Nevada
Environmental Management
Operations Activity

DOE/NV--1535

National Nuclear Security Administration

Post-Closure Inspection Report for the Tonopah Test Range, Nevada

For Calendar Year 2014

Controlled Copy No.:_____

Revision: 0

March 2015

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

DISCLAIMER

DOE/NV--1535

POST-CLOSURE INSPECTION REPORT FOR THE TONOPAH TEST RANGE, NEVADA

FOR CALENDAR YEAR 2014

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

Controlled Copy No.____
Revision: 0
March 2015

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POST-CLOSURE INSPECTION REPORT FOR THE TONOPAH TEST RANGE, NEVADA

FOR CALENDAR YEAR 2014

Approved By: /s/: Tiffany A. Lantow Date: 3/12/2015

Tiffany A. Lantow
Industrial Sites Activity Lead

Approved By: /s/: Robert F. Boehlecke Date: 3/12/15

Robert F. Boehlecke
Environmental Management Operations Activity Manager

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APPENDICES

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ACRONYMS AND ABBREVIATIONS

CADD	Corrective Action Decision Document
CAS	Corrective Action Site
CAU	Corrective Action Unit
CR	Closure Report
DOE/NV	U.S. Department of Energy, Nevada Operations Office
NDEP	Nevada Division of Environmental Protection
TTR	Tonopah Test Range

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EXECUTIVE SUMMARY

This report provides the results of the annual post-closure inspections conducted at the closed Corrective Action Units (CAUs) located on the Tonopah Test Range (TTR), Nevada. This report covers calendar year 2014 and includes inspection and repair activities completed at the following CAUs:

- CAU 400: Bomblet Pit and Five Points Landfill (TTR)
- CAU 407: Roller Coaster RadSafe Area (TTR)
- CAU 424: Area 3 Landfill Complexes (TTR)
- CAU 453: Area 9 UXO Landfill (TTR)
- CAU 487: Thunderwell Site (TTR)

Inspections were conducted according to the post-closure plans in the approved Closure Reports and subsequent correspondence with the Nevada Division of Environmental Protection. The post-closure inspection plans and subsequent correspondence modifying the requirements for each CAU are included in Appendix B. The inspection checklists are included in Appendix C. Photographs taken during inspections are included in Appendix D.

The annual post-closure inspections were conducted on May 28, 2014. Maintenance was required at CAU 407. Animal burrows were backfilled and erosion repairs were performed.

Vegetation monitoring was performed at CAU 407 in June 2014. The vegetation monitoring report is included in Appendix E.

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1.0 INTRODUCTION

1.1 SCOPE AND OBJECTIVES

This report includes inspection results, maintenance and repair activities, and recommendations for calendar year 2014 for Corrective Action Units (CAUs) on the Tonopah Test Range (TTR), Nevada. The CAUs are shown in Figure 1 of Appendix A. The CAUs and Corrective Action Sites (CASs) in this report include the following:

- **CAU 400: Bomblet Pit and Five Points Landfill (TTR)**
  - CAS TA-19-001-05PT: Ordnance Disposal Pit
- **CAU 407: Roller Coaster RadSafe Area (TTR)**
  - CAS TA-23-001-TARC: Roller Coaster RadSafe Area
- **CAU 424: Area 3 Landfill Complexes (TTR)**
  - CAS 03-08-001-A301: Landfill Cell A3-1
  - CAS 03-08-002-A302: Landfill Cell A3-2
  - CAS 03-08-002-A303: Landfill Cell A3-3
  - CAS 03-08-002-A304: Landfill Cell A3-4
  - CAS 03-08-002-A305: Landfill Cell A3-5
  - CAS 03-08-002-A306: Landfill Cell A3-6
  - CAS 03-08-002-A308: Landfill Cell A3-8
- **CAU 453: Area 9 UXO Landfill (TTR)**
  - CAS 09-55-001-0952: Area 9 Landfill
- **CAU 487: Thunderwell Site (TTR)**
  - CAS RG-26-001-RGRV: Thunderwell Site

Inspection requirements for each CAU are included in Appendix B. Inspections consist of the following activities to evaluate and document the condition of the units:

- Photographs to document current conditions and note variances from previous inspections
- Inspection of fencing, signs, monuments, and/or markers to determine if repairs and/or maintenance are needed
- Inspection of soil covers for indications of subsidence, erosion, or unauthorized use
- Vegetation survey to quantify the condition of vegetative covers

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2.0 INSPECTION RESULTS

Inspections were conducted on May 28, 2014. The post-closure inspection plans were published in the applicable Closure Report (CR) for each CAU. Subsequent correspondence with the Nevada Division of Environmental Protection (NDEP) modified the requirements. The post-closure plans and subsequent correspondence are included in Appendix B. Inspection checklists are included in Appendix C. Photographs taken during inspections are included in Appendix D.

2.1 CAU 400: BOMBLET PIT AND FIVE POINTS LANDFILL (TTR)

The Five Points Landfill (CAS TA-19-001-05PT, Ordnance Disposal Pit) was vegetated in 1997 under the *Tonopah Test Range Closure Sites Revegetation Plan* (U.S. Department of Energy, Nevada Operations Office [DOE/NV], 1997). Fencing was required for a minimum of 5 years, and inspections of the fencing are conducted as a best management practice. The Five Points Landfill is shown in Figure 2 of Appendix A.

In correspondence dated March 20, 2014, NDEP approved the recommendation to only conduct vegetation monitoring on an as-needed basis if significant changes or concerns are noted during annual visual inspections. Therefore, vegetation monitoring was not conducted in 2014 at this site.

The annual inspection was conducted on May 28, 2014. Minor animal burrows were observed that did not require repair. A minor breach in the rabbit fence was observed on the south side of the site, but repair was not recommended at this time. No other issues or concerns were identified, and no maintenance or repairs were required. Inspections should continue as scheduled.

2.2 CAU 407: ROLLER COASTER RADSAFE AREA (TTR)

Inspections are conducted according to the post-closure requirements for CAU 407, Roller Coaster RadSafe Area (TTR), CAS TA-23-001-TARC, Roller Coaster RadSafe Area, as described in the CR (DOE/NV, 2001a) and subsequent correspondence. The site is shown in Figure 3 of Appendix A.

Based on the observations made during vegetation monitoring conducted in 2013, it was recommended that the last annual vegetation monitoring be conducted in 2014 and future vegetation monitoring be conducted on an as-needed basis with a minimum of once every 5 years. This recommendation was approved by NDEP in correspondence dated March 20, 2014. Vegetation monitoring was conducted in June 2014, and the results are included in Appendix E. The next detailed vegetation monitoring will be conducted in 2019 if additional monitoring is not recommended before that time. During annual inspections, if abnormalities are noted or concerns are expressed regarding the status of the plant community, vegetation monitoring will be scheduled and conducted.

The annual inspection was conducted on May 28, 2014. Erosion rills and substantial animal burrows were observed on the cover slopes. Animal burrows were backfilled and erosion repairs were completed on July 22, 2014. No other issues or concerns were identified, and no additional maintenance or repairs were required. Inspections should continue as scheduled.

2.3 CAU 424: AREA 3 LANDFILL COMPLEXES (TTR)

Inspections are conducted according to the post-closure requirements for CAU 424, Area 3 Landfill Complexes (TTR), CAS 03-08-001-A301, Landfill Cell A3-1; CAS 03-08-002-A302, Landfill Cell A3-2; CAS 03-08-002-A303, Landfill Cell A3-3; CAS 03-08-002-A304, Landfill Cell A3-4; CAS 03-08-002-A305, Landfill Cell A3-5; CAS 03-08-002-A306, Landfill Cell A3-6; and CAS 03-08-002-A308, Landfill Cell A3-8, as described in the CR (DOE/NV, 1999a) and subsequent correspondence. The landfill locations are shown in Figure 4 of Appendix A. The annual inspection was conducted on May 28, 2014.

Landfill Cell A3-1 (CAS 03-08-001-A301): No issues or concerns were identified, and no maintenance or repairs were required. Inspections should continue as scheduled.

Landfill Cell A3-2 (CAS 03-08-002-A302): No issues or concerns were identified, and no maintenance or repairs were required. Inspections should continue as scheduled.

Landfill Cell A3-3 (CAS 03-08-002-A303): No issues or concerns were identified, and no maintenance or repairs were required. Inspections should continue as scheduled.

Landfill Cell A3-4 (CAS 03-08-002-A304): No issues or concerns were identified, and no maintenance or repairs were required. Inspections should continue as scheduled.

Landfill Cell A3-5 (CAS 03-08-002-A305): No issues or concerns were identified, and no maintenance or repairs were required. Inspections should continue as scheduled.

Landfill Cell A3-6 (CAS 03-08-002-A306): No issues or concerns were identified, and no maintenance or repairs were required. Inspections should continue as scheduled.

Landfill Cell A3-8 (CAS 03-08-002-A308): No issues or concerns were identified, and no maintenance or repairs were required. Inspections should continue as scheduled.

2.4 CAU 453: AREA 9 UXO LANDFILL (TTR)

Inspections are conducted according to the post-closure requirements for CAU 453, Area 9 UXO Landfill (TTR), CAS 09-55-001-0952, Area 9 Landfill, as described in the CR (DOE/NV, 1999b) and subsequent correspondence. The site is shown in Figure 5 of Appendix A. The annual inspection was conducted on May 28, 2014. Minor animal burrows were observed that did not require repair. No other issues or concerns were identified, and no maintenance or repairs were required. Inspections should continue as scheduled.

2.5 CAU 487: THUNDERWELL SITE (TTR)

Inspections are conducted according to the post-closure requirements for CAU 487, Thunderwell Site (TTR), CAS RG-26-001-RGRV, Thunderwell Site, as described in the Corrective Action Decision Document (CADD)/CR (DOE/NV, 2001b), Record of Technical Change (U.S. Department of Energy, National Nuclear Security Administration Nevada Site Office, 2004), and subsequent correspondence. The site is shown in Figure 6 of Appendix A. The annual inspection was conducted on May 28, 2014. Minor animal burrows were observed that did not require repair. No other issues or concerns were identified, and no maintenance or repairs were required. Inspections should continue as scheduled.

3.0 SUMMARY

3.1 CAU 400: BOMBLET PIT AND FIVE POINTS LANDFILL (TTR)

Maintenance or repairs were not required. Inspections should continue as scheduled. Future vegetation monitoring will be conducted on an as-needed basis if significant changes or concerns are noted during annual visual inspections.

3.2 CAU 407: ROLLER COASTER RADSAFE AREA (TTR)

Animal burrows were backfilled and erosion repairs were completed on July 22, 2014. Additional maintenance or repairs were not required. Inspections should continue as scheduled. Future vegetation monitoring will be conducted on an as-needed basis if significant changes or concerns are noted during annual visual inspections.

3.3 CAU 424: AREA 3 LANDFILL COMPLEXES (TTR)

Maintenance or repairs were not required. Inspections should continue as scheduled.

3.4 CAU 453: AREA 9 UXO LANDFILL (TTR)

Maintenance or repairs were not required. Inspections should continue as scheduled.

3.5 CAU 487: THUNDERWELL SITE (TTR)

Maintenance or repairs were not required. Inspections should continue as scheduled.

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4.0 REFERENCES

DOE/NV, see U.S. Department of Energy, Nevada Operations Office.

U.S. Department of Energy, National Nuclear Security Administration Nevada Site Office. 2004. *Record of Technical Change No. 2 for the Final Corrective Action Decision Document/Closure Report for Corrective Action Unit 487: Thunderwell Site, Tonopah Test Range, Nevada*, Revision 0, November 2001. Las Vegas, NV.

U.S. Department of Energy, Nevada Operations Office. 1997. *Tonopah Test Range Closure Sites Revegetation Plan*, DOE/NV/11718-115 UC-702. Las Vegas, NV.

U.S. Department of Energy, Nevada Operations Office. 1999a. *Closure Report for Corrective Action Unit 424: Area 3 Landfill Complexes, Tonopah Test Range, Nevada*, DOE/NV/11718--283. Las Vegas, NV.

U.S. Department of Energy, Nevada Operations Office. 1999b. *Closure Report for Corrective Action Unit 453: Area 9 UXO Landfill, Tonopah Test Range, Nevada*, DOE/NV/11718--284. Las Vegas, NV.

U.S. Department of Energy, Nevada Operations Office. 2001a. *Closure Report for Corrective Action Unit 407: Roller Coaster RadSafe Area, Tonopah Test Range, Nevada*, DOE/NV--694-REV-1. Las Vegas, NV.

