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Sandia National Laboratories

Operated for the U.S. Department of Energy's
National Nuclear Security Administration
by **Sandia Corporation**

P.O. Box 5800, MS-0143
Albuquerque, NM 87185-0143

P.O. Box 969
Livermore, CA 94551-0969

Phone: (505) 284-3191
Fax: (505) 284-1790
Internet: mwhazen@sandia.gov

Michael W. Hazen
Vice President
Infrastructure Operations
Chief Security Officer

Mr. James W. Todd
Assistant Manager for Engineering
U. S. Department of Energy
National Nuclear Security Administration
Sandia Field Office, MS-0184
P. O. Box 5400
Albuquerque, NM 87185-0184

Dear Mr. Todd:

Subject: ***Submittal of Mixed Waste Landfill (MWL) Annual Long-Term Monitoring and Maintenance Report, January – March 2014, Environmental Protection Agency Identification Number NM5890110518***

The Mixed Waste Landfill Annual Long-Term Monitoring and Maintenance Report, dated June 2014, is being provided to the Department of Energy (DOE) for submittal to the New Mexico Environment Department (NMED). The MWL Long-Term Monitoring and Maintenance Plan (LTMMP) was approved by the NMED on January 8, 2014. This submittal includes information for inspection activities conducted at the MWL during the first partial annual reporting period of January 8 through March 31, 2014 and satisfies the requirements listed in Section 4.8.1 of the MWL LTMMP. Supplemental information is included in this report regarding the ongoing implementation of all MWL LTMMP requirements.

I have signed the certification to be sent to the NMED as the Operator at SNL/NM. If you agree, please sign the certification as the Owner. If you have any questions regarding the enclosed document, please contact Sidney Gutierrez, Director, at (505) 284-0431/smgutie@sandia.gov, Francis Nimick, Senior Manager, at (505) 284-2577/ fbnimic@sandia.gov, or Pam Puissant, Manager, at (505) 844-3185/pmpuiss@sandia.gov.

Sincerely,

Enclosures:
1. Enclosure A – Mixed Waste Landfill Annual Long-Term Monitoring and Maintenance Report, January – March 2014, for Sandia National Laboratories/New Mexico, June 2014
2. Submittal of Mixed Waste Landfill Annual, Long-Term Monitoring and Maintenance Report, January – March 2014, Certification Statement

Copy to (w/enclosures):
MS-0184 John Weckerle, NNSA/SFO
MS-0184 Cynthia Wimberly, NNSA/SFO
MS-0184 SFO Waste Management File, NNSA/SFO

Blind copy to (w/enclosures):
MS-0651 Customer Funded Records Center, 09532

Blind copy to (w/o enclosures):
MS-0141 Amy Blumberg, 11100
MS-0718 Michael Mitchell, 06234
MS-0725 Sidney Gutierrez, 04100
MS-0729 Francis Nimick, 04140
MS-0729 Anita Reiser, 04135
MS-0729 Pam Puissant, 04142

Submittal of Mixed Waste Landfill Annual Long-Term Monitoring and Maintenance Report, January--March 2014

Sandia National Laboratories
Albuquerque, New Mexico
EPA ID No. NM5890110518

CERTIFICATION STATEMENT

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision according to a system designed to ensure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine or imprisonment for knowing violations.

_____ _____

Michael W. Hazen, Vice-President
Sandia Corporation
Albuquerque, New Mexico
Operator

Date signed

_____ _____

James W. Todd, Assistant Manager
U.S. Department of Energy
National Nuclear Security Administration
Sandia Field Office
Owner

Date signed

MIXED WASTE LANDFILL
ANNUAL LONG-TERM MONITORING & MAINTENANCE REPORT
JANUARY – MARCH 2014

SANDIA NATIONAL LABORATORIES, NEW MEXICO
LONG-TERM STEWARDSHIP
MIXED WASTE LANDFILL LONG-TERM MONITORING & MAINTENANCE PLAN

JUNE 2014

United States Department of Energy
Sandia Field Office

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MIXED WASTE LANDFILL
ANNUAL LONG-TERM MONITORING AND MAINTENANCE REPORT
JUNE 2014

Facility: Mixed Waste Landfill

Location: Sandia National Laboratories
Albuquerque, New Mexico

EPA ID No.: NM5890110518

Permit Basis: Mixed Waste Landfill Long-Term Monitoring and Maintenance Plan, submitted March 2012, effective January 8, 2014.

Owner: United States Department of Energy
Sandia Field Office
Technical Contact: Mr. John Weckerle, Long-Term Stewardship
U.S. Department of Energy, Sandia Field Office
P.O. Box 5400/MS 0184
Albuquerque, NM 87185-5400
(505) 845-6026
John.Weckerle@nnsa.doe.gov

Operator: Sandia Corporation
Technical Contact: Ms. Pamela Puissant, Manager
Long-Term Stewardship
Sandia National Laboratories
P.O. Box 5800/MS 0730
Albuquerque, NM 87185-1042
(505) 844-3185
pmpuiss@sandia.gov

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ACRONYMS AND ABBREVIATIONS

bgs	below ground surface
CFR	Code of Federal Regulations
CMI	Corrective Measures Implementation
DOE	U.S. Department of Energy
EPA	U.S. Environmental Protection Agency
ET	evapotranspirative
ft	foot (feet)
KAFB	Kirtland Air Force Base
LTMM	Long-Term Monitoring and Maintenance
LTMMP	Long-Term Monitoring and Maintenance Plan
MWL	Mixed Waste Landfill
NMAC	New Mexico Administrative Code
NMED	New Mexico Environment Department
RCRA	Resource Conservation and Recovery Act
SAP	sampling and analysis plan
Sandia	Sandia Corporation
SNL	Sandia National Laboratories
SNL/NM	Sandia National Laboratories, New Mexico
SWMU	Solid Waste Management Unit
TA	Technical Area
VOC	volatile organic compound

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1.0 INTRODUCTION

Sandia National Laboratories (SNL) is a multi-purpose engineering and science laboratory owned by the U.S. Department of Energy (DOE)/National Nuclear Security Administration. SNL is managed and operated by Sandia Corporation (Sandia), a wholly-owned subsidiary of Lockheed Martin Corporation. SNL/New Mexico (SNL/NM) is located within the boundaries of Kirtland Air Force Base (KAFB), immediately southeast of the City of Albuquerque in Bernalillo County, New Mexico (Figure 1-1). The Mixed Waste Landfill (MWL) is a Solid Waste Management Unit (SWMU) at SNL/NM and is located 4 miles south of SNL/NM's central facilities and 5 miles southeast of the Albuquerque International Sunport. The MWL is located in the north-central portion of Technical Area (TA)-III at SNL/NM (Figure 1-2).

The MWL (SWMU 76) is undergoing corrective action in accordance with the following regulatory criteria:

- New Mexico Administrative Code (NMAC), Title 20, Chapter 4, Part 1, Section 600 (20.4.1.600 NMAC) incorporating Title 40 of the Code of Federal Regulations (CFR), Part 264 (40 CFR 264.101)

- Module IV of Resource Conservation and Recovery Act (RCRA) Permit No. NM5890110518 (U.S. Environmental Protection Agency [EPA] August 1993), as revised and updated

  New Mexico Secretary of the Environment's Final Order in the matter of request for a Class 3 Permit Modification for Corrective Measures for the Mixed Waste Landfill No. HWB 04-11(M) (Final Order) (Curry May 2005)

  - Granting approval of New Mexico Environment Department (NMED) Class 3 Permit Modification for the MWL (NMED August 2005)

- Compliance Order on Consent (Consent Order) (NMED April 2004)

The MWL disposal area comprises 2.6 acres. During operations, the MWL accepted containerized and uncontainerized low-level radioactive waste and minor amounts of mixed waste from SNL/NM research facilities and off-site DOE and U.S. Department of Defense generators from March 1959 to December 1988. More specific information regarding the MWL inventory and past disposal practices is presented in the MWL Phase 2 RCRA Facility Investigation Report (Peace et al. September 2002) and in the MWL LTMMP (SNL/NM March 2012).

On May 26, 2005, NMED issued the Final Order (Curry May 2005) selecting a vegetative soil cover with biointrusion barrier as the final remedy for the MWL, hereinafter referred to as the MWL evapotranspirative (ET) Cover. The NMED Final Order, granting approval for the August 2005 Class 3 Permit Modification to Module IV of the RCRA Permit, requires a Long-Term Monitoring and Maintenance Plan (LTMMP). The LTMMP is to address monitoring, inspection, maintenance/repair, physical and institutional controls, and reporting at the MWL following remedy implementation. Deployment of the MWL ET Cover was completed in September 2009.

