

**RESPONSE TO COMMENTS ON REVISED DRAFT ROD
OPERABLE UNIT 2C, LANDFILL SITES 3 AND 5
FORMER MARINE CORPS AIR STATION EL TORO
EL TORO, CALIFORNIA
CTO-0062, APRIL 2007**

BEI-7526-0062-0184

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CTO-0062, APRIL 2007**

Comments from Penny Leinwander, CDPH

Letter dated 18 July 2007

Penny Leinwander, Senior Health Physicist
Environmental Management Branch
California Department of Public Health

GENERAL COMMENTS

Comment 1:

The role of California Department of Public Health should be explicitly described in the assessment of IRP Sites 3 and 5 radiological issues.

Response 1:

In response to the comment, the following revisions will be made:

Declaration, page 2, 3rd paragraph, last sentence; and Section 2.1.3, page 2-6, last sentence of the paragraph: *“Detailed descriptions of the radiological survey procedures, analyses, results, and recommendations are presented in the final Radiological Release Report (Weston 2006), which was reviewed and concurred on by the FFA signatories, including U.S. EPA, RWQCB, and DTSC (with technical support from DHS, now California Department of Public Health.”*

The following will be inserted as new paragraph 2 of Section 2.1.2 (page 2-5):

“The Radiological Survey Plan and Sampling Amendment were prepared with input and concurrence from the FFA signatories including U.S. EPA, RWQCB, and DTSC with DHS (now California Department of Public Health [DPH]) Food, Drug, and Radiation Safety Division, Radiologic Health Branch acting in support of DTSC. The DPH Radiologic Health Branch enforces radiation control laws and regulations designed to protect the public, radiation workers, and the environment. At former MCAS El Toro, DPH supports DTSC (the lead state agency) by providing services and technical guidance regarding inspection of facilities that used radiological materials, investigation of radiation incidents, surveillance of radioactive contamination in the environment, and the remediation and release of sites.”

Reference to DHS as a concurring agency, along with FFA signatories, on the final Radiological Release Report will also be inserted at the following three areas of the ROD: Section 2.1.7, last sentence of the paragraph (page 2-12); Section 5.2.2.4, Unit 1, last sentence of the 5th paragraph (page 5-7); and Section 5.3.2.4, last sentence of the 5th paragraph (page 5-14).

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Comment 2:

Institutional controls and land use restrictions should be modified to specify that no land-disturbing activity including but not limited to: 1) excavation of soil; 2) construction of roads, utilities, facilities, structures, and appurtenances of any kind; 3) demolition or removal of "hardscape" (e.g. concrete roadways, parking lots, foundations, and sidewalks) existing at the time of the ROD issuance; and/or 4) any activity that involves movement of the soil to the surface from below the surface will be allowed without prior approval from California Department of Public Health, Radiologic Health Branch. CDPH also would require a soil management plan and a radiation safety plan in operation in case of any excavation.

Comment 3:

Final Feasibility Study Addendum Operable Unit 2C IRP Sites 3 and 5 proposes complete excavation of the waste from Unit 4 and the Waste areas B through F followed by consolidation of this waste in the Waste area A. Subsequently, the Waste area A will be capped using EPA's presumptive remedy for municipal and industrial landfills and released for restricted use with Institutional Controls. The remaining of the Site 3 land, Unit 4 and Waste areas B through F, will be recommended for unrestricted use. The Revised Draft ROD for Sites 3 and 5 does

Response 2:

Section 7.2.2.1, under "Institutional Control Objectives and Land-Use Restrictions," 3rd bulleted item (page 7-6) will be revised as follows:

- *"Prohibit land-disturbing activity including but not limited to: 1) excavation of soil; 2) construction of roads, utilities, facilities, structures, and appurtenances of any kind; 3) demolition or removal of "hardscape" (e.g., concrete roadways, parking lots, foundations, and sidewalks) existing at the time of the ROD issuance; and/or 4) any activity that involves movement of the soil to the surface from below the surface without prior approval of the FFA signatories and California DPH, Radiologic Health Branch (formerly DHS). In addition, construction of a structure within 100 feet of the edge of the landfill is prohibited without prior approval of the DON and CIWMB."*

Per DON/EPA joint agreement, LUC objectives are presented in RODs, whereas the specific land-use restrictions and implementation actions needed to maintain and enforce ICs are described in remedial design documents. This agreement and the DON's approach for implementing ICs at Sites 3 and 5 are stated in Section 7.2.2.1 "Implementation," pages 7-6 and 7-7 of the ROD. Specific requirements for any necessary excavation work while ICs are in force, including soil management plans and radiation safety plans, will be specified in the remedial design documents. The remedial design documents will be developed, reviewed, and approved with input from FFA signatories and the CDPH prior to implementing the remedy.

Response 3:

In the Declaration, under "Statutory Determinations" (page 3), the last sentence of the 1st paragraph will be revised as follows:

"However, wastes from Site 3, Unit 4 and from Unit 1 Waste Areas B through F will be consolidated on-site into the reduced Unit 1 Waste Area A footprint prior to capping."

The introductory paragraph of Section 9 (page 9-1) will be revised as follows (Note: the revision also addresses EPA comment 18):

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not totally identify the above-cited remedial strategy for IRP Site 3 landfill. Furthermore, all through the Draft ROD the Institutional Controls boundaries for IRP Site 3 are not specified. CDPH recommends that remedial action strategies for IRP Sites 3 and 5 are clearly defined in the Final Draft ROD. It also recommends that the boundaries of the Institutional Controls for Sites 3 and 5 be distinctly stated.

Comment 4:

CDPH recommends that the Institutional controls and the land use restrictions be operational until the radiation concentration in the soil diminishes to levels that would permit unrestricted land use.

“The DON and U.S. EPA have coselected Alternative 4d as the remedy for landfill Sites 3 and 5. The selection is based on review of Sites 3 and 5 RI/FS Reports, the Radiological Release Report, Technical Memorandum for Pre-Design Investigation, FS Addendum, and the Administrative Record for these sites, as well as an evaluation of all comments submitted by interested parties during the public comment period for the January 2007 PP. ICs will be implemented for the landfill areas and surrounding buffer zones at both sites. As part of the Site 3 remedy, wastes from Unit 4 and from Unit 1 Waste Areas B through F will be excavated, consolidated with waste at the reduced Unit 1 Waste Area A footprint (main landfill area), and capped. Upon completion of the remedial action, portions of Site 3 exclusive of the consolidated landfill and surrounding buffer zone will be suitable for unrestricted use; these areas include Unit 4 and Unit 1 and Waste Areas B through F. At Site 5, excavation and consolidation of wastes are not required prior to implementing the landfill capping remedy. The selected alternative includes the following components.”

Regarding boundaries of ICs, see response below to specific comment 1. Figures 7-2 (Site 3) and 7-3 (Site 5), attached for reference, have been revised to show the areas requiring ICs.

Response 4:

The following sentence will be included as a last, stand-alone sentence to follow the bullet list of ICs shown on page 7-6 (Section 7.2.2.1 under “Institutional Control Objectives and Land-Use Restrictions”):

“ICs will remain in place until RAOs and remediation goals have been achieved and it can be demonstrated that concentrations of hazardous substances in the landfills and exposure to external radiation from radioactive decay of Ra-226, which is potentially present in small quantities within the waste, are at levels that allow for unrestricted use.”

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Comment 5:

CDPH recommends a Final status survey per MARSSIM guidelines for Waste areas B through F and Unit 4 following excavation and waste removals from these areas. The dose modeling will be implemented to calculate the annual dose to the public. The land will be released for unrestricted use if the residual radioactivity does not produce unacceptable public dose rate as per ALARA.

Response 5:

The DON agrees that as part of the remedial action it will be necessary to demonstrate that areas where waste removals occur will be suitable for unrestricted use, and there are no unacceptable risks to human health and the environment. Activities required for construction and implementation of the remedy at Site 3, as well as Site 5, will be specified in the remedial design documents; these documents will be reviewed and approved with input from FFA signatories and the CDPH prior to implementing the remedial action.

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SPECIFIC COMMENTS

Comment 1:

Page 2, - Description of the Remedy, The Institutional Control (IC) boundary is not evident. It is recommended that this be resolved in the Final Draft ROD.

Response 1:

Figures 7-2 (Site 3) and 7-3 (Site 5), which are attached to these RTCs for reference, have been revised to show the areas requiring ICs at both sites.

Comment 2:

Page 3, -Description of the Remedy, One of the restrictions for Land-use should be that no excavation/digging will be allowed without prior approval from CDPH, Radiologic Health Branch. CDPH will require a soil management plan and a radiation safety plan in operation in case of any excavation/digging.

Response 2:

The 4th bulleted item under Declaration, "Description of the Remedy" (page 3) will be revised as follows:

"Land-use restrictions applying to the landfill areas and extending approximately 100 feet beyond the waste boundaries will be used to protect the landfill covers, ensure that the containment remedy and contents of the landfills are not disturbed without approval of the FFA signatories and the DHS (now California Department of Public Health, Radiologic Health Branch), and allow the DON and other agencies to access the sites for maintenance and monitoring. Construction of structures within the 100-foot buffer zone will require concurrence of the FFA signatories and the CIWMB."

Also see response to general comment 2.

Comment 3:

Page 4, -Statutory Determinations, "Because this remedy will result in landfill wastes remaining on-site reviews will be conducted every 5 years." It is recommended that the reviews be performed every 5 years until the radiation concentration in the soil diminishes to levels that would permit unrestricted use of the land.

Response 3:

Comment noted. This recommendation is consistent with DON policy and procedures for conducting 5-year reviews.

Comment 4:

Section 1.6, -Current and Future Land Use, page 1-5, It is suggested that a sentence be added describing the radiological burn history of the original landfill incinerator.

Response 4:

Because duplicate text has been deleted from Section 1.6 (pages 1-5 and 1-6), the response to specific comment 4 is now incorporated in the 3rd sentence of paragraph 3 of Section 1.3 (page 1-2), which will be revised as follows:

"Wastes were burned at a former incinerator to reduce volume prior to disposal; however, there are no available records indicating the types and quantities of wastes that were incinerated."

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Comment 5:

Section 1.6, -Current and Future Land Use, page 1-5, CDPH suggests that some information be provided regarding the perimeter road landfill burn area and its radiological burn history.

Response 5:

Because duplicate text has been deleted from Section 1.6 (pages 1-5 and 1-6), the response to specific comment 5 is now incorporated in the 3rd sentence of paragraph 7 of Section 1.3 (page 1-2), which will be revised as follows:

“Wastes were typically burned in place to reduce volume prior to burial; however, there are no available records indicating the types and quantities of wastes that were burned.”

Comment 6:

Section -Current and Future Land Use, page 1-6, “Site 5 is located in an area that is designated as an open space/existing golf course.” Is the area designated as an open space or an addition to an existing golf course? CDPH suggests that this sentence be edited for clarity.

Response 6:

The last sentence of Section 1.6 (page 1-6) will be revised as follows:

“Based on the land-use map for the Orange County Great Park Plan, Site 3 is located in an area designated as a riparian corridor, and Site 5 is located in an area designated as open space/golf course.”

Comment 7:

Section 2.1.1, -May 2000 Historical Radiological Assessment, page 2-5, It is unknown and unstated, how and where the radioactive waste from this paint facility was disposed and how and when the original radium paint room was decommissioned. The radioactive waste and/or parts of the radium paint room perhaps may have been disposed of in the landfills, which were active during that time. CDPH suggests that this section be revised accordingly to address the potential for the presence of decommissioned radiological waste in the landfills.

Response 7:

The following text will be inserted after the 3rd sentence of paragraph 2 of Section 2.1.1 (page 2-5):

“According to the HRA report, a former radium paint facility located in Building 296 at MCAS El Toro was in operation beginning in the mid-1940s and was decommissioned in the 1950s or 1960s. Since there are no available records for the decommissioning, there is a potential that some decommissioned radiological waste could have been disposed at Site 3 and/or Site 5 (Weston 2001).”

The remainder of paragraph 2 will become a new paragraph in Section 2.1.1.

Comment 8:

Section 2.1.3.1, -Site 3, page 2-7, “Therefore, implementation of the ICs as part of the remedy proposed for the site would not pose a health or safety hazard to those performing the work.” Please clarify the kind of work.

Response 8:

The meaning of the sentence referenced in the comment (Section 2.1.3.1, 5th paragraph, last sentence [page 2-7]) is unclear, and therefore will be replaced by the following:

“However, due to the potential presence of small quantities of radiological material within the subsurface landfill waste, the final Radiological Release

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Comment 9:

Section 5.2.1, -Landfill Extent, page 5-3, "However, Unit 4 contains landfill wastes that will be removed and consolidated within Unit 1 during the final remedy of the Site." It is suggested that a sentence be added that cites the consolidation of the waste from the Waste areas B through F with the waste in the Waste area A.

Comment 10:

Section 7.2.2, -Alternative 2- Institutional Controls and Monitoring, page 7-4, It is recommended that the ICs boundaries be defined for Site 3.

Comment 11:

Section 7.2.2.1, Institutional Controls, page 7-6, The following land-use restriction should be added: No excavation/digging will be allowed without prior approval from CDPH, Radiologic Health Branch. Also, CDPH will require a soil management plan and a radiation safety plan in operation in case of any excavation/digging.

Comment 12:

Section 7.2.3.1, -Landfill cap, page 7-9, "On-Site waste consolidation would occur prior to capping at Site 3." It is recommended that a sentence be added that mentions the complete excavation of waste areas B through F and eventual repositioning of this waste in the Waste area A.

Report recommended installation and implementation of ICs at the site (Weston 2006). The report also indicated that ICs would be protective of the health and safety of future workers who would be performing routine monitoring and inspection activities at the site."

This same change will be made in Section 2.1.3.2 (Site 5), 5th paragraph, last sentence.

Response 9:

The last sentence of the 2nd paragraph of Section 5.2.1 (page 5-3) will be revised and a new last sentence added as follows:

"However, Unit 4 contains landfill wastes that will be removed and consolidated into the reduced Unit 1 footprint at Waste Area A during implementation of the final remedy for the site. Wastes located at Waste Areas B through F of Unit 1 will also be consolidated into Waste Area A at that time."

Response 10:

See response to specific comment 1. Figures 7-2 and 7-3 have been revised to show the areas requiring ICs.

Response 11:

See response to general comment 2.

Response 12:

For clarification, paragraph 3 of Section 7.2.3.1 (page 7-9) will be revised as follows (Note: this revision also addresses U.S. EPA comment 8):

"Under Alternative 3, Waste Areas B through F at Site 3 (Figure 7-2) will also be consolidated into the reduced Unit 1 footprint at Waste Area A, which is situated topographically 15 to 20 feet above Aqua Chinon Wash."