U.S. Department of Energy, Nevada Operations Office. 2001b. *Corrective Action Decision Document/Closure Report for Corrective Action Unit 487: Thunderwell Site, Tonopah Test Range, Nevada*, DOE/NV--761. Las Vegas, NV.

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APPENDIX A
FIGURES

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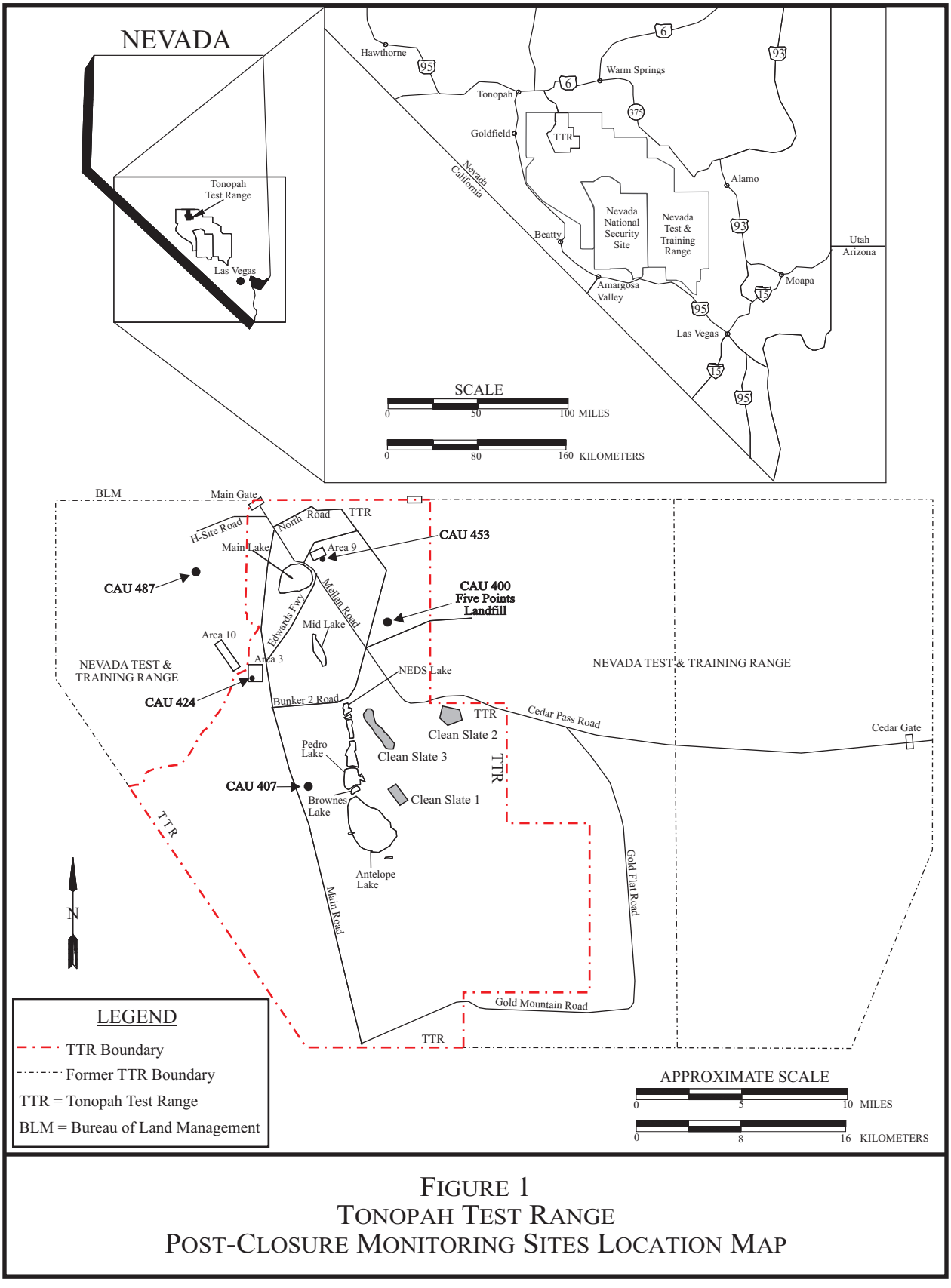

