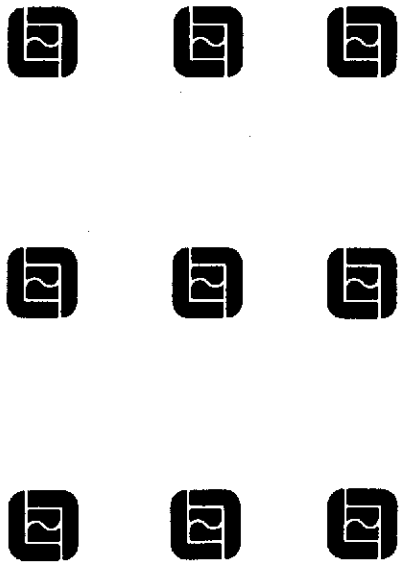

HEALTH AND SAFETY PLAN
SOIL AND GROUND-WATER INVESTIGATION
750-50TH AVENUE AND 5050 COLISEUM WAY
OAKLAND, CALIFORNIA

Revised October 19, 1993
LF 3018

Prepared for
Volvo GM Heavy Truck Corporation
7900 National Service Road
Greensboro, North Carolina

LEVINE·FRICKE

LEVINE·FRICKE

93 OCT 20 AM 8:47

Letter of Transmittal

Date October 19, 1993

From Cathy de Heer for Kathleen Isaacson

Project No. 3018.00-000

To Robert G. Whelen
Lawrence S. Bazel
Paul Smith

Subject 5050 Coliseum Way, Oakland

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Comments

*

(Signed)

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FIGURE 1: HOSPITAL LOCATION MAP

APPENDIX A: CHEMICAL DESCRIPTIONS

OSHA NOTICE

October 19, 1993 LF 3018

HEALTH AND SAFETY PLAN
SOIL AND GROUND-WATER INVESTIGATION
750-50TH AVENUE AND 5050 COLISEUM WAY
OAKLAND, CALIFORNIA

1.0 INTRODUCTION

This Health and Safety Plan ("HSP") addresses potential hazards associated with the planned field activities at the property located at 750-50th and 5050 Coliseum Way, Oakland, California. It presents baseline health and safety requirements for establishing and maintaining a safe working environment during the course of work. The planned field activities at the Site include drilling soil borings and installation, development and sampling of ground-water monitoring wells under the supervision of Levine·Fricke personnel.

If Work Plan specifications change during or after the preparation of this HSP, or if what is known about site conditions change significantly from the present as more information becomes available, the Levine·Fricke Health and Safety Director shall be informed immediately and appropriate changes shall be made to this HSP.

At a minimum, all contractor/subcontractor personnel working on site must:

- Have read and understood the specifications of this HSP.
- Have completed all training requirements in 29 Code of Federal Regulations (CFR) 1910.120.
- Provide their own health and safety equipment as indicated in this HSP, and comply with the minimum requirements established by this HSP. If the contractor/subcontractor has prepared his/her own HSP, it must minimally meet requirements contained herein and all applicable Federal, State, and local health and safety requirements.

This HSP shall be read and approved by the Levine•Fricke Health and Safety Director, the Levine•Fricke Project Manager, and a Levine•Fricke Quality Assurance Reviewer.

A copy of this HSP shall be kept on site, easily accessible to all employees and government inspectors, and in Levine•Fricke files.

This HSP was prepared using the following documents:

- 29 CFR 1910--Occupational Safety and Health Standards.
- 29 CFR 1926--Safety and Health Regulations for Construction.
- 29 CFR 1910.1000--OSHA Air Contaminants, Permissible Exposure Limits.
- Title 8, California Code of Regulations, Occupation Health and Safety Standards.
- American Conference of Governmental Industrial Hygienists (ACGIH). Threshold Limit Values and Biological Exposure Indices for 1992 - 1993. Cincinnati, Ohio, ACGIH.
- California Department of Health Services (DHS), Toxic Substances Control Division (TSCD), Technical and Support Unit, Region 3, Los Angeles, California, August 1988. Site Safety Plan Guidance Document.
- National Institute for Occupational Safety and Health (NIOSH); Occupational Safety and Health Administration (OSHA); U.S. Coast Guard (USCG); U.S. Environmental Protection Agency (EPA), October 1985. Occupational Safety and Health Guidance Manual for Hazardous Waste Site Activities. Washington D.C.: U.S. Government Printing Office.
- NIOSH/OSHA, 1981. Occupational Health Guidelines for Chemical Hazards.
- Sax, N. Irving, 1984, Dangerous Properties of Materials, 6th edition, Van Nostrand Reinhold Company, Inc., New York, New York.
- U.S. EPA, Office of Emergency and Remedial Response, Hazardous Response Support Division, November 1984. Standard Operating Safety Guides.

2.0 SITE CHARACTERISTICS

Site Name: White GMC Trucks

Site Address: 5050 Coliseum Way, Oakland, California (herein referred to as "the Site")

2.1 Site Description

The Site is located approximately 0.5 mile northeast of San Leandro Bay in a heavy industry area of Oakland in Alameda County, California. The Site occupies approximately 4 acres of land; its elevation is approximately 10 feet above sea level.

The Site is occupied by a large warehouse-type building (Figure 2), which contains office space and large service bays to maintain heavy trucks and other large vehicles. This building is surrounded by a concrete apron, and the remainder of the Site is covered with asphalt.

In the surrounding area are salvage businesses and other industrial and commercial facilities (Figure 2). A PG&E transformer station is located immediately southwest of the Site. The Southern Pacific Railroad tracks parallel the northeast perimeter of the Site. A concrete-lined stormwater canal runs parallel to Coliseum Way southeast of the Site and drains into San Leandro Bay.

