UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION IX
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July 12, 2007

Mr. Thomas Macchiarella, Code 06CA.TM
Department of the Navy
Base Realignment and Closure
Program Management Office West
1455 Frazee Road, Suite 900
San Diego, CA 92108-4310

RE: Draft Action Memorandum and Work Plan for CERCLA Time-Critical Removal for IR Sites 5 and 10, Alameda Point

Dear Mr. Macchiarella:

EPA has reviewed the above referenced documents submitted by the Navy on May 29, 2007. There are two sets of comments enclosed with this letter. One set relates to the Action Memorandum and deals primarily with associated ARARs issues. The second set of comments relates to the details of the Work Plan. We support and commend the Navy's efforts to supplement and complete the work on the radiological removal action that was started in 1998.

If you have any question, do not hesitate to call me at (415) 972-3029.

Sincerely,

Anna-Marie Cook

Anna-Marie Cook
Federal Facilities Remedial Project Manager

enclosure

cc list: Andrew Baughman, Navy
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EPA Review of the Draft Action Memorandum,
CERCLA Time-Critical Removal Action
Installation Restoration Sites 5 and 10, Buildings 5 and 400,
Storm Drain and Sewer Line Removal, Alameda Point

1. **Section 2.0, Site Conditions and Background:** The organization of this section varies from the Superfund Removal Procedures, Action Memorandum Guidance (EPA/540/P-90/004). For example, the site description should include "Removal Site Evaluation," "Physical Location," and "Site Characteristics," rather than "Hydrology." Hydrology can be a subsection under "Site Characteristics." Please reorganize this section to follow the format outlined in the guidance document.

   In addition, the questions and issues listed in the guidance should be answered. For example, the AM appears to be missing the following:
   - Physical location of the site in terms of surrounding land use, population and distances to populations and reference points.
   - Vulnerable or sensitive populations, habitats, and natural resources.
   - Current uses/tenants of Sites 5 and 10.

   Please revise the AM to include this information.

2. **Section 2.1, Site Background, Page 2-1:** The date Alameda Point was placed on the National Priorities List (NPL) is missing from the history in this section. For completeness, please include the date Alameda Point was placed on the NPL.

3. **Section 2.1.1, Hydrology, Page 2-4:** Since the storm sewer lines from IR Sites 5 and 10 discharge to the Seaplane Lagoon or the Oakland Inner Harbor, it would be more relevant to discuss the hydrodynamics of the Seaplane Lagoon and the Oakland Inner Harbor and how they interact with San Francisco Bay rather than the dynamics of San Francisco Bay. Please revise the text to discuss the dynamics of the Seaplane Lagoon and the Oakland Inner Harbor and how water and sediment in these areas interact with San Francisco Bay.

4. **Section 2.1.3, Removal Site Evaluation, Page 2-5:** The AM states that a radiological characterization survey of the storm drain lines was conducted in 1997 which included storm drain lines from Buildings 5 and 400, but does not elaborate on the results of that survey. Please discuss the survey of the storm drain lines, including whether any cracks or fissures were found and whether there was evidence that the lines were leaking and contaminating the surrounding soil.

5. **Section 2.1.3, Removal Site Evaluation, Page 2-5:** The AM states that the remediation criteria for radium 226 (Ra226) has increased from 5 picoCuries per gram (pCi/g) (prior to 1997) to a total effective dose equivalent (TEDE) less than

15 millirem per year (mrem/yr). Please provide a citation for this standard. Also, please explain how the pre-1997 concentration standard relates to the current exposure based standard.

6. **Section 2.2.1, Previous Actions, Page 2-6:** The AM states that "[b]ased on their history and operations, Buildings 5 and 400 were not subject to former license termination procedures." The basis for this statement is unclear. Please explain the basis for the conclusion that operations at Alameda Point did not trigger license termination procedures.

7. **Section 2.2.1, Previous Actions, Page 2-7:** The AM states that one objective of this investigation "was to identify storm sewer sections that were damaged, located below the water table (submerged), and subject to infiltration of contaminated groundwater (TtEMI 2000)" and that. "The data collected would be used to prioritize storm sewer sections for repair to minimize infiltration of contaminated groundwater and its subsequent transport to the Bay." However, the issues associated with contaminated groundwater and its impact on the TCRA are not discussed. Please discuss the concentrations and chemicals of concern associated with the contaminated groundwater and its impact on the planned TCRA.

