Eichleay Engineers Inc.
of California

Suite 600, 1390 Willow Pass Road, Concord, California 94520 • 510-689-7000 • FAX 510-689-7006

TO: Ms. Madhulla Logan DATE: JOB#: 6982

COMPANY: Alameda County Dept. of Env. Health FAX#: (510) 337-9335

FROM: Fred Serafin

RE: Workplan for Subsurface Investigation.

MESSAGE:

Ms. Logan:

The enclosed workplan for a site located at 2504 MacArthur Blvd, Oakland, CA, was submitted to you for your approval on January 19, '95, and apparently has not reached you.

Please review and send your approval to us and to the "clean-up fund", so we could initiate the work.

Sincerely, Fred Serafin

PAGE 1 OF 12 (including the cover sheet)

If you do not receive all pages, please call as soon as possible. Our direct number is (510)689-7000. Our telefax number is (510)689-7006.

Thank You.

EEI-20

Eichleay Engineers Inc.
of California

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January 19, 1995

Alameda County Health Care Services Agency
Department of Environmental Health
Hazardous Material Division
1131 Harbor Bay Parkway
Alameda, CA 94502-6577

Attention: Ms. Madhulla Logan

Subject: Workplan for Subsurface Investigation
2504 MacArthur Boulevard
Oakland, California 94602

Dear Ms. Logan:

On behalf of Michael Marr & Associates, Eichleay Engineers Inc. of California is pleased to present this workplan to conduct an investigation of subsurface pollutants at the property located at 2504 MacArthur Boulevard, Oakland, California.

Please review and approve this workplan at your earliest convenience so we can initiate the work as soon as possible. Please call us if you have any comments or questions.

Very truly yours,

Fred Serafin
Manager, Environmental Services

John Sakamoto
Manager, Industrial Operations

FS/kh
Attachments
cc:RJM, RCD, JMS, FOX, SLC, Nelson
File 6982
Marr Associates

Marr Associates
WORKPLAN

Subsurface Investigation
2504 MacArthur Boulevard
Oakland, California

January 1995

Health ▲ Safety ▲ The Environment

Workplan Contents

1.0 Basis of Workplan

Eichleay Engineers Inc. of California (Eichleay) is pleased to present this workplan to perform an investigation of subsurface pollutants at the property located at 2504 MacArthur Boulevard, Oakland, California. The scope of services was prepared based upon our conversations with the owner as well as the requirements outlined by the California Regional Water Quality Control Board, San Francisco Bay Region. This workplan also complies with the Alameda County Health Care Services Agency, Department of Environmental Health letter, Dated October 27, 1994. This investigation is intended to reasonably define the vertical and lateral extent of soil and groundwater pollutants in and around the area of the former tanks. The scope of services also includes preparation of an opinion of probable cost for remediation.

2.0 General Project Description

Four underground storage tanks were removed from the property located at 2504 MacArthur Boulevard, Oakland, California. Soil samples obtained from the tank excavation area indicate that the subsurface has been impacted by fuel hydrocarbons. Eichleay Engineers Inc. of California (Eichleay), at the request of the owner and in response to the requirements of the California Regional Water Quality Control Board, and the Department of Environmental Health, Alameda County Health Care Services Agency letter dated October 27, 1994, is providing this workplan to characterize the fuel hydrocarbon pollutants in the subsurface of the property. It is intended that the proposed services will not only define the horizontal and vertical extent of the pollutants in the subsurface, but will also initially define the geologic and hydrogeologic parameters needed for determining an effective and feasible remedial action for this site.

3.0 Scope of Services

The proposed scope of services for the investigation of pollutants in the soil and groundwater at the previous fuel tanks area is to try to define the boundary of potential contamination plume and consists of: a review of pertinent information; advancing soil borings; installing groundwater monitoring wells; sampling and chemical testing; data analysis; preparation of an opinion of probable cost for remediation; and presenting the results in the form of a written report.