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Comment 13:

Section 7.2.4, -Alternative 4- Single-Barrier Cap with Institutional Controls and Monitoring, page 7-11, "At Site 3, excavated landfill wastes from Unit 4 and waste from waste areas B through F would be consolidated within the reduced Unit 1 footprint and under the cap area." Please clarify the unrestricted and restricted release areas for Site 3.

Comment 14:

Section 7.2.5, -Alternative 5- Pavement Cap with Institutional Controls and Monitoring, page 7-14, "At Site 3, excavated landfill wastes from Unit 4 and waste from Waste Areas B through F would be consolidated within the reduced Unit 1 foot print and under the cap area." It is recommended that the ICs boundaries be defined.

Comment 15:

Section 7.2.6, -Alternative 6- Pavement Cap with a Flexible Membrane Liner Barrier with Institutional Controls and Monitoring, page 7-16, "At Site 3, excavated landfill wastes from Unit 4 and waste from Waste Areas B through F would be consolidated within the reduced Unit 1 footprint and under the cap area." It is recommended that boundaries of the Institutional Controls and the areas recommended for unrestricted release and/or restricted release be presented.

Consolidation of wastes at this main landfill area eliminates the potential for surface water in the wash to contact and erode landfill materials at the site. Waste within both landfills at Site 3 and Site 5 will be protected from precipitation and surface water runoff by construction and maintenance of the engineered landfill cover and associated drainage controls."

Response 13:

The following will be inserted as new sentence #4 in paragraph 1 of Section 7.2.4 (page 7-11). The reference to Figure 7-2, which shows the areas requiring ICs at Site 3, should clarify the unrestricted/restricted areas of concern noted in this comment (Note: this revision also addresses U.S. EPA comment 8):

"Consolidation of wastes into the Unit 1 main landfill area at Waste Area A (Figure 7-2), which is situated topographically 15 to 20 feet above Agua Chinon Wash, eliminates the potential for surface water in the wash to contact and erode landfill materials at the site."

Response 14:

The following will be inserted as new sentence #2 in paragraph 4 of Section 7.2.5 (page 7-14). The reference to Figure 7-2, which shows the area requiring ICs at Site 3, should clarify the unrestricted/restricted areas of concern noted in this comment (Note: this revision also addresses U.S. EPA comment 8):

"Consolidation of wastes into the Unit 1 main landfill area at Waste Area A (Figure 7-2), which is situated topographically 15 to 20 feet above Agua Chinon Wash, eliminates the potential for surface water in the wash to contact and erode landfill materials at the site."

Response 15:

The following will be inserted as new sentence #2 in paragraph 3 of Section 7.2.6 (page 7-16). The reference to Figure 7-2, which shows the area requiring ICs at Site 3, should clarify the unrestricted/restricted areas of concern noted in this comment (Note: this revision also addresses U.S. EPA comment 8):

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Comment 16:

Section 8.1, -Overall Protection of Human Health and Environment, page 8-2, "Alternative 2 would reduce the potential for inadvertent human exposure to landfill materials and groundwater, restricting excavation and drilling or use of groundwater." It is recommended that the ICs boundaries be identified.

Comment 17:

Section 8.3, -Long term Effectiveness and Permanence, page 8-5, It is stated that that Alternative 4c will not be able to control gas emissions. CDPH recommends clarification of 4c ARARS.

Comment 18:

Section 9, -Selected Remedy, page 9-1, "As part of the remedy, on-site consolidation of waste from Unit 1 will occur prior to capping at Site 3." It is recommended to provide a map showing Site 3 unrestricted and restricted release areas.

Comment 19:

Section 9, -Selected Remedy, page 9-2, "Periodic reviews (at least every 5 years) will be conducted to evaluate the monitoring results and verify that the action remains protective of human health and the environment." It is recommended that the reviews be performed every 5 years until the radiation concentration in the soil diminishes to levels that would permit unrestricted land use.

"Consolidation of wastes into the Unit 1 main landfill area at Waste Area A (Figure 7-2), which is situated topographically 15 to 20 feet above Agua Chinon Wash, eliminates the potential for surface water in the wash to contact and erode landfill materials at the site."

Response 16:

See response to specific comment 1.

Response 17:

This statement is in error. The 9th paragraph of Section 8.3 (page 8-5) will be deleted. The following will replace the current last paragraph of the section, which will also be deleted.

"Alternative 1 would not control landfill gas surface emissions and subsurface landfill gas migration, although data indicate that landfill gas at Sites 3 and 5 is currently below levels typically requiring control. As part of the agreement among FFA signatories, Alternatives 2, 3, 4, 5, and 6 include installation and monitoring of an active and passive gas control system at the two sites to address this concern."

Response 18:

The following will be inserted after the 1st sentence of the 3rd bulleted item in Section 9 (page 9-1):

"Areas requiring ICs at Sites 3 and 5 are shown on Figures 7-2 and 7-3, respectively."

Response 19:

See response to specific comment 3.

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Comment 20:

Section 11, -Documentation of Significant Changes, page 11-1, It is recommended that the boundaries be defined for the ICs.

Response 20:

See response to specific comment 1.

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Comments from Quang Than, DTSC

Letter dated 26 June 2007

Quang Than, Remedial Project Manager
Office of Military Facilities, Southern California Operations Branch
Department of Toxic Substances Control

GENERAL COMMENTS

Comment 1:

The ROD was issued to incorporate information from supplemental investigations, including investigations of potential radiological contamination, conducted after the Draft ROD was issued. The roles and responsibilities of the California Department of Health Services (DHS) in evaluating the recently collected radiological information should be clearly described.

Response 1:

In response to the comment, the following revisions will be made:

Declaration, page 2, 3rd paragraph, last sentence; and Section 2.1.3, page 2-6, last sentence of the paragraph: *“Detailed descriptions of the radiological survey procedures, analyses, results, and recommendations are presented in the final Radiological Release Report (Weston 2006), which was reviewed and concurred on by the FFA signatories, including U.S. EPA, RWQCB, and DTSC (with technical support from DHS, now California Department of Public Health.”*

The following will be inserted as new paragraph 2 of Section 2.1.2 (page 2-5):

“The Radiological Survey Plan and Sampling Amendment were prepared with input and concurrence from the FFA signatories including U.S. EPA, RWQCB, and DTSC with DHS (now California Department of Public Health [DPH]) Food, Drug, and Radiation Safety Division, Radiologic Health Branch acting in support of DTSC. The DPH Radiologic Health Branch enforces radiation control laws and regulations designed to protect the public, radiation workers, and the environment. At former MCAS El Toro, DPH supports DTSC (the lead state agency) by providing services and technical guidance regarding inspection of facilities that used radiological materials, investigation of radiation incidents, surveillance of radioactive contamination in the environment, and the remediation and release of sites.”

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Comments from Quang Than, DTSC

Comment 2:

The ROD describes land use restrictions that will be incorporated in a deed and land use covenant when property is transferred to a non-federal entity. Implementation and enforcement of the land use restrictions during the time period prior to transfer should also be described.

Comment 3:

In addition to monitoring for potential migration of landfill gas beyond landfill boundary, monitoring of passive landfill gas venting into the atmosphere is also necessary to meet requirements of the Coast Air Quality Management District.

Reference to DHS as a concurring agency, along with FFA signatories, on the final Radiological Release Report will also be inserted at the following three areas of the ROD: Section 2.1.7, last sentence of the paragraph (page 2-12); Section 5.2.2.4, Unit 1, last sentence of the 5th paragraph (page 5-7); and Section 5.3.2.4, last sentence of the 5th paragraph (page 5-14).

Response 2:

See response to specific comment 9.

Response 3:

See response to specific comment 12. For clarification, the phrase "landfill gas extraction well (passive operation)" will be added to Tables 9-3 and 9-4 (attached to these responses for reference) that outline the monitoring programs at Sites 3 and 5, respectively.

Please refer to the 2nd paragraph of Section 9.3, Monitoring (page 9-4). It is stated here that the SCAQMD, along with other appropriate agencies, will receive monitoring results.

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Comments from Quang Than, DTSC

SPECIFIC COMMENTS**Comment 1:**

Declaration, page 1: The citation to CERCLA should be changed to Title 42 United States Code sections 9601-9675. The Federal Facilities Agreement should also be cited as a base document for the ROD.

Response 1:

In the Declaration, the 1st sentence of paragraph 2 under "Statement of Basis and Purpose" (page 1) will be revised as follows:

"This ROD was developed in accordance with the Comprehensive Environmental Response, Compensation, and Liability Act of 1980, as amended by the Superfund Amendments and Reauthorization Act of 1986 (42 United States Code Sections 9601-9675), and to the extent practicable, the National Oil and Hazardous Substances Pollution Contingency Plan (Title 40 Code of Federal Regulations Part 300)."

In the Declaration, the 3rd paragraph under "Statement of Basis and Purpose" (page 1) will be replaced by the following (Note: this revision also addresses U.S. EPA comment 1):

"A Federal Facility Agreement (FFA) between the U.S. Department of the Navy (DON) and the U.S. Environmental Protection Agency (U.S. EPA) Region 9, the California Department of Health Services (DHS) (now referred to as the California Environmental Protection Agency Department of Toxic Substances Control [DTSC]), and the California Regional Water Quality Control Board (RWQCB) Santa Ana Region was signed by these parties in 1990. The DON and U.S. EPA have coselected the following remedial actions for this ROD:

- *no action for groundwater at Sites 3 and 5*
- *no action for soil at Site 3, Units 2 and 3*
- *further action for soil at Site 3, Units 1 and 4, and at Site 5*
- *Site 3 Unit 4 and Site 3 Unit 1 Waste Areas B through F will be recommended for unrestricted reuse after wastes from these areas are consolidated into Site 3 Unit 1 Waste Area A*

The State of California (through DTSC and RWQCB Santa Ana Region) concurs with the selected remedy."

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Comments from Quang Than, DTSC

Comment 2:

Declaration, page 4: Please state that the Navy will prepare 5-year review reports and submits to regulatory agencies for comments and approval or concurrence.

Comment 3:

Declaration, page 4: State of California should be capitalized.

Comment 4:

Declaration, page 1 and Section 1, page 1-1: The citation to the National Contingency Plan should be changed to 40 Code of Federal Regulations part 300 (40 C.F.R. pt. 300).

Comment 5:

Section 1, page 1-1: The figures and tables are presented at the end of main text of the report, not at the end of each section.

Comment 6:

Section 1.6, page 1-4: If this is the first reference to "carve-out parcels," the description should explain what these carve-out parcels are.

Response 2:

In the Declaration, the following will be added as the last sentence of the 2nd paragraph under "Statutory Determinations" (page 4):

"Results of the periodic review would be documented in a summary report."

Response 3:

The word "State" in the 1st sentence of the last paragraph under heading "ROD DATA CERTIFICATION CHECKLIST" (page 4) will be capitalized.

Response 4:

See response to specific comment 1. In addition, the 1st sentence of paragraph 2 of Section 1 (page 1-1) will be revised as follows:

"This ROD was developed in accordance with the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) of 1980, as amended by the Superfund Amendments and Reauthorization Act of 1986 (42 United States Code [U.S.C.] Sections [§§] 9601–9675), and the National Oil and Hazardous Substances Pollution Contingency Plan (Title 40 Code of Federal Regulations [C.F.R.] Part 300)."

Response 5:

The last sentence of paragraph 2 of Section 1 (page 1-1) will be revised as follows:

"Figures and tables are presented immediately following Section 12 and the Responsiveness Summary of this ROD."

Response 6:

The last sentence of the 1st paragraph of Section 1.6 (page 1-4) will be revised as follows:

"The DON also still holds title to 924 acres within 43 parcels, referred to as carve-out parcels, where property transfer cannot occur until all necessary environmental remedial actions have been taken."

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CTO-0062, APRIL 2007**

Comments from Quang Than, DTSC

Comment 7:

Section 2.1.1, page 2-4; Section 2.1.2, page 2-5; Section 2.1.3, page 2-6; Section 2.1.6, page 2-11; Section 2.1.7, page 2-12; Section 5.2.2.3, page 5-6; Section 5.2.2.4, page 5-6; Section 5.3.2.3, page 5-13; Section 5.3.2.4, page 5-13: These sections describe radiological assessment and characterization, including radium 226. The roles and responsibilities of the Department of Health Services in these activities should be described.

Note: Section 5.3.2.3 refers to a letter from DHS in which unrestricted radiological release was obtained for APHO 46; this letter should be part of the administrative record and the basis for obtaining the letter should be explained. The Declaration and Sections 2.1.3, 2.1.7, 5.2.2.4, and 5.3.2.4 refer to a Radiological Release Report (Weston 2006) which was reviewed and concurred on by the FFA signatories. The concurrences should be part of the administrative record.

Comment 8:

Section 3.3.2, page 3-5: The end of the public comment period for the revised Proposed Plan was February 21, 2007, not April 21, 2007.

Comment 9:

Section 7.2.2.1, page 7-4; Section 9.2, page 9-2; Section 10.2.3.7, page 10-6: These sections describe the institutional controls that are part of the selected remedy. The actions and schedules for implementation and enforcement of these institutional controls during the time period prior to transfer of property to nonfederal entities should be described. For example, when will the State land use covenants be signed?

Response 7:

See response to general comment 1.

The administrative record (AR) index will be included as Attachment A of the Draft Final ROD; letters of concurrence on the Final Radiological Release Report (Weston 2006) will be a part of the AR index.

Response 8:

The 1st sentence of paragraph 2 of Section 3.3.2 (page 3-5) will be revised as follows:

"The public comment period for the revised PP for Sites 3 and 5 was held from 22 January to 21 February 2007."

Response 9:

The 1st sentence of the last paragraph of Section 7.2.2.1 (page 7-7) will be revised as follows:

"The Navy will be responsible for implementing, inspecting, reporting, maintaining, and enforcing the IC objectives described in this ROD and land-use restrictions specified in the approved remedial design reports until property transfer."

The following text will be added to the end of the paragraph constituting Section 9.2.4, Land-Use Control Implementation (page 9-4):

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Comments from Quang Than, DTSC

Comment 10:

Section 9.2.2, page 9-3: The Navy should notify all FFA signatories in addition to the California Integrated Waste Management Board and/or the Local Solid Waste Enforcement Agency when there is a transfer of or land use change for the sites.

Comment 11:

Section 9.2.3, page 9-3: The reference to Section 7.2.1.2 should be corrected.

Comment 12:

Section 9.3, page 9-3 and Tables 9-3 and 9-4: Monitoring of passive venting of landfill gas into the atmosphere at the vertical gas extraction wells should be covered here.

“The Navy will retain responsibility for all LUC implementation actions until property transfer. As indicated in Section 7.2.2.1, remedial design reports will contain a LUC Remedial Design section that will identify FFA signatory agencies, other government agencies, and new property owner responsibilities for LUC implementation actions upon property transfer.”

The implementation of state land-use covenants will occur upon property transfer. This process is discussed in detail in Section 10.2.3.7.

