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DEPARTMENT OF ENERGY
National Nuclear Security Administration
Los Alamos Field Office
Los Alamos, New Mexico 87544



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Dear Mr. Kieling:

Subject: Submittal of the 2013 Annual Inspection Report for Los Alamos County Airport Landfill, Solid Waste Management Units 73-001(a) and 73-001(d), Technical Area 73

Enclosed please find two hard copies with electronic files of the 2013 Annual Inspection Report for Los Alamos County Airport Landfill, Solid Waste Management Units 73-100(a) and 73-100(d), Technical Area 73.

If you have any questions, please contact Ramoncita N. Massey at (505) 665-7771.

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**2013 Annual Inspection Report for
Los Alamos Country Airport Landfill,
Solid Waste Management Units
73-001(a) and 73-001(d),
Technical Area 73**



Prepared by the Los Alamos Field Office

2013 Annual Inspection Report for Los Alamos County Airport Landfill, Solid Waste Management Units 73-001(a) and 73-001(d), Technical Area 73

February 2014

Responsible project director:

	Federal Project Director	Environmental Projects Office	2/13/14
Ramoncita Massey			
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Responsible DOE representative:

David Rhodes		Supervisory Federal Project Director	DOE-NA-00-LA	2-13-2014
Printed Name	Signature	Title	Organization	Date

EXECUTIVE SUMMARY

This report summarizes activities and findings of the landfill inspection conducted for the Los Alamos County Airport Technical Area 73 landfill for calendar year 2013 as part of the postclosure monitoring requirements.

Routine site inspections and landfill gas monitoring were conducted throughout the year. In December 2013, at the direction of the U.S. Department of Energy, Los Alamos National Laboratory began weekly gas monitoring. One significant precipitation event inspection was completed for the period from September 10 to 15, 2013, when the airport received over 7 in. of rain in a 6-d period.

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- Appendix A Completed Monthly Inspection Checklists
- Appendix B Completed Landfill-Gas Measurement Forms
- Appendix C Completed Annual Inspection Checklist
- Appendix D Completed Significant Event Inspection Checklist

1.0 INTRODUCTION

This landfill cover inspection report, prepared by the U.S. Department of Energy (DOE) Los Alamos Field Office, summarizes the findings of inspection activities conducted at the Los Alamos County (LAC) Airport at Technical Area 73 (TA-73), Solid Waste Management Unit (SWMU) 73-001(a), a landfill, and SWMU 73-001(d), a debris disposal area (DDA), for calendar year 2013.

Postclosure inspection and reporting requirements are described in the “Final Implementation Strategy for Post Closure Inspection and Maintenance of the DOE/NNSA LASO Airport Landfill SWMU 73-001(a) and Debris Disposal Area SWMU 73-001(d), Los Alamos County Airport, New Mexico” (CE2 Corporation 2009, 111600) and the “Post-Closure Care and Monitoring Plan for the Los Alamos Site Office TA-73 Airport Landfill, Revision 2” (North Wind Inc. 2006, 111707). The final implementation strategy was developed to update the 2006 postclosure plan to include minor changes reflected in the 2007 final remedy and to include specific activities necessary for a comprehensive approach to maintaining and monitoring the landfill for 30 yr following closure.

2.0 BACKGROUND

Two inactive solid waste disposal sites [the airport landfill, SWMU 73-001(a), and the DDA, SWMU 73-001(d)] are located at the LAC Airport (Figure 2.0-1). The airport landfill operated from 1943 to 1973 for the disposal of solid waste consisting of household trash from the Los Alamos townsite and office trash from Los Alamos Scientific Laboratory. Before 1965, some of the waste was burned and subsequently buried in the airport landfill. Approximately 489,500 yd³ of waste was disposed of in the landfill.

From 1984 to 1986, approximately 126,000 yd³ of burned debris was excavated from the western end of the airport landfill and reburied in two parallel trenches at the DDA.

In late 2006 and early 2007, the DOE installed the final remedy landfill cover system at the airport landfill through a contract with North Wind, Inc. The final remedy design and completion activities for the landfill and the DDA are provided in the “Remedy Completion Report, DOE-LASO TA-73 Airport Landfill, SWMUs 73-001(a) and 73-001(d)” (North Wind Inc. 2007, 096333).

Approximately 50,000 yd³ of waste was relocated within the SWMU 73-001(a) boundary during the 2006 final remedy completion activities. With the exception of a single container of Freon-113 uncovered and subsequently managed off-site, no other hazardous or radioactive materials were discovered.

After waste relocation, compaction, and regrading were conducted, the following features were installed for the airport landfill cover (Figure 2.0-2):

- Approximately 6 acres of MatCon (Modified Asphalt Technology for Containment) asphalt pavement
- Five concrete hangar pads within the MatCon pavement area
- Turf reinforcement matting (TRM)
- A landfill-gas collection system
- Two rock retaining walls
- A concrete retaining wall

- Revegetation with native grasses of approximately 4 acres
- A storm water collection system consisting of 5 trench drains, 13 drain inlets, approximately 1950 ft of associated buried concrete storm-sewer lines, an 18-in.-diameter high-density polyethylene outfall pipe approximately 110 ft in length, and 3 riprap drainage channels

In 2009 and 2010, erosion features (rills and small gullies) and subsidence associated with storm water runoff from the paved areas above the vegetated slopes were repaired. In addition, the curb along the runway was repaired and extended to redirect storm water away from the main vegetated slope. Cracks in the concrete at hangar pads 2 and 3 were repaired using polyurethane sealants. These repairs and enhancements are detailed in the “Final Construction Report for Los Alamos Airport Landfill TA-73, SWMU 73-001(a) Cover Improvements, Los Alamos, New Mexico” (LANL 2011, 111750, Appendix A).

In 2011, cracks in the MatCon pavement and areas of separation between the concrete hangar pads and MatCon pavement were cleaned and filled with a hot seal mixture.

In 2012, stub outs at gas-vent riser locations PS-2, PS-3, and PS-5 were opened, and risers with turbines (spinners) were installed. New cracks in the MatCon pavement and any new areas of separation between the concrete hangar pads and MatCon pavement were cleaned and filled with a hot seal mixture.

On September 30, 2013, the Los Alamos Field Office awarded a contract for maintenance activities at the Los Alamos Airport landfill. This contract will also provide the Los Alamos Field Office with a design for a new landfill cover at the Los Alamos Airport landfill. Depending on the funding availability, this design should be completed this calendar year (CY). Construction of a new landfill cover is currently scheduled for CY2015.

The Los Alamos Field Office is currently awaiting the response for a waiver from the New Mexico Environment Department’s (NMED’s) for the implementation of an active gas collection system using blowers, as required in the 2006 “Post-Closure Care and Monitoring Plan for the Los Alamos Site Office TA-73 Airport Landfill, Revision 2” (North Wind Inc. 2006, 111707). In lieu of the active gas collection system, NMED directed Los Alamos National Security, LLC, on November 22, 2013, to immediately implement a weekly air monitoring program in open air at the landfill. The weekly air monitoring will continue until the methane levels drop below the 100% lower explosive limit (LEL). At this time, the monitoring frequency can change to 6 mo. After a review of the data the Los Alamos Field Office will provide formal direction for the frequency of the monitoring effort.

The NMED’s approval with modifications for the remedy completion report requires monitoring of storm water runoff from the site (NMED 2007, 098285). This monitoring is being performed under the Laboratory’s National Pollutant Discharge Elimination System Individual Permit for storm water discharges from SWMUs and areas of concern.

3.0 INSPECTION ACTIVITIES

During calendar year 2013, inspection activities were conducted in accordance with the “Final Implementation Strategy for Post Closure Inspection and Maintenance of the DOE/NNSA LASO Airport Landfill SWMU 73-001(a) and Debris Disposal Area SWMU 73-001(d), Los Alamos County Airport, New Mexico” (CE2 Corporation 2009, 111600) and the “Post-Closure Care and Monitoring Plan for the Los Alamos Site Office TA-73 Airport Landfill, Revision 2” (North Wind, Inc. 2006, 111707).

Inspection activities at SWMU 73-001(a) focused on evaluating the condition and overall integrity of each individual feature of the landfill cover system. In addition, gas monitoring was conducted throughout the landfill cover to evaluate the presence of potentially combustible gases. The SWMU 73-001(d) DDA, located at the eastern end of the airport runway (Figure 2.0-1), was inspected for evidence of erosion or reduced vegetation. The completed monthly inspection checklists are included in Appendix A, the completed landfill gas monitoring forms are included in Appendix B, the completed annual inspection checklist is included in Appendix C, and the significant event inspection checklist is included in Appendix D.

In accordance with section 7 of the implementation strategy (CE2 Corporation 2009, 111600), the following field inspections and gas monitoring were completed during 2013.

February 01, 2013 (January inspection)

- Monthly inspection of MatCon pavement, concrete hangar pads, and survey benchmarks

February 22, 2013

- Monthly inspection of MatCon pavement, concrete hangar pads, and survey benchmarks

March 15, 2013

- Monthly inspection of MatCon pavement, concrete hangar pads, and survey benchmarks
- First quarter landfill-gas monitoring

May 02, 2013 (April inspection)

- Monthly inspection of MatCon pavement, concrete hangar pads, and survey benchmarks

May 24, 2013

- Annual inspection of the gas-collection system, TRM, the vegetated areas, wattle area, concrete and rock retaining walls, storm water-collection system, outfall pipe, and DDA
- Annual/monthly inspection of MatCon pavement, concrete hangar pads, and survey benchmarks

June 28, 2013

- Monthly inspection of MatCon pavement, concrete hangar pads, and survey benchmarks

July 01, 2013

- Second quarter landfill-gas monitoring

July 23, 2013

- Monthly inspection of MatCon pavement, concrete hangar pads, and survey benchmarks

August 26, 2013

- Monthly inspection of MatCon pavement, concrete hangar pads, and survey benchmarks

September 16, 2013

- Significant rainfall inspection of the MatCon pavement, hangar pads, vegetated areas, wattle area, retaining walls, and the storm water-collection system

September 30, 2013

- Monthly inspection of MatCon pavement, concrete hangar pads, and survey benchmarks
- Third quarter landfill-gas monitoring

November 01, 2013 (October inspection)

- Monthly inspection of MatCon pavement, concrete hangar pads, and survey benchmarks

November 21, 2013

- Monthly inspection of MatCon pavement, concrete hangar pads, and survey benchmarks

December 20, 2013

- Monthly inspection of MatCon pavement, concrete hangar pads, and survey benchmarks

January 02, 2014

- Fourth quarter landfill-gas monitoring
- Methane caution signage at perimeter spinner locations PS-01 and PS-06 (section 3.7)

Weekly landfill-gas monitoring initiated in December 2013:

- Completed December 02, 2013
- Completed December 12, 2013
- Completed December 17, 2013
- Completed December 23, 2013
- Completed January 02, 2014

Inspection and monitoring activities and findings are described below.

3.1 MatCon Pavement and Concrete Hangar Pads

Monthly inspection surveys of the MatCon asphalt pavement were conducted by walking along transects along the western, eastern, and southern areas of the pavement and between each hangar pad (Figures 2.0-1 and 2.0-2). The inspection survey looked for evidence of cracking, subsidence, or separation of the pavement.

Cracking of the hot seal repairs completed in 2011 and 2012 was noted at approximately 50% of the previously repaired locations. In addition, extension cracks were noted at many of the previously identified locations. New cracks were observed between hangar pads 3 and 4, and pads 4 and 5 along a subsidence hinge line (Figure 3.1-1).

Subsidence of the pavement was noted and is primarily associated with the northern third of the site.

Monthly inspection surveys of the five concrete hangar pads were conducted by walking along the perimeter of each hangar pad and along a transect down the center of each pad. The inspection survey looked for evidence of cracking, subsidence, and/or separation between expansion joints and separation/subsidence between the concrete pads and the MatCon pavement.

Visual observations at hangar pad 1 indicate that the northern third of the pad has uplifted and tilted slightly to the south. Visible subsidence was observed on the northern half of hangar pads 2, 3, 4, and 5 (Figure 3.1-2). Cracking associated with the subsidence of the pads was also observed throughout the central portion of each pad (Figure 3.1-3). Separation of the expansion joints was observed at hangar pads 1, 2, 3, and 4. Separation or subsidence of joints between the hangar pads and the MatCon pavement was noted at pads 1, 2, 3, and 4.

3.2 Vegetated (Seeded) Areas

Inspections of the vegetated areas conducted annually and after significant rainfall events focused on evidence of erosion, subsidence, sparse vegetation, and animal burrows. Two parallel transects were surveyed along the northern vegetated area between the MatCon pavement and the chainlink perimeter fence, three parallel transects were surveyed along the upper reaches of the eastern sloped area, and three parallel transects were surveyed along the lower reaches of the eastern-sloped area.

The vegetated areas are well populated with various grasses, some shrubs, and seasonal weeds. A few areas have sparse vegetation but are covered with TRM. No animal burrows were noted (Figure 3.2-1).

In September 2013, the airport received over 7 in. of rain. Rill erosion was noted within the vegetated slope area, and a channel cut formed from runoff associated with the mid-slope riprap runoff channel (Figure 3.2-2).

3.3 Storm Water-Collection System

Inspection of the visible components of the storm water–collection system was completed annually and after significant rainfall events. The components consist of 6 grated trench drains (5 of which run next to each of the 5 hangar pads), 13 drain inlets, a manhole, and the outfall pipe (Figure 2.0-2). The length of each trench drain was inspected for standing water, cracking, excessive sedimentation, and displacement of grates. The integrity of the drain inlet grates and concrete structures was inspected for cracking or displacement. The outfall pipe was inspected for damage and/or displacement.

Cracking and displacement of the concrete channels associated with hangar pad subsidence were noted in the trench drains at hangar pads 1, 2, 3, 4, and 5. Standing water has been observed in the northern half of trench drains associated with pads 2, 3, 4, and 5. Ponding of water has been observed at the northern end of hangar pads 2 and 3 (Figure 3.1-2). Concrete drain inlets associated with pads 1, 2, and 3 are cracking or flaking. The remaining 10 drain inlets, manhole, and outfall appear to be in good working condition.

3.4 Riprap Drainage Channels

The riprap drainage channels were inspected annually and after significant rainfall events. Two riprap gravel drainage channels are located along the eastern and southeastern edges of the MatCon cover; a third riprap gravel channel is located mid-slope on the sloped portion of the landfill cover (Figures 2.0-1 and 2.0-2).

The length of each drainage channel was inspected for evidence of subsidence, erosion, vegetation, or excessive sedimentation. Areas below each end of the mid-slope drainage channel that receive flow from the channels were also inspected for signs of subsidence, erosion, and sedimentation.

The drainage channels adjacent to the MatCon cover are in good working condition, with no evidence of subsidence, erosion, sedimentation, or excessive vegetation.

The mid-slope rip-rap channel within the vegetated slope area has some minor sedimentation. The far eastern end of the channel has contributed to the erosion channel cut into the vegetated slope (Figure 3.2-2). The riprap has failed and the liner is exposed (Figure 3.4-1).

3.5 Retaining Walls

The retaining walls and porous detention areas were inspected annually and after significant rainfall events. The concrete retaining wall and the two rock retaining (rock basket/gabion) walls are located at the toe of the sloped portion of the landfill cover (Figure 2.0-2). The top and face of each wall were inspected for areas of cracking, separation, rotation, erosion/sedimentation, or slumping.

All retaining walls are in good working condition, with no evidence of cracking, separation, rotation, erosion/sedimentation, or slumping.

Three small detention areas are located east of the concrete retaining wall to enhance sediment removal and reduce storm water velocity from the adjacent slopes. At two of the detention areas, the retention berm failed after the September rain events (Figure 3.5-1).

3.6 Temporary Erosion-Control Features

Temporary erosion-control features installed during the remedy implementation included straw wattles, hay bales, and erosion fencing. These features served their intended purpose of protecting unvegetated runoff areas until vegetation could be established. During the 2010 inspections, it was observed that vegetation has been established, and the existing temporary erosion-control measures were no longer needed and thus were removed.

3.7 Landfill-Gas Monitoring

Landfill-gas monitoring was conducted quarterly and entailed measuring combustible gases, oxygen, and carbon dioxide at 47 locations along the hangar pads, trench drains, and drain inlets and within the northern and eastern vegetated areas. In addition, monitoring was completed at the 6 landfill-gas collection system riser vent locations. In accordance with the implementation plan (CE2 Corporation 2009, 111600), no landfill-gas monitoring was conducted at the DDA. Gas-monitoring locations are shown in Figure 2.0-2.

Concentrations of combustible gases, oxygen, and carbon dioxide were measured in percent values using a calibrated MSA Altair 5 multigas detector. This instrument is designed to detect the minimum concentration of a combustible gas in air that can ignite, or the lower explosive limit (LEL), as well as oxygen and carbon dioxide levels. The upper alarm level of the multigas detector was set at 20% of the LEL. Because of the potential for variable combustible gases and vapors that could rise from the landfill, the gas detector was calibrated using pentane rather than methane. Calibration to pentane results in more conservative detector readings (i.e., biased high) with respect to methane and minimizes the loss of sensitivity because of "poisoning" of the detector with elevated levels of methane.

Gas monitoring was conducted 2 in. above the expansion joints for the hangar pad (HP) locations, 4 in. below the trench grate for trench drain (TD) locations, 4 in. below the grate for drainage culvert (DC) locations, 2 in. above ground surface for perimeter ground (PG) locations, and at the spinner for perimeter spinner (PS) vent pipe locations (Figures 3.7-1, 3.7-2, and 3.7-3).

During first quarter monitoring, combustible gases were detected at locations PS-02 and PS-06. At PS-02, the meter alarmed at a concentration of 100% of the LEL with an oxygen concentration of 18.4%. At PS-06, the meter alarmed at a concentration of 34% of the LEL with an oxygen concentration of 20.8%. First quarter gas-monitoring results are presented in Table 3.7-1.

During second quarter monitoring, combustible gases were detected at locations PS-02, PS-04, and PS-05. At PS-02, the meter alarmed at a concentration of 100% of the LEL with an oxygen concentration of 14.1%. At PS-04, the meter registered a concentration of 12% of the LEL with an oxygen concentration of 20.8%. At PS-05, the meter alarmed at a concentration of 100% of the LEL with an oxygen concentration of 19.3%. Second quarter gas-monitoring results are presented in Table 3.7-2.

During third quarter monitoring, combustible gases were detected at locations HP-08 and PS-02, PS-04, and PS-05. At HP-08, the meter registered a concentration of 14% of the LEL with an oxygen concentration of 20.8%. At PS-02, the meter alarmed at a concentration of 100% of the LEL with an oxygen concentration of 18.5%. At PS-04, the meter registered a concentration of 12% of the LEL with an oxygen concentration of 20.8%. At PS-05, the meter alarmed at a concentration of 100% of the LEL with an oxygen concentration of 19.1%. Third quarter gas-monitoring results are presented in Table 3.7-3.

During fourth quarter monitoring, combustible gases were detected at locations PS-02 and PS-03. At PS-02, the meter alarmed at a concentration of 100% of the LEL with an oxygen concentration of 18.5%. At PS-03, the meter alarmed at a concentration of 100% of the LEL with an oxygen concentration of 16.7%. Fourth quarter gas-monitoring results are presented in Table 3.7-4.

Weekly Monitoring Initiated December 02, 2013

Week of December 02, 2013

Combustible gases were detected at the following locations: TD-08 at 6% of the LEL with an oxygen concentration of 20.8%, PS-02 at 100% of the LEL with an oxygen concentration of 16%, and PS-05 at 100% of the LEL with an oxygen concentration of 20.8%. Monitoring of the northern perimeter locations was not completed because of deep snow and frozen ground conditions. The results are presented in Table 3.7-5.

Week of December 09, 2013

Combustible gases were detected at the following locations: HP-11 at 6% of the LEL, HP-13 at 13% of the LEL, DC-01 at 11% of the LEL, DC-02 at 23% of the LEL, DC-03 at 16% of the LEL, DC-04 at 36% of the LEL, DC-05 at 34% of the LEL, DC-06 at 33% of the LEL, and DC-07 at 8% of the LEL, all locations with oxygen concentrations of 20.8%; PS-02 at 100% of the LEL with an oxygen concentration of 5.9% and PS-05 at 100% of the LEL with an oxygen concentration of 17.9%. Monitoring of the northern perimeter and trench drain locations was not completed because of deep snow, ice, and frozen ground conditions. The results are presented in Table 3.7-6.

Week of December 16, 2013

Combustible gases were detected at the following locations: DC-05 at 15% of the LEL, DC-06 at 7% of the LEL, DC-07 at 47% of the LEL, DC-08 at 32% of the LEL, all locations with oxygen concentrations of 20.8%, with the exception of DC-08 at 20.1%; PS-02 at 100% of the LEL with an oxygen concentration of 13.2%, PS-05 at 100% of the LEL with an oxygen concentration of 19%, and PS-06 at 100% of the LEL with an oxygen concentration of 20.8%. Monitoring of the northern perimeter and trench drain locations was not completed because of deep snow, ice, and frozen ground conditions. The results are presented in Table 3.7-7.

Week of December 23, 2013

Combustible gases were not detected. Monitoring of the northern perimeter and trench drain locations was not completed because of deep snow, ice, and frozen ground conditions. The results are presented in Table 3.7-8.

Week of December 30, 2013

Combustible gases were detected at locations PS-02 and PS-03. At PS-02 the meter alarmed at a concentration of 100% of the LEL with an oxygen concentration of 18.5%. At PS-03 the meter alarmed at a concentration of 100% of the LEL with an oxygen concentration of 16.7%. Weekly monitoring corresponds with fourth quarter monitoring results presented in Table 3.7-4.

3.8 Debris Disposal Area

Inspections of the DDA were conducted annually and after significant rainfall events. The DDA has a well-established vegetative cover with no evidence of erosion (Figure 3.8-1).

4.0 REFERENCES

The following list includes all documents cited in this report. Parenthetical information following each reference provides the author(s), publication date, and ER ID. This information is also included in text citations. ER IDs are assigned by the Environmental Programs Directorate's Records Processing Facility (RPF) and are used to locate the document at the RPF and, where applicable, in the master reference set.

Copies of the master reference set are maintained at the NMED Hazardous Waste Bureau and the Directorate. The set was developed to ensure that the administrative authority has all material needed to review this document, and it is updated with every document submitted to the administrative authority. Documents previously submitted to the administrative authority are not included.

CE2 Corporation, July 2009. "Final Implementation Strategy for Post Closure Inspection and Maintenance of the DOE/NNSA LASO Airport Landfill SWMU 73-001(a) and Debris Disposal Area SWMU 73-001(d), Los Alamos County Airport, New Mexico," report prepared for U.S. Department of Energy, National Nuclear Security Administration, Los Alamos Site Office, Los Alamos, New Mexico. (CE2 Corporation 2009, 111600)

LANL (Los Alamos National Laboratory), February 2011. "Inspection Report for Technical Area 73, Los Alamos County Airport Landfill, Solid Waste Management Units 73-001(a) and 73-001(d)," Los Alamos National Laboratory document LA-UR-11-0772, Los Alamos, New Mexico. (LANL 2011, 111750)

NMED (New Mexico Environment Department), August 8, 2007. "Notice of Approval, Remedy Completion Report SWMUs 73-001(a) and 73-001(d)," New Mexico Environment Department letter to D. Gregory (DOE-LASO) and D. McNroy (LANL) from J.P. Bearzi (NMED-HWB), Santa Fe, New Mexico. (NMED 2007, 098285)

North Wind Inc., April 2006. "Post-Closure Care and Monitoring Plan for the Los Alamos Site Office TA-73 Airport Landfill, Revision 2," report prepared for the U.S. Department of Energy, Los Alamos Site Office, North Wind report no. NW-ID-2004-027, Los Alamos, New Mexico. (North Wind, Inc., 2006, 111707)

North Wind Inc., April 2007. "Remedy Completion Report, DOE-LASO TA-73 Airport Landfill, SWMUs 73-001(a) and 73-001(d)," report prepared for U.S. Department of Energy, National Nuclear Security Administration, Los Alamos Site Office, North Wind report no. NWI-4212-001, Los Alamos, New Mexico. (North Wind, Inc., 2007, 096333)

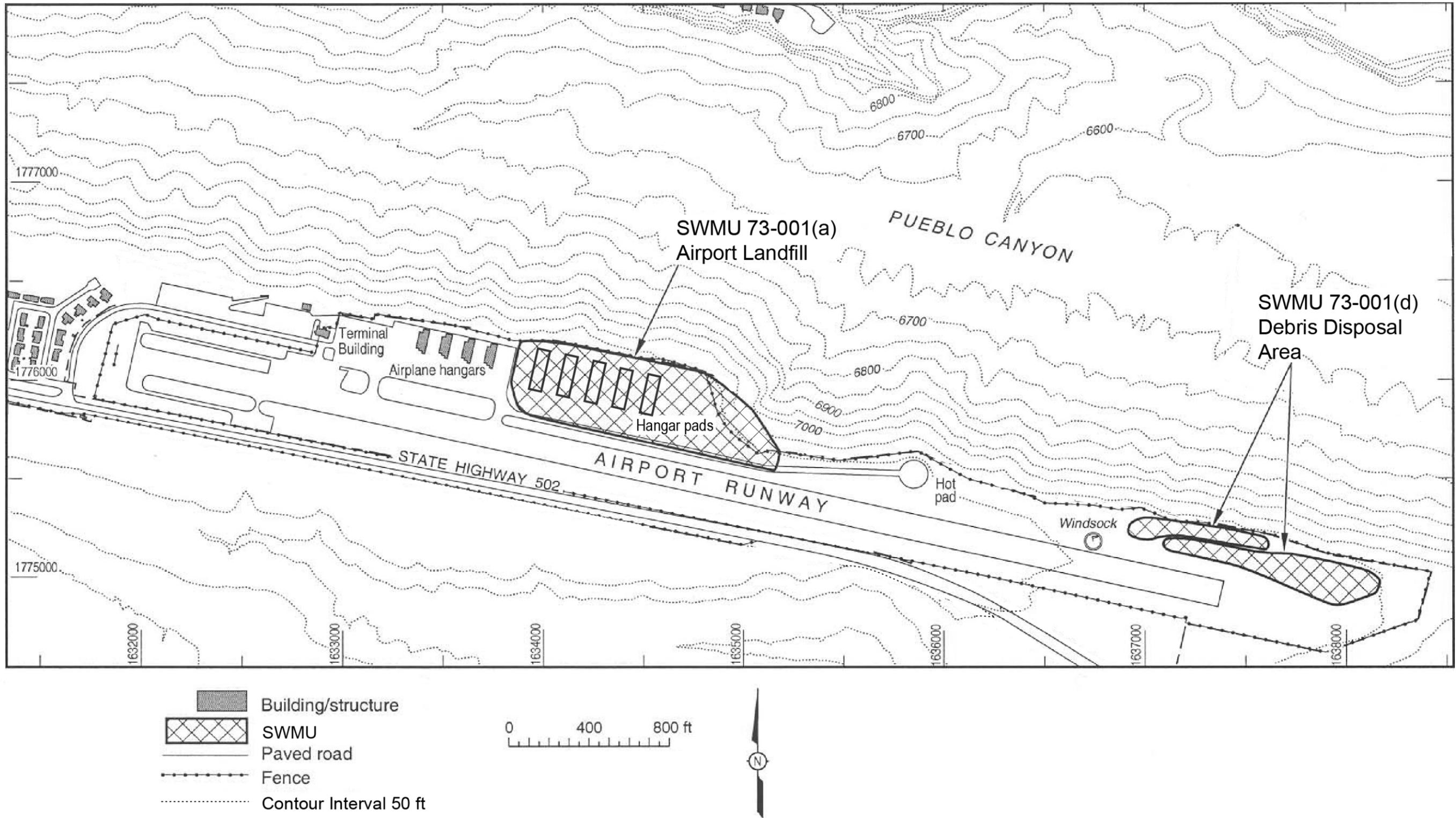
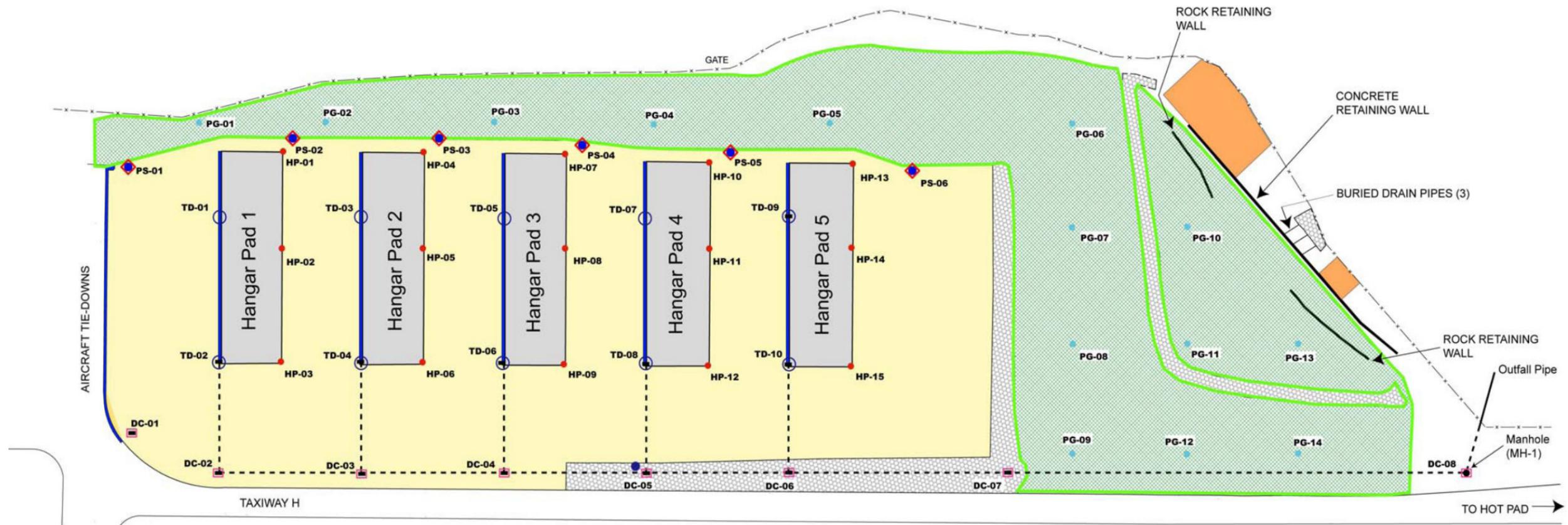


