EPA/Water Board Comments, dated April 19, 2016; Additional EPA Comments, dated July 15, 2016; Additional Water Board Comments dated July 19, 2016

GENERAL COMMENTS

1. **Risks Associated with N217 and N217A Areas:** Throughout the AM [Action Memorandum], the text states that this NTCRA [non-time-critical removal action] is intended by NASA [National Aeronautics and Space Administration] to be the final action at AOI 14 [Area of Investigation 14]; however, there is little discussion of the condition of the N217 and N217A areas. Specifically, the AM should include a discussion of the presence of contamination at these areas and the associated risk to substantiate the limited scope of the NTCRA. Some information is provided in Section 2.1.3; however, the AM should clearly state that the risks in these areas do not require a response action because contaminants are present at levels below the cleanup goals and/or complete exposure pathways do not exist.

Response: Information about contamination detected in these areas has been added to the first paragraph of Section 2.1.3. Additional information on the N217 and N217A areas has been added to the AM in response to specific comments below.

2. **ARARs:** In Section 5.1.4, the discussion of Applicable or Relevant and Appropriate Requirements [ARAR] includes the statement that the NTCRA will comply with all substantive provisions of the identified ARARs. However, the AM does not identify whether the listed ARARs are "applicable," "relevant and appropriate" or "to be considered" for this action. Typically, ARARs are presented in a tabular format and the lead agency's determination for each ARAR is clearly identified. Clarify NASA's determination for each ARAR.

Response: NASA has added an attachment to the AM presenting all the ARARs identified for the removal action. This table includes NASA's ARAR determination of "applicable," "relevant and appropriate," or "to be considered."

SPECIFIC COMMENTS

1. **Section 1, Purpose, page 1:** The first paragraph states that the purpose of the NTCRA is "to prevent erosion of contaminated soil." Revise the sentence, and similar ones throughout the AM (see Sections 5.1.2 and 6) to "to prevent erosion of contaminated soil and the release of contaminants."

Response: The AM has been revised as described in this comment.

2. **Section 1, Purpose, page 1:** In the first paragraph, before the last sentence, add a statement (similar to the last two sentences of Section 2.2) about suspension of the RCRA [Resource Conservation and Recovery Act] Order and execution of the FFA [Federal Facility Agreement].

Response: The AM has been revised as described in this comment.

3. **Section 2, Site Conditions and Background, page 2:** Revise the section to include information about the FFA and a brief description of the relationship of this site to the Moffett NPL [National Priorities List] site.

Response: The AM has been revised as described in this comment.

4. **Section 2.1.1, Physical Location, page 2:** Per EPA [U.S. Environmental Protection Agency] Guidance, provide rainfall data that could be relevant to the potential for erosion and the release of contaminants at the site.

Response: The AM has been revised as described in this comment.

5. **Section 2.1.2, Site Characteristics, page 6:** Per EPA Guidance, describe any current uses of the site, indicate the owner(s) and operator(s) of the site, and state that this is the first removal action for the site.

Response: The AM has been revised as described in this comment.

6. **Section 2.1.3, Removal Site Evaluation, page 6:** At the end of the first paragraph, state that there are no risks at the other peninsulas due to incomplete exposure pathways.

Response: It is not accurate to say that there are no risks in the N217 and N217A areas because the exposure pathway is incomplete. As stated in Section 2.1.3 of the AM, these areas do not require remediation because of the depths and limited extent of contamination. This conclusion is discussed in more detail in Sections 2.4.1.3 and 2.4.2.3 of the Final Engineering Evaluation/Cost Analysis (EE/CA). No changes will be made to the AM based on this comment. In response to General Comment 1, information about contamination detected in the N217 and N217A areas has been added to Section 2.1.3.

Additional EPA Comment: The response is adequate; however, please add a reference to Sections 2.4.1.3 and 2.4.2.3 of the EE/CA in the text of Section 2.1.3 of the Action Memorandum.

Response: The AM has been revised as described in this comment.

7. **Section 2.1.4, Release or Threatened Release into the Environment of a Hazardous Substance, or Pollutant or Contaminant, page 7:** Revise the first sentence to state "The results of past investigations and the streamlined human health and ecological risk evaluations in the EE/CA have documented..."

Response: The AM has been revised as described in this comment.

8. **Section 2.1.4, Release or Threatened Release into the Environment of a Hazardous Substance, or Pollutant or Contaminant, page 7:** The last sentence of the second

paragraph states that soil is the only exposure medium. Provide a brief description of how other media/exposure pathways were eliminated as possible risk scenarios.

Response: The AM has been revised as described in this comment.

9. **Section 2.1.4, Release or Threatened Release into the Environment of a Hazardous Substance, or Pollutant or Contaminant, page 7:** In the third paragraph, explain why the residential scenario was considered (to achieve a cleanup that is the final action for the site).

Response: The AM has been revised as described in this comment.

10. **Section 2.1.4, Release or Threatened Release into the Environment of a Hazardous Substance, or Pollutant or Contaminant, page 7:** At the end of the fourth paragraph, state through what pathways wetland receptors would be exposed to contaminants at the site.

Response: The AM has been revised as described in this comment.

11. **Section 2.1.4, Release or Threatened Release into the Environment of a Hazardous Substance, or Pollutant or Contaminant, page 8:** The last bullet in the list explains the RAO to prevent exposure to surface and subsurface soil with Aroclor-1260 and 4,4-DDT greater than levels protective of industrial workers. Clarify how this RAO [removal action objective] meets the goal stated in the third paragraph of considering the site for residential use in a future unrestricted scenario.

Response: Residential cleanup is not a goal of the NTCRA; however, the NTCRA will result in protectiveness for hypothetical residents because the cleanup goals are protective of residents (that is, less than accepted residential screening levels). However, the lead cleanup goal is greater than the residential screening level identified in the EE/CA (DTSC 2014). Please see the response to Specific Comment 17 below for more information.