Tasks to be performed:

- Task 100 - Site Reconnaissance and Review
- Task 200 - Site Safety Plan
- Task 300 - Drill Soil Borings, Install Groundwater Monitoring Wells, and Collect Soil and Groundwater Samples
- Task 400 - Chemical Analyses
- Task 500 - Data Evaluation and Report Preparation

Task 100
Site Reconnaissance and Review

Eichleay will collect and evaluate data, reports, geologic and hydrogeologic maps to help investigate the nature and extent of possible pollutants. A site visit will be made to observe current conditions and to coordinate the investigation to minimize disturbance to the on-going operations at the site.

Task 200
Site Safety Plan

After completion of Task 100 and prior to starting the fieldwork, Eichleay will prepare a Site Safety Plan (SSP) in accordance with Section 29 of the Code of Federal Regulations (CFR) 1910.120. The SSP will be made available to all parties conducting the drilling operations and will be available on-site during drilling activities. Immediately prior to work start-up, a safety meeting will be held at the site.

how many samples? at what depths 5 10 15 how many soil to be composited to

Task 300
Soil Borings, Groundwater Monitoring Wells, Collection of Soil and Groundwater Samples

Prior to conducting drilling activities, Eichleay will obtain the necessary permits to drill at the site. In addition, Eichleay will utilize Underground Service Alert (USA) and a private locator, if necessary, to delineate subsurface utilities at the boring locations.

Eichleay anticipates two days of field activities to complete the investigations. During drilling operations, soil samples will be collected every five feet and at other appropriate intervals. Cuttings will be logged by an experienced geologist or engineer under the supervision of a registered engineer or geologist. Soil samples and cuttings will be screened in the field for volatile organics, including petroleum hydrocarbons, using a Photoionization Detector (PID). At the discretion of the project manager, boreholes may be drilled to approximately five feet below the groundwater table in order to take grab groundwater samples. All boreholes will be backfilled to the surface with a cement-bentonite-water grout mixture. It is anticipated that three of the borings will be converted into groundwater monitoring wells. Eichleay will immediately inform the owner if any conditions are found that may have an impact on the site or the continuance of drilling operations. Appendix A contains a copy of Eichleay's Drilling, Sealing, and Sampling Protocol which will be adhered to during the investigation.

Task 400
Chemical Analyses

Soil and groundwater samples will be preserved for transport to a State of California certified analytical laboratory for chemical analyses. In accordance with the State of California Department of Health Services and Regional Water Quality Control Board guidelines concerning subsurface investigation at areas where fuel tanks (gasoline and diesel) are involved, each sample will be analyzed for Total Petroleum Hydrocarbons as Gasoline (TPH-G) and Benzene, Toluene, Ethyl Benzene, and Xylenes (BTEX). Further, selected samples may be analyzed for presence of organic lead.

Task 500
Data Evaluation and Report Preparation

Upon completion of Tasks 100 through 400, the generated data will be evaluated. A report will be prepared and will detail the investigative efforts, and appropriate recommendations will be made. In addition, the report will discuss the various remedial technologies available and an opinion of probable cost for the remedial activities will be presented

4.0 Schedule

We anticipate being able to begin work immediately upon receipt of an authorization to proceed and a signed Agreement for Professional Services. The draft of the final report will be available about four weeks after completion of drilling operations. The turnaround time for chemical analyses anticipated for this project is five days.

Eichleay cannot be held responsible for delays in completing the outlined scope of services caused by inclement weather, unsafe site conditions, or hazardous conditions uncovered during the investigation. If conditions occur or are discovered while performing the investigation, which could cause a change of scope to the investigation, work will cease, and the client will be notified. The investigation will continue when the situation has been corrected or the scope of work modified to account for the change in conditions.