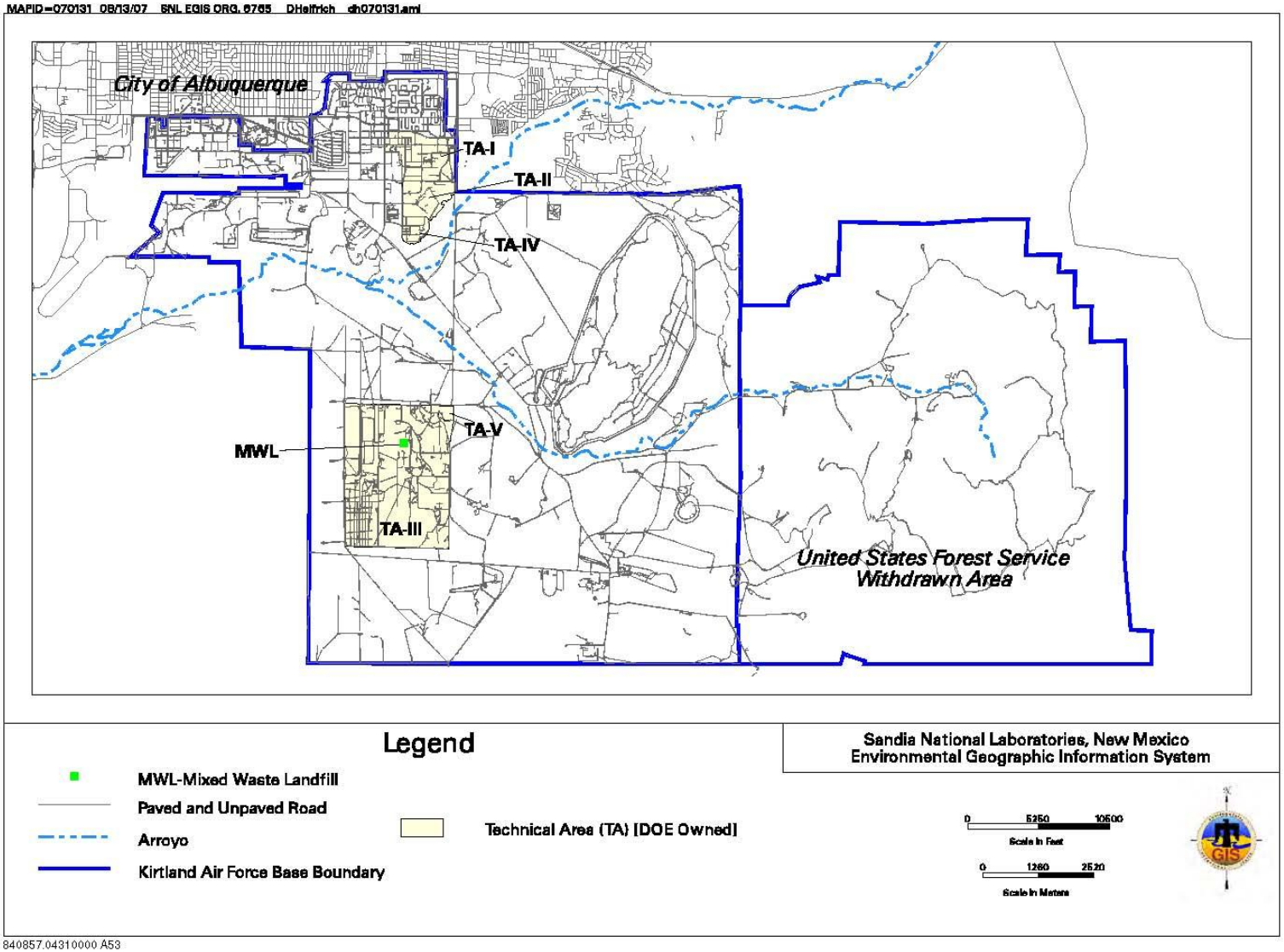

Figure 1-1
Location of the Mixed Waste Landfill with respect to Kirtland Air Force Base and the City of Albuquerque

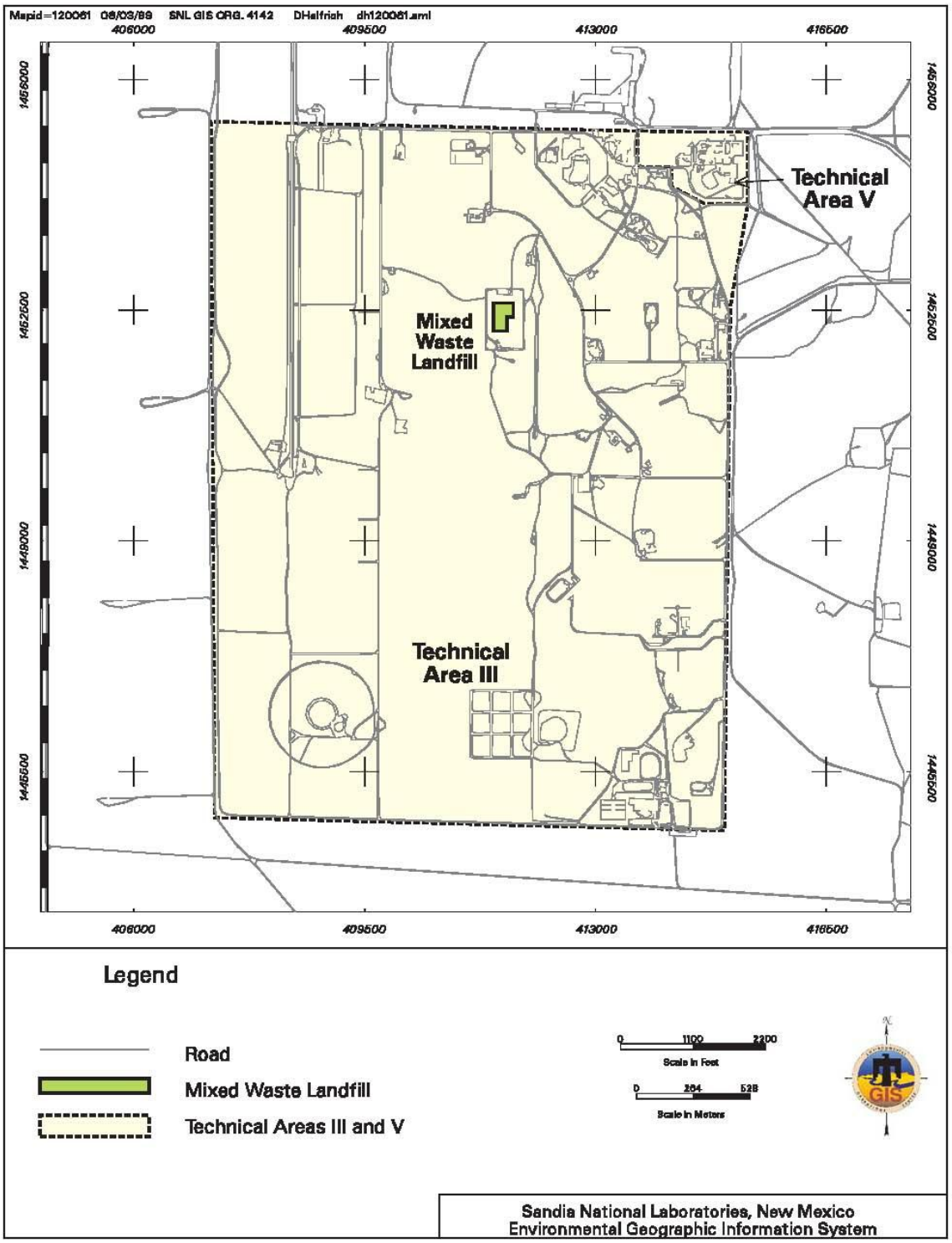

Figure 1-2
Location of the Mixed Waste Landfill within Technical Area III

The MWL Corrective Measures Implementation (CMI) Report (SNL/NM January 2010, Revision 1) documenting ET Cover construction in accordance with the MWL CMI Plan (SNL/NM November 2005) was approved by NMED on October 14, 2011 (Bearzi October 2011). The MWL LTMMP (SNL/NM March 2012) was submitted within 180 days of NMED approval of the CMI Report as stipulated in the NMED approval letter and as required by the Final Order (Curry May 2005). NMED approved the MWL LTMMP on January 8, 2014 (Blaine January 2014) after a public meeting held on October 16, 2012 and a 150-day public comment period. The NMED approval of the LTMMP included responses to public comments received during the 150-day public comment period (Blaine January 2014).

1.1 Purpose and Scope

The purpose of this MWL Annual Long-Term Monitoring and Maintenance (LTMM) Report is to document monitoring, inspection, maintenance, and repair activities conducted during the initial reporting period, as well as the physical and institutional controls. For the MWL, the annual LTMM reporting period is from April 1 through March 31 of the next year, with the annual report due to NMED by June 30. Because the LTMMP became effective on January 8, 2014, this first annual report documents LTMM activities conducted from January 8 through March 31, 2014 and fulfills the MWL LTMMP requirement for annual reporting to the NMED.

