

**DUGWAY PERMIT**

**MODULE VII**

**ATTACHMENT 4**

**HWMU 33  
POST-CLOSURE PLAN**

**TABLE OF CONTENTS**

<b><u>SECTION</u></b>	<b><u>PAGE NO.</u></b>
<b>1.0. INTRODUCTION .....</b>	<b>1</b>
<b>2.0. HWMU 33 DESCRIPTION .....</b>	<b>3</b>
2.1. LOCATION AND HISTORY .....	4
2.2. PAST OPERATIONS .....	4
2.3. PREVIOUS INVESTIGATIONS DOCUMENTATION .....	5
2.4. CLOSURE ACTIVITIES .....	5
2.5. HUMAN HEALTH AND ECOLOGICAL RISK ASSESSMENT .....	6
2.6. SURFACE WATER AND GROUNDWATER .....	7
<b>3.0. SECURITY REQUIREMENTS .....</b>	<b>7</b>
<b>4.0. PREPAREDNESS AND PREVENTION MEASURES .....</b>	<b>8</b>
<b>5.0. SEISMIC STANDARD .....</b>	<b>8</b>
<b>6.0. FLOODPLAIN STANDARD.....</b>	<b>8</b>
<b>7.0. POST-CLOSURE INSPECTIONS .....</b>	<b>8</b>
7.1. INTRODUCTION .....	8
7.2. ANNUAL INSPECTIONS .....	8
7.3. INSPECTION FOLLOW-UP.....	9
<b>8.0. SUBMITTALS/REPORTING .....</b>	<b>9</b>
8.1. POST-CLOSURE GROUNDWATER MONITORING .....	9
8.2. BIENNIAL POST-CLOSURE REPORT.....	10
<b>9.0. POST-CLOSURE CERTIFICATION.....</b>	<b>10</b>
<b>REFERENCES.....</b>	<b>11</b>

LIST OF FIGURES	ii
LIST OF TABLES	ii
LIST OF APPENDICES	ii
LIST OF ACRONYMS, ABBREVIATIONS, AND SYMBOLS	iii

**TABLE OF CONTENTS (Continued)**

**LIST OF FIGURES**

- Figure 2-1 Dugway Proving Ground Installation
- Figure 2-2 HWMU 33 Location Map

**LIST OF APPENDICES**

- Appendix A Dugway, HWMU 33 Certificate of Closure

**LIST OF TABLES**

	<b><u>PAGE NO.</u></b>
Table 1-1 Summary of HWMU 33 Post-Closure Information Requirements UAC R315-3-2.19; UAC R15-3-2.540 CFR §270.14 and 40 CFR §270.14. ....	2
Table 2-2 Pertinent UDSHW Library Documents Detailing HWMU 33 Investigations .....	6
Table 7-1 HWMU 33 Post-Closure Inspection and Monitoring schedule .....	12
Table 8-1 Summary Table of Required Submittals.....	14

## **LIST OF ACRONYMS, ABBREVIATIONS, AND SYMBOLS**

bgs	below ground surface
CFR	Code of Federal Regulations
DAF	Dilution Attenuation Factor
DPG	Dugway Proving Ground
DSHW	Division of Solid and Hazardous Waste
ft	feet
FWEC	Foster Wheeler Environmental Corporation
HWMU	Hazardous Waste Management Unit
IDW	Investigation-Derived Waste
MCL	Maximum Contaminant Level
mg/kg	milligrams per kilogram
mg/L	milligrams per liter
msl	Mean Sea Level
PCP	Post-Closure Plan
PES	Parsons Engineering Science
Shaw	Shaw Environmental, Inc.
SWMU	Solid Waste Management Unit
TDS	Total Dissolved Solids
TERC	Total Environmental Restoration Contract
TSDf	Treatment, Storage, and Disposal Facility
UAC	Utah Administrative Code
UDEQ	Utah Department of Environmental Quality
UDSHW	Utah Division of Solid and Hazardous Waste
USACE	United States Army Corps of Engineers
USGS	United State Geological Survey

## 1.0. INTRODUCTION

The objective of this Post-Closure Plan (PCP) is to ensure that Dugway Proving Ground (Dugway) complies with the Post-Closure Permit issued by the State of Utah in accordance with Title 40 Code of Federal Regulations (CFR) §265.117, with respect to post-closure inspection requirements. To meet this objective, this PCP provides detailed information regarding the location, regulatory criteria, and post-closure inspections at Hazardous Waste Management Unit (HWMU) 33. Post-closure requirements will continue for a minimum of 30 years after closure of HWMU 33. The post-closure care period may be extended or shortened, as deemed necessary (40 CFR §265.117(a)(2)).

