



ALISTO ENGINEERING GROUP

ENVIRONMENTAL  
PROTECTION  
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February 28, 2000

Mr. Barney Chan  
Alameda County Health Care Services Agency  
1131 Harbor Bay Parkway, Suite 250  
Alameda, California 94502-6577

10-479-02-002

Subject: Work Plan for Monitoring Well Destruction and/or Replacement  
6301 San Pablo Avenue  
Oakland, California

Dear Mr. Chan:

On behalf of Ms. Connie Lam, Alisto Engineering Group is pleased to submit the work plan for destruction and replacement of groundwater monitoring wells at 6301 San Pablo Avenue, Oakland, California.

The proposed scope of work is to address the concerns of the Alameda County Health Care Services Agency dated January 25, 2000, requesting proper abandonment of two damaged monitoring wells and installation of three groundwater monitoring wells onsite. If warranted, the damaged groundwater monitoring wells will be repaired and the well head elevations surveyed. This work plan will be revised to reflect the proposed scope of work if the wells can be rehabilitated. The monitoring wells will be inspected after ongoing construction activities, and the status of the monitoring wells will be reported.

The scope of work does not include the installation of a monitoring well at the location of former Well MW-1 since petroleum hydrocarbons have not been detected in the groundwater at that location during previous sampling events. As such, a monitoring well at the location of MW-1 is no longer required.

Please call if you have questions or need additional information.

Sincerely,

ALISTO ENGINEERING GROUP

Brady Nagle  
Project Manager

Enclosure

cc: Ms. Connie Lam (with enclosure)  
Mr. Brad Ledesma, ExxonMobil (with enclosure)

**WORK PLAN  
FOR  
MONITORING WELL DESTRUCTION AND/OR REPLACEMENT**

**6301 San Pablo Avenue  
Oakland, California**

**Project No. 10-479-02-002**

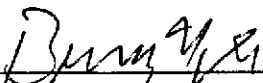
**Prepared for:**


**Ms. Connie Lam  
200 Dorado Terrace  
San Francisco, California**

**Prepared by:**

**Alisto Engineering Group  
1575 Treat Boulevard, Suite 201  
Walnut Creek, California**

**February 28, 2000**

  
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**Brady Nagle  
Project Manager**

  
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**Al Sevilla, P.E.  
Principal**



## WORK PLAN MONITORING WELL DESTRUCTION AND/OR REPLACEMENT

6301 San Pablo Avenue  
Oakland, California

Project No. 10-479-02-002

### INTRODUCTION

Aiisto Engineering Group has been retained by Ms. Connie Lam to prepare a work plan to destroy and replace groundwater monitoring wells at the former Mobil Oil site at 6301 San Pablo Avenue, Oakland, California. A site vicinity map is shown as Figure 1, and a site plan showing the locations of the monitoring wells is shown as Figure 2.

The proposed scope of work is to address the concerns of the Alameda County Health Care Services Agency dated January 25, 2000, requesting proper abandonment of two damaged monitoring wells and installation of three groundwater monitoring wells onsite. If warranted, the damaged groundwater monitoring wells will be repaired and the well head elevations surveyed. This work plan will be revised to reflect the proposed scope of work if the wells can be rehabilitated. The monitoring wells will be inspected after ongoing construction activities, and the status of the monitoring wells will be reported.

It should be noted that a replacement monitoring well for the former Well MW-1 is not proposed since no petroleum hydrocarbons have been detected in the groundwater at that location during previous sampling events. As such, a monitoring well at the location of MW-1 is no longer required. The scope of work covers only the installation and/or rehabilitation of monitoring wells at the approximate locations of MW-2, MW-3, and MW-4. The exact locations will be determined after assessment of the conditions of Wells MW-2 and MW-3 and status of construction activities at the site.

### PROJECT BACKGROUND

The project background regarding the groundwater monitoring well installation and destruction is as follows:

- On March 1, 1996, four groundwater monitoring wells, MW-1 through MW-4, were installed onsite by Mobil Oil Corporation to assess the extent of petroleum hydrocarbons in soil and groundwater.
- In the spring of 1999, Monitoring Well MW-4 was partially excavated during installation of a garage bay associated with an oil changing facility currently being constructed at the site. Well MW-4 could not be located and cannot be properly destroyed.