The scope of this report includes documentation of all monitoring and inspection activities required for the reporting period January 8 through March 31, 2014. No monitoring activities were required during this time period. Two quarterly inspections were required and performed as summarized below.

- One quarterly Biology Inspection (i.e., ET Cover vegetation and signs of animal activity).
- One quarterly ET Cover Surface and Physical Controls Inspection (i.e., ET Cover surface, storm-water diversion structures, perimeter fence, locks, gates, signs, and survey monuments).

In addition, this first MWL Annual LTMM Report also includes information regarding the full implementation of all LTMMP requirements that will be documented in the June 2015 Annual LTMM Report.

1.2 Report Organization

This report is organized as follows:

- Chapter 1 presents background information, purpose and scope, and report organization.
- Chapter 2 provides a summary of LTMMP monitoring and inspection requirements.

- Chapter 3 presents the results of the two quarterly inspections performed during the reporting period.
- Chapter 4 presents a summary of MWL LTMMP implementation and regulatory submittals.
- Chapter 5 presents a general summary and conclusions for the January 8 through March 31, 2014 reporting period.
- Chapter 6 lists the references cited in this report.

An annex is provided that includes supporting information as follows:

- Annex A – Inspection Forms/Checklists

Future MWL Annual LTMM Reports will contain documentation of monitoring, inspection, maintenance/repair activities for a complete reporting year (April 1 through March 31).

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2.0 MONITORING AND INSPECTION REQUIREMENTS

Monitoring, inspection, maintenance, and repair requirements are defined in Chapters 3 and 4 of the MWL LTMMP and are briefly summarized in this chapter. Monitoring requirements are described in Section 2.1. Monitoring activities generate empirical data that are evaluated to assess site conditions. Inspection requirements are described in Section 2.2 and include requirements to perform maintenance and/or repairs. As a whole, these activities ensure the physical controls at the MWL (SWMU 76) are maintained and perform as designed.

2.1 Monitoring Requirements

The primary objective of the monitoring activities at the MWL is to ensure that the ET Cover and site conditions are protective of human health and the environment. Monitoring activities include sampling and analysis of air, surface soil, vadose zone (volatile organic compounds in soil vapor and soil moisture content), groundwater, and biota (surface soil and vegetation). The multi-media monitoring program is summarized in Table 2-1 that details information for each monitoring activity, including the sampling media, monitoring parameters, frequency, number of samples, locations, and monitoring methods. Sampling and analysis plans (SAPs) for each monitoring activity are included in the MWL LTMMP, Appendices C through G.

2.2 Inspection, Maintenance, and Repair Requirements

The primary objective of inspection, maintenance, and repair activities at the MWL is to ensure that the ET Cover, other physical controls at the site (i.e., surface-water diversion features, perimeter security fence, and survey monuments), and the monitoring systems (groundwater and vadose zone networks) perform as designed. Inspection, maintenance, and repair activities are organized, performed, and documented as shown below.

Inspection Description	Inspection Performed By	Inspection Form
Biology Inspection (i.e., ET Cover vegetation and signs of animal activity)	Staff Biologist	*Biology Inspection Checklist/Form*
ET Cover Surface and Physical Controls (i.e., ET Cover surface, storm-water diversion structures, perimeter fence, locks, gates, signs, and survey monuments)	Field Technician	*Cover Inspection Checklist/Form*
Groundwater, Soil-Vapor, and Soil-Moisture Monitoring Networks and Sampling Equipment	Field Technician (Member of Sampling Team)	*Monitoring Network-Specific Inspection Forms* (3 separate forms)

Table 2-1
Summary of Long-Term Monitoring Parameters, Frequencies, and Methods
Mixed Waste Landfill, Sandia National Laboratories, New Mexico

Sampling Media	Monitoring Parameters[a]/ Constituents of Concern	Monitoring Frequency[a]	Number of Samples Per Event	Locations	Monitoring Method[b]	Comments
Air	Radon	Year 1 – Quarterly Year 2 – Quarterly Year 3 – Semiannual Year 4 – Semiannual Year 5 and subsequent years – Annual	17	10 detectors placed at corners and midpoints of perimeter fence 5 detectors placed on completed cover 2 detectors at background locations	Track-etch detectors (at breathing level); sampling and analysis per Appendix C	Samples are time-weighted average and will be collected over a 3-month period. The first quarterly monitoring period began in January 2014.
Surface Soil	Tritium	Annual	4	One sample collected from each corner of the MWL ET Cover.	Grab samples of soil collected; moisture extracted and analyzed for tritium using liquid scintillation method per Appendix G	Samples collected from the MWL ground surface at the four corners of the ET Cover.
Vadose Zone	VOCs in soil vapor	Year 1 – Semiannual Year 2 – Semiannual Year 3 – Semiannual Year 4 and subsequent years – Annual	17	Samples collected from 3 perimeter multi-port FLUTe™ or equivalent wells (MWL-SV03, MWL-SV04, and MWL-SV05) and 2 single-port soil-vapor monitoring points installed through the ET Cover (MWL-SV01 and MWL-SV02)	Sampling and analysis of soil vapor per Appendix D	The 3 multiport FLUTe™ wells or equivalent will be installed May-June 2014 at the MWL perimeter. Sampling port depths of 50, 100, 200, 300, and 400 ft bgs. The 2 existing single-port soil-vapor monitoring points have a sampling port approximately 35 ft below the original ground surface.

Refer to footnotes at end of table.

Table 2-1 (Continued)
Summary of Long-Term Monitoring Parameters, Frequencies, and Methods
Mixed Waste Landfill, Sandia National Laboratories, New Mexico

Sampling Media	Monitoring Parameters[a]/ Constituents of Concern	Monitoring Frequency[a]	Number of Samples Per Event	Locations	Monitoring Method[b]	Comments
Vadose Zone	Moisture content underneath the ET Cover	Year 1 – Semiannual Year 2 – Semiannual Year 3 and subsequent years – Annual	171	3 soil-moisture monitoring access tubes Measurements obtained at 1-ft increments from 4 ft to 25 ft bgs, then 5-ft increments to total depth of the access tube (200 linear ft)	Soil-moisture monitoring per Appendix E	Moisture content in vadose zone beneath the cover is measured using a neutron probe to evaluate moisture infiltration through the ET Cover.
Groundwater	VOCs, metals, tritium, radon, gamma-emitting radionuclides (short list), and gross alpha/beta activity	Semiannual	4	MWL compliance groundwater monitoring well network: MWL-BW2, MWL-MW7, MWL-MW8, and MWL-MW9	Sampling and Analysis of groundwater samples per Appendix F	Monitoring wells MWL–MW4, MWL-MW5, and MWL-MW6 will be retained for information only.
Biota – Surface Soil	RCRA Metals plus Cu, Ni, V, Zn, Co, and Be; and gamma-emitting radionuclides (short list)	Annual	Up to 4 (2 each, if they exist)	Variable - ant hills and animal burrows on the MWL ET Cover located during Biology Inspections, if present	Grab sampling and analysis of surface soil at animal burrow and/or ant hill features per Appendix G	Soil sampling will be performed in August or September to evaluate potential for mobilization of contaminants by biota. If no features are identified, no samples will be collected.

Refer to footnotes at end of table.

Table 2-1 (Concluded)
Summary of Long-Term Monitoring Parameters, Frequencies, and Methods
Mixed Waste Landfill, Sandia National Laboratories, New Mexico

Sampling Media	Monitoring Parameters[a]/ Constituents of Concern	Monitoring Frequency[a]	Number of Samples Per Event	Locations	Monitoring Method[b]	Comments
Biota – Cover Vegetation	Gamma-emitting radionuclides (short list) in vegetation	Annual	Up to 2 if they exist	Variable - potentially deep-rooted vegetation identified during Biology Inspections, if present, overlying former disposal areas	Grab sampling and analysis of vegetation, including the plant and root system per Appendix G	Vegetation sampling will be performed in August or September to evaluate potential for mobilization of contaminants by plants. If no potentially deep-rooted plants are present, no samples will be collected.

[a]Monitoring parameters and frequency will be reevaluated every five years in the Five-Year Reevaluation Report.
[b]Sampling and Analysis Plans in appendices of the MWL LTMMP (March 2012).
bgs = Below ground surface.
ET = Evapotranspirative.
FLUTe™ = Flexible Liner Underground Technologies.
ft = Foot (feet).
LTMMP = Long-Term Monitoring and Maintenance Plan (SNL/NM March 2012).
MWL = Mixed Waste Landfill.
RCRA = Resource Conservation and Recovery Act.
VOC = Volatile organic compound.

