



Earth Systems Consultants

Northern California

File No. NFE-4392-01
November 11, 1998

Mariner Square & Associates
2900 Main Street, Suite 100
Alameda, California 94501

Attention: Mr. John Beery

Subject: Mariner Square
2415 Mariner Square Drive
Alameda, California

REVISED RISK ASSESSMENT AND CHANGE ORDER REQUEST

Dear Mr. Beery:

As discussed, Earth Systems Consultants Northern California (ESCNC) is submitting this revised update on the risk assessment and proposing a change order to complete the risk assessment. The risk assessment is designed to determine the hazards of the remaining soil and groundwater contamination to human health and the environment. In the process of evaluating the industrial and residential risk at the site, data gaps were encountered regarding concentrations of polynuclear aromatics (PNA's), total lead, and soluble threshold limit concentration (STLC) lead in soil. This letter replaces the request submitted on November 2, 1998.

Some of the contamination at the site includes heavy petroleum hydrocarbons (total recoverable petroleum hydrocarbons [TRPH] and total petroleum hydrocarbons as diesel and motor oil [TPHd and TPHmo, respectively] and lighter petroleum hydrocarbons (total petroleum hydrocarbons as gasoline [TPHg]). Generally, the risks of TRPH, TPHd, TPHmo, and TPHg contamination are determined by evaluating individual constituents within the compounds, as recommended by the ASTM Standard Guide for Risk-Based Corrective Action. The individual compounds that are commonly used to evaluate these petroleum hydrocarbons include PNA's, benzene, toluene, ethylbenzene, total xylenes (BTEX), and lead.

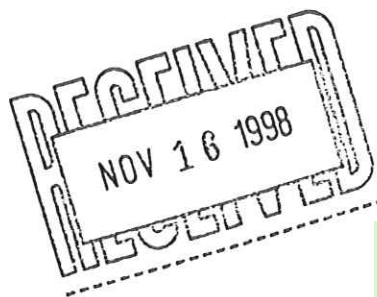
The PNA data at the site to date consists only of groundwater samples. Additionally, in the letter dated July 30, 1998, the Alameda County Health Care Services Agency (ACHCSA) stated:

"Polynuclear Aromatics - (Gary) Pischke will review file to get PNA data to use in the risk assessment. If none is available, soil samples will be collected near MW-5 and tested for PNA's."

Therefore, data regarding PNA in the soil is required by ACHCSA and to complete the risk assessment. Consequently, ESCNC recommends removing the abandoned pipeline, collecting soil samples, and analyzing samples for PNA's. This scope of work was approved as Task 4.

Another data gap for the risk assessment exists for total and STLC lead concentrations in the soil for the proposed industrial and residential areas of the site. STLC lead results are used to determine the amount of total lead that is soluble in water. Generally, the soil sample with the highest total lead concentration is also analyzed for STLC lead. Therefore, the total lead and STLC lead analyses are completed on the same soil sample. However, historical analytical results show that there are no correlating total lead and STLC lead data. Consequently, the lead solubility cannot

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Environmental Health

be determined for either the proposed residential or industrial areas of the site. Since lead in groundwater is a possible risk at the site, solubility information is necessary for both areas.

In addition to Task 4, ESCNC proposes to collect approximately two soil samples above groundwater using a direct push drill rig. The soil sample locations would be near SB-J and MW-1 as shown on Figure 1. The soil samples would be analyzed for PNA's, total lead, and STLC lead.

For the proposed residential area of the site, the highest STLC lead result is from boring MW-2 at a depth of 1.5 feet. Since there is no correlating total lead concentration, ESCNC proposes to analyze one soil sample from the pipeline excavation nearest MW-2 from a depth of 1.5 feet for total lead and STLC lead. For the proposed industrial area, the highest total lead concentration is from boring SB-J at a depth of 1.5 feet. Since there is no correlating STLC lead concentration, ESCNC proposes to collect one soil sample adjacent to SB-J at a depth of 1.5 feet and analyze for total lead and STLC lead.

The scope of work outlined above is necessary to complete the risk assessment. Therefore, to complete the risk assessment in a reasonable time frame, the pipeline excavation and soil sample collection and analysis for PNA's, total lead, and lead should be completed as soon as possible. For the proposed soil borings, the estimated cost for the drilling company and laboratory, if billed directly to Mariner Square & Associates, is \$1,190. The estimated cost for ESCNC personnel to complete the additional soil borings is \$360 over the existing work order dated July 13, 1998. This proposal will remain in effect for the described work if undertaken during the next 60 days. If the above change order is acceptable, please sign and return one copy of the enclosed Change Order to ESCNC.

Very truly yours,

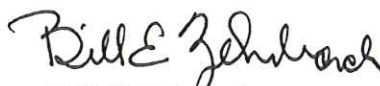
EARTH SYSTEMS CONSULTANTS
Northern California



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Distribution: 2 to Addressee

Attachments: 2 Change Order Request



Earth Systems Consultants
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CHANGE ORDER

Project: Mariner Square

Date: 11/11/98

Job Number: NFE-4392-01

Client Name: Mariner Square and Associates
Address: 2900 Main Street, Suite 100
Alameda, California 94501

Attention: Mr. John Beery

Date of Original Agreement: July 13, 1998

Amount of Original Agreement: \$12, 521.00

Reason for change: Additional Geoprobe™ point samples for risk assessment revised
November 2, 1998 Change Order.

Additional Compensation Required: \$360.00

Additional Time Required for Completion: 1 week

EARTH SYSTEMS CONSULTANTS
Northern California

Agreed to and Accepted:

Bill E. Zehrbach
Signature

Signature

Bill E. Zehrbach
Printed Name and Title

Printed Name and Title

November 11, 1998
Date

Date