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MARE ISLAND  
SSIC NO. 5090.3.A



Alan C. Lloyd, PhD  
Agency Secretary  
Cal/EPA

Maureen Gorsen, Director  
700 Heinz Avenue, Suite 200  
Berkeley, California 94710-2721

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March 20, 2006

Mr. Dwight Gemar  
Weston Solutions, Inc.  
750 Dump Road  
Mare Island  
Vallejo, California 94592

2006 MAR 23 P 2:33  
BRAC OFFICE

**Mare Island Navy Draft Remedial Action Plan/Record of Decision/RCRA Closure Plan, dated 1/2006**

Dear Mr. Gemar:

The Department of Toxic Substances Control has reviewed the subject document. The attached comments are forwarded to you for your consideration. Several differences have been noted between this document and the Feasibility Study. Please ensure that the revised Draft RAP/ROD/RCRA Closure Plan is consistent with the alternatives presented in the Feasibility Study.

Should you have any questions regarding this letter, please call me at (510) 540-3773.

Sincerely,

Chip Gribble  
Remedial Project Manager  
Base Closure Unit  
Office of Military Facilities

Attachments

cc: See next page.

Mr. Dwight Gemar  
March 20, 2006  
Page 2

cc: Mr. Jerry Dunaway  
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1455 Frazee Road, Suite 900  
San Diego, California 92108-4310

Mr. George Leyva  
Regional Water Quality Control Board  
San Francisco Bay Region  
1515 Clay Street, Suite 1400  
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Ms. Carolyn d'Almeida  
U. S. Environmental Protection Agency  
413 Poppyfield Drive  
American Canyon, California 94503

**DTSC Comments on the Mare Island Navy Draft Remedial Action Plan/Record of Decision/RCRA Closure Plan, dated 1/2006**

1. Please note that all outstanding issues, such as the biotic barrier and post hot-spot excavation confirmatory sampling must be resolved in order to develop a final draft RAP for formal public review.
2. Page 1-1, section 1.2, line 2: The "(RAP/ROD)" that follows "RCRA Closure Plan" should be deleted in all cases.
3. Page 1-1, section 1.2: Change the last bullet the following: California Health and Safety Code Chapters 6.5 and 6.8.
4. Page 1-2, 1<sup>st</sup> line: Please delete this sentence. The Initial Study should be presented in a separate document and not as an appendix. Discussion of CEQA documentation is not appropriate in this RAP/ROD/RCRA Closure Plan.
5. Page 1-2, section 1.4: The document extensively uses the phrase "Containment Area" without providing description. Please include a definition or description for the containment area.
6. Page 1-2, section 1.4: Please replace "non-hazardous waste cap" with non-RCRA hazardous waste cap".
7. Page 1-5, checklist number 7: Please add the cost of regulatory oversight to this checklist item.
8. Page 1-6: This page should be moved to the end of an Executive Summary that provides the proposed remedy with approval pages. Also, please add a new section titled Selected Remedy to follow the current section 12, and where the detailed selected remedy is presented along with estimated costs, rationale for the selected remedy components. A subsection should also be included that discusses all public participation activities conducted and that documents that all public participation requirements have been met. Understandably, this subsection may only be complete in a final document and not in the draft document for public review.
9. Page 2-1, para. 2: The subject document should be referred to in all cases as a RAP/ROD/RCRA Closure Plan. Further, please state that this document also satisfies the requirements of a RCRA Closure Plan, and has been developed in accordance with the California Health and Safety Code Chapters 6.5 and 6.8.
10. Page 2-1, 3<sup>rd</sup> para.: Please add a hyphen between IA and H1. Please also ensure consistency for this format throughout the document.

