



BECHTEL NATIONAL INC.

CLEAN II TRANSMITTAL/DELIVERABLE RECEIPT

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 Naval Facilities Engineering Command
 Southwest Division
 Mr. Richard Selby, Code 57CS.RS
 Building 127, Room 112
 1220 Pacific Highway
 San Diego, CA 92132-5187

DATE: September 5, 1997
 CTO #: 076
 LOCATION: MCAS El Toro

FROM: *Bong Kwon for*
D. J. Tedaldi, Ph.D., P.E., Project Manager

DESCRIPTION: Response to Comments on Draft Final Phase II Feasibility Study Reports -
Sites 2, 3, 5, and 17 (Various Dates)

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**RESPONSE TO COMMENTS
 REVIEW OF REVISED DRAFT PHASE II FEASIBILITY STUDY REPORT
 AND RELATED DOCUMENTS FOR OU-2B, SITE 2
 MCAS EL TORO, CALIFORNIA**

<p>Originator: Peter M. Janicki CIWMB</p> <p>To: Tayseer Mahmoud DTSC</p> <p>Date: 04 April 1997</p>	<p style="text-align: right;">CLEAN II Program Contract No. N68-711-92-D-4670 CTO-0076 File Code: 0214</p>
<p><u>GENERAL COMMENTS</u></p> <p>Because there is a strong consensus (supported by the reuse plan developed for this site) that the postclosure land use for this site will be a wildlife habitat reserve, Board staff evaluated all available site investigation and feasibility study submittals in context of their relevance and compatibility with the proposed Site 2 reuse. This includes not only any already conducted or future investigation and design work but also methodologies on which these activities have been based.</p> <p>Based on Board staff review, it appears that under the proposed postclosure land use conditions, a chosen closure alternative should require as little postclosure maintenance as possible since any postclosure maintenance or repair procedures would interfere with the integrity of the wildlife reserve.</p> <p>Also, it should be pointed out that the capping of the landfill (along with all necessary institutional controls and monitoring systems) is not required solely to limit water infiltration into the landfill but also to prevent potential landfill gas emissions and provide environmental protection to any proposed developments on the land surrounding the landfill.</p>	<p><u>RESPONSES TO GENERAL COMMENTS</u></p> <p>RESPONSE: Comment noted.</p>
<p><u>RESPONSE TO COMMENTS ON DRAFT FS</u></p> <p>Because of a fairly specific postclosure land use proposed for Site 2 (wildlife reserve habitat) and potentially very complex postclosure maintenance procedures (trying not to disturb the integrity of the habitat), all institutional controls (site security, access to monitoring points, restrictions on on-site development, and site maintenance), should be identified, established and integrated into the landfill closure and postclosure maintenance programs. Board staff do not find acceptable the approach taken in the FS to refer the institutional controls to a negotiation</p>	<p>RESPONSE: The institutional controls section will be expanded to include the following details:</p> <p>1) Land use restrictions have been added to protect human health and the integrity of the remedy. These include the following restrictions:</p> <ul style="list-style-type: none"> - the land may not be used for residential purposes or for day care centers - construction and excavation are prohibited without prior approval of

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<p>process during the base transfer. Both the design and operation of institutional controls should be derived in conjunction with landfill closure.</p>	<p>DON and FFA signatories</p> <ul style="list-style-type: none"> - groundcover may not be added or disturbed without prior approval - no irrigation is allowed without prior approval - fences and signs may not be removed without prior approval - monitoring equipment (e.g., lysimeters, monitoring wells, settlement monuments) may not be disturbed without prior approval <p>2) Provisions for access by DON and the FFA signatories for purposes of conducting or overseeing monitoring and maintenance activities will be included in the deed or lease</p> <p>3) Owner(s) and/or user(s) of the property will be restricted from excavations that would expose groundwater and from extracting and/or injecting groundwater</p> <p>4) DON will be required to notify the FFA signatories in the event that the property is transferred</p> <p>5) DON and/or the owner(s) and/or user(s) will be required to notify the FFA signatories if any event occur that may change the approved design of the site or if the remedy fails and endangers public health and safety or the environment</p> <p>6) A CERCLA 120(H) covenant will be included in the deed</p> <p>7) A variance/termination clause will be included to allow removal of restrictions once the FFA signatories agree that the cleanup is complete or the restriction is no longer necessary.</p>
<p><u>GENERAL COMMENTS</u></p>	<p><u>RESPONSES TO GENERAL COMMENTS</u></p>

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<p>In order to reduce the size of the Board staff review letter, the original Board staff comments are not cited in this portion of the review letter. Please refer to Board staff letter of September 30, 1996, to view the original comments.</p>	
<p>1. Board staff disagrees with the response to this comment. To the Board staff knowledge, only the flux chamber sampling results cannot be directly compared with the sampling results from the other sampling methods. Board staff requests that, except for the flux chamber sampling, all other sampling results be presented in the parts per million (or billion) by volume (ppmv). Under the present conditions, where multiple units are used to present the sampling results, it is very difficult to conduct direct comparisons of results and thus, expedite the document review. It also should be noted that although this comment had been made during the Site 2 review, it applies to all documents submitted for the El Toro MCAS landfill closure (Sites 3, 5, and 17).</p>	<p>RESPONSE 1: The response provided on the draft FS stands: "Due to the differences in sampling devices, analytical methods, and laboratory reports, the results for instantaneous, integrated, flux chamber, and soil gas samples have different units which cannot be directly compared (e.g., flux and integrated)." This revision will not be made for the reasons as stated in the response to the draft FS comment.</p>
<p>2. The response does not provide a satisfactory explanation of the chosen depths of the multiple depth gas monitoring wells. The regulatory requirements for a perimeter landfill gas monitoring network are clearly outlined in 14 CCR, section 17783.5, and both the response and the FS should be tailored to address all requirements listed in this section.</p> <p>Although Board staff concur that, for the time being, methane off-site migration monitoring would be sufficient at this site, monitoring results should be closely watched, and if necessary, corrective actions be taken immediately. Since corrective actions may involve installing and operating a gas collection system, proposed final cover design should be evaluated for the purpose of compatibility with a gas collection system and ease of installation of</p>	<p>RESPONSE 2: The installation of soil gas probes is discussed on page 4-11 and 4-12 in section 4.3.2 in the FS. Installation will be performed in accordance with 14 CCR 17783.5. At Site 2, probe depths are estimated to be approximately 10 and 30 feet bgs because of the slopes present at the site and the presumed depth of the landfill. An explanation of how the probe depths were determined has been added to the cost estimating appendix.</p>

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<p>such system.</p>	
<p>3. Board staff disagrees that the annual postclosure maintenance costs should be based on a net present worth concept. Because of a number of uncertainties associated with the landfill postclosure maintenance, discounting practice is generally discouraged in California (see attached excerpts from U.S. EPA Final Rule regarding Final Assurance Mechanism for Municipal Solid Waste Facilities [40 CFR Part 258]).</p>	<p>RESPONSE 3: The Navy intends to use the cost estimates presented in the FS because these estimates are for comparative purposes only. Once a detailed design is prepared, a more detailed cost estimate will be prepared and costs for the long-term monitoring will be given a great deal of scrutiny. In addition the net present worth estimate in FS was based on dispersal of funds that would occur for each year for 30 years. Each year had to be estimated separately because the frequency and types of monitoring and maintenance varies on a year by year basis. Also, to account for the uncertainty in cost estimates used in the FS for comparative purposes, a 20 percent contingency for operation and maintenance was included for unforeseen conditions.</p>
<p>4. Board staff do not find the position that the soil loss calculations will be conducted as a part of the final remedial design acceptable. As it was indicated in the FS, Site 2 experiences severe erosion problems (this was observed during a site visit). Without soil loss estimates, Board staff cannot fully evaluate the proposed final cover alternatives or configuration and sizing of the proposed runoff collection system (including energy dissipation and erosion protection measures). Board staff request that these calculations be conducted at the FS stage in order to determine if the chosen final cover materials are applicable under the high erosion conditions (soil loss calculations should account for these specific materials).</p>	<p>RESPONSE 4: The slopes shown on the conceptual design were designed to minimize erosion (usually 3 to 6%). Steeper areas between the 3% slopes have run-on and run-off minimized by the placement of diversion at the toe of the shallower slopes, directing surface water to channels designed to accommodate flow and minimize erosion. Calculations were made for the conceptual designs which included run-on and run-off, drainage channel sizing, and the need for energy dissipation features. These calculations are in the Navy files.</p> <p>As stated in the draft FS responses, the grading plan shown in the FS is conceptual. The final plan may differ slightly from the conceptual design presented in the FS reports but will be supported by appropriate soil loss calculations and many other detailed calculations which be prepared with the detailed final design.</p>
<p>5. Drainage calculations provided in the revised FS indicate a high potential for embankment erosion and high sediment content in the runoff. Board staff request that the sediment content calculations be provided in order to validate the proposed rip-rap erosion protection along the drainage channel. Board staff are concerned that excessive</p>	<p>RESPONSE 5: The intent of the FS is to present conceptual remedial action alternatives. Considerable effort was made to provide a defensible conceptual design in these FS reports. However, the specifics of such items as sediment calculations will be required in the detailed design. Such calculations are not</p>

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<p>sediment deposits may both impair the holding capacity of the drainage channel and make drainage channel maintenance labor-intensive and thus expensive. Perhaps other erosion reducing</p>	<p>necessary at the conceptual design phase.</p>
<p>measures such as channel widening, and runoff re-routing should be considered in addition to or instead of the rip-rap. Thus, in order to validate the proposed general approach (existing drainage channel with rip-rap protection), it is necessary to include the sediment content calculations at the FS stage.</p>	
<p>6. Board staff find this response acceptable.</p>	<p>RESPONSE 6: Comment noted.</p>
<p>7. Board staff find this approach acceptable, however, all institutional controls such as site development restrictions and access to monitoring and control systems should be included as an integral part of landfill closure (during the FS stage) and should not be negotiated during the transfer process.</p>	<p>RESPONSE 7: Please see the response on the first page of this document, under "Response to Comments on Draft FS."</p>
<p>8. Board staff find this response acceptable.</p>	<p>RESPONSE 8: Comment noted.</p>
<p>9. It is unclear how the quantities of wastes to be excavated and consolidated were derived. Thus, it is requested that all of the assumptions, field explorations, and volumetric calculations used for the purpose of landfill consolidation be included in the FS.</p>	<p>RESPONSE 9: The assumptions for waste consolidation are provided in Appendix H on page H4.3.</p>
<p><u>SPECIFIC COMMENTS</u></p>	<p><u>RESPONSES TO SPECIFIC COMMENTS</u></p>
<p>10. Board staff request that more detailed drainage system drawings be provided as a part of the FS. Of special interest to Board staff are more detailed design drawings depicting the placement of the proposed rip-rap erosion protection.</p>	<p>RESPONSE 10: Such detailed design is not warranted for conceptual designs in the FS reports. A detailed drainage system will be designed during the remedial design phase of the project.</p>
<p>11. Because of a limited knowledge on the landfill waste fill and its gas</p>	<p>RESPONSE 11: For the purpose of estimating costs, it is assumed that the</p>

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<p>generation potential, landfill gas monitoring frequency should remain as quarterly for the period of 30 years (worst case scenario) and the postclosure maintenance cost estimate should account for it. Only after conducting the actual field measurements over an extended period of time (depending on the monitoring results and postclosure land use around the landfill, this time may vary), a request may be submitted to reduce the landfill gas monitoring frequency; however, such request must be substantiated by actual field measurements.</p>	<p>monitoring frequency is quarterly for 5 years, then annually thereafter. This is the same monitoring frequency as assumed for all of the MCAS El Toro landfills. Extending the quarterly monitoring to 30 years would result in the same cost being added to each alternative and would not affect the cost comparison.</p> <p>The Navy is aware that a request must be submitted to reduce the frequency of monitoring from quarterly but feels that 5 years of quarterly monitoring will be an adequate baseline considering the age of the landfill and very low concentrations of landfill gas currently present at the site.</p>
<p>12. Similarly to the previous comment, landfill cap inspections should remain quarterly until, based on field inspections, it can be demonstrated that the on-site conditions have stabilized enough to justify a reduced frequency of inspections. However, until such time, the final cap inspections should be conducted on a quarterly basis. Also, the postclosure maintenance cost estimate should account for quarterly inspections for a period of 30 years.</p>	<p>RESPONSE 12: For the purpose of estimating costs, it is assumed that the inspection frequency is quarterly for 5 years, then annually thereafter. This is the same monitoring frequency for all of the MCAS El Toro landfills. Extending the quarterly monitoring to 30 years would result in the same cost being added to each alternative and would not affect the cost comparison.</p> <p>The Navy is aware that a request must be submitted to reduce the frequency of monitoring from quarterly but feels that 5 years of quarterly monitoring will be an adequate baseline considering the age of the landfill.</p>
<p>13. Please refer to the previous comment.</p>	<p>RESPONSE 13: See response to previous comment.</p>
<p><u>COMMENTS ON REVISED FS</u></p> <p>A. After reviewing the revised FS, it does not appear that the proposed closure alternatives have been tailored specifically for wildlife habitat conditions. Specifically, the issue of postclosure maintenance and repair procedures and their interference with wildlife were not addressed.</p>	<p><u>RESPONSES TO COMMENTS ON REVISED FS</u></p> <p>RESPONSE A: The impacts to wildlife are negotiated with the U.S. Fish and Wildlife Service. Specifics of the management of the landfill postclosure will be presented to the USFWS at the time of detailed design.</p>
<p>B. Board staff disagrees that the annual postclosure maintenance costs should be based on a net present worth concept. Because of a number of uncertainties associated with landfill postclosure</p>	<p>RESPONSE B: The Navy intends to use the cost estimates presented in the FS because these estimates are for comparative purposes only. Once a detailed design is prepared, a more detailed cost estimate will be prepared and costs for</p>

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<p>maintenance, discounting practice is generally discouraged in California (see attached excerpts from U.S. EPA Final Rule regarding Final Assurance Mechanism for Municipal Solid Waste Facilities [40 CFR Part 258]).</p>	<p>the long-term monitoring will be given a great deal of scrutiny. In addition the net present worth estimate in FS was based on dispersal of funds that would occur for each year for 30 years. Each year had to be estimated because the frequency and types of monitoring and maintenance varies on a year by year basis. Also, to account for the uncertainty in cost estimates used in the FS for comparative purposes, a 20 percent contingency for operation and maintenance was included for unforeseen conditions.</p>
<p>C. Should the monolithic native soil final cover be considered as a viable closure option, such proposal must be submitted in conformance with guidelines included in 14 CCR, Section 17773 (c).</p>	<p>RESPONSE C: Comment noted. Considering the proposed reuse of the site is wildlife habitat and demonstrated ability of the monolithic cap to provide equivalent infiltration protection, the Navy may consider a monolithic cover to be the preferred alternative.</p>
<p>D. The FS states that the final cover utilizing a low permeability clay layer will use materials derived from an off-site source (Bee Canyon). However, Board staff have contacted the Orange County Integrated Waste Management Department, the operator of Frank Bowerman Sanitary Landfill (formerly Bee Canyon Landfill), and were informed that their staff were not aware of any inquiries regarding availability of clay for off-site projects. An explanation for how the availability of clay material from that location was validated should be provided.</p>	<p>RESPONSE D: The Navy contractor contacted Mr. Denny Carpenter of the OCIWMB (an engineer and manager for the County). He indicated that there are other canyons in the Bee Canyon area that would likely have sources of clay. No inquiries were made on whether the Bee Canyon clay was available, only whether other sources are available in the area. The FS states in section 4.4.1 "it is assumed that potential clay borrow sources may be available from around the Bee Canyon area".</p>

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DRAFT FINAL PHASE II FEASIBILITY STUDY REPORT
FOR OU-2B, SITE 2
MCAS EL TORO, CALIFORNIA**

<p>Originator: Tayseer Mahmoud DTSC</p> <p>To: Joseph Joyce, BRAC Environmental Coordinator MCAS El Toro</p> <p>Date: 16 April 1997</p>	<p style="text-align: right;">CLEAN II Program Contract No. N68-711-92-D-4670 CTO-0076 File Code: 0214</p>
<p><u>GENERAL COMMENTS</u></p> <p>The Department does not agree that restrictions on land and groundwater use “may be negotiated during the BRAC transfer.” If the restrictions are developed as a component of the engineering control(s) to ensure the remedy is protective, the institutional control(s) should not be negotiable items. This especially applies to landfill cover remedies which are basically cap and monitor systems as opposed to an active remediation technology. The institutional controls should be evaluated with the same care as the engineering controls and a discussion of the alternatives should describe which institutional controls are appropriate for each alternative.</p> <p>The MCAS El Toro Local Redevelopment Authority (LRA) approved a Community Reuse Plan for the base in December 1996. As stated in the Draft Final FS Executive Summary, the LRA has recommended that the DoD grant the Department of Interior’s Habitat Reserve request. Site 2 is located within the area of the Habitat Reserve request. Although the DoD has not yet completed the federal screening process, it is fair to assume that the area (including Site 2) will be transferred to the Department of Interior. Since the “owner” of the property will remain the United States Government, deed restrictions are probably not the best institutional control to use in this case. However, the Navy can choose to prepare a land use covenant (deed restrictions) in case the federal screening isn’t approved or for the Department of Interior to use if they decide to sell the land in the future.</p>	<p><u>RESPONSES TO GENERAL COMMENTS</u></p> <p>RESPONSE: The discussion of institutional controls has been expanded to provide the following details:</p> <ol style="list-style-type: none"> 1) Land use restrictions have been added to protect human health and the integrity of the remedy. These include the following restrictions: <ul style="list-style-type: none"> - the land may not be used for residential purposes or for day care centers - construction and excavation are prohibited without prior approval of DON and FFA signatories - groundcover may not be added or disturbed without prior approval - no irrigation is allowed without prior approval - fences and signs may not be removed without prior approval - monitoring equipment (e.g., lysimeters, monitoring wells, settlement monuments) may not be disturbed without prior approval 2) Provisions for access by DON and the FFA signatories for purposes of conducting or overseeing monitoring and maintenance activities will be included in the deed or lease 3) Owner(s) and/or user(s) of the property will be restricted from excavations that would expose groundwater and from extracting and/or injecting groundwater
<p>The site has already been fenced and other institutional controls will be necessary to protect the remedy, monitoring wells, and provide for operation and maintenance. Therefore, a discussion of the institutional</p>	<ol style="list-style-type: none"> 4) DON will be required to notify the FFA signatories in the event that the property is transferred 5) DON and/or the owner(s) and/or user(s) will be required to notify the