2.2 Historical Usage of the Site

Review of RWQCB records, historical aerial photographs (Pacific Aerial Survey 1950, AV-28.-18-17; 1957, AV-253-11-34; 1959, AV-337-7-35; 1990, AV-3845-10-34), and Sanborne insurance maps (1912, 1925, 1950) indicate that the Site and the adjoining property at 750-50th Avenue were occupied by a variety of chemical companies between 1910 and 1964. These tenants included Chemical and Pigment Company, a division of Glidden Company, which operated at the Site between 1926 to 1964. Activities conducted at the Site during this period included production of paint-related materials such as lithopone (zinc sulfide and barium sulfate). Notations on the Sanborne maps indicate that acids, including sulfuric, nitric, and hydrochloric acid, were handled on the Site at least until 1950. According to information provided in an environmental

site assessment report prepared by Blymyer Engineers, Inc. (1990), the buildings were demolished in 1964 and the Site was not occupied between 1964 and 1973.

White Motor Corporation purchased the Site in 1973. The building and facilities, including the underground storage tanks located at the Site, were built in 1974 (Blymyer, 1990). From 1981 to 1988, Volvo-White Truck Corporation operated at the Site. White GMC, a division of Volvo GM, has operated at the Site since 1988. Operations at the Site from 1974 to the present have included maintenance of trucks and other large vehicles.

Based on information supplied by Volvo GM personnel the three underground tanks on the eastern side of the building historically were used to store motor oil. The former waste-oil tank on the northern side of the building received waste oil from the adjacent underground clarifier, which is still in place. The clarifier receives discharge from on-site steam-cleaning facilities.

2.3 Previous Soil and Ground-water Investigation

To further assess the possible effect of O&G and metals on soil and ground-water quality near the former location of the waste-oil tank, and to assess the potential impact of previous activities conducted at the Site, Levine•Fricke observed the installation of seven ground-water monitoring wells in October 1991.

2.4 Results of Soil Investigation

2.4.1 Petroleum-Related Compounds

O&G and hydrocarbons were only detected in the sample collected at 2.5 feet bgs at 2,200 ppm and 1,700 ppm, respectively. O&G and hydrocarbons were not reported above the detection limit of 10 ppm for the other three samples.

Samples collected from boring LF-1 at 5.5 feet bgs and 10.5 feet bgs were also analyzed for extractable hydrocarbons as diesel, purgeable hydrocarbons as gasoline, and BTEX. Diesel, gasoline, and BTEX were not reported above laboratory detection limits.

2.4.2 Metals

A total of 24 soil samples collected at depths ranging from 2 to 21 feet bgs from borings LF-1 through LF-7 were analyzed for arsenic, barium, cadmium, chromium, nickel, lead, and zinc.
Arsenic was detected in all samples except for the sample collected at 2 feet bgs from boring LF-2. Arsenic concentrations ranged from 2 to 270 mg/kg.

Barium was detected in all samples analyzed. The highest concentrations, ranging from 60,000 to 92,000 mg/kg, were detected in samples collected at depths of 4 feet bgs and shallower from borings LF-4 and LF-7. Based on the past use of the property, the barium detected may have been in the form of barium sulfate. A white powdery material (possibly a barium compound) was observed during drilling in samples collected at a depth of 3.5 feet from boring LF-4 and at 4 feet bgs from LF-6. Lower concentrations of barium, ranging from 30 to 4,200 mg/kg, were reported for samples collected from the remaining borings.

The highest concentrations of cadmium, chromium, and nickel were detected in the sample collected from boring LF-1 at a depth of 7.5 feet bgs. Cadmium results ranged from less than the detection limit (0.2 mg/kg) to 110 mg/kg. Concentrations of chromium ranged from 8 to 65 mg/kg. Nickel concentrations range from 8 to 130 milligrams per liter (mg/l).

Lead was detected at concentrations ranging from 5 to 24,000 mg/kg. The highest concentration reported was for the sample collected at 2.5 feet bgs from boring LF-2, which contained 8,600 mg/kg of lead. The next highest concentration (1,000 mg/kg) was collected at a depth of 3.5 feet bgs from boring LF-5.

Zinc was detected in all samples except for the sample collected at 7 feet bgs from boring LF-3 (detection limit 2.0 mg/kg). The highest concentrations (16,000 mg kg and 31,000 mg/kg) were detected in samples collected at depths of 21 feet bgs (6 feet below first water in natural sediments observed during drilling) and 7.5 feet bgs, respectively, from boring LF-1. Lower concentrations ranging from 20 to 6,900 mg/kg were detected in the rest of the samples analyzed.

2.4.3 Soil pH

Measurements of pH ranged from a low of 3.9 standard units, in soil samples collected from boring LF-1 at depths of 15.5 feet to 20 feet bgs, to a high of 10.6 standard units, in the soil sample collected at a depth of 3.5 feet bgs from boring LF-7. Most samples from borings LF-1, LF-2, and LF-3 had pH levels between 4.3 and 6.5 standard units. Samples from borings LF-4, LF-5, and LF-6 indicated pH measurements between 6.1 and 9.3 standard units.

2.5 Results of Ground-Water Chemical Analysis

Ground-water samples were analyzed to evaluate the possible effect of O&G and petroleum-related compounds, VOCs, and metals on ground-water quality.