Response 10:

This is addressed in Section 7.2.2.1, “Implementation,” 4th bullet on page 7-7. For additional clarification, the 3rd sentence of the paragraph comprising Section 9.2.2 (page 9-3) will be revised as follows:

“The DON shall notify FFA signatories and other appropriate governmental agencies, such as the CIWMB and Local Enforcement Agency (LEA), in the event of a property transfer of Sites 3 and 5. Transferees of Sites 3 and 5 will be required to notify FFA signatories, CIWMB, and LEA in the event of a land-use change at the sites so that issues related to postclosure land use, as well as implementing, monitoring, reporting on, and enforcing the land-use restrictions at these sites, are managed appropriately.”

Response 11:

The 1st sentence of Section 9.2.3 (page 9-3) will be revised as follows:

“The ICs, described in Section 7.2.2.1, shall prohibit the following:”

Response 12:

The phrase “landfill gas extraction well (passive operation)” will be added to Tables 9-3 and 9-4 (under “means” column, 1st row (landfill gas). These two tables are attached to these RTCs for reference.

It should be noted that the monitoring programs presented in Tables 9-3 and 9-4 are at the proposed stage in the ROD. Actual monitoring requirements will be specified in the remedial design document.

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Comments from Quang Than, DTSC

Comment 13:

Section 10.3, page 10-8: The costs listed here do not match those listed in Tables 8.3 and 8.4. Please reconcile the cost figures.

Comment 14:

Responsiveness Summary, page 2, Navy's response: Site 5 is described as both "covered in native grasses" and "gravel and pavement-covered". Please correct.

Response 13:

The bulleted text under Section 10.3 (page 10-8) will be revised as follows:

- *"For Site 3, \$9.6 million. This includes capital costs of \$5.0 million and O&M and monitoring costs of \$4.6 million.*
- *For Site 5, \$6.5 million. This includes capital costs of \$3.2 million and O&M and monitoring costs of \$3.3 million."*

Response 14:

The 1st sentence of the 2nd paragraph of the response to comment 2 of the "Responsiveness Summary" (page 2) will be revised as follows:

"Site 3 is currently covered with native grasses, and as mentioned above, Site 5 is covered with gravel and pavement."

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Comments from John Broderick, RWQCB

<p>Written on 11 May 2007</p> <p>John Broderick SLIC/DoD Section California Regional Water Quality Control Board, Santa Ana Region</p>	
GENERAL COMMENTS	
<p>Comment 1:</p> <p>Sections 1.6 CURRENT AND FUTURE LAND USE, page 1-4, and 7.2.2.1 INSTITUTIONAL CONTROLS, Implementation, second paragraph, page 7-7: When Lennar or another party assumes ownership of these landfill sites and responsibility for the postclosure care, the Regional Board will require waste discharge requirements to implement the postclosure requirements.</p> <p>Comment 2:</p> <p>Section 9, SELECTED REMEDY, page 6-1: Postclosure care and monitoring is critical for flexible membrane caps.</p> <p>Comment 3:</p> <p>Section 10.2.1.1 GROUNDWATER, second paragraph, page 10-2: Tank Farm 5 is downgradient from Site 3. Tank Farm 5 has an associated benzene plume, but it is not the likely source of benzene beneath an upgradient site. It is more likely that fuels were disposed of in the landfill. Disposal of contaminated fuel in landfills was a common practice at military airfields. Benzene should remain as a contaminant of concern for Site 3.</p> <p>Comment 4:</p> <p>Section 11, DOCUMENTATION OF SIGNIFICANT CHANGES, third bullet, page 11-2: We strongly suggest that you reconsider maintaining <u>only</u> a 100-foot buffer from edge of the waste cell around the closed landfill. We believe that for maintenance, monitoring and response to cover repairs you will</p>	<p>Response 1:</p> <p>Comment noted. The Navy's CERCLA remedy does not end upon property transfer and will continue during IC implementation, operations and maintenance, and monitoring. The CERCLA permit exclusion at Section 121(e) of CERCLA will continue to apply during this period.</p> <p>Response 2:</p> <p>Comment noted. No response needed.</p> <p>Response 3:</p> <p>As shown on Figure 5-5, Tank Farm 5 is located hydrologically cross-gradient from Site 3. Groundwater data from October 1997 shown in this figure indicate that benzene is present above detection limits only in the two wells located directly adjacent to Tank Farm 5.</p> <p>Table 9-3 indicates that postclosure groundwater monitoring at Site 3 will include analysis by U.S. EPA Method 8260B, in which benzene is a target analyte.</p> <p>Response 4:</p> <p>The Navy believes that the current depictions and descriptions of the 100-foot buffers surrounding the waste boundaries at Sites 3 and 5 are sufficient for purposes of the ROD. It should be noted that final areas and boundaries for buffer zones and areas requiring institutional controls at each</p>

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need space in excess of a strict 100-foot buffer. Within the fenced perimeter, you will need:

- a. Vehicle access, parking, and staging areas for operation & maintenance monitoring;
- b. Adequate room for storm water runoff control structures; and
- c. For repair of cover failure(s) – heavy equipment access and material storage area(s).

Comment 5:

Figure 7-2: The northern portion of the proposed waste cell footprint after reconsolidation of Site 3 waste is located outside of the defined boundary of Site 3. Such an extension of that portion of the proposed waste cell will trigger the federal and State municipal solid waste siting regulatory requirements and all other applicable regulations, including a conforming liner.

site will be determined in the remedial design phase of the project.

Response 5:

Figure 7-2 depicts waste boundaries at Site 3 that are based on the Phase II RI and the pre-design investigation reports. At the location noted in the comment, the waste boundary established during the pre-design investigation extends beyond the boundary depicted in the Phase II RI Report. Consolidated wastes will not be placed outside the maximum extent of either boundary; therefore, no new waste cell will be constructed and federal and state municipal solid waste siting requirements will not be triggered.

For clarity, Figure 7-2 has been revised to include the anticipated limits of waste consolidation within Waste Area A. This figure and Figure 7-3 (Site 5), have also been revised to illustrate the area requiring institutional controls. Both figures are attached to these RTCs for reference.

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Comments from Rich Muza, U.S. EPA

Written on 1 June 2007

Rich Muza, RPM
Superfund Division
United States Environmental Protection Agency, Region 9

SPECIFIC COMMENTS

Comment 1:

Declaration, Statement of Basis and Purpose, Page 1 – “The State of California...and the United State Environmental Protection Agency (U.S. EPA) concur with the selected remedy.” As per the introduction to the signature lines on Page 4, the U.S. EPA coselects the remedy with the Navy. It is recommended that the text cited above be modified as appropriate based on the text of Pages 4 and 5 of the Declaration.

Response 1:

Agreed. In the Declaration, the 3rd paragraph under “Statement of Basis and Purpose” (page 1), will be replaced with the following (Note: this revision also addresses DTSC specific comment 1):

“A Federal Facility Agreement (FFA) between the U.S. Department of the Navy (DON) and the U.S. Environmental Protection Agency (U.S. EPA) Region 9, the California Department of Health Services (DHS) (now referred to as the California Environmental Protection Agency Department of Toxic Substances Control [DTSC]), and the California Regional Water Quality Control Board (RWQCB) Santa Ana Region was signed by these parties in 1990. The DON and U.S. EPA have coselected the following remedial actions for this ROD:

- *no action for groundwater at Sites 3 and 5*
- *no action for soil at Site 3, Units 2 and 3*
- *further action for soil at Site 3, Units 1 and 4, and at Site 5*
- *Site 3 Unit 4 and Site 3 Unit 1 Waste Areas B through F will be recommended for unrestricted reuse after wastes from these areas are consolidated into Site 3 Unit 1 Waste Area A*

The State of California (through DTSC and RWQCB Santa Ana Region) concurs with the selected remedy.”

Comment 2:

Section 2.1.3.1 & 2.1.3.2, Pages 2-6 & 2-7 – The discussion here on the levels of concern for Ra-226 cite both the NRC’s 25 mrem/yr maximum dose level

Response 2:

The ROD will be revised to include language that clearly states that remedial action will be protective of human health and the environment and comply with ARARs. ARARs are often the determining factor in

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and the EPA's PRG/risk. EPA does not accept the NRC's 25 mrem/yr level as an appropriate cleanup level for radiological contaminants such as Ra-226. It is EPA's position, as stated in agency policy, that the cleanup level for such radiological contaminants should be based on a site-specific risk analysis using EPA's risk range of 10^{-6} to 10^{-4} . EPA desires that the ROD clearly state that the reason no action is being taken for Ra-226 is because the risk analyses show that there are no unacceptable risks using EPA's risk range. It is recommended that the discussion on these pages regarding Ra-226 emphasize this fact.

establishing cleanup levels at CERCLA sites. However, where ARARs are not available or are not sufficiently protective, the risk to human health and the environment is the determining factor for setting the remedial goals.

The following bolded note will be added to the text and tables where the NRC regulation regarding the 25 mrem/y is identified as an ARAR. Specifically, the note will be added at the end of comments in Table 10-1, sixth row, for citation 10 C.F.R. § 20.1403(b); in the second paragraph of Section 10; and at the end of Section 10.2.1.2:

"Note: U.S. EPA does not believe this NRC regulation is protective of human health and the environment."

The selected remedial action is a waste-in-place, containment remedy that includes a cap over the landfills with institutional controls to prevent contact with the landfill contents. The remedial action will ensure that there is no exposure and no risk to the public from any Ra-226 remaining at depth below the cap. The risk at the surface prior to installation of the cap has been determined to be 3×10^{-5} for both sites using a residential scenario. Since the residential scenario is not a potential future land use, the risk assessment for Ra-226 is conservative and the risk is expected to be even lower. The cap will provide further assurance that the remedial action objective for no direct contact with the landfill wastes will be achieved and ensure that there is no unacceptable exposure to any Ra-226 that may remain in the landfill buried at depth below the cap.

The residual risk levels are consistent with USEPA's August 22, 1997 OSWER Directive "Establishment of Clean up Levels for CERCLA Sites with Radioactive Contamination" (OSWER No. 9200.4-18) as well as the less-stringent NRC ARAR "Criteria for License Termination under Restricted Conditions" at 10 CFR Section 20.403(a) (25 mrem per year and "as low as reasonably achievable" ("ALARA"). In addition, the institutional controls selected in the ROD will preserve the integrity of the cap and comply with the institutional control requirements of 10 CFR Section 20.1403(b).

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At the end of the Declaration, Statement of Basis and Purpose (page 2) the following was added:

“Although the risk due to potential exposure to radiation from Ra-226 at the surface of the landfills has been determined to be acceptable, the high-density radiological surveys and sampling performed at the landfills were not intended to characterize landfill contents deeper than 18 inches below ground surface, the limitation of the survey equipment. Therefore, the DON identified radioactive waste applicable or relevant and appropriate requirements for this remedial action because of the potential for small quantities of waste with Ra-226 to be present in the body of the landfills. The remedial action is protective of human health and the environment with regard to potential exposure to external radiation due to radioactive decay of Ra-226, which may be present at small quantities within the waste.”

The following was added as the new second paragraph of Section 10 Statutory Determinations (page 10-1):

“ARARs have been identified for potential radioactive waste within the landfills. ARARs are often the determining factor in establishing cleanup levels at CERCLA sites. However, where ARARs are not available or are not sufficiently protective, site-specific remediation goals are generally set for carcinogens (radionuclides) at a level that represents an excess upper bound lifetime cancer risk to an individual of between 10^{-4} and 10^{-6} . The residual risk of the remedial action will be consistent with acceptable risk levels set forth in U.S. EPA's 22 August 1997 Office of Solid Waste and Emergency Response (OSWER) Directive “Establishment of Cleanup Levels for CERCLA Sites with Radioactive Contamination” (OSWER No. 9200.4-18) as well as the NRC ARAR “Criteria for License Termination Under Restricted Conditions” at 10 C.F.R. § 20.1403(a) (25 mrem/yr and “as low as reasonably achievable”). Note: U.S. EPA does not believe this NRC regulation is protective of human health and the environment. In addition, the ICs selected in this ROD will preserve the integrity of the cap and comply with the IC requirements of 10 C.F.R. § 20.1403(b).”

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Comments from Rich Muza, U.S. EPA

Comment 3:

Section 5.2.2.4, Pages 5-7 & 5-8 – For the discussions of Unit 3 and Unit 4 it is recommended that a sentence or two summarizing the sampling results be added – i.e., what was concluded from this sampling?

Response 3:

Agreed. The following text will be added as a new paragraph at the end of Section 5.2.2.4 “Unit 3” (page 5-8):

“Based on RFA and Phase II RI soil sampling results, Unit 3 contained no landfill wastes, and reported analytes did not exceed risk-based concentrations. Elevated levels of petroleum hydrocarbons reported in shallow soil were attributed to a probable motor oil or waste oil spill, but low concentrations of only a few VOCs in soil and soil gas (Section 5.2.2.2) did not indicate a significant solvent release at this unit. Therefore, no action was recommended at Unit 3.”

The following text will be added as a new paragraph at the end of Section 5.2.2.4 “Unit 4”:

“RFA and Phase II RI soil sampling results, particularly those for SVOCs and dioxins and dibenzofurans, confirmed the use of Unit 4 for waste incineration, as well as the presence of landfill wastes to a depth of approximately 10 feet bgs at this unit. On this basis, Unit 4 was recommended for further action.”

Comment 4:

Section 5.3.2.5, Pages 5-14 & 5-15 – For the discussion of ground-water monitoring it is recommended that a sentence or two summarizing the sampling results be added – i.e., what was concluded from this sampling?

Response 4:

Agreed. The following text will constitute the last paragraph of Section 5.3.2.5:

“Figure 5-12 illustrates the results of groundwater sampling performed at Site 5 in October 1997. Reported analytes were limited to trace amounts of two VOCs (tetrachloroethane and/or acetone) in three wells at concentrations below MCLs, and dissolved metals at concentrations generally below MCLs. Radionuclide activities were reported at levels attributable to natural sources. The Phase II RI concluded that organic analytes reported in groundwater appeared to be from an upgradient source and not from the Site 5 landfill. The probability that metals concentrations were naturally occurring was further analyzed in a Stationwide evaluation (see Section 5.5).”

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Comment 5:

Section 7.2.2.1, General – Figures showing the boundaries of the institutional controls (ICs) for Site 3 and Site 5 are not provided in the ROD. It is recommended that this omission be addressed in the draft final document.

Comment 6:

Section 7.2.2.1, General – The discussion of ICs does not include information on the duration of the ICs. As these sites include two former base landfills and waste is proposed to be left in place but isolated, it would be assumed that the ICs would run with the land. It is recommended that the following language on the duration of the ICs be included in the ROD: “Land Use Controls will be maintained until the concentration of hazardous substances in the soil are at such levels to allow for unrestricted use and exposure.”