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<p>controls should also describe the type of agreement (e.g., Who will be responsible for maintaining the landfill cover, perform O&M, etc.) that will be “negotiated” with the Department of Interior (as the new tenant) to ensure that the remedy (engineering and institutional controls) remains protective to human health and the environment.</p>	<p>FFA signatories if any event occur that may change the approved design of the site or if the remedy fails and endangers public health and safety or the environment</p> <p>6) A CERCLA 120(H) covenant will be included in the deed</p> <p>7) A variance/termination clause will be included to allow removal of restrictions once the FFA signatories agree that the cleanup is complete or the restriction is no longer necessary.</p> <p>In addition, the effect of institutional controls, especially on the long-term effectiveness of the remedial action, will be discussed in the detailed and comparative analysis in the FS.</p>
<p><u>OTHER COMMENTS:</u></p> <p>1. We could not find, in the tables or sections of Appendix A, responses to DTSC ‘s submitted ARARS, Orange County Health Care Agency, and Orange County Fire Department ARARS. DTSC’s submitted ARARS include Title 22, CCR 66264.14(a), 66264.19(a, c), 66264.51, 66264.52(b), 66264.97 to 100, and 66264.117(c, d, f).</p>	<p><u>RESPONSES TO OTHER COMMENTS:</u></p> <p>RESPONSE 1: Under CERCLA, local laws in and of themselves are not considered ARARs. In certain instances, requirements developed by a local agency that are both adopted and legally enforceable by the state or where local requirements become part of a legally enforceable state “plan” may be considered potential ARARs. The local ARARs submitted by DTSC do not appear to fit within these categories and were thus not addressed as potential ARARs. The potential Title 22 ARARs submitted by DTSC will be included in the ARARs evaluation.</p>
<p>2. <u>Section A3.1, Location Specific ARARS, Page A3-1 - Having a section similar to A3-1 on page A3-1 that lists the citations examined would be good for the other sections such as Chemical and Action Specific ARARS</u></p>	<p>RESPONSE 2: The Navy will consider this comment in preparation of future ARARs evaluations.</p>
<p>3. <u>Appendix A, Action-Specific ARARS - The draft final FS has deleted the discussion of Land Use Restrictions from Appendix A (formerly Sections A4.1, A4.1.1, A4.1.2, A4.5 and A4.5.1) without providing the rationale. Amendment of the base master plan to restrict future uses</u></p>	<p>RESPONSE 3: A discussion of institutional controls has been added to Appendix A.</p>

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<p>at Site 2 Should be a component of all alternatives being considered.</p>	
<p>4. <u>Table A4-1, Page A4-5</u> - Please list the appropriate sections listed under 66264.111 that are relevant ARARS. Some subsections of 66264.111 may not be appropriate.</p>	<p>RESPONSE 4: Comment noted. Specific subsections from 22 CCR 66264.111 that are considered relevant and appropriate will be added to the citation in Table A4-1.</p>

**RESPONSE TO COMMENTS
ON DRAFT FINAL PHASE II FEASIBILITY STUDIES
OPERABLE UNIT 2C - SITES 3 & 5
MCAS EL TORO, CALIFORNIA**

<p>Originator: Glenn R. Kistner, RPM U.S. EPA</p> <p>To: Joseph Joyce, BRAC Environmental Coordinator MCAS El Toro</p> <p>Date: 24 March 1997</p>	<p style="text-align: right;">CLEAN II Program Contract No. N68-711-92-D-4670 CTO-0076 File Code: 0214</p>
<p><u>GENERAL COMMENTS</u></p> <p>1. The language in the FS that states that the DON policy allows deed restrictions to be established only through negotiation of a BRAC transfer is not acceptable. The FS and the ROD need to identify the restrictions on use and access that will be part of the remedy, e.g., restrictions on use of groundwater, restrictions on excavation, maintenance of integrity of cap, etc.</p>	<p><u>RESPONSES TO GENERAL COMMENTS</u></p> <p>RESPONSE 1: The institutional controls section will be expanded to include the following details:</p> <p>1) Land use restrictions have been added to protect human health and the integrity of the remedy. These include the following restrictions:</p> <ul style="list-style-type: none"> - the land may not be used for residential purposes or for day care centers - construction and excavation are prohibited without prior approval of DON and FFA signatories - groundcover may not be added or disturbed without prior approval - no irrigation is allowed without prior approval - fences and signs may not be removed without prior approval - monitoring equipment (e.g., lysimeters, monitoring wells, settlement monuments) may not be disturbed <p>2) Provisions for access by DON and the FFA signatories for purposes of conducting or overseeing monitoring and maintenance activities will be included in the deed or lease</p> <p>3) Owner(s) and/or user(s) of the property will be restricted from excavations that would expose groundwater and from extracting and/or injecting groundwater</p> <p>4) DON will be required to notify the FFA signatories in the event that the property is transferred</p> <p>5) DON and/or the owner(s) and/or user(s) will be required to notify the FFA signatories if any event occur that may change the approved design of</p>

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MCAS EL TORO, CALIFORNIA**

<p>Originator: Glenn R. Kistner, RPM U.S. EPA</p> <p>To: Joseph Joyce, BRAC Environmental Coordinator MCAS El Toro</p> <p>Date: 24 March 1997</p>	<p style="text-align: right;">CLEAN II Program Contract No. N68-711-92-D-4670 CTO-0076 File Code: 0214</p>
	<p>the site or if the remedy fails and endangers public health and safety or the environment</p> <p>6) A CERCLA 120(H) covenant will be included in the deed</p> <p>7) A variance/termination clause will be included to allow removal of restrictions once the FFA signatories agree that the cleanup is complete or the restriction is no longer necessary.</p> <p>In addition, the effect of institutional controls, especially on the long-term effectiveness of the remedial action, will be discussed in the detailed and comparative analysis in the FS.</p>
<p>2. The DON seems to be identifying two sets of ARARs under RCRA, i.e., subtitle C and Subtitle D which creates inconsistency problems. If the DON believes that there is hazardous waste at the site, Subtitle C requirements are the ARARs; if the DON believes the site qualifies as a MSWLF, then Subtitle D requirements are the ARARs. The DON seems to think that designating Subtitle C as “relevant and appropriate” and Subtitle D as “applicable” resolves the inconsistency problem. It doesn’t. Once you designate requirements as “relevant and appropriate requirements.” These are like any other ARARs and must be complied with. In other words, they would be no different in weight than the applicable requirements. For instance, if you have an activity like landfill capping where the DON has designated both Subtitle C and D as ARARs (one as relevant and appropriate, the other as applicable), the question is which of these requirements regarding landfill capping must be complied with?</p>	<p>RESPONSE 2: Numerous federal and state requirements under 40 CFR Part 258 and Titles 14, 22, and 23 of CCR cover landfill closure. These regulations are not “applicable” to Sites 3 and 5 because the landfills ceased operations prior to the effective date of any of these four sets of similar but not identical regulations (e.g., 40 CFR 258 is not applicable because waste receipts stopped prior to 1991; Title 22 CCR is not applicable because there is no documentation of hazardous waste disposed in the landfill after 1980). Therefore, DON reviewed the regulations to determine whether any of them were potentially “relevant and appropriate” ARARs. Each of these four regulations contain overlapping, analogous provisions addressing the same subject matter (e.g., prescriptive or construction standards for cap design, erosion control, etc.). Because CERCLA requires that Federal ARARs that are more stringent than State ARARs and State ARARs that are more stringent than Federal ARARs must be complied with, DON reviewed and compared analogous requirements from the four regulations in order to identify which was the most stringent and, therefore, the potential “controlling” relevant and appropriate ARAR of the four. The results of this comparative analysis are set forth in summary fashion in Table 3-1.</p>
<p><u>SPECIFIC COMMENTS</u></p>	<p><u>RESPONSES TO SPECIFIC COMMENTS</u></p>

**RESPONSE TO COMMENTS
ON DRAFT FINAL PHASE II FEASIBILITY STUDIES
OPERABLE UNIT 2C - SITES 3 & 5
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<p>1. <u>P. ES-9</u> - As previously mentioned, Alternative 1 (no action) also accomplishes remediation of groundwater through precipitation. On this page and all throughout the document, monitoring is described as an institutional control. Monitoring is really not part of institutional controls.</p>	<p>RESPONSE 1: The monitoring discussion will be elevated to its own section.</p>
<p>2. <u>P. ES-10 - first underlined paragraph</u> - Refers to State's acceptance of the different variations of alternative 4. What about State's acceptance of alternatives 5 and 6? Also, what about EPA's acceptance of these alternatives? On the same page, first bullet under "Results of Remedial Alternative Evaluation," states that Alternative 1 is not expected to comply with ARARs. A no action alternative does not trigger ARARs.</p>	<p>RESPONSE 2: As indicated in Table ES-3 and in Section 5, the state did not provide comments on the on the acceptability of Alternatives 1, 2, 5a, 5b, 5c, and 5d in their comments on the draft FS report.</p> <p>The first bullet has been modified to acknowledge that ARARs are not triggered by the No Action alternative.</p>
<p>3. <u>P. ES-13; underlined section, last bullet</u> - This sentence seems to contradict itself, i.e., the alternative will result in continued low-level releases of gas from the LF surface and decreased releases at the periphery of the LF.</p>	<p>RESPONSE 3: Using Alternatives 3 and 4c, the landfill gases can migrate vertically to the surface. With barrier caps, such as 4a and 4b, the landfill gases are restricted in the vertical migration and are forced to migrate horizontally to margins of the barrier cap where they can migrate to the surface.</p>
<p>4. <u>P. ES-15; Table ES-3</u> - Ranks the various alternatives. Since "Overall Protection of HHE" and "Compliance with ARARs" are threshold criteria that must be complied with, these should not be ranked (low, moderate, high). In other words, when looking at alternatives, the first question is - do these alternatives make it past the two threshold requirement? If an alternative does, you compare it with the other alternatives with regard the other balancing criteria. That's when the ranking of alternatives should take place.</p>	<p>RESPONSE 4: Agreed. This table and the corresponding table in Section 6 will be revised to delete a ranking for the threshold criteria.</p>
<p>5. <u>P. 2-6; last paragraph</u> - What is "no significant" surface drainage?</p>	<p>RESPONSE 5: Significant in this case refers to surface drainage channels, either man-made or natural, such as Borrego Canyon Wash or Agua Chinon Wash or the canyon drainage that crosses Site 17 that is used for drainage</p>

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<p>6. P. 3-1 - This section discusses the screening of presumptive remedy technologies. Did the DON look at the EPA Guidance on "Application of the CERCLA Municipal Landfill Presumptive Remedy to Military Landfills?" There is no mention of it here.</p>	<p>RESPONSE 6: Yes, the military presumptive remedy was considered as referenced in the second paragraph on page 3-1 as U.S. EPA 1996.</p>
<p>7. P. 3-8; last paragraph - first underlined section - The substantive portions of Article 7.8 are potentially applicable, not relevant and appropriate.</p>	<p>RESPONSE 7: As noted in the text, because this landfill ceased operations prior to the effective date of the regulations, the substantive portions of Article 7.8 are not applicable to this response action. Therefore, the Navy reviewed the potential ARARs identified by the State to determine if they were relevant and appropriate to the various site conditions and remedial alternatives under review.</p>
<p>8. P. 3-9; first paragraph - 40 CFR Part 258 are applicable (not relevant and appropriate); and change the reference here from Site 17 to Site 5. On the same page, the last paragraph - since production from Site 5 aquifer may be as high as 500 to 2,000 gallons per day, the provisions of Res. 88-63 DO apply to Site 5.</p>	<p>RESPONSE 8: As noted in 40 CFR 258.1(c), the regulations do not apply (i.e., are not applicable) to solid waste landfill units that did not receive waste after October 9, 1991. Therefore, the ARARs analysis focused on the potential relevance and appropriateness of the regulations to the various site conditions and remedial alternative under review. With respect to Resolution 88-63, the text will be modified to note that Resolution 88-63 does apply.</p>
<p>9. P. 3-10; first row - How are the 66264.309(a) substantive environmental standards? The requirements in the second row are not cited in the text.</p>	<p>RESPONSE 9: 66264.309(a) contains an administrative requirement to create a map to be used as the basis for measuring settlement of the landfill. While the map referred to in the regulations is an administrative requirement and therefore not technically an ARAR, such a figure will be prepared to support post-closure care of the facility. This explanation has been added to Appendix A.</p>
<p>10. P. 3-11; first row - 17774(g)(1) requirements are not in the text.</p>	<p>RESPONSE 10: This citation has been added to the bullets on p. 3-11. The requirement is discussed in Appendix A.</p>
<p>11. P. 3-12 and 3-13 - The following are not cited in the text - 17777(a); 66264.117(b)(1) and (2); 17788(a); 17788.</p>	<p>RESPONSE 11: This citation has been added to the bullets on p. 3-11. The requirement is discussed in Appendix A.</p>
<p>12. P. 3-16; first paragraph - States that because background levels for metals have not been prepared, attaining background levels is not</p>	<p>RESPONSE 12: This section will be rewritten to indicate that background metal concentrations in groundwater have not been prepared. Therefore, it is</p>

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<p>considered feasible. That is a big assumption. On the same page, the third paragraph - mcls are the cleanup goals for this site, yet mcls may not be appropriate for other sites. Explain this. Also, last paragraph - please provide a citation for the Subtitle D requirement being referenced here.</p>	<p>not possible to evaluate whether attaining background levels is feasible.</p> <p>The sentence regarding MCLs was meant to confirm that cleanup goals should be chosen on a site-by-site basis. While MCLs may be used as goals for the landfill sites, other sites at MCAS El Toro may use risk-based criteria, for example.</p> <p>The citation is 40CFR 258.40(d). This has been added to the text.</p>
<p>13. <u>P. 3-19; first paragraph under Section 3.2</u> - Talks about response actions for hazardous waste sites. Is Site 5 a hazardous waste site or a MSWLF?</p>	<p>RESPONSE 13: The reference to hazardous waste sites will be deleted and replaced with municipal solid waste landfill.</p>
<p>14. <u>P. 3-20, and 3-23</u> - The bullet lists source area groundwater control but the text regarding this is deleted.</p>	<p>RESPONSE 14: The bullet for source area groundwater control will be deleted. Section 3.7 presents an analysis of groundwater remediation technologies.</p>
<p>15. <u>P. 3-23; last paragraph</u> - States that leachate collection and treatment is ruled out at this time. What about if the golf course scenario happens? Will leachate collection and treatment still be ruled out then?</p>	<p>RESPONSE 15: Leachate collection systems are installed below the landfill. Since the landfill is already in place, installation of such a leachate collection is not feasible. It is also assumed (and shown by the HELP model) that capping can be very effective in controlling infiltration and resultant leachate production. Use of an FML or GCL barrier, for example, would reduce infiltration even under the golf course scenario to an infiltration level far below that which currently exists at the site. As an alternate, DON could provide a monolithic cap, for example, and use institutional controls to ensure that irrigation of the site does not take place. Either of these alternatives would eliminate the need for a leachate collection and treatment system.</p>
<p>16. <u>P. 3-29 - first underlined paragraph</u> - The logic here seems sort of circular.</p>	<p>RESPONSE 16: Agreed. The sentence is awkward. It will be rewritten to state that "Excavation is considered complete when confirmation sampling shows that concentrations of contaminants in the remaining unexcavated soil are less than the calculated RBCs."</p>
<p>17. <u>P. 3-31</u> - As mentioned above, its really not accurate to include</p>	<p>RESPONSE 17: The monitoring discussion will be elevated to its own</p>

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<p>monitoring as part of institutional controls. There should really be a separate section for monitoring since all the alternatives will require monitoring.</p>	<p>section.</p>
<p>18. <u>P. 3-33; Section 3.6 Clean Closure</u> - Is this still part of the presumptive remedy?</p>	<p>RESPONSE 18: Clean closure is not a presumptive remedy. As such, it is given a separate section (3.6) as opposed to presumptive remedies section (3.4).</p>
<p>19. <u>P. 3-34; Under Section 3.7</u> - Reference is made to the sections which do not exist. These are 3.6.1, 3.6.6, and 3.6.7.</p>	<p>RESPONSE 19: This is a typographical error. The section will be corrected to read 3.7.1, 3.7.6, and 3.7.7.</p>
<p>20. <u>P. 3-43; Section 3.7.6; Disposal Actions</u> - This is confusing. Clarify that this is not a stand alone remedy but part of a remedy, where groundwater is treated and the question then is, what to do with the treated effluent?</p>	<p>RESPONSE 20: Agreed. This section will clarify that disposal actions are for groundwater produced from potential groundwater remediation efforts and is not a stand-alone remedy.</p>
<p>21. <u>P. 4-1, Section 4</u> - Talks about the development of alternatives for the soil at Site 5. What about the groundwater?</p>	<p>RESPONSE 21: The underlined paragraph at the end of the introduction to Section 4 is a new paragraph for the draft final FS and indicates that all alternatives rely on natural precipitation of metals in groundwater to control migration of metals in groundwater.</p>
<p>22. <u>P. 4-2; first paragraph</u> - Inadvertently deletes sentence regarding the first type of control.</p>	<p>RESPONSE 22: Agreed and the sentence will be restored.</p>
<p>23. <u>P. 5-10 and 5-11</u> - In P. 5-11, it states that alternative 3 is expected to meet all ARARs and provide equivalency to the Title 14, Title 23 prescriptive cap. In the previous page, it says that this alternative will achieve an equivalent standard of performance to the Title 23 cap only in the nonirrigated scenario.</p>	<p>RESPONSE 23: The sentence on 5-11 will be amended to explain that Alternative 3 will only achieve the equivalent performance in a nonirrigated scenario. If Alternative 3 were chosen for Site 5, it would be accompanied by institutional controls prohibiting irrigation of the cover.</p>
<p>24. <u>P. 5-11; last paragraph</u> - Why was it necessary to discuss here in "Compliance with ARARs" the interest in monolithic caps?</p>	<p>RESPONSE 24: This paragraph on "interest in monolithic caps" is presented in the section following "Compliance with ARARs" in the "Long-term Effectiveness and Permanence" section. It is used to support the effectiveness of monolithic caps in California and across the nation.</p>

