104 San Benito Road, Brisbane, CA 94005
phone: 415-467-2599 fax: 415-468-1520

Susan G. Colman

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To: Glenn Leong 510-654-1960
Susan Hugo 510-337-9335
✓Ignacio Dayrit 510-~~658-8095~~ 596-4389
Geoff Sears 415-459-4605

From: Susan G. Colman

Pages: 19

Phone:

Date: 10/17/2000

Re: Comments on draft EE/CA

CC:

CBS/Viacom doing the Excavation

Susan G. Colman
104 San Benito Road
Brisbane, CA 94005
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415-467-2599
415-468-1520 (fax)

VIA FACSIMILE

October 17, 2000

Mr. Glenn Leong
SOMA Corporation
1412 62nd Street
Emeryville, CA 94608

This letter presents comments on the draft Engineering Evaluation and Cost Analysis (EE/CA) prepared by Treadwell & Rollo, dated October 9, 2000. The document needs to clarify what portion of the remediation that Wareham will conduct. This may be contained in a cover letter for the document from Wareham to the City. General comments are included below and additional comments are on the attached markup.

Section 1.0 and Throughout
The draft EE/CA presupposes the selected remedy throughout, including in the introduction. The attached markup contains edits to remove these statements, including deleting Section 3.4 and moving its contents to Section 4.1.2.

Section 1.2
The last sentence of this section states that the removal action may not be conducted under CERCLA guidance. Keep in mind that all activities associated with the removal action must comply with the National Contingency Plan (NCP) to be eligible for a cleanup loan under CIERRA.

Section 2.4 and third sentence of Section 2.5
Section 2.4 indicates that remediation was conducted under a CAO issued by the RWQCB at the Westinghouse property south of the Site. The third sentence in Section 2.5 (last sentence of first paragraph) indicates that the remediation occurred on the Site. Please clarify.

Section 3.1 Statutory Limits on Removal Actions
Additional ARARs may be the California TTLC and STLC of 50 mg/kg and 5 mg/l, respectively.

Section 4.1 Removal Action Alternatives
It should be fairly easy and quick to obtain cost estimates for incineration vs. disposal per cubic yard of soil to support the conclusion that soil disposal is more cost-effective, and therefore, incineration was not evaluated further.

Section 4.1.1 Alternative 1: No Action
The first sentence of the first paragraph states that the No Action alternative is typically defined as "not proceeding with the removal project." While this is correct, this is not

equivalent to "no construction of the Horton Street extension." The removal action is the remediation of PCB-affected soil. Therefore, the No Action alternative does not need redefinition.

Section 4.1.2
Because Wareham will be applying for a cleanup loan to construct the road as a cap for the PCB-impacted soil that will remain at the site, the description and the analyses of the cap should be expanded. What type and thickness of road base, of road material, etc.? The details of the "limited" excavation from Section 3.4 should be moved here to document that PCB-impacted soil will remain in the subsurface at the Site.

Section 4.4.1 and 4.4.2
The EE/CA guidance indicates that the EE/CA should include capital costs. The only costs provided are $110 per yard for disposal costs and $35,000 for "additional costs" for Alternative 2. Although costs for road construction for Alternative 1 should also be included, at a minimum, include detailed costs for road construction for Alternative 2 because this will determine the loan amount.

If you have any questions or comments, please do not hesitate to call me at 415-467-2599.

Sincerely,

Susan G. Colman
Site Manager for the City of Emeryville

encl.

cc: Ignacio Dayrit, City of Emeryville
Geoff Sears, Wareham Development
Susan Hugo, Alameda County Health Agency

Treadwell&Rollo

9 October, 2000
Project 2953.01

Mr. Glenn Leong
SOMA Corporation
1412 62nd Street
Emeryville, California 94608

Subject: Engineering Evaluation and Cost Analysis (EE/CA)
Horton Street Extension
Emeryville, California

to construct the road as a cap for PCB-impacted soil remaining in place at the Site.