Inspection parameters, specifications, frequency, and repair requirements are detailed in Chapter 4 of the MWL LTMMP, and summarized in Table 2-2. Long-term monitoring inspection checklists/forms are contained in the MWL LTMMP, Annex I. Repair work is initiated as needed based upon the results of the inspections.

The following sections provide additional information on inspections and associated maintenance/repairs.

2.2.1 Biology Inspection

The Biology Inspection that focuses on ET Cover vegetation is to be accomplished in a two-phase approach. The first phase concentrates on establishing the vegetation on the ET Cover from seed to a mature plant community such that successful revegetation criteria are met. These criteria are defined in MWL LTMMP, Section 4.1 and are presented below.

- Total percent foliar coverage equals 20 percent (i.e., 20 percent of the land surface is covered with living plants versus 80 percent bare surface area);
- Of the 20 percent total foliar coverage, 50 percent or greater comprises native perennial species, and 50 percent or less comprises annual species; and
- No contiguous bare spots greater than 200 square feet (approximately 14 by 14 feet).

During this first phase of vegetation inspection a staff biologist must inspect and document the inventory of the main flora populating the cover on a quarterly basis, as well as documenting signs of animal and insect activity. Once successful revegetation criteria are met, the second phase of cover vegetation inspection begins. During this phase the staff biologist inspection frequency changes to annual and occurs near the end of the growing season (August-September) to most accurately determine the coverage of living plants.

At the end of each reporting year, the staff biologist must compile the results of the quarterly inspections (or annual inspection), summarize local climate trends, and present recommendations in a summary report to be included in the Annual LTMM Report along with the inspection form(s).

If parameter specifications are exceeded they will be noted on the *Biology Inspection Checklist/Form* and appropriate maintenance/repairs will be completed within 60 days. Reseeding repairs may be delayed until the appropriate time during the growing season (Table 2-2).

Table 2-2
Summary of Inspection, Maintenance, and Repair Requirements
Mixed Waste Landfill, Sandia National Laboratories, New Mexico

MWL System to be Inspected	Inspection Parameters	Inspection Frequency	Maintenance Implementation	Maintenance/ Repair Frequency[a]
ET Cover Surface	Vegetation Inventory	Quarterly until vegetation is established, annually thereafter by a staff biologist[b]	Soil augmentations and/or reseeding	Within 60 days of discovery of needed repairs. Reseeding repairs may be delayed to await appropriate growing season.
	Contiguous areas of no vegetation >200 ft^2		Revegetate barren areas that exceed prescribed limits	
	Animal intrusion burrows in excess of 4 inches in diameter		Repair cover system damage that exceeds prescribed limits	
ET Cover Surface	Settlement of cover surface in excess of 6 inches	Quarterly by a field technician	Repair cover system damage that exceeds prescribed limits	Within 60 days of discovery of needed repairs. Reseeding repairs may be delayed to await appropriate growing season.
	Erosion of cover soil in excess of 6 inches deep			
	Ponding of water on the ET Cover surface in excess of 100 ft^2			
	Animal intrusion burrows in excess of 4 inches in diameter			
	Contiguous areas of no vegetation >200 ft^2 [c]		Revegetate barren areas that exceed prescribed limits[c]	Within 60 days of discovery of needed repairs.
Surface-Water Drainage Features	Channel or sidewall erosion in excess of 6 inches deep	Quarterly by a field technician	Repair erosion that exceeds prescribed limits	Within 60 days of discovery of needed repairs.
	Accumulations of sediment in excess of 6 inches deep or debris that blocks more than 1/3 of the channel width		Remove sediment and debris accumulations that exceed prescribed limits	
Soil-Vapor Monitoring Wells, Soil-Moisture Monitoring Access Tubes, and Groundwater Monitoring Wells	Concrete pads, stanchions, and protective casings	Groundwater and Vadose Zone Network Components: Field technician to inspect at same frequency/time that monitoring occurs	Maintain, clean, repair, replace, re-label, as appropriate	Within 60 days of discovery of needed repairs.
	Well cover caps and Swagelok® (or equivalent) dust caps			
	Monitoring wells and soil-vapor sampling port labels			
	Locks			
	Sampling pumps and tubing			
	Neutron probe and cable system			

Refer to footnotes at end of table.

Table 2-2 (Concluded)
Long-Term Monitoring, Inspection, and Maintenance Schedule
Mixed Waste Landfill, Sandia National Laboratories, New Mexico

MWL System to be Inspected	Inspection Parameters	Inspection Frequency	Maintenance Implementation	Maintenance/ Repair Frequency[a]
Fence	Presence of wind-blown plants and debris	Quarterly by a field technician	Remove wind-blown plants and debris	Within 60 days of discovery of needed repairs.
	Condition of fence wires, posts, gates, gate locks, warning signs, and survey monuments in the local area		Repair broken wire sections and posts, repair/oil gates, clean/replace locks, repair/replace warning signs, clear dirt/debris from monuments	

[a]Maintenance/repairs will be performed as necessary, based upon the results of inspections.
[b]As explained in Section 2.2.1, the transition from quarterly to annual inspections by a staff biologist is based upon meeting successful revegetation criteria as determined by the staff biologist.
[c]Barren areas exceeding >200 ft^2 will not require corrective action after ET Cover vegetation is determined to have met successful revegetation criteria if they are the result of relatively short-term climate stresses (e.g., severe short-term drought), and the staff biologist determines they will naturally fill in over time. However, these areas will be noted and tracked during inspections and reviewed annually by the staff biologist to determine whether action is required based upon comparison to surrounding vegetation.
ET = Evapotranspirative.
ft^2 = Square feet.
MWL = Mixed Waste Landfill.

2.2.2 ET Cover Surface and Physical Controls Inspection

The ET Cover surface, side slopes, and physical controls (i.e., storm-water diversion structures, perimeter fence, locks, gates, signs, and survey monuments) are inspected by a field technician on a quarterly basis. All inspection parameters, specifications, and required maintenance/repair activities are detailed in Table 2-2. Documentation of animal burrows in excess of 4 inches in diameter and contiguous areas lacking vegetation in excess of 200 square feet will be noted quarterly on the *Biology Inspection Checklist/Form* and do not need to be noted on the *Cover Inspection Checklist/Form* until successful revegetation criteria have been met. These features will be noted on both the quarterly *Cover Inspection* and annual *Biology Inspection Checklists/Forms* once the Biology Inspection frequency changes to annual.

If parameter specifications are exceeded they will be noted on the *Cover Inspection Checklist/Form* and appropriate maintenance/repairs will be completed within 60 days. Reseeding repairs may be delayed until the appropriate time during the growing season (Table 2-2). The inspection forms will be included in the MWL Annual LTMM Report.

2.2.3 Monitoring Networks and Sampling Equipment

Groundwater monitoring wells, soil-vapor monitoring wells, soil-moisture monitoring access tubes, and associated sampling/monitoring equipment are inspected at the same frequency and during the associated monitoring events. All inspection parameters, specifications, and required maintenance/repair activities are detailed in Table 2-2. The inspections and any associated maintenance and repair activities will be documented on monitoring network-specific inspection checklists/forms. There is a separate inspection checklist/form for each of the three monitoring networks and associated sampling/monitoring equipment.

If conditions are observed that require maintenance, repair, or replacement they will be noted on the associated *Monitoring Network Inspection Checklist/Form* and appropriate actions will be completed within 60 days. The inspection forms will be included in the MWL Annual LTMM Report.

3.0 INSPECTION, MAINTENANCE, AND REPAIR RESULTS

This chapter presents a summary of inspection, maintenance, and repair activities conducted during the reporting period January through March 2014. The MWL inspections conducted during the reporting period are summarized below.

- Biology Inspection (vegetation and signs of animal activity)
- ET Cover and Physical Controls Inspection (ET Cover surface, surface-water diversion feature, perimeter security fence, security signs, gates, locks, and survey monuments)

Two quarterly inspections were performed in February 2014 and were documented on the *Biology Inspection Checklist/Form* (Biology Inspection) and the *Cover Inspection Checklist/Form* (ET Cover and Physical Controls Inspection). The inspection forms are included in Annex A of this report and the results of these inspections are described in the following sections.

3.1 Biology Inspection

The quarterly Biology Inspection of the ET Cover was conducted on February 18, 2014 by the staff biologist. The inspection was conducted during the latter part of the 2013 – 2014 winter season so the native grass vegetation was largely dormant. However, the general health of the native grasses and the foliar coverage was excellent and exceeded the criteria for successful revegetation (see Section 2.2.1 and Annex A). Three native grass species comprise the 51 percent foliar coverage, with almost no non-native vegetation present. There were no contiguous barren areas greater than 200 square feet and no potentially deep-rooted plants were observed. Approximately eight ant hills/burrows and two small mammal burrows (diameter less than 4 inches) were observed and noted. No maintenance or repairs were required based on the February 2014 Biology Inspection. The inspection form is provided in Annex A and includes photographs of the ET Cover vegetation taken during the inspection.

