GEOCON

CONSULTANTS, INC

GEOTECHNICAL
ENVIRONMENTAL
MATERIALS

HEALTH AND SAFETY PLAN

FORMER CALTRANS HEGENBERGER MAINTAINANCE STATION 555 HEGENBERGER ROAD, OAKLAND, CALIFORNIA

PREPARED FOR:

CALIFORNIA DEPARTMENT OF TRANSPORTATION
DISTRICT 4
OFFICE OF ENVIRONMENTAL ENGINEERING
111 GRAND AVENUE
OAKLAND, CALIFORNIA

PREPARED BY:

GEOCON CONSULTANTS, INC.
2356 RESEARCH DRIVE
LIVERMORE, CALIFORNIA

TASK ORDER 04A1862
TASK ORDER NO. HQ-17
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GEOCON PROJECT NO. E8220-06-17

MARCH 2005

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HEALTH AND SAFETY PLAN SUMMARY

Site Name: **Former Caltrans Maintenance Station**

Site Location/Address: **555 Hegenberger Road, Oakland, California**

Project Representatives:

- Project Manager/Cell No.: **Stephanie Smith** **(925) 784-0544**
- Site Safety Officer/Cell No.: **Chris Merritt** **(510) 750-3369**
  Geocon Office No. **(925) 371-5900**
- Consulting CIH: **Doug Krause, CIH – K&A (530) 758-6397**
- Client/Telephone: **Bahram Sazegar, Caltrans (510) 286-4668**

Scope:

- General survey/non-intrusive activities
- Annual Groundwater Monitoring

Hazard Summary:

- Mechanical (Material handling, slip/trip, struck-by injuries)
- Biological (Poisonous plants, insects, or animals)
- Thermal (Heat Stress/Cold stress)
- Chemical (TPHg, BTEX)

Control Summary:

- Appropriate work/sampling practices and procedures; attention to detail
- Appropriate dress for weather conditions; personal protection equipment (PPE) such as steel-toed boots, safety vests, protective gloves

Hospital Reference:

Alameda Hospital
2070 Clinton Avenue
Alameda, California 94501
510-522-3700

Directions:

To get to Alameda Hospital from the Site, proceed north on Interstate 880 and exit at 29th Avenue. Proceed west on 29th (across Interstate 880). Continue to Otis Drive and turn north (right). Proceed on Otis Drive to Willow Street and turn east (right). The hospital is located on the left at the intersection with Willow Street and Clinton Avenue.

Emergency Assistance:

Fire/Police/Medical Assistance: **911**
Poison Control: **800.523.2222 (San Francisco)**

1.0 INTRODUCTION

This Health and Safety Plan (HSP) is a compilation of health and safety guidelines, policies and/or performance protocols that, when exercised, are intended to reduce or eliminate the potential for injury and exposure during the performance of the activities at the site described below. Conformance with its contents does not warrant that injuries or exposures will not occur.

This HSP is not a training tool and does not contain the degree of detail necessary to train an employee on the appropriate performance, approach and/or equipment-use protocols referenced, herein. Persons working on this project and referring to this HSP shall meet the minimum training requirements described in Section 2.2.

This HSP has been prepared to specifically support the field activities described herein. The provisions described herein apply to employees of Geocon Consultants, Inc. (Geocon) and its subcontractors, only. Representatives of the Client, Client-retained subcontractors, and representatives of state or local government agencies are expected to observe the safety rules and requirements established by their respective organizations, provided they do not conflict with this HSP, but will not be responsible for enforcing the conditions of this HSP on these representatives.

The contents of this HSP are based on factors and conditions understood prior to the start of the field activities. If those factors and conditions change during the performance of the activities, including the service scope, or if conditions exist that were not considered in the preparation of this HSP, then such shall be brought to the immediate attention of the person approving this HSP, and the HSP shall be modified, accordingly. The date indicated in the lower right-hand corner of this document indicates the latest version of this HSP.

All project personnel will review, and become familiar with, the elements of the Plan and acknowledge such by signing the last page of this HSP prior to site work. A copy of the Plan will be provided to all subcontractors involved with project activities. A pre-job conference will be held to delineate roles and responsibilities, discuss key elements of the Plan, and coordinate activities. An updated copy of the Plan will be maintained at the site throughout the duration of operations and be available to all affected personnel.

