

SUTTON'S CONSTRUCTION, INC.
SITE SPECIFIC SAFETY PLAN
(To Be Posted In Plain View)

for

POWELL STREET CHEVRON
1400 POWELL STREET
EMERYVILLE, CA 94608

Sutton's Construction, Inc.
4111 Eighty-second Street
Sacramento, CA 95826
in conjunction with
Sutton and Associates, Inc.
4111 82nd Street
Sacramento, CA 95826

Sutton's Construction

Commercial and Residential

Ca License No. 445933

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INTRODUCTION

This document describes the health and safety procedures for the installation of underground storage tank related materials located at **1400 Powell Street, Emeryville, California 94608.**

ALL PERSONNEL MUST FOLLOW THIS PLAN. The prime responsibility for employee safety lies within this safety plan and its availability to employees and subcontractors at all times. It is the expressed intent that this site comply with all applicable sections of the *California Occupational Health and Safety Code*. All employees will maintain their general responsibilities: **Identify and correct any health/safety hazards while working in a safe manner.**

KEY PERSONNEL

Project personnel who will have overall responsibility for the safe operation of this are:

Site Contact: Brian Goins
 Pacific Engineering and Petroleum, Inc.
 Project Manager (PM) and Site Safety Officer (OSS)

PROJECT MANAGER AND SAFETY OFFICER RESPONSIBILITIES

- * To conduct initial site safety training for all employees as described on this document,
- * To ensure that all field team personnel have read and do understand the Health and Safety Plan,
- * To ensure that all work performed on this project is conducted in a safe manner,

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- * To coordinate with field personnel fire-watch, traffic control and site security,
- * Monitor activities to ensure the proper use of protective equipment such as hard hats, protective eye wear, gloves, coveralls, respirators, etc.
- * To monitor ambient hydrocarbon vapors,
- * To shut down or modify field work activity based on criteria in the site safety plan.

SUB-CONTRACTOR RESPONSIBILITIES

- * To read, understand and accept this Health and Safety Plan,
- * To ensure all members of it's crew attend the safety training program,
- * To make certain all equipment and other machines are properly inspected and maintained and are in compliance with applicable sections of the California Health and Safety Code,
- * To supply and maintain safety related protective equipment such as hard hats, safety boots, protective coveralls, gloves, safety eye wear, respirators, etc., as specified in this plan,
- * To ensure each employee working at this site did read and will comply with this Health and Safety Plan, and
- * To enforce corrective action under the direction of the Site Safety Officer.

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FIELD TEAM MEMBER RESPONSIBILITIES

- * To read, understand and follow this plan,
- * To perform work safely,
- * To cooperate with key personnel,
- * To report any unsafe conditions to the Site Safety Officer and,
- * To be aware and alert for signs and symptoms of potential exposure to site contaminants and heat stress.

HAZARD CRITERIA

- * As air, water, soil and chemical substance monitoring data become available for all site work, the information will be evaluated by the Site Safety Officer. Appropriate action, as stated in the *Health and Safety Modifications* manual will be initiated by the Safety Officer is necessary.

The anticipated activities of this project include:

- * Excavation and trenching
- * Drilling and sampling of borings or excavations,
- * Collection of soil samples,
- * Monitoring of ambient hydrocarbon concentrations during project activities.

The general types of hazards associated with this project are:

- * Mechanical hazards: swinging objects, machinery, etc.,

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- * Electrical hazards: buried cables, overhead power lines,
- * Chemical hazards: gasoline, diesel, waste oil,
- * Fire hazards: natural gas and product lines, flammable petroleum hydrocarbons, and motor driven equipment,
- * Thermal hazards: excessive noise created by machinery.

Job hazard analysis associated with each major work activity are presented in the following sections.

HAZARD EVALUATION

Soil Borings:

Excavating, drilling soil borings and installing groundwater monitoring wells in contaminated soil will potentially expose field personnel to the chemical hazards described below.

Excavation and Trenching:

Excavating and trenching in contaminated soil will potentially expose field personnel to the chemical hazards described below. Rupturing of electrical and gas utility lines are also potential fire hazards as described below.

Chemical Hazards:

Exposure to various chemical substances include, but are not limited to, petroleum hydrocarbon liquids and vapors from gasoline and diesel fuel, waste petroleum oil and grease.

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Physical Hazards:

- * Operating machinery,
- * Falling objects, and
- * Exposure to outside temperature extremes.