The ET Cover was seeded in September 2009 and inspections and maintenance have been conducted since that time, including supplemental watering. The supplemental watering activities were approved by the NMED (Bearzi December 2008 and April 2011), incorporated directly into the MWL LTMMP (SNL/NM March 2012), and have been critical to establishing a robust community of native grasses on the ET Cover. Although 2010 through 2012 meteorological conditions (i.e., lack of significant rainfall events that fully saturated the soil) caused significant vegetation stress, the ET Cover foliar coverage and vegetation meet successful revegetation criteria due to supplemental watering. This was also the case in 2013 based on the results of a Biology Inspection performed on September 10, 2013 at the end of the 2013 growing season. This inspection was performed prior to NMED-approval of the MWL LTMMP but is provided in Annex A as supplemental information. The large size of the native grass clumps and their relative abundance/coverage indicate a mature, healthy native grass population. ET Cover vegetation monitoring and inspection will continue on a quarterly basis through the 2014 growing season (i.e., two additional inspections will be conducted in May and August-September).

3.1.1 ET Cover Supplemental Watering and Maintenance

The MWL LTMMP addresses all cover maintenance and supplemental watering activities from the completion of the ET Cover in September 2009 through 2011. Supplemental watering activities performed in 2012 and 2013 are summarized below, and were critical to establishing the healthy native grasses depicted in the photographs included with the *Biology Inspection Checklist/Forms* provided in Annex A. No supplemental watering activities were conducted during the January through March 2014 reporting period. Minor maintenance in response to the ET Cover Surface and Physical Controls Inspection is discussed in the next section.

Calendar Year	Months When Supplemental Watering Was Performed	Inches of Supplemental Water Applied[a]	Supplemental Water + Natural Precipitation[b] for the Year (in inches)
2012	June – September	5.5	5.5 + 4.51 = **10.01**
2013	May – August	5	5 + 12.11 = **17.11**

[a] Supplemental water was applied over the entire ET Cover area using a temporary, above-ground sprinkler system. The volume of water used was tracked and converted to "inches of precipitation" for the ET Cover surface area.
[b] Natural precipitation determined from the SNL/NM A36 Meteorological Monitoring Station in TA-III.

No more than 3 inches of supplemental water was applied during any 30-day period, and no more than 0.5 inches of supplemental water was applied during any one day. As stated in Section 4.2.3 of the MWL LTMMP (SNL/NM March2012), the total water applied to the ET Cover (natural plus supplemental) should not exceed 16.5 inches for a calendar year.

In order to determine the appropriate quantity of supplemental water, SNL personnel used the average precipitation during the past 15 years to estimate the precipitation expected during each month of 2012 and 2013.

The last 2013 supplemental watering event was conducted in August. As of the end of August the total natural precipitation plus supplemental watering was equivalent to 11.3 inches of precipitation, well below the 16.5 inch limit. The 15-year average for the remaining months (September through December) as calculated from the SNL/NM A36 meteorological station located in TA-III is only 3.04 inches, so the anticipated total for 2013 was approximately 14.34 inches. However, three of the remaining four months experienced above average precipitation, including a record amount of precipitation in September 2013.

The table below provides a summary of the 15-year average versus the 2013 actual precipitation for September through December 2013. The table shows that for the final four months of 2013 the actual precipitation exceeded the 15-year average by 2.77 inches.

2013 Month	Estimated Precipitation (15-Year Average)	Actual Recorded Precipitation	2013 Precipitation Deviation from the 15-Year Average
September	0.99	4.12	+3.13
October	1.11	0.16	-0.95
November	0.44	0.82	+0.38
December	0.50	0.71	+0.21
Totals	**3.04**	**5.81**	**2.77**

As a result, the total natural and supplemental precipitation for 2013 exceeded 16.5 inches by 0.61 inches. This exceedance is small and should be taken in context with the totals for 2010, 2011, and 2012, which were all well below 16.5 inches (9.67, 11.47, and 10.01 inches, respectively).

ET Cover maintenance performed in 2012 and 2013 included the removal of annual weedy species and erosion repair on the ET Cover side slopes. In 2012 two weed removal efforts were conducted within the perimeter fence during September and October. All weeds were removed by hand and disposed of at the KAFB Landfill. Approximately 91 cubic yards of compressed weeds were removed from the ET Cover and side slopes, comprised mostly of Russian thistle, snakeweed, and kochia.

In 2013 erosion repair work was conducted in August and November to address small rills that formed on the northern and western ET Cover side slopes during strong monsoonal rainfall events that occurred in July and September. Stockpiled ET Cover soil material from the 2009 ET Cover construction effort was used along with a combination of compost, clean silica sand, rounded river rock (3/4-inch), and the original ET Cover native grass seed mix to repair and seed the rill areas in August. In November repairs were made in the same general areas with slightly larger rounded river rock (2 to 4-inch) and stockpiled ET Cover soil material (no additional seeding was performed). All materials were placed on the side slopes using hand tools and wheel barrows to minimize impact to the existing native grasses. In November the rounded river rock and soil material were tamped into the larger rills to improve compaction and long-term stability. Approximately 60 cubic yards of compressed weeds were also removed from the ET Cover and perimeter area just outside the fence line during November 2013 and composted as green waste through the SNL/NM green waste exchange program with the Albuquerque Bernalillo County Water Use Authority. Most of this volume originated from the ET Cover perimeter area outside the fence; the ET Cover itself had only minor weed growth.

3.2 ET Cover Surface and Physical Controls Inspection

The one quarterly inspection of the ET Cover Surface and Physical Controls for the reporting period was conducted on February 18, 2014 by a field technician. Parameters requiring maintenance/repair included the accumulation of tumbleweeds in the perimeter fence and a warning sign at the northwest corner of the site (needed replacement). Work to remove the large accumulation of tumbleweeds from the perimeter fence began on March 31 and will be concluded in early April 2014. The warning sign was replaced on February 24, 2014. No other cover or physical control elements required repairs or maintenance.

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4.0 LONG-TERM MONITORING & MAINTENANCE IMPLEMENTATION

This chapter presents an overview of the implementation of all MWL LTMMP monitoring, inspection, and maintenance/repair activities. The overall implementation schedule and regulatory submittals are presented in the following sections.

4.1 Implementation Schedule

All monitoring and inspection activities are being implemented in accordance with the requirements of the MWL LTMMP (SNL/NM March 2012). Table 4-1 presents implementation schedule information for all inspection and monitoring activities. ET Cover inspections are on a quarterly schedule, which started in February 2014. Monitoring network and sampling equipment inspections occur at the same frequency and time as the associated monitoring events, and will begin in April 2014.

Air monitoring for radon was initiated in January 2014 and the detectors will be sent to the analytical laboratory in early April 2014. These data will be included in the June 2015 MWL Annual LTMM Report. Annual surface soil sampling for tritium will be conducted in July-August 2014. Biota monitoring will be conducted in August-September after the quarterly Biology Inspection. Sampling locations are determined by the staff biologist based on their August-September Biology Inspection, which is scheduled near the end of the growing season when plant, animal, and insect activity is highest.

In general, monitoring activities that occur at a semiannual frequency (groundwater monitoring and vadose zone monitoring for soil moisture and soil vapor) will occur in April and October of each year to allow sufficient time for laboratory analysis, data review/validation, date evaluation, and final reporting. The exception in 2014 is related to soil-vapor monitoring, which will not occur until the three proposed FLUTe™ multi-port soil-vapor monitoring wells are installed (anticipated installation period is May-July). The first semiannual sampling event will be initiated two months after installation to allow the soil vapor in the vadose zone to equilibrate after drilling activities are completed (anticipated sampling event in late August/September).

Figure 4-1 presents a timeline for all required inspection and monitoring activities since the MWL LTMMP became effective on January 8, 2014. As shown in Figure 4-1, quarterly inspections (Biology and ET Cover Surface and Physical Controls) were implemented in February and were the only activities completed by the end of the reporting period for this first MWL Annual LTMM Report (i.e., March 31 2014). The annual LTMM reporting periods for this report and the June 30, 2015 report are shown at the top of Figure 4-1 and by the vertical, dashed red lines. The first quarterly radon air monitoring event began in January and will conclude in early April 2014; the data were not available in time to include in this report. The January through April 2014 air monitoring results and all other inspection and monitoring activities shown on Figure 4-1 occurring between the red dashed lines will be documented in the June 2015 MWL Annual LTMM Report. LTMM activities associated with the reporting period for the June 2016 report are not included on Figure 4-1.