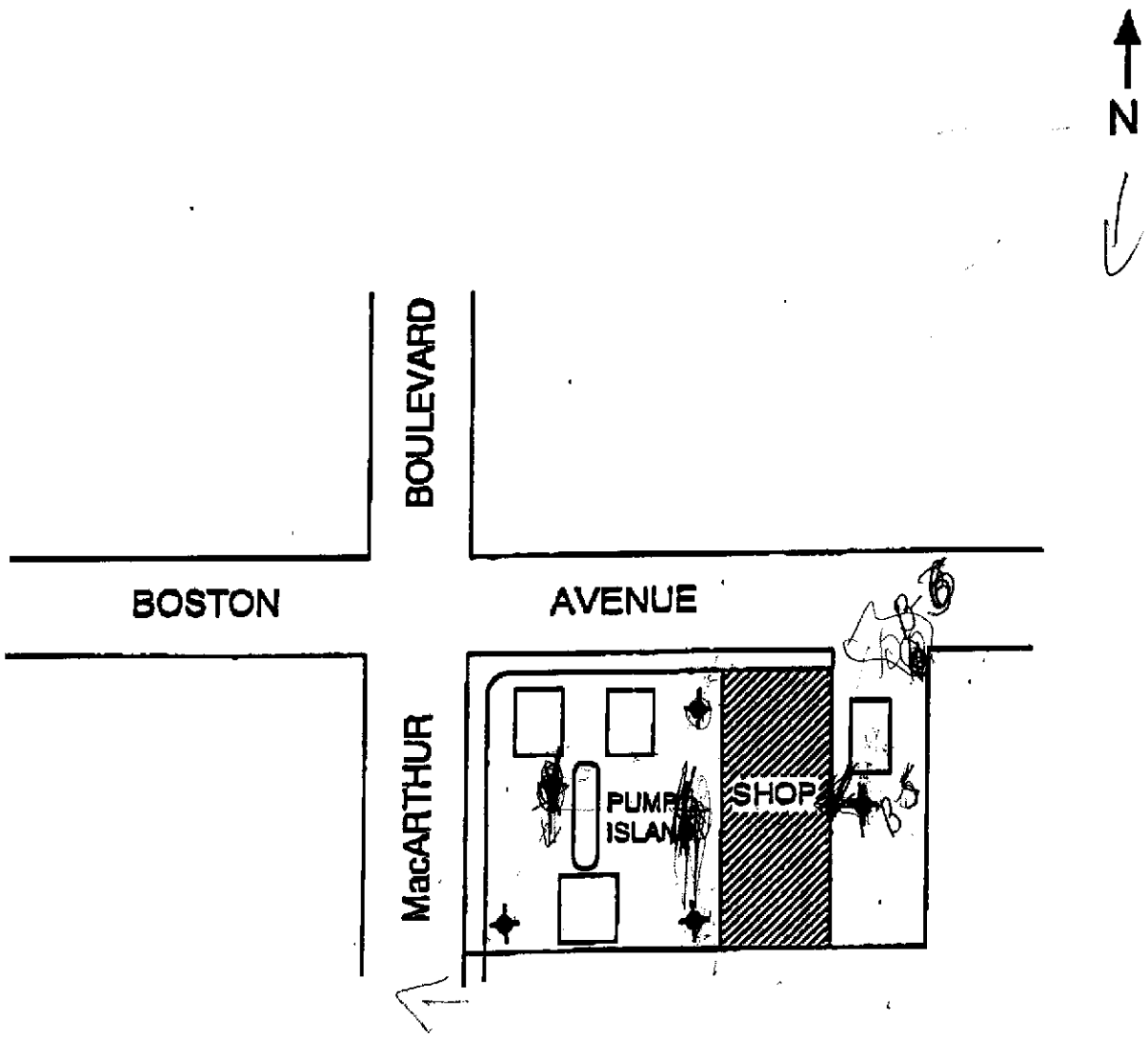
Base from USGS 7.5' Topographic Map, Oakland East, California, Photorevised 1980.
Scale: 1:24,000.

REVISIONS		
REV	DESCRIPTION	APPR

Eichleay ENGINEERS INC of CA — PITTSBURGH, CHICAGO, SAN FRANCISCO

Site Location Map
2504 MacArthur Blvd.
Oakland, California

SCALE	DATE	CONTRACT	
DRAWN BY	DRAWING		REVISION
CHECKED			
APPROVED			



LEGEND

- Location of Boreholes/ Monitoring Wells
- Location of Former tanks

Not to Scale

REVISIONS		
REV	DESCRIPTION	APPR

Eichleay ENGINEERS INC of CA

PITTSBURGH CHICAGO SAN FRANCISCO

Site Plan
2504 MacArthur Blvd.
Oakland, California

SCALE	DATE	CONTRACT	
DRAWN BY	DRAWING		REVISION
CHECKED			
APPROVED			

APPENDIX A

Appendix A
Drilling, Sealing and Sampling Protocol

DRILLING, SEALING, AND SAMPLING PROTOCOL

DRILLING

1. Eichleay Engineers Inc. of California will obtain all necessary permits for the installation of the proposed groundwater monitoring wells.