8. **Section 2.2.2, Current Actions, Page 2-7:** This section should include a description of all actions/activities currently taking place at Sites 5 and 10 (e.g., six-phase heating to address volatile organic compounds in soil and groundwater). In addition, this section should include a discussion of how the proposed action relates to the current activities described in this section. Please revise the AM to include this information.

9. **Section 4.1.4, Removal and Off-Site Disposal (Selected Remedy), Page 4-3:** The estimated cost of the selected remedy is not provided, although it is provided in a later section. In order to compare the selected remedy with hydroblasting, please provide the estimated cost of removal and off-site disposal or reference Section 4.4.

10. **Section 4.2.1, Proposed Action Description, Page 4-4:** The text states that removal actions will be conducted in a manner to minimize impact to sensitive habitat areas, but only prevention of storm water discharges is discussed in the text. In addition, areas with sensitive habitat are not discussed in the text and a figure with these areas has not been provided. Please clarify whether there are measures other than prevention of storm water discharge to protect sensitive habitat. In addition, please revise the AM to discuss the locations of sensitive habitat and provide a figure that shows the relationship of these habitat areas with the proposed actions.

In addition, measures to control dust, like sprinkling haul roads and areas to be excavated as well as covering all soil piles should be discussed. Please revise the text to include a discussion of dust control measures.

11. **Page 4-6 and ARARs Table p. 1 Clean Water Act Pretreatment Standards, 40 CFR 403.** (a) It is unclear why these requirements would be ARARs. Will there be liquids discharged to EBMUD as part of the remedy? Alternatively, does contamination from the storm sewers currently flow into the EBMUD system? (b) It is also unclear what the requirements are. The citation should be more specific than just 40 CFR 403.

12. **Page 4-6, NRC effluent limitations**.
(a) Discussion on page 4-6 is confusing as it includes NRC and UMTRCA requirements in the same paragraph. It would make more sense to move the UMTRCA requirements to the separate paragraph on page 4-7.
(b) Are these considered ARARs during the cleanup, or are they final requirements that must be achieved if the site is to be available for unrestricted use?
(c) Related discussion in ARARs Table page 4, of 10 CFR part 40, App. A, part I, Criterion 6(6), is confusing. This is part of the NRC regulations, but the ARARs table connects it to UMTRCA instead. Additionally, it would be helpful to state what the requirement is.

13. **Page 4-6,** NRC dose limit of 0.1 rem/year. The discussion on page 4-6 is unclear as to why this would be considered an ARAR. The ARARs Table, page 3, indicates that this is an ARAR to protect the public during the removal action. We'd recommend also explaining that on page. 4-6.

14. **Section 4.3.1.1 Federal Chemical-Specific ARARs –Uranium Mill Tailings Radiation Control Act, Page 4-7:** This section discusses Ra 228 which is not a contaminant of concern at the Site. Please limit the discussion in this section to Ra 226. Additionally, the second to last paragraph (on page 4-8) discusses radon decay product concentration limits, but the issue of radon does not appear anywhere else in the AM. Please explain why radon is relevant. Alternatively, please delete this paragraph.

15. **Section 4.3.1.2 State Chemical-Specific ARARs, Page 4-8:** The stated purpose of the AM indicates, on page 1-2, that the "removal action objectives (RAOs) for this AM are to protect public health and welfare and the environment by physically removing and disposing of Ra 226 impacted storm water and sewer systems and associated soils ..." The regulations cited in this section deal with identifying non-RCRA hazardous waste. Ra 226 is not a substance regulated, on its own, by these regulations. Please revise the AM to clarify how non-radiological non-RCRA hazardous (or mixed) wastes will be handled during this removal action. Please also discuss whether the excavated sewer lines and associated soils will be analyzed to determine if they qualify as a non-RCRA

listed or characteristic hazardous waste. In addition, if other non-radiological non-RCRA hazardous (or mixed) waste is encountered when excavation and analysis of soils is commenced, additional ARARs should be researched and applied to ensure compliance with CERCLA requirements.

16. **ARARs Table p. 5, Basin Plan**. The table indicates that substantive requirements pertaining to beneficial uses and WQOs are ARARs for the surface water and groundwater components of this response action. It is not clear from the discussion on pages 4-10 and 4-11 which WQOs and beneficial uses are ARARs, or why. (a) What uses and/or WQO for surface water are included, and why. Does the storm sewer system drain to the Bay? (b) Page 4-11 says that agricultural and industrial beneficial uses "would be prevented using institutional controls that are proposed for each GW remedial action alternative." What does this refer to? Where in the document are ICs discussed? (c) What GW uses and WQOs are considered to be ARARs? The discussion on pages 4-10 and 4-11 suggests that no GW uses are considered ARARs.