12. **Table 1:** Revise the heading for the last column to state "AOI 14 Site-wide Average Remediation Goals," instead of "Navy IR Site 25 Site-wide Average Remediation Goals" and add a footnote to the table indicating that the remediation goals are the same as and based on the Navy IR [Installation Restoration] Site 25 remediation goals.

Response: The Navy IR Site 25 site-wide average remediation goals were not identified as cleanup goals for the NTCRA. Rather, the site-wide average concentrations of lead, total polychlorinated biphenyls (PCB), and total dichlorodiphenyltrichloroethane (DDT) at AOI 14 will be calculated to document that residual concentrations of these chemicals that remain after the NTCRA is complete would not pose a risk to receptors at Navy IR Site 25 through soil erosion. If the residual site-wide average concentrations exceed Navy IR Site 25 site-wide average remediation goals, additional evaluation of remaining contaminants in soil at AOI 14 will be conducted, and additional removal or remedial actions may be identified to ensure the protectiveness of the remedy.

The Navy IR Site 25 site-wide average remediation goals were removed from Table 1 to avoid confusion and the implication that these goals are cleanup goals for the NTCRA at AOI 14. However, the numeric goals are listed in the text and the strategy for maintaining protection for potential receptors at Navy IR Site 25 are clarified.

13. **Section 2.1.5, National Priorities List Status, page 10:** Revise this section to discuss NASA Ames' location on the former Naval Air Station Moffett Field, and that facility's listing on the NPL in 1987. Also, specifically include a discussion of how the potential for releases from AOI 14 could impact Navy Moffett IR Site 25. The agencies recommend selecting relevant language from the NASA FFA to include in this section of the AM.

Response: A discussion of NASA Ames' location and relationship to the former Naval Air Station (NAS) Moffett Field Superfund Site was added to Section 2 of the AM in response to Specific Comment 3 and now indicates that NASA Ames consists of the NASA Ames Research Center and the majority portion of former NAS Moffett Field. In addition, Section 2.1.5 was modified as requested by this comment.

14. **Section 3, Threats to Public Health or Welfare or the Environment and Statutory and Regulatory Authorities, page 11:** Weather conditions are included in the list of factors that must be considered (fifth item in the bulleted list); however, there is no discussion of this factor in the text of the AM. Per EPA Guidance, revise the AM to describe rain/weather that create or aggravate threats to the environment and recurring weather patterns that impact the migration or release of contaminants. In addition, describe any considerations for sea-level rise.

Response: The weather conditions factor was included as a threat at AOI 14, and a description of the threat was added to Section 3.

15. **Section 3.1, Threats to Public Health or Welfare, pages 11 and 12:** Per EPA Guidance for both human and ecological receptors, identify the potential exposure scenarios and how/if levels of contaminants at the site exceed action levels. In addition, describe the immediacy and gravity of the threat.

Response: The AM has been revised as described in this comment.

16. **Section 4, Endangerment Determination, page 13:** Relative to the NTCRA's protectiveness of residential receptors, revise the last sentence of the section to state "risk to industrial workers, hypothetical residents, and ecological receptors," if appropriate.

Response: The AM was not modified in response to this comment because residential cleanup is not a goal of the NTCRA. However, the NTCRA will result in protectiveness for hypothetical residents because the cleanup goals are protective of residents (that is, less than accepted residential screening levels) and because the contamination is generally collocated so it is likely that residual concentrations of contaminants will be less than screening levels.

17. **Section 5, Proposed Actions and Estimated Costs, page 13:** The second paragraph states that cleanup goals "are generally lower than human health or ecological screening levels." Clarify what is meant by "generally lower." If the goals are all less than screening levels, then remove the qualifying language. If certain cleanup goals are greater than screening levels, explain how they are still protective.

Response: The word "generally" has been removed and the AM revised to state that all cleanup goals are less than human health and ecological screening levels except the residential screening level for lead. The lead cleanup goal (93.8 milligrams per kilogram [mg/kg]) is greater than the California Department of Toxic Substances Control (DTSC) screening level for residential exposure of lead in soil (80 mg/kg) (DTSC 2014[1]), which was the lead screening level in the EE/CA. However, all detected concentrations of lead at AOI 14 that exceeded the DTSC screening level also exceeded the cleanup goal (that is, no concentrations of lead were detected at concentrations between 80 and 93.8 mg/kg). Therefore, the cleanup goal is protective of hypothetical residents based on the current site characterization and current soil data. In addition, detected concentrations of lead at AOI 14 were less than the EPA Regional Screening Level (RSL) for lead (listed as "lead and compounds" in the RSL tables at http://www.epa.gov/ region9/superfund/prg/), which is 400 mg/kg.

Residential use of the site is not planned, and residential cleanup of AOI 14 is not included in the RAOs. However, this NTCRA is intended to be the final action at AOI 14; therefore, residual concentrations of lead are evaluated to demonstrate protectiveness for all potential site receptors, including hypothetical future residential receptors, for unrestricted future use of the site. Text was added to Section 5.1 to indicate that NASA may implement institutional controls as part of the NTCRA if needed to address residential exposure.

18. **Section 5.1.1, Proposed Action Description, pages 13-14:** State whether/when the silt fencing from the Interim Corrective (RCRA) Action Measure will be removed.

Response: The AM has been revised as described in this comment.

19. **Section 5.1.1, Proposed Action Description, page 14:** In the second paragraph following the bulleted list, the AM states that confirmation sampling will be done from the clean fill and native soil to evaluate residual concentrations of contaminants and the results will be used to dictate extent of excavation. Based on prior discussions regarding NASA's desire to use multi-increment sampling to determine extent of excavation, this text is somewhat confusing. Clarify the text and also state whether NASA would also sample clean fill prior to bringing it onto site and any soil NASA intends to reuse prior to placement.

