Department of Toxic Substances Control

Edwin F. Lowry, Director
700 Heinz Avenue, Bldg. F, Suite 200
Berkeley, California 94710-2721

Winston H. Hickox
Secretary for
Environmental
Protection

Gray Davis
Governor

April 9, 2003

Mr. Richard Weissenborn
Department of Navy
Southwest Division
Naval Facilities Engineering Command
1230 Columbia Street, Suite 1100
San Diego, CA 92101

DRAFT ORDNANCE AND EXPLOSIVE WASTE/GEOTECHNICAL CHARACTERIZATION REPORT, SITE 2, OPERABLE UNIT 4A, ALAMEDA POINT, ALAMEDA, CALIFORNIA

Dear Mr. Weissenborn:

The Department of Toxic Substances Control (DTSC) has reviewed the above referenced document, dated January 20, 2003. Our comments are enclosed.

If you have any questions, please contact me at 510-540-3767.

Sincerely,

Marcia Y. Liao

Marcia Liao, Ph.D., CHMM
Hazardous Substances Engineer
Office of Military Facilities

enclosure

cc: Michael McClelland, SWDiv
Andrew Dick, SWDiv
Steve Edde, Alameda Point
Mark Ripperda, EPA
Judy Huang, RWQCB
Christopher Fong, CIWMB
Elizabeth Johnson, City of Alameda
Peter Russel, Northgate Environmental
Randolph Brandt, LFR
Bert Morgan, RAB Co-Chair
Lea Loizos, Arc Ecology
Abid Loan, Foster Wheeler

DTSC COMMENTS
DRAFT ORDNANCE AMD EXPLOSIVES WASTE/GEOTECHNICAL CHARACTERIZATION REPORT
SITE 2, UNIT 4A
ALAMEDA POINT, ALAMEDA, CALIFORNIA

PART 1: OVERALL

1. DTSC considers Site 2 a Solid Waste Management Unit (SWMU) subject to RCRA corrective action. Management of this unit must conform to RCRA, either directly or as ARARs. Please reflect this in the document.

PART 2: ORDANCE AND EXPLOSIVE WASTE

Please refer to the memorandum prepared by Mr. James Austreng.

PART 3: GEOTECHNICAL AND SEISMIC EVALUATION

Please refer to the memorandum prepared by Mr. Ram Ramanujam.

Department of Toxic Substances Control

Edwin F. Lowry, Director
8800 Cal Center Drive
Sacramento, California 95826-3200

Winston H. Hickox
Agency Secretary
California Environmental
Protection Agency

Gray Davis
Governor

MEMORANDUM

TO: Marcia Liao
Project Manager
Office of Military Facilities

From: James C. Austreng, P.E.
State Unexploded Ordnance Coordinator
Office of Military Facilities

Date: April 8, 2003

SUBJECT: DRAFT ORDNANCE AND EXPLOSIVE WASTE/GEOTECHNICAL CHARACTERIZATION REPORT, REVISION 0, AT INSTALLATION RESTORATION SITE 2, ALAMEDA POINT, ALAMEDA, CALIFORNIA, DATED JANUARY 20, 2003

Per your request, I have reviewed the subject document as it pertains to the Department of Navy's (DON's) efforts to address ordnance and explosives waste (OEW) concerns within the 110 acre Site 2 and the estimated 26 acres between Site 1 and 2 known as the "Additional Investigation Area (AIA)." Please note that from our discussion, it remains my understanding that the geotechnical aspects of the subject report will be reviewed by other technical support staff within the Department of Toxic Substances Control (DTSC).

Also, given the document was developed solely for the purpose of addressing OEW and geotechnical concerns, the adequacy of project components such as the application of a presumptive remedy for the landfill (capping) or the investigation of a release (or potential release) of chemical contamination has not been included as part of this review.

BACKGROUND

The Site 1/AIA OEW/Geotechnical characterization effort was limited to a surface investigation by unexploded ordnance (UXO) technicians.

The UXO technicians were equipped with hand held analog magnetometers to assist in the detection of OEW.

Actions which preceded the surface investigation included the DON's initiation of a time critical removal action (TCRA). That TCRA was conducted February 8, 2002 through March 29, 2002 and included the excavation, sifting and re-depositing of soils from the upper 1 foot of a 2.3 acres portion of the landfill within Site 2. A total of 8,675 20 millimeter (mm) target practice projectiles were recovered during the sifting operation. All items recovered were reported as inert. Comments on the TCRA were provided by memorandum dated July 19, 2002. A copy is attached for reference.

