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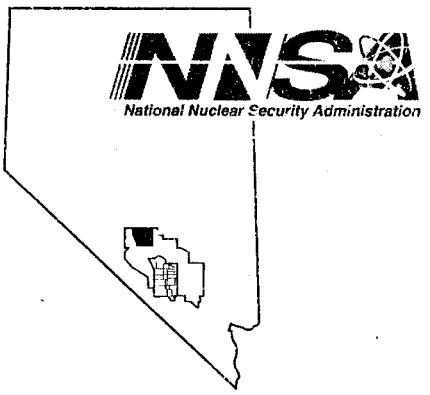

Post-Closure Inspection Report for the Tonopah Test Range, Nevada

For Calendar Year 2004

Controlled Copy No.:_____

Revision: 0

April 2005

Environmental Restoration
Division

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

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FOR CALENDAR YEAR 2004

U.S. Department of Energy
National Nuclear Security Administration
Nevada Site Office
Under Contract No. DE-AC08-96NV11718

Controlled Copy No.____
Revision: 0
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POST-CLOSURE INSPECTION REPORT FOR THE TONOPAH TEST RANGE, NEVADA,

FOR CALENDAR YEAR 2004

Approved By: _____ Date: 4/20/05
Janet Appenzeller-Wing, Project Manager
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Approved By: _____ Date: 4/20/05
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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
m	meter(s)
m^2	square meter(s)
NDEP	Nevada Division of Environmental Protection
NNSA/NSO	U.S. Department of Energy, National Nuclear Security Administration Nevada Site Office
ROTC	Record of Technical Change
TTR	Tonopah Test Range

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EXECUTIVE SUMMARY

This Post-Closure Inspection Report provides an analysis and summary of the semi-annual inspections conducted at the Tonopah Test Range (TTR) during Calendar Year 2004. The report includes the inspection and/or repair activities completed at the following nine Corrective Action Units (CAUs) located at TTR, Nevada:

- CAU 400: Bomblet Pit and Five Points Landfill (TTR)
- CAU 404: Roller Coaster Lagoons and Trench (TTR)
- CAU 407: Roller Coaster RadSafe Area (TTR)
- CAU 423: Area 3 Underground Discharge Point, Building 0360 (TTR)
- CAU 424: Area 3 Landfill Complexes (TTR)
- CAU 426: Cactus Spring Waste Trenches (TTR)
- CAU 427: Area 3 Septic Waste Systems 2, 6 (TTR)
- CAU 453: Area 9 UXO Landfill (TTR)
- CAU 487: Thunderwell Site (TTR)

Site inspections were conducted on July 7, 2004, and November 9-10, 2004. All inspections were conducted according to the post-closure plans in the approved Closure Reports (CRs). The post-closure inspection plan for each CAU is included in Appendix B, with the exception of CAU 400 and CAU 423. CAU 400 does not require post-closure inspections, but inspections of the vegetation and fencing are conducted as a best management practice. In addition, post-closure inspections are not currently required at CAU 423; however, the CR is being revised to include inspection requirements. The inspection checklists for each site inspection are included in Appendix C, the field notes are included in Appendix D, and the site photographs are included in Appendix E. Vegetation monitoring of CAU 400, CAU 404, CAU 407, and CAU 426 was performed in June 2004, and the vegetation monitoring report is included in Appendix F. In addition, topographic survey results of two repaired landfill cells in CAU 424 are included in Appendix G.

Maintenance and/or repairs were performed at the CAU 400 Five Points Landfill, CAU 407, CAU 424, CAU 427, and CAU 487. CAU 400 repairs included mending the fence, reseeding of a flood damaged area, and anchoring straw bales in the wash to help control erosion at the Five Points Landfill. CAU 407 repairs included erosion repair, reseeding the cover, and replacement of one warning sign. CAU 424 repairs included filling topographically low areas to the surrounding grade. This was performed at Landfill Cell A3-1 (CAS 03-08-001-A301) and Landfill Cell A3-4 (CAS 03-08-002-A304). CAU 427 maintenance activities included placing additional red rocks over the subsurface site markers during the July inspection to assist in locating them for future inspections. CAU 487 repairs included installing eight above-grade monuments to mark the use restriction boundaries, installing use restriction warning signs, stamping coordinates on the brass survey markers, and subsidence repair at the A-8 anomaly.

With the completion of these repairs and maintenance activities, all CAUs were in excellent condition at the end of 2004. The site inspections should continue as scheduled, and any potential problem areas, such as repaired areas of erosion or subsidence, should be monitored closely for further maintenance or repair needs.

1.0 INTRODUCTION

1.1 SCOPE AND OBJECTIVES

This post-closure inspection report includes the results of inspection activities, maintenance and repairs, and conclusions and recommendations for Calendar Year 2004 for nine Corrective Action Units (CAUs) located on the Tonopah Test Range (TTR), Nevada. The locations of the CAUs are shown in Figure 1 of Appendix A. The CAUs and Corrective Action Sites (CASs) covered in this report include the following:

- CAU 400: Bomblet Pit and Five Points Landfill (TTR)
  - CAS TA-19-001-05PT: Ordnance Disposal Pit
  - CAS TA-55-001-TAB2: Ordnance Disposal Pit
- CAU 404: Roller Coaster Lagoons and Trench (TTR)
  - CAS TA-03-001-TARC: Roller Coaster Lagoons
  - CAS TA-21-001-TARC: Roller Coaster N. Disposal Trench
- CAU 407: Roller Coaster RadSafe Area (TTR)
  - CAS TA-23-001-TARC: Roller Coaster RadSafe Area
- CAU 423: Area 3 Underground Discharge Point, Building 0360 (TTR)
  - CAS 03-02-002-0308: Underground Discharge Point
- 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 426: Cactus Spring Waste Trenches (TTR)
  - CAS RG-08-001-RGCS: Waste Trenches
- CAU 427: Area 3 Septic Waste Systems 2, 6 (TTR)
  - CAS 03-05-002-SW02: Septic Waste System
  - CAS 03-05-002-SW06: Septic Waste System
- 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

Post-closure inspections are conducted on a semi-annual basis (twice per calendar year) and consist of the following activities to evaluate and document the condition of the closed units. CAU-specific inspection requirements are included in Appendix B.

- Site inspections and photographs to verify site 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, unauthorized use, etc.
- Vegetation survey to quantify the condition of vegetative covers
- Subsidence survey to indicate any subsidence
- Preparation and submittal of an annual report

No specific post-closure inspection requirements exist for CAU 400; however, when the site was vegetated under the Tonopah Test Range Closure Site Revegetation Plan (DOE/NV, 1997), fencing was installed, and inspections are conducted as a best management practice to document vegetation growth and inspect the integrity of the fences. Details are included in Section 2.1 of this report. The Closure Report (CR) for CAU 423 (U.S. Department of Energy, Nevada Operations Office [DOE/NV], 1999a) does not specify post-closure inspection requirements. However, the site was closed in place, and warning signs were installed. Therefore, a Record of Technical Change (ROTC) is currently being prepared to modify the CR and include a requirement for post-closure inspections of the signs and use restriction. Details are included in Section 2.4 of this report. In addition, a ROTC modifying the Corrective Action Decision Document/Closure Report (CADD/CR) for CAU 487 to include post-closure inspections has been approved (U.S. Department of Energy, National Nuclear Security Administration Nevada Site Office [NNSA/NSO], 2004a). Details are included in Section 2.9 of this report.

1.2 CLOSURE REPORT CONTENTS

This Post-Closure Inspection Report includes the following sections:

- **Section 1.0** - Introduction: Identification of CAU and CAS names and numbers, description of the general scope and objectives of inspections and maintenance work, and report contents
- **Section 2.0** - Site Inspection Results: Inspection scope, semi-annual inspection results, maintenance and repairs, and conclusions and recommendations
- **Section 3.0** - Summary, Conclusions, and Recommendations
- **Section 4.0** - References
- **Appendix A** - Figures
- **Appendix B** - Post-Closure Inspection Plans
- **Appendix C** - Inspection Checklists
- **Appendix D** - Field Notes
- **Appendix E** - Photographs

- **Appendix F** - Vegetation Monitoring Report
- **Appendix G** - Topographic Survey Results
- **Library Distribution List**

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2.0 SITE INSPECTION RESULTS

Site inspections of TTR for the annual period January 2004 through December 2004 were conducted on July 7, 2004, and November 9-10, 2004. Copies of the inspection checklists are included in Appendix C, and field notes are included in Appendix D. Site photographs are included in Appendix E.

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

2.1.1 Introduction

There are no specific post-closure requirements in the CR for CAU 400, Bomblet Pit and Five Points Landfill (TTR); however, when the site was vegetated under the Tonopah Test Range Closure Site Revegetation Plan (DOE/NV, 1997), fencing was installed at the Bomblet Pit (CAS TA-55-001-TAB2, Ordnance Disposal Pit) and the Five Points Landfill (CAS TA-19-001-05PT, Ordnance Disposal Pit). As stated in Section 3.5.4 of the revegetation plan, the fencing is required at both CASs for a minimum of five years in order to give the plants sufficient time to become established. Therefore, inspections are conducted at CAU 400 to document vegetation growth and inspect the integrity of the fences. Removal of site fencing may be proposed in the future when vegetation on the cover is well established. Vegetation monitoring of CAU 400 was conducted in June 2004, and the results are included in Appendix F.

2.1.2 CAU 400 Inspection Results

2.1.2.1 First Semi-Annual Inspection

Bomblet Pit (CAS TA-55-001-TAB2, Ordnance Disposal Pit)

The Bomblet Pit is presented in Figure 2 of Appendix A. The first inspection was conducted on July 7, 2004. The inspection indicated some minor animal burrows on the site and evidence of horses outside the fence. The vegetation on the cover was not as established as the surrounding area but was healthy. The fence, signs, and cover were in good condition. Numerous bomblet fragments and halves were present outside the fenced area. No issues or concerns were noted that affected the integrity of the unit.

Five Points Landfill (CAS TA-19-001-05PT, Ordnance Disposal Pit)

The Five Points Landfill is presented in Figure 3 of Appendix A. The first inspection was conducted on July 7, 2004. During the inspection, small animal burrows were noted on and around the site. Abnormally heavy rains earlier in the season had caused flooding that resulted in damage to the fence on the east side of the site where it crosses a wash, and plant mortality was evident in the central low-lying area of the site due to standing water.

2.1.2.2 Second Semi-Annual Inspection

Bomblet Pit (CAS TA-55-001-TAB2, Ordnance Disposal Pit)

The second inspection was conducted on November 10, 2004. Scattered bomblet casings were noted during the inspection, both inside and outside the fenced area. Several small animal burrows were present outside the fence, and there was some evidence of small animal intrusion

beneath the mesh chicken wire fence. Vegetation was growing on the cover, but it was not as established as the surrounding area. The site was otherwise in good condition. The fence, signs, and cover were in good condition.

Five Points Landfill (CAS TA-19-001-05PT, Ordnance Disposal Pit)

The second inspection was conducted on November 10, 2004. The previously flooded area on the central low-lying portion of the site exhibited evidence of plant mortality. Animal tracks and tire tracks from an unknown vehicle were evident leading from the washed-out portion of the fence onto the site. It was recommended to repair the fence and reseed the site.

2.1.3 CAU 400 Maintenance and Repairs

Fence damage and flood damage at the Five Points Landfill were first noticed during the July inspection. The central low-lying portion of the site was reseeded on November 16, 2004, with a seed mixture of native shrubs and grasses using a rangeland drill seeder mounted on a Kawasaki Mule towing a chain drag harrow. The reseeding activities are documented in photographs 9-12 in Appendix E. The fence was repaired during the week of November 22, 2004. To slow water flow, catch debris, and protect the fence, ten bales of straw were placed in the wash leading to the landfill and anchored using t-posts on November 30, 2004, and copies of the field notes taken during this activity are included in Appendix D.

2.1.4 CAU 400 Conclusions and Recommendations

With the repairs conducted at the Five Points Landfill, both sites are in good condition. Future precipitation events large enough to cause flooding may occur with similar site damage. The layout of the site may lead to drainage and flooding problems in the case of future high precipitation levels.

At the Bomblet Pit, numerous bomblet fragments and shells are scattered both inside and outside the fence. They appear to be working their way to the surface as a consequence of seasonal change. Some were noted still to have their fuses intact, so care and attention are suggested during future inspections.

As stated in the revegetation plan (DOE/NV, 1997), the sites are to be fenced for a minimum of five years in order to give the vegetation sufficient time to become established. Based on the results of the 2004 inspections and the vegetation report (Appendix F), it has been determined that the vegetation is not currently sufficiently established to cease inspections. It is recommended that both sites remain fenced and semi-annual site inspections continue. Removal of the fencing will be proposed in the future when the vegetation has matured to the same extent as the surrounding areas.

2.2 CAU 404: ROLLER COASTER LAGOONS AND TRENCH (TTR)

2.2.1 Introduction

CAU 404, Roller Coaster Lagoons and Trench (TTR), consists of two CASs (CAS TA-03-001-TARC, Roller Coaster Lagoons; and CAS TA-21-001-TARC, Roller Coaster North Disposal Trench). Post-closure requirements are described in the CR for CAU 404

(DOE/NV, 1998a), which was approved by the Nevada Division of Environmental Protection (NDEP) on May 18, 1999.

Site inspections were conducted on July 7, 2004, and November 9, 2004. A diagram showing the site location and configuration is presented in Figure 4 of Appendix A. The site inspections were conducted according to the post-closure plan (Appendix B). The post-closure inspection checklists are located in Appendix C, and copies of the field notes from each inspection are located in Appendix D. Appendix E contains the photographs taken during the inspections. In addition to site inspections, vegetation monitoring of the site was conducted in June 2004, and the results are included in Appendix F.

2.2.2 CAU 404 Inspection Results

2.2.2.1 First Semi-Annual Inspection

The first inspection was conducted on July 7, 2004. The site was in good condition, and there was no damage noted to the fencing, signs, or cover. The vegetation was healthy and well established. Some small animal burrows were noted, but no maintenance or repairs were needed. The unit was in good condition.

2.2.2.2 Second Semi-Annual Inspection

The second inspection was completed on November 9, 2004. Several small animal burrows were observed along the fence. The burrows did not affect the integrity of the unit. The fence was in good condition, and all seven warning signs were intact and legible. No erosion, subsidence, or cracking of the cover was observed. The vegetation on the cover was healthy. The unit was in good condition.

2.2.3 CAU 404 Maintenance and Repairs

No maintenance or repairs were conducted at CAU 404 during 2004.

2.2.4 CAU 404 Conclusions and Recommendations

The cover, fence, posted warning signs, and gates are all in good condition. The site inspections should continue as scheduled, except in the event of severe weather, when a non-scheduled site inspection may be required.

2.3 CAU 407: Roller Coaster RadSafe Area (TTR)

2.3.1 Introduction

CAU 407, Roller Coaster RadSafe Area (TTR), consists of one CAS (CAS TA-23-001-TARC, Roller Coaster RadSafe Area). The post-closure requirements for CAU 407 are described in the CR (DOE/NV, 2001a). Revision 1 of the CR was approved by the NDEP on February 22, 2002. Section 5.2 of the CR calls for site inspections to be conducted within the first six months following completion of cover construction. Following the first six months, site inspections are to be conducted twice yearly for the next two years. Previous inspections have noted erosion rills on the cover margins, and subsequent maintenance was completed to repair the erosion and help prevent future erosion. Inspections should continue until the site has stabilized and erosion is no longer an ongoing issue.

Site inspections were conducted on July 7, 2004, and November 9, 2004. A diagram showing the site location and configuration is presented in Figure 5 of Appendix A. The site inspections were conducted according to the post-closure plan (Appendix B). The post-closure inspection checklists are located in Appendix C, and copies of the field notes from each inspection are located in Appendix D. Appendix E contains the photographs taken during the inspections. In addition to site inspections, vegetation monitoring of the site was conducted in June 2004, and the results are included in Appendix F.

2.3.2 CAU 407 Inspection Results

2.3.2.1 First Semi-Annual Inspection

The first inspection was conducted on July 7, 2004. The inspection indicated minor but noticeable erosion rills along the cover margin that were not compromising the integrity of the cover. It was agreed that repairs would be made during the fourth quarter of Calendar Year 2004 (the first quarter of Fiscal Year 2005) when funding resources would be available. Sparse vegetation was present on the cover and had become better established since the last inspection. Some small animal burrows were also present along the edges of the cover. The fence and signs were intact and in good condition.

2.3.2.2 Second Semi-Annual Inspection

The second inspection was conducted on November 9, 2004. Erosion rills along the cover side slopes were present, with no significant change since the last inspection. Small animal burrows were observed outside the fence. The fence and signs were in good condition, with the exception of one sign with poor legibility. It was decided that the sign would be replaced during the upcoming activities to repair the erosion rills and reseed the cover before the end of 2004.

2.3.3 CAU 407 Maintenance and Repairs

Maintenance and repairs at CAU 407 included erosion repair, reseeding the cover, and replacing one warning sign. One radiological warning sign was replaced by a radiological control technician on November 29, 2004. The erosion rills were filled with clean native fill on November 30, 2004. The erosion repair is documented in photographs 19 and 20 in Appendix E and in field notes in Appendix D. The cover was reseeded and mulched, and an erosion blanket was placed on December 1, 2004, to facilitate stabilization of the side slopes and mitigate the effects of storm water runoff on the soil cover. The reseeding activities are documented in photographs 21-24 in Appendix E. As recommended by the biologist, to ensure the health of the vegetation and supplement natural precipitation, the site will be irrigated in February, March, and April of 2005.

2.3.4 CAU 407 Conclusions and Recommendations

The cover is in good condition after the erosion repair and revegetation. The site inspections should continue as scheduled, and the health of the vegetation and integrity of the side slopes will be monitored closely. Inspections should continue until the site has stabilized and erosion is no longer an ongoing issue.

2.4 CAU 423: Area 3 Underground Discharge Point, Building 0360 (TTR)

2.4.1 Introduction

CAU 423, Area 3 Underground Discharge Point, Building 0360, consists of one CAS (CAS 03-02-002-0308, Underground Discharge Point). Post-closure inspections are not currently required for CAU 423; however, CAU 423 was closed in place, and one warning sign and one at-grade monument were installed, as detailed in the CR (DOE/NV, 1999a). A ROTC to the CR specifying the post-closure inspection requirements has been prepared and submitted for approval. For this reason, inspections were conducted on July 7, 2004, and November 9, 2004. A diagram showing the site location and configuration is presented in Figure 6 of Appendix A. The post-closure inspection checklists are located in Appendix C, and copies of the field notes from each inspection are located in Appendix D. Appendix E contains the photographs taken during the inspections.

2.4.2 CAU 423 Inspection Results

2.4.2.1 First Semi-Annual Inspection

The first inspection was conducted on July 7, 2004. During the inspection, it was noted that several buildings had been razed, and there had been some underground utility work in the area. The warning sign and at-grade monument were inspected, and the site was in excellent condition.

2.4.2.2 Second Semi-Annual Inspection

The second inspection was conducted on November 9, 2004. The unit was in good condition. The warning sign and at-grade monument were located and found to be in good condition. Vegetation was present that was consistent with the adjacent area.

2.4.3 CAU 423 Maintenance and Repairs

No maintenance or repairs at CAU 423 were done in 2004.

2.4.4 CAU 423 Conclusions and Recommendations

The warning sign and monument are in good condition. The site inspections should continue as scheduled.

2.5 CAU 424: Area 3 Landfill Complexes (TTR)

2.5.1 Introduction

CAU 424, Area 3 Landfill Complexes (TTR), consists of eight CASs. Seven landfill cells (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) were closed with soil covers and require post-closure inspections. CAS 03-08-002-A307, Landfill Cell A3-7, was not used as a landfill site and was closed without taking any corrective action. CAU 424 closure activities included removing small volumes of soil containing petroleum hydrocarbons, repairing cell covers that were cracked or had subsided, and installing above-grade and at-grade monuments to mark the corners

of the landfill cells. Post-closure requirements for CAU 424 are detailed in the CR, which was approved by the NDEP in July 1999 (DOE/NV, 1999b).

Site inspections of the seven CASs were conducted on July 7, 2004, and November 9, 2004. A diagram showing the landfill locations is presented in Figure 7 of Appendix A. The site inspections were conducted according to the post-closure plan (Appendix B). The post-closure inspection checklists are located in Appendix C, and copies of the field notes from each inspection are located in Appendix D. Appendix E contains the photographs taken during the inspections. Topographic surveys of Landfill Cell A3-1 (CAS 03-08-001-A301) and Landfill Cell A3-4 (CAS 03-08-002-A304) were completed on July 9, 2003, before repairs were performed, and on December 13, 2004, after repairs were performed. The results are presented in Appendix G.