Figure 2.0-1 Locations of the airport landfill and DDA



LEGEND		Landfill Gas Monitoring Locations	
	Grated Trench		DC = Drainage Culvert (Inlet)
	Gas Vent Riser		HP = Hangar Pad
	Drainage Inlet		PG = Perimeter Ground
	Turf Reinforcement Mats		PS = Perimeter Spinner
	Asphalt Pavement (MatCon)		TD = Trench Drain
	Hangar Pads, Concrete		
	Buried Storm Sewer Line		
	Straw Wattle Area		
	Gravel Drainage Channel		
	Fence (approximate)		

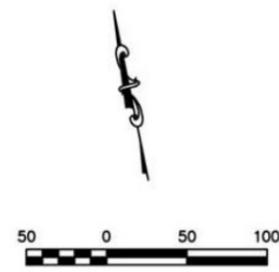


Figure 2.0-2 Airport landfill features



Figure 3.1-1 Cracks in MatCon asphalt between hangar pads 3 and 4



Figure 3.1-2 Subsidence at hangar pad 3

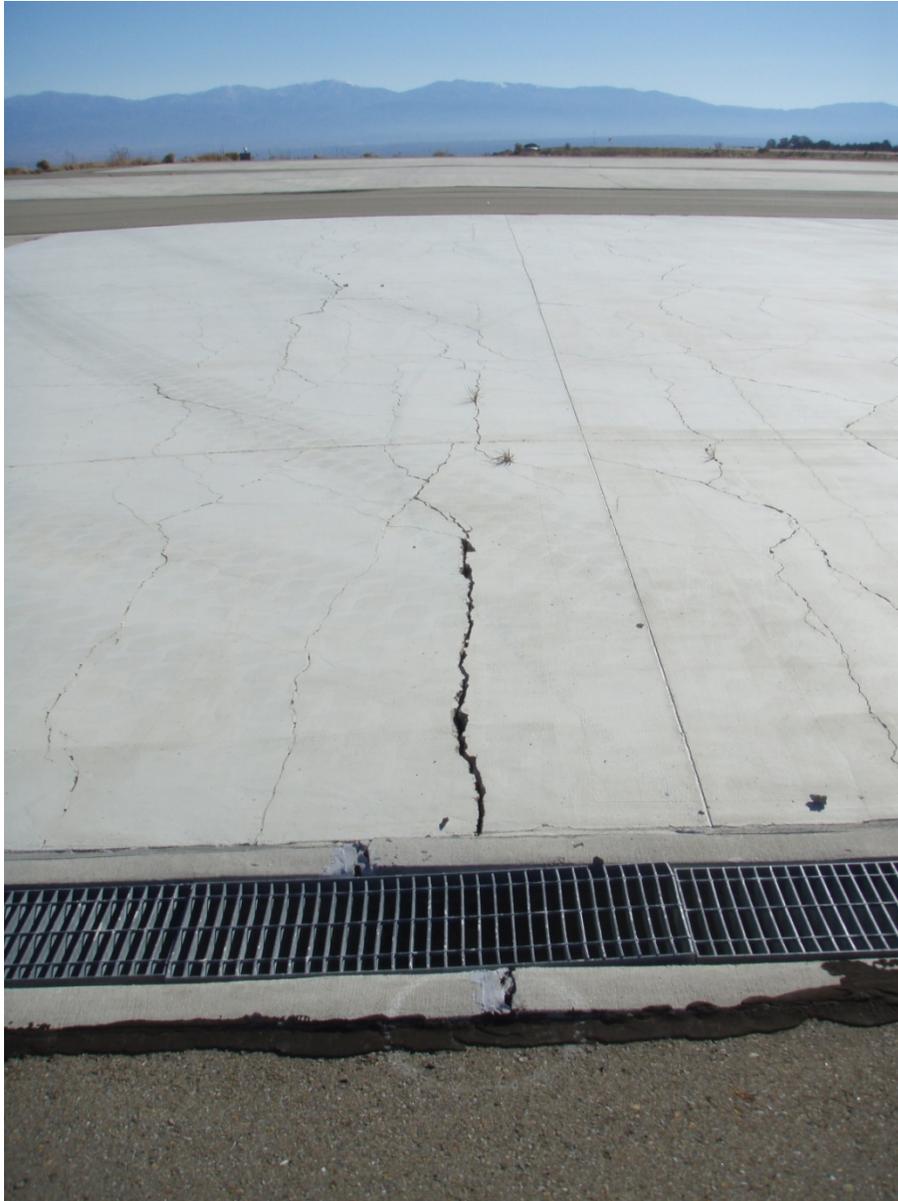


Figure 3.1-3 Cracks in concrete pad and trench drain at hangar pad 3



Figure 3.2-1 Vegetated slope area



Figure 3.2-2 Erosion channel from runoff from the riprap channel



Figure 3.4-1 Failure of riprap drainage



Figure 3.5-1 Failure of retention berm



Figure 3.7-1 Gas monitoring at PS-02



Figure 3.7-2 Caution sign at PS-06



Figure 3.7-3 Gas monitoring at PG-14 on vegetated slope



Figure 3.8-1 Vegetative cover at the DDA

**Table 3.7-1
First Quarter Landfill-Gas Monitoring Results (March 15, 2013)**

Monitoring Location	Height	Time	CH ₄ * (% LEL)	O ₂ (%)	CO ₂ (%)
Hangar Pads (samples collected on the east side of the pad along the expansion joint)					
HP-01	2 in. above expansion joint	0918	0	20.8	0
HP-02	2 in. above expansion joint	0917	0	20.8	0
HP-03	2 in. above expansion joint	0917	0	20.8	0
HP-04	2 in. above expansion joint	0933	0	20.8	0
HP-05	2 in. above expansion joint	0936	0	20.8	0
HP-06	2 in. above expansion joint	0937	0	20.8	0
HP-07	2 in. above expansion joint	0943	0	20.8	0
HP-08	2 in. above expansion joint	0942	0	20.8	0
HP-09	2 in. above expansion joint	0941	0	20.8	0
HP-10	2 in. above expansion joint	0946	0	20.8	0
HP-11	2 in. above expansion joint	0947	0	20.8	0
HP-12	2 in. above expansion joint	0947	0	20.8	0
HP-13	2 in. above expansion joint	0954	0	20.8	0
HP-14	2 in. above expansion joint	0953	0	20.8	0
HP-15	2 in. above expansion joint	0951	0	20.8	0
Trench Drains (west side of each hangar pad)					
TD-01	4 in. below trench grate	0911	0	20.8	0
TD-02	4 in. below trench grate	0912	0	20.8	0
TD-03	4 in. below trench grate	0931	0	20.8	0
TD-04	4 in. below trench grate	0916	0	20.8	0
TD-05	4 in. below trench grate	0935	0	20.8	0
TD-06	4 in. below trench grate	0938	0	20.8	0
TD-07	4 in. below trench grate	0944	0	20.8	0
TD-08	4 in. below trench grate	0941	0	20.8	0
TD-09	4 in. below trench grate	0953	0	20.8	0
TD-10	4 in. below trench grate	0950	0	20.8	0
Drainage Culverts (drainage inlets on the buried storm sewer lines)					
DC-01	4 in. below grate	0913	0	20.8	0
DC-02	4 in. below grate	0914	0	20.8	0
DC-03	4 in. below grate	0915	0	20.8	0
DC-04	4 in. below grate	0939	0	20.8	0
DC-05	4 in. below grate	0940	0	20.8	0
DC-06	4 in. below grate	0950	0	20.8	0
DC-07	4 in. below grate	0955	0	20.8	0
DC-08	4 in. below manhole lid	0959	0	20.8	0

Table 3.7-1 (continued)

Monitoring Location	Height	Time	CH ₄ * (% LEL)	O ₂ (%)	CO ₂ (%)
Northern Perimeter (ground and spinner [wind turbine] locations)					
PG-01	2 in. above ground surface	0910	0	20.8	0
PG-02	2 in. above ground surface	0930	0	20.8	0
PG-03	2 in. above ground surface	0935	0	20.8	0
PG-04	2 in. above ground surface	0945	0	20.8	0
PG-05	2 in. above ground surface	0954	0	20.8	0
PG-06	2 in. above ground surface	1004	0	20.8	0
PG-07	2 in. above ground surface	1003	0	20.8	0
PG-08	2 in. above ground surface	1002	0	20.8	0
PG-09	2 in. above ground surface	0956	0	20.8	0
PG-10	2 in. above ground surface	1001	0	20.8	0
PG-11	2 in. above ground surface	1000	0	20.8	0
PG-12	2 in. above ground surface	0957	0	20.8	0
PG-13	2 in. above ground surface	0959	0	20.8	0
PG-14	2 in. above ground surface	0958	0	20.8	0
PS-01	At spinner (4 ft above pavement)	0909	0	20.8	0
PS-02	At spinner (4 ft above pavement)	0919	100	18.4	0
PS-03	At spinner (4 ft above pavement)	0934	0	20.8	0
PS-04	At spinner (4 ft above pavement)	0943	0	20.8	0
PS-05	At spinner (4 ft above pavement)	0946	0	20.8	0
PS-06	At spinner (4 ft above pavement)	0955	34	20.8	0

* Methane concentrations measured in percent of the LEL. Other gases measured in total percent.

**Table 3.7-2
Second Quarter Landfill-Gas Monitoring Results (July 01, 2013)**

Monitoring Location	Height	Time	CH ₄ * (% LEL)	O ₂ (%)	CO ₂ (%)
Hangar Pads (samples collected on the east side of the pad along the expansion joint)					
HP-01	2 in. above expansion joint	1253	0	20.8	0
HP-02	2 in. above expansion joint	1254	0	20.8	0
HP-03	2 in. above expansion joint	1255	0	20.8	0
HP-04	2 in. above expansion joint	1247	0	20.8	0
HP-05	2 in. above expansion joint	1248	0	20.8	0
HP-06	2 in. above expansion joint	1249	0	20.8	0
HP-07	2 in. above expansion joint	1241	0	20.8	0
HP-08	2 in. above expansion joint	1242	0	20.8	0
HP-09	2 in. above expansion joint	1243	0	20.8	0
HP-10	2 in. above expansion joint	1236	0	20.8	0
HP-11	2 in. above expansion joint	1237	0	20.8	0
HP-12	2 in. above expansion joint	1238	0	20.8	0
HP-13	2 in. above expansion joint	1233	0	20.8	0
HP-14	2 in. above expansion joint	1234	0	20.8	0
HP-15	2 in. above expansion joint	1235	0	20.8	0
Trench Drains (west side of each hangar pad)					
TD-01	4 in. below trench grate	1257	0	20.8	0
TD-02	4 in. below trench grate	1258	0	20.8	0
TD-03	4 in. below trench grate	1250	0	20.8	0
TD-04	4 in. below trench grate	1249	0	20.8	0
TD-05	4 in. below trench grate	1245	0	20.8	0
TD-06	4 in. below trench grate	1244	0	20.8	0
TD-07	4 in. below trench grate	1240	0	20.8	0
TD-08	4 in. below trench grate	1239	0	20.8	0
TD-09	4 in. below trench grate	1235	0	20.8	0
TD-10	4 in. below trench grate	1234	0	20.8	0
Drainage Culverts (drainage inlets on the buried storm sewer lines)					
DC-01	4 in. below grate	1259	0	20.8	0
DC-02	4 in. below grate	1300	0	20.8	0
DC-03	4 in. below grate	1301	0	20.8	0
DC-04	4 in. below grate	1302	0	20.8	0
DC-05	4 in. below grate	1303	0	20.8	0
DC-06	4 in. below grate	1304	0	20.8	0
DC-07	4 in. below grate	1305	0	20.8	0
DC-08	4 in. below manhole lid	1226	0	20.8	0

Table 3.7-2 (continued)

Monitoring Location	Height	Time	CH ₄ * (% LEL)	O ₂ (%)	CO ₂ (%)
Northern Perimeter (ground and spinner [wind turbine] locations)					
PG-01	2 in. above ground surface	1314	0	20.8	0
PG-02	2 in. above ground surface	1312	0	20.8	0
PG-03	2 in. above ground surface	1310	0	20.8	0
PG-04	2 in. above ground surface	1309	0	20.8	0
PG-05	2 in. above ground surface	1219	0	20.8	0
PG-06	2 in. above ground surface	1220	0	20.8	0
PG-07	2 in. above ground surface	1221	0	20.8	0
PG-08	2 in. above ground surface	1222	0	20.2	0
PG-09	2 in. above ground surface	1223	0	20.8	0
PG-10	2 in. above ground surface	1230	0	20.8	0
PG-11	2 in. above ground surface	1229	0	20.8	0
PG-12	2 in. above ground surface	1224	0	20.8	0
PG-13	2 in. above ground surface	1228	0	20.8	0
PG-14	2 in. above ground surface	1225	0	20.8	0
PS-01	At spinner (4 ft above pavement)	1207	0	20.8	0
PS-02	At spinner (4 ft above pavement)	1208	100	14.1	0
PS-03	At spinner (4 ft above pavement)	1210	0	20.8	0
PS-04	At spinner (4 ft above pavement)	1214	12	20.8	0
PS-05	At spinner (4 ft above pavement)	1215	100	19.3	0
PS-06	At spinner (4 ft above pavement)	1216	0	20.8	0

* Methane concentrations measured in percent of the LEL. Other gases measured in total percent.

**Table 3.7-3
Third Quarter Landfill-Gas Monitoring Results (September 30, 2013)**

Monitoring Location	Height	Time	CH ₄ * (% LEL)	O ₂ (%)	CO ₂ (%)
Hangar Pads (samples collected on the east side of the pad along the expansion joint)					
HP-01	2 in. above expansion joint	1022	0	20.8	0
HP-02	2 in. above expansion joint	1021	0	20.8	0
HP-03	2 in. above expansion joint	1020	0	20.8	0
HP-04	2 in. above expansion joint	1027	0	20.8	0
HP-05	2 in. above expansion joint	1026	0	20.8	0
HP-06	2 in. above expansion joint	1025	0	20.8	0
HP-07	2 in. above expansion joint	1032	0	20.8	0
HP-08	2 in. above expansion joint	1031	14	20.8	0
HP-09	2 in. above expansion joint	1030	0	21.2	0
HP-10	2 in. above expansion joint	1041	0	20.8	0
HP-11	2 in. above expansion joint	1040	0	20.8	0
HP-12	2 in. above expansion joint	1039	0	20.8	0
HP-13	2 in. above expansion joint	1046	0	20.8	0
HP-14	2 in. above expansion joint	1045	0	20.8	0
HP-15	2 in. above expansion joint	1044	0	20.8	0
Trench Drains (west side of each hangar pad)					
TD-01	4 in. below trench grate	1017	0	20.8	0
TD-02	4 in. below trench grate	1018	0	20.8	0
TD-03	4 in. below trench grate	1024	0	20.8	0
TD-04	4 in. below trench grate	1025	0	20.8	0
TD-05	4 in. below trench grate	1032	0	20.8	0
TD-06	4 in. below trench grate	1033	0	20.8	0
TD-07	4 in. below trench grate	1036	0	20.8	0
TD-08	4 in. below trench grate	1038	0	20.8	0
TD-09	4 in. below trench grate	1045	0	20.8	0
TD-10	4 in. below trench grate	1047	0	20.8	0
Drainage Culverts (drainage inlets on the buried storm sewer lines)					
DC-01	4 in. below grate	1015	0	20.8	0
DC-02	4 in. below grate	1014	0	20.8	0
DC-03	4 in. below grate	1013	0	20.8	0
DC-04	4 in. below grate	1012	0	20.8	0
DC-05	4 in. below grate	1011	0	20.8	0
DC-06	4 in. below grate	1010	0	20.8	0
DC-07	4 in. below grate	1009	0	20.8	0
DC-08	4 in. below manhole lid	1100	0	20.8	0

Table 3.7-3 (continued)

Monitoring Location	Height	Time	CH ₄ * (% LEL)	O ₂ (%)	CO ₂ (%)
Northern Perimeter (ground and spinner [wind turbine] locations)					
PG-01	2 in. above ground surface	1016	0	20.8	0
PG-02	2 in. above ground surface	1023	0	20.8	0
PG-03	2 in. above ground surface	1028	0	20.8	0
PG-04	2 in. above ground surface	1035	0	20.8	0
PG-05	2 in. above ground surface	1043	0	20.8	0
PG-06	2 in. above ground surface	1050	0	20.8	0
PG-07	2 in. above ground surface	1052	0	20.8	0
PG-08	2 in. above ground surface	1053	0	20.8	0
PG-09	2 in. above ground surface	1054	0	20.8	0
PG-10	2 in. above ground surface	1105	0	20.8	0
PG-11	2 in. above ground surface	1103	0	20.8	0
PG-12	2 in. above ground surface	1056	0	20.8	0
PG-13	2 in. above ground surface	1102	0	20.8	0
PG-14	2 in. above ground surface	1058	0	20.8	0
PS-01	At spinner (4 ft above pavement)	0954	0	20.8	0
PS-02	At spinner (4 ft above pavement)	0955	100	18.5	0
PS-03	At spinner (4 ft above pavement)	0958	0	20.8	0
PS-04	At spinner (4 ft above pavement)	0959	12	20.8	0
PS-05	At spinner (4 ft above pavement)	1000	100	19.1	0
PS-06	At spinner (4 ft above pavement)	1004	0	20.8	0

* Methane concentrations measured in percent of the LEL. Other gases measured in total percent.

**Table 3.7-4
Fourth Quarter Landfill-Gas Monitoring Results (January 02, 2014)**

Monitoring Location	Height	Time	CH ₄ ^a (% LEL)	O ₂ (%)	CO ₂ (%)
Hangar Pads (samples collected on the east side of the pad along the expansion joint)					
HP-01	2 in. above expansion joint	1048	0	20.8	0
HP-02	2 in. above expansion joint	1049	0	20.8	0
HP-03	2 in. above expansion joint	1050	0	20.8	0
HP-04	2 in. above expansion joint	1052	0	20.8	0
HP-05	2 in. above expansion joint	1053	0	20.8	0
HP-06	2 in. above expansion joint	1054	0	20.8	0
HP-07	2 in. above expansion joint	1055	0	20.8	0
HP-08	2 in. above expansion joint	1056	0	20.8	0
HP-09	2 in. above expansion joint	1058	0	20.8	0
HP-10	2 in. above expansion joint	1059	0	20.8	0
HP-11	2 in. above expansion joint	1100	0	20.8	0
HP-12	2 in. above expansion joint	1101	0	20.8	0
HP-13	2 in. above expansion joint	1102	0	20.8	0
HP-14	2 in. above expansion joint	1103	0	20.8	0
HP-15	2 in. above expansion joint	1104	0	20.8	0
Trench Drains (west side of each hangar pad)					
TD-01	4 in. below trench grate	1035	0	20.8	0
TD-02	4 in. below trench grate	1036	0	20.8	0
TD-03	4 in. below trench grate	1037	0	20.8	0
TD-04	4 in. below trench grate	1038	0	20.8	0
TD-05	4 in. below trench grate	Ice	— ^b	—	—
TD-06	4 in. below trench grate	1040	0	20.8	0
TD-07	4 in. below trench grate	Ice	—	—	—
TD-08	4 in. below trench grate	1042	0	20.8	0
TD-09	4 in. below trench grate	1044	6	20.8	0
TD-10	4 in. below trench grate	1045	0	20.8	0
Drainage Culverts (drainage inlets on the buried storm sewer lines)					
DC-01	4 in. below grate	1033	0	20.8	0
DC-02	4 in. below grate	1032	0	20.8	0
DC-03	4 in. below grate	1031	0	20.8	0
DC-04	4 in. below grate	1030	0	20.8	0
DC-05	4 in. below grate	1029	0	20.8	0
DC-06	4 in. below grate	1028	0	20.8	0
DC-07	4 in. below grate	1027	0	20.8	0
DC-08	4 in. below manhole lid	1107	0	20.8	0

Table 3.7-4 (continued)

Monitoring Location	Height	Time	CH ₄ ^a (% LEL)	O ₂ (%)	CO ₂ (%)
Northern Perimeter (ground and spinner [wind turbine] locations)					
PG-01	2 in. above ground surface	1122	0	20.8	0
PG-02	2 in. above ground surface	1121	0	20.8	0
PG-03	2 in. above ground surface	1120	0	20.8	0
PG-04	2 in. above ground surface	1119	0	20.8	0
PG-05	2 in. above ground surface	1118	0	20.8	0
PG-06	2 in. above ground surface	1112	0	20.8	0
PG-07	2 in. above ground surface	1111	0	20.8	0
PG-08	2 in. above ground surface	1110	0	20.8	0
PG-09	2 in. above ground surface	1109	0	20.8	0
PG-10	2 in. above ground surface	1114	0	20.8	0
PG-11	2 in. above ground surface	1115	0	20.8	0
PG-12	2 in. above ground surface	1108	0	20.8	0
PG-13	2 in. above ground surface	Snow	—	—	—
PG-14	2 in. above ground surface	1107	0	20.8	0
PS-01	At spinner (4 ft above pavement)	1017	0	20.8	0
PS-02	At spinner (4 ft above pavement)	1018	100	18.5	0
PS-03	At spinner (4 ft above pavement)	1020	100	16.7	0
PS-04	At spinner (4 ft above pavement)	1022	0	20.8	0
PS-05	At spinner (4 ft above pavement)	1023	0	20.8	0
PS-06	At spinner (4 ft above pavement)	1025	0	20.8	0

^a Methane concentrations measured in percent of the LEL. Other gases measured in total percent.

^b — = Measurement not taken because of ground conditions.

**Table 3.7-5
December Weekly Landfill-Gas Monitoring Results (December 02, 2013)**

Monitoring Location	Height	Time	CH ₄ ^a (% LEL)	O ₂ (%)	CO ₂ (%)
Hangar Pads (samples collected on the east side of the pad along the expansion joint)					
HP-01	2 in. above expansion joint	1421	0	20.8	0
HP-02	2 in. above expansion joint	1422	0	20.8	0
HP-03	2 in. above expansion joint	1423	0	20.8	0
HP-04	2 in. above expansion joint	1424	0	20.8	0
HP-05	2 in. above expansion joint	1425	0	20.8	0
HP-06	2 in. above expansion joint	1426	0	20.8	0
HP-07	2 in. above expansion joint	1427	0	20.8	0
HP-08	2 in. above expansion joint	1428	0	20.8	0
HP-09	2 in. above expansion joint	1429	0	20.8	0
HP-10	2 in. above expansion joint	1431	0	20.8	0
HP-11	2 in. above expansion joint	1432	0	20.8	0
HP-12	2 in. above expansion joint	1433	0	20.8	0
HP-13	2 in. above expansion joint	1435	0	20.8	0
HP-14	2 in. above expansion joint	1436	0	20.8	0
HP-15	2 in. above expansion joint	1437	0	20.8	0
Trench Drains (west side of each hangar pad)					
TD-01	4 in. below trench grate	1446	0	20.8	0
TD-02	4 in. below trench grate	1447	0	20.8	0
TD-03	4 in. below trench grate	Water	— ^b	—	—
TD-04	4 in. below trench grate	1448	0	20.8	0
TD-05	4 in. below trench grate	Water	—	—	—
TD-06	4 in. below trench grate	1449	0	20.8	0
TD-07	4 in. below trench grate	Water	—	—	—
TD-08	4 in. below trench grate	1450	6	20.8	0
TD-09	4 in. below trench grate	1451	0	20.8	0
TD-10	4 in. below trench grate	1452	0	20.8	0
Drainage Culverts (drainage inlets on the buried storm sewer lines)					
DC-01	4 in. below grate	1503	0	20.8	0
DC-02	4 in. below grate	1502	0	20.8	0
DC-03	4 in. below grate	1501	0	20.8	0
DC-04	4 in. below grate	1449	0	20.8	0
DC-05	4 in. below grate	1457	0	20.8	0
DC-06	4 in. below grate	1456	0	20.8	0
DC-07	4 in. below grate	1454	0	20.8	0
DC-08	4 in. below manhole lid	Snow/Ice	—	—	—

Table 3.7-5 (continued)

Monitoring Location	Height	Time	CH ₄ ^a (% LEL)	O ₂ (%)	CO ₂ (%)
Northern Perimeter (ground and spinner [wind turbine] locations)					
PG-01	2 in. above ground surface	Snow/Ice	—	—	—
PG-02	2 in. above ground surface	Snow/Ice	—	—	—
PG-03	2 in. above ground surface	Snow/Ice	—	—	—
PG-04	2 in. above ground surface	Snow/Ice	—	—	—
PG-05	2 in. above ground surface	Snow/Ice	—	—	—
PG-06	2 in. above ground surface	Snow/Ice	—	—	—
PG-07	2 in. above ground surface	Snow/Ice	—	—	—
PG-08	2 in. above ground surface	Snow/Ice	—	—	—
PG-09	2 in. above ground surface	Snow/Ice	—	—	—
PG-10	2 in. above ground surface	Snow/Ice	—	—	—
PG-11	2 in. above ground surface	Snow/Ice	—	—	—
PG-12	2 in. above ground surface	Snow/Ice	—	—	—
PG-13	2 in. above ground surface	Snow/Ice	—	—	—
PG-14	2 in. above ground surface	Snow/Ice	—	—	—
PS-01	At spinner (4 ft above pavement)	1445	0	20.8	0
PS-02	At spinner (4 ft above pavement)	1443	100	16	0
PS-03	At spinner (4 ft above pavement)	1442	0	20.8	0
PS-04	At spinner (4 ft above pavement)	1441	0	20.8	0
PS-05	At spinner (4 ft above pavement)	1439	100	20.8	0
PS-06	At spinner (4 ft above pavement)	1438	0	20.8	0

^a Methane concentrations measured in percent of the LEL. Other gases measured in total percent.

^b — = Measurement not taken because of ground conditions.

