



**Class III INDUSTRIAL SOLID WASTE DISPOSAL SITE**  
**PERMIT APPLICATION**  
**Nevada Division of Environmental Protection**  
**Solid Waste Branch**

**Instructions:** Complete Sections I & II, attach the supporting information described in Section III, and sign Section IV.

[NAC 444.5715 "Class III site" defined. (NRS 444.560) "Class III site" means a disposal site which accepts only industrial solid waste]

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**Section I. Applicant Information**

**1. Land Owner**

Name: US DOE/ National Nuclear Security Administration

Address: PO Box 98518

City: Las Vegas State: NV Zip Code: 89193 - 8518

Phone: 702-295-1000

**2. Facility Operator**

Name: Mission Support and Test Services, LLC

Address: PO Box 98521

City: Las Vegas State: NV Zip Code: 89193 - 8518

Phone: 702-295-1000

**3. Owner/Operator name under which the Permit will be issued**

Name: U.S. DOE/ National Nuclear Security Administration

Address: P.O. Box 98518

City: Mercury State: NV Zip Code: 89193 - 8518

Phone: 702-295-1000

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**Section II. Facility Information**

**1. Location**

Name: Nevada National Security Site, Area 9

County:	Township/Range/Section:	Latitude & Longitude:
Nye	Mercury	X: 5648966718 : 4073483.0457

Address: P.O.Box 677 NAD 1983

City: Mercury State: NV Zip Code: 89030

Phone: 702-295-1000



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### Section III Type of Facility

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#### **Sectors to be Served by the Facility**

- ☐ Residential
- ☐ Commercial
- ☒ Industrial

#### **Waste Types**

Industrial Waste: "Industrial solid waste" means solid waste derived from industrial or manufacturing processes as defined at NAC 444.585:

List the types of waste(s) to be managed at the facility

See section 7.5 of the attached operating plan

#### **Additional or Special Wastes to be Managed by the Facility**

The special wastes listed below require a management plan specific to each, include as necessary and indicate those wastes by checking below.

- ☐ NAC 444.646 Disposal of special wastes: Sewage sludge, septic tank pumpings and medical wastes
  - ☐ NAC 444.648 Disposal of special wastes: Waste tires.
  - ☐ NAC 444.650 Disposal of special wastes: Waste oils.
  - ☒ NAC 444.652 Disposal of special wastes: Construction and Demolition wastes.
  - ☐ NAC 444.654 Disposal of special wastes: Septic tank pumping's and raw sewage.
  - ☒ NAC 444.656 Disposal of special wastes: Untreated sewage sludge.
  - ☒ NAC 444.976 Duties of operator who accepts asbestos. (NRS 618.775)
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**Section III. Supporting Information**

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All information required by NAC 444.733; 739, must be submitted as supporting information to this application.

1. Proof of ownership of the land on which the site is/or will be located
2. Facility Operating Plan [NAC 444.684] should contain at a minimum:
  - i. Site Overview
  - ii. Location Requirements NAC 444.735
  - iii. Personnel Requirements (with levels of Authority)/Training NAC 444.684
  - iv. Equipment Requirements with contingencies and descriptions NAC 444.684
  - v. Litter/Dust control program NAC 444.684
  - vi. Waste Characterization and Acceptance Criteria NAC 444.737
  - vii. Vector Control NAC 444.6678
  - viii. Cover Requirements (daily etc.) NAC 444.688
  - ix. Inspections & Operating Records NAC 444.7025
  - x. Contingency/Emergency Plan (Health & Safety) [Integrated Site Wide Contingency Plan] NAC 444.684
  - xi. Groundwater/Methane Monitoring [Control of Explosive Gasses] NAC 444.683/NAC 444.7483/NAC 444.667 [Sampling/QAQC/Statistical Analysis Plan(s)]
  - xii. Leachate Management NAC 444.684
  - xiii. Surface Water Management requirements (drainage from active areas) NAC 444.6885
  - xiv. Closure (Incremental where applicable) Post-Closure Procedures/Requirements With Financial Assurance NAC 444.6895
  - xv. Additional Requirements for Operating (CQA Plans, etc.)
  - xvi. Miscellaneous Requirements NAC 444.747
  - xvii. Additional Site Specific Requirements
  - xviii. Reserved
3. The Design Report must contain all those items in NAC 444.739
4. The Investigatory Report would contain the information necessary to support the design NAC 444.739(5)



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**Section IV. Certification**

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I certify that I am familiar with the information contained in the application and I believe that the information provided in this application is complete and accurate.

