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From: Commanding Officer, Navy Environmental Health Center
To: Commanding Officer, Atlantic Division, Naval Facilities Engineering Command
(Kirk Stevens), 1510 Gilbert Street, Norfolk, VA 23511-2699

Subj: HEALTH AND SAFETY PLAN REVIEW, REMEDIAL INVESTIGATION,
OPERABLE UNIT NO. 15, SITE 88, MARINE CORPS BASE CAMP
LEJEUNE, JACKSONVILLE, NC

Ref: (a) CH2MHill ltr 174056.PP.DR of 22 Jan 03

Encl: (1) Subject Health and Safety Plan Review

1. Per reference (a), we have completed a review of the subject document and are forwarding our comments to you as enclosure (1).
2. We are available to discuss the enclosed information by telephone with you and, if you desire, with you and your contractor. If you require additional assistance, please call Mr. Donald J. Coons at (757) 953-0936 or Ms. Mary Ann Simmons at (757) 953-0945. The DSN prefix is 377. The e-mail addresses are: coonsd@nehc.med.navy.mil and simmons@nehc.med.navy.mil.

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By direction

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NAVY ENVIRONMENTAL HEALTH CENTER ENVIRONMENTAL PROGRAMS DIRECTORATE

Health and Safety Plan Review

Location: Jacksonville, NC

Command: Marine Corps Base Camp Lejeune

Site: Operable Unit No. 15 (Site 88)

Work Description: Remedial Investigation

Document Date: January 2003

Contract No/Contract Task Order No: N62470-95-D-6007/0250

EP Document No: 1541

Prepared for: LANTNAVFACENCOM

Prepared by: CH2MHill

Date Received: 30 January 2003

Reviewed by:

Mr. Donald J. Coons, (757 953-0936, coonsd@nehc.med.navy.mil)

HEALTH AND SAFETY PLAN REVIEW

- Ref: (a) 29 CFR 1910.120 (Hazardous Waste Operations and Emergency Response)
(b) 29 CFR 1926.65 (Hazardous Waste Operations and Emergency Response)
(c) Navy/Marine Corps Installation Restoration Manual (February 1997)
(d) U. S. Army Corps of Engineers, Safety and Health Requirements Manual, EM 385-1-1

General Comment: We compared this health and safety plan (HASP) to federal requirements found in references (a) through (d), and have noted discrepancies in this HASP from these primary references. The acronyms used in our comments are included as Attachment (1).

Administrative Comment: Information provided on page C-1, the first paragraph third sentence states, "The plan adopts, by reference, the *Standards of Practice (SOPs) in the CH2MHILL Corporate Health and Safety Program, and Training Manual*, as appropriate." Numerous SOPs are cited throughout this document. It is unclear where these reference materials will be maintained for ready reference. We have not had the opportunity to review these documents, therefore are unable to comment regarding their accuracy or completeness. If requested we are available to review this health and safety program document.

Specific Comments:

1. Page C-9, Section 1.2 "Task Hazard Analysis (THA)":

Comment: This document is a checklist indicating potential hazards that may be encountered while performing four (4) separate tasks. A list of PPE for various tasks was located on page C-28. We do not consider a checklist the same as a site-specific task specific document. The checklist can serve as a framework for preparing the THA, but it does not meet minimal criteria for a site-specific assessment. A properly prepared THA should address each major task to be performed during the particular scope of work, the potential hazards that may be encountered, as well as methods of controlling the potential hazards.

Recommendation: Provide proper THAs with the final site-specific health and safety plan. We highly recommend using the three column format found on page 4, Figure 1-1 of the *U. S. Army Corps of Engineers Safety and Health Requirements Manual*, EM 385-1-1, dated 3 September 1996, for its completeness and ease of use.

2. Pages C-17 and C-18, Section C.2.2.8, "Heat Stress, Symptoms and Treatment of Heat Stress":

Comments:

a. No information is provided regarding the potential rise in body temperatures of victims of heat exhaustion (up to approximately 102 degrees Fahrenheit) or heat stroke victims (104 degrees Fahrenheit or higher).

b. No guidance is provided directing what actions are to be taken for the proper field treatment and management of site personnel who may be experiencing a heat related injury. Additionally, in the treatment section under heat stroke, one finds directions to rapidly cool potential heat stroke victims by soaking in cool, but not cold water. It is unclear what "soaking" is intended to mean.

c. In the last paragraph entitled "Monitoring Heat Stress," the first sentence states "These procedures should be considered when the ambient temperature exceeds 70 degrees Fahrenheit, the relative humidity is high (>50 percent), or when workers exhibit symptoms of heat stress." This guidance is both incomplete and erroneous. The purpose of "monitoring" ambient weather conditions is to prevent or reduce the potential onset of heat stress related injuries. The use of appropriate monitoring devices such as a WBGT meter is recommended. This is particularly important if site workers are wearing semi-permeable or impermeable protective clothing.