2.5.1 Petroleum Hydrocarbons and VOCs

No O&G was detected above the detection limit of 0.5 ppm in the sample from LF-1. Results for extractable hydrocarbons as diesel in samples from wells LF-1, LF-2, and LF-3 ranged from below the detection limit of 0.05 mg/l for well MW-2 to 0.3 mg/l for well LF-2. No extractable hydrocarbons as oil were reported above the detection limit of 0.10 mg/l for the sample from well MW-2.

Purgeable hydrocarbons as gasoline were not detected in the samples from wells LF-1, LF-2, LF-3 and MW-2. Purgeable hydrocarbons as gasoline were detected in LF-4 at 0.59 mg/l. Benzene, toluene, and ethylbenzene were reported at below the detection limits of 0.003 mg/l and 0.005 mg/l for analysis by EPA Methods 8020 and 8240, respectively. Concentrations of total xylenes were below the detection limits of 0.001 mg/l and 0.010 mg/l, respectively.

2.5.2 Metals

Arsenic was detected in samples from all wells above the detection limit of 0.002 mg/l at concentrations ranging from 0.004 to 3.1 mg/l, except for wells LF-5 and MW-3. The highest concentrations (2.1 and 3.1 mg/l) were reported for samples from wells MW-2 and LF-3, respectively. Barium was detected in samples from all wells sampled. Concentrations ranged from 0.013 mg/l for well MW-2 to 0.13 mg/l for well LF-7.

The highest concentration of cadmium (130 mg/l), copper (1.9 mg/l), nickel (20 mg/l), lead (0.5 mg/l), and zinc (40,000 mg/l) were detected in a sample collected from well LF-1. Lower concentrations of these metals were detected in samples from most of the wells; however, lead was only reported from wells LF-6 and MW-3.

Chromium was not detected above the detection limit of 0.01 mg/l in any of the ground-water samples.

Iron (Fe), manganese (Mn) and magnesium (Mg) were detected at elevated concentrations in the ground-water sample from well LF-1 analyzed for general minerals.

2.5.3 Ground-Water pH

Low values of pH (6.4 or less) have generally been measured for ground-water samples collected from seven of the 11 wells on site. The lowest values of pH (4 or 5) have been measured for samples collected from wells LF-1, LF-6, MW-2 and MW-3.

3.0 WORK DESCRIPTION

Tasks to be performed at the Site include:

Task 1: Location of Underground Lines and Obstacles

A geophysical survey of the Site will be conducted by an underground utility locator subcontractor to locate on-site utilities and other underground obstacles. This survey will be performed in an effort to identify locations of piping and underground utility lines, and to clear proposed soil boring and monitoring well locations of utilities and/or subsurface obstructions before drilling. A map of the existing subsurface utilities will be prepared for the Site based on results of the utility survey and review of site construction plans and utility company records.

Task 2: Deep Water-Supply Well Survey

Review of selected Sanborn Fire Insurance Maps has indicated the possible presence of deep (100-foot to 200-foot) ground-water wells at the Site. The wells were apparently used as water-supply wells for fire fighting before 1950. A well survey for the Site is recommended to further assess the existence and location of these deep wells. The well survey will include the review of additional Sanborn maps, if available, and of available files maintained by the California

Department of Water Resources or other appropriate regulatory agency. If available, information concerning the construction of the deep wells will be reviewed and evaluated to assess the potential for the wells to provide conduits to deeper ground water. An attempt will be made to locate the wells, but the abundance and variety of fill at the Site may preclude use of most standard techniques used to locate buried wells.

Task 3: Targeted and Grid-Generated Shallow Soil Sampling

To further assess shallow soil quality at the Site, collection of soil samples for chemical analysis from 39 grid-generated and targeted locations is proposed.

Task 4: Drilling of Deeper Soil Borings and the Installation, Development, and Sampling of Monitoring Wells

Based on results obtained during sampling and analysis of soil conducted in Task 3, deeper soil borings and additional shallow- and intermediate-depth monitoring wells will be installed to further assess the extent of metals-affected soil and ground water at the Site.

Shallow Ground-Water Monitoring Wells. Six shallow monitoring wells will be installed to further assess the lateral extent of dissolved metals in ground water beneath the Site.

Soil Borings. The objective of the deeper borings is to assess the vertical extent of metals-affected soil at the Site. Deeper soil borings will generally be located in areas where high metals concentrations and low pH conditions were detected in soil just above saturated material. Soil borings will be drilled to a depth where field measurements of soil pH indicate values above 6 SU. One pilot soil boring will be drilled to a depth of approximately 50 feet in the vicinity of well LF-1 to identify a deeper water-bearing unit.

Intermediate-Depth Monitoring Wells. Two to three intermediate-depth monitoring wells (less than 50 feet bgs) will be installed at the Site to assess whether metals detected in shallow ground water beneath the Site have affected deeper water-bearing sediments.

Soil Boring and Well Installation. Soil borings will be drilled in accordance with field procedures. Before drilling begins, soil boring and well permits will be obtained from the ACFCWD and locations will be cleared for underground utilities and other possible subsurface obstructions.

Soil samples will be collected during drilling. Soil samples will be collected approximately every 2.5 feet for lithologic description and possible chemical analysis. Two to six samples per boring, including samples collected from saturated material, will be analyzed Title 22 metals using the 6010/7000 Series, and for pH.

