

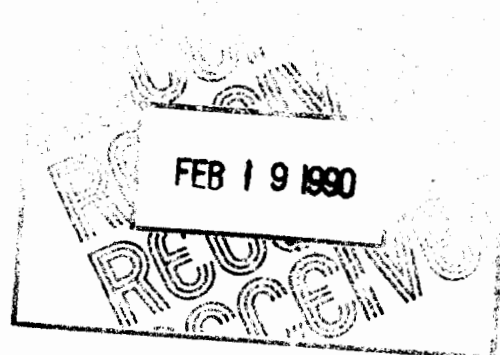
WSMR - Reed



DEPARTMENT OF THE ARMY
U.S. ARMY WHITE SANDS MISSILE RANGE
WHITE SANDS MISSILE RANGE, NEW MEXICO 88002-5076
February 15, 1990

REPLY TO
ATTENTION OF

Environmental Office



Mr. Jack Ellvinger
Chief, Hazardous Waste Bureau
New Mexico Environmental Improvement Division
Post Office Box 968
Santa Fe, New Mexico 87504-0968

Dear Mr. Ellvinger:

Enclosed find the Closure Plan for the High Energy Laser System Test Facility Hazardous Waste Tanks. Closure will begin upon written approval from your office.

Any questions on this submission should be addressed to Harrison Orr, (505) 678-2224.

Sincerely,


Frank M. Patete
Colonel, U.S. Army
Director, Engineering, Housing
and Logistics

Enclosures

HELSTF TREATMENT TANK SYSTEM CLOSURE PLAN

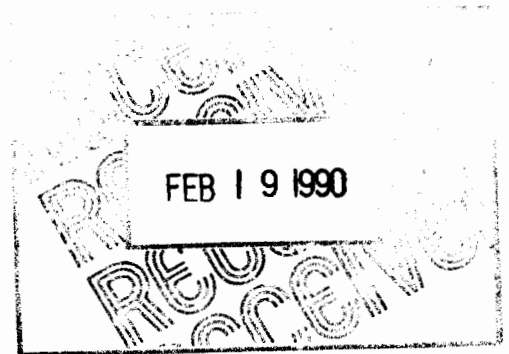


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HELSTF TREATMENT TANK SYSTEM CLOSURE PLAN

I. CLOSURE PERFORMANCE STANDARD

This closure plan complies with the performance standards set forth in Part V, Subpart G of HWMR-5. The objective of this plan is to close the High Energy Laser Systems Test Facility Treatment Tank System (HTTS) in a manner such that all hazardous waste and residues will be removed from the facility. All wastes will be disposed of at an approved, permitted facility. Partial closure of the HELSTF treatment tank system is not anticipated. Post-closure activities are also not anticipated. Provisions for partial closure or post-closure will therefore not be made and these topics will not be considered further. This closure plan will be amended if soil or groundwater sampling is required for further site characterization. Site characterization work will be subject to the terms of the HSWA Permit.

II. WASTE INVENTORY

The west tank of the HTTS is presently empty of all waste material except those residues embedded in the ballast sand and in the waste transfer lines. The ballast in this tank consists of 65 to 70 cubic yards of sand. The maximum inventory of hazardous material ever on-site at the facility was approximately 70,000 gallons of liquid waste from the cleaning facility and chromated waste water. This volume was reduced, by evaporation, to nearly 40,000 gallons when the tanks were determined to be leaking and all liquid waste was removed from the tank system and disposed of at a permitted disposal facility.

The east tank has never received waste material and contains approximately 50 cubic yards of ballast sand.

III. CLOSURE

A. GENERAL PROVISIONS

1. Personnel Training

Only personnel who have received training as required by 29 CFR 1910.1200 and 40 CFR 265.16 will be permitted to sample, handle, process or remove contaminated material. All material contained in, or associated with, the HTTS or its ancillary equipment will be considered to be hazardous until verified to be clean by appropriate procedures.

2. Sampling and Analysis Procedures

Samples will be taken of ballast sand, rinsate, liner material, concrete and soil. All samples will be analyzed to detect the presence of hexavalent chromium, non-halogenated organics or halogenated organics. They will also be analyzed to determine corrosivity and ignitability. Preliminary Analyses will be conducted by the HELSTF and TE-AE laboratory to investigate extent of contamination during the cleaning process.