2.5.2 CAU 424 Inspection Results

The first inspection was conducted on July 7, 2004.

2.5.2.1 First Semi-Annual Inspection

Landfill Cell A3-1 (CAS 03-08-001-A301)

Landfill Cell A3-1 is located at the north end of CAU 424 and is the largest of the landfill cells. The cover and the seven above-grade concrete monuments that demarcate the landfill cell were examined. All signs, survey markers, and monuments were in good condition. A topographically low area was observed in the northeast portion of the site, but the integrity of the unit was not compromised. As a best management practice, it was agreed that the low area would be filled to grade during the fourth quarter of Calendar Year 2004 in conjunction with the repair work at CAU 400 and CAU 407. No cracking or erosion of the cover was observed.

Landfill Cell A3-2 (CAS 03-08-002-A302)

Landfill Cell A3-2 is located due south of Landfill Cell A3-1. All four above-grade monuments and the landfill cover were examined and found to be in good condition. The signs and brass survey markers were also in good condition. No signs of erosion, subsidence, or unauthorized use were observed. The overall condition of the unit was good.

Landfill Cell A3-3 (CAS 03-08-002-A303)

Landfill Cell A3-3 straddles the western fence of the Sandia National Laboratories Area 3 Compound, with parts of the landfill outside the fence marked by three above-grade monuments and parts inside the fence marked by three at-grade monuments. All six monuments were located and inspected. All monuments, brass survey markers, and signs were in good condition. No subsidence or erosion was observed. No issues or concerns were observed for this site, and the overall condition of the landfill was good.

Landfill Cell A3-4 (CAS 03-08-002-A304)

Landfill Cell A3-4 is located south of Dykes Drive at the south end of the CAU. Five above-grade monuments and one at-grade brass survey marker were located and inspected. All monuments, brass survey markers, and warning signs were in good condition. A topographically

low area was observed in the northeast portion of the site, but the integrity of the unit was not compromised. As a best management practice, it was agreed that the low area would be filled to grade during the fourth quarter of Calendar Year 2004 in conjunction with the repair work at CAU 400, CAU 407, and Landfill Cell A3-1.

Landfill Cell A3-5 (CAS 03-08-002-A305)

Landfill Cell A3-5 is located west of Moody Avenue inside a fenced area in Area 10 south of the Air Force First-Aid Station. All four above-grade monuments with attached warning signs and brass survey markers were located and found to be in good condition. No evidence of subsidence, cracking, or erosion was observed, and the use restriction had been maintained. Some small animal burrows were found. The overall condition of the landfill cover was good.

Landfill Cell A3-6 (CAS 03-08-002-A306)

Landfill Cell A3-6 is located immediately west and outside of the fence of the Area 3 Compound. All four above-grade monuments with attached warning signs and brass survey markers were located and found to be in good condition. No evidence of subsidence, cracking, or erosion was observed. Some small animal burrows were found. The overall condition of the landfill cover was good.

Landfill Cell A3-8 (CAS 03-08-002-A308)

Landfill Cell A3-8 is located southwest of the Area 3 Compound in the box car storage yard. Three of the four at-grade brass markers were located and were determined to be in good condition. The southwest corner monument was not located due to its location in a posted radioactive materials area and the presence of surface debris. There was no indication that the debris was impacting the condition of the monument. No erosion, subsidence, or unauthorized use was observed at the site. The overall condition of the cover was good.

2.5.2.2 Second Semi-Annual Inspection

The second inspection was conducted on November 9, 2004.

Landfill Cell A3-1 (CAS 03-08-001-A301)

All signs, survey markers, and the seven above-grade monuments were in good condition. Vegetation on the cover was healthy but did not appear to be as dense as the surrounding area. The topographically low area present in the northeast portion of the site had not changed since the last inspection and was scheduled to be filled to the surrounding grade before the end of the calendar year. No cracking or erosion of the cover was observed.

Landfill Cell A3-2 (CAS 03-08-002-A302)

The four above-grade monuments were located and found to be in good condition. The signs and brass survey markers were also in good condition. Sparse vegetation was present on the cover. The overall condition of the unit was good.

Landfill Cell A3-3 (CAS 03-08-002-A303)

The three above-grade monuments and three at-grade monuments were located and inspected. All monuments, brass survey markers, and signs were in good condition. No subsidence or

erosion was observed. No issues or concerns were observed for this site, and the overall condition of the landfill was good.

Landfill Cell A3-4 (CAS 03-08-002-A304)

The five above-grade monuments and one at-grade brass survey marker were located and inspected. All monuments, brass survey markers, and warning signs were in good condition. The vegetation on the cover was healthy but was not as established as the surrounding area. The topographically low area present in the south portion of the cover was still present, with no change since the last inspection. Repair work was scheduled to fill the low area to the surrounding grade before the end of the calendar year.

Landfill Cell A3-5 (CAS 03-08-002-A305)

The four above-grade monuments were located and inspected. The monuments, attached warning signs, and survey markers were in good condition. The vegetation growing on the cover appeared to be consistent with the surrounding area. No evidence of subsidence, cracking, or erosion was observed. The overall condition of the landfill cover was good.

Landfill Cell A3-6 (CAS 03-08-002-A306)

The four above-grade monuments were located and inspected. The monuments, attached warning signs, and survey markers were in good condition. No evidence of subsidence, cracking, or erosion was observed. The vegetation growing on the cover was healthy. The overall condition of the landfill cover was good.

Landfill Cell A3-8 (CAS 03-08-002-A308)

Three of the four at-grade monuments were located and found to be in good condition. The southwest corner monument was located in a posted and fenced radioactive materials area and covered by a pile of rubber tires. The condition of the monument did not appear to be impacted by the debris. Large piles of debris were present within the fenced area on the southern portion of the landfill, but did not appear to be affecting the integrity of the landfill. No erosion, subsidence, or cracking was observed. The overall condition of the cover was good.

2.5.3 CAU 424 Maintenance and Repairs

Maintenance and repairs at CAU 424 consisted of adding soil to topographically low areas at Landfill Cell A3-1 (CAS 03-08-001-A301) and Landfill Cell A3-4 (CAS 03-08-002-A304) to bring them to the natural grade. These activities were completed on December 9, 2004. Topographic surveys of the two landfill cells were completed before and after the landfill cells were repaired. The pre-repair topographic surveys were performed on July 9, 2003, and the post-repair topographic surveys were completed on December 13, 2004, to document the results of the repairs. The results of the topographic surveys are presented in Appendix G.

2.5.4 CAU 424 Conclusions and Recommendations

With the repairs conducted at Landfill Cell A3-1 (CAS 03-08-001-A301) and Landfill Cell A3-4 (CAS 03-08-002-A304), all seven CASs in CAU 424 are in good condition. By comparing the pre-repair and post-repair topographic surveys, it is clear that the repairs were effective at

bringing the topographically low areas to the natural grade. The site inspections should continue as scheduled.

2.6 CAU 426: Cactus Spring Waste Trenches (TTR)

2.6.1 Introduction

CAU 426, Cactus Spring Waste Trenches (TTR) consists of one CAS (CAS RG-08-001-RGCS, Waste Trenches). The post-closure requirements are described in the CR for CAU 426 (DOE/NV, 1998b), which was approved by the NDEP on May 13, 1999.

Site inspections were conducted on July 7, 2004, and November 9, 2004. A diagram showing the site location and configuration is presented in Figure 8 of Appendix A. The site inspections were conducted according to the post-closure plan (Appendix B). The post-closure inspection checklists are located in Appendix C, and copies of the field notes from each inspection are located in Appendix D. Appendix E contains the photographs taken during the inspections. In addition to site inspections, vegetation monitoring of the site was conducted in June 2004, and the results are included in Appendix F.

2.6.2 CAU 426 Inspection Results

2.6.2.1 First Semi-Annual Inspection

The first inspection was conducted on July 7, 2004. The site was in good condition, and there was no damage to the fencing or cover. The signs were intact and legible. No erosion, subsidence, or unauthorized use was observed. Some small animal burrows were noted around the fence and margin of the cover during the inspection. The overall condition of the unit was good.

2.6.2.2 Second Semi-Annual Inspection

The second inspection was conducted on November 9, 2004. The fence perimeter was walked, and the condition of the fence, signs, and cover was observed. Several small animal burrows were noted outside the fence. The fence was in excellent condition, and the wire mesh had not been breached by animals. The signs were legible and in good condition. The vegetation was healthy and had successfully prevented any erosion of the soil cover. No subsidence, erosion, or cracking was observed. The overall condition of the unit was good.

2.6.3 CAU 426 Maintenance and Repairs

No maintenance or repairs were conducted at CAU 426 during 2004.

2.6.4 CAU 426 Conclusions and Recommendations

The cover, fence, and posted warning signs are all in good condition. The site inspections should continue as scheduled, except in the event of severe weather, where a non-scheduled site inspection may be required.

2.7 CAU 427: Area 3 Septic Waste Systems 2, 6 (TTR)

2.7.1 Introduction

CAU 427, Area 3 Septic Waste Systems 2, 6 (TTR), consists of two CASs (CAS 03-05-002-SW02, Septic Waste System; and CAS 03-05-002-SW06, Septic Waste System). Post-closure requirements for CAU 427 are described in the CR for CAU 427 (DOE/NV, 1999c), which was approved by the NDEP on August 27, 1999.

Site inspections were conducted on July 7, 2004, and November 9, 2004. A diagram showing the site location and configuration is presented in Figure 9 of Appendix A. The site inspections were conducted according to the post-closure plan (Appendix B). The post-closure inspection checklists are located in Appendix C, and copies of the field notes from each inspection are located in Appendix D. Appendix E contains the photographs taken during the inspections.

2.7.2 CAU 427 Inspection Results

2.7.2.1 First Semi-Annual Inspection

The first inspection was conducted on July 7, 2004. Some red rocks denoting the locations of the leachfield markers had been covered with gravel. All 21 subsurface metal markers were located at the corners of Leachfield A (four markers), Leachfield B (four markers), Abandoned Leachfield (four markers), Pre-1965 Leachfield (four markers), and Septic Tank 33-5 (five markers), and red rocks were added to aid in future inspections. The five warning signs were intact and legible. The site was in good condition, and no further maintenance or repairs were needed.

2.7.2.2 Second Semi-Annual Inspection

The second inspection was conducted on November 9, 2004. All 21 subsurface metal markers were located at the corners of Leachfield A (four markers), Leachfield B (four markers), Abandoned Leachfield (four markers), Pre-1965 Leachfield (four markers), and Septic Tank 33-5 (five markers). The five warning signs were located and found to be in good condition. The soil and asphalt covers are located in high traffic areas; therefore, no vegetation was growing on the covers. No evidence of subsidence, erosion, or unauthorized use of the closed sites was observed. The overall condition of the site was good.

2.7.3 CAU 427 Maintenance and Repairs

Maintenance activity at CAU 427 during 2004 consisted of adding red rocks during the July inspection to aid in finding the subsurface site markers during future inspections.

2.7.4 CAU 427 Conclusions and Recommendations

The site is in excellent condition. The site inspections should continue as scheduled.

2.8 CAU 453: AREA 9 UXO LANDFILL (TTR)

2.8.1 Introduction

CAU 453, Area 9 UXO Landfill (TTR), consists of one CAS (CAS 09-55-001-0952, Area 9 Landfill). Post-closure requirements for CAU 453 are described in the CR for CAU 453 (DOE/NV, 1999d), which was approved by the NDEP on September 10, 1999.

Site inspections were conducted on July 7, 2004, and November 10, 2004. A diagram showing the site location and configuration is presented in Figure 10 of Appendix A. The site inspections were conducted according to the post-closure plan (Appendix B). The post-closure inspection checklists are located in Appendix C, and copies of the field notes from each inspection are located in Appendix D. Appendix E contains the photographs taken during the inspections.

2.8.2 CAU 453 Inspection Results

2.8.2.1 First Semi-Annual Inspection

The first inspection was conducted on July 7, 2004. The site was in good condition, and there was no damage to the fence, signs, monuments, or cover. Some small animal burrows were noted during the inspection. The overall condition of the unit was good.

2.8.2.2 Second Semi-Annual Inspection

The second inspection was conducted on November 10, 2004. The fence, signs, and 16 above-grade monuments were in good condition. No subsidence, erosion, cracking, or evidence of intrusion onto the cover was observed. A few minor animal burrows were present on the original borrow pit. The overall condition of the unit was good.

2.8.3 CAU 453 Maintenance and Repairs

The only maintenance activity performed at CAU 453 was the installation of a combination lock on the gate on November 18, 2004.

2.8.4 CAU 453 Conclusions and Recommendations

The cover, fence, posted warning signs, and monuments are all in good condition. The site inspections should continue as scheduled, except in the event of severe weather, where a non-scheduled site inspection may be required.

2.9 CAU 487: THUNDERWELL SITE (TTR)

2.9.1 Introduction

CAU 487, Thunderwell Site (TTR) consists of one CAS (CAS RG-26-001-RGRV, Thunderwell Site). The CADD/CR was approved by the NDEP on December 17, 2001 (DOE/NV, 2001b). Buried waste and debris were present at the site but no contamination was found. Land-use restrictions were implemented at the site as explained in the CADD/CR, but no post-closure inspections were proposed. Two separate land-use restrictions were implemented to address areas associated with subsurface geophysical anomalies (anomalies A-8 and A-17). Concrete monuments were installed at both locations of buried waste. A ROTC to modify the CADD/CR

to include post-closure inspections and use restrictions was approved by the NDEP on July 30, 2004 (NNSA/NSO, 2004a).

A site inspection was conducted on November 10, 2004. A diagram showing the site location and configuration is presented in Figure 11 of Appendix A. The post-closure inspection checklists are located in Appendix C, and copies of the field notes from each inspection are located in Appendix D. Appendix E contains the photographs taken during the inspections.

2.9.2 CAU 487 Inspection Results

2.9.2.1 First Semi-Annual Inspection

No site inspection was conducted in July of 2004. It was agreed that inspections would not be completed at CAU 487 until the monuments were installed.

2.9.2.2 Second Semi-Annual Inspection

An inspection was conducted on November 10, 2004. The concrete monuments had been installed on July 22, 2004, and were in good condition, but no use restriction signs were present. It was scheduled to install the use restriction signs before the end of the calendar year. Some standing water, subsidence, and cracking were present at the A-8 anomaly. It was scheduled to fill the area of subsidence before the end of the calendar year.

2.9.3 CAU 487 Maintenance and Repairs

Maintenance and repairs at CAU 487 consisted of installing above-grade concrete monuments, mounting use restriction warning signs, stamping coordinates on the brass survey markers, and subsidence repair. Eight above-grade monuments were installed at the two landfill sites A-8 and A-17 on July 22, 2004. Use restriction signs were installed on the concrete monuments on November 30, 2004, and this activity is documented in field notes located in Appendix D. Coordinates were stamped on the brass survey markers on December 14, 2004. The area of subsidence at the A-8 anomaly was repaired using clean soil during the week of December 20, 2004.

2.9.4 CAU 487 Conclusions and Recommendations

With the repairs and maintenance performed at CAU 487, the site is in excellent condition. The site inspections should continue as scheduled.

3.0 SUMMARY, CONCLUSION, AND RECOMMENDATIONS

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

Site inspections at CAS TA-55-001-TAB2, Ordnance Disposal Pit (Bomblet Pit) indicated that the site is in excellent condition. Numerous bomblet fragments are scattered both inside and outside the fence.

Site inspections at CAS TA-19-001-05PT, Ordnance Disposal Pit (Five Points Landfill) indicated fence damage on the east side of the site and plant mortality in the central low-lying area of the site due to heavy rains and flooding. To control erosion, the unit was reseeded in November, and ten bales of straw were placed in the wash leading to the landfill and anchored using t-posts. The fence was also repaired in November.

With the repairs conducted at the Five Points Landfill, both sites are in good condition. It is recommended that both sites remain fenced and semi-annual site inspections continue. Removal of the fencing will be proposed in the future when the vegetation has matured to the same extent as the surrounding areas.

3.2 CAU 404: ROLLER COASTER LAGOONS AND TRENCH (TTR)

Both site inspections indicated that the site was in good condition, and there was no damage noted to the fencing, signs, or cover. Some small animal burrows were noted, but no maintenance or repairs were needed. The unit was in good condition.

The site inspections should continue as scheduled, except in the event of severe weather, when a non-scheduled site inspection may be required.

3.3 CAU 407: ROLLER COASTER RADSAFE AREA (TTR)

Site inspections indicated that erosion rills along the cover margin and side slopes were present. Small animal burrows were observed outside the fence. The fence and signs were in good condition. Maintenance and repairs included erosion repair, seeding the cover, and replacement of one use restriction sign. To encourage the establishment of the vegetation and supplement natural precipitation, the site will be irrigated in February, March, and April of 2005.

The cover is in good condition after the erosion repair and revegetation. The site inspections should continue as scheduled, and the health of the vegetation and integrity of the side slopes will be monitored closely. Inspections should continue until the site has stabilized and erosion is no longer an ongoing issue.

3.4 CAU 423: Area 3 Underground Discharge Point, Building 0360 (TTR)

Site inspections indicated that the unit was in good condition. The warning sign and at-grade monument were located and found to be in good condition. Vegetation was present that was consistent with the adjacent area. No maintenance or repairs at CAU 423 were done in 2004.

The site inspections should continue as scheduled.

3.5 CAU 424: Area 3 Landfill Complexes (TTR)

Site inspections indicated that all signs, survey markers, and monuments were in good condition. Topographically low areas were present at Landfill Cell A3-1 (CAS 03-08-001-A301) and Landfill Cell A3-4 (CAS 03-08-002-A304). No subsidence, cracking, or erosion was observed on the remaining five covers. Maintenance and repairs consisted of subsidence repairs at Landfill Cell A3-1 and Landfill Cell A3-4 in December.

With the subsidence repairs conducted at Landfill Cell A3-1 and Landfill Cell A3-4, all seven CASs in CAU 424 are in good condition. The site inspections should continue as scheduled.

3.6 CAU 426: Cactus Spring Waste Trenches (TTR)

The site inspections indicated that the site was in good condition, and there was no damage to the fencing or cover. All signs were intact and legible. Some small animal burrows were noted around the fence and the margin of the cover. The overall condition of the unit was good, and no maintenance or repairs were needed.

The site inspections should continue as scheduled, except in the event of severe weather, where a non-scheduled site inspection may be required.

3.7 CAU 427: Area 3 Septic Waste Systems 2, 6 (TTR)

During the first inspection, some red rocks were added to the locations denoting the subsurface leachfield markers to aid in future inspections. The five warning signs were intact and legible. The site was in good condition, and no further maintenance or repairs were needed.

The site is in excellent condition. The site inspections should continue as scheduled.

3.8 CAU 453: Area 9 UXO Landfill (TTR)

The site inspections indicated that the site was in good condition, and there was no damage to the fence, signs, monuments, or cover. Some small animal burrows were noted during the inspection. The overall condition of the unit was good. A combination lock was installed on the gate in November.

The site inspections should continue as scheduled, except in the event of severe weather, where a non-scheduled site inspection may be required.

3.9 CAU 487: THUNDERWELL SITE (TTR)

An inspection was conducted on November 10, 2004. Concrete monuments were installed in July and were in good condition, but no use restriction warning signs were present. Some standing water, subsidence, and cracking were present at the A-8 anomaly. Use restriction warning signs were installed on the concrete monuments in November, and coordinates were stamped on the brass survey pins in December. The area of subsidence at the A-8 anomaly was also repaired in December.

With the repairs and maintenance performed at CAU 487, the site is in excellent condition. The site inspections should continue as scheduled.

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4.0 REFERENCES

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

NNSA/NSO, see U.S. Department of Energy, National Nuclear Security Administration Nevada Site Office.

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U.S. Department of Energy, Nevada Operations Office. 1998a. Closure Report for Corrective Action Unit 404: Roller Coaster Sewage Lagoons and North Disposal Trench, Tonopah Test Range, Nevada, DOE/NV/11718-187 UC-702. Las Vegas, NV.

U.S. Department of Energy, Nevada Operations Office. 1998b. Closure Report for Corrective Action Unit 426: Cactus Spring Waste Trenches, Tonopah Test Range, Nevada, DOE/NV/11718-226 UC-702. Las Vegas, NV.

U.S. Department of Energy, Nevada Operations Office. 1999a. Closure Report for Corrective Action Unit 423: Area 3 Building 03-60 Underground Discharge Point, Tonopah Test Range, Nevada, DOE/NV/11718--319. Las Vegas, NV.

U.S. Department of Energy, Nevada Operations Office. 1999b. 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. 1999c. Closure Report for Corrective Action Unit 427: Area 3 Septic Waste Systems 2 and 6, Tonopah Test Range, Nevada, DOE/NV/11718--326. Las Vegas, NV.