Monitoring wells will be constructed using 4-inch-diameter, flush threaded, 0.010-inch polyvinyl chloride (PVC) well screen and well casing. The length of slotted well screen and blank PVC casing will be based on the lithology of the sediments and depth to ground water observed during drilling. The well casings will be placed in the completed boreholes through the hollow-stem auger. The screen will extend above the static-water level. A filter pack consisting of appropriately graded sand will extend 1 to 2 feet above the top of the slotted casing. Bentonite will be placed above the top of the sandpack to prevent the entrance of cement-bentonite grout into the sandpack. A cement-bentonite grout will be placed above the bentonite seal to the land surface to seal the remainder of the borehole interval from surface-water infiltration. The grout will be pumped into place through a tremie pipe, and a locking well cover will be placed over the top of the well casing to protect well integrity. The wells will be installed according to California Regional Water Quality Control Board RWQCB guidelines. Newly installed wells will be surveyed to the nearest 0.01 foot, referenced to msl by a licensed surveyor.

Intermediate-depth monitoring wells will be double-cased to prevent chemical-affected shallow ground water from mixing with deeper water during well construction. PVC conductor casing will be placed 2 to 3 feet into a clay interval below the first saturated sediments, as determined by lithologic information obtained from the deeper pilot boring, then grouted on the outside and bottom to seal off the shallow sediments from the borehole. After the grout has set overnight, the conductor casing will be flushed with clean water to remove ground water that has entered from the upper sediments. Drilling will proceed inside the conductor casing through the grout to the next permeable interval. The well will be constructed of 2-inch-diameter PVC by installing the screen and casing through the augers to the depth of the

boring. A filter pack consisting of appropriately graded sand will be installed into the annular space between the borehole and the slotted PVC casing. Well construction will be completed in accordance with procedures described above.

Well Development. The newly installed wells will be developed by hand bailing, surging, or overpumping during the development process. Approximately 6 to 10 well casing volumes of ground water will be purged to remove sediments left in the well during well construction and to enhance hydraulic communication with the surrounding water-yielding sediments. Observations concerning the quantity and clarity of the water withdrawn will be recorded during this process. Temperature, pH, and specific conductivity also will be measured and recorded.

Ground-Water Sampling. Ground-water samples will be collected immediately following well development from the newly installed wells. Samples will be collected from the newly installed and existing wells using a clean Teflon bailer. Samples collected for analyses for metals will be field filtered into laboratory-supplied, nitric acid-preserved 1-liter plastic containers using 0.45-micron disposable filters. Ground-water samples for other analyses will be poured directly from the bailer into appropriate laboratory-supplied containers. Measurements of pH will be obtained and recorded in the field.

4.0 KEY PERSONNEL AND RESPONSIBILITIES

4.1 Site Safety Personnel

Name	Responsibilities
Kathleen A. Isaacson	Project Manager Site Safety Officer
Shari A. Samuels	Health and Safety Director

4.2 Levine·Fricke Personnel and Responsibilities

The responsibilities of the Levine·Fricke personnel listed in Section 4.1 are outlined below.

4.2.1 Levine·Fricke Project Manager

The Levine·Fricke Project Manager, Kathleen A. Isaacson, has the ultimate responsibility for the health and safety of Levine·Fricke personnel on site. As part of her duties, Ms. Isaacson shall be responsible for:

1. The Levine·Fricke Health and Safety Director being informed of project developments.

2. On-site Levine·Fricke personnel receiving the proper training, and being informed of potential hazards anticipated at the Site and procedures and precautions to be implemented on the job.

3. Contractors and subcontractors being informed of the expected hazards and appropriate protective measures to take at the Site. (Subcontractors should also be given a copy of Levine·Fricke's HSP for review.)

4. Resources being available to provide a safe and healthy work environment for Levine·Fricke personnel .

4.2.2 Levine·Fricke Health and Safety Director

The Levine·Fricke Health and Safety Director is Ms. Shari A. Samuels. Ms. Samuels is responsible for:

1. Monitoring the health and safety impacts of this project for on-site Levine·Fricke personnel.

2. Assessing the potential health and safety hazards at the Site.

3. Recommending appropriate safeguards and procedures.

4. Modifying the HSP, when necessary.

5. Approving changes in safeguards used or operating procedures employed at the Site.

The Levine•Fricke Health and Safety Director has the authority to:

1. Require that additional safety precautions or procedures be implemented.

2. Order an evacuation of the Site, or portion of the Site, or shut down any operation, if she believes a health or safety hazard exists.

3. Deny unauthorized personnel access to the Site.

4. Require that any worker obtain immediate medical attention.

5. Approve or disallow any proposed modifications to safety precautions or working procedures.

4.2.3 Site Safety Officer

The Site Safety Officer (SSO) has been designated by Levine•Fricke as William Madison . Mr. Madison s fulfilled the 40-hour health and safety training requirements pursuant to 29 CFR 1910.120.

The SSO, or a trained designated alternate, will be present at the Site during work activities. The SSO shall be notified of and approve activities in which persons may be reasonably expected to be exposed to affected soils and/or ground water.

The SSO shall be responsible for:

1. On-site Levine•Fricke personnel complying with the requirements of the HSP.

2. Limiting access to the Site.

3. Reporting unusual or potentially hazardous conditions to the Levine•Fricke Health and Safety Director and the Levine•Fricke Project Manager.

4. Reporting injuries, exposures, or illnesses to the Levine•Fricke Health and Safety Director and the Levine•Fricke Project Manager.

5. Communicating proposed changes in work scope or procedures to the Levine•Fricke Health and Safety Director for approval.

6. Recommending to the Levine·Fricke Health and Safety Director and the Levine·Fricke Project Manager additional safety procedures or precautions that might be implemented.

The SSO shall have the authority to:

1. Order an evacuation of the Site, or portion s) of the Site, or shut down any operation if he/she believes a health or safety hazard exists.