Sampling will be performed by personnel from the STEWS-TE-AE Chemical Analysis Laboratory. Sampling for preliminary analysis may be performed by either personnel from the STEWS-TE-AE Chemical Analysis Laboratory or by personnel from the local HELSTF Chemical Analysis Laboratory.

Formal analysis will be performed by an independent laboratory certified to perform the analyses outlined in Table 1.

Solid samples shall consist of not less than 500 ml of material. Liquid samples shall consist of not less than one (1) liter of liquid. All samples will be placed in glass bottles with Teflon lined tops. All samples, preliminary or formal, will be split for possible future analysis. These samples will be stored and preserved until clean closure certification is accepted by the state of New Mexico. All samples will be analyzed for ignitability, corrosivity, hexavalent chromium and organic using the methods outlined in Table 1.

Table 1. Analytical Methods

CHARACTERISTIC	SW-846 METHOD
ignitability	1010
corrosivity	1110
Hexavalent Chromium	7195 or 7196
purge-able aromatics	8020
non-halogenated volatile organics	8015
Halogenated Solvents	8010

B. SAMPLING, PROCESSING AND DISPOSAL OF THE BALLAST SAND

1. Sampling

Formal Samples of the ballast sand in each of the tanks will be collected¹ in the following manner:

1. The interior of each tank will be divided into 32 equal size grid sectors. This will be accomplished by dividing the width of each tank into quarters and the length of each tank into eighths.
2. For each tank, each sector will be numbered sequentially.

¹ This sampling and analysis plan is in accordance with *Waste Analysis Plans, a Guidance Manual (EPA/530-SW-84-012)*.

3. Seven sectors of each tank will be selected for sampling using a random number sampling procedure.
4. Stainless steel tools will be used to collect a sample from each identified sector.

All Formal samples of ballast sand will be analyzed as outlined in paragraph III.A.2 of this plan.

2. Decontamination and Disposal of the Ballast Sand

i. Storage

The sand will be stored in the present location, in the tanks, and covered with plastic held down with sandbags to prevent any dust or sand from blowing out of the tanks. Storage will continue until the procedures specified in this closure plan are initiated.

ii. Decontamination and Disposal

The ballast sand in a tank² will be considered to be a hazardous waste if any of the samples collected as outlined in paragraph III.B.1 above display hazardous characteristics as identified from the analyses³. If the ballast sand in a tank is determined to be non-hazardous⁴ it will be removed and disposed of in the WSMR post sanitary landfill.

If any of the ballast sand is determined to be a hazardous waste or contain hazardous constituents, a laboratory study will be conducted to determine its treatability. This study will be conducted by a government contractor. Not more than five (5) cubic feet of ballast sand and not more than 50 gallons of rinse water may be used in the laboratory study.

If the objectives of the laboratory study are met and are validated by formal analysis, a batch process will be proposed. The results of the laboratory study and any proposed waste treatment will be presented to the New Mexico State Environmental Improvement Division for approval.

In the event that the laboratory study cannot be validated within the initial 60 days of closure, DE will dispose of all remaining contaminated ballast and any contaminated rinse water through a permitted disposal facility.

3. Decontamination and Disposal of the Tank Liners

The ballast in the east tank will be disposed of as outlined in paragraph III.B.2.ii. In the event that this ballast is found to be hazardous, it will however, be transferred to the west tank to await processing and disposal so as that the cleaning and disposal of the liner from the east tank may begin as soon as possible. When all ballast sand has been removed from the west tank, its liner will also be cleaned and disposed of as outlined in this paragraph.

² Each tank will be treated as a separate entity for the purpose of determining if the ballast sand is hazardous or non-hazardous.

³ These analyses were previously outlined in Table 1.

⁴ As the east tank has never been exposed to hazardous waste it is anticipated that the ballast in this tank may not be hazardous.

The liners will be steam cleaned at least three times and checked by formal analysis until there is no detectable contamination. These liners will then be disposed of as solid waste. In the event that contamination remains after reasonable attempt has been made to clean them, the liners will be disposed of as hazardous waste through a permitted disposal facility.