**Table 3.7-6
December Weekly Landfill-Gas Monitoring Results (December 12, 2013)**

Monitoring Location	Height	Time	CH ₄ ^a (% LEL)	O ₂ (%)	CO ₂ (%)
Hangar Pads (samples collected on the east side of the pad along the expansion joint)					
HP-01	2 in. above expansion joint	1357	0	20.8	0
HP-02	2 in. above expansion joint	1355	0	20.8	0
HP-03	2 in. above expansion joint	1354	0	20.8	0
HP-04	2 in. above expansion joint	Snow/Ice	— ^b	—	—
HP-05	2 in. above expansion joint	1351	0	20.8	0
HP-06	2 in. above expansion joint	1352	0	20.8	0
HP-07	2 in. above expansion joint	1349	0	20.8	0
HP-08	2 in. above expansion joint	1348	0	20.8	0
HP-09	2 in. above expansion joint	1347	0	20.8	0
HP-10	2 in. above expansion joint	1343	0	20.8	0
HP-11	2 in. above expansion joint	1344	6	20.8	0
HP-12	2 in. above expansion joint	1346	0	20.8	0
HP-13	2 in. above expansion joint	1342	13	20.8	0
HP-14	2 in. above expansion joint	1341	0	20.8	0
HP-15	2 in. above expansion joint	1340	0	20.8	0
Trench Drains (west side of each hangar pad)					
TD-01	4 in. below trench grate	Snow/Ice	—	—	—
TD-02	4 in. below trench grate	Snow/Ice	—	—	—
TD-03	4 in. below trench grate	Snow/Ice	—	—	—
TD-04	4 in. below trench grate	Snow/Ice	—	—	—
TD-05	4 in. below trench grate	Snow/Ice	—	—	—
TD-06	4 in. below trench grate	Snow/Ice	—	—	—
TD-07	4 in. below trench grate	Snow/Ice	—	—	—
TD-08	4 in. below trench grate	Snow/Ice	—	—	—
TD-09	4 in. below trench grate	Snow/Ice	—	—	—
TD-10	4 in. below trench grate	Snow/Ice	—	—	—
Drainage Culverts (drainage inlets on the buried storm sewer lines)					
DC-01	4 in. below grate	1327	11	20.8	0
DC-02	4 in. below grate	1326	23	20.8	0
DC-03	4 in. below grate	1324	16	20.8	0
DC-04	4 in. below grate	1323	36	20.8	0
DC-05	4 in. below grate	1322	34	20.8	0
DC-06	4 in. below grate	1321	33	20.8	0
DC-07	4 in. below grate	1320	8	20.8	0
DC-08	4 in. below manhole lid	Snow/Ice	—	—	—

Table 3.7-6 (continued)

Monitoring Location	Height	Time	CH ₄ ^a (% LEL)	O ₂ (%)	CO ₂ (%)
Northern Perimeter (ground and spinner [wind turbine] locations)					
PG-01	2 in. above ground surface	Snow/Ice	—	—	—
PG-02	2 in. above ground surface	Snow/Ice	—	—	—
PG-03	2 in. above ground surface	Snow/Ice	—	—	—
PG-04	2 in. above ground surface	Snow/Ice	—	—	—
PG-05	2 in. above ground surface	Snow/Ice	—	—	—
PG-06	2 in. above ground surface	Snow/Ice	—	—	—
PG-07	2 in. above ground surface	Snow/Ice	—	—	—
PG-08	2 in. above ground surface	Snow/Ice	—	—	—
PG-09	2 in. above ground surface	Snow/Ice	—	—	—
PG-10	2 in. above ground surface	Snow/Ice	—	—	—
PG-11	2 in. above ground surface	Snow/Ice	—	—	—
PG-12	2 in. above ground surface	Snow/Ice	—	—	—
PG-13	2 in. above ground surface	Snow/Ice	—	—	—
PG-14	2 in. above ground surface	Snow/Ice	—	—	—
PS-01	At spinner (4 ft above pavement)	1307	0	20.8	0
PS-02	At spinner (4 ft above pavement)	1308	100	5.9	0
PS-03	At spinner (4 ft above pavement)	1313	0	20.8	0
PS-04	At spinner (4 ft above pavement)	1314	0	20.8	0
PS-05	At spinner (4 ft above pavement)	1316	100	17.9	0
PS-06	At spinner (4 ft above pavement)	1318	0	20.8	0

^a Methane concentrations measured in percent of the LEL. Other gases measured in total percent.

^b — = Measurement not taken because of ground conditions.

**Table 3.7-7
December Weekly Landfill-Gas Monitoring Results (December 17, 2013)**

Monitoring Location	Height	Time	CH ₄ ^a (% LEL)	O ₂ (%)	CO ₂ (%)
Hangar Pads (samples collected on the east side of the pad along the expansion joint)					
HP-01	2 in. above expansion joint	1223	0	20.8	0
HP-02	2 in. above expansion joint	1224	0	20.8	0
HP-03	2 in. above expansion joint	1225	0	20.8	0
HP-04	2 in. above expansion joint	1226	0	20.8	0
HP-05	2 in. above expansion joint	1228	0	20.8	0
HP-06	2 in. above expansion joint	1229	0	20.8	0
HP-07	2 in. above expansion joint	1231	0	20.8	0
HP-08	2 in. above expansion joint	1232	0	20.8	0
HP-09	2 in. above expansion joint	1233	0	20.8	0
HP-10	2 in. above expansion joint	1235	0	20.8	0
HP-11	2 in. above expansion joint	1236	0	20.8	0
HP-12	2 in. above expansion joint	1237	0	20.8	0
HP-13	2 in. above expansion joint	1240	0	20.8	0
HP-14	2 in. above expansion joint	1241	0	20.8	0
HP-15	2 in. above expansion joint	1243	0	20.8	0
Trench Drains (west side of each hangar pad)					
TD-01	4 in. below trench grate	Snow/Ice	— ^b	—	—
TD-02	4 in. below trench grate	Snow/Ice	—	—	—
TD-03	4 in. below trench grate	Snow/Ice	—	—	—
TD-04	4 in. below trench grate	Snow/Ice	—	—	—
TD-05	4 in. below trench grate	Snow/Ice	—	—	—
TD-06	4 in. below trench grate	Snow/Ice	—	—	—
TD-07	4 in. below trench grate	Snow/Ice	—	—	—
TD-08	4 in. below trench grate	Snow/Ice	—	—	—
TD-09	4 in. below trench grate	Snow/Ice	—	—	—
TD-10	4 in. below trench grate	Snow/Ice	—	—	—
Drainage Culverts (drainage inlets on the buried storm sewer lines)					
DC-01	4 in. below grate	1221	0	20.8	0
DC-02	4 in. below grate	1220	0	20.8	0
DC-03	4 in. below grate	1218	0	20.8	0
DC-04	4 in. below grate	1217	0	20.8	0
DC-05	4 in. below grate	1215	15	20.8	0
DC-06	4 in. below grate	1212	7	20.8	0
DC-07	4 in. below grate	1210	47	20.8	0
DC-08	4 in. below manhole lid	1250	32	20.1	0

Table 3.7-7 (continued)

Monitoring Location	Height	Time	CH ₄ ^a (% LEL)	O ₂ (%)	CO ₂ (%)
Northern Perimeter (ground and spinner [wind turbine] locations)					
PG-01	2 in. above ground surface	Snow/Ice	—	—	—
PG-02	2 in. above ground surface	Snow/Ice	—	—	—
PG-03	2 in. above ground surface	Snow/Ice	—	—	—
PG-04	2 in. above ground surface	Snow/Ice	—	—	—
PG-05	2 in. above ground surface	Snow/Ice	—	—	—
PG-06	2 in. above ground surface	Snow/Ice	—	—	—
PG-07	2 in. above ground surface	Snow/Ice	—	—	—
PG-08	2 in. above ground surface	Snow/Ice	—	—	—
PG-09	2 in. above ground surface	Snow/Ice	—	—	—
PG-10	2 in. above ground surface	Snow/Ice	—	—	—
PG-11	2 in. above ground surface	Snow/Ice	—	—	—
PG-12	2 in. above ground surface	Snow/Ice	—	—	—
PG-13	2 in. above ground surface	Snow/Ice	—	—	—
PG-14	2 in. above ground surface	Snow/Ice	—	—	—
PS-01	At spinner (4 ft above pavement)	1159	0	20.8	0
PS-02	At spinner (4 ft above pavement)	1200	100	13.2	0
PS-03	At spinner (4 ft above pavement)	1203	0	20.8	0
PS-04	At spinner (4 ft above pavement)	1205	0	20.8	0
PS-05	At spinner (4 ft above pavement)	1206	100	19.0	0
PS-06	At spinner (4 ft above pavement)	1208	100	20.8	0

^a Methane concentrations measured in percent of the LEL. Other gases measured in total percent.

^b — = Measurement not taken because of ground conditions.

**Table 3.7-8
December Weekly Landfill-Gas Monitoring Results (December 23, 2013)**

Monitoring Location	Height	Time	CH ₄ ^a (% LEL)	O ₂ (%)	CO ₂ (%)
Hangar Pads (samples collected on the east side of the pad along the expansion joint)					
HP-01	2 in. above expansion joint	1027	0	20.8	0
HP-02	2 in. above expansion joint	1027	0	20.8	0
HP-03	2 in. above expansion joint	1028	0	20.8	0
HP-04	2 in. above expansion joint	1029	0	20.8	0
HP-05	2 in. above expansion joint	1030	0	20.8	0
HP-06	2 in. above expansion joint	1031	0	20.8	0
HP-07	2 in. above expansion joint	1032	0	20.8	0
HP-08	2 in. above expansion joint	1033	0	20.8	0
HP-09	2 in. above expansion joint	1034	0	20.8	0
HP-10	2 in. above expansion joint	1035	0	20.8	0
HP-11	2 in. above expansion joint	1036	0	20.8	0
HP-12	2 in. above expansion joint	1038	0	20.8	0
HP-13	2 in. above expansion joint	1039	0	20.8	0
HP-14	2 in. above expansion joint	1040	0	20.8	0
HP-15	2 in. above expansion joint	1041	0	20.8	0
Trench Drains (west side of each hangar pad)					
TD-01	4 in. below trench grate	Snow/Ice	— ^b	—	—
TD-02	4 in. below trench grate	Snow/Ice	—	—	—
TD-03	4 in. below trench grate	Snow/Ice	—	—	—
TD-04	4 in. below trench grate	Snow/Ice	—	—	—
TD-05	4 in. below trench grate	Snow/Ice	—	—	—
TD-06	4 in. below trench grate	Snow/Ice	—	—	—
TD-07	4 in. below trench grate	Snow/Ice	—	—	—
TD-08	4 in. below trench grate	Snow/Ice	—	—	—
TD-09	4 in. below trench grate	Snow/Ice	—	—	—
TD-10	4 in. below trench grate	Snow/Ice	—	—	—
Drainage Culverts (drainage inlets on the buried storm sewer lines)					
DC-01	4 in. below grate	1026	0	20.8	0
DC-02	4 in. below grate	1025	0	20.8	0
DC-03	4 in. below grate	1024	0	20.8	0
DC-04	4 in. below grate	1023	0	20.8	0
DC-05	4 in. below grate	1021	0	20.8	0
DC-06	4 in. below grate	1020	0	20.8	0
DC-07	4 in. below grate	1019	0	20.8	0
DC-08	4 in. below manhole lid	1045	0	20.8	0

Table 3.7-8 (continued)

Monitoring Location	Height	Time	CH ₄ ^a (% LEL)	O ₂ (%)	CO ₂ (%)
Northern Perimeter (ground and spinner [wind turbine] locations)					
PG-01	2 in. above ground surface	Snow/Ice	—	—	—
PG-02	2 in. above ground surface	Snow/Ice	—	—	—
PG-03	2 in. above ground surface	Snow/Ice	—	—	—
PG-04	2 in. above ground surface	Snow/Ice	—	—	—
PG-05	2 in. above ground surface	Snow/Ice	—	—	—
PG-06	2 in. above ground surface	Snow/Ice	—	—	—
PG-07	2 in. above ground surface	Snow/Ice	—	—	—
PG-08	2 in. above ground surface	Snow/Ice	—	—	—
PG-09	2 in. above ground surface	Snow/Ice	—	—	—
PG-10	2 in. above ground surface	Snow/Ice	—	—	—
PG-11	2 in. above ground surface	Snow/Ice	—	—	—
PG-12	2 in. above ground surface	Snow/Ice	—	—	—
PG-13	2 in. above ground surface	Snow/Ice	—	—	—
PG-14	2 in. above ground surface	Snow/Ice	—	—	—
PS-01	At spinner (4 ft above pavement)	1010	0	20.8	0
PS-02	At spinner (4 ft above pavement)	1011	0	20.8	0
PS-03	At spinner (4 ft above pavement)	1012	0	20.8	0
PS-04	At spinner (4 ft above pavement)	1014	0	20.8	0
PS-05	At spinner (4 ft above pavement)	1015	0	20.8	0
PS-06	At spinner (4 ft above pavement)	1017	0	20.8	0

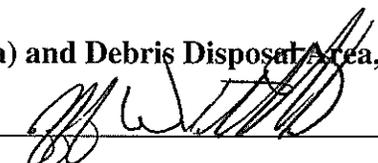
^a Methane concentrations measured in percent of the LEL. Other gases measured in total percent.

^b — = Measurement not taken because of ground conditions.

Appendix A

Completed Monthly Inspection Checklists

Inspection Checklist for the Airport Landfill, SWMU 73-001(a) and Debris Disposal Area, SWMU 73-001(d)

Date: February 1, 2013 Time: 1100 Printed Name: Jeff Walterscheid Signature: 

Figure(s): Photos attached.

Weather: temperature: 31 degrees wind: 1 mph, last significant rain/snow: 1 inch of snow January 29, 2013.

Weather Data Source: Los Alamos Airport

January 2013 Monthly Inspection

Component: Concern(s)	Inspection Frequency*	Inspection Findings	Corrective Action Needed Yes/No?	Description of Corrective Action	Corrective Action Completion Date
Airport Landfill					
MatCon Asphalt Pavement: cracks, gaps, spalling, subsidence	M	<p><u>Settlement / Subsidence</u> Differential settlement and subsidence of the MatCon pavement is visible throughout the paved area with evidence of low spots that allow for ponding of water.</p> <p>Ponding of water is evident at NW corners of Pad 2 & 3 due to settlement of the Matcon pavement, concrete pads and associated trench drains. Trench drains were designed to drain north to south and are currently ineffective. Ponded water at the NW corner of Pad 2 seeps into the soil berm.</p> <p>Storm water drains to, and over, the north vegetative slope between Pads 3 and 4 from settlement of the MatCon pavement. A small erosion channel has formed down the slope.</p> <p>A visible hinge point has developed in an approximate east west orientation. North of the hinge point line, from Pad 2 to Pad 5, is visible settling, cracking, and ineffective drainage for the MatCon pavement, pads and trench drains.</p> <p><u>Cracks / Gaps</u> Approximately 70% of the previously repaired cracks (hot seal) have failed and re-cracked. Many of the cracks have extended and new cracking is evident.</p> <p>Spider web type cracking is visible along a hinge point trend between pads #3 and 4, and between pads #4 and #5.</p> <p>Gaps between the MatCon pavement and Concrete pads /trench drains are evident. Hot seal has cracked/failed.</p> <p>Photo: 1, 3, 4, 5, 6, 7, 8</p>	<p>Yes</p> <p>Yes</p> <p>Yes</p> <p>Yes</p> <p>Yes</p> <p>Yes</p>		

Inspection Checklist Airport Landfill (form modified April, 2011)

Component: Concern(s)	Inspection Frequency*	Inspection Findings	Corrective Action Needed Yes/No?	Description of Corrective Action	Corrective Action Completion Date
Concrete Hangar Pads (5) and expansion joints: cracks, gaps, spalling, pop-outs, separation of pad from asphalt, subsidence	M	<p><u>Subsidence / Settlement / Cracking</u> Subsidence and settlement is evident at Pads 2, 3 & 4. From visual observation the north end of Pad 1 is raising and twisting. The north ends of Pads 2 & 3 have noticeable subsidence and the trench drains drain in reverse causing water to puddle. Pad 4 has some subsidence and drainage problems at the north end of the pad with Pad 5 beginning to show signs of settling and drainage issues.</p> <p>Pads 1, 2, 3, & 4 have cracking in an east-west orientation mainly along the hinge point with major cracking occurring at pads 2 and 3. Cracks in pads 2 & 3 are numerous and large enough to allow infiltration of water during storm events. Pad 4 has spider web type cracking and is showing new cracks in an east-west orientation. Pad 5 has spider web type cracking.</p> <p>Cracking and subsidence are trending along a hinge line that is roughly in east-west orientation. The north side of the hinge line is subsiding with the exception of pad 1 which has lifted and twisted.</p> <p>Cracks are evident within the trench drains. Previously repaired cracks are failing.</p> <p><u>Gaps / Pop-outs / Separation</u> Sealed expansion joints within the pads and along the trench drains are damaged and failing in many locations.</p> <p>Previously repaired cracks in the Pads are failing and separating.</p> <p>Gaps between the MatCon pavement and Concrete pads/trench drains are evident. Hot seal has cracked.</p> <p>Photo: 1, 2, 3, 4, 7</p>	<p>Yes</p> <p>Yes</p> <p>Yes</p> <p>Yes</p> <p>Yes</p> <p>Yes</p> <p>Yes</p>		

Inspection Checklist Airport Landfill (form modified April, 2011)

Component: Concern(s)	Inspection Frequency*	Inspection Findings	Corrective Action Needed Yes/No?	Description of Corrective Action	Corrective Action Completion Date
Survey Benchmark on each hangar pad: accessible, attached to concrete pad	M	All ACOE points are in place and accessible.	No		
Gas Collection System: Turbines (6) along northern edge of asphalt pavement and 1 stub-out on southern edge of asphalt pavement: debris, functional, accessible	A				
Measure landfill-gas concentrations using Landfill Gas Monitoring Form: any values greater than 25% of the methane LEL (lower explosive limit)?	Q or B				

Inspection Checklist Airport Landfill (form modified April, 2011)

Component: Concern(s)	Inspection Frequency*	Inspection Findings	Corrective Action Needed Yes/No?	Description of Corrective Action	Corrective Action Completion Date
Seeded Areas & Turf Reinforcement Mats: barren areas >1,000 square feet, tears, animal burrows >4 inches deep, subsidence >1 ft, rills/cracks >4 inches deep, large vegetation (trees, shrubs, bushes, deep-rooting weeds)	A, ASR				
Gravel drainage channels (3): subsidence, erosion, clear of trash, soil, other blockages	A, ASR				
Concrete Retaining Wall & 2 Rock Retaining Walls: cracks, bulges, separation, rotation, nearby erosion, spalling, pop-outs, drain pipes (3) open at gravel drainage channel	A, ASR				

Inspection Checklist Airport Landfill (form modified April, 2011)

Component: Concern(s)	Inspection Frequency*	Inspection Findings	Corrective Action Needed Yes/No?	Description of Corrective Action	Corrective Action Completion Date
Grated Trenches (6): cracks; clear of trash, soil, other blockages, draining properly, standing water, subsidence	A, ASR				
Drainage inlets (8): functional, grates not blocked by trash, soil, other material	A, ASR				
Evidence that pollutants (spills) have entered the storm-water system?	A, ASR				
Sediment washing off the site? If so, map the location[s] in logbook	A, ASR				
Outfall Pipe: secure, blockage, significant erosion, soil staining, manhole in place	A, ASR				
Straw-wattle areas between retaining walls and fence: wattles in place, erosion, rills	A, ASR				

Inspection Checklist Airport Landfill (form modified April, 2011)

Component: Concern(s)	Inspection Frequency*	Inspection Findings	Corrective Action Needed Yes/No?	Description of Corrective Action	Corrective Action Completion Date
Debris Disposal Area					
Seeded (hydromulched) Areas: animals burrows >4 inches deep, barren areas >1,000 square feet, subsidence >1 ft deep, rills/cracks >4 inches deep, large vegetation (trees, shrubs, bushes, deep-rooting weeds)	A, ASR				
Comments: 1. Inspection form modified per DOE verbal instruction May 3, 2011 to include inspection findings.					

Component locations are shown on Figure 2 of the *Final Implementation Strategy for Post Closure and Maintenance of the DOE/NNSA LASO Airport Landfill SWMU 73-001(a) and Debris Disposal Area SWMU 73-001(d), Los Alamos County Airport, New Mexico, July 2009*. Copies of this figure can be marked up to show concerns, findings, and corrective actions. These copies should be listed above in the comments section and stapled to this checklist.

*Inspection Frequency: A= annual, ASR = After Significant Rainfall, B = biannual (twice a year), M = Monthly, Q = quarterly.
 Note: If an additional component(s) is installed for the Airport Landfill, the component(s) can be added in the blank row.



Photo 1: Settlement of Pad 2 has impacted the trench drain for approximately ½ the length of the pad causing water to flow to the north instead of the south forming a pond of water at the NW corner of Pad 2. Note settlement of MatCon pavement 2-3 inches below pad height. Water infiltrates along the vegetated margin of the MatCon.



Photo 2: Cracks in Pad 3 and the trench drain. Note the buckling of the pad and drain causing drainage problems to the north.



Photo 3: Buckling of Pad 3 is visible near the center line of the pad. Note MatCon repairs along the trench drain.



Photo 4: Separation of the concrete pad and MatCon in the hot seal.



Photo 5: Settlement of MatCon pavement and cracking along the paving lane boundary. Note drop inlet at upper right.



Photo 6: Crack in the hot seal patch.

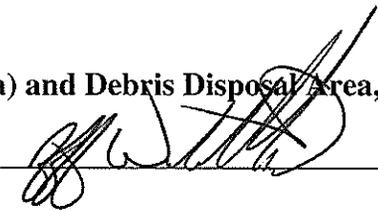


Photo 7: Differential subsidence between the concrete pad, the trench drain, and the MatCon pavement. Note expansion joint seals are separating.



Photo 8: Cracking along the hinge point between Pads 4 & 5.

Inspection Checklist for the Airport Landfill, SWMU 73-001(a) and Debris Disposal Area, SWMU 73-001(d)

Date: February 22, 2013 Time: 1230 Printed Name: Jeff Walterscheid Signature: 

Figure(s): Photos attached.

Weather: temperature: 37 degrees wind: 7 mph last significant rain/snow: 1 inch of snow January 29, 2013.

Weather Data Source: Los Alamos Airport

February 2013 Monthly Inspection

Component: Concern(s)	Inspection Frequency*	Inspection Findings	Corrective Action Needed Yes/No?	Description of Corrective Action	Corrective Action Completion Date
<i>Airport Landfill</i>					
MatCon Asphalt Pavement: cracks, gaps, spalling, subsidence	M	<p><u>Settlement / Subsidence</u> Differential settlement and subsidence of the MatCon pavement is visible throughout the paved area with evidence of low spots that allow for ponding of water.</p> <p>Ponding of water is evident at NW corners of Pad 2 & 3 due to settlement of the Matcon pavement, concrete pads and associated trench drains. Trench drains were designed to drain north to south and are currently ineffective. Ponded water at the NW corner of Pad 2 seeps into the soil berm.</p> <p>Storm water drains to, and over, the north vegetative slope between Pads 3 and 4 from settlement of the MatCon pavement. A small erosion channel has formed down the slope.</p> <p>A visible hinge point has developed in an approximate east west orientation. North of the hinge point line, from Pad 2 to Pad 5, is visible settling, cracking, and ineffective drainage for the MatCon pavement, pads and trench drains.</p> <p><u>Cracks / Gaps</u> Approximately 70% of the previously repaired cracks (hot seal) have failed and re-cracked. Many of the cracks have extended and new cracking is evident.</p> <p>Spider web type cracking is visible along a hinge point trend between pads #3 and 4, and between pads #4 and #5.</p> <p>Gaps between the MatCon pavement and Concrete pads /trench drains are evident. Hot seal has cracked/failed.</p> <p>Photo: 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 27, 28</p>	<p>Yes</p> <p>Yes</p> <p>Yes</p> <p>Yes</p> <p>Yes</p> <p>Yes</p>		

Inspection Checklist Airport Landfill (form modified April, 2011)

Component: Concern(s)	Inspection Frequency*	Inspection Findings	Corrective Action Needed Yes/No?	Description of Corrective Action	Corrective Action Completion Date
Concrete Hangar Pads (5) and expansion joints: cracks, gaps, spalling, pop-outs, separation of pad from asphalt, subsidence	M	<p><u>Subsidence / Settlement / Cracking</u> Subsidence and settlement is evident at Pads 2, 3 & 4. From visual observation the north end of Pad 1 is raising and twisting. The north ends of Pads 2 & 3 have noticeable subsidence and the trench drains drain in reverse causing water to puddle. Pad 4 has some subsidence and drainage problems at the north end of the pad with Pad 5 beginning to show signs of settling and drainage issues.</p> <p>Pads 1, 2, 3, & 4 have cracking in an east-west orientation mainly along the hinge point with major cracking occurring at pads 2 and 3. Cracks in pads 2 & 3 are numerous and large enough to allow infiltration of water during storm events. Pad 4 has spider web type cracking and is showing new cracks in an east-west orientation. Pad 5 has spider web type cracking.</p> <p>Cracking and subsidence are trending along a hinge line that is roughly in east-west orientation. The north side of the hinge line is subsiding with the exception of pad 1 which has lifted and twisted.</p> <p>Cracks are evident within the trench drains. Previously repaired cracks are failing.</p> <p><u>Gaps / Pop-outs / Separation</u> Sealed expansion joints within the pads and along the trench drains are damaged and failing in many locations.</p> <p>Previously repaired cracks in the Pads are failing and separating.</p> <p>Gaps between the MatCon pavement and Concrete pads/trench drains are evident. Hot seal has cracked.</p> <p>Photo: 1, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23,24, 25, 27, 28</p>	<p>Yes</p> <p>Yes</p> <p>Yes</p> <p>Yes</p> <p>Yes</p> <p>Yes</p> <p>Yes</p>		

Inspection Checklist Airport Landfill (form modified April, 2011)

Component: Concern(s)	Inspection Frequency*	Inspection Findings	Corrective Action Needed Yes/No?	Description of Corrective Action	Corrective Action Completion Date
Survey Benchmark on each hangar pad: accessible, attached to concrete pad	M	All ACOE points are in place and accessible. Photo: 26 and 27	No		
Gas Collection System: Turbines (6) along northern edge of asphalt pavement and 1 stub-out on southern edge of asphalt pavement: debris, functional, accessible	A				
Measure landfill-gas concentrations using Landfill Gas Monitoring Form: any values greater than 25% of the methane LEL (lower explosive limit)?	Q or B				

Inspection Checklist Airport Landfill (form modified April, 2011)

Component: Concern(s)	Inspection Frequency*	Inspection Findings	Corrective Action Needed Yes/No?	Description of Corrective Action	Corrective Action Completion Date
Seeded Areas & Turf Reinforcement Mats: barren areas >1,000 square feet, tears, animal burrows >4 inches deep, subsidence >1 ft, rills/cracks >4 inches deep, large vegetation (trees, shrubs, bushes, deep-rooting weeds)	A, ASR				
Gravel drainage channels (3): subsidence, erosion, clear of trash, soil, other blockages	A, ASR				
Concrete Retaining Wall & 2 Rock Retaining Walls: cracks, bulges, separation, rotation, nearby erosion, spalling, pop-outs, drain pipes (3) open at gravel drainage channel	A, ASR				

Inspection Checklist Airport Landfill (form modified April, 2011)

Component: Concern(s)	Inspection Frequency*	Inspection Findings	Corrective Action Needed Yes/No?	Description of Corrective Action	Corrective Action Completion Date
Grated Trenches (6): cracks; clear of trash, soil, other blockages, draining properly, standing water, subsidence	A, ASR				
Drainage inlets (8): functional, grates not blocked by trash, soil, other material	A, ASR				
Evidence that pollutants (spills) have entered the storm-water system?	A, ASR				
Sediment washing off the site? If so, map the location[s] in logbook	A, ASR				
Outfall Pipe: secure, blockage, significant erosion, soil staining, manhole in place	A, ASR				
Straw-wattle areas between retaining walls and fence: wattles in place, erosion, rills	A, ASR				

Inspection Checklist Airport Landfill (form modified April, 2011)

Component: Concern(s)	Inspection Frequency*	Inspection Findings	Corrective Action Needed Yes/No?	Description of Corrective Action	Corrective Action Completion Date
Debris Disposal Area					
Seeded (hydromulched) Areas: animals burrows >4 inches deep, barren areas >1,000 square feet, subsidence >1 ft deep, rills/cracks >4 inches deep, large vegetation (trees, shrubs, bushes, deep-rooting weeds)	A, ASR				
<p>Comments:</p> <ol style="list-style-type: none"> Inspection form modified per DOE verbal instruction May 3, 2011 to include inspection findings. 					

