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ALAMEDA POINT
SSIC NO. 5090.3

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Ser BPMOW.mep/0823
September 29, 2006

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Mr. Erich Simon
Regional Water Quality Control Board
1515 Clay Street, Suite 1400
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Ms. Dot Lofstrom
Department of Toxic Substances Control
8800 Cal Center Drive
Sacramento, CA 95826-3200

Dear Ms. Cook, Mr. Simon, and Ms. Lofstrom:

SUBJECT: DRAFT FINAL RECORD OF DECISION, SITE 17 SEAPLANE LAGOON, ALAMEDA POINT, ALAMEDA, CA

I am pleased to submit to you the *Draft Final Record of Decision for Site 17 Seaplane Lagoon, Alameda Point, Alameda, California*, dated October 2006, and responses to regulatory agency comments on the Draft Record of Decision (ROD). This ROD documents the remedy and summarizes results of the remedial investigation and feasibility study. In accordance with the Federal Facility Agreement, this ROD is scheduled to become final on November 1, 2006.

If you have any questions or comments, please call Ms. Mary Parker at (619) 532-0945 or me at (619) 532-0907.

Sincerely,

Alan H. Lee

for THOMAS L. MACCHIARELLA
BRAC Environmental Coordinator
By direction of the Director

Enclosure: 1. Draft Final Record of Decision, Site 17 Seaplane Lagoon, Alameda Point, Alameda, California, October 2006

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Final Response to Agency Comments on the Draft ROD for IR Site 17 Dated June 2006
Alameda Point, Alameda, California

Comment No.	Comment	Response
	General Comments from Mr. Mark Ripperda, U.S. EPA (dated August 2, 2006)	
1	Page D-1, Statement of Basis and Purpose. First paragraph, last sentence is incorrect and should be removed. Although DON is the lead federal agency, it does not have final decision-making authority over remedy selections. If there were a dispute, the final decision would be made by EPA, see CERCLA 120(e)(4)(A).	The following sentence was deleted: "As the lead Federal agency, the DON has the final decision-making authority over remedy selections and overall public participation activities. Under the next Declaration section, "Assessment of the Site", the following sentence has been added: "The larger of the two Site 17 debris piles along the Site 17 shoreline was sampled in February 2006. Concentrations in the debris pile exceed the remedial goal for Total PCBs, and these debris piles will be addressed separately prior to beginning the Site 17 sediment remediation." The above sentences also have been added at the end of Section 2.2.1, CERCLA Investigation Activities, and are summarized in Section 12.0.
2	Page D-2, last sentence, states that a five-year review is not required. While a Five-Year Review is not necessary because contaminants will not be left in place at levels which might preclude unrestricted use, the regulators have asked for a follow-up monitoring event. Please add a sentence such as: However, the Navy will take a round of post-closure samples approximately 3-5 years after cleanup is completed.	The Navy does not support monitoring 3-5 years after cleanup is completed. The Navy plans to conduct confirmation sampling at the end of the remediation to verify that remedial goals have been reached.
3	Page D-3, last row of the Table. How long will it take to complete the remediation and O&M.	Currently, it is estimated that the remedial action will be completed in approximately 2 years. Confirmation sampling will confirm that remedial goals have been met, and no O&M is required. O&M has been deleted from the referenced sentence.
4	Page D-1, Assessment of the Site. Please include a brief mention of contaminants found at the site that are risk drivers, and the approximate surface area and depth of the contaminated sediments. This will provide a better basis for the following section.	The text has been revised to indicate that the primary risk drivers are Total PCBs, cadmium, chromium, lead, and DDx and that the remediation areas encompass approximately 8 acres (4.9 acres in the northeast corner and 2.9 acres in the northwest corner) down to a depth of 4 feet.

