



# California Regional Water Quality Control Board

## Santa Ana Region



Winston H. Hickox  
Secretary for  
Environmental  
Protection

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June 17, 1999

M60050.000045  
MCAS EL TORO  
SSIC # 5090.3

Mr. Joseph Joyce  
BRAC Environmental Coordinator  
AC/S Environmental (1AU)  
Marine Corps Air Station El Toro  
P. O. Box 95001  
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### **DRAFT RECORD OF DECISION, OPERABLE UNIT 2C, LANDFILL SITES 3 AND 5, MARINE CORPS AIR STATION, EL TORO**

Dear Mr. Joyce:

We have completed our review of the above document dated March 1999. We have the following comments.

#### **Page 1, Declaration, Description of the Remedy**

Please include in the description that a soil layer with a minimum thickness of two feet will be placed over the flexible membrane liner.

#### **Figures, 5-3, 5-4, 5-6, 5-7, 5-9, 5-10, 5-11**

Please include the date the samples were collected.

#### **Page 7-5, Monitoring and Inspections**

We would suggest that the following be added "Additional monitoring probes and /or lysimeters may be add as necessary and will be determined in the design phase".

#### **Page 7-6, 7.3.1 Landfill Cap**

We suggest that the first sentence be modified to read, " The landfill cap for Alternative 3 consists of at a minimum a 4-foot-thick single-layer (monolithic) soil cap designed to prevent exposure to landfill materials and reduce the amount of rainfall that can infiltrate into and through the landfill."

#### **Page 7-9, Figure 7-2, Conceptual Grading and Monitoring Plan – Site 3**

Please add the percent slope of the cover on this figure.

**Page 8-4, first line, Page 8-6 last paragraph**

We have not stated that we would not support a monolithic cap under an irrigated scenario. We support the use of monolithic caps for landfills in our Region. However, we have not received adequate information to show that the proposed monolithic cap could support irrigation. Please see our December 3, 1998 letter. In that letter we stated, "Additional investigation and/or characterization of the borrow soils, vegetation, and proposed thickness of the cover needs to be conducted in order to make a valid comparison between the prescriptive cover and the proposed alternative cover under an irrigated scenario." We have several landfills in our Region with monolithic covers and your staff/consultants are welcome to make an appointment and come in and review our files for those sites.

If a monolithic layer is proposed, an appropriate model must be run with appropriate input parameters. Oftentimes the model must be run several times using varied parameters (vegetation, soil thickness, soil permeability, volume of water, etc.) in order to determine the appropriate fit for the site, such that infiltration into the waste is eliminated (or at least minimized). In addition, some type of soil moisture monitoring system will need to be installed and an irrigation management plan will need to be developed. Please see our December 3, 1998 letter responding to the Navy's October 1998 Draft Technical Memorandum, UNSAT-H Infiltration Modeling for Landfill Covers. We have not received a response to our comments on that document.

**Page 8-6, Section 8-10 Conclusion, first paragraph**

Please keep in mind that using a flexible membrane liner (FML) does not totally eliminate the possibility of infiltration. The FML can be damaged during installation, when heavy equipment might run over it, tunneling rodents may gnaw through it, the top soil layer may slide if the side slopes are too steep, and rocks in the foundation layer or cover layer may puncture it. As a reminder, a static and seismic slope stability analysis is required as part of the final closure design per Title 27, §21090. In addition, at Site 3, anchoring of the FML along Aqua Chinon Wash will need to be addressed.

**Page 8-6, Section 8-10 Conclusion, second paragraph**

Same comment as for page 8-4.

**Page 9-2, Section 9.2.2 Land -Use Control Objectives**

The Regional Board should also be notified in the event of the transfer of Sites 3 and 5 and also in the case of land-use changes at the landfill sites.

**Page 9-3, Table 9-1, Site 3 Cost-Estimate Summary for Alternative 4d**

The heading Capping has a small "b" next to it and according to the key "b" states that the "cap includes a 1 foot-thick compacted clay barrier layer. A clay barrier layer is not mentioned in the selected remedy, please clarify or correct.

Mr. Joyce  
MCAS El Toro, ROD OU-2C, Landfill Sites 3 and 5

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**Page 9-8 and 9-7 Proposed Postclosure Monitoring**

In light of the strong possibility that equipment painted with radium paint was disposed in the landfills radionuclides should be monitored for in the groundwater. This was proposed in the Feasibility Study but not in this ROD.

If you should have any questions, please call me at (909) 782-4498.

Sincerely,

Patricia A. Hannon  
DoD Section

cc: Dept. of Toxic Substances Control - Tayseer Mahmoud  
Kutak Rock, Attorneys - Gregory F. Hurley (El Toro RAB Co-Chair)  
Orange County Hall of Administration - Courtney Wiercioch  
Orange County Health Care Agency - Steve Sharp  
Naval Facility Engineering Command, SWDIV - Andy Piszkin  
State Water Resources Control Board, Clean Water Programs – John Adams  
State Water Resources Control Board, Office of Chief Counsel – Ted Cobb  
U. S. EPA, Region IX - Glenn Kistner