Component locations are shown on Figure 2 of the *Final Implementation Strategy for Post Closure and Maintenance of the DOE/NNSA LASO Airport Landfill SWMU 73-001(a) and Debris Disposal Area SWMU 73-001(d), Los Alamos County Airport, New Mexico, July 2009*. Copies of this figure can be marked up to show concerns, findings, and corrective actions. These copies should be listed above in the comments section and stapled to this checklist.

*Inspection Frequency: A= annual, ASR = After Significant Rainfall, B = biannual (twice a year), M = Monthly, Q = quarterly.
 Note: If an additional component(s) is installed for the Airport Landfill, the component(s) can be added in the blank row.



Photo 1: looking east across MatCon and hangar pads.



Photo 2: Cracking of hot seal in previously repaired crack, note new crack in MatCon.



Photo 3: Cracking of hot seal in previously repaired crack, note new crack in MatCon.



Photo 4: Cracking of hot seal and MatCon.



Photo 5: Cracking of hot seal.



Photo 6: Cracking of hot seal repairs and MatCon.



Photo 7: New crack in MatCon.



Photo 8: Extension of crack in MatCon.



Photo 9: Cracking of MatCon along hinge point.



Photo 10: Cracking along paving lane.



Photo 11: Looking east, note uneven nature and subsidence of pads 2 & 3.



Photo 12: NW corner of Pad 1, note crack across trench drain and separation at of pad / drain.



Photo 13: Spider web cracking in Pad 1.



Photo 14: Cracking in Pad 1 along contact joint.



Photo 15: Puddle at NW corner of Pad 2. Note subsidence of MatCon, ineffective trench drain, and infiltration of water along the vegetative edge.



Photo 16: Puddle at NW corner of Pad 2. Note infiltration of water along the vegetative edge and soil fissure along top of earth berm.



Photo 17: Looking West at cracking in Pad 2.



Photo 18: Looking East at cracking in Pad 2, note crack across trench drain.



Photo 19: Looking west at cracking in Pad 3 along hinge point. Note cracking and subsidence along trench drain.



Photo 20: Crack in Pad 3, camera case used for scale.



Photo 21: Looking East from Pad 4, note cracking in pad and trench drain.



Photo 22: Looking West across Pad 4.



Photo 23: Separation along joints in pad 4. Similar separation is occurring at all pads.



Photo 24: Separation of the pad and trench drain at Pad 3. Similar separation is occurring at pads 1-4.



Photo 25: Separation of pad and trench drain. Also note subsidence of MatCon pavement.



Photo 26: Original survey benchmark at upper corner, ACOE nail near lower middle of photo.

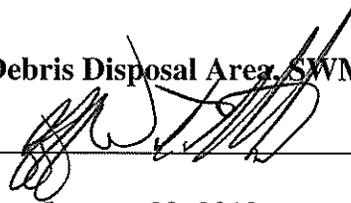


Photo 27: Crack extending from pad to NE edge.



Photo 28: Looking West from Pad 5 along hinge line. Note cracking around tie down.

Inspection Checklist for the Airport Landfill, SWMU 73-001(a) and Debris Disposal Area, SWMU 73-001(d)

Date: March 15, 2013 Time: 1000 Printed Name: Jeff Walterscheid Signature: 

Figure(s): Photos attached.

Weather: temperature: 52 degrees wind: 1 mph, last significant rain/snow: 1 inch of snow January 29, 2013.

Weather Data Source: Los Alamos Airport

March 2013 Monthly Inspection

Component: Concern(s)	Inspection Frequency*	Inspection Findings	Corrective Action Needed Yes/No?	Description of Corrective Action	Corrective Action Completion Date
<i>Airport Landfill</i>					
MatCon Asphalt Pavement: cracks, gaps, spalling, subsidence	M	<p><u>Settlement / Subsidence</u> Differential settlement and subsidence of the MatCon pavement is visible throughout the paved area with evidence of low spots that allow for ponding of water.</p> <p>Ponding of water is evident at NW corners of Pad 2 & 3 due to settlement of the MatCon pavement, concrete pads and associated trench drains. Trench drains were designed to drain north to south and are currently ineffective. Ponded water at the NW corner of Pad 2 seeps into the soil berm.</p> <p>Storm water drains to, and over, the north vegetative slope between Pads 3 and 4 from settlement of the MatCon pavement. A small erosion channel has formed down the slope.</p> <p>A visible hinge point has developed in an approximate east west orientation. North of the hinge point line, from Pad 2 to Pad 5, is visible settling, cracking, and ineffective drainage for the MatCon pavement, pads and trench drains.</p> <p><u>Cracks / Gaps</u> Approximately 70% of the previously repaired cracks (hot seal) have failed and re-cracked. Many of the cracks have extended and new cracking is evident.</p> <p>Spider web type cracking is visible along a hinge point trend between pads #3 and 4, and between pads #4 and #5.</p> <p>Gaps between the MatCon pavement and Concrete pads /trench drains are evident. Hot seal has cracked/failed.</p> <p>Photo: 1, 2, 3, 6. Also see February 2013 inspection photos</p>	<p>Yes</p> <p>Yes</p> <p>Yes</p> <p>Yes</p> <p>Yes</p> <p>Yes</p>		

Inspection Checklist Airport Landfill (form modified April, 2011)

Component: Concern(s)	Inspection Frequency*	Inspection Findings	Corrective Action Needed Yes/No?	Description of Corrective Action	Corrective Action Completion Date
Concrete Hangar Pads (5) and expansion joints: cracks, gaps, spalling, pop-outs, separation of pad from asphalt, subsidence	M	<p><u>Subsidence / Settlement / Cracking</u> Subsidence and settlement is evident at Pads 2, 3 & 4. From visual observation the north end of Pad 1 is raising and twisting. The north ends of Pads 2 & 3 have noticeable subsidence and the trench drains drain in reverse causing water to puddle. Pad 4 has some subsidence and drainage problems at the north end of the pad with Pad 5 beginning to show signs of settling and drainage issues.</p> <p>Pads 1, 2, 3, & 4 have cracking in an east-west orientation mainly along the hinge point with major cracking occurring at pads 2 and 3. Cracks in pads 2 & 3 are numerous and large enough to allow infiltration of water during storm events. Pad 4 has spider web type cracking and is showing new cracks in an east-west orientation. Pad 5 has spider web type cracking.</p> <p>Cracking and subsidence are trending along a hinge line that is roughly in east-west orientation. The north side of the hinge line is subsiding with the exception of pad 1 which has lifted and twisted.</p> <p>Cracks are evident within the trench drains. Previously repaired cracks are failing.</p> <p><u>Gaps / Pop-outs / Separation</u> Sealed expansion joints within the pads and along the trench drains are damaged and failing in many locations.</p> <p>Previously repaired cracks in the Pads are failing and separating.</p> <p>Gaps between the MatCon pavement and Concrete pads/trench drains are evident. Hot seal has cracked.</p> <p>Photo: 1, 3, 4, 5, 6. Refer to the February 2013 inspection for additional photos.</p>	<p>Yes</p> <p>Yes</p> <p>Yes</p> <p>Yes</p> <p>Yes</p> <p>Yes</p> <p>Yes</p>		

Inspection Checklist Airport Landfill (form modified April, 2011)

Component: Concern(s)	Inspection Frequency*	Inspection Findings	Corrective Action Needed Yes/No?	Description of Corrective Action	Corrective Action Completion Date
Survey Benchmark on each hangar pad: accessible, attached to concrete pad	M	All ACOE points are in place and accessible.	No		
Gas Collection System: Turbines (6) along northern edge of asphalt pavement and 1 stub-out on southern edge of asphalt pavement: debris, functional, accessible	A				
Measure landfill-gas concentrations using Landfill Gas Monitoring Form: any values greater than 25% of the methane LEL (lower explosive limit)?	Q or B				

Inspection Checklist Airport Landfill (form modified April, 2011)

Component: Concern(s)	Inspection Frequency*	Inspection Findings	Corrective Action Needed Yes/No?	Description of Corrective Action	Corrective Action Completion Date
Seeded Areas & Turf Reinforcement Mats: barren areas >1,000 square feet, tears, animal burrows >4 inches deep, subsidence >1 ft, rills/cracks >4 inches deep, large vegetation (trees, shrubs, bushes, deep-rooting weeds)	A, ASR				
Gravel drainage channels (3): subsidence, erosion, clear of trash, soil, other blockages	A, ASR				
Concrete Retaining Wall & 2 Rock Retaining Walls: cracks, bulges, separation, rotation, nearby erosion, spalling, pop-outs, drain pipes (3) open at gravel drainage channel	A, ASR				

Inspection Checklist Airport Landfill (form modified April, 2011)

Component: Concern(s)	Inspection Frequency*	Inspection Findings	Corrective Action Needed Yes/No?	Description of Corrective Action	Corrective Action Completion Date
Grated Trenches (6): cracks; clear of trash, soil, other blockages, draining properly, standing water, subsidence	A, ASR				
Drainage inlets (8): functional, grates not blocked by trash, soil, other material	A, ASR				
Evidence that pollutants (spills) have entered the storm-water system?	A, ASR				
Sediment washing off the site? If so, map the location[s] in logbook	A, ASR				
Outfall Pipe: secure, blockage, significant erosion, soil staining, manhole in place	A, ASR				
Straw-wattle areas between retaining walls and fence: wattles in place, erosion, rills	A, ASR				

Inspection Checklist Airport Landfill (form modified April, 2011)

Component: Concern(s)	Inspection Frequency*	Inspection Findings	Corrective Action Needed Yes/No?	Description of Corrective Action	Corrective Action Completion Date
Debris Disposal Area					
Seeded (hydromulched) Areas: animals burrows >4 inches deep, barren areas >1,000 square feet, subsidence >1 ft deep, rills/cracks >4 inches deep, large vegetation (trees, shrubs, bushes, deep-rooting weeds)	A, ASR				
<p>Comments:</p> <ol style="list-style-type: none"> 1. Inspection form modified per DOE verbal instruction May 3, 2011 to include inspection findings. 2. Refer to February 2013 Inspection for additional photos. 					

Component locations are shown on Figure 2 of the *Final Implementation Strategy for Post Closure and Maintenance of the DOE/NNSA LASO Airport Landfill SWMU 73-001(a) and Debris Disposal Area SWMU 73-001(d), Los Alamos County Airport, New Mexico, July 2009.*

*Inspection Frequency: A= annual, ASR = After Significant Rainfall, B = biannual (twice a year), M = Monthly, Q = quarterly.
 Note: If an additional component(s) is installed for the Airport Landfill, the component(s) can be added in the blank row.



Photo 1: Looking West at MatCon pavement and concrete Hangar Pad #5.



Photo 2: Hot seal repair of crack in MatCon pavement. New cracks within the hot seal and MatCon are evident throughout the cap.



Photo 3: Looking west at new cracks in the MatCon pavement visible along the hinge line. Note subsidence of pads left (south) and right (north) of hinge line.



Photo 4: Looking west at cracks in concrete Hangar Pad #3 along the hinge line, note large amount of subsidence to right (north) of the hinge line.

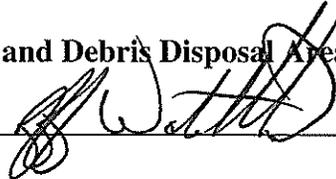


Photo 5: Looking East across Pad #3 along hinge line. Note crack across trench drain and subsidence to the north.



Photo 6: NW corner of Pad #2. Note subsidence of MatCon at contact with pad (3 inches) and sediment from puddle, trench drain is ineffective.

Inspection Checklist for the Airport Landfill, SWMU 73-001(a) and Debris Disposal Area, SWMU 73-001(d)

Date: May 2, 2013 Time: 1430 Printed Name: Jeff Walterscheid Signature: 

Figure(s): Photos attached.

Weather: temperature: 49 degrees wind: 6 mph, last significant rain/snow: 1 inch of snow January 29, 2013.

Weather Data Source: Los Alamos Airport

April 2013 Monthly Inspection

Component: Concern(s)	Inspection Frequency*	Inspection Findings	Corrective Action Needed Yes/No?	Description of Corrective Action	Corrective Action Completion Date
<i>Airport Landfill</i>					
MatCon Asphalt Pavement: cracks, gaps, spalling, subsidence	M	<p><u>Settlement / Subsidence</u> Differential settlement and subsidence of the MatCon pavement is visible throughout the paved area with evidence of low spots that allow for ponding of water.</p> <p>Ponding of water is evident at NW corners of Pad 2 & 3 due to settlement of the MatCon pavement, concrete pads and associated trench drains. Trench drains were designed to drain north to south and are currently ineffective. Ponded water at the NW corner of Pad 2 seeps into the soil berm.</p> <p>Storm water drains to, and over, the north vegetative slope between Pads 3 and 4 from settlement of the MatCon pavement. A small erosion channel has formed down the slope.</p> <p>A visible hinge point has developed in an approximate east west orientation. North of the hinge point line, from Pad 2 to Pad 5, is visible settling, cracking, and ineffective drainage for the MatCon pavement, pads and trench drains.</p> <p><u>Cracks / Gaps</u> Approximately 70% of the previously repaired cracks (hot seal) have failed and re-cracked. Many of the cracks have extended and new cracking is evident.</p> <p>Spider web type cracking is visible along a hinge point trend between pads #3 and 4, and between pads #4 and #5.</p> <p>Gaps between the MatCon pavement and Concrete pads /trench drains are evident. Hot seal has cracked/failed.</p> <p>Photo: . Also see February 2013 inspection photos</p>	<p>Yes</p> <p>Yes</p> <p>Yes</p> <p>Yes</p> <p>Yes</p> <p>Yes</p>		

Inspection Checklist Airport Landfill (form modified April, 2011)

Component: Concern(s)	Inspection Frequency*	Inspection Findings	Corrective Action Needed Yes/No?	Description of Corrective Action	Corrective Action Completion Date
Concrete Hangar Pads (5) and expansion joints: cracks, gaps, spalling, pop-outs, separation of pad from asphalt, subsidence	M	<p><u>Subsidence / Settlement / Cracking</u> Subsidence and settlement is evident at Pads 2, 3,4 & 5. From visual observation the north end of Pad 1 is raising and twisting. The north ends of Pads 2 & 3 have noticeable subsidence and the trench drains drain in reverse causing water to puddle. Pads 4 & 5 have subsidence and drainage problems at the north end of the pads.</p> <p>Pads 1, 2, 3, & 4 have cracking in an east-west orientation mainly along the hinge point with major cracking occurring at pads 2 and 3. Cracks in pads 2 & 3 are numerous and large enough to allow infiltration of water during storm events. Pad 4 has spider web type cracking and new cracks in an east-west orientation. Pad 5 has spider web type cracking.</p> <p>Cracking and subsidence are trending along a hinge line that is roughly in east-west orientation. The north side of the hinge line is subsiding with the exception of pad 1 which has lifted and twisted.</p> <p>Cracks are evident within the trench drains. Previously repaired cracks are failing.</p> <p><u>Gaps / Pop-outs / Separation</u> Sealed expansion joints within the pads and along the trench drains are damaged and failing in many locations.</p> <p>Previously repaired cracks in the Pads are failing and separating.</p> <p>Gaps between the MatCon pavement and Concrete pads/trench drains are evident. Hot seal has cracked.</p> <p>Photo: . Refer to the February 2013 inspection for additional photos.</p>	<p>Yes</p> <p>Yes</p> <p>Yes</p> <p>Yes</p> <p>Yes</p> <p>Yes</p>		

Inspection Checklist Airport Landfill (form modified April, 2011)

Component: Concern(s)	Inspection Frequency*	Inspection Findings	Corrective Action Needed Yes/No?	Description of Corrective Action	Corrective Action Completion Date
Survey Benchmark on each hangar pad: accessible, attached to concrete pad	M	All ACOE points are in place and accessible.	No		
Gas Collection System: Turbines (6) along northern edge of asphalt pavement and 1 stub-out on southern edge of asphalt pavement: debris, functional, accessible	A				
Measure landfill-gas concentrations using Landfill Gas Monitoring Form: any values greater than 25% of the methane LEL (lower explosive limit)?	Q or B				

Inspection Checklist Airport Landfill (form modified April, 2011)

Component: Concern(s)	Inspection Frequency*	Inspection Findings	Corrective Action Needed Yes/No?	Description of Corrective Action	Corrective Action Completion Date
Seeded Areas & Turf Reinforcement Mats: barren areas >1,000 square feet, tears, animal burrows >4 inches deep, subsidence >1 ft, rills/cracks >4 inches deep, large vegetation (trees, shrubs, bushes, deep-rooting weeds)	A, ASR				
Gravel drainage channels (3): subsidence, erosion, clear of trash, soil, other blockages	A, ASR				
Concrete Retaining Wall & 2 Rock Retaining Walls: cracks, bulges, separation, rotation, nearby erosion, spalling, pop-outs, drain pipes (3) open at gravel drainage channel	A, ASR				

Inspection Checklist Airport Landfill (form modified April, 2011)

Component: Concern(s)	Inspection Frequency*	Inspection Findings	Corrective Action Needed Yes/No?	Description of Corrective Action	Corrective Action Completion Date
Grated Trenches (6): cracks; clear of trash, soil, other blockages, draining properly, standing water, subsidence	A, ASR				
Drainage inlets (8): functional, grates not blocked by trash, soil, other material	A, ASR				
Evidence that pollutants (spills) have entered the storm-water system?	A, ASR				
Sediment washing off the site? If so, map the location[s] in logbook	A, ASR				
Outfall Pipe: secure, blockage, significant erosion, soil staining, manhole in place	A, ASR				
Straw-wattle areas between retaining walls and fence: wattles in place, erosion, rills	A, ASR				

Inspection Checklist Airport Landfill (form modified April, 2011)

Component: Concern(s)	Inspection Frequency*	Inspection Findings	Corrective Action Needed Yes/No?	Description of Corrective Action	Corrective Action Completion Date
Debris Disposal Area					
Seeded (hydromulched) Areas: animals burrows >4 inches deep, barren areas >1,000 square feet, subsidence >1 ft deep, rills/cracks >4 inches deep, large vegetation (trees, shrubs, bushes, deep-rooting weeds)	A, ASR				
<p>Comments:</p> <ol style="list-style-type: none"> 1. Inspection form modified per DOE verbal instruction May 3, 2011 to include inspection findings. 2. Refer to February 2013 Inspection for additional photos. 					

Component locations are shown on Figure 2 of the *Final Implementation Strategy for Post Closure and Maintenance of the DOE/NNSA LASO Airport Landfill SWMU 73-001(a) and Debris Disposal Area SWMU 73-001(d), Los Alamos County Airport, New Mexico, July 2009.*

*Inspection Frequency: A= annual, ASR = After Significant Rainfall, B = biannual (twice a year), M = Monthly, Q = quarterly.
 Note: If an additional component(s) is installed for the Airport Landfill, the component(s) can be added in the blank row.



Photo 1: Looking West at MatCon pavement and concrete Hangar Pad #5.



Photo 2: Looking East at MatCon pavement and concrete Hangar Pads #1, 2, & 3.



Photo 3: Hot seal repair of crack in MatCon pavement. New cracks within the hot seal and MatCon are evident throughout the cap.



Photo 4: Looking West at new crack in MatCon pavement.



Photo 5: Plant growth between MatCon and Pad #2.



Photo 6: Looking east at cracks in concrete Hangar Pad #3 along the hinge line, note crack across trench drain.



Photo 7: Looking West at new cracking in concrete Hangar Pad #4 along the hinge line.



Photo 8: Crack in Pad #3.



Photo 9: Separation between pad and trench drain at Pad #2.

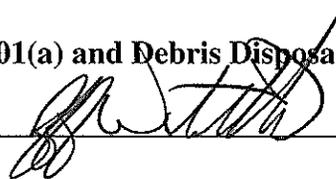


Photo 10: Trench drain filled with sediment due to inadequate drainage from subsidence.



Photo 11: Crack across trench drain.

Inspection Checklist for the Airport Landfill, SWMU 73-001(a) and Debris Disposal Area, SWMU 73-001(d)

Date: May 24, 2013 Time: 1330 Printed Name: Jeff Walterscheid Signature: 

Figure(s): Photos attached.

Weather: temperature: 72 degrees wind: 6 mph last significant rain/snow: 1 inch of snow January 29, 2013.

Weather Data Source: Los Alamos Airport

May 2013 Monthly Inspection

Component: Concern(s)	Inspection Frequency*	Inspection Findings	Corrective Action Needed Yes/No?	Description of Corrective Action	Corrective Action Completion Date
<i>Airport Landfill</i>					
MatCon Asphalt Pavement: cracks, gaps, spalling, subsidence	M	<p><u>Settlement / Subsidence</u> Differential settlement and subsidence of the MatCon pavement is visible throughout the paved area with evidence of low spots that allow for ponding of water.</p> <p>Ponding of water is evident at NW corners of Pad 2 & 3 due to settlement of the MatCon pavement, concrete pads and associated trench drains. Trench drains were designed to drain north to south and are currently ineffective. Ponded water at the NW corner of Pad 2 seeps into the soil berm.</p> <p>Storm water drains to, and over the north vegetative slope between Pads 3 and 4 from settlement of the MatCon pavement. A small erosion channel has formed down the slope.</p> <p>A visible hinge point has developed in an approximate east west orientation. North of the hinge point line, from Pad 2 to Pad 5, is visible settling, cracking, and ineffective drainage for the MatCon pavement, pads and trench drains.</p> <p><u>Cracks / Gaps</u> Approximately 70% of the previously repaired cracks (hot seal) have failed and re-cracked. Many of the cracks have extended and new cracking is evident.</p> <p>Spider web type cracking is visible along a hinge point trend between pads #3 and 4, and between pads #4 and #5.</p> <p>Gaps between the MatCon pavement and Concrete pads /trench drains are evident. Hot seal has cracked/failed.</p> <p>Photo: 1, 2, & 6. Also see previous 2013 inspection photos</p>	<p>Yes</p> <p>Yes</p> <p>Yes</p> <p>Yes</p> <p>Yes</p> <p>Yes</p>		

Inspection Checklist Airport Landfill (form modified April, 2011)

Component: Concern(s)	Inspection Frequency*	Inspection Findings	Corrective Action Needed Yes/No?	Description of Corrective Action	Corrective Action Completion Date
Concrete Hangar Pads (5) and expansion joints: cracks, gaps, spalling, pop-outs, separation of pad from asphalt, subsidence	M	<p><u>Subsidence / Settlement / Cracking</u> Subsidence and settlement is evident at Pads 2, 3,4 & 5. From visual observation the north end of Pad 1 is raising and twisting. The north ends of Pads 2 & 3 have noticeable subsidence and the trench drains drain in reverse causing water to puddle. Pads 4 & 5 have subsidence and drainage problems at the north end of the pads.</p> <p>Pads 1, 2, 3, & 4 have cracking in an east-west orientation mainly along the hinge point with major cracking occurring at pads 2 and 3. Cracks in pads 2 & 3 are numerous and large enough to allow infiltration of water during storm events. Pad 4 has spider web type cracking and new cracks in an east-west orientation. Pad 5 has spider web type cracking.</p> <p>Cracking and subsidence are trending along a hinge line that is roughly in east-west orientation. The north side of the hinge line is subsiding with the exception of pad 1 which has lifted and twisted.</p> <p>Cracks are evident within the trench drains. Previously repaired cracks are failing.</p> <p><u>Gaps / Pop-outs / Separation</u> Sealed expansion joints within the pads and along the trench drains are damaged and failing in many locations.</p> <p>Previously repaired cracks in the Pads are failing and separating.</p> <p>Gaps between the MatCon pavement and Concrete pads/trench drains are evident. Hot seal has cracked.</p> <p>Photo: 2, 4, 5, & 6 . Also see previous 2013 inspection photos</p>	<p>Yes</p> <p>Yes</p> <p>Yes</p> <p>Yes</p> <p>Yes</p> <p>Yes</p>		
Survey Benchmark on each hangar pad: accessible, attached to concrete pad	M	<p>All ACOE points are in place and accessible.</p> <p>Photo: 3</p>	No		

Inspection Checklist Airport Landfill (form modified April, 2011)

Component: Concern(s)	Inspection Frequency*	Inspection Findings	Corrective Action Needed Yes/No?	Description of Corrective Action	Corrective Action Completion Date
Gas Collection System: Turbines (6) along northern edge of asphalt pavement and 1 stub-out on southern edge of asphalt pavement: debris, functional, accessible	A				
Measure landfill-gas concentrations using Landfill Gas Monitoring Form: any values greater than 25% of the methane LEL (lower explosive limit)?	Q or B				
Seeded Areas & Turf Reinforcement Mats: barren areas >1,000 square feet, tears, animals burrows >4 inches deep, subsidence >1 ft, rills/cracks >4 inches deep, large vegetation (trees, shrubs, bushes, deep-rooting weeds)	A, ASR				
Gravel drainage channels (3): subsidence, erosion, clear of trash, soil, other blockages	A, ASR				

Inspection Checklist Airport Landfill (form modified April, 2011)

Component: Concern(s)	Inspection Frequency*	Inspection Findings	Corrective Action Needed Yes/No?	Description of Corrective Action	Corrective Action Completion Date
Concrete Retaining Wall & 2 Rock Retaining Walls: cracks, bulges, separation, rotation, nearby erosion, spalling, pop-outs, drain pipes (3) open at gravel drainage channel	A, ASR				
Grated Trenches (6): cracks; clear of trash, soil, other blockages, draining properly, standing water, subsidence	A, ASR				
Drainage inlets (8): functional, grates not blocked by trash, soil, other material	A, ASR				
Evidence that pollutants (spills) have entered the storm-water system?	A, ASR				
Sediment washing off the site? If so, map the location[s] in logbook	A, ASR				

Inspection Checklist Airport Landfill (form modified April, 2011)

Component: Concern(s)	Inspection Frequency*	Inspection Findings	Corrective Action Needed Yes/No?	Description of Corrective Action	Corrective Action Completion Date
Outfall Pipe: secure, blockage, significant erosion, soil staining, manhole in place	A, ASR				
Straw-wattle areas between retaining walls and fence: wattles in place, erosion, rills	A, ASR				
Debris Disposal Area					
Seeded (hydromulched) Areas: animals burrows >4 inches deep, barren areas >1,000 square feet, subsidence >1 ft deep, rills/cracks >4 inches deep, large vegetation (trees, shrubs, bushes, deep- rooting weeds)	A, ASR				
<p>Comments:</p> <ol style="list-style-type: none"> 1. Inspection form modified per DOE verbal instruction May 3, 2011 to include inspection findings. 2. Refer to previous 2013 inspections for additional photos. 					

Component locations are shown on Figure 2 of the *Final Implementation Strategy for Post Closure and Maintenance of the DOE/NNSA LASO Airport Landfill SWMU 73-001(a) and Debris Disposal Area SWMU 73-001(d), Los Alamos County Airport, New Mexico, July 2009.*

*Inspection Frequency: A= annual, ASR = After Significant Rainfall, B = biannual (twice a year), M = Monthly, Q = quarterly.

Note: If an additional component(s) is installed for the Airport Landfill, the component(s) can be added in the blank row.



Photo 1: Looking West at MatCon pavement and concrete Hangar Pad #5.



Photo 2: Weeds growing between MatCon pavement and concrete hangar pad.



Photo 3: Survey markers in concrete pad. Brass cap is the original point silver nail cap is the Army Corp. of Engineers survey point.



Photo 4: New cracking in Pad #4.

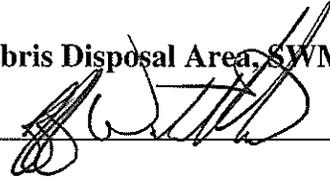


Photo 5: Cracking in Pad #3 along hinge point.



Photo 6: Looking East from Pad #1.

Inspection Checklist for the Airport Landfill, SWMU 73-001(a) and Debris Disposal Area, SWMU 73-001(d)

Date: June 28, 2013 Time: 1030 Printed Name: Jeff Walterscheid Signature: 

Figure(s): Photos attached.

Weather: temperature: 86 degrees wind: 5 mph, last significant rain/snow: 0.23 inches of rain June 14, 2013.