2. Deny site access to unauthorized personnel.

3. Require that any worker, including the contractors' or subcontractors' personnel, obtain immediate medical attention.

5.0 HAZARD ANALYSIS

Potential chemical, physical and general safety hazards during the soil and ground-water investigation at the Site include the following:

Chemical hazards	-	respiratory (exposure to chemical compounds)
	-	dermal (low pH in soil and/or ground water)
Physical hazards	-	noise
	-	electric shock
	-	heavy equipment
	-	drill rig equipment

Work procedures to protect workers from chemical and physical hazards are discussed in Section 6.0.

5.1 Chemical Hazards

Descriptions of the nature of each of the metals or compounds of concern are included in Appendix A.

The proposed soil boring and monitoring wells are all to be drilled on Site. It is possible that chemical-affected soil will be encountered during the drilling operations.

5.2 Physical Hazards

The potential physical hazards at the Site during the planned activities stem from heavy machinery use. The potential physical hazards are listed under Section 5.0.

6.0 WORK REQUIREMENTS

Field operations will be initiated at Level C personal protective equipment. The primary route of potential exposure for the metals of concern and low pH soil and ground water is believed to be through inhalation and skin contact.

Respirators will be equipped with NIOSH-approved high efficiency particulate/organic vapor combination cartridges.

6.1 Personal Protective Equipment

Levine•Fricke and contractor/subcontractor personnel will wear the following protective clothing on site:

- hearing protection
- hard hats
- steel-toed/steel-shanked boots
- inner and outer disposable polyvinyl chloride (PVC) gloves
- safety glasses
- uncoated Tyvek coveralls
- half-faced air-purifying respirators.

6.2 Action Levels

Action Levels for a Temporary Stop Work. The SSO shall impose a temporary stop work and contact the Levine•Fricke Health and Safety Director immediately if the following conditions are observed, or if there is a question about site conditions:

1. uncontrolled dust generation

2. indications of heat stress

3. changes in the general health profile of on-site personnel, including symptoms discussed in Appendix A and headaches, dizziness, breathing difficulties, irritation to the eyes, nose, throat and hands.

6.3 Protection Against Physical Hazards

Noise. Noise results primarily from drilling equipment and other machinery. Workers will wear hearing protection when working around heavy machinery.

Electric Shock. All electrical equipment to be used during field activities will be suitably grounded and insulated.

Heavy Equipment. Hazards related to drilling equipment will necessitate securing the work area. All relevant requirements pursuant to 29 CFR 1926.602 and Subpart W, Rollover Protective Structures; Overhead Protection, shall be observed during the course of drilling activities.

Unauthorized visitors will not be permitted near areas where heavy equipment are in use regardless of whether the area has been designated as an exclusion zone.

General Safety. All Levine•Fricke and contractor/subcontractor personnel will wear approved head protection while working around heavy equipment in the site area. Fire hydrants, electrical and underground lines and pipes will be identified before drilling operations begin. Two 10-pound ABC fire extinguishers will be kept on site near the exclusion zone.

6.4 Work Area Definition

An exclusion zone will be delineated using caution tape or equivalent material to secure the work area from unauthorized entry. "No smoking" signs will be posted around the exclusion zone.

6.5 Entry Procedures

At a minimum, all visitors entering the exclusion zone must wear the protective clothing and equipment worn by Levine•Fricke and contractor/subcontractor personnel. Permission to enter the work area must be obtained from at least one of the personnel named in Section 4.0, Site Safety Responsibilities. Visitor's name and purpose of visit will be recorded in the field notes.

6.6 Decontamination Procedures

Disposable gloves, coveralls and other disposable clothing or equipment worn by Levine•Fricke personnel will be placed in a suitable disposal container on site at the end of each work

day. Protective clothing and equipment will be replaced if their protective function is compromised through holes or tears.

Equipment that comes in contact with on-site soils or ground water that apparently contain petroleum hydrocarbons will be cleaned with high-pressure water before removal from the site area. Wash water that contains petroleum hydrocarbons from cleaning activities will be collected, placed in drums, and appropriately transported and disposed.

6.7 Disposal Procedures

Soil sample analysis results will be evaluated to assess alternatives for the appropriate disposal method of soils suspected to be contaminated. Soils generated from soil borings will be considered clean unless otherwise indicated by field or laboratory testing methods. The disposal or placement of these soils must be approved by the State of California Regional Water Quality Control Board.

7.0 EMERGENCY PROCEDURES

7.1 General Injury

- Step 1: Use first-aid kit on site, if appropriate.
- Step 2: Use off-site help and/or assistance if appropriate.
- Step 3: Notify SSO, Project Manager, and Health and Safety Director.

7.2 Specific Treatments

- Eye Exposure: flush eye with eye wash, call ambulance.
- Skin Exposure: wash immediately with soap and water; call ambulance, if necessary.
- Fire (localized): use fire extinguisher and activate alarm system, if necessary.
- Fire (uncontrolled): call Fire Department.
- Chemical Spill: call Fire Department and National Response Center for Toxic Chemical and Oil Spills.

- Explosion: call Fire Department if potential for additional explosions or fire danger exists.
- Swallowing: call ambulance service.
- Inhalation: move affected person(s) to fresh air and cover source of vapors, if applicable.

7.3 Emergency Phone Numbers

Medical/General Service Numbers

Police Department	911
Fire Department	911
Ambulance	911

Hospital

Highland Hospital 1411 East 31st Street Oakland, California	phone: 534-8055 emergency room: 437-4557

Figure 1 shows the route from the Site to the Hospital.