11. Page 2-2, para. 1: The 1992 FFSRA has been superceded with a more recent FFSRA. Please refer to the current FFSRA. Also, the fourth sentence should be changed to indicate that the lead agency under CERCLA is the DoD, whereas the lead agency under RCRA and the California Health and Safety Code Chapters 6.5 and 6.8 is the DTSC, with support from the RWQCB. Also change the corresponding reference in section 13.
12. Page 2-2, section 2.3: The Report should include a subsection on site seismicity, particularly Maximum Credible Earthquake (MCE) for the project.
13. Page 2-15, para. 2: Please revise the 4<sup>th</sup> sentence to be consistent with the corresponding statement in the Feasibility Study.
14. Page 2-15, section 2.5, 3<sup>rd</sup> bullet: Please revise to "California Health and Safety Code Chapters 6.5 and 6.8.
15. Page 2-17, section 2.5.2: The document should include a figure to describe the vertical groundwater Containment barrier wall details (such as, depth, width and keying into the bay mud etc.). The document should also include a figure to describe the groundwater collection trench details.
16. Page 2-18: Please update with a correct date for the final FS. Also change the corresponding reference in section 13.
17. Page 3-2, last para.: It is recommended that the last paragraph on this page be deleted.
18. Page 4-1. last line: Public access will not be allowed for the Containment Area under the proposed remedy. Please revise accordingly.
19. Page 5-1, section 5.1.1, para. 1: Please replace "ambient" with "ambient/background" in all cases.
20. Page 5-2, para. 4: Please confirm that the listed analytes is correct. Also, delete sentence 2 of this paragraph. Further, the last sentence should be replaced with "The detected concentrations thus far are considered to be consistent with naturally occurring radioactivity and radionuclides for this area."
21. Page 5-3, para. 2, 3<sup>rd</sup> line: The presumptive remedy for landfills, as well as the presumptive remedy for military landfills, is **containment**, not simply capping. The features necessary to establish containment are site specific, and capping is considered to be only one of many possible features necessary to establish containment. Please revise accordingly. Further, we do not consider the remaining portion of the containment area to have been extensively characterized as implied in the 2<sup>nd</sup> sentence. Please revise this paragraph and the 3<sup>rd</sup> paragraph also for consistency with the FS in this regard.

22. Page 5-6, para. 2, last sentence: Please replace this sentence with "This barrier and extraction trench is expected to effectively eliminate the horizontal migration of contaminants in the SWBZ from the Containment Area."
23. Page 6-1, para. 2: Please change the last line to indicate that public access will not be allowed for the Containment Area, with this proposed remedy.
24. Page 7-1, para. 1, line 5: Background is not necessarily identical to ambient. Concentrations for a specific and limited list of inorganic constituents in soil and groundwater at Mare Island have been defined as ambient/background. Please revise for the correct terminology throughout.
25. Page 7-10, para. 1: There is no defined ambient concentration for benzo(a)pyrene. Please correct.
26. Page 8-4, para. 1: Delete "...and by regulator requests..."
27. Page 8-4, section 8.2.1.2, para. 1, line 8: Please revise to indicate that the eastern extent is not defined by the Facility Landfill but by another feature such as topography. The eastern extent of the Facility Landfill may be interpreted as far east as the current Containment Area extent.
28. Figure 8-1: Please revise to show that the subtitle C cap will be continuous over the RCRA landfill and the IWTP.
29. Page 8-4, section 8.2.1.2: This section states that "a multilayer cap will be implemented under this alternative to isolate municipal solid waste refuse and other shipyard debris or waste, eliminate direct contact with surface soil, reduce erosion, reduce surface soil contamination migration, and limit surface water infiltration." Please clarify what a multilayer cap is by referring an appropriate figure. Additionally, please state that complete characterization of the wastes in this area was not achieved. Please include the description of the wastes known to be contained in this area which is discussed in section 11.2.3.2.
30. Page 8-4, section 8.2.1.2, para. 2: S/A comment number 23.
31. Page 8-5, section 8.2.1.2.1: Please revise this section for consistency with the FS.
32. Page 8-6, section 8.2.1.2.2: Please revise this section for consistency with the FS.
33. Page 8-7, section 8.2.1.2.3: Please include a description of fence proposed to be placed around the containment area.
34. Page 8-11, section 8.2.2.2.1: Please describe how these institutional controls would be applied if the property is not transferred and remains federal property.

35. Page 8-13, section 8.2.2.2.3: The number and location of monitoring wells should be defined in a subsequent remedial design and monitoring plan, and deleted from this document.
36. Page 9-6, section 9.2.5: This section states "The costs include a minimum of 30 years post-closure care for the cap." Please note that post-closure cost estimates must include a 30 year estimate for all elements of post-closure care.
37. Page 9-7, section 9.3: Delete the parenthetical statement regarding State preference as this is not correct. State preference will be reflected in the recommended alternative presented in a final draft RAP.
38. Page 9-8, section 9.5: Please also identify the elements to be included in the post closure permit and O&M plan.
39. Page 10-1, section 10: Please revise this section to include quarterly inspections, and annual reports, in addition to the statutory 5 year review.
40. Page 10.2, para. 3: All long term monitoring costs should reflect a uniform 30 year duration. These costs should be identified also in Table 10-1.
41. Page 11-5, para. 2: Please modify accordingly when the Biological Opinion of the USF&WS becomes issued, which is expected prior to this document being issued for formal public comment.
42. Page 11-6, section 11.2.3.1: Please define how the institutional controls will be established in lieu of an environmental restrictive covenant that would be created only upon transfer to a non-federal entity.
43. Page 12-3, section 12.2: Please add that this site is also being closed in accordance with the California Health and Safety Code Chapters 6.5 and 6.8.
44. Page 12-5, section 12.3.3: A Post-Closure Operation and Maintenance Plan should meet the requirements of California Code of Regulations (CCR), Title 22, Section 66264.310 (Closure and Post-Closure Care). Please include reference to the state regulations.
45. Page 13-1, section 13: Please include US EPA publication: Design and Construction of RCRA/CERCLA Final Covers, EPA/625/4-91/025, May 1991.
46. Please add appendices for the Public Notice, Fact Sheet, Public Meeting Transcript, and Responsiveness Summary.
47. Table 11-3: The Applicable or Relevant and Appropriate Requirements (ARARs) should include the CCR, Title 22, Section 66264.310.