1.1 Project Location and Description

Site Location: **555 Hegenberger Road, Oakland, California**

Description: The project site consists of five groundwater monitoring wells located on the grounds of the former Caltrans Maintenance Station.

1.2 Planned Scope of Services

- General survey/non-intrusive activities; and
- Groundwater sampling

1.3 Schedule

Anticipated Period of Performance: March, 2005 (one day)

Anticipated Weather/Temperature: Weather conditions are expected to be cool.

2.0 ADMINISTRATIVE REQUIREMENTS/CONTROLS

2.1 Personnel

Personnel responsible for project safety include the Project Manager, the designated Site Safety Officer (SSO), the Consulting Certified Industrial Hygienist (CIH), and participating project personnel.

2.1.1 Project Manager

The Project Manager has ultimate authority and responsibility for project Health and Safety. Accordingly, he/she has the responsibility to develop the HSP (or assign its development); audit compliance with the provisions of this HSP; suspend project activities or modify service practices for health and safety reasons, and; to dismiss from a project site individuals whose on-site conduct either endangers the health and/or safety of others or is judged not to comply with the provisions of the HSP. The Project Manager is responsible for sharing/distributing the HSP to participating field personnel and to an authorized representative of each project subcontractor. The Project Manager is also responsible for implementing all provisions of the HSP and any applicable addenda. Implementation includes:

- Development of, or assignment to develop the project HSP;
- A review of the HSP requirements (if prepared by another project member);
- An overview presentation of the provisions of the HSP with project participants;
- Provision of the safety equipment specified herein;
- Collection and preservation of the requisite health and safety documentation (training rosters/certificates, site personnel logs, medical approvals, air monitoring logs), and copying them to the SSO, if appropriate;
- Designation/identification of a qualified project member as the SSO; and
- Reporting all Plan amendments to the Consulting CIH.

2.1.2 Site Safety Officer

The designated SSO is responsible for assisting the Project Manager with on-site implementation of the HSP. The SSO's responsibilities include:

- Maintaining project safety equipment supplies;
- Establishing Site Control Zones as needed;
- Performing air monitoring as required;
- Directing decontamination procedures, as appropriate;
- First line enforcement of the provisions of this HSP;
- Directing emergency response operations until public emergency personnel arrive,

- If necessary, preparing amendments to the Plan; and
- Reporting all incidents and infractions to the Project Manager.

The SSO has the authority to temporarily suspend project activities any time he/she determines that the provisions of the HSP are inadequate to provide a service/project environment conducive to employee safety. Further, the SSO is to inform the Project Manager of any individuals whose on-site actions jeopardize either their health and safety or the health and safety of others.

2.1.3 Consulting Certified Industrial Hygienist

The Consulting CIH provides industrial hygiene and safety technical support to the Project Manager and Site Safety Officer. In this capacity, he:

- Reviews and approves the HSP and any amendments;
- Provides training, as requested;
- Approves or recommends monitoring equipment;
- Provides technical support for the selection and use of Personal Protective Equipment (PPE); and,
- Provides arbitration on project health and safety issues.

2.1.4 Project Field Staff

All project personnel are responsible for:

- Complying with the provisions of this HSP;
- Performing services in a manner that is consistent with good health and safety practice; and
- Reading and being knowledgeable of the contents of this HSP.

2.2 Personnel Training

2.2.1 General Site Employees

Site employees will attend a project orientation before starting the project. The orientation will review all elements of the HSP including: 1) the location of potential health and safety hazards on the site; and 2) requirements of the HSP. The training will also address other Cal/OSHA requirements such as the Geocon Hazard Communication (T8 CCR §5194) and Injury and Illness Prevention Program (T8 CCR §3203; CSO §1509).

Although the anticipated tasks to be performed under this HSP are not considered Hazardous Waste Operations as defined by T8 CCR §5192, "Hazardous Waste Operations and Emergency Response," as Geocon policy, all project personnel will have successfully completed all applicable training requirements outlined in T8 CCR §5192(e), "Training" (40-hour Certificate and current annual Refresher Training).

2.2.2 Supervisors and Managers

Geocon employees who's responsibilities include on-site supervising or managing project tasks as defined under Title 8, CCR Section 5192(e)(4) shall hold a Supervisor Certificate documenting at least eight additional hours of specialized hazardous waste operations management training.

