



Class III INDUSTRIAL SOLID WASTE DISPOSAL SITE
PERMIT APPLICATION
Nevada Division of Environmental Protection

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]

Section I. Applicant Information

1. Land Owner

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

Address: P.O. Box 98518

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

Phone: 702-295-4111 (Scott Wade)

2. Facility Operator

Name: Mission Support and Technical Services, LLC

Address: P.O. Box 98521

City: Las Vegas State: NV Zip Code: 89193-8521

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

Phone: 702-295-4111 (Scott Wade)

Section II. Facility Information

1. Location

Name: Nevada National Security Site, Area 9

County:

Township/Range/Section:

Latitude & Longitude:

Nye

Mercury

-116.027727 36.929810 [NAD 1983]

Address: P.O. Box 677

City: Mercury State: NV Zip Code: 89030

Phone: 702-295-4111 (Scott Wade)



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Section III Type of Facility

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

Industrial waste
Construction waste
Hydrocarbon-burdened soil
Hydrocarbon-burdened demolition and construction waste
Permissible waste
Regulated asbestos containing material
Polychlorinated biphenyl bulk product waste
Special waste
Other waste identified in the facility's waste acceptance criteria (attached)

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

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

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 Scott A. Wade Title or Authority of Signatory AM for EM & Sr Advisor

Legal Signature [Signature] Date of Signing 7/26/2018

Printed Name of Operator Raymond K. Alexander Title or Authority of Signatory Senior Director

Legal Signature [Signature] Date of Signing 9 July 18

Send the completed application and supporting information to:

Supervisor
Nevada Division of Environmental
Protection Bureau of Federal Facilities
2030 East Flamingo Road, Suite 230
Las Vegas, NV 89119-5163
(702) 486-2850 ph
(702) 486-2863 fax

Exhibit 1

**Facility Operating Plan for
Area 6 Solid Waste Disposal Site**

June 2018

Prepared for the

U.S. Department of Energy
National Nuclear Security Administration
Nevada Field Office

by

Mission Support and Test Services, LLC

Table of Contents

Acronyms.....	iii
1.0 Facility Summary.....	1
2.0 Facility Description	3
2.1 Facility Design	3
2.2 Groundwater Studies	3
3.0 Operations.....	4
3.1 Collection and Transportation	4
3.2 Personnel	4
3.3 Processing In.....	4
3.4 Off-Loading.....	4
3.5 Daily Log.....	5
3.6 Inspections	5
3.6.1 Site Inspections	5
3.6.2 Random Inspections	5
3.7 Signage/Hours of Operation.....	6
3.8 Disposal Site Equipment.....	6
3.9 Operating Records.....	6
3.10 Reports.....	7
3.11 Cover and Lift Control	8
3.11.1 Cells/Compaction.....	8
3.11.2 Sewage Sludge.....	8
3.11.3 Operational/Temporary Cover.....	8
3.12 Dust Control.....	8
3.13 Litter Control	9
3.14 Vector Control.....	9
3.15 Fire Protection	9
3.16 Neutron Monitoring	9
3.17 Methane Gas/Explosive Gas Monitoring	10
3.18 Unforeseen Circumstances	10

3.18.1	Medical Emergency	10
3.18.2	Natural Events	11
3.18.3	Equipment Failure.....	11

List of Figures

Figure 1.	Location of NNSS Solid Waste Disposal Sites.....	3
Figure 2.	Site Plan – Location of Neutron Tubes	12
Figure 3.	Aerial view of A6 SWDS.....	13

Acronyms

DOE	U.S. Department of Energy
MSTS	Mission Support and Test Services, LLC
NAC	Nevada Administrative Code
NDEP/BFF	Nevada Division of Environmental Protection Bureau of Federal Facilities
NNSA/NFO	National Nuclear Security Administration Nevada Field Office
NNSS	Nevada National Security Site
RACM	Regulated Asbestos-Containing Material
SWDS	Solid Waste Disposal Site
SWO	Solid Waste Operations

1.0 Facility Summary

The Nevada National Security Site (NNSS) is located approximately 105 km (65 mi) northwest of Las Vegas, Nevada. The U.S. Department of Energy (DOE), National Nuclear Security Administration Nevada Field Office (NNSA/NFO) is the federal lands management authority for the NNSS, and Mission Support and Test Services, LLC (MSTS), is the Management and Operations 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.

MSTS is the operator of all solid waste disposal sites on the NNSS. The Class III Disposal Site is located in the Yucca Flat on a roughly rectangular tract of land adjacent to the 6-01 Road, on the west edge of Yucca Lake, in Area 6, NNSS, Nye County, Nevada (Figure 1).

The disposal site serves as the central repository for permissible waste generated at the NNSS, and with regulator permission from the NFO at North Las Vegas. The original disposal site was designed by a federal engineer and constructed in 1988. The site opened in early 1989 and approximately 1.8 million kg (4 million lbs) of putrescible and non-putrescible waste, of which an estimated 70 percent was putrescible, was waste received until mid-1991. The site never proceeded into closure, since the total capacity of the landfill was never utilized. Due to the increasing need for an area for the disposal of construction waste, a request was made to NDEP/BFF to utilize the unused portion of this site for the disposal of the hydrocarbon-burdened solid waste generated by construction activities. The proposal was accepted in 1992, and a 1.5 (5 ft) barrier layer of compacted soil was installed with three neutron monitoring tubes set in the barrier layer to monitor the possible permeation of liquid into the compacted soil.

In February 1993, NDEP/BFF approved the operation of this facility as a state of Nevada Class III Solid Waste Disposal Site (SWDS), after a critical review of the site's O & M Plan. The site continued operation with NDEP/BFF interim approval until 1997, when a permit was issued. The current configuration of the disposal site is shown in Figure 2.