In accordance with 40 CFR §270.28 and Utah Administrative Code (UAC) R315-3-2.19, the post-closure permit is required to include specific information for a closed facility. As applicable to HWMU 33, the information requirements include:

1. General description of the facility,
2. Description of security procedures,
3. Copy of general inspection schedule,
4. Preparedness and Prevention Plan,
5. Facility location information (including seismic and flood plain considerations),
6. Closure Plan or Closure Proposal,
7. Certificate of Closure, and
8. Topographic map, with specific scale.

Table 1-1 provides the regulatory citations for the general information requirements and the specific locations in the Attachments or in the PCP where the specific information is presented.

**Table 1-1: Summary of HWMU 33 Post-Closure Information Requirements Under 40 CFR §270.14 and UAC R315-3-2.19 and R315-3.2.5 (Page 1 of 2):**

<b>Regulation Citation</b>	<b>Requirement Description</b>	<b>Location Requirement is Addressed</b>
40 CFR §270.14(b)(1) UAC R315-3-2.5(b)(1)	General Description of the Facility	Post-Closure Permit, Attachment 1;
40 CFR §270.14(b)(4) UAC R315-3-2.5(b)(4)	Description of Security Procedures	Section 3.0
40 CFR §270.14(b)(5) UAC R315-3-2.5(b)(5)	General Inspection Schedule	Section 7.0, Module VII Table VII-3, and Module VII Form A
40 CFR §270.14(b)(6) UAC R315-3-2.5(b)(6)	Preparedness and Prevention	Section 3.0
40 CFR §§270.14(b)(11)(i-ii, v) UAC R315-3-2.5(b)(11) (i-ii, v)	Facility Location Information Applicable seismic standard	Section 5.0
40 CFR §§270.14(b)(11) (iii-v) UAC R315-3-2.5(b)(11) (iii-v)	Facility Location Information 100-year floodplain	Section 6.0
40 CFR §270.14(b)(14) UAC R315-3-2.5(b)(14)	Closure Certification and Notification	Appendix A
40 CFR §270.14(b)(16) UAC R315-3-2.5(b)(16)	Post-Closure Cost Estimate	Federal Facilities are exempt from this requirement
40 CFR §270.14(b)(18) UAC R315-3-2.5(b)(18)	Proof of Financial Coverage	Federal Facilities are exempt from this requirement
40 CFR §270.14(b)(19) UAC R315-3-2.5(b)(19) (i)	Topographic Map Map Scale and Date	Figure 2-1 (1 inch = 1000 feet) and Figure 2-2; (1 inch = 60 feet)
40 CFR §270.14(b)(19) UAC R315-3-2.5(b)(19) (ii)	Topographic Map 100-year floodplain area	HWMU 33 is not located within a verified 100-year floodplain area; Figure 2-2
40 CFR §270.14(b)(19) UAC R315-3-2.5(b)(19) (iii)	Topographic Map Surface waters including intermittent streams	There are no surface waters or intermittent streams within the HWMU 33 area Figure 2-2
40 CFR §270.14(b)(19) UAC R315-3-2.5(b)(19) (iv)	Topographic Map Surrounding land uses	HWMU 33 is within a military base. There are no nearby residents in the vicinity of HWMU 33. Figure 2-2
40 CFR §270.14(b)(19) UAC R315-3-2.5(b)(19) (v)	Topographic Map A wind rose (i.e., prevailing windspeed and direction)	There are no residential populations in the vicinity of HWMU 33. The closest residential area is English Village (approximately 12 miles away). A wind rose is not deemed necessary for HWMU 33.
40 CFR §270.14(b)(19) UAC R315-3-2.5(b)(19) (vi)	Topographic Map Orientation of Map, North Arrow	Figure 2-2