17. **Page 4-12, ESA**. The document states that consultation requirements aren't ARARs but they are TBCs. EPA considers portions of the ESA, such as the prohibition on take, to be substantive, and thus ARARs. Are there any threatened or endangered species in the area that should be considered?

18. **Section 4.3.1.2 State Chemical-Specific ARARs, Comprehensive Water Quality Control Plan for the San Francisco Bay Basin (Basin Plan), Page 4-10:** This section concludes that because the shallow groundwater beneath IR Sites 5 and 10 has little potential as a source of drinking water, "the MUN beneficial use is not considered a [sic]ARAR." However, the corresponding Appendix B entry, on page 5 of the appendix, indicates that these regulations are applicable ARARs. Please revise these sections to be consistent.

19. **Section 4.3.1.2 State Chemical-Specific ARARs, Comprehensive Water Quality Control Plan for the San Francisco Bay Basin (Basin Plan), Pages 4-9 through 4-11:** This section also fails to cite California Water Code regulations consistent with the regulations cited in Appendix B on page 5. Please cite the regulations listed in Appendix B on pages 4-9 to 4-11 of the AM.

20. **Section 4.3.2.1 Federal Location-Specific ARARs, Endangered Species Act of 1973, Page 4-12:** This section states that "[u]nder Section 7(a) of the ESA (16 USC § 1536[a][2]), Federal Agencies must carry out conservation programs for listed species," but the correct citation for this requirement appears at 16 USC § 1536(a)(1) rather than (a)(2). Please correct this citation.

    In addition, this section does not state whether these regulations are applicable or relevant and appropriate. Please specify whether these requirements are applicable or relevant and appropriate.

21. **Section 4.3.2.2 State Location-Specific ARARs, California Coast Act of 1976, Page 4-14:** This section cites multiple sections of the California Coast Act of 1976 including sections not relevant to the AM (e.g. provisions related to protection of productive agricultural lands and archaeological resources). Please edit this section to discuss only sections of the Act relevant to the Removal Action.

22. **Section 4.3.3.1 Federal Action-Specific ARARs, Radioactive Waste Storage and Control, Page 4-15:** The last two sentences of this section provide definitions for a "controlled area" and an "unrestricted area" but do not provide citations for these definitions. Please edit this section to provide citations for these definitions.

23. **Section 4.3.3.1 Federal Action-Specific ARARs, Clean Water Act and State NPDES General Permit for Discharges of Stormwater Runoff Associated with Construction Activity, Page 4-16:** The citation provided for this section (40 CFR 122.44(k)(2) and (4)) related to NPDES stormwater discharge requirements for construction sites over one acre in size does not appear to be correct. Please correct this citation.

24. **Section 4.3.3.2 State Action-Specific ARARs, Bay Area Air Quality Management District Regulation 6-301, Page 4-17:** Please add a subheading to this section on page 4-17, indicating that this regulation is part of the California Health & Safety Code.

25. **Appendix B, Federal and State Chemical-, Action-, and Location Specific ARARs for Buildings 5 and 400 Storm Drain and Sewer Line Removal, Page 2:** The last entry on page 2 cites the 10 CFR section 20.1404(a)(1)-(a)(3) requirement that the maximum exposure limit will be less than 100 mrem/yr. The "Comments" field on the table indicates that this ARAR is relevant and appropriate because radiological material less than 1 pCi/g will remain on site. Please clarify how the expected concentration level of Ra 226 relates to the exposure limit listed in the regulation. Also, please edit the "Requirement" field to more closely summarize the quoted regulation.

26. **Appendix B, Federal and State Chemical-, Action-, and Location Specific ARARs for Buildings 5 and 400 Storm Drain and Sewer Line Removal, Page 3:** The first entry on page 3 indicates that licensed operations include: "construction, operation, and decommissioning of commercial reactors and fuel cycle facilities; possession, use, processing, exporting, and certain aspects of transporting nuclear materials and waste; and siting, design, construction, operations, and closure of waste disposal sites," but licensed operations are not enumerated in the cited regulation. Please expand the citation for this regulation to reference the above listed operations.

27. **Appendix B, Federal and State Chemical-, Action-, and Location Specific ARARs for Buildings 5 and 400 Storm Drain and Sewer Line Removal, Page 3:** The second entry on page 3 establishes limits for effluent releases to an unrestricted area and cites to 10 CFR pt. 20, app. B, Table 2; however, this reference, in Table 3, establishes the "Monthly Average Concentration limitation. Please include a discussion of this limitation as an ARAR.

