

Alameda County

DEC 18 2002

Environmental Health

**WORKPLAN
QUARTERLY GROUNDWATER
MONITORING
TASK ORDER NUMBER 04-987901-VV
CONTRACT NUMBER 43A0078**

**HEGENBERGER MAINTENANCE STATION
OAKLAND, CALIFORNIA**

prepared for

**CALIFORNIA DEPARTMENT OF
TRANSPORTATION
District 4
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Oakland, California 94612**

prepared by

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September 26, 2002
575-2G002

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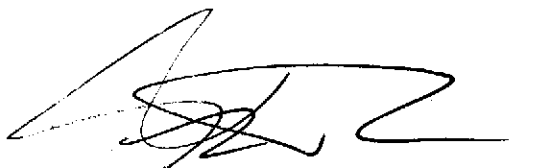
- APPENDIX A: FIELD PROCEDURES

STATEMENT OF LIMITATIONS AND PROFESSIONAL CERTIFICATION

Information provided in this Workplan, prepared by Professional Service Industries, Inc. (PSI), is intended exclusively for the use of Caltrans for the evaluation of subsurface conditions as it pertains to the subject site. The professional services provided will be performed in accordance with practices generally accepted by other geologists, hydrologists, hydrogeologists, engineers, and environmental scientists practicing in this field. No other warranty, either expressed or implied, is made. As with all subsurface investigations, there is no guarantee that the work conducted will identify any or all sources or locations of contamination.

PSI reserves the right to deviate from the proposed scope of services outlined in this Workplan as needed to obtain the required information. If such deviation is necessary, PSI will seek prior approval from the client and the regulatory agency overseeing this project.

This Workplan is issued with the understanding that Caltrans is responsible for ensuring that the information contained herein is brought to the attention of the appropriate regulatory agency. This Workplan has been reviewed by a geologist who is registered in the State of California and whose signature and license number appears below.



Frank R. Poss
Senior Technical Professional



Chris Merritt
Registered Geologist (RG 7156)

1.0 INTRODUCTION

Professional Service Industries, Inc. (PSI) has been retained by the California Department of Transportation (Caltrans), under Task Order Number 04-987901-VV and Contract Number 43A0078, to prepare this Workplan to perform semi-annual groundwater monitoring at 555 Hegenberger Road in the City of Oakland, California (subject site; Figure 1). The site is the former Hegenberger Maintenance Station.

The scope of work for this investigation includes:

- Redevelopment of Existing Wells, if impaired by sedimentation,
- Collection of groundwater samples from five on-site monitoring wells for three episodes of semi-annual sampling,
- Chemical analysis of the groundwater samples, and
- Preparation of a technical report describing the investigation and interpretation of the data generated.

1.1 PROJECT OBJECTIVE

The objective of the project is to perform quarterly groundwater monitoring according to established protocol to satisfy regulatory requirements.

1.2 SITE BACKGROUND

In September 1994, four underground storage tanks (USTs) and the associated product piping and pump island were removed. The USTs consisted of two 2,000 gallon diesel USTs and two 6,500 gallon gasoline tanks. Over excavation was completed to remove, to the extent feasible, residual petroleum hydrocarbons impacting the soil. Soil sampling conducted following the completion of the excavation indicated elevated concentrations of petroleum hydrocarbons in the remaining soil.

A soil and groundwater investigation was completed in 1995 by Geocon Consultants Inc. to characterize the vertical and lateral extent of petroleum hydrocarbons in soil and groundwater, if present. The investigation included the installation of 5 monitoring wells. The results indicated petroleum hydrocarbons remained in the soil and groundwater.

Subsequent quarterly groundwater monitoring at the site indicated that Total Petroleum Hydrocarbons as Motor Oil (TPH-MO) and TPH as oil and grease (TPH-OG) were not detected and were discontinued. TPH as Gasoline (TPH-G) and TPH as Diesel (TPH-D) have been detected in all the monitoring wells at some point in the sampling process. Benzene has been detected in all of the monitoring wells and methyl tert butyl ether (MTBE) has been detected in all of the wells with the exception of MW-2.