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5	Section 2.2. Since the Navy did not use RCRA authority for the Seaplane Lagoon investigation or cleanup, this section is unnecessary and should be deleted.	This section has been revised to remove references to RCRA.
6	Section 4. EPA guidance suggests including an Overall Site Cleanup Plan. It would be helpful to list the ten Operable Units and their current status in this Section. Also describe which OUs are immediately adjacent and if activities from those sites impact the Seaplane Lagoon and vice versa. For example, mention the storm drain line remediation and the adjacent groundwater contamination plume.	For brevity, only adjacent areas that could affect the site were discussed. The second paragraph of Section 4 has been revised as follows: As shown in Figure 4-1, Site 17 is located within OU 4B at Alameda Point. The remedies for the other IR sites at Alameda Point will be, or have been, addressed in separate RODs. Site 17, Seaplane Lagoon, is located in the southeastern quadrant of the former NAS facility. The storm sewer system at Alameda Point, designated as IR site 18, served as a primary transport route for chemicals from industrial operations and for surface water runoff to reach the offshore sites. In 1975, the direct discharge of industrial wastewater through the storm sewer network was terminated and since that time, a stormwater pollution prevention program has been in place at Alameda Point to ensure that only surface runoff is carried into the lagoon. In 1991, the Navy initiated several removal actions, designed to remove residual contaminated sediments from the sewer lines. The effectiveness of these actions was documented through closed circuit television surveys and the Navy issued a technical memorandum in February 2000 that removed Site 18 as a specific IR site (TtEMI, 2000). Additional investigations and remediation of potential residual contamination in the sewer lines leading to Site 17 are planned to be conducted prior to the initiation of remedial activity at Site 17. The role of the response action is to protect people and the environment from health risks posed by exposure to the

Comment No.	Comment	Response
		contaminated sediments located in the lagoon. This action is being conducted in preparation of utilizing the area for future commercial and recreational usage.
7	Section 5.5. Please provide a table with concentration ranges for the chemicals that were found above ambient levels, along with the ambient levels and an appropriate risk based screening level.	Table 5-1 (see Attachment 2), which summarizes the concentration ranges for the chemicals that exceed ambient, has been added.
8	Page 7-5, first paragraph line 7 and second paragraph line 4. The terms "generally acceptable risk range" and "acceptable risk range" should be changed to "risk management range". Additionally, we request that the following language be inserted: "EPA considers an excess cancer risk level of 10^{-6} as the point of departure for considering when to implement remedial measures at a site. Cancer risks above a risk level of 10^{-4} generally require remediation. The range between 10^{-6} and 10^{-4} is often referred to as the "risk management range," and sites having cancer risks that fall into this range may, or may not, require remediation, based upon the nature and extent of contamination, potential exposure, and other site-specific factors."	The text has been revised as requested.
9	Section 8.0. The last sentence of this section states that RA-226 will be evaluated during the remedial design, as well as during the removal action *(should be remedial action)*. What evaluation will occur?	The text has been modified to include a reference to Section 12.2 which clarifies that the remedial action sampling will include analysis of Ra-226 to enable proper, safe handling and segration of sediment within the dredged area and to support waste characterization and disposal.
10	Section 12.0. Please provide a better description of the potential problems associated with radium. State that all of the samples taken during the RI indicate that disposal should be allowable in a Class II landfill, but that the dredged materials will be screened for radium. Include the potential higher cost in the text, rather than just in the footnote to the table. Perhaps provide the differential per unit in disposal, rather than just the potential total of $33 million. Also, what was the range of levels of Radium previously sampled and what is the level that would preclude disposal in a Class II landfill.	Section 12.0 has been revised as requested to include a more detailed description of the potential problems with radium (see Attachment 1). In addition, Table 12.1 has been revised to include costs that include radium disposal. The revised total cost is $24.6 million. The site-specific background concentration of radium for Alameda Point is 0.36 pCi/g, therefore it is assumed that sediments with concentrations up to 1.36 pCi/g (i.e., background plus 1) can be disposed at a Class II landfill. Sediments with concentrations exceeding 1.36 pCi/g, based on the remedial action sampling, will be disposed at an appropriate facility that is designed to handle radioactive waste. For the purpose of this cost estimate, it is