Fire, Electrical and Noise Hazards:

- * Underground gas and product lines, and
- * Excessive machinery noise.

Due to the nature of drilling or operating excavation equipment, there is a risk of electrical shock from over head and underground electrical lines. There is also a risk of physical injury from moving machinery and heavy equipment. Explosive hazards exist when fuel concentrations in the bore hole reach explosive levels; >10% LEL.
Hydrocarbon Vapor:

Hydrocarbon vapors expected to be encountered consist of gasoline and diesel fuel. Exposure to elevated levels of hydrocarbon vapor presents potential health risks that need to be properly controlled. Work practices and methods will be instituted to limit exposures. Where elevated exposure persists, respiratory protection will be the primary control method to protect personnel from inhalation of hydrocarbon vapor. The hydrocarbon vapor expected to be encountered during project activities are composed of a variety of volatile refined petroleum compounds. The majority of these have limited toxicity requiring minimal controls at the concentrations expected.

Petroleum fuel consists of hundreds of chemical compounds. There are certain compounds such as benzene that present significant a hazard and must be properly controlled. To do so, a working limit of 100 ppm total hydrocarbon is proposed as the maximum acceptable level of exposure without respiratory protection. In a typical situation with 1% of the hydrocarbon vapors being benzene, a 100 ppmv concentration of total hydrocarbon will result in a breathing zone of less than 1 ppmv benzene. This level is **one tenth of the current occupational *Permissible Exposure Limit* (PEL)**

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Action Levels of Hydrocarbon Components in Petroleum Fuel

Gasoline	> 300ppm	PEL	LEL	> 10%
Benzene	> 1ppm	PEL	Oxygen	< 19.5%
Toluene	> 100ppm	PEL		
Xylene	> 100ppm	PEL		
Ethyl Benzene	> 100ppm	PEL		

A hydrocarbon vapor analyzer will be used to measure real time breathing zone concentration for comparison with the 100 ppmv working limit. When a persistent level of 100 ppmv is observed, appropriate respirators will be donned and other vapor measurements will be made. If hydrocarbon vapors exceed 1000 ppmv or 10 ppm benzene, work will be stopped. The field crew will be instructed to stay up wind and methods will be applied to subdue fugitive vapor emissions such as sprinkling soil with water, or the use of a copious blower.

The Site Safety Officer will make such determinations.

If LEL is >10% in or around the tank, work must stop and not commence until determined safe and/or LEL <10%.

If oxygen levels in the immediate work area are <19.5%, work must stop until determined safe and/or LEL >19.5%.

Symptoms of Acute Overexposure

Gasoline and gasoline vapor maybe irritating to the skin, eyes and respiratory tract. Gasoline vapor may effect the central nervous system and may cause headaches and dizziness.

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Oxygen Deficiency

May cause dizziness.

Heat Stress and Noise

A hazard exists when individuals are required to work in warm temperatures, particularly while wearing impervious protective clothing. When the ambient air temperature exceeds 65 degrees, heat stress may become a problem. If these conditions are encountered, the following precautions on the next will be taken:

- * During day-to-day field work, the On-Site Supervisor will be alert for the signs and symptoms of heat stress.

Field workers will be observed for the following signs and symptoms of heat stress:

- * profuse sweating, or complete lack of sweating,
- * skin color change,
- * increased heart rate,
- * body temperatures in excess of 100 degrees as measured by thermometers, and
- * vision problems.

Any team member who exhibits any of these signs or symptoms will be removed immediately from field work and be requested to consume electrolyte fluid or cool water while resting in a shaded area. The individual will be instructed to rest until the symptoms have been subdued. If the symptoms appear critical, persist or get worse, immediate medical attention will be sought.

When working around mechanical equipment the potential exists for exposure to excessive noise. To deal with the health hazards of excessive noise, ear plugs will be provided.

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PERSONAL PROTECTIVE EQUIPMENT REQUIREMENTS

This section specifies personal protective equipment required for the various tasks of this project.

Excavating, Trenching, Drilling and Sampling

Respiratory Protection:

All field personnel will be required to have available an air purifying respirator with organic vapor cartridges. The respirators will be required based on criteria presented in this safety plan. **All respirators must be NIOSH approved, canister -equipped for all organic vapors up to 1000 ppm.**

Protective Clothing:

All field personnel who handle contaminated soil or liquid will wear impervious coveralls and butyl rubber gloves. Impervious coveralls will not be required if soil or water is not visibly contaminated, or if vapor measurements are below 500 ppmv. Level "D" protective clothing and equipment will be worn at all times on the job site. All employees will have level "C" protective equipment available at all times. The Site Safety Officer will monitor air borne contaminate levels for determination of when to wear level "C" equipment.

