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HUNTERS POINT  
SSIC NO. 5090.3

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

REGION IX

75 Hawthorne Street  
San Francisco, Ca. 94105-3901

MAY 11 1994

Mr. Dave Song  
Western Division  
Naval Engineering Facilities Command  
Mail Code: 09A21DS  
900 Commodore Street  
San Bruno, CA 94066-2402

Subject: Draft Parcel E Site Inspection Report Comments

Dear Mr. Song:

Enclosed are our comments regarding the Draft Parcel E Site Inspection Report dated March 22, 1994. As indicated in the comments, the U.S. Environmental Protection Agency (EPA) has several concerns regarding the recommendations for the Parcel E investigation as given by the Navy and its contractors. After your review of the comments, we suggest that a meeting be scheduled to discuss both U.S. EPA and Cal EPA's concerns and determine a course for their resolution.

In addition, we recommend that a series of working technical meetings be scheduled to begin the process of organizing, coordinating, and assessing all of the available information for Parcel E, as well as for the other parcels. Our over-arching concern regarding the site inspection reports as a whole, is that no coordinated assessment of the data has yet been provided which supports the Remedial Investigation Work Plan activities. In particular, there is no assessment of the data gaps which might prohibit a comprehensive understanding of the nature and extent of contamination in the parcels and basewide. Further, there is no assessment of the data quality objectives necessary to support a meaningful Remedial Investigation Report, Public Health and Environmental Evaluation, Feasibility Study, Ecological Risk Assessment, and Basewide Record of Decision.

I look forward to your review of these comments and our discussion of them. If you have any questions, please contact me at (415) 744-2409.

Sincerely,

A handwritten signature in cursive script, reading "Alydda Mangelsdorf".

Alydda Mangelsdorf  
Remedial Project Manager

### 3 Enclosures

cc: B. Smith, RWQCB  
C. Shabahari, DTSC  
R. Raymos, WESTDIV  
M. McClelland, WESTDIV  
D. Klimas, NOAA  
M. Martin, DFG  
J. Haas, USFW  
A. Brownell, SFPHD  
K. Glatzel, Port of San Francisco  
N. Wakeman, BCDC

General Comments

1. This SI report serves as the last formal document prior to the RI Report for Parcel E. At this time, there is no document which contains an evaluation of the IR sites and any additional investigatory work which may be required to fully characterize the nature and extent of contamination at those sites. Unlike the other parcels, no Alternative Selection Report was prepared for Parcel E which undertakes this task. As such, it is essential that the SI Report/RI Work Plan provide a holistic assessment of Parcel E given the information known today such that a Site Conceptual Model of the contaminants of concern, migration pathways and receptors of concern can be developed. Most importantly, PA sites must be evaluated in the context of the overall contamination at the site. For example, storm drains in the vicinity of IR-2 might not be considered a conduit of concern if one did not simultaneously consider the contaminants present at IR-2 which may be entering the storm drain system and discharging to San Francisco Bay.
2. As per recent FFA negotiations, the Parcel E investigations are to provide support for the basewide Record of Decision. Based on this arrangement, it is imperative that the Parcel E Remedial Investigation include a systematic evaluation of the physical and chemical conditions of groundwater at Hunters Point Annex. Further, it is critical that the Parcel E RI include investigation of Navy-owned bay sediments sufficient to support a remedial decision regarding sediment cleanup, if remediation is deemed necessary. In addition, given that the Parcel E RI will support the basewide Record of Decision, it is important that the RI work plan be viewed as an iterative document subject to change as new conditions are discovered and new investigatory needs are identified as necessary to support the basewide Record of Decision.
3. There are several areas/facilities in Parcel E which have not yet been identified as either a PA or IR site. The SI Report should contain a brief description of these areas/facilities and a rationale for not investigating their potential to contribute contamination to Parcel E and San Francisco Bay. Please provide an inventory of the building, utility, disposal and industrial areas within Parcel E including an indication of which sites have undergone RI-

level work, which sites have undergone SI-level work, which sites are identified for PA-level work, and which sites have received no investigation at all. A description of each investigation site (PA, SI, and RI) should include an assessment of whether or not adequate information has yet been collected to characterize the nature and extent of contamination at that site, including but no limited to the nature and extent of contamination migration, even in the case where a point source has not been firmly identified.