Weather Data Source: Los Alamos Airport

June 2013 Monthly Inspection

Component: Concern(s)	Inspection Frequency*	Inspection Findings	Corrective Action Needed Yes/No?	Description of Corrective Action	Corrective Action Completion Date
<i>Airport Landfill</i>					
MatCon Asphalt Pavement: cracks, gaps, spalling, subsidence	M	<p><u>Settlement / Subsidence</u> Differential settlement and subsidence of the MatCon pavement is visible throughout the paved area with evidence of low spots that allow for ponding of water.</p> <p>Ponding of water is evident at NW corners of Pad 2 & 3 due to settlement of the MatCon pavement, concrete pads and associated trench drains. Trench drains were designed to drain north to south and are currently ineffective. Ponded water at the NW corner of Pad 2 seeps into the soil berm.</p> <p>Storm water drains to, and over the north vegetative slope between Pads 3 and 4 from settlement of the MatCon pavement. A small erosion channel has formed down the slope.</p> <p>A visible hinge point has developed in an approximate east west orientation. North of the hinge point line, from Pad 2 to Pad 5, is visible settling, cracking, and ineffective drainage for the MatCon pavement, pads and trench drains.</p> <p><u>Cracks / Gaps</u> Approximately 70% of the previously repaired cracks (hot seal) have failed and re-cracked. Many of the cracks have extended and new cracking is evident.</p> <p>Spider web type cracking is visible along a hinge point trend between pads #3 and 4, and between pads #4 and #5.</p> <p>Gaps between the MatCon pavement and Concrete pads /trench drains are evident. Hot seal has cracked/failed.</p> <p>Photo: 1, 2, 3, 4 & 5. See previous 2013 inspection photos.</p>	<p>Yes</p> <p>Yes</p> <p>Yes</p> <p>Yes</p> <p>Yes</p> <p>Yes</p>		

Inspection Checklist Airport Landfill (form modified April, 2011)

Component: Concern(s)	Inspection Frequency*	Inspection Findings	Corrective Action Needed Yes/No?	Description of Corrective Action	Corrective Action Completion Date
Concrete Hangar Pads (5) and expansion joints: cracks, gaps, spalling, pop-outs, separation of pad from asphalt, subsidence	M	<p><u>Subsidence / Settlement / Cracking</u> Subsidence and settlement is evident at Pads 2, 3,4 & 5. From visual observation the north end of Pad 1 is raising and twisting. The north ends of Pads 2 & 3 have noticeable subsidence and the trench drains drain in reverse causing water to puddle. Pads 4 & 5 have subsidence and drainage problems at the north end of the pads.</p> <p>Pads 1, 2, 3, & 4 have cracking in an east-west orientation mainly along the hinge point with major cracking occurring at pads 2 and 3. Cracks in pads 2 & 3 are numerous and large enough to allow infiltration of water during storm events. Pad 4 has spider web type cracking and new cracks in an east-west orientation. Pad 5 has spider web type cracking.</p> <p>Cracking and subsidence are trending along a hinge line that is roughly in east-west orientation. The north side of the hinge line is subsiding with the exception of pad 1 which has lifted and twisted.</p> <p>Cracks are evident within the trench drains. Previously repaired cracks are failing.</p> <p><u>Gaps / Pop-outs / Separation</u> Sealed expansion joints within the pads and along the trench drains are damaged and failing in many locations.</p> <p>Previously repaired cracks in the Pads are failing and separating.</p> <p>Gaps between the MatCon pavement and Concrete pads/trench drains are evident. Hot seal has cracked.</p> <p>Photo: 2, 3, 4 & 5 . Also see previous 2013 inspection photos</p>	<p>Yes</p> <p>Yes</p> <p>Yes</p> <p>Yes</p> <p>Yes</p> <p>Yes</p>		
Survey Benchmark on each hangar pad: accessible, attached to concrete pad	M	All ACOE points are in place and accessible.	No		

Inspection Checklist Airport Landfill (form modified April, 2011)

Component: Concern(s)	Inspection Frequency*	Inspection Findings	Corrective Action Needed Yes/No?	Description of Corrective Action	Corrective Action Completion Date
Gas Collection System: Turbines (6) along northern edge of asphalt pavement and 1 stub-out on southern edge of asphalt pavement: debris, functional, accessible	A				
Measure landfill-gas concentrations using Landfill Gas Monitoring Form: any values greater than 25% of the methane LEL (lower explosive limit)?	Q or B				
Seeded Areas & Turf Reinforcement Mats: barren areas >1,000 square feet, tears, animals burrows >4 inches deep, subsidence >1 ft, rills/cracks >4 inches deep, large vegetation (trees, shrubs, bushes, deep-rooting weeds)	A, ASR				
Gravel drainage channels (3): subsidence, erosion, clear of trash, soil, other blockages	A, ASR				

Inspection Checklist Airport Landfill (form modified April, 2011)

Component: Concern(s)	Inspection Frequency*	Inspection Findings	Corrective Action Needed Yes/No?	Description of Corrective Action	Corrective Action Completion Date
Concrete Retaining Wall & 2 Rock Retaining Walls: cracks, bulges, separation, rotation, nearby erosion, spalling, pop-outs, drain pipes (3) open at gravel drainage channel	A, ASR				
Grated Trenches (6): cracks; clear of trash, soil, other blockages, draining properly, standing water, subsidence	A, ASR				
Drainage inlets (8): functional, grates not blocked by trash, soil, other material	A, ASR				
Evidence that pollutants (spills) have entered the storm-water system?	A, ASR				
Sediment washing off the site? If so, map the location[s] in logbook	A, ASR				

Inspection Checklist Airport Landfill (form modified April, 2011)

Component: Concern(s)	Inspection Frequency*	Inspection Findings	Corrective Action Needed Yes/No?	Description of Corrective Action	Corrective Action Completion Date
Outfall Pipe: secure, blockage, significant erosion, soil staining, manhole in place	A, ASR				
Straw-wattle areas between retaining walls and fence: wattles in place, erosion, rills	A, ASR				
Debris Disposal Area					
Seeded (hydromulched) Areas: animals burrows >4 inches deep, barren areas >1,000 square feet, subsidence >1 ft deep, rills/cracks >4 inches deep, large vegetation (trees, shrubs, bushes, deep- rooting weeds)	A, ASR				
<p>Comments:</p> <ol style="list-style-type: none"> 1. Inspection form modified per DOE verbal instruction May 3, 2011 to include inspection findings. 2. Refer to previous 2013 inspections for additional photos. 					

Component locations are shown on Figure 2 of the *Final Implementation Strategy for Post Closure and Maintenance of the DOE/NNSA LASO Airport Landfill SWMU 73-001(a) and Debris Disposal Area SWMU 73-001(d), Los Alamos County Airport, New Mexico, July 2009.*

*Inspection Frequency: A= annual, ASR = After Significant Rainfall, B = biannual (twice a year), M = Monthly, Q = quarterly.

Note: If an additional component(s) is installed for the Airport Landfill, the component(s) can be added in the blank row.



Photo 1: Looking West at MatCon pavement and concrete Hangar Pads.



Photo 2: Looking West at MatCon pavement and concrete Hangar Pad #5.



Photo 3: Looking East at MatCon pavement and concrete Hangar Pads.

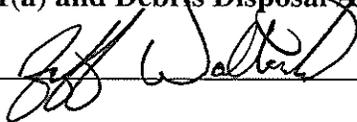


Photo 4: Looking East at MatCon pavement and concrete Hangar Pad #2.



Photo 5: New cracks in MatCon pavement in an east-west orientation between hangar pads 3 and 4 along the hinge point.

Inspection Checklist for the Airport Landfill, SWMU 73-001(a) and Debris Disposal Area, SWMU 73-001(d)

Date: July 23, 2013 Time: 1330 Printed Name: Jeff Walterscheid Signature: 

Figure(s): Photos attached.

Weather: temperature: 88 degrees wind: 5 mph, last significant rain/snow: 0.23 inches of rain July 21, 2013.

Weather Data Source: Los Alamos Airport

July 2013 Monthly Inspection

Component: Concern(s)	Inspection Frequency*	Inspection Findings	Corrective Action Needed Yes/No?	Description of Corrective Action	Corrective Action Completion Date
<i>Airport Landfill</i>					
MatCon Asphalt Pavement: cracks, gaps, spalling, subsidence	M	<p><u>Settlement / Subsidence</u> Differential settlement and subsidence of the MatCon pavement is visible throughout the paved area with evidence of low spots that allow for ponding of water.</p> <p>Ponding of water is evident at NW corners of Pad 2 & 3 due to settlement of the MatCon pavement, concrete pads and associated trench drains. Trench drains were designed to drain north to south and are currently ineffective. Ponded water at the NW corner of Pad 2 seeps into the soil berm.</p> <p>Storm water drains to, and over the north vegetative slope between Pads 3 and 4 from settlement of the MatCon pavement. A small channel has formed down the slope.</p> <p>A visible hinge point has developed in an approximate east west orientation. North of the hinge point line, from Pad 2 to Pad 5, is visible settling, cracking, and ineffective drainage for the MatCon pavement, pads and trench drains.</p> <p><u>Cracks / Gaps</u> Approximately 70% of the previously repaired cracks (hot seal) have failed and re-cracked. Many of the cracks have extended and new cracking is evident.</p> <p>Spider web type cracking is visible along a hinge point trend between pads #3 and 4, and between pads #4 and #5.</p> <p>Gaps between the MatCon pavement and Concrete pads /trench drains are evident. Hot seal has cracked/failed.</p> <p>Photo: 1, 2, 3, 4 & 5. See previous 2013 inspection photos.</p>	<p>Yes</p> <p>Yes</p> <p>Yes</p> <p>Yes</p> <p>Yes</p> <p>Yes</p>		

Inspection Checklist Airport Landfill (form modified April, 2011)

Component: Concern(s)	Inspection Frequency*	Inspection Findings	Corrective Action Needed Yes/No?	Description of Corrective Action	Corrective Action Completion Date
Concrete Hangar Pads (5) and expansion joints: cracks, gaps, spalling, pop-outs, separation of pad from asphalt, subsidence	M	<p><u>Subsidence / Settlement / Cracking</u> Subsidence and settlement is evident at Pads 2, 3, 4 & 5. North end of Pad 1 has raised and twisted. The north ends of Pads 2 & 3 have noticeable subsidence and the trench drains drain in reverse causing water to puddle. Pads 4 & 5 have subsidence and drainage problems at the north end of the pads.</p> <p>Pads 1, 2, 3, 4, & 5 have cracking in an east-west orientation mainly along the hinge point with major cracking occurring at pads 2 and 3. Cracks in pads 2 & 3 are numerous and large enough to allow infiltration of water during storm events. All pads have spider web type cracking.</p> <p>Cracking and subsidence are trending along a hinge line that is roughly in east-west orientation. The north side of the hinge line is subsiding with the exception of pad 1 which has lifted.</p> <p>Cracks are evident within the trench drains. Previously repaired cracks are failing.</p> <p><u>Gaps / Pop-outs / Separation</u> Sealed expansion joints within the pads and along the trench drains are damaged and failing in many locations.</p> <p>Previously repaired cracks in the Pads are failing and separating.</p> <p>Gaps between the MatCon pavement and Concrete pads/trench drains are evident. Hot seal has cracked.</p> <p>Photo: 1, 2, 3, 4, 5 & 6 . Also see previous 2013 inspection photos.</p>	<p>Yes</p> <p>Yes</p> <p>Yes</p> <p>Yes</p> <p>Yes</p> <p>Yes</p> <p>Yes</p>		
Survey Benchmark on each hangar pad: accessible, attached to concrete pad	M	All ACOE points are in place and accessible.	No		

Inspection Checklist Airport Landfill (form modified April, 2011)

Component: Concern(s)	Inspection Frequency*	Inspection Findings	Corrective Action Needed Yes/No?	Description of Corrective Action	Corrective Action Completion Date
Gas Collection System: Turbines (6) along northern edge of asphalt pavement and 1 stub-out on southern edge of asphalt pavement: debris, functional, accessible	A				
Measure landfill-gas concentrations using Landfill Gas Monitoring Form: any values greater than 25% of the methane LEL (lower explosive limit)?	Q or B				
Seeded Areas & Turf Reinforcement Mats: barren areas >1,000 square feet, tears, animals burrows >4 inches deep, subsidence >1 ft, rills/cracks >4 inches deep, large vegetation (trees, shrubs, bushes, deep-rooting weeds)	A, ASR				
Gravel drainage channels (3): subsidence, erosion, clear of trash, soil, other blockages	A, ASR				

Inspection Checklist Airport Landfill (form modified April, 2011)

Component: Concern(s)	Inspection Frequency*	Inspection Findings	Corrective Action Needed Yes/No?	Description of Corrective Action	Corrective Action Completion Date
Concrete Retaining Wall & 2 Rock Retaining Walls: cracks, bulges, separation, rotation, nearby erosion, spalling, pop-outs, drain pipes (3) open at gravel drainage channel	A, ASR				
Grated Trenches (6): cracks; clear of trash, soil, other blockages, draining properly, standing water, subsidence	A, ASR				
Drainage inlets (8): functional, grates not blocked by trash, soil, other material	A, ASR				
Evidence that pollutants (spills) have entered the storm-water system?	A, ASR				
Sediment washing off the site? If so, map the location[s] in logbook	A, ASR				

Inspection Checklist Airport Landfill (form modified April, 2011)

Component: Concern(s)	Inspection Frequency*	Inspection Findings	Corrective Action Needed Yes/No?	Description of Corrective Action	Corrective Action Completion Date
Outfall Pipe: secure, blockage, significant erosion, soil staining, manhole in place	A, ASR				
Straw-wattle areas between retaining walls and fence: wattles in place, erosion, rills	A, ASR				
Debris Disposal Area					
Seeded (hydromulched) Areas: animals burrows >4 inches deep, barren areas >1,000 square feet, subsidence >1 ft deep, rills/cracks >4 inches deep, large vegetation (trees, shrubs, bushes, deep- rooting weeds)	A, ASR				
<p>Comments:</p> <ol style="list-style-type: none"> 1. Inspection form modified per DOE verbal instruction May 3, 2011 to include inspection findings. 2. Refer to previous 2013 inspections for additional photos. 					

Component locations are shown on Figure 2 of the *Final Implementation Strategy for Post Closure and Maintenance of the DOE/NNSA LASO Airport Landfill SWMU 73-001(a) and Debris Disposal Area SWMU 73-001(d), Los Alamos County Airport, New Mexico, July 2009.*

*Inspection Frequency: A= annual, ASR = After Significant Rainfall, B = biannual (twice a year), M = Monthly, Q = quarterly.

Note: If an additional component(s) is installed for the Airport Landfill, the component(s) can be added in the blank row.



Photo 1: Looking East at MatCon pavement and concrete Hangar Pads..



Photo 2: Cracks in MatCon pavement in an east-west orientation between hangar pads 3 and 4 along the hinge point.



Photo 3: North end of Pad 3. Note improper drainage of trench drain, puddle of water, cracking of pad, separation of MatCon and trench drain, and repair patch in pavement.



Photo 4: Puddles at Pad 2 and 3 due to subsidence of MatCon, pads and trench drains.

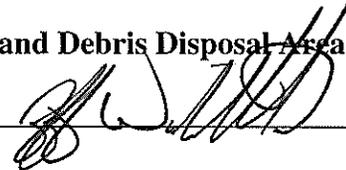


Photo 5: Vegetation growing between MatCon pavement and concrete Pad 4.



Photo 6: Pad 4, cracks in an east-west orientation along hinge point. Note repaired crack at trench drain has failed.

Inspection Checklist for the Airport Landfill, SWMU 73-001(a) and Debris Disposal Area, SWMU 73-001(d)

Date: August 26, 2013 Time: 1330 Printed Name: Jeff Walterscheid Signature: 

Figure(s): Photos attached

Weather: temperature: 85 degrees wind: 3 mph last significant rain/snow: 0.32 inches of rain August 4, 2013.

Weather Data Source: Los Alamos Airport

August 2013 Monthly Inspection

Component: Concern(s)	Inspection Frequency*	Inspection Findings	Corrective Action Needed Yes/No?	Description of Corrective Action	Corrective Action Completion Date
<i>Airport Landfill</i>					
MatCon Asphalt Pavement: cracks, gaps, spalling, subsidence	M	<p><u>Settlement / Subsidence</u> Differential settlement and subsidence of the MatCon pavement is visible throughout the paved area with evidence of low spots that allow for ponding of water.</p> <p>Ponding of water is evident at NW corners of Pad 2 & 3 due to settlement of the MatCon pavement, concrete pads and associated trench drains. Trench drains were designed to drain north to south and are currently ineffective. Ponded water at the NW corner of Pad 2 seeps into the soil berm.</p> <p>Storm water drains to, and over the north vegetative slope between Pads 3 and 4 from settlement of the MatCon pavement. A small erosion channel has formed down the slope.</p> <p>A visible hinge point has developed in an approximate east west orientation. North of the hinge point line, from Pad 2 to Pad 5, is visible settling, cracking, and ineffective drainage for the MatCon pavement, pads and trench drains.</p> <p><u>Cracks / Gaps</u> Approximately 70% of the previously repaired cracks (hot seal) have failed and re-cracked. Many of the cracks have extended and new cracking is evident.</p> <p>Spider web type cracking is visible along a hinge point trend between pads #3 and #4, and between pads #4 and #5.</p> <p>Gaps between the MatCon pavement and Concrete pads /trench drains are evident. Hot seal has cracked/failed.</p> <p>Photo: 1, 2, 4, 5 6, 7, 13, 14, 15, 16 & 17.</p>	<p>Yes</p> <p>Yes</p> <p>Yes</p> <p>Yes</p> <p>Yes</p> <p>Yes</p>		

Inspection Checklist Airport Landfill (form modified April, 2011)

Component: Concern(s)	Inspection Frequency*	Inspection Findings	Corrective Action Needed Yes/No?	Description of Corrective Action	Corrective Action Completion Date
Concrete Hangar Pads (5) and expansion joints: cracks, gaps, spalling, pop-outs, separation of pad from asphalt, subsidence	M	<p><u>Subsidence / Settlement / Cracking</u> Subsidence and settlement is evident at Pads 2, 3, 4 & 5. North end of Pad 1 has raised and twisted. The north ends of Pads 2 & 3 have noticeable subsidence and the trench drains drain in reverse causing water to puddle. Pads 4 & 5 have subsidence and drainage problems at the north end of the pads.</p> <p>Pads 1, 2, 3, 4, & 5 have cracking in an east-west orientation mainly along the hinge point with major cracking occurring at pads 2 and 3. Cracks in pads 2 & 3 are numerous and large enough to allow infiltration of water during storm events. All pads have spider web type cracking.</p> <p>Cracking and subsidence are trending along a hinge line that is roughly in east-west orientation. The north side of the hinge line is subsiding with the exception of pad 1 which has lifted.</p> <p>Pad 1 also has new cracking in an north- south orientation and has subsided near the middle of the pad.</p> <p>Cracks are evident within the trench drains. Previously repaired cracks are failing.</p> <p><u>Gaps / Pop-outs / Separation</u> Sealed expansion joints within the pads and along the trench drains are damaged and failing in many locations.</p> <p>Previously repaired cracks in the Pads are failing and separating.</p> <p>Gaps between the MatCon pavement and Concrete pads/trench drains are evident. Hot seal has cracked.</p> <p>Photo: 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13 & 18.</p>	<p>Yes</p> <p>Yes</p> <p>Yes</p> <p>Yes</p> <p>Yes</p> <p>Yes</p> <p>Yes</p>		
Survey Benchmark on each hangar pad: accessible, attached to concrete pad	M	<p>All ACOE points are in place and accessible.</p> <p>Photo: 18</p>	No		

Inspection Checklist Airport Landfill (form modified April, 2011)

Component: Concern(s)	Inspection Frequency*	Inspection Findings	Corrective Action Needed Yes/No?	Description of Corrective Action	Corrective Action Completion Date
Gas Collection System: Turbines (6) along northern edge of asphalt pavement and 1 stub-out on southern edge of asphalt pavement: debris, functional, accessible	A				
Measure landfill-gas concentrations using Landfill Gas Monitoring Form: any values greater than 25% of the methane LEL (lower explosive limit)?	Q or B				
Seeded Areas & Turf Reinforcement Mats: barren areas >1,000 square feet, tears, animals burrows >4 inches deep, subsidence >1 ft, rills/cracks >4 inches deep, large vegetation (trees, shrubs, bushes, deep-rooting weeds)	A, ASR				
Gravel drainage channels (3): subsidence, erosion, clear of trash, soil, other blockages	A, ASR				

Inspection Checklist Airport Landfill (form modified April, 2011)

Component: Concern(s)	Inspection Frequency*	Inspection Findings	Corrective Action Needed Yes/No?	Description of Corrective Action	Corrective Action Completion Date
Concrete Retaining Wall & 2 Rock Retaining Walls: cracks, bulges, separation, rotation, nearby erosion, spalling, pop-outs, drain pipes (3) open at gravel drainage channel	A, ASR				
Grated Trenches (6): cracks; clear of trash, soil, other blockages, draining properly, standing water, subsidence	A, ASR				
Drainage inlets (8): functional, grates not blocked by trash, soil, other material	A, ASR				
Evidence that pollutants (spills) have entered the storm-water system?	A, ASR				
Sediment washing off the site? If so, map the location[s] in logbook	A, ASR				

Inspection Checklist Airport Landfill (form modified April, 2011)

Component: Concern(s)	Inspection Frequency*	Inspection Findings	Corrective Action Needed Yes/No?	Description of Corrective Action	Corrective Action Completion Date
Outfall Pipe: secure, blockage, significant erosion, soil staining, manhole in place	A, ASR				
Straw-wattle areas between retaining walls and fence: wattles in place, erosion, rills	A, ASR				
Debris Disposal Area					
Seeded (hydromulched) Areas: animals burrows >4 inches deep, barren areas >1,000 square feet, subsidence >1 ft deep, rills/cracks >4 inches deep, large vegetation (trees, shrubs, bushes, deep- rooting weeds)	A, ASR				
<p>Comments:</p> <ol style="list-style-type: none"> 1. Inspection form modified per DOE verbal instruction May 3, 2011 to include inspection findings. 2. Refer to previous 2013 inspections for additional photos. 					

Component locations are shown on Figure 2 of the *Final Implementation Strategy for Post Closure and Maintenance of the DOE/NNSA LASO Airport Landfill SWMU 73-001(a) and Debris Disposal Area SWMU 73-001(d), Los Alamos County Airport, New Mexico, July 2009.*

*Inspection Frequency: A= annual, ASR = After Significant Rainfall, B = biannual (twice a year), M = Monthly, Q = quarterly.

Note: If an additional component(s) is installed for the Airport Landfill, the component(s) can be added in the blank row.



Photo 1: Looking east across pads and MatCon

Inspection Checklist Airport Landfill (form modified April, 2011)



Photo 2: Pad 1



Photo 3: Pad 1 cracking in North-South orientation



Photo 4: Pad 2



Photo 5: Pad 3

Inspection Checklist Airport Landfill (form modified April, 2011)



Photo 6: Pad 4



Photo 7: Pad 5



Photo 8: Cracking in Pad 2



Photo 9: Close-up of crack



Photo 10: Expansion joint



Photo 11: Expansion joint



Photo 12: Subsidence of MatCon & trench drain



Photo 13: Weeds

Inspection Checklist Airport Landfill (form modified April, 2011)



Photo 14: Cracks along hinge line



Photo 15: Cracks along hinge line



Photo 16: Cracking along paving lane

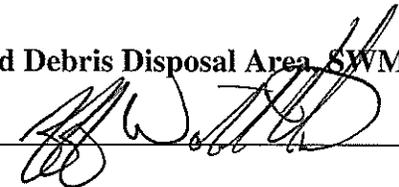


Photo 17: extension of crack in MatCon



Photo 18: Survey Benchmark. Original is brass cap at corner, nail is the ACOE point.

Inspection Checklist for the Airport Landfill, SWMU 73-001(a) and Debris Disposal Area SWMU 73-001(d)

Date: September 30, 2013 Time: 1030 Printed Name: Jeff Walterscheid Signature: 

Figure(s): Photos attached.

Weather: temperature: 65 degrees wind: 3 mph last significant rain/snow: 1.01 inches of rain September 22, 2013.

Weather Data Source: Los Alamos Airport

September 2013 Monthly Inspection

Component: Concern(s)	Inspection Frequency*	Inspection Findings	Corrective Action Needed Yes/No?	Description of Corrective Action	Corrective Action Completion Date
<i>Airport Landfill</i>					
MatCon Asphalt Pavement: cracks, gaps, spalling, subsidence	M	<p><u>Settlement / Subsidence</u> Differential settlement and subsidence of the MatCon pavement is visible throughout the paved area with evidence of low spots that allow stormwater water to puddle and pond.</p> <p>Ponding of water is evident at NW corners of Pad 2 & 3 due to settlement of the MatCon pavement, concrete pads and associated trench drains. Trench drains were designed to drain north to south and are currently ineffective. Pondered water at the NW corner of Pad 2 seeps into the soil berm.</p> <p>Storm water drains to and over the north vegetative slope between Pads 3 and 4 from settlement of the MatCon pavement. A small erosion channel has formed down the slope.</p> <p>A visible hinge point has developed in an approximate east west orientation. North of the hinge point line, from Pad 2 to Pad 5, is visible settling, cracking, and ineffective drainage for the MatCon pavement, pads and trench drains.</p> <p><u>Cracks / Gaps</u> Approximately 70% of the previously repaired cracks (hot seal) have failed and re-cracked. Many of the cracks have extended and new cracking is evident.</p> <p>Spider web type cracking is visible along a hinge point trend between pads #3 and #4, and between pads #4 and #5.</p> <p>Gaps between the MatCon pavement and Concrete pads /trench drains are evident. Hot seal has cracked.</p> <p>Photo: 1, 2</p>	<p>Yes</p> <p>Yes</p> <p>Yes</p> <p>Yes</p> <p>Yes</p> <p>Yes</p>		

Inspection Checklist Airport Landfill (form modified April, 2011)

Component: Concern(s)	Inspection Frequency*	Inspection Findings	Corrective Action Needed Yes/No?	Description of Corrective Action	Corrective Action Completion Date
Concrete Hangar Pads (5) and expansion joints: cracks, gaps, spalling, pop-outs, separation of pad from asphalt, subsidence	M	<p><u>Subsidence / Settlement / Cracking</u> Subsidence and settlement is evident at Pads 2, 3, 4 & 5. North end of Pad 1 has raised and twisted. The north ends of Pads 2 & 3 have noticeable subsidence and the trench drains drain in reverse causing water to puddle. Pads 4 & 5 have subsidence and drainage problems at the north end of the pads.</p> <p>Pads 1, 2, 3, 4, & 5 have cracking in an east-west orientation mainly along the hinge point with major cracking occurring at pads 2 and 3. Cracks in pads 2 & 3 are numerous and large enough to allow infiltration of water during storm events. All pads have spider web type cracking.</p> <p>Cracking and subsidence are trending along a hinge line that is roughly in east-west orientation. The north side of the hinge line is subsiding with the exception of pad 1 which has lifted.</p> <p>Pad 1 also has new cracking in an north- south orientation and has subsided near the middle of the pad.</p> <p>Cracks are evident within the trench drains. Previously repaired cracks are failing.</p> <p><u>Gaps / Pop-outs / Separation</u> Sealed expansion joints within the pads and along the trench drains are damaged and failing in many locations.</p> <p>Previously repaired cracks in the Pads are failing and separating.</p> <p>Gaps between the MatCon pavement and Concrete pads/trench drains are evident. Hot seal has cracked.</p> <p>Photo: 1, 2</p>	<p>Yes</p> <p>Yes</p> <p>Yes</p> <p>Yes</p> <p>Yes</p> <p>Yes</p> <p>Yes</p>		
Survey Benchmark on each hangar pad: accessible, attached to concrete pad	M	All ACOE points are in place and accessible.	No		

Inspection Checklist Airport Landfill (form modified April, 2011)

Component: Concern(s)	Inspection Frequency*	Inspection Findings	Corrective Action Needed Yes/No?	Description of Corrective Action	Corrective Action Completion Date
Gas Collection System: Turbines (6) along northern edge of asphalt pavement and 1 stub-out on southern edge of asphalt pavement: debris, functional, accessible	A				
Measure landfill-gas concentrations using Landfill Gas Monitoring Form: any values greater than 25% of the methane LEL (lower explosive limit)?	Q or B				
Seeded Areas & Turf Reinforcement Mats: barren areas >1,000 square feet, tears, animals burrows >4 inches deep, subsidence >1 ft, rills/cracks >4 inches deep, large vegetation (trees, shrubs, bushes, deep-rooting weeds)	A, ASR				
Gravel drainage channels (3): subsidence, erosion, clear of trash, soil, other blockages	A, ASR				

Inspection Checklist Airport Landfill (form modified April, 2011)

Component: Concern(s)	Inspection Frequency*	Inspection Findings	Corrective Action Needed Yes/No?	Description of Corrective Action	Corrective Action Completion Date
Concrete Retaining Wall & 2 Rock Retaining Walls: cracks, bulges, separation, rotation, nearby erosion, spalling, pop-outs, drain pipes (3) open at gravel drainage channel	A, ASR				
Grated Trenches (6): cracks; clear of trash, soil, other blockages, draining properly, standing water, subsidence	A, ASR				
Drainage inlets (8): functional, grates not blocked by trash, soil, other material	A, ASR				
Evidence that pollutants (spills) have entered the storm-water system?	A, ASR				
Sediment washing off the site? If so, map the location[s] in logbook	A, ASR				

Inspection Checklist Airport Landfill (form modified April, 2011)

Component: Concern(s)	Inspection Frequency*	Inspection Findings	Corrective Action Needed Yes/No?	Description of Corrective Action	Corrective Action Completion Date
Outfall Pipe: secure, blockage, significant erosion, soil staining, manhole in place	A, ASR				
Straw-wattle areas between retaining walls and fence: wattles in place, erosion, rills	A, ASR				
Debris Disposal Area					
Seeded (hydromulched) Areas: animals burrows >4 inches deep, barren areas >1,000 square feet, subsidence >1 ft deep, rills/cracks >4 inches deep, large vegetation (trees, shrubs, bushes, deep- rooting weeds)	A, ASR				
<p>Comments:</p> <ol style="list-style-type: none"> 1. Inspection form modified per DOE verbal instruction May 3, 2011 to include inspection findings. 2. Refer to previous 2013 monthly inspections for additional photos. 3. Refer to the September 2013 significant rain event inspection for additional photos. 					