Dear Mr. Leong:

Treadwell & Rollo, Inc. is pleased to present this Preliminary Draft Engineering Evaluation and Cost Analysis (EE/CA) of Wareham Development's Horton Street extension project in Emeryville, California, for your review and comment. We understand that Wareham Development may use this EE/CA (and other documents) to apply for a no-interest loan ~~if the responsible party does not pay for or conduct the removal and disposal of the PCB-affected soil at the site~~. To expedite this EE/CA process, at your direction we have not included detailed construction cost estimates to calculate the incremental cost increase associated with handling the PCB-affected soil, and have included unit transportation and disposal costs only.

At your direction, we have also forwarded (via Federal Express) copies of this Preliminary Draft for review and comment to:

Mr. Geoff Sears – Wareham Development (1 copy, also via email: gsears@warehamproperties.com)
Mr. Ignacio Dayrit – City of Emeryville (3 copies)
Ms. Susan Colman – (1 copy)
Ms. Susan Hugo – Alameda County Health Agency (1 copy).

We look forward to your review and approval of this EE/CA. If you have any questions or comments, please contact me at 510/874-4500, ext. 527.

Sincerely yours,
TREADWELL & ROLLO, INC.

Michael P. McGuire, P.E
Associate Engineer

29530101.OAK

Treadwell & Rollo, Inc. *Environmental & Geotechnical Consultants*
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Treadwell&Rollo

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EXECUTIVE SUMMARY

Wareham Development plans to conduct remedial soil activities at 6121 Hollis Street in Emeryville, California in association with the installation of subsurface utilities, and construction of a street extension (the continuation of Horton Street to 62nd Street). Prior activities by others at the site and adjacent areas resulted in shallow soil containing concentrations of polychlorinated biphenyls (PCBs). To protect construction workers during these planned activities and to provide safety for future utility workers, soil with elevated concentrations of PCBs beneath the planned street extension will be ~~excavated and~~ remediated.

Two removal action alternatives were evaluated. The alternative that consists of limited soil excavation, offsite disposal or reuse, and capping was selected as the preferred removal alternative. The selected alternative meets each of the project objectives and can be completed in a cost effective and timely manner.

This Engineering Evaluation and Cost Assessment (EE/CA) report has been prepared in general conformance with EPA Publication 9360.0-32, Guidance on Conducting Non-Time-Critical Removal Actions Under CERCLA.

make it clear that Wareham will construct the road as a ~~cap~~ protective cap because soil containing PCBs will remain on site

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ENGINEERING EVALUATION / COSTS ANALYSIS
HORTON STREET EXTENSION
6121 Hollis Street
Emeryville, California

1.0 INTRODUCTION

not consistently used

Wareham Development is conducting remedial soil activities at 6121 Hollis Street in Emeryville, California (the Site) in association with redevelopment activities in the adjacent properties. As part of the construction project, Wareham is coordinating the installation of subsurface utilities at the Site and the construction of a street extension (the continuation of Horton Street to 62nd Street).

Prior activities by others at the Site and adjacent areas resulted in shallow soils (e.g., less than six feet below ground surface) affected by polychlorinated biphenyls (PCBs). To complete the installation of utilities and street construction, soils (some containing elevated concentrations of PCBs) will be excavated from the Site. To protect construction workers during this planned activity and to provide safety for future utility workers, soil with elevated concentrations of PCBs beneath the planned street extension will be excavated and remediated. Soil with elevated PCB concentrations outside of the excavation limits required for this new street construction or subsurface utility installation will not be included in this remedial action.

1.1 Purpose

The purpose of the Engineering Evaluation and Cost Estimate (EE/CA) is to identify and evaluate alternatives for ~~handling and~~ remediating PCB-contaminated soil ~~excavated~~ during a planned construction activity at the Site. The PCB-contaminated soil is the result of activities by others and the excavation and remediation of soil discussed in this EE/CA is not the result of, nor required by a regulatory enforcement action or other administrative order.

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1.2 Limiting Conditions and Methodology

This evaluation is solely based on information provided in previous site investigations, and as such, no additional site-specific data was collected for the preparation of this EE/CA.

Although the planned remedial actions for this site are not regulated by CERCLA, this EE/CA generally follows the methodology and format for Engineering Evaluations and Cost Estimates as described in the U.S. Environmental Protection Agency Publication 9360.0-32, *Guidance on Conducting Non-Time-Critical Removal Actions Under CERCLA*. This methodology was chosen as an appropriate and efficient approach to evaluate and select a remedial alternative for the PCB-contaminated soil at this site. However, use of this methodology does not imply that this removal action or other site activities will be conducted under CERCLA guidance.

