

**DEPARTMENT OF TOXIC SUBSTANCES CONTROL**REGION 2  
700 HEINZ AVE., SUITE 200  
BERKELEY, CA 94710-2737

April 3, 1996

Commander  
Department of the Navy  
Engineering Field Activity, West  
Naval Facilities Engineering Command  
Attn: Mr. Stephen Chao, Project Manager  
900 Commodore Drive, Bldg. 101  
San Bruno, California 94066-2402

Dear Mr. Chao:

**IRON CURTAIN PILOT-SCALE STUDY HEALTH AND SAFETY PLAN, MOFFETT  
FEDERAL AIRFIELD**

The Department of Toxic Substances Control (DTSC) received the subject document on April 1, 1996. In order to facilitate the extremely tight field work schedule, the Department has conducted an expedited review and comments are attached below. In general, DTSC needs at least three weeks to review any Health and Safety Plan (HASP). DTSC has addressed this concern to the Navy on March 14, 1996 that sufficient time should be provided for the State to review the subject document. DTSC recommends the Navy to consider practical review time in future contracting process to assure the schedule is implementable. Please incorporate all comments in the revised HASP. If you have any questions, please call me at 510-540-3830.

Sincerely,

A handwritten signature in cursive script, appearing to read "C. Joseph Chou".

C. Joseph Chou  
Remedial Project Manager  
Base Closure Unit  
Office of Military Facilities

Enclosure

cc: Mr. Michael Bessette  
Regional Water Quality Control Board  
2101 Webster Street, Suite 500  
Oakland, California 94612

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Mr. Michael D. Gill  
U.S. Environmental Protection Agency  
Region IX, Mail Stop H-9-2  
75 Hawthorne St.  
San Francisco, California 94105

Mr. Frank Parr  
Department of Toxic Substances Control  
Office of Scientific Affairs  
Industrial Hygiene Section  
245 West Broadway, Suite 425  
Long Beach, California 90802

DEPARTMENT OF TOXIC SUBSTANCES CONTROL  
245 WEST BROADWAY, SUITE 425  
LONG BEACH, CALIFORNIA 90802  
(310) 590-4956



## MEMORANDUM

TO: Joseph Chou  
Hazardous Substances Engineer  
Office of Military Facilities  
Base Closure Unit  
700 Heinz Avenue, Suite 200  
Berkeley, CA 94710

FROM: Frank S. Parr   
Associate Industrial Hygienist  
Office of Scientific Affairs (OSA)  
Industrial Hygiene Section  
245 West Broadway, Suite 425  
Long Beach, CA 90802

DATE: April 3, 1996

SUBJECT: MOFFET FEDERAL AIRFIELD, IRON CURTAIN PILOT-SCALE HASP  
PCA Code: 14740 Site Number: 200068/45

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**BACKGROUND**

The Office of Military Facilities, Base Closure Unit in Berkeley requested OSA Industrial Hygiene Section (IHS) to review the Health and Safety Plan (HASP) addressing the installation of an iron curtain treatment system to treat groundwater contaminated with chlorinated volatile organic compounds. Moffett Federal Airfield (MFA) is located approximately one mile from the southern end of San Francisco Bay, adjacent to the cities of Mountain View and Sunnyvale, California. The facility occupies approximately 2,200 acres in Santa Clara County. Since the 1950's, the primary mission of MFA has been to support antisubmarine warfare training and patrol squadrons. In 1992, MFA was designated for closure as an active military base under the Department of Defense Base Realignment and Closure Act program. The National Aeronautics and Space Administration, which operates the Ames Research Center at the northern side of the station, assumed control of the facility in July 1994. At that time, the station was renamed Moffett Federal Airfield.

In July of 1987 the U.S Environmental Protection Agency (EPA) placed MFA on the National Priorities List. Historical on-site activities, such as parts washing during vehicle and aircraft maintenance and dry cleaning, and off-site operations, such as semiconductor manufacturing and electroplating, have contributed to groundwater contamination at MFA.

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The groundwater contamination is comprised of fuel-related compounds and chlorinated, volatile organic compounds (VOCs).