2. Borings will be drilled using appropriate methods after consideration of site geologic and geotechnical conditions and accepted practice.

3. All augers, drilling rods, and tools used during drilling will be thoroughly steam-cleaned. The augers, drilling rods and tools will be stored before use in a clean area.

4. A method blank of the cleaned rods and/or augers will be taken prior to use and if required by regulatory agencies to detect contamination from any previous drilling site.

5. All borings will be advanced according to guidelines provided by the agency under which the drilling operations are to be conducted.

6. The subsurface stratigraphy and aquifer geometry will be determined using cuttings from the drilling operations and by sampling undisturbed soils using a California Modified or appropriate sampler. Logs will be maintained of all borings with details of materials encountered.

7. Depths of all borings will be determined in the field. Ground water or vadose monitoring wells will be constructed in each boring, as appropriate.

SEALING

8. Bentonite or neat cement seals will be tremied to the bottom of all holes which have penetrated clay layers, to protect the integrity of all lower aquifers.

9. All aquifers encountered will be properly isolated using bentonite or neat cement seals.

10. At no time will slotting or sand packs extend through 5-foot thick or thicker clay layers to connect adjacent aquifers unless previously agreed to by local and state agencies.

11. All wells will be sealed at the surface with at least 5 feet of neat cement. A protective locking device will be installed at the surface over the well casing.

12. All surface seals will be inspected by the appropriate agencies as needed.

13. All well casings will be protected against surface infiltration.

SAMPLING (GENERAL)

14. Any materials supplied by the client will reduce the cost of our work. These may include tap water, 55-gallon drums, and DI water. Arrangements will be made before the start of the project.

15. Chemical sampling procedures and sample storage will be conducted under the direction of our consulting laboratory or a consulting analytical chemist.

16. All equipment used during the sampling process will be thoroughly steam-cleaned prior to its use.

17. All samples will be stored in an ice chest and packed in blue ice or ice in such a manner as to prevent sample immersion in melted ice.

18. All samples will be delivered to the consulting laboratory as soon as possible after collection.

19. All sample containers will be opened only by the consulting laboratory which performs the chemical testing.

SOIL SAMPLES

20. Soil samples will be attempted at 5-foot intervals or more frequently as determined in the field.

21. Sample container cleaning blanks may be taken of the steam-cleaned brass liners for quality control purposes at the rate of one per boring.

22. All soil sampling equipment will be disassembled and thoroughly steam-cleaned prior to each usage.

23. The ends of all soil sample liners will be covered with aluminum foil and an air-tight cap which will be wrapped with aluminized tape and properly labeled. All soil samples will be immediately stored in an ice chest and packed with blue ice or ice in such a manner as to prevent immersion in melted ice.

24. All excess soils will be placed in 55-gallon drums for proper disposal.

25. The center of each soil liner will be extracted at the consulting laboratory for appropriate analysis.

WATER SAMPLES

26. At least 3 to 5 well bore volumes will be purged from each well prior to sampling for volatile organic compounds. Purging will be accomplished using a bladder or centrifugal pump, a Honda jet pump with foot valve, or by hand-bailing with a clean teflon bailer. During evacuation, pH, conductivity, and temperature will be monitored and recorded. All samples will be retrieved with a steam-cleaned teflon bailer. Cleaning blanks of the teflon bailer will be taken between each well to be sampled if the client so desires.

27. Samples will not be taken until the pH, conductivity, and temperature measurements have stabilized during well purging.

28. All sampling equipment, including gloves and tape measures will be properly decontaminated between each well.

29. All samples will be placed in the appropriate cleaned containers provided by the project laboratory. The type of container necessary is contingent upon the analysis needed.

SAMPLE RECORDS AND CUSTODY

30. Records will be maintained for all samples collected by Eichleay Engineers Inc. of California.

31. A positive chain-of-custody record will be maintained by Eichleay Engineers Inc. of California for future reference.

32. All records will be maintained under strict confidence by Eichleay Engineers Inc. of California and will be released only by written authorization of the client.