Component locations are shown on Figure 2 of the *Final Implementation Strategy for Post Closure and Maintenance of the DOE/NNSA LASO Airport Landfill SWMU 73-001(a) and Debris Disposal Area SWMU 73-001(d), Los Alamos County Airport, New Mexico, July 2009.*

*Inspection Frequency: A= annual, ASR = After Significant Rainfall, B = biannual (twice a year), M = Monthly, Q = quarterly.

Note: If an additional component(s) is installed for the Airport Landfill, the component(s) can be added in the blank row.

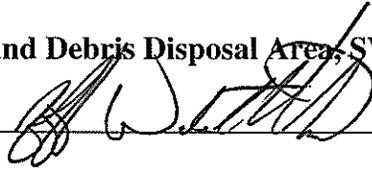


Photo 1: Looking west across hangar pads and MatCon



Photo 2: Looking east across MatCon and hangar pads 3, 4, and 5.

Inspection Checklist for the Airport Landfill, SWMU 73-001(a) and Debris Disposal Area, SWMU 73-001(d)

Date: November 1, 2013 Time: 1030 Printed Name: Jeff Walterscheid Signature: 

Figure(s): Photos attached.

Weather: temperature: 45 degrees wind: 2 mph, last significant rain/snow: 1.01 inches of rain September 22, 2013.

Weather Data Source: Los Alamos Airport

October 2013 Monthly Inspection

Component: Concern(s)	Inspection Frequency*	Inspection Findings	Corrective Action Needed Yes/No?	Description of Corrective Action	Corrective Action Completion Date
<i>Airport Landfill</i>					
MatCon Asphalt Pavement: cracks, gaps, spalling, subsidence	M	<p><u>Settlement / Subsidence</u> Differential settlement and subsidence of the MatCon pavement is visible throughout the paved area with evidence of low spots that allow stormwater water to puddle and pond.</p> <p>Ponding of water is evident at NW corners of Pad 2 & 3 due to settlement of the MatCon pavement, concrete pads and associated trench drains. Trench drains were designed to drain north to south and are currently ineffective. Ponded water at the NW corner of Pad 2 seeps into the soil berm.</p> <p>Storm water drains to and over the north vegetative slope between Pads 3 and 4 from settlement of the MatCon pavement. A small erosion channel has formed down the slope.</p> <p>A visible hinge point has developed in an approximate east west orientation. North of the hinge point line, from Pad 2 to Pad 5, is visible settling, cracking, and ineffective drainage for the MatCon pavement, pads and trench drains.</p> <p><u>Cracks / Gaps</u> Approximately 70% of the previously repaired cracks (hot seal) have failed and re-cracked. Many of the cracks have extended and new cracking is evident.</p> <p>Spider web and open cracking is visible along a hinge point trend between pads #3 and #4, and between pads #4 and #5.</p> <p>Gaps between the MatCon pavement and Concrete pads /trench drains are evident. Hot seal has cracked.</p> <p>Photo: 1, 2, 3, 4</p>	<p>Yes</p> <p>Yes</p> <p>Yes</p> <p>Yes</p> <p>Yes</p> <p>Yes</p>		

Inspection Checklist Airport Landfill (form modified April, 2011)

Component: Concern(s)	Inspection Frequency*	Inspection Findings	Corrective Action Needed Yes/No?	Description of Corrective Action	Corrective Action Completion Date
Concrete Hangar Pads (5) and expansion joints: cracks, gaps, spalling, pop-outs, separation of pad from asphalt, subsidence	M	<p><u>Subsidence / Settlement / Cracking</u> Subsidence and settlement is evident at Pads 2, 3, 4 & 5. North end of Pad 1 has raised and twisted. The north ends of Pads 2 & 3 have noticeable subsidence and the trench drains drain in reverse causing water to puddle. Pads 4 & 5 have subsidence and drainage problems at the north end of the pads.</p> <p>Pads 1, 2, 3, 4, & 5 have cracking in an east-west orientation mainly along the hinge point with major cracking occurring at pads 2 and 3. Cracks in pads 2 & 3 are numerous and large enough to allow infiltration of water during storm events. All pads have spider web type cracking.</p> <p>Cracking and subsidence are trending along a hinge line that is roughly in east-west orientation. The north side of the hinge line is subsiding with the exception of pad 1 which has lifted.</p> <p>Pad 1 also has new cracking in an north- south orientation and has subsided near the middle of the pad.</p> <p>Cracks are evident within the trench drains. Previously repaired cracks are failing.</p> <p><u>Gaps / Pop-outs / Separation</u> Sealed expansion joints within the pads and along the trench drains are damaged and failing in many locations.</p> <p>Previously repaired cracks in the Pads are failing and separating.</p> <p>Gaps between the MatCon pavement and Concrete pads/trench drains are evident. Hot seal has cracked.</p> <p>Photo: 1, 2, 3, 4, 5, 6, 7, 8</p>	<p>Yes</p> <p>Yes</p> <p>Yes</p> <p>Yes</p> <p>Yes</p> <p>Yes</p> <p>Yes</p>		
Survey Benchmark on each hangar pad: accessible, attached to concrete pad	M	<p>All ACOE points are in place and accessible.</p> <p>Photo: 9</p>	No		

Inspection Checklist Airport Landfill (form modified April, 2011)

Component: Concern(s)	Inspection Frequency*	Inspection Findings	Corrective Action Needed Yes/No?	Description of Corrective Action	Corrective Action Completion Date
Gas Collection System: Turbines (6) along northern edge of asphalt pavement and 1 stub-out on southern edge of asphalt pavement: debris, functional, accessible	A				
Measure landfill-gas concentrations using Landfill Gas Monitoring Form: any values greater than 25% of the methane LEL (lower explosive limit)?	Q or B				
Seeded Areas & Turf Reinforcement Mats: barren areas >1,000 square feet, tears, animals burrows >4 inches deep, subsidence >1 ft, rills/cracks >4 inches deep, large vegetation (trees, shrubs, bushes, deep-rooting weeds)	A, ASR				
Gravel drainage channels (3): subsidence, erosion, clear of trash, soil, other blockages	A, ASR				

Inspection Checklist Airport Landfill (form modified April, 2011)

Component: Concern(s)	Inspection Frequency*	Inspection Findings	Corrective Action Needed Yes/No?	Description of Corrective Action	Corrective Action Completion Date
Concrete Retaining Wall & 2 Rock Retaining Walls: cracks, bulges, separation, rotation, nearby erosion, spalling, pop-outs, drain pipes (3) open at gravel drainage channel	A, ASR				
Grated Trenches (6): cracks; clear of trash, soil, other blockages, draining properly, standing water, subsidence	A, ASR				
Drainage inlets (8): functional, grates not blocked by trash, soil, other material	A, ASR				
Evidence that pollutants (spills) have entered the storm-water system?	A, ASR				
Sediment washing off the site? If so, map the location[s] in logbook	A, ASR				

Inspection Checklist Airport Landfill (form modified April, 2011)

Component: Concern(s)	Inspection Frequency*	Inspection Findings	Corrective Action Needed Yes/No?	Description of Corrective Action	Corrective Action Completion Date
Outfall Pipe: secure, blockage, significant erosion, soil staining, manhole in place	A, ASR				
Straw-wattle areas between retaining walls and fence: wattles in place, erosion, rills	A, ASR				
Debris Disposal Area					
Seeded (hydromulched) Areas: animals burrows >4 inches deep, barren areas >1,000 square feet, subsidence >1 ft deep, rills/cracks >4 inches deep, large vegetation (trees, shrubs, bushes, deep- rooting weeds)	A, ASR				
<p>Comments:</p> <ol style="list-style-type: none"> 1. Inspection form modified per DOE verbal instruction May 3, 2011 to include inspection findings. 2. Refer to previous 2013 monthly inspections for additional photos. 3. Refer to the September 2013 significant rain event inspection for additional photos. 					

Component locations are shown on Figure 2 of the *Final Implementation Strategy for Post Closure and Maintenance of the DOE/NNSA LASO Airport Landfill SWMU 73-001(a) and Debris Disposal Area SWMU 73-001(d), Los Alamos County Airport, New Mexico, July 2009.*

*Inspection Frequency: A= annual, ASR = After Significant Rainfall, B = biannual (twice a year), M = Monthly, Q = quarterly.

Note: If an additional component(s) is installed for the Airport Landfill, the component(s) can be added in the blank row.



Photo 1: Looking west at hangar pads



Photo 2: Cracks in MatCon between hangar pads 3 & 4



Photo 3: Cracks in MatCon between hangar pads 4 & 5



Photo4: Subsidence of MatCon at NW corner of hangar pad 3



Photo 5: Separation of hangar pad and trench drain



Photo 6: Crack across trench drain



Photo 7: Separation of hangar pad and trench drain

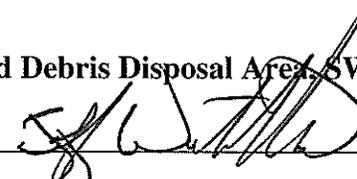


Photo 8: Crack in hangar pad 3



Photo 9: Survey marker and ACOE survey pin

Inspection Checklist for the Airport Landfill, SWMU 73-001(a) and Debris Disposal Area, SWMU 73-001(d)

Date: November 21, 2013 Time: 1330 Printed Name: Jeff Walterscheid Signature: 

Figure(s): Photos attached.

Weather: temperature: 42 degrees wind: 9 mph, last significant rain/snow: 0.21 inches of rain November 16, 2013.

Weather Data Source: Los Alamos Airport

November 2013 Monthly Inspection

Component: Concern(s)	Inspection Frequency*	Inspection Findings	Corrective Action Needed Yes/No?	Description of Corrective Action	Corrective Action Completion Date
<i>Airport Landfill</i>					
MatCon Asphalt Pavement: cracks, gaps, spalling, subsidence	M	<p><u>Settlement / Subsidence</u> Differential settlement and subsidence of the MatCon pavement is visible throughout the paved area with evidence of low spots that allow stormwater water to puddle and pond.</p> <p>Ponding of water is evident at NW corners of Pad 2 & 3 due to settlement of the MatCon pavement, concrete pads and associated trench drains. Trench drains were designed to drain north to south and are currently ineffective. Ponded water at the NW corner of Pad 2 seeps into the soil berm.</p> <p>Storm water drains to and over the north vegetative slope between Pads 3 and 4 from settlement of the MatCon pavement. A small erosion channel has formed down the slope.</p> <p>A visible hinge point has developed in an approximate east west orientation. North of the hinge point line, from Pad 2 to Pad 5, is visible settling, cracking, and ineffective drainage for the MatCon pavement, pads and trench drains.</p> <p><u>Cracks / Gaps</u> Approximately 70% of the previously repaired cracks (hot seal) have failed and re-cracked. Many of the cracks have extended and new cracking is evident.</p> <p>Spider web and open cracking is visible along a hinge point trend between pads #3 and #4, and between pads #4 and #5.</p> <p>Gaps between the MatCon pavement and Concrete pads /trench drains are evident. Hot seal has cracked.</p> <p>Photo: 1, 2, 3, 4</p>	<p>Yes</p> <p>Yes</p> <p>Yes</p> <p>Yes</p> <p>Yes</p> <p>Yes</p>		

Inspection Checklist Airport Landfill (form modified April, 2011)

Component: Concern(s)	Inspection Frequency*	Inspection Findings	Corrective Action Needed Yes/No?	Description of Corrective Action	Corrective Action Completion Date
Concrete Hangar Pads (5) and expansion joints: cracks, gaps, spalling, pop-outs, separation of pad from asphalt, subsidence	M	<p><u>Subsidence / Settlement / Cracking</u> Subsidence and settlement is evident at Pads 2, 3, 4 & 5. North end of Pad 1 has raised and twisted. The north ends of Pads 2 & 3 have noticeable subsidence and the trench drains drain in reverse causing water to puddle. Pads 4 & 5 have subsidence and drainage problems at the north end of the pads.</p> <p>Pads 1, 2, 3, 4, & 5 have cracking in an east-west orientation mainly along the hinge point with major cracking occurring at pads 2 and 3. Cracks in pads 2 & 3 are numerous and large enough to allow infiltration of water during storm events. All pads have spider web type cracking.</p> <p>Cracking and subsidence are trending along a hinge line that is roughly in east-west orientation. The north side of the hinge line is subsiding with the exception of pad 1 which has lifted.</p> <p>Pad 1 also has new cracking in an north- south orientation and has subsided near the middle of the pad.</p> <p>Cracks are evident within the trench drains. Previously repaired cracks are failing.</p> <p><u>Gaps / Pop-outs / Separation</u> Sealed expansion joints within the pads and along the trench drains are damaged and failing in many locations.</p> <p>Previously repaired cracks in the Pads are failing and separating.</p> <p>Gaps between the MatCon pavement and Concrete pads/trench drains are evident. Hot seal has cracked.</p> <p>Photo: 2, 3, 4</p>	<p>Yes</p> <p>Yes</p> <p>Yes</p> <p>Yes</p> <p>Yes</p> <p>Yes</p> <p>Yes</p>		
Survey Benchmark on each hangar pad: accessible, attached to concrete pad	M	All ACOE points are in place and accessible.	No		

Inspection Checklist Airport Landfill (form modified April, 2011)

Component: Concern(s)	Inspection Frequency*	Inspection Findings	Corrective Action Needed Yes/No?	Description of Corrective Action	Corrective Action Completion Date
Gas Collection System: Turbines (6) along northern edge of asphalt pavement and 1 stub-out on southern edge of asphalt pavement: debris, functional, accessible	A				
Measure landfill-gas concentrations using Landfill Gas Monitoring Form: any values greater than 25% of the methane LEL (lower explosive limit)?	Q or B				
Seeded Areas & Turf Reinforcement Mats: barren areas >1,000 square feet, tears, animals burrows >4 inches deep, subsidence >1 ft, rills/cracks >4 inches deep, large vegetation (trees, shrubs, bushes, deep-rooting weeds)	A, ASR				
Gravel drainage channels (3): subsidence, erosion, clear of trash, soil, other blockages	A, ASR				

Inspection Checklist Airport Landfill (form modified April, 2011)

Component: Concern(s)	Inspection Frequency*	Inspection Findings	Corrective Action Needed Yes/No?	Description of Corrective Action	Corrective Action Completion Date
Concrete Retaining Wall & 2 Rock Retaining Walls: cracks, bulges, separation, rotation, nearby erosion, spalling, pop-outs, drain pipes (3) open at gravel drainage channel	A, ASR				
Grated Trenches (6): cracks; clear of trash, soil, other blockages, draining properly, standing water, subsidence	A, ASR				
Drainage inlets (8): functional, grates not blocked by trash, soil, other material	A, ASR				
Evidence that pollutants (spills) have entered the storm-water system?	A, ASR				
Sediment washing off the site? If so, map the location[s] in logbook	A, ASR				

Inspection Checklist Airport Landfill (form modified April, 2011)

Component: Concern(s)	Inspection Frequency*	Inspection Findings	Corrective Action Needed Yes/No?	Description of Corrective Action	Corrective Action Completion Date
Outfall Pipe: secure, blockage, significant erosion, soil staining, manhole in place	A, ASR				
Straw-wattle areas between retaining walls and fence: wattles in place, erosion, rills	A, ASR				
Debris Disposal Area					
Seeded (hydromulched) Areas: animals burrows >4 inches deep, barren areas >1,000 square feet, subsidence >1 ft deep, rills/cracks >4 inches deep, large vegetation (trees, shrubs, bushes, deep- rooting weeds)	A, ASR				
<p>Comments:</p> <ol style="list-style-type: none"> Inspection form modified per DOE verbal instruction May 3, 2011 to include inspection findings. Refer to previous 2013 monthly inspections for additional photos. Refer to the September 2013 significant rain event inspection and the October monthly inspection for additional photos. No photos taken during inspection on November 21. Attached taken November 22, the airport received 0.45 inches of rain followed by snow evening of November 21 and morning of November 22. 					

Component locations are shown on Figure 2 of the *Final Implementation Strategy for Post Closure and Maintenance of the DOE/NNSA LASO Airport Landfill SWMU 73-001(a) and Debris Disposal Area SWMU 73-001(d), Los Alamos County Airport, New Mexico, July 2009.*

*Inspection Frequency: A= annual, ASR = After Significant Rainfall, B = biannual (twice a year), M = Monthly, Q = quarterly.
Note: If an additional component(s) is installed for the Airport Landfill, the component(s) can be added in the blank row.



Photo 1: Frozen puddle on MatCon west of hangar pad



Photo 2: Puddle at NE corner of hangar pad 2

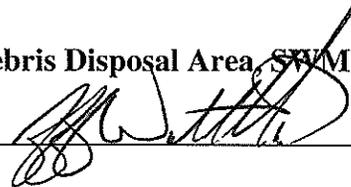


Photo 3: Puddle NW corner hangar pad 3. Note pad and MatCon subsidence.



Photo 4: Looking west across MatCon and hangar pads. Note hinge line down middle of photo.

Inspection Checklist for the Airport Landfill, SWMU 73-001(a) and Debris Disposal Area, SWMU 73-001(d)

Date: December 20, 2013 Time: 1030 Printed Name: Jeff Walterscheid Signature: 

Figure(s): Photos attached.

Weather: temperature: 36 degrees wind: SE 5 mph last significant rain/snow: 3 inches of snow November 30, 2013.

Weather Data Source: Los Alamos Airport

December 2013 Monthly Inspection

Component: Concern(s)	Inspection Frequency*	Inspection Findings	Corrective Action Needed Yes/No?	Description of Corrective Action	Corrective Action Completion Date
<i>Airport Landfill</i>					
MatCon Asphalt Pavement: cracks, gaps, spalling, subsidence	M	<p><u>Settlement / Subsidence</u> Differential settlement and subsidence of the MatCon pavement is visible throughout the paved area with evidence of low spots that allow stormwater water to puddle and pond.</p> <p>Ponding of water is evident at NW corners of Pad 2 & 3 due to settlement of the MatCon pavement, concrete pads and associated trench drains. Trench drains were designed to drain north to south and are currently ineffective. Pondered water at the NW corner of Pad 2 seeps into the soil berm.</p> <p>A visible hinge point has developed in an approximate east west orientation. North of the hinge point line, from Pad 2 to Pad 5, is visible settling, cracking, and ineffective drainage for the MatCon pavement, pads and trench drains. The northwest side of Pad 4 has visibly subsided since the last monthly inspection in November</p> <p><u>Cracks / Gaps</u> Approximately 70% of the previously repaired cracks (hot seal) have failed and re-cracked. Many of the cracks have extended and new cracking is evident.</p> <p>Spider web and open cracking is visible along a hinge point trend between pads 3 and 4, and between pads 4 and 5. Cracks are forming in an east-west orientation with subsidence of both the pavement and concrete pads along the hinge line.</p> <p>Gaps between the MatCon pavement and Concrete pads /trench drains are evident. Hot seal has cracked.</p> <p>Photo: 1, 2, 3, 4, & 8</p>	<p>Yes</p> <p>Yes</p> <p>Yes</p> <p>Yes</p> <p>Yes</p> <p>Yes</p>		

Inspection Checklist Airport Landfill (form modified April, 2011)

Component: Concern(s)	Inspection Frequency*	Inspection Findings	Corrective Action Needed Yes/No?	Description of Corrective Action	Corrective Action Completion Date
Concrete Hangar Pads (5) and expansion joints: cracks, gaps, spalling, pop-outs, separation of pad from asphalt, subsidence	M	<p><u>Subsidence / Settlement / Cracking</u> Subsidence and settlement is evident at Pads 2, 3, 4 & 5. North end of Pad 1 has raised and twisted. The north ends of Pads 2 & 3 have noticeable subsidence and the trench drains drain in reverse causing water to puddle. Pads 4 & 5 have subsidence and drainage problems at the north end of the pads. Additional subsidence is occurring on the NW side of Pad 4.</p> <p>Pads 1, 2, 3, 4, & 5 have cracking in an east-west orientation mainly along the hinge point with major cracking occurring at pads 2 and 3. Cracks in pads 2 & 3 are numerous and large enough to allow infiltration of water during storm events. All pads have spider web type cracking.</p> <p>Cracking and subsidence are trending along a hinge line that is roughly in east-west orientation. The north side of the hinge line is subsiding with the exception of pad 1 which has lifted.</p> <p>Pad 1 also has new cracking in an north- south orientation and has subsided near the middle of the pad.</p> <p>Cracks are evident within the trench drains. Previously repaired cracks are failing.</p> <p><u>Gaps / Pop-outs / Separation</u> Sealed expansion joints within the pads and along the trench drains are damaged and failing in many locations.</p> <p>Previously repaired cracks in the Pads are failing and separating.</p> <p>Gaps between the MatCon pavement and Concrete pads/trench drains are evident. Hot seal has cracked.</p> <p>Photo: 5, 6, 7, and 8</p>	<p>Yes</p> <p>Yes</p> <p>Yes</p> <p>Yes</p> <p>Yes</p> <p>Yes</p> <p>Yes</p>		
Survey Benchmark on each hangar pad: accessible, attached to concrete pad	M	<p>All ACOE points are in place and accessible.</p> <p>Photo: 9</p>	No		

Inspection Checklist Airport Landfill (form modified April, 2011)

Component: Concern(s)	Inspection Frequency*	Inspection Findings	Corrective Action Needed Yes/No?	Description of Corrective Action	Corrective Action Completion Date
Gas Collection System: Turbines (6) along northern edge of asphalt pavement and 1 stub-out on southern edge of asphalt pavement: debris, functional, accessible	A				
Measure landfill-gas concentrations using Landfill Gas Monitoring Form: any values greater than 25% of the methane LEL (lower explosive limit)?	Q or B				
Seeded Areas & Turf Reinforcement Mats: barren areas >1,000 square feet, tears, animals burrows >4 inches deep, subsidence >1 ft, rills/cracks >4 inches deep, large vegetation (trees, shrubs, bushes, deep-rooting weeds)	A, ASR				
Gravel drainage channels (3): subsidence, erosion, clear of trash, soil, other blockages	A, ASR				

Inspection Checklist Airport Landfill (form modified April, 2011)

Component: Concern(s)	Inspection Frequency*	Inspection Findings	Corrective Action Needed Yes/No?	Description of Corrective Action	Corrective Action Completion Date
Concrete Retaining Wall & 2 Rock Retaining Walls: cracks, bulges, separation, rotation, nearby erosion, spalling, pop-outs, drain pipes (3) open at gravel drainage channel	A, ASR				
Grated Trenches (6): cracks; clear of trash, soil, other blockages, draining properly, standing water, subsidence	A, ASR				
Drainage inlets (8): functional, grates not blocked by trash, soil, other material	A, ASR				
Evidence that pollutants (spills) have entered the storm-water system?	A, ASR				
Sediment washing off the site? If so, map the location[s] in logbook	A, ASR				

Inspection Checklist Airport Landfill (form modified April, 2011)

Component: Concern(s)	Inspection Frequency*	Inspection Findings	Corrective Action Needed Yes/No?	Description of Corrective Action	Corrective Action Completion Date
Outfall Pipe: secure, blockage, significant erosion, soil staining, manhole in place	A, ASR				
Straw-wattle areas between retaining walls and fence: wattles in place, erosion, rills	A, ASR				
Debris Disposal Area					
Seeded (hydromulched) Areas: animals burrows >4 inches deep, barren areas >1,000 square feet, subsidence >1 ft deep, rills/cracks >4 inches deep, large vegetation (trees, shrubs, bushes, deep- rooting weeds)	A, ASR				
<p>Comments:</p> <ol style="list-style-type: none"> 1. Inspection form modified per DOE verbal instruction May 3, 2011 to include inspection findings. 2. Refer to previous 2013 monthly inspections for additional photos. 3. Refer to the September 2013 significant rain event inspection and the October monthly inspection for additional photos. 4. 					

Component locations are shown on Figure 2 of the *Final Implementation Strategy for Post Closure and Maintenance of the DOE/NNSA LASO Airport Landfill SWMU 73-001(a) and Debris Disposal Area SWMU 73-001(d), Los Alamos County Airport, New Mexico, July 2009.*

*Inspection Frequency: A= annual, ASR = After Significant Rainfall, B = biannual (twice a year), M = Monthly, Q = quarterly.
Note: If an additional component(s) is installed for the Airport Landfill, the component(s) can be added in the blank row.



Photo 1: Looking west across MatCon pavement and cement hangar pads.



Photo 2 Cracks in the MatCon pavement along the hinge line between Pads 4 & 5.

Inspection Checklist Airport Landfill (form modified April, 2011)



Photo 3: New cracks between Pads 3 & 4.



