

PERMIT ATTACHMENT K CLOSURE PLAN

Overview of the Closure Plan

This Closure Plan for the Holloman Air Force Base (HAFB) Container Storage Unit (CSU) is designed to meet the following performance standards:

- To protect human health and the environment;
- To remove all hazardous waste and hazardous waste residues from the CSU at the time of closure and to decontaminate or remove any remaining containers, liners, bases, and soil containing or contaminated with hazardous waste or hazardous waste residues; and
- To minimize or eliminate the need for future maintenance or monitoring.

This plan identifies the steps that HAFB shall take to close the subject hazardous waste management unit at the end of its intended operation life and achieve clean closure. Holloman Air Force Base DRMO Environmental Coordinator shall maintain a copy of the submitted Closure Plan and all revisions to the plan. Revisions shall be made whenever any modifications are made to the existing equipment, structures, instruments, or procedures related to the management of the CSU. The procedures for meeting these goals are outlined in this section.

Applicability

The DRMO shall provide management and storage capacity for containerized hazardous waste generated on-site (i.e., at HAFB). Treatment of wastes shall not be performed at the CSU, and wastes generated off-site shall not be accepted for management and storage. The CSU consists of a staging area, outdoor storage area, and indoor storage building. The staging area and outdoor storage area consist of diked concrete pads that are outdoors. These portions of the CSU are intended only for waste-handling and accumulation-type activities. Also, because the CSU contains only containers (e.g., steel drums) that hold hazardous waste, ground water monitoring requirements shall not be applicable. However, if HAFB fails to achieve clean closure or cannot demonstrate equivalency clean closure, the CSU shall be closed in place as a landfill, and detective ground water monitoring shall be conducted as per 20.4.1.500 NMAC, incorporating 40 CFR §264.98. This shall be done using the procedures submitted with the post-closure care plan. This Closure Plan identifies the steps necessary to close the CSU at any point during its active life.

Closure Performance Standard

This Closure Plan is designed to ensure that the CSU shall not require further maintenance and shall eliminate or minimize the threat to human health and the environment by preventing the escape of hazardous waste, hazardous constituents, leachate, contaminated rainfall, or waste decomposition products. This standard shall be achieved through removal of wastes and waste residues from the CSU. Rinsate from any decontaminated secondary containment, along with samples of surrounding soils shall be tested to ensure that decontamination has been completely effective and that hazardous wastes and hazardous constituents have not migrated from the CSU. Equipment used to perform the closure activity shall be decontaminated. On completion of the decontamination and demonstration that the CSU has been effectively decontaminated, the closure shall be certified by a professional engineer registered in the state of New Mexico.

Partial and Final Closure

There shall be no partial closure of the CSU. Complete closure of all CSU storage buildings, including any additions made through appropriate permit shall occur concurrently. The anticipated date for closure of the CSU is 2011.

Maximum Waste Inventory

The maximum inventory of waste stored at this CSU (i.e., in the staging area, outdoor storage area, and indoor storage area) shall not exceed 47,960 gallons. Most wastes at this CSU shall be managed in containers of 55 gallons or smaller volume. Exceptions shall include transformers containing polychlorinated biphenyls (PCBs), containers of solid waste, and salvage drums. PCB items shall not be in storage at the expected closure date.

Description of Decontamination and Removal Procedures

All wastes at the CSU shall be removed from their respective management and storage locations and transferred to transport vehicles for reclamation or treatment and disposal at an approved off-site recycling facility or permitted treatment, storage, and disposal facility. The procedures described in Permit attachments D and G to ensure safe handling, shall prevent mixing of incompatible wastes, and prevent accidental ignition and spills shall be followed in the closure operation. The maximum waste volume from the transfer operation shall not exceed 47,960 gallons.

Decontamination of Soil, Equipment, and Structures

Prior to the initiation of closure activities, a notice of intent to close the Unit shall be sent to NMED. At the time formal notification to proceed with closure is submitted, no additional wastes shall be accepted at the CSU. Any waste inventory in the CSU at this time shall be sent off-site for treatment and disposal in accordance with all applicable regulatory requirements.