2.0 SITE CHARACTERIZATION

This section provides a site description and relevant available information regarding the site and adjoining properties.

2.1 Site Description and Background

The project site is located on property immediately north of the former Westinghouse Electric Corporation (Westinghouse) property at 5815 Peladeau Street in Emeryville, California. The property presently consists of an office building on much of the eastern portion of the Site, and a U.S. Post Office building on a portion of the western portion of the site (Figure 1). The remaining area of the Site consists of a paved parking area used by occupants of the office building and the U.S. Post Office.

2.2 Local Geology and Hydrogeology

Local Geology

The site is located along the eastern San Francisco Bay margin (approximately 0.5 miles east of the existing bay shoreline). The elevation of this area is very near sea level (between 12 and 14 feet above mean sea level) and has been frequently inundated by the San Francisco Bay during deposition and formation of the native subsurface materials at the site. The uplands (Berkeley Hills) approximately 3 miles to the east are most likely the source of the geologic material (alluvium and colluvium) presently found at the site. The uplands to the east are the result of local uplift along the Hayward Fault.

sum geological data in OSS

A detailed subsurface geological investigation has not been performed at this site to date. However, based on information from nearby sites and general geological studies performed by the United States Geological Survey (USGS), the shallow subsurface (upper 30 feet) most likely is comprised of unconsolidated, layers of fine-grain material such as sand, silt and clay. Because this site is located within a heavily developed area, several feet of artificial fill material may be present overlying the native soil.

Hydrogeology

A detailed hydrogeological investigation at the site has not been conducted. In general, the local groundwater flow at the site should be to the west, from the Berkeley Hills towards the San Francisco Bay. However, site-specific conditions, such as buried stream channels, fill material, or deep utility corridors could locally influence the groundwater flow immediately beneath, or adjacent to the site. Additionally, the site is located approximately 0.5 miles from the San Francisco Bay margin, and the shallow groundwater flow direction and gradient may be influenced by tidal fluctuation.

Based on the previous soil sampling activities, shallow groundwater at the site is anticipated to be at depths of greater than 4 feet below the ground surface. In 1999 at a site approximately 750

feet to the east, shallow groundwater was measured at between 18 and 19 feet below the ground surface.

2.3 Previous Studies

Several soil investigations have been performed at this site to evaluate the presence and distribution of PCB-contaminated soil. Those investigations are:

- February 1981 California Department of Health Services (DHS)
- June 1981 ITT Grinnell Corporation (by CH2M HILL)
- August 1990 U.S. Postal Service (by Harding Lawson Associates)
- August 2000 Viacom, Inc. (by SOMA Environmental Engineering, Inc.)

Those investigations have provided analytical data used to delineate the lateral and vertical extent in PCBs in soil at the site. Analytical results of these investigations are discussed below and copies of the investigation reports prepared by SOMA Environmental Engineering, Inc., (2000) and Harding Lawson Associates (1990) are included in this EE/CA as Appendix A.

2.4 ~~Previous~~ Removal Actions at Adjacent Site? (Heading implies other than site)

A Cleanup and Abatement Order (CAO No. 85-006) was issued in 1985 by the Regional Water Quality Control Board, San Francisco Bay Region (RWQCB) for the Westinghouse property south of the site. The CAO was issued stating that Westinghouse took "inadequate action to prevent the movement of PCB-contaminated soil offsite." To address CAO No. 85-006, Westinghouse constructed a continuous 35-foot-deep slurry wall surrounding PCB-contaminated soils along their property boundary. Contaminated soil (concentrations greater than 50 parts per million) from outside the wall and from various areas along the northern and eastern portions of the site was excavated and placed within the slurry wall containment area. That PCB-contaminated soil was later sealed with an erosion-resistant engineered cap designed to reduce

Which site? the Site?

surface water infiltration and to prevent further migration and exposure of PCB-contaminated soil.