2.2.3 "Tailgate" Meetings

During the active field components of the project, the Project Manager or designee will conduct regular (i.e., weekly or daily, as appropriate) "tailgate" safety meetings. This meeting will include information on the following subjects, as applicable:

- Changes to project scope;
- Recognized changes to site conditions;
- Review of safe work practices;
- On or off the project safety practices;
- Feedback from employees on hazards, safety suggestions, or concerns; and
- Recognition for compliance, good safety performance or attitude.

Attendance at the tailgate meetings is considered a part of each employee's job responsibilities.

2.3 Medical Surveillance

Geocon and subcontractor employees required to wear respiratory protection shall have a current medical evaluation and approval by a physician or other licensed health care professional (PLHCP). Medical evaluations will be provided in accordance with the Geocon Respiratory Protective Equipment Program (ref. T8 CCR §5144(e) "Medical Evaluation").

Project personnel are expected to arrive at the jobsite and be well rested and physically prepared to perform assigned tasks.

3.0 HAZARD AND CONTROL ANALYSIS

The following hazards were assessed to either exist, or have the potential to develop, during the performance of the project activities:

TASKS	HAZARDS							
	MECHANICAL	ELECTRICAL/ UTILITY	NOISE	BIOLOGICAL	RADIOLOGICAL	THERMAL	CHEMICAL	OTHER
Driving	X							
General Survey/Non-Intrusive Activities	X			X		X		
Groundwater Monitoring	X			X		X	X	

3.1 Safe Driving

Hundreds of workers are injured or die in job-related motor vehicle accidents annually. Motor vehicle accidents are one of the number-one causes of employee injuries and deaths. Most accidents can be avoided by practicing defensive driving. Geocon policies mandate that employees:

- Prepare themselves and their vehicle for the road before travel;
- Drive according to posted speed limits;
- Never tailgate;
- Eliminate distractions; and
- Use practical driving procedures in cities, on the freeway, and in rural areas.

3.2 Mechanical Hazards

Type(s)/Source:

- Struck-by and other trauma type injuries including slips, trips and falls
- Material Handling/Back Injury

Qualified Exposure Risk: Moderate

Primary "Control(s)":

- Work practices, housekeeping, and safe sampling procedures
- Isolation (Traffic control/work practices/no work during inclement weather)
- PPE (Orange Safety Vests)
- Traffic cones
- Safe Lifting

3.2.1 "Struck-by" and Other Trauma Type Injuries

Hazard: Injuries can, and often, result when one becomes an unexpected receptor of contact with another kinetic mass. These occurrences typically result from the worker being struck by a dropped or collapsed mass or a moving piece of equipment or vehicle. Hazards with machines and heavy equipment are created when there are rotating, reciprocating, and transverse motions, or cutting, punching, shearing and bending actions.

Control: (Specific)

-Heavy Equipment Operation: Heavy equipment shall be equipped with a backup alarm to warn workers that the vehicles are moving in reverse. Personnel working in proximity to operating equipment shall maintain a high degree of awareness and remain out of harm's way of the moving portions of the equipment. In addition, personnel shall refrain from wearing loose jewelry or clothing, especially when in proximity to rotating tools. Likewise, long hair shall be secured away from the face. Personnel shall also wear hard hats and fluorescent safety vests. Also, carry an air horn whenever working in proximity to heavy equipment where the operator's full view of the work area is impeded.

Control: (General)

-Illumination- Poor illumination can contribute significantly to the hazards of site work. During night and early morning work, or during periods of limited visibility due to adverse weather conditions, all work areas will be provided with illumination meeting the minimum intensities specified in the Cal/OSHA regulation, T8 CCR §3317.

Hazard: Injuries can, and often, result when a person (a kinetic mass) unexpectedly instigates contact with another kinetic mass. These occurrences typically result from inadvertent slips, trips and falls.

Control(s): To control "slip/trip" hazards, personnel shall maintain a constant program of good housekeeping, keeping areas clear of trip hazards and wet and slippery surfaces.

3.2.2 Material Handling/Back Injury

Hazard: It is expected that field personnel will be required to lift heavy equipment and supplies and/or perform arduous tasks during this project. Accordingly, back injuries or physical strain may be caused by: routine lifting or one-time-only lifting; the weight of a lifted object; the frequency of lifting; bending, twisting, or rotating during lifting; prolonged sitting; exposure to vibrations; poor arch support in shoes; and, not stretching prior to physical activity. If the following "control" mechanisms are not exercised, debilitating back injury may occur.