28. **Appendix B, Federal and State Chemical-, Action-, and Location Specific ARARs for Buildings 5 and 400 Storm Drain and Sewer Line Removal, Page 3:** The last entry on page 3 identifies the standards for cleanup of land and buildings contaminated with Ra 226, Ra 228 and Thorium. Please limit the discussion to Ra 226 if it is the only relevant contaminant of concern.

    In addition, the reference citation provided lists 40 CFR 192.41 as one of the regulations which defines the level of cleanup which is relevant and appropriate, but it appears that this citation is not relevant to this discussion. Please revise this section of the table to indicate the relevance of 40 CFR 192.41 or, alternatively, please delete this section.

29. **Appendix B, Federal and State Chemical-, Action-, and Location Specific ARARs for Buildings 5 and 400 Storm Drain and Sewer Line Removal, Page 5:** As mentioned above, the determination regarding the ARARs listed on page 5, appear to be inconsistent with the AM discussion on page 4-10 to 4-11 in that Appendix B indicates that these ARARs are "Applicable"; whereas the discussion on page 4-10 to 4-11 indicates that these regulations are not considered ARARs. Please resolve these inconsistencies.

30. **Appendix B, Federal and State Chemical-, Action-, and Location Specific ARARs for Buildings 5 and 400 Storm Drain and Sewer Line Removal, Page 6:** The section related to Hazardous Waste Accumulation mistakenly cites regulations related to containers in the "Requirement" field. The correction citation should be 22 CCR 66264.171 – 178. Please revise this section to reflect this correction.

31. **ARARs Table page 8 and page10.** Discussion of requirements related to discharge of groundwater to sanitary sewer system (p. 8) and surface water (p. 10) is confusing. Is there a plan to discharge groundwater to the sanitary sewer system, or to surface water?

32. **Appendix B, Federal and State Chemical-, Action-, and Location Specific ARARs for Buildings 5 and 400 Storm Drain and Sewer Line Removal, Page 11:** The comments related to the Migratory Bird Treaty Act of 1972 are inconsistent with the requirement field. The requirement field indicates that an unregulated taking may include "poisoning at hazardous waste sites"; however, the ARAR determination relates that this legislation is relevant and appropriate (but not applicable) based on the finding that the paved spaces at Sites 5 and 10

do not support special-status species and therefore migratory birds are not likely to be exposed to radiologically contaminated materials or affected by remedial activities. However, according to the AM, radiologically contaminated waste is known to have been discharged to the San Francisco Bay; therefore, it would appear that migratory birds feeding in the San Francisco Bay Area may be exposed to radiologically contamination. Please revise this section to address this concern.

33. **Appendix B, Federal and State Chemical-, Action-, and Location Specific ARARs for Buildings 5 and 400 Storm Drain and Sewer Line Removal, Page 11:** The section related to the Endangered Species Act (ESA) combines multiple sections of the ESA so it is not clear which provisions are applicable and which are relevant and appropriate (it appears consultation with the USFS would be classified as relevant and appropriate whereas the requirement that the DON not jeopardize the existence of any listed species (or its critical habitat) would be classified as applicable). Please edit this section to separate the separate sections of the ESA and indicate which sections are applicable, or relevant and appropriate.

34. **Appendix B, Federal and State Chemical-, Action-, and Location Specific ARARs for Buildings 5 and 400 Storm Drain and Sewer Line Removal, Page 13:** This section relates that "[a]ction must be taken to conserve endangered species; there can be no releases and/or actions that would have a deleterious effect on species or habitat," but the regulation cited (CFGC 2080) does not state the above quoted language. Instead, the regulation is designed to protect endangered and threatened species from being imported or exported out of the state, taken, possessed, purchased or sold. Please revise this sentence to reflect the stated purpose of the regulation.

EPA Review of the Draft Project Work Plan, Installation Restoration Sites 5 and 10 (Buildings 5 and 400), Storm Drain and Sewer Line Time-Critical Removal Action, Former Naval Air Station Alameda, Alameda Point

GENERAL COMMENTS

1. It is unclear if the goal of this time-critical removal action (TCRA) is to achieve radiological free release of the areas being excavated. Please clarify whether the goal of the TCRA is free release of these portions of IR Sites 5 and 10.