FIGURE 1
TONOPAH TEST RANGE
POST-CLOSURE MONITORING SITES LOCATION MAP

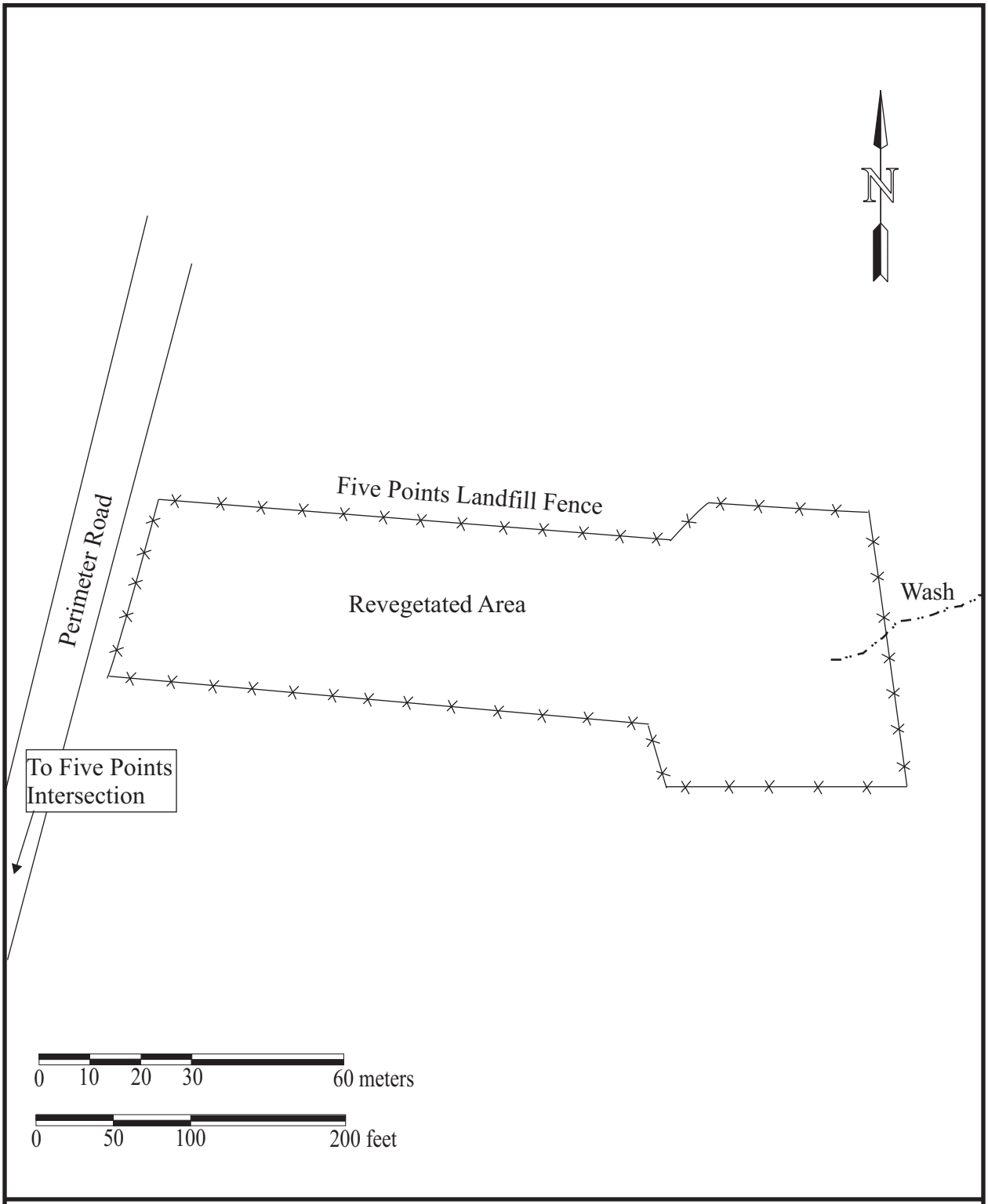

FIGURE 2
CAU 400 FIVE POINTS LANDFILL LOCATION MAP

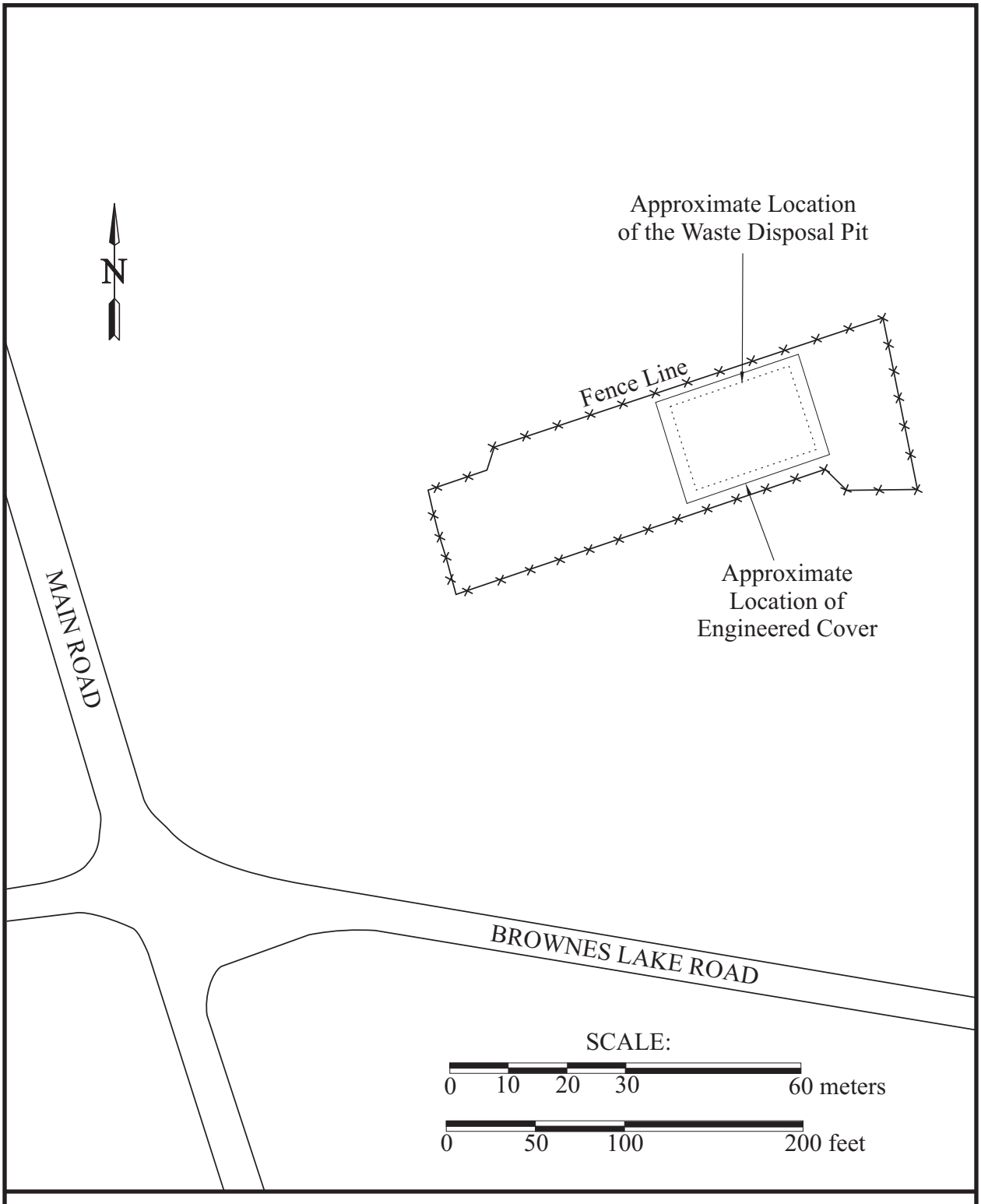

FIGURE 3
CAU 407 ROLLER COASTER RADSAFE AREA LOCATION MAP

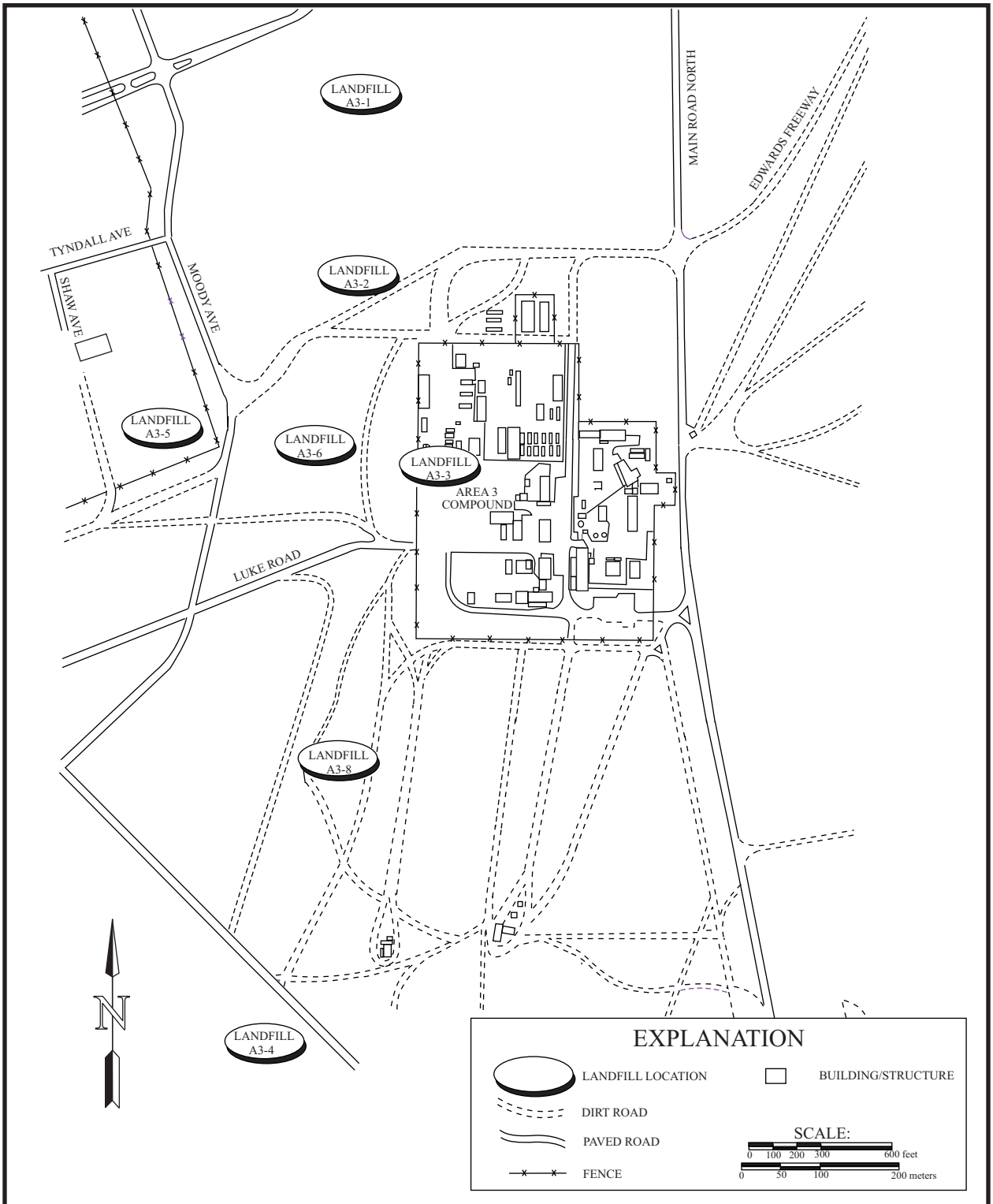

FIGURE 4
CAU 424 AREA 3 LANDFILL COMPLEXES LOCATION MAP

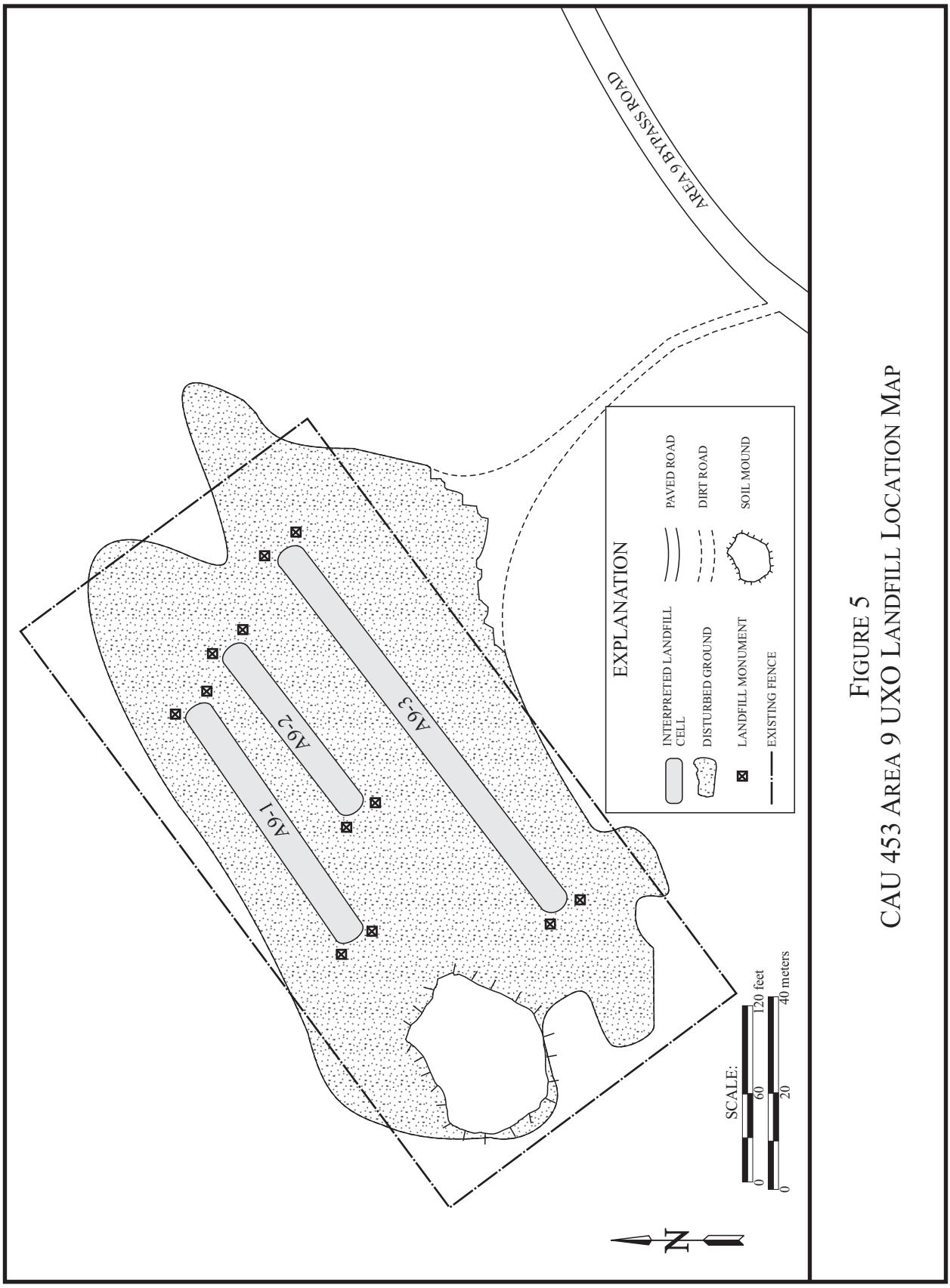

FIGURE 5
CAU 453 AREA 9 UXO LANDFILL LOCATION MAP

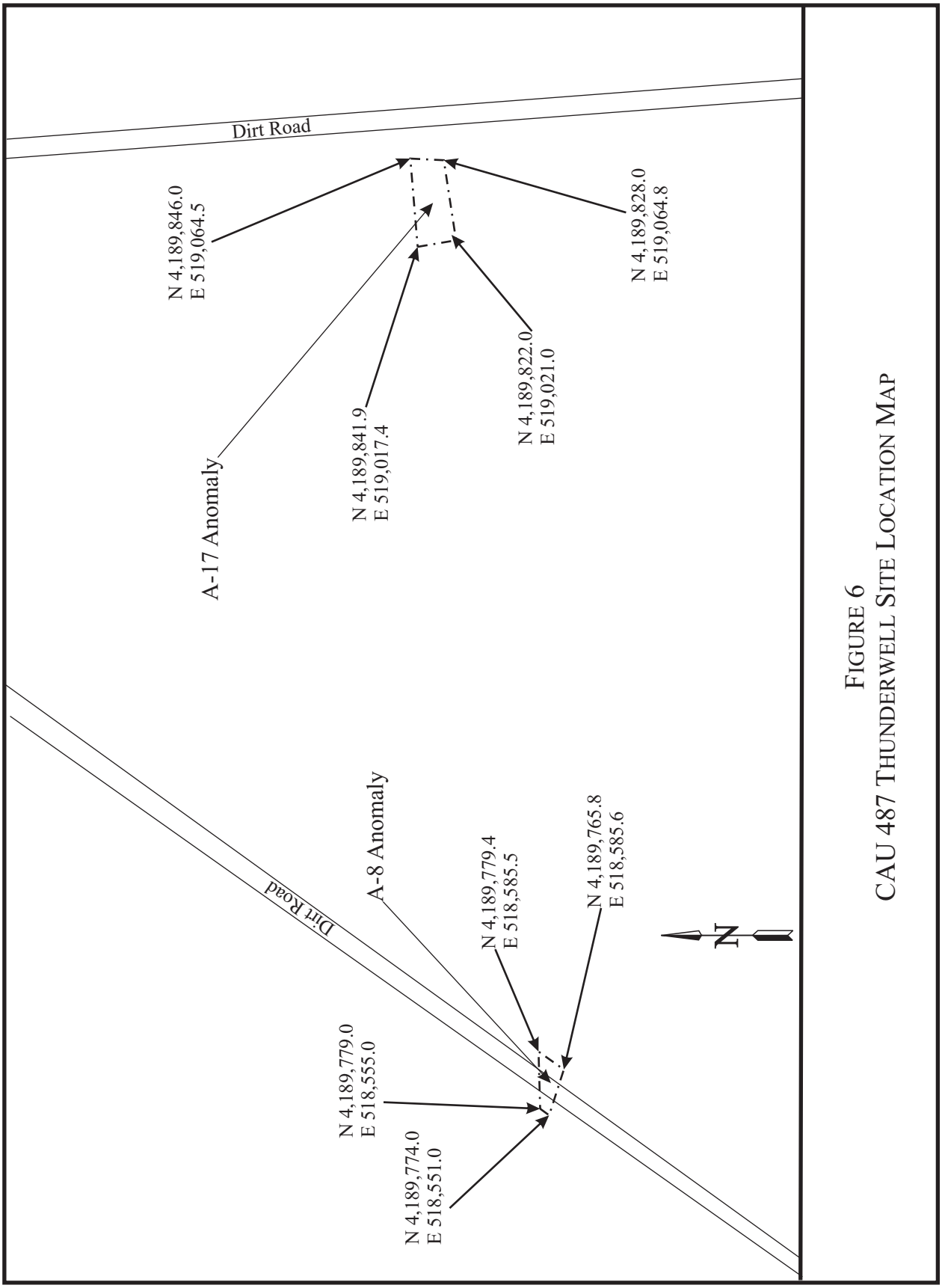

FIGURE 6
CAU 487 THUNDERWELL SITE LOCATION MAP

APPENDIX B
POST-CLOSURE REQUIREMENTS

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CAU 407: ROLLER COASTER RADSAFE POST-CLOSURE INSPECTION PLAN

The following text appeared in the published and approved CAU 407 CR, *Closure Report for Corrective Action Unit 407: Roller Coaster RADSAFE Area, Tonopah Test Range, Nevada*.

INSPECTIONS

Inspections consist of visually inspecting the cover for signs of erosion, animal burrows, cracks, water ponding, vegetation, and inspecting the fencing and postings. Inspections will be performed twice during the first six months after construction of the cover has been completed. After completion of the quarterly inspections, the cover systems will be inspected and monitored semiannually (twice per year) for the next two years. The frequency after the second year will be determined by NDEP, based on the results of the previous inspections. Any identified maintenance and repair requirements will be remedied within 90 working days of discovery and documented in writing at the time of repair.