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<p>25. <u>P. 5-16, last paragraph</u> - The discussion of HHE is limited to a discussion of the soil contamination. What about the groundwater?</p>	<p>RESPONSE 25: This discussion will be supplemented to address groundwater as well as soil contamination. A statement will be added to this section and similar sections for the other alternatives that institutional controls restricting the use of groundwater at Sites 3 and 5 are protective of human health and the environment and that natural precipitation is expected to provide long-term protection by reducing concentrations of metals in groundwater. For capping alternatives, additional statements will be included to indicate that capping will also reduce infiltration and subsequent leaching of contaminants to groundwater, resulting in protection of human health from groundwater consumption.</p>
<p>26. <u>P. 5-17</u> - Under "Long Term Effectiveness," the text leads one to conclude that compacted clay barrier layer will not work. The question then is, why are we considering this alternative?</p>	<p>RESPONSE 26: The clay cap is the Title 23 prescriptive cap which is the basis of comparison for other capping alternatives.</p>
<p>27. <u>P. 5-22</u> - Under State Acceptance- this is the only place where groundwater is discussed. Also on this page, under "Overall Protection of HHE," there is a sentence that states that the cap will also reduce infiltration into landfill contents, thus minimizing further impacts to groundwater. Why doesn't this sentence appear in P. 5-16?</p>	<p>RESPONSE 27: These statements will be added to the alternatives as stated in response #25.</p>
<p>28. <u>P. 5-44</u> - Why did the State not comment on alternative 5b?</p>	<p>RESPONSE 28: The state did not comment on the acceptability of this alternative. A reason was not provided.</p>
<p>29. <u>P. 5-49</u> - Why did the State not comment on alternative 6a?</p>	<p>RESPONSE 29: The state did not comment on the acceptability of this alternative. A reason was not provided.</p>
<p>30. <u>P. 5-54</u> - Why did the State not comment on alternative 6b?</p>	<p>RESPONSE 30: The state did not comment on the acceptability of this alternative. A reason was not provided.</p>
<p>31. <u>P. 6-1</u> - Are there any RAOs for groundwater remediation?</p>	<p>RESPONSE 31: Yes, there are RAOs for groundwater. These are presented in Section 3.1.4 of the FS. A discussion of how the proposed groundwater remediation meets these RAOs has been added to Page 6-1.</p>

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<p>32. P. 6-5; second row, alternative 4a - States that this complies with the Title 23 prescriptive cap. This wasn't clear in the text.</p>	<p>RESPONSE 32: Alternative 4a is the Title 23 prescriptive cap. The text will be reviewed and this point will be emphasized where needed.</p>
<p>33. P. 6-7; third row, alternative 2 - States that implementability of this alternative is high because there are no construction activities. What about the implementability of the deed restrictions? Also on this page, last row - both 4b and 5b cost \$4.7m. Yet, 4b is the second most costly and 5b is third most costly.</p>	<p>RESPONSE 33: Deed restrictions are considered to be readily implementable.</p> <p>The costs presented in this table are rounded off. Alternative 4b cost is \$4,663,000 and Alternative 5b is \$4,653,600 as presented in Section 5 and cost estimate appendix. The accuracy of these estimates is +/- 30 percent.</p>
<p><u>COMMENTS TO ARARs (APPENDIX A)</u></p>	<p><u>RESPONSES TO COMMENTS TO ARARs (APPENDIX A)</u></p>
<p>1. P. A1-5 - Delete "significant provisions" in the first sentence that refers to Subtitle D requirements. Do this mean <i>substantive</i> provisions?</p>	<p>RESPONSE 1: Comment noted. Words "Significant provisions of" will be removed.</p>
<p>2. P. A1-6 - Why is it necessary to have a separate RCRA corrective action section (specifically a section on CAMU) here? The other Subtitle C requirements are discussed on page A1-4.</p>	<p>RESPONSE 2: Comment noted. CAMU discussion will be moved to RCRA Subtitle C section.</p>
<p>3. P. A2-2 - There should be a footnote here that clarifies that when stated "relevant and appropriate for all alternatives," it means all except alternative 1.</p>	<p>RESPONSE 3: Noted footnote will be added.</p>
<p>4. P. A2-3; last row - TCLP regulatory levels applicable only if hazardous waste is generated.</p>	<p>RESPONSE 4: A note will be added under the ARAR determination section stating that the requirements are applicable only if waste is generated.</p>
<p>5. P. A2-8; first paragraph - ACLs under CERCLA are not analyzed as part of the ARARs process. Also on this page, I believe the federal water quality standards promulgated by EPA for California were for toxic pollutants. In the same section (Clean Water Act), it states that FWQC are potentially relevant and appropriate only in the absence of promulgated mcls or mclgs. Is that the case here? Primary and Secondary State mcls are ARARs only if they are more stringent, and in the case of secondary mcls, if they have been promulgated by the</p>	<p>RESPONSE 5: Text will be modified to describe the applicability of the FWQC to this site. Text will also be modified to clarify the applicability of primary and secondary State MCLs or MCLGs (i.e., that State MCLs are only considered ARARs if they are more stringent than Federal MCLs and that secondary State MCLs are potential ARARs only if they have been promulgated.</p>

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<p>State.</p>	
<p>6. P. A2-10 - Please delete the last sentence in the first paragraph that starts with the word "Authorizes..." The second paragraph refers to implementation plans to meet water quality objectives. Many of these implementation plans are not ARARs. In the Citation section on this page, it cites 13241, 13243, 13263(a) and 13360 of the Water Code. The only one cited in the narrative text is 13263(a).</p>	<p>RESPONSE 6: Table A2-2 will be modified to remove noted sentence. With respect to the comment concerning the implementation plans as noted in the second paragraph, the Navy agrees that many of the implementation plans are not ARARs. The second paragraph (which contains reference to implementation plans) is intended to provide a basic description of the Basin Plan. The ARAR status for the Basin Plan is noted under the column titled ARAR Determination with limitations noted under the Comment column. With respect to the Water Code citations noted on page A2-10, the table will be modified to be consistent with the text in Section A2.1.2.3.</p>
<p>7. P. A2-11; first row - cites Res. 89-42 - What is this? This was also not cited in the text.</p>	<p>RESPONSE 7: Resolution 89-42 incorporates Resolution 88-63 in to the Santa Ana Basin Plan. A clarifying statement will be added to the text concerning Resolution 89-42.</p>
<p>8. P. A2-14; top of the page - States that the aquifer is estimated to have a production rate of greater than 200 gallons per day. This means that the groundwater is a potential municipal or domestic water supply.</p>	<p>RESPONSE 8: Comment noted. Text will be modified to note that groundwater is a potential municipal or domestic water supply.</p>
<p>9. P. A2-16; first paragraph - States; because Res. 92-49 incorporates and relies upon the provisions of Title 23 which are not more stringent than Title, Res. 92-49 is not a valid State ARAR. This seems inconsistent with the "stand alone" approach advocated in the previous page (p. A2-15).</p>	<p>RESPONSE 9: Text will be modified to clearly describe the ARARs review process (i.e., identification of both Federal and State requirements, as it applies to the review of Resolution 92-49, 23 CCR 2550.4(d)(e) and (f), and 22 CCR 66264.94.</p>
<p>10. P. A2-18; first bullet under Groundwater Chemical ARARs - Refers to waste discharge limitations. It is my understanding that waste discharge requirements are permits issued by the Water Board. If they are indeed permits, one should be careful in citing them as ARARs.</p>	<p>RESPONSE 10: Comment noted. Reference is made to "waste discharge limitations" not "waste discharge requirements" (WDRs). Since WDRs are, in essence, permits they are not considered ARARs.</p>
<p>11. P. A4-5; first row - There will be no placement of hazardous waste at all? On the same page, last row, Title 22 closure performance standards are relevant and appropriate only if there is hazardous waste</p>	<p>RESPONSE 11: Since consolidation of waste within a unit is not considered "placement" within the context of land disposal restrictions, it is correct to state that placement of hazardous waste will not occur. However, since</p>

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<p>in Site 5.</p>	<p>hazardous constituents may exist in landfill materials, the DON has determined that substantive provisions of the closure performance standards are relevant and appropriate.</p>
<p>12. P. A4-7; first row - This was struck out. I am assuming it is because this is not landfill containing RCRA hazardous waste. Yet, there are other requirements in the ARARs Table and text that pertain to Subtitle C requirements. This goes to my general comment above regarding the inconsistent approach taken by the DON. Also on this page, last row - is the requirement for a map a substantive requirement?</p>	<p>RESPONSE 12: The noted section was struck out because more detailed references to specific requirements from 22 CCR 66264.310 were added to the ARARs analysis.</p>
<p>13. P. A4-8 - Here it appears that the controlling ARARs are Title 14 and 23, not Title 22. Please see my general comment above.</p>	<p>RESPONSE 13: Please see response to General Comment 2 above.</p>
<p>14. P. A4-9; second row - States that the requirement to continue to operate leachate collection is not an ARAR because the landfill is not fitted with a leachate collection system. The question is, is there a need for a leachate collection system, not whether or not one currently exists.</p>	<p>RESPONSE 14: No leachate collection system is required based on the RI findings and the fact that all capping alternatives effectively reduce infiltration in a nonirrigated scenario and several capping alternatives are effective in reducing infiltration in an irrigated scenario.</p>
<p>15. P. A4-14; last row - States that 40 CFR Part 258.61 is not an ARAR because it is not more stringent than Title 23. Its the other way around; the starting point is Part 258, the federal ARAR. Then, the issue is whether Title 23 is more stringent than Part 258.</p>	<p>RESPONSE 15: Text will be modified to indicate that Title 23 is more stringent than 40 CFR 258.61 and is, therefore, the controlling ARAR.</p>
<p>16. P. A4-16 - Why is there no citation of the Title 22 regulations here regarding CAMU?</p>	<p>RESPONSE 16: The correct Title 22 citation regarding CAMUs will be added to the table.</p>
<p>17. P. A4-17 - Why is it necessary to cite this? Isn't there already an ARAR that addresses point of compliance? If so, the DON should just consolidate all the citations to the same requirement in one place.</p>	<p>RESPONSE 17: The comment section will be modified to indicate that this is the controlling ARAR for the point of compliance issue.</p>
<p>18. P. A4-18 - Dept. of Transportation requirements are offsite requirements. They can be discussed in the text but should be taken</p>	<p>RESPONSE 18: The DON has taken the position that DOT requirements are relevant and appropriate requirements for on-site transport of hazardous</p>

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<p>out of the ARARs discussion because it can be confused with ARARs requirements.</p>	<p>materials.</p>
<p>19. P. A4-24; last row - Please see comment above regarding waste discharge requirements.</p>	<p>RESPONSE 19: See response to Comment No. 10 above.</p>
<p>20. P. A4-27, last row - Corrective action is not an ARAR because the CERCLA response action is equivalent to a corrective action.</p>	<p>RESPONSE 20: Text will be modified to state that the CERCLA action is equivalent to a RCRA corrective action.</p>
<p>21. P. A4-33; second row - Both Title 14 and Title 23 contain the State of California's Subtitle D requirements. So, in a way, they are both the controlling ARARs for Subtitle D but only if they are more stringent than 40 CFR part 258. Also, on this page, last row - this one states that Title 22 is the controlling ARAR. This illustrates the point made earlier about the confusing and inconsistent approach to Title 22 (Subtitle C) and Title 14/Chapter 15 (Subtitle D) requirements.</p>	<p>RESPONSE 21: Please see response to General Comment 2 above.</p>
<p>22. P. A4-39 - What are the substantive requirements in closure certification?</p>	<p>RESPONSE 22: Substantive requirements for closure certification would include a detailed as-built description of all environmental containment, monitoring, and control systems remaining after construction of the final landfill cover.</p>
<p>23. P. A4-47 - Why are these stormwater requirements TBCs instead of ARARs?</p>	<p>RESPONSE 23: ARAR determination will be changed from TBC to relevant and appropriate.</p>
<p>24. P. A4-49; last row - What is this CA. Water code, chapter 5, Article 1 requirement? Please give specific citation.</p>	<p>RESPONSE 24: This citation was provided by the Santa Ana RWQCB in their response to the Navy request that they provide State ARARs for this response action.</p>
<p>25. P. A4-53 - Why were the Clean Air Act requirements deleted.</p>	<p>RESPONSE 25: Text was deleted since no Federal Clean Air Act ARARs were identified.</p>

**RESPONSE TO COMMENTS
ON THE DRAFT FINAL PHASE II FEASIBILITY STUDY REPORT
OPERABLE UNIT 2C - SITE 3
MCAS EL TORO, CALIFORNIA**

<p>Originator: Glenn R. Kistner, RPM U.S. EPA</p> <p>To: Joseph Joyce, BRAC Environmental Coordinator MCAS El Toro</p> <p>Date: 11 March 1997</p>	<p>CLEAN II Program Contract No. N68-711-92-D-4670 CTO-0076 File Code: 0214</p>
<p><u>GENERAL COMMENTS</u></p> <p>1. The strikeout/underline format was very helpful and facilitated review of this document.</p>	<p><u>RESPONSES TO GENERAL COMMENTS</u></p> <p>RESPONSE 1: Comment noted and appreciated.</p>
<p>2. The rationale for capping the landfill is still unclear. The sample results do not indicate that risks are due to materials disposed at the landfill. The risk assessment indicates risk is due to arsenic, but the detected levels of arsenic may be representative of natural (background) conditions.</p>	<p>RESPONSE 2: The rationale for capping is not entirely driven by risks, rather, the site needs to be graded to control runoff to avoid erosion while minimizing infiltration. Because the samples used in the risk assessment at MCAS El Toro were from shallow soil and not from the landfill wastes, the risks are likely to be underestimated.</p>
<p>3. Section 2.2.4.1 indicates that the risks are due to arsenic. At many sites, background concentrations of arsenic result in this degree of risk. More work may be needed to evaluate whether the risk is based on natural arsenic concentrations. Further, the source for cap materials may have the same or higher arsenic concentrations. Arsenic concentrations in the clean cap materials should be tested prior to capping.</p>	<p>RESPONSE 3: As part of the risk assessment, the metal concentrations in shallow soil were compared to background concentrations and statistical application of the Wilcoxon Rank Sum test and Quantile test as outlined in the RI in order to evaluate whether metals should be included in the risk assessment. The value for arsenic at Site 3 indicated that it may not be related to background and it was included in the risk assessment.</p> <p>During the detailed design stage, the potential borrow source materials will need to be characterized to confirm their uncontaminated nature as well as their geotechnical properties.</p>
<p>4. Alternative 3 appears to be the most attractive when compared to the other capping alternatives. However, the infiltration rates for the native cap are based on data that was not collected from the likely cap material. Before the decision is made to accept Alternative 3, additional permeability data is needed. The FS should de-emphasize the calculated infiltration estimates for native cap material due to the high degree of uncertainty about actual permeability.</p>	<p>RESPONSE 4: We agree that reliance on one sample for hydraulic conductivity is not suitable for a detailed design. However in the FS, the hydraulic conductivity was increased by one order of magnitude from 2×10^{-6} to 2×10^{-5} centimeters per second (cm/s) to incorporate some uncertainty into the reliance on one result. Additional design studies will need to assess the suitability of the proposed borrow source for capping materials, including such aspects as rippability, hydraulic conductivity, and grain size analyses. Because no investigations were actually conducted in the proposed borrow source but based on the similarity of geologic materials (especially soil descriptions) at the</p>

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	<p>borrow source and those investigated at Site 2, the value of 2×10^{-5} cm/s is considered a good approximation. If the design study indicates that the hydraulic conductivity is higher, the soil may need additional fine grained materials or clays added during excavation of borrow materials.</p>
<p><u>SPECIFIC COMMENTS</u></p> <p>1. General Comment Response 1. Although it is helpful that the RBCs have been included, this information should be used in a discussion to show that the RBCs are exceeded.</p> <p>2. General Comment Response 3. Please revise the text to reflect the response given for this comment.</p> <p>3. Response 6. Please revise the text to reflect the response given for this comment. It is confusing to discuss the samples taken within an old boundary and then provide a figure showing the revised boundary with no discussion. The text should be consistent with the figure provided in this report.</p> <p>4. Response 9. To be complete, the text should indicate that no chemicals were detected in 3SB5. This could be done in a general statement.</p> <p>5. Table 3-4. The ex-situ treatment options were eliminated based on cost effectiveness, but the reason why these technologies are deemed not cost effective is not discussed. These technologies have been used in numerous groundwater pump and treat systems nationally and have been shown to be cost effective. Cost effectiveness is not a justifiable reason to eliminate the technologies at this point in the FS. One or several of these technologies should be included in the development of alternatives to treat groundwater if groundwater</p>	<p><u>RESPONSES TO SPECIFIC COMMENTS</u></p> <p>RESPONSE 1: The RBCs are intended to be used for confirmation sampling of soil underlying wastes that are to be consolidated. For soil analyzed at Site 3, no soil less than 10 feet deep exceeded RBCs. However, samples were not taken from landfill wastes themselves.</p> <p>RESPONSE 2: A statement will be added to the human health risk assessment to indicate that soil samples collected from the surface to a depth of 2 feet in the Phase II study area boundary were used in the risk assessment.</p> <p>RESPONSE 3: A statement will be added to explain that the sampling occurred in the Phase II RI study area boundary. RI results show the actual extent of the landfill wastes is smaller than the Phase II study area. Therefore, the boundary portrayed in the FS is the landfill boundary and not the Phase II RI study area used to collect the information to support the risk assessment.</p> <p>RESPONSE 4: Review of the boring logs for Site 3 shows that there was one shallow soil sample taken from 3SB5; however, there were no samples taken at a depth of greater than 10 feet bgs at 3SB5. Figure 2-9, which shows subsurface soil sampling results, will be revised accordingly.</p> <p>RESPONSE 5: Because background concentrations are not available and there are exceedances of MCLs for metals, several remedial options were considered in the alternatives screening for groundwater remediation. Cost was not the primary reason for screening out ex situ treatment options. Of the seven wells sampled at Site 3, four monitoring wells had nickel MCL exceedances (326 µg/L, 366 µg/L, 358 µg/L, and 326 µg/L compared to the MCL of 100 µg/L) and two monitoring wells had benzene MCL exceedances (5 µg/L and 20 µg/L</p>