## Department of Toxic Substances Control

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Alan C. Lloyd, Ph.D.  
Agency Secretary  
Cal/EPA

Maureen F. Gorsen, Director  
700 Heinz Avenue, Suite 200  
Berkeley, California 94710-2721

Arnold Schwarzenegger  
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### MEMORANDUM

TO: Chip Gribble  
Engineering Geologist  
Office of Military Facilities, Berkeley Regional Office, Site Mitigation

FROM: Buck King, PG, CHG *Buck King*  
Engineering Geologist, Northern California Geological Services Unit (GSU)  
Hazardous Waste Management Program, Berkeley Regional Office

CONCUR: Brian Lewis, CHG, CEG *BK for*  
Senior Engineering Geologist, Northern California GSU  
Hazardous Waste Management Program, Sacramento Regional Office

DATE: March 15, 2005

SUBJECT: DRAFT REMEDIAL ACTION PLAN, RECORD OF DECISION, RCRA  
CLOSURE PLAN, INVESTIGATION AREA H1, MARE ISLAND  
PCA: 18040 SITE: 201208-18

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#### DOCUMENT REVIEWED

Draft Remedial Action Plan, Record of Decision, RCRA Closure Plan, Investigation Area H1, Mare Island, Vallejo, California (Draft RAP/ROD/RCP) dated January 17, 2006.  
Prepared by Weston Solutions, Inc.

#### INTRODUCTION

As you requested, the Northern California GSU of the Department of Toxic Substances Control (DTSC) has reviewed the above-referenced Draft RAP/ROD/RCP. This memorandum provides GSU comments and recommendations. If you have questions, please contact me at (510) 540-3955 or Brian Lewis at (916) 255-6532.

## DISCUSSION

The Draft RAP/ROD/RCP describes the preferred remedy and summarizes the basis for the selection of the preferred remedy. The Resource Conservation and Recovery Act (RCRA) Closure Plan elements are included in the document either directly or by a cross reference table in Section 12 of the plan. The GSU found the Draft RAP/ROD/RCP to be complete and generally accurate with the following exceptions identified as comments below.

**Comment 1.** Page 4-1, Paragraph 4 indicates that wetland sediment monitoring is an element of the Non-Tidal Wetland remedial action. It was GSU understanding that wetland sediment monitoring was going to be replaced with habitat and ecological surveys to evaluate the effectiveness of the remedial action and progress of ecological restoration.

**Comment 2.** Page 5-2, Paragraph 1, Sentence 2 is, "None of the metals exceeded the screening criteria for the majority of the intermediate water bearing zone (IWBZ) wells during the last four sampling events". Please revise or augment this sentence to describe metals in groundwater that exceeded screening criteria to present a complete summary of groundwater chemical conditions. Also include a description of the monitoring event(s) used as the basis for the summary of chemical conditions.

**Comment 3.** Page 5-2, Paragraph 2, Sentences 1 and 2 contain statements about aluminum, cadmium, lead, and zinc which disagree with each other. The paragraph appears to attempt to describe metals in the deep water bearing zone (DWBZ). Please review and revise the paragraph to accurately describe the metals that exceed screening criteria and extent of criteria exceedance in the DWBZ.

**Comment 4.** Page 5-2, Paragraph 3, Sentence 1 references the "latest monitoring event" in the description of the chemical data set reviewed. Please revise or augment the sentence to indicate which groundwater sampling event is being referenced and to include a summary description of historical dioxins/furans groundwater chemistry data.

**Comment 5.** Page 5-3, Paragraph 2, Sentence 6 begins "With the exception of PCBs, the occurrence of ...". Please revise or augment the sentence to summarize the extent of PCB screening criteria exceedance in soils within the containment area.

**Comment 6.** Page 5-3, Paragraph 3, Sentence 4 lists 1,4-dichlorobenzene and tetrachloroethylene twice in the sentence. Please check the sentence for accuracy and revise as appropriate.