**Table 1-1 (Continued-Page 2 of 2): Summary of HWMU 33 Post-Closure Information Requirements Under 40 CFR §270.14 and UAC R315-3-2.19 and R315-3.2.5.**

<b>Regulation Citation</b>	<b>Requirement Description</b>	<b>Location Requirement is Addressed</b>
40 CFR §270.14(b)(19) UAC R315-3-5(b)(19) (vii)	Topographic Map Legal boundaries of the hazardous waste management facility.	The site is shown in Figure 2-2
40 CFR §270.14(b)(19) UAC R315-3-2.5(b)(19) (viii)	Topographic Map Access control, fence, gates	The fenced area and access gates are shown in, Figure 4.2
40 CFR §270.14(b)(19) UAC R315-3-2.5(b)(19) (ix)	Topographic Map Injection and withdrawal wells	There are no injection or withdrawal wells in the vicinity of HWMU 33. Monitoring wells are shown in Figure 2-2
40 CFR §270.14(b)(19) UAC R315-3-2.5(b)(19) (xi)	Topographic Map Barriers for drainage or flood control	The HWMU site has been retrofitted with a new expanded bermed sewage lagoon system that is operating under a separate permit, Figure 2-2
40 CFR §270.14(c) UAC R315-3-2.5(c)(1)	Groundwater Monitoring Information Summary of Groundwater Data	Not applicable. No post-closure groundwater monitoring required at HWMU 33.
40 CFR §270.14(c) UAC R315-3-2.5(c)(2)	Groundwater Monitoring Information Identification of uppermost aquifer	Not applicable. No post-closure groundwater monitoring required at HWMU 33.
40 CFR §270.14(c) UAC R315-3-2.5(c)(3)	Groundwater Monitoring Information Delineation of the Waste Management Area	Not applicable. No post-closure groundwater monitoring required at HWMU 33.
40 CFR §270.14(c) UAC R315-3-2.5(c)(4)	Groundwater Monitoring Information Extent of Plume	Not applicable. No post-closure groundwater monitoring required at HWMU 33.
40 CFR §270.14(c) UAC R315-3-2.5(c)(5)	Groundwater Monitoring Information Detailed Plans/Engineering Report for Proposed Groundwater Program	Not applicable. No post-closure groundwater monitoring required at HWMU 33.
40 CFR §270.14(c) UAC R315-3-2.5(c)(6)(i)	Groundwater Monitoring Information Proposed List of Parameters	Not applicable. No post-closure groundwater monitoring required at HWMU 33.
40 CFR §270.14(c) UAC R315-3-2.5(c)(6)(ii)	Groundwater Monitoring Information Proposed Groundwater Monitoring System	Not applicable. No post-closure groundwater monitoring required at HWMU 33.
40 CFR §270.14(c) UAC R315-3-2.5(c)(6)(iii)	Groundwater Monitoring Information Background Values	Not applicable. No post-closure groundwater monitoring required at HWMU 33.
40 CFR §270.14(c) UAC R315-3-2.5(c)(6)(iv)	Groundwater Monitoring Information A description of the Proposed Sampling	Not applicable. No post-closure groundwater monitoring required at HWMU 33.

## 2.0. HWMU 33 DESCRIPTION

The following provides a general description of HWMU 33, also known as the Baker Sewage Lagoon at Dugway. The HWMU 33 lagoon is not active (has been closed) and has been retrofitted and incorporated into a new sewage lagoon system expansion constructed in 2002-2003. The new sewage lagoon expansion system is operating under a separate Utah Division of Water Quality permit, and encompasses the area formerly occupied by HWMU 33 lagoons. A general description of the Dugway installation can be found in Module VII Attachment 1.

## **2.1. Location and History**

HWMU 33, known as the Baker Sewage Lagoon, is located approximately 1,800 feet (ft) north of Burns Road and 900 ft east of Cherait Road in the Baker Area (Figure 2-1).