Facility Operating Plan for Area 6 Solid Waste Disposal Site

June 2018

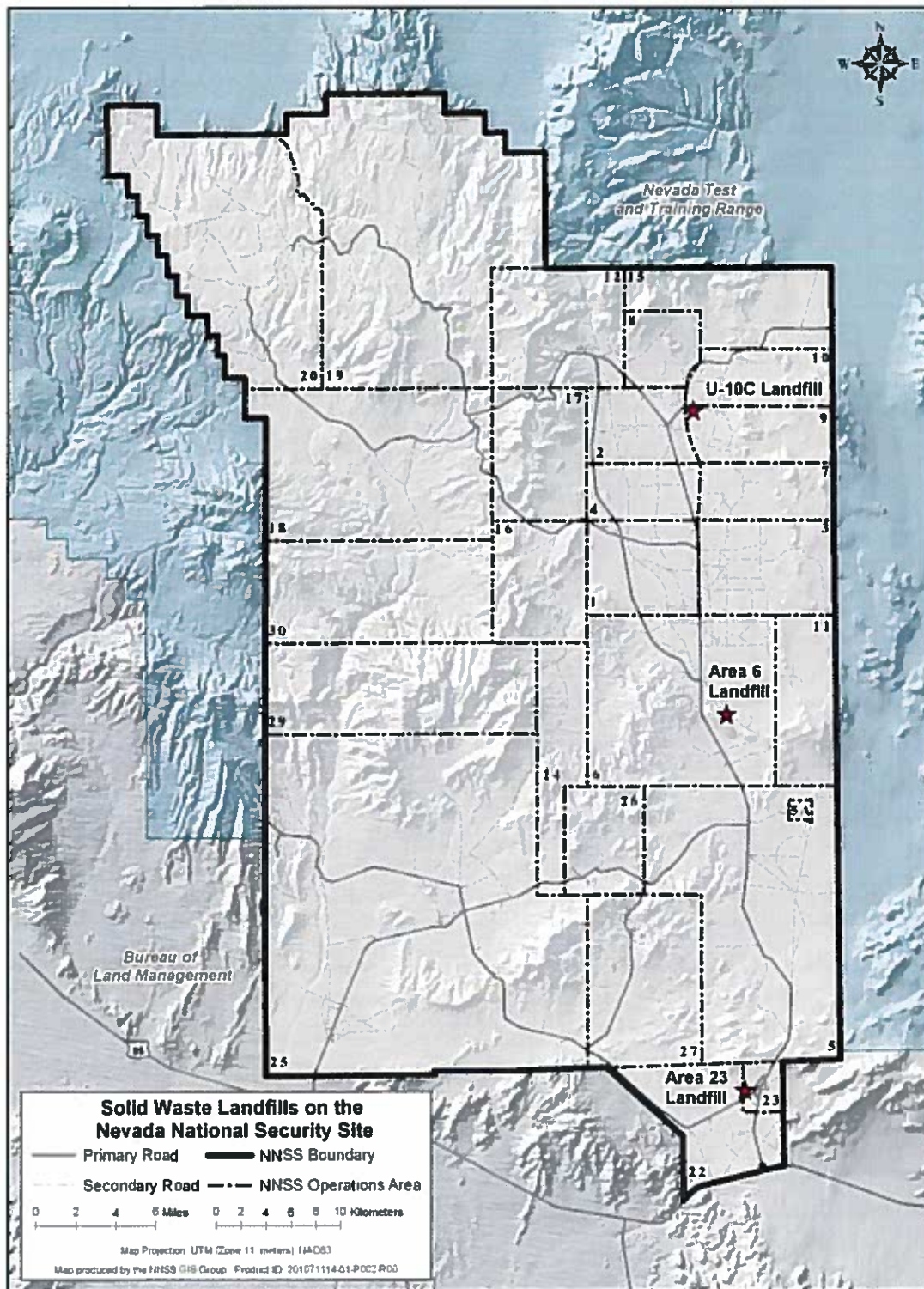


Figure 1. Location of NNSS Solid Waste Disposal Sites

2.0 Facility Description

2.1 Facility Design

Records indicate that the original disposal site was constructed in 1988 and opened in 1989. Waste was received until mid-1991, when the site became non-operational. Approximately 1.8 million kgs (4 million lbs) of putrescible and non-putrescible waste, in addition to cover material, was buried during this period, of which an estimated 70 percent of the total volume was putrescible waste. A minimal 1.5 m (5 ft) compacted soil barrier was installed in 1992 prior to opening the site for the disposal of permissible hydrocarbon construction waste. The purpose of this layer is to segregate the two different portions of the disposal site and inhibit leachate through the barrier, thus acting as a liner. The holding capacity of the 1.5 m (5 ft) barrier is estimated to be 309,500 liters (81,664 gals) of hydrocarbon compounds. Three neutron monitoring tubes were installed in the barrier layer to monitor the possible permeation of liquid into the compacted soil. In February 1993, NDEP/BFF approved the operation of this facility as a state of Nevada Class III Disposal Site, after a critical review of the site's O & M Plan. The site has continued operation with NDEP/BFF interim approval until 1997, when it was permitted. The current configuration of the disposal site is shown in Figure 2. A volume study performed in March 2013 estimated that the lifetime of the site is approximately 137 years at current rates of accrual with an estimated remaining volume of 77,543 m³ (101,423 yd³). An updated volume study will be concluded in 2018. The maximum berm elevation is approximately 1,202 m (3,945 ft) on the north and northwest side and 1,199 m (3,935 ft) on the south and southeast side.

2.2 Groundwater Studies

Surface soils consist predominantly of clayey silt associated with playa deposits. Moisture profiles of similar soils monitored over time in Beatty indicate that water percolates and redistributes to depths of only 2 m (6.6 ft) below the surface after an intense rainfall.

The water table across southern Yucca Flat has a very low gradient sloping to the south. The depth to the water table is shallowest in the center of the valley and increases to the west and east towards the valley edge due to increasing surface elevation. In southern Yucca Flat, the depth to the water table ranges from approximately 450 m (1,480 ft) to 475 m (1,560 ft) depending on surface elevation.

3.0 Operations

3.1 Collection and Transportation

Solid Waste Operations (SWO) personnel are responsible for the operation and maintenance of the disposal site. Collection and transportation are the responsibility of the facility manager or generator of the permissible waste. If collection and transportation will be performed by disposal site personnel, a Form FRM-1003, "Service Request," must be completed and submitted.

3.2 Personnel

One disposal site operator and a teamster are assigned to the disposal site to control access during hours of operation, determine acceptance of the waste, and weigh the solid waste before the collection vehicle enters the disposal site. Under no circumstances will the disposal site have less than two workers in attendance during heavy equipment operation. During abnormal circumstances, additional personnel may be required.

3.3 Processing In

Loads of waste may only be processed while SWO personnel are working at the disposal site. Each load of industrial solid waste or special waste is accompanied by the following paperwork:

- Signed load verification documentation which contains waste characterization information, a statement on the absence of prohibited materials, and the waste source by location;
- Radiological certification, if necessary; and
- Weight or weight estimate.

A truck scale is available at Area 9 and Area 23 to determine the weight of the waste. Scales are electronic and are designed and manufactured to remain in calibration; an annual calibration check is conducted. If the truck scales at Area 9 and Area 23 are not functioning or it is not practical to weigh the waste due to its size or other physical characteristics, other adequate measures can be used to determine the weight of the waste.

3.4 Off-Loading

Before entering the disposal site, transporters of industrial waste must present a weigh ticket or estimated weight. Disposal site operators designate the area of the disposal site where the transporter will offload. Industrial waste may be offloaded either by the

transporter or disposal site personnel. Disposal site operators ensure that bulky waste larger than two feet in any axis arranged horizontally across the base of the disposal site to achieve the thinnest lift possible.

3.5 Daily Log

A daily log is maintained to indicate the following:

- Each load of industrial solid waste which is disposed;
- Identification of personnel entering the disposal site;
- Routine disposal site activities such as operational/temporary cover installation, litter control, dust suppression; and
- Nonroutine events such as unforeseen circumstances (fire, medical, equipment failure, recyclable material retrieval, hazardous or toxic waste identification), rainfall indicators, and those events that cause pooling water or erosion.

3.6 Inspections

3.6.1 Site Inspections

The disposal site is inspected semi-monthly (twice a month). The inspection includes the following observations:

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

Each inspection is noted in the log. Corrective measures are taken as soon as possible to correct the deficiency. All corrective measures and their completion dates are noted in the log.

Where there is an excessive accumulation of water, the approximate area and depth of the ponded water would be noted in the log.

3.6.2 Random Inspections

Disposal site personnel inspect, at a minimum, one randomly selected load of waste monthly. Once the waste has been dumped onto the ground, the inspector closely examines the load of industrial solid waste or special waste to determine if prohibited

materials are contained in the waste. Each inspection is documented, signed by the inspector, and placed in the disposal site operating record.

If prohibited waste is identified in the disposal site by site personnel or during randomly selected inspections, the area would be cordoned off and operations in the area would be discontinued. The area would not be reopened until an investigation of the circumstances responsible for the disposal of the non-permissible waste are completed and documented. These items are segregated when discovered, documented in the daily log, and turned over to SWO supervision for proper disposal. This procedure does not apply to recyclable items that may be considered a hazardous waste (e.g., batteries, lead bricks, partially full aerosol cans).

NDEP/BFF will be notified if prohibited wastes are discovered at the site either through random inspections or during daily operations.

3.7 Signage/Hours of Operation

A sign is posted at the entrance to the disposal site that informs personnel of the hours of operation, prohibited materials, and an emergency contact telephone number. The site is protected from entry by a locked chain between two guard posts at the entry and a fence completely surrounding the site.

3.8 Disposal Site Equipment

Many types of vehicles may be used at the NNSS to collect and transport solid waste. Collection vehicles may consist of but are not limited to 4-cubic yard luggers, 20-cubic yard roll-off boxes, short and long flat bed and dump bed trucks, pickup trucks, or trailers.

The equipment used at the disposal site consists of a D-8 bulldozer, a 4- or 8-cubic yard front end loader, a non-potable water truck, and a motor grader. Other types of equipment that may be used at the disposal site on an irregular basis include cranes, forklifts, and rollers.

3.9 Operating Records

Records and a log are maintained by designated disposal site 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, if applicable;
- Weigh ticket or estimated weight; and
- Radioactive Material Clearance.

Before acceptance, the disposal site operator ensures that all documentation is complete, accurate, and legible. If the documentation is not acceptable, the disposal site 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 or is falsely represented.

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

3.10 Reports

A report of the solid waste received at the site is submitted to NDEP/BFF annually. The report is submitted by January 30. The report includes:

- All off normal conditions experienced during the calendar year;
- The weight of waste disposed of in both annual and quarterly totals; and
- All exceptions to the Waste Acceptance Criteria.

At least once every 5 years until the site is closed, a volumetric report is submitted to NDEP/BFF. This report is due next in late 2018 and includes:

- The remaining volume and disposal capacity of the site;
- The volume used and waste disposed of since the original report of design; and
- A calculation of the remaining life of the site, in years.

Biennially, in odd years, a Neutron Monitoring Report(s) is submitted for all required monitoring performed the previous two calendar years. The report is submitted by the last Friday of the second calendar quarter.

When moisture is detected above the action level when performing neutron tube monitoring, MSTS would notify NNSA/NFO and NDEP/BFF. The notification must be made within 21 days after confirming the exceedance.

All reports, notifications, or other submissions which are required by this Permit are submitted by the specified due date to:

Bureau of Federal Facilities
Nevada Division of Environmental Protection
2030 East Flamingo Road, Suite 230
Las Vegas, NV 89119

3.11 Cover and Lift Control

Cover material consists of native soil obtained from a borrow pit south of the disposal site that provided soil for the barrier layer.

3.11.1 Cells/Compaction

Waste is spread evenly and compacted to form a lift that will not vary by more than 0.3 m (1.0 ft) due to the presence of previously disposed putrescible and non-putrescible waste material below this disposal site. Structural stability of cover material over this waste must be maintained and therefore the height of the lift can vary but does not exceed 0.3 m (1 ft) along the major axis. Each lift is covered with at least six inches of compacted earthen material. Compaction is uniform with a D-8 bulldozer or equivalent equipment making at least two passes into a layer which will not exceed 0.3 m (1 ft) in thickness prior to full compaction.

Waste that has confined open areas (e.g., storage tanks, vehicles) is filled with native soil or other inert material so that more than 90 percent of the original volume will remain filled when compacted. Bulky items are 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 in the site. Therefore, Section 652 of Nevada Administrative Code (NAC) Chapter 444, "Sanitation," which requires cross-sectioned cells separated by compacted cover material, is not applicable.

3.11.2 Sewage Sludge

A completed sewage sludge burial area must be covered with a layer of suitable cover material compacted to a minimum uniform depth of 1m (3ft) inches.

3.11.3 Operational/Temporary Cover

A temporary cover, consisting of at least 30 cm (12 in.) of compacted earthen material, will be placed on waste disposal areas that have not received waste for more than 90 days.

3.12 Dust Control

Water trucks containing non-potable water are used to suppress dust on the compacted dirt roads, as necessary, and during operations involving the compaction of cover material or the production of borrow material.