2.5 Source, Nature, and Extent of Contamination

The detected soil contaminants at the site consist of polychlorinated biphenyls (PCBs). The source of this site contamination is apparently from previous industrial activities at this site or from adjacent properties dating back to before 1950. Some soil remediation has occurred which includes the installation of a continuous subsurface slurry wall and covering the surface soil with an engineered cap to reduce water infiltration and erosion.

at this site or adj ? site if latter, delete

Based on existing data, contamination in the soil has been detected from 0.5 and 6 feet below ground surface (bgs) with the highest concentrations within the upper 1.0 foot of the surface. Elevated concentrations of PCBs significantly decreases with depth as observed in sampling intervals at 0.5, 3.5 to 4.0, and 6.0 feet bgs. PCBs were not detected in soil samples collected at 9.0 feet bgs.

Groundwater at the site has not been collected or analyzed. However, based on the observed significant decrease in PCB concentration with depth (i.e., three orders of magnitude decrease between 0.5 and 6.0 feet below ground surface), and because PCBs were not detected in samples collected from 9.0 feet below ground surface, it is unlikely that the groundwater at the site has been significantly affected.

also low solubility of PCBs

PCB-contaminated soil is present beneath a majority of the site; however, the PCB-contaminated soil is covered with the engineered cap or pavement. The investigation and report prepared by SOMA Environmental Engineering (2000) defines the lateral and vertical extent of PCB-contaminated soil within the proposed project area (see Appendix A).

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3.0 IDENTIFICATION OF REMOVAL ACTION OBJECTIVES

3.1 Statutory Limits on Removal Actions

The ~~excavation and~~ remediation of PCB-contaminated soil discussed in this EE/CA is ~~required~~ being evaluated as part of a construction project being performed in association with redevelopment activities, and is not the result of, or required by a regulatory agency or other administrative order. Therefore, there are no statutory limits establishing or guiding the ~~excavation and~~ remediation ~~extent~~ of the planned street construction. The project cleanup objectives are based on health-based risk objectives designed to protect construction workers for this redevelopment activity and to protect future utility workers.

Soil ~~excavated during this~~ within the project area will contain detectable concentrations of PCBs. Disposal of soil (solid material) containing PCBs is regulated by the Toxic Substances Control Act of 1976 (TSCA) and by the Hazardous Waste Management Act of 1986 (HWMA). ~~Excavated~~ soil with less than 50 ppm PCBs is not regulated by HWMA and typically can be reused or left in place; whereas, ~~excavated~~ soil having PCB concentrations above 50 ppm is to be disposed at an offsite, EPA-approved (TSCA) land disposal facility (Class I in California), or incinerated.

3.2 Determination of Removal Scope

Because there are no regulatory orders for this removal action, the extent of soil being ~~excavated and~~ remediated has been determined by project design specifications and negotiations with the Regional Water Quality Control Board (RWQCB) and the City of Emeryville. Based on those discussions, the following criteria for the ~~soil excavation~~ extent of soil remediation was established for this project:

- Minimum of one foot of clean soil below the planned sewer line
- Minimum of one foot of clean soil below PG&E's utility trench
- Minimum of two feet of clean soil beneath the entire width of the new street (including beneath sidewalks)
- Two to 2.5 feet of clean soil below the street level within a corridor for future utilities.

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The RWQCB has previously agreed on a cleanup concentration level of 59.3 ppm for this project (SOMA Environmental Engineering, 1996). This value is protective to future construction/utility workers. An additional cleanup level for PCB-contaminated soil was also agreed upon. That value, 2.85 ppm, is the cleanup level for soil less than 2 feet deep (below ground surface).

3.3 Determination of Removal Schedule

In order to complete this project before the heavy seasonal rains begin in the San Francisco Bay area, this redevelopment and construction project is on an accelerated schedule. Delays in this project will require additional site control measures to reduce erosion and to prohibit surface runoff. The estimated duration for this road construction project is two months. The ~~contaminated~~ soil remediation ~~excavation and subsequent disposal~~ will occur within the first month of construction.