Results of all inspections in a given year will be addressed in a single annual report. The annual report will include the following information:

- Discussion of observations.
- Inspection checklist and maintenance record.
- Conclusions and recommendations.

A copy of each annual report will be submitted to the NDEP. A copy of the inspection checklist is provided in Appendix B.

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CAU 424: AREA 3 LANDFILL COMPLEXES POST-CLOSURE INSPECTION PLAN

The following text appeared in the published and approved CAU 424 CR, *Closure Report for Corrective Action Unit 424: Area 3 Landfill Complexes, Tonopah Test Range, Nevada*. Post-closure inspection of the Area 3 Landfill sites is intended to determine:

- If maintenance repairs to the landfill soil covers are needed.
- If maintenance and repairs to the landfill markers and warning signs are needed.
- If modifications to the Use Restriction administrative controls are needed.
- If termination of post-closure inspection can be proposed in the future.

POST-CLOSURE INSPECTION

The inspection will consist of biannual (twice per year) visual inspections of:

- The soil cover for indications of subsidence, erosion, unauthorized use, etc.
- The landfill markers and warning signs, to verify they are in-place, intact, and readable.
- The inspections will be documented on a checklist and with photography, if needed.

If damage to the soil covers, landfill markers, or warning signs is noted, then maintenance will be performed and may include placement and compaction of additional backfill, and repair or replacement of markers and signs. Additional nonscheduled inspections may be required after severe weather events such as heavy rainfall, flash flooding, and high winds. Any identified maintenance and repair requirements will be remedied within 90 days of discovery and documented in writing at the time of repair.

ANNUAL REPORTING

An annual report will be prepared that will provide the observations and describe modifications and/or repairs made to the cover and cover area. The annual post-closure inspection report will be prepared and submitted to NDEP following the second inspection of each year that post-closure inspection is conducted. The annual reports will include the following information:

- Discussion of observations.
- Inspection checklist and maintenance record.
- Conclusions and recommendations.

DURATION

The biannual inspections will be performed for five years after the completion of closure activities, and will be documented on inspection forms.

Completion of post-closure inspection of CAU 424 may be proposed by DOE/NV to the NDEP after two consecutive years of visual inspections have not indicated recurrence of subsidence. Completion of post-closure monitoring may be proposed by DOE/NV to the NDEP within five years after the completion of closure activities.

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CAU 453: AREA 9 UXO LANDFILL POST-CLOSURE INSPECTION PLAN

The following text appeared in the published and approved CAU 453 CR, *Closure Report for Corrective Action Unit 453: Area 9 UXO-Landfill, Tonopah Test Range, Nevada*.
Post-closure inspection of the Area 9 UXO Landfill is intended to determine:

- If maintenance and repairs to the cell soil covers are needed.
- If maintenance and repairs to the perimeter fence, warning signs, and monuments are needed.
- If modifications to the administrative use restrictions are needed.
- If termination of post-closure inspection can be proposed in the future.

POST-CLOSURE INSPECTION

The inspection will consist of biannual (twice per year) visual inspections of:

- The cell soil cover for indications of subsidence, erosion, unauthorized excavation, etc.
- The perimeter fence, warning signs, and monuments, for signs of wear, disturbance, etc.

The inspections will be documented on a checklist and with photography, if needed. Repairs to the cell soil covers (placement and compaction of additional fill), perimeter fence, warning signs, and monuments (repair, reposition, and/or replacement) may be required. Additional, nonscheduled inspections may be required after severe weather events such as heavy rainfall, flash flooding, and high winds. Any identified maintenance and repair requirements will be remediated within 90 days of discovery and documented in writing at the time of repair.

ANNUAL REPORTING

An annual post-closure inspection report will be prepared that will provide the observations and describe modifications and/or repairs made to the cover and cover area. The annual report will be prepared and submitted to NDEP following the second inspection of each year that post-closure inspection is conducted. The annual reports will include the following information:

- Discussion of observations.
- Inspection checklist and maintenance record.
- Conclusions and recommendations.

DURATION

The biannual inspections will be performed for five years after the closure activities have completed, and will be documented on inspection forms.

Completion of post-closure inspection of CAU 453 may be proposed by DOE/NV to NDEP within five years after the completion of closure activities. Completion of post-closure inspection may also be proposed by DOE/NV to NDEP if two consecutive years of visual inspections do not indicate the recurrence of subsidence depressions.

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CAU 487: THUNDERWELL SITE, POST-CLOSURE INSPECTION PLAN

The following text appeared in the published and approved Record of Technical Change Number 2 for the final *Corrective Action Decision Document/Closure Report for Corrective Action Unit 487: Thunderwell Site, Tonopah Test Range, Nevada*.

The post-closure inspection of CAS RG-26-001-RGRV will consist of semi-annual (twice per year) visual inspections of the monument markers and postings to verify that they are in-place, intact, and readable. Visual inspections of the monuments and signage, and indications of ground disturbance within the Use Restriction area will be conducted. Observations and any modifications and/or repairs to the monuments or postings will be included in the annual *Post-Closure Inspection Report for the Tonopah Test Range, Nevada.*

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ndep
NEVADA DIVISION OF ENVIRONMENTAL PROTECTION
protecting the future for generations

STATE OF NEVADA
Department of Conservation & Natural Resources
DIVISION OF ENVIRONMENTAL PROTECTION

Kenny C. Guinn, Governor
Allen Biaggi, Director
Leo M. Drozdoff, P.E., Administrator

ERD.061208.0001

December 5, 2006

John B. Jones, Acting Federal Project Director
Environmental Restoration Project
National Nuclear Security Administration
Nevada Site Office (NNSA/NSO)
P.O. Box 98518
Las Vegas, NV 89193-8518

Subject: NNSA/NSO Request to Reduce the Frequency of Post-Closure Monitoring of Corrective Action Units (CAU) 400, 404, 407, 423, 424, 426, 427, 453, and 487 at Tonopah Test Range (TTR), Nevada

Dear Mr. Jones:

The Nevada Division of Environmental Protection, Bureau of Federal Facilities staff (NDEP) has received and reviewed the referenced request, dated November 28, 2006. The sites have been monitored for various lengths of time beginning in 1997 for CAU 400, 1998 for CAUs 404 and 426, 1999 for CAUs 423, 424, 427, and 453, 2001 for CAU 487, and 2002 for CAU 407. Some of the sites have not been required to conduct post-closure monitoring or have only been required to conduct inspections for a short period of time but all sites have continued to be monitored as a best management practice. Past monitoring has demonstrated that a once per year inspection would be sufficient for soil cover, fencing, monuments and signs at these sites.

NDEP concurs with the NNSA/NSO request to reduce the frequency of the post-closure monitoring inspections of the subject CAUs to an annual frequency. Maintenance and repair requirements must continue to be made within ninety (90) days of discovery and documented in writing at the time of repair. Annual reports to NDEP must also continue.

Address any questions regarding this matter to either Ted Zaferatos at (702) 486-2850, ext. 234, Don Elle at (702) 486-2850, ext. 229, or me at (702) 486-2850, ext. 231.

Sincerely,

/s/: Tim Murphy

T.H. Murphy
Chief
Bureau of Federal Facilities

ACTION	ERP
INFO	WMP AMSP
NSO/MGR	L
AMEM	L
AMNS	
AMSO	
AMSP	L
AMSS	

1771 E. Flamingo Road, Suite 121-A • Las Vegas, Nevada 89119

DRE/TZ

cc: K.J. Cabble, ERP, NNSA/NSO
E.F. Di Sanza, WMP, NNSA/NSO
K.A. Hoar, Director, AD/AMSP, NNSA/NSO
D.C. Loewer, DTRA/CXT1, M/S 645, Mercury, NV
T.A. Lantow, DTRA/CXT1, M/S 645, Mercury, NV
W.R. Griffin, SNJV/DTRA, M/S 645, Mercury, NV
Glenn Richardson, NSTec, NTS 306, Mercury, NV
J.L. Smith, NSTec, Las Vegas, NV
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98 RANW/XPL, 3770 Duffer Drive, Las Vegas, NV 89191

APPENDIX C
POST-CLOSURE INSPECTION CHECKLISTS

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Inspection Requirement: **BMP**

POST-CLOSURE INSPECTION CHECKLIST

CAU 400, BOMBLET PIT AND FIVE POINTS LANDFILL (TTR) – CAS TA-19-001-05PT, ORDNANCE DISPOSAL PIT

Inspection Date: 5/28/14	Reason for Inspection: BMP
Date of Last Post-Closure Inspection: 5/14/13	Reason for Last Post-Closure Inspection: BMP
Responsible Entity: NSTec Environmental Restoration, Nevada National Security Site, Mercury, Nevada	
Responsible Facility Owner: Reed J. Poderis, Project Manager, Industrial Sites, Environmental Restoration Project	
Chief Inspector: Rebecca King	Title: Project Mgr
Assistant Inspector: Reed Poderis	Title: Mgr

A. GENERAL INSTRUCTIONS

- ***The site inspection is to document vegetation growth and inspect the integrity of the fence and can be conducted from outside the perimeter fence.***
- All documentation must be legible and clear. Complete all checklist items.
- If a shaded box is checked, add detailed comments to document the results of the site inspection. Information provided should be of sufficient detail to enable reconstruction of observations regarding field conditions. The completed checklist is part of the field record of the inspection.
- Field notes taken to assist in completion of this checklist will become part of the inspection record. No form is specified for field notes, and additional field notes are not required if the checklist and associated attachments adequately describe site conditions.

B. PREPARATION (To be completed prior to the site visit)	YES	NO	EXPLANATION (required if shaded box is checked)
1. Were anomalies or trends detected on previous inspections?		✓	
2. Were maintenance or repairs performed since the last inspection?	✓		burrow and hay bale Repair

C. SITE INSPECTION (To be completed during the site visit)			
1. Adjacent Offsite Features:	YES	NO	EXPLANATION (required if shaded box is checked)
a. Are there any new activities or offsite features that could potentially affect the site?		✓	
2. Site Markers:	YES	NO	EXPLANATION (required if shaded box is checked)
a. Is there damage to or a break in the fence or fenceposts?	✓		Rabbit fence loose on south
3. Fenced Area:	YES	NO	EXPLANATION (required if shaded box is checked)
a. Is there evidence of human or large animal intrusion onto the site?		✓	
b. Are animal burrows present?	✓		minor
c. Are weedy plants present?		✓	
d. Is there evidence of plant mortality?		✓	
e. Is there trash or debris within the fenced area?		✓	
f. Are there any other issues not specifically described in this checklist?		✓	

Photograph Instructions:

- ***A standard set of photographs is needed for the post-closure report. Photos are required to be taken from the approximate location where photos were taken the previous year (as found in the previous year's post-closure report).***
- Photographs should also be taken to document maintenance/repair needs, anomalous features, or new features (such as changes in adjacent area land use). These will be used to plan maintenance/repair activities and are not intended for use in the annual post-closure report.
- Photographs will be filed electronically.

4. Photograph Documentation:	YES	NO	EXPLANATION (required if shaded box is checked)
a. Have the required photographs of the site been taken?	✓		

POST-CLOSURE INSPECTION CHECKLIST

CAU 400, BOMBLET PIT AND FIVE POINTS LANDFILL (TTR) – CAS TA-19-001-05PT, ORDNANCE DISPOSAL PIT

D. FIELD CONCLUSIONS AND REPAIR OR MAINTENANCE RECOMMENDATIONS:

Vegetation is dry but established. Fencing is in good condition except for an area of Rabbit fence that is loose on South end. Hay bales that were placed along wash to slow down Run off until vegetation was established are washed away but no longer needed because vegetation is established.

E. CERTIFICATION: I have conducted this inspection in accordance with the post-closure requirements as recorded on this checklist and attachments.