Control(s): Before attempting to lift and carry an object, always test its weight, first. If it is too heavy, get help. If possible, use mechanical lifting aids. If manageable, the proper method for lifting is:

- Get a good footing.
- Place feet about shoulder width apart.

- Bend knees to pick up load. Never bend from the waist.
- Keep back straight.
- Get a firm hold. Grasp opposite corners of the load, if possible.
- Keep the back as upright as possible.
- Lift gradually by straightening the legs - don't jerk the load.
- Keep the weight as close to the body as possible.
- When changing directions, turn the entire body, including the feet. Don't twist the body.

If devices are used for handling materials manually (e.g., two-handed lifters, barrel ring clamps, hand trucks, wheelbarrows, etc.), wear protective equipment like gloves and safety shoes to minimize the potential of appendages becoming pinched or smashed between the load and stationary features. Also, avoid overloading the device.

3.3 Biological Hazards

Type(s)/Source: Poisonous plants/vectors (mosquitoes)/animals.

Qualified Exposure Risk: Low

Primary "Control":

- Isolation (Attention to detail – avoidance)
- PPE (Gloves/boots/long-sleeve shirts)
- Insect repellent, barrier creams

Hazard: Contact with plants, insects, and animals likely to be present at the site should be avoided. Plants (such as poison oak or ivy) can cause an allergic reaction and skin rash in some individuals. Stinging and biting insects, including bees, spiders, and ticks, can cause extreme discomfort and/or serious allergic responses. Insect bites are generally not dangerous, unless they are from a poisonous insect or mosquitoes potentially carrying West Nile virus.

The primary concern with animal bites and scratches is the potential for infection and/or rabies. Snake or scorpion bites can also be dangerous, but more from infection or trauma than the toxins injected by the snake or scorpion.

Control(s): Avoid conducting site activities from dusk to dawn when the risk of encountering biting mosquitoes is higher. Before beginning fieldwork each day, inspect the work area for the presence of standing water, poisonous plants and inhabitant reptiles and take measures necessary to minimize the potential for contact. Specially prepared topical barriers, such as Teknu®, for protection against poison oak, and insect repellent containing approximately 50% DEET for protecting exposed skin from biting insects; the more DEET a repellent contains the longer time it can provide protection from mosquito bites. Apply insect repellent sparingly to exposed skin. These products are commercially available and may minimize the potential for development of skin rashes and/or irritations due to such exposures. If unprotected contact with potentially poisonous plants does exist, wash with soap and water as soon as possible. If irritation still develops, apply First Aid and/or seek medical attention, accordingly. If you are allergic to bee or wasp stings, be sure to have the appropriate first aid available (e.g., an epi-pen) on the project. If you are stung, administer first aid and seek immediate medical attention.

Be sure a reptile or animal bite victim obtains medical attention quickly if a bite or scratch occurs, especially if there is a potential that it was poisonous. In the meantime, administer First Aid by scrubbing the wound with soap and water, and rinsing thoroughly under running water. Dry off and place a clean bandage on the wound. Victims of these bites should lie down and remain calm and motionless; cold packs should be applied and medical attention sought immediately.

3.4 Thermal Hazards

Type(s)/Source:	Temperature-extreme environments resulting in cold stress/heat stress
Qualified Exposure Risk:	Low to Moderate
Primary "Control":	Dress appropriately for the expected weather conditions.

3.4.1 Cold Stress

Hazard: Cold temperatures can result in injury to workers. Effects that require medical attention include frostbite and hypothermia. Hypothermia is much more common in California than frostbite.

- Frostbite generally involves actual freezing of tissues, requiring temperatures below freezing. The extremities of the body (e.g., fingers, toes, ears, etc.) are most often affected. The signs of frostbite are:
  - The skin turns white or grayish-yellow.
  - Pain is sometimes felt early but subsides later; often there is no pain.
  - The affected part feels intensely cold and numb.
- Hypothermia is characterized by shivering, numbness, drowsiness, muscular weakness and low internal body temperature, even when the body feels warm externally. Hypothermia can occur at much higher temperatures. Most hypothermia cases occur at ambient temperatures around 45°F. This can lead to unconsciousness and eventual death.

Control(s): The best control for frostbite and hypothermia is to avoid its occurrence by dressing appropriately, warmly, and heeding the early warning signs of each, and seeking warm shelter before actual damage begins. In the event of either's occurrence, remove yourself from the cold, immediately. In the case of frostbite, the affected areas need to be warmed as soon as possible, but gradually rather than quickly. This is best done by immersion in warm or room temperature (but not hot) water. In both cases seek medical assistance and treatment.