Printed Name of Owner David Bowman, Ph.D. Title or Authority of Signatory Manager, Nevada Field C

Legal Signature David R. Bowman Digitally signed by David R. Bowman  
Date: 2022.12.20 07:57:58 -08'00' Date of Signing \_\_\_\_\_

Printed Name of Operator Mark Krauss Title or Authority of Signatory Senior Director

Legal Signature Mark J Krauss Digitally signed by Mark J Krauss  
Date: 2022.11.03 14:40:13 -07'00' Date of Signing \_\_\_\_\_

Send the completed application and supporting information to:

Supervisor  
Nevada Division of Environmental Protection  
Bureau of Federal Facilities  
375 E. Warm Springs Road,  
Suite 200  
Las Vegas, NV 89119  
(702) 668-3900 ph  
(775) 4862863 fax

For more information, please visit <http://ndep.nv.gov/bwm/swpermit.htm> or call (702) 668-3900

**OPERATING PLAN FOR  
AREA 9 CLASS III  
SOLID WASTE DISPOSAL SITE  
PERMIT NO. SW 13 097 03**

October 2022

Prepared for:

Nevada Division of Environmental Protection

Prepared by:

Mission Support and Test Services, LLC

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## **ACRONYMS AND ABBREVIATIONS**

CFR	Code of Federal Regulations
dBA	A-weighted decibel(s)
DOE	U.S. Department of Energy
ft	foot/feet
m	meter(s)
M&O	Management and Operating (Contractor)
NAC	Nevada Administrative Code
NDEP/BFF	Nevada Division of Environmental Protection Bureau of Federal Facilities
NNSA/NFO	U.S. Department of Energy, National Nuclear Security Administration Nevada Field Office
NNSS	Nevada National Security Site
PCB	polychlorinated biphenyl
pCi/g	picocurie(s) per gram
ppm	part(s) per million
RACM	regulated asbestos containing material
RCRA	Resource Conservation and Recovery Act
SWDS	Solid Waste Disposal Site
TCLP	Toxicity Characteristic Leachate Procedure
µg/L	microgram(s) per liter



## **1.0 INTRODUCTION**

This operating plan describes facilities, personnel, equipment, environmental controls, and processes that support Nevada Solid Waste Disposal regulations in Nevada Administration Code (NAC) Chapter 444, "Sanitation" (Sections 444.731–444.747 for Class III sites). NAC 444.733.4 states that an application for a Class III site must include a plan for operating the site as required by NAC 444.684. The scope of the operating plan is limited to the portions of the regulations that apply to Class III site operations. The operating plan's format follows the outline provided in the Class III Industrial Solid Waste Disposal Site Permit Application Form, Section III, 2.

## **2.0 SITE OVERVIEW**

The Nevada National Security Site (NNSS) is located approximately 105 kilometers (65 miles) northwest of Las Vegas, Nevada. The U.S. Department of Energy, National Nuclear Security Administration Nevada Field Office (NNSA/NFO) is a federal lands management authority for the NNSS. The site is managed by a Management and Operating (M&O) Contractor. Access on and off the NNSS is tightly controlled, restricted, and guarded on a 24-hour basis. The NNSS is posted with signs along its entire perimeter.