4. Several of the PA sites are also part of a separate underground storage tank (UST) closure program. The SI describes the proposed scope of work for additional investigation at each of the UST sites. The SI should provide supporting data used to develop the proposed UST scope of work at each UST closure site in Parcel E.
5. A significant portion of Parcel E is bordered by San Francisco Bay, some parts extending several hundred feet into the bay. There are many potential pathways of contaminant migration, either from Parcel E contaminant sources (point or non-point) or through Parcel E from other Parcel sources which may contribute to risk to those biota which reside in or rely on the bay and/or its shore front. For example, there are storm drains and sewer lines discharging to the bay from Parcel E which have a history of illicit contamination disposal to them. There are steam lines, storm drains, sewer lines, and utilidors which may act as natural conduits transporting contaminated surface water or groundwater from contaminant sources to areas of communication with the bay. And, there is a shallow tidally-influenced aquifer to which Parcel E contaminants may be transported via infiltration.

The RI work plan should be integrated with the Ecological Risk Assessment where possible. It should identify criteria to screen on-shore data for its potential to cause ecological risk to the intertidal and near shore ecosystems. And, it should include sampling locations appropriate for determining the extent to which shore-based contaminants have migrated to the bay.

6. The SI report does not assess whether the RI-level work proposed in it, together with data from investigations of IR site and other interim actions is sufficient to prepare both a parcel RI report and support a basewide Record of

Decision. The SI report should include an assessment of whether the existing data and proposed additional data will be sufficient to prepare a parcel RI, public health and environmental evaluation, feasibility study and support a basewide Record of Decision. U.S. EPA does not now believe that the current proposal can accomplish the above. It is our concern that final closure and transfer of the property might be made difficult if the Navy does not immediately begin its evaluation of collected data on a basewide basis to determine if contaminant sources have already or are likely to migrate from one parcel to another and from any given parcel to San Francisco Bay. EPA recommends a series of working technical meetings to begin immediately for the purpose of plotting all known information and assessing basewide conditions.

7. To support the evaluation suggested in General Comment #6, summary surface map(s) of Parcel E should be prepared indicating the locations of all existing and proposed soil borings (their depths), grab groundwater sample locations, Hydropunch locations, and groundwater monitoring wells. Existing and proposed sampling locations should be distinguished by the use of different symbols or colors. The maps should also illustrate the extent of existing and proposed exploratory excavations and locations of existing and proposed trenches. Maps should include sampling locations in both IR and PA areas.
8. To further support the evaluation suggested in General Comment #6, summary map(s) should also be prepared showing the lateral and vertical extent of detected contamination in all areas of Parcel E. Different symbols and/or colors should be used to distinguish the degree/nature of detected contamination at each location. Given that data has been collected for groundwater, air, soil, and sewer/storm water at 10 IR sites and 10 PA sites and surface water and sediment data has been collected on Navy-owned property in San Francisco Bay, there should be enough information to begin developing contaminant concentration maps for each media, including groundwater data on ebb, slack and flood tides, as a basis for testing the RI hypotheses and developing/confirming a parcel conceptual model.
9. Several criteria appear to have been applied to the SI data as a means of screening it to determine which sites should be further investigated in the RI. Those criteria include:

Interim Ambient Levels (IAL), Health Based Levels (HBL), and point source identification.

As you are aware, U.S. EPA has opposed the IALs which were developed by the Navy and instead has supported those calculated by the California Environmental Protection Agency, Department of Toxic Substances Control. SI sites must be re-evaluated by applying those Cal/EPA IALs which are lower than Navy IALs.