U.S. Department of Energy, Nevada Operations Office. 1999d. 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/11718--694-REV1. Las Vegas, NV.

U.S. Department of Energy, Nevada Operations Office. 2001b. Corrective Action Decision Documents/Closure Report for Corrective Action Unit 487: Thunderwell Site, Tonopah Test Range, Nevada, DOE/NV/11718--761. Las Vegas, NV.

U.S. Department of Energy, National Nuclear Security Administration Nevada Site Office. 2004a. 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.

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APPENDIX A

FIGURES

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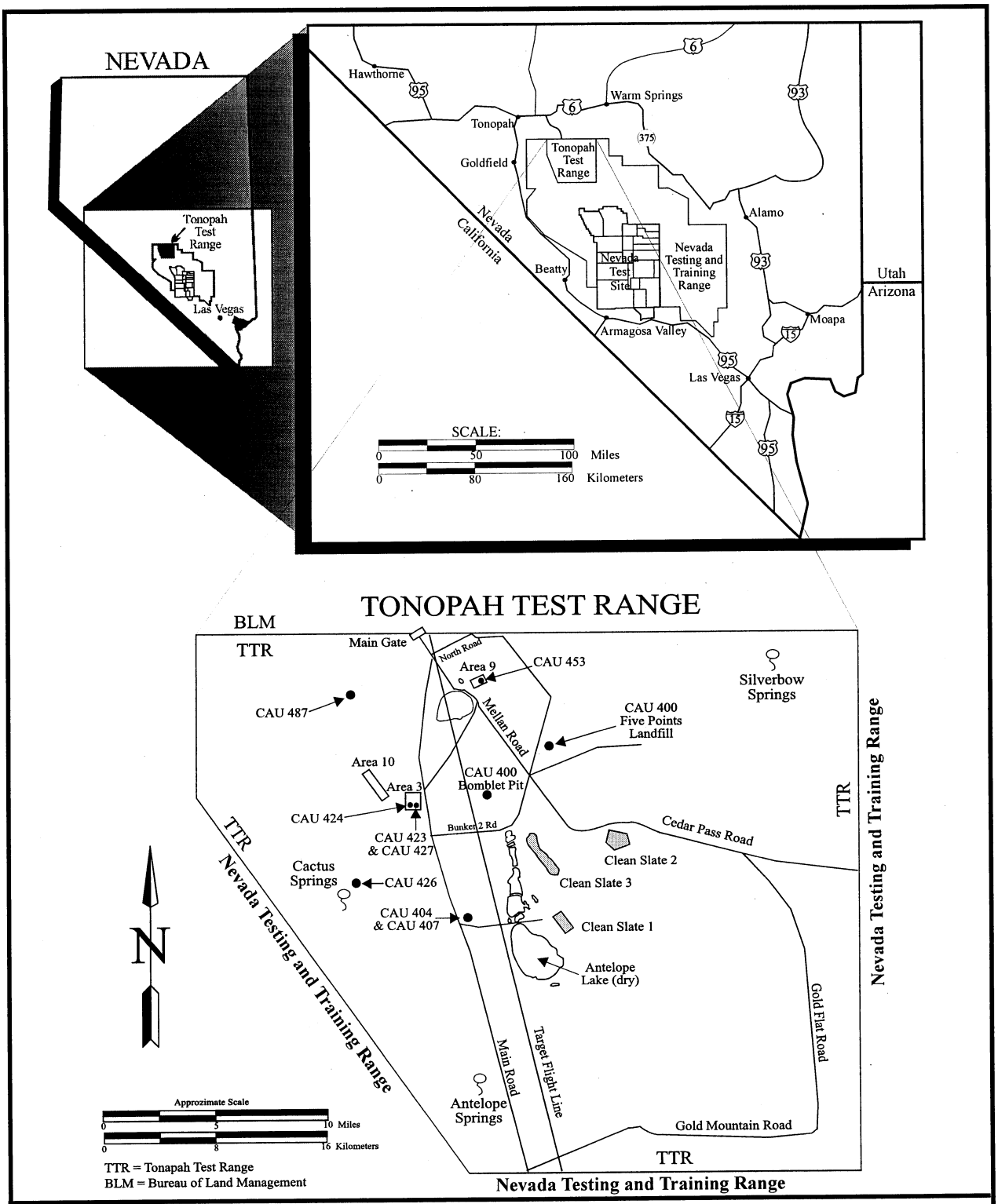