**Comment 7.** Page 5-3, Paragraph 3, Sentence 5 indicates the previously listed organic chemicals detected in soil "undergo rapid natural attenuation through biodegradation and volatilization in surface and subsurface soil". The GSU disagrees with the use of the term "rapid" in describing rate of natural attenuation for the referenced compounds. Please delete this sentence because it does not accurately summarize soil contamination in the containment area and appears to attempt to diminish the fact that volatile organic compounds were detected in soil in the containment area.

**Comment 8.** Page 5-4, Paragraph 1 indicates that soil gas from the RCRA Landfill contains non-methane organic compounds at levels less than typical municipal landfills. The GSU does not agree with the statement or its relevance in describing soil gas composition. Please revise the paragraph to clearly indicate the non-methane components detected in soil gas collected from the RCRA landfill area.

**Comment 9.** Page 5-4, Paragraph 2, Sentence 2 is, "As has been shown with groundwater data and supported by analyses of metal contaminated soil from IA H1, metals present limited risk to groundwater as they do not leach with deionized water simulating rain water infiltration". The GSU does not agree with the statement or its relevance in describing metals contamination in the Non-RCRA containment area soils. Please delete this speculative and dismissive statement regarding metals contamination.

**Comment 10.** Page 5-5, Paragraph 2 describes fate and transport of soluble contaminants in groundwater in the containment zone. The description of fate and transport does not include a reference to the Young Bay Mud (YBM) deposits that lie beneath landfill debris and their effects on groundwater flow. The description does not describe the anticipated impact associated with the presumptive remedy of a landfill cap. Please revise or augment the description of containment area groundwater contaminant fate and transport to include a description of the underlying YBM and the effects of landfill cap component of the presumptive remedy.

**Comment 11.** Page 8-9, Paragraph 3, Sentence 3 states "essentially no non-methane volatile organics were detected" in the soil gas collected from the containment area. The data from soil gas samples collected in the RCRA portion of the containment cell clearly indicated the presence non-methane volatile organic compounds at concentrations that would present a significant health risk under a variety of exposure scenarios. The GSU is alarmed by the apparent inaccuracy in the description of soil gas data that appears to be an attempt to minimize or falsify the characterization of soil gas from the containment area. Please revise the paragraph and remove the misleading statement. Please include a list of the top five non-methane volatile organic compounds detected in soil gas from the containment area that present the greatest potential health risk under a hypothetical direct residential exposure scenario.

## **RECOMMENDATIONS**

The GSU recommends that the comments listed above be addressed and incorporated in the next version of the document. Supporting documents for the remedy selection include the Feasibility Study and the Remedial Design Plan. These documents should be finalized and approved by regulatory agencies prior to final review of the RAP/ROD/RCP.



Allen C. Lloyd, Ph.D.  
Agency Secretary  
Cal/EPA

## Department of Toxic Substances Control

Maureen F. Gorsen, Director  
8800 Cal Center Drive  
Sacramento, California 95826-3200



Arnold  
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### MEMORANDUM

**TO:** Charles Gribble  
Office of Military Facilities  
700 Heinz Avenue  
Berkeley, CA 94710-2721

**FROM:** John P. Christopher, Ph.D., D.A.B.T.  
Staff Toxicologist  
Human & Ecological Risk Division (HERD)  
[JChristo@dtsc.ca.gov](mailto:JChristo@dtsc.ca.gov) 916.255.6630

**DATE:** 17 March 2006

**SUBJECT:** Mare Island: Draft RAP/ROD/Closure Report for Investigation Area H1  
PCA: 18040 Site: 201208-18

#### BACKGROUND

The former Mare Island Naval Shipyard is a closed military facility in Contra Costa County. Cleanup operations are being managed by Naval Facilities Engineering Command, Southwest Division. Investigation Area H1 (IA-H1) is on the western side of Mare Island, close to San Pablo Bay. IA-H1 includes a former RCRA hazardous waste landfill and nearby sites with soil contaminated with lead, PCBs, and other substances. In earlier memoranda we presented our comments on the Final Remedial Investigation and Draft Final Feasibility Studies for Investigation Area H1, both dated 2005. The current document is the Draft Remedial Action Plan/Record of Decision/RCRA Closure Report, which contains a summary of human health risk assessments from prior reports. Comments on the ecological risk assessment will be presented under separate cover.

#### DOCUMENT REVIEWED

We reviewed "Draft Remedial Action Plan, Record of Decision, and RCRA Closure Plan, Investigation Area H1, Mare Island, Vallejo, California". This document is dated January 2006. It was prepared by Weston Solutions, Inc, contractors to the Navy.

#### GENERAL COMMENT

The estimates of cancer risk and non-cancer hazard for current and future receptors accurately

reflect those reviewed earlier in the Final Remedial Investigation Report and the Draft Feasibility Study Report. We recommend that the Navy correct the errors noted in the Specific Comments below.

