



DEPARTMENT OF THE NAVY

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From: Commanding Officer, Navy Environmental Health Center
To: Commander, Atlantic Division, Naval Facilities Engineering
Command, Attn: Linda Saksvig, 1510 Gilbert Street,
Norfolk, VA 23511-2699

Subj: MEDICAL REVIEW OF INSTALLATION RESTORATION PROGRAM
DOCUMENTS FOR MARINE CORPS BASE, CAMP LEJEUNE, NC

Ref: (a) LANTNAVFACENGCOM transmittal ltr of 12 Dec 94
Contract N62470-89-D-4814, CTO 0249

Encl: (1) Health and Safety Program Review

1. As you requested in reference (a), we completed a medical review of the "Draft Final, Health and Safety Plan for Remedial Investigation/Feasibility Study of Operable Unit No. 9, Sites 65 and 73, Marine Corps Base, Camp Lejeune, North Carolina." Our comments are provided in enclosure (1).

2. We are available to discuss the enclosed information by telephone with you and, if necessary, with you and your contractor. If you require additional assistance, please call Ms. Mary Ann Simmons at (804) 444-7575 or DSN 564-7575, extension 402.

DAVID A. MACYS
By direction

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To Dan Bonk	From Linda Saksvig	
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HEALTH AND SAFETY PLAN REVIEW

Ref : (a) 29 CFR 1910.120 (Hazardous Waste Operations and Emergency Response)
(b) Navy/Marine Corps Installation Restoration Manual (February 1992)

General Comments:

1. The "Draft Final, Health and Safety Plan for Remedial Investigation/Feasibility Study of Operable Unit No. 39, Sites 65 and 73, Marine Corps Base Camp LeJeune, North Carolina, Contract N62470-89-D-4814, CTO 0249" was prepared for LANTNAVFACENGCOM by Baker Environmental, Inc., and forwarded to the Navy Environmental Health Center on 13 January 1995. The document is dated 23 November 1994.
2. The method used for this review is to compare the health and safety plan to the 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. A list of acronyms used in our comments is included as Attachment (1). Specific comments are noted below.
3. 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 402.

Specific Comments:

1. Section 1.0, "Introduction":

a. Sub-section 1.1, "Policy": The second paragraph refers to a U. S. Coast Guard policy manual, "COMDTINST M-16456.30, Policy Guidance for Response to Hazardous Chemical Releases." According to Coast Guard representatives, this document is out of date and has undergone major revisions. The revised document is not anticipated to be available until sometime during the summer of 1995.

b. Sub-section 1.3, "References": The current edition of the ACGIH TLV document is "1994-1995" vice "1993-1994."

2. Section 3.0, "Site Characterization":

a. Table 3-1, "Chemical/Physical Properties and Routes of Entry for Constituents Detected During Previous Sampling at Site 65":

Enclosure (1)

(1) Include the form in which chromium is expected. Its PEL/TLV values and toxicity vary depending upon this information.

(2) Explain the correlation between groundwater and/or soil chemical concentrations with airborne chemical concentrations.

b. Table 3-2, "Chemical/Physical Properties and Routes of Entry for Constituents Detected During Previous Sampling at Site 73":

(1) Benzene and cadmium should be noted as "suspected or proven carcinogens."

(2) Include the form in which chromium is expected. Its PEL/TLV values and toxicity vary depending upon this information.

(3) Explain the correlation between groundwater and/or water chemical concentrations with airborne chemical concentrations.

c. Sub-Section 3.2.2.6, "Heavy Equipment": This section states that "noise from the operation of the heavy equipment will limit verbal warning abilities." In a previous section, 3.2.2.3, "Noise," the plan states that, based on past experience with the heavy equipment, the noise levels are not a concern. These two sections are contradictory. If noise levels are high enough to limit verbal communications they likely exceed allowable limits. Review noise levels associated with heavy equipment operations and revise the plan accordingly to meet regulatory requirements.

d. Sub-Section 3.2.3, "Radiation Hazards": This section states that "Although radiological disposal at Site 65 has not been reported, a radiation survey meter will be used as a standard operating procedure. There either is or is not a radiological hazard at these sites. We recommend determining the level of naturally occurring radiation prior to starting work, and, if subsequent levels exceed these background levels, evacuating the site until the situation is thoroughly investigated by a radiation expert.

e. Sub-section 3.2.4.2, "Hazardous Fauna": It appears that the potential safety and health hazards from fire ants or ticks have been minimized. We recommend the final plan include additional information regarding identification, avoidance and first aid methods for exposure to these insects. This would be particularly significant if the weather, during this operation, were to be unseasonably warm.

3. Sub-Section 4.6, "Sanitation Procedures/Site Precautions": We recommend rephrasing the seventh bullet to prohibit any hand to mouth activity in the EZ or CRZ.

4. Section 5.0, "Environmental Monitoring":

a. Sub-Section 5.1, "Personal Monitoring": The PID Action Levels are based on coal tar pitch volatiles (CTPV). These, as a group, do not have an assigned ionization potential according to data in this plan and that found in the NIOSH *Pocket Guide to Chemical Hazards*. Additionally, a PID is not the instrument of choice for measuring CTPVs. We recommend choosing a volatile organic chemical that has a definite ionization potential for the basis of the PID readings.

b. Sub-Section 5.5, "Equipment Calibration and Maintenance" states that equipment is to be calibrated daily. Standard industrial hygiene practice is to calibrate instruments before and after each period of use.

c. Sub-Section 5.6, "Monitoring Documentation": Include a method to notify employees of air monitoring results.

d. Table 5-1, "Monitoring Equipment and Frequency for Each Field Activity Conducted at Sites 65 and 73": The "Note" below the table states that "As concentrations are measured, they should be documented..." We recommend changing "should" to "shall."