Hazardous Materials Response/Reporting

National Emergency Response Center	(800) 424-8802
California State Office of Emergency Services	(800) 852-7550
Regional Water Quality Control Board	(805) 549-3147

7.4 Accident Reporting Procedures

In the event of an emergency, contact the following:

Levine·Fricke:	(510) 652-4500
Shari A. Samuels	(Health and Safety Director)*
Kathleen A. Isaacson	(Project Manager)
William Madison	(Site Safety Officer)

If an exposure or injury occurs, work shall be temporarily halted until the SSO, in consultation with the Health and Safety Director, decides it is safe to continue work.

*Direct Number/Pager Number: (510)596-9644/(510)308-9881

8.0 DOCUMENTATION

The SSO will record field observations of health and safety procedures by workers conducting the planned activities outlined in Section 3.0, including deviations from the recommended health and safety procedures.

9.0 MEDICAL MONITORING

Appropriate medical monitoring will be required of Levine•Fricke personnel to:

- Meet requirements of 29 CFR 1910.120 (f).
- Meet requirements for respirator use.
- Meet other legal requirements.

A signed physician's statement qualifying the individual for the work to be performed will be required as part of the medical monitoring program.

10.0 TRAINING PROGRAM

1. The Levine•Fricke SSO shall have fulfilled all appropriate training requirements indicated by 29 CFR 1910.120 (e), including the 40-hour training requirement and required refresher courses.
2. A tailgate session will be held prior to commencing field activities to discuss this HSP. All Levine•Fricke personnel and contractor/subcontractor employees shall receive, at a minimum, the following information:
    - the names of personnel and alternates responsible for site safety and health
    - safety, health, and other hazards at the Site
    - instruction to use personal protective equipment
    - action levels
    - employee work practices to minimize risks from on-site hazards

- instruction for safe use of engineering controls and equipment on site
- site control measures
- emergency plans
- Proposition 65 warnings.

11.0 PROPOSITION 65

Under California's Safe Drinking Water and Toxic Enforcement Act of 1986 (Proposition 65), individuals who may be exposed in the work place to chemicals that may cause cancer or birth defects must be warned of such hazards pursuant to California Health and Safety Code (HSC) Section 25249.6. At this Site, the chemicals that may cause cancer or reproductive abnormalities, and their respective warnings, are listed below.

11.1 Carcinogens

Of the site chemicals of concern, benzene is known to the State of California to cause cancer, as listed in Title 22, California Code of Regulations (CCR) Section 12000(b).

11.2 Warnings

Pursuant to HSC Section 25249.6 and CCR Sections 12601(c)(3)(A) and 12601(c)(3)(B), the following warnings must be made:

"This area contains chemicals known to the State of California to cause cancer."

12.0 SIGNATURES

12.1 Levine•Fricke Personnel

This HSP for the soil boring and sampling, and well installation, development and sampling to be conducted at 5050 Coliseum Way in Oakland, California is approved by the following Levine•Fricke personnel:

_____ _____

Shari A. Samuels — Date
Health and Safety Director

_____ _____

Kathleen A. Isaacson — Date
Project Manager and
Quality Assurance Reviewer

12.2 Contractor and Subcontractor Personnel

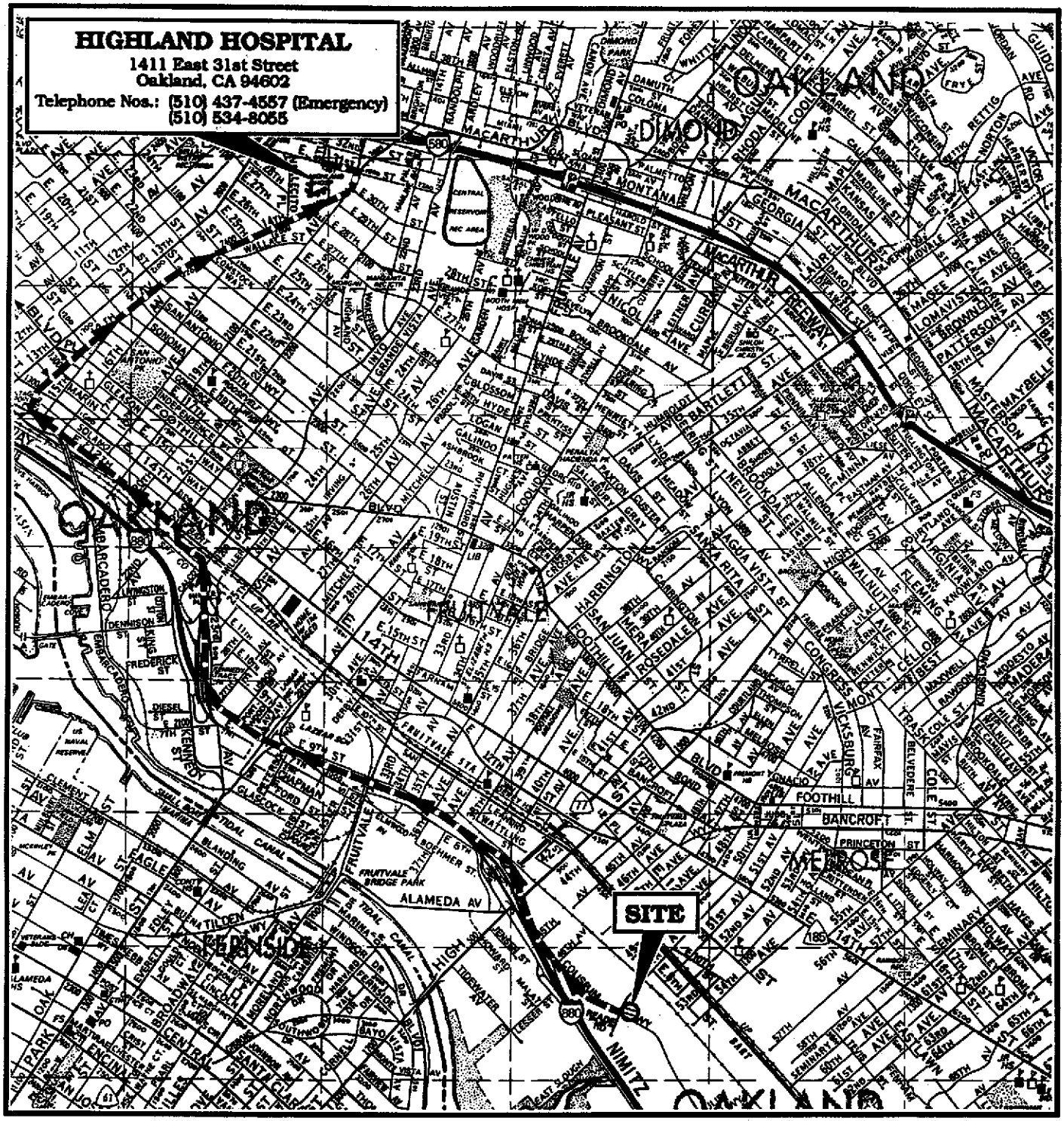
Contractor and Subcontractor Agreement:

1. Contractor certifies that the following personnel noted below to be employed on the project at 750-50th Avenue and 5050 Coliseum Way in Oakland, California, have met the requirements of the OSHA Hazardous Waste Operations and Emergency Response Standard 29 CFR 1910.120 and other applicable OSHA Standards.

2. Contractor certifies that in addition to meeting the OSHA requirements, it has received a copy of this HSP, and will ensure that its employees are informed and will comply with both OSHA requirements and the guidelines in this HSP.

3. Contractor further certifies that it has read, understands and will comply with all provisions of this HSP, and it will take full responsibility for the health and safety of its employees.

Contractor	Signature	Date



DIRECTIONS TO THE HOSPITAL

From the site take Coliseum to High Street to 880 North, exit at 23rd Avenue off ramp, left onto East 12th Street, right onto 14th Avenue, left on East 31st Street. Emergency room on the left side of street.

MAP SOURCE:
Thomas Bros. Map
Alameda and Contra Costa Counties, 1991

Figure 1: SITE VICINITY AND HOSPITAL ROUTE MAP

Project No. 3018.00-000

LEVINE•FRICKE
ENGINEERS, HYDROGEOLOGISTS & APPLIED SCIENTISTS

KAI19OCT93RYL

JOB SAFETY & HEALTH PROTECTION

The Occupational Safety and Health Act of 1970 provides job safety and health protection for workers by promoting safe and healthful working conditions throughout the Nation. Requirements of the Act include the following:

Employers

All employers must furnish to employees employment and a place of employment free from recognized hazards that are causing or are likely to cause death or serious harm to employees. Employers must comply with occupational safety and health standards issued under the Act.

Employees

Employees must comply with all occupational safety and health standards, rules, regulations and orders issued under the Act that apply to their own actions and conduct on the job.

The Occupational Safety and Health Administration (OSHA) of the U.S. Department of Labor has the primary responsibility for administering the Act. OSHA issues occupational safety and health standards, and its Compliance Safety and Health Officers conduct jobsite inspections to help ensure compliance with the Act.

Inspection

The Act requires that a representative of the employer and a representative authorized by the employees be given an opportunity to accompany the OSHA inspector for the purpose of aiding the inspection.

Where there is no authorized employee representative, the OSHA Compliance Officer must consult with a reasonable number of employees concerning safety and health conditions in the workplace.

Complaint

Employees or their representatives have the right to file a complaint with the nearest OSHA office requesting an inspection if they believe unsafe or unhealthful conditions exist in their workplace. OSHA will withhold, on request, names of employees complaining.

The Act provides that employees may not be discharged or discriminated against in any way for filing safety and health complaints or for otherwise exercising their rights under the Act.

Employees who believe they have been discriminated against may file a complaint with their nearest OSHA office within 30 days of the alleged discrimination.

Citation

If upon inspection OSHA believes an employer has violated the Act, a citation alleging such violations will be issued to the employer. Each citation will specify a time period within which the alleged violation must be corrected.

The OSHA citation must be prominently displayed at or near the place of alleged violation for three days, or until it is corrected, whichever is later, to warn employees of dangers that may exist there.

Proposed Penalty

The Act provides for mandatory penalties against employers of up to $1,000 for each serious violation and for optional penalties of up to $1,000 for each nonserious violation. Penalties of up to $1,000 per day may be proposed for failure to correct violations within the proposed time period. Also, any employer who willfully or repeatedly violates the Act may be assessed penalties of up to $10,000 for each such violation.

Criminal penalties are also provided for in the Act. Any willful violation resulting in death of an employee, upon conviction, is punishable by a fine of not more than $10,000, or by imprisonment for not more than six months, or by both. Conviction of an employer after a first conviction doubles these maximum penalties.

Voluntary Activity

While providing penalties for violations, the Act also encourages efforts by labor and management, before an OSHA inspection, to reduce workplace hazards voluntarily and to develop and improve safety and health programs in all workplaces and industries. OSHA's Voluntary Protection Programs recognize outstanding efforts of this nature.