3.13 Litter Control

SWO personnel will remove, on a continuing basis, windblown material collected on the fence surrounding the disposal site. Scavenging and salvaging are not permitted in the disposal site.

3.14 Vector Control

Pathological waste (dead animals) and putrescible animal and vegetable waste from food service operations are covered immediately. Pathological waste is dispersed to the degree practical throughout the non-putrescible waste.

3.15 Fire Protection

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

Disposal site 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 disposal site operators attempt to extinguish a large fire.

The fire station serving the disposal site is located in Area 6 and operates 24 hours per day, seven days a week.

3.16 Neutron Monitoring

A minimum 1.5 m (5 ft) compacted soil barrier was installed in late 1992 before opening the site for the disposal of permissible waste. The purpose of the soil layer is to segregate the two different portions of the disposal site and inhibit leaching through the barrier, thus acting as a liner for the permissible waste. A monitoring system designed to detect leachate and moisture mobility through the five-foot layer of compacted soil, as well as monitor changes in the industrial solid waste, was installed.

As an indicator of the amount of water and hydrocarbon leachate entering into the soil barrier, three neutron access tubes were installed in the Area 6 Hydrocarbon Landfill floor (see Figure 2) to monitor the moisture content of the compacted soil barrier that separates the former sanitary landfill disposal operation from the current operation. These access tubes were situated to optimize the areal coverage of the monitoring system within the compacted soil layer.

All data will be reported as percent soil moisture content. Initial neutron logging started in March 1993. Measurements made during the first year were used to determine the initial conditions (baseline) against measurements of subsequent changes. In discussions with Nevada Division of Environmental Protection/Bureau of Federal Facilities (NDEP/BFF), it was decided to use the neutron gauge raw counts as the reporting parameter. Annual readings were performed until 2017 to determine if water has entered this barrier. Under an agreement with NDEP/BFF in 2017, the minimum monitoring frequency of the neutron tubes changed from annual to biennial. Monitoring will occur anytime within a 2-year time frame with the first monitoring period spanning 2017–2018. Additional monitoring will be conducted within 3 months following a 24-hour rain event exceeding 1.5 inches as measured by weather monitoring station A06AA or next nearest station if A06AA is not available.

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 disposal site. Only changes within the four-foot 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.

3.17 Methane Gas/Explosive Gas Monitoring

It is not anticipated that the waste and environmental media will generate methane gases. Based on the physical and chemical composition of the buried material and low annual rainfall at the disposal site, the generation and accumulation of explosive or toxic gases is considered minimal or non-existent. Therefore, methane gas/explosive gas monitoring is not considered necessary.

3.18 Unforeseen Circumstances

3.18.1 Medical Emergency

Emergency medical services are located in Area 6 Fire Station, approximately 1.9 miles away. This facility operates 24 hours per day, 365 days per year. Disposal site personnel may contact Medical Services by calling 911 or by using a “Mayday” signal on the NNSS radio communication system. All SWO personnel will have an operable NNSS radio with them at all time. The landfill is in close proximity to a telephone if it is needed for communication, and cellular service is also available. SWO personnel are trained in first aid, CPR [cardiopulmonary resuscitation], and in the operation of an AED [automated external defibrillator].

3.18.2 Natural Events

The disposal site is protected from run-on water through flood channel control and compacted soil berms. However, rainfall falling directly on the site may result in muddy conditions that require that the site be closed for a short period of time until additional native soil is added to muddy areas to provide a workable surface.

3.18.3 Equipment Failure

Equipment at the disposal site is maintained to prevent failure. However, there may be circumstances where equipment failure may occur and the equipment cannot be repaired in a timely manner. Backup equipment (e.g., loaders, scrapers, dozers) will be obtained from other NNSS operations to provide, as a minimum, an operational cover in the interim while the equipment dedicated for the disposal site is being repaired.



Facility Operating Plan for Area 6 Solid Waste Disposal Site

June 2018

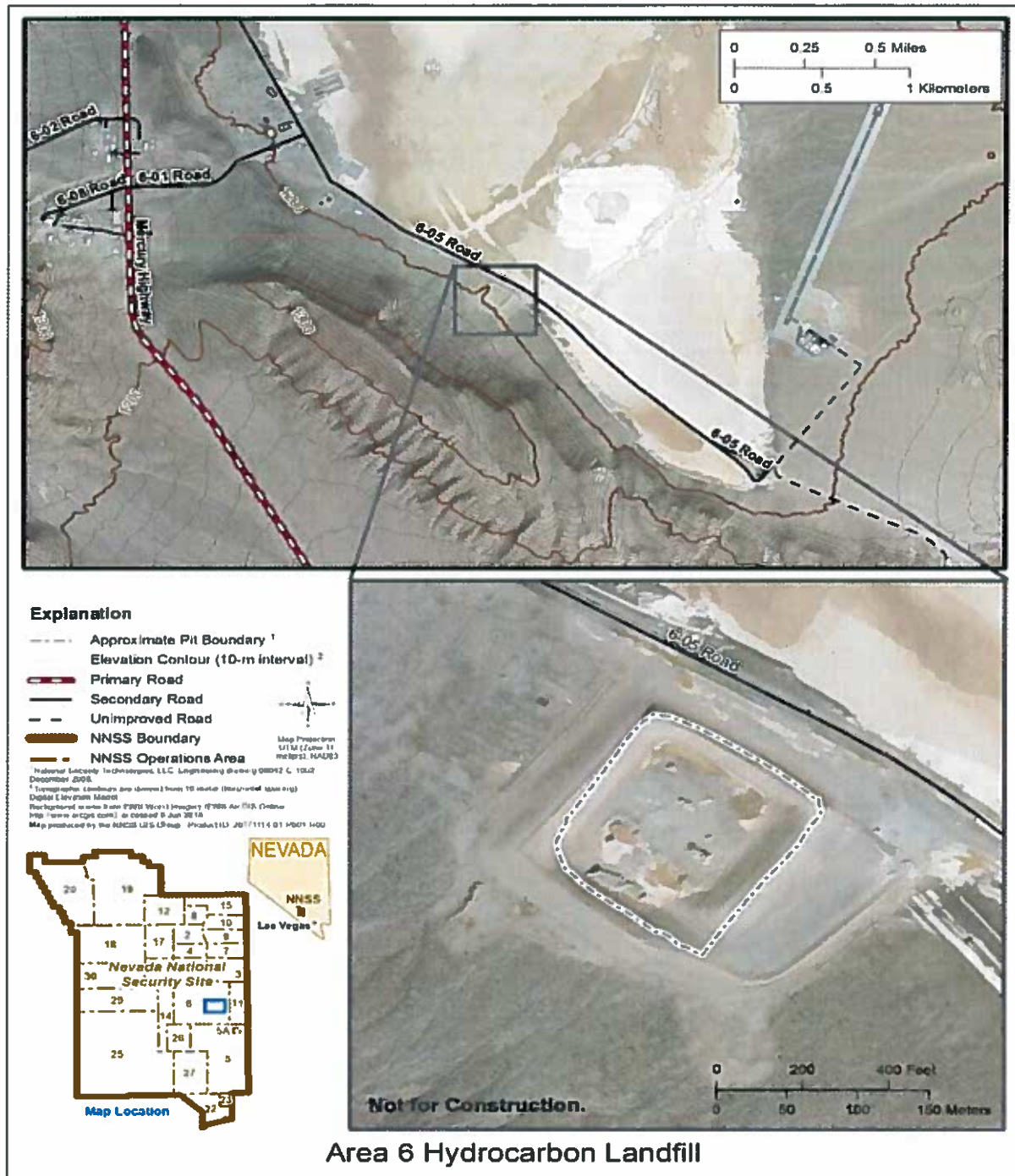


Figure 3. – Aerial photo of A6 SWDS

Exhibit 2

Health and Safety Plan for Area 23, Area 6 and Area 9 U10c Solid Waste Disposal Sites

**June 2018
Rev. 3**

Prepared for the

U.S. Department of Energy
National Nuclear Security Administration
Nevada Field Office

by

Mission Support and Test Services, LLC

Table of Contents

LIST OF FIGURES	III
LIST OF TABLES	III
ACRONYMS	IV
1.0 INTRODUCTION	1
1.1 Foreword	1
1.2 Scope	1
1.3 Applicability	1
1.4 Conditions	1
1.5 Discussion	1
1.6 Project Personnel Responsibilities	1
1.7 Project Positions and Responsibilities	2
2.0 SITE INFORMATION	2
3.0 SCOPE OF WORK	4
3.1 Mitigation of Safety Hazards	4
4.0 HAZARD ANALYSIS AND RISK ASSESSMENT	4
4.1 Introduction	4
4.1.1 Job Hazard Analysis and Pretask Hazard Review	4
4.1.2 Risk Assessment	4
4.1.3 Engineering Controls	5
4.1.4 Administrative Controls	5
4.1.5 Personal Protective Equipment	5
5.0 HAZARDS	5
5.1 Radiological Hazards	5
5.2 Biological Hazards and Surveys	5
5.2.1 Hantavirus	5
5.2.2 Valley Fever (Coccidioidomycosis)	6
5.2.3 Bites and Stings	6
5.2.4 Wild Animals	6
5.2.5 Poisonous Plants	6
5.3 Physical Hazards	6
5.3.1 Cold Stress	6
5.3.2 Heat Stress	7
5.3.3 Weather	7
5.3.4 Noise	8
5.3.5 Vehicle Operations	8
5.3.6 Heavy Equipment Operations	9
5.3.7 Manual Lifting	10
5.3.8 Slips, Trips, and Falls	10
5.3.9 Housekeeping	10