The Area 9 Solid Waste Disposal Site, hereafter called the Area 9 Landfill, is located in the northwest corner of Area 9, operated under Permit SW 13 097 03 at the NNSS, and is in a subsidence crater formed by two underground nuclear events, one in October 1962 and another in April 1964. The landfill opened in 1971 for the disposal of rubbish, refuse, pathological waste, asbestos-containing material, and industrial solid waste. A Notice of Intent form to operate the landfill as a Class II Solid Waste Disposal Site (SWDS) was submitted to the State of Nevada on January 26, 1994, and was acknowledged in a letter to the U.S. Department of Energy (DOE) on February 8, 1994. It operated as a Class II SWDS until it closed on October 5, 1995, for a retrofit as a Class III SWDS. The retrofit consisted of the installation of a minimum four-foot compacted soil layer to segregate the different waste types and function as a liner to inhibit leachate and water flow into the lower waste zone. Upon acceptance of the installed barrier and approval of an operating plan by the Nevada Division of Environmental Protection Bureau of Federal Facilities (NDEP/BFF), the site reopened in January 1996 as a Class III SWDS for the disposal of industrial solid waste and other inert waste. A neutron monitoring program was established to monitor possible leachate production and water movement through the compacted soil layer.

A quarter-mile-long unpaved driveway, consisting of tightly compacted soils and gravel, leads directly into the landfill from the paved Circle Road. A similarly compacted unpaved road winds down to the bottom of the landfill.

Access to the interior of the site is controlled by a perimeter fence that has a locked gate. The entrance to the landfill is posted with a sign that clearly indicates the operator of the landfill, the hours of operation, and prohibited waste.

## **3.0 LOCATION REQUIREMENTS**

The location of the Area 9 Landfill has been approved by NDEP and has operated at this location under an approved operating plan in accordance with the regulations for over 20 years.

## **4.0 PERSONNEL REQUIREMENTS (WITH LEVEL OF AUTHORITY)/TRAINING (NAC 444.684)**

The operator controls access during ongoing activities, determines the acceptability of the waste, and estimates the weight of the solid waste entering the landfill; however, at least one disposal operator will be in attendance during the hours of operation.

## 4.1 Training

The M&O Contractor is responsible for verifying that personnel assigned to support activities meet the training requirements. Personnel assigned to this site receive training as outlined in Table 1 below, as applicable to the type of activity and role being performed. Employees, including subcontractor personnel, will not participate in field activities until they have been trained to a level required by their job function and responsibility. If work activities create additional training requirements not covered in this operating plan, the appropriate training will be identified, provided, and documented.

**Table 1. Training Requirements**

<b>Course</b>	<b>Activity Level Work</b>
General Employee Radiological Training	X
Toxic Metals/Beryllium/Lead Awareness	X
Asbestos Awareness	X
Hazard Communication	X
Fire Extinguishers (video)	X
Personal Protective Equipment	X
Driver Safety (for government vehicle use)	X
Hearing Conservation (if sound levels potentially exceed 85 dBA)	X
Bloodborne Pathogens	X
First Aid	X
Cardiopulmonary Resuscitation (CPR)	X

## 5.0 EQUIPMENT REQUIREMENTS WITH CONTINGENCIES AND DESCRIPTIONS

A small trailer serves as a base station for the assigned operators. The trailer has electrical power, telephone, and radio communication.

Waste arrives at Area 9 Landfill in luggers, roll-off boxes, flat bed and dump bed trucks, trailers, or similar receptacles.

The waste is managed at the landfill using equipment that includes but is not limited to dozers, a front-end loader, a non-potable water truck for dust control, a scraper to support driveway maintenance, a dump truck if needed, and forklifts. All equipment is maintained by the M&O Contractor in repair shops on the NNSS.

## 6.0 LITTER/DUST CONTROL PROGRAM

### 6.1 Litter Control

Litter control is based on the type and content of waste to be disposed and monthly cover with native soils. Windblown litter originating within the landfill is not expected. However, the possibility exists for the lightweight industrial solid waste to be windblown. If lightweight material is observed at the surface, native soil will be added to prevent diversion. Workers remove, on a continuing basis, windblown material collected outside the perimeter fence within the disposal boundary.

## **6.2 Dust Control**

Water trucks will be used to spray water as needed to suppress dust on the compacted dirt roads and during operations involving the compaction material.