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<p>contamination is truly a concern.</p>	<p>compared to the MCL of 5 µg/L). Based on these low exceedances and the possibility that the metal concentrations in these wells may be due to natural variation, no metal groundwater remediation other than natural precipitation was brought forward beyond the screening process. This approach is supported by the fact that no drinking water is extracted at the site. Because benzene appears to be derived from Tank farm No. 5, no remediation of the benzene was considered for this FS of the landfill. This justification will be clarified in Section 3.</p>
<p>6. Section 3.1.3, p. 3-16, paragraph 3. The lack of established background concentrations does not mean it is technically infeasible to achieve background. Please revise the first sentence.</p>	<p>RESPONSE 6: This sentence will be revised to state that background concentrations for metals in groundwater at MCAS El Toro have not been developed. Therefore it is not possible to evaluate whether it is technically achievable to achieve background.</p>
<p>7. Section 4, p. 4-2, paragraph 1. All the alternatives should not rely on natural attenuation to resolve the concerns with groundwater quality. This approach does not provide a basis for comparison since this natural process occurs for every alternative, including the no action and institutional controls alternatives. Include one or more active groundwater remediation alternatives to address groundwater contamination.</p>	<p>RESPONSE 7: See response to comment #5.</p>
<p>8. Section 4.1.1, p. 4-23, paragraph 1. This last sentence says the liner will be HDPE but Figure 4-10 indicates that PVC will be used. HDPE is not the optimum liner due to its rigidity. Please revise.</p>	<p>RESPONSE 8: The text will be revised to read "PVC" and not "HDPE" to reflect the figure and cost estimate for this alternative.</p>
<p>9. Response 47. It appears that the geotextile overliner has not been eliminated in Figure 4-11 as stated in the comment response.</p>	<p>RESPONSE 9: The figure will be revised to eliminate the geotextile overlying the PVC as stated in the original response.</p>
<p>10. Section 5.1.4, p. 5-2. It is incorrect to state that "all alternatives except Alternative 1 reduce the toxicity and volume of contaminants in groundwater through natural precipitation." Because natural precipitation occurs continuously without interference or help from humankind, Alternative 1 also reduces the toxicity and volume of</p>	<p>RESPONSE 10: This statement will be revised to indicate that natural precipitation will occur under the No Action alternative but that the process will not be monitored.</p>

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<p>contaminants in groundwater through natural precipitation. The only real difference is that there is no way to monitor the effectiveness of this natural process in a no action alternative. Please revise the text to be consistent.</p>	
<p>11. <u>Section 5.2.3.2, p. 5-10, ARARS.</u> The performance of this native soil cap appears to be based on a single permeability test done on a sample of the material collected at 80 feet below the surface. The infiltration rate of 0.5 inches/year has much uncertainty because it is not based on near surface soil permeability. Additional information is necessary to support the conclusion that the native soil cap will perform equally as well as the prescriptive cap.</p>	<p>RESPONSE 11: A discussion of the hydraulic conductivity for the native soil suggested for the caps is presented on pages 4-7 and 4-8. An increase in one order of magnitude was used in the HELP model. Borrow source soils are currently being tested. The results will be used for the detailed design of the cap for Site 3.</p>
<p>12. <u>Section 5.2.6.1, p. 5-47, Long Term Effectiveness and Table 6-1.</u> Infiltration for the concrete/FML cap is greater than for the FML cap (Alternative 4d) alone. It seems that the concrete should help reduce infiltration rates. Please clarify or correct as necessary.</p>	<p>RESPONSE 12: The reason for the increase in infiltration with pavement is that that evaporative depth is decreased with pavement, thus allowing more water to collect beneath the pavement and eventually leading to increased infiltration rates.</p>
<p>13. <u>Section 5.2.6.1, p. 5-52, Long Term Effectiveness and Table 6-1.</u> Infiltration for the asphalt/FML cap is greater than for the FML cap (Alternative 4d) alone. It seems that the concrete should help reduce infiltration rates. Please clarify.</p>	<p>RESPONSE 13: See response to comment #12. The same rationale applies to this alternative.</p>
<p>14. <u>Section 6.4, p. 6-14, and Table 6-4.</u> Based on the fact that natural precipitation of metals occurs continuously, the reduction in toxicity also occurs for Alternatives 1 and 2. Please revise the text and table to be consistent.</p>	<p>RESPONSE 14: The statements in this section will be revised to indicate that natural precipitation will occur under Alternative 1 and 2. In addition it will be added that under Alternative 1 the process will not be monitored.</p>
<p>15. <u>Section 7, p. 7-1, 2nd bullet.</u> There is no difference between Alternative 1 and 2 with regard to groundwater remediation through natural precipitation. Alternative 1 is just as effective as the rest of the alternatives with regard to natural precipitation. Please revise.</p>	<p>RESPONSE 15: This discussion will be revised in accordance with the response to comment #14.</p>
<p>16. <u>Section 7, p. 7-1, 4th bullet.</u> The effectiveness of Alternative 3 is uncertain because of the lack of information on the permeability of</p>	<p>RESPONSE 16: See response to comment #11.</p>

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native soil. The reader is led to believe that a native soil cap should be the recommended remedy. Additional permeability data should be gathered for the soil likely to be used for the cap before a recommendation is made.	

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<p>Originator: Peter M. Janicki CIWMB</p> <p>To: Tayseer Mahmoud DTSC</p> <p>Date: 10 March 1997</p>	<p style="text-align: right;">CLEAN II Program Contract No. N68-711-92-D-4670 CTO-0076 File Code: 0214</p>
<p><u>GENERAL COMMENT</u></p> <p>Because it has been acknowledged that the postclosure land use for this site will be light industrial, Board staff will evaluate all available site investigation and feasibility study submittals in context of their relevance and compatibility with the proposed Site 3 reuse. This includes not only any already conducted or future investigation and design work but also methodology on which these activities have been based.</p>	<p><u>RESPONSE TO GENERAL COMMENT</u></p> <p>RESPONSE: Comment noted.</p>
<p><u>COMMENTS ON DRAFT FSR AND REVISED DRAFT FSR</u></p> <p><u>GENERAL COMMENT</u></p> <p>Because of fairly specific postclosure land use proposed for Site 3 (light industrial with possible warehouse structures) and potentially very demanding postclosure maintenance resulting from it, all institutional controls (site security, access to monitoring points, restrictions on on-site development, and site maintenance), should be identified, established and integrated into the landfill closure and postclosure maintenance programs. Board staff do not find acceptable the approach taken in the FS to refer the institutional controls to a negotiation process during the base transfer. Both the design and operation of institutional controls should be derived in conjunction with landfill closure.</p>	<p><u>RESPONSES TO COMMENTS ON DRAFT FSR AND REVISED DRAFT FSR</u></p> <p><u>RESPONSE TO GENERAL COMMENT</u></p> <p>RESPONSE: The institutional controls section will be expanded to include the following details:</p> <p>1) Land use restrictions have been added to protect human health and the integrity of the remedy. These include the following restrictions:</p> <ul style="list-style-type: none"> - the land may not be used for residential purposes or for day care centers - construction and excavation are prohibited without prior approval of DON and FFA signatories - groundcover may not be added or disturbed without prior approval - no irrigation is allowed without prior approval - fences and signs may not be removed without prior approval - monitoring equipment (e.g., lysimeters, monitoring wells, settlement monuments) may not be disturbed <p>2) Provisions for access by DON and the FFA signatories for purposes of conducting or overseeing monitoring and maintenance activities will be included in the deed or lease</p>

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	<p>3) Owner(s) and/or user(s) of the property will be restricted from excavations that would expose groundwater and from extracting and/or injecting groundwater</p> <p>4) DON will be required to notify the FFA signatories in the event that the property is transferred</p> <p>5) DON and/or the owner(s) and/or user(s) will be required to notify the FFA signatories if any event occur that may change the approved design of the site or if the remedy fails and endangers public health and safety or the environment</p> <p>6) A CERCLA 120(H) covenant will be included in the deed</p> <p>7) A variance/termination clause will be included to allow removal of restrictions once the FFA signatories agree that the cleanup is complete or the restriction is no longer necessary.</p> <p>In addition, the effect of institutional controls, especially on the long-term effectiveness of the remedial action, will be discussed in the detailed and comparative analysis in the FS.</p>
<p><u>SPECIFIC COMMENTS</u></p> <p>In order to reduce the size of the Board staff review letter, the original Board staff comments are not cited in this portion of the review letter. Please refer to Board staff letter of December 2, 1996, to view the original comments.</p>	<p><u>RESPONSES TO SPECIFIC COMMENTS</u></p>
<p>1. Board staff have no comment.</p>	<p>RESPONSE 1: Comment noted.</p>
<p>2. After reviewing the revised FS, it does not appear that the proposed closure alternatives have been tailored specifically for a light industrial and warehouse use. The issue of surface integrity, its maintenance, and differential settlement reducing measures</p>	<p>RESPONSE 2: The FS will be revised to include a short discussion of the compatibility of the remedial alternatives with a proposed light industrial reuses.</p> <p>Specific analyses of a subsurface drainage system and differential settlement</p>

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<p>(important in an event of heavy surface loading from truck traffic and storage, and on-site structures) have not been addressed. Also, the matter of compatibility of each of the alternatives with on-site activities and repair of final cover have not addressed.</p>	<p>will be more fully assessed in the detailed design stage.</p>
<p>3. It is unclear how the waste quantity estimate was derived. Also, it is unclear how the percentage of hazardous waste vs. Non-hazardous waste was estimated. While only partial site investigation information exists (especially limited beneath and within the waste pile), the estimated percentage of hazardous waste is 25 percent. This is not consistent with assumptions made at Site 5, where up to 50 percent of waste was assumed to be hazardous. Board staff request that the justifiable assumptions be provided for both the total and hazardous waste quantities.</p> <p>Board staff are unclear about the accuracy of a clean closure alternative cost estimate. Because this alternative may be environmentally most beneficial and least limiting to postclosure land use, it is requested that the detailed clean closure analyses be conducted. The analyses should include justification for both assumptions and construction (excavation, hauling, etc.) costs for clean closure. It is recommended that clean closure costs acquired during clean closure projects at other military facilities in California be used for comparison.</p>	<p>RESPONSE 3: The waste quantity was estimate by taking the area of the landfill in Unit 1 (11 acres) and multiplying this value by 15 feet and landfill in Unit 4 (0.5 acres) and multiplying this value by 10 feet. The depths used in this calculation were the maximum depths that landfill wastes were encountered in soil borings in these units.</p> <p>The 50% assumption of hazardous wastes in Site 5 are based on the fact that burning was reported at this site and such burning activities result in chemicals with relatively high toxicities. Site 3 was assumed to have less (up to 25%) hazardous wastes because waste disposal did not occur uniformly throughout the site. Also wastes appear to be covered with a thick (6 feet) layer of soil. Therefore, more soil than wastes is expected to be removed from this site. For both sites, these estimates are assumptions - we agree that no characterization has been conducted in the wastes because of the presumptive remedy approach employed. Therefore, the uncertainty associated with these assumptions is large.</p> <p>The clean closure for Site 3 is based on the a detailed cost estimate developed for Site 2. This detailed estimate is presented in the Site 2 draft final FS and is based on clean closure estimates and actual costs from Norton AFB and March AFB. Based on this detailed estimate, unit costs for hazardous and nonhazardous soil were developed for Site 3.</p>

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<p>4. Board staff have no comment.</p>	<p>RESPONSE 4: Comment noted.</p>
<p>5. Board staff disagrees that the annual postclosure maintenance costs should be based on a net present worth concept. Because of a large number of uncertainties associated with a landfill postclosure maintenance (in this case, further amplified by the proposed land use), discounting practice is generally discouraged in California (see attached excerpts from U.S. EPA Final Rule regarding Final Assurance Mechanism for Municipal solid Waste Facilities [40 CFR Part 258]).</p>	<p>RESPONSE 5: The Navy intends to use the cost estimates presented in the FS because these estimates are for comparative purposes only. Once a detailed design is prepared, a more detailed cost estimate will be prepared and costs for the long-term monitoring will be given a great deal of scrutiny. In addition the net present worth estimate in FS was based on dispersal of funds that would occur for each year for 30 years. Each year had to be estimated because the frequency and types of monitoring and maintenance varies on a year by year basis. Also, to account for the uncertainty in cost estimates used in the FS for comparative purposes, a 20 percent contingency for operation and maintenance was included for unforeseen conditions.</p>
<p>6. Board staff feel that at least basic soil loss calculations should be conducted at this time in order to verify the feasibility of installing a final cover instead of clean closure.</p>	<p>RESPONSE 6: Soil loss calculations will be performed at the detailed design phase.</p>
<p>7. Board staff have no comment.</p>	<p>RESPONSE 7: Comment noted.</p>
<p>8. Board staff concur.</p>	<p>RESPONSE 8: Comment noted.</p>
<p>9. Because Site 3 will be used as a light industrial and warehouse location, any compatible final cover alternative (utilizing asphalt, concrete, GCL or FML materials) and no field waste characterization or vertical extent of waste studies have been conducted, a reinforcement layer (for example, geonet) would be required.</p>	<p>RESPONSE 9: DON anticipates that remedial action at Site 3 will be completed before reuse of the site is implemented. Therefore, the Navy plans to design the cover based on information currently available, using a cover that will offer the maximum flexibility for the intended reuse. Redesign of portions of the landfill cover may be required at the time of site development. The DON will place institutional controls on the site to prevent construction without prior approval by DON and the FFA signatories. It would then be the responsibility of future land users to demonstrate that their development plans (e.g., locations of buildings, landscaping) will be protective of the CERCLA remedy in place at the site.</p>

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10. Board staff have no comment. However, should a monolithic cover be proposed, an extra time allowance should be made for Board staff to review such proposal.	RESPONSE 10: Comment noted.
11. Response noted.	RESPONSE 11: Comment noted.
12. Board staff find the response acceptable.	RESPONSE 12: Comment noted.
13. Board staff find the response acceptable.	RESPONSE 13: Comment noted.
14. Board staff find the response acceptable.	RESPONSE 14: Comment noted.
15. Board staff find the response acceptable.	RESPONSE 15: Comment noted.

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<p><u>GENERAL COMMENTS</u></p> <p>The Navy has not adequately addressed DTSC's comments regarding institutional controls and the accommodation of the Local Redevelopment Authority (LRA) reuse plan in the remedial analysis. The Site 3 FS recommends institutional controls as a component for all remedial alternatives except alternative 1 (No Action). The intent of institutional controls is to maintain the remedy so that it is protective of human health and the environment. Institutional controls are also used to assure long-term permanence of the remedy. Since institutional controls are an instrumental part of the remedy, it is imperative that the FS contains a clear description of the institutional controls for each alternative. This information is required so that the LRA, public, and regulators can fully evaluate the remedy for CERCLA compliance and compatibility with the reuse plan.</p> <p>DTSC does not agree with the revised explanation of institutional controls throughout the document. Deed restrictions should not be negotiated at the time of BRAC transfer, but discussed as early in the remedial evaluation process as possible. We acknowledge that in the CERCLA process, the specifics of institutional controls/deed restrictions may be finalized during the remedial design phase. This may include negotiations with the responsible party over who will maintain ownership of the land. However, in a BRAC closure, the military will not be the future property owner. The intent of the base closure laws is to rapidly make available closing bases for local redevelopment and job creation. Therefore, the LRA as either the transferee or the local entity created to plan the redevelopment of the base has to know the constraints of any future institutional controls. The FS, as written, fails to disclose this vital information for the reader to evaluate the protectiveness of the</p>	<p><u>RESPONSES TO GENERAL COMMENTS</u></p> <p>RESPONSE: The institutional controls section will be expanded to include the following details:</p> <ol style="list-style-type: none"> 1) Land use restrictions have been added to protect human health and the integrity of the remedy. These include the following restrictions: <ul style="list-style-type: none"> - the land may not be used for residential purposes or for day care centers - construction and excavation are prohibited without prior approval of DON and FFA signatories - groundcover may not be added or disturbed without prior approval - no irrigation is allowed without prior approval - fences and signs may not be removed without prior approval - monitoring equipment (e.g., lysimeters, monitoring wells, settlement monuments) may not be disturbed 2) Provisions for access by DON and the FFA signatories for purposes of conducting or overseeing monitoring and maintenance activities will be included in the deed or lease 3) Owner(s) and/or user(s) of the property will be restricted from excavations that would expose groundwater and from extracting and/or injecting groundwater 4) DON will be required to notify the FFA signatories in the event that the property is transferred 5) DON and/or the owner(s) and/or user(s) will be required to notify the FFA signatories if any event occur that may change the approved design of