2. It is unclear how liquids that are present in the storm drains and sewers will be handled or if these fluids will be sampled. The text indicates that the ends of the lines will be capped, but does not discuss management of any remaining liquids in the lines. It is recommended that liquids found in the storm drains and sewers be handled separately from those generated from dewatering or decontamination. Please revise the Work Plan and Sampling and Analysis Plan to discuss how liquids present in the storm drains and sewers will be handled. In addition, if these fluids will be sampled, please revise the Sampling and Analysis Plan (SAP) to specify that these liquids will be sampled.

SPECIFIC COMMENTS

1. **Section 2.1, Site Description, Page 2-1:** This section does not include the date Alameda Point was placed on the National Priorities List (NPL). Please add the date Alameda Point was placed on the NPL to the second paragraph.

2. **Section 2.2.2, San Francisco Bay Dynamics, Page 2-2:** Since the storm sewer lines from IR Sites 5 and 10 discharge to the Seaplane Lagoon or the Oakland Inner Harbor, it would be more relevant to discuss the hydrodynamics of the Seaplane Lagoon and the Oakland Inner Harbor and how they interact with San Francisco Bay rather than the dynamics of San Francisco Bay. Please revise the text to discuss the dynamics of the Seaplane Lagoon and the Oakland Inner Harbor and how water and sediment in these areas interact with San Francisco Bay.

3. **Section 2.4, Adjacent Land Usage, Page 2-3:** This section does not indicate whether there are any facilities that have sensitive receptors like schools or day care centers within one mile of the Alameda Point site boundaries. Please discuss whether there are any schools or day care centers within one mile of the Alameda Point site boundaries.

4. **Section 4.1, Radioactive Health and Safety, Page 4-1:** The third paragraph indicates that air monitoring will be performed as necessary. It is not clear whether this reference to air monitoring refers to personal air monitoring (i.e., monitoring breathing zones of personnel) or to ambient air monitoring for fugitive dust downwind of remedial activities. Please clarify the type of air monitoring. In addition, if this reference is to downwind ambient air monitoring, discuss what criteria will be used to determine whether air monitoring is necessary and ensure that sampling procedures and analytical methods are included in the SAP.

5. **Section 4.11.1, Reference (Background) Areas, Page 4-12:** The Work Plan specifies the number of background readings that will be collected using each instrument, as well as the number of soil samples that will be collected in the background area, but it is unclear how these numbers were developed. In addition, it is unclear what criteria will be used to determine that "the variability of the background is not too high." Please clarify how the specific number (18) of samples was determined or include the relevant reference where this information may be found. Also, clarify what cutoff level will be used to determine if background variability is "too high."

6. **Section 4.11.3.1, Static Surveys for Alpha/Beta Radiation, Page 4-13:** The text does not provide justification for the statement that a one-minute count time is sufficient to measure the appropriate release criteria. Please provide justification for the assumption that a one-minute count time will be sufficient to measure the appropriate release criteria, especially as related to alpha-emitters.

7. **Section 7.8, Excavation of Soils and Removal of Piping and Systems:** It is unclear whether excavation of the storm drain and sewer line piping will extend and include the outfalls, or whether it will end at the IR site boundary. Please clarify whether the scope of work includes replacing the storm drain and sewer line piping all the way to the outfalls into Seaplane Lagoon and the Oakland Inner Harbor. If not, please discuss when piping in these areas will be addressed.

8. **Section 7.8.3, Excavation Approach, Page 7-7:** Some of the sanitary sewer lines are within groundwater plume boundaries, but this is not acknowledged. Please discuss specific concerns for each reach of a storm drain or sanitary sewer line that intersects a groundwater plume, including known groundwater contaminants and provide a figure that shows where storm drains and sanitary sewers intersect groundwater plumes.

9. **Section 7.8.3, Excavation Approach, Page 7-7:** It is unclear why soilfreezing will provide an "ability to perform radiological scan of excavated side walls." Since water interferes with the ability to do radiological scans, it seems possible that ice would also interfere with the scans. Please clarify.

10. **Section 7.8.4, Other Considerations, Page 7-7:** This section states that additional soil will be removed if radiological contamination is found, but does not include procedures to be followed if stained soil is encountered. Since stained soil could be the result of releases from the sanitary sewers or storm drain lines, it is possible that both hazardous

constituents and radiological contamination may be associated with stained soil. At a minimum, stained soil should be sampled for hazardous and radiological isotopes. The text specifies that excavated material that emits odors or is stained will be segregated for potential sampling. However, stained soil present within the trenches (i.e. unexcavated soil) is not addressed. Please specify procedures for handling/removing unexcavated stained soil.