## **7.0 WASTE CHARACTERIZATION AND ACCEPTANCE CRITERIA**

### **7.1 Summary**

Waste characterization is a means of identifying the chemical and physical properties of the waste material to ensure that the solid waste accepted at Area 9 Landfill is not prohibited polychlorinated biphenyl (PCB) material; waste that will create an environmental hazard as described in Title 40 Code of Federal Regulations (CFR) Part 261, "Identification and Listing of Hazardous Waste," Subparts C and D; or otherwise prohibited waste. If the waste generator does not have adequate knowledge or if the landfill operator questions the characterization, additional investigation will be done, including sampling and analysis or further research.

### **7.2 Process Knowledge**

Generators characterize waste by their familiarity and experience with the process by which material was generated. Process knowledge relies on a waste generator's knowledge of the chemical properties of process ingredients, including concentration levels of contaminants in the ingredients at the start of the process and how each step of the process chemically and/or physically affects the processed material by adding, removing, producing, depleting, or neutralizing the contaminants in process ingredients, by-products, and/or finished products. Safety Data Sheets often are used as a means of identifying the process ingredients, and through the generator's knowledge of the process, the waste can be identified.

Process knowledge may also be "derived" through the repeated analyses of the same waste stream.

### **7.3 Processing In**

Loads of waste are only accepted when landfill operators are working at the landfill. Each load is accompanied by the following paperwork:

- Signed load verification documents that contain waste characterization information, a statement on the absence prohibited materials, and the waste source by location
- Radiological clearance certification (only if waste came from an area with active or historic radiological activities)

Prior to entering the landfill, transporters of industrial waste provide the estimated weight. Landfill operators designate the area of disposal of the landfill where the transporter offloads.

### **7.4 Waste Minimization/Segregation**

It is NNSS policy to use waste minimization techniques to reduce waste generation. This occurs by separating waste at the point of generation or collection. Recyclable materials such as cardboard, scrap metal, and salvageable items are sold at auction or sent to offsite recycling facilities.

## **7.5 Waste Acceptance**

### **7.5.1 Overview**

Acceptable waste comes from the government agencies and contractors with operations at the NNSS, Federal Facility Agreement and Consent Order remediation sites in Nevada, and, on a case-by case basis and subject to approval from NDEP/BFF, from other NNSA/NFO operations within Nevada.

Landfill operators, prior to accepting waste, obtain a signed document attesting to:

- The absence of prohibited materials
- Waste characterization information that identifies the type of allowable waste and the process by which it was characterized (e.g., waste minimization/segregation, process knowledge, sampling and analysis)
- Source by location

This information must be prepared by the generator or a worker familiar with the waste as part of the load verification document and accepted by landfill operators prior to the waste being disposed. Inadequate documentation is cause to refuse entry and disposal of any load of solid waste.

### **7.5.2 Permissible Waste**

The Area 9 Landfill accepts industrial solid waste, including waste derived from construction, refurbishing, or demolition of buildings or other structures (NAC 444.585.1(p)); road materials; and vehicles carcasses and parts. The waste must be inert and non-putrescible and may consist of, but not be limited to, the following items of industrial solid waste:

- Soil
- Rocks and other unaltered geological materials from construction sites
- Bushes and trees removed from construction sites
- Miscellaneous debris including metal, cloth, paper, plastic, rubber (excluding tires), etc.
- Empty containers
- Drained fuel filters (gasoline and diesel)
- Crushed non-terne plated oil filters
- Non-liquid hydrocarbon-contaminated waste
- Beryllium-contaminated non-hazardous (Resource Conservation and Recovery Act [RCRA]) solid waste generated at DOE facilities in North Las Vegas and at the Remote Sensing Laboratory–Nellis
- Friable and non-friable asbestos
- PCB waste identified in Section 7.5.5

### 7.5.3 Sewage Sludge

Sewage sludge will be dried, and then it will be sampled and analyzed. Domestic sewage will be analyzed for constituents identified in 40 CFR 503, "Standards for the Use or Disposal of Sewage Sludge," and contaminants listed in 40 CFR 261.4, using the Toxicity Characteristic Leachate Procedure (TCLP). Sewage sludge exceeding the TCLP limits in 40 CFR 261.4, Table 1, will be managed as hazardous waste.