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<p>Originator: Tayseer Mahmoud DTSC</p> <p>To: Joseph Joyce, BRAC Environmental Coordinator MCAS El Toro</p> <p>Date: 12 March 1997</p>	<p style="text-align: right;">CLEAN II Program Contract No. N68-711-92-D-4670 CTO-0076 File Code: 0214</p>
<p>alternatives, the long-term permanence of the remedy and the compatibility with the future redevelopment.</p>	<p>the site or if the remedy fails and endangers public health and safety or the environment</p> <p>6) A CERCLA 120(H) covenant will be included in the deed</p> <p>7) A variance/termination clause will be included to allow removal of restrictions once the FFA signatories agree that the cleanup is complete or the restriction is no longer necessary.</p> <p>In addition, the effect of institutional controls, especially on the long-term effectiveness of the remedial action, will be discussed in the detailed and comparative analysis in the FS.</p>
<p><u>SPECIFIC COMMENTS/NAVY'S RESPONSE TO DTSC COMMENTS</u></p> <p>1. DTSC general comment number 2 was <i>"Future Land Use: The draft Community Reuse Plan, dated August 1996, prepared by the MCAS El Toro Local Redevelopment Authority has listed the primary alternative for future redevelopment of the area where Site 3 is located as "R&D/Light Industrial/Institutional)." The FS does not include a remedial action alternative(s) meets the intended future use of Site 3."</i></p> <p>The Navy's response was <i>"A discussion of the potential reuse of Site 3 and the impact of the proposed alternatives has been added to the FS."</i></p> <p>DTSC disagrees that the FS has been modified to address the potential land use of Site 3. In December 1996, the MCAS El Toro Local Redevelopment Authority approved the reuse plan for MCAS El Toro. The reuse plan designated Site 3 as a R&D/Light Industrial/Industrial. Although the Navy was aware of the reuse plan, the draft final FS does not include or describe how any of the alternatives could coexist with the development of Site 3 for these reuse purposes. This is not consistent with DoN Environmental Policy Memorandum 95-02, which states in part, "It is DoN policy to</p>	<p><u>RESPONSES TO SPECIFIC COMMENTS/NAVY'S RESPONSE TO DTSC COMMENTS</u></p> <p>RESPONSE 1: The FS will be revised to discuss the compatibility of each alternative with the proposed light industrial scenario.</p> <p>The Navy understands that the reuse plan issued in August 1996 was approved by the Local Reuse Authority in December 1996 and that the Orange County Board of Supervisors also conditionally approved the plan in December 1996. At that time, the Board of Supervisors requested additional, detailed studies on the airport concept. At the time of the FS revision, the results of those additional studies were not available and more detailed information on reuse was not available. A second phase of reuse planning will occur at the Station. The Navy will participate in this planning to ensure that the final land use and CERCLA remedy chosen for the site are compatible.</p> <p>Given the current schedule, DON expects to complete remedial action at Site 3 before reuse is implemented. To ensure the continued effectiveness of the CERCLA remedy, DON will place institutional controls on the site in the form of lease restrictions (if the property is leased) or restrictive covenants (if the property is transferred by deed). These will restrict construction at the site without prior approval of DON and the FFA signatories and will ensure that</p>

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FOR OU-2C, SITE 3
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<p>ensure that remedies and cleanup levels . . . are consistent with approved community reuse plans.” The FS needs to clearly evaluate and discuss whether each alternative will result in a remedy compatible with industrial use.</p>	<p>any development that takes place at the site is designed to maintain the integrity of the landfill cover.</p>
<p>2. DTSC specific comment number 2 was <i>“Section 3.4.5, Institutional Controls, page 3-19: This section states that “Access controls (e.g., fencing and signs) are expected to be necessary to assure the integrity of the landfill cover subsequent to the completion of closure.” Please be advised that the draft Community Reuse Plan, dated August 1996 [Approved in December 1996], prepared by the MCAS El Toro Local Redevelopment Authority has listed the primary alternative for future redevelopment of the area where Site 3 is located as “R&D/Light Industrial/Institutional.” Please evaluate the appropriate institutional controls for the intended use.”</i></p> <p>The Navy’s response was <i>“The discussion of access controls has been revised in light of the proposed reuse of Site 3. In particular, site access controls such as fencing will be commensurate with the reuse.”</i></p> <p>The draft final FS was revised to state that “restricting site access commensurate with the planned reuse.” This statement is vague and appears to conflict with the statement that “access controls (e.g., fencing and signs) are expected to be necessary to assure the integrity of the landfill cover.” Also in Section 3.5.2.1, the text indicates that the most common type of fence to restrict access is an 8-foot-high chain link fence.” Fencing Site 3 to restrict access is inconsistent with the reuse plan. The FS needs to clarify how fencing off the landfill will be compatible with an industrial use scenario.</p> <p>The FS fails to mention that institutional controls will be required in the future to ensure that the area around the wells are kept</p>	<p>RESPONSE 2: DON expects to complete remedial action at Site 3 before reuse is implemented. A fence will be placed around the landfill to prohibit unauthorized entry and protect the integrity of the cap. Institutional controls will prevent removal of the fence without prior approval of DON and the FFA signatories. In order to obtain such approval, the owner(s) and/or user(s) of the site would need to demonstrate that adequate measures are being taken to protect the cap and associated monitoring system.</p>

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<p>unobstructed and access will be necessary to allow monitoring of landfill gas, leachate and groundwater.</p>	
<p>3. DTSC specific comment number 3 was "<u><i>Section 3.5.2.2, DEED RESTRICTIONS, page 3-24: The comment provided above (comment number 2) also applies here.</i></u>"</p> <p>The Navy's response was "<i>The Department of Navy on deed restrictions requires that these types of restrictions to be negotiated at the time of BRAC transfer. Until that time the Base Master Plan will restrict land use and access.</i>"</p> <p>The draft final FS fails to clearly describe the land use restrictions proposed for each alternative. DTSC disagrees with the statement that "Per DON policy, restrictions on land and groundwater use can only be negotiated in a BRAC transfer." This statement implies that institutional controls can be modified after the Record of Decision. Institutional controls/ land use restrictions are proposed as part of the remedy. If the restrictions are not described in the FS, what assurances does the public and regulators have that the "negotiated" restrictions will be protective of human health and the environment? The FS also does not state who will be negotiating the restrictions.</p> <p>The statement also conflicts with DoN Environmental Policy Memorandum 95-02 which states that "If DoN proposes a cleanup which depends on land use restrictions to assure protection of human health and the environment, such restrictions and any appropriate institutional controls to establish and maintain the restrictions shall be discussed in the Feasibility Study, Proposed Plan, and the Record of Decision." The draft final FS does not contain sufficient information to evaluate what constraints the deed restrictions would have on the future development.</p>	<p>RESPONSE 3: Institutional controls for keeping obstructions clear of the wells and to allow access for monitoring have been added (please see response to the general comment on page 1).</p>

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<p><u>OTHER COMMENTS</u></p> <p>4. We could not find, in the tables or sections of Appendix A, responses to DTSC 's submitted ARARS, Orange County Health Care Agency, and Orange County Fire Department ARARS. DTSC's submitted ARARS include Title 22, CCR 66264.14(a), 66264.19(a, c), 66264.51, 66264.52(b), 66264.97 to 100, and 66264.117(c, d, f).</p>	<p><u>RESPONSES TO OTHER COMMENTS</u></p> <p>RESPONSE 1: Under CERCLA, local laws in and of themselves are not considered ARARs. In certain instances, requirements developed by a local agency that are both adopted and legally enforceable by the state or where local requirements become part of a legally enforceable state "plan" may be considered potential ARARs. The local ARARs submitted by DTSC do not fit within these categories and were thus not addressed as potential ARARs. However, the potential Title 22 ARARs submitted by DTSC will be included in the ARARs evaluation.</p>
<p>5. <u>Section A3.1, location Specific ARARS, page A3-1</u> - Having a section similar to A3-1 on page A3-1 that lists the citations examined would be good for the other sections such as Chemical and Action Specific ARARS.</p>	<p>RESPONSE 2: The Navy will consider this comment in preparation of future ARARs evaluations.</p>
<p>6. <u>APPENDIX A, Action-Specific ARARS</u> - The draft final FS has deleted the discussion of Land Use Restrictions from Appendix A (formerly Sections A4.1, A4.1.1, A4.1.2, A4.5 and A4.5.1) without providing the rationale. Institutional controls/deed restrictions will be requirements of the remedy if contaminants will be left in place after property transfer. Since the FS has proposed institutional controls as part of the remedy, land use restrictions should be discussed in this section.</p>	<p>RESPONSE 3: A section discussing institutional controls has been added back to Appendix A.</p>
<p>7. <u>Table A4-1, page A4-5</u> - Please list the appropriate sections listed under 66264.111(c) that are relevant ARARS. Some sections listed in the table may not be appropriate.</p>	<p>RESPONSE 4: Comment noted. Specific subsections from 22 CCR 66264.111 that are considered relevant and appropriate will be added to the citation in Table A4-1.</p>
<p>8. <u>Section A.4.2.2.1, page A4-53</u> - Convert the sentence "... commenced closure r after the effective date ..." to read better.</p>	<p>RESPONSE 8: This sentence will be rewritten to read "landfill closure did not commence until after the effective date of the requirements".</p>

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<p><u>GENERAL COMMENT</u></p> <p>Because there is a strong consent (supported by the reuse plan developed for this site) that the postclosure land use for this site will be an irrigated golf course, Board staff evaluated all available site investigation and feasibility study submittals in context of their relevance and compatibility with the proposed Site 5 reuse. This includes not only any already conducted or future investigation and design work but also methodology on which these activities have been based. As a result of Board staff review, it appears that the final cover alternative employing a flexible membrane liner (FML) would provide the most stringent environmental protection and maximize Site 5 reuse potential. The superiority of the FML was also acknowledged by the Department of Navy in their responses to Board staff comments. However, the project proponent may consider other final cover alternatives as long as it can be demonstrated that level of environmental protection they provide would be adequate to support an irrigated golf course (in the case of monolithic cover, a full compliance with the requirements of Title 14, California Code of Regulations (14 CCR) Section 17773 (b) would be required).</p>	<p><u>RESPONSE TO GENERAL COMMENT</u></p> <p>RESPONSE: The Navy agrees that FML (and GCL) offers the most stringent protection at Site 5 based on the irrigated golf course scenario. However, the monolithic cap is as effective as the Title 23 cap under the non-irrigated scenario. The preferred remedy may consist of a monolithic cover supplemented by institutional controls restricting irrigation of the cover.</p>
<p><u>RESPONSE TO REUSE ISSUES</u></p> <p>The text using italic font indicates the original language of Board staff letter of October 25, 1996.</p> <p>1. <i>“Comprehensive landfill extent delineation survey for both the vertical and lateral limits of the waste fill.”</i></p> <p>Although the response states that no vertical extent of the waste investigation had been conducted, as per agreement in the Phase II RI (Remedial Investigation)/FS Work Plan, it should be noted that this approach was acceptable in the context of a non-irrigated open space postclosure land use for Site 5. As it was stated in Board staff</p>	<p><u>RESPONSES TO REUSE ISSUES</u></p> <p>RESPONSE 1: DON anticipates that remedial action at Site 5 will be completed before reuse of the site is implemented. Therefore, the Navy plans to design the cover based on information currently available, using a cover that will offer the maximum flexibility for potential site reuse. Redesign of portions of the landfill cover may be required at the time of site development. The DON will place institutional controls on the site to prevent construction without prior approval by DON and the FFA signatories. It would then be the responsibility of future land users to demonstrate that their development plans</p>

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<p>previous correspondence, should the postclosure land use be changed to a more complex one, involving irrigation (golf course), additional site investigation and/or design considerations may be required.</p> <p>Because the golf course may require additional soil to be deposited over the final cover, knowledge of vertical configuration of the landfill (along with waste characterization) could be very useful in estimating the potential for differential settlement. Differential settlement is an important factor which could affect performance of the subsurface drainage system beneath the golf course. Since the golf course will be irrigated on a regular basis (according to the FS, almost 31 inches per year), the issue of adequate subsurface drainage should be addressed, if not through accurate differential settlement analyses, then through installing a reinforcement beneath the final cover (geonet, etc.) to eliminate potential low spots in the drainage system.</p> <p>It should be pointed out that the capping of the landfill (along with all necessary institutional controls and monitoring systems) is not required solely to limit water infiltration into the landfill but also to prevent potential landfill gas emissions and provide environmental protection to any proposed developments on the land surrounding the landfill.</p>	<p>(e.g., locations of buildings, landscaping) will be protective of the CERCLA remedy in place at the site.</p> <p>Comment noted.</p>
<p>2. <i>“Waste characterization study including types of waste, age of waste, moisture content and saturation capacity.”</i></p> <p>The premise behind conducting a waste characterization study and</p>	<p>RESPONSE 2: The Navy agrees that moisture trapped in the wastes can promote decomposition and gas generation. To monitor gas generation, perimeter gas probes will be constructed and sampled periodically as</p>

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<p>establishing waste moisture content is the evaluation of landfill gas generation potential <u>after</u> the site has been capped. The age of the waste may not necessarily be a good indicator of waste decomposition. Because the landfill does not have an impermeable barrier in place, there is a possibility that waste decomposition did not take place uniformly throughout the landfill, especially that the on-site precipitation is relatively low (less than 14 inches per year).</p> <p>However, under confinement of an (relatively) impermeable final cover, any moisture trapped in the waste (existing or supplied by leaks in the low permeability cover) will be retained in waste and thus potentially promote waste decomposition. Since both the waste composition and its state of decomposition are unknown, there may be a potential of developing future increased landfill gas production areas within the landfill. As a result, special design considerations such as a moisture detection system and irrigation system leak detection may be required as a part of the golf course design.</p>	<p>discussed in the proposed monitoring plan.</p> <p>If an irrigation system is placed over the landfill, the golf course design may include an irrigation leak detection system and moisture detection system.</p>
<p>3. <i>“Comprehensive landfill gas survey with samples collected from the fill area at several representative depths. The laboratory analyses would have to include both fixed gases and organic compounds analyses.”</i></p> <p>As it was stated in the response to this comment, the landfill gas investigation was focused on analyzing soil gas samples, mainly close to the surface. Since no representative samples were collected from within the waste fill (as recommended in past correspondence), no conclusion can be drawn about landfill gas potential migration after installation of final cover. The issue of off-site gas migration requires a serious consideration based on the proposed land use on site (golf course) and surrounding land (housing developments are very likely). Although methane was detected in low concentrations, this situation may change after capping the site. Also, methane may serve as a carrier for other constituents which, even in very low concentrations,</p>	<p>RESPONSE 3: Comment noted.</p>

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<p>may pose a public health threat, should development around the landfill ever take place.</p> <p>Although Board staff concur that for the time being, methane off-site migration monitoring would be sufficient at this site, monitoring results should be closely watched, and if necessary, corrective actions be taken immediately. Since corrective actions may involve installing and operating a gas collection system, proposed final cover design should be evaluated for the purpose of compatibility with a gas collection and ease of installation of such system.</p>	
<p>4. <i>“Landfill gas generation potential study based on gas monitoring results collected over a period of one year from perimeter probes constructed in accordance with 14 CCR 17783.5.”</i></p> <p>Board staff find the response to this comment acceptable. As mentioned above, should results of the monitoring indicate a gas migration problem, a corrective action would be required.</p>	<p>RESPONSE 4: Comment noted.</p>
<p>5. <i>“Modified HELP model infiltration analyses based on the proposed irrigation and approved final cover design.”</i></p> <p>The response to this comment (and revised FS) state that the irrigation rate of 30.6 inches per year was used to conduct HELP analyses. However, the irrigation rate was supplied by the superintendent of the golf course at North Island Naval Air Station. An explanation why the irrigation rate from the golf course at El Toro was not used instead should be provided.</p> <p>Based on the results of HELP analyses for monolithic cover, it appears that this type of cover is unsuitable for Site 5 (an irrigated golf course). However, should the project proponent still consider a monolithic native soil cover as a viable option, such proposal must be submitted in accordance with 14 CCR, Section 17773 (b) as a part of</p>	<p>RESPONSE 5: The irrigation data for North Island Naval Air Station has been published in a RCRA Facilities Inspection for the golf course/landfill at this base and was readily available. North Island NAS and MCAS El Toro are both located in coastal or near coastal areas, and irrigation applications are expected to be similar. No data was readily available from the El Toro golf course. In addition, the rainfall total for San Diego (North Island) is generally less than MCAS El Toro or Los Angeles by 1 to 2 inches per year. Therefore, the golf course at El Toro should, theoretically, receive less irrigation.</p> <p>The detailed design for Site 5 will considered plant types and irrigation rates appropriate to those plants.</p> <p>The FS includes a discussion of whether the various alternatives are compatible with the proposed golf course reuse. A monolithic cover is not considered appropriate under the irrigated golf course scenario. However, a</p>

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<p>the FS submittal.</p> <p><i>“In addition to the site investigation requirements and based on its results, modifications to the design of the final cover may be required as well. The modifications may include the following elements:”</i></p>	<p>monolithic cover is considered viable if institutional controls are implemented restricting irrigation. At the current stage of reuse planning, it is not clear that the final reuse of this parcel will be golf and, even if the reuse is golf, whether Site 5 would be part of the irrigated portion of the course (e.g., this area may be used for parking or structures associated with the golf course).</p> <p>It is the Navy’s intent to select the preferred alternative in the Proposed Plan, not in the FS. Therefore, a proposal in accordance with 14 CCR Section 17773 is not appropriate at this time.</p>
<p>6. <i>“Modified final cover design which would include a synthetic impermeable membrane along with a subsurface drainage layer connected to the runoff collection system.”</i></p> <p>Board staff concur with the response to this comment.</p>	<p>RESPONSE 6: Comment noted.</p>
<p>7. <i>“In addition to the final cover design modification or in lieu of, a subsurface moisture sensing system synchronized with the onsite irrigation system may be required.”</i></p> <p>Board staff concur with the response to this comment.</p>	<p>RESPONSE 7: Comment noted.</p>
<p>8. <i>“Landfill gas monitoring and collection systems and audible gas detection devices (for onsite enclosed structures) may be required, based on the results of the landfill gas survey.”</i></p> <p>As it was stated previously, a comprehensive landfill gas survey involving sampling from within the waste pile would be necessary to conclusively determine landfill gas generation potential at the site. Nevertheless, Board staff concur with the proposed quarterly landfill gas inspection schedule as a protective measure after the closure of the landfill.</p> <p>However, the assurance, “onsite enclosed structures are not considered as part of the irrigated golf course reuse but this will be</p>	<p>RESPONSE 8: The institutional controls section will be expanded to include the following details:</p> <p>1) Land use restrictions have been added to protect human health and the integrity of the remedy. These include the following restrictions:</p> <ul style="list-style-type: none"> - the land may not be used for residential purposes or for day care centers - construction and excavation are prohibited without prior approval of DON and FFA signatories - groundcover may not be added or disturbed without prior approval - no irrigation is allowed without prior approval