Chief Inspector's Signature: /s/: Rebecca King	Date: 5/28/14

F. VERIFICATION: I have reviewed this checklist and attachments and have verified that they are complete.

Signature: /s/: Reed J. Poderis	Date: 6/11/14
Printed Name: Reed J. Poderis (or designee)	

Inspection Requirement: **Annual**

POST-CLOSURE INSPECTION CHECKLIST

CAU 407, ROLLER COASTER RADSAFE AREA (TTR) – CAS TA-23-001-TARC, ROLLER COASTER RADSAFE AREA

Inspection Date: 5/28/14	Reason for Inspection: Annual
Date of Last Post-Closure Inspection:	Reason for Last Post-Closure Inspection: Annual
Responsible Entity: NSTec Environmental Restoration, Nevada National Security Site, Mercury, Nevada	
Responsible Facility Owner: Reed J. Poderis, Project Manager, Industrial Sites, Environmental Restoration Project	
Chief Inspector: Rebecca Kniz	Title: Proj. Mgr
Assistant Inspector: Reed Poderis	Title: Mgr

A. GENERAL INSTRUCTIONS

- ***The site inspection is an inspection of the entire perimeter to visually inspect all features specifically described in this checklist and observe whether there is an indication that the use restriction may have been compromised. Entry into the fenced area is not required for the inspection.***
- All documentation must be legible and clear. Complete all checklist items.
- If a shaded box is checked, add detailed comments to document the results of the site inspection. Information provided should be of sufficient detail to enable reconstruction of observations regarding field conditions. The completed checklist is part of the field record of the inspection.
- Field notes taken to assist in completion of this checklist will become part of the inspection record. No form is specified for field notes, and additional field notes are not required if the checklist and associated attachments adequately describe site conditions.

B. PREPARATION (To be completed prior to the site visit)	YES	NO	EXPLANATION (required if shaded box is checked)
1. Were anomalies or trends detected on previous inspections?		✓	
2. Were maintenance or repairs performed since the last inspection?		✓	
a. If yes, has repair resulted in a change from as-built conditions?			NA ✓
b. If yes (to 2a), are revised as-built plans available that reflect repair changes?			NA ✓

C. SITE INSPECTION (To be completed during the site visit)			
1. Adjacent Offsite Features:	YES	NO	EXPLANATION (required if shaded box is checked)
a. Are there any new activities or offsite features that could potentially affect the site?		✓	
2. Site Markers:	YES	NO	EXPLANATION (required if shaded box is checked)
a. Is there damage to or a break in the fencing or fenceposts?		✓	
b. Are all use restriction signs legible?	✓		
c. How many damaged or missing use restriction signs need to be replaced?	0		
d. How many use restriction signs are down or loose and need to be re-hung?	0		
e. Do any Underground Radioactive Material Area signs need to be replaced or re-hung?		✓	
3. Waste Unit Cover:	YES	NO	EXPLANATION (required if shaded box is checked)
a. Is there evidence of settling or cracking?		✓	
b. Is there evidence of erosion (wind or water)?	✓		water erosion rills on South slope
c. Is there evidence of ponding on the cover?		✓	
d. Is organic mulch adequate to prevent erosion?	✓		
e. Is there evidence of human or large animal intrusion onto the site?		✓	
f. Are animal burrows present?	✓		substantial on slopes

Inspection Requirement: **Annual**

POST-CLOSURE INSPECTION CHECKLIST

CAU 407, ROLLER COASTER RADSAFE AREA (TTR) – CAS TA-23-001-TARC, ROLLER COASTER RADSAFE AREA

g. Are weedy plants present?		✓	
h. Is there evidence of plant mortality?		✓	
i. Is there trash or debris within the fenced area?		✓	
j. Are there any other issues not specifically described in this checklist?		✓	

Photograph Instructions:

- ***A standard set of photographs is needed for the post-closure report. Photos are required to be taken from the approximate location where photos were taken the previous year (as found in the previous year's post-closure report).***
- Photographs should also be taken to document maintenance/repair needs, anomalous features, or new features (such as changes in adjacent area land use). These will be used to plan maintenance/repair activities and are not intended for use in the annual post-closure report.
- Photographs will be filed electronically.

4. Photograph Documentation:	YES	NO	EXPLANATION (required if shaded box is checked)
a. Have the required photographs of the site been taken?	✓		

D. FIELD CONCLUSIONS	YES	NO	EXPLANATION (required if shaded box is checked)
1. Is there an imminent hazard to the integrity of the landfill cover?		✓	

2. Field Conclusions and Repair or Maintenance Recommendations:

Fence, signage and top of cover are in good condition. Cover side slopes have a lot of animal burrows, some are large & deep. Erosion rills are forming on east side slope. Repair is needed.

E. CERTIFICATION: I have conducted this inspection in accordance with the post-closure requirements as recorded on this checklist and attachments.

Chief Inspector's Signature: /s/: Rebecca King Date: 5/28/14

F. VERIFICATION: I have reviewed this checklist and attachments and have verified that they are complete.

Signature: /s/: Reed J. Poderis Date: 6/11/14

Printed Name: Reed J. Poderis (or designee)

Inspection Requirement: **Annual**

POST-CLOSURE INSPECTION CHECKLIST

CAU 424, Area 3 Landfill Complexes (TTR) – CAS 03-08-001-A301, Landfill Cell A3-1, CAS 03-08-002-A302, Landfill Cell A3-2, CAS 03-08-002-A303, Landfill Cell A3-3, CAS 03-08-002-A304, Landfill Cell A3-4, CAS 03-08-002-A305, Landfill Cell A3-5, CAS 03-08-002-A306, Landfill Cell A3-6, and CAS 03-08-002-A308, Landfill Cell A3-8

Inspection Date: 5/28/14	Reason for Inspection: Annual
Date of Last Post-Closure Inspection: 5/14/13	Reason for Last Post-Closure Inspection: Annual
Responsible Entity: NSTec Environmental Restoration, Nevada National Security Site, Mercury, Nevada	
Responsible Facility Owner: Reed J. Poderis, Project Manager, Industrial Sites, Environmental Restoration Project	
Chief Inspector: Rebecca Kus	Title: Proj Mgr
Assistant Inspector: Reed Poderis	Title: Mgr

A. GENERAL INSTRUCTIONS

- ***The site inspection is an inspection of the each site including the perimeters and sufficient transects to be able to inspect the entire surface and all features specifically described in this checklist.***
- All documentation must be legible and clear. Complete all checklist items.
- If a shaded box is checked, add detailed comments to document the results of the site inspection. Information provided should be of sufficient detail to enable reconstruction of observations regarding field conditions. The completed checklist is part of the field record of the inspection.
- Field notes taken to assist in completion of this checklist will become part of the inspection record. No form is specified for field notes, and additional field notes are not required if the checklist and associated attachments adequately describe site conditions.

B. PREPARATION (To be completed prior to the site visit)	YES	NO	EXPLANATION (required if shaded box is checked)
1. Were anomalies or trends detected on previous inspections?		✓	
2. Were maintenance or repairs performed since the last inspection?	✓		Subsidence Repair, cover repair
a. If yes, has repair resulted in a change from as-built conditions?		✓	NA
b. If yes (to 2a), are revised as-built plans available that reflect repair changes?			NA ✓

C. SITE INSPECTION (To be completed during the site visit)			
1. Adjacent Offsite Features (Landfill A3-1):	YES	NO	EXPLANATION (required if shaded box is checked)
a. Are there any new activities or offsite features that could potentially affect the site?		✓	
2. Site Markers (Landfill A3-1):	YES	NO	EXPLANATION (required if shaded box is checked)
a. Have any of the seven (7) boundary monuments been disturbed or damaged?		✓	
b. Are all signs legible?	✓		
c. How many damaged or missing signs need to be replaced?	0		
d. How many down or loose signs need to be re-hung?	0		
3. Waste Unit Cover (Landfill A3-1):	YES	NO	EXPLANATION (required if shaded box is checked)
a. Is there evidence of settling or cracking?		✓	
b. Is there evidence of erosion (wind or water)?		✓	
c. Is there evidence of human or large animal intrusion onto the site?		✓	
d. Are animal burrows present?		✓	
e. Is there trash or debris within the use restricted area?		✓	
f. Are there any other issues not specifically described in this checklist?		✓	

Inspection Requirement: **Annual**

POST-CLOSURE INSPECTION CHECKLIST

CAU 424, Area 3 Landfill Complexes (TTR) – CAS 03-08-001-A301, Landfill Cell A3-1, CAS 03-08-002-A302, Landfill Cell A3-2, CAS 03-08-002-A303, Landfill Cell A3-3, CAS 03-08-002-A304, Landfill Cell A3-4, CAS 03-08-002-A305, Landfill Cell A3-5, CAS 03-08-002-A306, Landfill Cell A3-6, and CAS 03-08-002-A308, Landfill Cell A3-8

4. Adjacent Offsite Features (Landfill A3-2):	YES	NO	EXPLANATION (required if shaded box is checked)
a. Are there any new activities or offsite features that could potentially affect the site?		✓	
5. Site Markers (Landfill A3-2):	**YES**	**NO**	**EXPLANATION (required if shaded box is checked)**
a. Have any of the four (4) boundary monuments been disturbed or damaged?		✓	
b. Are all signs legible?	✓		
c. How many damaged or missing signs need to be replaced?	0		
d. How many down or loose signs need to be re-hung?	0		
6. Waste Unit Cover (Landfill A3-2):	**YES**	**NO**	**EXPLANATION (required if shaded box is checked)**
a. Is there evidence of settling or cracking?		✓	
b. Is there evidence of erosion (wind or water)?		✓	
c. Is there evidence of human or large animal intrusion onto the site?		✓	
d. Are animal burrows present?		✓	
e. Is there trash or debris within the use restricted area?		✓	
f. Are there any other issues not specifically described in this checklist?		✓	
7. Adjacent Offsite Features (Landfill A3-3, western two cells):	**YES**	**NO**	**EXPLANATION (required if shaded box is checked)**
a. Are there any new activities or offsite features that could potentially affect the site?		✓	
8. Site Markers (Landfill A3-3, western two cells):	**YES**	**NO**	**EXPLANATION (required if shaded box is checked)**
a. Have any of the three (3) boundary monuments been disturbed or damaged?		✓	
b. Are all three (3) surface markers in good condition and is lava rock sufficient to locate them?	✓		
c. Are all signs legible?	✓		
d. How many damaged or missing signs need to be replaced?	0		
e. How many down or loose signs need to be re-hung?	0		
9. Waste Unit Cover (Landfill A3-3, western two cells):	**YES**	**NO**	**EXPLANATION (required if shaded box is checked)**
a. Is there evidence of settling or cracking?		✓	
b. Is there evidence of erosion (wind or water)?		✓	
c. Is there evidence of human or large animal intrusion onto the site?		✓	
d. Are animal burrows present?		✓	
e. Is there trash or debris within the use restricted area?		✓	
f. Are there any other issues not specifically described in this checklist?		✓	

Inspection Requirement: **Annual**

POST-CLOSURE INSPECTION CHECKLIST

CAU 424, Area 3 Landfill Complexes (TTR) – CAS 03-08-001-A301, Landfill Cell A3-1, CAS 03-08-002-A302, Landfill Cell A3-2, CAS 03-08-002-A303, Landfill Cell A3-3, CAS 03-08-002-A304, Landfill Cell A3-4, CAS 03-08-002-A305, Landfill Cell A3-5, CAS 03-08-002-A306, Landfill Cell A3-6, and CAS 03-08-002-A308, Landfill Cell A3-8

	YES	NO	EXPLANATION (required if shaded box is checked)
10. Adjacent Offsite Features (Landfill A3-3, eastern cell):			
a. Are there any new activities or offsite features that could potentially affect the site?		✓	
11. Site Markers (Landfill A3-3, eastern cell):	YES	NO	EXPLANATION (required if shaded box is checked)
a. Are all three (3) surface markers in good condition and is lava rock sufficient to locate them?	✓		
12. Waste Unit Cover (Landfill A3-3, eastern cell):	YES	NO	EXPLANATION (required if shaded box is checked)
a. Is there evidence of settling or cracking?		✓	
b. Is there evidence of erosion (wind or water)?		✓	
c. Is there evidence of human or large animal intrusion onto the site?		✓	
d. Are animal burrows present?		✓	
e. Is there trash or debris within the use restricted area?		✓	
f. Are there any other issues not specifically described in this checklist?		✓	
13. Adjacent Offsite Features (Landfill A3-4):	YES	NO	EXPLANATION (required if shaded box is checked)
a. Are there any new activities or offsite features that could potentially affect the site?		✓	
14. Site Markers (Landfill A3-4):	YES	NO	EXPLANATION (required if shaded box is checked)
a. Have any of the five (5) boundary monuments been disturbed or damaged?		✓	
b. Are all signs legible?	✓		
c. How many damaged or missing signs need to be replaced?	0		
d. How many down or loose signs need to be re-hung?	0		
15. Waste Unit Cover (Landfill A3-4):	YES	NO	EXPLANATION (required if shaded box is checked)
a. Is there evidence of settling or cracking?		✓	
b. Is there evidence of erosion (wind or water)?		✓	
c. Is there evidence of human or large animal intrusion onto the site?		✓	
d. Are animal burrows present?		✓	
e. Is there trash or debris within the use restricted area?		✓	
f. Are there any other issues not specifically described in this checklist?		✓	
16. Adjacent Offsite Features (Landfill A3-5):	YES	NO	EXPLANATION (required if shaded box is checked)
a. Are there any new activities or offsite features that could potentially affect the site?		✓	
17. Site Markers (Landfill A3-5):	YES	NO	EXPLANATION (required if shaded box is checked)
a. Have any of the four (4) boundary monuments been disturbed or damaged?		✓	
b. Are all signs legible?	✓		