- Review of plans for the oil changing building indicated that Well MW-1 would also eventually be damaged during building construction. As such, Well MW-1 was properly destroyed on May 28, 1999, and a report documenting the destruction was prepared by Alisto Engineering dated June 28, 1999.
- During ongoing site construction activities, Mobil Business Resources Corporation noted that Wells MW-2 and MW-3 were damaged. Site inspection by Alisto in January 2000, however, noted that the well casing for Well MW-2 is intact with a cap in place. The condition of Well MW-3 could not be observed due to standing water and saturated site conditions.

## SCOPE OF WORK

The scope of work for well destruction and replacement includes acquisition of well destruction permits, destruction of groundwater monitoring wells as needed, completion of the California Department of Water Resources Form (188), and preparation of a letter report summarizing the field activities.

Prior to performing the following scope of work, the wellheads of MW-2 and MW-3 will be exposed, the total depth measured, and the condition of the well casing inspected. If the well casings are not damaged below the surface, the wells will be developed to remove any material that may have entered the well and brought back into service.

### Task 1: Acquire Necessary Permit

Well destruction permits will be obtained from the Alameda County Public Works Department, and they will be notified at least 48 hours prior to commencing work.

### Task 2: Destroy Groundwater Monitoring Well

Monitoring Wells MW-2 and MW-3 were constructed of 4-inch-diameter PVC casing and installed to a depth of 20 feet below grade. The wells will be destroyed by pressure grouting with neat cement tremied from the total depth of the well casings to approximately 6 inches below surface grade. The remainder of the borehole will be backfilled to grade to match the existing surface.

Any rinse water generated from decontamination activities will be transported for disposal at an appropriate recycling facility.

### Task 3: Install Groundwater Monitoring Wells

Soil borings for monitoring well installation will be drilled using a truck-mounted CME 75 drilling rig or equivalent, equipped with 10-inch-diameter, hollow stem augers. Soil samples will be collected at 5-foot intervals and at significant stratigraphic changes beginning at 5 feet below grade and continuing to the total depth of the borings. Samples will be collected from a split-spoon sampler lined with stainless



steel tubes and logged in the field by a qualified geologist or engineer using the Unified Soil Classification System.

Each of the borings will be converted into a groundwater monitoring well based on site-specific hydrogeologic conditions and the nature of contamination encountered. The proposed monitoring wells will be constructed using 4-inch-diameter casing to depths of approximately 10 to 15 feet below the tip of the first saturated zone. The wells will be constructed using 4-inch-diameter, Schedule 40 PVC casing with 0.010-inch perforations, and the associated filter pack. An approximately 1-foot-thick bentonite spacer will be installed above the sand pack, and the remainder of the annulus will be sealed with Portland Type I/II neat cement. The tip of the well will be secured with a watertight locking cap and utility box finished flush with the ground surface.

The proposed monitoring wells will be developed to: (1) consolidate and stabilize the filter pack, and (2) optimize production. The proposed groundwater monitoring well will be developed during drilling and before installation of the bentonite spacer and neat cement seal. Development will be accomplished by purging up to 10 saturated well volumes or until the groundwater is visually free of sediment.

To calculate the hydraulic gradient and groundwater flow direction of the shallow aquifer, each well will be surveyed by a state-licensed surveyor from the top of the casing to within 0.01 foot accuracy in reference to an established benchmark or a common datum.

#### Task 4: Prepare Report

A letter report presenting a summary of the well destruction activities will be submitted to the Alameda County Health Care Services Agency and the RWQCB. A copy of the Department of Water Resources Well Completion Report (Form 188) will be submitted along with the letter report.

### **SITE SAFETY PLAN**

All field procedures and activities related to the well destruction will be conducted in accordance with the attached site-specific safety plan. The site safety plan was developed in accordance with applicable requirements of the California Environmental Protection Agency (Cal-EPA) and the federal and state Occupational Safety and Health Administration (OSHA and Cal-OSHA).

### **IMPLEMENTATION SCHEDULE**

The proposed monitoring well destruction and replacement, if warranted, will be completed within 30 days after completion of resurfacing activities at the site. A report will be submitted within 30 days after installation of the monitoring wells.





BERKELEYVILLE

Piles

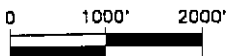
Mud

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SOURCE:  
USGS MAP, OAKLAND WEST QUADRANGLE,  
7.5 MINUTE SERIES, 1959.  
PHOTOREVISED 1980.