Photo 4: Extension of crack from previously hot sealed crack



Photo 5: Expansion joint



Photo 6: Separation of pad and trench drain with cracking at Pad 1



Photo 7: Crack across trench drain and into Pad 3

Inspection Checklist Airport Landfill (form modified April, 2011)



Photo 8: subsidence at NW corner of Pad 2



Photo 9: Survey nail and cap NE corner Pad 1

Appendix B

Completed Landfill-Gas Measurement Forms

LANDFILL GAS MONITORING FORM

Landfill Name: Airport Landfill, SWMU 73-001(a) at the Los Alamos County Airport

Inspector Printed Name: Jeff Walterscheid Inspector Signature: 

Date: 03/15/13 Barometric Pressure: 30.22 Temperature: 52 degrees F

Weather conditions: Clear Wind Direction: SE Wind Speed: 0-1 mph

Date and amount of last precipitation (within last 48 hours): None

Instrument: MSA Altair 5X #1310 Calibration method and date: Pentane gas 03/04/13

1st Quarter Monitoring 2013

Sample Location	Height (ft)	Time	CH ₄ % LEL	O ₂ %	CO %
Hangar Pads: Samples will be collected on the east side of the pad along the expansion joint.* After a hangar is built, samples will be collected along the interior walls at 4 inches to 4 ft above pad.					
HP-01	2 inches above expansion joint*	0918	0	20.8	0
HP-02	2 inches above expansion joint*	0917	0	20.8	0
HP-03	2 inches above expansion joint*	0917	0	20.8	0
HP-04	2 inches above expansion joint*	0933	0	20.8	0
HP-05	2 inches above expansion joint*	0936	0	20.8	0
HP-06	2 inches above expansion joint*	0937	0	20.8	0
HP-07	2 inches above expansion joint*	0943	0	20.8	0
HP-08	2 inches above expansion joint*	0942	0	20.8	0
HP-09	2 inches above expansion joint*	0941	0	20.8	0
HP-10	2 inches above expansion joint*	0946	0	20.8	0
HP-11	2 inches above expansion joint*	0947	0	20.8	0
HP-12	2 inches above expansion joint*	0947	0	20.8	0
HP-13	2 inches above expansion joint*	0954	0	20.8	0
HP-14	2 inches above expansion joint*	0952	0	20.8	0
HP-15	2 inches above expansion joint*	0951	0	20.8	0

Trench drains (west side of each hangar pad)					
TD-01	4 inches below trench grate	0911	0	20.8	0
TD-02	4 inches below trench grate	0912	0	20.8	0
TD-03	4 inches below trench grate	0931	0	20.8	0
TD-04	4 inches below trench grate	0916	0	20.8	0
TD-05	4 inches below trench grate	0935	0	20.8	0
TD-06	4 inches below trench grate	0938	0	20.8	0
TD-07	4 inches below trench grate	0944	0	20.8	0
TD-08	4 inches below trench grate	0941	0	20.8	0
TD-09	4 inches below trench grate	0953	0	20.8	0
TD-10	4 inches below trench grate	0950	0	20.8	0
Drainage culverts (drainage inlets on the buried storm sewer lines)					
DC-01	4 inches below grate	0913	0	20.8	0
DC-02	4 inches below grate	0914	0	20.8	0
DC-03	4 inches below grate	0915	0	20.8	0
DC-04	4 inches below grate	0939	0	20.8	0
DC-05	4 inches below grate	0940	0	20.8	0
DC-06	4 inches below grate	0950	0	20.8	0
DC-07	4 inches below grate	0955	0	20.8	0
DC-08	4 inches below manhole lid	0959	0	20.8	0
Northern perimeter (ground and spinner [wind turbine] locations)					
PG-01	2 inches above ground surface	0910	0	20.8	0
PG-02	2 inches above ground surface	0930	0	20.8	0
PG-03	2 inches above ground surface	0935	0	20.8	0
PG-04	2 inches above ground surface	0945	0	20.8	0
PG-05	2 inches above ground surface	0954	0	20.8	0
PG-06	2 inches above ground surface	1004	0	20.8	0
PG-07	2 inches above ground surface	1003	0	20.8	0
PG-08	2 inches above ground surface	1002	0	20.2	0

PG-09	2 inches above ground surface	0956	0	20.8	0
PG-10	2 inches above ground surface	1001	0	20.8	0
PG-11	2 inches above ground surface	1000	0	20.8	0
PG-12	2 inches above ground surface	0957	0	20.8	0
PG-13	2 inches above ground surface	0959	0	20.8	0
PG-14	2 inches above ground surface	0958	0	20.8	0
PS-01	at spinner (4 ft above pavement)	0909	0	20.8	0
PS-02	at spinner (4 ft above pavement)	0919	100%	18.4	0
PS-03	at spinner (4 ft above pavement)	0934	0	20.8	0
PS-04	at spinner (4 ft above pavement)	0943	0	20.8	0
PS-05	at spinner (4 ft above pavement)	0946	0	20.8	0
PS-06	at spinner (4 ft above pavement)	0955	34%	20.8	0

Note:

Methane concentrations shall be measured in percent of the LEL. Other gases measured in %.

DC = Drainage Culvert (inlet)

HP = Hangar Pad

LEL = lower explosive limit

PG = Perimeter Ground

PS = Perimeter Spinner (wind turbine)

TD = Trench Drain

Methane = CH₄

Oxygen = O₂

Carbon dioxide = CO₂

Comments: **PS-2 monitoring notes:** Alarmed within 6 inches of approach to spinner at 40% LEL, area at top of open vent pipe and under spinner registered 100% LEL (not within breathing zone). Area was very calm with no breeze during monitoring activities.

Form modified from <http://www.nmenv.state.nm.us/swb/documents/ExampleMethaneFORM10-10-08.doc>.

LANDFILL GAS MONITORING FORM

Landfill Name: Airport Landfill, SWMU 73-001(a) at the Los Alamos County Airport

Inspector Printed Name: Jeff Walterscheid

Inspector Signature: 

Date: 07/01/13 Barometric Pressure: 30.39 Temperature: 71 degrees F

Weather conditions: Clear Wind Direction: SE Wind Speed: 3-5 mph

Date and amount of last precipitation (within last 48 hours): 0.19 inches May 30, 2013

Instrument: MSA Altair 5X #1549 Calibration method and date: Pentane gas 06/18/13

2nd Quarter Monitoring 2013

Sample Location	Height (ft)	Time	CH ₄ % LEL	O ₂ %	CO %
Hangar Pads: Samples will be collected on the east side of the pad along the expansion joint.* After a hangar is built, samples will be collected along the interior walls at 4 inches to 4 ft above pad.					
HP-01	2 inches above expansion joint*	1253	0	20.8	0
HP-02	2 inches above expansion joint*	1254	0	20.8	0
HP-03	2 inches above expansion joint*	1255	0	20.8	0
HP-04	2 inches above expansion joint*	1247	0	20.8	0
HP-05	2 inches above expansion joint*	1248	0	20.8	0
HP-06	2 inches above expansion joint*	1249	0	20.8	0
HP-07	2 inches above expansion joint*	1241	0	20.8	0
HP-08	2 inches above expansion joint*	1242	0	20.8	0
HP-09	2 inches above expansion joint*	1243	0	20.8	0
HP-10	2 inches above expansion joint*	1236	0	20.8	0
HP-11	2 inches above expansion joint*	1237	0	20.8	0
HP-12	2 inches above expansion joint*	1238	0	20.8	0
HP-13	2 inches above expansion joint*	1233	0	20.8	0
HP-14	2 inches above expansion joint*	1234	0	20.8	0
HP-15	2 inches above expansion joint*	1235	0	20.8	0

Trench drains (west side of each hangar pad)					
TD-01	4 inches below trench grate	1257	0	20.8	0
TD-02	4 inches below trench grate	1258	0	20.8	0
TD-03	4 inches below trench grate	1250	0	20.8	0
TD-04	4 inches below trench grate	1249	0	20.8	0
TD-05	4 inches below trench grate	1245	0	20.8	0
TD-06	4 inches below trench grate	1244	0	20.8	0
TD-07	4 inches below trench grate	1240	0	20.8	0
TD-08	4 inches below trench grate	1239	0	20.8	0
TD-09	4 inches below trench grate	1235	0	20.8	0
TD-10	4 inches below trench grate	1234	0	20.8	0
Drainage culverts (drainage inlets on the buried storm sewer lines)					
DC-01	4 inches below grate	1259	0	20.8	0
DC-02	4 inches below grate	1300	0	20.8	0
DC-03	4 inches below grate	1301	0	20.8	0
DC-04	4 inches below grate	1302	0	20.8	0
DC-05	4 inches below grate	1303	0	20.8	0
DC-06	4 inches below grate	1304	0	20.8	0
DC-07	4 inches below grate	1305	0	20.8	0
DC-08	4 inches below manhole lid	1226	0	20.8	0
Northern perimeter (ground and spinner [wind turbine] locations)					
PG-01	2 inches above ground surface	1314	0	20.8	0
PG-02	2 inches above ground surface	1312	0	20.8	0
PG-03	2 inches above ground surface	1310	0	20.8	0
PG-04	2 inches above ground surface	1309	0	20.8	0
PG-05	2 inches above ground surface	1219	0	20.8	0
PG-06	2 inches above ground surface	1220	0	20.8	0
PG-07	2 inches above ground surface	1221	0	20.8	0
PG-08	2 inches above ground surface	1222	0	20.2	0

PG-09	2 inches above ground surface	1223	0	20.8	0
PG-10	2 inches above ground surface	1230	0	20.8	0
PG-11	2 inches above ground surface	1229	0	20.8	0
PG-12	2 inches above ground surface	1224	0	20.8	0
PG-13	2 inches above ground surface	1228	0	20.8	0
PG-14	2 inches above ground surface	1225	0	20.8	0
PS-01	at spinner (4 ft above pavement)	1207	0	20.8	0
PS-02	at spinner (4 ft above pavement)	1208	100%	14.1	0
PS-03	at spinner (4 ft above pavement)	1210	0	20.8	0
PS-04	at spinner (4 ft above pavement)	1214	12%	20.8	0
PS-05	at spinner (4 ft above pavement)	1215	100%	19.3	0
PS-06	at spinner (4 ft above pavement)	1216	0	20.8	0

Note:

Methane concentrations shall be measured in percent of the LEL. Other gases measured in %.

DC = Drainage Culvert (inlet)

HP = Hangar Pad

LEL = lower explosive limit

PG = Perimeter Ground

PS = Perimeter Spinner (wind turbine)

TD = Trench Drain

Methane = CH₄

Oxygen = O₂

Carbon dioxide = CO₂

Comments:

Form modified from <http://www.nmenv.state.nm.us/swb/documents/ExampleMethaneFORM10-10-08.doc>.

LANDFILL GAS MONITORING FORM

Landfill Name: Airport Landfill, SWMU 73-001(a) at the Los Alamos County Airport

Inspector Printed Name: Jeff Walterscheid

Inspector Signature: 

Date: 09/30/13 Barometric Pressure: 29.98 Temperature: 56 degrees F

Weather conditions: Clear Wind Direction: SE Wind Speed: 3-5 mph

Date and amount of last precipitation (within last 48 hours): None

Instrument: MSA Altair 5X #1549 Calibration method and date: Pentane gas 09/19/13

3rd Quarter Monitoring 2013

Sample Location	Height (ft)	Time	CH ₄ % LEL	O ₂ %	CO %
Hangar Pads: Samples will be collected on the east side of the pad along the expansion joint.* After a hangar is built, samples will be collected along the interior walls at 4 inches to 4 ft above pad.					
HP-01	2 inches above expansion joint*	1022	0	20.8	0
HP-02	2 inches above expansion joint*	1021	0	20.8	0
HP-03	2 inches above expansion joint*	1020	0	20.8	0
HP-04	2 inches above expansion joint*	1027	0	20.8	0
HP-05	2 inches above expansion joint*	1026	0	20.8	0
HP-06	2 inches above expansion joint*	1025	0	20.8	0
HP-07	2 inches above expansion joint*	1032	0	20.8	0
HP-08	2 inches above expansion joint*	1031	14%	20.8	0
HP-09	2 inches above expansion joint*	1030	0	20.8	0
HP-10	2 inches above expansion joint*	1041	0	20.8	0
HP-11	2 inches above expansion joint*	1040	0	20.8	0
HP-12	2 inches above expansion joint*	1039	0	20.8	0
HP-13	2 inches above expansion joint*	1046	0	20.8	0
HP-14	2 inches above expansion joint*	1045	0	20.8	0
HP-15	2 inches above expansion joint*	1044	0	20.8	0

Trench drains (west side of each hangar pad)					
TD-01	4 inches below trench grate	1017	0	20.8	0
TD-02	4 inches below trench grate	1018	0	20.8	0
TD-03	4 inches below trench grate	1024	0	20.8	0
TD-04	4 inches below trench grate	1025	0	20.8	0
TD-05	4 inches below trench grate	1032	0	20.8	0
TD-06	4 inches below trench grate	1033	0	20.8	0
TD-07	4 inches below trench grate	1036	0	20.8	0
TD-08	4 inches below trench grate	1038	0	20.8	0
TD-09	4 inches below trench grate	1045	0	20.8	0
TD-10	4 inches below trench grate	1047	0	20.8	0
Drainage culverts (drainage inlets on the buried storm sewer lines)					
DC-01	4 inches below grate	1015	0	20.8	0
DC-02	4 inches below grate	1014	0	20.8	0
DC-03	4 inches below grate	1013	0	20.8	0
DC-04	4 inches below grate	1012	0	20.8	0
DC-05	4 inches below grate	1011	0	20.8	0
DC-06	4 inches below grate	1010	0	20.8	0
DC-07	4 inches below grate	1009	0	20.8	0
DC-08	4 inches below manhole lid	1100	0	20.8	0
Northern perimeter (ground and spinner [wind turbine] locations)					
PG-01	2 inches above ground surface	1016	0	20.8	0
PG-02	2 inches above ground surface	1023	0	20.8	0
PG-03	2 inches above ground surface	1028	0	20.8	0
PG-04	2 inches above ground surface	1035	0	20.8	0
PG-05	2 inches above ground surface	1043	0	20.8	0
PG-06	2 inches above ground surface	1050	0	20.8	0
PG-07	2 inches above ground surface	1052	0	20.8	0
PG-08	2 inches above ground surface	1053	0	20.2	0

PG-09	2 inches above ground surface	1054	0	20.8	0
PG-10	2 inches above ground surface	1105	0	20.8	0
PG-11	2 inches above ground surface	1103	0	20.8	0
PG-12	2 inches above ground surface	1056	0	20.8	0
PG-13	2 inches above ground surface	1102	0	20.8	0
PG-14	2 inches above ground surface	1058	0	20.8	0
PS-01	at spinner (4 ft above pavement)	0954	0	20.8	0
PS-02	at spinner (4 ft above pavement)	0955	100%	18.5	0
PS-03	at spinner (4 ft above pavement)	0958	0	20.8	0
PS-04	at spinner (4 ft above pavement)	0959	12%	20.8	0
PS-05	at spinner (4 ft above pavement)	1000	100%	19.1	0
PS-06	at spinner (4 ft above pavement)	1004	0	20.8	0

Note:

Methane concentrations shall be measured in percent of the LEL. Other gases measured in %.

DC = Drainage Culvert (inlet)

HP = Hangar Pad

LEL = lower explosive limit

PG = Perimeter Ground

PS = Perimeter Spinner (wind turbine)

TD = Trench Drain

Methane = CH₄

Oxygen = O₂

Carbon dioxide = CO₂

Comments:

Instrument alarmed at PS-02 and PS-05, set to alarm at 20% of the LEL.

Form modified from <http://www.nmenv.state.nm.us/swb/documents/ExampleMethaneFORM10-10-08.doc>.



Photo 1: Gas monitoring at riser PS-2

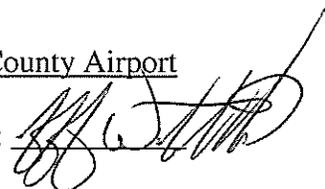


Photo 2: Gas monitoring at PG-14 on vegetated slope

LANDFILL GAS MONITORING FORM

Landfill Name: Airport Landfill, SWMU 73-001(a) at the Los Alamos County Airport

Inspector Printed Name: Jeff Walterscheid

Inspector Signature: 

Date: 1/2/14 Barometric Pressure: 30.36 Temperature: 28 degrees F

Weather conditions: Fair Wind Direction: NW Wind Speed: 6 mph

Date and amount of last precipitation (within last 48 hours): 12/22/13 0.5 inches of snow

Instrument: MSA Altair 5X #1500 Calibration method and date: Pentane gas 12/18/13

4th Quarter Monitoring 2013

Sample Location	Height (ft)	Time	CH ₄ % LEL	O ₂ %	CO %
Hangar Pads: Samples will be collected on the east side of the pad along the expansion joint.* After a hangar is built, samples will be collected along the interior walls at 4 inches to 4 ft above pad.					
HP-01	2 inches above expansion joint*	1048	0	20.8	0
HP-02	2 inches above expansion joint*	1049	0	20.8	0
HP-03	2 inches above expansion joint*	1050	0	20.8	0
HP-04	2 inches above expansion joint*	1052	0	20.8	0
HP-05	2 inches above expansion joint*	1053	0	20.8	0
HP-06	2 inches above expansion joint*	1054	0	20.8	0
HP-07	2 inches above expansion joint*	1055	0	20.8	0
HP-08	2 inches above expansion joint*	1056	0	20.8	0
HP-09	2 inches above expansion joint*	1058	0	20.8	0
HP-10	2 inches above expansion joint*	1059	0	20.8	0
HP-11	2 inches above expansion joint*	1100	0	20.8	0
HP-12	2 inches above expansion joint*	1101	0	20.8	0
HP-13	2 inches above expansion joint*	1102	0	20.8	0
HP-14	2 inches above expansion joint*	1103	0	20.8	0
HP-15	2 inches above expansion joint*	1104	0	20.8	0

Trench drains (west side of each hangar pad)					
TD-01	4 inches below trench grate	1035	0	20.8	0
TD-02	4 inches below trench grate	1036	0	20.8	0
TD-03	4 inches below trench grate	1037	0	20.8	0
TD-04	4 inches below trench grate	1038	0	20.8	0
TD-05	4 inches below trench grate	Ice	-	-	-
TD-06	4 inches below trench grate	1040	0	20.8	0
TD-07	4 inches below trench grate	Ice	-	-	-
TD-08	4 inches below trench grate	1042	0	20.8	0
TD-09	4 inches below trench grate	1044	0	20.8	0
TD-10	4 inches below trench grate	1045	0	20.8	0
Drainage culverts (drainage inlets on the buried storm sewer lines)					
DC-01	4 inches below grate	1033	0	20.8	0
DC-02	4 inches below grate	1032	0	20.8	0
DC-03	4 inches below grate	1031	0	20.8	0
DC-04	4 inches below grate	1030	0	20.8	0
DC-05	4 inches below grate	1029	0	20.8	0
DC-06	4 inches below grate	1028	0	20.8	0
DC-07	4 inches below grate	1027	0	20.8	0
DC-08	4 inches below manhole lid	1107	0	20.8	0
Northern perimeter (ground and spinner [wind turbine] locations)					
PG-01	2 inches above ground surface	1122	0	20.8	0
PG-02	2 inches above ground surface	1121	0	20.8	0
PG-03	2 inches above ground surface	1120	0	20.8	0
PG-04	2 inches above ground surface	1119	0	20.8	0
PG-05	2 inches above ground surface	1118	0	20.8	0
PG-06	2 inches above ground surface	1112	0	20.8	0
PG-07	2 inches above ground surface	1111	0	20.8	0
PG-08	2 inches above ground surface	1110	0	20.8	0

PG-09	2 inches above ground surface	1109	0	20.8	0
PG-10	2 inches above ground surface	1114	0	20.8	0
PG-11	2 inches above ground surface	1115	0	20.8	0
PG-12	2 inches above ground surface	1108	0	20.8	0
PG-13	2 inches above ground surface	Snow	-	-	-
PG-14	2 inches above ground surface	1107	0	20.8	0
PS-01	at spinner (4 ft above pavement)	1017	0	20.8	0
PS-02	at spinner (4 ft above pavement)	1018	100	18.5	0
PS-03	at spinner (4 ft above pavement)	1020	100	16.7	0
PS-04	at spinner (4 ft above pavement)	1022	0	20.8	0
PS-05	at spinner (4 ft above pavement)	1023	0	20.8	0
PS-06	at spinner (4 ft above pavement)	1025	0	20.8	0

Note:

Methane concentrations shall be measured in percent of the LEL. Other gases measured in %.

DC = Drainage Culvert (inlet)

HP = Hangar Pad

LEL = lower explosive limit

PG = Perimeter Ground

PS = Perimeter Spinner (wind turbine)

TD = Trench Drain

Methane = CH₄

Oxygen = O₂

Carbon dioxide = CO₂

Comments:

Form modified from <http://www.nmenv.state.nm.us/swb/documents/ExampleMethaneFORM10-10-08.doc>.



Photo 1: Posting for methane gas at PS-01 (similar posting at PS-06)



Photo 2: Monitoring at PG-01

LANDFILL GAS MONITORING FORM

Landfill Name: Airport Landfill, SWMU 73-001(a) at the Los Alamos County Airport

Inspector Printed Name: Jeff Walterscheid

Inspector Signature: 

Date: 12/02/13 Barometric Pressure: 29.98 Temperature: 49 degrees F

Weather conditions: Clear Wind Direction: N Wind Speed: 3 mph

Date and amount of last precipitation (within last 48 hours): 6 inches of snow 11/24/13

Instrument: MSA Altair 5X #1547 Calibration method and date: Pentane gas 11/19/13

Weekly Monitoring

Sample Location	Height (ft)	Time	CH ₄ % LEL	O ₂ %	CO %
Hangar Pads: Samples will be collected on the east side of the pad along the expansion joint.* After a hangar is built, samples will be collected along the interior walls at 4 inches to 4 ft above pad.					
HP-01	2 inches above expansion joint*	1421	0	20.8	0
HP-02	2 inches above expansion joint*	1422	0	20.8	0
HP-03	2 inches above expansion joint*	1423	0	20.8	0
HP-04	2 inches above expansion joint*	1424	0	20.8	0
HP-05	2 inches above expansion joint*	1425	0	20.8	0
HP-06	2 inches above expansion joint*	1426	0	20.8	0
HP-07	2 inches above expansion joint*	1427	0	20.8	0
HP-08	2 inches above expansion joint*	1428	0	20.8	0
HP-09	2 inches above expansion joint*	1429	0	20.8	0
HP-10	2 inches above expansion joint*	1431	0	20.8	0
HP-11	2 inches above expansion joint*	1432	0	20.8	0
HP-12	2 inches above expansion joint*	1433	0	20.8	0
HP-13	2 inches above expansion joint*	1435	0	20.8	0
HP-14	2 inches above expansion joint*	1436	0	20.8	0
HP-15	2 inches above expansion joint*	1437	0	20.8	0

Trench drains (west side of each hangar pad)					
TD-01	4 inches below trench grate	1446	0	20.8	0
TD-02	4 inches below trench grate	1447	0	20.8	0
TD-03	4 inches below trench grate	Standing Water			
TD-04	4 inches below trench grate	1448	0	20.8	0
TD-05	4 inches below trench grate	Standing Water			
TD-06	4 inches below trench grate	1449	0	20.8	0
TD-07	4 inches below trench grate	Standing Water			
TD-08	4 inches below trench grate	1450	6%	20.8	0
TD-09	4 inches below trench grate	1451	0	20.8	0
TD-10	4 inches below trench grate	1452	0	20.8	0
Drainage culverts (drainage inlets on the buried storm sewer lines)					
DC-01	4 inches below grate	1503	0	20.8	0
DC-02	4 inches below grate	1502	0	20.8	0
DC-03	4 inches below grate	1501	0	20.8	0
DC-04	4 inches below grate	1459	0	20.8	0
DC-05	4 inches below grate	1457	0	20.8	0
DC-06	4 inches below grate	1456	0	20.8	0
DC-07	4 inches below grate	1454	0	20.8	0
DC-08	4 inches below manhole lid	Snow			
Northern perimeter (ground and spinner [wind turbine] locations)					
PG-01	2 inches above ground surface	Snow			
PG-02	2 inches above ground surface	Snow			
PG-03	2 inches above ground surface	Snow			
PG-04	2 inches above ground surface	Snow			
PG-05	2 inches above ground surface	Snow			
PG-06	2 inches above ground surface	Snow			
PG-07	2 inches above ground surface	Snow			

PG-08	2 inches above ground surface	Snow			
PG-09	2 inches above ground surface	Snow			
PG-10	2 inches above ground surface	Snow			
PG-11	2 inches above ground surface	Snow			
PG-12	2 inches above ground surface	Snow			
PG-13	2 inches above ground surface	Snow			
PG-14	2 inches above ground surface	Snow			
PS-01	at spinner (4 ft above pavement)	1445	0	20.8	0
PS-02	at spinner (4 ft above pavement)	1443	100%	16	0
PS-03	at spinner (4 ft above pavement)	1442	0	20.8	0
PS-04	at spinner (4 ft above pavement)	1441	0	20.8	0
PS-05	at spinner (4 ft above pavement)	1439	100%	20.8	0
PS-06	at spinner (4 ft above pavement)	1438	0	20.8	0

Note:

Methane concentrations shall be measured in percent of the LEL. Other gases measured in %.

DC = Drainage Culvert (inlet)

HP = Hangar Pad

LEL = lower explosive limit

PG = Perimeter Ground

PS = Perimeter Spinner (wind turbine)

TD = Trench Drain

Methane = CH₄

Oxygen = O₂

Carbon dioxide = CO₂

Comments:

- 1. Trench drains associated with hangar pads 1-5 contain standing water at northern third of drain.**
- 2. Monitoring not completed along eastern and northern vegetated slopes due to snow and saturated soil conditions.**
- 3. Manhole at DC-8 covered with snow and could not be located.**

Form modified from <http://www.nmenv.state.nm.us/swb/documents/ExampleMethaneFORM10-10-08.doc>.



Snow on northern vegetated slope



Snow and saturated soil conditions eastern vegetated slope



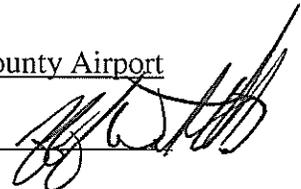
Snow/ice along hinge point



Water and ice in trench drain

LANDFILL GAS MONITORING FORM

Landfill Name: Airport Landfill, SWMU 73-001(a) at the Los Alamos County Airport

Inspector Printed Name: Jeff Walterscheid Inspector Signature: 

Date: 12/12/13 Barometric Pressure: 30.36 Temperature: 33 degrees F

Weather conditions: Calm Wind Direction: 0 Wind Speed: 0 mph

Date and amount of last precipitation (within last 48 hours): 1 inch of snow 12/7/13

Instrument: MSA Altair 5X #1543 Calibration method and date: Pentane gas 12/4/13

Weekly Monitoring

Sample Location	Height (ft)	Time	CH ₄ % LEL	O ₂ %	CO %
Hangar Pads: Samples will be collected on the east side of the pad along the expansion joint.* After a hangar is built, samples will be collected along the interior walls at 4 inches to 4 ft above pad.					
HP-01	2 inches above expansion joint*	1357	0	20.8	0
HP-02	2 inches above expansion joint*	1355	0	20.8	0
HP-03	2 inches above expansion joint*	1354	0	20.8	0
HP-04	2 inches above expansion joint*	Snow covered	-	-	-
HP-05	2 inches above expansion joint*	1351	0	20.8	0
HP-06	2 inches above expansion joint*	1352	0	20.8	0
HP-07	2 inches above expansion joint*	1349	0	20.8	0
HP-08	2 inches above expansion joint*	1348	0	20.8	0
HP-09	2 inches above expansion joint*	1347	0	20.8	0
HP-10	2 inches above expansion joint*	1343	0	20.8	0
HP-11	2 inches above expansion joint*	1344	6**	20.8	0
HP-12	2 inches above expansion joint*	1346	0	20.8	0
HP-13	2 inches above expansion joint*	1342	13**	20.8	0
HP-14	2 inches above expansion joint*	1341	0	20.8	0
HP-15	2 inches above expansion joint*	1340	0	20.8	0

Trench drains (west side of each hangar pad)					
TD-01	4 inches below trench grate	Snow/ice	–	–	–
TD-02	4 inches below trench grate	Snow/ice	–	–	–
TD-03	4 inches below trench grate	Snow/ice	–	–	–
TD-04	4 inches below trench grate	Snow/ice	–	–	–
TD-05	4 inches below trench grate	Snow/ice	–	–	–
TD-06	4 inches below trench grate	Snow/ice	–	–	–
TD-07	4 inches below trench grate	Snow/ice	–	–	–
TD-08	4 inches below trench grate	Snow/ice	–	–	–
TD-09	4 inches below trench grate	Snow/ice	–	–	–
TD-10	4 inches below trench grate	Snow/ice	–	–	–
Drainage culverts (drainage inlets on the buried storm sewer lines)					
DC-01	4 inches below grate	1327	11	20.8	0
DC-02	4 inches below grate	1326	23	20.8	0
DC-03	4 inches below grate	1324	16	20.8	0
DC-04	4 inches below grate	1323	36	20.8	0
DC-05	4 inches below grate	1322	34	20.8	0
DC-06	4 inches below grate	1321	33	20.8	0
DC-07	4 inches below grate	1320	8	20.8	0
DC-08	4 inches below manhole lid	Snow	–	–	–
Northern perimeter (ground and spinner [wind turbine] locations)					
PG-01	2 inches above ground surface	Snow	–	–	–
PG-02	2 inches above ground surface	Snow	–	–	–
PG-03	2 inches above ground surface	Snow	–	–	–
PG-04	2 inches above ground surface	Snow	–	–	–
PG-05	2 inches above ground surface	Snow	–	–	–
PG-06	2 inches above ground surface	Snow	–	–	–
PG-07	2 inches above ground surface	Snow	–	–	–
PG-08	2 inches above ground surface	Snow	–	–	–

PG-09	2 inches above ground surface	Snow	–	–	–
PG-10	2 inches above ground surface	Snow	–	–	–
PG-11	2 inches above ground surface	Snow	–	–	–
PG-12	2 inches above ground surface	Snow	–	–	–
PG-13	2 inches above ground surface	Snow	–	–	–
PG-14	2 inches above ground surface	Snow	–	–	–
PS-01	at spinner (4 ft above pavement)	1307	0	20.8	0
PS-02	at spinner (4 ft above pavement)	1308	100	5.9	0
PS-03	at spinner (4 ft above pavement)	1313	0	20.8	0
PS-04	at spinner (4 ft above pavement)	1314	0	20.8	0
PS-05	at spinner (4 ft above pavement)	1316	100	17.9	0
PS-06	at spinner (4 ft above pavement)	1318	0	20.8	0

Note:

Methane concentrations shall be measured in percent of the LEL. Other gases measured in %.