POST-CLOSURE INSPECTION CHECKLIST

CAU 424, Area 3 Landfill Complexes (TTR) – CAS 03-08-001-A301, Landfill Cell A3-1, CAS 03-08-002-A302, Landfill Cell A3-2, CAS 03-08-002-A303, Landfill Cell A3-3, CAS 03-08-002-A304, Landfill Cell A3-4, CAS 03-08-002-A305, Landfill Cell A3-5, CAS 03-08-002-A306, Landfill Cell A3-6, and CAS 03-08-002-A308, Landfill Cell A3-8

c. How many damaged or missing signs need to be replaced?	0		
d. How many down or loose signs need to be re-hung?	0		
18. Waste Unit Cover (Landfill A3-5):	YES	NO	EXPLANATION (required if shaded box is checked)
a. Is there evidence of settling or cracking?		✓	
b. Is there evidence of erosion (wind or water)?		✓	
c. Is there evidence of human or large animal intrusion onto the site?		✓	
d. Are animal burrows present?		✓	
e. Is there trash or debris within the use restricted area?		✓	
f. Are there any other issues not specifically described in this checklist?		✓	
19. Adjacent Offsite Features (Landfill A3-6):	YES	NO	EXPLANATION (required if shaded box is checked)
a. Are there any new activities or offsite features that could potentially affect the site?		✓	
20. Site Markers (Landfill A3-6):	YES	NO	EXPLANATION (required if shaded box is checked)
a. Have any of the four (4) boundary monuments been disturbed or damaged?		✓	
b. Are all signs legible?	✓		
c. How many damaged or missing signs need to be replaced?	0		
d. How many down or loose signs need to be re-hung?	0		
21. Waste Unit Cover (Landfill A3-6):	YES	NO	EXPLANATION (required if shaded box is checked)
a. Is there evidence of settling or cracking?		✓	
b. Is there evidence of erosion (wind or water)?		✓	
c. Is there evidence of human intrusion or large animal onto the site?		✓	
d. Are animal burrows present?		✓	
e. Is there trash or debris within the use restricted area?		✓	
f. Are there any other issues not specifically described in this checklist?		✓	
22. Adjacent Offsite Features (Landfill A3-8):	YES	NO	EXPLANATION (required if shaded box is checked)
a. Are there any new activities or offsite features that could potentially affect the site?		✓	
23. Site Markers (Landfill A3-8):	YES	NO	EXPLANATION (required if shaded box is checked)
a. Are all four (4) surface markers in good condition and is lava rock sufficient to locate them?	✓		
b. Are all signs legible?	✓		
c. How many damaged or missing signs need to be replaced?	0		
d. How many down or loose signs need to be re-hung?	0		

Inspection Requirement: **Annual**

POST-CLOSURE INSPECTION CHECKLIST

CAU 424, Area 3 Landfill Complexes (TTR) – CAS 03-08-001-A301, Landfill Cell A3-1, CAS 03-08-002-A302, Landfill Cell A3-2, CAS 03-08-002-A303, Landfill Cell A3-3, CAS 03-08-002-A304, Landfill Cell A3-4, CAS 03-08-002-A305, Landfill Cell A3-5, CAS 03-08-002-A306, Landfill Cell A3-6, and CAS 03-08-002-A308, Landfill Cell A3-8

24. Waste Unit Cover (Landfill A3-8):	YES	NO	EXPLANATION (required if shaded box is checked)
a. Is there evidence of settling or cracking?		✓	
b. Is there evidence of erosion (wind or water)?		✓	
c. Is there evidence of human or large animal intrusion onto the site?		✓	
d. Are animal burrows present?		✓	
e. Is there trash or debris within the use restricted area?		✓	
f. Are there any other issues not specifically described in this checklist?		✓	

Photograph Instructions:

- ***A standard set of photographs is needed for the post-closure report. Photos are required to be taken from the approximate location where photos were taken the previous year (as found in the previous year's post-closure report).***
- Photographs should also be taken to document maintenance/repair needs, anomalous features, or new features (such as changes in adjacent area land use). These will be used to plan maintenance/repair activities and are not intended for use in the annual post-closure report.
- Photographs will be filed electronically.

25. Photograph Documentation:	YES	NO	EXPLANATION (required if shaded box is checked)
a. Have the required photographs of the site been taken?	✓		

D. FIELD CONCLUSIONS	YES	NO	EXPLANATION (required if shaded box is checked)
1. Is there an imminent hazard to the integrity of the landfills?		✓	

2. Field Conclusions and Repair or Maintenance Recommendations:

Markers, monuments and covers at all 7 landfills in the complex are in good condition. No issues.

E. CERTIFICATION: I have conducted this inspection in accordance with the post-closure requirements as recorded on this checklist and attachments.

Chief Inspector's Signature: /s/: Rebecca King Date: 5/28/14

F. VERIFICATION: I have reviewed this checklist and attachments and have verified that they are complete.

Signature: /s/: Reed J. Poderis Date: 6/11/14

Printed Name: Reed J. Poderis (or designee)

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Inspection Requirement: **Annual**

POST-CLOSURE INSPECTION CHECKLIST

CAU 453, AREA 9 UXO LANDFILL (TTR) – CAS 09-55-001-0952, AREA 9 LANDFILL

Inspection Date: 5/28/14	Reason for Inspection: Annual
Date of Last Post-Closure Inspection: 5/14/13	Reason for Last Post-Closure Inspection: Annual
Responsible Entity: NSTec Environmental Restoration, Nevada National Security Site, Mercury, Nevada	
Responsible Facility Owner: Reed J. Poderis, Project Manager, Industrial Sites, Environmental Restoration Project	
Chief Inspector: Rebecca King	Title: Project Manager
Assistant Inspector: Reed Poderis	Title: Manager

A. GENERAL INSTRUCTIONS

- ***The site inspection is an inspection of the entire site including the perimeter and sufficient transects to be able to inspect the entire surface and all features specifically described in this checklist.***
- All documentation must be legible and clear. Complete all checklist items.
- If a shaded box is checked, add detailed comments to document the results of the site inspection. Information provided should be of sufficient detail to enable reconstruction of observations regarding field conditions. The completed checklist is part of the field record of the inspection.
- Field notes taken to assist in completion of this checklist will become part of the inspection record. No form is specified for field notes, and additional field notes are not required if the checklist and associated attachments adequately describe site conditions.

B. PREPARATION (To be completed prior to the site visit)	YES	NO	EXPLANATION (required if shaded box is checked)
1. Were anomalies or trends detected on previous inspections?		✓	
2. Were maintenance or repairs performed since the last inspection?	✓		Burrow backfill

C. SITE INSPECTION (To be completed during the site visit)			
1. Adjacent Offsite Features:	YES	NO	EXPLANATION (required if shaded box is checked)
a. Are there any new activities or offsite features that could potentially affect the site?		✓	
2. Site Markers:	YES	NO	EXPLANATION (required if shaded box is checked)
a. Is there damage to the gate or lock?		✓	
b. Is there damage to fencing or fenceposts?		✓	
c. Have any boundary monuments been disturbed or damaged?		✓	
d. Are all signs legible?	✓		
e. How many damaged or missing signs need to be replaced?	0		
f. How many down or loose signs need to be re-hung?	0		
3. Use Restricted Area:	YES	NO	EXPLANATION (required if shaded box is checked)
a. Is there evidence of settling or cracking?		✓	
b. Is there evidence of erosion (wind or water)?		✓	
c. Is there evidence of human or large animal intrusion onto the site?		✓	
d. Are animal burrows present?	✓		minor no action Required
e. Is there trash or debris within the use restricted area?		✓	
f. Are there any other issues not specifically described in this checklist?		✓	

Inspection Requirement: **Annual**

POST-CLOSURE INSPECTION CHECKLIST

CAU 453, AREA 9 UXO LANDFILL (TTR) – CAS 09-55-001-0952, AREA 9 LANDFILL

Photograph Instructions:

- ***A standard set of photographs is needed for the post-closure report. Photos are required to be taken from the approximate location where photos were taken the previous year (as found in the previous year's post-closure report).***
- Photographs should also be taken to document maintenance/repair needs, anomalous features, or new features (such as changes in adjacent area land use). These will be used to plan maintenance/repair activities and are not intended for use in the annual post-closure report.
- Photographs will be filed electronically.

4. Photograph Documentation:	YES	NO	EXPLANATION (required if shaded box is checked)
a. Have the required photographs of the site been taken?	✓		

D. FIELD CONCLUSIONS	YES	NO	EXPLANATION (required if shaded box is checked)
1. Is there an imminent hazard to the integrity of the landfill cover?		✓	

2. Field Conclusions and Repair or Maintenance Recommendations:

Fencing, signage + cover + monuments in good condition
No issues.

E. CERTIFICATION: I have conducted this inspection in accordance with the post-closure requirements as recorded on this checklist and attachments.

Chief Inspector's Signature: /s/: Rebecca King Date: 5/28/14

F. VERIFICATION: I have reviewed this checklist and attachments and have verified that they are complete.

Signature: /s/: Reed J. Poderis Date: 6/1/14

Printed Name: Reed J. Poderis (or designee)

Inspection Requirement: **Annual**

POST-CLOSURE INSPECTION CHECKLIST

CAU 487, THUNDERWELL SITE (TTR) – CAS RG-26-001-RGRV, THUNDERWELL SITE

Inspection Date: 5/28/14	Reason for Inspection: Annual
Date of Last Post-Closure Inspection: 5/14/13	Reason for Last Post-Closure Inspection: Annual
Responsible Entity: NSTec Environmental Restoration, Nevada National Security Site, Mercury, Nevada	
Responsible Facility Owner: Reed J. Poderis, Project Manager, Industrial Sites, Environmental Restoration Project	
Chief Inspector: Rebecca King	Title: Project Manager
Assistant Inspector: Reed Poderis	Title: Manager

A. GENERAL INSTRUCTIONS

- ***The site inspection is an inspection of the entire site including the perimeter and sufficient transects to be able to inspect the entire surface and all features specifically described in this checklist.***
- All documentation must be legible and clear. Complete all checklist items.
- If a shaded box is checked, add detailed comments to document the results of the site inspection. Information provided should be of sufficient detail to enable reconstruction of observations regarding field conditions. The completed checklist is part of the field record of the inspection.
- Field notes taken to assist in completion of this checklist will become part of the inspection record. No form is specified for field notes, and additional field notes are not required if the checklist and associated attachments adequately describe site conditions.

B. PREPARATION (To be completed prior to the site visit)	YES	NO	EXPLANATION (required if shaded box is checked)
1. Were anomalies or trends detected on previous inspections?		✓	
2. Were maintenance or repairs performed since the last inspection?		✓	

C. SITE INSPECTION (To be completed during the site visit)			
1. Adjacent Offsite Features (A8 Anomaly):	YES	NO	EXPLANATION (required if shaded box is checked)
a. Are there any new activities or offsite features that could potentially affect the site?		✓	
2. Site Markers (A8 Anomaly):	YES	NO	EXPLANATION (required if shaded box is checked)
a. Have any boundary monuments been disturbed or damaged?		✓	
b. Are all signs legible?	✓		
c. How many damaged or missing signs need to be replaced?	0		
d. How many down or loose signs need to be re-hung?	0		
3. Use Restricted Area (A8 Anomaly):	YES	NO	EXPLANATION (required if shaded box is checked)
a. Is there evidence of human or large animal intrusion onto the site?		✓	
b. Are animal burrows present?		✓	
c. Is there trash or debris within the use restricted area?		✓	
d. Are there any other issues not specifically described in this checklist?		✓	
4. Adjacent Offsite Features (A17 Anomaly):	YES	NO	EXPLANATION (required if shaded box is checked)
a. Are there any new activities or offsite features that could potentially affect the site?		✓	
5. Site Markers (A17 Anomaly):	YES	NO	EXPLANATION (required if shaded box is checked)
a. Have any boundary monuments been disturbed or damaged?		✓	
b. Are all signs legible?	✓		
c. How many damaged or missing signs need to be replaced?	0		

Inspection Requirement: **Annual**

POST-CLOSURE INSPECTION CHECKLIST

CAU 487, THUNDERWELL SITE (TTR) – CAS RG-26-001-RGRV, THUNDERWELL SITE

d. How many down or loose signs need to be re-hung?	6		
6. Use Restricted Area (A17 Anomaly):	YES	NO	EXPLANATION (required if shaded box is checked)
a. Is there evidence of human or large animal intrusion onto the site?		✓	
b. Are animal burrows present?	✓		minor
c. Is there trash or debris within the use restricted area?		✓	
d. Are there any other issues not specifically described in this checklist?		✓	

Photograph Instructions:

- ***A standard set of photographs is needed for the post-closure report. Photos are required to be taken from the approximate location where photos were taken the previous year (as found in the previous year's post-closure report).***
- Photographs should also be taken to document maintenance/repair needs, anomalous features, or new features (such as changes in adjacent area land use). These will be used to plan maintenance/repair activities and are not intended for use in the annual post-closure report.
- Photographs will be filed electronically.