Further, measures to control dust, like sprinkling and sweeping haul roads and areas to be excavated should be discussed. Please revise the text to include a discussion of dust control measures.

11. **Section 7.12, Final Status Surveys of Trenches, Page 7-14:** The definitions of "elevated radiation level" and "elevated gamma activity" are not discussed in this section. Elsewhere in the Work Plan, it appears "elevated" can refer to contamination that exceeds the Radiological Remedial Objective (RRO) for Radium-226, or radiation readings that exceed the 3 sigma background value. Because the final status surveys of trenches will use both gamma surveys and sample collection, the Work Plan should be as specific as possible when discussing the conditions under which further excavation/investigation is necessary, and when no further action on the trench survey unit is required. Please revise the Work Plan to include these details.

12. **Section 8.2.5, Waste Transportation, Pages 8-7:** It is unclear if portal monitors will be established to ensure that trucks leaving Alameda Point with soil designated for Class I or Class II landfills do not contain radioactive materials. Please clarify whether portal monitors will be established at Alameda Point, and if not, please explain if and how this final screening will be done.

13. **Section 9.2, Description of Habitat and Sensitive Species, Page 9-1:** It is unclear whether excavation of the storm drain and sewer line piping will extend to the outfalls, or whether it will end at the IR site boundary. If the excavation will extend to the outfalls near Seaplane Lagoon, please include a description of the habitat adjacent to Seaplane Lagoon in Section 9.2 and revise the sections describing impacts to plants, fish, amphibians and reptiles, and mammals, as necessary.

    If excavation will be necessary along the shoreline or in the intertidal zone, the text should discuss the fish window and other specific requirements to protect endangered species and migratory birds that use San Francisco Bay. In addition, specific procedures to minimize discharge of silt and sediment to San Francisco Bay should be specified. Please discuss whether excavation will be required in the shoreline and/or intertidal zones, and if so, discuss the fish window and appropriate procedures to minimize sediment discharge to San Francisco Bay and to protect nesting and migratory birds.

14. **Section 9.4.1.2, Air Emissions, Page 9-4:** In addition to the measures discussed in this section, regularly scheduled street sweeping and/or washing may be necessary to remove dirt and dust from roads. Please revise the Work Plan to include street sweeping and/or

washing.

15. **Figure 10-1, Traffic Control Route and Alternate and Figure F.3-1, Transportation Route:** The marked trailer site and IR Sites 5 and 10 are in the middle of the Seaplane Lagoon on these figures. Also, it is unclear why the figures do not include the Seaplane Lagoon. Further, the pier area (e.g., the location of the USS Hornet) is not dry land as shown on the figures. Please revise the location of the marked trailer site and IR Sites 5 and 10. Please also include the Seaplane Lagoon on the figures and correct the depiction of the pier area.

APPENDIX B, Sampling and Analysis Plan

1. **Appendix B, Table B.3-1, Data Quality Objectives:** Under Step 4, it appears that the second paragraph states that IR Sites 5 and 10 comprise 1,734 acres, when this is the size of Alameda Point. Rather than specifying the acreage of Alameda Point, the size of IR Sites 5 and 10 should be specified. Please revise Step 4 to specify the acreage of IR Sites 5 and 10.

2. **Appendix B, Table B.3-1, Data Quality Objectives:** Step 7 of the Data Quality Objectives discusses the number of samples that will be collected to obtain the data necessary to achieve the goals of the study. Please provide documentation/rationale that supports the use of these specific numbers (18 post excavation samples per trench, and four random samples of each import material source.)

3. **Appendix B, Section 5.1, Pipe Removal Sampling, Page B.5-1:** Non-radiological sampling will be conducted for stockpiled soil, and excavated material that emits odors or is stained will be segregated for possible additional sampling. Please discuss whether any biased sampling of unexcavated soil will be conducted in the event that soil staining or other signs of contamination are observed in the trenches.

4. **Appendix B, Section 5.4, Waste Characterization Sampling, Page B.5-3:** The second paragraph in section 5.4 details the number of samples that will be collected after soil has been removed from the trenches. Please provide the rationale behind these numbers (i.e., the collection of two samples per 100 cubic yards of soil for radiation sampling, and one sample per 500 cubic yards of soil for chemical analyses).

   In addition, it is unclear if soil that is segregated because of staining or odors will be sampled separately or if this soil will be combined into 500 cubic yard piles and sampled. Since soil that has staining or odors is more likely to be contaminated, it is recommended that soil from each stained/odiferous area be segregated and sampled separately. Please revise the text to clarify how stained/odiferous soil will be sampled.