### 7.5.4 Asbestos Waste

Regulated asbestos containing material (RACM) waste is disposed in a designated area and covered within 24 hours. The waste generator packages and ships RACM in accordance with applicable regulations.

### 7.5.5 PCB Waste

PCB waste that meets the requirements for disposal at the site, as specified in Table 2, is acceptable for disposal.

**Table 2. Acceptable PCB Waste as specified in 40 CFR 761 and NAC 444.945**

<b>Acceptable PCB Waste</b>	<b>Acceptable concentrations</b>
PCB Small Capacitors (40 CFR 761.60 (b)(2)(ii))	Any
PCB Hydraulic Machines, Drained (40 CFR 761.60 (b)(3)(i)(B) and (40 CFR 761.60 (b)(3)(ii))	<1,000 ppm PCBs
PCB Hydraulic Machines, Flushed (40 CFR 761.60 (b)(3)(i)(B) and (40 CFR 761.60 (b)(3)(ii))	≥1,000 ppm PCBs
PCB-Contaminated Electrical Equipment (40 CFR 761.60 (b)(4))	≥50 ppm but <500 ppm PCBs
Other PCB Articles (40 CFR 761.60 (b)(6)(ii)(A)(2))	<500 ppm PCBs
PCB Light Ballasts with PCBs in Non-Leaking Capacitors with <50 ppm PCBs in Potting Compound (40 CFR 761.62 (b)(1))	Any
Empty PCB Containers (40 CFR 761.60 (c)(2))	<500 ppm
PCB Bulk Product Waste including Plastic, Rubber Parts, Dried Paints/Similar Coating, Building Demolition Debris, or Similar Materials Expected to Leach (40 CFR 761.62 (b)(1)(i))	Any
Other PCB Bulk Product Waste Demonstrated to Leach <10 µg/L (40 CFR 761.62 (b)(1)(ii))	Any

### 7.6 Prohibited Waste

The following wastes are prohibited from disposal at the landfill:

- Waste that does not meet the surface activity release requirements in Article 422 of DOE/NV/03624--0257, "Nevada Test Site Radiological Manual," or current revision, "Release to Uncontrolled Areas," and exceeds the mass concentrations in 10 CFR 30.70 or Table 3 of this document. When radionuclides not identified in this section are known or suspected to be present in permissible wastes, applicable limits will be established before waste is accepted for disposal. All limits established for radionuclides not addressed in this section will be done with the concurrence of the NDEP/BFF.

**Table 3. Radiological Volumetric Limits for NNSS Landfill Disposal**

<b>Radionuclide*</b>	<b>Mass Concentration Limits (pCi/g)</b>
<sup>226</sup> Ra**, <sup>232</sup> Th, <sup>237</sup> Np, <sup>238</sup> Pu, <sup>239</sup> Pu, <sup>240</sup> Pu, <sup>241</sup> Am, <sup>242</sup> Cm, <sup>244</sup> Cm	10
<sup>22</sup> Na, <sup>63</sup> Ni, <sup>90</sup> Sr, <sup>94</sup> Nb, <sup>99</sup> Tc, <sup>137</sup> Cs, <sup>152</sup> Eu, <sup>154</sup> Eu, <sup>151</sup> Sm, <sup>234</sup> U, <sup>235</sup> U, <sup>238</sup> U, <sup>241</sup> Pu**, <sup>125</sup> Sb, <sup>147</sup> Pm, <sup>60</sup> Co	100

\* Progeny in equilibrium with their parent radionuclide have been incorporated with these limits (e.g., <sup>137</sup>Cs, <sup>90</sup>Sr) and do not need a sum of fractions determination.

\*\* <sup>226</sup>Ra is a daughter product of <sup>238</sup>U. <sup>241</sup>Pu is an activation product, not a fission product.

Based upon process knowledge, permissible waste generated outside controlled areas, as defined in DOE/NV/03624--0257, current revision, is assumed to have no added radioactivity and does not require surface contamination surveys or radiological analysis. Permissible waste generated inside controlled areas is segregated using one or more of the following: process knowledge, surface surveys, or radiological analysis.