7. Photograph Documentation:	YES	NO	EXPLANATION (required if shaded box is checked)
a. Have the required photographs of the site been taken?	✓		

D. FIELD CONCLUSIONS AND REPAIR OR MAINTENANCE RECOMMENDATIONS:

Markers, monuments, signs and cover in good condition at both sites. No issues.

E. CERTIFICATION: I have conducted this inspection in accordance with the post-closure requirements as recorded on this checklist and attachments.

Chief Inspector's Signature: /s/: Rebecca King Date: 5/28/14

F. VERIFICATION: I have reviewed this checklist and attachments and have verified that they are complete.

Signature: /s/: Reed J. Poderis Date: 6/14/14

Printed Name: Reed J. Poderis (or designee)

APPENDIX D
PHOTOGRAPHS

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PHOTOGRAPH LOG

PHOTOGRAPH	DATE	DESCRIPTION
1	05/28/2014	CAU 400 Five Points Landfill, Looking West
2	05/28/2014	CAU 407, Looking East
3	05/28/2014	CAU 424, Landfill Cell A3-1, Looking Southeast
4	05/28/2014	CAU 424, Landfill Cell A3-2, Looking South
5	05/28/2014	CAU 424, Landfill Cell A3-3, Looking North
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11	05/28/2014	CAU 453, Looking Northwest
12	05/28/2014	CAU 487, A-8 Anomaly, Looking East
13	05/28/2014	CAU 487, A-17 Anomaly, Looking West

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Photograph 1: CAU 400 Five Points Landfill, Looking West, 05/28/2014

Photograph 2: CAU 407, Looking East, 05/28/2014

Photograph 3: CAU 424, Landfill Cell A3-1, Looking Southeast, 05/28/2014

Photograph 4: CAU 424, Landfill Cell A3-2, Looking South, 05/28/2014

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Photograph 10: CAU 424, Landfill Cell A3-8, Looking East, 05/28/2014

Photograph 11: CAU 453, Looking Northwest, 05/28/2014

Photograph 12: CAU 487, A-8 Anomaly, Looking East, 05/28/2014

Photograph 13: CAU 487, A-17 Anomaly, Looking West, 05/28/2014

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APPENDIX E
POST-CLOSURE VEGETATION MONITORING REPORT

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POST-CLOSURE VEGETATION MONITORING REPORT

CORRECTIVE ACTION UNIT 407, ROLLER COASTER RADSAFE AREA (TTR)

Field Work Completed
June 4, 2014

Report Prepared
by
David C. Anderson, Sr. Scientist
Ecological & Environmental Monitoring

July 2014

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TABLES

ATTACHMENTS

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1.0 INTRODUCTION

Vegetation monitoring was conducted on June 4, 2014, at Corrective Action Unit (CAU) 407, Roller Coaster RadSafe Area on the Tonopah Test Range. This report documents the methods used and describes the status of the vegetation community that has established on the CAU 407 cover. Concerns and issues related to the status of the vegetation community are identified, and recommendations are made.

In 2004 actions were taken to repair erosion channels that had developed on the cover at the CAU 407 site. Those actions left much of the cover without vegetation. In the fall of 2004 the cover was seeded with a mix of native plant species. The entire site was covered with a biodegradable erosion control blanket, and supplemental irrigation was applied as necessary through the following spring. Vegetation monitoring has been conducted annually since 2005.

2.0 OBJECTIVES

The objective of the revegetation efforts at CAU 407, Roller Coaster RadSafe Area, was to accelerate the reestablishment of native plants and return the site to pre-disturbance conditions. Vegetation affords protection from wind and water erosion and maintains the integrity of the site. It also impedes the growth of noxious, weedy species and provides cover and food for wildlife. Vegetation monitoring is conducted annually to document the success of revegetation efforts and to identify any issues that may need to be addressed to ensure that the plant community persists.

3.0 METHODS

Monitoring was performed on June 4, 2014. Plant cover and density were recorded, wildlife usage was noted, and erosion was evaluated. Plant cover was estimated using an optical point projection device. Samples were taken at intervals along each of the three 25-meter-long permanent linear transects. Cover was recorded by species. Density was estimated using 1-square meter (m^2) quadrats placed at designated intervals along each transect. The total number of individual plants within each quadrat was recorded. The data were averaged over all quadrats. Species richness was calculated from density data. The number of different plant species within each quadrat was averaged over all quadrats to gauge the diversity or heterogeneity of the plant community.

Quantification of the success of the revegetation effort is accomplished by comparing the percentage of plant cover and plant density on the reseeded closure cover with the percentage of plant cover and plant density on an adjacent undisturbed plant community or reference area. Typically, if cover and density on the reseeded area are close to 70 percent of the cover and density on the reference area over consecutive years, the site is considered to be successfully revegetated.

Wildlife usage is a subjective determination and is measured by the presence of animals, burrows, scat, or browsed shrubs and grasses. Indications of erosion include the movement of surface litter, pedestalling and rilling of soils, or exposure of plant roots.

4.0 CAU 407, ROLLER COASTER RADSAFE AREA, SURVEY RESULTS

The three permanent transects were sampled in 2014. Reclamation success standards were previously determined by averaging data collected at a reference site from 2000 to 2009. The reference site is located less than a mile north of the CAU 407 site.

4.1 PLANT COVER

Plant cover at CAU 407 was 9.2 percent in 2014, all from shadscale saltbush and fourwing saltbush (Table 1). Plant cover in 2014 was the lowest it has been at this site since it was revegetated in the fall of 2004. The average plant cover for the previous seven years was 13.9 percent, almost 5 percent higher than was recorded this year. Plant cover on the site seems to have peaked at 21.7 percent in 2010 and has decreased since then. Perennial grasses have never contributed significantly to plant cover at this site and have not been part of total plant cover since 2009 (Table I.1). Annual forbs have contributed to plant cover on occasion, but there have been no forbs the last 4 years.

TABLE 1. PLANT COVER (PERCENT) AT CAU 407

		Cover	Reference	Standard
SHRUBS	Bud sagebrush		5.3	
	Fourwing saltbush	1.7	3.8	
	Shadscale saltbush	7.5		
	Yellow rabbitbrush		0.1	
	Winterfat		0.2	
	Total Shrub Cover	**9.2**	**9.4**	**6.6**
GRASSES	Indian ricegrass		0.7	
	Woolly tuftgrass		0.1	
	James' galleta grass		1.0	
	Total Grass Cover	**0.0**	**1.8**	**1.3**
FORBS	Esteve's pincushion		1.5	
	Filaree		0.2	
	Milkvetch		0.2	
	Total Forb Cover	**0.0**	**1.9**	**1.3**
INVASIVE WEEDS	Halogeton	0.0	0.1	
	Total Invasive Weed Cover	**0.0**	**0.1**	
TOTAL PLANT COVER		**9.2**	**13.2**	**9.2***
Bare Ground		72.5	69.6	
Litter		18.3	17.2	

* Does not include invasive weeds

4.2 PLANT DENSITY

Plant density at CAU 407 was 8.0 plants per m^2 this year and included four shrubs (Table 2). The most abundant shrub was shadscale saltbush with a density of 5.8 plants per m^2, almost a 50 percent drop in density from last year, when the density of shadscale saltbush was 11.0 plants per m^2. Fourwing saltbush is rarely encountered at the site but was up substantially from the last 4 years. Fourwing saltbush was relatively abundant between 2005 and 2009 but has become less common over the last few years. The increase in density this year is encouraging. Winterfat was present this year at about half the density as last year. Total plant density was lower than it was last year but similar to what it was 2 years ago (Table I.3). There were a few halogeton plants, an invasive weed, but there have been no native forbs on the site for the last 4 years.

TABLE 2. PLANT DENSITY (PLANTS PER M^2) AT CAU 407

		Cover	Reference	Standard
SHRUBS	Bud sagebrush	0.7	3.1	
	Fourwing saltbush	1.2	0.0	
	Shadscale saltbush	5.8	0.8	
	Sagebrush cholla		0.03	
	Winterfat	0.3	0.1	
	Total Shrub Density	**8.0**	**4.0**	**2.8**
GRASSES	Indian ricegrass	0	0.4	
	Woolly tuftgrass	0	0.4	
	Squirreltail grass	0	0.04	
	James' galleta grass	0	0.9	
	Total Grass Density	**0**	**1.7**	**1.2**
FORBS	Buckwheat species	0	0.1	
	Desert globemallow	0	0.3	
	Esteve's pincushion	0	8.7	
	Freckled milkvetch	0	0.1	
	Gooseberryleaf globemallow	0	0.1	
	Hoary tansyaster	0	0.04	
	Lambsquarter	0	0.1	
	Milkvetch	0	0.2	
	Pepperweed	0	0.2	
	Total Forb Density	**0**	**9.8**	**6.9**
INVASIVE WEEDS	Halogeton	0.7	0.3	
	Total Invasive Weed Cover	**0.7**	**0.3**	
TOTAL PLANT DENSITY		**8.7**	**15.9**	**10.9***

* Does not include invasive weeds

4.3 SPECIES RICHNESS

There was an average of one species encountered per quadrat on the CAU 407 cover this year (Table 3), which is close to what it has been the last 4 years. The only species encountered on the site were shrubs. Perennial grasses and native forbs were occasionally encountered, but never in abundance (Table I.5).

TABLE 3. SPECIES RICHNESS (SPECIES PER M^2) AT CAU 407

	Cover	Reference	Standard
Shrubs	1.0	1.6	1.1
Grasses	0	0.5	0.4
Forbs	0	1.1	0.8
Total Species	**1.0**	**3.2**	**2.3**

4.4 REVEGETATION SUCCESS

Both plant cover and density were low this year. Plant cover was equal to the standard for revegetation success, which is 9.2 percent (Table 1). The concern at CAU 407 is the lack of perennial grasses and forbs. It is anticipated that with increased rainfall, shrub cover will increase, forbs will eventually contribute to overall plant cover as they have in the past, and perennial grasses will reestablish on the site.

Total plant density dropped below the revegetation success standard of 10.9 plants per m^2 for the second time since the site was revegetated (Table I-3). The only plants present were four species of shrubs. There have been no perennial grasses since 2009 and no forbs since 2010.

The third parameter used to measure revegetation success is plant diversity, which has been low for CAU 407 for several years. Plant diversity this year was 1.0 species per quadrat and has not been greater than that value since 2010. The revegetation success standard for plant diversity is 2.3 species per quadrat, which has not been achieved since 2006 (Table I-5).

4.5 WILDLIFE USE

As has been noted in previous years, there continue to be a few animal burrows on the side slopes of the cover. The burrows appeared to be shallow and, as in previous years, do not appear to be heavily used.

4.6 SOIL EROSION

The soil on the cover and side slopes appears to be stable. No gullies were observed, and there were no indications that soil erosion is a concern.

4.7 SUMMARY

Corrective measures taken previously at CAU 407 appear to be controlling severe erosion. The animal burrows, primarily along the southern slope, do not appear to be frequently used, and there are no signs of subsurface soils being carried to the surface.