FIGURE 1
TONOPAH TEST RANGE
POST-CLOSURE MONITORING SITES LOCATION MAP

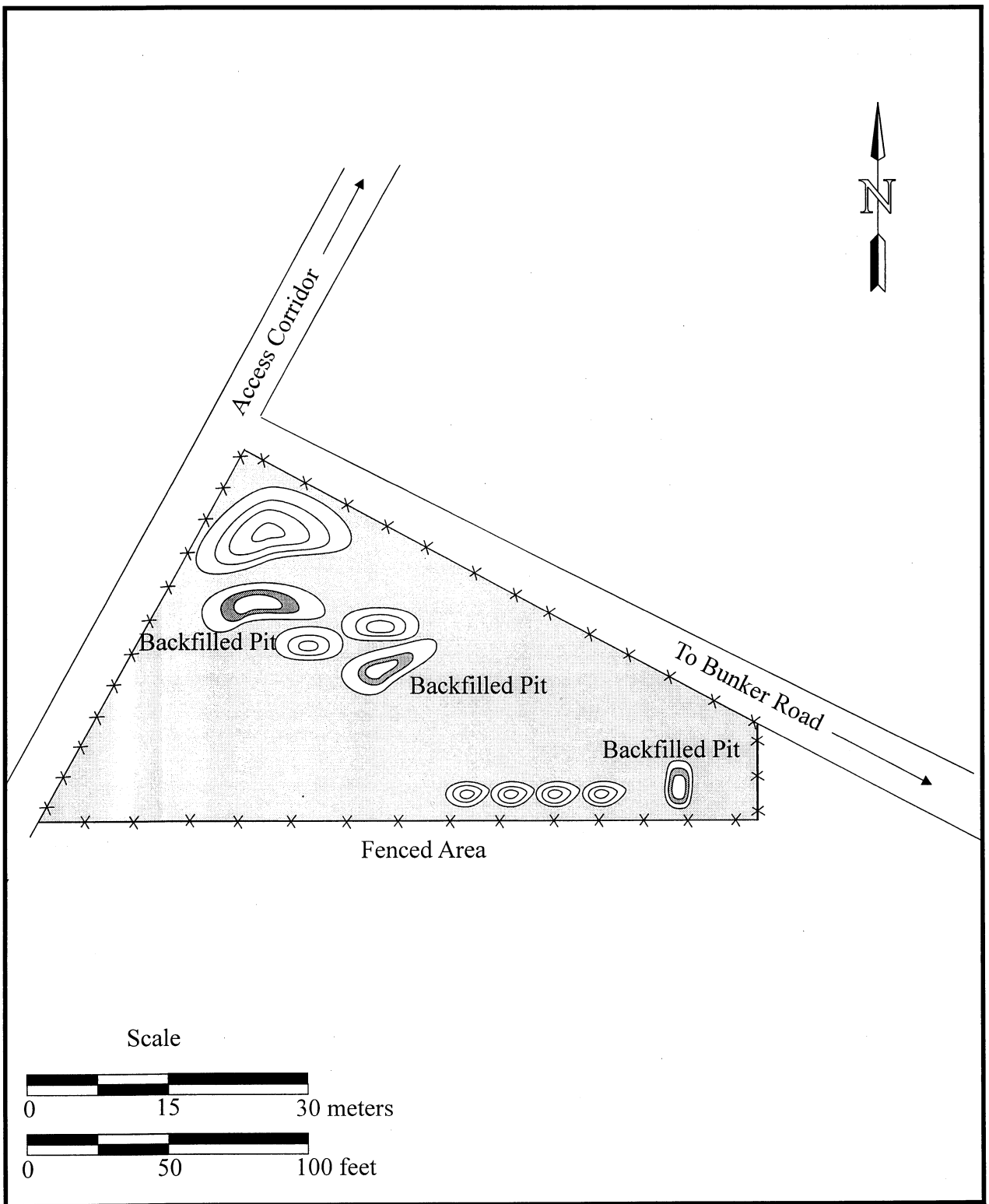

FIGURE 2
CAU 400 BOMBLET PIT LOCATION MAP

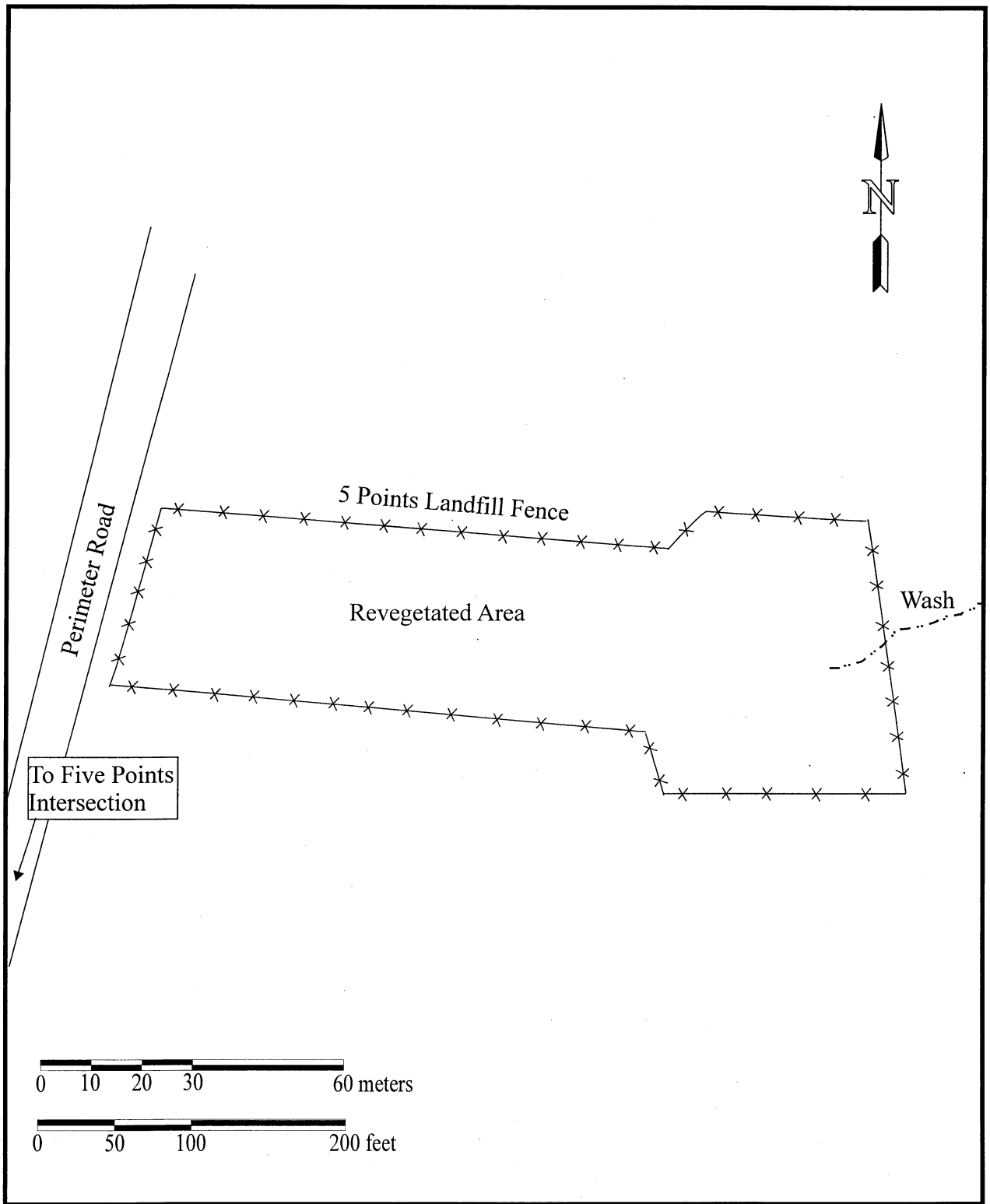

FIGURE 3
CAU 400 FIVE POINTS LANDFILL LOCATION MAP

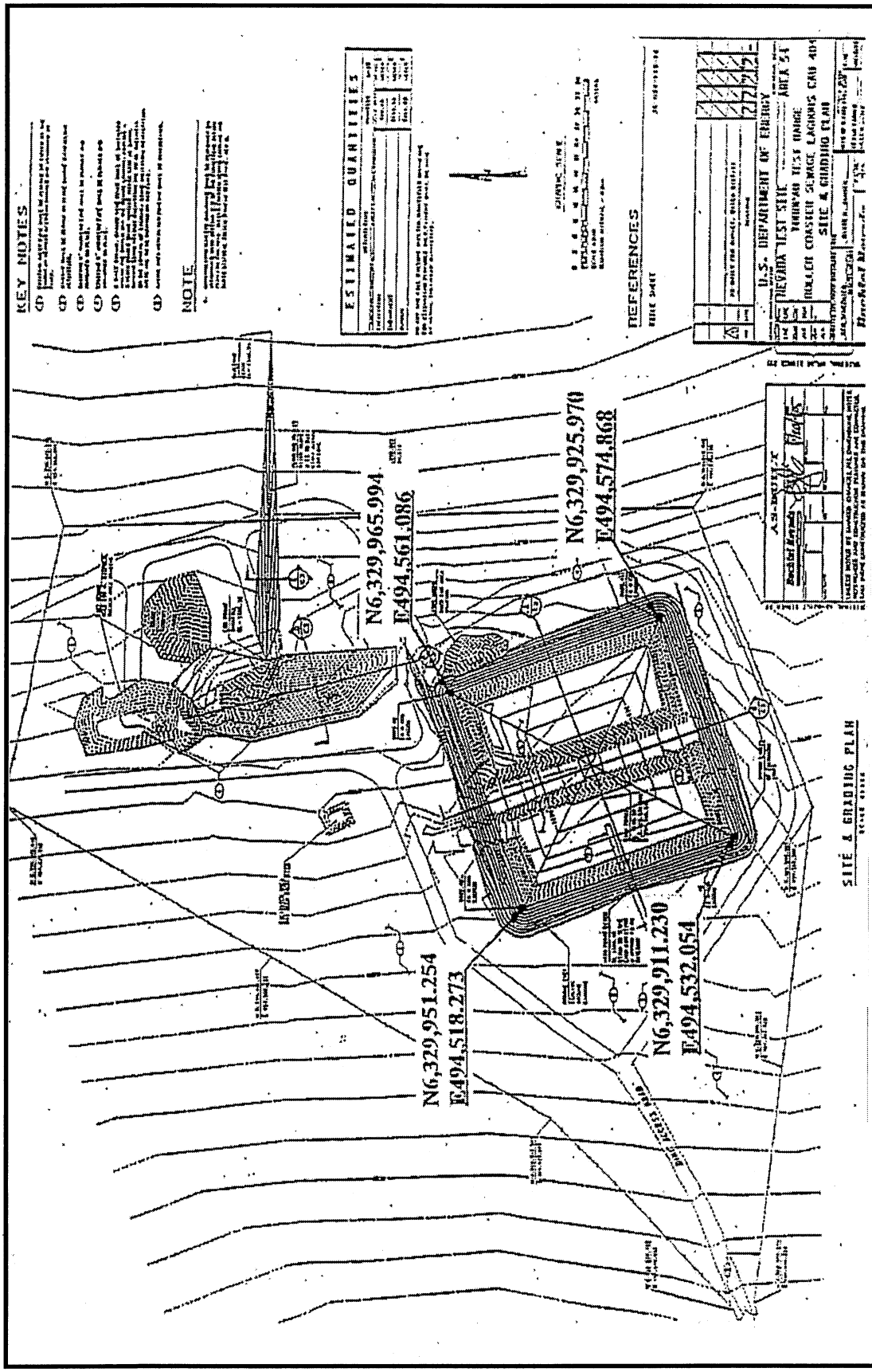

FIGURE 4
CAU 404 ROLLER COASTER LAGOONS AND TRENCH LOCATION MAP

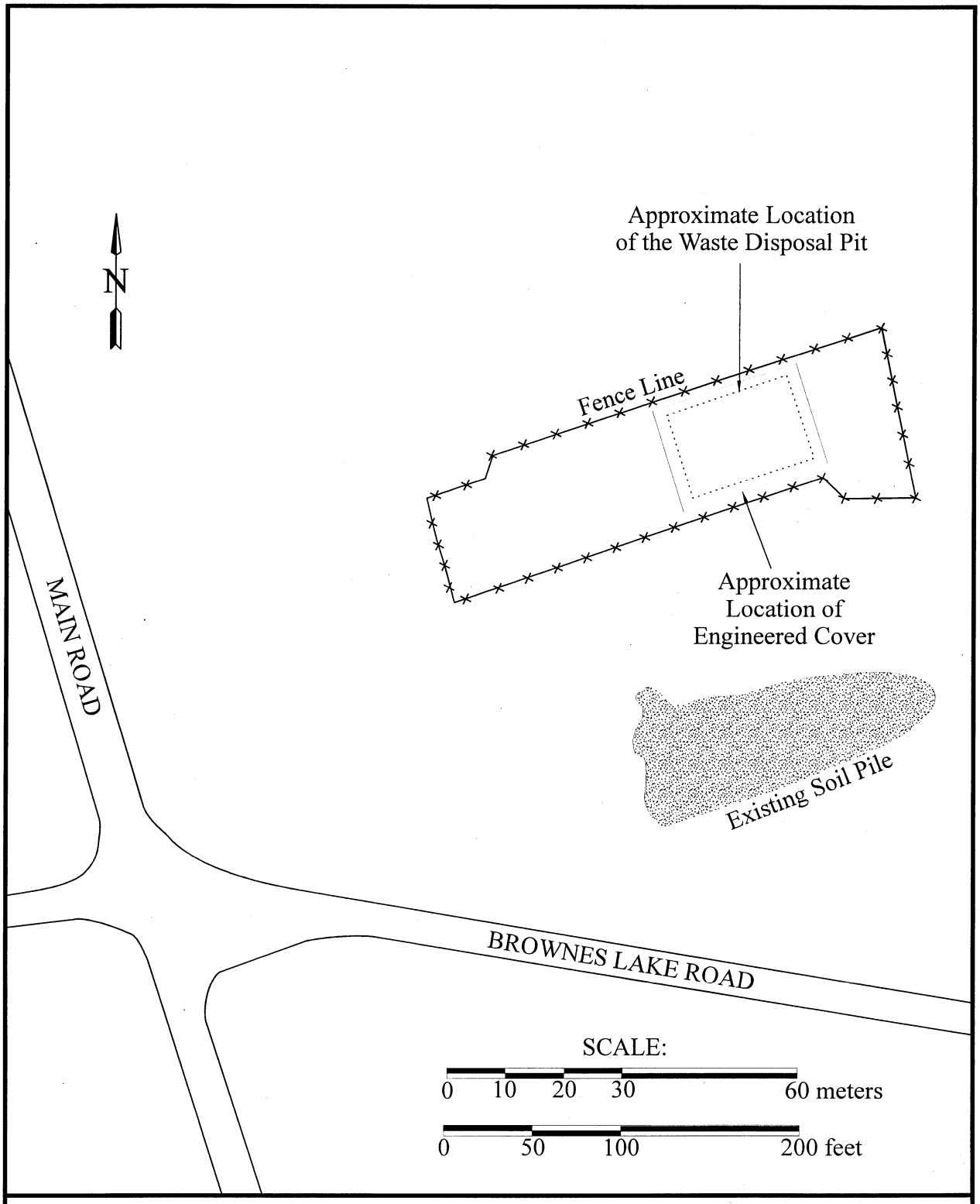

FIGURE 5
CAU 407 ROLLER COASTER RADSAFE AREA LOCATION MAP

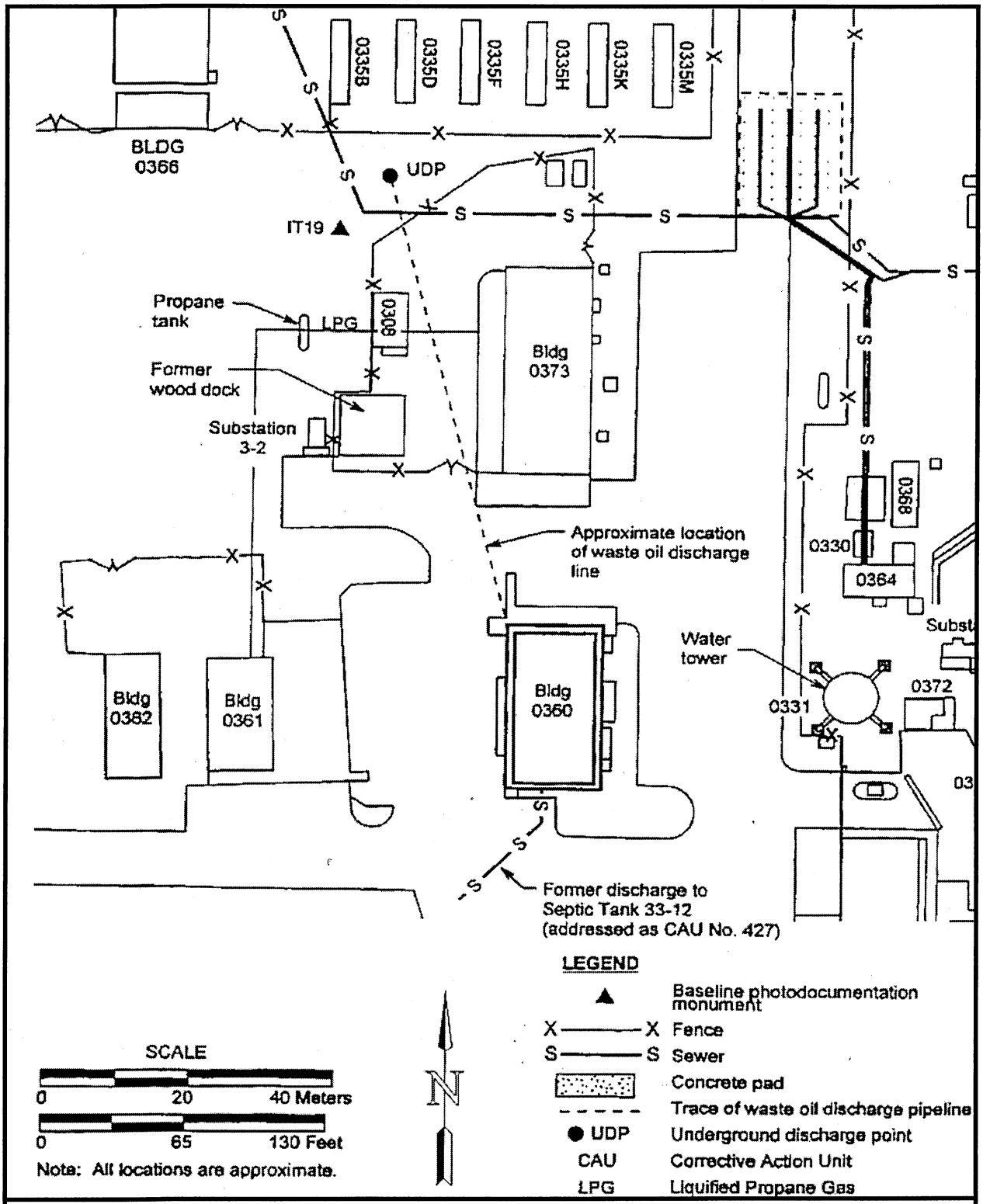

FIGURE 6
CAU 423 AREA 3 UNDERGROUND DISCHARGE POINT,
BUILDING 0360 LOCATION MAP

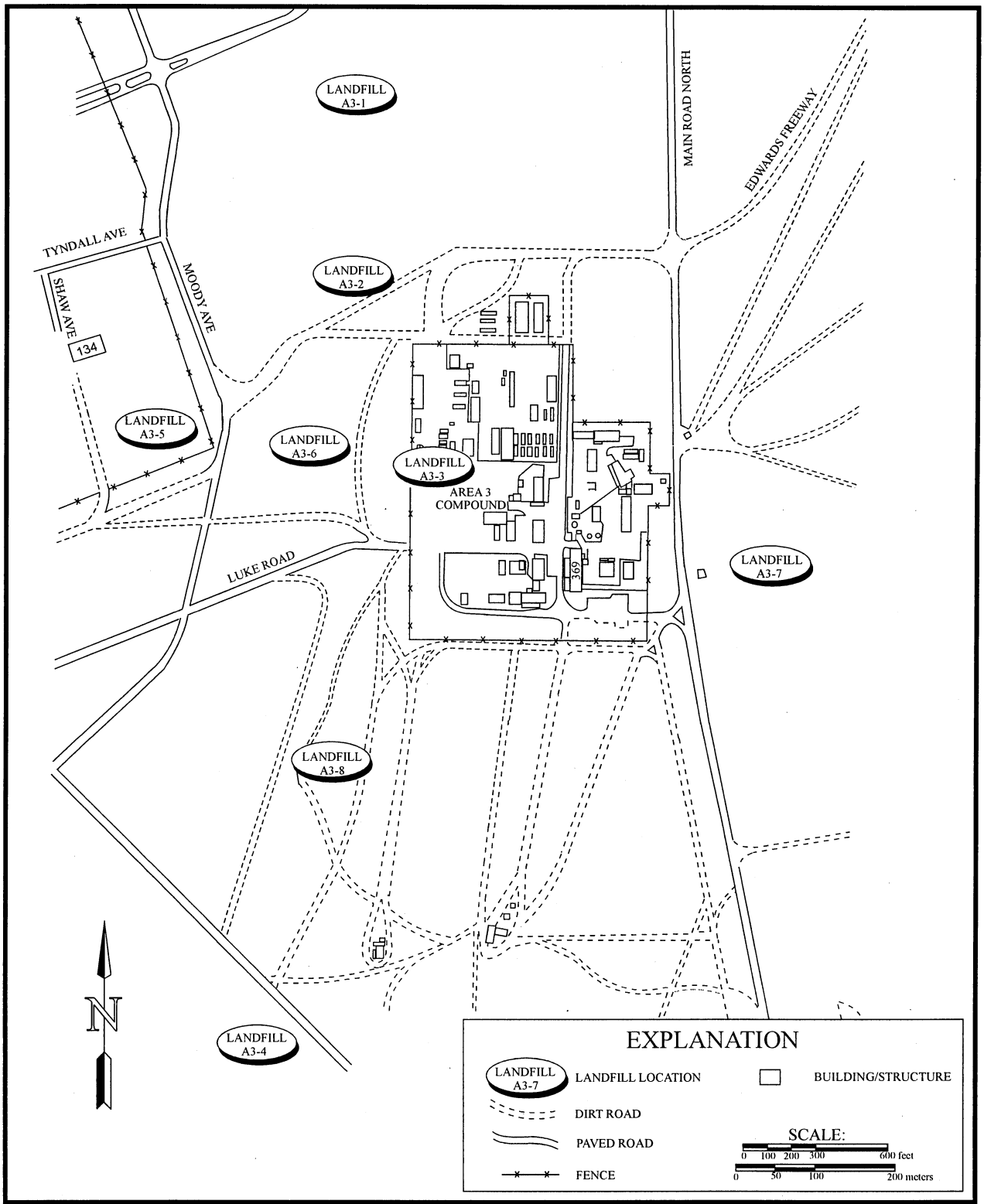

FIGURE 7
CAU 424 AREA 3 LANDFILL COMPLEXES LOCATION MAP

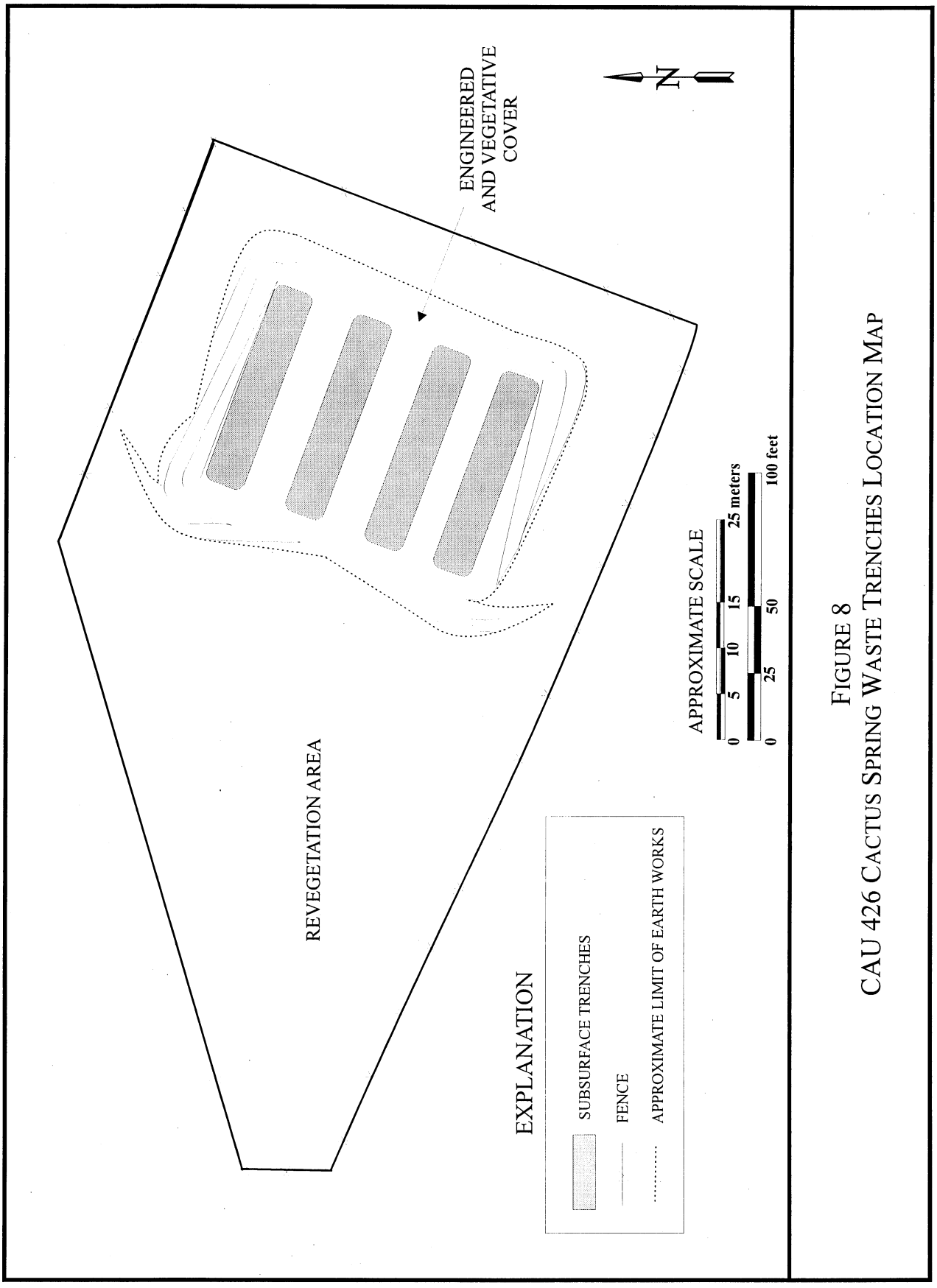

FIGURE 8
CAU 426 CACTUS SPRING WASTE TRENCHES LOCATION MAP

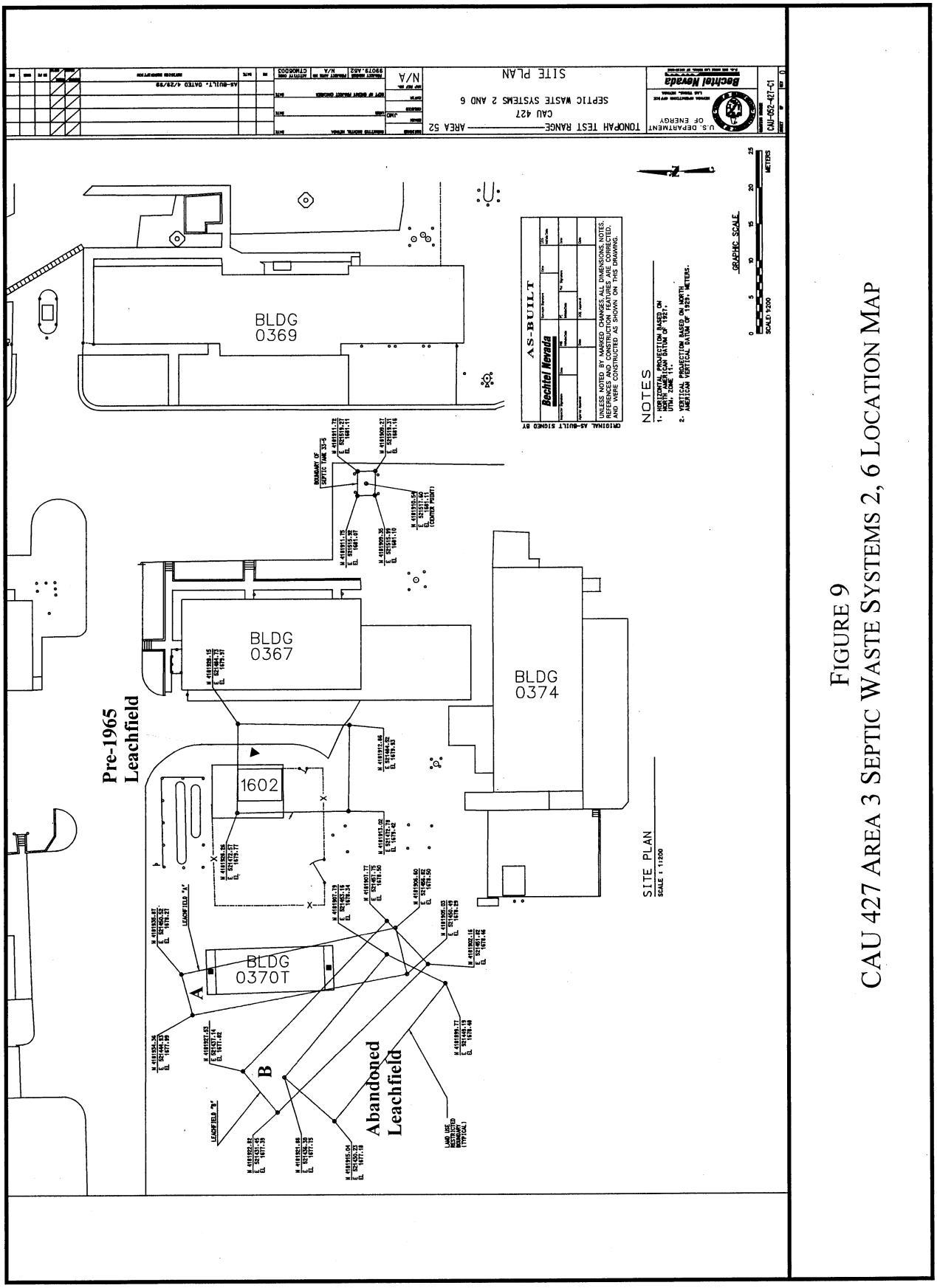

FIGURE 9
CAU 427 AREA 3 SEPTIC WASTE SYSTEMS 2, 6 LOCATION MAP

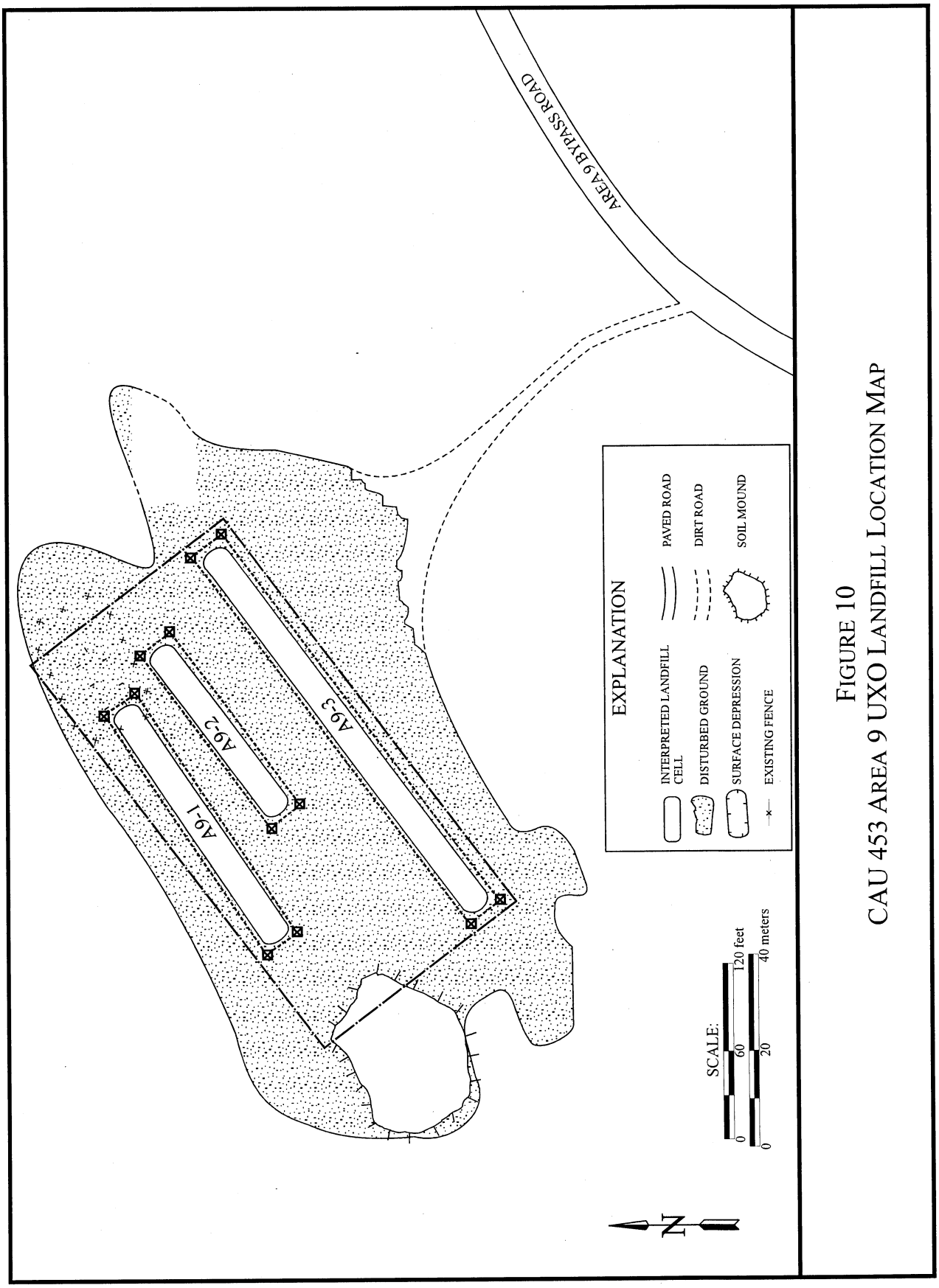

FIGURE 10
CAU 453 AREA 9 UXO LANDFILL LOCATION MAP

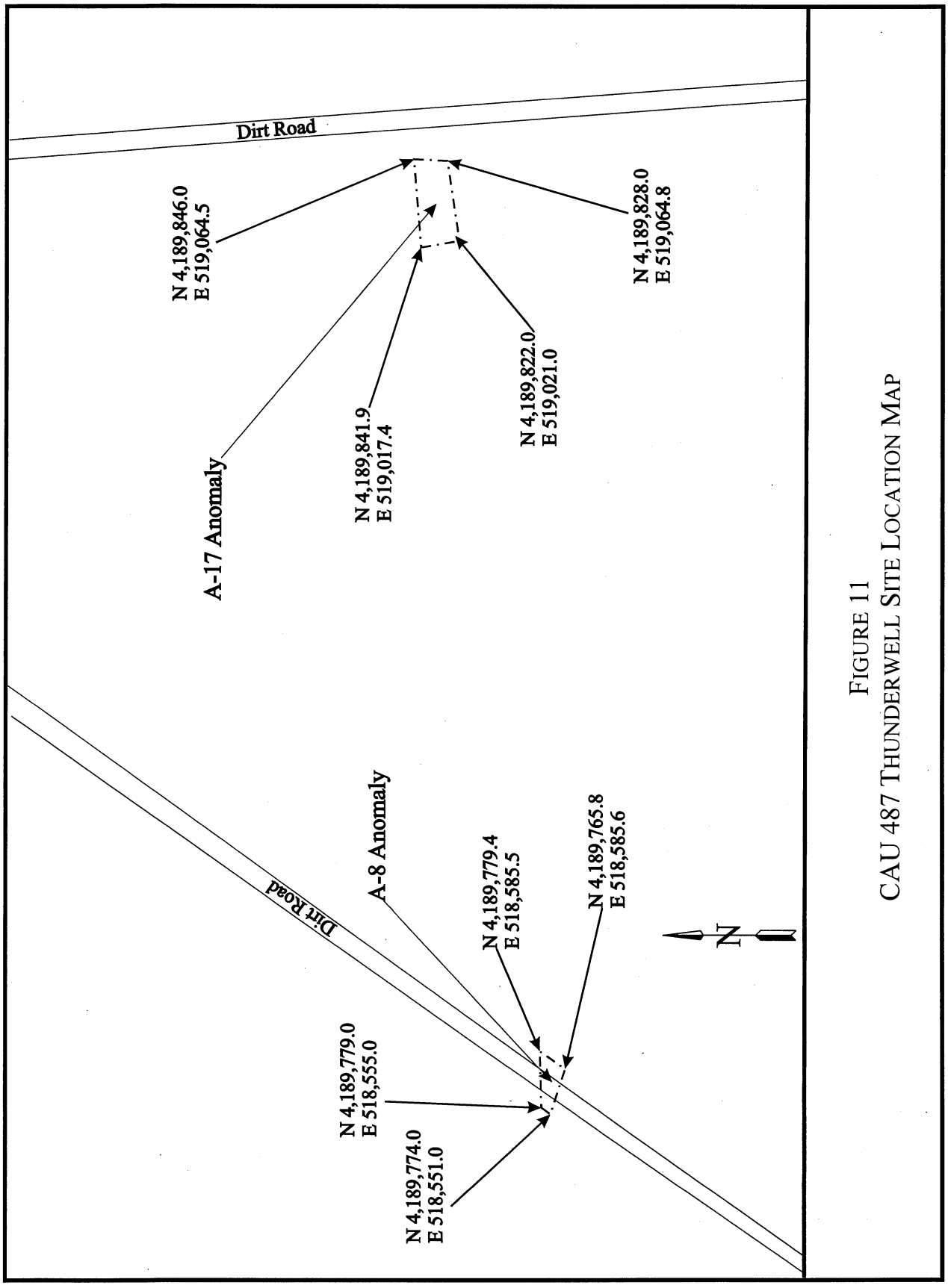

FIGURE 11
CAU 487 THUNDERWELL SITE LOCATION MAP

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APPENDIX B

POST-CLOSURE INSPECTION PLANS

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CORRECTIVE ACTION UNIT (CAU) 404: ROLLER COASTER LAGOONS AND TRENCH POST-CLOSURE INSPECTION PLAN

The following text appeared in the approved and published Closure Report (CR) for CAU 404: Roller Coaster Sewage Lagoons and North Disposal Trench, Tonopah Test Range, Nevada, Rev. 0, September 1998, DOE/NV/11718-187 UC-702. Las Vegas, Nevada

Post-Closure of the covers is intended to determine:

- If maintenance repairs to the perimeter fence are required
- If remedial action is necessary to establish a vegetative cover
- If maintenance and repairs to the engineered cover is required
- When a cessation to post-closure monitoring can be proposed

POST-CLOSURE MONITORING

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

- The cover for condition (subsidence, significant erosion, unauthorized excavation, etc.) and plant development.
- The fence and signs to determine if repairs are 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. Additional revegetation work would be conducted during the next revegetation window (October to February).