### **SPECIFIC COMMENTS**

- 1. Ambient Risk Due to Arsenic, Sec. 7.0, p. 7-1:** Ambient values for arsenic in soil are a range, not a single value. The value of 36 mg/kg for arsenic in soil is the on upper 95<sup>th</sup> percentile of the ambient range. Ambient risks should be calculated using the 95% upper confidence limit on the mean value (95UCL) for arsenic, not the top of the ambient range. Therefore, the stated estimate of 1 E-4 for ambient risk due arsenic in soil is an overestimate and should be corrected.

Also, in the last line of section 7.0, "Arsenic" should not be capitalized.

- 2. Top Line, p. 7-3:** Please fix the spacing.
- 3. Lack of a Summary Table, pp. 7-3 to 7-5:** A summary table would aid the recitation of cancer risks and non-cancer hazards for current and future receptors.

### **CONCLUSION AND RECOMMENDATIONS**

The Draft RAP/ROD/Closure Report presents estimates of cancer risk and non-cancer hazard for current and future receptors which accurately reflect earlier reports on Area H1.

Reviewed by: Brian K. Davis, Ph.D.  
Staff Toxicologist, HERD

cc: Dr. J. Polisini, HERD



## Department of Toxic Substances Control

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Alan C. Lloyd, Ph.D.  
Agency Secretary  
Cal/EPA

Maureen Gorsen, Director  
1011 North Grandview Avenue  
Glendale, California 91201

Arnold Schwarzenegger  
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**TO:** Chip Gribble, DTSC Project Manager  
Henry Chui, DTSC Project Manager  
OMF Berkeley Office  
700 Heinz Avenue, Second Floor  
Berkeley, CA 94710-2721

**FROM:** James M. Polisini, Ph.D.  
Staff Toxicologist  
Human and Ecological Risk Division  
1011 North Grandview Avenue  
Glendale, CA 91201

**DATE:** March 20, 2006

**SUBJECT:** INVESTIGATION AREA H1 DRAFT REMEDIAL ACTION PLAN, MARE  
ISLAND NAVAL SHIPYARD (LENNAR MARE ISLAND)  
[PCA 18040 SITE 201208-18 H:16]

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### **BACKGROUND**

HERD reviewed a document titled *Draft Remedial Action Plan, Record of Decision RCRA Closure Plan, Investigation Area H1, Mare Island, Vallejo, California* dated January, 2006. This document was prepared by Weston Solutions, INC. of Walnut Creek, California. This document was downloaded from the Weston Solutions Team Site on March 16, 2006. This review is in response to your verbal request on March 15, 2006.

HERD has participated over the last several years in the ecological risk assessment process for IA H1. HERD last participated in a conference call on March 9, 2006 to discuss analysis of confirmation samples, sediment criteria for material added to create wetlands, inclusion of a biological barrier in the cap construction and other issues regarding IA H1.

From as early as 1909 until 1978, solid wastes generated in the shipyard, including hazardous wastes and petroleum wastes, were deposited within IA H1 in unlined pits and low-lying terrain along Dump Road. IA H1 was also the site of a fire-fighting training area, storage areas for spent lead-acid batteries, a fenced solid waste disposal area (Landfill Subarea), and industrial wastewater treatment plant (IWTP), and

Chip Gribble  
Henry Chui  
March 20, 2006  
Page 2

treatment waste sludge impoundments.

IA H1 encompasses approximately 230 acres with an elevation ranging from 6 feet to 23 feet above mean sea level (msl). An estimated 4.5 million gallons of waste oil were reportedly disposed of at the former waste oil sumps within the Waste Disposal Sump/Lead Oxide Storage and Disposal Area (E & E, 1983 and Weston, 2004, page 1-5). Estimates of the free product, observed in borings and test pits, in the IA H1 area range from 900,000 gallons to upwards of 2 million gallons. The presumptive remedy for IA H1 is consolidation of contaminated material into a proposed containment boundary containing the former landfill, placement of a slurry wall with engineered dewatering collection trench, and capping of the former landfill area.

Mare Island Naval Shipyard (MINSY) was the first naval station on the Pacific Coast, where shipbuilding began in 1854. The former MINSY is located on a peninsula approximately 30 miles northeast of San Francisco. The peninsula is bounded to the east, south, and west by the Napa River (Mare Island Strait), Carquinez Strait, and San Pablo Bay, respectively. Mare Island was originally an island of approximately 1,000 acres with surrounding wetlands of approximately 300 acres. Fill material was added to enlarge Mare Island and connect it to the mainland. MINSY has been in operation under Navy control from approximately 1853 until the recent transfer to the City of Vallejo through the State Lands Commission.

### **GENERAL COMMENTS**

This draft document accurately presents an overview of the estimates of ecological hazard present at the Containment Area, the Upland Area and the Non-tidal Wetland Area of Investigation Area (IA) H1.