The major concern at CAU 407 continues to be the lack of diversity of plants. Shrubs are the only life form found on the site, and both cover and density have declined over the past few years. The lack of natural rainfall continues in the region and is most likely the primary reason for the declines and low diversity. As has been mentioned previously, plants that have established on the site appear smaller than would be expected, probably a result of the compacted subsurface soils, which is typical of most soil covers. As years of higher precipitation occur, the compacted soils may loosen and allow greater root penetration and more robust plant growth.

4.8 RECOMMENDATIONS

No remedial actions are recommended for CAU 407. Lower cover and density values will improve with a more normal rainfall pattern. This year marks the tenth year since the CAU 407 cover was reseeded and the tenth consecutive year that vegetation data have been collected at the site. As recommended last year and approved by the Nevada Division of Environmental Protection, future vegetation monitoring will be conducted on an as-needed basis with a minimum of once every 5 years. Based on this, the next scheduled vegetation monitoring will be conducted in 2019. If during annual inspections of the site, abnormalities or concerns are noted regarding the status of the plant community on the cover, vegetation monitoring could be scheduled and conducted.

ATTACHMENT I

CAU 407 COVER, DENSITY, AND DIVERSITY DATA AND PHOTOGRAPHS

TABLE I.1. CAU 407 PLANT COVER (PERCENT), COVER

	Year							
	2006	**2008**	**2009**	**2010**	**2011**	**2012**	**2013**	**2014**
Litter	74.2	66.7	39.2	47.5	20.0	20.8	14.2	18.3
Bare		23.4	50.9	30.9	64.2	67.5	71.6	72.5
Bud sagebrush	0.8							
Fourwing saltbush		0.8	0.8	1.7	0.8			1.7
Shadscale saltbush	15.0	7.5	8.3	18.3	13.3	11.7	14.2	7.5
Winterfat				0.8				
Indian ricegrass			0.8					
Squirreltail	9.2	0.8						
Esteve's pincushion		0.8		0.8				
Halogeton	0.8				1.7			
Shrubs	15.8	8.3	9.1	20.8	14.1	11.7	14.2	9.2
Grasses	9.2	0.8	0.8					
Forbs		0.8		0.8				
Invasive Weeds	0.8				1.7			
TOTAL PLANT COVER	**25.8**	**9.9**	**9.9**	**21.6**	**15.8**	**11.7**	**14.2**	**9.2**

TABLE I.2. PLANT COVER (PERCENT), REFERENCE AREA

	Year									
	2000	**2002**	**2003**	**2004**	**2005**	**2006**	**2007**	**2008**	**2009**	**Average**
Litter	19.0	18.5	13.0	14.5	10.0	27.8	19.8	13.8	18.3	17.2
Bare	45.5	34.0	34.0	24.5	38.5	54.9	64.6	68.3	73.2	**48.4**
Rock	18.5	41.0	41.5	49.5	43.5					21.6
Bud sagebrush	8.0	3.0	4.0	6.0	1.5	7.2	8.3	5.6	3.9	5.3
Shadscale saltbush	5.0	1.5	5.0	3.0	5.5	3.3	4.7	3.6	2.8	3.8
Yellow rabbitbrush			0.5							0.06
Winterfat				0.5		0.6	0.5	0.5		0.2
Greasewood		0.5								0.06
Indian ricegrass	1.5	0.5	0.5	1.0	0.5	1.7	0.5			0.7
Low woollygrass	2.5	1.0	1.0	0.5	0.5				0.6	0.7
James' galleta grass						1.1	1.6		0.6	0.4
Esteve's pincushion								8.2		0.9
Gooseberryleaf globemallow									0.6	0.1
Milkvetch						1.7				0.2
Redstem stork's bill						1.7				0.3
Shrubs	13.0	5.0	9.0	9.5	7.0	11.1	13.5	9.7	6.7	**9.4**
Grasses	4.0	2.0	1.5	1.5	1.0	2.8	2.1		1.2	**1.8**
Forbs			0.5			3.4		8.2	0.6	**1.6**
Invasive Weeds										0
TOTAL PLANT COVER	**17.0**	**6.5**	**11.0**	**11.0**	**8.0**	**17.3**	**15.6**	**17.9**	**8.5**	**12.8**

TABLE I.3. CAU 407 PLANT DENSITY (PLANTS/M^2), COVER

	Year									
	2005	**2006**	**2007**	**2008**	**2009**	**2010**	**2011**	**2012**	**2013**	**2014**
Bud sagebrush	2.9	1.3	1.3	0.5	0.3	0.7	0.1			0.7
Fourwing saltbush	2.3	3.2	2.4	1.8	1.7	0.8	0.5	0.3	0.7	1.2
Shadscale saltbush	17.5	17.9	14.2	18.1	11.6	11.7	10.2	8.2	11.0	5.8
Rubber rabbitbrush		0.3								
Winterfat	0.7	2.0	1.2	0.7		0.7			0.7	0.3
Indian ricegrass	16.4	1.1	5.4							
Cheatgrass	0.1	0.3								
Squirreltail	42.9	53.3	22.3	2.0	0.3					
Birdnest buckwheat	0.1									
Buckwheat	2.9	7.0				0.3				
Esteve's pincushion				13.4		14.6				
Hoary tansyaster		0.3		0.3	0.3					
Lambsquarter	1.3									
Manybranched ipomopsis	0.1									
Milkvetch	0.1									
Mountain pepperweed					0.3					
Prickly Russian thistle	0.3									
Halogeton					4.1	7.6	1.9			0.7
Shrubs	23.4	24.8	19.2	21.1	13.6	13.9	10.8	8.5	12.3	8.0
Grasses	59.3	54.5	27.6	2.0	0.3	0.0	0.0	0.0	0.0	0.0
Forbs	4.4	7.3	0.0	13.7	0.7	14.9	0.0	0.0	0.0	0.0
Invasive Weeds	0.4	0.3	0.0	0.0	4.1	7.6	1.9	0.0	0.0	0.7
TOTAL PLANT DENSITY	**12.3**	**86.9**	**46.8**	**36.8**	**18.7**	**36.4**	**12.7**	**8.5**	**12.3**	**8.7**

TABLE I.4. PLANT DENSITY (PLANTS/M^2), REFERENCE AREA

	Year									
	2000	**2002**	**2003**	**2004**	**2005**	**2006**	**2007**	**2008**	**2009**	**Average**
Bud sagebrush	4.1	3.3	3.8	3.2	3.1	2.6	2.9	2.8	2.5	3.1
Shadscale saltbush	0.9	0.9	1.1	0.7	1.0	0.8	0.6	0.7	0.8	0.8
Winterfat	0.02	0.04	0.1	0.1	0.1	0.1	0.04	0.1	0.2	0.1
Sagebrush cholla	0.02	0.02		0.1						0.01
Indian ricegrass	0.8	0.5	0.2	0.3	0.2	0.3	0.4	0.3	0.2	0.4
Squirreltail	0.2	0.1		0.04		0.04	0.04			0.04
Low woollygrass	0.7	0.8	1.5	1.2	1.2	0.3	0.2	0.3	0.3	0.4
James' galleta grass	0.7		0.02			0.8	0.9	0.2	0.7	0.9
Birdnest buckwheat				0.1		0.02		0.04		0.01
Buckwheat	0.7	0.5	0.5	0.5	0.1				0.1	0.1
Cryptantha	0.1									0.01
Cushion cryptantha				0.1						0.01
Desert globemallow	0.3			0.1				0.2	0.1	0.3
Esteve's pincushion	1.3			2.7	36.9			31.9	5.6	8.7
Freckled milkvetch	0.02	0.04		0.1	0.9					0.1
Gooseberryleaf globemallow		0.1	0.6	0.02	0.3	0.3	0.3			0.1
Hoary tansyaster	0.02	0.5		0.2	0.03	0.2				0.04
Lambsquarter			0.5							0.1
Manybranched ipomopsis			0.3	0.5				0.1		0.01
Milkvetch						1.9				0.2
Mountain pepperweed								0.2		0.03
Pepperweed	0.1					0.9		0.1		0.2
Halogeton	1.7		0.3	0.1						0.3
Suncup					0.1					0.01
Shrubs	5.1	4.3	4.9	4.0	4.2	3.4	3.6	3.7	3.5	4.1
Grasses	2.5	1.3	1.7	1.6	1.5	1.4	1.6	0.9	1.2	1.5
Forbs	2.6	1.3	1.9	4.8	38.4	3.3	0.3	32.6	5.8	10.1
Invasive Weeds	1.7			0.3	0.1					0.2
TOTAL PLANT DENSITY	11.9	6.9	8.5	10.7	44.1	8.1	5.5	37.2	10.5	15.9

TABLE I.5. CAU 407 PLANT DIVERSITY (SPECIES/QUADRAT), COVER

LIFEFORM	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	Ref
Shrubs	2.5	2.3	2.2	1.4	1.1	1.2	0.9	0.9	0.9	1.0	1.6
Grasses	1.1	1.5	1.3	0.1	0.1						0.5
Forbs	0.9	0.3	0	1.1	0.5	1.0					1.1
TOTAL SPP/Quad	**4.5**	**4.1**	**3.5**	**2.6**	**1.7**	**2.2**	**0.9**	**0.9**	**0.9**	**1.0**	**3.2**
Invasive Weeds	0.1					.9	0.3				1.1

TABLE I.6. PLANT DIVERSITY (SPECIES/QUADRAT), REFERENCE AREA

LIFEFORM	2000	2002	2003	2004	2005	2006	2007	2008	2009	Avg
Shrubs	1.5	1.5	1.5	1.4	1.6	1.7	1.5	1.6	1.9	1.6
Grasses	1.1	0.5	0.4	0.4	0.4	0.5	0.3	0.3	0.4	0.5
Forbs	1.1	0.8	0.9	1.7	1.9	1.2	0.2	1.2	1.1	1.1
TOTAL SPP/Quad	**3.7**	**2.8**	**2.8**	**3.4**	**3.9**	**3.4**	**2.0**	**3.1**	**3.4**	**3.2**
Invasive Weeds	1.1	0.8	0.9	1.7	1.9	1.2	0.2	1.2	1.1	1.1

PHOTOGRAPHS

CAU 407, 2005

CAU 407, 2006

CAU 407, 2007

CAU 407, 2008

CAU 407, 2009

CAU 407, 2010

CAU 407, 2011

CAU 407, 2012

CAU 407, 2013

CAU 407, 2014

ATTACHMENT II

COMMON AND SCIENTIFIC NAMES OF PLANTS ENCOUNTERED AT OR NEAR CAU 407

TABLE II.1. COMMON AND SCIENTIFIC NAMES OF PLANTS ENCOUNTERED AT OR NEAR CAU 407

	Common Name	Scientific Name
SHRUBS	Bud sagebrush	*Picrothamnus desertorum*
	Fourwing saltbush	*Atriplex canescens*
	Greasewood	*Sarcobatus vermiculatus*
	Nevada jointfir	*Ephedra nevadensis*
	Greene's rabbitbrush	*Chrysothamnus greenei*
	Rubber rabbitbrush	*Ericameria nauseosa*
	Sagebrush cholla	*Grusonia pulchella*
	Shadscale saltbush	*Atriplex confertifolia*
	Winterfat	*Krascheninnikovia lanata*
	Yellow rabbitbrush	*Chrysothamnus viscidiflorus*
GRASSES	Cheatgrass	*Bromus tectorum*
	Indian ricegrass	*Achnatherum hymenoides*
	James' galleta grass	*Pleuraphus jamesii*
	Low woollygrass	*Dasyochloa pulchella*
	Squirreltail	*Elymus elymoides*
FORBS	Birdnest buckwheat	*Eriogonum nidularium*
	Buckwheat	*Eriogonum* species
	Cryptantha	*Cryptantha* species
	Cushion cryptantha	*Cryptantha circumscissa*
	Desert globemallow	*Sphaeralcea ambigua*
	Esteve's pincushion	*Chaenactis steviodes*
	Freckled milkvetch	*Astragalus lentiginosus*
	Gooseberryleaf globemallow	*Sphaeralcea grossulariifolia*
	Halogeton	*Halogeton glomeratus*
	Hoary tansyaster	*Macheranthera canescens*
	Lupine	*Lupinus* species
	Manybranched ipomopsis	*Ipomopsis polycladon*
	Milkvetch	*Astragalus* species
	Mountain pepperweed	*Lepedium montanum*
	Pepperweed	*Lepidium* species
	Prickly Russian thistle	*Salsola iberica*
	Redstem stork's bill	*Erodium cicutarium*
	Suncup	*Camissonia* species

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