As stated on page 5-1 of the subject Draft OEW/Geotechnical Report, the DON position regarding future actions include – "Upon completion of the surface characterization and TCRA at IR Site 2, the removal of OEW on the site will be considered complete for the planned use of the land by the City of Alameda."

The DON also states on page 5-1 that- "Future remedial activities will include the placement of 4 feet of fill at IR Site 2 as part of the presumptive remedy selected for the site."

Given the above, and the understanding that a feasibility study (which reportedly will address institutional controls) is pending, the following is provided for your consideration.

GENERAL COMMENTS:

The reports submitted to date indicate that no live OEW has been recovered within Site 2 or within the AIA. However, as indicated in previous memoranda (see attached July 19, 2002), questions remain whether the boundaries of the area excavated and sifted were appropriately delineated. Furthermore, the efforts conducted as part of the OEW/Geotechnical characterization were restricted to a surface investigation. Consequently, uncertainty remains as to whether additional burial pits exist and/or whether live OEW may be located beneath land surface.

Given such uncertainties, details of risk management measures must be incorporated into selection of the preferred remedial action(s). These details should include not only the specific risk management/institutional measures to be taken, but also include information as to who will perform or be responsible to ensure the measures are implemented. In addition, a schedule for implementation of these measures as well as a reporting sequence should be outlined in the feasibility study.

SPECIFIC COMMENTS:

1) Section 1.5.2, Environmental Concerns and Mitigations, Page 1-14:

Text states "IR (Installation Restoration) Site 2 is currently used as a bird and wildlife sanctuary and is proposed for transfer to the USFWS (United States Fish and Wildlife Service) for eventual use as a National Wildlife Refuge."

Comment: It is not clear whether this proposed transfer will included the AIA. Should the AIA be excluded, additional investigation effort may be needed to determine whether buried OEW exist.

2) Page 1-18, Section 1.5.5.2, Design Basis

Comment: While no live ordnance items were detected within the top one foot of soil within the boundaries of the landfill, the potential that other areas include live ordnance cannot be ruled out. Consequently, compaction efforts required for installation of the landfill cap must take into consideration the possibility that stresses imposed by heavy equipment may generate sufficient energy or movement that can trigger a detonation.

3) Page 1-19, Section 1.5.6, Applicable Regulations and Criteria for OEW Management.

Comments: The document failed to cite California Code of Regulations, Title 22 as a potential Applicable, or Relevant and Appropriate Requirement (ARAR).

Conclusion:
Based on the information provided, uncertainties remain regarding the potential presence of buried live OEW. Given such possibility, compaction efforts required for placement of the landfill cap must take into account the possibility that live ordnance may be present and could detonate due to stresses imposed by heavy equipment. Additionally, institutional controls and risk management measures for OEW must be included in the selection of the final remedial action.

Should you have any questions regarding this memorandum, please call me at (916) 255-3702.

ATTACHMENT TO JIM AUSTRENG'S COMMENTS

Department of Toxic Substances Control

Edwin F. Lowry, Director
8800 Cal Center Drive
Sacramento, California 95826-3200

Winston H. Hickox
Agency Secretary
California Environmental
Protection Agency

Gray Davis
Governor

MEMORANDUM

TO: Marcia Liao
Project Manager
Office of Military Facilities
Department of Toxic Substances Control

VIA: Donn Diebert, P.E.
Chief, Open Base Navy and FUDS Unit
Office of Military Facilities
Department of Toxic Substances Control

FROM: James C. Austreng, P.E.
State Unexploded Ordnance Coordinator
Office of Military Facilities
Department of Toxic Substances Control

DATE: July 19, 2002

SUBJECT: REVIEW OF DRAFT TIME-CRITICAL REMOVAL ACTION CLOSURE REPORT, REVISION 0, INSTALLATION RESTORATION SITE 2, ALAMEDA POINT, ALAMEDA CALIFORNIA, JUNE 7, 2002.