5.3.10	Lighting	10
5.3.11	Dust.....	10
5.3.12	Pinch Point Hazards	11
5.4	Fire and Explosion Hazards	11
5.4.1	Refueling Operations.....	11
5.4.2	Smoking Areas	11
5.4.3	Brush Fires	12
6.0	TRAINING	12
6.1	Training Requirements.....	12
6.2	Site-Specific Training	12
6.3	Daily Briefings.....	13
6.4	Visitor Clearance.....	13
7.0	PERSONAL PROTECTIVE EQUIPMENT	13
7.1	Levels of Personal Protective Equipment.....	13
7.2	Level D	14
7.3	Hearing Protection	14
8.0	MEDICAL REQUIREMENTS	14
8.1	Medical Surveillance	14
9.0	MONITORING REQUIREMENTS	15
9.1	Radiological Monitoring.....	15
9.2	Miscellaneous Monitoring.....	15
9.2.1	Noise Monitoring	15
9.2.2	Wind Speed Monitoring	15
9.2.3	Heat and Cold Stress Monitoring.....	15
10.0	SITE CONTROL	15
10.1	Communications	16
11.0	EMERGENCY RESPONSE PLAN	16
11.1	Emergency Response Personnel.....	16
11.2	Notifications	16
11.3	Personnel Accountability.....	17
11.4	Site Evacuation.....	17
11.5	Medical Support.....	17

List of Figures

Figure 1. Location of the NNSS..... 3

List of Tables

Table 1. Training Requirements 13

Acronyms

ARL/SORD	Air Resources Laboratory/Special Operations and Research Division
ESH&Q	Environment, Safety, Health & Quality
HASP	Health and Safety Plan
IH	Industrial Hygiene
JHA	Job Hazard Analysis
LED	Local Emergency Director
NDEP/BFF	Nevada Division of Environmental Protection Bureau of Federal Facilities
MSTS	Mission Support and Test Services
NNSS	Nevada National Security Site
OCC	Operations Coordination Center
OS	Occupational Safety
PPE	Personal Protective Equipment
PTHR	Pretask Hazard Review
SWO	Solid Waste Operations
S&H	Safety and health
SOW	Scope of Work
SSHASP	Site-Specific Health and Safety Plan
TWA	Time-Weighted Average
WBGT	Wet Bulb Globe Thermometer
WO	Work order

1.0 Introduction

1.1 Foreword

Mission Support and Test Services, LLC (MSTS) has developed this Health and Safety Plan (HASP) to address safety and health requirements for the disposal site located in Area 6 at the Nevada National Security Site (NNSS). The HASP has been developed in conjunction with Occupational Safety and Industrial Hygiene (OS&IH). The HASP is an extension of the Worker Safety and Health Program and activities outlined are to be performed under an approved work order using an integrated work control process. Safety and health (S&H) activities will be addressed as part of that process. The specific area is:

1. Area 6 Solid Waste Disposal Site.

1.2 Scope

This HASP provides guidelines to support the identified waste disposal site which is permitted by the Nevada Division of Environmental Protection Bureau of Federal Facilities (NDEP/BFF).

1.3 Applicability

This HASP is applicable only for the following types of work:

1. MSTS personnel and subcontractors who perform work at the disposal site located in Area 6;
2. Environment, Safety, Health & Quality (ESH&Q) oversight related to disposal of non-hazardous material within the disposal site located in Area 6;
3. Visitors to the disposal sites located in Area 6.

1.4 Conditions

1. A work order (WO) will be maintained for routine work to be performed. New work will require modification of the existing WO or initiation of a specific work order.
2. MSTS OS&IH will determine safety and industrial hygiene requirements, mitigations, and compensatory activities as required for MSTS work.
3. Periodic work will require either a WO or discrete work order to be developed before the performance of work.

1.5 Controls

Specific hazard control objectives are discussed in the individual WO and may include a Job Hazard Analysis (JHA), Pretask Hazard Review (PTHR) requirements, and IH Plans, as applicable. Controls will be adopted based upon sampling and monitoring results for enhancements to worker safety. Controls will be identified to ensure personnel are not exposed to hazards at harmful levels. The need for additional monitoring and sampling to evaluate the adequacy of the controls will be performed as necessary.

1.6 Project Personnel Responsibilities

Each person is responsible for the health and safety of themselves and their coworkers, for completing tasks safely, and for reporting unsafe acts or unanticipated hazards or conditions.

All personnel are responsible for continuous adherence to this HASP during work. All personnel have the right and responsibility to call a "Time Out" or "Stop Work" in the event of unsafe acts or conditions. In the event that the scope of work changes, an emergency or incident occurs (e.g., fatality, injury or illness, skin/clothing contamination, vehicle accident, radiological contamination of personnel, serious property damage, or spill), or unexpected hazards arise, personnel shall take a "Time Out" or "Stop Work" as appropriate and notify the Roads, Grounds, Solid Waste (RGSW) Superintendent.

1.7 Project Positions and Responsibilities

SWO Superintendent

- Determines and provides labor and equipment requirements
- Coordinates site activities
- Implements project plans and work activities
- Directs personnel to medical upon report of an occupational injury or illness or suspicion that an employee has been injured or become ill due to an occupational accident
- Notifies the appropriate chain of command if something unusual occurs or work is out of scope
- Oversees compliance with HASP and job-specific JHA
- Evaluates effectiveness of control measures and recommends changes/additions, if required
- Monitors work area, exposures, and hazards, and documents as necessary
- Provides and documents daily safety briefings
- Verifies site personnel have completed the required training before work start
- Reviews and assists in the completion of all paperwork required as a result of an occupational accident, injury, illness, vehicle or property damage, or near miss

SWO Staff

- Conduct activities as directed by the RGSW Superintendent
- Comply with HASP, applicable work package, JHA, and PTHR requirements

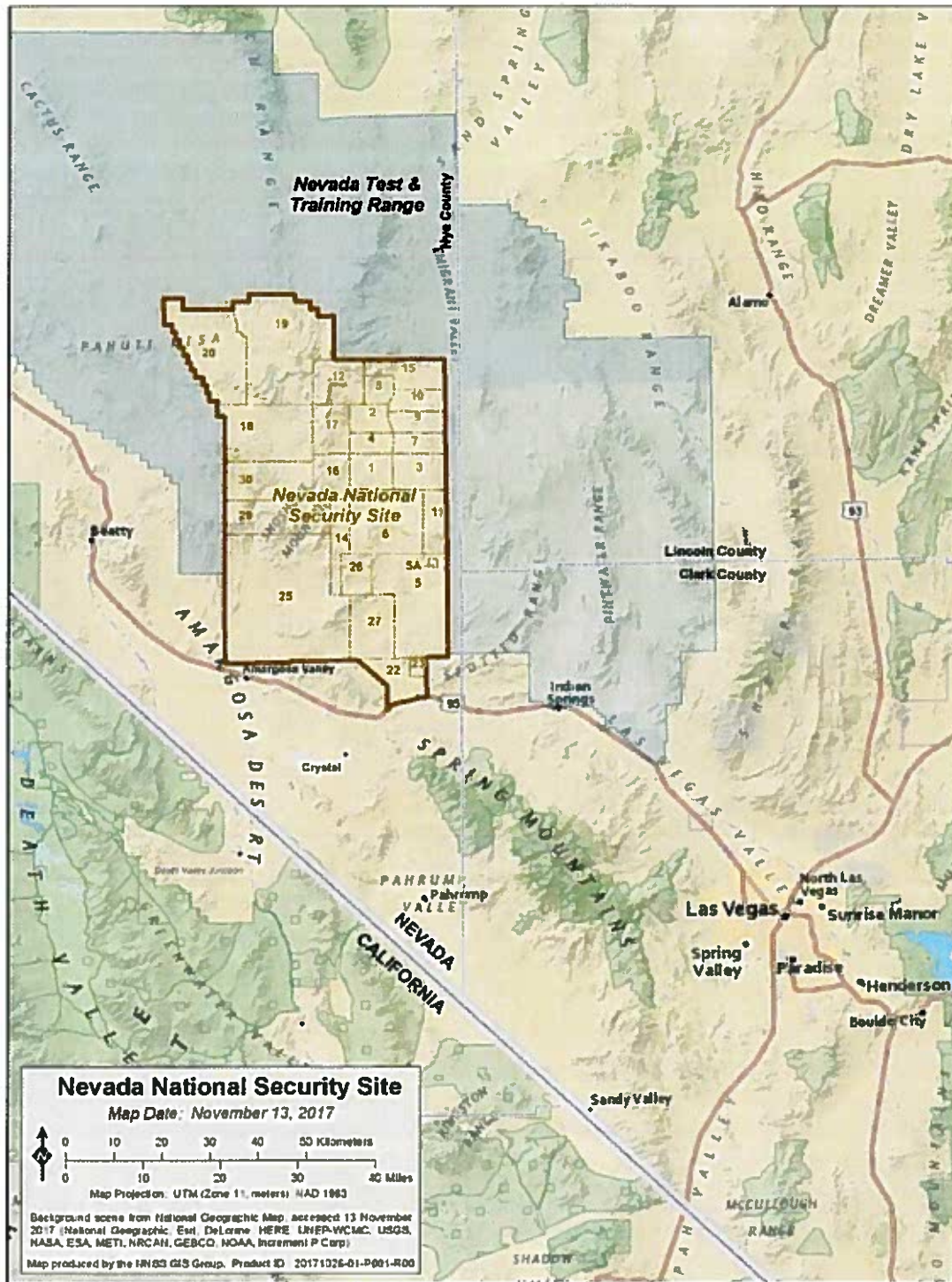
Other MSTs Staff

- Conduct activities as directed by the RGSW Superintendent
- Obtain a safety briefing upon entering the disposal sites as necessary

2.0 Site Information

The NNSS is located 65 miles northwest of Las Vegas, Nevada (Figure 1). The disposal site is located in Area 6 within the NNSS boundaries.