Head Protection:

Field personnel will wear non-metallic safety helmets.

Foot Protection:

Field personnel will wear neoprene rubber boots with steel toes. Under non-liquid exposure conditions, leather boots with steel toes and shanks are permissible.

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Ear Protection:

Field personnel, based on noise levels, may be required to wear earplugs during soil excavation.

Eye Protection:

Field personnel will wear chemical-resistant safety glasses with attached side shield where splashes of potentially hazardous liquid or particles are likely.

WORK ZONES

During soil excavation and well drilling operations, a work zone around the immediate vicinity of the project will be established and taped off. Only authorized personnel will be permitted to enter the work zone. Authorized personnel include those who have duties requiring their presence in the work zone and **do acknowledge this site safety plan**. Further, work zones are created to aid in the decontamination of equipment and personnel. The following list comprises the zones to be established:

Exclusion Zone

A seventy-five foot (75') demarcation line around the work area will in place before construction begins. The area inside the circle will constitute the "*Exclusion Zone*". The *Exclusion Zone* constitutes the area where potentially hazardous air borne contaminants and physical hazards exist. **Full personal protection must be available to all personnel in this area.** The size of the *Exclusion Zone* may be changed to accommodate site conditions and to ensure contaminate containment.

Contamination Reduction Zone

A formal decontamination zone should not be required during the preliminary investigation. However, an area will be designated in the event extreme gasoline contamination is encountered. The decontamination zone will be an area where personnel can clean protective equipment. A waste contaminated equipment can be placed inside and covered.

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Support Zone

A *Support Zone*, the outermost zone, must be defined for each field activity. Support equipment is located in this uncontaminated or clean area. Normal work clothes are appropriate within this zone. The location of this zone depends on factors such as accessibility, wind direction (it should be up wind of excavation), and resources (e.g. roads, utilities, shelter).

DECONTAMINATION PROCEDURES

Petroleum hydrocarbon liquids and vapors are anticipated. Due to the volatile nature of hydrocarbons that may be encountered during the initial excavation and sampling operations, decontamination of equipment and vehicles will be of minimal importance since the volatile hydrocarbons will vaporize rapidly. Therefore, no formal decontamination procedure will be followed with the exception of general cleaning no eating, drinking or smoking will be permitted in the *exclusion zone*. All personnel involved in work activities will be instructed to wash their hands, face, neck and forearms at the end of the work day. Soap, water and towels will be provided for this purpose. Field personnel will also be instructed to shower at home at the end of each work day.

As work progresses, the nature of materials handled and the extent of contamination may possibly require formal decontamination procedures and delineated work/clean zones. However, we do not expect that such formal procedures will be necessary at this site and will only proceed at the discretion of the Safety Officer. In the event that extreme contamination is encountered, decontamination of personnel, equipment and vehicles will be important to insure that contamination does not spread to unsuspecting people and property. **Personnel decontamination mainly involves personal hygiene. Contamination should not be present on the skin if the proper protective methods specified in this plan are used.** However, all field personnel will be instructed to follow these guidelines to insure that contamination does not remain on equipment, sample containers or in contact with their bodies.

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The field team should remove their personal protective clothing following the sequence listed below:

- Step 1: Move out of the *exclusion zone* and into the *decontamination zone*. Do not remove personal protective equipment.
- Step 2: Obtain decontamination solutions and decontaminate the spades, shovels and other equipment by brushing them under a water rinse. A high-pressure steam cleaner may also be used for decontamination. All wastes and spent decontamination, liquids will be properly contained.
- Step 3: Remove outer gloves and coveralls and place them inside a garbage bag. Keep the air purifying respirator on.
- Step 4: Move to the *support zone*, then remove the respirator.

MONITORING PROGRAM

Personal exposure to ambient airborne hazards will be monitored to ensure that personnel exposure does not exceed acceptable limits and that appropriate selections of protective equipment items is made. Airborne hydrocarbon vapor concentrations will be measured primarily by the use of a hydrocarbon vapor meter. If concentrations approach criteria levels, all personnel will be notified of possible site safety changes. Audits will be conducted by the Safety Officer to insure compliance with this Safety Plan and to provide additional support as required.