When a mixture of radionuclides is known or potentially present, a sum of fractions must be performed using the following equation.

$$\sum_{i=1}^n \frac{C_i}{VL_i} \leq 1$$

Where  $C_i$  is the measured activity of radionuclide  $i$ ;  $VL_i$  is the mass concentration limit for radionuclide  $i$ ; and  $n$  is the number of radionuclides in the mixture.

- RCRA Hazardous Waste (as described in NAC 444.8565)
- Medical Waste (as described in NAC 444.589)
- Pathological Waste (as described in NAC 444.600)
- Refuse (as described in NAC 444.610)
- PCB waste not listed in Section 7.5.5
- "Free Liquid" waste (as described in NAC 444.692)

## 8.0 VECTOR CONTROL

Pathological waste (dead animals) and putrescible animal and vegetable waste are not permitted for disposal. Ordinary trash derived from personnel operations is collected and disposed of in a Class II SWDS on the NNSS. Therefore, additional vector controls are not necessary.

## 9.0 COVER REQUIREMENTS

Waste is spread evenly and compacted to form a lift that will not vary by more than 0.6 meters (m) (2.0 feet [ft]) along the face. The height of the lift can vary but will not exceed 2.0 m (6.6 ft). Each lift is covered with at least 15 centimeters (6 inches) of compacted earthen material. Compaction is accomplished by making at least two passes with a dozer or an equivalent piece of equipment.

Waste that has confined open areas (e.g., boxcars) will be filled as completely as possible with native soil or other inert material. Bulky items will be covered with the major axis horizontal to minimize the lift height.

It is expected that large quantities of combustible construction and demolition debris will not be disposed at the site. Therefore, the requirements of NAC 444.652, which require cross-sectioned cells separated by compacted cover material, are not applicable.

Waste is covered and compacted within 30 days of disposal per NAC 444.731(2). Prior to compaction, waste is spread evenly. A dozer or similar equipment makes at least two passes over the waste and compresses it to at least 0.6 m (2 ft).

## **9.1 Asbestos Cell**

A separate area within the landfill has been designated for the disposal of RACM. This area has signs notifying personnel of the hazards of asbestos. Records of the location and quantity of asbestos that is accepted will be kept. The following procedures will be used when handling and disposing of RACM:

- Each package or container will be handled in a manner that limits breakage.
- Vehicles that contained a package or container that leaked will be rinsed out.
- RACM will be covered within 24 hours after placement with at least 15 centimeters (6 inches) of compacted material that does not contain asbestos.

## **10.0 INSPECTIONS AND OPERATING RECORDS**

### **10.1 Landfill Inspections**

The landfill will be inspected daily when waste is accepted. The inspection will consist of the following items:

- Erosion of the berm or walls
- Settling of the covered material
- Condition of fencing
- Condition of roadway
- Accumulation of litter
- Accumulation of water

Each inspection will be noted. Corrective measures will be taken as soon as possible to correct the deficiency. All corrective measures and their completion dates will be recorded.

### **10.2 Waste Inspections**

Landfill personnel will inspect one randomly selected load of waste on a monthly basis. Once the waste has been dumped onto the ground, the inspector will closely examine the load of waste to verify that only acceptable items are present. Each inspection will be documented and placed in the landfill operating record.

If prohibited waste is identified by site personnel during normal operations or inspections, the item(s) will be removed from the working face and segregated. If necessary, the landfill will be temporarily closed pending remediation. An investigation of the circumstances that resulted in the receipt of unacceptable items, and proper disposition of those materials, will follow. NDEP/BFF will be notified if prohibited waste is disposed.

### **10.3 Operating Records**

Records and logs will be maintained by designated landfill personnel. The following documentation must be present with each load of permissible waste:

- A load verification document
- Analytical results or written documentation of process knowledge
- Estimated weight
- Radioactive Material Clearance (when needed)

Before acceptance, the landfill operator will ensure that all documentation is complete, accurate, and legible. If the documentation is not acceptable, the landfill operator will reject the waste for disposal. The disposal operator may also reject the waste if, upon a random inspection, it is determined that the waste does not conform to the waste acceptance criteria (Sections 7.5.2 to 7.5.5) or is falsely represented.