The rinsate from the steam cleaning process will be recycled through a set of filters to remove all hazardous constituents below detectable levels. The cleanliness of the rinsate will be verified by analysis and the rinsate will ultimately be disposed of in the HELSTF sewage ponds.

4. Decontamination and Disposal of the Hazardous Waste Pipeline

The pipeline from the cleaning facility to the tank system will be drained of any remaining waste and the primary and secondary channels will be dried using a nitrogen purge to prevent any waste release during excavation. The pipeline will then be excavated, steam cleaned at least three times until analysis indicates that contamination is non-detectable in the rinsate. It will then be disposed of off site as solid waste. In the event that contamination remains after reasonable attempt has been made to clean the pipe, it will be disposed of as hazardous waste through a permitted disposal facility. All feed sources to the pipeline will be permanently closed and sealed. Any captured residual waste will be disposed of as hazardous waste. The rinsate from the steam cleaning process will be recycled through a set of filters to remove all hazardous constituents below detectable levels. The cleanliness of the rinsate will be verified by analysis and the rinsate will ultimately be disposed of in the HELSTF sewage ponds.

5. Decontamination of the Concrete Tanks

The concrete tanks themselves will be steam cleaned at least three times until analysis indicates that no contamination is detectable in the rinsate. A grid selection process as outlined in III.B.1 for the ballast sand will be applied to the clean concrete floor of the tanks. Core samples of the concrete and samples of the soil below the core samples⁵ will be taken and analyzed as outlined in Table 1. If the concrete cannot be cleaned to non-detectable limits of contamination it will be broken down and disposed of as hazardous waste through a permitted disposal facility. If the concrete is determined to be non-hazardous the tanks will be dismantled and disposed of at the convenience of the government. The rinsate from the steam cleaning process will be recycled through a set of filters to remove all hazardous constituents below detectable levels. The cleanliness of the rinsate will be verified by analysis and the rinsate will ultimately be disposed of in the HELSTF sewage ponds.

6. Sampling of Adjacent Water Table

A perched water table is known to exist in the proximate to the HTTS. Four shallow ground water wells exist adjacent to the corners of the HTTS. As a final act of closure, The water in these wells will be sampled and analyzed in accordance with paragraph III.A of this plan.

7. Decontamination and Disposal of Ancillary Equipment

⁵ Taken at at depth of approximately one foot.

The items used in the cleaning of the facility (e.g., shovels, mops, buckets, protective clothing, pump hose, fittings, etc.) will be steam cleaned at least three times or disposed of hazardous waste. If cleaned, the rinsate from the steam cleaning process will be recycled through a set of filters to remove all hazardous constituents below detectable levels. The cleanliness of the rinsate will be verified by analysis and the rinsate will ultimately be disposed of in the HELSTF sewage ponds. Laboratory personnel shall clean and decontaminate all bottles and sampling tools.

IV. CLOSURE CERTIFICATION

A. Validation of Performance Standards

All activities will be monitored by the WSMR Environmental office (EL-N) and an Independent Registered Professional Engineer. The finding of clean-closure will be clearly demonstrated by analytical results.

B. Issuance of Certification

Certification that the approved closure plan was followed and the site is clean will be issued by the facility owner, the facility operator and an Independent Registered Professional Engineer.

V. CLOSURE SCHEDULE

The final closure schedule for the HELSTF Treatment Tank System is as follows:

- day 0 — This Closure Plan is approved by NM EID
- day 1 — Closure of the HTTS is initiated in accordance with this plan.
- day 60 — Laboratory Study of treatability of ballast sand complete or disposal of the contaminated ballast sand as a hazardous waste is initiated.
- day 90 — Treatment process for ballast sand is validated or disposal of the contaminated ballast sand as a hazardous waste is initiated.
- day 120 — Removal of all ballast sand, the pipeline and tank liners from the facility is complete.
- day 180 — Closure activities complete and certification submitted to Director, New Mexico Environmental Improvement Division

VI. LIST OF EQUIPMENT TO BE USED DURING CLOSURE

1. Hand shovels
2. Bulldozer
3. Steam Cleaning equipment
4. Cleaning Brushes
5. Cutting tools
6. Personnel Protective Equipment