3.4 Planned Removal Activities

In general, the area beneath the planned roadway will be initially excavated to a depth of approximately 2 feet below the existing grade. The roadway easement is 46 feet wide; however, some additional area on either side of the roadway will be excavated to allow for the construction of sidewalks. Based on the analytical data collected, this upper two feet of excavated soil will contain the highest PCB concentrations, particularly in the southern portion of the project site (see Site Plan). The excavated soil will be analyzed in the field at the time of excavation (using a soil screening technique) so that the soil can be placed in stockpiles according to PCB concentrations. Two stockpiles will be constructed: one for soil with less than 50 ppm of PCBs and one stockpile for soil with more than 50 ppm of PCBs. This planned soil segregation is ~~required~~ because of the soil disposal options. Soil with >50ppm PCBs that requires offsite disposal will be disposed of at the TSCA facility in Kettleman, California. Soil with PCB concentrations of <50 ppm will be reused onsite, as appropriate, or disposed offsite at the Altamont Class II landfill facility.

combine with the description of Alternative 2 in Section 4.1.2

the 3rd bullet in Sec 3.2 is more restrictive than just "some"

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combine w/ 4.1.2

Following the initial soil excavation, additional trenches will be excavated in areas planned for subsurface utilities. Planned sewer and storm drains will require the deepest excavations. Those utility excavations will extend to a maximum of 6 to 7 feet below grade. Some over-excavation in the utility trenches may be required to comply with the RWQCB's request that PCB concentrations of <50 ppm in soil remain at a minimum thickness of one foot beneath utility corridors. Therefore, soil excavated for remediation purposes may extend to, but not more than, 8 feet below surface grade. If over-excavation is required, backfill meeting the cleanup objectives will be placed and compacted.

Following excavation and analytical characterization testing, the excavated soil that cannot be reused on site will be disposed offsite at either a Class I or Class II landfill facility.

4.0 IDENTIFICATION AND ANALYSIS OF REMOVAL ACTION ALTERNATIVES

This section describes the Removal Action Alternatives evaluated for this construction project. As discussed above, the objectives of this Removal Action are:

1. Protect construction workers during road construction
2. Protect future utility workers
3. Protect the existing soil cover (soil cap/paved parking lot).

4.1 Removal Action Alternatives

Two Removal Action Alternatives were evaluated for the preparation of this EE/CA: 1) ~~a~~ No Action ~~Alternative~~, and 2) ~~the~~ Limited Excavation, Offsite Disposal or Reuse, and Capping ~~Alternative~~. Because of the limited treatment technologies available for PCB-contaminated soil (disposal at an EPA-approved facility or incineration) and because of the small property size and short duration of this project (approximately 2 months), offsite soil disposal was presumed to be the most cost-effective method to treat the PCB-contaminated soil.

manage

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4.1.1 Alternative 1: No Action

Typically No Action Alternatives evaluated for the EE/CA process would define No Action as "not proceeding with the removal project" (i.e., no construction of the Horton Street extension). However, because the construction of this road is beneficial to the public and because the City of Emeryville has accepted the Horton Street extension as part of the local redevelopment project; for the purpose of this EE/CA, the No Action Alternative is redefined as "proceeding with the road construction, but without disturbing the existing PCB-contaminated soil."

The No Action Alternative would require significant design modifications and complexity to provide for road construction on or above the existing surface grade, and to redirect subsurface utilities around the PCB-contaminated soil.

4.1.2 Alternative 2: Excavation, Offsite Disposal or Reuse, and Capping

This Removal Action Alternative includes the excavation of soil beneath the planned construction area required to prepare the road base and to install subsurface utilities. Excavation and offsite disposal consists of the physical removal of the soil from the property and hauling the soil to either a landfill for or treatment facility disposal. For this project, excavated soil will be transported to either a Class I or Class II Landfill, depending on the concentrations of PCBs in the soil. Soil treatment consisting of incineration was presumed not financially cost effective because of the long distance hauling (outside of California) to a licensed facility and subsequent treatment and disposal costs; therefore, that treatment option was not evaluated. This Removal Action Alternative is typically used to remove small volumes (generally less than 1,000 cubic yards) of soil. Depending on the PCB concentrations encountered and the final design specifications, the total volume of contaminated soil to be disposed offsite may exceed 1,000 yards. However, because of the limited treatment options for PCB-contaminated soil, excavation and offsite disposal remains the most feasible.

A portion of the soil excavated in preparing the site for construction may have non-detect or low concentrations of PCB that would not require offsite disposal at a licensed facility. Where

possible, this soil will be reused as backfill material to reduce the need for soil hauling and disposal. During excavation, soil suitable (chemically and physically) for reuse will be segregated and stockpiled onsite separate from soil requiring offsite disposal.