The amount and source of permissible waste delivered to the landfill will be documented in the operating record. Additional documentation required as operating records are Access Records and Inspection Checklists.

### **10.4 Annual Report**

As specified in NAC 444.747, a solid waste annual report is submitted to NDEP/BFF. The report contains the weight of industrial solid waste disposed at the landfill the previous calendar year and any exceptions to the waste acceptance criteria.

## **11.0 CONTINGENCY/EMERGENCY PLAN**

### **11.1 Medical Emergency**

Employees are trained in first aid and CPR (see Table 1). Emergency medical services are located in Area 23 (Mercury), approximately 34 miles away. This facility operates Monday through Thursday, 7:00 a.m. to 5:30 p.m. Landfill personnel may contact medical services by calling 702-295-1718 or 911 or by using a "Mayday" signal on the NNSS radio communication system. Additional emergency services are available 24 hours a day through the Fire Department in Area 6, approximately 18 miles away. All operators have an NNSS radio and cell phone with them at all times.

### **11.2 Fire**

Open burning of solid waste is prohibited by NAC 444.6675. However, fires could be initiated through malfunction of electrical devices or landfill equipment. Fire extinguishers are located in the base station and landfill equipment.

Landfill personnel will use hand-held fire extinguishers to control small fires. Where fires cannot be extinguished with small, hand-held extinguishers, the NNSS Fire Department will be notified by calling



911 on the telephone or using a “Mayday” signal on the NNSS radio communication system. Under no circumstances will landfill operators attempt to extinguish a large fire without instructions from the NNSS Fire Department.

The fire station serving the landfill is located in Area 6 (approximately 18 miles away) and operates 24 hours per day, 7 days a week.

### **11.3 Inclement Weather**

The landfill is not operated in heavy rain or other severe storms. The landfill is protected from run-off water using land contouring and soil berms. However, rain falling directly on the site may result in localized muddy conditions, which requires the landfill be closed for short periods of time until additional native soil is added to muddy areas to provide a workable surface.

## **12.0 GROUNDWATER/METHANE MONITORING**

### **12.1 Groundwater Monitoring**

A 1.2-m (4-ft) compacted soil barrier was installed in late 1995 before opening the site for disposal of Class III waste. The purpose of the soil layer is to segregate the two different portions of the landfill and inhibit leachate through the barrier, thus acting as a liner for the permissible waste. A monitoring system designed to detect leachate and moisture mobility through the 1.2-m (4-ft) layer of compacted soil, as well as monitor changes in the industrial solid waste, was installed. The action level requiring NDEP/BFF notification is the midpoint between the existing baseline data (representing dry conditions) and saturated conditions measured at a point approximately 0.3 m (1 ft) above the bottom of the monitoring tube.

As an indicator of the amount of water and leachate entering into the soil barrier, four neutron monitoring tubes were placed 0.9 m (3 ft) into the layer, and one control tube was placed outside of the landfill. A neutron soil moisture gauge is used to monitor changes in the soil moisture content within the 1.2-m (4-ft) engineered barrier. All data are reported as percent moisture content. Initial neutron logging started in January 1996, and annual readings were performed until 2017 to determine if water has entered this barrier. In 2017, the minimum monitoring frequency of the neutron tubes changed from annual to biennial. Monitoring occurs anytime within a 2-year timeframe. Additional monitoring will be conducted within 3 months following a 24-hour rain event that exceeds 1.5 inches as measured by the weather monitoring station A10AA or next nearest station if A10AA is not available.

The NDEP/BFF will be notified of any action level reached or exceeded within 21 days of the confirmation. Logging will continue biennially throughout the active life of the landfill. Only changes within the 1.2-m (4-ft) layer of compacted soil will trigger a response to NDEP/BFF; changes within the waste will simply be monitored. Continued use of the system will be addressed in the closure and post-closure plans for the site.

### **12.2 Methane Monitoring**

The types of waste accepted into this landfill are not expected to generate methane gases. Based on the physical and chemical composition of buried materials and low annual rainfall at the landfill, the generation and accumulation of explosive or toxic gases is considered minimal to non-existent. Therefore, methane gas/explosive gas monitoring is not necessary.