The following describes the HWMU 33 lagoon system before the lagoon was retrofitted and incorporated into the new lagoon expansion system. The HWMU included the sewage lagoon with a concrete spillway and an outfall area. The HWMU 33 former site features are shown on Figure 2-2. Most of the information presented in this section was taken from the HWMU 33 Final Closure Plan (Foster Wheeler Environmental Corporation [FWEC], 1998). The reader is referred to this document for more detailed site background information. The bermed lagoon was an engineered structure located on gently sloping ground at the north end of the Baker Area. The top of the berm was approximately 4,308 ft mean sea level (msl), while the surrounding terrain is approximately 4,300 ft msl. Comparison of an aerial photograph taken in August 1953 with one taken in June 1981 indicates that the location of the outfall area of the sewage lagoon corresponds to the location of the outfall at the former Baker Sewage Drainfield, which was in operation from about 1952 to 1975. The outfall was originally identified with Corrective Action Solid Waste Management Unit [SWMU] 35, but was included under the investigation of HWMU 33. The Baker Sewage Lagoon came on line in 1975.

The flat lagoon bottom was 210 ft long and 130 ft wide, with an overall depth of 8 ft. The finished surface area of the lagoon was about 0.93 acres, with a total capacity of about 1.4 million gallons. The lagoon bottom was lined with a 1-foot thick layer of native clay and was enclosed by a 3:1 sloped berm about 6 ft high. The concrete spillway on the northern edge of the lagoon is about 15 ft wide and its lip is 0.5 ft below the top of the berm that surrounds the lagoon. The concrete outfall was installed in 1989, along with several other modifications, including raising the berm height and adding 0.5 ft of gravel on top of the clay/bentonite seal. The 0.5-ft layer of gravel overlaid the one-ft thick clay layer along the entire length of the sloped berms. Other modifications included the addition of an inlet splash pad in the center of the lagoon and the replacement of the existing eight-inch diameter polyvinyl chloride (PVC) sewer line with a four-inch diameter PVC force-main line. These modifications served to aerate the wastewater as it entered the lagoon. HWMU 33 was used from 1975 until 1996 for disposal of sanitary and laboratory wastes from various facilities in the Baker Area. These facilities previously included a biological laboratory, change house, decontamination buildings, the munitions cold storage and loading buildings, a storage building, and the boiler house.

## **2.2. Past Operation**

The original design flow capacity of the Baker sewage lagoon was 21,500 gallons of effluent per day. The average flow into the lagoon in 1976 was 14,200 gallons per day. The design flow capacity of the former outfall area, which had an areal extent of two acres and was natural grade and vegetated, is reported to have been 48,000 gallons of effluent per day. The flow into this drainfield averaged 13,250 gallons per day in 1974.

HWMU 33 was used from 1975 until 1996 for disposal of sanitary and laboratory wastes from various facilities in the Baker Area. These facilities previously included a biological laboratory, change house, decontamination buildings, the munitions cold storage and loading buildings, a storage building, and the boiler house. The sewage from these facilities was previously routed through a treatment plant located in Building 2000 and then to the HWMU 33 lagoon through an underground pipeline (see Figure 2-2). More recently, wastewater was discharged directly to the lagoon from the source facilities. Solids were allowed to settle out in the lagoon and the liquids were allowed to percolate into the soil or to evaporate.

Prior to the construction of the lagoon, liquid wastes were discharged directly to the original drainfield, a shallow depression, via an aboveground sewer pipe. From this drainfield, liquid wastes were discharged into the open desert north of the lagoon.

HWMU 33 was one of the 27 sites listed at Dugway under the Utah Department of Environmental Quality – Division of Solid and Hazardous Waste (UDEQ-DSHW) Stipulation and Consent Order No. 8909884 (dated September 19, 1990). This Consent Order directed Dugway to determine whether hazardous waste management occurred at these sites. This Stipulation and Consent Order was amended in December 22, 1993 and identified HWMU 33 among the sites to be closed.

**2.3. Previous Investigations Documentation**

The detailed results of previous material, soil, and groundwater sampling, and closure information including the risk assessment are available, for HWMU 33 in the Utah DSHW (UDSHW) public documents listed below in Table 2-2.