Because PCB-affected soil will remain in the subsurface at the Site, X
~~Additionally with this Removal Action Alternative,~~ the completed roadway will provide a competent surface cap reducing the potential for surface water infiltration and preventing surface soil erosion.

Add more description - road base - thickness "
who will be responsible for maintenance? road type - etc

4.2 Effectiveness

4.2.1 Alternative 1: No Action

The No Action Alternative would effectively reduce the potential for worker exposure to the existing PCB-contaminated soil by eliminating the need to disturb that soil and maintaining the existing surface cap. This alternative will not provide any reduced future risk at this site by eliminating the existing soil contamination. Therefore, the long-term health risks of leaving contaminated soil in place would remain unchanged from current conditions.

4.2.2 Alternative 2: Limited Excavation, Offsite Disposal or Reuse, and Capping

X

The limited excavation, offsite disposal or reuse, and capping alternative provides effective methods and procedures to control risks for current and future utility worker exposure and to provide long-term restricted access (surface cap) to contaminated soils left in place. This alternative also reduces the amount of contamination in the project area by relocating that material to a landfill specifically designed to hold and contain hazardous wastes. The excavated contaminated soil will be isolated in a hazardous waste landfill designed to protect human health and the environment. Therefore, the long-term health risks at the site will be reduced by the removal of some contaminants. The new road surface will provide an effective cap in restricting surface water infiltration through the contaminated soil and will prevent surface exposure and erosion of contaminated soil.

4.3 Implementability

4.3.1 Alternative 1: No Action

Alternative 1 may not be readily implementable. Although constructing a roadway on top of the existing grade is most likely technically feasible, it may not be practical or appropriate in that area of Emeryville. Additionally, relocating the subsurface utilities to avoid the PCB-contaminated soil may not be feasible based on requirements for gravity flows and available tie-ins to existing utilities. Required design modifications would prevent this project from being completed within the Removal Action schedule.

4.3.2 Alternative 2: Excavation, Offsite Disposal or Reuse, and Capping

Alternative 2 is readily implementable and can be completed within the planned schedule. This alternative does not require additional or specialized excavation or construction equipment. Many certified contractors that have standard operating procedures for excavating, handling, testing, transporting, and disposing of hazardous materials are readily available to conduct this work cost effectively and safely. The Class I and Class II landfills where this soil would be disposed of are presently accepting wastes from construction and remediation projects.

4.4 Cost

4.4.1 Alternative 1: No Action

Costs associated with the No Action Alternative would include at a minimum significant design modifications to allow for the road construction above the existing grade, increased road construction costs, and increased cost to redirect subsurface utilities. Because this Removal Action Alternative does not appear feasible or appropriate, the higher associated costs would not be the deciding factor to selecting this Removal Action Alternative. Therefore, a detailed cost estimate was not prepared for this alternative. The presumed cost increase associated with this alternative would be significantly greater than excavation and offsite disposal of PCB-contaminated soil.

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4.4.2 Alternative 2: Excavation, Offsite Disposal or Reuse, and Capping

Costs associated with the excavation, offsite disposal or reuse, and capping alternative will include excavation equipment, soil hauling charges, disposal charges (including State disposal taxes), and backfilling costs, and road construction costs to provide a competent surface cap. Assuming the PCB concentrations in excavated soil will be between 50 and 1,000 ppm, the cost per cubic yard to haul and dispose of the PCB-contaminated soil, excluding excavation and backfilling, would be approximately $110 (for disposal at the Class I facility in Kettleman, CA). The disposal costs of soil containing PCB concentrations in excess of 1,000 ppm will be significantly higher. The hauling and disposal costs for soil taken to the Altamont Class II facility would be less than those costs of Class I disposal. ~~However, for this evaluation, it was assumed that all soil requiring offsite disposal would be taken to the Class I facility in Kettleman, CA.~~

Since you didn't provide a cost estimate for this alternative, you don't need to make this assumption

~~In addition to disposal costs, other project costs for implementing Alternative 2 will be incurred.~~ ~~These~~ additional costs are the incremental project increases typically associated with working with and handling hazardous materials, and are not directly related to the volume of soil excavated. These costs include at a minimum: preparing hazardous waste health and safety plans and waste sampling and analysis plans, permitting, additional site controls (i.e., to prevent public access and surface water runoff during construction), additional chemical analyses for waste profiling and confirmation, field screening to segregate reusable excavated soil, using certified hazardous waste professionals and contractors, manifesting, and reporting. These additional costs are estimated at approximately $35,000 for a project of this scope.