Recommendations:

a. Include guidance for conducting physiological monitoring of all site workers in the final health and safety plan. Additional guidance for conducting a heat stress monitoring program can be found in the NIOSH/OSHA/USCG/EPA *Occupational Safety and Health Guidance Manual for Hazardous Waste Site Activities, DHHS (NIOSH) Publication No. 85-115, October 1985*, and the *U. S. EPA Standard Operating Safety Guides, Publication No. 9285.1-03*.

b. Provide guidance for the proper field treatment and management of personnel experiencing heat stress injuries. This would include removal from source of exposure to a shady or cooler area; removal of protective clothing, particularly if wearing semi-permeable or impermeable clothing; loosening or removal of personal clothing as decency allows; sponging with cool water and fanning; and if conscious providing casualty with sips of cool water or other appropriate beverage. We do not recommend immersing the casualty in either cool or cold water in the field. This is better left to the emergency medical treatment facility personnel. If the heat stress casualty is experiencing heat stroke, immediate evacuation to the emergency medical treatment facility is required.

c. We recommend providing guidance for conducting heat stress monitoring, to include use of appropriate instrumentation.

3. Page C-25 and C-26, Section C-3, "Project Organization and Personnel":

Comments:

a. Section C.3.1, "CH2M HILL Employee Medical Surveillance and Training": The fourth and fifth sentences state "Employees designated "FA-CPR" are currently certified by the American Red Cross, or equivalent, in first aid and CPR. At least one FA-CPR designated employee must be present during all tasks performed in the exclusion or decontamination zones." It is unclear if the first aid/CPR responders have been trained in the Bloodborne Pathogens criteria as required by 29 CFR 1910.1030. Additionally, in accordance with references (c) and (d), at least two personnel trained and certified in adult first aid/CPR are to be available on-site at all times work is being performed.

b. Section C.3.2.2, "CH2M HILL," does not include the name of the Site Safety Coordinator.

Recommendations:

a. Include information in the final site-specific health and safety plan stating that all emergency first aid/CPR providers have received training in the Bloodborne Pathogens in accordance with 29 CFR 1910.1030. Additionally, ensure that at least two emergency first aid/CPR providers are available on-site during the times work is being performed.

b. Appoint an appropriate company official as soon as possible so that the important functions of this position may be accomplished in a timely manner. Verify all emergency telephone numbers prior to commencing on-site work.

4. Page C-29, Section C.5.1, "Air Monitoring Specifications":

Comment: The table directs daily calibration of direct reading air monitoring instruments.

Recommendation: Revise the calibration guidance to state that all direct reading air monitoring instruments will be calibrated before and after each period of use in accordance with the manufacturer's specifications and standard industrial hygiene practice.

5. Page C-34, Section C.8.1, "Site-Control Procedures":

Comment: There is no requirement for site workers or visitors entering the EZ/CRZ to log-in and log-out on a daily basis.

Recommendation: Establish the requirement for all personnel entering the EZ/CRZ to log-in and log-out from the site.

6. Pages C-36 through C-38, "Emergency Response Plan":

Comment: Section C.9.2, "Emergency Equipment and Supplies," cites the availability of an emergency eye wash unit. It is unclear if this emergency eye wash unit meets the American National Standards Institute (ANSI) Z358.1-1990 or later standard and is capable of delivering to the eyes not less than 1.5 liters per minute (0.4 gallons) for 15 minutes.

Recommendation: Include information in the final health and safety plan stating that the emergency eye wash unit meets ANSI Standard Z358.1-1990, or later criteria.

7. Attachment 4, "Emergency Contacts":

Comments:

a. The Table entitled "Emergency Contacts" does not include a method for contacting the LEPC or a local poison control center. The telephone number, 1-800-222-1222 may be used for contacting the nearest poison control center.

b. The unnumbered page following "Emergency Contacts," provides the telephone number and written directions to the local emergency medical treatment facilities. However, a map showing the correct route is not included in this document.

Recommendations:

a. Include telephone numbers for the LEPC and poison control center in the final health and safety plan. Verify all emergency telephone numbers prior to commencing on-site work.

b. Include an easily readable map showing the correct directions to the emergency medical facilities in the final health and safety plan.

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
COC:	Contaminant of Concern
CPR:	Cardiopulmonary Resuscitation
CRZ:	Contamination Reduction Zone
EIC:	Engineer-in-Charge
EMS:	Emergency Medical Service
EPA:	Environmental Protection Agency
EZ:	Exclusion Zone
HBV:	Hepatitis B Virus
HIV:	Human Immunodeficiency Virus
IDLH:	Immediately Dangerous to Life and Health
LEL	Lower Explosive Limit
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
PID:	Photoionization Device
PPE:	Personal Protective Equipment
PPM:	Parts Per Million
SCBA:	Self Contained Breathing Apparatus
SOP:	Standard Operating Procedure
STEL:	Short Term Exposure Limit
TLV:	Threshold Limit Value