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DEPARTMENT OF THE NAVY
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From: Commanding Officer, Navy Environmental Health Center
To: Commander, Atlantic Division, Naval Facilities Engineering Command, Code 1822, Norfolk, VA 23511-6287

Subj: MEDICAL REVIEW OF HEALTH AND SAFETY PLAN FOR MARINE CORPS BASE, CAMP LEJEUNE, NORTH CAROLINA

Ref: (a) Baker Environmental transmittal of 8 Oct 93

Encl: (1) Medical Review of the Health and Safety Plan, Sites 41, 69, and 74, Marine Corps Base, Camp Lejeune, North Carolina

1. As requested per reference (a), we completed a medical review of the "Health and Safety Plan, Sites 41, 69, and 74, Marine Corps Base, Camp Lejeune, North Carolina." Our comments are provided as enclosure (1).

2. The technical point of contact for comments on the review is noted in the enclosure. We are available to discuss the enclosed information by telephone with you and, if necessary, with you and your contractor. If you have any questions, please call Ms. Sheila A. Berglund, P.E., Head, Installation Restoration Program Support Department at 444-7575, extension 430.

R. L. Buck

R. L. BUCK
Acting

HEALTH AND SAFETY PLAN REVIEW

Ref: (a) 29 CFR 1910.120
(b) Navy/Marine Corps Installation Restoration Manual (February 1992)

General Comments:

1. The "Health and Safety Plan, Sites 41, 69, and 74, Marine Corps Base, Camp Lejeune, North Carolina" was prepared for LANTNAVFACENGCOM by Baker Environmental, Inc., and forwarded to the Navy Environmental Health Center on 8 October 1993. The document was dated 8 October 1993.

2. This review addresses both health and safety and emergency response sections of the plan.

3. The method used for the review is to compare the health and safety plan to federal requirements under OSHA regulations (29 CFR 1910.120) and to Department of the Navy requirements under the "Navy/Marine Corps Installation Restoration Manual." See references (a) and (b) above. Deviations and/or differences in the plan from these two primary references are noted.

4. The plan does not comply with requirements of either reference (a) or reference (b). It contains general, confusing and incomplete information. We recommend revising the plan to reflect accurate, concise and site-specific information. Particular attention should be given in developing a thorough, clear hazard analysis for each specific site. Specific comments are noted below.

5. The point of contact for review of the health and safety plan is Ms. Mary Ann Simmons, Industrial Hygienist, who may be contacted at (804) 444-7575, or DSN 564-7575, extension 477.

Specific Comments:

1. *Section 3.0, "Hazard Evaluation"*: The hazard evaluation should be the backbone of the health and safety plan. A wealth of information is included in this section, but the information is confusingly presented, incomplete, and general in nature. Some examples of this are listed below. Revise the entire section and consolidate all information pertinent to each individual site into one location. Include a clear description of each task, associated hazards and preventive measures for each site. This should provide a clearer understanding of site-specific conditions and considerations.

Enclosure (1)

a. All intrusive activities should include the potential hazard of contact with unexploded ordnance (UXO). "Monitoring Well Installation" and "Test Pit/Trenching" did not list this hazard.

b. Section 3.3.2, "Chemical Hazards" only provides information on blister agents and tear agents. Based on information presented in the site descriptions and in Table 3-1, other chemical hazards may also be present.

c. Include additional information on UXO. It is not clear if the UXO subcontractor will be with the work crews all the time for identification and management purposes. If not, employees should receive specific training on identification and appropriate actions to take in the event they encounter UXO.

d. Include an SOP which is specific for the type of thermal stress (heat or cold).

e. Section 3.3.3.7, "Confined Space Entry" contains contradictory information. It indicates confined space entry is not anticipated, but that a confined space entry procedure would be required where a rescue operation involving a confined space may occur. The previous section on "Heavy Equipment" (3.3.3.2) indicates that personnel must be careful to avoid falling into a trench. This suggests that entering a confined space for rescue purposes may be necessary on an emergency basis.

f. Section 3.3.4 provides generic information about types of radioactivity since radiological wastes or radioactivity are not anticipated at the site. The section does establish a 1 mR/hour level as the basis for site workers to stop work. From a health physics perspective, a more protective measure for site workers is to determine the background radiation exposure level and establish the stop work criteria as two times the background radiation exposure level.

