

**RESPONSE COMMENTS  
PROPOSED PLAN FOR CLOSURE OF  
INACTIVE LANDFILLS AT  
MCAS EL TORO, CALIFORNIA**

<p><b>Originator:</b> Jim A. Bartel, Assistant Field Supervisor US Department of the Interior, Fish and Wildlife Services</p> <p><b>To:</b> Lt. Col. C. B. Wallace Marine Corps Air Bases Western Area, El Toro</p> <p><b>Date:</b> August 17, 1998</p>	<p><b>CLEAN II Program</b> Contract No. N68-711-92-D-4670 CTO-0135 File Code: 0222</p>
<p><b><u>COMMENTS</u></b></p> <p>The U.S. Fish and Wildlife Service (Service) through the environmental Contaminants Branch of the Carlsbad Fish and Wildlife Office has reviewed the Proposed Plan for Closure of Inactive landfills at Marine Corps Air Station El Toro. While the general approach appears to be sound, our review did raise some specific issues outlined below.</p> <p>Though you stated in your cover letter to Mr. Charles Houghten, Chief of the National Wildlife Refuges Branch in the Service's Regional Office in Portland, Oregon, that the responsibility for landfill remedial action, operations and maintenance remains with the U.S. Government after the property transfer, you did not specifically state which agency will be responsible. This issue will need to be clarified during the transfer process. It is this office's experience that the Department of Defense maintains this responsibility until final closure of all sites is achieved.</p>	<p><b><u>RESPONSE TO COMMENTS</u></b></p> <p><b>RESPONSE:</b> The Department of Defense currently intends to maintain responsibility for implementing the landfill remedial action for landfill closure and for monitoring and maintaining Sites 2 and 17 during the postclosure maintenance period. As noted in your comment, this issue will be further clarified during the transfer process.</p>
<p>The Plan (p. 2-3) includes a discussion of groundwater contamination in the immediate vicinity of the landfills and a description of the surface water bodies that exist adjacent to the landfills. No information was included, however, regarding the groundwater flow beyond the immediate vicinity of the landfills and where contaminated groundwater may surface if contamination were to move offsite. The Service will require this information to determine the potential for impacts to downstream wildlife resources (both within and outside the proposed refuge boundaries) in the future should some type of failure occur. This information is also needed to confirm that the offsite landfills are downstream of the proposed refuge, and contaminants from these sites would not impact wildlife resources at the proposed refuge.</p>	<p><b>RESPONSE:</b> Except for an upgradient seasonal seep at Site 2, groundwater from beneath Sites 2 and 17 does not surface in the vicinity of MCAS El Toro. Depth to groundwater is shallowest in the foothills where Sites 2 and 17 are located. Downgradient of these sites, the depth to groundwater increases to over 100 feet below ground surface. Therefore, there is no potential for impacts to downstream wildlife resources from groundwater.</p> <p>At Site 2, there is a seasonal seep upgradient of the landfill in a man-made valley between the operational landfill areas A and B. The seep occurs following above average seasonal rainfalls and has been observed only twice in the past few years: once in 1995 and again in 1998. As part of the Phase II RI, water samples were collected from the seep to evaluate if the Site 2 landfill is impacting this surface water.</p> <p>The quality of this water was found to be very similar to groundwater from a monitoring well immediately upgradient of the landfill and near the seep location. Water quality was evaluated based on analytical results of sampling for cations and anions, pH, specific conductivity, volatile organic compounds,</p>

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	<p>that a presumptive remedy (capping) would be used for the landfills and that this remedy would sever the pathway for exposure to landfill materials for wildlife and plants.</p> <p>DON's proposed alternative provides a 4-foot monolithic soil cover over the landfill material. Soil for the cover will be obtained from a nearby borrow source and will be analyzed to ensure that the soil is not contaminated. This cover will effectively prevent burrowing species from exposure to landfill contents.</p>
<p><b>The Ecological Risk Assessment (ERA, p. 5) did not include insect sampling, despite the fact that the federally threatened coastal California gnatcatcher (<i>Poliophtila californica californica</i>, "gnatcatcher") was the primary species of concern. Because we could not determine how risk was evaluated for this species without this information, please clarify how the ERA was conducted.</b></p>	<p><b>RESPONSE:</b> Insect sampling was not performed at Sites 2 and 17. During preparation of the ecological risk assessment work plan in 1994 and 1995 and during the ecological sampling in 1995 and 1996, sampling of insects was discussed. Because flying insects are transient and consume food items on and off the sites, it was determined that sampling flying insects at the El Toro landfills would not yield reliable data on the uptake of contaminants through this food web. Samples of plant materials from Sites 2 and 17 that also contribute to the gnatcatcher diet were considered to provide more reliable evidence of uptake of potential contaminants from the sites. These plant materials were sampled, submitted for chemical analysis, and the chemical analysis was used in the food web modeling.</p> <p>In addition, due to the lack of gnatcatcher toxicological information, the American robin was used as a surrogate species. The use of an American Robin as a surrogate was reviewed and approved by DTSC, U.S. EPA, and the RWQCB.</p> <p>Modeling performed at Sites 2 and 17 and at a nearby reference site unaffected by the landfills showed that the total hazard index for the American Robin is elevated at both landfills and at the reference site. Specifically, the total hazard index was approximately 1,200 at Site 2 (versus 170 at the reference site) and approximately 630 at Site 17 (versus 810 at the reference site). MCP, a herbicide, is the main contributor to risk at Site 2; metals are the main contributors at Site 17. The RI concluded that there may be a potential for impacts to avian receptors on Site 2 associated with MCP. However, the RI</p>