<b>Table 2-2: Pertinent UDSHW Library Documents Detailing HWMU 33 Investigations.</b>		
<b>Document Title</b>	<b>Received Date</b>	<b>UDSHW Library No</b>
<i>Final Dugway Proving Ground Closure Plan Module 3 HWMU 33 (Baker Sewage Lagoons)</i>	6/24/1998	DPG 00106
<i>Draft Final Remedial Action Plan HWMU 33 Baker Area Storage Lagoon, Dugway Proving Ground</i>	10/25/1999	DPG 00153
<i>Final Interim Remedial Action Plan (Revision 0) Hazardous Waste Management Unit (HWMU 33.</i>	7/13/2000	DPG 00189
<i>Hazardous Waste Management Unit (HWMU) 33 Risk Based Screening Evaluation for Closure.</i>	1/18/2001	DPG 00203
<i>Remedial Action Closure Report Hazardous Waste Management Unit (HWMU) 33 Former Baker Area Sewage Lagoon. Also the Final Quality Control Summary Report.</i>	8/24/2001	DPG 00234
<i>Final Remedial Action Closure Report, Revised, Hazardous Waste Management Unit (HWMU) 33 Former Baker Area Sewage Lagoon</i>	6/5/2003	DPG 00343

**2.4. Closure Activities**

The detailed results of previous material, soil, and groundwater sampling at HWMU 33 are included in the Final Closure Report. The reader is referred to these documents for detailed information.

Utah has specific regulations governing the closure and post-closure requirements for interim status/non-notifier hazardous waste treatment, storage and disposal facilities (TSDFs) (UAC R315-7-14; 40 CFR §265.111 by reference). Based on the work performed at HWMU 33 and the risk evaluations presented in the Final Closure Report, the requirements specified under 40 CFR §265, subpart G and a Consent Order have been achieved.

The Certification of Closure (Appendix A) certifies that HWMU 33 meets the closure performance standards under UAC315-7-14 and 40 CFR §265.111 (subpart G) adopted by reference, as follows: (1) minimizes the need for further maintenance, (2) controls, minimizes or eliminates, to extent necessary to protect human health and environment, post closure escape of hazardous waste, hazardous constituents, leachate, contaminated runoff, or hazardous waste decomposition products to the ground or surface waters or to the atmosphere, and (3) complies with closure requirements of this subpart and other applicable requirements.

The remedial activities performed at HWMU 33 are described in detail in the Final Remedial Action Closure Report. As part of the remedial activities, the following hazardous wastes were removed and disposed in accordance with the state and federal regulations: (1) 583 tons of lagoon sludge; (2) 2,345 gallons of decontamination liquids; (3) 250 gallons of pipe contents (liquids); (4) 16 tons of pipeline materials and pipe contents; and (5) other miscellaneous hazardous wastes. Non-hazardous wastes disposed consisted of excavated soils, pipe contents (liquids), and miscellaneous wastes and debris. The following structures were partially or completely removed at HWMU 33 as part of closure activities: lagoon liner and influent pipeline systems. After the removal of the wastes and structures, soil confirmation sampling was conducted and the results were included in the human and ecological risk assessments for HWMU 33. The human and ecological risk assessments are also presented in the Final Remedial Action Closure Report.

The closure of HWMU 33 has been completed. Approval for the HWMU 33 Final Remedial Action Closure Report (IT, 2003) was received in a letter dated July 8, 2003, from Mr. Dennis R. Downs, Utah Solid and Hazardous Waste Control Board. Appendix A includes a copy of the HWMU 33 Closure Certification signed and stamped by a Utah-licensed Professional Engineer. With the investigative, remedial, and closure actions performed at this site, all stipulations of the Consent Order has been satisfied for HWMU 33.

## **2.5. Human Health and Ecological Risk Assessment**

A human health risk assessment and ecological risk assessment have been conducted indicating the remaining residual contamination does not pose an unacceptable risk as defined in UAC 315-101. The cancer risk is less than 1E-04 and the Hazard Index is less than 1. Since the waste has been removed, there is no potential for escape of hazardous waste, hazardous constituents, leachate, contaminated runoff, or hazardous waste decomposition products to the ground, surface waters, or to the atmosphere.