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[1] DTSC. 2014. Human Health Risk Assessment Note 3 - DTSC Recommended Methodology for Use of U.S. EPA Regional Screening Levels in Human Health Risk Assessment Process at Hazardous Waste Sites and Permitted Facilities. July 14. Accessed at: http://www.dtsc.ca.gov/AssessingRisk/upload/HHRA-Note-3_Table.pdf

Response: The AM has been revised to remove "confirmation" and allow NASA more flexibility in when and how soil samples are collected. Instead of collecting confirmation samples after the NTCRA is complete, NASA may collect soil samples, using incremental sampling methodology (ISM), before beginning excavation to define the extent of excavation and serve as confirmation sampling. The results of samples collected in areas that were not excavated as part of the NTCRA will be used to calculate residual site-wide average concentrations for comparison with Navy IR Site 25 site-wide average remediation goals.

Additional EPA Comment: The response addresses the portion of the comment regarding residual contamination post-excavation; however, the response does not appear to address sampling of fill materials prior to use at the site.

Response: NASA is not currently planning to bring any new material to the site. If new imported material is determined to be necessary for structural or biological reasons, the new material will be clean with no detected concentrations of lead, PCBs, and pesticides and meet state requirements for imported backfill.

20. **Section 5.1.1, Proposed Action Description, page 14:** In the paragraph discussing assumptions for the cost estimate, briefly discuss the requirement for the estimate to be within -30%/+50% of actual costs or refer to Section 5.2.

Response: The AM has been revised as described in this comment.

21. **Section 5.1.1, Proposed Action Description, page 14:** Per EPA Guidance, state NASA's intent to comply with the Off-Site Rule for this NTCRA.

Response: NASA has added a statement in Section 5.1.1 that it will comply with the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) Off-Site Rule in 40 Code of Federal Regulations (CFR) § 300.440.

22. **Section 5.1.3, Engineering Evaluation/Cost Analysis, page 15:** Per EPA Guidance, state that no significant comments were received on the EE/CA. Also, include the dates of the public comment period.

Response: The AM has been revised as described in this comment.

23. **Section 5.1.3, Engineering Evaluation/Cost Analysis, page 16:** In the description of Alternative 2, clarify if the institutional controls [IC] prohibiting residential use apply to the entire site or just the FSFA [former soil fill area]. In the description of Alternative 3, state why the NTCRA action does not include actions at N217 and N217A.

Response: The specific areas subject to ICs would be specified in the Land Use Control (LUC) design. However, because Alternative 2 was not the chosen alternative for AOI 14, the area subject to ICs is irrelevant. The first paragraph of Section 5 was modified to indicate

that the NTCRA does not include actions at N217 and N217A because of the depth and limited extent of contaminants in these areas.

24. Section 5.1.4, Applicable or Relevant and Appropriate Requirements, page 16: Per EPA Guidance, describe efforts made by NASA to identify State ARARs.

Response: The AM has been revised as described in this comment.

25. Section 5.1.4, Applicable or Relevant and Appropriate Requirements, page 16 et seq: Provide information regarding NASA's determination that the following regulations are not ARARs for this action.

a) Provide justification for why Chapters 2, 3, and 4 of the San Francisco Bay Regional Water Quality Control Board Basin Plan were not identified as ARARs for the proposed action.
b) Provide justification for why the Federal Clean Water Act, Section 401, 33 USC 1341, was not identified as an ARAR for the proposed action.
c) Provide justification for why, despite the site's proximity to the San Francisco Bay, the Coastal Zone Management Act was not identified as an ARAR for this proposed action.
d) Provide justification for why California Fish and Game Code section 505 regarding protection of reptiles and amphibians was not identified as an ARAR for this proposed action.

Response: NASA's responses are as follows:

a) (The response to the original EPA comment has been revised based on Additional EPA Comment 25b and Additional Water Board Comment 25a below). NASA documented in the EE/CA that it did not accept Chapters 2, 3, and 4 of the San Francisco Bay Regional Water Quality Control Plan (Basin Plan) because surface water and groundwater are not media of concern for the NTCRA. However, NASA has agreed to accept Chapters 2, 3, and 4 of the Basin Plan as ARARs and will include them in the AM as state action-specific ARARs in the AM, triggered by and as they pertain to the discharge of dredge or fill material in the jurisdictional wetland.
b) (The response to the original EPA comment has been revised to clarify and update NASA's position based on Additional EPA Comment 25b below.) NASA has revised the location-specific ARARs in the AM to include Clean Water Act § 404 as an applicable federal ARAR, and Executive Order 11990 as a federal to be considered criteria, because excavation may be conducted in the jurisdictional wetland on the eastern side of the FSFA, around sediment sample FSFA-SDS08. NASA did not accept Clean Water Act § 401 as ~~an~~ a federal ARAR. Clean Water Act § 401 allows for a state water quality certification process to ensure that the discharge does not degrade state water quality when a federal permit is issued for the discharge to Waters of the U.S. Clean Water Act § 401 contains procedural requirements, and procedural requirements are not ARARs. To qualify as an

ARAR, a requirement must contain substantive provisions. Therefore, NASA will not seek a state water quality certification, but instead will use CERCLA documentation (for example, the removal action design) to demonstrate that its removal action will be completed in a way that will not result in degradation of water quality. In addition, NASA recognizes that the Water Board has the authority to regulate the discharge into wetlands under state law. ~~However, to comply with the substantive requirements of Clean Water Act § 404 (identified as an ARAR) and U.S. Army Corps of Engineers Nationwide Permit 38, NASA will use the requirements in the Clean Water Act state water quality certification application as a means of complying with the substantive requirements of the Clean Water Act § 401 water quality certification process, which in turn ensures compliance with state wetland discharge requirements.~~ Please see the response to Specific Comment 26 for further information.

c) NASA has not identified the Coastal Zone Management Act as an ARAR for the NTCRA because AOI 14 is not within the coastal zone and because the selected removal action does not affect the San Francisco Bay or the coastal zone and does not include construction of any structures or facilities in the coastal zone.

d) NASA assumes there is a typographical error in the citation and that it was intended as California Fish and Game Code § 5050. NASA does not accept California Fish and Game Code § 5050 because the fully protected reptile and amphibian species identified in the provision are not present or potentially present at AOI 14.