5. **Appendix B, Section 6.4, Decontamination Procedures, Page B.6-10:** The text indicates non-disposable sampling equipment will be screened for alpha/beta radiation prior to decontamination, but does not indicate what will happen if alpha/beta radiation is

detected. Please clarify the decontamination procedures for non-disposable sampling equipment found to be contaminated with alpha/beta radiation.

6. **Appendix B, Table B.7-1, Reference Limits for Soil Samples, Pages 4 and 6:** Some footnotes assigned to numbers in this table appear to have been assigned in error. Specifically, footnote g, which refers to Endosulfans, is applied to polynuclear aromatic hydrocarbons on page 4, and footnote f, which applies to 4,4-DDD, 4,4-DDE, and 4,4-DDT, is applied to metals on page 6. Please review this table for similar discrepancies and assign the correct footnotes, as applicable.

7. **Appendix B, Table B.7-4, Measurement Performance Criteria, Field QC Samples:** The text of Section 6.3.3 (Item #8) indicates field duplicates will be collected for 10% of import fill samples for chemical analyses as well as gamma emitting isotopes. Table B.7-4 indicates field duplicates will only be analyzed for gamma emitting isotopes. Please resolve this discrepancy.

Appendix D, Standard Operating Procedures

1. **Appendix D-6, Standard Operating Procedure (SOP) 6 – Sampling Procedures for Radiological Surveys, Section 4.2.1, Swipe Sampling, Page 2:** Section 4.2.1 indicates swipe samples will be obtained in accordance with Appendix D-6, Radiation and Contamination Surveys. It appears swipe samples are described in Appendix D-1. Please correct this discrepancy.

Appendix E, Stormwater Pollution Prevention Plan

1. **Appendix E, Section 2.4, Construction Activities, Page E.2-3:** The second complete paragraph on page E.2-3 states that stockpiles will be covered with plastic during rainy weather and/or windy conditions. However, Section 7.7 of the Work Plan indicates that stockpiles will be covered with plastic at the end of each work day. Please revise the text on Page E.2-3 to indicate that stockpiles will be covered with plastic during rainy weather, windy conditions, and at the end of each work day.

2. **Appendix E, Section 5.0, Non-Stormwater Management, Page E.5-1:** This section does not provide information regarding sequencing and/or procedures to be followed to ensure that groundwater that will be encountered when sanitary sewer lines are excavated will not be discharged to San Francisco Bay. For example, if a sanitary sewer line adjacent to a storm drain line is excavated, and there is a tie-in or gravel fill between the lines, it is possible that groundwater could enter the storm sewers and be discharged directly to the Seaplane Lagoon or to the Oakland Inner Harbor. Please revise this section to discuss sequencing and procedures to ensure that contaminated groundwater is not discharged to the Seaplane Lagoon or the Oakland Inner Harbor.

Appendix F, Transportation and Disposal Plan

1. **Appendix F, Section 2.0, Scope of Work, Page F.2-2:** The last sentence of the first partial paragraph on Page F.2-2 states "Work is anticipated to commence in May 2007 and continue through November 2007." Please update the anticipated field work dates to reflect the most recent anticipated schedule.

   Please also make this change in Step 3 of the Data Quality Objectives table in Appendix B, Sampling and Analysis Plan.

APPENDIX G, Design Criteria

GENERAL COMMENTS

1. Text in Section 1.1 (Site Background and Design Period in Appendix G) states that the second phase of the redevelopment program proposes demolition/redevelopment of Buildings 5 and 400. However, this TCRA includes the removal of radiologically contaminated lines and impacted surrounding soil adjacent to structures/foundations and does not discuss RAD impacted soil under structures/foundations. Please ensure that radiologically impacted soils adjacent to structures/foundations that could not be removed during this TCRA, due to shoring/design limitations, are addressed during the second phase of the redevelopment program.

2. Appendix G does not provide an implementation schedule. As such, the sequence of tasks and proposed commencement/completion dates and timeframes cannot be evaluated. For example, it is unclear if trench excavations will occur simultaneously or sequentially. It is also unclear if multiple pumping stations will be operated simultaneously as part of the dewatering system. Please revise the Work Plan to include an implementation schedule with a sequence of tasks and associated commencement/completion dates and timeframes.