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		assumed that 62% of the total volume of sediment will be suitable for disposal at a Class II landfill.
11	Section 12.0. The regulators have requested a follow-up monitoring event after approximately 3-5 years. Please include that cost under O&M in Table 12.1.	Sampling in 3-5 years will not be conducted so no revision to Table 12.1 is required.
12	Page 13-19, Sec. 13.3, line 3, quote from NCP, need to close the quotes.	The text has been revised as requested.
	Typographical Errors	
13	Page D-3, first row of Table. Please change Section 2.1 to Section 2.2.1. Also change Section 5.3 to Section 5.5 in the first and fourth rows of the table.	The text has been revised as requested.
14	Page 2-5. Incorporated is missing the letter 'R' in the last sentence at the end of the table.	The text has been revised as requested.
15	Table 10-1. rgs should be RGs in the description of long term effectiveness of alt. 6.	The text has been revised as requested.
16	Page 13-7. Chemcials for chemicals occurs twice in the first paragraph after the bullets.	The text has been revised as requested.
17	Page 13-9. Typo for sediment in the last sentence of the first paragraph.	The text has been revised as requested.
18	Page 13-19, Third Sentence. This sentence has incomplete parentheses. Also, it states that three criteria were used, but names only two.	The text has been revised as requested.
19	Page F-1, Paragraph 3, Second to last Sentence. Typo for contaminants.	The text has been corrected as requested.
	ARARs Comments	
20	General comment: A slight reorganization of Section 13 so that the three ARARs tables are all together would be much appreciated.	The tables in Section 13 have been moved to the end of Section 13.2.3 in the ARARs section.
21	General comment: The list of chemical-specific ARARs on page 13-7 and the ARARs table (13-1) are not always consistent.	The text has been clarified and text and tables are now consistent.
22	Page 13-2: CTR/NTR water quality standards: (a) The list on page 13-7 includes more pollutants than are included under Comments in Table 13-1, first row. (b) It would be very helpful to clarify which WQS are from the CTR and which are from the NTR, and to give the	In response to the RWQCB Comment #1, the specific chemical names have been deleted because the NTR and CTR would apply to the discharge in general of all chemicals listed in the requirements, rather than just the

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	values.	chemicals of concern identified in the sediment. Therefore, it is not appropriate to include the values for all NTR and CTR in the ARARS. In addition, the NTR and CTR values are the same for the COCs identified at Site 17.
23	Page 13-2: Effluent limitations that meet technology-based requirements. EPA agrees with including CWA 301(b) as an ARAR but finds the discussion in the draft ROD incomplete and confusing. (a) The document should specify which step(s) in the process this requirement applies to. We surmise it applies to discharge of leachate following dewatering, but this is not clear. (b) We recommend also including the criteria and standards for imposing technology-based treatment requirements from 40 CFR Part 125, Subpart A. Technology-based effluent limitations will have to be developed using best professional judgment. (See also discussion p. 3-7 and following in USEPA *CERCLA Compliance with Other Law* Manual, EPA/540/G-89/006 (August 1988).) The ROD in Sec. 12.3, p. 12-4, indicates that specific discharge requirements will be provided in the remedial design, and we recommend noting that also in the ARARs table. (c) The statement under "Comments" that "the DON may use the substantive provisions of a RWQCB permit as TBCs to comply with other requirements" is confusing. Is this a reference to a particular permit? What are the other requirements?	The text has been revised as follows: • The process referred to, dewatering effluent discharge, will be called out in the text and table for this ARAR. • The criteria at 40 CFR 125.3 will be added as ARARs. Reference will be added to the table that specific requirements will be provided in the remedial design. • No other permit was identified by the State. This portion of the comment text will be deleted.
24	Other substantive NPDES requirements: Permitted discharges to surface waters must meet not only the technology-based requirements from CWA 301(b), but also, if necessary, water quality-based effluent limitations (CWA 301(1)(C)), and other substantive requirements from EPA permitting regulations in 40 CFR Parts 122-125. These should also be included as ARARs. (Again, see EPA 1988.)	The citation of Clean Water Act 301(b) includes 301(b)(1)(C). However, the requirement for control beyond BCT/BAT was added when necessary to meet water quality standards. The water quality standards are already addressed in the CTR, NTR, and ambient water quality criteria. The permitting regulations were reviewed for pertinent substantive provisions in 40 CFR parts 122-125. Other sections that were added to the ARARs include: monitoring requirements at 40 CFR 122.44(i)((1)(i-iv) were added as action-specific ARARs; 40 CFR 125.3 was added as discussed in the response to EPA Comment 23 above and 122.44(k)(2) and (4) was added in response to EPA Comment 25 below.