QUADRANGLE LOCATION



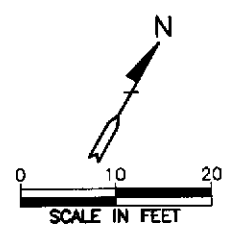
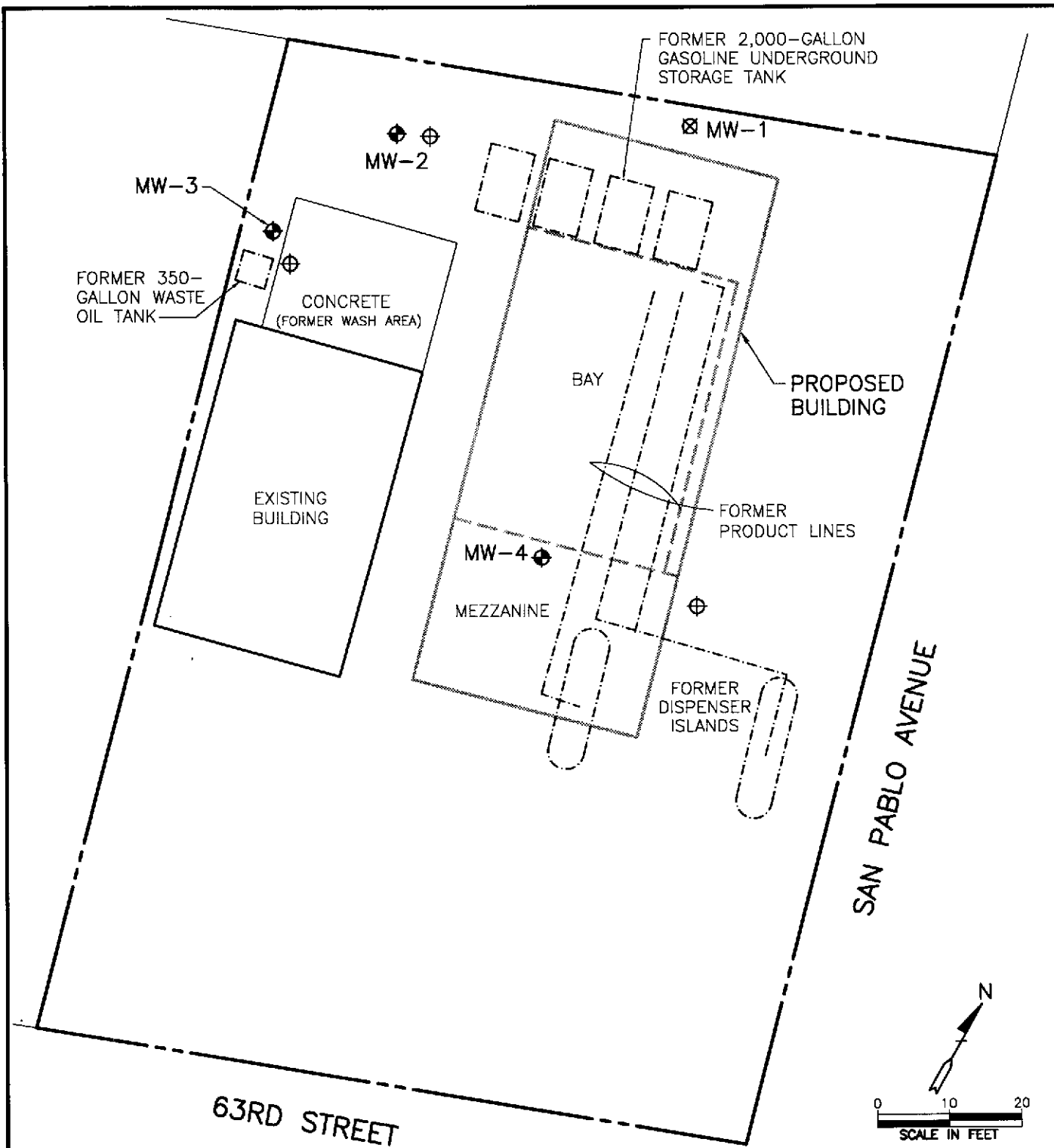
## FIGURE 1 SITE VICINITY MAP

6301 SAN PABLO AVENUE  
OAKLAND, CALIFORNIA

PROJECT NO. 10-309



**ALISTO ENGINEERING GROUP**  
WALNUT CREEK, CALIFORNIA



**LEGEND**

- ⊕ GROUNDWATER MONITORING WELL
- ⊗ DESTROYED WELL
- ⊕ PROPOSED REPLACEMENT WELL

**FIGURE 2**  
**SITE PLAN**  
 6301 SAN PABLO AVENUE  
 OAKLAND, CALIFORNIA  
 PROJECT NO. 10-479



10479CA-DWG B-2-99 RWY 1-20