Also, as you know, U.S. EPA has opposed the use of HBLs without consideration of cumulative or total risk. PA sites can not be eliminated from further investigation based on an HBL alone. An understanding of the degree to which any PA site contributes to a cumulative or total risk is also required. SI data must be re-evaluated with this consideration.

Further, while it is the goal of an SI to identify sources of contaminants in preparation for characterizing the nature and extent of contamination in the RI, having identified only the presence of but not the source of contaminants in the SI stage can not be a reason for dropping an area from further consideration in the RI. Some sources may simply be difficult to track while others may in fact be disperse. In either case, the nature and extent of the contamination must be fully characterized so that in the event that remediation is infeasible, future land user are aware of the full extent of its presence and land use restrictions can be properly applied.

10. All references in the SI Report and Public Summary to the Base Closure Team (BCT) and its support of the documents must be deleted. U.S. EPA, as a member of the BCT, has not accepted the SI Report--not has it been involved in the publication of it.
11. The Public Summary included as part of the SI Report does not adequately describe in lay person's terms the goals, methods, and accomplishments of the SI. It should be rewritten to more thoroughly describe such. In addition, it should include a "road map" of the general direction of investigation at the Hunters Point Annex, as well as a guide to the relevant documents associated with the investigations. Further, the Public Summary should include a more detailed "road map" of the investigations and interim

actions in Parcel E, as well as a guide to the relevant documents for Parcel E, including a guide to basewide investigations and documents such as those associated with groundwater monitoring and the ecological assessment.

12. The Navy must assert a position regarding the interpretation, use and/or re-analysis of the tentatively identified and unidentified compounds.

#### Specific Comments

1. The FFA assumed that the parcel SI data presentations would provide adequate information to support RI tasks for those sites proposed for RI-level work. Similarly, the SI parcel reports were to provide adequate information to support recommendations for no further investigation at PA sites where such a recommendation was made. Adequate information to support No Further Investigation recommendations is not presented in the Parcel E SI Report for the sites listed below. Discussion of each of these sites is presented in the remaining Specific Comments.

PA-45	Steam lines
PA-47	Fuel Distribution lines
PA-50	Stormwater and Sanitary Sewers
PA-38	Buildings 507 and 509
PA-40	Building 527 Electrical Substation
PA-52	Off-site Railroad Right-of-Way
PA-54	Building 511A Woodworking
PA-56	Area VII, Railroad Tracks and UST Site 28

#### **PA-45--Steam lines**

2. PA-45. The SI Report says: "The affected areas appears to be confined to only those segments of the system linking Drydock 4, Berth 29, and Tank S-505]." Please provide the supporting evidence for this claim.
3. PA-45. The steam line system connecting Drydock 4, Berth 29 and Tank S-505 cross over the Parcel D/Parcel E boundary. As such, the findings associated with the steam line investigation in Parcel D should be summarized and included in the description of findings in Parcel E. Without such coordination, the overall impacts associated with this transfer of PCB-laden oil through the steam line system is at risk of becoming obscured.

4. PA-45. According to control diagrams only, the steam line system of interest extends along Berth 22, Pier 1, Berth 29, and Pier 2. Plate 8 identifies those segments of steam line to be present but uninvestigated. Given the presence of oil within the steam lines in and around the 500 series buildings as confirmed by the SI, it would be prudent to confirm that the down gradient lines (i.e., at Berth 22, Pier 1, Berth 29, and Pier 2) do not similarly contain oil or other contaminants. The berth and pier areas are particularly sensitive due to their proximity to the Bay and aquatic receptors therein.
5. PA-45. Why were the lines connecting Buildings 512, 513, and 516 not spot-checked for the presence of contaminants? It would be prudent to do so.
6. PA-45. Five test pits were excavated and only 1 was sampled. That one, despite the lack of visible contamination, contained levels of mercury and arsenic exceeding HBLs and elevated levels of lead, copper, and zinc. The test pits excavated along the steam lines closer to the bay, in particular at PA45ST406, should be sampled for further evidence of soil contamination, or lack thereof.