Intrusion into or sampling of the impacted materials in the East or West Sewage Lagoon is not proposed during the post-closure monitoring period.

Monitoring of the vegetative cover will be conducted during the first, third, and fifth year after revegetation. Monitoring during the first year will determine if germination of seeded plant species has occurred. By the third year, plant establishment will be evaluated. By the fifth year, the objective of determining if burrowing animals have moved onto the site and to what depth they might be expected to penetrate the cover. The erosion condition of the soil will be evaluated using a qualitative erosion condition classification developed by the Bureau of Land Management. Information gathered will be compared to natural conditions and will be used in assessing whether or not remedial action is necessary so that a viable vegetative cover is established.

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 report will be prepared following

the second inspection of each year that post-closure monitoring is conducted. The annual reports 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.

DURATION

The biannual inspections will be performed for five years after the planting of the vegetative covers, and will be documented on inspection forms.

Completion of post-closure monitoring of CAU 404 may be proposed after two consecutive years of visual inspections have not indicated the need to revegetate or provide maintenance to the vegetative covers. Completion of post-closure monitoring may be proposed within five years after the original revegetation of the site and include the removal of the fence since the plants will have attained a maturity to not be significantly affected by the grazing of wild horses.

CAU 407: ROLLER COASTER RADSAFE POST-CLOSURE MONITORING PLAN

The following text appeared in the approved and published CR for CAU 407: Roller Coaster RadSafe Area, Tonopah Test Range, Nevada, Rev. 1, December 2001, DOE/NV/11718--694. Las Vegas, Nevada

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 MONITORING PLAN

The following text appeared in the approved and published CR for CAU 424: Area 3 Landfill Complexes, Tonopah Test Range, Nevada, Rev. 0, July 1999, DOE/NV/11718--283. Las Vegas, Nevada

Post-Closure of the covers 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 (Appendix B) and with photography, if needed

Repairs to the soil covers (placement and compaction of additional backfill), landfill markers, and warning signs (repair, reposition, and/or replacement) may be required. Additional, non-scheduled 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 report will be prepared following the second inspection of each year that post-closure monitoring is conducted. The annual reports 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

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

CAU 426: CACTUS SPRING WASTE TRENCHES POST-CLOSURE INSPECTION PLAN

The following text appeared in the approved and published CR for CAU 426: Cactus Spring Waste Trenches, Tonopah Test Range, Nevada, Rev. 0, August 1998, DOE/NV/11718-226 UC-702. Las Vegas, Nevada

Post-Closure of the covers is intended to determine:

- If maintenance repairs to the perimeter fence are required
- If remedial action is necessary to establish a vegetative cover
- If maintenance and repairs to the engineered cover is required
- When a cessation to post-closure monitoring can be proposed

POST-CLOSURE MONITORING

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

- The cover for condition (subsidence, significant erosion, unauthorized excavation, etc.) and plant development.
- The fence and signs to determine if repairs are 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. Additional revegetation work would be conducted during the next revegetation window.

Intrusion into or sampling of the impacted materials in the East or West Sewage Lagoon is not proposed during the post-closure monitoring period.

Monitoring of the vegetative cover will be conducted during the first, third, and fifth year after revegetation. Monitoring during the first year will determine if germination of seeded plant species has occurred. By the third year, plant establishment will be evaluated. By the fifth year, the objective of determining if burrowing animals have moved onto the site and to what depth they might be expected to penetrate the cover. The erosion condition of the soil will be evaluated using a qualitative erosion condition classification developed by the Bureau of Land Management. Information gathered will be compared to natural conditions and will be used in assessing whether or not remedial action is necessary so that a viable vegetative cover is established.

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 report will be prepared following

the second inspection of each year that post-closure monitoring is conducted. The annual reports 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.

DURATION

The biannual inspections will be performed for five years after the planting of the vegetative covers, and will be documented on inspection forms.

Completion of post-closure monitoring of CAU 404 may be proposed after two consecutive years of visual inspections have not indicated the need to revegetate or provide maintenance to the vegetative covers. Completion of post-closure monitoring may be proposed within five years after the original revegetation of the site and include the removal of the fence since the plants will have attained a maturity to not be significantly affected by the grazing of wild horses.

CAU 427: AREA 3 SEPTIC WASTE SYSTEMS 2, 6 POST-CLOSURE MONITORING PLAN

The following text appeared in the approved and published CR for CAU 427: Area 3 Septic Waste Systems 2 and 6, Tonopah Test Range, Nevada, Rev. 0, July 1999, DOE/NV/11718--326. Las Vegas, Nevada

Post-Closure of the covers is intended to determine:

- If maintenance and repairs to the closed leachfield or septic tank soil and asphalt covers are needed
- If maintenance and repairs to the closed leachfield and septic tank 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 annual (once per year) visual inspections of:

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

Repairs to the soil covers (placement and compaction of additional backfill), landfill markers, and warning signs (repair, reposition, and/or replacement) may be required.

Inspections are not required after severe weather events such as heavy rainfall, flash flooding, and high winds, because the leachfield waste is buried in the subsurface. However, 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 letter will provide the inspector's observations of CAU 427s land-use restricted areas and describe modifications and/or repairs made to Leachfield A, Leachfield B, Pre-1965 Leachfield, 1965-1975 Leachfield, and/or Septic Tank 33-5. The annual post-closure inspection report will be prepared and submitted to NDEP before the completion of the fiscal year in which the inspection was conducted. The annual reports 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.

DURATION

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

Completion of post-closure monitoring of CAU 427 may be proposed by the DOE/NV to the NDEP if after two consecutive years of visual inspections, indications of subsidence/depression recurrences have not been detected. Completion of post-closure inspection may be proposed by DOE/NV to the NDEP within five years after the completion of closure activities.

CAU 453: AREA 9 UXO LANDFILL MONITORING PLAN

The following text appeared in the approved and published CR for CAU 453: Area 9 UXO-Landfill, Tonopah Test Range, Nevada, Rev. 0, July 1999, DOE/NV/11718--284. Las Vegas, Nevada

Post-Closure of the covers 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 (once per year) visual inspections of:

- The cell soil cover, for indications of subsidence, erosion, unauthorized use, 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 completion of closure activities, 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.

CAU 487: THUNDERWELL SITE, POST-CLOSURE PLAN

The following text appeared in the approved and published Record of Technical Change Number 2 for the final Corrective Action Decision Document/Closure Report for CAU 487: Thunderwell Site, Tonopah Test Range, Nevada, Rev. 0, November 2001, DOE/NV/11718--761. Las Vegas, 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 repairing to the monuments or postings will be included in the *Tonopah Test Range Post-Closure Inspection Annual Report.*

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APPENDIX C

INSPECTION CHECKLISTS

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CAU 400: BOMBLET PIT, POST-CLOSURE INSPECTION CHECKLIST

Inspection Date: 07 July 04	
Responsible Agency: NNSA/NSO ER	NNSA Project Manager: Janet L. Appenzeller-Wing
Date of Last Inspection: 03 Dec 03	Reason for Last Inspection: Post-Closure Inspection
Inspector (name, title, organization): Brad Jackson BNER	
Assistant Inspector (name, title, organization): N/A	

A. GENERAL INSTRUCTIONS

1. All checklist items must be completed and detailed comments made to document the results of the site inspection. The completed checklist is part of the field record of the inspection. Additional pages should be used as necessary to ensure that a complete record is made. Attach the additional pages and number all pages upon completion of the inspection.
2. Any checklist line item marked by an inspector in a SHADED BOX, must be fully explained or an appropriate reference to previous reports provided. The purpose of this requirement is to provide a written explanation of inspector observations and the inspector's rationale for conclusions and recommendations. Explanations are to be placed on additional attachments and cross-referenced appropriately. Explanations, in addition to narrative, will take the form of sketches, measurements, annotated site maps.
3. The site inspection is a walking 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.
4. A standard set of color 35 mm photographs (or equivalent) is required. In addition, all anomalous features or new features (such as changes in adjacent area land use) are to be photographed. A photo log entry will be made for each photograph taken.
5. This unit will be inspected biannually with formal reporting to the Nevada Division of Environmental Protection to be done annually. The annual report will include an executive summary, this inspection checklist with field notes and photo log attached, and recommendations and conclusions.

B. PREPARATION (To be completed prior to site visit)	YES	NO	EXPLANATION
1. Site as-built plans and site base map reviewed.	X		
2. Previous inspection reports reviewed.	X		
a. Were anomalies or trends detected on previous inspections?		X	
b. Was maintenance performed?		X	
3. Site maintenance and repair records reviewed.	X		
a. Has site repair resulted in a change from as-built conditions?		X	
b. Are revised as-builts available that reflect repair changes?			N/A

C. SITE INSPECTION (To be completed during inspection)	YES	NO	EXPLANATION
1. Adjacent off-site features within watershed areas.			
a. Have there been any changes in use of adjacent area?		X	
b. Are there any new roads or trails?		X	
c. Has there been a change in the position of nearby washes?		X	
d. Has there been lateral excursion or erosion/deposition of nearby washes?		X	
e. Are there new drainage channels?		X	
f. Change in surrounding vegetation?		X	
2. Security fence, signs.			
a. Displacement of fences, site markers, boundary markers, or monuments?		X	All fencing is in good condition
b. Have any signs been damaged or removed? (Number of signs replaced: 0)		X	
c. Were gates locked?		X	Not required

CAU 400: BOMBLET PIT, POST-CLOSURE INSPECTION CHECKLIST

3. Waste Unit cover.	YES	NO	EXPLANATION
a. Is there evidence of settling?		X	
b. Is there cracking?		X	
c. Is there evidence of erosion around the cap (wind or water)?		X	
d. Is there evidence of animal burrowing?		X	
e. Have the site markers been disturbed by man or natural processes?		X	
f. Do natural processes threaten to integrity of any cover or site marker?		X	
g. Other?		X	
4. Vegetative cover.			
a. Is perimeter fence or mesh fencing damaged?		X	
b. Is there evidence of horses or rabbits on site?	X		Horses outside of fence and some rabbit/small animal burrows within site, none significant.
c. Is organic mulch and/or plants adequate to prevent erosion?		X	
d. Are weedy annual plants present? If yes, are they a problem?	X		
e. Are seeded plant species found on site?			
f. Is there evidence of plant mortality?			
5. Photo Documentation			
a. Has a photo log been prepared?	X		
b. Number of photos exposed (7)			
D. FIELD CONCLUSIONS			
1. Is there an imminent hazard to the integrity of the unit? (Immediate report required)		X	
Person/Agency to whom report made:			
2. Are more frequent inspections required?		X	
3. Are existing maintenance/repair actions satisfactory?	X		
4. Is other maintenance/repair necessary?		X	
5. Is current status/condition of vegetative cover satisfactory?		X	

6. Rationale for field conclusions:
The site is in good condition and no maintenance/repairs are needed. Inspections are not required at this site but are completed as a best management practice under NNSA approval. As soon as vegetation is well established at the site, removal of the fence will be proposed to NNSA/NDEP per the closure report.

E. CERTIFICATION

I have conducted an inspection of the Bomblet Pit, CAU 400, at the TTR in accordance with the Post-Closure Monitoring Plan (see Closure Report) as recorded on this checklist, attached sheets, field notes, photo logs, and photographs.

Chief Inspector's Signature:	Printed Name: Brad Jackson
Title: TTR PCI Task Manager	Date: 07 July 04

CAU 400: 5 POINTS LANDFILL, POST-CLOSURE INSPECTION CHECKLIST

Inspection Date: 07 July 04

Responsible Agency: NNSA/NSO ER	NNSA Project Manager: Janet L. Appenzeller-Wing
Date of Last Inspection: 03 Dec 03	Reason for Last Inspection: Post Closure Inspection

Inspector (name, title, organization): Brad Jackson, Task Manager, BNER

Assistant Inspector (name, title, organization): N/A

A. GENERAL INSTRUCTIONS

1. All checklist items must be completed and detailed comments made to document the results of the site inspection. The completed checklist is part of the field record of the inspection. Additional pages should be used as necessary to ensure that a complete record is made. Attach the additional pages and number all pages upon completion of the inspection.
2. Any checklist line item marked by an inspector in a SHADED BOX, must be fully explained or an appropriate reference to previous reports provided. The purpose of this requirement is to provide a written explanation of inspector observations and the inspector's rationale for conclusions and recommendations. Explanations are to be placed on additional attachments and cross-referenced appropriately. Explanations, in addition to narrative, will take the form of sketches, measurements, annotated site maps.
3. The site inspection is a walking 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.
4. A standard set of color 35 mm photographs (or equivalent) is required. In addition, all anomalous features or new features (such as changes in adjacent area land use) are to be photographed. A photo log entry will be made for each photograph taken.
5. This unit will be inspected biannually with formal reporting to the Nevada Division of Environmental Protection to be done annually. The annual report will include an executive summary, this inspection checklist with field notes and photo log attached, and recommendations and conclusions.

B. PREPARATION (To be completed prior to site visit)	YES	NO	EXPLANATION
1. Site as-built plans and site base map reviewed.	X		
2. Previous inspection reports reviewed.	X		
a. Were anomalies or trends detected on previous inspections?		X	
b. Was maintenance performed?		X	
3. Site maintenance and repair records reviewed.	X		
a. Has site repair resulted in a change from as-built conditions?		X	
b. Are revised as-builts available that reflect repair changes?			N/A

C. SITE INSPECTION (To be completed during inspection)	YES	NO	EXPLANATION
1. Adjacent off-site features within watershed areas.			
a. Have there been any changes in use of adjacent area?		X	
b. Are there any new roads or trails?		X	
c. Has there been a change in the position of nearby washes?		X	
d. Has there been lateral excursion or erosion/deposition of nearby washes?	X		Some erosion and fence damage on east margin of site
e. Are there new drainage channels?		X	
f. Change in surrounding vegetation?		X	
2. Security fence, signs.			
a. Displacement of fences, site markers, boundary markers, or monuments?		X	
b. Have any signs been damaged or removed? (Number of signs replaced: 0)		X	
c. Were gates locked?		X	Not required

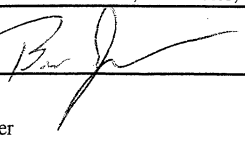
CAU 400: 5 POINTS LANDFILL, POST-CLOSURE INSPECTION CHECKLIST

3. Waste Unit cover.	YES	NO	EXPLANATION
a. Is there evidence of settling?		X	
b. Is there cracking?		X	
c. Is there evidence of erosion around the cap (wind or water)?		X	
d. Is there evidence of animal burrowing?	X		Some small animal burrows
e. Have the site markers been disturbed by man or natural processes?		X	
f. Do natural processes threaten to integrity of any cover or site marker?		X	
g. Other?		X	
4. Vegetative cover.			
a. Is perimeter fence or mesh fencing damaged?	X		Approx 50' section damaged by flooding
b. Is there evidence of horses or rabbits on site?		X	
c. Is organic mulch and/or plants adequate to prevent erosion?	X		
d. Are weedy annual plants present? If yes, are they a problem?	X		Not a problem
e. Are seeded plant species found on site?	X		
f. Is there evidence of plant mortality?	X		Flooding has killed vegetation in the low-lying portion of the site
5. Photo Documentation			
a. Has a photo log been prepared?	X		
c. Number of photos exposed (7)			
D. FIELD CONCLUSIONS			
1. Is there an imminent hazard to the integrity of the unit? (Immediate report required)		X	No significant damage, site requires reseeding and minor fence repairs
Person/Agency to whom report made: N/A			
2. Are more frequent inspections required?		X	
3. Are existing maintenance/repair actions satisfactory?	X		
4. Is other maintenance/repair necessary?	X		Seeding and fence repair needed (Scheduled for 1st Quarter 05)
5. Is current status/condition of vegetative cover satisfactory?		X	Vegetation dead, reseeding will repair damage

6. Rationale for field conclusions:
Site is in generally good condition. Heavy rains have caused minor flooding resulting in fence damage on the east side of the site and plant mortality in the central low-lying area of the site. Repairs and maintenance activities are planned to be completed during the first quarter of FY05. Inspections are not required at this site but are completed as a best management practice under NNSA approval. As soon as vegetation is well established at the site, removal of the fence will be proposed to NNSA/NDEP per the closure report.

E. CERTIFICATION

I have conducted an inspection of the 5 Points Landfill, CAU 400, at the TTR in accordance with the Post-Closure Monitoring Plan (see Closure Report) as recorded on this checklist, attached sheets, field notes, photo logs, and photographs.

Chief Inspector's Signature: 	Printed Name: Brad Jackson
Title: TTR PCI Task Manager	Date: 07 July 04

CAU 404: ROLLER COASTER LAGOONS & TRENCH, POST-CLOSURE INSPECTION CHECKLIST

Inspection Date: 07 July 04	
Responsible Agency: NNSA/NSO ER	NNSA Project Manager: Janet L. Appenzeller-Wing
Date of Last Inspection: 03 Dec 03	Reason for Last Inspection: Post Closure Inspection
Inspector (name, title, organization): Brad Jackson BNER	
Assistant Inspector (name, title, organization): N/A	

A. GENERAL INSTRUCTIONS

1. All checklist items must be completed and detailed comments made to document the results of the site inspection. The completed checklist is part of the field record of the inspection. Additional pages should be used as necessary to ensure that a complete record is made. Attach the additional pages and number all pages upon completion of the inspection.
2. Any checklist line item marked by an inspector in a SHADED BOX, must be fully explained or an appropriate reference to previous reports provided. The purpose of this requirement is to provide a written explanation of inspector observations and the inspector's rationale for conclusions and recommendations. Explanations are to be placed on additional attachments and cross-referenced appropriately. Explanations, in addition to narrative, will take the form of sketches, measurements, annotated site maps.
3. The site inspection is a walking 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.
4. A standard set of color 35 mm photographs is required. In addition, all anomalous features or new features (such as changes in adjacent area land use) are to be photographed. A photo log entry will be made for each photograph taken.
5. This unit will be inspected biannually with formal reporting to the Nevada Division of Environmental Protection to be done annually. The annual report will include an executive summary, this inspection checklist with field notes and photo log attached, and recommendations and conclusions.