Per your request, I have reviewed the subject document as it pertains to the Time Critical Removal Action (TCRA) for ordnance and explosive (OE) remediation at a small portion of Installation Restoration (IR) site 2. My comments follow:

Back Ground

The subject report represents actions taken and subsequent findings as a result of the TCRA. The TCRA is just one component of The Focussed Remedial Investigation Work Plan (Work Plan) for IR Site 2.

Other components of the Work Plan which were not part of this review include:

- Surface OEW [ordnance and explosive waste] Investigation
- Geotechnical Evaluation
- Seismic Evaluation
- Document Preparation

The action under the TCRA included excavation, sieving and placement of soil from the top 1 foot of Site 2 within an extremely limited area. The top 1 foot of soils was sieved, and various materials were found, including 8,882 inert 20-millimeter (mm) target rounds. These target rounds were demilled and disposed of at an appropriate off-site landfill.

No live ordnance and explosive waste (OEW) materials, also known as energetic materials, were reportedly recovered as part of this TCRA.

General Comment

Overall, I believe the actions taken as part of the TCRA were appropriate and the findings (no live OE) support the conclusions as presented in Section 4.0. However, the report only address how work was performed and not how the extent of the presumed burial area was defined prior to the excavation or if other areas within IR Site 2 could also have been used for burial. Based on the subject report, I have identified comments regarding report content, authorization of field change requests, quality assurance/quality control and consistency with the Comprehensive Environmental Response, Compensation and Liability Act (CERCLA). These comments are presented below.

Specific Comments

1) Section 1.3, Page 1-4, Regulatory Framework: The report states "CERCLA does not specifically address OEW as a hazardous substance; response actions to address OEW require a different approach to balance the risks and impacts of OEW with the risk of inaction."

   While I agree in principle with the "...OEW require a different approach..." portion of the statement, I do not concur with the Navy's assessment that OEW is not specifically addressed. First, the Navy has stated OE is a waste. Consequently, pursuant to CERLCA (and state law), if the material exhibit specific criteria shall be deemed hazardous waste, and therefore a hazardous substance, and subject to provisions of 40 Code of Federal Regulations, Section 300 et. Seq.

   In addition, the United States Environmental Protection Agency (EPA), Region IX, has recently issued a letter to the Department of the Army, Defense Language Institute Foreign Languages Center and Presidio of Monterey, that states, "The OE [ordnance and explosives] at Fort Ord that needs to be remediated meets the statutory definition of a hazardous substance because OE at these closed ranges has been "discarded"

and is therefore a solid waste. (I have attached a copy of EPA's letter for reference). Please note that I do recognize that EPA's letter is subsequent to issuance of the subject report. However, EPA's decision to regulate OE under CERCLA is not a new decision. EPA Region IX provided multiple correspondences, including testimony during the U.S. House of Representatives' Committee on Environmental Matters held in Seaside, April 1993 indicating that military munitions that are disposed of and which are abandoned are considered a hazardous substance subject to CERCLA.

2) Section 1.6, Page 1-8, Explosive Safety Remediation Plan: Text indicates that the Department of Defense Explosive Safety Board (DDESB) reviewed and approved the Explosive Safety Remediation Plan (ESRP) for the TCRA.

   I could not locate a copy of the DDESB approval letter in the document. It is DTSC's practice that the Explosive Safety Submission and DDESB's approval be included as an Attachment or Appendix to the subject report.

3) Section 2.6, Page 2-6, Excavation and Screening for OEW: This section discussion the use of field change requests for changing sieve size from ½ to ¾. Attachment 6 includes copies of these field change requests.

   My concern is that these field changes requests were not reviewed by or approved by DDESB or DTSC. For future reference, appropriate parties should approve all change requests before submitting to DTSC for final approval. This may include review by DDESB given the implication that the action my affect the ultimate acceptability of the site due to safety concerns.

4) Section 2.6, Page 2-6, Excavation and Screening for OEW: Text states- "...default removal depths guidelines based on the projected end use of the land and they represent a minimum risk to users when the land is cleared to the recommended depths (DDESB, 1999)."

   My concern with adherence to the default removal depths is with respect to the uncertainty as to how the Navy (or the end user) will ensure restrictions such as no digging will be maintained. As noted above in the summary of background information, the TCRA is just one component of a broader scoped work plan. What remains in question is how the limitations of this action, i.e., the limited depth and areal extent of the clean up will be addressed from a risk management perspective. Specifically, who will decide what restrictions are to be placed on Site 2 and what mechanism (institutional) measures will be used to limit potential contact with any remaining OE. Furthermore, how will these restrictions be enforced, maintained, monitored and reported to DTSC?

