency egress cylinders.

DECON ENVIRONMENTAL SERVICES, INCORPORATED

AIR TOOLS

Approval Notation:

Proceedure Number/Name: DECON-SOP-#24 **Air Tools** has been reviewed and approved by the following:

APPROVAL SIGNATURES:

C. L. McIlvaine — 11-3-98

Clarance L. McIlvaine/ Operations Manager — Date

Bruce Jacobsen — 11-3-98

Bruce Jacobsen, President — Date

(1926.302/8 CCR 1695)

Pneumatic power tools should be secured to the hose or whip in a positive manner to prevent accidental disconnection.

Safety clips or retainers should be securely installed and maintained on pneumatic impact tools to prevent attachments from being accidentally expelled.

The manufacturer's safety operating pressure for all fittings should not be exceeded.

All hoses exceeding 1/2-inch inside diameter should have a safety device at the source of supply or branch line to reduce pressure in case of hose failure.

DECON ENVIRONMENTAL SERVICES, INCORPORATED

SCAFFOLDS-(GENERAL)

Approval Notation:

Proceedure Number/Name: DECON-SOP-#25 **Scaffolds-(General)** has been reviewed and approved by the following:

APPROVAL SIGNATURES:

C. L. McIlvaine

Clarance L. McIlvaine/ Operations Manager — 11-3-98. Date

Bruce Jacobsen

Bruce Jacobsen, President — 11-3-98 Date

SCAFFOLDS (GENERAL) (1926.451/8 CCR ARTICLE 21)

Each scaffold should be inspected and approved by responsible supervisory personnel prior to initial use and after alteration or moving.

Scaffolds should be erected on sound, rigid footing, capable of carrying the maximum intended load without settling or displacement. There is no such thing as temporary scaffolding. All scaffolding should be erected and maintained to conform with established standards.

Scaffolds and their components should be capable of supporting, without failure, at least four times the maximum intended load.

Guardrails, mid-rails, and toeboards should be installed on all open sides and ends of platforms more than 10 feet above the ground or floor, except needle beam scaffolds and floats. Scaffolds 4 feet to 10 feet in height, having a minimum dimension in either direction of less than 45 inches, should have standard guardrails installed on all open sides and ends of the platform. Guardrails, mid-rails, and toeboards should be constructed from components furnished by the manufacturer. Where this is not possible, sound 2 x 4 inch lumber should be used for the guardrails, and 1 x 4 inch lumber for the mid-rails and toeboards.

There should be a screen of 18-gage, 1/2-inch wire-mesh between the toeboard and the guardrail, where persons are required to work or pass under the scaffold.

All planking should be Scaffold grade or equivalent as recognized by approved grading rules for the species of wood used. The maximum permissible spans for 2 x 10 inches or wider planks are

shown in Table XII-2. The maximum permissible span for 1-1/4 x 9 inch or wider plank of full thickness is 4 feet, with medium loading of 50 ps.

TABLE XII-2

	Full Thickness Undressed Lumber			Normal Thickness Lumber	
Working Load (ps)	25	50	75	25	50
Permissible span (ft)	10	8	6	8	6

Scaffold planking should be overlapped a minimum of 12 inches or secured from movement.

Scaffold planks should be cleated and should extend over their end supports not less than 6 inches nor more than 12 inches.

All scaffolding and accessories should be visually inspected before each use and should have any effective parte immediately replace or repaired.

All scaffolds should be at least two planks wide,no employee may work from a single plank.

An access ladder or equivalent safe access should be provided. Climbing off the end frames is prohibited unless scaffold design incorporates an approved ladder.

Adequate mud sills or other rigid footing, capable of withstanding the maximum intended load, should be provided.

Scaffolds should be tied onto the building or structure at intervals which do not exceed 30 feet horizontally and 26 feet vertically.

Barrels, boxes, kegs, and similar unstable objects should be used as work platforms or to support scaffolds.

Overhead protection is required if employees working on scaffolds are exposed to overhead hazards. Such protection should be a 2 inch plank or the equivalent.