2. *Section 4.0, "Site Control"*: Provide specific site descriptions and site maps in this section. The maps should include site-specific topographic information. Provide detailed site-specific safe work practices.

3. *Section 5.0, "Environmental Monitoring"*: Recommend revising this section to address the following information:

a. Include personnel exposure assessment methodology for specific chemicals. No method at all is provided to evaluate semi-volatiles and pesticides. Explain how non-specific, real time monitoring results will be compared with OSHA's chemical specific, 8-hour time weighted averaged exposure standards.

b. Include a requirement for noise monitoring.

c. Specify the types of colorimetric detector tubes which will be used.

d. Include a description of the "Minicam" and its method of detection.

e. Monitoring for external radiation exposure is discussed. The usual health physics convention in this situation is to use personal dosimeters such as a film badge for monitoring. The type of survey discussed in this section is usually referred to as "area monitoring." Revise this section to include a discussion of possible personal monitoring for external radiation exposure. (Note: Dosimetry for external radiation exposure is most likely not indicated by the potential for radiation exposure.)

f. Define the term "TEU."

g. Monitoring instruments should be calibrated before and after each use, not just daily.

4. *Section 6.0, "Personal Protective Equipment (PPE)"*:

a. Note the specific material used for the chemical-resistant clothing.

b. Explain the designation of "Level B" for Sites 41 and 74 Test Pit/Trenching since previously in the plan it was stated that trenches would not be entered.

c. Note the method to deliver air to the "North" Air Line Respirator system, e.g., a breathing air compressor will be used or air cylinders will be used. If a breathing air compressor is used, discuss its location in relationship to the work zone.

d. The Mine Safety Appliance M-17 respirator is not NIOSH/MSHA approved. This mask was designed for use in chemical-biological warfare scenarios and may only be used for that purpose (or training) and only by military service members. The use of this mask by civilians for routine or "industrial" type exposure is not permitted. An air supplying respirator should be used when an approved air purifying respirator is not available.

e. Describe the work mission duration.

f. Include specific inspection procedures for the PPE.

5. *Section 7.0, "Decontamination Procedures"*: Revise this section to include special decontamination methods for chemical warfare agent contamination. Add methods to monitor effectiveness of decontamination.

6. *Section 8.0, "Emergency Procedures"*: Page 8-3 contains a list of emergency phone numbers, several of which are incorrect. A phone numbers for the Agency for Toxic Substances and Disease Registry (ATSDR), a recognized authority on emergency response, was not included. None of the emergency facilities had been contacted to determine their capabilities of handling potential chemical contamination. The basis under which the Navy

Medical Department is to provide medical care is not stated (i.e., whether or not contractor personnel are to be rendered assistance under civilian humanitarian rules or by other agreement). There is no indication that the military ambulance crew has been trained to respond to potential hazardous waste site emergencies or that a point of contact within the Navy Medical Department has been provided technical information about the potential chemical hazards. The map provided in Figure 8-1 is not readable. The emergency eye wash bottle noted on pages 8-10 does not contain enough water to meet the minimum of 15 minutes flushing time. Carefully review reference (a) paragraph (l) and revise this section to reflect all of the regulatory requirements. Verify all phone numbers and coordinate with listed organizations prior to the start of work. Include a clear copy of a map which indicates the location of the medical treatment facilities (both military and civilian).

7. *Section 9.0, "Training"*: The training section did not contain any provision for inclusion of training certificates for all employees including sub-contractors with the health and safety plan. Provide an explanation for the "National Registry of Emergency Medical Technician" certification. Due to the nature of contaminants on this site, special first aid procedures should be investigated.

8. *Section 10.0, "Medical Surveillance"*: There is no indication that the occupational medicine physician has been provided site-specific information upon which to base the medical surveillance examinations.

9. *Appendix A, "Baker Environmental, Inc. Safety Standard Operating Procedures"*:

a. Recommend adding SOPs for hearing conservation, trenching, and heavy equipment operations.

b. In section 4.2, "Site Precautions" include non-prescription drugs as well as prescribed drugs as substances that can potentiate effects from exposure to toxic chemicals.

10. *Appendix B, "Material Safety Data Sheets (MSDS)"*: Clarify the inclusion of MSDSs for carbon disulfide and ethylene dibromide since they do not appear elsewhere in the plan.

11. Develop a Bloodborne Pathogen Program (29 CFR 1910.1030 applies) for those employees expected to perform first aid and include it in the health and safety plan.