5) Section 3.1, Page 3-1 Certification of Surface Clearance Teams and Section 3.2, Page 3-2 Surface Clearance Effectiveness Test: Text discussions threshold values for Probability of Detection (PD) and Confidence Level (CL) and certification.

   It is not clear where or how the PD and CL values were derived. Also, it is not clear what actions were taken if a team failed and how all of their work between the decertified date and the prior certification date should be evaluated. In addition, the values indicated are not consistent with DTSC's practice. The most reliable depth of detection must be established for each instrumentation and each munition type. However, recognizing that the TCRA involved an excavation and sieving operation, post documentation of a most reliable depth of detection is not needed.

   The final report should also include a discussion of work which may have been done by a decertified team and what actions were taken to ensure the problems causing decertification were corrected and additional work needed to ensure quality control/quality assurance (QC/QA) standards were met. To the matter of QC/QA, daily and weekly QC/QA reports should be included with the final report (a compact disc including electronic copies would suffice).

Conclusion

From the information provided in the subject report and the understanding that no live (energetic) materials were recovered as part of the TCRA, I would conclude that the action taken have provided an additional level of understanding regarding the potential threats from OE. I would also conclude, as did the authors of the text, that "...the Possible Burial Site in the West Beach Landfill was used to bury OEW as documented in the Alameda Point historical records." However, because of the limited depth and areal extent of the excavation, questions and uncertainty remain. Consequently, it is my opinion that further actions, including, but not limited to additional OE investigations, deed restrictions, notifications, education and monitoring must be established prior to finalization of this report. Furthermore, until such measures are secured, transfer and re-use of this property should not proceed.

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION IX
75 Hawthorne Street
San Francisco, CA 94105

July 15, 2002

Department of the Army
Defense Language Institute Foreign Language Center and Presidio of Monterey
Director, Environmental and Natural Resources Management
Attn: James Willison
P.O. Box 5004
Presidio of Monterey, California 93944-5004

Re: Characterization of Ordnance and Explosives (OE) in Records of Decision (ROD)

Dear Mr. Willison:

The purpose of this letter is to express the U.S. Environmental Protection Agency's (EPA's) position regarding the Army's characterization of ordnance and explosives (OE) in records of decision (RODs) under development for the former Fort Ord in Monterey County, California. We believe that the term "hazardous substance" should be used in place of "pollutant or contaminant" in these RODs, including the Interim Action ROD for Ranges 43-48 , Range 30A, and Site OE-16. While we believe the actions proposed in the Interim Action ROD are consistent with the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA), EPA is concerned that the Army's failure to characterize OE as a hazardous substance may suggest to some that the Army is not prepared to comply with ARARs (e.g., State hazardous waste regulations).

The OE at Fort Ord that needs to be remediated meets the statutory definition of a hazardous substance because the OE at these closed ranges has been "discarded" and is therefore a solid waste. Because much of the material meets the Resource Conservation and Recovery Act (RCRA) definition for reactive waste, it is subject to regulation as a hazardous waste. In addition to being a hazardous waste, the OE includes a number of chemicals included within the CERCLA definition of "hazardous substance". Therefore, all requirements relating to CERCLA response actions for hazardous substances apply to the OE at Fort Ord.

EPA believes that Congress defined "pollutant or contaminant" to allow CERCLA to address a separate class of material that is outside the scope of the definition of hazardous substance. Accepting the Army's proposed designation of OE as a pollutant or contaminant could therefore imply that OE is not a hazardous substance and accordingly not a hazardous waste.

We note that earlier this year the Army and the Department of Defense (DoD)

acknowledged that OE is a hazardous substance subject to CERCLA in seeking a legislative exclusion from those portions of CERCLA which apply specifically to hazardous substances. In its statement in support of its legislative proposal, DoD made clear that it is seeking an exclusion only for operational ranges and that elsewhere OE is fully subject to CERCLA and to federal and state hazardous waste regulation.

We believe that a great deal of progress has been made in addressing OE at the former Fort Ord. This progress can be attributed in part to the leadership of the SMART team and in part to the willingness of the facility and agency personnel to work together to find solutions that are protective of human health and the environment, consistent with CERCLA, and responsive to the community. We trust that this progress will continue as we work to resolve this issue in the remedy selection phase of the OE remediation program at the former Fort Ord.