U.S. EPA supports the Navy recommendation for further investigation of utilidor integrity since that assessment was not completed as part of the SI. Should this investigation determine that any segments of the utilidor are cracked or broken, additional environmental sampling in association with those segments must be considered.

7. PA-45. The Navy recommends no further investigation along those steam lines which are contained within utilidors. Are there steam lines laid directly in the ground? If so, where are they? U.S. EPA recommends that soil boring or trenches be sampled in areas where steam lines are laid directly in the ground.
8. PA-45. Oil was observed in the severed end of the steam line at PA55ST500. A soil sample at PA55ST500 should be collected and analyzed to determine the need for further soil and groundwater investigation.
9. PA-45. Oil was observed in the steam line south of Building 521, between Building 521 and Tank S-505. Will this line be

removed? If not, soil samples along this segment of the steam line are required. If this segment of steam line is to be removed, environmental samples could be collected during the steam line removal.

10. PA-45. The data collected as part of the steam line investigation must be evaluated in association with ecological criteria.
11. PA-45. Samples collected at PA45TA07 exceeds U.S. EPA's Preliminary Remediation Goals (PRG) for arsenic and chromium. In addition, the detection limit for beryllium is greater than U.S. EPA's PRG.
12. PA-45. Samples collected at PA45TA19 exceed U.S. EPA's PRG for arsenic and chromium.

#### **PA-47--Fuel Distribution System**

13. PA-47. Fuel lines connect Berth 29 to Tank S-505 and Building 521. Building 521 housed a power plant fueled by the petroleum transported there. As confirmed in the SI at PA-45, steam lines also connected Drydock 4, Berth 29, Tank S-505 and Building 521. Has the Navy considered the potential for surface soil and sediment contamination due to the burning of PCB-laden waste oil in Building 521? If not, random soil samples for dioxins and other PCB by-products should be considered for the area surrounding Building 521 which could be impacted by such burning operations.
14. PA-47. The field investigation focused on bends and junctures in the piping system as areas most likely to exhibit leakage. Of what material is the piping made? Are they likely to break or crack in the long sections where ground settling has occurred? If so, additional sampling is required in those areas.
15. PA-47. Six trenches were excavated but only 5 were sampled. Why was the sixth trench not sampled? Without an adequate explanation of this omission, the sixth trench should be sampled.
16. PA-47. The data collected as part of the fuel line investigation must be compared to ecological criteria to ensure it does not represent a potential risk to terrestrial and aquatic receptors.

17. PA-47. Levels of DDE, DDT, chlordanes, Aroclor, copper, lead and zinc were detected at PA47TA04--a test pit near Building 521. What is the Navy's hypothesis regarding this finding? The extent of pesticide and metal contamination must be further evaluated.
18. PA-47. Low levels of petroleum were detected at PA47TA01, PA47TA02, PA47TA03, and PA47TA05. Are these four samples meant to be representative of PA-47 as a whole? If not, a sampling design which does represent PA-47 as a whole must be developed to confirm or disprove the presence of petroleum in the soil at PA-47 as a widespread phenomenon.

#### **PA-50--Stormwater Drainage System**

19. PA-50, Stormwater System. The print of Plate 11 does not reproduce well and is not legible. This map must be improved so that sampling station identification numbers are discernable.
20. PA-50, Stormwater System. Only 2 soil samples were collected from test trench pits in PA-50. At PA50TA13, levels of Aroclor, petroleum and metals were identified. At PA50TA14, low levels petroleum and metals were identified. Are these two samples meant to represent the whole of PA-50 (Stormwater System)? If not, a sampling design which does represent the whole of PA-50 (Stormwater System) should be developed to confirm whether or not the stormwater system in Parcel E is contributing low levels of contaminants to the site as a widespread phenomenon.
21. PA-50, Stormwater System. Plate 12 does not depict the findings at PA50TA13. Plate 12 must be revised to include all findings.
22. PA-50, Stormwater System. Page 17 indicates that the Parcel B Tank Farm investigation found open stormwater sumps of a kind which may be present in Parcel E, as well. The SI Report provides no information regarding the investigation of this possibility either as part of the SI or the RI.
23. PA-50, Stormwater System. Between PA50SW511 and PA50SW512, sections of pipe are broken but no samples were collected. Contaminant contributions from this segment of line must be further investigated.