## **13.0 LEACHATE MANAGEMENT**

There is no leachate collection device at Area 9 Landfill.

## **14.0 SURFACE WATER REQUIREMENTS (DRAINAGE FROM ACTIVE AREAS)**

The landfill is not operated in heavy rain or other severe storms. It is protected from run-off water using land contouring and soil berms. However, rain falling directly on the site may result in localized muddy conditions, which require the landfill to be closed for a short period of time until additional native soil is added to muddy areas to provide a workable surface.

## **15.0 CLOSURE/POST-CLOSURE PROCEDURES/REQUIREMENT WITH FINANCIAL ASSURANCE**

### **15.1 Closure**

NDEP/BFF will be notified in writing of an intent to close the landfill at least 15 days before beginning closure activities. Closure activities will commence within 30 days of written acceptance of the plan by NDEP/BFF and will be completed within 180 days after beginning the closure.

It is anticipated that the landfill will be used until permissible waste reaches an elevation of approximately 1,298 m (4,260 ft) on the north and northwest side and 1,294 m (4,245 ft) on the south and southeast side. The final design will incorporate a cap configuration that will have a slope of not less than three percent to the center and be graded along the sides to drain surface water into the borrow pit south of the landfill. The southern and eastern edges of the closure cap will have an adequately designed drainage channel arrangement that will prohibit water from entering adjacent subsidence craters. This will prevent water from entering a potential preferential pathway to groundwater.

The landfill will be closed in accordance with the requirements of NAC 444.6891-444.6896. An alternative design may be recommended at the time of closure that meets or exceeds infiltration requirements, controls erosion, maintains cover stability, and protects groundwaters of the State of Nevada.

The closure plan will address all steps taken to complete closure. This information will consist of a plan discussing the cover specifications, an estimate of the total volume of waste placed in the landfill during its lifetime, decommissioning of any equipment or structures, and the installation of water, vadose zone, and/or gas monitoring devices, as required. The plan will meet all applicable regulations and will follow all relevant and appropriate regulations to the extent possible.

### **15.2 Post-Closure**

The post-closure program will:

- Maintain the integrity and effectiveness of the final cover.
- Correct the effects of settlement, subsidence, erosion, or other circumstances, which may affect the integrity of the final cover.
- Demonstrate at closure that no leachate is present or demonstrate that any leachate does not pose a threat to public health and safety and the environment.
- Monitor groundwater or demonstrate that any leachate does not pose a threat to public health and safety and the environment (post-closure groundwater monitoring will be contingent upon discovery of large amounts of leachate).
- Monitor gas or demonstrate that any potential gas generation does not pose a threat to public health and safety and the environment.

The post-closure program will be conducted for a period of 30 years. However, the land manager/operator maintains the right to request a waiver from the items listed above or request a waiver in the time period, if it can be demonstrated that a less extensive program is sufficient to protect public health and safety and the environment.

### **15.3 Financial Assurance**

Not applicable to Federal Government facilities (NAC 444.682(2a)).

## **16.0 MISCELLANEOUS REQUIREMENTS**

### **16.1 Scavenging**

Scavenging and salvaging are not permitted in the landfill.

### **16.2 Inspections**

Refer to Section 10.0.

### **16.3 Weighing and Measuring Waste**

Refer to Section 10.3.

### **16.4 Annual Report**

Refer to Section 10.4.

### **16.5 Approval by Solid Waste Management Authority**

Refer to Section 2.0.

### **16.6 Financial Assurance**

Refer to Section 15.3.

### **16.7 Closure and Post-Closure Care**

Refer to Sections 15.1 and 15.2.

### **16.8 Site Location**

Refer to Section 3.0.

### **16.9 Waste Characterization**

Refer to Section 7.0.

### **16.10 Groundwater Monitoring**

Refer to Section 12.1.

### **16.11 Changes to Documents**

Changes requiring approval will be submitted to NDEP/BFF.

**16.12 Alternative Schedule for Recordkeeping and Notification**

No alternative schedule is requested for recordkeeping or notification requirements.