Comment 7:

Section 7.2.2.1, Page 7-7 – “The Navy will be responsible for implementing, inspecting, reporting, maintaining, and enforcing the IC objectives described in the ROD in accordance with the approved remedial design reports.” EPA recommends that this statement be edited as follows: “The Navy will be responsible for implementing, inspecting, reporting, maintaining, and enforcing the IC objectives *and LUC controls* described in the ROD in accordance with the approved remedial design reports.”

Response 5:

Figures 7-2 (Site 3) and 7-3 (Site 5), which are attached to these RTCs for reference, have been revised to show the areas requiring institutional controls at both sites.

Response 6:

The Navy basically agrees with the comment but proposes that the following sentence be included as a last, stand-alone sentence to follow the bullet list of ICs shown on page 7-6 (Section 7.2.2.1 header entitled “Institutional Control Objectives and Land-Use Restrictions”):

“ICs will remain in place until RAOs and remediation goals have been achieved and it can be demonstrated that concentrations of hazardous substances in the landfills and exposure to external radiation from radioactive decay of Ra-226, which is potentially present in small quantities within the waste, are at levels that allow for unrestricted use.”

Response 7:

The Navy basically agrees with EPA’s recommended text revision, but proposes a minor variation to the first sentence of the last paragraph of Section 7.2.2.1 (page 7-7) to reflect that IC objectives are contained in the ROD, whereas specific land-use restrictions will be provided in remedial design documents:

“The Navy will be responsible for implementing, inspecting, reporting, maintaining, and enforcing the IC objectives described in this ROD and land-use restrictions specified in the approved remedial design reports until property transfer.”

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Comment 8:

Section 7.2.3.1, Page 7-9 – “With regard to meeting the RAO of minimizing contact with surface water from Aqua Chinon Wash, consolidation of waste from Waste Area C within Waste Area A and the fact that Waste Area A is not in the 100-year floodplain will provide topographic control.” This statement is confusing. It is recommended that this statement be edited for clarity and to provide further description of the issues being presented.

Comment 9:

Section 7.2.3.2, Page 7-10 – Figures showing the boundaries of the ICs for Site 3 and Site 5 are not provided in the ROD. It is recommended that this omission be addressed in the draft final document.

Response 8:

The Navy agrees that the cited text from paragraph 3 of Section 7.2.3.1 (page 7-9) is confusing as written, since neither Site 3 nor Site 5 are located within a 100-year floodplain. In addition, the first sentence of paragraph 2 of Section 8.3 states “Alternatives 3, 4, 5, and 6 meet the RAOs for the landfill sites,” so there is no need to single out the surface water RAO in the Alternative 3 description. For clarification, paragraph 3 of Section 7.2.3.1 (page 7-9) will be revised as follows:

“Under Alternative 3, Waste Areas B through F at Site 3 (Figure 7-2) will also be consolidated into the reduced Unit 1 footprint at Waste Area A, which is situated topographically 15 to 20 feet above Aqua Chinon Wash. Consolidation of wastes at this main landfill area eliminates the potential for surface water in the wash to contact and erode landfill materials at the site. Waste within both landfills at Site 3 and Site 5 will be protected from precipitation and surface water runoff by construction and maintenance of the engineered landfill cover and associated drainage controls.”

The above revised text is also applicable to the description of Alternatives 4, 5, and 6 presented in Section 7. Therefore, the following similar text will be added to: Section 7.2.4 (1st paragraph, new sentence #4 [page 7-11]); Section 7.2.5 (4th paragraph, new sentence #2 [page 7-14]); and Section 7.2.6 (3rd paragraph, new sentence #2 [page 7-16]):

“Consolidation of wastes into the Unit 1 main landfill area at Waste Area A (Figure 7-2), which is situated topographically 15 to 20 feet above Aqua Chinon Wash, eliminates the potential for surface water in the wash to contact and erode landfill materials at the site.”

Response 9:

See response 5.

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Comment 10:

Section 7.2.4, Page 7-11 – Figures showing the boundaries of the ICs for Site 3 and Site 5 are not provided in the ROD. It is recommended that this omission be addressed in the draft final document.

Response 10:

See response 5.

Comment 11:

Section 7.2.5, Page 7-14 – Figures showing the boundaries of the ICs for Site 3 and Site 5 are not provided in the ROD. It is recommended that this omission be addressed in the draft final document.

Response 11:

See response 5.

Comment 12:

Section 7.2.6, Page 7-15 – Figures showing the boundaries of the ICs for Site 3 and Site 5 are not provided in the ROD. It is recommended that this omission be addressed in the draft final document.

Response 12:

See response 5.

Comment 13:

Section 8.2, Pages 8-3 & 8-4 – The ARARs discussion with regards to Alternative 4c is confusing. Section 7.2.4.3 indicates that this alternative is a variation of Alternative 4a. In the ARARs discussion Alternative 4a meets all identified ARARs while mention of Alternative 4c is omitted from this paragraph of the discussion. Further, later in this section it is stated that Alternative 4c will not be able to control gas emissions and does not meet these requirements; however, the discussion in Section 7.2.4 does not imply that this would be the case as this remedy would include passive gas control trenches and vertical landfill gas extraction wells. It is recommended that this section be revised to further address and clarify the ARARs for Alternative 4c.

Response 13:

The Navy agrees with the comment, as Alternative 4c is a variation of Alternative 4 that uses a geocomposite clay liner (GCL) beneath a vegetative soil cover. The GCL is functionally equivalent to the other Alternative 4 options (clay barrier, soil/bentonite mix barrier, synthetic flexible membrane liner) with respect to meeting permeability requirements of identified ARARs. In addition, Alternative 4c includes passive and active landfill gas control systems, like all other alternatives except no action Alternative 1. Text revisions will be made to correct errors at the following locations in the ROD:

Section 8.2, 3rd paragraph, 1st sentence (page 8-3): *“Alternatives 3, 4a, 4b, 4c, 4d, 5, and 6 comply with all ARARs for Sites 3 and 5 identified in Appendix A of the FS Addendum.”*

Section 8.2, 4th paragraph, 1st sentence (page 8-3): *“Alternatives 4a, 4b, 4c, 4d, 5, and 6 comply with the Cal. Code Regs. tit. 27, §§ 20921(a)(1), (2), and (3) and 21160(b) requirements for landfill gas monitoring and*

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controls, thereby meeting the requirement of not exceeding 5 percent methane by volume in air at the facility property boundary.”

The last sentence of paragraph 4 will be deleted.

Section 8.3, 9th paragraph (page 8-5) will be deleted in its entirety.

Section 8.3, 10th paragraph (page 8-5). The following will be added as a new first sentence:

“The clay and soil/bentonite mixture used in the barrier layers for Alternatives 4a and 4b, respectively, have low resistance to cracking due to differential settlement.”

Section 8.3 (page 8-5). The following will replace the current last paragraph at the end of the section: *“Alternative 1 would not control landfill gas surface emissions and subsurface landfill gas migration, although data indicate that landfill gas at Sites 3 and 5 is currently below levels typically requiring control. As part of the agreement among FFA signatories, Alternatives 2, 3, 4, 5, and 6 include installation and monitoring of an active and passive gas control system at the two sites to address this concern.”*

Comment 14:

Section 8.3, Page 8-5 – Once again it is stated that Alternative 4c will not be able to control gas emissions; however, the discussion in Section 7.2.4 does not imply that this would be the case as this remedy would include passive gas control trenches and vertical landfill gas extraction wells. It is recommended that the ROD be revised to address discrepancies regarding Alternative 4c.

Comment 15:

Section 8.7, Pages 8-7 & 8-8 – Are the costs of monitoring ICs considered in the alternatives costs provided? It is recommended that this issue be clarified in the draft final ROD.

Response 14:

See response 13.

Response 15:

The O&M costs shown in Tables 8-3 and 8-4 include the costs for monitoring ICs. The following will be inserted after the 5th sentence of paragraph 3 of Section 8.7 (page 8-8) for clarification:

“Capital costs shown in the two tables include remedial design, construction, construction materials, direct labor, equipment, land and site development,

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LANDFILL SITES 3 AND 5, FORMER MCAS EL TORO
EL TORO, CALIFORNIA
CTO-0062, April 2007**

Comments from Rich Muza, U.S. EPA

remedial action professional labor, indirect costs (contractor overhead and profit, taxes, insurance, etc.), escalation, and contingency. O&M costs assumed for a 30-year period include operating labor, postclosure maintenance, replacement materials, cap maintenance (grading, mowing, reseeding, etc.), administration (e.g., ICs and monitoring/maintenance), postclosure inspection and monitoring, analytical testing, and reporting. Cost estimate details are presented in the initial FS Reports (BNI 1997c,d) and the final FS Addendum (Earth Tech 2006)."

The last sentence of paragraph 3 will be deleted.

Comment 16:

Section 8.8, Page 8-8 – The discussion provided in the text here looks to be from the original draft ROD in 1999. It is recommended that this section be updated and revised accordingly.

Response 16:

Section 8.8 has been updated and revised in its entirety as follows:

"Following supplemental investigations performed after the draft ROD for Sites 3 and 5 was issued, the draft FS Addendum for the sites was prepared and submitted for regulatory agency review in spring 2005. After resolution of agency comments and issuance of a draft final version, the final FS Addendum was issued in December 2006 (Earth Tech 2006). The 1998 PP was subsequently revised and issued in January 2007 to document the Navy's proposed selection of Alternative 4d. The 2007 PP, developed in cooperation with the agencies, also documents state regulatory agency concurrence with the selected alternative."

Comment 17:

Section 8.9, Page 8-8 – The discussion provided in the text here looks to be from the original draft ROD in 1999. It is recommended that this section be updated and revised accordingly.

Response 17:

Section 8.9 has been updated and revised in its entirety as follows:

"Following supplemental investigations performed after the draft ROD for Sites 3 and 5 was issued, the final FS Addendum was issued in December 2006 (Earth Tech 2006). The 1998 PP was subsequently revised and issued in January 2007 to document the Navy's proposed selection of Alternative 4d. Both documents were made available for public review, as described in Section 3.3.2. At the initiation of a 30-day public comment period for the PP, notices of availability of these documents were published

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Comments from Rich Muza, U.S. EPA

Comment 18:

Section 9, Page 9-1 – “Based on the Sites 3 and 5 RI/FS reports,...the DON has selected...” As per the introduction to the signature lines on Page 4, the U.S. EPA coselects the remedy with the Navy. It is recommended that the text cited above be modified as appropriate.

in local newspapers, and over 500 PP copies were mailed to recipients on the community relations list.

In addition to the 30-day public comment period, the public was given an opportunity to provide questions and comments during and after a public meeting for the PP held on 31 January 2007. The Navy reviewed and responded to all public comments received during the comment period, as documented in the Responsiveness Summary immediately following Section 12 of this ROD.”

Response 18:

Agreed. The introductory paragraph of Section 9 (page 9-1) has been revised as follows (Note: this revision also addresses CDPH general comment 3):

“The DON and U.S. EPA have coselected Alternative 4d as the remedy for landfill Sites 3 and 5. The selection is based on review of Sites 3 and 5 RI/FS Reports, the Radiological Release Report, Technical Memorandum for Pre-Design Investigation, FS Addendum, and the Administrative Record for these sites, as well as an evaluation of all comments submitted by interested parties during the public comment period for the January 2007 PP. ICs will be implemented for the landfill areas and surrounding buffer zones at both sites. As part of the Site 3 remedy, wastes from Unit 4 and from Unit 1 Waste Areas B through F will be excavated, consolidated with waste at the reduced Unit 1 Waste Area A footprint (main landfill area), and capped. Upon completion of the remedial action, portions of Site 3 exclusive of the consolidated landfill and surrounding buffer zone will be suitable for unrestricted use; these areas include Unit 4 and Unit 1 Waste Areas B through F. At Site 5, excavation and consolidation of wastes are not required prior to implementing the landfill capping remedy. The selected alternative includes the following components.”

**RESPONSE TO COMMENTS ON
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LANDFILL SITES 3 AND 5, FORMER MCAS EL TORO
EL TORO, CALIFORNIA
CTO-0062, April 2007**

Comments from Rich Muza, U.S. EPA

Comment 19:

Section 9, Page 9-1 – The discussion provided in the introductory paragraph here looks to be in part from the original draft ROD in 1999. It is recommended that this section be updated and revised accordingly based on the January 2007 Proposed Plan public meeting and public comment period.

Response 19:

See response 18.

Comment 20:

Section 9, Page 9-1 – “On-site consolidation of waste from Unit 1 will occur prior to capping at Site 3.” There is inconsistency within the ROD with regards to this issue. Elsewhere in the text it is stated that waste from Unit 4 and waste from Waste Areas B through F would be consolidated within the Unit 1 footprint at Site 3. It is recommended that the ROD be revised to address this discrepancy.

Response 20:

Agreed. See response 18.

Comment 21:

Section 9.2, General – The discussion of ICs does not include information on the duration of the ICs. As these sites include two former base landfills and waste is proposed to be left in place but isolated, it would be assumed that the ICs would run with the land. It is recommended that the following language on the duration of the ICs be included in the ROD: “Land Use Controls will be maintained until the concentration of hazardous substances in the soil are at such levels to allow for unrestricted use and exposure.”

Response 21:

See response 6.

Comment 22:

Section 9.2.2, Page 9-3 – “The DON shall notify the CIWMB in the event of a transfer of Sites 3 and 5...” Why are EPA and DTSC not included in the notification of transfer? It is recommended that EPA and DTSC be added to the list of agencies to be notified in the event of a property transfer.

Response 22:

Agreed. The third sentence of the paragraph constituting Section 9.2.2 (page 9-3) will be revised as follows:

“The DON shall notify FFA signatories and other appropriate governmental agencies, such as the CIWMB and Local Enforcement Agency (LEA), in the event of a property transfer of Sites 3 and 5. Transferees of Sites 3 and 5 will be required to notify FFA signatories, CIWMB, and LEA in the event of a land-use change at the sites so that issues related to postclosure land use, as well as implementing, monitoring, reporting on, and enforcing the land-use restrictions at these sites, are managed appropriately.”

**RESPONSE TO COMMENTS ON
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CTO-0062, April 2007**

Comments from Rich Muza, U.S. EPA

Comment 23:

Section 10.2.1.2, Page 10-2 – The NRC regulation requiring “as low as reasonably achievable” is not an ARAR for this remedial action. There are no soil chemical-specific ARARs for Ra-226 because no action is being undertaken with regards to Ra-226 since the risk analysis showed that the risk is within the EPA risk range. It is recommended that this discussion be deleted.

Comment 24:

Section 10.2.3.2, Page 10-5 – “This plan will include descriptions of the BMPs to be implemented during the removal action...” It is recommended that the term “remedial action” be used here instead of “removal action”.

Comment 25:

Section 10.4, Page 10-8 – “The DON, DTSC, and RWQCB have determined that the selected remedy...” Why is EPA not listed in the list of regulatory agencies concurring with the selected remedy here? It is recommended that EPA be added to the list of agencies in this statement.