Additional EPA Comment: As appropriate, revise the response to indicate that the ARARs determinations described were made in the EE/CA or change the language of the response to classify ARARs as "applicable," "relevant and appropriate," or "to be considered," as noted in General Comment 2.

Regional Water Board staff submitted the RTCs to legal counsel for review; at this time, legal counsel's comments have not been received. However, preliminary comments from Regional Water Board staff are presented below. When legal counsel's comments are received, they will be forwarded to NASA.

- Comment 25 a – Regional Water Board staff disagree with NASA's determination that the identified sections of the Basin Plan are not ARARs. While the removal action specifically includes removal of contaminated soil, the actions being performed during the removal action could impact the wetlands of the storm water retention pond. Chapter 2 of the Basin plan states that "Surface waters in the Region consist of non-tidal wetlands…" And although surface water and groundwater are not the "media of concern", at a minimum, surface water (i.e., the associated wetlands) quality could be impacted by the removal action. The Basin Plan requires that activities, including but not limited to, the discharge of contaminated soils not result in degradation of water quality.
- Comment 25b – Clarify the text. The response to this comment states that Section 401 is not an ARAR; however, the response to Comment 26 states that NASA will "use the

substantive provisions of the water quality certification application pursuant to Clean Water Act § 401 as a means of complying with the substantive provision of the state wetland discharge requirements." Therefore, it appears that Section 401 applies as an ARAR.

Response:

- Comment 25a: The response to the original EPA comment has been revised.
- Comment 25b: The response to the original EPA comment has been revised to clarify and update NASA's position.

Additional Water Board Comment:

- Comment 25a: NASA has conceded that excavation may occur in jurisdictional wetlands. Moreover, there is a pond, that contains wetlands, on the site that meets the definition of Waters of the State. Therefore, the Basin Plan applies to both of these areas. If NASA remains opposed to including Chapters 2, 3, and 4 as ARARs, please have your counsel contact our legal counsel, Tamarin Austin (tamarin.austin@waterboards.ca.gov or 916-341-5171) to discuss this. Please note that Ms. Austin will be out of the office until the week of August 1.
- Comment 25b: Regional Water Board staff will not pursue Section 401 as an ARAR. However, please document in the comments section of the ARARs the explanation NASA has provided that includes the agreement to comply with applicable state water quality and discharge requirements.

Response:

- Comment 25a: NASA agrees that excavation may occur in jurisdictional wetlands. At this time, NASA does not concede that a discharge of dredge and fill material, which provides the jurisdictional basis for the Clean Water Act and state water quality requirements, will occur. However, NASA has accepted the substantive provisions of Chapters 2, 3, and 4 of the Basin Plan as state action-specific ARARs in the AM as they pertain to state requirements for the discharge into wetlands should there be a discharge of dredge or fill into the jurisdictional wetland in the removal action.
- Comment 25b: NASA has added language in the comments column of Clean Water Act § 404 that NASA will comply with the substantive provisions of the state's § 401 water quality certification application as a means of complying with Clean Water Act § 404 and state water quality requirements for the discharge into the jurisdictional wetland.

26. Section 5.1.4, Applicable or Relevant and Appropriate Requirements, page 16: Discuss whether the NTCRA is being conducted at or near Waters of the State. While the U.S. Army Corps of Engineers did not include the stormwater retention pond in its delineation of Waters of the U.S., no determination of whether the pond is a Water of the

State has been provided. If the pond qualifies as a Water of the State, confirm the actions that will be taken to meet applicable regulations.

Response: (The response to the original EPA comment has been revised to clarify and update NASA's position based on the Additional EPA Comment below.) In 1989, the U.S. Army Corps of Engineers verified a delineation of Waters of the U.S. that included significant portions of Navy IR Site 25 that surround AOI 14. NASA used this delineation to determine that the excavation at sample location FSFA-SDS08 was within Waters of the U.S. A delineation of the area in response to recent U.S. Supreme Court decisions on federal jurisdiction over wetlands has not been completed and so cannot be used to make the determination. Waters of the State are defined in California Water Code § 13050(e) as "any surface water or groundwater, including saline waters, within the boundaries of the state." This definition does not include wetlands, so the jurisdictional wetlands that surround AOI 14 do not appear to be Waters of the State. However, state and regional water boards have the authority to and have been issuing waste discharge requirements (permits) for discharges to wetlands pursuant to California Water Code § 13142.5. Pursuant to CERCLA § 121(e), NASA is not required to obtain a permit for portions of the removal action conducted on-site. The potential discharge into the jurisdictional wetland will occur on site; therefore no actual discharge permit is required. However, NASA will use the substantive provisions of the state water quality certification application to comply with applicable state water quality requirements because it will use the substantive provisions of the Clean Water Act state water quality certification application pursuant to Clean Water Act § 401 as a means of ensuring compliance complying with the substantive provisions of state law in the state wetland discharge requirements. ~~NASA will comply with applicable state water quality requirements because it will use the substantive provisions of the Clean Water Act state water quality certification application pursuant to Clean Water Act § 401 as a means of complying with the substantive provisions of the state wetland discharge requirements.~~

Additional EPA Comment: Regional Water Board staff disagree with NASA's determination regarding Waters of the State. As previously stated, the State includes wetlands in the definition of surface waters. As such, the wetlands in the pond qualify as Waters of the State and must be treated as such. Therefore, confirm that all applicable and relevant and appropriate regulations will be followed for the removal action to protect the wetlands.