HWMU 33 did not qualify for risk-based residential closure due to the presence of inorganics (arsenic, chromium, and mercury) in site soils primarily present within the northern outfall drainage area.

HWMU 33 has been closed in a manner that will no longer require any post-closure maintenance, including the removal of wastes and appurtenances (influent pipelines, partial clay liner, and influent splash pad). In accordance with the approved Interim Remedial Action Plan (IT, 2000a), only partial removal of the clay liner was required. Hazardous operations are no longer taking place at HWMU 33. The site has been retrofitted as a non-hazardous sewage lagoon and is operating under a separate permit. The site will therefore remain industrial.

The human and ecological risk assessments are presented in the *Final Remedial Action Closure Report, Revised, Hazardous Waste Management Unit (HWMU) 33 Former Baker Area Sewage Lagoon, 2003*.

## **2.6. Surface Water and Groundwater**

Based on the topography of the area, the natural drainage of surface water is to the north-northwest. HWMU 33 appears to be in the central portion of a natural drainage visible on aerial photographs. No distinct natural drainage features are evident on the ground.

Sampling of wells has resulted in no data indicating a significant release to groundwater at HWMU 33. Groundwater is also classified as non-potable.

## **2.7. Closure Notifications**

Federal facilities are exempt from submitting notifications to the local zoning authority as required by 40 CFR §§264.116 and 264.119, which are incorporated by reference in UAC R315-8-7.

## **3.0 SECURITY REQUIREMENTS**

The Permittee shall comply with the following security conditions as applicable to HWMU 33:

1. HWMU 33 is located within a federal, military installation (Dugway). As such, the installation is restricted for the common population. Access to HWMU 33 is monitored by Dugway Base Security (Range Control)
2. Specifically at HWMU 33, a fence is present with a locked gate that surrounds the retrofitted lagoon on all sides, with the exception of the former drainfield area, which prevents unauthorized entry. The former lagoons and the outfall areas are subject to post-closure inspections. The fence shall be maintained throughout the post-closure care period.
3. A sign, which reads “DANGER, UNAUTHORIZED PERSONNEL KEEP OUT”, is posted at the entrance gate leading to the former HWMU 33 lagoon and shall be maintained throughout the post-closure care period. A warning sign shall be posted on the former drainfield area. The signs shall be legible from a distance of at least 25 ft.
4. All security facilities shall be inspected throughout the post-closure care period. The Permittee shall incorporate those security facilities (i.e., fence and posted signs) to be inspected and the frequency of inspection on the inspection schedule as required under Table 3.
5. Damaged security facilities shall be noted in the inspection checklist. Repairs shall be completed as soon as practicable after the problem is discovered, in compliance with UAC R315-8-2.6(c).
6. Verify security facilities are maintained and shall be inspected throughout the post-closure care period. The security facilities (i.e., posted signs) to be inspected and the frequency of inspection are listed on the inspection Table 3. Dugway shall report to the DSHW any decrease of Dugway’s Base Security, which could affect the security conditions as applicable to HWMU 33.

7. Damaged security facilities shall be noted in the inspection checklist. Repairs shall be completed as soon as practicable after the problem is discovered, in compliance with UAC R315-8-2.6(c).

#### **4.0. PREPAREDNESS AND PREVENTION MEASURES**

All wastes have been removed from HWMU 33. The Dugway Emergency Response and Contingency Plan (Part B Permit), where applicable to this site, shall be used to announce and respond to emergency conditions.

At a minimum, the site inspector should have a radio or phone and a First Aid kit available during inspections.