B. PREPARATION (To be completed prior to site visit)	YES	NO	EXPLANATION
1. Site as-built plans and site base map reviewed.	X		
2. Previous inspection reports reviewed.	X		
a. Were anomalies or trends detected on previous inspections?		X	
b. Was maintenance performed?		X	
3. Site maintenance and repair records reviewed.	X		
a. Has site repair resulted in a change from as-built conditions?		X	
b. Are revised as-builts available that reflect repair changes?		X	N/A

C. SITE INSPECTION (To be completed during inspection)	YES	NO	EXPLANATION
1. Adjacent off-site features within watershed areas.			
a. Have there been any changes in use of adjacent area?		X	
b. Are there any new roads or trails?		X	
c. Has there been a change in the position of nearby washes?		X	
d. Has there been lateral excursion or erosion/deposition of nearby washes?		X	
e. Are there new drainage channels?		X	
f. Change in surrounding vegetation?		X	
2. Security fence, signs.			
a. Displacement of fences, site markers, boundary markers, or monuments?		X	
b. Have any signs been damaged or removed? (Number of signs replaced: 0)		X	
c. Were gates locked?		X	Not required

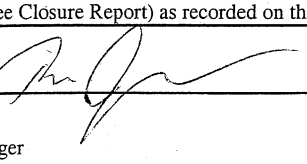
CAU 404: ROLLER COASTER LAGOONS & TRENCH, POST-CLOSURE INSPECTION CHECKLIST

3. Waste Unit cover.	YES	NO	EXPLANATION
a. Is there evidence of settling?		X	
b. Is there cracking?		X	
c. Is there evidence of erosion around the cap (wind or water)?		X	
d. Is there evidence of animal burrowing?	X		Minor, no damage or repairs needed
e. Have the site markers been disturbed by man or natural processes?		X	
f. Do natural processes threaten to integrity of any cover or site marker?		X	
g. Other?		X	
4. Vegetative cover.			
a. Is perimeter fence or mesh fencing damaged?		X	
b. Is there evidence of horses or rabbits on site?	X		Horse activity outside fence and some rabbit/small animal burrows along and within fence. No repairs needed.
c. Is organic mulch adequate to prevent erosion?		X	
d. Are weedy annual plants present? If yes, are they a problem?	X		Minor, not a problem
e. Are seeded plant species found on site?	X		
f. Is there evidence of plant mortality?		X	
5. Photo Documentation			
a. Has a photo log been prepared?	X		
c. Number of photos exposed (7)			
D. FIELD CONCLUSIONS			
1. Is there an imminent hazard to the integrity of the unit? (Immediate report required)		X	
Person/Agency to whom report made: N/A			
2. Are more frequent inspections required?		X	
3. Are existing maintenance/repair actions satisfactory?	X		
4. Is other maintenance/repair necessary?		X	
5. Is current status/condition of vegetative cover satisfactory?	X		

6. Rationale for field conclusions:
The site is in good condition and there was no damage to the fencing or cover noted during the inspection. Some small animal burrows were noted during the inspection but no maintenance/repairs are needed.

E. CERTIFICATION

I have conducted an inspection of the Roller Coaster Sewage Lagoons & North Disposal Trench, CAU 404, at the TTR in accordance with the Post-Closure Monitoring Plan (see Closure Report) as recorded on this checklist, attached sheets, field notes, photo logs, and photographs.

Chief Inspector's Signature: 	Printed Name: Brad Jackson
Title: TTR PCI Task Manager	Date: 07 July 04

CAU 407: ROLLER COASTER RADSAFE AREA, POST-CLOSURE INSPECTION CHECKLIST

Inspection Date: 07 July 04

Responsible Agency: NNSA/NSO ER	Responsible Agency: NNSA/NSO ER
Date of Last Inspection: 03 Dec 03	Date of Last Inspection: 03 Dec 03

Inspector (name, title, organization): Brad Jackson, Task Manager, BNER

Assistant Inspector (name, title, organization): N/A

A. GENERAL INSTRUCTIONS

1. All checklist items must be completed and detailed comments made to document the results of the site inspection. The completed checklist is part of the field record of the inspection. Additional pages should be used as necessary to ensure that a complete record is made. Attach the additional pages and number all pages upon completion of the inspection.
2. Any checklist line item marked by an inspector in a SHADED BOX, must be fully explained or an appropriate reference to previous reports provided. The purpose of this requirement is to provide a written explanation of inspector observations and the inspector's rationale for conclusions and recommendations. Explanations are to be placed on additional attachments and cross-referenced appropriately. Explanations, in addition to narrative, will take the form of sketches, measurements, annotated site maps.
3. The site inspection is a walking 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.
4. A standard set of color 35 mm photographs is required. In addition, all anomalous features or new features (such as changes in adjacent area land use) are to be photographed. A photo log entry will be made for each photograph taken.
5. This unit will be inspected biannually with formal reporting to the Nevada Division of Environmental Protection to be done annually. The annual report will include an executive summary, this inspection checklist with field notes and photo log attached, and recommendations and conclusions.

B. PREPARATION (To be completed prior to site visit)	YES	NO	EXPLANATION
1. Site as-built plans and site base map reviewed.	X		
2. Previous inspection reports reviewed.	X		
a. Were anomalies or trends detected on previous inspections?	X		Minor erosion was noted along the cover margin.
b. Was maintenance performed?		X	Repairs are scheduled to be completed in the first quarter of FY05
3. Site maintenance and repair records reviewed.	X		
a. Has site repair resulted in a change from as-built conditions?		X	
b. Are revised as-builts available that reflect repair changes?		X	N/A
C. SITE INSPECTION (To be completed during inspection)	YES	NO	EXPLANATION
1. Adjacent off-site features within watershed areas.			
a. Have there been any changes in use of adjacent area?		X	
b. Are there any new roads or trails?		X	
c. Has there been a change in the position of nearby washes?		X	
d. Has there been lateral excursion or erosion/deposition of nearby washes?		X	
e. Are there new drainage channels?		X	
f. Change in surrounding vegetation?		X	
2. Security fence, signs.			
a. Displacement of fences, site markers, boundary markers, or monuments?		X	
b. Have any signs been damaged or removed? (Number of signs replaced: 0)		X	
c. Were gates locked?		X	Not required

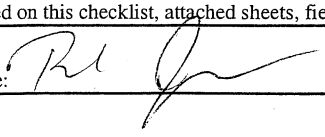
CAU 407: ROLLER COASTER RADSAFE AREA, POST-CLOSURE INSPECTION CHECKLIST

3. Waste Unit cover.	YES	NO	EXPLANATION
a. Is there evidence of settling?		X	
b. Is there cracking?		X	
c. Is there evidence of erosion around the cap (wind or water)?	X		Minor erosion along margin of cover
d. Is there evidence of animal burrowing?	X		Minor burrowing along margin of cover
e. Do natural processes threaten to integrity of any cover or site marker?		X	
f. Other?		X	
4. Vegetative cover.			
a. Is perimeter fence or mesh fencing damaged?		X	
b. Is there evidence of horses or rabbits on site?	X		Horses outside of fence and rabbits/small animal burrows within fence
c. Is organic mulch adequate to prevent erosion?	X		Additional mulch will be added at time of maintenance
d. Are weedy annual plants present? If yes, are they a problem?	X		Not a problem
e. Are seeded plant species found on site?		X	The site has not been seeded, but seed will be added during maintenance activities
f. Is there evidence of plant mortality?		X	
5. Photo Documentation			
a. Has a photo log been prepared?	X		
c. Number of photos exposed (8)			
D. FIELD CONCLUSIONS			
1. Is there an imminent hazard to the integrity of the unit? (Immediate report required)		X	
Person/Agency to whom report made:			
2. Are more frequent inspections required?		X	
3. Are existing maintenance/repair actions satisfactory?		X	Additional maintenance planned for FY05
4. Is other maintenance/repair necessary?	X		Additional maintenance planned for FY05
5. Is current status/condition of vegetative cover satisfactory?		X	Additional maintenance planned for FY05

6. Rationale for field conclusions:
The site is in generally good condition. Some minor maintenance is required to fill erosion along the margin of the cover and to add seed to help establish vegetation on the cover. This work is planned for the first quarter of FY05.

E. CERTIFICATION

I have conducted an inspection of the Roller Coaster RadSafe Area, CAU 407, at the TTR in accordance with the Post-Closure Monitoring Plan (see Closure Report) as recorded on this checklist, attached sheets, field notes, photo logs, and photographs.

Chief Inspector's Signature: 	Printed Name: Brad Jackson
Title: TTR PCI Task Manager	Date: 07 July 04

CAU 423: AREA 3 UNDERGROUND DISCHARGE POINT, POST-CLOSURE INSPECTION CHECKLIST

Inspection Date: 07 July 04	
Responsible Agency: NNSA/NSO ER	NNSA Project Manager: NNSA/NSO ER
Date of Last Inspection: N/A	Reason for Last Inspection: N/A
Inspector (name, title, organization): Brad Jackson, Task Manager, BNER	
Assistant Inspector (name, title, organization): N/A	

A. GENERAL INSTRUCTIONS

1. All checklist items must be completed and detailed comments made to document the results of the site inspection. The completed checklist is part of the field record of the inspection. Additional pages should be used as necessary to ensure that a complete record is made. Attach the additional pages and number all pages upon completion of the inspection.
2. Any checklist line item marked by an inspector in a SHADED BOX, must be fully explained or an appropriate reference to previous reports provided. The purpose of this requirement is to provide a written explanation of inspector observations and the inspector's rationale for conclusions and recommendations. Explanations are to be placed on additional attachments and cross-referenced appropriately. Explanations, in addition to narrative, will take the form of sketches, measurements, annotated site maps.
3. The site inspection is a walking 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.
4. A standard set of color 35 mm photographs (or equivalent) is required. In addition, all anomalous features or new features (such as changes in adjacent area land use) are to be photographed. A photo log entry will be made for each photograph taken.
5. This unit will be inspected biannually with formal reporting to the Nevada Division of Environmental Protection to be done annually. The annual report will include an executive summary, this inspection checklist with field notes and photo log attached, and recommendations and conclusions.

B. PREPARATION (To be completed prior to site visit)	YES	NO	EXPLANATION
1. Site as-built plans and site base map reviewed.	X		
2. Previous inspection reports reviewed.		X	N/A
a. Were anomalies or trends detected on previous inspections?		X	
b. Was maintenance performed?		X	
3. Site maintenance and repair records reviewed.		X	N/A
a. Has site repair resulted in a change from as-built conditions?		X	N/A
b. Are revised as-builts available that reflect repair changes?		X	N/A
C. SITE INSPECTION (To be completed during inspection)	YES	NO	EXPLANATION
1. Adjacent off-site features within watershed areas.			
a. Have there been any changes in use of adjacent area?	X		Several buildings have been razed and there has been underground utility work in the area.
b. Are there any new roads or trails?		X	
c. Has there been a change in the position of nearby washes?		X	
d. Has there been lateral excursion or erosion/deposition of nearby washes?		X	
e. Are there new drainage channels?		X	
f. Change in surrounding vegetation?		X	
2. Security fence, signs.			
a. Displacement of fences, site markers, boundary markers, or monuments?		X	
b. Have any signs been damaged or removed? (Number of signs replaced: 0)		X	
c. Were gates locked?		X	No gate present, only one sign and marker

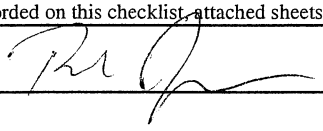
CAU 423: AREA 3 UNDERGROUND DISCHARGE POINT, POST-CLOSURE INSPECTION CHECKLIST

3. Waste Unit cover.	YES	NO	EXPLANATION
a. Is there evidence of erosion around buried waste		X	
b. Is there evidence of animal burrowing?		X	
c. Have the site markers been disturbed by man or natural processes?		X	
d. Is the vegetation on the cover?		X	
e. Do natural processes threaten to integrity of the buried waste?		X	
f. Other?		X	
4. Photo Documentation			
a. Has a photo log been prepared?	X		
c. Number of photos exposed (2)			
D. FIELD CONCLUSIONS			
1. Is there an imminent hazard to the integrity of the unit? (Immediate report required)		X	
Person/Agency to whom report made:			
2. Are more frequent inspections required?		X	
3. Are existing maintenance/repair actions satisfactory?	X		None required
4. Is other maintenance/repair necessary?		X	
5. Is current status/condition of the site satisfactory?	X		

6. Rationale for field conclusions:
Site is in good condition. An ROTC to the CR is being prepared at the request of NNSA/NDEP to add this site to the TTR PCI sites. Inspections will consist of a visual inspection of the area for excavation or other compromises and to ensure the sign and marker is in good condition..

E. CERTIFICATION

I have conducted an inspection of the Area 3 Underground Discharge Point, CAU 423, at the TTR in accordance with the Post-Closure Inspection Plan (see Closure Report) as recorded on this checklist, attached sheets, field notes, photo logs, and photographs.

Chief Inspector's Signature: 	Printed Name: Brad Jackson
Title: TTR PCI Task Manager	Date: 07 July 04

CAU 424: AREA 3 LANDFILL COMPLEX, POST-CLOSURE INSPECTION CHECKLIST

Inspection Date: 07 July 04

Responsible Agency: NNSA/NSO ER	Responsible Agency: NNSA/NSO ER
Date of Last Inspection: 03 Dec 03	Date of Last Inspection: 03 Dec 03

Inspector (name, title, organization): Brad Jackson BNER

Assistant Inspector (name, title, organization): N/A

A. GENERAL INSTRUCTIONS

1. All checklist items must be completed and detailed comments made to document the results of the site inspection. The completed checklist is part of the field record of the inspection. Additional pages should be used as necessary to ensure that a complete record is made. Attach the additional pages and number all pages upon completion of the inspection.
2. Any checklist line item marked by an inspector in a SHADED BOX, must be fully explained or an appropriate reference to previous reports provided. The purpose of this requirement is to provide a written explanation of inspector observations and the inspector's rationale for conclusions and recommendations. Explanations are to be placed on additional attachments and cross-referenced appropriately. Explanations, in addition to narrative, will take the form of sketches, measurements, annotated site maps.
3. The site inspection is a walking 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.
4. A standard set of color 35 mm photographs (or equivalent) is required. In addition, all anomalous features or new features (such as changes in adjacent area land use) are to be photographed. A photo log entry will be made for each photograph taken.
5. This unit will be inspected biannually with formal reporting to the Nevada Division of Environmental Protection to be done annually. The annual report will include an executive summary, this inspection checklist with field notes and photo log attached, and recommendations and conclusions.

B. PREPARATION (To be completed prior to site visit)	YES	NO	EXPLANATION
1. Site as-built plans and site base map reviewed.	X		
2. Previous inspection reports reviewed.	X		
a. Were anomalies or trends detected on previous inspections?		X	
b. Was maintenance performed?		X	
3. Site maintenance and repair records reviewed.	X		
a. Has site repair resulted in a change from as-built conditions?		X	
b. Are revised as-builts available that reflect repair changes?		X	N/A
C. SITE INSPECTION (To be completed during inspection)	YES	NO	EXPLANATION
1. Adjacent off-site features within watershed areas.			
a. Have there been any changes in use of adjacent area?		X	
b. Are there any new roads or trails?		X	
c. Has there been a change in the position of nearby washes?		X	
d. Has there been lateral excursion or erosion/deposition of nearby washes?		X	
e. Are there new drainage channels?		X	
f. Change in surrounding vegetation?		X	
2. Security fence, signs.			
a. Displacement of fences, site markers, boundary markers, or monuments?		X	N/A
b. Have any signs been damaged or removed? (Number of signs replaced: 0)		X	N/A
c. Were gates locked?		X	N/A

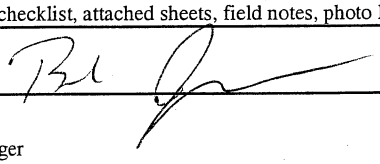
CAU 424: AREA 3 LANDFILL COMPLEX, POST-CLOSURE INSPECTION CHECKLIST

3. Waste Unit cover.	YES	NO	EXPLANATION
a. Is there evidence of settling?	X		Maintenance is scheduled to repair areas if subsidence at A3-1 and A3-4 during the first quarter of FY05
b. Is there cracking?		X	
c. Is there evidence of erosion around the cap (wind or water)?		X	
d. Is there evidence of animal burrowing?	X		Minor burrowing by small animals
e. Have the site markers been disturbed by man or natural processes?		X	
f. Is the vegetation on the cover?	X		
g. Do natural processes threaten to integrity of any cover or site marker?		X	
h. Other?		X	
4. Photo Documentation			
a. Has a photo log been prepared?	X		
c. Number of photos exposed (21)			
D. FIELD CONCLUSIONS			
1. Is there an imminent hazard to the integrity of the unit? (Immediate report required)		X	
Person/Agency to whom report made:			
2. Are more frequent inspections required?		X	
3. Are existing maintenance/repair actions satisfactory?	X		
4. Is other maintenance/repair necessary?		X	
5. Is current status/condition of vegetative cover satisfactory?	X		

6. Rationale for field conclusions:
The site is in good condition and there was no damage to the fencing or cover noted during the inspection. Some small animal burrows were noted during the inspection. Maintenance to repair areas of possible subsidence at cells A3-1 and A3-6 are scheduled for the first quarter of FY05

E. CERTIFICATION

I have conducted an inspection of the Area 3 Landfill Complex, CAU 424, at the TTR in accordance with the Post-Closure Inspection Plan (see Closure Report) as recorded on this checklist, attached sheets, field notes, photo logs, and photographs.

Chief Inspector's Signature: 	Printed Name: Brad Jackson
Title: TTR PCI Task Manager	Date: 07 July 04

CAU 426: CACTUS SPRING WASTE TRENCHES, POST-CLOSURE INSPECTION CHECKLIST

Inspection Date: 07 July 04

Responsible Agency: NNSA/NSO ER	Responsible Agency: NNSA/NSO ER
Date of Last Inspection: 03 Dec 03	Date of Last Inspection: 03 Dec 03

Inspector (name, title, organization): Brad Jackson, Task Manager, BNER

Assistant Inspector (name, title, organization): N/A

A. GENERAL INSTRUCTIONS

1. All checklist items must be completed and detailed comments made to document the results of the site inspection. The completed checklist is part of the field record of the inspection. Additional pages should be used as necessary to ensure that a complete record is made. Attach the additional pages and number all pages upon completion of the inspection.
3. Any checklist line item marked by an inspector in a SHADED BOX, must be fully explained or an appropriate reference to previous reports provided. The purpose of this requirement is to provide a written explanation of inspector observations and the inspector's rationale for conclusions and recommendations. Explanations are to be placed on additional attachments and cross-referenced appropriately. Explanations, in addition to narrative, will take the form of sketches, measurements, annotated site maps.
4. The site inspection is a walking 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.
5. A standard set of color 35 mm photographs (or equivalent) is required. In addition, all anomalous features or new features (such as changes in adjacent area land use) are to be photographed. A photo log entry will be made for each photograph taken.
6. This unit will be inspected biannually with formal reporting to the Nevada Division of Environmental Protection to be done annually. The annual report will include an executive summary, this inspection checklist with field notes and photo log attached, and recommendations and conclusions.

B. PREPARATION (To be completed prior to site visit)	YES	NO	EXPLANATION
1. Site as-built plans and site base map reviewed.	X		
2. Previous inspection reports reviewed.	X		
a. Were anomalies or trends detected on previous inspections?		X	
b. Was maintenance performed?		X	
3. Site maintenance and repair records reviewed.	X		
a. Has site repair resulted in a change from as-built conditions?		X	
b. Are revised as-builts available that reflect repair changes?		X	N/A

C. SITE INSPECTION (To be completed during inspection)	YES	NO	EXPLANATION
1. Adjacent off-site features within watershed areas.			
a. Have there been any changes in use of adjacent area?		X	
b. Are there any new roads or trails?		X	
c. Has there been a change in the position of nearby washes?		X	
d. Has there been lateral excursion or erosion/deposition of nearby washes?		X	
e. Are there new drainage channels?		X	
f. Change in surrounding vegetation?		X	
2. Security fence, signs.			
a. Displacement of fences, site markers, boundary markers, or monuments?		X	
b. Have any signs been damaged or removed? (Number of signs replaced: 0)		X	
c. Were gates locked?		X	N/A

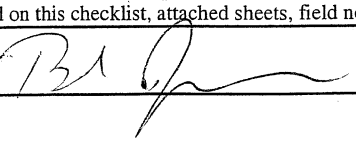
CAU 426: CACTUS SPRING WASTE TRENCHES, POST-CLOSURE INSPECTION CHECKLIST

3. Waste Unit cover.	YES	NO	EXPLANATION
a. Is there evidence of settling?		X	
b. Is there cracking?		X	
c. Is there evidence of erosion around the cap (wind or water)?		X	
d. Is there evidence of animal burrowing?	X		Small burrows around the fence and margin of cover, no maintenance needed.
e. Have the site markers been disturbed by man or natural processes?		X	
f. Do natural processes threaten to integrity of any cover or site marker?		X	
g. Other?		X	
4. Vegetative cover.			
a. Is perimeter fence or mesh fencing damaged?		X	
b. Is there evidence of horses or rabbits on site?	X		Horses along fencing and rabbits/small animal burrows along and within fencing.
c. Is organic mulch and/or plants adequate to prevent erosion?	X		
d. Are weedy annual plants present? If yes, are they a problem?	X		Some are present but no maintenance needed.
e. Are seeded plant species found on site?	X		
f. Is there evidence of plant mortality?		X	
5. Photo Documentation			
a. Has a photo log been prepared?	X		
c. Number of photos exposed (7)	X		
D. FIELD CONCLUSIONS			
1. Is there an imminent hazard to the integrity of the unit? (Immediate report required)		X	
Person/Agency to whom report made:			
2. Are more frequent inspections required?		X	
3. Are existing maintenance/repair actions satisfactory?	X		
4. Is other maintenance/repair necessary?		X	
5. Is current status/condition of vegetative cover satisfactory?		X	

6. Rationale for field conclusions:
The site is in good condition and there was no damage to the fencing or cover noted during the inspection. Some small animal burrows were noted during the inspection but no maintenance/repairs are needed.