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25	Stormwater discharge requirements: The Proposed Plan at page 13 stated that the dewatering areas will be located adjacent to the lagoon, and that any discharge occurring during the dewatering process will drain back into Seaplane Lagoon. This does not appear consistent with the commitment in the Draft ROD, page 12-4, that the water produced during dewatering will be tested and treated as necessary prior to being released back into the lagoon. The ROD should clarify whether there could be runoff during the dewatering process. If so, ARARs related to stormwater need to be included. Generally, we have seen RODs include substantive portions of the State's general permits for stormwater discharges as ARARs, although another option might be to directly cite EPA stormwater regulations.	The text in Section 12.3 of the ROD reflects conceptual pre-design work conducted since the Proposed Plan was released. Based on that work, the Navy has concluded that the RCRA exclusion will not apply and has clarified in the ROD that sediment will be contained while dewatering occurs and tested and treated prior to release back to the lagoon. There may be disturbance to land in the form of staging piles that could exceed the 1 acre limit. Therefore, the construction stormwater requirements at 122.44(k)(2) and (4) for BMPs and stormwater plans were added in for action-specific ARARs.
26	RCRA regulations defining hazardous waste (fourth box on page 13-2 and bullets 9 and 10 on page 13-7). The box on page 13-2 is not consistent with either bullet 9 or 10 on page 13-7, nor are the bullets consistent with each other. This should either be explained or made consistent.	The regulations defining RCRA hazardous waste on the table are the same as bullet #4 on page 13-7. The bullets were clarified that #4 is for RCRA waste and bullet #10 is for state definitions of waste.
27	Basin Plan (p. 13-3, third box; p. 13-7, sixth bullet. (a) The ROD includes water quality standards for turbidity and DO, but does not include total suspended solids, which was included in the Proposed Plan (p. 14). Why was this removed? (b) The bullet on page 13-7 includes substantive provisions of Chapter 4 of the Basin Plan, but this is not included in the table. This should be consistent. Generally, EPA does not consider Chapter 4 of the Basin Plan to contain ARARs.	The requirements of 40 C.F.R. § 300.5 specify that an ARAR must be an environmental or facility siting requirement or limitation. The sediment clause in the Basin Plan to prevent a nuisance does not fall within the definition of those terms and is therefore not an ARAR. However, the Basin Plan WQOs were previously identified in the ROD in Section 13.2.1 and suspended sediment, with the exception for nuisance (to protect beneficial uses), was added to the specifically called out WQOs for dissolved oxygen and turbidity.
28	SWRCB Resolution 68-16 (p. 13-3, last box; p. 13-7, seventh bullet and explanation at the bottom; page 13-8, discussion of DON position). In the ARARs table, Resolution 68-16 is identified as applicable for certain portions of the remedy, and in the bullets on page 13-7 it is identified as an ARAR for new discharges associated with the remedial action only. EPA considers Resolution 68-16 an ARAR for remedies involving discharges to surface water, so we	The text will clarify the rationale for the determination that 68-16 is not an ARAR requiring the cleanup of sediment at IR Site 17. However, the proposed sediment excavation/dredging will result in a new discharge as well as the dewatered sediment effluent that would be subject to the new discharge requirements of 68-16. The text and table were revised to clarify this.