Table 4-1
Summary of 2014 Inspection and Monitoring Implementation
Mixed Waste Landfill, Sandia National Laboratories, New Mexico

Inspection or Monitoring Activity	Parameters	Frequency	Implementation Schedule Comments[a]
Biology Inspection	ET Cover	Quarterly	Inspections in February, May, August, and November 2014
Surface & Physical Controls Inspection	ET Cover and Perimeter	Quarterly	Inspections in February, May, August, and November 2014
Monitoring Network Inspections	Well & Sampling Equipment	Variable	Inspections will occur at the frequency and same time as the associated monitoring.
Air	Radon	Quarterly	The 2014 quarterly monitoring periods are January-March, April-June, July-September, and October-December. The January-March 2014 data will be presented in the June 2015 Report.
Surface Soil	Tritium	Annual	Samples will be collected in July-August 2014.
Vadose Zone	VOCs in soil vapor	Semiannual	Installation of the 3 multiport FLUTe™ wells is planned for May-June 2014. The first sampling event for all soil-vapor wells is planned for August-September 2014. The next sampling event is planned for December 2014 or January 2015. In 2015 sampling will occur in April and October.
Vadose Zone	Moisture content underneath the ET Cover	Semiannual	Vadose zone soil moisture monitoring will be conducted in April and October 2014.
Groundwater	VOCs, metals, tritium, radon, and other radiological parameters	Semiannual	Groundwater monitoring will be conducted in April and October 2014.
Biota – Surface Soil	Metals; and gamma-emitting radionuclides (short list)	Annual	Soil sampling will be performed in August or September 2014 after the Biology Inspection.
Biota – Cover Vegetation	Gamma-emitting radionuclides (short list) in vegetation	Annual	Vegetation sampling will be performed in August or September to evaluate potential for mobilization of contaminants by plants. If no potentially deep-rooted plants are present, no samples will be collected.

[a]All monitoring data collected in 2014 will be presented in the June 2015 MWL Long-Term Monitoring & Maintenance Annual Report. Timing of monitoring and inspections may vary pending unforeseen events.
ET = Evapotranspirative.
FLUTe™ = Flexible Liner Underground Technologies.
VOC = Volatile organic compound.

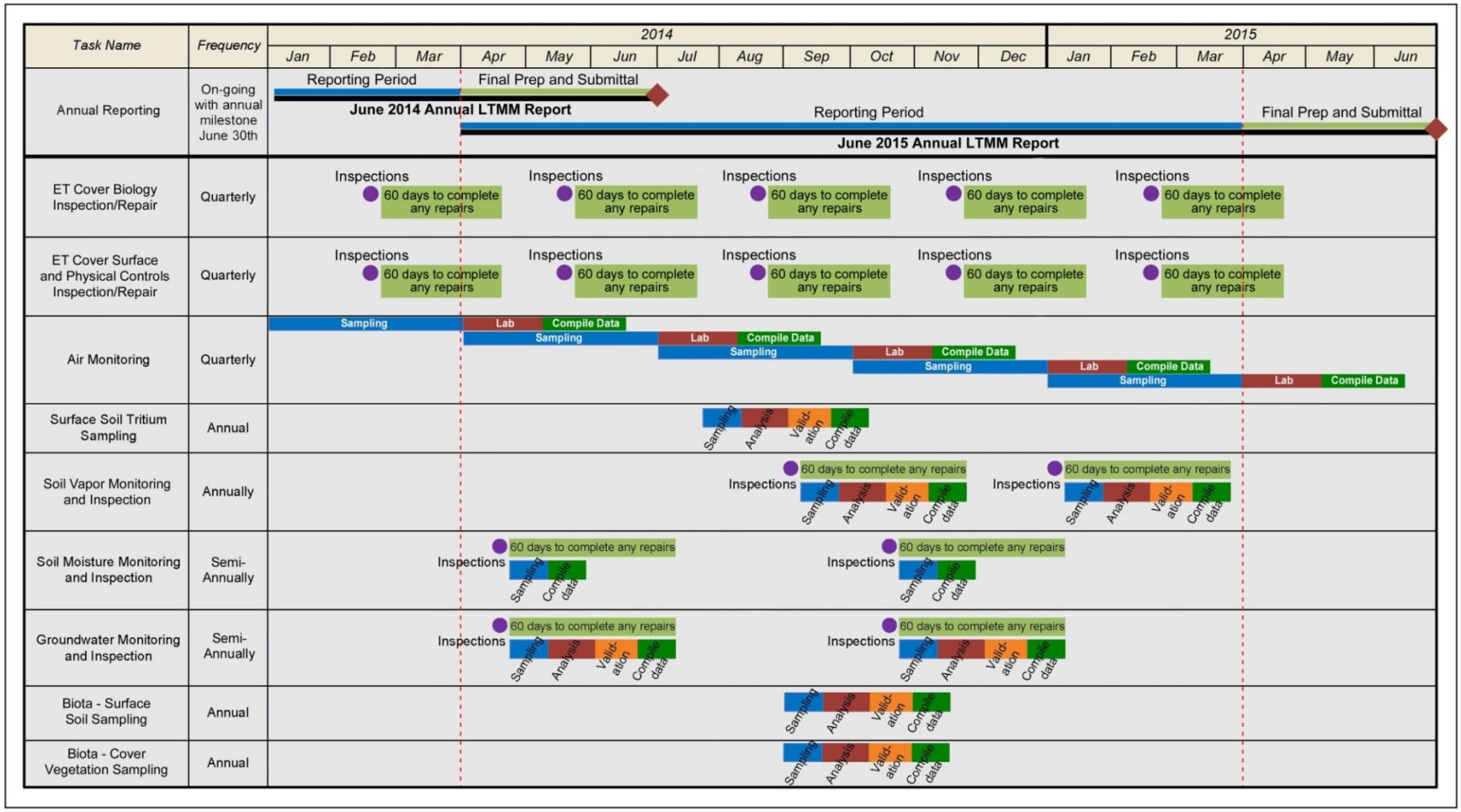

Figure 4-1
Time Line Showing Implementation of Required Long-Term Monitoring and Maintenance Activities at the Mixed Waste Landfill

4.2 Regulatory Submittals

The *Work Plan for the Installation of Three Soil-Vapor Monitoring Wells (MWL-SV03, MWL-SV04, and MWL-SV05) at the Mixed Waste Landfill* (SNL/NM January 2014) was submitted to the NMED on January 15, 2014 (SNL/NM January 2014). This Work Plan was approved by NMED on February 14, 2014 (Blaine February 2014). DOE/Sandia submitted all reference documents cited in Appendices C through G of the MWL LTMMP (i.e., the monitoring SAPs) on March 6, 2014 within 60 days of LTMMP approval in accordance with MWL LTMMP requirements (Beausoleil March 2014).

5.0 SUMMARY AND CONCLUSIONS

As of January 8, 2014 the MWL LTMMP (SNL/NM March 2012) became effective and all required inspection and monitoring activities are being implemented at the MWL. This first MWL Annual LTMM Report documents the implementation effort as well as the quarterly inspections performed during the first partial reporting period (i.e., January 8 through March 31, 2014). The supplemental watering activities for the MWL ET Cover conducted in 2012 and 2013 are also documented. Based upon the inspections performed, the MWL ET Cover and Physical Controls are functioning as designed, and only minimal maintenance was required. The ET Cover vegetation meets successful revegetation criteria in large part due to supplemental watering activities conducted in 2009, 2011, 2012, and 2013.

The *Work Plan for the Installation of Three Soil-Vapor Monitoring Wells (MWL-SV03, MWL-SV04, and MWL-SV05) at the Mixed Waste Landfill* (SNL/NM January 2014) was submitted to the NMED in January 2014 and was approved by NMED on February 14, 2014 (Blaine February 2014). Drilling and installation field work is ongoing and should be completed by early July 2014. The required submittal of all reference documents cited in Appendices C through G of the MWL LTMMP were submitted to the NMED on March 6, 2014, within 60 days of LTMMP approval (Beausoleil March 2014).

Future MWL Annual LTMM Reports will contain documentation for a complete reporting year (April 1 through March 31) of monitoring, inspection, maintenance, and repair activities.

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6.0 REFERENCES

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Annex A
Mixed Waste Landfill
SWMU 76
Inspection Forms/Checklists

Biology Inspections

- **February 18, 2014 Inspection**
- **September 10, 2013 Inspection**

ET Cover Surface and Physical Controls Inspection

- **February 18, 2014**

Mixed Waste Landfill
SWMU 76

Biology Inspection

February 18, 2014

February 18, 2014

Mixed Waste Landfill
Biology Inspection Checklist/Form for the MWL Cover

Approximate vegetative coverage (actively photosynthesizing)*: 51 %

Approximate percent native vegetation of the total vegetative cover: 99 %

Listed below are the main plant species identified as growing on the MWL cover and the percentage of the cover populated by each species.