Such voluntary action should initially focus on the identification and elimination of hazards that could cause death, injury, or illness to employees and supervisors. There are many public and private organizations that can provide information and assistance in this effort, if requested. Also, your local OSHA office can provide considerable help and advice on solving safety and health problems or can refer you to other sources for help such as training.

Consultation

Free consultative assistance, without citation or penalty, is available to employers, on request, through OSHA supported programs in most State departments of labor or health.

More Information

Additional information and copies of the Act, specific OSHA safety and health standards, and other applicable regulations may be obtained from your employer or from the nearest OSHA Regional Office in the following locations:

Atlanta, Georgia
Boston, Massachusetts
Chicago, Illinois
Dallas, Texas
Denver, Colorado
Kansas City, Missouri
New York, New York
Philadelphia, Pennsylvania
San Francisco, California
Seattle, Washington

Telephone numbers for these offices, and additional area office locations, are listed in the telephone directory under the United States Department of Labor in the United States Government listing.

Washington, D.C.
1985
OSHA 2203

William E. Brock, Secretary of Labor

U.S. Department of Labor
Occupational Safety and Health Administration

Under provisions of Title 29, Code of Federal Regulations, Part 1903.2(a)(1) employers must post this notice (or a facsimile) in a conspicuous place where notices to employees are customarily posted.

APPENDIX A

CHEMICAL DESCRIPTIONS

Barium

Barium is a silver-white somewhat malleable metal.

Swallowing concentrated chemical may cause severe internal injury. Short-term exposure may cause extreme ocular irritation, respiratory irritation or distress, skin or gastrointestinal distress. Repeated exposure may cause chronic eye irritation and/or benign pneumoconiosis.

The PEL for barium is 0.5 ppm in air.

Benzene

Benzene is a clear colorless liquid.

Exposure to high concentrations (3,000 ppm) may result in acute poisoning, characterized by the narcotic action of benzene on the central nervous system. Chronic poisoning occurs most commonly through inhalation and dermal absorption. Benzene is also a recognized carcinogen.

The PEL for benzene is 1 ppm in air.

Cadmium

Cadmium dust is an odorless grey powder.

Short-term exposure to cadmium dust can cause irritation of the nose and throat. If enough has been inhaled, after a delay of several hours, a person may also develop cough, chest pain, sweating, chills, shortness of breath, and weakness. Death may occur. Ingestion of cadmium dust may cause nausea, vomiting, diarrhea, and abdominal cramps.

The TWA of the PEL for cadmium dust is 0.2 mg/m^3.

Chromium

Chromium is a greenish-blue, odorless solid.

Exposure to chromium has been associated with lung changes in workers exposed to chromium alloys. Chromium dust exposure may cause minor lung changes.

The PEL for chromium is 1 mg/m^3.

Lead

Lead (inorganic) is a bluish-white, silver, or grey odorless solid.

Short-term exposure to lead can cause decreased appetite, insomnia, headache, muscle and joint pain, colic, and constipation.

The PEL for lead is 0.05 mg/m^3.

Nickel

Nickel is a silvery grey, metallic (or darker), odorless powder.

Exposure to nickel can cause pneumonitis. Nickel and its compounds have also been reported to cause cancer of the lungs and sinuses. Nickel itself is not very toxic if swallowed.

The TWA of the PEL for nickel is 1 mg/m^3.

Zinc

Zinc oxide is a white fume.

Short-term exposure to zinc oxide fume can cause flu-like illness called metal fume fever. Symptoms of metal fume fever include headache, fever, chills, muscle ache, nausea, vomiting, weakness, and tiredness.

The TWA of the PEL for zinc oxide fume is 5 mg/m^3.

Gasoline

Gasoline is produced from the light distillates during petroleum fractionation, with its major components including paraffins, olefins, naphthenes, aromatics, and recently ethanol. Gasoline also contains various functional additives as required for different uses, such as antiknock fluids, antioxidants, metal deactivators, corrosion inhibitors, anti-icing agents, preingition preventors, upper-cylinder lubricants, dyes, and decolorizers. Lead additives in particular were widely used in gasoline until the introduction of vehicle catalytic converters.

Mild cases of gasoline ingestion can cause inebriation, vomiting, vertigo, drowsiness, confusion, and fever. Aspiration into the lungs and secondary pneumonia may occur

unless prevented. Gasoline can cause hyperemia of the conjunctiva and other eye disturbances. Inhalation of gasoline during bulk handling operations produced no physiological effects. Gasoline is a skin irritant and a possible allergen. Repeated or chronic dermal contact can result in drying of the skin, lesions, and other dermatologic conditions.

The TWA of the PEL for gasoline is 300 ppm and the STEL is 500 ppm.

Motor Oil

Motor lubrication oils are composed of aliphatic, olefinic, naphthenic (cycloparaffinic), and aromatic hydrocarbons, as well as additives depending on specific uses. Additives include antioxidants, bearing protectors, wear resistors, dispersants, detergents, viscosity index improvers, and antifoaming and rust-resisting agents.

Oral and dermal toxicities for motor oil are very low due to their low vapor pressure and high viscosity. Inhalation only presents a problem if misting occurs. Skin irritation may occur in hypersensitive individuals after frequent and prolonged skin contact, mainly owing to the additives.

The TWA of the PEL for oil mist is 5 mg/m^3 and the STEL is 10 mg/m^3, as identified in Volume 2B of Patty's Industrial Hygiene and Toxicology, which follows ACGIH (1988) TLVs and BEIs for 1988-1989.