



March 16, 1994

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131.01.005

Alameda County Environmental Health Services
Hazardous Materials Division
80 Swan Way, Room 200
Oakland, California 94621

Attn: Ms. Susan Hugo

**PROPOSED MONITORING REVISIONS
PASSIVE IN-SITU BIOREMEDIATION
PILOT STUDY
EMERY BAY PLAZA
1650 65TH STREET PROPERTY
EMERYVILLE, CALIFORNIA**

Dear Ms. Hugo:

PES Environmental, Inc. (PES) presents this letter on behalf of Emery Bay Plaza to propose a revised monitoring program for the proposed passive in-situ bioremediation pilot study at the subject site. When we spoke last week you stated that you were approving our December 21, 1993 plan with the condition that we increase the groundwater monitoring frequency to every other month for the first six months. After that period the monitoring frequency would be reevaluated. In accordance with our discussion last week, PES proposes an alternative approach to bi-monthly groundwater monitoring. Our approach and the basis for that approach are presented below.

The process of biodegradation of dissolved hydrocarbons in groundwater at the site appears to be limited by the supply of available oxygen to the native microorganisms. This is evidenced by the ample growth of microorganisms in parts of the extraction and treatment system (extraction well and filters) where contaminated water is exposed to air. The bioremediation pilot study approach is to increase the supply of dissolved oxygen available for biodegradation of dissolved hydrocarbons in the subsurface to stimulate the native populations of microorganisms to degrade the hydrocarbons in-situ.

Many studies have shown that in biologically active environments, the concentration of hydrocarbons in water is inversely related to the concentration of dissolved oxygen. That is, if sufficient dissolved oxygen is available, microbial degradation of the hydrocarbons occurs quite rapidly with a resulting decrease in contaminant concentrations and a residual concentration of dissolved oxygen. Conversely, when insufficient oxygen is available, significant hydrocarbon concentrations remain and the little oxygen initially present is consumed leaving no residual oxygen. I have attached and highlighted two technical papers for your review which cite this relationship.

Ms. Susan Hugo
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Quarterly groundwater monitoring has been conducted at the site since November 1989. Since that time, little or no changes (other than minor seasonal) have occurred in the distribution and concentrations of hydrocarbons in groundwater or groundwater gradient and direction. Because of the relatively stable conditions encountered at the site, lack of migration of dissolved hydrocarbons and the negligible impact to groundwater gradient from the pilot program, PES believes that more frequent sampling at the site may not provide significant additional data for evaluating the progress of the bioremediation process.

In order to: (1) increase the data base for evaluating the progress of the pilot study; (2) assess the rate of consumption of the introduced nutrients; and (3) indirectly monitor contaminant concentrations, PES will perform additional monitoring on a bi-monthly basis. Based on the relationship between dissolved oxygen and dissolved hydrocarbons in groundwater, PES believes measurement of dissolved oxygen is a valuable tool for indirect measurement of the presence of significant hydrocarbon contamination. Consequently, PES proposes that water levels and dissolved oxygen concentrations be measured quarterly, midway between quarterly monitoring events, for the duration of the pilot study. Quarterly groundwater monitoring, including dissolved oxygen and water levels, will be performed in accordance with the proposed bioremediation workplan. ✓

We trust this information meets your needs and respectfully request your timely review. If you have any questions or require any additional information, please contact the undersigned.

Yours very truly,

PES ENVIRONMENTAL, INC.



Andrew A. Briefer, P.E.
Senior Engineer

Attachments: *Aerobic Biodegradation of Benzene, Toluene and Xylene in a Sandy Aquifer-
Data Analysis and Computer Modeling*
Biodegradation Modeling at Aviation Fuel Spill Site

cc: Tom Gram - Emery Bay Plaza
Matt Dulka, Esq. - Hanson, Bridgett, Marcus, Vlahos & Rudy

8-12-93

Emergy Bay Plaza
STID 4352

DETAILED REVIEW CHECKLIST

CLAIM NO.: 1573	REGION: 2	COUNTY: Alameda	CODE: 01
PRIORITY ASSIGNED: B	LEAD AGENCY AND Alameda County Health		
CURRENT RANK:	CONTACT PERSON:		
DATE REVIEWED: 10-12-93	PHONE NO.: (510) 271-4530		
REVIEWER: <i>W. Kelly</i>			