Figure 1. Location of the NNSS



3.0 Scope of Work

This HASP addresses the safety-related actions required for operation of the disposal site located in Area 6. Individual tasks required to address specific work efforts will be developed according to integrated work control processes to implement the Integrated Safety Management System and ensure that the appropriate hazards are recognized and controls are in place. The scope of the project includes mitigation of safety hazards, characterization and removal of materials, and demolition of structures.

3.1 Mitigation of Safety Hazards

The following activities will be performed to mitigate safety hazards as necessary:

- Perform site set up
- Perform site inspections
- Establish work zones and construct containments
- Perform monitoring for personnel safety and determination of extent of work impact
- Perform housekeeping and clean-up activities

4.0 Hazard Analysis and Risk Assessment

4.1 Introduction

Based upon the scope of work for this activity, there may be a potential for exposure to a number of hazardous conditions during the execution of specific work packages required to complete this project.

4.1.1 Job Hazard Analysis and Pretask Hazard Review

The controlling safety documents for individual field activities are the work packages for each job or task, this HASP, and applicable MSTs company documents. This HASP provides the general and programmatic safety information required for activities. Information regarding job- or task-specific work scope, hazards, and mitigations will be included in the work packages, the accompanying JHA, and/or PTHRs. Personnel assigned to work at these sites or associated sites are responsible for compliance with this HASP, JHAs, and PTHRs.

Work packages will be issued to cover all activity-level work. A JHA will be associated with each Type 1 or 2 work package and must be reviewed at the start of work. In addition, before the start of work each day, a PTHR covering the day's specific SOW will be held to assure understanding of the work and hazards present. Personnel performing the work must sign the PTHR verifying they are aware of the specific hazards present. When new hazards are identified that are not addressed by the PTHR, a "Time Out" or "Stop Work" shall be taken until mitigation of the new hazards is implemented. New personnel assigned to this project must review the HASP, JHA, and, if involved in activity-level work, the specific hazards associated with the day's tasks before starting work.

4.1.2 Risk Assessment

Acceptance of residual risk is based upon established MSTs criteria, as well as an industry standard approach to risk reduction and acceptance. Hazard exposure risk reduction can be achieved using appropriate engineering controls, administrative controls, and personal

protective equipment (PPE). Through these measures, the residual risk associated with closure work has been determined to be within acceptable limits, per established MSTS criteria. The list of controls under each hazard does not imply a requirement to use them all. They will be chosen at the discretion of the RGSW Superintendent, based on professional judgment.

4.1.3 Engineering Controls

Engineering controls include the following:

- Removal/elimination of the hazards or hazardous conditions by design or substitution
- Use of specialized equipment
- Use of limiting barriers, along with associated warning devices (e.g., signs and lights), and other measures to warn and control employee access to the hazard

4.1.4 Administrative Controls

Administrative controls include the following:

- Use of the MSTS work control process and JHAs/PTHRs to identify, discuss, and resolve specific hazard exposure potential
- Implementation and enforcement of approved MSTS operating procedures, manuals, and directives for specific work activities
- Controlled access and personnel exposure monitoring (noise and temperature)
- Enforced employee safety training and skill requirements before work assignment and on-the-job hazard/mitigation information for site-specific hazards

4.1.5 Personal Protective Equipment

Task-specific PPE will be used when required (see Section 7.0, Personal Protective Equipment).

5.0 Hazards

5.1 Radiological Hazards

Precautionary measures will be taken as necessary at the Area 6 disposal site to limit potential personnel exposure to radiological constituents.

Controls:

- Dosimetry
- PPE use

5.2 Biological Hazards and Surveys

5.2.1 Hantavirus

There is a potential for hantavirus pathogens to be encountered in rodent feces, urine, and saliva, as well as live or dead rodents (especially deer mice). Inspection of the work area is required before initial project start. If hantavirus cleanup is required, it will be done according to current procedures for hantavirus prevention and control.

5.2.2 Valley Fever (Coccidioidomycosis)

A potential exists that personnel may be exposed to the Coccidioidomycosis fungus, which is common in the soils of the southwestern United States, Mexico, and South America. Valley Fever disease is caused by the inhalation of spores from the fungus and may affect those workers who conduct tasks outdoors. The fungus thrives in dry conditions in locations with mild winters and long dry summers. The spores are released when soil is disturbed. They do not spread person to person but only by direct contact with inhaled spores.

5.2.3 Bites and Stings

The potential exists for encountering venomous animals and insects (e.g., snakes, scorpions, bees, spiders), as well as other biting, non-venomous animals (e.g., birds, rats, coyotes, badgers) and insects (e.g., flies). Personnel are advised to avoid crevices, shrubs, and other areas that these creatures may inhabit. Individuals with allergies to wasps or bees must notify the RGSW Superintendent of their condition and if they have a prescription sting kit, before working at the site. Employees should not handle or feed animals or insects.

5.2.4 Wild Animals

It is possible for wild animals to be in or near the work area (e.g., coyotes, rabbits, owls, bobcats, badgers). Personnel are prohibited from feeding, harassing, or otherwise disturbing wildlife. Also, employees will be made aware of the potential for encountering wildlife, especially antelope, on the roads to and from these sites and near any water source.

Before work at these sites is initiated, a biological survey will be conducted. Whenever a desert tortoise is encountered, the date and time of the sighting, where the tortoise was seen (area, distance to closest intersection), the size of the tortoise, and whether the tortoise had any markings should be recorded. The sighting is then to be reported to the RGSW Superintendent and a FRM-1537, "Desert Tortoise Sighting Report," must be completed.

If a desert tortoise is encountered in a roadway, the tortoise should be moved 25 feet off the road in the direction it was heading and the necessary reports shall be made. If a desert tortoise is encountered in a work area or an area not considered a roadway, and if it is not in immediate harm's way, the tortoise is to be left undisturbed. Site personnel are to immediately report the sighting to MSTs Ecological Services.

5.2.5 Poisonous Plants

Certain native and non-native plants may have sharp spines or leaves that can present a hazard upon contact (e.g., cuts, abrasions, punctures). Unnecessary contact with plants must be avoided. Employees should pay attention to skin irritations or rashes and report changes to the RGSW Superintendent.

5.3 Physical Hazards**5.3.1 Cold Stress**

In winter months, cold stress and hypothermia must be a concern when establishing work procedures, especially in wet weather. Other adverse weather conditions such as wind, blowing dust, rain, or snow can cause workers to be distracted, preoccupied, or irritable. Factors such as wet clothing and personal illness can compound the effects of cold stress. Personnel will be briefed on how to recognize and identify the symptoms of cold stress and be required to wear

proper clothing to mitigate the effects of cold stress. Work breaks will be provided as needed so that personnel may take shelter and warm up. The RGSW Superintendent will observe work site conditions and monitor weather forecasts to determine if work activities need to be altered or suspended.

Controls:

- Current procedure for mitigating cold stress
- Weather monitoring
- Awareness information
- Appropriate protective clothing

5.3.2 Heat Stress

In summer months, heat stress can be a serious concern, especially when working in the high deserts of the NNSS. Heat stress monitoring will be conducted if warranted by hot weather conditions. Wet Bulb Globe Thermometer (WBGT) temperature monitoring or heart rate monitoring may be used as a guide for determining work/rest regimens in hot weather. Personnel will be briefed on how to identify the various stages of heat induced illness (heat stress, heat exhaustion, and heat stroke).

Controls:

- Current procedure for mitigating heat stress
- Weather monitoring
- Awareness information
- Appropriate protective clothing
- Fluid intake
- Work breaks when needed
- Cool zones (trailers, vehicles, and tents)

5.3.3 Weather

The following information must be provided during the initial briefing before the start of work.

Severe weather warnings are issued by the Operations Coordination Center (OCC) using the all-nets announcements on NNSS radios. These warnings include high wind speed warnings, flash flood advisories, and severe thunderstorm warnings. In all cases, the RGSW Superintendent will direct personnel to take appropriate actions when such warnings are issued by OCC.

Upon notification by the OCC of thunderstorm warnings involving lightning, the RGSW Superintendent will then ensure continual monitoring of the storm. Electrical storms may move very quickly and may be extremely dangerous. When lightning strikes are observed within 10 miles of the work site, work must stop, and all personnel must seek shelter as directed by the RGSW Superintendent. Work cannot continue until either the storm has moved beyond 10 miles from the work site or 30 minutes have elapsed following the last observed lightning strike.

Flashflood warnings may require that personnel evacuate a work site if the site is within a low-lying or drainage area. The RGSW Superintendent will determine whether evacuation is necessary or appropriate. In all cases, it is incumbent upon all workers to assess site conditions and take protective actions as needed.

When high winds create a hazard to employees or work being performed, work activities will stop, and responsible supervision will be contacted for further direction.

Controls:

- Current procedure for inclement weather protection
- Weather monitoring
- Seeking shelter as needed
- Suspending work as needed

5.3.4 Noise

Heavy equipment (e.g., bulldozers, front end loaders, water masters) is a potential source for excessive noise. Personnel within ten feet of operating equipment and operators are required to wear hearing protection. When it is uncertain if the ten-foot zone is protective enough, noise exposure assessments will require IH support.