Response: The response to the original EPA comment has been revised to clarify and update NASA's position.

27. **Section 5.1.4, Applicable or Relevant and Appropriate Requirements, page 16:** The AM does not include as ARARs regulations regarding characterization of excavated sediment. Provide justification for why these regulations were not identified as ARARs for this action.

Response: The AM does include ARARs regarding characterization of excavated sediment. NASA has identified federal ARARs and accepted state ARARs for characterizing waste, including excavated sediment, which is shipped off site for disposal. These ARARs are

identified as chemical-specific ARARs in Section 5.1.4, and the requirements to perform waste characterization are identified as action-specific ARARs in Section 5.1.4.

28. Section 5.1.4, Applicable or Relevant and Appropriate Requirements, TSCA, page 19: The AM selects as an action-specific ARAR 40 CFR section 761.61(c). It is not clear what requirements this regulation is placing on the action itself. First, elaborate on the requirements that are established and met through this ARAR, including whether it is being used for determination of risk-based levels and/or disposal requirements. In particular, selection of this ARAR does not provide substantive requirements for off-site disposal of PCB remediation waste. Either provide the applicable requirements and add them to the ARARs section or explain what requirements are being selected under this regulation. Finally, 40 CFR 761.61(c) provides for written approval from the EPA Regional Administrator or delegate. The AM states that EPA's approval of the document itself, the EE/CA, and the design documents could constitute such a determination. EPA would not consider approval of these documents to constitute the specific approval required by this regulation; thus this language should be removed. Any EPA approval of this selected risk-based approach will be provided under separate cover.

Response: (The response to the original EPA comment has been revised based on the Additional EPA Comment below.) The substantive requirements contained in the ARAR at 40 CFR § 761.61(c) are the use of a risk-based approach. For example, at 40 CFR § 761.61(c), "any person wishing to sample, cleanup, or dispose of PCB remediation waste in a manner other than prescribed in paragraphs (a) or (b)…." NASA may collect pre-design samples using ISM to identify specific locations with concentrations exceeding the PCB cleanup goal that will then be excavated. Therefore, the actions required for the NTCRA by the ARAR are the sampling and cleanup of PCBs exceeding the goal of 0.210 mg/kg. Because this ARAR does not provide a numerical cleanup level, the ARAR was identified as an action-specific ARAR. ARARs do not always fall neatly into one category of ARAR, and this ARAR could have been identified as a chemical-specific ARAR because it provided a narrative standard (risk-based) that reflects the risk-based concentration identified as the cleanup goal. In addition, NASA has revised the language about EPA approval in Section 5.1.4 to indicate EPA approval will be provided under separate cover.

NASA has added 40 CFR § 761.61(a)(5)(i)(B)(2)(ii) and (iii), 40 CFR § 761.65(c)(4), and 40 CFR § 761.79(b)(1) as ARARs for the NTCRA. NASA has included 40 CFR § 761.61(a)(5)(i)(B)(2)(ii) as an ARAR to confirm that sediment contaminated with PCBs will be disposed of at a licensed, appropriate, off-site, disposal facility. Because disposal will occur off site, the requirements are typically not ARARs, which apply to the portion of the remedial action that occurs "on site." These types of requirements would be independently applicable requirements, and NASA must comply with all independently applicable requirements for off-site actions, including both substantive and procedural components (for example, the procedural requirements of completing a manifest when necessary).

~~In addition, NASA has revised the language about EPA approval in Section 5.1.4 to indicate EPA approval will be provided under separate cover.~~

Additional EPA Comment: The Response to Comment 28 should be clarified to explain that 761.61(c) is being cited as an ARAR to establish the risk-based ARAR for PCBs of 0.210 mg/kg. To avoid confusion, this should be put into the chemical-specific ARARs section. Because the regulation does not set a particular number, it can be designated as a To Be Considered, or TBC. The selection of relevant subsections of 40 CFR 761.61(a), 761.65(c)(4), and 761.79(b)(1) should remain as action-specific ARARs.

The last line of the response should be moved to the end of the paragraph about selection of the cleanup goal. This will clarify that EPA's approval referred to is the use of the development of the risk-based goal specifically. Regarding EPA's approval, please indicate in the Removal Action that "EPA has indicated that it will" provide approval of use of 0.210 mg/kg as the PCB cleanup goal. The response can also add that the risk-based goal was approved by EPA for the Navy's Site 25.

Response: NASA has moved the last line of the response to the end of the first paragraph and NASA has added language to the ARARs in the AM to state that 40 CFR § 761.61(c) is being used to establish the risk-based PCB cleanup goal. NASA does not believe that 40 CFR § 761.61(c) should be moved up to the chemical-specific ARARs and identified as a "to be considered" criteria. 40 CFR § 761.61(c) is a promulgated regulatory standard and therefore is evaluated as an ARAR.

29. **Section 5.1.4, Applicable or Relevant and Appropriate Requirements, CAA, page 19:** Include as an ARAR the Bay Area Air Quality Management District Rule 6-1-302 or provide justification for why it is not included.

Response: NASA did not identify Bay Area Air Quality Management District Rule 6-1-302 as an ARAR because it determined that Bay Area Air Quality Management District Rule 6-1-305 was the more appropriate ARAR for the excavation. Rule 6-1-305 applies to visible particles, which are typically associated with dust generated during excavation. Rule 6-1-302 restricts emissions based on opacity. Rule 1-213 defines emission as "a gas or liquid stream containing one or more air contaminants." Rule 1-218 defines opacity in terms of transmission of light through a gas stream. Based on the provisions in Rule 6-1-302 and the definitions in Rule 1-213 and 1-218, NASA determined that Rule 6-1-305, which is based on visible particles, is better suited to dust generated during excavation.