#### **5.0. SEISMIC STANDARD**

HWMU 33 is not located within 200 ft of active faults, which have displacement in Holocene time. Although Utah is tectonically active, most of the earthquake activity occurs about 55 miles to the east along the Wasatch Range Foothills. The United States Geological Survey has conducted a study ([U.S. Geological Survey (USGS), 1988]. Map of Fault Scarps Formed on Unconsolidated Sediments, Tooele 1°x2° Quadrangle, Northwestern Utah. Compiled by T.P. Bamhard and R. L. Dodge) to determine the distribution, relative age, and amount and extent of surface rupture on Quaternary fault scarps in the Tooele 1°x2° Quadrangle in northwestern Utah. The conclusions of the study state that morphologic and geologic data collected along the fault scarps in the area indicate that all were formed during the later Pleistocene era with no clear evidence of Holocene surface faulting. Several faults inferred on geophysical evidence are located at Dugway; however, there is no evidence of displacement during Holocene time. With the removal actions at HWMU 33, no hazardous wastes remain at the site; therefore, even if an earthquake were to occur, no hazardous wastes would be released.

#### **6.0. FLOODPLAIN STANDARD**

HWMU 33 is not located within a 100-year verified floodplain. A National Flood Insurance Rate Map, identifying the boundary of the 100-year flood, has not been prepared for Dugway. There are no permanent streams or other surface water bodies on Dugway. Surface water from precipitation flows through well-established drainage channels into the flat plain and evaporates. Like other arid regions, Dugway is subject to flash flooding following high-precipitation events. Flash floods have occurred only four times in the history of the installation, in 1944, 1952, 1973, and 1983. The major area affected during flash floods has been the Government Creek drainage channel, which has overflowed and caused minor inundation of roads at Ditto Technical Center. With the removal actions at HWMU 33, no hazardous wastes remain at the site; therefore, even if a flood were to occur, no hazardous wastes would be released.

#### **7.0. POST-CLOSURE INSPECTIONS**

##### **7.1. Introduction**

HWMU 33 has been closed under a continued industrial use scenario, which prohibits residential use in the areas formerly occupied by the site. To ensure that the area is not reused or developed for residential purposes, annual site inspections and a biannual report shall be required.

##### **7.2. Annual Inspections**

General site inspections of the former HWMU 33 site shall be conducted annually before November 1<sup>st</sup>, to ensure that the former Baker Sewage Lagoon area remains under industrial use and to verify the Dugway Dig Permit process as described in Module VII.I has been followed. The frequency of inspections can be modified in accordance with UAC R315-3-4.3. A general post-closure site inspection checklist for industrial use sites is included in Module VII as Form A (refer to Table VII-3 of Module VII). Completed inspection forms shall be filed with the Dugway Environmental Office. The site shall be visually inspected to ensure the following conditions are maintained at the site:

1. There is no evidence of land use other than for industrial purposes within the former site boundary.
2. That Security Controls (eg. Signs) are still in place and active at HWMU 33.

Table 7-1, summarizes the Post-Closure Inspection Schedule for HWMU 33, and lists the items to be inspected and potential problems. Inspection personnel shall note any problems found and shall inform appropriate Dugway representatives.

**Table 7-1: HWMU 33 Post-Closure Inspection and Monitoring Schedule.**

Inspection/Monitoring Item	Method of Documentation	Frequency of Inspection
1) Land use for industrial purposes only.  2) That signs security controls are still in place and active.	General Site Inspection Checklist: Module VII Form A)	Annual inspections shall be conducted before <u>November 1<sup>st</sup></u> , of each year.

**7.3. Inspection Follow-up**

Copies of completed site inspection checklists (refer to Module VII Form A) shall be forwarded to the Dugway Environmental Office. The Point-of-Contact for the Dugway Environmental Office is as follows:

Environmental Programs Compliance Representative  
 Dugway Proving Ground Environmental Program Office  
 Dugway Proving Ground, UT 84022  
 Telephone: (435) 831-3560

The Dugway Environmental Office shall notify the appropriate personnel to implement corrective action as needed. Corrective action shall be initiated as soon as practical after identifying the problem, or as directed by Dugway. If the corrective action requires substantial effort, a technical plan shall be prepared to summarize the problem, the potential impacts, the proposed plan for action, and the time frame in which corrective action shall be implemented as required under this Permit. This plan shall be approved by the Executive Secretary and shall be submitted within 30 days of Dugway’s decision to implement corrective action.

**8.0. SUBMITTALS/REPORTING**

**8.1. Post-Closure Groundwater Monitoring**

Based on the evaluation presented in Revised Final Remedial Action Closure Report, no post closure groundwater monitoring is required for HWMU 33.