E. CERTIFICATION

I have conducted an inspection of the Cactus Spring Waste Trenches, CAU 426, at the TTR in accordance with the Post-Closure Monitoring Plan (see Closure Report) as recorded on this checklist, attached sheets, field notes, photo logs, and photographs.

Chief Inspector's Signature: 	Printed Name: Brad Jackson
Title: TTR PCI Task Manager	Date: 07 July 04

CAU 427: AREA 3 SEPTIC WASTE SYSTEMS 2 & 6, POST-CLOSURE INSPECTION CHECKLIST

Inspection Date: 07 July 04

Responsible Agency: NNSA/NSO ER	Responsible Agency: NNSA/NSO ER
Date of Last Inspection: 03 Dec 03	Date of Last Inspection: 03 Dec 03

Inspector (name, title, organization): Brad Jackson BNER

Assistant Inspector (name, title, organization): N/A

A. GENERAL INSTRUCTIONS

1. All checklist items must be completed and detailed comments made to document the results of the site inspection. The completed checklist is part of the field record of the inspection. Additional pages should be used as necessary to ensure that a complete record is made. Attach the additional pages and number all pages upon completion of the inspection.
2. Any checklist line item marked by an inspector in a SHADED BOX, must be fully explained or an appropriate reference to previous reports provided. The purpose of this requirement is to provide a written explanation of inspector observations and the inspector's rationale for conclusions and recommendations. Explanations are to be placed on additional attachments and cross-referenced appropriately. Explanations, in addition to narrative, will take the form of sketches, measurements, annotated site maps.
3. The site inspection is a walking 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.
4. A standard set of color 35 mm photographs (or equivalent) is required. In addition, all anomalous features or new features (such as changes in adjacent area land use) are to be photographed. A photo log entry will be made for each photograph taken.
5. This unit will be inspected biannually with formal reporting to the Nevada Division of Environmental Protection to be done annually. The annual report will include an executive summary, this inspection checklist with field notes and photo log attached, and recommendations and conclusions.

B. PREPARATION (To be completed prior to site visit)	YES	NO	EXPLANATION
1. Site as-built plans and site base map reviewed.	X		
2. Previous inspection reports reviewed.	X		
a. Were anomalies or trends detected on previous inspections?		X	
b. Was maintenance performed?		X	
3. Site maintenance and repair records reviewed.	X		
a. Has site repair resulted in a change from as-built conditions?		X	
b. Are revised as-builts available that reflect repair changes?		X	N/A

C. SITE INSPECTION (To be completed during inspection)	YES	NO	EXPLANATION
1. Adjacent off-site features within watershed areas.			
a. Have there been any changes in use of adjacent area?		X	
b. Are there any new roads or trails?		X	
2. Security signs.			
a. Displacement of site markers, boundary markers, or monuments? (disturbed by man or natural processes?)		X	Some red rock covering the leachfield markers has been covered. The locations were found and red rock was added to aid in future inspections.
b. Have any signs been damaged or removed? (Number of signs replaced: 0)		X	
c. Were all subsurface markers detected? (i.e., using a magnatometer or equivalent)	X		Markers have been located using a magnetometer/excavation. Red rock was used to backfill each location to aid in finding markers during site inspections.

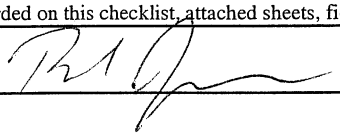
CAU 427: AREA 3 SEPTIC WASTE SYSTEMS 2 & 6, POST-CLOSURE INSPECTION CHECKLIST

3. Soil/aspharlt cover.	YES	NO	EXPLANATION
a. Is there evidence of settling?		X	
b. Is there cracking?		X	
c. Is there evidence of erosion near use restriction boundaries?		X	
d. Is there evidence of animal burrowing?		X	
e. Is there vegetation?		X	
f. Do natural processes threaten to integrity of any cover or site marker?		X	
g. Is there evidence suggesting unauthorized excavations have taken place?		X	
e. Other?		X	
4. Photo Documentation			
a. Has a photo log been prepared?	X		
c. Number of photos exposed (14)			
D. FIELD CONCLUSIONS			
1. Is there an imminent hazard to the integrity of the unit? (Immediate report required)		X	
Person/Agency to whom report made:			
2. Are more frequent inspections required?		X	
3. Are existing maintenance/repair actions satisfactory?	X		
4. Is other maintenance/repair necessary?		X	

5. Rationale for field conclusions:
The site is in good condition and no maintenance/repairs are needed. Two marker locations were obscured by fill material but were uncovered and repaired at the time of the inspection.

E. CERTIFICATION

I have conducted an inspection of the Area 3 Septic Waste Systems 2 & 6, CAU 427, at the TTR in accordance with the Post-Closure Monitoring Plan (see Closure Report) as recorded on this checklist, attached sheets, field notes, photo logs, and photographs.

Chief Inspector's Signature: 	Printed Name: Brad Jackson
Title: TTR PCI Task Manager	Date: 07 July 04

CAU 453: AREA 9 UXO LANDFILL, POST-CLOSURE INSPECTION CHECKLIST

Inspection Date: 07 July 04

Responsible Agency: NNSA/NSO ER	Responsible Agency: NNSA/NSO ER
Date of Last Inspection: 03 Dec 03	Date of Last Inspection: 03 Dec 03

Inspector (name, title, organization): Brad Jackson BNER

Assistant Inspector (name, title, organization): N/A

A. GENERAL INSTRUCTIONS

1. All checklist items must be completed and detailed comments made to document the results of the site inspection. The completed checklist is part of the field record of the inspection. Additional pages should be used as necessary to ensure that a complete record is made. Attach the additional pages and number all pages upon completion of the inspection.
2. Any checklist line item marked by an inspector in a SHADED BOX, must be fully explained or an appropriate reference to previous reports provided. The purpose of this requirement is to provide a written explanation of inspector observations and the inspector's rationale for conclusions and recommendations. Explanations are to be placed on additional attachments and cross-referenced appropriately. Explanations, in addition to narrative, will take the form of sketches, measurements, annotated site maps.
3. The site inspection is a walking 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.
4. A standard set of color 35 mm photographs (or equivalent) is required. In addition, all anomalous features or new features (such as changes in adjacent area land use) are to be photographed. A photo log entry will be made for each photograph taken.
5. This unit will be inspected biannually with formal reporting to the Nevada Division of Environmental Protection to be done annually. The annual report will include an executive summary, this inspection checklist with field notes and photo log attached, and recommendations and conclusions.

B. PREPARATION (To be completed prior to site visit)	YES	NO	EXPLANATION
1. Site as-built plans and site base map reviewed.	X		
2. Previous inspection reports reviewed.	X		
a. Were anomalies or trends detected on previous inspections?		X	
b. Was maintenance performed?		X	
3. Site maintenance and repair records reviewed.	X		
a. Has site repair resulted in a change from as-built conditions?		X	
b. Are revised as-builts available that reflect repair changes?		X	N/A

C. SITE INSPECTION (To be completed during inspection)	YES	NO	EXPLANATION
1. Adjacent off-site features within watershed areas.			
a. Have there been any changes in use of adjacent area?		X	
b. Are there any new roads or trails?		X	
c. Has there been a change in the position of nearby washes?		X	
d. Has there been lateral excursion or erosion/deposition of nearby washes?		X	
e. Are there new drainage channels?		X	
f. Change in surrounding vegetation?		X	
2. Security fence, signs.			
a. Displacement of fences, site markers, boundary markers, or monuments?		X	
b. Have any signs been damaged or removed? (Number of signs replaced: 0)		X	
c. Were gates locked?		X	A lock has been requested from ASI

CAU 453: AREA 9 UXO LANDFILL, POST-CLOSURE INSPECTION CHECKLIST

3. Waste Unit cover.	YES	NO	EXPLANATION
a. Is there evidence of settling?		X	
b. Is there cracking?		X	
c. Is there evidence of erosion around the cap (wind or water)?		X	
d. Is there evidence of animal burrowing?		X	
e. Have the site markers been disturbed by man or natural processes?		X	
f. Is vegetation present?	X		Sparse
g. Do natural processes threaten to integrity of any cover or site marker?		X	
h. Other?		X	
4. Photo Documentation			
a. Has a photo log been prepared?	X		
c. Number of photos exposed (7)			
D. FIELD CONCLUSIONS			
1. Is there an imminent hazard to the integrity of the unit? (Immediate report required)		X	
Person/Agency to whom report made:			
2. Are more frequent inspections required?		X	
3. Are existing maintenance/repair actions satisfactory?	X		
4. Is other maintenance/repair necessary?		X	
5. Is current status/condition of vegetative cover satisfactory?	X		

6. Rationale for field conclusions:
The site is in good condition and there was no damage to the fencing or cover noted during the inspection. Some small animal burrows were noted during the inspection but no maintenance/repairs are needed.

E. CERTIFICATION

I have conducted an inspection of the Area 9 UXO Landfill, CAU 453, at the TTR in accordance with the Post-Closure Inspection Plan (see Closure Report) as recorded on this checklist, attached sheets, field notes, photo logs, and photographs.

Chief Inspector's Signature:	Printed Name: Brad Jackson
Title: TTR PCI Task Manager	Date: 07 July 04

CAU 400: BOMBLET PIT, POST-CLOSURE INSPECTION CHECKLIST

Inspection Date: 11/10/04	
Responsible Agency: NNSA/NSO ER	NNSA Project Manager: Janet L. Appenzeller-Wing
Date of Last Inspection: 7/16/04	Reason for Last Inspection: Semi-Annual
Inspector (name, title, organization): ALISSA TIBESAR, TECHNICAL LEAD, BN-ER	
Assistant Inspector (name, title, organization): SHAUGHN BURNISON, TASK MANAGER, BN-ER	

A. GENERAL INSTRUCTIONS

1. All checklist items must be completed and detailed comments made to document the results of the site inspection. The completed checklist is part of the field record of the inspection. Additional pages should be used as necessary to ensure that a complete record is made. Attach the additional pages and number all pages upon completion of the inspection.
2. Any checklist line item marked by an inspector in a SHADED BOX, must be fully explained or an appropriate reference to previous reports provided. The purpose of this requirement is to provide a written explanation of inspector observations and the inspector's rationale for conclusions and recommendations. Explanations are to be placed on additional attachments and cross-referenced appropriately. Explanations, in addition to narrative, will take the form of sketches, measurements, annotated site maps.
3. The site inspection is a walking 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.
4. A standard set of color 35 mm photographs (or equivalent) is required. In addition, all anomalous features or new features (such as changes in adjacent area land use) are to be photographed. A photo log entry will be made for each photograph taken.
5. This unit will be inspected biannually with formal reporting to the Nevada Division of Environmental Protection to be done annually. The annual report will include an executive summary, this inspection checklist with field notes and photo log attached, and recommendations and conclusions.

B. PREPARATION (To be completed prior to site visit)	YES	NO	EXPLANATION
1. Site as-built plans and site base map reviewed.	✓		
2. Previous inspection reports reviewed.	✓		
a. Were anomalies or trends detected on previous inspections?		✓	
b. Was maintenance performed?		✓	
3. Site maintenance and repair records reviewed.	✓		
a. Has site repair resulted in a change from as-built conditions?		✓	
b. Are revised as-builts available that reflect repair changes?		✓	N/A

C. SITE INSPECTION (To be completed during inspection)	YES	NO	EXPLANATION
1. Adjacent off-site features within watershed areas.			
a. Have there been any changes in use of adjacent area?		✓	
b. Are there any new roads or trails?		✓	
c. Has there been a change in the position of nearby washes?		✓	
d. Has there been lateral excursion or erosion/deposition of nearby washes?		✓	
e. Are there new drainage channels?		✓	
f. Change in surrounding vegetation?		✓	
2. Security fence, signs.			
a. Displacement of fences, site markers, boundary markers, or monuments?		✓	
b. Have any signs been damaged or removed? (Number of signs replaced: 0)		✓	
c. Were gates locked?		✓	No gate

CAU 400: BOMBLET PIT, POST-CLOSURE INSPECTION CHECKLIST

3. Waste Unit cover.	YES	NO	EXPLANATION
a. Is there evidence of settling?		✓	
b. Is there cracking?		✓	
c. Is there evidence of erosion around the cap (wind or water)?		✓	
d. Is there evidence of animal burrowing?	✓		outside fence line
e. Have the site markers been disturbed by man or natural processes?		✓	
f. Do natural processes threaten to integrity of any cover or site marker?		✓	
g. Other?		✓	
4. Vegetative cover.			
a. Is perimeter fence or mesh fencing damaged?		✓	
b. Is there evidence of horses or rabbits on site?	✓		droppings outside fence
c. Is organic mulch and/or plants adequate to prevent erosion?	✓		
d. Are weedy annual plants present? If yes, are they a problem?		✓	
e. Are seeded plant species found on site?	✓		
f. Is there evidence of plant mortality?		✓	
5. Photo Documentation			
a. Has a photo log been prepared?	✓		
c. Number of photos exposed (6)			

D. FIELD CONCLUSIONS			
1. Is there an imminent hazard to the integrity of the unit? (Immediate report required)		✓	
Person/Agency to whom report made:			
2. Are more frequent inspections required?		✓	
3. Are existing maintenance/repair actions satisfactory?	✓		
4. Is other maintenance/repair necessary?		✓	
5. Is current status/condition of vegetative cover satisfactory?	✓		

6. Rationale for field conclusions: No issues or concerns were observed. The unit is in good condition.

E. CERTIFICATION

I have conducted an inspection of the Bomblet Pit, CAU 400, at the TTR in accordance with the Post-Closure Monitoring Plan (see Closure Report) as recorded on this checklist, attached sheets, field notes, photo logs, and photographs.

Chief Inspector's Signature:	Printed Name: ALISSA TIBESAR
Title: TECHNICAL LEAD	Date: 11/18/04

CAU 400: 5 POINTS LANDFILL, POST-CLOSURE INSPECTION CHECKLIST

Inspection Date: 11/16/04	
Responsible Agency: NNSA/NSO ER	NNSA Project Manager: Janet L. Appenzeller-Wing
Date of Last Inspection: 7/16/04	Reason for Last Inspection: Semi-Annual
Inspector (name, title, organization): ALISSA TIBESAR, TECH. LEAD, BN-ER	
Assistant Inspector (name, title, organization): Shaughn Burnison, Task Mgr, BN-ER	

A. GENERAL INSTRUCTIONS

1. All checklist items must be completed and detailed comments made to document the results of the site inspection. The completed checklist is part of the field record of the inspection. Additional pages should be used as necessary to ensure that a complete record is made. Attach the additional pages and number all pages upon completion of the inspection.
2. Any checklist line item marked by an inspector in a SHADED BOX, must be fully explained or an appropriate reference to previous reports provided. The purpose of this requirement is to provide a written explanation of inspector observations and the inspector's rationale for conclusions and recommendations. Explanations are to be placed on additional attachments and cross-referenced appropriately. Explanations, in addition to narrative, will take the form of sketches, measurements, annotated site maps.
3. The site inspection is a walking 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.
4. A standard set of color 35 mm photographs (or equivalent) is required. In addition, all anomalous features or new features (such as changes in adjacent area land use) are to be photographed. A photo log entry will be made for each photograph taken.
5. This unit will be inspected biannually with formal reporting to the Nevada Division of Environmental Protection to be done annually. The annual report will include an executive summary, this inspection checklist with field notes and photo log attached, and recommendations and conclusions.

B. PREPARATION (To be completed prior to site visit)	YES	NO	EXPLANATION
1. Site as-built plans and site base map reviewed.			
2. Previous inspection reports reviewed.	✓		
a. Were anomalies or trends detected on previous inspections?		✓	
b. Was maintenance performed?		✓	
3. Site maintenance and repair records reviewed.	✓		
a. Has site repair resulted in a change from as-built conditions?		✓	
b. Are revised as-builts available that reflect repair changes?		✓	N/A

C. SITE INSPECTION (To be completed during inspection)	YES	NO	EXPLANATION
1. Adjacent off-site features within watershed areas.			
a. Have there been any changes in use of adjacent area?		✓	
b. Are there any new roads or trails?		✓	
c. Has there been a change in the position of nearby washes?		✓	
d. Has there been lateral excursion or erosion/deposition of nearby washes?		✓	
e. Are there new drainage channels?		✓	
f. Change in surrounding vegetation?		✓	
2. Security fence, signs.			
a. Displacement of fences, site markers, boundary markers, or monuments?		✓	
b. Have any signs been damaged or removed? (Number of signs replaced: 0)		✓	
c. Were gates locked?		✓	No lock

CAU 400: 5 POINTS LANDFILL, POST-CLOSURE INSPECTION CHECKLIST

3. Waste Unit cover.	YES	NO	EXPLANATION
a. Is there evidence of settling?		✓	
b. Is there cracking?	✓		Due to standing water
c. Is there evidence of erosion around the cap (wind or water)?	✓		Water has appeared to be standing
d. Is there evidence of animal burrowing?	✓		Minor along fence
e. Have the site markers been disturbed by man or natural processes?		✓	
f. Do natural processes threaten to integrity of any cover or site marker?		✓	
g. Other?		✓	
4. Vegetative cover.			
a. Is perimeter fence or mesh fencing damaged?	✓		water has collapsed the fence at the entrance of the wash
b. Is there evidence of horses or rabbits on site?	✓		around the fence
c. Is organic mulch and/or plants adequate to prevent erosion?	✓		
d. Are weedy annual plants present? If yes, are they a problem?		✓	
e. Are seeded plant species found on site?	✓		
f. Is there evidence of plant mortality?	✓		Plants are dying where standing water was present
5. Photo Documentation			
a. Has a photo log been prepared?	✓		
c. Number of photos exposed (7)			

D. FIELD CONCLUSIONS			
1. Is there an imminent hazard to the integrity of the unit? (Immediate report required)		✓	
Person/Agency to whom report made:			
2. Are more frequent inspections required?		✓	
3. Are existing maintenance/repair actions satisfactory?	✓		
4. Is other maintenance/repair necessary?	✓		Fence needs repair
5. Is current status/condition of vegetative cover satisfactory?		✓	cover needs to be re-seeded in depressed, formally flooded areas

6. Rationale for field conclusions: The fence needs to be repaired, and formally flooded areas need to be revegetated. Some form of flood diversion should be implemented.

E. CERTIFICATION

I have conducted an inspection of the 5 Points Landfill, CAU 400, at the TTR in accordance with the Post-Closure Monitoring Plan (see Closure Report) as recorded on this checklist, attached sheets, field notes, photo logs, and photographs.

Chief Inspector's Signature: [signature]	Printed Name: ALISSA TIBESAR
Title: TECHNICAL LEAD.	Date: 11/10/04

CAU 404: ROLLER COASTER LAGOONS & TRENCH, POST-CLOSURE INSPECTION CHECKLIST

Inspection Date: 11/9/04

Responsible Agency: NNSA/NSO ER	NNSA Project Manager: Janet L. Appenzeller-Wing
Date of Last Inspection: 7/16/04	Reason for Last Inspection: Semi-Annual
Inspector (name, title, organization): ALISSA TIBESAR, TECHNICAL LEAD, BN-ER	
Assistant Inspector (name, title, organization): SHAUGHN BURNISON, TASK MANAGER, BN-ER	

A. GENERAL INSTRUCTIONS

1. All checklist items must be completed and detailed comments made to document the results of the site inspection. The completed checklist is part of the field record of the inspection. Additional pages should be used as necessary to ensure that a complete record is made. Attach the additional pages and number all pages upon completion of the inspection.
2. Any checklist line item marked by an inspector in a SHADED BOX, must be fully explained or an appropriate reference to previous reports provided. The purpose of this requirement is to provide a written explanation of inspector observations and the inspector's rationale for conclusions and recommendations. Explanations are to be placed on additional attachments and cross-referenced appropriately. Explanations, in addition to narrative, will take the form of sketches, measurements, annotated site maps.
3. The site inspection is a walking 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.
4. A standard set of color 35 mm photographs is required. In addition, all anomalous features or new features (such as changes in adjacent area land use) are to be photographed. A photo log entry will be made for each photograph taken.
5. This unit will be inspected biannually with formal reporting to the Nevada Division of Environmental Protection to be done annually. The annual report will include an executive summary, this inspection checklist with field notes and photo log attached, and recommendations and conclusions.