The specific comments contained in this memorandum refer only to the Ecological Risk Assessment (ERA) performed for IA H1 and the remedial actions based on the ERA. Human Health Risk Assessment comments may be furnished at a later date.

### **SPECIFIC COMMENTS**

1. The breeding pairs of California least tern located within a mile of IA H1 (USFWS, Draft Biological Assessment, page 20), which have entered into consideration of potential impacts associated with IA H1 activities, should be at least mentioned among the 'many birds found in tidal wetlands' (Section 2.3.4.1, page 2-7).
2. The last phrase of the first paragraph in the discussion of future use (Section 6.1, page 6-1) makes a statement regarding the Containment Area which is difficult to interpret. The statement the '...it is anticipated

that the Containment Area will be restricted to the public' could be taken to mean that ecological receptors would be excluded by some means or might indicate that the public will be excluded. If the latter is the intent, HERD suggests '...it is anticipated that public access to the Containment Area will be prohibited.'

3. The replacement of the biotic barrier, as a part of the landfill cap, with an exclusionary fence and trapping program was discussed during the March 9, 2006 telephone conference call. HERD favors the biotic barrier as a permanent method of sequestering landfill contaminants from burrowing ecological receptors. The inclusion of the biotic barrier in the contained cap description appears to indicate the biotic barrier will, in fact, be incorporated in both RCRA Subtitle C (Section 8.2.1.2.1, page 8-6) and RCRA Subtitle D (Section 8.2.1.2.2, page 8-6) caps.
4. There appear to be conflicting descriptions of the number of confirmation samples proposed for each hot spot excavation. One text section indicates a single sample will be collected from the center of each excavation (Section 8.2.2.2.2, page 8-12) where a subsequent section (Section 8.2.3.2.2, page 8-18) indicates that confirmation samples (plural) will be collected from each excavation area. Confirmation samples should be taken for both the lateral and vertical boundaries of the excavation. Single samples in the center of the excavation only examine the vertical component. Confirmation samples must include the lateral boundaries of the excavation.
5. HERD proposed that the Contaminants of Concern (COCs) which are analyzed for in the confirmation samples for each excavation include all of the COCs which are the risk drivers for hot spot removal regardless of the excavation. This suite of COCs can be summed within each IA H1 habitat (i.e., upland or non-tidal wetlands). The text should be amended (Section 8.2.3.2.2, page 8-18) to include this description of COCs for the hot spot removal.

## **CONCLUSIONS**

This document, the Draft Remedial Action Plan (RAP), Record of Decision (ROD) RCRA Closure Plan, provides an adequate overview of the ecological investigations which provide input for selection of a remedial alternative.

The document should be amended to address the items identified in the Specific Comments above, as well as other issues discussed in the March 9, 2006 conference call.

Chip Gribble  
Henry Chui  
March 20, 2006  
Page 4

HERD Internal Reviewer: Michael Anderson, Ph.D., HERD  
Staff Toxicologist

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# Memorandum

To: Chip Gribble, Remedial Project Manager  
Department of Toxic Substances Control  
700 Heinz Avenue, Suite 200  
Berkeley, CA 94710

Date: March 13, 2006

From: Frank Gray, Environmental Scientist *FBG*  
Becky Stanton, Ph.D., Associate Toxicologist  
Department of Fish and Game  
Office of Spill Prevention and Response  
1700 K Street, Suite 250  
Sacramento, CA 95814



Subject: Comments on Draft Remedial Action Plan, Record of Decision, and RCRA Closure Plan for Investigation Area H1, Mare Island, Vallejo, California (SITE # 201208).

The California Department of Fish and Game, Office of Spill Prevention and Response (DFG-OSPR) appreciates the opportunity to review the subject Draft Remedial Action Plan (RAP), Record of Decision (ROD), and RCRA Closure Plan for Investigation Area (IA) H1 for Mare Island. The following issues should be addressed as soon as possible.

## Background

Mare Island Naval Shipyard is in Solano County about 25 miles northeast of San Francisco. The reuse plans for this area include industrial redevelopment, open space, and wetlands. IA H1 is approximately 230 acres and is bounded by dredge ponds in three directions. Sources of contamination to IA H1 are related to the overall activities of the base, including shipbuilding, ship repair, dredge and fill activities, manufacture and storage of munitions, and waste disposal.