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<p>negotiated at the time of BRAC transfer”, is not acceptable. Depending on the complexity of the on-site structures, should any be proposed at a later date, certain modifications to the proposed final cover design and/or monitoring and control systems may be requested by the Board Closure and Remediation Branch staff under a change of postclosure land use guidelines. Thus, in order to control land use at Site 5, institutional controls (development restrictions) must be clearly identified and in place upon landfill closure. Such restrictions should not be negotiated later but be in place as an integral part of closure design.</p>	<ul style="list-style-type: none"> - fences and signs may not be removed without prior approval - monitoring equipment (e.g., lysimeters, monitoring wells, settlement monuments) may not be disturbed <ol style="list-style-type: none"> 2) Provisions for access by DON and the FFA signatories for purposes of conducting or overseeing monitoring and maintenance activities will be included in the deed or lease 3) Owner(s) and/or user(s) of the property will be restricted from excavations that would expose groundwater and from extracting and/or injecting groundwater 4) DON will be required to notify the FFA signatories in the event that the property is transferred 5) DON and/or the owner(s) and/or user(s) will be required to notify the FFA signatories if any event occur that may change the approved design of the site or if the remedy fails and endangers public health and safety or the environment 6) A CERCLA 120(H) covenant will be included in the deed 7) A variance/termination clause will be included to allow removal of restrictions once the FFA signatories agree that the cleanup is complete or the restriction is no longer necessary. <p>In addition, the effect of institutional controls, especially on the long-term effectiveness of the remedial action, will be discussed in the detailed and comparative analysis in the FS.</p>
<p>9. “Special design consideration should be given to allow ease of all monitoring and control systems related to the landfill postclosure maintenance.”</p>	<p>RESPONSE 9: Please see the proposed institutional controls as presented in response to comment #8.</p>

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<p>Access to monitoring and control systems should be included as an integral part of landfill closure and should not be negotiated during the transfer process.</p>	
<p><i>“As an alternative to constructing actual irrigated golf course over the fill, the project proponent may consider designating the landfill for golf course related functions such as parking lot, restrooms, etc. By eliminating site irrigation, the site investigation and closure requirements may be then reduced.”</i></p> <p>Board staff concur with the response to this statement, however, should any enclosed structures be proposed, additional issues and concerns may be identified then.</p>	<p>Please see the response to comment #8 on proposed institutional controls.</p>
<p><i>“It should be pointed out that the extent of site investigation may have a direct effect on the final cover and other closure related requirements for this project. Should the site investigation supply sufficient information about the landfill’s low environmental threat potential, the extent of the closure and, subsequently, construction and postclosure maintenance costs may be greatly reduced. Conversely, should the proposed design address all potential public health and safety and environmental impacts (worst case scenario), the necessity for a comprehensive site investigation will be reduced.”</i></p> <p>Based on a limited site investigation conducted at Site 5, Board staff cannot agree with the statement that, “the existing environmental threats from Site 5 are minimal”. It would be more appropriate to conclude that the conducted site investigation (acceptable for an open and non-irrigated space postclosure land use) did not identify any serious environmental threats.</p>	<p>The response was meant to refer to the risks to human health and the environment at Site 5 which, according to the risk assessment, are minimal.</p>

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<p><u>COMMENTS ON DRAFT FSR AND REVISED DRAFT FRS</u></p> <p><u>GENERAL COMMENT</u></p> <p>Because of a fairly specific postclosure land use proposed for Site 5 (irrigated golf course) and potentially very demanding postclosure maintenance resulting from it, all institutional controls (site security, access to monitoring points, restrictions on on-site development, and site maintenance), should be identified, established and integrated into the landfill closure and postclosure maintenance programs. Board staff do not find acceptable the approach taken in the FS to refer the institutional controls to a negotiation process during the base transfer. Both the design and operation of institutional controls should be derived in conjunction with landfill closure.</p>	<p><u>RESPONSES TO COMMENTS ON DRAFT FSR AND REVISED DRAFT FRS</u></p> <p><u>RESPONSE TO GENERAL COMMENT</u></p> <p>Please see the response to comment #8 on the Draft Final FS. This response presents several proposed institutional controls and how these controls are implemented.</p>
<p><u>SPECIFIC COMMENTS</u></p> <p>In order to reduce the size of the Board staff review letter, the original Board staff comments are not cited in this portion of the review letter. Please refer to Board staff letter of December 2, 1996, to view the original comments.</p>	<p><u>RESPONSE TO SPECIFIC COMMENTS</u></p>
<p>1. Board staff have no comment.</p>	<p>RESPONSE 1: Comment noted.</p>
<p>2. After reviewing the revised FS, it does not appear that the proposed closure alternatives have been tailored specifically for an irrigated golf course. The issue of subsurface drainage collection system, its maintenance, and differential settlement reducing measures (crucial for a functional subsurface drainage collection system) have not been addressed. Also, the matter of compatibility of each of the alternatives with an on-site irrigation system, its maintenance and leak detection and repair have not been addressed (along with a potential for a point source leak event).</p>	<p>RESPONSE 2: The FS will be revised to include a short discussion of the compatibility of the remedial alternatives with a proposed irrigated golf course reuse or existing open space uses.</p> <p>Specific analyses of a subsurface drainage system and differential settlement will be more fully assessed in the detailed design stage.</p>

RESPONSE TO COMMENTS
REVISED DRAFT PHASE II FEASIBILITY STUDY REPORT AND
RELATED OTHER DOCUMENTS FOR OPERABLE UNIT 2C - SITE 5
MCAS EL TORO, CALIFORNIA

<p>Originator: Peter M. Janicki CIWMB</p> <p>To: Tayseer Mahmoud DTSC</p> <p>Date: 10 March 1997</p>	<p style="text-align: right;">CLEAN II Program Contract No. N68-711-92-D-4670 CTO-0076 File Code: 0214</p>
<p>3. It is unclear how the waste quantity estimate was derived. Also, it is unclear how the percentage of hazardous waste vs. Non-hazardous waste was estimated. While only partial site investigation information exists (especially limited beneath and within the waste pile), the estimated percentage of hazardous waste was as high as 50 percent. This is not consistent with assumptions made at Site 3, where only 25 percent of waste was assumed to be hazardous. Board staff request that the justifiable assumptions for both the total and hazardous waste quantities be provided.</p> <p>Board staff are unclear about the accuracy of a clean closure alternative cost estimate. Because this alternative may be environmentally most beneficial and least limiting to postclosure land use, it is requested that the detailed clean closure analyses be conducted. The analyses should include justification for both assumptions and construction (excavation, hauling, etc.) costs for clean closure. It is recommended that clean closure costs acquired during clean closure projects at other military facilities in California be used for comparison.</p>	<p>RESPONSE 3: The waste quantity was estimate by taking the area of the landfill trench and multiplying this value by 15 feet. The trench was described in interviews as being so deep that tractor trailer could not be seen in the trench at ground surface. This implies that the depth was on the order of 15 feet deep, possibly greater. However, if the trench was much deeper than 15 feet, trench walls are likely to be unstable and collapse because the soils are granular.</p> <p>The 50% assumption of hazardous wastes in Site 5 are based on the fact that burning was reported at this site and such burning activities result in chemicals with relatively high toxicities. Site 3 was assumed to have less (up to 25%) hazardous wastes because waste disposal did not occur uniformly throughout the site. Also wastes appear to be covers with a thick (6 feet) layer of soil. Therefore, more soil than wastes is expected to be removed from this site. For both sites, these estimates are assumptions - we agree that no characterization has been conducted in the wastes and the uncertainty associated with these assumptions is large.</p> <p>The clean closure for Site 5 is based on the a detailed cost estimate developed for Site 2. This detailed estimate is presented in the Site 2 draft final FS and is based on clean closure estimates and actual costs from Norton AFB and March AFB. Based on this detailed estimate, unit costs for hazardous and nonhazardous soil were developed for Site 5.</p>
<p>4. Board staff have no comment.</p>	<p>RESPONSE 4: Comment noted.</p>
<p>5. Board staff disagrees that the annual postclosure maintenance costs should be based on a net present worth concept. Because of a large number of uncertainties associated with a landfill postclosure maintenance (in this case, further amplified by the proposed land use), discounting practice is generally discouraged in California (see attached excerpts from U.S. EPA Final Rule regarding Assurance Mechanism for Municipal Solid Waste Facilities [40 CFR part 258]).</p>	<p>RESPONSE 5: The Navy intends to use the cost estimates presented in the FS because these estimates are for comparative purposes only. Once a detailed design is prepared, a more detailed cost estimate will be prepared and costs for the long-term monitoring will be given a great deal of scrutiny. In addition the net present worth estimate in FS was based on dispersal of funds that would occur for each year for 30 years. Each year had to be estimated because the frequency and types of monitoring and maintenance varies on a year by year basis. Also, to account for the uncertainty in cost estimates, a 20 percent</p>

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	<p>contingency for operation and maintenance was included for unforeseen conditions.</p>
<p>6. Board staff feel that at least basic soil loss calculations should be conducted at this time in order to verify the feasibility of installing a final cover instead of clean closure.</p>	<p>RESPONSE 6: The detailed design may be different than the conceptual design presented in the FS. Therefore, the advantage of preparing a soil loss analysis is not likely to indicate that clean closure is more feasible than a cap.</p>
<p>7. Board staff have no comment.</p>	<p>RESPONSE 7: Comment noted.</p>
<p>8. Board staff concur.</p>	<p>RESPONSE 8: Comment noted.</p>
<p>9. Because Site 5 will be used as an irrigated golf course, use of a subsurface drainage layer is very likely. Thus, the appropriate alternatives (along with cost estimates) should account for this element of the final cover. Furthermore, since no field waste characterization or vertical extent of waste studies have been conducted, a reinforcement layer (for example, geonet) would be required as well.</p>	<p>RESPONSE 9: The Navy agrees that a subsurface drainage is needed under an irrigated golf course scenario. However, the Title 23 prescriptive cover was used in the FS as the presumptive remedy cover for a municipal landfill in California. This Title 23 cover does not include a drainage layer in the regulations.</p> <p>In addition, the performance of the various alternatives for infiltration was assessed with the HELP model. The Help model is a one dimensional model which is not capable of assessing a drainage layer. Rather it considers a drainage layer as layer with very high hydraulic conductivity and assumes that the infiltration then occurs downward to the next layer. So by including a drainage layer in the conceptual design may actually lead to an increase in infiltration based on this simple model (a situation that is counterintuitive).</p> <p>The Navy will consider a drainage layer in the detailed design of the preferred cover if the preferred alternative has to accommodate irrigation.</p>
<p>10. Board staff have no comment. However, should a monolithic cover be proposed, an extra time allowance should be made for Board staff to review such proposal.</p>	<p>RESPONSE 10: Comment noted.</p>
<p>11. Response noted.</p>	<p>RESPONSE 11: Comment noted.</p>

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12. Board staff find the response acceptable.	RESPONSE 12: Comment noted.
13. Board staff find the response acceptable.	RESPONSE 13: Comment noted.
14. Board staff find the response acceptable.	RESPONSE 14: Comment noted.
15. Board staff find the response acceptable.	RESPONSE 15: Comment noted.

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<p>Originator: Tayseer Mahmoud DTSC</p> <p>To: Joseph Joyce, BRAC Environmental Coordinator MCAS El Toro</p> <p>Date: 12 March 1997</p>	<p style="text-align: right;">CLEAN II Program Contract No. N68-711-92-D-4670 CTO-0076 File Code: 0214</p>
<p><u>GENERAL COMMENTS</u></p> <p>The Navy has not adequately addressed DTSC's comments regarding institutional controls and the accommodation of the Local Redevelopment Authority (LRA) reuse plan in the remedial analysis. The Site 5 FS recommends institutional controls as a component for all remedial alternatives except alternative 1 (No Action). The intent of institutional controls is to maintain the remedy so that it is protective of human health and the environment. Institutional controls are also used to assure long-term permanence of the remedy. Since institutional controls are an instrumental part of the remedy, it is imperative that the FS contains a clear description of the institutional controls for each alternative. This information is required so that the LRA, public, and regulators can fully evaluate the remedy for CERCLA compliance and compatibility with the reuse plan.</p> <p>DTSC does not agree with the revised explanation of institutional controls throughout the document. Deed restrictions should not be negotiated at the time of BRAC transfer, but discussed as early in the remedial evaluation process as possible.</p> <p>We acknowledge that in the CERCLA process, the specifics of institutional controls/deed restrictions may be finalized during the remedial design phase. This may include negotiations with the responsible party over who will maintain ownership of the land. However, in a BRAC closure, the military will not be the future property owner. The intent of the base closure laws is to rapidly make available closing bases for local redevelopment and job creation. Therefore, the LRA as either the transferee or the local entity created to plan the redevelopment of the base has to know the constraints of any future institutional controls. The FS, as</p>	<p><u>RESPONSES TO GENERAL COMMENTS</u></p> <p>RESPONSE: The institutional controls section will be expanded to include the following details:</p> <p>1) Land use restrictions have been added to protect human health and the integrity of the remedy. These include the following restrictions:</p> <ul style="list-style-type: none"> - the land may not be used for residential purposes or for day care centers - construction and excavation are prohibited without prior approval of DON and FFA signatories - groundcover may not be added or disturbed without prior approval - no irrigation is allowed without prior approval - fences and signs may not be removed without prior approval - monitoring equipment (e.g., lysimeters, monitoring wells, settlement monuments) may not be disturbed <p>2) Provisions for access by DON and the FFA signatories for purposes of conducting or overseeing monitoring and maintenance activities will be included in the deed or lease</p> <p>3) Owner(s) and/or user(s) of the property will be restricted from excavations that would expose groundwater and from extracting and/or injecting groundwater</p> <p>4) DON will be required to notify the FFA signatories in the event that the property is transferred</p> <p>5) DON and/or the owner(s) and/or user(s) will be required to notify the FFA signatories if any event occur that may change the approved design of the site or if the remedy fails and endangers public health and safety or the</p>

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<p>written, fails to disclose this vital information for the reader to evaluate the protectiveness of the alternatives, the long-term permanence of the remedy and the compatibility with the future redevelopment.</p>	<p>environment</p> <p>6) A CERCLA 120(H) covenant will be included in the deed</p> <p>7) A variance/termination clause will be included to allow removal of restrictions once the FFA signatories agree that the cleanup is complete or the restriction is no longer necessary.</p> <p>In addition, the effect of institutional controls, especially on the long-term effectiveness of the remedial action, will be discussed in the detailed and comparative analysis in the FS.</p>
<p><u>SPECIFIC COMMENTS/ NAVY'S RESPONSE TO DTSC COMMENTS:</u></p> <p>1. DTSC general comment number 2 was <i>"Future Land Use: The draft Community Reuse Plan, dated August 1996, prepared by the MCAS El Toro Local Redevelopment Authority has listed the primary alternative for future redevelopment of the area where Site 5 is located as "Recreation (golf)." The FS does not include a remedial action alternative for a recreation/golf course proposal."</i></p> <p>The Navy's response was <i>"The FS has been modified to address the potential recreational use of Site 5."</i></p> <p>DTSC disagrees that the FS has been modified to address the potential land use of Site 5. In December 1996, the MCAS El Toro Local Redevelopment Authority approved the reuse plan for MCAS El Toro. The reuse plan designated Site 5 as a recreational area, potentially for the expansion of the existing golf course on base. Although the Navy was aware of the reuse plan, the draft final FS does not include or describe how any of the alternatives could coexist with the development of Site 5 as a recreational area/golf course. This is not consistent with DoN Environmental Policy Memorandum</p>	<p><u>RESPONSES TO SPECIFIC COMMENTS</u></p> <p>RESPONSE 1: The FS will be revised to discuss the compatibility of each alternative with the proposed recreational (golf course) scenario.</p> <p>The Navy understands that the reuse issued in August 1996 was approved by the Local Reuse Authority in December 1996 and that the Orange County Board of Supervisors also conditionally approved the plan in December 1996. However, the Board of Supervisors have requested additional, detailed studies on the airport concept. At the time of the FS revision, the results of those additional studies were not available and more detailed information on reuse was not available. A second phase of reuse planning will occur at the Station. The Navy will participate in this planning to ensure that the final land use and CERCLA remedy chosen for the site are compatible.</p> <p>Given the current schedule, DON expects to complete remedial action at Site 5 before reuse is implemented. To ensure the continued effectiveness of the CERCLA remedy, DON will place institutional controls on the site in the form of lease restrictions (if the property is leased) or restrictive covenants (if the property is transferred by deed). These will restrict construction at the site without prior approval of DON and the FFA signatories and will ensure that</p>

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<p>95-02, which states in part, "It is DoN policy to ensure that remedies and cleanup levels . . . are consistent with approved community reuse plans." The FS needs to clearly evaluate and discuss whether each alternative will result in a remedy compatible with a golf course or recreational use. Appendix D, Section D2.2 does state that sensitivity runs that account for the effects of irrigation for a golf course scenario were conducted, but the discussion of the alternatives in Section 3 does not mention the compatibility of the alternatives with golf course type vegetation and irrigation use.</p>	<p>any development that takes place at the site is designed to maintain the integrity of the landfill cover.</p>
<p>2. DTSC specific comment number 4 was "<u>Section 3.4.5, Institutional Controls, page 3-19</u>: This section states that "Access controls (e.g., fencing and signs) are expected to be necessary to assure the integrity of the landfill cover subsequent to the completion of closure." Please be advised that the draft Community Reuse Plan, dated August 1996 [Approved in December 1996], prepared by the MCAS El Toro Local Redevelopment Authority has listed the primary alternative for future redevelopment of the area where Site 5 is located as "Recreation (golf)." Please evaluate the appropriate institutional controls for recreation/golf reuse scenario and the impact on the landfill cover."</p> <p>The Navy's response was "Under the golf course scenario, site security will be commensurate with this activity and unauthorized access to monitoring wells will be controlled."</p> <p>The draft final FS was revised to state that "security commensurate with recreational (golf) reuse will be provided." This statement is vague and appears to conflict with the statement that "access controls (e.g., fencing and signs) are expected to be necessary to assure the integrity of the landfill cover." Also in Appendix C, Section C5.5, the text indicates that the site will be surrounded by a</p>	<p>RESPONSE 2: DON expects to complete remedial action at Site 5 before reuse is implemented. A fence will be placed around the landfill to prohibit unauthorized entry and protect the integrity of the cap. Institutional controls will prevent removal of the fence without prior approval of DON and the FFA signatories. In order to obtain such approval, the owner(s) and/or user(s) of the site would need to demonstrate that adequate measures are being taken to protect the cap and associated monitoring system.</p>