The area in which the iron curtain field activities shall be conducted is Site 9 - Old Fuel Farm. This site was used for the storage of fuel from the 1940's until 1964. It is predominantly covered with asphalt and concrete paving. Data included within the Comprehensive Long-Term Environmental Action Navy (CLEAN) Naval Air Station Moffett Field Draft Final General Health and Safety Plan and the CLEAN Iron Curtain Pilot-Scale Study Phase 1 Field Work Plan indicates that the maximum soil contaminant concentrations in ug/kg for site 9 include 420 ug/kg 1,1,2,2 tetrachloroethane, 43 ug/kg, 1,2-DCE, 41 ug/kg acetone, 26 ug/kg methylene chloride. Maximum groundwater contaminant concentrations specific to the area of concern include 2800 ug/l, 28 ug/L trichloroethene, 2 ug/L vinyl chloride, and 260 ug/L dichloroethene.

The iron curtain is a passive treatment technology involving the installation of a metal-bearing wall within a groundwater aquifer perpendicular to the path of a migrating contaminant plume. Contaminated groundwater is detoxified via the water flowing through the wall and undergoing reductive dehalogenation.

#### DOCUMENT REVIEWED

OSA reviewed the "Iron Curtain Pilot-Scale Study Health and Safety Plan" for MFA. This document was prepared by Slurry Systems, Inc. and was dated March 28, 1996. It was received by OSA on April 2, 1996.

The OSA-IHS review focused on the Slurry Systems HASP and did not include a review of the CLEAN Draft Final General HASP.

#### GENERAL COMMENTS

The Department of Toxic Substances Control (DTSC) reviewed the HASP for compliance with Title 8, California Code of Regulations (8 CCR), section 5192: "Health and Safety for Hazardous Waste Operations and Emergency Response", DTSC policies and guidelines, and the NIOSH/OSHA/USCG/EPA Guidance Manual as well as other appropriate State and Federal Occupational Health and Safety Regulations. Please note that in addition to the requirements of this section, the employer is responsible for the implementation of an effective Illness and Injury Prevention program which is required by the 8 CCR, sections 1509 and 3203. The requirements of those sections have not been included in this review.

DTSC is unable to foresee all the health and safety hazards in the work-place by the review of the submitted plan. Continuous surveillance of the work-site and creation of an effective health and safety program by the employer will reduce work place injuries and

reduce liability. An industrial hygienist from the OSA-IHS may perform a field audit in order to confirm the implementation of the provisions and specifications presented in the HASP.

The review of this HASP is not a guarantee that it will be properly and safely implemented. HASP implementation is the employer's responsibility.

### SPECIFIC COMMENTS

1. Section 2.2, PRC. Please specifically state whether PRC of Slurry systems has ultimate site safety officer authority for the iron curtain field work.
2. Section 3.2, Physical Hazards. Text within this section indicates that hearing protection will be required to be worn around pile driving rigs. Past experience has indicated that noise levels in excess of the 85 dBA action level are generated by a wide variety of earth moving and site characterization equipment. An employer is obligated to quantify their employees' exposure to noise when there is a possibility of exposure to an eight-hour time-weighted average of 85 dBA. Provide personnel monitoring data from previous similar site activities or describe noise monitoring protocols to be employed on site, including a description of the instrumentation, frequency of monitoring, and corresponding action levels. [8 CCR Group 15, Article 105 (Control of Noise Exposure)].
3. Section 3.2, Physical Hazards. Language within this section states "Conventional safety techniques for material handling and equipment operations will be utilized" when performing excavating, pile driving, and mixing bentonite with cement on-site. Please include a more detailed description of potential chemical, physical and biological hazards associated with these tasks. [8 CCR 5192(b)(4)(B)].
4. Section 3.4, Anticipated Field Activities. Please indicate whether personnel shall at any time enter the trench excavation. If so, the requirements of 8 CCR 341 - 341.5 (Permit Requirements) and 8 CCR 1539 - 1541.1 (Excavations and Requirements for Protective Systems) may need to be addressed. In addition, a competent person is required to inspect excavations less than 5 feet in depth in which personnel are required to work to ensure that there are no indications of cave-ins. If applicable, please include language within this section addressing this requirement. [8 CCR 1541.1 (a)(1)(A)].
5. Section 4.0, Personal Protection. Please describe in greater detail the specific components of Level C PPE ensemble. Including the type (material) of protective suit, inner and outer glove, and type of air-purifying respirator cartridge(s). In addition, please describe the following elements as they relate to a PPE program required by 8 CCR 5192(g)(5);
  - PPE selection based upon site hazards,

- PPE use and limitations of the equipment,
- PPE maintenance and storage,
- PPE training and proper fitting,
- PPE donning and doffing procedures,
- PPE inspection procedures prior to, during, and after use,
- Evaluation of the effectiveness of the PPE program, and
- Limitations during temperature extremes, heat stress, and other appropriate medical conditions.