The three-foot rule is recommended for general guidance during field operations. It states that if two people standing three feet apart must shout to hear each other above the background noise, then hearing protection is warranted.

Controls:

- Current procedure addressing the noise and hearing conservation program
- Noise monitoring to assess sound level exposures
- Noise monitoring to assess proper selection and use of hearing protection
- Proper selection and use of PPE (ear plugs, insets, or muffs)
- Separation of personnel from noise source (establish work distances from sources or placing barriers between the source and person)
- The following types of hearing protection are required:
 - Single protection at or above 85 decibels, A-weighted (dBA) action limit
 - Double protection at or above 104 dBA
 - Placing personnel in the Hearing Conservation Program at or above 85 dBA for an 8-hour time-weighted average (TWA)

5.3.5 Vehicle Operations

Motor vehicles present the potential for personnel to be struck by or caught in or between moving vehicles. Personnel will be aware of moving vehicles at all times. Reflective vests are required for all onsite personnel, unless the RGSW Superintendent downgrades this requirement due to site conditions, if the vests pose additional safety hazards, or if all heavy equipment is shut down.

The commute to and from remote locations may expose personnel to potential driving fatigue. Drivers shall take breaks as needed, switch off driving, or drive with another person. Workers shall drive defensively. All posted speed limits and other traffic regulations will be strictly observed. Seat belts shall be worn by the driver and all passengers. Operating vehicles in reverse poses additional risk to personnel. Employees are encouraged to do a 360-degree walk-around before moving the vehicle, use a spotter, and/or honk the vehicle horn. Use of cell phones is prohibited while driving, as well as texting while driving, as this is a distraction.

Controls:

- Current procedure for safe motor vehicle operation
- Driver Safety Training
- Vehicle safety inspection and safe vehicle operation
- Use of seat belts and driver/passenger awareness of safety requirements
- No use of cell phones while operating a motor vehicle

5.3.6 Heavy Equipment Operations

Heavy equipment will be used during landfill activities. Before use, the heavy equipment operator shall perform a pre-operational visual inspection to determine if the equipment is in safe working condition. If a deficiency that could affect operational safety is discovered, equipment shall be removed from service, red-tagged, and the RGSW Superintendent shall be notified. All leaks of transmission fluid, hydraulic fluid, coolant, or fuel shall be immediately reported to the RGSW Superintendent. Action shall be taken to minimize and clean up the spill. All spills, regardless of volume, are required to be reported in conjunction with current procedures.

Heavy equipment and other powered industrial equipment create a potential for personnel to be struck by or caught in or between moving equipment. While in the operational reach of heavy equipment, personnel will wear high visibility vests and are to stay in the line of sight of the equipment operator at all times. Equipment will be operated only by those qualified to do so. Only essential personnel will be within the operational reach where heavy equipment is in operation. Personnel will not be allowed inside the swing radius of the heavy equipment without specific consent of the operator.

Heavy equipment shall be equipped with a back-up alarm or a spotter will be required when equipment is traveling in reverse.

High visibility vests are required for all personnel working on site, unless the RGSW Superintendent downgrades this requirement due to site conditions, if the vest poses an additional safety hazard, or if all heavy equipment is shut down.

Controls:

- Current procedure for warning and notice tags
- Current procedure for powered industrial trucks
- Use of qualified operators
- Red tags and other warning devices, alarms, and/or signs
- Use of vests, backup alarm, and/or spotter

5.3.7 Manual Lifting

There will be numerous times when personnel are required to handle and move objects of varying weights and sizes. Proper lifting techniques shall always be used when manual lifting or pulling is required, adhere to the 60lb limit for a single person lift. Personnel shall seek assistance and/or use material handling equipment when a load is determined to be too heavy or awkward.

Controls:

- Current procedure for back injury prevention program
- Proper lifting techniques
- Use of assistance when needed
- Necessary lifting aids

5.3.8 Slips, Trips, and Falls

The walking surface around these sites is uneven or otherwise presents a tripping hazard to personnel. High traffic areas at the sites with irregular surfaces will be graded to minimize risks.

Another potential hazard is falling from equipment. Personnel will use the "Three-Point Rule," meaning there will be three points of contact at all times by either hands and feet when mounting or dismounting equipment. High ankle boots are recommended.

Controls:

- Good housekeeping
- Use of the "Three-Point Rule"
- Keeping eyes on path while walking
- Proper foot wear

5.3.9 Housekeeping

Good housekeeping practices are the responsibility of every person assigned to the area. Awareness of such hazards is a major factor in the prevention of housekeeping-related accidents and decreasing fire hazard concerns. Construction materials shall be stored or placed in a convenient location in an orderly manner. Good housekeeping helps minimize the attraction of animals and insects.

Controls:

- Current procedure for housekeeping and fire protection
- Current procedure for flammable/combustible liquids and aerosol products

5.3.10 Lighting

In winter months, the sunrise and sunset may impact the work schedule. Work will not be conducted if lighting conditions inhibit sight or create a hazard.

5.3.11 Dust

Due to the nature of the work, there is potential for nuisance dust hazards. Dust generated from equipment operations or wind-borne dust will be kept to a minimum and control measures (e.g., wet methods) will be used as necessary. Avoid eye injuries by stepping up PPE as necessary, such as wrap around safety glasses or goggles.

Controls:

- Wet methods as needed
- Enclosed, pressurized cabs for heavy equipment
- Site control
- Controlled operations while dumping soil

5.3.12 Pinch Point Hazards

Pinch point hazards exist during the general operation of the waste disposal sites. Potential consequences of being caught in a pinch point include damage to PPE and personnel injury.

Controls:

- Personnel should evaluate the work being performed for the presence of pinch points
- Leather or other appropriate work gloves shall be worn during activities involving pinch points
- Workers should remain alert to the tasks they are performing
- Stay out of the line of fire, good body positioning

5.4 Fire and Explosion Hazards**5.4.1 Refueling Operations**

Refueling operations present the potential for chemical releases and fire/explosion hazards in the presence of static electricity or flame/spark-producing devices. If refueling onsite is necessary, the equipment used to transfer the flammable/combustible liquids shall be approved for the material being transferred.

Any fuel brought to the site must be in U.S. Department of Transportation-approved containers and properly labeled. If more than five gallons are required at any one time, it will be brought to the site by fuel trucks and transferred to smaller containers using proper grounding and bonding techniques.

Controls:

- Use of fire extinguisher
- Use of proper grounding and/or bonding
- Removal of ignition sources
- Fire extinguisher training

5.4.2 Smoking Areas

Smoking and/or open flames are not permitted where there may be dry grass, flammable material, or wherever procedures or rules forbid such practices. Improperly discarded cigarettes and other smoking materials could cause brush fires in the area. Smoking will not be permitted in vehicles, operating equipment, or office trailers. Smoking will be allowed only in designated areas and personnel shall appropriately dispose of spent smoking materials.

Controls:

- Appropriate containers for cigarette butts

- Fire extinguisher readily available

5.4.3 Brush Fires

Vehicles and equipment will not be left idling in or around areas where exhaust systems may cause fires by contacting grease or vegetation. When operating project vehicles and/or equipment in high grass, weeds, brush, or similar combustibles, care needs to be taken to monitor for the accumulation of these materials adjacent to the exhaust system. To reduce the potential for this type of fire, the vehicle/equipment operators should periodically stop, examine the undercarriage, and remove any accumulated combustibles.

During high fire hazard season, additional requirements may be in effect. Those requirements will be provided as needed.

Controls:

- Parking in designated parking areas
- Fire extinguisher readily available
- Walk-around inspections of vehicles after off-road travel

6.0 Training

6.1 Training Requirements

MSTS personnel are responsible for verifying that personnel assigned to support closure activities meet the training requirements. Personnel assigned to this project shall receive training as outlined in Table 4, 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 HASP, the appropriate training will be identified, provided, and documented.

The specific training requirements for each task will be identified in the work order.

6.2 Site-Specific Training

It is the employee's responsibility to ensure he/she is familiar with the requirements relating to their job tasks. Before performing activity-level work, all employees will read and become familiar with this HASP and sign a statement indicating that they have read and understand this document. Personnel unable to read or understand this document must have their supervisor explain its contents. Individuals who have questions on information found in this document should discuss their questions with their supervisor for clarification. If the question cannot be answered to the satisfaction of the individual, the RGSW Superintendent should be contacted for assistance. Once the briefing and/or review of the HASP is completed and employees understand its contents, they will sign the Safety Compliance Agreement form acknowledging they understand and agree to comply with this Site-Specific HASP (SSHASP). If an employee feels they do not understand the contents of the SSHASP, another briefing shall be administered and/or they may request a current copy of the SSHASP from the RGSW Superintendent.

6.3 Daily Briefings

Daily briefings will be conducted for all involved personnel for activity-level work. The briefings will meet the requirements of MSTS integrated work control processes and pre-job briefings and post-job debriefings. New personnel must receive a thorough briefing that adequately describes the remaining portions of the job and the hazards presented in the remaining work.

6.4 Visitor Clearance

Visitors to the sites will be given a site-specific briefing by the RGSW Superintendent or designee.