All CSU structures, equipment, and related items shall be decontaminated by trained personnel wearing appropriate personal protective equipment as required by 40 CFR 1910.120, Appendix B. Representatives from the following organizations shall determine the level of protection required collectively:

- Defense Re-utilization and Marketing Office;
- Defense Re-utilization and Marketing Service/Battle Creek;
- Holloman AFB Civil Engineering Squadron/Environmental Flight; and
- Holloman AFB Bio-environmental Engineering Office

All visible signs of contamination shall be removed using water and detergent. All waste storage area floors, containment trenches, and walls shall be cleaned using high-pressure steam cleaning equipment. All washings (rinsates) shall be collected, stored, and analyzed. If the analysis indicates that the wash is hazardous, it shall be placed in appropriate containers, appropriately labeled, and disposed of as hazardous waste. If the analysis indicates there is no evidence of contamination, the water shall be discharged into the sewer system. Other areas in which the hazardous wastes were handled and the associated containment facilities shall be decontaminated in a similar manner.

Decontamination and Closure Criteria for Rinsate and Soil

A composite sample, as defined in *Test Methods for Evaluating Solid Waste, Physical/Chemical Methods, EPA Publication SW-846*, shall be collected and analyzed from the collective samples of each decontamination phase. The analysis shall include procedures designed to detect possible contamination that could have resulted from those hazardous chemicals that have been included on the chemical inventory lists of the CSU over its operation lifetime. The specific analytical method shall be indicated in the initial notice of intended closure when it is submitted to the NMED for approval.

The rinsate from decontamination of equipment and structures shall be managed as hazardous waste if analytical results indicate that it is hazardous. Inorganic constituents in soil shall be compared to background levels. Surrounding soils shall be sampled to ensure that chemicals handled at the CSU have not migrated from the area. The proposed acceptable decontamination and closure criteria for rinsate and soil shall be based on practical quantitation limit concentrations specified under 20.4.1.500 NMAC, incorporating 40 CFR §264, Appendix IX.

Soil Sampling at the Container Storage Area

Soil samples shall be taken to verify that hazardous constituents have not migrated from the CSU during its active life. Soil samples shall be taken from all sides of the containment area, approximately one foot from the curbing. Figure K-1 shows the location where closure soil samples shall be taken during closure of the CSU. Two equally spaced sets of soil samples shall be taken from each side of the indoor storage facility, one set of soil samples shall be taken from each side of the staging area, and three equally spaced sets of samples shall be taken along each side of the outdoor storage area. Each set of soil samples shall consist of a spoon-collected surface-level sample and a soil core to a depth of 3 ft. Each soil log shall be composited at 1-ft intervals for analysis of the decontamination criteria. If the decontamination criteria cannot be met, the surrounding soils shall be excavated to the indicated depth and replaced with clean fill material. If excavation is required in an area, a second coring shall be taken at the width of the excavation zone. It is considered extremely unlikely that contamination would be found at depths below 3 ft. However, in the unlikely event that such contamination is found, the soils in the affected area shall be sampled and excavated at 1-ft intervals. Each one-foot increment shall be analyzed for constituents of concern. If necessary, additional depth samples shall be taken until a level is established in which no contamination occurred. All contaminated soil shall be removed and disposed of in accordance with the applicable regulatory requirements. A site *Health and Safety Plan* shall be submitted for the closure activities at the time of the closure notice. This plan shall follow the requirements contained in 29 CFR 1910.120, *Hazardous Waste Operations and Emergency Response*.

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Equipment Decontamination

All CSU equipment shall be moved into the storage building for decontamination. Pallets that were used for container placement shall be dismantled, containerized, and disposed of as hazardous waste if any visible signs of contamination are present. Pallets that do not exhibit visible signs of contamination shall be retained for future use at Holloman AFB. Storage racks from the outdoor storage area shall be dismantled, moved inside the storage building, and initially decontaminated by a high-pressure rinse consisting of hot water or steam and anionic surfactant. This rinse shall be collected and disposed of as hazardous waste if necessary. On completion of the initial wash, a second rinse shall be applied. The second rinse shall be collected and sampled for the decontamination criteria. Forklifts and tools used during the active life of the CSU shall be moved into the storage building and decontaminated in a similar fashion.