6. Section 7.0, Emergency Response Plan. Please include information discussing personnel roles, lines of authority, and methods of communication as they relate to the emergency response plan. [8 CCR 5192(l)].

7. Section 10.0, NIOSH Chemical Data Sheets. It is acceptable to include the NIOSH chemical data sheets to discuss the chemical, physical, and toxicological characteristics of the compounds of concern on site. However, please include the correct Cal-OSHA exposure limits. Refer to table below. In addition, please address other compounds of concern identified in the Draft Final General HASP.

Chemical	PEL	STEL	Ceiling
Trichloroethylene	25	200	300
1,2-Dichloroethylene	200	N/A	N/A
Tetrachloroethylene	25	N/A	300

The comments outlined below reflect other health and safety concerns which were not addressed in the submitted HASP.

8. A safety and health risk or hazard analysis for each site task and operation identified in the workplan is required by 8 CCR 5192(b)(4)(B)1. Please identify all tasks or operations and describe all chemical, physical and biological hazards associated with these tasks. In addition, outline the degree of risk associated with each task and identify protective protocols (i.e. air monitoring, PPE, work practices, training, etc.) that will minimize employee exposure to these hazards.

9. Please provide additional detail describing confined space hazards and entry procedures. If confined space entry is not anticipated (i.e. no excavation entry) then include language within the HASP stating this. (8 CCR 5192(b)(4)(B)(9) & 5157).

10. When heavy equipment is used on sites where high voltage overhead power lines may be encountered, the minimum safe distances to be maintained from these lines outlined in 8

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CCR 2946, Table 2, must be followed. Disregard if no overhead lines are present at or within distances addressed within the cited section. (8 CCR 2946).

11. Please include language indicating that all regional notification centers shall be contacted a minimum of two working days prior to the start of any digging or excavation work per the requirements of 8 CCR 1541.

12. Please clarify if the administration of CPR/First Aid by trained individuals will be part of the Emergency Response/Contingency Plan. If so, the bloodborne pathogen standard requires that employers whose employees have a potential to be occupationally exposed to blood or other potentially infectious materials resulting from the performance of an employee's duties be subject to the requirements of the standard. Should the site safety officer or other designated employee be first aid/CPR trained and required to provide first aid, please discuss training requirements, an exposure control plan, and adequate PPE and decontamination procedures as they relate to the BBP standard. (8 CCR 3400 and 5193).

13. Provide background information which demonstrates ionizing radiation hazards are not a concern at this site, or discuss monitoring protocols for radiological hazards. Employers are required to monitor the work site for hazardous levels of ionizing radiation when the site evaluation produces information that shows the potential for ionizing radiation or when the site information is not sufficient to rule out these possible conditions. (8 CCR 5192(c)(6)(A))

14. Explain how adequate lighting shall be provided during work activities. Ensure minimum illumination intensities outlined in table H-1, 8 CCR 5192(m) are provided. If all work activities are to be performed during daylight hours, include language stating so within the HASP.

15. A description of a spill containment program is not included. Describe protocols to followed in the event of a spill at the job site. (8 CCR 5192(b)(4)(B)(10) & (j)).

16. A description of sanitary facilities which will be available to site personnel is not included. Please describe provisions for providing personnel with adequate potable and non-potable water and toilet facilities. (8 CCR 5192(n)).

## CONCLUSIONS

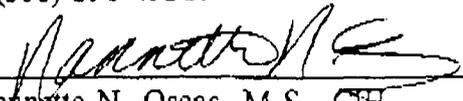
The submitted HASP does not contain all of the elements and/or contains the elements in insufficient detail as specified in 8 CCR 5192. Areas identified as deficient must be corrected or clarified and resubmitted for further review, and are delineated in the preceding sections.

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Future changes in the document should be clearly identified. This may be done in several ways: by submitting revised pages with the reason for the changes noted, by the use of strikeout and underline, by the use of shading and italics, or by cover letter stating how each of the comments herein has been addressed.

OSA is available to discuss this document and related issues. Should questions arise contact Frank Parr at (310) 590-4956.

PEER REVIEW BY:

  
Nannette N. Oseas, M.S., CIH  
Senior Industrial Hygienist

cc: Site File  
OSA