SITE NAME:

SITE ADDRESS: 1650-65th St., Emeryville, CA 94608

CLAIMANT INFORMATION	ACC.	REJ.	HOW INFORMATION WAS VERIFIED
I. Claimant Identification			
1. Claimant is/was the owner and/or operator of the leaking UST?	✓		app; URF
2. Have all applicable past and current UST owners/operators been identified?	✓		cert documents
3. All required tax ID numbers provided?	✓		app; taxes
4. Date site/tanks acquired verified?	✓		app; cert docs
II. Statement of Costs			
1. Valid third party claim?	n/a		
2. Claimed corrective action costs exceed \$10,000?	✓		
III. Joint Claimant			
1. Joint Claimant is an owner and/or operator?	n/a		
2. Tax ID number provided?	n/a		
3. Joint Claimant's priority class verified?	n/a		
IV. Co-Payee			
1. Tax ID No. provided?	✓		
2. Mailing address/phone no. provided?	✓		
V. Contamination Site/Occurrence Description*			
1. Description of tank and use verified?	✓		URF; consultant reports
2. Registered farm tank?	Yes No		n/a
3. Leaking tank contained eligible substance?	✓		URF
4. Is there any evidence that the UAR was the result of a spill, overfill or gross negligence?	✓		none indicated in County file
5. If claimant submitted more than one claim for the site, each claim is for a separate occurrence?	✓		n/a
6. Site map provided?	✓		
VII. Priority Class Worksheet			
1. Claimant's priority verified?			
2. Claimant was both the owner and operator at time of leak discovery?	Yes No		owner only
3. Claimant is the current owner and operator?	Yes No/NA		tanks removed
4. If either question = No, other party(s) priority class was verified?	✓		n/a - no operator
VIII. Priority Class Designation			
A. Priority Class A			
Residential Motor Fuel Tanks			
1. UST located at the residence of a person and property zoned residential use only at time of leak discovery?			
2. UST located at property improved by an owner-occupied single family dwelling or duplex at time of leak discovery?			
3. UST was not used for agricultural purposes or for resale on or after 1/1/85?			
OR			
Residential Small Home Heating Oil Tanks			
4. UST located at the residence of a person at time of leak discovery?			
5. UST located at property improved by an owner-occupied single family dwelling or duplex at time of leak discovery?			
6. UST has a capacity of 1,100 gallons or less?			
7. UST is used only to store home heating oil for consumptive use on property?			
8. UST was not located on agricultural property on or after 1/1/85?			

DETAILED REVIEW CHECKLIST - CONT'D PAGE 2

CLAIM NO. 1573

LOCAL AGENCY NO. LOP 4352

CLAIMANT INFORMATION	ACC	REJ.	HOW INFORMATION WAS VERIFIED
B. Priority Class B Financial Review Team has determined that the claimant qualifies for Priority Class B.			
C. Priority Class C Financial Review Team has determined that the claimant qualifies for Priority Class C.			
IX. Eligibility Requirements*			
1. UAR reporting requirements satisfied and date release discovered verified?	✓		5/13/87 per Rls. Rept.
2. If property acquired after 1/1/84, claimant exercised due diligence or previous owner was eligible?	n/a		
3. Claimant either had or applied for a permit by 1/1/90, or was able to substantiate why not obtained?	✓		tanks removed 7/87
4. UST is not grossly out of compliance with permit requirements?	✓		
5. Claimant was required to initiate corrective action?	✓		see p. 3 checklist
6. If claimant discovered UAR prior to 1/1/88 required corrective action was initiated on or before 6/30/88?	✓		Site characterization plan in Sept/87
7. Corrective action is in compliance with regulatory requirements?	✓		SEE PAGE 3 OF CHECKLIST
8. Claimant is in compliance with financial responsibility requirements?	n/a		
X-XII. Certifications/Agreements/Statements/Verification			
1. Claim contains original signatures of all claimants and joint claimants?	✓		
2. Required documentation was submitted for authorized representative?	✓		

PROBLEM AREAS AND ANY ADDITIONAL COMMENTS

- 1) ES Engng Inc. prepared & submitted technical reports to Benefit Capital Corp.
- 2) " " " " " " " " " " PO Partners.
- 3) clai

* Compliance with requirements for items listed in Section V. (Contamination Site/Occurrence Description) and Section IX. (Eligibility Requirements) may require lead agency confirmation. Any items that cannot be verified through the applicant and which will require lead agency review and confirmation, should be highlighted for further review. In all cases lead agency confirmation of corrective action compliance will be required.