Response 23:

The DON has determined that the NRC “as low as reasonably achievable” is relevant and appropriate for this remedial action. The DON has identified provisions of NRC requirements and other radioactive waste requirements as relevant and appropriate ARARs because of the potential for products with radioluminescent paint used on site to have been disposed of inadvertently in the landfills, although not detected above station background at the surface. The risk analysis evaluated the current risk at the surface. It is not feasible to characterize the waste within the site to rule out the potential for Ra-226. Therefore, the DON has determined that the cover will be designed to comply with these ARARs and be protective of human health and the environment. See Response to Comment 2 above.

Response 24:

Agreed. The last paragraph of Section 10.2.3.2 (page 10-5) will be revised as follows:

“The Navy will also comply with the substantive provisions of the General Permit to develop and implement BMPs during the remedial action and prepare a stormwater management plan, which will address technical monitoring and analytical requirements (i.e., location and frequency of sample collection, parameters to be tested, and analytical methods). Compliance with these substantive requirements will be documented in the remedial design package.”

Response 25:

Agreed. The first sentence of the paragraph constituting Section 10.4 (page 10-8) will be revised as follows:

“The DON, U.S. EPA, DTSC, and RWQCB have determined that the selected remedy represents the maximum extent practicable to which permanent solutions and alternative treatment technologies can be used in a cost-effective manner for the landfill sites.”

**RESPONSE TO COMMENTS ON
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CTO-0062, April 2007**

Comments from Rich Muza, U.S. EPA

Comment 26:

Table 10-1 – For the Chemical-Specific ARARs, as per Comment #2 above, it is recommended that the references to the two NRC Radiological Criteria regulations be deleted.

Comment 27:

Table 10-3 – For the Action-Specific ARARs, under the South Coast Air Quality Management District, why has the DON made the determination that the second requirement is relevant and appropriate while the first one is applicable? It is recommended that this issue be clarified in the draft final ROD.

Response 26:

See response to Comment 2 and 23 above.

Response 27:

SCAQMD Rule 1150 in substantive part requires mitigation measures to ensure that a public nuisance does not occur as a result of excavation. The DON notes that the nuisance rule (SCAQMD Rule 1150) is subjective in nature and lacks objective standards. The requirements of 40 C.F.R. § 300.5 specify that an ARAR must be an environmental or facility siting requirement or limitation. Rule 1150 does not fall within the definition of those terms and is therefore not an ARAR. The nature, quantity, and location of identified contaminants at Sites 3 and 5 should not be of concern under SCAQMD Rule 1150 even if it were an ARAR. The DON has determined that Rule 1150 is not an ARAR for this remedial action and has removed it from the listing on page 8 of 12 under the State section of Table 10-3 (attached for reference). In addition, the last sentence of Section 10.2.3.6, SCAQMD Requirements (page 10-6), has been revised to delete Rule 1150 as follows:

“Additionally, SCAQMD Rule 401 is an applicable state ARAR at Sites 3 and 5.”

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ATTACHMENTS

- 1. RESPONSIVENESS SUMMARY**
- 2. FIGURES 7-2 AND 7-3**
- 3. TABLES 9-3, 9-4, 10-1, AND 10-3**

**RESPONSIVENESS SUMMARY
FORMER MARINE CORPS AIR STATION EL TORO, CALIFORNIA
PROPOSED PLAN FOR OPERABLE UNIT 2C, LANDFILL SITES 3 AND 5**

Letters Received During Public Comment Period

Comments by: Larry Laven, letters dated February 9, 2007 and February 10, 2007, respectively

Number	Comments	Responses
1	<p>I notice that none of the remedies proposed for the land fill caps at sites 3 and 5 mention "Natural Attenuation" under the remedial alternatives evaluated in the paper titled "Proposed Plan" a paper that notified me of the thirty day public comment period. In Table 2, under Summary of Landfill Closures Alternatives, on page 8 of the paper, Natural Attenuation is not mentioned, possibly because all of the proposed possibilities for the land fill caps except option #1 (no action at all), prevents not only the water from sinking into the soil, but also keeps out the air that would be drawn down into the soil by the sinking water, and therefore, theoretically, the trash and waste under the land fill caps will be cut off from fresh oxygen, and will never again receive fresh oxygen creating a situation where some of it might possibly become petrified if, in ten thousand or a million or so years from now, or maybe sooner, silica is introduced, like was done by nature to the trees in the Petrified Forest, a forest that is actually buried under ground and I believe covered with ash from trees that burned, before water carried silica down through the dirt and the ash surrounding the trees. I think the silica and ash cut the fallen trees off from the surrounding oxygen, causing the trees to petrify.</p> <p>However, for now, at sites 3 and 5 I believe that there is still a sufficient amount of oxygen that will be trapped in place when covered by a landfill cap, to allow some amount of natural attenuation to take place. I do not know for sure whether or not organic or inorganic waste decays faster or more efficiently when in an environment with oxygen or without oxygen. According to the RAB Glossary of Technical Terms: Anaerobic life or processes take place inside of, and are not destroyed by, the absence of oxygen, suggesting that some form or something, possibly some form of decomposition like the souring of milk, or the fermentation of organic matter like in the formation of alcohol from sugar, can take place inside the absence of oxygen; however, I believe that the decomposition of most organic matter is slower in an anaerobic</p>	<p>In the original Feasibility Studies performed for Sites 3 and 5, the Navy used a presumptive remedy approach advocated by U.S. EPA for municipal and appropriate military landfill sites. Presumptive remedies are based on those technologies that are preferred for common categories of sites (such as landfills) based on past experience, and historical patterns that show they will be cost-effective and time-efficient for clean-up. The presumptive remedy established by U.S. EPA for landfills is containment. Per this approach, the Navy defined appropriate remedial action objectives and developed remedial alternatives 3 through 6, as described in the Proposed Plan, that utilize containment as the principal technology.</p> <p>Natural attenuation, frequently referred to as "monitored natural attenuation" when discussed as a remedial technology, is a range of physical and biological processes that can reduce the concentration, toxicity, or mobility of organic contaminants in soil and/or groundwater. However, these processes are not effective for inorganic contaminants, such as metals, that would be present in landfills. Due to this limitation with respect to landfill waste material and because a presumptive remedy approach was used, natural attenuation was not considered as a viable technology during the remedial alternatives development process for Sites 3 and 5.</p>

**RESPONSIVENESS SUMMARY
FORMER MARINE CORPS AIR STATION EL TORO, CALIFORNIA
PROPOSED PLAN FOR OPERABLE UNIT 2C, LANDFILL SITES 3 AND 5**

Letters Received During Public Comment Period

Comments by: Larry Laven, letters dated February 9, 2007 and February 10, 2007, respectively

Number	Comments	Responses
	<p>environment and the inorganic matter in the landfills is likely to take even longer when outside the presence of oxygen, and therefore this project will probably need to be monitored for not just thirty years but more likely for hundreds of years.</p>	
2	<p>I am not sure, but I think that the Gnatcatcher might be a subject of concern at Landfill sites 3 and 5; and if it is please include this paper on the Gnatcatcher.</p> <p style="text-align: center;">THE GNAT CATCHER</p> <p>What the Gnatcatcher wants most is to be left alone. The basic Gnatcatcher, a small slender grayish bird on the list of endangered species, is probably bigger than a humming bird, but does not do well around people, not as well as the humming bird, or the crow. Many birds do well in the environment people provide. Birds appreciate lawns full of worms, and water puddles. I believe that it is possible to find more birds and other wild life in a landscaped neighborhood, than amongst trees by a stream in the mountains; however, the Gnatcatcher is unique and possibly incapable of competing with other birds like the crow. Perhaps the Gnatcatcher has found a home at El Toro because there, the Gnatcatcher does not have to compete with larger birds like the crow, that will ultimately steal its eggs; or smaller birds that are quicker at stealing crumbs from one another. Although the Gnatcatcher would obviously prefer to be left alone, one might try to learn about the bird. Because much is already known about the Gnatcatcher's diet, someone might already know if a Gnatcatcher can find food around other plants like wild daisies? Or do plants different than sagebrush attract other birds that will compete with the Gnatcatcher? The Gnatcatcher might take advantage of a birdbath; (a pail of water held off the ground by a stand) but then again, maybe the Gnatcatcher is afraid of new and unusual objects, or unnatural objects. Perhaps the</p>	<p>Potential impacts to ecological receptors at Site 5 was addressed in an ecological risk assessment (ERA) performed as part of the Remedial Investigation conducted at the site. There was no ERA required for Site 3, since the site is cover with gravel or pavement and does not support wildlife habitat. The ERA at Site 5 supports the conclusion that significant ecological effects are not expected.</p> <p><u>Site 3 is currently covered with native grasses, and as mentioned above, Site 5 is covered with gravel and pavement.</u>Site 5 is currently covered in native grasses, and as mentioned above, Site 5 is gravel and pavement-covered. Neither landfill site contains significant riparian habitat that is typically preferred by species such as the Gnatcatcher. The preferred remedy (alternative 4d) will include an upper soil cover layer that will support vegetation such as native grasses, to control erosion and aid slope stability.</p>

**RESPONSIVENESS SUMMARY
FORMER MARINE CORPS AIR STATION EL TORO, CALIFORNIA
PROPOSED PLAN FOR OPERABLE UNIT 2C, LANDFILL SITES 3 AND 5**

Letters Received During Public Comment Period

Comments by: Larry Laven, letters dated February 9, 2007 and February 10, 2007, respectively

Number	Comments	Responses
	<p>Gnatcatcher would like a bird bath, but is afraid of the other birds attracted to the water. On the other hand, one might ask ones self; Does the Gnatcatcher really need any more water than it already has? And if forgotten about, will the water breed mosquitoes?</p> <p>If a person was to stake out and tie a ribbon around the land fill that is to be covered with a cap, would the Gnatcatcher's instinctively comprehend the meaning of the ribbon? Would the Gnatcatcher understand that the people are only interested in the staked out land fill near by and that the people are not there to bother the Gnatcatcher its self? Or would the Gnatcatcher fear the ribbon and fly away?</p> <p>The Gnatcatcher was probably not afraid of the noise from the military aircraft that flew in and out of El Toro, but would the Gnatcatcher be frightened away by a new noise, or if the aircraft were to return?</p>	

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SENSITIVE RECORD

PORTIONS OF THIS RECORD ARE CONSIDERED SENSITIVE
AND ARE NOT AVAILABLE FOR PUBLIC VIEWING

FIGURES 7-2 AND 7-3

FOR ADDITIONAL INFORMATION, CONTACT:

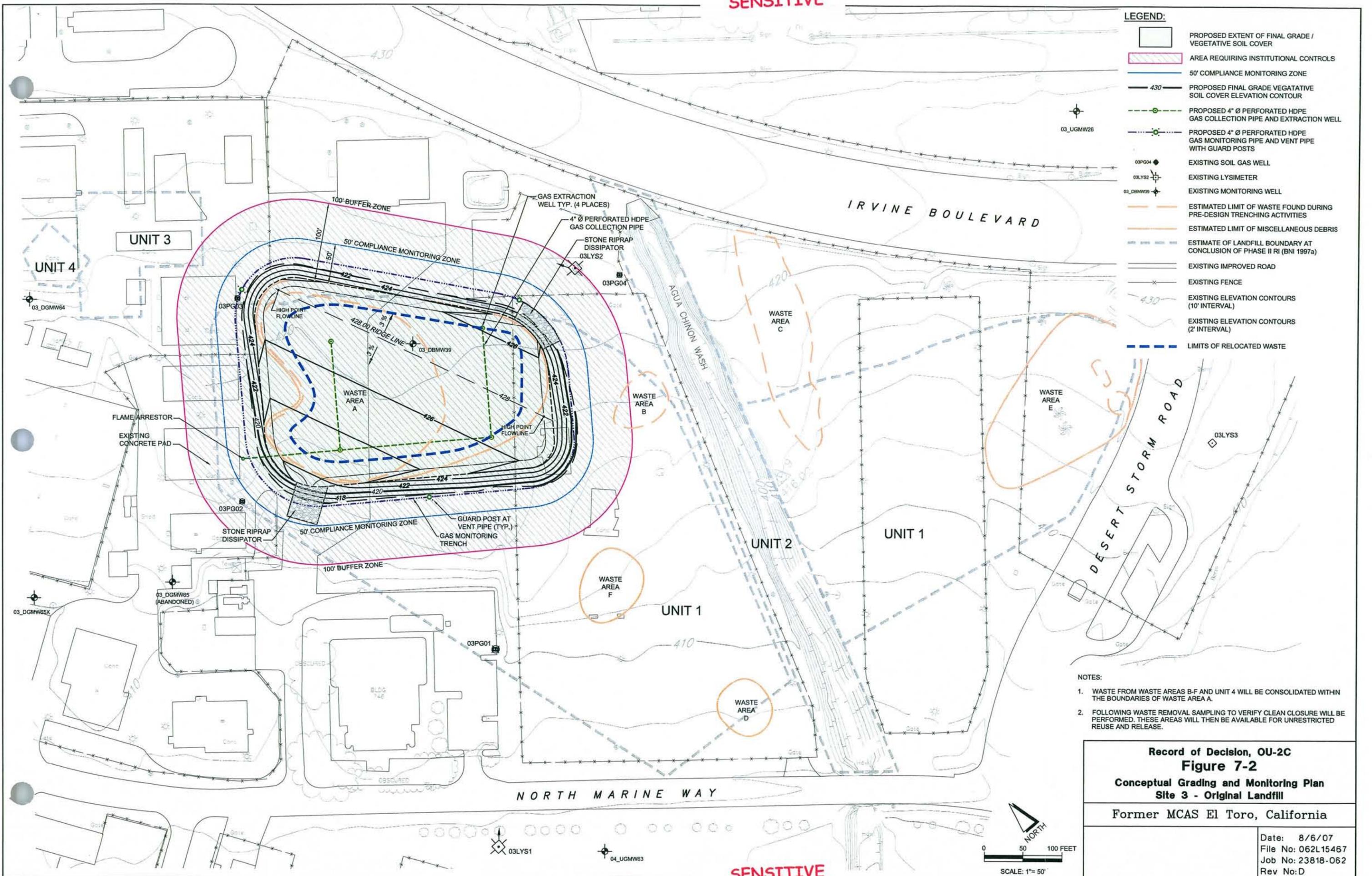
DIANE C. SILVA, RECORDS MANAGER
NAVAL FACILITIES ENGINEERING COMMAND, SOUTHWEST
1220 PACIFIC HIGHWAY
SAN DIEGO, CA 92132

TELEPHONE: (619) 556-1280
E-MAIL: diane.silva@navy.mil

SENSITIVE

LEGEND:

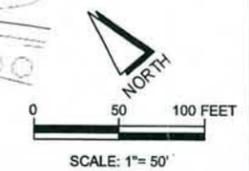
-  PROPOSED EXTENT OF FINAL GRADE / VEGETATIVE SOIL COVER
-  AREA REQUIRING INSTITUTIONAL CONTROLS
-  50' COMPLIANCE MONITORING ZONE
-  PROPOSED FINAL GRADE VEGETATIVE SOIL COVER ELEVATION CONTOUR
-  PROPOSED 4" Ø PERFORATED HDPE GAS COLLECTION PIPE AND EXTRACTION WELL
-  PROPOSED 4" Ø PERFORATED HDPE GAS MONITORING PIPE AND VENT PIPE WITH GUARD POSTS
-  EXISTING SOIL GAS WELL
-  EXISTING LYSIMETER
-  EXISTING MONITORING WELL
-  ESTIMATED LIMIT OF WASTE FOUND DURING PRE-DESIGN TRENCHING ACTIVITIES
-  ESTIMATED LIMIT OF MISCELLANEOUS DEBRIS
-  ESTIMATE OF LANDFILL BOUNDARY AT CONCLUSION OF PHASE II RI (BNI 1997a)
-  EXISTING IMPROVED ROAD
-  EXISTING FENCE
-  EXISTING ELEVATION CONTOURS (10' INTERVAL)
-  EXISTING ELEVATION CONTOURS (2' INTERVAL)
-  LIMITS OF RELOCATED WASTE



- NOTES:
1. WASTE FROM WASTE AREAS B-F AND UNIT 4 WILL BE CONSOLIDATED WITHIN THE BOUNDARIES OF WASTE AREA A.
 2. FOLLOWING WASTE REMOVAL SAMPLING TO VERIFY CLEAN CLOSURE WILL BE PERFORMED. THESE AREAS WILL THEN BE AVAILABLE FOR UNRESTRICTED REUSE AND RELEASE.