Scientific Name	Common Name (optional)	% of Cover[1]
Pleuraphis 'jamesii'	James' galleta	45.0
Bouteloua gracilis	Blue grama	2.5
Sporobolus flexuosus	Mesa dropseed	3.5
Gutierrezia sarothrae	Broom Snake weed	Trace**
Bouteloua eriopoda	Black grama	Trace
Sphaeralcea species	Globemallow	Trace

Note: [1] Percentage of total MWL Cover populated by actively-photosynthesizing plants of this species

* Living plants per Section 4.1 of the MWL LTMP.

** Trace = species present at a rate of less than one-half of one-percent.

Mixed Waste Landfill
Biology Inspection Checklist/Form for the MWL Cover
(continued)

Are there any contiguous areas of no vegetation greater than 200 square feet? (approximately 14 x 14 ft)? No

If "Yes," mark such areas on a map and attach to this checklist. Address actions and schedule to improve such area(s) in the notes section below.

Are there any very deeply rooted (roots greater than 8 feet deep at maturity) plant species present on the cover? No

If "Yes," describe the plant(s) and their general distribution. Address actions and schedule to remove plant(s) from the cover in the notes section below.

Notes: _____

Inspection for Animal and Insect Intrusion into MWL Cover

Are any burrows present on the cover? Yes

Do any of the burrows appear to be active? No

Any ant hills/nests? Yes

Describe below observations regarding animal and insect features. If burrows with an entrance diameter of 4 inches or greater are present or appear to be that of a species that is able to burrow 6 feet deep or greater, indicate the location(s) on a map and attach to this checklist. Address actions and schedule to repair cover damage that exceeds prescribed limits. As appropriate, identify animal and insect features and have them surveyed and marked for biota sampling.

Notes: Burrow entrances are smaller than 4-inches in diameter. No burrow appears to be that of a species able to burrow six feet or greater.

Mixed Waste Landfill
Biology Inspection Checklist/Form for the MWL Cover
(Continued)

Notes (continued):

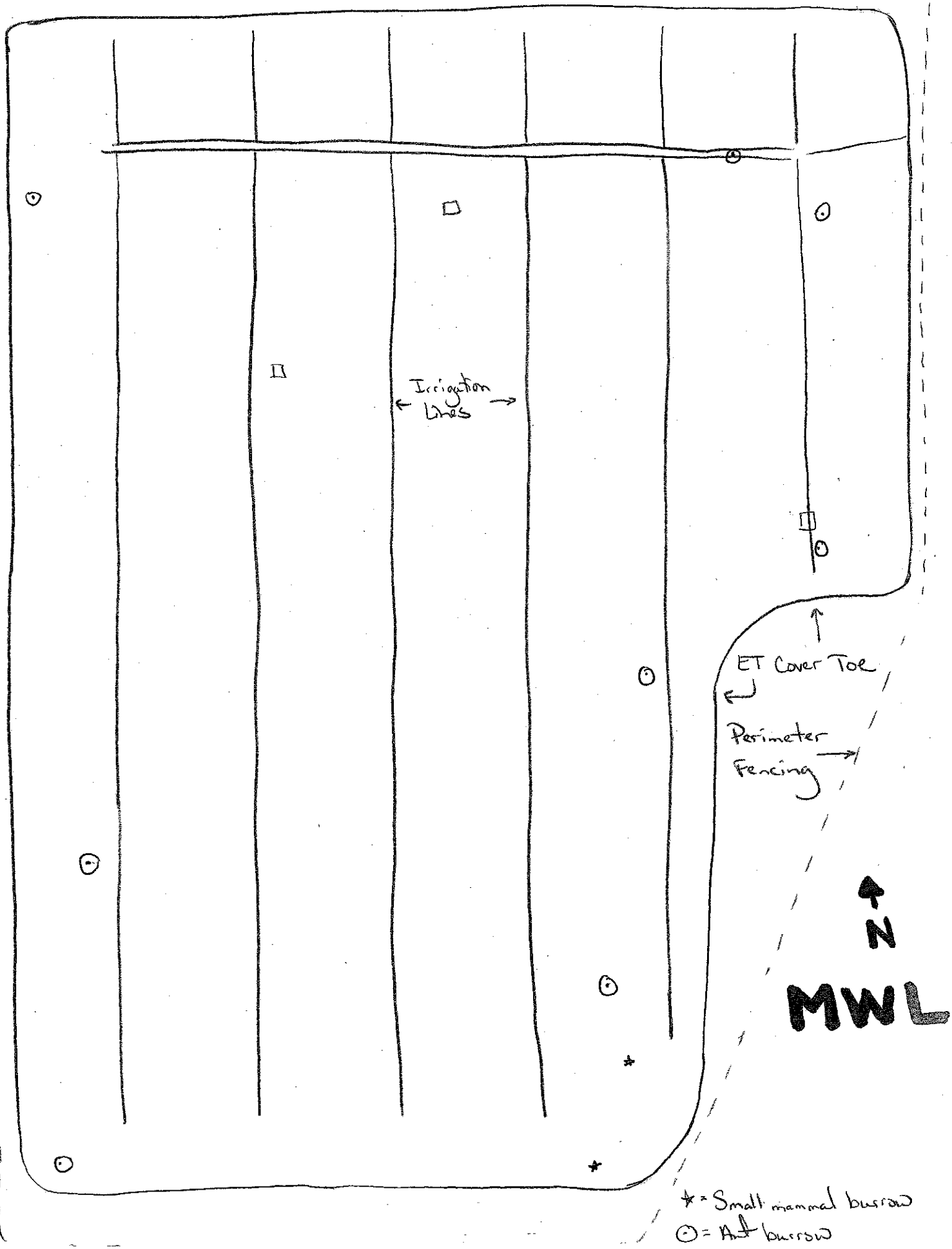
The ET cover continues to be in excellent shape with even coverage across the cover. Little has changed since the 9/10/13 inspection, only fewer annual plant species present due to winter dormancy.

Biological Aspects Map -- [note: sketch map to locate specific features described above will be attached as appropriate]

Inspector's Signature: _____ Date: 2/18/14

Original to: Mixed Waste Landfill Operating Record

Copy to: SNL/NM Records Center


Irrigation Lines
ET Cover Toe
Perimeter Fencing
N
MWL
★ = Small mammal burrow
⊙ = Ant burrow

Looking north from approximate center of ET cover

Looking east from approximate center of ET cover

Looking south from approximate center of ET cover

Looking west from approximate center of ET cover

West Slope: looking south from northern end

South portion of cover; facing north from center southern edge of cover

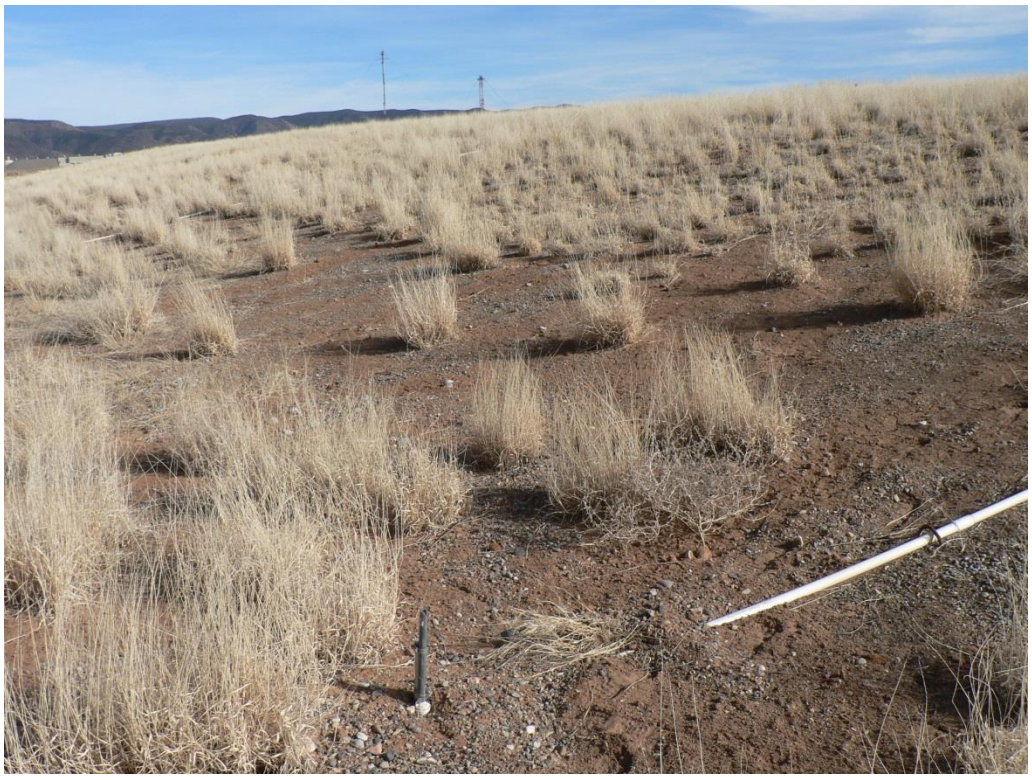
South slope of cover

East slope of cover: southern end

East slope of cover: northern end

Northeast corner of cover: facing southwest

North slope of cover: facing west from the eastern portion of slope



North slope of cover: facing east from the western portion of slope

Northwest corner of cover: facing center of cover
(This small area has the lowest density of native perennial plants on the cover)

Mixed Waste Landfill
SWMU 76

Biology Inspection

September 10, 2013

Mixed Waste Landfill
Biology Inspection Checklist/Form for the MWL Cover

Approximate vegetative coverage (actively photosynthesizing)*: 56 %

Approximate percent native vegetation of the total vegetative cover: 96 %

Listed below are the main plant species identified as growing on the MWL cover and the percentage of the cover populated by each species.