CLAIM NO. 1573

LOCAL AGENCY NO. LOP 4352

SITE ADDRESS 1650 - 65th St., Emeryville, CA

CORRECTIVE ACTION COMPLIANCE DOCUMENTATION

PAGE 2

DATE	ACTION REQUIRED/RESPONSE
7-2-87	Tank removed
9-18-87	UST site investigation report submitted by ES Engrg Science.
12-18-87	Soil Remediation w/p for southeastern corner of street property.
4-6-88	Implementation of Remedial Action Plan Rept submitted by ES Engrg Inc. to Benefit Capital Corp.
5-26-88	Regulatory Compliance + Completion of Remedial Action Following UST Removal rept submitted to Benefit Capital Corp.
10-24-89	Quarterly GW monitoring rept submitted by ES Engrg to P.O. Partners.
1-8-90	Well survey data submitted by ES Engrg to Alameda for PO Partners.
4-3-90	2nd quarterly monitoring rept submitted by ES Engrg to Alameda for PO Partners
6-15-90	Evaluation of GW Remediation Alternatives + Remedial Action Plan Submitted by ES Engrg Science for PO Partners.
8-16-90	Alameda ltr to PO Partners - GW Remedial Action Plan is not complete - need more info.
12-14-90	Alameda ltr to PO Partners approving GW Treatment Program.
12-28-90	(Fifth consecutive quarterly) GW monitoring report submitted by ES to Alameda.
3-19-91	ES submitted summary of most recent groundwater monitoring data. 6th quarterly monitoring rept to follow.
5-3-91	Sixth Quarterly GW monitoring submitted by ES.
6-5-91	Ltr report - review of Environmental Rept for 6601 + 6603 Bay St prepared by William Dubovsky Environmental + Larry Petite. Contamination reported are not substantiated by guidance.
8-1-91	7th quarterly GW monitoring rept submitted by ES.
3-23-92	PES Environmental Inc Submitted GW monitoring rept to Alameda. Rept was prepared for PO Partners on behalf of Emery Bay Plaza
4-16-92	GW monitoring report submitted by PES for PO Partners (Emery Bay.
6-29-92	" " " " " " " " " " " "
9-22-92	GW monitoring rept submitted by PES for Emery Bay Plaza.
12-31-92	" " " " " " " " " " " "
2-18-93	GW monitoring rept submitted by PES for Emery Bay Plaza. This is the 14th consecutive sampling event since GW monitoring.

CLAIM NO. 1573

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SITE ADDRESS 1650 - 65th St., Emeryville, CA

CORRECTIVE ACTION COMPLIANCE DOCUMENTATION PAGE 3

DATE	ACTION REQUIRED/RESPONSE
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Cont:	was initiated.
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4-1-93	Meeting summary submitted by Hoexter Consulting Inc. Attendees were: Susan Hugi; adjacent property owner; atty for previous owner, Doty Group; consultant for Doty Group, Hoexter. Requested to modify current remedial goals.
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6-30-93	15th CW monitoring rept submitted by PES.
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CONFIRMATION OF CORRECTIVE ACTION COMPLIANCE: After reviewing the lead agency site file, the claim reviewer has determined that the claimant is in substantial compliance with corrective action requirements.

<u>Blaney Jones</u> REVIEWER'S SIGNATURE	8/12/93 DATE SIGNED
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LEAD AGENCY CONCURRENCE: As of this date, the lead agency representative concurs with the determination that the claimant is in compliance with applicable corrective action requirements.

<u>[Signature]</u> SIGNATURE	8-12-93 DATE SIGNED
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STAFF RECOMMENDATION: () APPROVED () REFERRED TO TEAM LEADER - See Comments, Page 2.

REVIEWER'S SIGNATURE: DATE SIGNED