When no consistent attenuation of the contaminant concentrations was reported, the Alameda County Department of Environmental Health Services (ADEHS) requested semi-annual monitoring. The March 30, 2001 quarterly monitoring indicated that MTBE was no longer present above laboratory detection limits. As a result, the ACDEHS stated that MTBE was no longer a contaminant of concern.

As a result of the semi-annual groundwater monitoring, the ACDEHS requested further site characterization to determine the extent of the groundwater plume. Additional soil and groundwater sampling and analyses was performed up gradient, down gradient, and within the former underground storage tank pit.

2.0 PRE-FIELD ACTIVITIES

This section describes the tasks PSI will perform prior to initiating any field activities. These tasks include: 1) attending the Caltrans Task Order Meeting; 2) preparing the Pre-Work Site Visit Checklist; and 3) preparing a Completion Schedule.

2.1 TASK ORDER MEETING

A Task Order Meeting was completed on July 2, 2002 with Mr. Chris Merritt of PSI and Mr. Aaron Bennett of Caltrans in attendance. The primary purpose of the meeting will be to familiarize PSI with site conditions that may impact field operations.

At the Task Order Meeting, a Pre-Work Site Visit Checklist was completed. Topics specified in the checklist included identification of monitoring well location, and storage areas for purge water.

2.2 HEALTH AND SAFETY PLAN

Prior to the commencement of field activities at the site, a site-specific Health and Safety Plan (HSP) will be developed in compliance with 29 CFR 1910.120, under the supervision of a Certified Industrial Hygienist. The HSP is designed to address the potential hazardous materials that may be encountered during field activities at the site. Further, the HSP will be designed to minimize the exposure to potentially hazardous materials and unsafe working conditions to on-site personnel.

3.0 GROUNDWATER SAMPLING

This section describes the methodology that will be implemented during the groundwater sampling at the site. The objectives of the sampling procedures are to provide an accurate assessment of the current groundwater conditions and to minimize the potential for cross-contamination during sampling operations.

3.1 MONITORING WELL SAMPLING

If the monitoring wells prove to be affected by sedimentation, each of the groundwater monitoring wells will be re-developed by purging the wells of ten well volumes. Groundwater sampling will not be completed for at least 24 hours after re-development. Groundwater monitoring wells MW-1 through MW-5 will be sampled for chemical analyses (Figure 2). Prior to sampling, the groundwater elevation will be measured from the top of the well casing. The monitoring well will be purged of a minimum of three well volumes until pH, conductivity, and temperature stabilizes. The purging will be completed by bailing or pumping. Volatile organic compounds will be collected first. The groundwater sample will be collected according to PSI's standard protocol, presented in Appendix A.

Following collection of the groundwater sample, the samples will be logged on a chain-of-custody record and stored in an ice chest at 4 degrees Celsius. Sample preservatives will be utilized as instructed by the analytical laboratory. All transportation and handling of the groundwater sample will follow chain-of-custody protocol.

3.2 DECONTAMINATION PROCEDURES

Decontamination procedures will be implemented to maintain sample integrity and to prevent contamination of the sampling location. All sampling equipment will be cleaned with a non-phosphate detergent and rinsed twice with deionized water to use at a new sampling location. Sampling equipment includes:

- Groundwater sampling equipment, and
- Sounders.

3.3 STORAGE AND DISPOSAL OF GENERATED WASTES

Water from equipment cleaning and well purging activities will be stored in individually labeled 55-gallon drums. Disposition of the water will be determined upon receipt of laboratory analytical results of the soil and water samples. PSI will arrange for the management and appropriate disposal of water generated during the field activities under Contract 43A0078.

4.0 LABORATORY ANALYSIS PROGRAM

The soil and groundwater samples collected during this investigation will be submitted to a State of California Department of Health Services certified hazardous waste laboratory. The groundwater samples will be analyzed for Total Petroleum Hydrocarbons as Diesel (TPH-D) and TPH as Gasoline (TPH-G) according to a modified EPA Method 8015, as well as Volatile Organic Compounds including oxygenates according to EPA Method 8260. Prior to analysis, PSI will instruct the laboratory to use the Silica Gel Cleanup Method (Method 3630C) for the TPH-D analyses.

During groundwater sampling the following measurements will be collected:

- pH
- Conductivity
- Temperature

5.0 FIELD QUALITY ASSURANCE/QUALITY CONTROL

The following field documentation procedures will be implemented by PSI field personnel.