24. PA-50, Stormwater System. Three storm drain sediment samples were collected: PA50SW500, PA50SW501, and PA50FS417. Detected compounds included: Aroclor at levels exceeding HBLs, other organics, and elevated metals at all three locations. These findings indicate a need to look upgradient of each sampling location for the sources of contamination. If concentrations of runoff exceed criteria, then the source material maybe very concentrated, indeed.
25. PA-50, Stormwater System. Page 18 read: "Several areas of poor pipeline integrity were identified (Plate 12 and 13)." However, Plates 12 and 13 do not appear to contain the referenced information. Plates 12 and 13 should be revised to depict those segments of poor pipeline integrity identified as part of the SI.
26. PA-50, Stormwater System. Do the 3 sediment samples represent the condition of the whole stormwater drainage system of Drainage Area A? If not, a sampling design should be developed which would represent the condition of sediment within the Parcel E stormwater system as a whole.
27. PA-50, Stormwater System. Soil samples collected at Test Pit PA50TA13 and PA50TA14 are not associated with any of the sediment sampling stations nor any of the areas of poor pipe integrity. As mentioned above, PA50TA13 is not depicted on Plate 12. However, according to the data presentation notes, it is associated with PA50SW511 from which no samples were collected. Additional test pits must be sampled in the vicinity of broken lines and near sediment stations in which contaminants were detected. Cracks were observed in pipe segments between PA50SW431 to PA50FC502, PA50SW506 to PA50SW508, and PA50SW512 to PA51SW511.
28. PA-50, Stormwater System. In accordance with U.S. EPA's recommendations regarding the Environmental Sampling and Analysis data collected in bay sediments, the Drainage A outfall area should be investigated for the presence of Aroclor and the other organics and metals which were detected within the stormwater drainage system.
29. PA-50, Stormwater System. In accordance with the findings in PA-45 at Building 521, the potential movement of DDE-, DDD- and Aroclor-contaminated soil to the stormwater system and San Francisco Bay must be investigated.

**PA-50, Sanitary Sewer System**

30. PA-50, Sanitary Sewer. The Navy asserts that in the southern portion of the site, the sewer system is above the groundwater level and therefore may act as a source of contamination to groundwater in those areas where cracks and holes exist. In the northern portion of the site, the sewer system is below the level of groundwater and therefore acts as a sink in those locations where cracks and holes exist. What is the impact of tidal fluctuations of groundwater on these assertions?
31. PA-50, Sanitary Sewer. Page 19 reads: "The Sanitary sewer was included in the SI program because contamination could be release to groundwater from the sewers, principally via breaks or leaks in the lines." This sentence should be modified to add: "but also from past and current connections to the stormwater drainage system with potential contamination of bay surface waters and sediments."
32. PA-50, Sanitary Sewer. The sanitary sewer investigation included observations at 12 manholes. No observations of the sanitary sewer were made in Reach 9 between PA50SN426 and PA50SN427. Further, no observations were made in Reach 10 where the sanitary sewers are suspected of being in very poor condition. Please provide a rationale for this omission. U.S. EPA believes observations of these segments should be conducted.
33. PA-50, Sanitary Sewer. Plate 14 is not legible and must be revised so that sample identification numbers are discernable.
34. PA-50, Sanitary Sewer. Thick sediments were observed in the sanitary sewers at Building 506. Where might they be coming from? Is there a connection with the stormwater system which is worthy of concern? Given the poor conditions of Reach 8, U.S. EPA believes that the association of the sewer system with Building 521 tanks should be further evaluated.
35. PA-50, Sanitary Sewer. The well completion logs for PA50MW10A are referenced to Appendix D but are not contained there. Please provide these logs and correct the citation.