MOBILE/PULLING SCAFFOLDS (1926.451/8 CCR ARTICLE 21)

Platforms should be tightly planked for the full width of the scaffold except for necessary entrance opening. Platforms should be secured in place.

Guardrails made of lumber, not less than 2x4 inches (or other material providing equivalent protection), approximately 42 inches high, with a mid-rail of 1x6 inch lumber (or other

material providing equivalent protection), and toeboards, should be installed at all open sides and ends on all scaffolds more than 10 feet above the ground or floor. Toeboards should be a minimum of 4 inches in height. Where persons are required to work or pass under the scaffold, wire-mesh should be installed between the toeboards and the guardrail, extending along the entire opening, consisting of No.18 gauge U.S. Standard wire 1/2 inch mesh, or the equivalent.

The height of rolling scaffolds should not exceed three times the minimum base dimension.

SWING SCAFFOLDS (1926.451/8 CCR ARTICLE 21)

On suspension scaffolds designed for a working load of 500 pounds, no more than two men should be permitted to work at one time. On suspension scaffolds with a working load of 750 pounds, no more than three men should be permitted to work at one time.

Each employee should be protected by an approved safety life belt attached to a lifeline. The lifeline should be securely attached to substantial members of the structure (not scaffold). or to securely rigged lines, which will safely suspend the employee in case of a fall. In order to keep the lifeline continuously attached, with a minimum of slack, to a fixed structure, the attachment point of the lifeline should be appropriately changed as the work progresses.

Suspended scaffolds should not be less than 20, nor more than 36 inches wide. Wire ropes used to suspend such scaffolds should have a safety factor six times the maximum intended load. Non-conductive insulating material must be placed over the suspension cables of each scaffold for protection when the chance of contact with an electric arc exists.

FLOATS (1926.451/8 CCR ARTICLE 21)

Floats are intended to support not more than three workmen and a few tools. They should be inspected carefully prior to each use.

The platform should be constructed from 3/4 inch exterior plywood, Grade B-B or better. The minimum width must be 3 feet, and the minimum surface area must be 18 square feet.

The supporting beams should be 2 x 4 inch select lumber and should project at least 6 inches beyond each side of the platform.

A 1 x 2 inch edging should be placed on all sides of the platform to prevent tools from rolling off.

Supporting ropes should be 1 inch manilla, or equivalent, in "as new" condition and should be fastened so that the platform cannot slip or shift.

When working from floats, employees are required to wear a safety belt and to be tied off to the structure or to an independent lifeline.

TUBULAR WELDED FRAME SCAFFOLDS (1925.451/8 CCR ARTICLE 21)

All needle beam scaffolds should be constructed to support the intended load with a safety factor of four.

All employees working from needle beam scaffolds should use safety belts and lifelines.

Needle beams should be at least 4 x 6 inches, and the span should not exceed 10 feet.

Rope supports should be at least 1 inch manilla or larger, attached with a scaffold hitch or eye splice, properly secured to prevent the beam from rolling or being displaced.

Needle beams suspended by wire rope should be secured with three wire-ripe clamps, properly attached.

DECON ENVIRONMENTAL SERVICES, INCORPORATED

STAIRS

Approval Notation:

Proceedure Number/Name: DECON-SOP-#26 **Stairs** has been reviewed and approved by the following:

APPROVAL SIGNATURES:

Clarance L. McIlvaine, Operations Manager — 11-3-98 Date

Bruce Jacobsen, President — 11-3-98 Date

(1926.500/8 CCR 1629)

Every flight of stairs having four or more risers should be equipped with standard stair railings or standard handrails.

On stairways less than 44 inches wide having one side open, at least one stair railing on the open side is required.

On stairways less than 44 inches wide having both sides open, one stair railing on each side is required.

On all structures 20 feet or over in height, stairways, ladders, or ramps should be provided.

Rise height and tread width should be uniform throughout any flight of stairs.

Hollow pan-type stairs should be filled to the level of the nosing with solid material.

