

National Aeronautics and  
Space Administration  
**Ames Research Center**  
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JAN 12 2001

Reply to Attn of:

QE:218-1

Commanding Officer  
Naval Facilities Engineering Command, Southwest Division  
Attn: Ms. Marianna Potacka  
BRAC Environmental Coordinator  
NASA Crows Landing Flight Facility  
1220 Pacific Highway  
San Diego, CA 92132-5190

Dear Ms. Potacka:

NASA has received the following document from the Navy: Final Action Memorandum, Time-critical Removal Actions at the National Aeronautics and Space Administration (NASA) Crows Landing Flight Facility, Administration Area Plume at Installation Restoration Program (IRP) Site 17. The document has been reviewed and the following comments are provided, as requested in the public notification provided in the Modesto Bee.

### GENERAL COMMENTS

The proposed time-critical removal action (TCRA) involves the extraction of contaminated groundwater from one or more locations within the administration area plume near well CL1-MW-12(S). The removal action will end when either 50,000 gallons of water have been removed or the levels of ethylene dibromide (EDB) reach 1000  $\mu\text{g/L}$ , whichever occurs first. The goal of the removal action is to reduce the risk of off-site migration of contaminants.

To date, there has not been any evidence of migration of contaminants off of the Crows Landing facility. This is in spite of the fact that some of those contaminants have probably been in the groundwater for more than fifty years. It appears, based on flow data, that irrigation wells have an influence on flow direction at the facility. The seasonal pumping of irrigation water has caused the flow direction to vary considerably throughout the year. As a result, it appears that the varying flow direction changes have helped keep the plumes from migrating offsite. Since there does not appear to be an imminent threat to the surrounding wells, the Navy should reconsider the need for this TCRA.

Based on the amounts of water proposed to be pumped during this removal, it is doubtful that any significant reduction of contaminant mass and concentration will occur. While

the removal action will reduce some amount of EDB, there will still be very large quantities of contaminants such as acetone, benzene, and gasoline left in the groundwater. Since there will be large amounts of contaminants left, the usefulness of this removal action appears questionable.

To properly prevent any potential offsite plume migration due to the influence of irrigation wells, pumping of groundwater at higher rates will be needed to provide hydraulic control. The current proposal will not provide that. Also, to provide meaningful hydraulic data, the aquifer should be pumped at a high enough rate to stress the aquifer.

A remedial system had been previously planned and under construction for the Cluster 1 site. The Navy should explain why the construction was stopped and replaced with this TCRA. The previously proposed system would have provided a greater reduction in the contaminant mass than the current removal action. The proposed system would have been able to address all contaminants present including the recently discovered EDB, methyl ethyl ketone (MEK), and methyl isobutyl ketone (MIBK).

### **SPECIFIC COMMENTS**

#### **COMMENT 1**

Sect. I, Par. 4, Pg. 2

The scope of the proposed actions are to prevent exposure to receptors of contaminants in groundwater that may migrate offsite due to the influence of nearby irrigation wells. With the exception of EDB, MEK, and MIBK, the contaminants have been known for some time. There has not been any evidence to date that such offsite migration had occurred.

#### **COMMENT 2**

Sect. I, Par.5, Pg. 2

As stated in this paragraph, the TCRA should accomplish the following: removal of contaminant mass from a potential drinking water supply, reduce the potential exposure of nearby receptors of hazardous materials, and reduce the potential for migration of the plume to adjacent properties. Based on the proposed removal amounts of 50,000 gal or reduction of EDB to 1000 µg/L, it does not appear that this TCRA will be able to achieves the stated goals.

#### **COMMENT 3**

Sect. II.A.1 Par. 9 Pg.5

The dry wells were cobble-*filled* pits, not cobble-*lined*. The wells were removed completely during the tank removals.

**COMMENT 4**

Sect. II.A.1 "Evaluation of the Release ..." Pg.6 - 7

The paragraph states that the releases of contaminants to a potential water supply were confirmed by the July 2000 sampling event. The implication is that there was no confirmation of the releases until the July 2000 event. The releases to groundwater have been known and confirmed as a result of several years of environmental investigation work before the July 2000 sampling.

In that same paragraph, plume migration is discussed. Data collected to date do not indicate that the plume/plumes are moving offsite. The proposed pumping amounts in Section V (extraction of 50,000 gal. of water or bringing the concentration of EDB to 1000 µg/L, whichever comes first) will not be sufficient to remove the contaminant hazard or prevent the plumes from potentially migrating offsite. Controlling plume migration will require higher pumping rates and water volumes. Additionally, such pumping would have to be balanced so as not to further commingle the plumes.

**COMMENT 5**

Sect. II.A.4 Pg.9

See previous comment concerning confirmation of releases. The presence of contaminants have been know for some time by investigative work that occurred at the site before the July 2000 sampling event.

**COMMENT 6**

Sect. II.C.1 Par. 4 2<sup>nd</sup> Sent., Pg. 11

In addition to representatives for Stanislaus County, NASA representatives also participate in BCT meetings.

**COMMENT 7**

Sect. IV

This section states that "releases of pollutants or contaminants from this site ... may present an imminent and substantial endangerment to public health, welfare, or the environment" if not addressed by this TCRA. Based on the amount of groundwater extraction proposed for this action, the potential threat to receptors will remain due to the high levels of the remaining compounds.

**COMMENT 8**

Sect. V.A.1 Par. 4, Pg.14

It is unclear as to how the removal of 20,00 to 50,000 gallons of groundwater will substantially remove the contaminant mass. A considerable amount of contaminant mass will remain after conclusion of this TCRA. Previous calculations of contaminant mass for the highly contaminated area of the plume (>100,000 µg/L) showed that 119,000 lbs

of mass were present due to JP4/5 and benzene. The TCRA, as proposed, will address only a very small fraction of the mass present.

**COMMENT 9**

Sect. V.A.3 Pg.14

This paragraph states that the "no action alternative" will leave the risk that contaminants could migrate offsite. As noted in previous comments, there will still be a substantial amount of contaminant mass present after this TCRA. Additionally, the potential for offsite migration will still exist. Hydraulic control of the plumes will be required to prevent migration offsite. Higher pumping rates and water volumes over longer periods of time will be needed to establish such control. Remedial action will be required. It would be more expedient to focus on the installation of a remedial system at the site.

**COMMENT 10**

Sect. VI

See previous comments on the inability of this removal action to reduce risks at the site.

If you have any questions or comments, please call me at (650) 604-0237.

Sincerely,



Donald M. Chuck  
Environmental Services Office

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## TRANSMITTAL

Date: 18 Jan 2001

From: Lynn Marie Hornecker

To: Diane Silva  
Code 01LS.DS

**Subj: CERCLA Administrative Record Materials**  
NALF Crows Landing

**Installation:** Naval Auxiliary Landing Field, Crows Landing

**UIC Number:** N60211

**Document Title (or subject):** Final Action Memorandum

**Author:** Donald M. Chuck, NASA

**Recipient:** Marianna Potacka, SWDIV BEC

**Record Date:** 12 Jan 2001

**Approximate Number of Pages:** 4

**EPA Category:** 01.1

**Sites:** 17, UST Cluster 1

**Key Words:** Removal Action, GW, EDB, acetone, MEK, MIBK

**Contract:** N/A

**CTO Number:**

N/A