3.4.2 Heat Stress

Hazard: In addition to the chemical, physical and operational hazards referenced above, heat stress may present a potential hazard to on-site personnel during the on-site operations. This hazard can be created when individuals work in warm temperatures while wearing relatively impervious protective clothing. When ambient air temperatures at the site exceed approximately 75 degrees Fahrenheit, heat stress can result. If these conditions are encountered, the precautions referenced below should be implemented.

Controls: The SSO should regularly monitor ambient air temperature. Field team members will be observed for signs and symptoms of heat stress including: dizziness, profuse sweating, skin color change, increased heart rate and vision problems. Personnel who exhibit any of these symptoms will be removed from field work and requested to consume 2 to 4 pints of electrolyte fluid or cool water every hour while resting in a shaded area. The individual should not return to work until the symptoms

are no longer recognizable. If symptoms appear critical, persist or get worse, seek immediately medical attention.

To control the potential occurrence of heat stress, preventive measures will be evaluated and implemented on a daily basis. These measures may include:

Frequent rest periods;

Inducement of fluids (e.g., water, Gatorade, etc.); and

- Periodic cooling of personnel (e.g., via shaded areas, hose-downs with water, etc.).

The implementation frequency of these measures will be the responsibility of the SSO

3.5 Chemical Hazards

The risk of exposure to airborne contaminants during well monitoring activities is low due to the level of contaminants in the impacted ground water and the sampling methods and work practices employed.

Type(s)/Source

- TPHg: Total petroleum hydrocarbons as gasoline
- BTEX: Benzene; toluene; ethylbenzene; xylenes

Exposure Route: Inhalation, skin absorption

Anticipated Acute Physiologic Response: Irritation – eyes and respiratory system

Pertinent Physical Properties: N/A

Qualified Exposure Risk: Low

Primary "Control":

- Engineering Controls - work practices and sampling procedures
- Isolation – site control
- PPE – eye (safety glasses or goggles) and,
  hand protection (leather and/or impermeable gloves)
- Sanitation – good personal hygiene

3.5.1 Gasoline

CHEMICAL NAME AND CAS #	ROUTE OF ENTRY	PUBLISHED EXPOSURE LIMITS		
		CATEGORY	CONCENTRATION	SOURCE
Gasoline (8006-61-9)	Inhalation	TLV-TWA	300 ppm	ACGIH
	Dermal	TLV-STEL	500 ppm	ACGIH

Hazard: Gasoline is a complex blend of petroleum hydrocarbons primarily composed of paraffins, napthenes, aromatic and olefins. It is a colorless to red liquid with a petroleum odor that can be detected at extremely low concentrations. It is a flammable liquid with a high volatility and its vapors are heavier than air.

Under conditions where exposure occurs, eye, nose, and throat irritation, headache, nausea, drowsiness, and dizziness/intoxication may possibly occur. Gasoline contains benzene, toluene, ethyl benzene and xylenes (BTEX), which are toxic or carcinogenic. A hazard assessment of these compounds follows this gasoline assessment.

When certain proportions of a combustible vapor are mixed with air and a source of ignition is present, an explosion can also occur. The range of concentrations within which this will occur with gasoline is 1.3 percent to 8 percent. Therefore, under normal conditions, the lowest percentage of the material in the air in which an explosion will occur is the lower explosive limit (LEL) or 1.3 percent and the highest percentage of the material in the air in which an explosion will occur is the upper explosive limit (UEL) or 8 percent. Gasoline has a flash point of -45°C or -49°F.

Control(s): In open work areas, unless there are conditions of a stagnant high-pressure system, ambient breezes are usually adequate to minimize potential exposure to high concentrations of gasoline vapor.

If free liquid is encountered, extreme caution must be taken to prevent sources of ignition from coming into contact with gasoline vapors. Maintain a 50-foot no smoking zone (also referred to as the Exclusion Zone).