Please call us at your earliest opportunity to discuss this matter further. I can be reached at 415-972-3133, or you may call Rich Seraydarian (415-972-3031) or John Chesnutt (415-972-3005).

Sincerely,

// original signed by //

Deborah Jordan
Chief, Federal Facility and Site Cleanup Branch
Superfund Division

cc: Tony Landis, DTSC
Dick Wright, Army Environmental Policy Institute
Robin Mills, Army TRADOC

Department of Toxic Substances Control

Edwin F. Lowry, Director
8800 Cal Center Drive
Sacramento, California 95826-3200

Winston H. Hickox
Agency Secretary
California Environmental
Protection Agency

Gray Davis
Governor

MEMORANDUM

TO: Marcia Liao
Office of Military Facilities
Northern California Region
Berkeley

VIA: John Hart, P.E.
Chief, Engineering Services Unit

FROM: Ram Ramanujam, P.E.
Hazardous Substances Engineer
Engineering Services Unit

REGISTERED PROFESSIONAL ENGINEER
N. RAMANUJAM
No. C027455
Exp. 6/30/05
CIVIL
STATE OF CALIFORNIA

DATE: April 2, 2003

SUBJECT: Draft - Ordnance and Explosive Waste/Geotechnical Characterization Report - IR Site 2 - Alameda Point, Alameda, CA

Per your request, I have reviewed the following Report:

Draft - Ordnance and Explosives Waste/Geotechnical Characterization Report - Installation Restoration Site 2, Alameda Point, Alameda, CA (Prepared by Foster Wheeler Environmental Corporation, dated January 20, 2003).

Based on the review, my comments are as follows:

COMMENTS:

1. Section 1.5.51, State and Federal regulations: Installation Restoration (IR) Site 2 is classified as a hazardous waste landfill. The landfill closure systems should follow the appropriate requirements of California Code of Regulations (CCR) Title 22. The Section 1.5.5.1 should include reference to CCR Title 22.

2. Section 2, Wetland Assessment and Site Surveys: The Report should identify in map format, the locations of all the wetland areas such as Wetlands WE1, WE2 and WE3.

3. Table 4-6a, Summary of Material Design Parameters: The table provides Post-Earthquake/liquefaction Undrained Shear Strength values for various subsurface soil strata. It is not clear how these post-earthquake shear strength values were obtained from the laboratory tests. In this regard, please refer the following publication:

> **N. Ramanujam, L.L. Holish and W.H. Chen.,** Post-earthquake Stability Analysis of Earth Dams (Earthquake Engineering and Soil Dynamics, Proceedings of the ASCE Geotechnical Engineering Division, Speciality Conference, June 19-21, 1978, Pasadena).

4. Section 4.5.3, Page 4-19, 5th paragraph: "Maximum differential settlements were estimated by taking the difference between the settlement values calculated from the maximum assumed loading (landfill cap with additional fill) and the settlement caused by the minimum assumed loading (landfill cap only)." The definition of maximum differential settlement provided by the Report is incorrect. The Report evaluates settlement for two different conditions (landfill cap with and without additional fill). The difference between these two settlements will not yield differential settlement. The Report should be revised.

5. Tables 4-12a, 4-12b and 4-12c: It is not clear how the shear wave velocity values were assigned for various soil types used for the SHAKE91 computer analyses. This issue needs calcification.

6. Figures 4-4 and 4-5:

> . These figures should include the elevation of the water table, and
>
> . Subsurface cross section profile should include Standard Penetrometer Test (SPT) results.

7. Appendix L: One-Dimensional Site Response and Liquefaction-Induced Deformation Analyses: The Report uses the empirical method developed by Bartlett and Youd, 1995 and Youd et al., 2002 to estimate the magnitude of lateral spread displacements for the potentially liquefied soils. However, the empirical method is applicable only for "free face" slope conditions. The assumed "free face" is partially covered by the bay water and it cannot be considered a "free face." The Report should revisit the deformation analyses.

I will be available to attend any project meeting to resolve the technical issues identified in this memorandum. In the meantime, if you need any clarification on this memorandum, please contact me at (916) 255-6662.