TABLE 1. TRAINING REQUIREMENTS

Course	Activity Level Work
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 (two personnel on job site)	X
First Aid (two personnel on job site)	X
Cardiopulmonary Resuscitation (two personnel on job site)	X

7.0 Personal Protective Equipment

7.1 Levels of Personal Protective Equipment

PPE levels may be upgraded or downgraded as instructed by IH. PPE specific to all work will be developed consistent with the requirements of MSTS integrated work control processes.

All PPE requirements will be identified in applicable work documents or posted at work areas.

At a minimum, the following program requirements apply:

- Current procedures for personal protective equipment
- Current procedures for noise and hearing conservation

7.2 Level D

Level D PPE, at a minimum, is required for all activity-level work. Level D PPE includes the following:

- Safety glasses with side shields
- Hard hats (when overhead hazards exist)
- Safety shoes
- Work clothing
- Work gloves (when required and does not pose a safety risk)
- Reflective vests (when working around heavy equipment or in high traffic areas)

Hard hats, safety shoes, and safety glasses must meet current and applicable American National Standards Institute standards. Personnel in the cab of equipment or vehicles that are equipped with overhead protection are not required to wear hard hats while inside the cab.

Appropriate work gloves are determined by specific work requirements and/or the applicable PTHR. Personnel in non-office work areas shall wear ankle-length pants. Shorts, skirts, dresses, shirts without sleeves, or other such clothing is not permitted. (Modesty garments worn under protective clothing are exempt from this requirement.)

7.3 Hearing Protection

Hearing protection and hearing conservation will be implemented consistent with noise and hearing conservation program requirements. Those personnel who are subject to hearing conservation requirements will be identified by IH (e.g., heavy equipment operators). Personnel will apply the three-foot rule. If it is difficult to carry on a conversation with personnel within three feet due to noise, then hearing protection should be worn. If personnel have any concerns related to ambient noise and the need for hearing protection, then they are to notify the RGSW Superintendent or IH and noise surveys will be completed, as required.

Hearing protection must be worn as prescribed by the manufacturer. If ear insert hearing protection is used, it should be tested for proper fit. Testing for fit is performed by covering the ears after the protectors have been inserted. The noise levels should drop or sound fainter when the ears are cupped by the hands.

8.0 Medical Requirements

All onsite employees are required to meet the appropriate medical requirements before beginning work. Medical requirements for specific individuals will depend on the tasks to be performed, associated hazards or risks, and safety requirements.

8.1 Medical Surveillance

All MSTS personnel must participate in the MSTS Medical Surveillance Program. Medical surveillance will ensure that personnel have the following:

- Physical fitness to perform intended work activities
- The ability to work in thermally hot environments

The RGSW Superintendent or designee will review medical documentation from the physician to ensure fitness for duty. Any restrictions will be noted and adhered to.

9.0 Monitoring Requirements

The following sections describe the monitoring program to be implemented and action levels.

9.1 Radiological Monitoring

Radiation dosimeters will be furnished by NNSS External and Internal Dosimetry.

9.2 Miscellaneous Monitoring

Other potential hazards exist which may require real-time monitoring. These hazards include noise, wind speed, heat and cold stress. Additional monitoring may be performed and equivalent instruments may be substituted at the discretion of the IH.

9.2.1 Noise Monitoring

Noise levels have been monitored with an audio dosimeter to delineate activities where hearing protection is required and to assess the effectiveness of hearing protection and whether or not personnel need to participate in a Hearing Conservation Program. The monitoring determined that personnel would not be required to participate in a Hearing Conservation Program but would be required to wear hearing protection.

9.2.2 Wind Speed Monitoring

At the direction of the Air Resources Laboratory/Special Operations and Research Division (ARL/SORD) Duty Forecaster, high wind advisories are issued by the OCC when sustained winds exceed 20 mph. High Wind warnings are issued by the OCC using the all-nets announcements on NNSS radios and by way of the Communicator Nxt System.

When high winds create a hazard to employees or work being performed (instability in elevated areas, limited visibility due to dust or particles, unmanageable materials, etc.) work activities need to stop, materials must be stored/secured, and responsible supervision contacted for further direction. Elevated work and use of aerial lifts are also to be stopped.

9.2.3 Heat and Cold Stress Monitoring

Current procedures for heat and cold stress list work/rest requirements and action levels for work involving PPE. If necessary, physiological heat stress monitoring may be performed.

Cold stress monitoring will be accomplished by obtaining air temperature and wind speed and calculating the equivalent chill temperature using the guidelines found in current procedures for heat and cold stress.

10.0 Site Control

Site control prevents unauthorized, untrained, or unprotected personnel or visitors from being exposed to the hazards associated with the sites. Site control measures will include the following:

- A fence will be maintained around each site.
- Project personnel and visitors will enter the site through the primary access point only.
- Visitors shall be scheduled through the responsible person before arrival.
- Visitors shall sign their name, time in, and time out on the visitor control log.
- Signage or barriers will communicate information such as hazards, required PPE, and work zone boundaries.
- The site will be secured at the end of each shift.

10.1 Communications

NNSS personnel, including emergency responders, will be able to be reached in case of injury. Telephones are available onsite. Field radios will be the primary communication tool.

11.0 Emergency Response Plan

The Emergency Response Plan is designed to establish a program/plan to optimize a safe and informed response to incidental and emergency situations with the intent of protecting project personnel, co-located workers, the public, the environment, and property in the event of hazardous substance releases, employee contamination, accidents, injuries, fire, or natural disasters. Preparatory steps necessary for responding to an emergency situation are given below and they should be complied with before beginning any work at the site.

11.1 Emergency Response Personnel

Once an emergency has occurred, the facility manager/facility owner (for facility events) assumes the role of Local Emergency Director (LED) and is responsible for initial response, mitigating the event at the scene, and implementing applicable emergency plans and procedures. During an Operational Emergency, the LED is relieved of emergency management decision making, with the exception of categorization and classification as applicable, by the arrival of a senior fire officer, and becomes a member of the unified Incident Command System. The senior fire officer assumes the role of Incident Commander. If a security emergency has been declared, the senior fire officer becomes a member of the unified Incident Command System and site security acts as the Incident Commander.

11.2 Notifications

Accident and incident reporting will be according to current procedures for accident/incident notifying, investigating, and reporting. In the event of an emergency (e.g., significant injury or illness, fatality, serious property damage, or spill), the OCC will be notified and NNSS emergency responders will be contacted at 911.

Initial discovery and reporting of an emergency or abnormal event is essential to completing the proper response, assessment, and mitigation actions. All site personnel are responsible for reporting emergencies, abnormal events, uncontrolled releases, or unusual incidents that could impact the health and safety of project personnel, co-located workers, the public, or the environment.

The individual who discovers an emergency or abnormal event shall report the condition to the RGSW Superintendent as applicable and as follows:

- **Life-Threatening Situations** – In case of a life-threatening emergency, NNSS emergency services must be notified. MSTs maintains an emergency response telephone number of 911 at the NNSS. 911 may be reached from onsite radios by pressing the orange button or by dialing 911 from any site telephone. Either option will immediately connect the caller with the Fire Department, Central Alarm Station. 911 will also be used when the facts of the situation are not fully known.
- **Non-Life-Threatening Situations** – Individuals will notify the RGSW Superintendent for non-life-threatening situations.
- **Contact Safety Professional of the incident**

11.3 Personnel Accountability

Personnel accountability is accomplished using sign in sheets and the visitor log.

11.4 Site Evacuation

The Responsible Supervisor directs all evacuations of any of the facilities. Based on the nature and severity of the situation, there are at least two ways that each facility can be evacuated. These are as follows:

- **Immediate Evacuation:** Site radios will also be used to communicate an immediate evacuation. Personnel inside the structure will egress via the nearest exit without stopping.
- **Controlled Evacuation:** Site radios will also be used to communicate a controlled evacuation. Non-essential personnel inside the structure shall egress following normal exit means.

11.5 Medical Support

Occupational Medicine in Building 23-650 and the NNSS Fire Department facilities in Area 6 will be used for medical injuries and emergencies. Depending on the seriousness of the injury, injured personnel may also require care by an offsite hospital. The need for offsite care will be determined by the Fire Department or Occupational Medicine.

The NNSS Fire Department will be called at 911 for all medical injuries and emergencies regardless of the severity. In addition, the Fire Department will be responsible for transporting all injured personnel to NNSS Occupational Medicine. When a medical facility or physician is not accessible within five minutes of a group of two or more workers for the treatment of injuries, at least two employees on each shift shall be qualified to administer first aid and Cardiopulmonary Resuscitation/Automated External Defibrillator, shall have received bloodborne pathogens training, and shall be assigned a first aid kit.

Exhibit 3

Waste Acceptance Criteria for Area 6 Solid Waste Disposal Site

**June 2018
Rev. 3**

Prepared for the

U.S. Department of Energy
National Nuclear Security Administration
Nevada Field Office

by

Mission Support and Test Services, LLC

Table of Contents

Acronyms.....	ii
List of Tables.....	ii
1.0 Area 6 Solid Waste Disposal Site Acceptance Criteria	1
1.1 Summary	1
1.2 Waste Acceptance Criteria	2
1.2.1 Waste Characteristics.....	2
1.2.2 Prohibited Wastes	2
1.3 Waste Characterization.....	5
1.3.1 Process Knowledge	5
1.3.2 Sampling and Analysis	5
1.3.3 Sewage Sludge	5

Acronyms

ACM	Asbestos-Containing Material
CFR	Code of Federal Regulations
cm	centimeter
CWMA	Controlled Waste Management Areas
EPA	U. S. Environmental Protection Agency
FFACO	Federal Facilities Agreement and Consent Order
in	inch
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
ORD	Office of Repository Development
PCB	Polychlorinated Biphenyls
POC	Performance Objective for Certification
ppm	parts per million
RACM	Regulated Asbestos-Containing Material
RCRA	Resource Conservation and Recovery Act
SWDS	Solid Waste Disposal Site
TCLP	Toxicity Leaching Characteristic Procedure
TSCA	Toxic Substance Control Act

List of Tables

Table 1.1 Radiological Volumetric Limits for NTS Landfill Disposal	3
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1.0 Area 6 Solid Waste Disposal Site Acceptance Criteria

1.1 Summary

The disposal site will be used for disposal of hydrocarbon-burdened solid waste (hereafter known as, permissible waste). The disposal site will only accept permissible waste, which has come in contact with petroleum hydrocarbon for disposal. Permissible waste, which has hazardous component whose concentrations are greater than Resource Conservation and Recovery Act (RCRA) or Toxic Substance Control Act (TSCA) Polychlorinated Biphenyl (PCB) regulatory levels will not be accepted.