3.5.2 Aromatic Petroleum Distillates

CHEMICAL NAME AND CAS #	ROUTES OF ENTRY	PUBLISHED EXPOSURE LIMITS		
		CATEGORY	CONCENTRATION	SOURCE
Benzene	Inhalation	TLV-TWA	0.5 ppm	ACGIH
71-43-2	Skin Absorption	TLV-STEL	2.5 ppm	ACGIH
Ethylbenzene	Inhalation	TLV-TWA	100 ppm	ACGIH
100-41-4		TLV-STEL	125 ppm	ACGIH
Toluene	Inhalation	TLV-TWA	50 ppm	ACGIH
108-88-3	Skin Absorption	TLV-TWA	100 ppm	ACGIH
Xylenes	Inhalation	TLV-STEL	150 ppm	ACGIH
1330-20-7		TLV-TWA	50 ppm	ACGIH

Hazard: These chemicals are all found in varying concentrations in fuel or as fuel additives. They are colorless liquids with strong aromatic petroleum hydrocarbon-like odors detectable at relatively low concentrations. They are all flammable and have moderate to high volatility.

Exposure to these materials in excess of published limits can cause eye, nose and throat irritation and may produce narcotic effects on the central nervous system. Symptoms of exposure at these concentrations include headache, nausea, drowsiness, dizziness, and loss of coordination. Prolonged exposure at these concentrations can result in unconsciousness and coma. Several of these materials, if in direct contact are irritating to the skin. For those chemicals noted above (Skin Absorption), absorption (by contact with vapors or direct skin contact with the substance) may significantly contribute to the overall exposure. They all de-fat the skin. There is some evidence to indicate that repeated and prolonged exposure may result in a condition known as "solvent syndrome" characterized by reversible central nervous system damage. There is also some evidence to indicate that toluene may sensitize the heart, predisposing exposure victims to cardiac arrhythmias. Toluene and xylenes may be potentially carcinogenic in laboratory animals. Benzene is a known human carcinogen and has been shown to cause leukemia, blood disorders and chromosome damage in humans and adverse birth effects in laboratory animals.

Control(s): See Section 3.5.1 - Gasoline

4.0 GENERAL HEALTH AND SAFETY REQUIREMENTS

4.1 Air Monitoring

The necessity for evaluating potential airborne concentrations of vapors from petroleum hydrocarbons will be determined during the project by the Project Manager or SSO. Based on information from previous sampling and characterization activities conducted at these sites, the potential for significant exposure to these contaminants is low and air monitoring will not be required.

4.2 Personal Hygiene

- Eating, drinking, chewing gum or tobacco, smoking, or any practice that increases the probability of hand-in-mouth transfer and ingestion of material is prohibited in any area designated as being potentially impacted.
- Hands and face must be thoroughly washed upon leaving the work area, and before eating, drinking, or other non-project activities.
- Kneeling, sitting, leaning, or general contact with potentially impacted surfaces, or with surfaces suspected of being potentially impacted by hazardous materials (i.e., puddles, mud, leachate, etc.) should be avoided.
- Medicine and alcohol can potentiate the effects of exposure to toxic chemicals. Personnel should take neither if the likelihood of such potentiation exists. Being under the influence of alcohol during the field activities is prohibited.

4.3 Work Zone Controls

Although formal work zones will not be required for these operations, work areas will be isolated using traffic cones when working near streets, driveways, or in parking areas.

5.0 PERSONAL PROTECTIVE EQUIPMENT

The employment of the aforementioned engineering controls is the preferred method of providing personal protection from hazards identified at this and any site. PPE provides acceptable secondary recourse, but only when engineering controls fail or cannot adequately eliminate exposure to the hazard. The use of PPE is intended to provide protection for on-site personnel from operational hazards that cannot be controlled through other safety procedures or work practices.

Only ANSI approved PPE and NIOSH approved respirators will be assigned for use. The use applications for this equipment are summarized in the following matrix. Specific procedures are further described below. PPE required to be on-site for each worker during this project will include:

- ☐ Hard Hat (without face Shield)
- ☒ Leather Boots
- ☐ Chem. Resistant Boots
- ☐ Leather Gloves
- ☐ Ear Plugs/Muffs
- ☒ Orange Vest
- ☐ Other
- ☒ Safety Glasses
- ☒ Disposable inner gloves (for sample handling)
- ☐ Chem. Resistant gloves
- ☐ Air-Purifying Respirator
- ☐ APR Cartridges
- ☐ Tyvek coveralls

The use applications for this equipment are summarized in the following matrix. Specific procedures are further described below.