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	agree with the Navy's treatment of it in both the ARARs table and the bullets on page 13-7. However, we find the last paragraph on page 13-7 and the long explanation of the differences between the DON and State positions on 68-16 very confusing as to this ARAR and ROD. For example, both the paragraph at the bottom on page 13-7 and the fourth paragraph on page 13-8 state that DON does not consider 68-16 a chemical-specific ARAR for this action. However, 68-16 is included in the table of chemical-specific ARARs and in the bullets for chemical-specific ARARs on page 13-7. Paragraph 3 on page 13-8 indicates that 68-16 "is a potential action-specific ARAR for regulating new discharges such as discharges to surface water during dredging and dewatering activities." This language suggests that DON has decided that 68-16 is not a chemical-specific ARAR but instead an action-specific ARAR for Site 17. EPA recommends that the Navy clarify this discussion to clearly indicate that 68-16 is selected as an ARAR for this remedial action for new discharges to surface water.	
29	SWRCB Resolution 92-49 (p. 13-4 ARARs table; discussion p. 13-7, last paragraph; discussion p. 13-8). It is not clear whether the Navy does not consider this an ARAR because this is a sediment cleanup, as the ARARs table suggests, or because the Navy considers it no more stringent than 22 CCR 66264.94, as the discussion starting on page 13-7 suggests. If the latter, the Navy should explain why 22 CCR 66264.94 is an ARAR, as this is not readily apparent.	The discussion regarding 22 CCR 66264.94 will be removed and additional discussion added regarding the State's assertion that 92-49 is applicable for setting sediment cleanup levels and the Navy position that it is not. Specifically, the text will be revised to state that the substantive provisions of SWRCB Resolution 92-49 III.G. require cleanup that promotes attainment of background water quality or best water quality reasonable. However, the surface water of Seaplane Lagoon is not considered different from other parts of the bay and is already considered to be at background levels. Since the sediment does not appear to be adversely affecting water quality based on sampling, SWRCB Resolution 92-49 is not considered to be a potential ARAR. Although DoN has determined that SWRCB Resolution 92-49 is not a potential ARAR for the sediment cleanup, the proposed remediation will comply with the substantive provisions of SWRCB Resolution 92-49 III.G.

Final Response to Agency Comments on the Draft ROD for IR Site 17 Dated June 2006
Alameda Point, Alameda, California

Comment No.	Comment	Response
30	Policy for Implementation of Toxic Standards (p. 13-4 and p. 13-7, eighth bullet). (a) This would appear to be an ARAR for discharge of treated leachate following dewatering rather than during the dredging. (b) We recommend using the entire name of the Policy in the bullet on page 13-7 because "Inland Surface Waters Plan" and "Enclosed Bays and Estuaries Plan" refer to two documents that were rescinded in 1994.	The description of the Policy for Implementation of Toxic Standards has been revised to indicate that it is an ARAR for discharge of dewatering effluent. In addition, the name of the Policy will be revised as requested.
31	BAAQMD regulation 6-301 (page 13-7, eleventh bullet). This requirement is not included on the ARARs table and should be added to the table. Also, the Proposed Plan at page 14 includes other BAAQMD requirements from regulations 11-1-301, 11-1-303, 11-1-501 and portions of Regulation 8. Why were those not included in the draft ROD?	BAAQMD Regulation 6-301 has been added to the table. In addition, the additional requirements mentioned were reevaluated. No portions of Rule 8 were identified as being pertinent to the proposed remedial action. The lead standards at Rule 11 were re-evaluated. There is an option for using 11-1-303 instead of 11-1-302. The Navy has elected to use 11-1-302. The requirements at 11-1-501 are only required for 11-1-303. The requirements for lead emission limits at 11-1-301 and 11-1-302 have been added back into the ARARs.
32	NRC and UMTRCA requirements (p. 13-5 and 13-6; p. 13-7, last two bullets and discussion p. 13-9). (a) Page 13-5 contains the same requirement twice. (b) The discussion on page 13-9 states that these requirements may be used as screening levels for Site 17 and for characterization prior to disposal. What does the Navy mean by screening levels? There is no mention of radiation levels in the remediation goals section.	The text repeated on page 13-5 has been deleted. With respect to the discussion of screening levels, that text has been revised to clarify that the UMTRCA requirement will be considered during the characterization of dredged sediments for the purposes of disposal.
33	Page 13-9 first bullet and page 13-10 second box, River and Harbors Act of 1899. Please remove reference to 33 USC 322, which has been repealed.	The references to 33 USC 322 have been removed as requested.
34	Page 13-9 first bullet and page 13-10 third box, Endangered Species Act. We recommend adding ESA Sec. 9, 16 USC 1538, as an ARAR.	16 USC 1538(a) has been added in as a potential ARAR as suggested.
35	Page 13-9, second bullet. Should add the name of the Act (presumably California ESA).	The text has been revised to include "California Endangered Species Act" at the beginning of the bullet.
36	Page 13-13, second paragraph, 33 CFR 320 and 323. These requirements are not included in the ARARs table starting on page 13-14, and it is not readily apparent why they are ARARs. Please explain.	The 33 CFR 320 and 323 requirements have been deleted from the text.