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<p>establishment of vegetation on the cap. These species are all readily available in the nursery trade. This action will result in faster achievement of the necessary habitat characteristics to meet mitigation goals. These goals are generally established on an area basis rather than a plant for plant basis, thus allowing greater flexibility in the final plant composition on the site provided the habitat requirements are met.</p>	
<p>Alternative 3 is a single-layer soil cap and is the preferred alternative. According to the description, the soil in the cap would be compacted to reduce water movement through the cap. The cap would then be revegetated with annual grasses, but coastal sage scrub plants would be allowed to re-invade with time. Alternative 4 is a single barrier cap design of similar thickness to Alternative 3. Coastal sage scrub vegetation would not be permitted on this cap design to prevent roots from penetrating the barrier. Please clarify how a single soil layer cap can accommodate root growth as compared to the single barrier design of the same thickness comprised of soil layers in combination with a barrier layer (with four different material options). From the design information provided, Alternative 5 (single-barrier cap with additional soil cover) apparently provides flexibility in terms of vegetative cover while incorporating an additional barrier to water infiltration.</p>	<p><b>RESPONSE:</b> Alternative 3 is a 4-foot thick single layer soil cap. Alternative 4 is approximately the same thickness, but the Alternative 4 cap consists of a 2-foot foundation, a barrier material (i.e., clay, bentonite, GCL, or FML) of variable thickness, and a 2-foot vegetative soil cover. Alternative 5 consists of 2-feet of foundation, a barrier material of variable thickness, and a 4-foot vegetative soil cover. The vegetative soil cover on Alternative 4 is not considered to be thick enough to support re-invasion with coastal sage scrub because the roots of the coastal sage could grow deeper than 2 feet and these roots could breach the barrier. Such a breach would act as a conduit for infiltration into the landfill.</p> <p>Because Alternatives 3 and 5 contain a 4-foot thick vegetative soil cover, they are considered to provide adequate root depth to accommodate coastal sage scrub. Both alternatives are also protective of human health and the environment.</p> <p>Alternative 4a is referred to as the prescriptive landfill cap. The requirements for this cap are specified in the <i>California Code of Regulations</i> (CCR) Title 27 §21090. The prescriptive cap consists of a 2-foot foundation layer, a 1-foot clay barrier, and minimum of 1-foot vegetative soil cover. CCR Title 27 also allows for engineered alternatives to the prescriptive cap providing that the alternative can be shown to offer an equivalent level of water quality protection. Alternative 4a was not considered suitable for use at Sites 2 or 17 because the vegetative layer is too shallow to support re-invasion of coastal sage. In addition, the clay barrier used in this cap has a tendency to desiccate and crack in a semi-arid environment such as MCAS El Toro.</p>

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<p>between Alternative 3 and the different options described under Alternative 4 and (for Sites 2 and 17) Alternative 5 needs to be clarified to accurately compare them.</p>	<p>Alternative 3 reduces infiltration into the landfill by approximately 90 percent over existing conditions at Sites 2 and 17. Alternatives 4C, 4D, 5C, and 5D reduce infiltration at these sites even more. However, Alternative 3 was considered more resistant to damage (e.g., through settlement or burrowing) and much easier to repair should damage occur than Alternatives 4C, 4D, 5C, and 5D. Alternatives 4C and 4D were also considered ineffective in the long term for Sites 2 and 17 because they did not contain a thick enough vegetative layer to support re-invasion of coastal sage scrub.</p>
<p>The designated use of the area including Site 5 is as a golf course. This use appears incompatible with the land-use restriction that precludes irrigation beyond the needed to establish grass on the landfill cap. Generally, golf courses require much more irrigation than grasslands planted strictly for ground cover. We recommend that the designated use be reconsidered in light of the presence of the landfill and the land use restrictions to be implemented.</p>	<p><b>RESPONSE:</b> DON acknowledges your concern with use of Site 5 as an irrigated portion of a golf course. DON is currently addressing the issue of irrigation and land use at Site 5 with the Local Redevelopment Authority, the agency to which this property may eventually be transferred.</p>
<p>The Service appreciates the opportunity to provide input on the closure of these landfills. This review is based only on the Proposed Plan for Closure of Inactive Landfills at Marine Corps Air Station at Marine Corps Air Station El Toro. Review of additional background materials, including but not limited to the Draft Final Remedial Investigation Report and the Draft Final Feasibility Study Reports, will be required as a part of the Service's pre-acquisition process. If you have any questions regarding these comments, please contact Carol Roberts of my staff at (760) 431-9440.</p>	<p><b>RESPONSE:</b> DON appreciates your comments on the Proposed Plan and looks forward to working with the U.S. Fish and Wildlife Services to complete the transfer of this property in a mutually beneficial manner.</p>

M60050.000198  
MCAS EL TORO  
SSIC #5090.3

THE PROPOSED PLAN FOR CLOSURE OF INACTIVE  
LANDFILLS ENTERED INTO DATABASE AND FILED  
UNDER ADMINISTRATIVE RECORD NO.  
M60050.000420