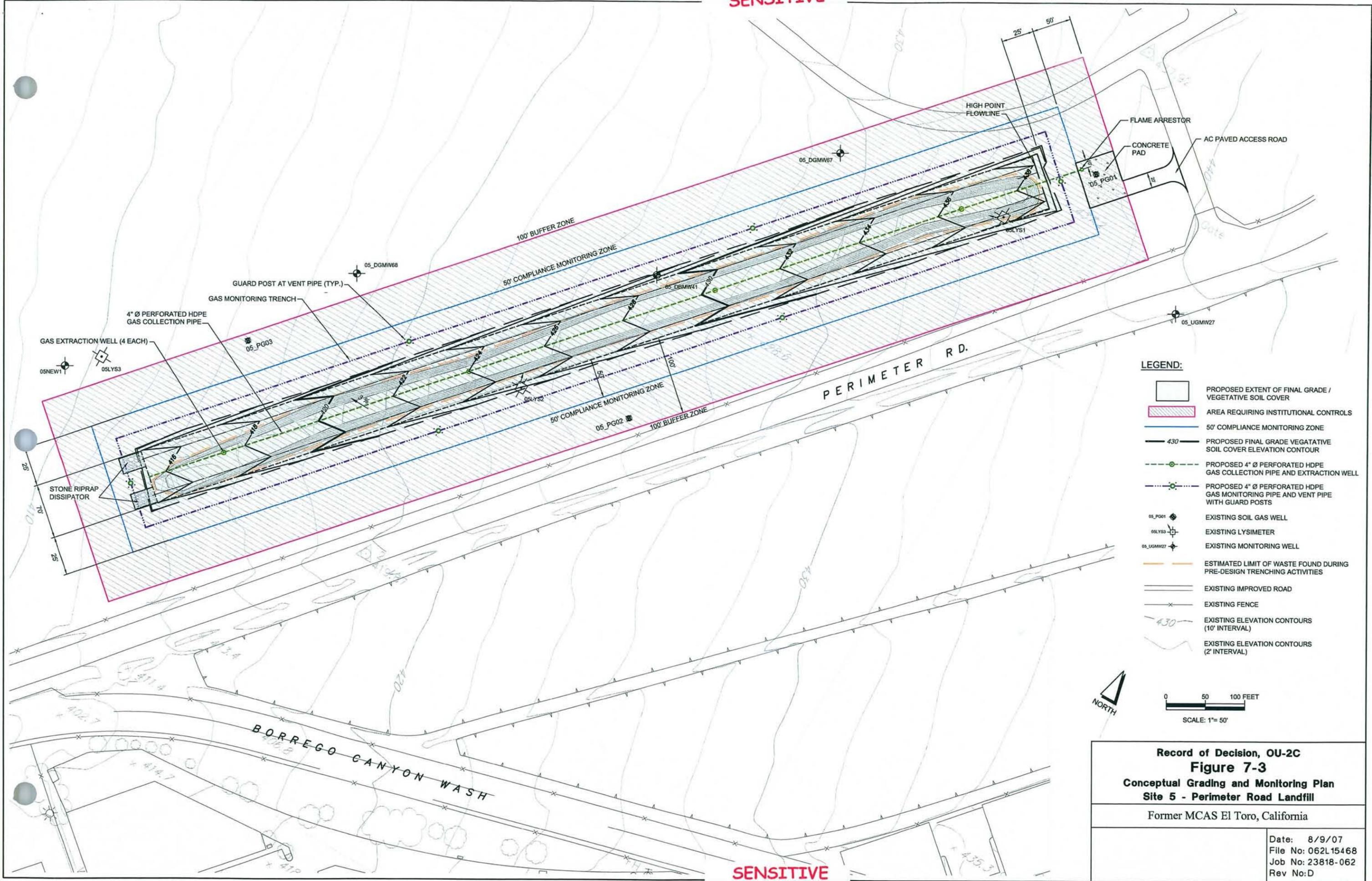
Record of Decision, OU-2C
Figure 7-2
Conceptual Grading and Monitoring Plan
Site 3 - Original Landfill
 Former MCAS El Toro, California

	Date: 8/6/07
	File No: 062L15467
	Job No: 23818-062
	Rev No: D

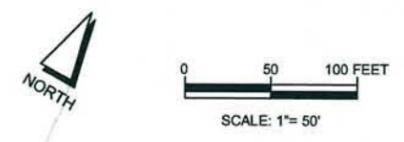


SENSITIVE

SENSITIVE



- LEGEND:**
- PROPOSED EXTENT OF FINAL GRADE / VEGETATIVE SOIL COVER
 - AREA REQUIRING INSTITUTIONAL CONTROLS
 - 50' COMPLIANCE MONITORING ZONE
 - 430 PROPOSED FINAL GRADE VEGETATIVE SOIL COVER ELEVATION CONTOUR
 - PROPOSED 4" Ø PERFORATED HDPE GAS COLLECTION PIPE AND EXTRACTION WELL
 - PROPOSED 4" Ø PERFORATED HDPE GAS MONITORING PIPE AND VENT PIPE WITH GUARD POSTS
 - 05_PG01 EXISTING SOIL GAS WELL
 - 05LYS3 EXISTING LYSIMETER
 - 05_UGMW27 EXISTING MONITORING WELL
 - ESTIMATED LIMIT OF WASTE FOUND DURING PRE-DESIGN TRENCHING ACTIVITIES
 - EXISTING IMPROVED ROAD
 - EXISTING FENCE
 - EXISTING ELEVATION CONTOURS (10' INTERVAL)
 - EXISTING ELEVATION CONTOURS (2' INTERVAL)



Record of Decision, OU-2C
Figure 7-3
Conceptual Grading and Monitoring Plan
Site 5 - Perimeter Road Landfill
 Former MCAS El Toro, California

	Date: 8/9/07
	File No: 062L15468
	Job No: 23818-062
	Rev No: D

SENSITIVE

**Table 9-3
Proposed Postclosure Monitoring for Site 3**

Description	Means	Target Analyte	Test Method	Monitoring Frequency
Landfill gas	Perimeter probes (6 new) <u>Landfill gas extraction well (passive operation)</u>	VOCs Fixed gases	U.S. EPA Method T014 ASTM Method D-3416	Quarterly until stabilized
Vadose zone gas	Soil probes on lysimeters (4 new, 1 existing)	VOCs Fixed gases	U.S. EPA Method T014 ASTM Method D-3416	Semiannually, 5 years Annually, 25 years
Groundwater	Monitoring wells (7 existing)	VOCs	U.S. EPA Method 8260B	Semiannually, 5 years Annually, 25 years
		Sulfate Sulfide	U.S. EPA Method 375 or 300 U.S. EPA Method 376	Four rounds minimum
		SVOCs	U.S. EPA Method 8270C	Every 5 years
		Herbicides Pesticides/PCBs Total metals	U.S. EPA Method 8157 U.S. EPA Methods 8081/8082 U.S. EPA 6000/7000 Series	
Leachate	Lysimeters (4 new, 1 existing)	VOCs	U.S. EPA Method 8260B	Semiannually, 5 years Annually, 25 years
		SVOCs Total metals	U.S. EPA Method 8270C U.S. EPA 6000/7000 Series	Every 5 years
Landfill cap	Visual settlement monuments	NA	NA	Quarterly until stabilized
Surface control features/final grading	Visual settlement monuments	NA	NA	Quarterly until stabilized
Revegetation/site security	Visual	NA	NA	Semiannually, 5 years Annually, 25 years

Acronyms/Abbreviations:

ASTM – American Society for Testing and Materials
 NA – not applicable
 PCB – polychlorinated biphenyl
 SVOC – semivolatile organic compound
 U.S. EPA – United States Environmental Protection Agency
 VOC – volatile organic compound

**Table 9-4
Proposed Postclosure Monitoring for Site 5**

Description	Means	Target Analyte	Test Method	Monitoring Frequency
Landfill gas	Perimeter probes (4 new) <u>Landfill gas extraction well (passive operation)</u>	VOCs Fixed gases	U.S. EPA Method T014 ASTM Method D-3416	Quarterly until stabilized
Vadose zone gas	Soil probes on lysimeters (3 existing)	VOCs Fixed gases	U.S. EPA Method T014 ASTM Method D-3416	Semiannually, 5 years Annually, 25 years
Groundwater	Monitoring wells (5 existing)	VOCs	U.S. EPA Method 8260B	Semiannually, 5 years Annually, 25 years
		Sulfate Sulfide	U.S. EPA Method 375 or 300 U.S. EPA Method 376	Four rounds minimum
		SVOCs Herbicides Pesticides/PCBs Total metals	U.S. EPA Method 8270C U.S. EPA Method 8157 U.S. EPA Methods 8081/8082 U.S. EPA 6000/7000 Series	Every 5 years
Leachate	Lysimeters (3 existing)	VOCs	U.S. EPA Method 8260B	Semiannually, 5 years Annually, 25 years
		SVOCs Total metals	U.S. EPA Method 8270C U.S. EPA 6000/7000 Series	Every 5 years
Landfill cap	Visual settlement monuments	NA	NA	Quarterly until stabilized
Surface control features/final grading	Visual settlement monuments	NA	NA	Quarterly until stabilized
Revegetation/site security	Visual	NA	NA	Semiannually, 5 years Annually, 25 years

Acronyms/Abbreviations:

- ASTM – American Society for Testing and Materials
- NA – not applicable
- PCB – polychlorinated biphenyl
- SVOC – semivolatile organic compound
- U.S. EPA – United States Environmental Protection Agency
- VOC – volatile organic compound

**Table 10-1
Chemical-Specific ARARs for Selected Remedy**

Action/Requirement	Citation	ARAR Determination	Comments
FEDERAL			
Resource Conservation and Recovery Act*			
TCLP regulatory levels; persistent and bioaccumulative toxic substances TTLCs and STLCs. Hazardous waste treatment, storage, or disposal.	Cal. Code Regs. tit. 22, § 66261.21, 66261.22(a)(1), 66261.23, 66261.24(a)(1), and 66261.100	Applicable (only if hazardous waste is generated)	While it is not anticipated that any RCRA hazardous wastes will be generated as a result of this remedial action, in the event that wastes are generated (e.g., drill cuttings from monitoring well construction) generator requirements (i.e., hazardous waste determinations) will be applicable.
Groundwater protection standards: Owners/operators of RCRA treatment, storage, or disposal facilities must comply with conditions in this section that are designed to ensure that hazardous constituents entering the groundwater from a regulated unit do not exceed the concentration limits for contaminants of concern set forth under Cal. Code Regs. tit. 22, § 66264.94 in the uppermost aquifer underlying the waste management area of concern at the POC.	Cal. Code Regs. tit. 22, § 66264.94(a)(1), (d), and (e)	Relevant and appropriate	Sites 3 and 5 have no record of hazardous waste disposal. Not an ARAR for groundwater cleanup since there is no known release to groundwater from the site. However, the Cal. Code Regs. tit. 22, § 66264.94 regulations pertaining to groundwater protection standards are relevant and appropriate for groundwater monitoring program at Sites 3 and 5. More specifically, detection monitoring program will be established as part of the closure and postclosure requirements.
Uranium Mill Tailings Radiation Control Act*			
Design requirements for remedial actions that involve disposal for controlling combined releases of radon-220 and radon-222 to the atmosphere.	40 C.F.R. § 192.02(b)	Relevant and appropriate	Standards are typically applicable only to UMTRCA sites that are exempt from CERCLA. The sites <u>may potentially generate</u> have radon-220 or radon-222 as contaminants which will be disposed of on site.
NRC Radiological Criteria*			
As a condition for license termination with restricted site use, the licensee must demonstrate that further reductions in residual radioactivity necessary to comply	10 C.F.R. § 20.1403(a)	Relevant and appropriate	Not applicable because this is not an NRC-licensed facility. Substantive provisions are relevant and appropriate for <u>leaving potential Ra-226 within the landfills</u> at the site.

Table 10-1 (continued)

Action/Requirement	Citation	ARAR Determination	Comments
with the provisions of 10 C.F.R. § 20.1402 would result in net public or environmental harm or were not being made because the residual levels associated with restricted conditions are ALARA.			
As a condition for license termination with restricted site use, the licensee must make provisions for legally enforceable institutional controls that provide reasonable assurance that the TEDE from residual radioactivity distinguishable from background to the average member of the critical group will not exceed 25 mrem/yr.	10 C.F.R. § 20.1403(b)	Relevant and appropriate	Not applicable because this is not an NRC-licensed facility. Substantive provisions are relevant and appropriate for leaving potential Ra-226 within the landfills at the site. <u>Note: U.S. EPA does not believe this NRC regulation is protective of human health and the environment.</u>
STATE			
Cal/EPA Department of Toxic Substances Control*			
Definition of "non-RCRA hazardous waste."	Cal. Code Regs. tit. 22, § 66261.22(a)(3) and (4), 66261.24(a)(2) to (a)(8), 66261.101, 66261.3(a)(2)(C), or 66261.3(a)(2)(F)	Applicable (only if hazardous waste is generated)	While it is not anticipated that any non-RCRA hazardous wastes will be generated as a result of this remedial action, in the event that such wastes are generated (e.g., drill cuttings from monitoring well construction), generator requirements (i.e., hazardous waste determinations) will be applicable.
California Integrated Waste Management Board*			
Landfill gas control. Requires that landfill gases are controlled during periods of closure and postclosure maintenance such that: 1) the concentration of methane does not exceed 1.25 percent of the volume in air within on-site structures; 2) the concentration of methane gas migrating from the landfill must not exceed 5 percent by volume in air at the facility property boundary or an alternative boundary in accordance with Cal. Code Regs. tit. 27, § 20925; and 3) trace gases shall be controlled to prevent acute and chronic	Cal. Code Regs. tit. 27, § 20921(a)(1), (2), and (3)	Relevant and appropriate	Substantive requirements pertaining to landfill gas control and monitoring are relevant and appropriate. There are no on-site structures. Potential gas migration will be monitored using perimeter landfill gas probes.