Add Road Construction Costs!

The duration of this project will be less than one year, so present net worth cost analyses are not ~~required~~ necessary for this EE/CA.

no total project costs to apply this to!

5.0 COMPARATIVE ANALYSIS OF REMOVAL ACTION ALTERNATIVES

~~The limited treatment options available for PCB-contaminated soil makes the comparison of the potential Removal Action Alternatives relatively straightforward.~~ Alternative 2 is the best Removal Action Alternative available to meet the removal action objectives and to complete the

this is not a comparison

proposed construction project in a timely manner. This alternative provides the most effective, easily implemented, and lowest cost alternative to remove, handle and dispose of the PCB-contaminated soil. This alternative is protective of current and future construction workers and the general public. The excavation will reduce the amount of contamination in the soil at the project site, and provide for the permanent isolation and containment of that material excavated.

6.0 RECOMMENDED REMOVAL ACTION ALTERNATIVE

Alternative 2 is selected and recommended as the preferred Removal Action Alternative. The scope of this selected alternative is summarized below:

- The area beneath the planned roadway will be initially excavated to a depth of approximately 2 to 3 feet below the existing grade. The roadway easement is 46 feet wide; however, some additional area on either side of the roadway will be excavated to allow for the construction of sidewalks. → the 3rd bullet in Sec 3. a more restrictive excavation

- The excavated soil will be analyzed in the field at the time of excavation so that the soil can be placed in stockpiles according to PCB concentrations. Two stockpiles will be constructed: one for soil with less than 50 ppm of PCBs and one stockpile for soil with more than 50 ppm of PCBs. This planned soil segregation is required because of the soil disposal options. Soil with >50ppm PCBs that requires offsite disposal will be disposed of at the TSCA Class I landfill facility in Kettleman, California. Soil with PCB concentrations of <50 ppm will be reused onsite, as appropriate, or disposed offsite at the Altamont Class II landfill facility.

- Trenches beneath the Horton Street extension will be excavated in areas planned for subsurface utilities. Planned sewer and storm drains will require the deepest excavations. Those utility excavations will extend to a maximum of 6 to 7 feet below grade. Some over-excavation in the utility trenches may be required to comply with the request that PCB concentrations of <50 ppm in soil remain at a minimum thickness of one foot beneath utility corridors. Therefore, soil excavated for remediation purposes may extend

to, but not more than, 8 feet below surface grade. If over-excavation is required, backfill meeting the cleanup objectives will be placed and compacted.

- Following excavation and analytical characterization testing, the excavated soil that cannot be reused on site will be disposed offsite at either a Class I or Class II landfill facility.

- The Horton Street extension will be constructed providing a cap for the PCB-contaminated soil remaining beneath the roadway easement. Areas of the existing pavement that were removed or damaged during construction will be repaired or replaced to provide a continuous cap. Add more description

7.0 REFERENCES

Harding Lawson Associates, Inc. 20 September 1990. *Shallow Soils Investigation, 6121 Hollis Street, Emeryville, California.* Letter to Mr. Ray Jones, United States Postal Service.

SOMA Environmental Engineering, Inc. 2 February 1996. *Baseline Human Health Risk Assessment for the Former Westinghouse Electric Corporation Facility, 5899 Peladeau Street, Emeryville, California.*

SOMA Environmental Engineering, Inc. 8 August 2000. *Delineation of the Extent of PCBs Contamination at the Heritage Square Property Located at 6121 Hollis Street, Emeryville, California.*

United States Environmental Protection Agency (EPA). *Guidance on Conducting Non-Time-Critical Removal Actions Under CERCLA.* EPA/540-R-93-057, Publication 9360.0-32, August 1993.

United States Geological Survey. 1957. *Areal and Engineering Geology of the Oakland West Quadrangle, California.* Miscellaneous Geologic Investigations, Map I-239.