30. **Section 5.1.5, Project Schedule, page 20:** The AM states that the NTCRA will be completed in 12 months; however, the nesting season for special status species will likely limit the time available in a calendar year to complete the NTCRA. Discuss how special status species considerations may impact the project schedule.

Response: Specific schedule constraints and contingency measures will be discussed in the NTCRA design. Section 5.1.5 of the AM has been revised to indicate that site work may be interrupted or modified based on ecological concerns.

31. **Section 6, Expected Change in the Situation Should Action Be Delayed or Not Taken, page 21:** Per EPA Guidance, discuss how the NTCRA will be managed if the response action needs to be split over two nesting seasons.

Response: Section 6 was revised to indicate that contingency measures would be implemented to prevent erosion of contaminated soil into Navy IR Site 25 if the NTCRA is interrupted by ecological concerns (such as the nesting seasons of special status species). The NTCRA design will contain more information on the specific contingency measures.

MINOR COMMENTS

1. **Section 2.1.4, Release or Threatened Release into the Environment of a Hazardous Substance, or Pollutant or Contaminant, page 8:** The words "areas addressed by these" in the third sentence after the bulleted list should be deleted.

Response: The AM has been revised as described in this comment.

2. **Section 2.2, Other Action to Date, page 10:** In the second sentence of the second paragraph, capitalize the word "order."

Response: The AM has been revised as described in this comment.

3. **Section 5.1.1, Proposed Action Description, page 14:** In the paragraph following the bulleted list, add "vertically" before "...until clean fill material is encountered..." and add "or native soil" before "...at the FSFA will be sloped..."

Response: The AM has been revised as described in this comment.

CDFW Comments, dated May 13, 2016

SPECIFIC COMMENTS

1. **Page 6, Section 2.1.2 Site Characteristics.** Please revise the scientific name of pickleweed from *Salicornia virginica* to *Salicornia pacifica* to reflect the name change in The Jepson Manual in 2011 (The Jepson Herbarium, 2014).

Response: The AM has been revised as described in this comment.

2. **Page 7, Section 2.1.4 Release or Threatened Release into the Environment of a Hazardous Substance, or Pollutant or Contaminant.** The text states, "*Potential ecological receptors include terrestrial plants, soil invertebrates, amphibians, reptiles, birds and mammals that could be exposed if contaminated soil erodes on to the surface of the stormwater retention pond*." Burrowing animals can also dig into the contaminated soil and bring it to the surface where it is exposed to human and ecological receptors. Please revise the text to state, "*Potential ecological receptors include terrestrial plants, soil invertebrates, amphibians, reptiles, birds and mammals that could be exposed if contaminated soil is exposed by burrowing animals or erodes on to the surface of the stormwater retention pond*."

Response: The AM has been revised as described in this comment.

3. **Page 8. Release or Threatened Release into the Environment of a Hazardous Substance, or Pollutant or Contaminant.**

    a. The text states "*numeric cleanup goals were identified in the EE/CA (Tetra Tech 2015) to be protective of human and ecological receptors (Table 1)*." This sentence requires clarification. According to Table 1 in the subject document, there are two type of remediation goals: (1) cleanup goal for A01-14 and (2) Navy IR Site 25 Site-wide Average Remediation Goal.

        (1) If both the higher and the lower cleanup goals are the removal cleanup goals for A01-14, please clearly identify them as so. For example, rather than indicate 33 mg/kg of lead is the Navy's IR Site 25 Site-wide Average Remediation Goal, simply rename the header to indicate that 33 mg/kg would be the site-wide average removal goal for A01-14, and footnote that it is the same as the adjacent Navy IR Site 25 site-wide average remediation goal.

Response: The Navy IR Site 25 site-wide average remediation goals were not identified as cleanup goals for the NTCRA. Rather, the site-wide average concentrations of lead, total PCBs, and total DDT at AOI 14 will be calculated and compared to the Navy IR Site 25 site-wide average remediation goals to document that residual concentrations of these chemicals that

remain after the NTCRA is complete would not pose a risk to receptors at Navy IR Site 25 through soil erosion. If residual site-wide average concentrations exceed Navy IR Site 25 site-wide average remediation goals, additional evaluation of remaining contaminants in soil at AOI 14 will be conducted, and additional removal or remedial actions may be identified to ensure the protectiveness of the remedy. The Navy IR Site 25 site-wide average remediation goals will be removed from Table 1 to avoid confusion and the implication that these values are cleanup goals for the NTCRA at AOI 14.

(2) The subject document is to present the decision under the removal action authority under CERCLA and not necessarily document the decision for a remedial action. Thus, it is confusing to identify the higher cleanup goal (e.g., 93.8 mg/kg for lead) as a "*cleanup goal*" and name the lower cleanup goal (e.g., 33 mg/kg lead) as the "*remediation goal*." To clarify, CDFW-OSPR recommends renaming the header so that the column header for the higher cleanup goal is rename to "*do-not-exceed*' removal action goal and the column header for the lower cleanup goal be rename "*site-wide average*" removal action goal.

Response: The "lower cleanup goal" of 33 mg/kg for lead is a remediation goal that was identified for Navy IR Site 25 and is not a cleanup goal or remediation goal for AOI 14. As described in the response to subpart 1 of this comment, NASA will evaluate the residual site-wide average concentrations of lead, total DDT, and total PCBs at AOI 14 and compare the site-wide average concentrations to Navy IR Site 25 site-wide average remediation goals. In addition, Navy IR Site 25 site-wide average remediation goals will be removed from Table 1 of the AM to avoid the implication that these values are cleanup goals for AOI 14.