The disposal site will be used as the sole depository of permissible waste which is:

- Generated under the EPA Hazardous Waste Generator Identification Number for the NNSS (off-site locations listed below);
- Generated at sites identified in the FFACO;
- Industrial solid and inert waste from the Yucca Mountain Office of Repository Development activities;
- PCBs considered approved for solid waste disposal per 40 CFR 761;
- PCB bulk product waste on a case-by-case approval by NDEP/BFF; and
- Other waste on a case-by-case approval by NDEP/BFF.

The generator of permissible waste is responsible for preparing documentation related to waste acceptance criteria, waste characterization, and load verification. Solid Waste Operations (SWO) personnel are responsible for operating the disposal site and reviewing documentation to determine if the waste is acceptable.

Disposal site operators, before accepting waste, will obtain a signed document attesting to:

- The absence of prohibited materials;
- Waste characterization information that identifies each load by the type of permissible waste;
- Process by which the waste was characterized (i.e., process knowledge, sampling and analysis, or waste minimization/segregation); and
- Its source by location (i.e., Area 2, Area 25 - ORD, Double Tracks -Tonopah Test Range).

Load verification information will be prepared by the generator or worker familiar with the waste and accepted by disposal site operators before waste disposal. Inadequate documentation is cause to refuse entry and disposal of any load of solid waste.

1.2 Waste Acceptance Criteria

1.2.1 Waste Characteristics

Permissible waste shall be consistent with the following examples:

Contaminated solid waste and environmental media (e.g., septic sludge, soil, plants) containing the following types of hydrocarbons or coolants may include:

- Gasoline (if permissible TCLP sample results);
- Various types of jet fuel;
- Various grades of diesel fuel;
- Hydrocarbon lubricants and hydraulics;
- Kerosene;
- Asphaltic Petroleum Hydrocarbon;
- Ethylene Glycol and other coolants;

Solid waste, which is burdened with one or more of the above hydrocarbons or coolants, may include:

- Plastic sheeting;
- Rags;
- Empty aerosol cans;
- Drained fuel filters (Gasoline and diesel);
- Wooden materials;
- Cement and concrete;
- Road pavement;
- Sludge from sand/oil/water separators; and
- Crushed non-terne plated oil filters.
- Containers and large pieces of solid waste must be capable of being compacted.

1.2.2 Prohibited Wastes

The following wastes are prohibited from disposal at this site:

- Hazardous waste per NAC 444.580 - see Section 1.2.2.1;
- Waste regulated by TSCA - see Section 1.2.2.2;
- Permissible waste that exceeds the criteria in Section 1.2.2.3;
- Waste containing "free liquid" per NAC 444.692 - see Section 1.2.2.4;
- Medical waste per NAC 444.589;
- Pathological waste per NAC 444.600; and
- Garbage per NAC 444.578.

1.2.2.1 RCRA Constituents

Permissible waste will not be accepted for disposal if it is determined that the material is a RCRA listed hazardous waste or displays a RCRA characteristic. Material or environmental media contaminated with gasoline must be tested using the RCRA Toxicity Characteristic Leaching Procedure for benzene and lead, as a minimum, unless process knowledge indicates the absence of these analytes. Fuel and oil filters are exempt from testing requirements after they have been drained of all liquid.

1.2.2.2 TSCA Constituents

Permissible waste must be tested for PCBs, unless process knowledge indicates their absence. The total concentration of PCBs must be below 50 ppm to be accepted for disposal. Infrequent disposal of fluorescent light ballasts, which may contain small amounts of PCBs, is not prohibited.

PCB bulk product wastes specifically identified in 40 CFR 761.62(b)(1)(i) (i.e., plastics, molded rubber parts, caulking, applied dried paint, varnishes, non-liquid building demolition debris) and that meets waste acceptance criteria are to be disposed as permissible wastes regardless of PCB concentration. Further, NDEP requires that PCB bulk product waste disposal approval be handled on a case-by-case basis.

1.2.2.3 Radioactive Constituents

Permissible waste submitted for disposal must meet the surface activity release requirements in Article 422 of DOE/NV/25946--801, Nevada Test Site Radiological Control Manual, current revision, "Release to Uncontrolled Areas," and not exceed the mass concentrations in 10 CFR 30.70, Schedule A or Table 1.1 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 state of Nevada.

Table 1.1 Radiological Volumetric Limits for NNSS Landfill Disposal

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

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

** ^{241}Pu is an activation product, not a fission product. ^{226}Ra is a daughter product of ^{238}U .

Based upon process knowledge, permissible waste generated outside controlled areas, as defined in DOE/NV/25946--801, Nevada Test Site Radiological Control Manual, 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 shall be 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.

1.2.2.4 Free Liquids

Waste shall not contain free liquids. If testing is required to verify the absence of free liquid, it shall be performed by Test Method 9095: "Paint Liquids Filter Test," described in "Test Methods for Evaluating Solid Wastes, Physical/Chemical Methods," EPA Publication Number SW-846. Sufficient sorbing material will be mixed with the permissible waste to ensure that free liquids do not exist before being accepted at the disposal site. The sorbing material will have similar physical and chemical properties to dry, fine grained soil or meet the criteria established for nonbiodegradable sorbing materials found in 40 CFR 264.314, "Special requirements for bulk and containerized liquids." Coarse materials, which have poor sorbing characteristics and which may induce greater porosity in the compacted lifts, will not be used. Disposal site personnel shall inspect loads to verify the absence of free liquids. If free liquids are observed, the waste will be rejected.

1.3 Waste Characterization

Waste will be characterized to ensure that it meets acceptance criteria and will not create an environmental hazard or threaten the health of the general public. Waste will be characterized through process knowledge, sampling, and analysis, or a combination of these methods.

1.3.1 Process Knowledge

Generators can adequately characterize permissible waste by their familiarity and experience with the process by which the 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 affected the processed material by adding, removing, producing, depleting or neutralizing the contaminants in process ingredients, by-products, and/or finished products. Material Safety Data Sheets often are used as a means of identifying the process ingredients.

Process knowledge may also be "derived" through the repeated analyses of the same event. For example, repeated analyses of soil contaminated with a known type of motor oil reveals the same results. From these sampling and analyses, subsequent soil contaminated with this motor oil may be disposed of without further analysis.

Each generator using process knowledge will provide written documentation to the disposal site operator before disposal.

1.3.2 Sampling and Analysis

A sampling and analysis plan for all suspect permissible waste will be developed and implemented. The plan ensures that each waste can be properly characterized for RCRA analytes, PCBs, or free liquids.

1.3.3 Sewage Sludge

Sewage sludge or lagoon sediments will be sampled and analyzed. Lagoons that received only domestic sewage will be analyzed for constituents identified in 40 CFR 503. Sewage sludge from lagoons that have received one or more industrial wastewaters will be analyzed for contaminants listed in 40 CFR 261.4, Table 1, using Toxicity Characteristic Leachate Procedure (TCLP). Sewage sludge exceeding the TCLP limits in 40 CFR 261.4, Table 1, will be managed as hazardous waste.

Exhibit 4

Closure/Post-Closure Plan for Area 6 Solid Waste Disposal Site

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Rev. 2**

Prepared for the

U.S. Department of Energy
National Nuclear Security Administration
Nevada Field Office

by

Mission Support and Test Services, LLC

Table of Contents

Closure Plan	1
Post-Closure Plan	2

Closure/Post-Closure Plan for Area 6 Solid Waste Disposal Site

Closure Plan

Nevada Department of Environmental Protection/Bureau of Federal Facilities (NDEP/BFF) will be notified in writing of the intent to close the disposal site 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 disposal site will be used until permissible waste reaches an elevation of approximately 1,200 m (3,937 ft). 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 disposal site. 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 cover will consist of an infiltration layer containing a minimum 0.46 m (18 in) of earthen material having a capability that is less than the permeability of the natural subsoils, but not greater than 1×10^{-5} cm/sec (3.2×10^{-2} ft/sec). Quality assurance checks will guarantee that the infiltration layer has met the specification requirements before completion of the final cover. An erosion layer, consisting of at least 15.2 cm (6 in) of native soil, will be placed on the infiltration layer. The erosion layer will be vegetated with native plants to stabilize the surface and reduce wind and water erosion.

An alternative design that meets or exceeds infiltration requirements, controls erosion, maintains cover stability, and protects ground waters of the state of Nevada may be recommended at the time of closure.

The closure plan will address all steps that will be 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 disposal site 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. 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.

Post-Closure Plan

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 effect the integrity of the final cover;
- 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); and
- 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.