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<p>fence containing one gate. Fencing Site 5 to restrict access is inconsistent with the reuse plan. The FS needs to clarify how fencing off the landfill will be compatible with a recreational/golf course scenario.</p> <p>The FS mentioned that monitoring wells will be locked and maintained to restrict unauthorized use. The FS however failed to mention that institutional controls will be required in the future to ensure that the area around the wells are kept unobstructed and access will be necessary to allow monitoring of landfill gas, leachate and groundwater.</p>	
<p>3. DTSC specific comment number 5 was <u>“Section 3.5.2.2, DEED RESTRICTIONS, page 3-24: The comment provided above (comment number 4) also applies here.”</u></p> <p>The Navy’s response was <i>“The Department of Navy on deed restrictions requires that these types of restrictions to be negotiated at the time of BRAC transfer. Until that time the Base Master Plan will restrict land use and access.”</i></p> <p>The draft final FS fails to clearly describe the land use restrictions proposed for each alternative. DTSC disagrees with the statement that “Per DON policy, restrictions on land and groundwater use can only be negotiated in a BRAC transfer.” This statement implies that institutional controls can be modified after the Record of Decision. Institutional controls/ land use restrictions are proposed as part of the remedy. If the restrictions are not described in the FS, what assurances does the public and regulators have that the “negotiated” restrictions will be protective of human health and the environment? The FS also does not state who will be negotiating the restrictions.</p> <p>The statement also conflicts with DoN Environmental Policy Memorandum 95-02 which states that “If DoN proposes a cleanup</p>	<p>RESPONSE 3: Institutional controls for keeping obstructions clear of the wells and allowing access for monitoring have been added (please see response to the general comment on page 1).</p>

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<p>which depends on land use restrictions to assure protection of human health and the environment, such restrictions and any appropriate institutional controls to establish and maintain the restrictions shall be discussed in the Feasibility Study, Proposed Plan, and the Record of Decision.” The draft final FS does not contain sufficient information to evaluate what constraints the deed restrictions would have on the future development.</p>	
<p><u>OTHER COMMENTS</u></p> <p>4. We could not find, in the tables or sections of Appendix A, responses to DTSC ‘s submitted ARARS, Orange County Health Care Agency, and Orange County Fire Department ARARS. DTSC’s submitted ARARS include Title 22, CCR 66264.14(a), 66264.19(a, c), 66264.51, 66264.52(b), 66264.97 to 100, and 66264.117(c, d, f).</p>	<p><u>RESPONSES TO OTHER COMMENTS</u></p> <p>RESPONSE 1: Under CERCLA, local laws in and of themselves are not considered ARARs. In certain instances, requirements developed by a local agency that are both adopted and legally enforceable by the state or where local requirements become part of a legally enforceable state “plan” may be considered potential ARARs. The local ARARs submitted by DTSC do not appear to fit within these categories and were thus not addressed as potential ARARs. The potential Title 22 ARARs submitted by DTSC will be included in the ARARs evaluation.</p>
<p>5. <u>Section A3.1, location Specific ARARS, page A3-1</u> - Having a section similar to A3-1 on page A3-1 that lists the citations examined would be good for the other sections such as Chemical and Action Specific ARARS.</p>	<p>RESPONSE 2: The Navy will consider this comment in preparation of future ARARs evaluations.</p>
<p>6. <u>APPENDIX A, Action-Specific ARARS</u> - The draft final FS has deleted the discussion of Land Use Restrictions from Appendix A (formerly Sections A4.1, A4.1.1, A4.1.2, A4.5 and A4.5.1) without providing the rationale. Institutional controls/deed restrictions will be requirements of the remedy if contaminants will be left in place after property transfer. Since the FS has proposed institutional controls as part of the remedy, land use restrictions should be discussed in this section.</p>	<p>RESPONSE 3: A section discussing institutional controls has been added back to Appendix A.</p>

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<p>7. Table A4-1, page A4-5 - Please list the appropriate sections listed under 66264.111(c) that are relevant ARARS. Some sections listed in the table may not be appropriate.</p>	<p>RESPONSE 4: Comment noted. Specific subsections from 22 CCR 66264.111 that are considered relevant and appropriate will be added to the citation in Table A4-1.</p>
<p>8. Section A.4.2.2.1, page A4-53 - Convert the sentence “. . . commenced closure r after the effective date . . . ” to read better.</p>	<p>RESPONSE 8: This sentence will be rewritten to read “landfill closure did not commence until after the effective date of the requirements”.</p>
<p>9. Appendix D, Table D-1, page D-2 - Table D-1 shows the estimated monthly irrigation under a golf course reuse scenario. However, the data shown is from water usage at North Island Naval Air Station. Wouldn't the water usage at the existing golf course at MCAS El Toro be a better example to estimate irrigation? Is there a significant different in the water usage between the two golf courses?</p>	<p>RESPONSE 9: Golf course irrigation in southern California is expected to occur at about the same rate on most coastal and near coastal courses. The North Island data was readily available and was used as the basis of HELP modeling performed for the Draft Final RI/RFI report for Site 5, Garbage Disposal Area, at NAS North Island; the MCAS El Toro irrigation data was not readily available. More specific application rates will be developed in the design to match specific uses and vegetation types.</p>

**RESPONSE TO COMMENTS
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MCAS EL TORO, CALIFORNIA**

<p>Originator: Sherrill Beard, CHG DTSC</p> <p>To: Tayseer Mahmoud DTSC</p> <p>Date: 24 March 1997</p>	<p style="text-align: right;">CLEAN II Program Contract No. N68-711-92-D-4670 CTO-0076 File Code: 0222</p>
<p><u>GENERAL COMMENTS</u></p> <p>Response to comments 2, 4, 5, and 6, are not appropriate and do not satisfy GSU's concerns or answer the questions included in the review of the Draft Feasibility Study. GSU has made an effort to limit comments on work plans and reports to only the most pertinent, as a result of extensive discussions during the May 8th and 9th, 1996, team building in San Diego, California. During the team building meeting, SWDIV and the BRAC Environmental Coordinator (BEC) explicitly requested comments be limited for draft documents and further requested no comments from regulatory agencies be submitted on draft final documents unless they were considered "fatal flaws", in other words, would stop the project from moving forward. Consequently, appropriate and complete responses to GSU comments are expected for this agreement to succeed. Below is additional clarification and/or explanation why the responses are inappropriate or not complete. To facilitate proper reply to BCT comments, perhaps in the future, response to comments could be approached and resolved as a team, similar to the manner agreed upon during the March 19 meeting regarding the Site 24 feasibility study. It is expected the resolution of each comment listed below will be incorporated into the final document. For easy reference, the original comments are included as an attachment.</p>	<p><u>RESPONSES TO GENERAL COMMENTS</u></p> <p>RESPONSE: We appreciate the recognition that the team building effort was organized to provide guidance to the BCT members in regards to the review and comment on draft and draft final documents. However, as you have pointed out, BCT comments on the draft final documents were to be directed at "fatal flaws", or, under the Federal Facilities Agreement, the opportunity of the BCT members in invoke dispute resolution.</p> <p>Upon review of the following comments, it is clear that the DTSC was not satisfied with the previous responses. However, the following responses supplement the original response to comments.</p> <p>Many of the DTSC comments focus on issues that were discussed prior and during the Work Plan preparation or during field work. The BCT, including the DTSC, agreed to the placement of monitoring wells at Site 17 during the fieldwork and that these wells would be used to collect data on the presence of groundwater in bedrock conditions upgradient from the landfill while the monitoring wells located downgradient of the landfill, situated in alluvium, would provide data on groundwater conditions downgradient of the landfill.</p> <p>The response to these comments is provided below. Perhaps a more appropriate time to provide these comments would have been on the RI for the site. The RI report is the document that provides the detailed discussion on the site conditions. The FS report simply summarized those findings and is focused on the evaluation of remedial alternatives.</p>
<p>Comment 2, Section 2.2.1.3 - Geology and Hydrology - The strike out version of the Draft Final RI for Site 17 reports a gradient of 0.15 ft/ft. (Volume I, Section 5.1.1.2 - Geology/Hydrology, page 5-2, third paragraph). However, the crux of this comment was not to point out an editorial error but was to suggest additional hydrogeologic information and explanation be provided in the Geology and Hydrogeology section of</p>	<p>RESPONSE: As indicated in the draft final FS, in section 2.2.1.3, two groundwater regimes were interpreted to underlay the site - bedrock sandstone and alluvium. So we are in agreement that there are two hydrogeologic regimes represented at Site 17.</p> <p>In regards to assessing gradient at the site, there is a limitation to calculating</p>

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MCAS EL TORO, CALIFORNIA**

<p>Originator: Sherrill Beard, CHG DTSC</p> <p>To: Tayseer Mahmoud DTSC</p> <p>Date: 24 March 1997</p>	<p style="text-align: right;">CLEAN II Program Contract No. N68-711-92-D-4670 CTO-0076 File Code: 0222</p>
<p>the feasibility study. The construction logs in the Draft Final RI show monitoring wells 17NEW1 and 17_DBMW83 screened in alluvium (sandy silt and silty sand) and monitoring well 17NEW2 screened in bedrock (clayey siltstone and siltstone). The water levels in the alluvium may not necessarily correlated with the water level in the bedrock, consequently, calculation of a gradient is not possible. Two hydrogeologic regimes most likely exist beneath Site 17, alluvium and bedrock. Based on the geomorphology of the site, GSU agrees the flow direction of the groundwater is towards the southwest and gradually changes to a more westerly direction at the southern portion of the site. However, there are not enough wells screened in the alluvium or bedrock to calculate a quantitative gradient. Please explain the nature of these uncertainties in the text of the feasibility study.</p> <p>It is still unclear how aquifer properties were determined at Site 17. It is unlikely that the aquifer properties at 17NEW1 and 17NEW2 are the same (as reported in the feasibility study) given one well is screened in fine to medium grained alluvium and one well is screened in siltstone. The vertical hydraulic conductivity results from the laboratory permeability tests on soil samples from the screened intervals in 17NEW1 and 17NEW2 are reported as approximately 0.001 feet/day, the horizontal permeability values are assumed to be two orders of magnitude greater than the vertical permeability, and effective porosity of 0.2 is assigned for both wells. This data is then used, along with a gradient of 0.14 ft/ft, to calculate an average linear groundwater velocity of 0.07 feet/day. It is incorrect to use the same aquifer properties for alluvium and bedrock, and therefore, not likely the groundwater flows at the same rate in bedrock as it does in alluvium material.</p>	<p>gradients and flow directions from monitoring wells screened in two different hydrogeologic regimes such as the situation with the wells in bedrock and alluvium at Site 17. The limitation arises from the fact that the communication between these two regimes is not well documented and that the water levels observed in the bedrock and alluvium wells may or may not represent a true gradient and flow direction for the site. However, based on the limited set of monitoring wells at the site, the water levels are considered to represent a gross approximation of gradient and flow direction.</p> <p>The vertical hydraulic conductivity in well 17NEW1 (alluvial well) was 0.0016 ft/day and in well 17NEW2 (bedrock well) was 0.00091 ft/day. Both samples were taken in most permeable soils sampled during drilling, because these conservatively high permeabilities would produce the highest velocity at the site. By providing the highest velocity, the maximum rate of contaminant transport would be described (so that a maximum pumping rate can be described for if an active groundwater pump and treat system was needed).</p> <p>The statement in the FS reads “the results indicate a vertical hydraulic conductivity of <i>approximately</i> (emphasis added) of 0.001 ft/day”. The 0.001 ft/day was considered as being representative based on the two values reported.</p> <p>In regard to the comment that it is incorrect to use the same aquifer properties for alluvium and bedrock, again, there are limitations to the types and number of data collected for the RI/FS. Two statements were made above which indicate the limitations of the data. First, the limitation arises from the fact that the communication between these two regimes is not well documented and that the water levels observed in the bedrock and alluvium wells may or may not represent a true gradient and flow direction for the site. However, based on the limited set of monitoring wells at the site, the water levels are considered to</p>

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DRAFT PHASE II FEASIBILITY STUDY REPORT
OU-2B, SITE 17
MCAS EL TORO, CALIFORNIA**

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<p>There is insufficient data to determine pumping rates of wells at Site 17. The text states "Though no pump tests were conducted at Site 17, pumping rates as estimated from groundwater sampling can range from 500 to 2,000 gallons per day (gpd) for wells at Site 17." Generally, the pumping duration which is needed to sample a monitoring well is not adequate to determine pumping rates. However, if such values are to be estimated and reported, additional information should be presented to support such statements. Include data such as pumping rates and water level measurements while collecting the groundwater samples at each monitoring well. The text also does not clearly state if the range given is for all wells or if one well is 500 gpd, one well is 2000 gpd, and the third well fall somewhere in the middle range.</p>	<p>represent a gross approximation of gradient and flow direction. Second, the vertical hydraulic conductivity in well 17NEW1 (alluvial well) was 0.0016 ft/day and in well 17NEW2 (bedrock well) was 0.00091 ft/day. Both samples were taken in most permeable soils sampled during drilling, because these conservatively high permeabilities would produce the highest velocity at the site. The overall hydrogeologic characteristics of each regime was not characterized as part of the RI/FS. Therefore, the method or results of those methods used to derive aquifer properties for both the bedrock and alluvial aquifers is not incorrect, but has limitations inherent to the data used.</p> <p>General evaluations of the pumping rates of the monitoring wells at Site 17 are based on development and purging rates of the monitoring wells from groundwater sampling conducted during the Phase II RI. Appendix K of the RI report presents the development and purge rates for the monitoring wells at Site 17. Based on these rates, sustained pumping was assumed to be 0.5 to 1.5 gpm. These values were simply used to give an order of magnitude estimate to pump rates.</p>
<p>Comment 4, Section 2.2.2.6 - Groundwater - Monitoring well 17NEW2 can not be used as an upgradient well for the purpose of comparing geochemistry. Although, the alluvial groundwater may receive recharge from bedrock groundwater geohydraulic conditions vary significantly, therefore the total and dissolved metals concentrations should not be compared and used to determine if the landfill has impacted groundwater.</p>	<p>RESPONSE: As discussed above, there are inherent limitations to the data collected from monitoring wells positioned in different hydrogeologic regimes. The method of using data from the two different regimes was discussed with the BCT during fieldwork.</p>

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<p>Comment 5, Section 2.2.3.1 - Contaminant Persistence - Analysis for hexavalent chromium in groundwater, U. S. EPA Method 7196, is a reliable and proven method. The procedures and protocols for sample preparation and analysis are published and approved by U. S. EPA and DTSC Hazardous Material Laboratory. The preparation and analysis should be performed by skilled chemist and compliance with the 24 hour holding time must be maintained. The colorimetric method is the standard analytical method, however, if interference is expected the ion chromatography method can be used.</p>	<p>RESPONSE: At the time of the draft final FS report preparation, the hexavalent chromium data were not available. These data will be included in the draft final RI/FS to be issued to the public. No hexavalent chromium was detected by the US EPA Method 7196 at Site 17 as reported by CDM Federal Programs Corp., as part of the quarterly groundwater monitoring program.</p> <p>In discussions with John Christopher, toxicologist with DTSC, concerning the two methods for hexavalent chromium, the colorimetric method has been used for a considerable time, but has a tendency to produce false positive results while the ion chromatography tends to have higher detection limits and very few false positives.</p>
<p>Comment 6, Section 2.2.3.2 - Contaminate Migration - Please refer to Comment 4 for the discussion regarding aquifer parameters.</p> <p>There is obviously difficulty comparing geochemical variations between the upgradient and downgradient wells because they are screened in different formations. Therefore, drawing conclusions about whether a release of metals occurred should not be limited to comparison to the upgradient well but also based on what is in the landfill.</p>	<p>RESPONSE: The Navy and DTSC discussed this comment on August 12, 1997 and the DTSC concurred that characterization of the landfill was not required as part of the RI. In addition based on historical accounts of disposal practices and types of wastes, groundwater metal contamination is not expected from the wastes rather metals are likely to be mobilize based on changes in subsurface conditions during decomposition of wastes in the landfill.</p> <p>Based on sample results downgradient from the site which were compared to MCLs, exceedances of MCLs were minor. These small exceedances were likely to be natural variation.</p> <p>As discussed above, the limitations inherent from the data collected from two different hydrogeologic regimes is recognized.</p>

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<p>Originator: Tayseer Mahmoud DTSC</p> <p>To: Joseph Joyce, BRAC Environmental Coordinator MCAS El Toro</p> <p>Date: 01 April 1997</p>	<p style="text-align: right;">CLEAN II Program Contract No. N68-711-92-D-4670 CTO-0076 File Code: 0214</p>
<p><u>GENERAL COMMENTS</u></p>	<p><u>RESPONSES TO GENERAL COMMENTS</u></p>
<p>The Department does not agree that restrictions on land and groundwater use “may be negotiated during the BRAC transfer.” If the restrictions are developed as a component of the engineering control(s) to ensure the remedy is protective, the institutional control(s) should not be negotiable items. This especially applies to landfill cover remedies which are basically cap and monitor systems as opposed to an active remediation technology. The institutional controls should be evaluated with the same care as the engineering controls and a discussion of the alternatives should describe which institutional controls are appropriate for each alternative.</p> <p>The MCAS El Toro Local Redevelopment Authority (LRA) approved a Community Reuse Plan for the base in December 1996. As stated in the Draft Final FS Executive Summary, the LRA has recommended that the DoD grant the Department of Interior’s Habitat Reserve request. Site 17 is located within the area of the Habitat Reserve request. Although the DoD has not yet completed the federal screening process, it is fair to assume that the area (including Site 17) will be transferred to the Department of Interior. Since the “owner” of the property will remain the United States Government, deed restrictions are probably not the best institutional control to use in this case. However, the Navy can choose to prepare a land use covenant (deed restrictions) in case the federal screening isn’t approved or for the Department of Interior to use if they decide to sell the land in the future.</p> <p>The site has already been fenced and other institutional controls will be necessary to protect the remedy, monitoring wells, and provide for operation and maintenance. Therefore, a discussion of the institutional controls should also describe the type of agreement (e.g., Who will be</p>	<p>RESPONSE: The institutional controls section will be expanded to include the following details:</p> <ol style="list-style-type: none"> 1) Land use restrictions have been added to protect human health and the integrity of the remedy. These include the following restrictions: <ul style="list-style-type: none"> - the land may not be used for residential purposes or for day care centers - construction and excavation are prohibited without prior approval of DON and FFA signatories - groundcover may not be added or disturbed without prior approval - no irrigation is allowed without prior approval - fences and signs may not be removed without prior approval - monitoring equipment (e.g., lysimeters, monitoring wells, settlement monuments) may not be disturbed without prior approval 2) Provisions for access by DON and the FFA signatories for purposes of conducting or overseeing monitoring and maintenance activities will be included in the deed or lease 3) Owner(s) and/or user(s) of the property will be restricted from excavations that would expose groundwater and from extracting and/or injecting groundwater 4) DON will be required to notify the FFA signatories in the event that the property is transferred 5) DON and/or the owner(s) and/or user(s) will be required to notify the FFA signatories if any event occur that may change the approved design of