After completion of the initial two-rinse decontamination sequence, a subsequent rinse of hot water or steam followed by cold tap water shall be applied. These rinsates shall be collected and sampled for the decontamination criteria. No further decontamination efforts shall be undertaken until analytical results are received that indicate such actions are warranted. If the decontamination criteria are not being met, these steps shall be repeated. When the criteria are met, these items shall be transferred to the DRMO zone for re-utilization.

During the closure activities, workers shall wash down equipment and instruments, remove protective clothing, and undergo decontamination in this area on a daily basis. Entrance to or exit from the CSU during the closure activities shall occur through this zone. Upon completion of CSU decontamination efforts, all equipment shall be moved to this zone for final cleaning. The final cleaning shall be performed by steam cleaning followed by a tap water rinse.

After equipment decontamination, the outdoor portions of the CSU shall be demolished if necessary. Rubble shall be collected for disposal as non-hazardous solid waste.

Outdoor Storage Area Decontamination

After decontamination of the storage racks and operating equipment, the staging area and covered outdoor storage area shall be decontaminated. The curbs, pad surfaces, and containment basins of these areas shall be steam cleaned with water containing surfactant. If necessary, a vacuum nozzle attachment shall be fitted to the suction line to remove all freestanding liquids in the containment

areas. The entire area shall subsequently be rinsed with tap water that shall be collected and sampled as previously described.

In addition to the collection of rinsate samples, standard wipe samples for PCBs shall be taken in the staging area. Wipe samples for PCB contamination shall not be proposed for the outdoor storage pad because PCBs or PCB-contaminated items shall not be placed in that portion of the CSU. The sampling methodology proposed is the 7-point hexagonal grid technique delineated in *Verification of PCB Spill Cleanup by Sampling and Analysis, EPA 560/5-85-016*. The containment sump shall be sampled by a single wipe taken along each wall and the sump bottom.

If the decontamination criteria are met, no further closure action shall be taken in these areas. If the criteria are not met, the affected area shall be scuff sanded along the surfaces. All residues from the sanding shall be collected and disposed of as hazardous waste. After completion of this step, the area shall be rinsed with fresh tap water. The rinsate shall be collected and sampled for the decontamination criteria. If the violated criteria involved PCBs, wipe samples shall be taken in the same fashion as in the preceding step. This procedure shall be repeated until the criteria are met in the rinsate and wipe samples.

Indoor Storage Area Decontamination

The indoor storage area shall be decontaminated in a manner similar to that used for the outdoor portions of the CSU. The initial step in this decontamination cycle shall be swipe sampling of the cells used to sort PCB items and their associated sumps. After collection of the swipe samples, these cells shall be decontaminated by steam cleaning with a water surfactant mixture followed by a water rinse. The initial wash solution shall be collected for disposal as a Toxic Substances Control Act (TSCA) and RCRA regulated constituents. The second rinsate shall be sampled to verify that the decontamination criteria are met. If the decontamination criteria have been met in both the rinsate and swipe samples, further sampling for PCBs shall not be performed. If these criteria cannot be met, the surfaces of these cells and associated sumps shall be scarified by sanding, the residues shall be collected for TSCA/RCRA-regulated disposal, and the rinse step shall be repeated until decontamination has been achieved. After each cycle, both the swipe and rinsate sampling shall be repeated. The remaining portions of the building shall be decontaminated in a similar fashion.

Decontamination shall be performed step-wise for each cell and its associated sump by steam cleaning and rinsing as described above. If the criteria cannot be met, the second rinsate shall be disposed of, as hazardous waste and secondary decontamination by scarification and rinsing shall be performed in the affected cells or sumps. Rinsates that do not exceed the decontamination criteria shall be released to the sewer system.