	PPE												
TASKS	Hard Hat	Safety Glasses/Goggles	Leather Boots	Chemical Resistant Boots	Disposable Inner Gloves	Chemical Resistant Gloves	Leather Gloves	Ear Plugs/Muffs	Air-Purifying Respirator (Half-/Full Face)	APR Cartridges	Orange Vest	Tyvek Coveralls	Other
General Survey Non-Intrusive Activities	X		X								X		
Soil Sampling	X		X		X		X				X		
Groundwater Sampling	X		X		X		X				X		

5.1 Respiratory Protection

Respiratory protection will not be required during sampling activities.

5.2 PPE – Level D Protection

The protective equipment to be donned by personnel working in the Exclusion Zone includes:

- Body Protection: Body protection shall include the use of "work clothing," including long pants and long- or short-sleeved shirts.

- Foot Protection: Foot protection shall include the use of leather boots with steel toes.
- Hand Protection: Hand protection will include disposable chemical gloves for groundwater sampling.

5.3 Miscellaneous Safety Equipment

Additional protective equipment to be available to personnel working at the site is listed as follows:

Communication: Portable radios/walkie talkies or cell phones shall accompany all personnel.

6.0 DECONTAMINATION

The Project Manager or SSO will established a work zone around each sampling location. The zone will be established to minimize the potential safety risks or spread of contaminants.

The following decontamination (cleansing/disposal) procedures for equipment and PPE have been developed with the intent of reducing the potential for the transfer of hazardous soil from the site(s). Decontamination should be performed in direct proximity to each work area. The primary principle in consideration of decontamination procedure is: Avoid unnecessary contamination of PPE and Sampling Equipment.

6.1 Equipment Decontamination

Decontamination of ground water sampling equipment will include a low volume system for cleaning (i.e., liquinox and water). The decontamination water generated during the groundwater monitoring activities will be allowed to evaporate off the pavement.

6.2 PPE Decontamination

The project manager will determine the necessity for and arrangement of decontamination appropriate to this project. Consumable PPE may be discarded as general refuse.

7.0 EMERGENCY RESPONSE PROCEDURES

7.1 Physical Injury

In the event of an accident resulting in physical injury, call emergency service personnel immediately and perform first aid commensurate with training and seriousness of the injury. Severely injured personnel are to be transported only by emergency service personnel and/or by ambulance personnel, unless a life-threatening condition is judged to exist that must be addressed immediately.

The Project Manager is to be notified by the SSO, as soon after the injury as practical, regarding the nature of the accident. The Project Manager or designee will prepare a written report within 24 hours of the accident.

7.2 Catastrophic Event

In the event of a catastrophic event (e.g., severe personal injury, fire, explosion, and/or property damage), notify the fire/safety and rescue department immediately by dialing 911.

Any accident involving serious injury or illness will require suspension of site activities until the Project Manager (or designee) has completed a review of the events and site conditions and authorized work to resume.

In case of serious workplace injury or illness, or death the Project Manager (or designee) will immediately notify the nearest District Office for Cal/OSHA by phone or fax:

Cal/OSHA Oakland District Office
1515 Clay Street Suite 1301
Oakland, California 94612
Tel: (510) 622-2916
Fax: (510) 622-2908

The report shall be filed within 8-hours of the Project Manager learning of the incident; unless exigent circumstances can be demonstrated, the report will be made no later than 24-hours after the incident.

7.3 Emergency Telephone Numbers

Fire/Police/Medical Assistance 911

Other phone numbers may be available or required for emergency response at specific sites. Check with on-site representatives before mobilizing to the job site.

7.4 Project Site Address

Site Location: 555 Hegenberger Road, Oakland, California.

7.5 Hospital Address and Route

Hospital Reference:

Alameda Hospital
2070 Clinton Avenue
Alameda, California 94501
510-522-3700

Directions:

To get to Alameda Hospital from the Site, proceed north on Interstate 880 and exit at 29th Avenue. Proceed west on 29th (across Interstate 880) to Otis Drive and turn north (right). Proceed on Otis Drive to Willow Street and turn east (right). The hospital is located on the left at the intersection with Willow Street and Clinton Avenue.

Emergency Assistance:

Fire/Police/Medical Assistance:	**911**
Poison Control:	**(800) 876-4766**

8.0 PLAN APPROVAL

The undersigned has reviewed and approved this Health and Safety Plan prepared for the Former Caltrans Maintenance Station, 555 Hegenberger Road, Oakland, California -- Groundwater Monitoring Project, as described herein.