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<p>responsible for maintaining the landfill cover, perform O&M, etc.) that will be “negotiated” with the Department of Interior (as the new tenant) to ensure that the remedy (engineering and institutional controls) remains protective to human health and the environment.</p>	<p>the site or if the remedy fails and endangers public health and safety or the environment</p> <p>6) A CERCLA 120(H) covenant will be included in the deed</p> <p>7) A variance/termination clause will be included to allow removal of restrictions once the FFA signatories agree that the cleanup is complete or the restriction is no longer necessary.</p> <p>In addition, the effect of institutional controls, especially on the long-term effectiveness of the remedial action, will be discussed in the detailed and comparative analysis in the FS.</p>
<p><u>SPECIFIC COMMENTS/NAVY’S RESPONSE TO DTSC COMMENTS:</u></p> <p>1. See attached memorandum dated March 24, 1997, prepared by Ms. Sherrill Beard, Certified Hydrogeologist from DTSC’s Geological Services Unit.</p>	<p><u>RESPONSE TO SPECIFIC COMMENTS/NAVY’S RESPONSE TO DTSC COMMENTS:</u></p> <p>RESPONSE 1: Responses to these comments are provided on the following pages.</p>
<p><u>OTHER COMMENTS:</u></p> <p>1. We could not find, in the tables or sections of Appendix A, responses to DTSC ‘s submitted ARARS, Orange County Health Care Agency, and Orange County Fire Department ARARS. DTSC’s submitted ARARS include Title 22, CCR 66264.14(a), 66264.19(a, c), 66264.51, 66264.52(b), 66264.97 to 100, and 66264.117(c, d, f).</p>	<p><u>RESPONSE TO OTHER COMMENTS:</u></p> <p>RESPONSE 1: Under CERCLA, local laws in and of themselves are not considered ARARs. In certain instances, requirement developed by a local agency that are both adopted and legally enforceable by the state or where local requirements become part of a legally enforceable state “plan” may be considered potential ARARs. The local ARARs submitted by DTSC do not appear to fit within these categories and were thus not addressed as potential ARARs. The potential Title 22 ARARs submitted by DTSC will be included in the ARARs evaluation.</p>
<p>2. Section A3.1, Location Specific ARARS, Page A3-1 - Having a section similar to A3-1 on page A3-1 that lists the citations examined would be good for the other sections such as Chemical and Action Specific ARARS.</p>	<p>RESPONSE 2: The Navy will consider this comment in preparation of future ARARs evaluations.</p>

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<p>3. Appendix A, Action-Specific ARARS - The draft final FS has deleted the discussion of Land Use Restrictions from Appendix A (formerly Sections A4.1, A4.1.1, A4.1.2, A4.5 and A4.5.1) without providing the rationale. Amendment of the base master plan to restrict future uses at Site 17 Should be a component of all alternatives being considered.</p>	<p>RESPONSE 3: A discussion of institutional controls and land use restrictions has been added to Appendix A.</p>
<p>4. Table A4-1, Page A4-5 - Please list the appropriate sections listed under 66264.111 that are relevant ARARS. Some subsections of 66264.111 may not be appropriate.</p>	<p>RESPONSE 4: Comment noted. Specific subsections from 22 CCR 66264.111 that are considered relevant and appropriate will be added to the citation in Table A4-1.</p>

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<p>Originator: Peter M. Janicki CIWMB</p> <p>To: Tayseer Mahmoud DTSC</p> <p>Date: 10 April 1997</p>	<p style="text-align: right;">CLEAN II Program Contract No. N68-711-92-D-4670 CTO-0076 File Code: 0214</p>
<p><u>GENERAL COMMENTS</u></p> <p>Because there is a strong consensus (supported by the reuse plan developed for this site) that the postclosure land use for this site will be a wildlife habitat reserve. Board staff evaluated all available site investigation and feasibility study submittals in context of their relevance and compatibility with the proposed Site 17 reuse. This includes not only any already conducted or future investigation and design work but also methodologies on which these activities have been based.</p> <p>Based on Board staff review, it appears that under the proposed postclosure land use conditions, a chosen closure alternative should require as little postclosure maintenance as possible since any postclosure maintenance or repair procedures would interfere with the integrity of the wildlife reserve.</p> <p>Also, it should be pointed out that the capping of the landfill (along with all necessary institutional controls and monitoring systems) is not required solely to limit water infiltration into the landfill but also to prevent potential landfill gas emissions and provide environmental protection to any proposed developments on the land surrounding the landfill.</p>	<p><u>RESPONSES TO GENERAL COMMENTS</u></p> <p>RESPONSE: Comment noted.</p>
<p><u>RESPONSE TO COMMENTS ON DRAFT FS</u></p> <p>Because of a fairly specific postclosure land use proposed for Site 17 (wildlife reserve habitat) and potentially very complex postclosure maintenance procedures (trying not to disturb the integrity of the habitat), all institutional controls (site security, access to monitoring points, restrictions on on-site development, and site maintenance), should be identified, established and integrated into the landfill closure and postclosure maintenance programs. Board staff do not find acceptable the approach taken in the FS to refer the institutional controls to a negotiation process during the base transfer. Both the design and operation of</p>	<p><u>RESPONSE TO COMMENTS ON DRAFT FS</u></p> <p>RESPONSE: The institutional controls section will be expanded to include the following details:</p> <p>1) Land use restrictions have been added to protect human health and the integrity of the remedy. These include the following restrictions:</p> <ul style="list-style-type: none"> - the land may not be used for residential purposes or for day care centers - construction and excavation are prohibited without prior approval of DON and FFA signatories

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<p>institutional controls should be derived in conjunction with landfill closure.</p>	<ul style="list-style-type: none"> - groundcover may not be added or disturbed without prior approval - no irrigation is allowed without prior approval - fences and signs may not be removed without prior approval - monitoring equipment (e.g., lysimeters, monitoring wells, settlement monuments) may not be disturbed without prior approval <p>2) Provisions for access by DON and the FFA signatories for purposes of conducting or overseeing monitoring and maintenance activities will be included in the deed or lease</p> <p>3) Owner(s) and/or user(s) of the property will be restricted from excavations that would expose groundwater and from extracting and/or injecting groundwater</p> <p>4) DON will be required to notify the FFA signatories in the event that the property is transferred</p> <p>5) DON and/or the owner(s) and/or user(s) will be required to notify the FFA signatories if any event occur that may change the approved design of the site or if the remedy fails and endangers public health and safety or the environment</p> <p>6) A CERCLA 120(H) covenant will be included in the deed</p> <p>7) A variance/termination clause will be included to allow removal of restrictions once the FFA signatories agree that the cleanup is complete or the restriction is no longer necessary.</p>
<p><u>GENERAL COMMENTS</u></p> <p>In order to reduce the size of the Board staff review letter, the original Board staff comments are not cited in this portion of the review letter.</p>	<p><u>RESPONSES TO GENERAL COMMENTS</u></p>

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<p>Please refer to Board staff letter of September 30, 1996, to view the original comments.</p>	
<p>1. Board staff find the response satisfactory.</p>	<p>RESPONSE 1: Comment noted.</p>
<p>2. Board staff find the response satisfactory.</p>	<p>RESPONSE 2: Comment noted.</p>
<p>3. The response does not provide a satisfactory explanation on the chosen depths of the multiple depth gas monitoring wells. The regulatory requirements for a perimeter landfill gas monitoring network are clearly outlined in 14 CCR, Section 17783.5, and both the response and the FS should be tailored to address all requirements listed in this section.</p> <p>Although Board staff concur that, for the time being, methane off-site migration monitoring would be sufficient at this site, monitoring results should be closely watched, and if necessary, corrective actions be taken immediately. Since corrective actions may involve installing and operating a gas collection system, proposed final cover design should be evaluated for the purpose of compatibility with a gas collection system and ease of installation of such system.</p>	<p>RESPONSE 3: The installation of soil gas probes is discussed on page 4-11 in section 4.3.2 in the FS. Installation will be in accordance with 14 CCR 17783.5. At Site 17, probe depths are estimated to be approximately 30, 105, 70, and 133 feet bgs because of the slopes present at the site and the presumed depth of the landfill. An explanation of how the probe depths were determined has been added to the cost estimating appendix.</p> <p>In regards to landfill gas monitoring, the proposed monitoring plan in the FS includes discussions of the gas monitoring process and indicates that corrective action may be needed. The final design will more fully assess whether a gas collection could be implemented with the cap design.</p>
<p>4. Board staff disagrees that the annual postclosure maintenance costs should be based on a net present worth concept. Because of a number of uncertainties associated with the landfill postclosure maintenance, discounting practice is generally discouraged in California (see attached excerpts from U.S. EPA Final Rule regarding Final Assurance Mechanism for Municipal Solid Waste Facilities [40 CFR Part 258]).</p>	<p>RESPONSE 4: The Navy intends to use the cost estimates presented in the FS because these estimates are for comparative purposes only. Once a detailed design is prepared, a more detailed cost estimate will be prepared and costs for the long-term monitoring will be given a great deal of scrutiny. In addition the net present worth estimate in FS was based on dispersal of funds that would occur for each year for 30 years. Each year had to be estimated separately because the frequency and types of monitoring and maintenance varies on a year by year basis. Also, to account for the uncertainty in cost estimates used in the FS for comparative purposes, a 20 percent contingency for operation and maintenance was included for unforeseen conditions.</p>

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<p>5. Board staff do not find the position that the soil loss calculations be conducted as a part of the final remedial design acceptable. As it was indicated in the FS, Site 17 experiences severe erosion problems (this was observed during a site visit). Without soil loss estimates, Board staff cannot fully evaluate the proposed final cover alternatives or configuration and sizing of the proposed runoff collection system (including energy dissipation and erosion protection measures). Board staff request that these calculations be conducted at the FS stage in order to determine if the chosen final cover materials are applicable under the high erosion conditions (soil loss calculations should account for these specific materials).</p>	<p>RESPONSE 5: The slopes shown on the conceptual grading plan were designed to minimize erosion (usually 3 to 6%). Steeper areas between the 3% slopes have run-on and run-off minimized by the placement of diversion at the toe of the shallower slopes, directing surface water to channels designed to accommodate flow and erosion. Calculations were made for the conceptual designs which included run-on and run-off, drainage channel sizing, and the need for energy dissipation features. These calculations are in the Navy files.</p> <p>As stated in the draft FS responses, the final grading plan may differ slightly from the conceptual plan presented in the FS reports but will be backed up by appropriate soil loss calculations and many other detailed calculations will be prepared with the detailed final design.</p>
<p>6. Drainage calculations provided in the revised FS indicate a high potential for embankment erosion and high sediment content in the runoff. Board staff request that the sediment content calculations be provided in order to validate the proposed rip-rap erosion protection along the drainage channel. Board staff are concerned that excessive sediment deposits may both impair the holding capacity of the drainage channel and make drainage channel maintenance labor-intensive and thus expensive. Perhaps other erosion reducing measures such as channel widening, and runoff re-routing should be considered in addition to or instead of the rip-rap. Thus, in order to validate the proposed general approach (exiting drainage channel with rip-rap protection), it is necessary to include the sediment content calculations at the FS stage.</p>	<p>RESPONSE 6: The intent of the FS is to present conceptual remedial action alternatives. Considerable effort was made to provide a defensible conceptual design in these FS reports. However, the specifics of such item as sediment calculations will be required in the detailed design. Such calculations are not necessary in the conceptual designs.</p>
<p>7. Board staff find this response acceptable.</p>	<p>RESPONSE 7: Comment noted.</p>
<p>8. Board staff find this approach acceptable, however, all institutional controls such as site development restrictions and access to monitoring and control systems should be included as an integral part of landfill closure (during the FS stage) and should not be</p>	<p>RESPONSE 8: Please see our response on Page 1, under "Response to Comments on Draft FS."</p>

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<p>negotiated during the transfer process.</p>	
<p>9. Board staff find this response acceptable.</p>	<p>RESPONSE 9: Comment noted.</p>
<p><u>SPECIFIC COMMENTS</u></p> <p>10. Board staff request that more detailed drainage system drawings be provided as a part of the FS. Of special interest to Board staff are design details depicting the placement of the proposed rip-rap erosion protection.</p>	<p><u>RESPONSES TO SPECIFIC COMMENTS</u></p> <p>RESPONSE 10: Such detailed design is not warranted for conceptual designs in the FS reports.</p>
<p>11. Board staff have no comment.</p>	<p>RESPONSE 11: Comment noted.</p>
<p>12. Because of a limited knowledge on the landfill waste fill and its gas generation potential, landfill gas monitoring frequency should remain as quarterly for the period of 30 years (worst case scenario) and the postclosure maintenance cost estimate should account for it. Only after conducting the actual field measurements over an extended period of time (depending on the monitoring results and postclosure land use around the landfill, this may be longer than five years), a request may be submitted to reduce the landfill gas monitoring frequency; however, such request must be substantiated by actual field measurements.</p>	<p>RESPONSE 12: For the purpose of estimating costs, it is assumed that the monitoring frequency is quarterly for 5 years, then annually thereafter. This is the same monitoring frequency for all of the MCAS El Toro landfills. Extending the quarterly monitoring to 30 years would result in the same cost being added to each alternative and would not affect the cost comparison.</p> <p>The Navy is aware that a request must be submitted to reduce the frequency of monitoring from quarterly but feels that 5 years of quarterly monitoring will be an adequate baseline considering the age of the landfill and very low concentrations of landfill gas currently present at the site.</p>
<p>13. Similarly to the previous comment, landfill cap inspections should remain quarterly until, based on field inspections, it can be demonstrated that the on-site conditions have stabilized enough to justify a reduced frequency of inspections. However, until such time, the final cap inspections should be conducted on a quarterly basis. Also, the postclosure maintenance cost estimate should account for quarterly inspections for a period of 30 years.</p>	<p>RESPONSE 13: For the purpose of estimating costs, it is assumed that the inspection frequency is quarterly for 5 years, then annually thereafter. This is the same monitoring frequency for all of the MCAS El Toro landfills. Extending the quarterly monitoring to 30 years would result in the same cost being added to each alternative and would not affect the cost comparison.</p> <p>The Navy is aware that a request must be submitted to reduce the frequency of monitoring from quarterly but feels that 5 years of quarterly monitoring will be an adequate baseline considering the age of the landfill.</p>

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<p>14. Please refer to the previous comment.</p>	<p>RESPONSE 14: Please see response to previous comment.</p>
<p><u>COMMENTS ON REVISED FS</u></p>	<p><u>RESPONSES TO COMMENTS ON REVISED FS</u></p>
<p>A. After reviewing the revised FS, it does not appear that the proposed closure alternatives have been tailored specifically for wildlife habitat conditions. Specifically, the issue of postclosure maintenance and repair procedures and their interference with wildlife were not addressed.</p>	<p>RESPONSE A: The impacts to wildlife are negotiated with the U.S. Fish and Wildlife Service. Specifics of the management of the landfill postclosure will be presented to the USFWS at the time of detailed design.</p>
<p>B. Board staff disagrees that the annual postclosure maintenance costs should be based on a net present worth concept. Because of a number of uncertainties associated with landfill postclosure maintenance, discounting practice is generally discouraged in California (see attached excerpts from U.S. EPA Final Rule regarding Final Assurance Mechanism for Municipal Solid Waste Facilities [40 CFR Part 258]).</p>	<p>RESPONSE B: The Navy intends to use the cost estimates presented in the FS because these estimates are for comparative purposes only. Once a detailed design is prepared, a more detailed cost estimate will be prepared and costs for the long-term monitoring will be given a great deal of scrutiny. In addition the net present worth estimate in FS was based on dispersal of funds that would occur for each year for 30 years. Each year had to be estimated because the frequency and types of monitoring and maintenance varies on a year by year basis. Also, to account for the uncertainty in cost estimates used in the FS for comparative purposes, a 20 percent contingency for operation and maintenance was included for unforeseen conditions.</p>
<p>C. Should the monolithic native soil final cover be considered as a viable closure option, such proposal must be submitted in conformance with guidelines included in 14 CCR, Section 17773 (c).</p>	<p>Comment noted. Considering the proposed reuse of the site is wildlife habitat and demonstrated ability of the monolithic cap to provide equivalent infiltration protection, the Navy may consider a monolithic cover to be the preferred alternative.</p>
<p>D. The FS states that the final cover utilizing a low permeability clay layer will use materials derived from an off-site source (Bee Canyon). However, Board staff have contacted the Orange County Integrated Waste Management Department, the operator of Frank Bowerman Sanitary Landfill (formerly Bee Canyon Landfill), and were informed that their staff were not aware of any inquiries regarding</p>	<p>The Navy contractor contacted Mr. Denny Carpenter of the OCIWMB (an engineer and manager for the County). He indicated that there are other canyons in the Bee Canyon area that would likely have sources of clay. No inquiries were made on whether the Bee Canyon clay was available, only whether other sources are available in the area. The FS states in section 4.4.1 "it is assumed that potential clay borrow sources may be available from around</p>

**RESPONSE TO COMMENTS
REVIEW OF REVISED DRAFT PHASE II FEASIBILITY STUDY REPORT
AND RELATED DOCUMENTS FOR OU-2B, SITE 17
MCAS EL TORO, CALIFORNIA**

Originator: Peter M. Janicki CIWMB To: Tayseer Mahmoud DTSC Date: 10 April 1997	CLEAN II Program Contract No. N68-711-92-D-4670 CTO-0076 File Code: 0214
availability of clay for off-site projects. An explanation for how the availability of clay material from that location was validated should be provided.	the Bee Canyon area”.