5. Section 6.0, "Personal Protective Equipment":

a. Sub-Section 6.2, "Site-Specific Levels of Protection": Level B PPE is specified for the "Test Pit/Trenching" task for Site 65. Earlier in the plan, in Section 3.2.2.6, "Heavy Equipment," personnel are specifically prohibited from entering trenches and are instructed to avoid walking within 2 feet of an open excavation. Based on this direction, the reason for using Level B PPE for this task is not clear. While it is important to protect the employee from chemical hazards, it is also important not to expose them to additional physical hazards such as heat stress.

b. Sub-Section 6.3.2, "Level C": Respirator cartridges should be changed at least daily.

6. Section 7.0, "Decontamination Procedures":

a. Sub-Section 7.2, "Personnel Decontamination," contains no guidance for PPE or decontamination procedures for support personnel assisting in the CRZ. A site-specific hazard analysis for decontamination procedures should be included in the final plan.

b. Sub-Section 7.4, "Decontamination Materials": The Baker *Standard Operating Procedures for Administrative, Field, and Technical Activities Manual* is referenced. If this

document will not be maintained on-site, we recommend including copies of all pertinent SOPs with this HASP.

7. Section 8.0, "Emergency Procedures":

a. Sub-Section 8.3, "Emergency Coordinator": The last paragraph states that on-site personnel will be informed of their responsibilities in an emergency by the emergency coordinator. We recommend informing on-site personnel of their responsibilities prior to starting site work and providing them with any necessary additional training based on their anticipated levels of response.

b. Sub-Section 8.8.1, "Physical Injury": If emergency medical personnel may be allowed into the EZ or the CRZ to rescue or treat a casualty, prior coordination with the emergency medical facility is important so that the responders' training and medical surveillance requirements can be met.

c. Sub-section 8.8.3, "Snakebite Injury": The third item, in the third paragraph, directs "Wash the wound." We recommend that this be left to medical personnel.

d. Sub-Section 8.10, "Personal Protection and First Aid Equipment": In the third paragraph a personal eye wash bottle is listed as being located in the Field Trailer and Field Vehicle and a portable 15 minute eyewash station is listed as being located closest to the area of greatest exposure potential. It should be emphasized that, in accordance with ANSI Z358.1-1990, the emergency eye wash bottle is only to be used as an adjunct in support of the 15 minute emergency eye wash station.

e. Sub-Section 8.11, "Notification": The fire chief is referred to as the NOSC both in this paragraph and in Table 8-1, "Emergency Telephone Numbers." In Sub-Section 8.16, "Spill Containment" the NOSCDR is referenced as the person to direct spill responses. The NOSC and the NOSCDR are usually different individuals. Revise the final plan, using consistent terminology, so the emergency coordinator knows who to contact in the event of an emergency. Also, clarify the fire chief's actual title, i.e., NOSCDR or NOSC.

f. Include methods to critique incidents as well as to periodically exercise and critique the emergency response plan.

8. Section 9.0, "Training Requirements": Include a provision for having copies of training certificates of on-site personnel available on-site.

9. Section 10.0, "Medical Surveillance Requirements": Include a provision for having copies of medical clearance certificates for all on-site personnel available, on-site.

10. Attachment A, "Baker Environmental Inc, Safety Standard Operating Procedures":

a. SOP 2.0, "Respiratory Protection Program": In Sub-Section 2.11, "Medical Surveillance," we recommend including a provision to medically evaluate all employees prior to fit testing and issuing them negative pressure air-purifying respirators.

b. SOP 4.0, "Bloodborne Pathogens," Sub-section 4.5.5.1, "First Aid Incident Report,": An employee's vaccination status has no bearing on whether or not they are evaluated following a potential exposure as is stated in this section. We recommend carefully reviewing the requirements listed in 29 CFR 1910.1030(f) regarding Hepatitis B vaccination and post-exposure follow-up, and revising the final HASP to incorporate appropriate requirements.

c. SOP 6.0, "Cold Stress": This SOP does not include information regarding work/rest cycles, fluid replacement protocols, types of beverages to avoid, or a description of delayed symptoms of hypothermia. Include methods to maintain body fluids and identify the fluids appropriate to use and those to avoid. We also recommend advising personnel of the signs and symptoms of cold stress related illnesses and the proper first aid procedures for these types of injuries. These can be especially important for those personnel performing heavy work while wearing impermeable protective clothing.

ACRONYMS

ACGIH:	American Conference of Governmental Industrial Hygienists
ANSI:	American National Standards Institute
ATSDR:	Agency for Toxic Substances and Disease Registry
BBP:	Bloodborne Pathogen Program
CPR:	Cardiopulmonary Resuscitation
CRZ:	Contamination Reduction Zone
EIC:	Engineer-in-Charge
EMS:	Emergency Medical Service
EPA:	Environmental Protection Agency
EZ:	Exclusion Zone
HASP:	Health and Safety Plan
HBV:	Hepatitis B Virus
HIV:	Human Immunodeficiency Virus
IDLH:	Immediately Dangerous to Life and Health
LEPC:	Local Emergency Planning Committee
MSDS:	Material Safety Data Sheet
NIOSH:	National Institute for Occupational Safety and Health
NOSC:	Navy On-Scene Coordinator
NOSCDR:	Navy On-Scene Commander
OSHA:	Occupational Safety and Health Administration
OV:	Organic Vapor
PCB:	Polychlorinated Biphenyl
PEL:	Permissible Exposure Limit
PPE:	Personal Protective Equipment
PPM:	Parts per million
SOP:	Standard Operating Procedure
STEL:	Short Term Exposure Limit
TLV:	Threshold Limit Value