Table 10-1 (continued)

Action/Requirement	Citation	ARAR Determination	Comments
exposure to toxic and/or carcinogenic compounds. Period of control must continue for 30 years or until it can be demonstrated that there is no potential for gas migration beyond the property boundary or into on-site structures.			

Note:

* statutes and policies, and their citations are provided as headings to identify general categories of potential ARARs for the convenience of the reader; listing the statutes and policies does not indicate that the Department of the Navy accepts the entire statutes or policies as potential ARARs; specific potential ARARs are addressed in the table below each general heading; only substantive requirements of the specific citations are considered potential ARARs

chemical-specific concentrations used for feasibility study evaluation may not be ARARs indicated in this table, but may be concentrations based upon other factors; such factors may include the following:

- human-health risk-based concentrations (40 C.F.R. § 300.430[e][A][1] and [2])
- ecological risk-based concentrations (40 C.F.R. § 300.430 [e][G])
- practical quantitation limits of contaminants (40 C.F.R. § 300.430[e][A][3])

many potential action-specific ARARs contain chemical-specific limitations and are addressed in the action-specific ARAR tables

Acronyms/Abbreviations:

- ALARA – as low as reasonably achievable
- ARAR – applicable or relevant and appropriate requirement
- Cal/EPA – California Environmental Protection Agency
- Cal. Code Regs. – California Code of Regulations
- CERCLA – Comprehensive Environmental Response, Compensation, and Liability Act
- C.F.R. – Code of Federal Regulations
- mrem/yr – millirems per year
- NRC – National Regulatory Commission
- POC – point of compliance
- Ra-226 – radium 226
- RCRA – Resource Conservation and Recovery Act
- § – section
- STLC – soluble threshold limit concentration
- TCLP – toxicity characteristics leaching procedure
- TEDE – total effective dose equivalent
- tit. – title
- TTLC – total threshold limit concentration
- UMTRCA – Uranium Mill Tailings Radiation Control Act
- U.S. EPA – United States Environmental Protection Agency

**Table 10-3
Action-Specific ARARs for Selected Remedy**

Action/Requirement	Citation	ARAR Determination	Comments
FEDERAL			
Resource Conservation and Recovery Act, 42 U.S.C. § 6901 et seq.*			
On-site waste generation. Person who generates waste shall determine whether that waste is a hazardous waste.	Cal. Code Regs. tit. 22, § 66262.10(a), 66262.11	Applicable	Applicable for any operation where waste is generated. The determination of whether wastes generated during remedial activities (e.g., soil cuttings from well installations) are hazardous will be made at the time the wastes are generated.
Requirements for analyzing waste for determining whether waste is hazardous.	Cal. Code Regs. tit. 22, § 66264.13(a) and (b)	Applicable	The determination of whether wastes generated during remedial activities (e.g., equipment waste or soil cuttings from well installations) that require off-site disposal are hazardous will be made at the time the wastes are generated.
Hazardous waste accumulation. Generator may accumulate waste on-site for 90 days or less or must comply with requirements for operating a storage facility.	Cal. Code Regs. tit. 22, § 66264.34	Applicable	Substantive requirements are applicable for well installation and monitoring waste accumulation of wastes for less than 90 days if the waste is hazardous waste and is stored on-site. Not an ARAR for staging piles addressed below. Storage of wastes for greater than 90 days is not pertinent to the remedial actions.
Containers of RCRA hazardous waste must be <ul style="list-style-type: none"> • maintained in good condition, • compatible with hazardous waste to be stored, and • closed during storage except to add or remove waste. 	Cal. Code Regs. tit. 22, § 66264.171, 66264.172, 66264.173	Relevant and appropriate	In the event that hazardous wastes requiring off-site disposal are generated (e.g., equipment waste or drill fluids from monitoring well installation), substantive provisions are ARARs for storage in containers depending on waste characterization.
Inspect container storage areas weekly for deterioration.	Cal. Code Regs. tit. 22, § 66264.174	Relevant and appropriate	In the event that hazardous wastes requiring off-site disposal are generated (e.g., equipment waste or drill fluids from monitoring well installation), substantive provisions are ARARs for storage in containers depending on waste characterization.

Table 10-3 (continued)

Action/Requirement	Citation	ARAR Determination	Comments
Place containers on a sloped, crack-free base, and protect from contact with accumulated liquid. Provide containment system with a capacity of 10 percent of the volume of containers of free liquids. Remove spilled or leaked waste in a timely manner to prevent overflow of the containment system.	Cal. Code Regs. tit. 22, § 66264.175(a) and (b)	Relevant and appropriate	In the event that hazardous wastes requiring off-site disposal are generated (e.g., equipment waste or drill fluids from monitoring well installation), substantive provisions are ARARs for storage in containers depending on waste characterization.
At closure, remove all hazardous waste and residues from the containment system, and decontaminate or remove all containers and liners.	Cal. Code Regs. tit. 22 § 66264.178	Relevant and appropriate	In the event that hazardous wastes requiring off-site disposal are generated (e.g., equipment waste or drill fluids from monitoring well installation), substantive provisions are ARARs for storage in containers depending on waste characterization.
Alternate requirements for container storage that are protective of human health and the environment.	40 C.F.R. § 264.553	Relevant and appropriate	In the event that hazardous wastes requiring off-site disposal are generated (e.g., equipment waste or drill fluids from monitoring well installation), substantive provisions are ARARs for storage in containers depending on waste characterization.
Landfill Closure and Postclosure Requirements			
General performance standard requires minimization or elimination of need for further maintenance and control; elimination of postclosure escape of hazardous wastes, hazardous constituents, leachate, contaminated runoff, or hazardous waste decomposition products, to the extent necessary to protect human health and the environment.	Cal. Code Regs. tit. 22, § 66264.111(a) and (b) except as it cross-references procedural requirements such as preparation and submittal of closure plans and other notifications	Relevant and appropriate	Substantive provisions are relevant and appropriate.
If waste is to remain in a unit, the unit shall be compacted before any portion of the final cover is installed.	Cal. Code Regs. tit. 22, § 66264.228(e)(1)	Relevant and appropriate	Substantive requirements pertaining to compaction prior to placement of a final cover are relevant and appropriate for this response action.
Before installing the compacted layer of the final cover, the owner or operator shall accurately establish the correlation between the desired permeability and the density at which that permeability is achieved.	Cal. Code Regs. tit. 22, § 66264.228(f)	Relevant and appropriate	The substantive requirements are relevant and appropriate for cap construction.

Table 10-3 (continued)

Action/Requirement	Citation	ARAR Determination	Comments
A map must be prepared showing the exact location and dimensions, including depth of each cell with respect to permanently surveyed benchmarks with horizontal and vertical controls.	Cal. Code Regs. tit. 22, § 66264.309(a)	Relevant and appropriate	Substantive requirements for surveying of the closed landfill are relevant and appropriate.
The final cover shall accommodate lateral and vertical shear forces generated by the maximum credible earthquake so that the integrity of the cover is maintained.	Cal. Code Regs. tit. 22, § 66264.310(a)(5)	Relevant and appropriate	Substantive provisions are relevant and appropriate for the cap only where there is hazardous waste. See also Cal. Code Regs. tit. 27, § 20370 for nonhazardous waste cap requirements.
The final cover shall be designed to prevent the downward entry of water into the closed landfill throughout a period of at least 100 years.	Cal. Code Regs. tit. 22, § 66264.310(a)(1)	Relevant and appropriate	Substantive requirements are relevant and appropriate.
Maintain the integrity and effectiveness of the final cover, including making repairs to the cap as necessary to correct the effects of settling, subsidence, erosion, or other events throughout the postclosure period.	Cal. Code Regs. tit. 22, § 66264.310(b)(1)	Relevant and appropriate	Substantive requirements are relevant and appropriate.
After final closure, maintain and monitor the groundwater system and comply with all other applicable requirements of art. 6, ch. 14 {monitoring} requirements.	Cal. Code Regs. tit. 22, § 66264.310(b)(3)	Relevant and appropriate	Substantive requirements are relevant and appropriate.
Protect and maintain surveyed benchmarks throughout the postclosure period.	Cal. Code Regs. tit. 22, § 66264.310(b)(5)	Relevant and appropriate	Substantive requirements pertaining to benchmark maintenance are relevant and appropriate.
Postclosure care shall be begun after completion of closure and continue for approximately a <u>minimum of 30 years</u> , based on protectiveness to human health and the environment.	Cal. Code Regs. tit. 22, § 66264.117(b)(1) and (2)	Relevant and appropriate	Substantive requirements are relevant and appropriate.

Table 10-3 (continued)

Action/Requirement	Citation	ARAR Determination	Comments
Monitoring			
Owners/operators of RCRA surface impoundment, waste pile, land treatment unit, or landfill shall conduct a monitoring and response program for each regulated unit.	Cal. Code Regs. tit. 22, § 66264.91(a)(1)–(4) and (c), except as it cross-references permit requirements	Relevant and appropriate	Substantive requirements for detection monitoring program at Cal. Code Regs. tit. 22, § 66264.91(a)(1) and (c) are relevant and appropriate. The requirements for evaluation and corrective action monitoring at Cal. Code Regs. tit. 22, § 66264.91(a)(2)–(4) are ARARs only if the detection monitoring program shows a significant evidence of release.
The POC is a vertical surface, located at the hydraulically downgradient limit of the waste management area that extends through the uppermost aquifer underlying the regulated unit.	Cal. Code Regs. tit. 22, § 66264.95(a) and (b)	Relevant and appropriate	Substantive requirements are potentially relevant and appropriate for all alternatives including groundwater monitoring.
Requirements for monitoring groundwater, surface water, and the vadose zone.	Cal. Code Regs. tit. 22, § 66264.97 (b)(1)(A), (b)(1)(B), (b)(4–7), (e)(6), (12)(A) and (B), (13), and (15)	Relevant and appropriate	Substantive requirements are potentially relevant and appropriate for detection monitoring program.
Requirements for a detection monitoring program.	Cal. Code Regs. tit. 22, § 66264.98(e)(1–5), (i), (j), (k)(1–3), (4)(A) and (D), (5), (7)(C) and (D), (n)(1), (2)(B), and (C)	Relevant and appropriate	Substantive requirements are potentially relevant and appropriate for detection monitoring program.
Requirements for an evaluation monitoring program.	Cal. Code Regs. tit. 22, § 66264.99(b), (e)(1)–(6), (f)(3), and (g)	Relevant and appropriate	The requirements of an evaluation monitoring program are only relevant and appropriate if there is statistically significant evidence of release during the detection monitoring program.
Clean Water Act, as Amended (33 U.S.C., ch. 26, §§ 1251–1387)*			
Owners and operators of construction activities must be in compliance with discharge standards for construction activities that disturb an acre or more of soil.	CWA Section 402 (33 U.S.C. ch. 26, § 1342); 40 C.F.R. § 122.44(k)(2) and (4)	Applicable	Substantive provisions of the stormwater management plan best management practices are applicable since the site will disturb more than 1 acre.

Table 10-3 (continued)

Action/Requirement	Citation	ARAR Determination	Comments
Atomic Energy Act of 1954 (42 U.S.C. ch. 23, § 2011 et seq.)*			
The licensee shall secure from unauthorized removal or access, licensed materials that are stored in controlled or unrestricted areas.	10 C.F.R. § 20.1801	Relevant and appropriate	Potentially Relevant and appropriate for Site 3 if temporary storage of excavated waste <u>that may</u> containing radiological constituents is conducted for consolidation purposes.
The licensee shall control and maintain constant surveillance of licensed material that is in a controlled or unrestricted area and that is not in storage.	10 C.F.R. §20.1802	Relevant and appropriate	Potentially Relevant and appropriate for Site 3 if temporary storage of excavated waste <u>that may</u> containing radiological constituents is conducted for consolidation purposes.
Clean Air Act (42 U.S.C. §§ 7401–7671)*			
Prohibits emissions of fugitive dust such that the presence of such dust remains visible in the atmosphere beyond the property line of the emission source and shall not cause or allow PM ₁₀ levels to exceed 50 micrograms per cubic meter when determined, by simultaneous sampling, as the difference between upwind and downwind samples.	SCAQMD Rule 403	Applicable	Fugitive dust emissions of particulate matter are expected from the excavation and waste handling. Measures such as applying water to minimize fugitive dust emissions may be required.
Limits equipment from discharging particulate emissions in excess of 0.01 to 0.196 grain per cubic foot based on a given volumetric (dry standard cubic feet per minute) exhaust gas flow rate averaged over 1 hour or one cycle of operation. It excludes steam generators or gas turbines.	SCAQMD Rule 404	Applicable	The equipment used will comply with substantive requirements of this rule.
Limits equipment from discharging particulate emissions in excess of 0.99 to 30 pounds per hour based on a given process weight.	SCAQMD Rule 405	Applicable	The equipment used will comply with substantive requirements of this rule.
Install a landfill gas control system and proper disposal of the collected gas.	SCAQMD Rule 1150.1	Relevant and appropriate <u>Applicable</u>	A landfill gas control system is designed for Sites 3 and 5.

Table 10-3 (continued)

Action/Requirement	Citation	ARAR Determination	Comments
STATE			
State Water Resource Control Board and Regional Water Quality Control Board*			
Waste management units undergoing final closure, with 1 acre of disturbance or more, must comply with the substantive requirements for eliminating most nonstormwater discharges, developing and implementing a stormwater pollution prevention plan, and performing monitoring to stormwater discharges.	SWRCB Order No. 92-08-DWQ (General Construction Activity Storm Water Permit)	TBC	Permits are administrative in nature and thus are not considered ARARs. Substantive provisions for BMPs in a stormwater management plan will be used as guidance to comply with federal ARARs. A separate stormwater pollution prevention plan will not be prepared.
Closed landfills shall be graded and maintained to prevent ponding and to provide slopes of at least 3 percent.	Cal. Code Regs. tit. 27, § 21090(b)(1)	Relevant and appropriate	Substantive provisions pertaining to final grading requirements are relevant and appropriate.
Hazardous waste and designated waste management units shall be designed to withstand the maximum credible earthquake, and nonhazardous waste management units must be designed to withstand the maximum probable earthquake without damage to the foundation or the structures that control leachate, surface drainage, erosion, or gas.	Cal. Code Regs. tit. 27, § 20370	Relevant and appropriate	Substantive provisions are relevant and appropriate. Design to maximum credible earthquake standards were determined not to be ARARs where there was not hazardous waste.
Diversion and drainage facilities shall be designed and constructed to accommodate the anticipated volume of precipitation and peak flows. Collection and holding facilities associated with drainage control shall be emptied immediately or otherwise managed to maintain design capacity.	Cal. Code Regs. tit. 27, § 20365(c) and (d)	Relevant and appropriate	Substantive provisions are relevant and appropriate.
Prevent erosion and related damage of the final cover through the postclosure maintenance period.	Cal. Code Regs. tit. 27, § 21090(c)(4)	Relevant and appropriate	Substantive requirements are relevant and appropriate.
Closed landfills shall be provided with an uppermost cover layer consisting of a vegetative layer including no less than 1 foot of soil, containing no waste or leachate, placed on top of a low-hydraulic-conductivity layer (see Cal. Code Regs. tit. 27, § 21090[a][2]); vegetation rooting	Cal. Code Regs. tit. 27, § 21090(a)(3)	Relevant and appropriate	Substantive requirements pertaining to the vegetation layer are relevant and appropriate.