**PA-50, Stormwater and Sanitary Sewer System**

36. PA-50. The condition of the stormwater and sanitary sewer systems has been observed to be poor. Further, the system was at one time a combined system with discharge to San Francisco Bay. At present, only the stormwater system is known to discharge directly to the bay, but the sanitary system may be contributing to groundwater contamination in some areas. As a means of better directing a more thorough evaluation of these drainage systems and their likely character as a contaminant migration pathway, a conceptual model of Parcel E contaminants, including IR sites and areas where interim actions have occurred, should be developed for the purpose of identifying the most likely contaminants of concern. An RI work plan addendum should be developed to include this effort and describe additional RI data collection needs.

**PA-38, Buildings 507 and 509**

37. PA-38. Samples were collected from only one boring (PA38B0012) at Building 507. Oil and grease were detected above HBLs. Vanadium and zinc were detected above IALs. The report failed to acknowledge exceedances of HBLs for arsenic and beryllium at PA38B002. This data can not be ignored and suggests the need for further investigation.

Was there any radiological survey conducted? If so, what were the results? Radiological data collected as part of a separate investigation must be incorporated here, as well.

38. PA-38. No investigation was conducted at Building 509 because it was only a library, prior to its demolition. What was the initial reasoning for including the library as an PA site?

**PA-39, Building 707 NRDL Animal Colony**

39. PA-39. Contaminants were identified at this site. The Navy must provide a credible hypothesis for the presence of these contaminants to support its recommendation of no further investigation.

**PA-40, Building 527 Electrical Substation**

40. PA-40. There is evidence of a release (perhaps of PCBs) as indicated by "a product sheen over an approximately 1-square-foot area." As stated in our comment on the data presentation materials, concrete is a relatively porous material and need not be cracked to transmit contaminants spilled upon it. As such, further evaluation of this spill is required.
41. PA-40. Building 527 was apparently evaluated with respect to its potential to impact soil or groundwater. It is, if the map is correct, however, on a pier over the water. As such, it should be evaluated with respect to its potential to impact surface water, sediments, and aquatic biota. Such an evaluation should include an assessment of the potential for hazardous constituents to be spilled, dumped or discharged to the pier, floor drains, or concrete floor in a manner which might cause migration to the bay.

**PA-52, Off-site Railroad Right-of-Way**

42. Contamination in the triangular land area just north of Palou Street needs to be characterized. In addition, since the presence of contaminants has been identified at PA-52, immediate measures must be taken to protect the public from exposure to it.

**PA-54, Building 511A Woodworking Shop**

43. PA-54. This site can not be eliminated from further investigation simply because a point source was not identified. The contaminants found may be indicative of contaminants found at other sites at Hunters Point Annex, but not throughout Hunters Point Annex, as indicated in this report. A general assessment of the data indicates exceedances of HBLs for arsenic at all surface sampling points and beryllium in the western-most composite surface sampling locations. In addition, there is an exceedance of the HBL for Benzo(a)pyrene in the surface composite sample at PA54SS01. The data also seems to indicate that surface sample composite locations for PA54SS01 are contaminated with identifiable semivolatile organic contaminants and there is a prevalence of some unidentified semivolatile organic contaminants at lower levels throughout all the surface sampling locations. In addition, there are

indications that the nature of at least some of the semivolatile organic contaminants may be petroleum-related.

Additional effort should be made to physically inspect the site for evidence of releases. Further, additional sampling is required to better characterize the nature and extent of contamination.

**PA-56, Area VII Railroad Tracks and UST Site #28**

44. PA-56. Findings at this site indicate exceedances of arsenic above HBLs at PA56B004 and other HBL exceedances at other sampling locations. The data indicates a prevalence of semivolatile organic contaminants throughout PA-56. Thus, U.S. EPA can not support the Navy's recommendation for no further investigation.