Consulting CIH
Douglas S. Krause, CIH
ABIH Certification No. 2123, Exp. June 30, 2005
Krause & Associates

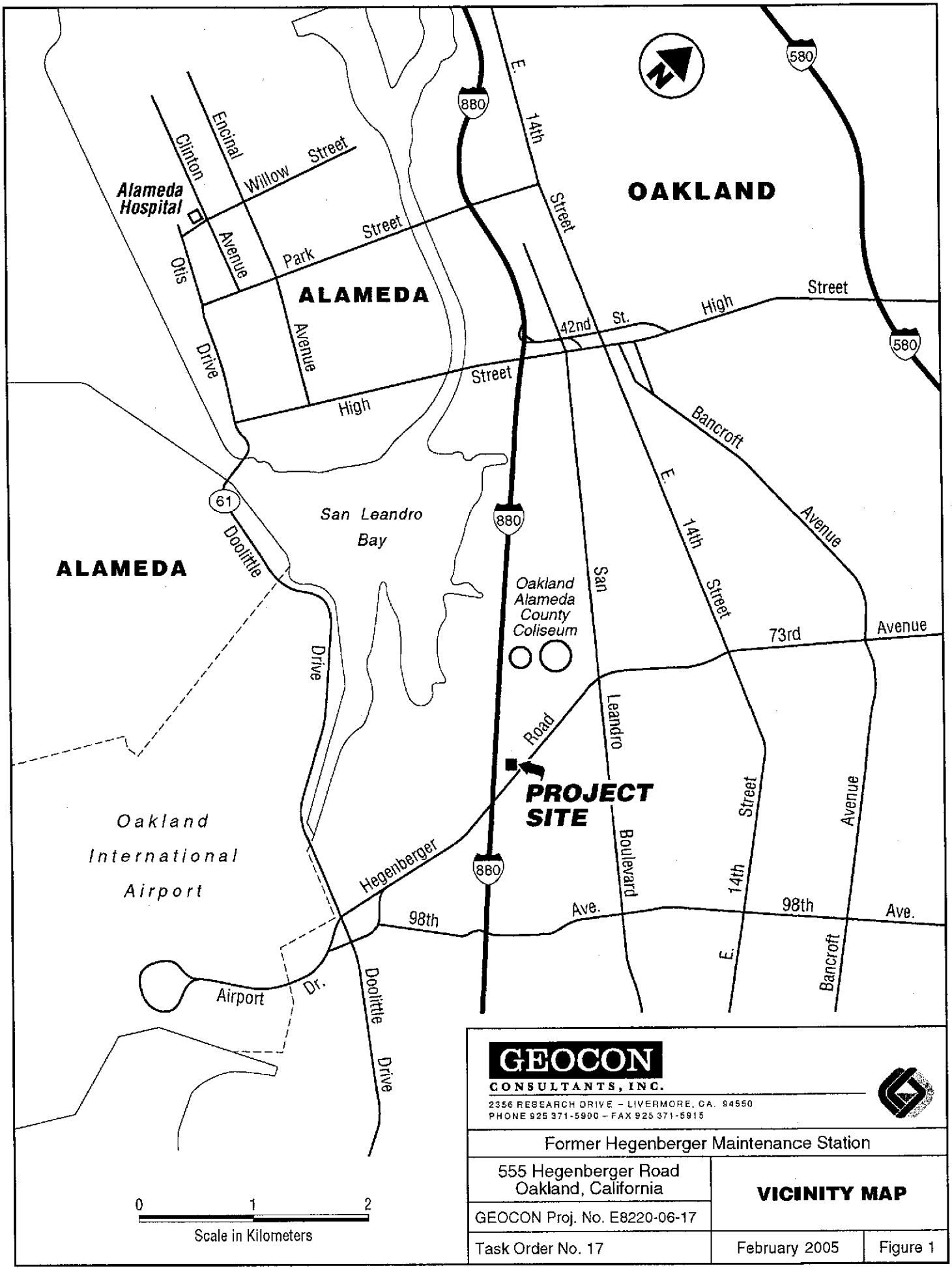
March 5, 2005
Date

Project Manager

3/16/05
Date

The following personnel involved with the project activities have reviewed this HSP and agree to follow the health and safety procedures described herein.

EMPLOYEE	DATE	EMPLOYEE	DATE



GEOCON
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Former Hegenberger Maintenance Station

555 Hegenberger Road
Oakland, California

VICINITY MAP

GEOCON Proj. No. E8220-06-17

Task Order No. 17 | February 2005 | Figure 1