Any grates, aisle spaces, or forklift ramps that are near a cell shall be decontaminated as a portion of that cell. CSU walls, to a height of 10 ft, shall also be considered a portion of the corresponding cell.

Groundwater Monitoring, Leachate Collection, and Run-on and Run-off Control

Because the CSU shall be clean closed and no hazardous waste or hazardous constituents shall remain on-site, groundwater monitoring, leachate collection, and run-on/run-off controls shall not be necessary. However, if HAFB cannot achieve clean closure of the CSU, groundwater detection monitoring shall be conducted, as required by 20.4.1.500 NMAC, incorporating 40 CFR §264.98.

Closure Plan Amendments

HAFB shall submit a written notification or request for a permit modification to authorize a change in operating plans, facility design, or the approved Closure Plan in accordance with the applicable procedures in 20.4.1 NMAC. The notification shall be submitted to NMED at least 60 days in advance of the proposed change and no later than 60 days after an unexpected event has occurred. The written notification or request shall include a copy of the amended Closure Plan for review and approval by NMED.

Closure Notification Requirements

HAFB shall notify NMED at least 45 days prior to the date that closure of the CSU shall begin.

Closure Schedule

The anticipated date of closure is 2011. This date is based on the expected service life of the CSU design. Closure of Holloman AFB and its tenant DRMO is not anticipated by this date as the Department of Defense components at Holloman AFB are an integral part of the defense system of the United States. Table K-1 presents a schedule for accomplishment of the closure action. The closure activities shall be completed within 180 days of receipt of the final volume of hazardous waste. If Holloman AFB is unable to complete closure activities in accordance with the approved closure plan and within 180 days, as stipulated under the regulations, an extension shall be requested from the NMED in accordance with 40 CFR §264.113(b).

Certification of Closure

After closure activities are completed, an independent professional engineer registered in the State of New Mexico shall certify the closure. This engineer shall be provided access to the Closure Plan, the site during the closure activities, and all analytical results. Certification of closure of the CSU shall be provided to NMED by registered mail or hand delivered within 60 days of completion. The

closure certification for the CSU shall document that no hazardous wastes or hazardous constituents remain on the site, based upon the laboratory analytical results of soil samples taken from the Unit.

POST CLOSURE PLAN

A post-Closure Plan shall not be needed because the permit application only addresses a CSU. All wastes shall be removed, and the storage areas shall be decontaminated upon closure. However, if HAFB cannot clean close the CSU or cannot demonstrate equivalency closure, the Facility shall be subject to post-closure permitting requirements.

TABLE K-1: Schedule for Closure of the KAFB Container Storage Unit

Step	Action	Day Completed
1	Closure notice	-15
2	Receipt of final waste volume	0
3	Conduct final inventory, inspect, and repackage for shipment	30
4	Remove all waste for disposal or reclamation	60
5	Initial outdoor drum rack decontamination and verification sampling	60
6	Initial equipment decontamination and verification sampling	65
7	Receipt of analytical results (Step 7)	85
8	Secondary decontamination of equipment and storage racks ^a	90
9	Initial decontamination of outdoor storage areas/verification sampling	90
10	PCB sampling of storage building	90
11	Initial PCB decontamination of storage building/verification sampling	100
12	Receipt of analytical results (Step 9)	110
13	Receipt of analytical results (Step 10 and 11)	105
14	Secondary decontamination of outdoor areas ^a	115
15	Secondary PCB decontamination in storage building ^a	120
16	Initial decontamination of storage building/verification sampling	130
17	Begin soil sampling	135
18	Complete soil sampling	150
19	Receipt of analytical results (Step 16)	150
20	Secondary decontamination of storage building ^a	155
21	Receipt of soil sample results	165
22	Soil excavation ^a	170
23	Demolition/equipment decontamination	175
24	Shipment of closure residuals	180
25	Certification	240

Notes:

^aIf required

PCB = Polychlorinated biphenyl