Final Response to Agency Comments on the Draft ROD for IR Site 17 Dated June 2006
Alameda Point, Alameda, California

Comment No.	Comment	Response
37	Page 13-13, first bullet, and page 13-14, second box, Hazardous waste accumulation, 22 CCR 66262.34. This regulation puts a limit of 90 days on hazardous waste accumulation without a permit. It is confusing to cite this regulation along with the staging pile regulations that allow accumulation up to two years, and along with the temporary unit regulations for treatment and storage of hazardous waste during corrective actions, which allow one year (22 CCR 66264.553). It is not apparent why 66262.34 is an ARAR. Please explain why 66264.34 is an ARAR, and how the various time limits would apply to this site.	CCR 66262.34 was deleted.
38	Page 13-13, sixth bullet, and P. 13-17, second box, Staging Piles. The Navy should add that these requirements apply in California through 22 CCR 66264.552(f).	22CCR 66264.552(f) was added into the discussion of the comment. This section references the federal staging pile regulations and is no more stringent than the federal ARAR.
39	Waste piles. The FS included waste pile requirements from 22 CCR 66264.251, 66264.221, etc. Why were those omitted from the ROD?	The remedial action will use temporary staging piles rather than waste piles. ARARs for staging piles are already included.
40	Treatment of leachate: Are there any action-specific ARARs that would apply to treatment processes contemplated if the leachate from the dewatering needs to be treated prior to disposal?	The monitoring requirements at 40 CFR 122.44(i)(1)(i-iv) were added in as action-specific ARARs as well as other requirements identified above in response to comment #24.
General Comments from Ms. Judy C. Huang, RWQCB (dated August 2, 2006)		
1	Page 13-2, Table 13-1 Chemical-Specific ARARs, First Row, Water Quality Standards, National Toxics rule (NTR) and California Toxics Rule: In this section, the draft ROD stated that the NTR and CTR are potentially applicable to the expected discharge to surface water for PCBs and DDx during dredging and dewatering activities. Please note that the NTR and CTR are applicable to all chemical discharges into Waters of the State as part of the remedial action, and are not limited to discharges of PCBs and DDx. Please revise the Draft ROD.	The specific chemical names have been deleted as requested because the NTR and CTR would apply to the discharge in general of all chemicals listed in the requirements, rather than just the chemicals of concern identified in the sediment. See also response to EPA comment # 22.
General Comments from DHS (dated July 28, 2006)		
1	Upon Review of the subject document, DHS does not have comments for submission to DTSC at this time.	The DON acknowledges receipt of DHS's letter.

Final Response to Agency Comments on the Draft ROD for IR Site 17 Dated June 2006
Alameda Point, Alameda, California

Comment No.	Comment	Response
General Comments from Ms. Dot Lofstrom, DTSC (dated August 2, 2006)		
1	DTSC concurs with the comments submitted by the Regional Board, U.S. EPA, and DHS and has no further comments at this time.	The DON acknowledges receipt of DTSC's letter.
General Comments from Ms. Debbie Potter, ARRA (dated June 27, 2006)		
1	The debris piles along the north shor4e of Seaplane Lagoon should be remediated, as needed, as expeditiously as possible. In the Res5ponsiveness Summary (Appendix F) of the *ROD*, the Navy discusses the debris pile: "...[T]he DON committed to evaluate the soils at the debris pie to confirm that no contamination was introduced to the lagoon through the fill material. A separate investigation is currently being conducted at this area. Soil samples were collected in February and are currently being analyzed for the contaminant list identified in the Offshore *Core Study Workplan* (Battelle et al., 2005). Removal of those areas will be considered only if chemicals are identified at concentrations posing a risk to humans or the environment." (p. F-7) The ARRA looks forward to reviewing the results of the February investigation. If the results suggest a threat to human health or the environment or to normal marina operation and maintenance, the Navy must complete any needed cleanup of the debris piles by the time the Seaplane Lagoon *ROD*'s remediation is completed. It may be most efficient to combine the two remedial efforts.	As specified in U.S EPA Comment 1, the following text has been added to the ROD: "The larger of the two Site 17 debris piles along the Site 17 shoreline was sampled in February 2006. Concentrations in the debris pile exceed the remedial goal for Total PCBs, and these debris piles will be addressed separately prior to beginning the Site 17 sediment remediation."