5/5/94

**MEMORANDUM**

**SUBJECT:** Review of the Hunter's Point Parcel E Site Inspection Report

**FROM:** Matthew Hagemann, Hydrogeologist  
Technical Support Section (H-9-3)

**TO:** Alydda Mangelsdorf, Remedial Project Manager  
Navy Section (H-9-2)

Stated objectives of the March 22, 1994 Draft SI include the assessment of site-specific hydrogeologic conditions and, where groundwater contamination is evident, evaluation of groundwater flow direction and gradient (Section 1.1). In my review of the SI, I found these objectives to be unaddressed. Instead, the hydrogeologic characteristics of the site are described only in qualitative and general terms.

The hydrogeologic information in the Parcel E SI is identical to that included in the Parcel B, C, and D SIs. Therefore, the thrust of my comments in the review of the Parcel E SI are the same as general comments made in the review of the Parcel B, C, and D SIs (see memos dated February 28 and March 11, 1994). In short, I recommend the following:

- (1) Determination of tidal influence on groundwater flow rate and direction. This determination should be made using mean hydraulic gradients as described by Serfes (1991).
- (2) Quantification of the fundamental characteristics of the aquifers underlying Parcel C, including hydraulic conductivity, transmissivity, porosity, and storativity.
- (3) Adherence to the format of the *Recommended Content and Presentation for Reporting Hydrogeologic Data During Site Investigations* (CBEC, 1993). (The CBEC report recommends extensive quantification of hydrogeologic characteristics during SIs.)

Other objectives of the SI as stated in Section 1.1 include the identification of contaminant migration pathways and the assessment of potential public health threats. Until the fundamental hydrogeologic information as outlined above is included in the SI or RI for Parcel E, these objectives cannot be met.

**References:**

California Base Closure Environmental Committee, 1993.  
Recommended Content and Preparation for Reporting Hydrogeologic  
Data during Site Investigations. August 5, 1993.

Serfes, M.E., 1991. Determining Mean Hydraulic Gradient of  
Groundwater Affected by Tidal Fluctuations. Groundwater, vol.  
29, no. 4, pp. 549 - 555.

cc: Doug Steele, H-9-3

**Memorandum**

To: Alydda Mangelsdorf (H-9-2)  
Remedial Project Manger

From: Daniel Stralka Ph.D. (H-9-3)  
Regional Toxicologist

Subject: Review of Hunters Point Annex, Risk Assessment Appendix H, Parcel E Site  
Inspection Report, dated March 1994.

Date: 5 May, 1994

I have reviewed the above document and found it to be generally well written and logically presented. The general question that I have pertains to the areas evaluated and the "reality check", by that I mean was the sampling done in the areas to most likely have contamination and was the sampling sufficient to detect contamination if it was there. Splitting the areas due to partial inclusion into an arbitrary boundary is confusing and should be changed to include all the contamination associated with the operations at the buildings. This would entail inclusion and discussion of sampling results from other bordering parcels. Also, where are the results of the other sites in parcel E? There should be rationale for how there were evaluated.

**Specific Comments**

1. Section 2.0 Site Background and Contamination, 3rd para., page H-2. There is a provisional toxicity value for cobalt through the inhalation route of  $2.9E-4$  mg/kg-day as presented in the Region 9 PEG Tables. Therefore, cobalt should be evaluated.
2. Section 3.1 Exposure to Groundwater, 4th para., page H-6. I do not recommend the use of the Designated Level Methodology for determination of impact of vadose zone contamination to groundwater. However, using this model the attenuation factor should be 1 due to the soil type and depth to groundwater.
3. Section 3.2 Exposure to Surface Soil, 7th para., page H-7. Dermal absorption factors presented by California DTSC should be used for this site.
4. Table H-2, page H-25. Arsenic was not detected in the soils at PA-38? This seems odd since arsenic was thought to be present, at least in part, due to background.
5. Table H-?. There is no PA-38 groundwater results. None measured or not included?
6. Table H-11 and H-12. Dermal soil absorption values should follow California DISC guidance.

Addressing these specific comments will not effect the overall conclusions of the report but the changes should be made for consistency in subsequent and base-wide documents.