Scientific Name	Common Name (optional)	% of Cover[1]
Pleuraphis jamesii	James' galleta	46
Bouteloua eriopoda	Black grama	4
Sporobolus flexuosus	Mesa dropseed	3
Xanthisma spinulosum	Tansy aster	Trace**
Salsola tragus	Russian thistle	Trace
Bouteloua barbata	Six-weeks grama	Trace
Sporobolus contractus	Spike dropseed	Trace
Bouteloua curtipendula	Side-oats grama	Trace
Dasyochloa pulchella	Low woolly grass	Trace
Gutierrezia sarothrae	Broom snakeweed	Trace
Helianthus species	Sunflower species	Trace
Panicum capillare	Witch grass	Trace
Chenopodium incanum	Mealy goosefoot	Trace
Sphaeralcea hastulata	Wrinkled globemallow	Trace
Sphaeralcea angustifolia	Narrowleaf globemallow	Trace

Note: [1] Percentage of total MWL Cover populated by actively-photosynthesizing plants of this species

* Living plants per Section 4.1 of the MWL LTMMP.

** Trace = species present at a rate of less than one-half of one percent.

Mixed Waste Landfill
Biology Inspection Checklist/Form for the MWL Cover
(continued)

Are there any contiguous areas of no vegetation greater than 200 square feet? (approximately 14 x 14 ft)? No.

If "Yes," mark such areas on a map and attach to this checklist. Address actions and schedule to improve such area(s) in the notes section below.

Are there any very deeply rooted (roots greater than 8 feet deep at maturity) plant species present on the cover? No.

If "Yes," describe the plant(s) and their general distribution. Address actions and schedule to remove plant(s) from the cover in the notes section below.

Notes: _____

Inspection for Animal and Insect Intrusion into MWL Cover

Are any burrows present on the cover? Yes

Do any of the burrows appear to be active? No

Any ant hills/nests? Yes

Describe below observations regarding animal and insect features. If burrows with an entrance diameter of 4 inches or greater are present or appear to be that of a species that is able to burrow 6 feet deep or greater, indicate the location(s) on a map and attach to this checklist. Address actions and schedule to repair cover damage that exceeds prescribed limits. As appropriate, identify animal and insect features and have them surveyed and marked for biota sampling.

Notes: Burrow entrances are smaller than 4 inches in diameter. No burrow appears to be that of a species able to burrow six feet or greater.

Mixed Waste Landfill
Biology Inspection Checklist/Form for the MWL Cover
(Continued)

Notes (continued):

The ET cover is in excellent shape. The two largest bare areas observed in the May 2013 inspection have been significantly filled in with native grass species during the 2013 growing season. All side slopes have good coverage of native grasses. Extremely little weed growth was observed on the cover during this inspection.

The native grasses have developed into fully mature clumps. Abundant above-ground biomass was observed in this inspection. The clumps have barren interspaces between them which mimic the native grass ecosystems in the surrounding areas. The natural spacing between clump grasses allows for full root development of each plant. A mature root system enables better uptake of nutrients and water, enriching the health of each plant and enabling each plant to best withstand drought conditions. The grass clumps have set abundant seed, further indicating a very healthy community of native grasses on the ET cover.

Biological Aspects Map -- [note: sketch map to locate specific features described above will be attached as appropriate]

Inspector's Signature: _____ Date: 9/10/2013

Original to: Mixed Waste Landfill Operating Record

Copy to: SNL/NM Records Center

Looking north from approximate center of ET cover

Looking east from approximate center of ET cover

Looking south from approximate center of ET cover

Looking west from approximate center of ET cover

West Slope: looking north from southern end

West Slope: looking south from northern end

Southwest corner of cover: facing center of cover

South slope of cover

Southeast corner of cover: facing center of cover

West slope of cover: southern end

Northeast portion of cover: facing northeast

West slope of cover: northern end

Northeast corner of cover: facing west

Northeast portion of cover: facing northwest

North slope of cover: facing west from the eastern portion of slope

North slope of cover: facing east from the western portion of slope

Northwest corner of cover: facing center of cover
(This small area has the lowest density of native perennial plants on the cover)

Mixed Waste Landfill
SWMU 76

ET Cover Surface and Physical Controls Inspection

February 18, 2014

Mixed Waste Landfill
Cover Inspection Checklist/Form

1. Date of Inspection 2/18/14
2. Time of Inspection @ 1400
3. Name of Inspector Don M Watenpaugh

Provide explanatory notes for each parameter not inspected or each action required. Include any maintenance or repair required in notes section at the end of this form.

I. COVER SYSTEM [Quarterly]			
Inspection Parameter	***Parameter Inspected (Yes or No)***	***Action Required (Yes or No)***	***Note Number***
A. Visible settlement of the soil cover in excess of 6 inches.	yes	NO	
B. Erosion of the soil cover in excess of 6 inches deep.	yes	NO	
C. Evidence of water ponding on the MWL cover surface in excess of 100 square feet.	yes	NO	
D. Animal intrusion burrows in excess of 4 inches in diameter. Note: During period when the Biology Inspection is occurring quarterly, this inspection requirement will be covered on the Biology Inspection Checklist/Form.	yes	NO	
E. Contiguous areas of no vegetation greater than 200 ft^2. Note: During period when the Biology Inspection is occurring quarterly, this inspection requirement will be covered on the Biology Inspection Checklist/Form.	yes	NO	
F. Potentially deep-rooted plants present. Note: During period when the Biology Inspection is occurring quarterly, this inspection requirement will be covered on the Biology Inspection Checklist/Form.	yes	NO	
II. SURFACE-WATER (STORM-WATER) DIVERSION STRUCTURES [Quarterly]			
Inspection Parameter	***Parameter Inspected (Yes or No)***	***Action Required (Yes or No)***	***Note Number***
A. Channel or sidewall erosion in excess of 6 inches deep.	Yes	NO	
B. Channel sediment accumulation in excess of 6 inches deep.	Yes	NO	
C. Debris that blocks more than 1/3 of the channel width.	Yes	NO	

Mixed Waste Landfill
Cover Inspection Checklist/Form (continued)

III. SECURITY FENCE [Quarterly]			
Inspection Parameter	***Parameter Inspected (Yes or No)***	***Action Required (Yes or No)***	***Note Number***
A. Accumulation of wind-blown plants and debris.	yes	yes	1
B. Fence wires and posts in need of repair/maintenance.	yes	ND	
C. Gates in need of oiling/repair/maintenance.	yes	ND	
D. Locks in need of cleaning or replacement.	yes	ND	
E. Warning signs in need of repair or replacement.	yes	yes	2
F. Survey monuments in vicinity of MWL visible.	yes	ND	

IV. PREVIOUS DEFICIENCIES			
Inspection Parameter	***Parameter Inspected (Yes or No)***	***Action Required (Yes or No)***	***Note Number***
Uncorrected/undocumented previous deficiencies.	NA	NA	

Mixed Waste Landfill
Cover Inspection Checklist/Form (continued)

NOTES

Note Number	Description
1	Accumulation of Russian Thistle along East & west Fence. Work Order has been Submitted to Purchasing For Sequoia Landscaping to perform removal
2	Danger warning Sign on NW corner of MWL Fence needs to be replaced

Mixed Waste Landfill
Cover Inspection Checklist/Form (continued)

Action (Note Number) 1 assigned to Don Schofield Date action completed 4/4/14

Action (Note Number) 2 assigned to Robert Zisck Date action completed 2/24/14

Action (Note Number) _____ assigned to _____ Date action completed _____

Action (Note Number) _____ assigned to _____ Date action completed _____

Action (Note Number) _____ assigned to _____ Date action completed _____

Additional Comments:

#1 Weeds were removed from fence line by Sequoia Landscaping.

#2 New Danger/Warning sign installed to replace damaged one.

Inspector's Signature _____

Original to: Mixed Waste Landfill Operating Record

Copy to: SNL/NM Records Center