DC = Drainage Culvert (inlet)

HP = Hangar Pad

LEL = lower explosive limit

PG = Perimeter Ground

PS = Perimeter Spinner (wind turbine)

TD = Trench Drain

Methane = CH₄

Oxygen = O₂

Carbon dioxide = CO₂

Comments:

** Gas monitoring along the east side of the hangar pads is dictated by open cracking along the expansion joint. The height of the monitoring is dictated by the design of the pad and the MatCon. Monitoring results for HP-11 and HP-13 at the surface of the crack were 100% of the LEL.

- 1. Trench drains associated with hangar pads 1-5 contain snow and ice and were not monitored.**
- 2. Monitoring not completed along eastern and northern vegetated slopes due to snow and frozen soil conditions.**
- 3. Manhole at DC-8 covered with snow and could not be located.**

Form modified from <http://www.nmenv.state.nm.us/swb/documents/ExampleMethaneFORM10-10-08.doc>.



Monitoring at PS-02



Snow and frozen soil conditions eastern vegetated slope



Snow on northern vegetated slope

LANDFILL GAS MONITORING FORM

Landfill Name: Airport Landfill, SWMU 73-001(a) at the Los Alamos County Airport

Inspector Printed Name: Jeff Walterscheid

Inspector Signature: 

Date: 12/17/13 Barometric Pressure: 30.44 Temperature: 46 degrees F

Weather conditions: Calm Wind Direction: SE Wind Speed: 1-2 mph

Date and amount of last precipitation (within last 48 hours): None

Instrument: MSA Altair 5X #310 Calibration method and date: Pentane gas 12/16/13

Weekly Monitoring

Sample Location	Height (ft)	Time	CH ₄ % LEL	O ₂ %	CO %
Hangar Pads: Samples will be collected on the east side of the pad along the expansion joint.* After a hangar is built, samples will be collected along the interior walls at 4 inches to 4 ft above pad.					
HP-01	2 inches above expansion joint*	1223	0	20.8	0
HP-02	2 inches above expansion joint*	1224	0	20.8	0
HP-03	2 inches above expansion joint*	1225	0	20.8	0
HP-04	2 inches above expansion joint*	1226	0	20.8	0
HP-05	2 inches above expansion joint*	1228	0	20.8	0
HP-06	2 inches above expansion joint*	1229	0	20.8	0
HP-07	2 inches above expansion joint*	1231	0	20.8	0
HP-08	2 inches above expansion joint*	1232	0	20.8	0
HP-09	2 inches above expansion joint*	1233	0	20.8	0
HP-10	2 inches above expansion joint*	1235	0	20.8	0
HP-11	2 inches above expansion joint*	1236	0	20.8	0
HP-12	2 inches above expansion joint*	1237	0	20.8	0
HP-13	2 inches above expansion joint*	1240	0	20.8	0
HP-14	2 inches above expansion joint*	1241	0	20.8	0
HP-15	2 inches above expansion joint*	1243	0	20.8	0

Trench drains (west side of each hangar pad)					
TD-01	4 inches below trench grate	Snow/ice	–	–	–
TD-02	4 inches below trench grate	Snow/ice	–	–	–
TD-03	4 inches below trench grate	Snow/ice	–	–	–
TD-04	4 inches below trench grate	Snow/ice	–	–	–
TD-05	4 inches below trench grate	Snow/ice	–	–	–
TD-06	4 inches below trench grate	Snow/ice	–	–	–
TD-07	4 inches below trench grate	Snow/ice	–	–	–
TD-08	4 inches below trench grate	Snow/ice	–	–	–
TD-09	4 inches below trench grate	Snow/ice	–	–	–
TD-10	4 inches below trench grate	Snow/ice	–	–	–
Drainage culverts (drainage inlets on the buried storm sewer lines)					
DC-01	4 inches below grate	1221	0	20.8	0
DC-02	4 inches below grate	1220	0	20.8	0
DC-03	4 inches below grate	1218	0	20.8	0
DC-04	4 inches below grate	1217	0	20.8	0
DC-05	4 inches below grate	1215	15	20.8	0
DC-06	4 inches below grate	1212	7	20.8	0
DC-07	4 inches below grate	1210	47	20.8	0
DC-08	4 inches below manhole lid	1250	32	20.1	0
Northern perimeter (ground and spinner [wind turbine] locations)					
PG-01	2 inches above ground surface	Snow	–	–	–
PG-02	2 inches above ground surface	Snow	–	–	–
PG-03	2 inches above ground surface	Snow	–	–	–
PG-04	2 inches above ground surface	Snow	–	–	–
PG-05	2 inches above ground surface	Snow	–	–	–
PG-06	2 inches above ground surface	Snow	–	–	–
PG-07	2 inches above ground surface	Snow	–	–	–
PG-08	2 inches above ground surface	Snow	–	–	–

PG-09	2 inches above ground surface	Snow	–	–	–
PG-10	2 inches above ground surface	Snow	–	–	–
PG-11	2 inches above ground surface	Snow	–	–	–
PG-12	2 inches above ground surface	Snow	–	–	–
PG-13	2 inches above ground surface	Snow	–	–	–
PG-14	2 inches above ground surface	Snow	–	–	–
PS-01	at spinner (4 ft above pavement)	1159	0	20.8	0
PS-02	at spinner (4 ft above pavement)	1200	100	13.2	0
PS-03	at spinner (4 ft above pavement)	1203	0	20.8	0
PS-04	at spinner (4 ft above pavement)	1205	0	20.8	0
PS-05	at spinner (4 ft above pavement)	1206	100	19.0	0
PS-06	at spinner (4 ft above pavement)	1208	100	20.8	0

Note:

Methane concentrations shall be measured in percent of the LEL. Other gases measured in %.

DC = Drainage Culvert (inlet)

HP = Hangar Pad

LEL = lower explosive limit

PG = Perimeter Ground

PS = Perimeter Spinner (wind turbine)

TD = Trench Drain

Methane = CH₄

Oxygen = O₂

Carbon dioxide = CO₂

Comments:

- 1. Trench drains associated with hangar pads 1-5 contain snow and ice and were not monitored.**
- 2. Monitoring not completed along eastern and northern vegetated slopes due to snow and saturated soil conditions.**

Form modified from <http://www.nmenv.state.nm.us/swb/documents/ExampleMethaneFORM10-10-08.doc>.

LANDFILL GAS MONITORING FORM

Landfill Name: Airport Landfill, SWMU 73-001(a) at the Los Alamos County Airport

Inspector Printed Name: Jeff Walterscheid Inspector Signature: 

Date: 12/23/13 Barometric Pressure: 30.42 Temperature: 28 degrees F

Weather conditions: Clear Wind Direction: SE Wind Speed: 5 mph

Date and amount of last precipitation (within last 48 hours): 12/22/13 0.5 inches of snow

Instrument: MSA Altair 5X #310 Calibration method and date: Pentane gas 12/16/13

Weekly Monitoring

Sample Location	Height (ft)	Time	CH ₄ % LEL	O ₂ %	CO %
Hangar Pads: Samples will be collected on the east side of the pad along the expansion joint.* After a hangar is built, samples will be collected along the interior walls at 4 inches to 4 ft above pad.					
HP-01	2 inches above expansion joint*	1027	0	20.8	0
HP-02	2 inches above expansion joint*	1027	0	20.8	0
HP-03	2 inches above expansion joint*	1028	0	20.8	0
HP-04	2 inches above expansion joint*	1029	0	20.8	0
HP-05	2 inches above expansion joint*	1030	0	20.8	0
HP-06	2 inches above expansion joint*	1031	0	20.8	0
HP-07	2 inches above expansion joint*	1032	0	20.8	0
HP-08	2 inches above expansion joint*	1033	0	20.8	0
HP-09	2 inches above expansion joint*	1034	0	20.8	0
HP-10	2 inches above expansion joint*	1035	0	20.8	0
HP-11	2 inches above expansion joint*	1036	0	20.8	0
HP-12	2 inches above expansion joint*	1038	0	20.8	0
HP-13	2 inches above expansion joint*	1039	0	20.8	0
HP-14	2 inches above expansion joint*	1040	0	20.8	0
HP-15	2 inches above expansion joint*	1041	0	20.8	0

Trench drains (west side of each hangar pad)					
TD-01	4 inches below trench grate	Snow/ice	–	–	–
TD-02	4 inches below trench grate	Snow/ice	–	–	–
TD-03	4 inches below trench grate	Snow/ice	–	–	–
TD-04	4 inches below trench grate	Snow/ice	–	–	–
TD-05	4 inches below trench grate	Snow/ice	–	–	–
TD-06	4 inches below trench grate	Snow/ice	–	–	–
TD-07	4 inches below trench grate	Snow/ice	–	–	–
TD-08	4 inches below trench grate	Snow/ice	–	–	–
TD-09	4 inches below trench grate	Snow/ice	–	–	–
TD-10	4 inches below trench grate	Snow/ice	–	–	–
Drainage culverts (drainage inlets on the buried storm sewer lines)					
DC-01	4 inches below grate	1026	0	20.8	0
DC-02	4 inches below grate	1025	0	20.8	0
DC-03	4 inches below grate	1024	0	20.8	0
DC-04	4 inches below grate	1023	0	20.8	0
DC-05	4 inches below grate	1021	0	20.8	0
DC-06	4 inches below grate	1020	0	20.8	0
DC-07	4 inches below grate	1019	0	20.8	0
DC-08	4 inches below manhole lid	1045	0	20.8	0
Northern perimeter (ground and spinner [wind turbine] locations)					
PG-01	2 inches above ground surface	Snow	–	–	–
PG-02	2 inches above ground surface	Snow	–	–	–
PG-03	2 inches above ground surface	Snow	–	–	–
PG-04	2 inches above ground surface	Snow	–	–	–
PG-05	2 inches above ground surface	Snow	–	–	–
PG-06	2 inches above ground surface	Snow	–	–	–
PG-07	2 inches above ground surface	Snow	–	–	–
PG-08	2 inches above ground surface	Snow	–	–	–

PG-09	2 inches above ground surface	Snow	–	–	–
PG-10	2 inches above ground surface	Snow	–	–	–
PG-11	2 inches above ground surface	Snow	–	–	–
PG-12	2 inches above ground surface	Snow	–	–	–
PG-13	2 inches above ground surface	Snow	–	–	–
PG-14	2 inches above ground surface	Snow	–	–	–
PS-01	at spinner (4 ft above pavement)	1010	0	20.8	0
PS-02	at spinner (4 ft above pavement)	1011	0	20.8	0
PS-03	at spinner (4 ft above pavement)	1012	0	20.8	0
PS-04	at spinner (4 ft above pavement)	1014	0	20.8	0
PS-05	at spinner (4 ft above pavement)	1015	0	20.8	0
PS-06	at spinner (4 ft above pavement)	1017	0	20.8	0

Note:

Methane concentrations shall be measured in percent of the LEL. Other gases measured in %.

DC = Drainage Culvert (inlet)

HP = Hangar Pad

LEL = lower explosive limit

PG = Perimeter Ground

PS = Perimeter Spinner (wind turbine)

TD = Trench Drain

Methane = CH₄

Oxygen = O₂

Carbon dioxide = CO₂

Comments:

- 1. Trench drains associated with hangar pads 1-5 contain snow and ice and were not monitored.**
- 2. Monitoring not completed along eastern and northern vegetated slopes due to snow/ice conditions.**

Form modified from <http://www.nmenv.state.nm.us/swb/documents/ExampleMethaneFORM10-10-08.doc>.



Photo 1: Snow/ice and frozen ground Northern perimeter area.



Photo 2: Snow along northern perimeter.



Photo 3: Monitoring at HP-08

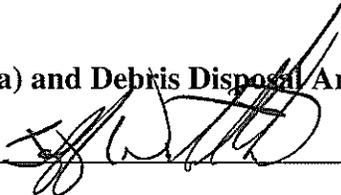


Photo 4: Monitoring at DC-04

Appendix C

Completed Annual Inspection Checklist

Inspection Checklist for the Airport Landfill, SWMU 73-001(a) and Debris Disposal Area, SWMU 73-001(d)

Date: May 24, 2013 Time: 1230 Printed Name: Jeff Walterscheid Signature: 

Figure(s): Photos attached.

Weather: temperature: 83 degrees wind: 6 mph, last significant rain/snow: Traces of rain during May, 2013.

Weather Data Source: Los Alamos Airport

Annual 2013 Inspection

Component: Concern(s)	Inspection Frequency*	Inspection Findings	Corrective Action Needed Yes/No?	Description of Corrective Action	Corrective Action Completion Date
<i>Airport Landfill</i>					
MatCon Asphalt Pavement: cracks, gaps, spalling, subsidence	M	<i>See May 2013 monthly inspection</i>			
Concrete Hangar Pads (5) and expansion joints: cracks, gaps, spalling, pop-outs, separation of pad from asphalt, subsidence	M	<i>See May 2013 monthly inspection</i>			
Survey Benchmark on each hangar pad: accessible, attached to concrete pad	M	<i>See May 2013 monthly inspection</i>			
Gas Collection System: Turbines (6) along northern edge of asphalt pavement and 1 stub-out on southern edge of asphalt pavement: debris, functional, accessible	A	Six turbines along northern edge of MatCon pavement are accessible, functional, and clean of debris. Stub-out along southern edge of MatCon pavement is accessible and clean of debris.	No No	Three of the six proposed turbine locations were completed as stub-outs. November 2012 turbines were installed.	November 2012

Inspection Checklist Airport Landfill (form modified April, 2011)

Component: Concern(s)	Inspection Frequency*	Inspection Findings	Corrective Action Needed Yes/No?	Description of Corrective Action	Corrective Action Completion Date
Measure landfill-gas concentrations using Landfill Gas Monitoring Form: any values greater than 25% of the methane LEL (lower explosive limit)?	Q or B	<i>See 1st quarter 2013 inspection</i>			
Seeded Areas & Turf Reinforcement Mats: barren areas >1,000 square feet, tears, animals burrows >4 inches deep, subsidence >1 ft, rills/cracks >4 inches deep, large vegetation (trees, shrubs, bushes, deep-rooting weeds)	A, ASR	Drought conditions have stressed the vegetated areas. Grasses that were thriving last year are threatened. The turf reinforcement matting is holding soil in place in many locations. No animal burrows were noted. One large rill has been previously noted during monthly inspections along the northern slope but is well vegetated. No new rills were noted during the inspection.. Trees are growing along the northern edge of the pads and sage brush is located throughout the vegetated slope.	Yes See recommend -ations	<ol style="list-style-type: none"> 1. Recommend rill between pads 3 and 4 be repaired to direct storm water down the slope. 2. Recommend removal of trees along northern edge and consider cutting back sage brush. 3. If dry conditions continue recommend watering all vegetated areas with water truck. 	
Gravel drainage channels (3): subsidence, erosion, clear of trash, soil, other blockages	A, ASR	The 3 gravel drainage channels are clear of trash and any other blockage, no indications of erosion or subsidence, the lower channel has some minor soil accumulation along the eastern end but it will not hamper its performance. No corrective action is warranted at this time.	No		

Inspection Checklist Airport Landfill (form modified April, 2011)

Component: Concern(s)	Inspection Frequency*	Inspection Findings	Corrective Action Needed Yes/No?	Description of Corrective Action	Corrective Action Completion Date
Concrete Retaining Wall & 2 Rock Retaining Walls: cracks, bulges, separation, rotation, nearby erosion, spalling, pop-outs, drain pipes (3) open at gravel drainage channel	A, ASR	No evidence of cracks, bulges, separation, rotation, nearby erosion, spalling, or pop-outs in the retaining walls. Drain pipes (3) are open.	No		
Grated Trenches (6): cracks; clear of trash, soil, other blockages, draining properly, standing water, subsidence	A, ASR	Grated trenches at for all pads are currently not draining as designed. Water is puddling at north end of Pads 2,3, & 4. All drains have soil accumulation and subsidence concerns. Cracking has been noted in drains associated with Pads 1, 2, 3, & 4. All grated trenches are clear of trash.	Yes See recommend -ations	<ol style="list-style-type: none"> 1. Subsidence corrective action recommendations are beyond the scope of this inspection. 2. Recommend cracks be repaired/sealed 	
Drainage inlets (8): functional, grates not blocked by trash, soil, other material	A, ASR	Drainage inlets (8) are functional, grates are not blocked by trash, soil, other material.	No		
Evidence that pollutants (spills) have entered the storm-water system?	A, ASR	No evidence that pollutants (spills) have entered the storm-water system.	No		
Sediment washing off the site? If so, map the location[s] in logbook	A, ASR	No evidence of sediment washing off the site.	No		

Inspection Checklist Airport Landfill (form modified April, 2011)

Component: Concern(s)	Inspection Frequency*	Inspection Findings	Corrective Action Needed Yes/No?	Description of Corrective Action	Corrective Action Completion Date
Outfall Pipe: secure, blockage, significant erosion, soil staining, manhole in place	A, ASR	Outfall pipe is secure. No evidence of blockage, significant erosion, or soil staining. Manhole cover is in place.	No		
Straw-wattle areas between retaining walls and fence: wattles in place, erosion, rills	A, ASR	Straw-wattles between retaining walls and fence have been replaced and are in place. Previously identified rills have been repaired, no evidence of new erosion.	No	Wattles replaced and rill erosion repaired	December 2012
Debris Disposal Area					
Seeded (hydromulched) Areas: animals burrows >4 inches deep, barren areas >1,000 square feet, subsidence >1 ft deep, rills/cracks >4 inches deep, large vegetation (trees, shrubs, bushes, deep- rooting weeds)	A, ASR	No evidence of animal burrows, rills or cracking. Vegetation is stressed due to continuing dry conditions. Sage brush was noted growing on the DDA.	No See recommend -ation	1. If dry conditions continue recommend watering all vegetated areas with water truck.	
Comments: <ol style="list-style-type: none"> 1. Inspection form modified per DOE verbal instruction May 3, 2011 to include inspection findings. 2. Refer to previous 2013 inspections for additional photos. 3. At time of inspection drought conditions continue in northern NM, no real green-up has occurred throughout the region. 					

Component locations are shown on Figure 2 of the *Final Implementation Strategy for Post Closure and Maintenance of the DOE/NNSA LASO Airport Landfill SWMU 73-001(a) and Debris Disposal Area SWMU 73-001(d), Los Alamos County Airport, New Mexico, July 2009.*

*Inspection Frequency: A= annual, ASR = After Significant Rainfall, B = biannual (twice a year), M = Monthly, Q = quarterly.

Note: If an additional component(s) is installed for the Airport Landfill, the component(s) can be added in the blank row.

Inspection Checklist Airport Landfill (form modified April, 2011)



Photo 1: Cracking of MatCon pavement.



Photo 2: Separation of MatCon and trench drain



Photo 3: Concrete failing at trench drain drop inlet structure.



Photo 4: Subsidence of MatCon and Pad #4.

Inspection Checklist Airport Landfill (form modified April, 2011)



Photo 5: Weeds growing between MatCon and pad.



Photo 6: New and old survey points in pad.



Photo 7: View of retaining walls and wattle slope.



Photo 8: view of small stilling basin at base of concrete retaining wall.

Inspection Checklist Airport Landfill (form modified April, 2011)



Photo 9: View of concrete retaining wall and wattle slope.



Photo 10: East rock retaining wall.



Photo 11: View of concrete curb and vegetated slope.



Photo 12: Looking west at DDA vegetated cover..

Inspection Checklist Airport Landfill (form modified April, 2011)



Photo 13: Looking east at DDA. Vegetated cover.



Photo 14: Looking east at vegetated slope.



Photo 15: Looking west at concrete hangar pads.



Photo 16: Vegetated slope.

Inspection Checklist Airport Landfill (form modified April, 2011)



Photo 17: Rock drainage channel.



Photo 18: Cracks in concrete hangar pad.



Photo 19: Tree growing along north side of pads.



Photo 20: Vegetated north slope.

Inspection Checklist Airport Landfill (form modified April, 2011)



Photo 21: Large cracks in Pad #3 along hinge line.



Photo 22: Subsidence of MatCon and pad.



Photo 23: Vegetated north slope.

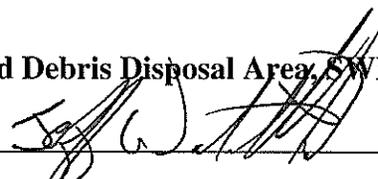


Photo 24: view from pad #1 looking east.

Appendix D

Completed Significant Event Inspection Checklist

Inspection Checklist for the Airport Landfill, SWMU 73-001(a) and Debris Disposal Area, SWMU 73-001(d)

Date: September 16, 2013 Time: 1130 Printed Name: Jeff Walterscheid Signature: 

Figure(s): Photos attached.

Weather: temperature: 78 degrees wind: 3 mph last significant rain/snow: Over 7 inches of rain September 10-15, 2013.

Weather Data Source: Los Alamos Airport

Significant Rainfall Inspection September 2013

Component: Concern(s)	Inspection Frequency*	Inspection Findings	Corrective Action Needed Yes/No?	Description of Corrective Action	Corrective Action Completion Date
<i>Airport Landfill</i>					
MatCon Asphalt Pavement: cracks, gaps, spalling, subsidence	M				
Concrete Hangar Pads (5) and expansion joints: cracks, gaps, spalling, pop-outs, separation of pad from asphalt, subsidence	M				
Survey Benchmark on each hangar pad: accessible, attached to concrete pad	M				

Inspection Checklist Airport Landfill (form modified April, 2011)

Component: Concern(s)	Inspection Frequency*	Inspection Findings	Corrective Action Needed Yes/No?	Description of Corrective Action	Corrective Action Completion Date
Gas Collection System: Turbines (6) along northern edge of asphalt pavement and 1 stub-out on southern edge of asphalt pavement: debris, functional, accessible	A				
Measure landfill-gas concentrations using Landfill Gas Monitoring Form: any values greater than 25% of the methane LEL (lower explosive limit)?	Q or B				
Seeded Areas & Turf Reinforcement Mats: barren areas >1,000 square feet, tears, animals burrows >4 inches deep, subsidence >1 ft, rills/cracks >4 inches deep, large vegetation (trees, shrubs, bushes, deep-rooting weeds)	A, ASR	<p>Due to saturated soil conditions multiple small rills less than four inches deep have formed across the vegetative slopes. In some areas rills greater than four inches deep were observed. The slopes are well vegetated and the rilling is not expected to be of concern. Will continue to observe during the monthly inspections.</p> <p>Drainage from the gravel drainage channel (mid-slope channel) has eroded a deep rill approximately 1ft deep by 2ft wide by 20 ft long in the area next to the wattle slope.</p> <p>Drainage from the mid-slope drainage channel above the concrete retaining wall has eroded deeply into the vegetated slope (down to tuff in some area). Significant material has moved down slope and knocked down the chain link perimeter fence. A deep erosion channel has formed (3ft deep by 4 ft wide by 50 ft long)</p>	Yes		

Inspection Checklist Airport Landfill (form modified April, 2011)

Component: Concern(s)	Inspection Frequency*	Inspection Findings	Corrective Action Needed Yes/No?	Description of Corrective Action	Corrective Action Completion Date
Gravel drainage channels (3): subsidence, erosion, clear of trash, soil, other blockages	A, ASR	The mid-slope drainage channel directed significant amounts of run-off onto the vegetated slope area at the discharge ends. The eastern drainage area has subsided and slumped. Channel is clear of sediment and debris.	Yes		
Concrete Retaining Wall & 2 Rock Retaining Walls: cracks, bulges, separation, rotation, nearby erosion, spalling, pop-outs, drain pipes (3) open at gravel drainage channel	A, ASR	No evidence of cracks, bulges, separation, spalling or pop-outs was observed. Due to the large amount of rain and saturated soil conditions some minor erosion was observed directly above and along the edges of the rock retaining walls, this is not expected to of concern.	No		
Grated Trenches (6): cracks; clear of trash, soil, other blockages, draining properly, standing water, subsidence	A, ASR	Grated trenches have previously identified cracks and subsidence, they are clear of trash and any blockages.. Subsidence of the northern end of the concrete pads has caused improper drainage of all trenches associated with the hangar pads. Sediment has accumulated in the trenches, standing water is evident. Cracking and subsidence are not associated with the significant rainfall event.	Yes		
Drainage inlets (8): functional, grates not blocked by trash, soil, other material	A, ASR	All 8 inlets are functional	No		
Evidence that pollutants (spills) have entered the storm-water system?	A, ASR	No evidence that pollutants from spills have entered the storm water system.	No		

Inspection Checklist Airport Landfill (form modified April, 2011)

Component: Concern(s)	Inspection Frequency*	Inspection Findings	Corrective Action Needed Yes/No?	Description of Corrective Action	Corrective Action Completion Date
Sediment washing off the site? If so, map the location[s] in logbook	A, ASR	Yes- Two of the small retention areas below the concrete retaining wall have failed. Sediment washing down the wattle slope and northern sections of the retention area berms has washed off sight. Sediment from the failure of the vegetative slope has knocked down the perimeter fence and washed off site.	Yes		
Outfall Pipe: secure, blockage, significant erosion, soil staining, manhole in place	A, ASR	Functional	No		
Straw-wattle areas between retaining walls and fence: wattles in place, erosion, rills	A, ASR	Wattles have filled in, slope has eroded and caused the small retention areas to fail.	Yes		
Debris Disposal Area					
Seeded (hydromulched) Areas: animals burrows >4 inches deep, barren areas >1,000 square feet, subsidence >1 ft deep, rills/cracks >4 inches deep, large vegetation (trees, shrubs, bushes, deep-rooting weeds)	A, ASR	Functional with no concerns noted during the inspection	No		
Comments: <ol style="list-style-type: none"> Inspection form modified per DOE verbal instruction May 3, 2011 to include inspection findings. Inspection covers multiple rain events September 10-14, 2013. Over two inches of rain on saturated ground on Friday September 13. 					

Component locations are shown on Figure 2 of the *Final Implementation Strategy for Post Closure and Maintenance of the DOE/NNSA LASO Airport Landfill SWMU 73-001(a) and Debris Disposal Area SWMU 73-001(d), Los Alamos County Airport, New Mexico, July 2009.*

*Inspection Frequency: A= annual, ASR = After Significant Rainfall, B = biannual (twice a year), M = Monthly, Q = quarterly.
Note: If an additional component(s) is installed for the Airport Landfill, the component(s) can be added in the blank row.

Inspection Checklist Airport Landfill (form modified April, 2011)



Photo 1. View of vegetated slopes. Minor rilling was observed across area.



Photo 2. Rock drainage channel at east end of site.



Photo 3. East-west rock drainage channel at site.



Photo 4. West rock retaining wall.



Photo 5. East rock retaining wall.



Photo 6. Concrete retaining wall and wattle slope.



Photo 7. Trench drain north side of hangar pad #3.



Photo 8. Trench drain north side of hangar pad #2.



Photo 9. Wattle slope and retention area. Note failure of berm.



Photo 10. Retention area at base of concrete retaining wall.



Photo 11. Wattle slope. Note rilling of slope, sediment accumulation behind wattles, failure of retention feature and downed perimeter fence.



Phot0 12. Perimeter fence impacted from erosion of slope.



Photo 13. Erosion channel at east end of mid-slope rock drainage channel.



Photo 14. Erosion at east end of mid-slope rock drainage channel.



Photo 15. Perimeter fence damage.



Photo 16. View of debris disposal area.