DECON ENVIRONMENTAL SERVICES, INCORPORATED

LOCKOUT/TAGOUT

Approval Notation:

Proceedure Number/Name: DECON-SOP-#27 **Lockout/Tagout** has been reviewed and approved by the following:

APPROVAL SIGNATURES:

C. L. McIlvaine — 11-3-98

Clarance L. McIlvaine/ Operations Manager — Date

Bruce Jacobze — 11-3-98

Bruce Jacobsen. President — Date

For the protection and safety of employees, no decontamination, removal or other related work will be performed on any potentially-powered mechanical machinery, electrical equipment, or utility lines (electrical, hydraulic, steam, gas, etc.) until lockout procedures have been followed. Lockout is to prevent unintentional or accidental starting or energizing of equipment. No work is to begin until all lockout procedures are implemented and all workers are free from possible points of danger.

To ensure that all such work is performed in a safe manner, the following rules will be followed:

1. No work will be attempted until authorized by the Site Safety Engineer (SSE) or Owner and/or Designated Representative.

2. Lockout will only be done by the contractor's employees qualified and directed to do so with assistance by DECON maintenance personnel.

3. The Contractor shall provide a lockout device if appropriate.

4. The Contractor shall pad lock the device and provide Owner and/or Designated Representative with all keys but one. No other padlocks will be capable of being opened by the same key.

5. The Owner and/or designated Representative will maintain a master list of key numbers and all extra keys for each lock.

6. A "Lockout" tag with the date and time the lockout is taking place shall be placed in a prominent location in the immediate area of the work.

7. In no case will the Owner and/or designated Representative lend the master key, even though the Contractor's key seems to be lost. The Owner and/or designated

Representative will use the key himself until the old lock and the extra keys are destroyed and replaced by new ones.

8. A lockout device will be placed on the control switch, lever, or other starting or energizing control at the controlling substation.

9. When the contractor's work is completed, he will remove only his own padlock from the control. No one else will remove it for him.

10. If work is still in progress at the end of the day or shift, the locks will remain in place until the work is completed.

11. If there is occasion for the work to be continued by an oncoming shift, the retiring shift may remove their padlocks, but the SSO or SSE will ensure that the oncoming shift immediately installs their padlocks on the control device.

DECON ENVIRONMENTAL SERVICES, INCORPORATED

SANITATION

Approval Notation:

Proceedure Number/Name: DECON-SOP-#28 **Sanitation** has been reviewed and approved by the following:

APPROVAL SIGNATURES:

Clarance L. McIlvaine/ Operations Manager — 11-3-98 Date

Bruce Jacobsen, President — 11-3-98 Date

Potable Water

1. An adequate supply of potable water shall be provided in all places of employment.
2. Portable containers used to dispense drinking water shall be capable of being tightly closed, and equipped with a tap. Water shall not be dipped from containers.
3. Any container used to distribute drinking water shall be clearly marked as to the nature of its contents and not used for any other purpose.
4. The common drinking cup is prohibited.
5. Where single service cups (to be used by once) are supplied, both a sanitary container for the unused cups and a receptacle for disposing of the used cups shall be provided.

Non-Potable Water

1. Outlets for non-potable water, such as water for industrial or firefighting purposes only, shall be identified by signs to indicate clearly that the water is unsafe and is not to be used for drinking, washing, or cooking purposes.
2. There shall be no cross-connection, open or potential, between a system furnishing potable water and a system furnishing non-potable water.

Toilets at Construction Jobsites

1. Toilets shall be provided for employees according to Table XII-3.

TABLE XII - 3

CONSTRUCTION SITE TOILET FACILITIES	
Number of Employees	Minimum Number of Facilities
20 or less	1
20 or more	1 toilet seat & urinal per 40 workers
200 or more	1 toilet seat & urinal per 50 workers

1. Under temporary field conditions, provisions shall be made to assure not less than one toilet facility is available.

2. Jobsites, not provided with a sanitary sewer, shall be provided with one of the following toilet facilities unless prohibited by local codes:

    a. Privies (where their use will not contaminate ground or surface water);

    b. Chemical toilets;

    c. Recirculating toilets;

    d. Combustion toilets.

3. The requirements of this paragraph for sanitation facilities shall not apply to mobile crews having transportation readily available to nearby toilet facilities.