The DFG is the State's trustee for fish and wildlife resources pursuant to Fish and Game Code section 711.7. The DFG is also designated to act on behalf of the public as trustee for natural resources pursuant to the Comprehensive Environmental Response, Compensation, and Liability Act Section 107 (f)(2)(B). The DFG-OSPR has provided the Department of Toxic Substances Control with the following recent memorandums applicable to the remedial process at IA H1: (1) Applicable or Relevant and Appropriate Requirements (ARARs) (December 21, 2004); (2) comments on the Draft FS (January 10, 2005); (3) comments on the Final Remedial Investigation (July 26, 2005); (4) comments on California Environmental Quality Act issues applicable to remedial actions (August 29, 2005); (5) wildlife issues relative to contaminant hotspot excavations (September 2, 2005); and (6) comments on the Draft Final Feasibility Study (FS) (December 5, 2005).

## General Comments

1. DFG-OSPR generally concurs with the preferred alternatives for upland (Alternative 4) and wetland (Alternative 5) habitats identified in the Draft Final FS as noted in our December 2005 comments. However, the following major

revisions should be made: (1) expand the two-foot soil cover over the entire upland habitat; (2) further evaluate metals considered in the "ambient range" for wetland habitats; (3) use hazard quotient (HQ) of one as hot spot criteria for wetland fringe or wetland mitigation areas, and (4) resolve all issues pertaining to regulatory compliance. Based on initial discussions with Weston and the Navy, the changes recommended in item three above is agreeable and will be made in the upcoming revisions. It is our understanding that our outstanding comments on the Draft Final FS will be resolved based on an upcoming meeting held concurrent with the review period for the Draft RAP/ROD.

2. Several statements are made regarding specific details of the confirmations sampling, particularly the location and analyte list for each excavation area. DFG-OSPR generally recommends that all confirmation samples be analyzed for the chemicals of concern (COCs) for that habitat (upland or non-tidal wetland), and that additional samples per 50 by 50 foot area be collected. Since specific details of confirmation sampling will be described in the remedial design, it may be best to remove any specific details of sampling until that time.
3. The need for additional wetland sampling was discussed during the June 29, 2005 conference call with the conclusion that such sampling "would be a verification step." The FS and the RAP/ROD should mention this need, the proposed actions to address it, and the process by which the results of sampling would be incorporated.
4. It is our understanding that remediation described in the RAP/ROD will be addressed under the California Environmental Quality Act (CEQA). The DFG has an interest in reviewing all applicable Mare Island IA H1 CEQA documents relative to its CEQA trustee authority. However, the timetable and status of such CEQA documentation is unclear in the draft RAP/ROD, and CEQA documents are scheduled to be included only in the final RAP/ROD. CEQA documentation should be provided as soon as possible, preferably not later than the draft final RAP/ROD, thus facilitating timely review.
5. Plants established on the RCRA Subtitle C and D caps to be placed in the Containment Area have the potential to provide habitat for various wildlife species, in addition to helping to prevent soil erosion. For that reason, we recommend that native plant species with high wildlife value be chosen, consistent with all applicable regulatory requirements.

### **Specific Comments**

1. Page iii, Table of Contents. Appendix B is listed, and is to include CEQA documents in the final RAP/ROD only. The draft final document should include, at a minimum, the CEQA Initial Study, and the timetable for subsequent CEQA documentation.

2. Page 1-3, Section 1.4. Specifics regarding wetland creation and a monitoring plan are being deferred to a forthcoming Biological Opinion (BO) from the U.S. Fish and Wildlife Service (FWS). The scope of this BO encompasses only the project's adverse impacts on the Salt Marsh Harvest Mouse (SMHM). As we have indicated in prior correspondence, the SMHM is a state-listed, as well as federally listed species, and design criteria for the created wetlands must satisfy all DFG ARARs and CEQA requirements. Thus, conditions in the forthcoming BO do not necessarily encompass all of the design criteria pertinent to the establishment of these wetlands. The sentence regarding land use controls should be revised to reflect that these controls are also applicable to the wetland mitigation area. The Navy should recognize the DFG wetland policy as To-Be-Considered guidance.
3. Pages 2-6 to 2-7, Section 2.3.4. A description of the upland habitat with likely wildlife species should also be included similar to Section 2.3.4.1 for non-tidal wetlands.
4. Page 7-9, Section 7.2.2. The statement that small mammals and passerine birds were included in the analysis "as potential prey for raptors" should be removed or revised. These receptors were also included as representative species for their respective feeding guilds.
5. Page 7-10, Section 7.2.2 and Page 7-12, Section 7.2.3. Please see the general comment above regarding "ambient levels" for metals. In addition, the chemical benzo(a)pyrene should be excluded from this list since the screening of chemicals based on ambient conditions should only apply to inorganic chemicals.
6. Page 7-13, Section 7.2.4. The text does not mention the use of low toxicity reference value to back-calculate chemical concentrations protective of salt marsh harvest mouse in the non-tidal wetlands. In addition, the distinction between the specific ecological criteria for the non-tidal wetland and the upland areas was missing. Please include this information in the description of the hot-spot criteria development.
7. Page 8-7, Section 8.2.1.2.2 and Page 9-9, Section 9.5. The text cites the Draft IA H1 Remedial Design/Remedial Action Work Plan (RD/RAWP) (Weston, 2005c) as a source for the wetland mitigation plan. DFG-OSPR was not on the original distribution list for the RD/RAWP, but has requested and received an electronic copy on February 1, 2006.
8. Page 8-7, Section 8.2.1.2.2. Various issues pertinent to the functions and values of the mitigation area should be addressed now rather than deferred until the delivery of the forthcoming FWS BO. FWS staff have indicated informally that the final BO will not be available earlier than May or June of 2006. It is imperative to achieve consensus regarding applicable state ARARs now.