(3) Although NASA is not prohibited from using it as its removal action goal, the higher numeric cleanup goals are not protective of ecological receptors. According to the Navy's Final Site 25 Record of Decision, the do-not-exceed remedial goal is based on the Navy/BTAG TRV-high. The TRV-high is a mid-effects level (i.e., chronic exposure level that is above the Lowest Observed Effects Level; EFA West, 1997). This Navy/BTAG TRV-high is not considered ecologically protective and is only suitable to rank sites in prioritizing cleanup (Chernoff et al., 1997).

Response: Please see the response to subpart 1 of this comment for more information on how NASA intends to evaluate residual site-wide average concentrations of lead, total DDT, and total PCBs at AOI 14.

(4) The text also states that the higher numeric cleanup goal of 93.8 mg/kg is protective of human health for hypothetical residents. It is CDFW-OSPR's understanding is that the lead cleanup goal for unrestricted use and unlimited exposure in California is 80 mg/kg (DTSC, 2015). However, CDFW-OSPR defers this issue to the Water Board, as the state lead agency, on this issue.

Response: Please see the response to EPA/Water Board comment 17.

(5) The text continues, "*...the Navy IR Site 25 site-wide average remediation goals will also be addressed through calculations of the site-wide averages from confirmation* samples...[emphasis added by CDFW-OSPR]" The word "*addressed*" is vague. Please specify what NASA would do if the site-wide averages from confirmation samples do not meet the site-wide average remediation goals. Does it plan to excavate further until the confirmation samples meet the site-wide average remediation goal during the removal action?

Response: Please see the response to subpart 1 of this comment. The AM has been revised to state that if residual site-wide average concentrations of lead, total PCBs, and total DDT at AOI 14 exceed Navy IR Site 25 site-wide average remediation goals, additional evaluation or removal will be conducted.

4. Page 12, Section 3.2 Threats to the Environment.

a. Please revise the scientific name of Ridgway's Rail from *Rallus longirostris obsoletus* to *Rallus obsoletus* to reflect the name change in 2014 by the American Ornithologists' Union (Chesser, et al., 2014).

Response: The AM has been revised as described in this comment.

b. Please correct the spelling of the scientific name of the Western Snowy Plover from *Charadrius alexandrius nivosus* to *Charadrius alexandrinus nivosus*.

Response: The AM has been revised as described in this comment.

c. Please revise the status of the Townsend's big-eared bat from State species of special concern to State candidate threatened.

Response: The AM has been revised as described in this comment.

d. The text states "*Although the contaminants in FSFA soil would not contaminate drinking water supplies, the contamination may affect sensitive ecosystems on and adjacent to the FSFA*." Please add that the contamination may affect sensitive ecosystems and federally and state listed species on and adjacent to the FSFA.

Response: The AM has been revised as described in this comment.

5. Page 14. Section 5.1.1 Proposed Action Description.

a. The text states:

The results of the confirmation samples will dictate the extent of excavation to meet cleanup goals and will be used to calculate site-wide average concentrations to ***address*** *the site-wide average remediation goals developed for Navy IR Site 25* [emphasis added by CDFW-OSPR].

As stated in Specific Comment #3b, it is not clear what specific action the word "*address*" translates to. Please clarify.

Response: Both Section 2.1.4 and Section 5.1.1 of the AM has been revised to state that if residual site-wide average concentrations of lead, total PCBs, and total DDT exceed Navy IR Site 25 site-wide average remediation goals, additional evaluation or removal of soil at AOI 14 will be conducted.

b. The text continues:

Approximately 12,000 (bank) cubic yards of clean overburden will be segregated, sampled, and returned to the FSFA to be used for grading, assuming the sampling results confirm that contaminant concentrations are below the cleanup goals.

If the cleanup goals refer to the upper bound of the removal action (i.e., 93.8 mg/kg for lead and 0.109 mg/kg for Total DDT), it would not be appropriate for grading or mixing. Please keep in mind that the upper end of the **removal** action goal is not a **remedial** action goal and as such, it is not suitable for unrestricted use. Furthermore, grading would effectively reduce the concentration of contaminants by dilution, presumably with cleaner soil from other parts of the FSFA. Dilution of contaminant level by grading or re-grading site soil is an unacceptable practice for the following reasons:

(1) Because many of the sample locations with elevated contaminant of ecological concern do not have their vertical extent delineated, mixing or re-grading soil would add another layer of uncertainty in whether it would dilute soil concentration or exacerbate the final contaminant volume in the said mixture. There is no assurance that the mixing effort would reduce contaminant level below threshold of effects.

Response: Currently, NASA plans to further characterize AOI 14 using incremental sampling methodology (ISM) before excavation begins. The ISM sampling will identify areas that exceed the cleanup goals and allow NASA to calculate residual site-wide average concentrations before excavation. If residual AOI 14 site-wide average concentrations of

lead, total PCBs, and total DDT exceed Navy IR Site 25 site-wide average remediation goals, NASA will identify and excavate additional areas or evaluate other actions.

Soil mixing is not an element of the removal action. After characterization, NASA will remove soil at the FSFA that has concentrations of lead, total DDT, and total PCBs in excess of the cleanup goals, or NASA will remove additional areas to meet the Navy IR site-wide average remediation goal, as applicable. Soil with concentrations of lead, total DDT, and total PCBs less than cleanup goals and not removed to achieve the site-wide average concentrations will remain on site. The entire site will be regraded for stormwater drainage.

(2) Dilution does not reduce the contaminant mass (e.g.,10 lbs. of total DDT is still 10 lbs. of total DDT after dilution). There would be no treatment or reduction of the contaminant mass in the environment. If it is not done properly, contaminant levels may still be above site-wide remedial cleanup goals.