5.1 SAMPLE IDENTIFICATION

Groundwater samples collected in the field will be labeled according to standard protocol, as described in Appendix A.

5.2 CHAIN-OF-CUSTODY PROCEDURES

Chain-of-Custody records will be used to document sample handling and shipping procedures. Chain-of-Custody records will trace the samples from collection, through any custody transfers to the analytical laboratory. Information recorded on the Chain-of-Custody records will include location of sample collection, sample identification, number, date and time of collection, number and type of sample containers, and analyses requested. The shipping conditions will also be described on the Chain-of-Custody records. The name of the sampler(s) as well as the name of the person relinquishing the samples will be documented. Chain-of-Custody procedures are described in Appendix A.

6.0 DATA MANAGEMENT

In accordance with Contract 43A0078, on-site personnel will complete a Daily Work Field Log for each day in the field. The log will include the following items listed below:

- Task order number and contract number;
- Project name and location;
- Name, title, and company of person performing the work;
- Date work is being performed;
- Actual begin and end times of work;
- Description of work being performed;
- Additional notations, observations, or remarks to further characterize or clarify work being performed;
- Equipment utilized on site; and
- Change orders issued during site activities.

6.1 DATA STORAGE

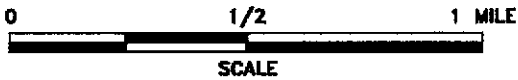
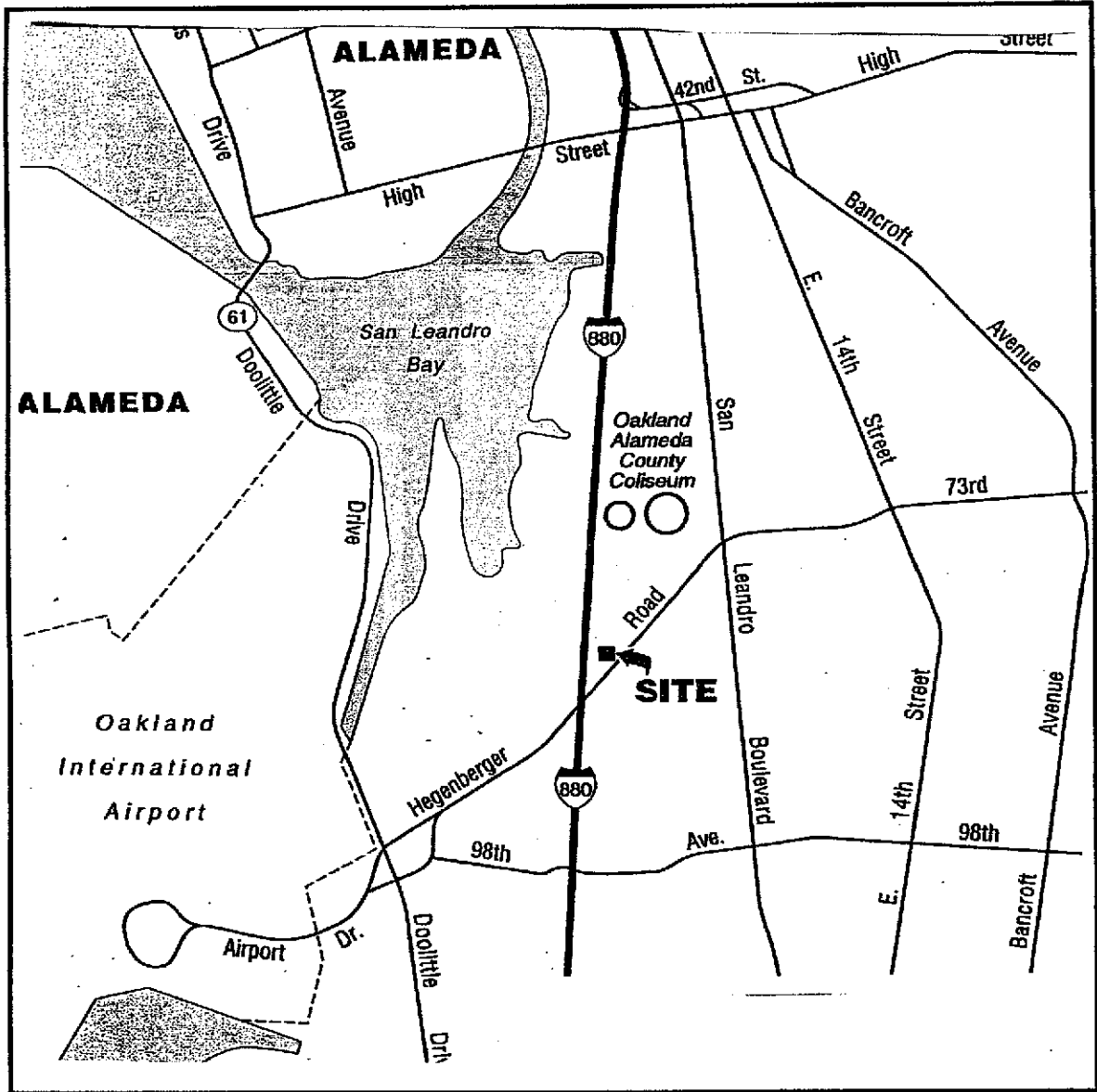
Project correspondence, field notes, maps, and data will be filed within the main Project File at PSI's Hayward office. Chemical data will be entered onto a spreadsheet program for ease of organization, review, and presentation of data in the report. Hard copy files within the main Project File may include, but not be limited to:


- Basic Data: Soil boring logs, field procedures, forms, maps, analytical data.
- Project Field Logs: The project notebook and all field memorandums.
- Correspondence: All written correspondence and telephone conversation records.
- Data Presentation: All maps and tables generated from basic data analyses.
- Data Verification: Documentation that all tables, maps and texts using basic information have been reviewed.

7.0 QUARTERLY GROUNDWATER MONITORING REPORT PREPARATION

Upon completion of the field activities described in this workplan, a report will be prepared presenting the investigative methodology implemented, findings, and conclusions for the subject site. The report will include the following elements:

- Title sheet,
- Signature page,
- Table of contents,
- Investigative summary,
- Introductory narrative of the project,
- Investigative methods,
- Investigative results and field observations,
- Data evaluation and discussion,
- Tables and Figures,
- Summary table (s) indicating laboratory results,
- Contaminant concentrations, analytical methods, and detection limits,
- Copies of original laboratory documentation,
- Field procedure forms, and chain-of-custody records,
- Conclusions, and
- Recommendations.



| | | | | |
|--|----------------------|---|-----------------------|----------|
|  Information To Build On Engineering • Consulting • Testing | | 4703 Tidewater Avenue, Suite B Oakland, California 94601 (510) 434-9200 | | |
| Project Name: FORMER CALTRANS MAINTENANCE STATION 655 HEGENBERGER ROAD, OAKLAND, CA | Drawn By: B.S. | Date: 9/02 | File No.: 20020-01 | 1 |
| Title: SITE LOCATION MAP | Approved By: F.P. | Project No.: 575-20020 | | |

General Motors Corporation Truck Center Facility

MW3

Asphalt

Asphalt

MW2

Approximate Limit of Former UST Excavation

MW4

MW1

Former Hegenberger Maintenance Station

Building (Demolished)

Canopy (Demolished)

MW5

Approximate Limit of Former Pump Island

Asphalt

LEGEND:

⊕ LOCATION OF GROUNDWATER MONITORING WELL
GEOCON SEPTEMBER 1995

□ LOCATION OF FORMER UST



PSI Information
To Build On
Engineering • Consulting • Testing

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Project Name:
FORMER HEGENBERGER MAINTENANCE STATION
665 HEGENBERGER ROAD, OAKLAND, CALIFORNIA

Drawn By: M.C.
Date: 9/02
File No.: 2C020-002

2

Title:
SITE PLAN

Approved By: F.P.
Project No.: 575-2C020

APPENDIX A
FIELD PROCEDURES

I. DRILLING OF SOIL BORINGS AND COLLECTION OF SOIL SAMPLES

The following procedures will be used for the drilling and sampling of the soil borings drilled at the site:

1. Drilling will be conducted by V&W Drilling Environmental under the supervision of PSI. Drilling equipment will be pressure washed at the beginning of the day and between soil borings.
2. Prior to the commencement of drilling activities at the site, Underground Service Alert (USA) will be contacted to identify underground utilities in the areas that the borings will be located.
3. Boring logs for the soil borings drilled at the site will be prepared under the supervision of a State of California Registered Geologist. The soil cuttings observed during drilling will be described in accordance with the Unified Soil Classification System.
4. Soil samples will be collected using a 2.5-centimeters (1-inch) diameter stainless steel sampler. When the boring has been advanced to the appropriate sampling depth, a 1-inch diameter sampler lined with 2.5 centimeters (1-inch) diameter acetate tubes, with a retractable tip will be placed in the open boring. When the sampler is advanced to the appropriate depth, the tip will be retracted and an undisturbed soil sample will be collected by pushing the sampler into the subsurface using a percussion hammer.
5. Once the sampler has been retrieved the ends of the sample tube will be covered with Teflon sheets and capped with polyethylene end caps. The sample will be labeled and placed in a zip-lock bag in a chilled cooler pending delivery to the laboratory for analysis.
6. Soil samples will be assigned identification numbers such as B1-0.9, where B1 indicates the parcel address, boring 1 and -0.9 indicates that the sample was collected at 0.9 meters bgs from boring 1 at that address. The samples will be labeled with the sampling designation, depth, date, client name, and project number.

7. Soil samplers will be washed between sampling intervals with Alconox soap followed by two deionized-water rinses.
8. Chain-of-custody procedures using chain-of-custody forms will be used to document sample handling and transportation.
9. A Century 128 organic vapor analyzer (OVA) or equivalent device will be used to monitor volatile organic compounds (VOCs) in the ambient air during drilling at the site in accordance with the site health and safety plan. VOC concentrations in the soil will be measured and recorded on the borings logs for depths that soil samples were collected. VOCs in the soil will be measured at the sampling depths by partially filling a zip-loc bag with soil.
10. Soil cuttings and steam wash water generated during drilling activities at the site will be contained in Department of Transportation (DOT) approved 55-gallon drums. The drums will be labeled with the contents, date, well or boring number, client name, and project number.

II FIELD DOCUMENTATION OF SAMPLING PROCEDURES

The following outline describes the procedures adhered by PSI for proper sampling documentation.

1. Sampling procedures will be documented in a field notebook that will contain:
 1. Sample collection procedures
 2. Date and time of collection
 3. Date of shipping
 4. Sample collection location
 5. Sample identification number(s)
 6. Intended analysis
 7. Quality control samples
 8. Sample preservation
 9. Name of sampler
 10. Any pertinent observations

2. Samples will be labeled with the following information:

1. Sample number
2. Well number
3. Date and time sample was collected
4. Sampler's name
5. Sample preservatives (if required)

3. The following is the sample designation system for the site:

For Borings, the samples will be labeled B-(Boring Number)-(Depth) (i.e. sample collected from boring 4 at 5 feet would be B4-5)

For groundwater samples (W) (Boring Number) (i.e. WB4)

4. Handling of the samples will be recorded on a chain of custody form which shall include:

1. Site name
2. Signature of Collector
3. Date and time of collection
4. Sample identification number
5. Number of containers in sample set
6. Description of sample and container
7. Name and signature of persons, and the companies or agencies they represent, who are involved in the chain of possession
8. Inclusive dates and times of possession
9. Analyses to be completed

III. GROUNDWATER SAMPLING

The following procedures will be implemented while performing well monitoring, well purging, and water sampling.

1. All non-disposable equipment will be washed prior to entering the boring with an Alconox solution, followed by two tap water rinses and a deionized water rinse.

2. Grab groundwater samples will be collected without purging. After collection of the sample, a depth to groundwater will be measured with an electronic sounder.
3. Water samples will be collected with a single-use Teflon lined tubing with a check valve. The water will be immediately decanted into laboratory-supplied vials and bottles. The containers will be overfilled, capped, labeled, and placed in a chilled cooler prior to delivery to the laboratory for analysis.
5. Chain-of-custody procedures, including chain-of-custody forms, will be used to document water sample handling and transport from collection to delivery to the laboratory for analyses.
6. Groundwater samples will be delivered to the State-certified hazardous waste laboratory within approximately 48-hours of collection.