**8.2. Biennial Post-Closure Report**

In accordance with R315-3-3.1(1)(9), a Biennial Post-Closure Report shall be prepared for all of Dugway’s HWMUs and SWMUs undergoing post-closure care. Post Closure Reports shall be submitted to DSHW no later than March 1<sup>st</sup>, of the following year, that the report is due. The first Post-Closure reporting year is 2006 for HWMU 33. The report shall be submitted no later than March 1<sup>st</sup> of 2007 (Table 8-1). After this initial period, reporting years shall change to odd numbered years, with subsequent biennial reports due by March 1<sup>st</sup> of even numbered years, beginning in 2008. The first Post-Closure report for Specifically for HWMU 33, the Biennial Post-Closure Report shall include, at a minimum, the following:

1. General site description and conditions, and
2. Inspection records.

**Table 8-1: Summary Table of Required Submittals.**

Required Submittals	Frequency and Submittal Date
<u>Biennial Post-Closure Report</u>	Post Closure Reports shall be submitted to the DSHW no later than <u>March 1<sup>st</sup></u> , of the following year, that the report is due. Reporting years are even numbered years beginning with 2006, and odd numbered years beginning 2007 for the duration of the Post-Closure Monitoring Period.
Anticipated Non-Compliance (VII.C.5.).	30 days advance notice of any change, which may result in non-compliance.
24-hour Notification on information concerning the non-compliance, which may endanger public drinking water supplies or human health or the environment (VII.C.5.).	Orally within 24 hours of discovery noncompliance
Five-day written notification on information concerning the non-compliance, which may endanger public drinking water supplies or human health or the environment. The Executive Secretary may waive the 5-day notice, in favor of a 15-day notice (VII.C.5.).	Within 5 days of discovery
Written notification on information concerning the non-compliance, which does not endanger human health or the environment (VII.C.5.).	Submitted with the Biannual Post Closure Report are submitted.

**9.0. POST-CLOSURE CERTIFICATION**

No later than 60 days after post-closure activities are completed and approved by the Executive Secretary, Dugway shall submit a certification to the Board, signed by Dugway and an independent professional engineer registered in the State of Utah, stating why post-closure care is no longer needed.

**REFERENCES**

Foster Wheeler Environmental Corporation (FWEC), 1998. *Dugway Proving Ground Closure Plan, Module 3, HWMU 33, Final*. May.

IT Corporation (IT), 2003. *Revised Final Remedial Action Closure Report for HWMU 33 Baker Area Sewage Lagoon (Closure Report), Dugway Proving Ground, Dugway, Utah*. May

IT, 2000a. *Final Interim Remedial Action Plan, Proving Ground, Dugway, Utah*. June.

IT, 2000b. *Closure Proposal for HWMU 33- Revised*. January.

Parsons Engineering Science (PES), 2000. *Technical Memorandum Groundwater Model*. July.

Utah Administrative Code (UAC), Utah Hazardous Waste Management Rules, R315-7 to R315-14, R315-50, and R315-101.

**DUGWAY PERMIT  
MODULE VII**

**ATTACHMENT 4**

**APPENDIX A**

**HWMU 33**

**CERTIFICATION OF CLOSURE**

### CERTIFICATION OF CLOSURE

The Closure Report for Hazardous Waste Management Unit (HWMU) 33 at Dugway Proving Ground, Utah has been prepared by Shaw Environmental in accordance with the closure requirements specified under the Utah Administrative Code (UAC) 315-7-14 and 40 Code of Federal Regulations 265, Subparts G and K for closure of HWMU 33. The requirements of UAC 315-101 form the basis for the risk-based criteria in the closure of HWMU 33.

In accordance with 40 CFR 265.115, the signature and seal certify that a licensed professional has reviewed the Closure Report in accordance with the above referenced regulatory requirements.

Respectfully submitted,



Scott Reed  
Directorate of Environmental Programs  
Dugway Proving Ground



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Shaw Environmental, Inc.  
Utah Registered Civil Engineer No. 4858945-2202

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12/31/04