Table 10-3 (continued)

Action/Requirement	Citation	ARAR Determination	Comments
depth must not exceed the depth to (a)(2) layer (vegetation layer).	Cal. Code Regs. tit. 27, § 21090(a)(1)	Relevant and appropriate	Substantive provisions are relevant and appropriate.
<p>Foundation Layer—Closed landfills shall be provided with not less than 2 feet of appropriate materials as a foundation layer for the final cover. These materials may be soil, contaminated soil, incinerator ash, or other waste materials, provided that such materials have appropriate engineering properties to be used for a foundation layer. The foundation layer shall be compacted to the maximum density obtainable at optimum moisture content using methods that are in accordance with accepted civil engineering practice. A lesser thickness may be allowed for units if the differential settlement of waste and ultimate land use will not affect the structural integrity of the final cover.</p>	Cal. Code Regs. tit. 27, § 21090(a)(2)	Relevant and appropriate	Substantive provisions are relevant and appropriate.
<p>Low-Hydraulic-Conductivity Layer—Closed landfills shall be provided with a low-hydraulic-conductivity (or low through-flow rate) layer, consisting of not less than 1 foot of soil containing no waste or leachate, that is placed on top of the foundation layer and compacted to attain a hydraulic conductivity of either 1×10^{-6} cm/sec (i.e., 1 foot per year) or less, or equal to the hydraulic conductivity of any bottom liner system or underlying natural geologic materials, whichever is less permeable, or another design that provides a correspondingly low through-flow rate throughout the postclosure maintenance period.</p>	Cal. Code Regs. tit. 27, §§ 20320(c) and (d) and 20324(g)(1)	Relevant and appropriate	Substantive requirements with respect to cover permeability requirements are relevant and appropriate.

Table 10-3 (continued)

Action/Requirement	Citation	ARAR Determination	Comments
<p>The operator shall ensure that landfill gases generated at a disposal site are controlled. Methane must not exceed 1.25 percent by volume in air within on-site structures, concentrations of methane gas migrating from the landfill must not exceed 5 percent by volume in air at the property boundary, and trace gases shall be controlled to prevent adverse acute and chronic exposure to toxic and/or carcinogenic compounds.</p>	<p>Cal. Code Regs. tit. 27, § 20921(a)(1), (2), and (3)</p>	<p>Relevant and appropriate</p>	<p>Substantive requirements are relevant and appropriate.</p>
<p>South Coast Air Quality Management District*</p>			
<p>Visible emissions standard that states a person shall not discharge any air contaminant into the atmosphere from any single source of emission for a period or periods aggregating more than 3 minutes in a 60-minute period, which is (a) as dark or darker in shade at that designated No. 1 on the Ringlemann Chart, or (b) of such opacity as to obscure an observer's view to a degree equal to or greater than does smoke described in (a).</p>	<p>SCAQMD Rule 401</p>	<p>Applicable</p>	<p>Grading and excavation activities have the potential to produce visible emissions due to fugitive dust. Substantive requirements pertaining to visible emissions, such as wetting the soil or waste, may be required to minimize fugitive dust.</p>
<p>Excavation of landfill sites. Identify mitigation measures to ensure that a public nuisance condition does not occur.</p>	<p>SCAQMD Rule 1150</p>	<p>Relevant and appropriate</p>	<p>Substantive provisions are relevant and appropriate for on-site consolidation that exposes buried waste to the atmosphere.</p>
<p>California Integrated Waste Management Board*</p>			
<p>Security: All points of access to the site must be restricted. All monitoring, control, and recovery systems shall be protected from unauthorized access. Once closure activities are complete, site access by the public may be allowed in accordance with the approved closure and postclosure maintenance plan.</p>	<p>Cal. Code Regs. tit. 27, § 21135(f) and (g)</p>	<p>Relevant and appropriate</p>	<p>Substantive provisions are relevant and appropriate. A perimeter fence exists around the Station to restrict unauthorized access until remedial actions are complete. Monitoring wells will also be locked and maintained to restrict unauthorized access. Removal of the locks would be prohibited by lease conditions or deed restrictions.</p>
<p>Final cover requirements: Cross-references Cal. Code Regs. tit. 27, § 21090 with regard to specific cover requirements and states that engineered alternatives to the prescriptive</p>	<p>Cal. Code Regs. tit. 27, § 21140(a)(b)</p>	<p>Relevant and appropriate</p>	<p>Substantive requirements are relevant and appropriate to the placement of the final cover.</p>

Table 10-3 (continued)

Action/Requirement	Citation	ARAR Determination	Comments
standard are allowed provided they meet performance requirements.			
Final drainage and erosion control: The design of the final cover must control run-on and runoff produced by a 100-year, 24-hour storm event. Slopes must be stabilized.	Cal. Code Regs. tit. 27, § 21150	Relevant and appropriate	Substantive requirements pertaining to final drainage are relevant and appropriate.
Requires that gas monitoring and control be conducted during the closure and postclosure maintenance period.	Cal. Code Regs. tit. 27, § 21160 (a) and (b) except leachate	Relevant and appropriate	The landfill gas control system will be implemented and maintained in accordance with the substantive provisions of Cal. Code Regs. tit. 27, §§ 20921–20937 that have been determined to be ARARs for Sites 3 and 5 remedial action. The leachate production and accumulation has not been evident at Sites 3 and 5 landfills; therefore, the provisions for leachate collection and control are not potential ARARs.
Establishes requirements for design and maintenance of proposed postclosure land uses. Also stipulates that site closure design should show one or more proposed uses of the closed site or show development that is compatible with open space.	Cal. Code Regs. tit. 27, § 21190(a) and (b)	Relevant and appropriate	Substantive provisions are relevant and appropriate for design and maintenance of postclosure land use.
Closed waste management units shall be provided with at least two permanent monuments (to be installed by a licensed land surveyor or a registered civil engineer) from which the location and elevation of wastes, containment structures, and monitoring facilities can be determined throughout the postclosure maintenance period.	Cal. Code Regs. tit. 27, § 20950(d)	Relevant and appropriate	Substantive provisions are relevant and appropriate.
Conduct an aerial photographic survey to include closed portions of the unit and its immediate surrounding area, including the surveying monuments. This survey will be used to produce a topographic map showing as-closed topography and to allow early detection of any differential settlement.	Cal. Code Regs. tit. 27, § 21090(e)(1)	Relevant and appropriate	Substantive provisions are relevant and appropriate.

Table 10-3 (continued)

Action/Requirement	Citation	ARAR Determination	Comments
Final grading: Final grades must be designed and maintained to reduce impacts to health and safety and take into consideration any postclosure land use.	Cal. Code Regs. tit. 27, § 21090(b)(1)	Relevant and appropriate	Substantive requirements are relevant and appropriate for this action.
The landfill shall be maintained and monitored for a period of not less than 30 years after completion of closure of the entire solid waste landfill.	Cal. Code Regs. tit. 27, § 21180(a)	Relevant and appropriate	Substantive requirements are relevant and appropriate for maintenance and monitoring of the cap. There is a separate requirement for the groundwater monitoring period under federal ARARs at Cal. Code Regs. tit. 22 § 66264.117.
<p>Land-Use Controls</p> <p>Provides conditions under which land-use restrictions will apply to successive owners of land.</p>	Cal. Civ. Code § 1471	Relevant and appropriate	<p>Generally, Cal. Civ. Code § 1471 allows an owner of land to make a covenant to restrict the use of land for the benefit of a covenantee. The covenant runs with the land to bind successive owners, and the restrictions must be reasonably necessary to protect present or future human health or safety or the environment as a result of the presence on the land of hazardous materials, as defined in Cal. Health & Safety Code § 25260. Substantive provisions are the following general narrative standard: “to do or refrain from doing some act on his or her own land . . . where (c) Each such act relates to the use of land and each such act is reasonably necessary to protect present or future human health or safety or the environment as a result of the presence of hazardous materials, as defined in Section 25260 of the California Health and Safety Code.” This narrative standard would be implemented through incorporation of restrictive covenants in the deed and Environmental Restriction and Covenant Agreement at the time of transfer.</p>

Table 10-3 (continued)

Action/Requirement	Citation	ARAR Determination	Comments
Allows DTSC to enter into an agreement with the owner of a hazardous waste facility to restrict present and future land uses.	Cal. Health & Safety Code § 25202.5	Relevant and appropriate	The substantive provisions of Cal. Health & Safety Code § 25202.5 are the general narrative standards to restrict “present and future uses of all or part of the land on which the . . . facility . . . is located . . .”
Provides a streamlined process to be used to enter into an agreement to restrict specific use of property in order to implement the substantive use restrictions of Cal. Health & Safety Code § 25232(b)(1)(A)–(E).	Cal. Health & Safety Code §§ 25222.1 and 25355.5(a)(1)(C)	Relevant and appropriate	Generally, Cal. Health & Safety Code §§ 25222.1 and 25355.5(a)(1)(C) provide the authority for the DTSC to enter into voluntary agreements with land owners to restrict the use of property. The agreements run with the land, restricting present and future uses of the land. The substantive requirements of the following Cal. Health & Safety Code § 25222.1 provisions are relevant and appropriate: (1) the general narrative standard: “restricting specified uses of the property...” and (2) “...the agreement is irrevocable, and shall be recorded by the owner, ...as a hazardous waste easement, covenant, restriction or servitude, or any combination thereof, as appropriate, upon the present and future uses of the land.” The substantive requirements of the following Cal. Health & Safety Code § 25355.5(a)(1)(C) provisions are relevant and appropriate: “...execution and recording of a written instrument that imposes an easement, covenant, restriction, or servitude, or combination thereof, as appropriate, upon the present and future uses of the land.”
Provides processes and criteria for obtaining written variances from a land-use restriction and for removal of the land-use restrictions.	Cal. Health & Safety Code §§ 25233(c) and 25234	Relevant and appropriate	Cal. Health & Safety Code § 25233(c) sets forth relevant and appropriate substantive criteria for granting variances from use prohibitions set forth in Cal. Health & Safety Code § 25232(b) based upon specified environmental and health criteria. Cal. Health & Safety Code § 25234 sets forth the following relevant and appropriate substantive criteria for the removal of a land-use restriction on the grounds that “...the waste no longer

Table 10-3 (continued)

Action/Requirement	Citation	ARAR Determination	Comments
A land-use covenant imposing appropriate limitations on land use shall be executed and recorded when facility closure, corrective action, remedial or removal action, or other response actions are undertaken and hazardous materials, hazardous wastes or constituents, or hazardous substances will remain at the property at levels which are not suitable for unrestricted use of the land.	Cal. Code Regs. tit. 22, § 67391.1	Relevant and appropriate	creates a significant existing or potential hazard to present or future public health or safety.” Cal. Code Regs. tit. 22, § 67391.1 provides for a land-use covenant to be executed and recorded when remedial actions are taken and hazardous substances will remain at the property at concentrations that are unsuitable for unrestricted use of the land. The substantive provisions of this regulation have been determined to be relevant and appropriate state ARARs by the DON.

Note:

- * statutes and policies and their citations are provided as headings to identify general categories of potential ARARs; specific potential ARARs are addressed in the table below each general heading

Acronyms/Abbreviations:

- ARAR – applicable or relevant and appropriate requirement
- art. – article
- BMP – best management practice
- Cal. Civ. Code – *California Civil Code*
- Cal. Code Regs. – *California Code of Regulations*
- Cal. Health & Safety Code – *California Health and Safety Code*
- C.F.R. – *Code of Federal Regulations*
- ch. – chapter
- CWA – Clean Water Act
- DON – Department of the Navy
- DTSC – (California Environmental Protection Agency) Department of Toxic Substances Control
- DWQ – Division of Water Quality
- NRC – Nuclear Regulatory Commission
- POC – point of compliance
- RCRA – Resource Conservation and Recovery Act
- § – section
- SCAQMD – South Coast Air Quality Management District
- SWRCB – (California) State Water Resources Control Board
- TBC – to be considered
- tit. – title
- U.S.C. – *United States Code*

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BECHTEL ENVIRONMENTAL, INC.

CLEAN 3 TRANSMITTAL/DELIVERABLE RECEIPT

Contract No. N-68711-95-D-7526

Document Control No. BEI-7526-0062-0184

File Code: 0232

TO: Contracting Officer
NAVFAC Southwest
Graciela R. Steinway, Code AQE.GS
1220 Pacific Highway
San Diego, CA 92132-5190

DATE: October 5, 2007
CTO #: 0062
LOCATION: Former MCAS El Toro, CA

FROM: Thurman L. Heironimus/Project Manager

DESCRIPTION: Response to Comments on Revised Draft ROD Operable Unit 2C,
Landfill Sites 3 and 5 - Dated April 2007

TYPE: Contract Deliverable X CTO Deliverable Change Notice/Project Note
Other

VERSION: N/A REVISION #: 0
(e.g., Draft, Draft Final, Final, etc.)

ADMIN RECORD: Yes X No Category Confidential
(PM to Identify)

SCHEDULED DELIVERY DATE: 10/05/07 ACTUAL DELIVERY DATE: 10/05/07

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M. Wochnick, CIWMB (1C/1E)
M. Fleisch, El Toro (1C/1E)

- OTHER (Distribution done by Bechtel):
R. Muza, U.S. EPA (1C/1E)
Q. Than, EPA DTSC (1C/1E)
J. Broderick, RWQCB (1C/1E)
V. Cooper, U.S. EPA (1C/1E)
O. Abu-Shaban, OCHCA (1C/1E)
T. Chauvel, EPA DTSC (1C/1E)
R. Woodings, RAB (1C/1E)
M. Rudolph, RAB (1C/1E)
J. Werkmeister, Lennar (1C/1E)
G. Worthington, OCGPC (1C/1E)
AC/S Env. Mgmt. Miramar (1C)

Date/Time Received

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