9. Page 8-7 Section 8.1.1.2.3. The description of institutional controls should include zoning, such as that provided under the current version of the Mare Island Specific Plan, since zoning is a form of institutional control. Also, we believe that the adopted institutional controls should prohibit activities including but not necessarily limited to the following:
- a. Building of roads or trails
  - b. Use of pesticides, herbicides, or rodenticides except as approved by the FWS and DFG.
  - c. Placement of new structures
  - d. Introduction of non-native species
  - e. Incompatible fire protection activities
  - f. Storing or discharge of rubbish, garbage, or other wastes

The above provisions are typical of those which the DFG expects as land use controls, and which were included in the draft BO. All requirements should be transferable to subsequent landowners and last in perpetuity.

10. Page 8-12, Section 8.2.2.2.2 and Page 8-17, Section 8.2.3.2.2. The excavation depth is described as continuing to one foot below the deepest contaminated sample location. However, Weston has previously stated that excavation depth would depend on what triggered the excavation, such as risk to human health or ecological receptors, or the presence of free product. The text should be consistent with the current proposals.
11. Page 8-12, Section 8.2.2.2.2 and Page 8-18, Section 8.2.3.2.2. The statement that a single confirmation sample will be collected from the center of each 50 by 50 foot excavation area should be revised or removed as it may be premature and involve insufficient sample numbers. DFG-OSPR recommends that, at a minimum, one sample be taken at the surface along each of four sidewalls and one at the bottom for each 50 by 50 foot area. Additional excavation may be needed laterally and/or vertically depending on the results of the sidewall and bottom samples. In addition, confirmation samples were only to be analyzed for the chemicals that exceed the hot spot criteria for that specific location or group of locations, rather than all chemicals of ecological concern (COECs). DFG-OSPR generally recommends that all confirmation samples be analyzed for the COCs for that habitat (upland or non-tidal wetland). However, since specific details of confirmation sampling will be described in the remedial design, it may be best to remove any specific details of sampling from the current document.

12. Page 8-13, Section 8.2.2.2.4. The "Upland Areas" that will receive two foot of soil cover should include the upland areas adjacent to the Wetlands A, B, C, and D as depicted on Figure 2-3. The recent proposal that the upland cover only occur in areas with hotspots is inconsistent with the ecological risk assessment that addressed the entire upland area as a single habitat unit.
13. Page 8-17. The issues described in our September 8, 2005 memo regarding hotspots removal should be addressed.
14. Page 8-18, Section 8.2.3.2.3. Annual sediment monitoring in the non-tidal wetlands should include analysis for all COECs for that habitat, rather than metals only as proposed.
15. Figure 2-3. Wetland B should be included as part of the non-tidal wetlands (green crosses) rather than as upland (yellow circles).
16. Figure 8-2 and 8-3 and Page 8-6, Section 8.2.1.2.2. The figure includes 18 inches total of cover soil, whereas the text mentions only six inches. This discrepancy should be resolved, and appropriate revisions made. Also, a biotic barrier should be retained as an option for both the Subtitle C and Subtitle D cap designs. One of the benefits of the biotic barrier will be to help eliminate ecological risk associated with animals burrowing into contaminated areas within the foundation layer.
17. Figures 8-5 and 9-1. The two foot soil cover should extend across all upland areas, including adjacent to Wetland B and the southwest boundary of the contaminant area (Figure 1-1 of the FS), but this is not depicted as such on the Figure 8-5.
18. Tables 7-1 to 7-6. These tables should specifically reference whether they apply to upland or non-tidal wetland areas, or both.

If you have any questions regarding this review or require further details, please contact Beckye Stanton regarding contaminants (916-327-0916, [bstanton@ospr.dfg.ca.gov](mailto:bstanton@ospr.dfg.ca.gov)) or contact Frank Gray regarding other issues (916-327-9961, [fgray@ospr.dfg.ca.gov](mailto:fgray@ospr.dfg.ca.gov)).

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Page 6 of 6

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