ATTACHMENT 1

Based on the RI Report (Battelle et al., 2004a), the FS Report (Battelle, 2005), and the AR (see Attachment A) for Site 17, as well as comments received on the Proposed Plan (Battelle, 2006); the DON, along with the BCT, has selected Alternative 5 as the selected remedy because it satisfies the statutory requirements to the maximum extent practicable (see Section 13).

Alternative 5 has the following components:

- Initial remedial action sampling to enable proper and safe handling, segregation, and disposal of sediment to be dredged;
- Dredging;
- Quality control sampling and confirmation testing;
- Dewatering; and,
- Upland disposal at a permitted off-site waste disposal facility.

Alternative 5 meets the threshold criteria and provides the best balance of tradeoffs among the alternatives evaluated in detail with respect to the balancing criteria. This selected remedy would be expected to fully comply with the statutory requirements set by CERCLA. Additionally, this alternative would likely accommodate the planned redevelopment of Site 17 into a commercial marina. The total present worth cost would be $24.6 million (see Table 12-1 for a summary of estimated costs).

As discussed in Section 5.5, although not identified as a risk driver, it is possible that radium concentrations may be high enough in some portions of the dredged material to preclude disposal at a Class II landfill. For cost-estimating purposes the site-specific background concentration of radium for Site 17 is assumed to be 0.36 pCi/g; therefore it is assumed that sediments with concentrations up to 1.36 pCi/g (i.e., background + 1) will be acceptable for Class II disposal. As described in Section 12.2, additional sampling will be conducted during the remediation for the purpose of characterizing the material for disposal. Based on the data currently available, a cost estimate was generated conservatively assuming that up to 38% of the total volume of material dredged would not be suitable for Class II landfill disposal.

The Site 17 debris piles will be addressed separately prior to the beginning of the Site 17 sediment remediation. Remaining storm sewer evaluation and remediation for the lines leading to the lagoon are planned to be conducted prior to the Site 17 sediment remediation.

Table 12-1 Cost Estimate Summary for Alternative 5[a]

Cost Category	Capital Costs
Design/Work Plan, Initial Remedial Action Sampling, Quality Control Testing, and Confirmation Sampling	$0.6 million
Mobilization, Setup, Dredging, and Dewatering	$2.6 million
Debris Removal from Sediment, Waste Characterization, Transportation, and Class II Landfill Disposal[b]	$14.1 million[b]
Engineering Design, Management, and Contingencies	$7.3 million
Total Capital Costs	$24.6 million

[a] The information in this cost estimate summary table is based on the best available information regarding the anticipated scope of the remedial alternative. Changes in cost elements may occur as a result of new information and data collected during the engineering design of the remedial alternative. This is an order of magnitude engineering cost estimate that is expected to be within +50 to -30 percent of the actual project cost.

[b] Assumes that approximately 38% of the dewatered dredged material will contain levels of Ra-226 or other chemical constituents that preclude disposal at a Class II landfill. Concentrations of Ra-226 of 1.36 pCi/g and below will be assumed acceptable for Class II disposal.

