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January 15, 2002

Ms. Eva Chu  
Alameda County Health Care Services  
Agency  
1131 Harbor Bay Parkway, STE 250  
Alameda, CA 94502-6577

Re: Former BP Oil Site No. 11120  
6400 Dublin Boulevard  
Dublin, CA

Direct: 425/251-0689  
Cell: 206/335-0689  
hootonst@bp.com  
www.bp.com

Dear Ms. Chu:

This letter transmits a workplan for the installation of replacement groundwater monitoring wells as requested by the Alameda County Health Care Services Agency.

Contact me at (425) 251-0689 if you have questions.

Sincerely,

  
Scott Hooton

attachment

cc: site file  
Chris Winsor - La Palma  
Stephen Palmer - La Palma  
David Camille - Tosco (w/attachment)

**WORK PLAN  
FOR  
SITE INVESTIGATION**

**Former BP Site No. 11120  
6400 Dublin Boulevard  
Dublin, California**

**Project No. 10-170-07-001**

**Prepared for:**

**BP Oil Company  
295 S.W. 41<sup>st</sup> Street  
Building 13, Suite N  
Renton, Washington**

**Prepared by:**

**Alisto Engineering Group  
3732 Mt. Diablo Boulevard, Suite 270  
Lafayette, California**

**January 22, 2002**

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**Brady Nagle  
Project Manager**

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

## **INTRODUCTION**

This work plan presents the proposed scope of work for installation of groundwater monitoring wells and site investigation at former BP Site No. 11120, 6400 Dublin Boulevard, Dublin, California to address the concerns of the Alameda County Health Care Services Agency (ACHCSA). A site vicinity map is shown on Figure 1, and a site plan is included as Figure 2.

## **SCOPE OF WORK**

The proposed scope of work for site investigation will be performed in accordance with the guidelines and requirements of the ACHCSA and the California Regional Water Quality Control Board (RWQCB), San Francisco Bay Region. The tasks to be performed include the following:

### **Task 1: Pre-Field Activities**

On receipt of regulatory approval of the work plan, pre-field activities will be performed including, but not limited to: acquiring drilling permits from the appropriate regulatory agencies; scheduling and coordinating field activities with subcontractors and appropriate parties; and locating underground utilities and interferences at the proposed monitoring well locations.

### **Task 2: Install Groundwater Monitoring Wells**

Four soil borings will be drilled onsite using a truck-mounted CME 75 drilling rig or equivalent, equipped with 8-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 Soils Classification System.

Each sample will also be field screened using a photoionization detector or combustible gas indicator to assist in selecting samples for laboratory analysis. The samples selected for laboratory analysis will be sealed airtight with Teflon or aluminum sheeting, plastic caps and adhesive tape, and placed immediately into a cooler maintained at 4 degrees Centigrade for transport to a state-certified laboratory .

After drilling to a depth of 10 to 15 feet below the top of the first encountered saturated zone, each boring will be converted into a groundwater monitoring well based on site-specific hydrogeologic conditions and the nature of contamination observed in the field. The proposed monitoring well will be

constructed using 2-inch-diameter, Schedule 40, PVC blank and 0.010-inch perforated casing, and 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 top of the well will be secured with a watertight locking cap and utility box finished flush with the ground surface.

**Task 3: Develop, Sample, and Survey Groundwater Monitoring Wells**

The proposed monitoring wells will be developed to: (1) consolidate and stabilize the filter pack; and (2) optimize production. Development will be accomplished by purging up to 10 saturated well volumes or until the groundwater is visually free of sediment.

The proposed groundwater monitoring wells will be sampled at least 72 hours after development. Before sampling, the water level in the well will be measured and the wells will be inspected for free product or sheen. The well will then be purged to allow groundwater representative of the aquifer to enter. Purging will be accomplished using a bailer or pump so as not to agitate the groundwater or expose it to air. Purging will continue until at least 3 and up to 10 saturated well casing volumes have been evacuated and indicator parameters have stabilized. Indicator parameters will be pH, temperature, and specific conductivity. Stabilization of the parameters will be determined when they vary no more than the following values:

- pH - 0.2 units
- Temperature - 0.5 degrees Celsius
- Specific conductivity - 10 percent

The samples will be placed in an iced cooler maintained at 4 degrees Centigrade and transported to a state-certified laboratory for analysis. Purged water from sampling and development as well as decontamination rinsate will be stored onsite in Department of Transportation approved 55-gallon drums for transport and disposal.

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 in accordance with the current state requirement for electronic data reporting.

#### Task 4: Analyze Soil and Groundwater Samples

Soil and groundwater samples will be transported to a state-certified laboratory and analyzed for the following:

- Total petroleum hydrocarbons as gasoline using Environmental Protection Agency (EPA) Methods 5030/8015
- Benzene, toluene, ethylbenzene, and total xylenes using EPA Methods 5030/8020
- Methyl tert-butyl ether using EPA Method 5030/8020

Selected groundwater samples will be additionally analyzed for the following:

- BTEX and all fuel oxygenates (MTBE, DIPE, ETBE, TAME, TBA, methanol and ethanol) by EPA Method 8260B
- 1,2-DCA and EDB by EPA Method 8260B

All samples will be analyzed on a standard 2-week turnaround time.

#### Task 5: Evaluate Data and Laboratory Results

On completion of sample analysis, a detailed evaluation of results and available information will be conducted to assess the nature and extent of petroleum hydrocarbons in the soil and groundwater. This will include the following:

- Interpretation of geologic and hydrogeologic characteristics of the water-bearing formation and the nature of subsurface contamination.
- Preparation of groundwater potentiometric surface maps and hydrocarbon concentration maps.
- Assessment of the extent of hydrocarbons in the soil and groundwater.

#### Task 6: Prepare Report

A report presenting the results, findings, and conclusions of the above tasks will be submitted to the appropriate regulatory agencies. The report will include analytical results, boring logs, field notes, and sampling protocol and documentation.

## **SITE SAFETY PLAN**

All field procedures and activities related to the site investigation will be conducted in accordance with a site-specific safety plan. The site safety plan will be developed in accordance with the applicable requirements of the California Environmental Protection Agency and the federal and state Occupational Safety and Health Administration.

## **IMPLEMENTATION SCHEDULE**

The proposed additional site characterization will be completed and a report submitted within 90 days after receipt of written approval of the proposed work plan from the appropriate regulatory agencies, including pre-approval from the state underground storage tank cleanup fund. The estimated schedule for completion of the proposed tasks is as follows:

<u>Task/Activity</u>	<u>Days After Work Plan Approval</u>	
- Acquire permits	15	
- Install wells and collect soil samples		35
- Develop, sample, and survey wells	45	
- Analyze samples		60
- Evaluate data	75	
- Prepare report	90	