3. The Work Plan does not provide design details for the Low Level Radiological (RAD) Soil Stockpile Area, RAD Cleared Chemical Contaminated Soil Stockpile Area, or RAD Contaminated Construction Debris. As a result, it is unclear if these areas are lined, covered, or include erosion control measures. In addition, the dimensions and anticipated volume to be included in these areas is unclear. Also, it is unclear if pre- and post-TCRA confirmation samples of system components will be collected. Please revise the Work Plan to include design details for all system components including staging, decontamination, and stockpile areas.

4. It is unclear when design drawings for replacement of the storm drains will be provided. These drawings should be provided for Regulatory Agency Review. Please provide design drawings for storm drain replacement, including materials and compaction specifications.

SPECIFIC COMMENTS

1. **Section 1.0, Introduction and Purpose, Page G1-1:** This section states that, "The removed sewer lines are not to be replaced," but, details regarding the disconnection of sewer pipes have not been provided in the Work Plan. Therefore, it is unclear if the sewer pipes will be properly disconnected and placed out of use. Please ensure that the disconnection and closure of sewer pipes occurs prior to TCRA activities and describe how this will be done. Similarly, ensure that the disconnection and closure of storm drain lines occurs prior to TCRA activities.

2. **Section 2.1.2, New Storm Drain System Design and Installation, Page G.2-1:** According to this section, "The new storm water drainage system can be installed in the existing storm drain system, or at an adjacent new location. Both options should be evaluated, but it is unclear when this evaluation and decision process will occur. Also, it is unclear what adjacent new location is under consideration for the new storm water drainage system. Please include specific details regarding the evaluation and decision process related to the new storm drain system design and installation.

3. **Section 2.1.2, New Storm Drain System Design and Installation, Page G.2-1:** The text states that some monitoring wells located at the site will be destroyed due to storm line removal action; however, the monitoring wells to be destroyed have not been identified in the Work Plan. Please specify the monitoring wells which will be destroyed due to the storm line removal action. In addition, please revise Drawing 0028-105 (Groundwater Plume and Monitoring Wells) to indicate which monitoring wells will be destroyed.

4. **Section 2.1.5, Trench Excavation, Page G.2-2:** According to the text, "Crossing through contaminated groundwater plume areas shall be minimized whenever possible." However, it is unclear what measures will be taken if crossing through a contaminated groundwater plume areas is unavoidable. Please discuss measures that will be taken if contaminated groundwater is encountered during trench excavations.

5. **Section 2.1.5, Trench Excavation, Page G.2-2:** The text does not discuss how RAD contaminated lines and impacted surrounding soil will be removed from the trench excavations and transported to stockpile areas. Appendix F only addresses transport off-site. Please revise the Work Plan to include details regarding the removal and on-site transportation of RAD contaminated lines and impacted surrounding soil.

6. **Section 2.1.6, Backfill, Page G.2-2:** The text states that, "Backfill material shall consist of clean import material with acceptable chemical/RAD levels as approved by the engineer/compliance person, as well as poorly graded river rock and/or crushed stone." It is unclear if the material will be sampled for construction specific parameters (i.e., permeability, particle size, moisture content, and compaction/density). Please ensure the clean import material will be sampled for construction specific parameters.

7. **Section 2.2, Codes and Standards, Pages G.2-3 to G.2-4:** This section provides a list of codes and standards which will be utilized and adhered to during the TCRA, but the list of codes and standards does not provide specific detail regarding which sections, chapters, and/or regulations apply to the site and various design system components. As such, it is unclear if specific codes and standards apply to the entire site or only to specific system components. Please clarify which sections, chapters, and/or regulations will be utilized during TCRA activities.

MINOR COMMENTS

1. **Section 2.1.5, Trench Excavation, Page G.2-2:** According to the text, "If personnel entry is necessary, adequate shoring/sloping/benching shall be required per California OSHA rules and regulations." However, the section does not discuss whether personnel will be confined-space trained, since trenches do meet the definition of confined-space. Please ensure that if entry is necessary, personnel will be properly trained in confined-space entry.

2. **Drawing 0028-101, Storm Drain and Sanitary Sewer – Enlarged Plans, Sheet 6:** The scale of Sheet 6 is different than the scale of Sheets 1-5. As such, Sheet 6 cannot be matched to Sheets 1-5 to provide an enlarged plan. Please ensure that the scale of Sheet 6 is revised to match the scale of Sheets 1-5.

3. **Drawing 0028-002, Site Vicinity Map:** The drawing does not include a legend. As a result, it is unclear if lines shown on the drawing represent sewer or storm water lines. Please ensure that all pertinent details shown on the drawings are included in a legend.