ATTACHMENT 2

Table 5-1. Statistical Summary of Chemicals in Surface Sediment

Analyte	Units	Number of Samples			Detected Range	Threshold Values			
		Total	Non-Detect	Detected		Ecological Screen[a]	Ambient[b]	ER-M[c]	PRG Industrial[d]
Arsenic	mg/kg	76	0	76	1.5-15.4	8.2	15.3	70	0.25
Cadmium	mg/kg	76	2	74	0.19-57.3	1.2	0.33	9.6	450
Chromium	mg/kg	76	0	76	34.2-495	81	112	370	450
Copper	mg/kg	76	0	76	7-291	34	68.1	270	64
Lead	mg/kg	76	0	76	3.4-619	46.7	43.2	218	800
Magnesium	mg/kg	49	0	49	2980-17900	NA	NA	NA	NA
Mercury	mg/kg	76	0	76	0.07-1.8	0.15	0.43	0.71	62
Molybdenum	mg/kg	49	32	17	0.43-9.3	NA	NA	NA	5100
Nickel	mg/kg	76	0	76	29.2-128	20.9	112	51.6	20000
Selenium	mg/kg	76	44	32	0.2083-1.35	0.7[e]	0.64	1.4	5100
Silver	mg/kg	76	14	62	0.4-11.7	1	0.58	3.7	5100
Thallium	mg/kg	56	46	10	0.08-0.3	NA	NA	NA	67
Tin	mg/kg	10	0	10	3-8	NA	NA	NA	100000
Zinc	mg/kg	76	1	75	101.5-514	150	158	410	100000
Total PCB	µg/kg	77	10	67	18-2535	22.7	200[f]	180	NA
Total 4,4-DDX	µg/kg	77	20	57	2.4-202.1	1.58	7	46.1	NA
Total HPAH	µg/kg	77	15	62	120-36380	1700	3060	9600	NA
Total LPAH (6)	µg/kg	77	42	35	87.18-6768	552	434	3160	NA
alpha-Chlordane	µg/kg	77	48	29	0.1251-17	0.5[e]	NA	6	6.5
Dieldrin	µg/kg	77	50	27	0.1688-12.45	0.02[e]	0.44	8	0.11
Endrin	µg/kg	69	63	6	0.07217-28	0.02[e]	NA	45	180
Endrin Aldehyde	µg/kg	67	65	2	3.6-4.6	NA	NA	NA	NA
gamma-Chlordane	µg/kg	67	51	16	0.08243-27	0.5[e]	NA	6	6.5
Dibutyltin	mg/kg	57	38	19	3.625-145	25.1[g]	NA	NA	NA
Monobutyltin	mg/kg	45	36	9	4-61	25.1[g]	NA	NA	NA
Tetrabutyltin	mg/kg	57	53	4	2-6	25.1[g]	NA	NA	NA
Tributyltin	mg/kg	77	60	17	3.125-185	25.1[g]	NA	25.1	NA

NA = not applicable

[a] Conservative ecological sediment screening benchmarks protective of benthic invertebrates and fish. Values represent the Effects Range-Low (ER-L) from Long et al. 1995, unless otherwise noted.

[b] Ambient values reflect data from the Bay Protection and Toxic Hotspot Cleanup Program (BPTCP), the SFEI RMP, and data from reference locations collected by Tetra Tech during the 1998 field sampling and by Battelle during 2001 sampling conducted for Hunters Point, unless otherwise noted.

[c] Effects Range-Median (ER-M) from Long et al., 1995.

[d] Preliminary remediation goals (PRG) reported by EPA (2004a), based on human health exposures to soil under an industrial exposure scenario.

[e] ER-L reported by Long and Morgan, 1991.

[f] Upper-bound estimate of nearshore ambient as recommended by EPA, 2004b.

[g] Value reported by EPA, 1996.

References:
USEPA. 2004a. U.S. EPA Region 9 Preliminary Remediation Goal Tables.
USEPA. 2004b. Letter to Thomas Macchiarella (Navy) regarding the Draft Final Remedial Investigation Report. June 29.
Long, E.R., D.D. MacDonald, S.L. Smith, and F.D. Calder. 1995. Incidence of Adverse Biological Effects within Ranges of Chemical Concentrations in Marine and Estuarine Sediments. Environmental Management, 19(1): 81-97.
Long, E.R., and L.G. Morgan. 1991. The Potential for Biological Effects of Sediment-Sorbed Contami¬nants Tested in the National Status and Trends Program. NOAA Technical Memorandum NOS OMA 52. Seattle, WA. March.

ENCLOSURE 1

DRAFT FINAL RECORD OF DECISION SITE 17 SEAPLANE LAGOON

DATED 02 OCTOBER 2006

IS ENTERED IN THE DATABASE AND FILED AT ADMINISTRATIVE RECORD NO. **N00236.002555**