Ambient Vapor Reading

A hydrocarbon vapor detector will be used during drilling and excavation activities. It

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measures both excavation and breathing zone concentration of hydrocarbon vapors. The instrument will be calibrated on a regular schedule using known calibrated gases.

Readings will be taken in the area where the field team members are working and surrounding down-wind areas. Measurements will be taken every 30 minutes where hydrocarbon vapors indicate levels above 30 ppmv. All readings will be recorded in a field notebook.

Emergency Procedures listed in this plan are designed to give the field team instruction regarding medical emergencies, land fires and explosions. The emergency procedures will be carefully reviewed with the field team during the health and safety training session.

Ingestion: **DO NOT INDUCE VOMITING;** call a physician immediately.

Oxygen Deficiency: Move out of oxygen deficient area into fresh air.
CALL PHYSICIAN IMMEDIATELY and RESUSCITATE if breathing has stopped.

The field team will be instructed to seek immediate professional medical attention for all serious injuries. A first aid kit will be present at the work site in case of minor injuries. If anyone receives a splash or particle in the eye the field team will be instructed to **irrigate the eye for 15 minutes**. Furthermore, instruction will be provided regarding the washing of any skin areas with soap and water in the event of direct contact with contaminates.

Fire and Explosion Hazards

Fires on site are of particular concern during soil drilling and sampling activities during the possibility of encountering flammable petroleum hydrocarbon liquids or vapors. During these activities the site safety officer will be present and equipped with an explosive vapor monitor (EVM) for areas monitoring and a multipurpose (A,B,C) fire extinguisher.

Flammable materials must be cleared away from the site prior to the start of work. If a fire does occur, the local fire department will be contacted immediately.

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Operation Shutdown

Under extreme circumstances the On-site Supervisor (OSS), Safety Officer (SO), or Project Manager (PM) may request that operations be temporarily suspended while the underlying hazard is corrected or controlled. **If measurements taken with the EVM show levels approaching explosive limits, operations will be stopped while the area is controlled.** During this activity, all personnel will be required to stand up wind to prevent exposure to fugitive vapor emissions. The SO holds ultimate authority for operation shutdown.

Community Protection

To ensure community protection from health and fire hazards-up wind and down-vapor monitoring will be performed if the general work area is found to have hydrocarbon levels exceeding 100 ppmv. If down wind monitoring indicates persistent levels of 30 ppmv at the perimeter of the work area, **work will be shutdown and vapor control efforts will be instituted until measurements indicate levels have dropped below 30 ppmv.** Alternatively, expanding the demarcated zone may be used to provide additional community protection.

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EMERGENCY RESPONSE PLAN

Fire Department	911
Ambulance	911
Police	911
Hospital: Oakland Children's Hospital	(510) 428-3000
Site or Client Phone:	(510) 653-2251
Poison Control Center	(415) 428-3248
Chem Trec	(800) 424-9300
EPA Emergency Response	(415) 974-7500
State Office of Emergency Services	(800) 852-7550
Emergency Response (Pacific Engineering & Petroleum Inc.)	(916) 489-9098
Clean -Up (Pacific Engineering & Petroleum Inc.)	(916) 489-9098

NOTE: Prior to starting work note the location of the nearest functional telephone-
Pacific Engineering & Petroleum Inc. **CREWS CARRY CELLULAR SITE PHONES.**

INJURIES

Medical problems occurring on site will be handled quickly. Emergency telephone numbers will be written down and posted in the passenger compartments of the field vehicles. The local emergency numbers are:

Police, Fire and Rescue	911
Facility Security (if applicable)	() _____

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EMERGENCY FIRST AID PROCEDURES

- Eye Contact: FLUSH with clear water for 15 minutes or until irritation subsides. See a physician.
- Skin Contact: WASH thoroughly with soap and water.
- Inhalation: REMOVE from area, CLEAR of vapor/exposure. CALL PHYSICIAN and START RESUSCITATION IMMEDIATELY if breathing has stopped.

HOSPITAL ROUTE

Drive east on Powell Street through San Pablo Avenue. At San Pablo Avenue, Powell becomes Stanford Street. Continue east on Stanford to Martin Luther King Jr. Boulevard (MLK). Turn right onto MLK and proceed south through 55th Street. Continue four blocks to 51st Street and turn left into **Oakland Children's Hospital**.

This drive takes approximately seven (7) minutes.