Response: As stated above, soil mixing (and dilution) are not removal action elements. Soil volume to be removed will be based on the cleanup goals. Overburden soil with contaminant concentrations below cleanup goals may be used for final site grading purposes. Based on the current soil data and planned areas and volume of excavation, NASA estimates that the NTCRA will reduce concentrations of lead by 31.5 percent, concentrations of total DDT by 99.4 percent, and concentrations of total PCBs by 98.4 percent. No new fill material will be added to the site. As discussed in the responses to previous comments, NASA will calculate residual site-wide average concentrations at AOI 14 and compare those concentrations to Navy IR Site 25 site-wide average remediation goals. If AOI 14 site-wide average concentrations exceed Navy IR Site 25 site-wide average remediation goals, additional excavation or evaluation will be conducted.

(3) Long-term effectiveness and permanence are Primary Balancing Criteria under the National Contingency Plan (NCP). However, under the proposed scenario, these NCP criteria would not be factored in the remedial decision-making. Specifically, the "dilution as solution" scenario would not achieve long-term effectiveness and permanence.

Response: The EE/CA evaluated the long-term effectiveness and permanence of Alternative 3, which is the selected alternative for the NTCRA. The NTCRA would result in a net decrease in the mass of lead, total PCBs, and total DDT at AOI 14. The EE/CA also documents that Alternative 3 does not include treatment and thus does not reduce the toxicity, mobility, or volume of contamination through treatment.

(4) Dilution of contaminated soil with cleaner soil would aerate soil. Thus may change the redox potential or make the propensity for leaching of contaminants higher. Additional investigation would need to be conducted to ensure that mixing soil would not exacerbate the fate and transport of

contaminants to the nearby habitat for the salt marsh harvest mouse, the California Clapper Rail, and the California Black Rail.

Response: As stated above, soil mixing (and dilution) are not removal action elements. Soil volume to be removed will be based on the cleanup goals. Additionally, the mobility of lead, total DDT, and total PCBs would not be significantly affected by changes in the redox potential of the soil because of the inherent characteristics of these chemicals.

c. The last sentence on page 14 states:

Approximately 3,000 (bank) cubic yards of construction debris will be transported and disposed of as solid waste at either a California Class II landfill or as ***construction debris*** [Emphasis added by CDFW-OSPR].

Please clearly define what NASA meant by "*construction debris*." Provide the characteristics of construction debris and what material would constitute construction debris, and under what use the construction debris would be used for. Can the construction debris from A01 14 be used in habitat restoration projects?

Response: As described in the EE/CA, visual observations of the surface of the FSFA show that the fill material consists of soil and construction debris, including concrete, rebar, and metal piping. At this time, NASA does not intend to use the construction debris in habitat restoration projects.

6. Page 15. Section 5.1.1 Proposed Action Description.

a. The text states:

The specific mitigation criteria and actions to be conducted will be detailed in subsequent site removal action documents.

Please clarify if NASA is referring to the removal action work plan for which the mitigation criteria and actions to be conducted will be detailed. Alternatively, if there are any other documents that would supplement this information, please list what they would be.

Response: NASA intends to complete a removal action work plan that will detail NTCRA activities and mitigation criteria. Other documents, such as a separate habitat restoration plan, may be completed as necessary.

b. The text continues:

However, one CERCLA 5-year review will be necessary because the ecological mitigation monitoring will continue for up to 5 years after excavation is complete.

CDFW-OSPR recommends that the habitat restoration should be part of the removal action completion report. Alternatively, a habitat restoration plan can be part of the operation and maintenance plan. Please clarify this process in the text.

Response: The reference to a CERCLA five-year review will be deleted from the AM. NASA will complete a Removal Action Completion Report (RACR) to document NTCRA activities and the results of the ecological restoration. It is assumed that the level of effort for the RACR will be similar to that of the five-year review and so this change would not significantly affect the anticipated costs of the NTCRA.

7. Page 15. Section 5.1.2 Contribution to Remedial Performance.

a. The text states:

After the NTCRA is completed, A01 14 will be available for unrestricted use. No long-term monitoring or institutional controls (IC) will be necessary to maintain the effectiveness of the NTCRA because soil exceeding cleanup goals would not remain on A01 14.

If the cleanup goals are based on the higher cleanup goals, CDFW-OSPR cannot recommend the site be certified for unrestricted use unless the confirmation samples meet the site-wide average. Usually, a Record of Decision would be followed after the NTCRA is completed if NASA would like to obtain certification for unrestricted use and unlimited exposure.

Response: CDFW's comment is noted.

b. The text continues:

The NTCRA will serve as the final action for A01 14 because the NTCRA will address all potential risks at AOl 14.

Given that a 5-year review would be prepared, it does not appear that the NTCRA would be the final action. Please rectify.

Response: Please see the response to CDFW comment 6b. The text was also revised to say that NASA intends the NTCRA to be the final action for AOI 14 because the NTCRA will address all potential risks at AOI 14.

8. **Figure 5. Extent of Non-Time-Critical Removal Action.** According to the legend, sample location with solid red dots exceeded the cleanup goal for at least one chemical. Whereas sample locations with solid green dots indicate these samples did not exceed the cleanup goals for any chemicals. Please categorize those green sample locations further by indicating which one of these sample locations has chemical concentrations that exceed the site-wide average cleanup goal.

Response: The Navy IR Site 25 site-wide average remediation goals are not cleanup goals for AOI 14. NASA will evaluate residual site-wide average concentrations of lead, total PCBs, and total DDT and may excavate additional areas to achieve the Navy IR Site 25 site-wide average remediation goals at AOI 14. However, these areas are not known at this time and thus cannot be specified on Figure 5.