B. PREPARATION (To be completed prior to site visit)	YES	NO	EXPLANATION
1. Site as-built plans and site base map reviewed.	✓		
2. Previous inspection reports reviewed.	✓		
a. Were anomalies or trends detected on previous inspections?		✓	
b. Was maintenance performed?		✓	
3. Site maintenance and repair records reviewed.	✓		
a. Has site repair resulted in a change from as-built conditions?		✓	
b. Are revised as-builts available that reflect repair changes?		✓	N/A

C. SITE INSPECTION (To be completed during inspection)	YES	NO	EXPLANATION
1. Adjacent off-site features within watershed areas.			
a. Have there been any changes in use of adjacent area?		✓	
b. Are there any new roads or trails?		✓	
c. Has there been a change in the position of nearby washes?		✓	
d. Has there been lateral excursion or erosion/deposition of nearby washes?		✓	
e. Are there new drainage channels?		✓	
f. Change in surrounding vegetation?		✓	
2. Security fence, signs.			
a. Displacement of fences, site markers, boundary markers, or monuments?		✓	
b. Have any signs been damaged or removed? (Number of signs replaced: 0)		✓	
c. Were gates locked?		✓	NO gate lock

CAU 404: ROLLER COASTER LAGOONS & TRENCH, POST-CLOSURE INSPECTION CHECKLIST

	YES	NO	EXPLANATION
3. Waste Unit cover.			
a. Is there evidence of settling?		✓	
b. Is there cracking?		✓	
c. Is there evidence of erosion around the cap (wind or water)?		✓	
d. Is there evidence of animal burrowing?	✓		outside fence - does not affect unit integrity
e. Have the site markers been disturbed by man or natural processes?		✓	
f. Do natural processes threaten to integrity of any cover or site marker?		✓	
g. Other?		✓	
4. Vegetative cover.			
a. Is perimeter fence or mesh fencing damaged?		✓	
b. Is there evidence of horses or rabbits on site?	✓		outside the fence
c. Is organic mulch adequate to prevent erosion?	✓		
d. Are weedy annual plants present? If yes, are they a problem?		✓	
e. Are seeded plant species found on site?	✓		
f. Is there evidence of plant mortality?		✓	
5. Photo Documentation			
a. Has a photo log been prepared?	✓		
c. Number of photos exposed (3)			
D. FIELD CONCLUSIONS			
1. Is there an imminent hazard to the integrity of the unit? (Immediate report required)		✓	
Person/Agency to whom report made:			
2. Are more frequent inspections required?		✓	
3. Are existing maintenance/repair actions satisfactory?	✓		
4. Is other maintenance/repair necessary?		✓	
5. Is current status/condition of vegetative cover satisfactory?	✓		

6. Rationale for field conclusions: The overall condition of the unit is good. No issues or concerns were observed.

E. CERTIFICATION

I have conducted an inspection of the Roller Coaster Sewage Lagoons & North Disposal Trench, CAU 404, at the TTR in accordance with the Post-Closure Monitoring Plan (see Closure Report) as recorded on this checklist, attached sheets, field notes, photo logs, and photographs.

Chief Inspector's Signature: [signature]	Printed Name: ALISSA TIBESAR
Title: TECHNICAL LEAD	Date: 11/9/04

CAU 407: ROLLER COASTER RADSAFE AREA, POST-CLOSURE INSPECTION CHECKLIST

Inspection Date: 11/9/04	
Responsible Agency: NNSA/NSO ER	NNSA Project Manager: Janet L. Appenzeller-Wing
Date of Last Inspection: 7/16/04	Reason for Last Inspection: semi-annual
Inspector (name, title, organization): ALISSA TIBESAR, TECHNICAL LEAD, BN-ER	
Assistant Inspector (name, title, organization): SHAUGHN BURNISON, TASK MANAGER, BN-ER	

A. GENERAL INSTRUCTIONS

1. All checklist items must be completed and detailed comments made to document the results of the site inspection. The completed checklist is part of the field record of the inspection. Additional pages should be used as necessary to ensure that a complete record is made. Attach the additional pages and number all pages upon completion of the inspection.
2. Any checklist line item marked by an inspector in a SHADED BOX, must be fully explained or an appropriate reference to previous reports provided. The purpose of this requirement is to provide a written explanation of inspector observations and the inspector's rationale for conclusions and recommendations. Explanations are to be placed on additional attachments and cross-referenced appropriately. Explanations, in addition to narrative, will take the form of sketches, measurements, annotated site maps.
3. The site inspection is a walking 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.
4. A standard set of color 35 mm photographs is required. In addition, all anomalous features or new features (such as changes in adjacent area land use) are to be photographed. A photo log entry will be made for each photograph taken.
5. This unit will be inspected biannually with formal reporting to the Nevada Division of Environmental Protection to be done annually. The annual report will include an executive summary, this inspection checklist with field notes and photo log attached, and recommendations and conclusions.

B. PREPARATION (To be completed prior to site visit)	YES	NO	EXPLANATION
1. Site as-built plans and site base map reviewed.	✓		
2. Previous inspection reports reviewed.	✓		
a. Were anomalies or trends detected on previous inspections?	✓		Erosion rills on edges of cover
b. Was maintenance performed?		✓	
3. Site maintenance and repair records reviewed.	✓		
a. Has site repair resulted in a change from as-built conditions?		✓	
b. Are revised as-builts available that reflect repair changes?		✓	N/A
C. SITE INSPECTION (To be completed during inspection)	YES	NO	EXPLANATION
1. Adjacent off-site features within watershed areas.			
a. Have there been any changes in use of adjacent area?		✓	
b. Are there any new roads or trails?		✓	
c. Has there been a change in the position of nearby washes?		✓	
d. Has there been lateral excursion or erosion/deposition of nearby washes?		✓	
e. Are there new drainage channels?		✓	
f. Change in surrounding vegetation?		✓	
2. Security fence, signs.			
a. Displacement of fences, site markers, boundary markers, or monuments?		✓	
b. Have any signs been damaged or removed? (Number of signs replaced: 6)		✓	
c. Were gates locked?		✓	No gate.

CAU 407: ROLLER COASTER RADSAFE AREA, POST-CLOSURE INSPECTION CHECKLIST

3. Waste Unit cover.	YES	NO	EXPLANATION
a. Is there evidence of settling?		✓	
b. Is there cracking?		✓	
c. Is there evidence of erosion around the cap (wind or water)?	✓		erosion rills on edges of cover
d. Is there evidence of animal burrowing?	✓		outside fence
e. Do natural processes threaten to integrity of any cover or site marker?		✓	
f. Other?		✓	
4. Vegetative cover.			
a. Is perimeter fence or mesh fencing damaged?		✓	
b. Is there evidence of horses or rabbits on site?	✓		outside fence
c. Is organic mulch adequate to prevent erosion?		✓	
d. Are weedy annual plants present? If yes, are they a problem?	✓		Not a problem
e. Are seeded plant species found on site?		✓	
f. Is there evidence of plant mortality?		✓	
5. Photo Documentation			
a. Has a photo log been prepared?	✓		
c. Number of photos exposed (8)			
D. FIELD CONCLUSIONS			
1. Is there an imminent hazard to the integrity of the unit? (Immediate report required)		✓	
Person/Agency to whom report made:			
2. Are more frequent inspections required?		✓	
3. Are existing maintenance/repair actions satisfactory?		✓	erosion needs to be repaired
4. Is other maintenance/repair necessary?	✓		" "
5. Is current status/condition of vegetative cover satisfactory?	✓		

6. Rationale for field conclusions: The fencing and signs are in good condition. The erosional rills will be repaired before the end of calendar year 04, and the cover will be vegetated to prevent further erosion.

E. CERTIFICATION

I have conducted an inspection of the Roller Coaster RadSafe Area, CAU 407, at the TTR in accordance with the Post-Closure Monitoring Plan (see Closure Report) as recorded on this checklist, attached sheets, field notes, photo logs, and photographs.

Chief Inspector's Signature:	Printed Name: ALISSA TIBESAR
Title: TECHNICAL LEAD	Date: 11/9/04

CAU 423: AREA 3 UNDERGROUND DISCHARGE POINT, POST-CLOSURE INSPECTION CHECKLIST

Inspection Date: 11/9/04

Responsible Agency: NNSA/NSO ER	NNSA Project Manager: Janet L. Appenzeller-Wing
Date of Last Inspection: N/A	Reason for Last Inspection: N/A
Inspector (name, title, organization): Alissa Tibesar, Tech. Lead, BN-ER	
Assistant Inspector (name, title, organization): Shaughn Burnison, Task Mngr, BN-ER	

A. GENERAL INSTRUCTIONS

1. All checklist items must be completed and detailed comments made to document the results of the site inspection. The completed checklist is part of the field record of the inspection. Additional pages should be used as necessary to ensure that a complete record is made. Attach the additional pages and number all pages upon completion of the inspection.
2. Any checklist line item marked by an inspector in a SHADED BOX, must be fully explained or an appropriate reference to previous reports provided. The purpose of this requirement is to provide a written explanation of inspector observations and the inspector's rationale for conclusions and recommendations. Explanations are to be placed on additional attachments and cross-referenced appropriately. Explanations, in addition to narrative, will take the form of sketches, measurements, annotated site maps.
3. The site inspection is a walking 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.
4. A standard set of color 35 mm photographs (or equivalent) is required. In addition, all anomalous features or new features (such as changes in adjacent area land use) are to be photographed. A photo log entry will be made for each photograph taken.
5. This unit will be inspected biannually with formal reporting to the Nevada Division of Environmental Protection to be done annually. The annual report will include an executive summary, this inspection checklist with field notes and photo log attached, and recommendations and conclusions.

B. PREPARATION (To be completed prior to site visit)	YES	NO	EXPLANATION
1. Site as-built plans and site base map reviewed.	✓		
2. Previous inspection reports reviewed.		✓	N/A
a. Were anomalies or trends detected on previous inspections?		✓	
b. Was maintenance performed?		✓	
3. Site maintenance and repair records reviewed.	✓		
a. Has site repair resulted in a change from as-built conditions?		✓	
b. Are revised as-builts available that reflect repair changes?		✓	N/A
C. SITE INSPECTION (To be completed during inspection)	YES	NO	EXPLANATION
1. Adjacent off-site features within watershed areas.			
a. Have there been any changes in use of adjacent area?		✓	
b. Are there any new roads or trails?		✓	
c. Has there been a change in the position of nearby washes?		✓	
d. Has there been lateral excursion or erosion/deposition of nearby washes?		✓	
e. Are there new drainage channels?		✓	
f. Change in surrounding vegetation?		✓	
2. Security fence, signs.			
a. Displacement of fences, site markers, boundary markers, or monuments?		✓	
b. Have any signs been damaged or removed? (Number of signs replaced: 0)		✓	
c. Were gates locked?		✓	N/A

CAU 423: AREA 3 UNDERGROUND DISCHARGE POINT, POST-CLOSURE INSPECTION CHECKLIST

3. Waste Unit cover.	YES	NO	EXPLANATION
a. Is there evidence of settling?		✓	
b. Is there cracking?		✓	
c. Is there evidence of erosion around the cap (wind or water)?		✓	
d. Is there evidence of animal burrowing?		✓	
e. Have the site markers been disturbed by man or natural processes?		✓	
f. Is the vegetation on the cover?	✓		consistent with adjacent area
g. Do natural processes threaten to integrity of any cover or site marker?		✓	
h. Other?		✓	
4. Photo Documentation			
a. Has a photo log been prepared?	✓		
c. Number of photos exposed (2)			

D. FIELD CONCLUSIONS			
1. Is there an imminent hazard to the integrity of the unit? (Immediate report required)		✓	
Person/Agency to whom report made:			
2. Are more frequent inspections required?		✓	
3. Are existing maintenance/repair actions satisfactory?	✓		
4. Is other maintenance/repair necessary?		✓	
5. Is current status/condition of vegetative cover satisfactory?	✓		

6. Rationale for field conclusions: The unit is in excellent condition. No issues or concerns noted.

E. CERTIFICATION

I have conducted an inspection of the Area 3 Underground Discharge Point, CAU 423, at the TTR in accordance with the Post-Closure Inspection Plan (see Closure Report) as recorded on this checklist, attached sheets, field notes, photo logs, and photographs.

Chief Inspector's Signature: [signature]	Printed Name: ALISSA TIBESAR
Title: TECHNICAL LEAD	Date: 11/9/04

CAU 424: AREA 3 LANDFILL COMPLEX, POST-CLOSURE INSPECTION CHECKLIST

Inspection Date: 11/9/04

Responsible Agency: NNSA/NSO ER	NNSA Project Manager: Janet L. Appenzeller-Wing
Date of Last Inspection: 7/16/04	Reason for Last Inspection: semi-annual
Inspector (name, title, organization): ALISSA TIBESAR, TECHNICAL LEAD, BN-ER	
Assistant Inspector (name, title, organization): SHAUGHN BURNISON, TASK MANAGER, BN-ER	

A. GENERAL INSTRUCTIONS

1. All checklist items must be completed and detailed comments made to document the results of the site inspection. The completed checklist is part of the field record of the inspection. Additional pages should be used as necessary to ensure that a complete record is made. Attach the additional pages and number all pages upon completion of the inspection.
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3. The site inspection is a walking 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.
4. A standard set of color 35 mm photographs (or equivalent) is required. In addition, all anomalous features or new features (such as changes in adjacent area land use) are to be photographed. A photo log entry will be made for each photograph taken.
5. This unit will be inspected biannually with formal reporting to the Nevada Division of Environmental Protection to be done annually. The annual report will include an executive summary, this inspection checklist with field notes and photo log attached, and recommendations and conclusions.

B. PREPARATION (To be completed prior to site visit)	YES	NO	EXPLANATION
1. Site as-built plans and site base map reviewed.	✓		
2. Previous inspection reports reviewed.	✓		
a. Were anomalies or trends detected on previous inspections?		✓	
b. Was maintenance performed?		✓	
3. Site maintenance and repair records reviewed.	✓		
a. Has site repair resulted in a change from as-built conditions?		✓	
b. Are revised as-builts available that reflect repair changes?		✓	n/A
C. SITE INSPECTION (To be completed during inspection)	YES	NO	EXPLANATION
1. Adjacent off-site features within watershed areas.			
a. Have there been any changes in use of adjacent area?		✓	
b. Are there any new roads or trails?		✓	
c. Has there been a change in the position of nearby washes?		✓	
d. Has there been lateral excursion or erosion/deposition of nearby washes?		✓	
e. Are there new drainage channels?		✓	
f. Change in surrounding vegetation?		✓	
2. Security fence, signs.			
a. Displacement of fences, site markers, boundary markers, or monuments?		✓	
b. Have any signs been damaged or removed? (Number of signs replaced: 6)		✓	
c. Were gates locked?		✓	no locks

CAU 424: AREA 3 LANDFILL COMPLEX, POST-CLOSURE INSPECTION CHECKLIST

3. Waste Unit cover.	YES	NO	EXPLANATION
a. Is there evidence of settling?	✓		cells A3-1 and A3-4 will be filled to grade
b. Is there cracking?		✓	
c. Is there evidence of erosion around the cap (wind or water)?		✓	
d. Is there evidence of animal burrowing?		✓	
e. Have the site markers been disturbed by man or natural processes?		✓	
f. Is the vegetation on the cover?		✓	
g. Do natural processes threaten to integrity of any cover or site marker?		✓	
h. Other?			
4. Photo Documentation			
a. Has a photo log been prepared?	✓		
c. Number of photos exposed (8)			
D. FIELD CONCLUSIONS			
1. Is there an imminent hazard to the integrity of the unit? (Immediate report required)		✓	
Person/Agency to whom report made:			
2. Are more frequent inspections required?		✓	
3. Are existing maintenance/repair actions satisfactory?	✓		
4. Is other maintenance/repair necessary?	✓		fill subsidence on cells A3-1 & A3-4
5. Is current status/condition of vegetative cover satisfactory?	✓		

6. Rationale for field conclusions: Landfill Cells A3-1 and A3-4 need to be filled to grade. Otherwise, there are no issues or concerns.

E. CERTIFICATION

I have conducted an inspection of the Area 3 Landfill Complex, CAU 424, at the TTR in accordance with the Post-Closure Inspection Plan (see Closure Report) as recorded on this checklist, attached sheets, field notes, photo logs, and photographs.

Chief Inspector's Signature:	Printed Name: ALISSA TIBESAR
Title: TECHNICAL LEAD	Date: 11/9/04

CAU 426: CACTUS SPRING WASTE TRENCHES, POST-CLOSURE INSPECTION CHECKLIST

Inspection Date: 11/9/04	
Responsible Agency: NNSA/NSO ER	NNSA Project Manager: Janet L. Appenzeller-Wing
Date of Last Inspection: 7/16/04	Reason for Last Inspection: Semi-Annual
Inspector (name, title, organization): ALISSA TIBBAR, TECH. LEAD, BN-ER	
Assistant Inspector (name, title, organization): Shaughn Burnison, Task Manager, BN-ER	

A. GENERAL INSTRUCTIONS

1. All checklist items must be completed and detailed comments made to document the results of the site inspection. The completed checklist is part of the field record of the inspection. Additional pages should be used as necessary to ensure that a complete record is made. Attach the additional pages and number all pages upon completion of the inspection.
3. Any checklist line item marked by an inspector in a SHADED BOX, must be fully explained or an appropriate reference to previous reports provided. The purpose of this requirement is to provide a written explanation of inspector observations and the inspector's rationale for conclusions and recommendations. Explanations are to be placed on additional attachments and cross-referenced appropriately. Explanations, in addition to narrative, will take the form of sketches, measurements, annotated site maps.
4. The site inspection is a walking 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.
5. A standard set of color 35 mm photographs (or equivalent) is required. In addition, all anomalous features or new features (such as changes in adjacent area land use) are to be photographed. A photo log entry will be made for each photograph taken.
6. This unit will be inspected biannually with formal reporting to the Nevada Division of Environmental Protection to be done annually. The annual report will include an executive summary, this inspection checklist with field notes and photo log attached, and recommendations and conclusions.

B. PREPARATION (To be completed prior to site visit)	YES	NO	EXPLANATION
1. Site as-built plans and site base map reviewed.	✓		
2. Previous inspection reports reviewed.	✓		
a. Were anomalies or trends detected on previous inspections?		✓	
b. Was maintenance performed?		✓	
3. Site maintenance and repair records reviewed.	✓		
a. Has site repair resulted in a change from as-built conditions?		✓	
b. Are revised as-builts available that reflect repair changes?		✓	n/a

C. SITE INSPECTION (To be completed during inspection)	YES	NO	EXPLANATION
1. Adjacent off-site features within watershed areas.			
a. Have there been any changes in use of adjacent area?		✓	
b. Are there any new roads or trails?		✓	
c. Has there been a change in the position of nearby washes?		✓	
d. Has there been lateral excursion or erosion/deposition of nearby washes?		✓	
e. Are there new drainage channels?		✓	
f. Change in surrounding vegetation?		✓	
2. Security fence, signs.			
a. Displacement of fences, site markers, boundary markers, or monuments?		✓	
b. Have any signs been damaged or removed? (Number of signs replaced: 0)		✓	
c. Were gates locked?	✓		

CAU 426: CACTUS SPRING WASTE TRENCHES, POST-CLOSURE INSPECTION CHECKLIST

3. Waste Unit cover.	YES	NO	EXPLANATION
a. Is there evidence of settling?		✓	
b. Is there cracking?		✓	
c. Is there evidence of erosion around the cap (wind or water)?		✓	
d. Is there evidence of animal burrowing?	✓		outside the fence
e. Have the site markers been disturbed by man or natural processes?		✓	
f. Do natural processes threaten to integrity of any cover or site marker?		✓	
g. Other?		✓	
4. Vegetative cover.			
a. Is perimeter fence or mesh fencing damaged?		✓	
b. Is there evidence of horses or rabbits on site?	✓		outside the fence
c. Is organic mulch and/or plants adequate to prevent erosion?	✓		
d. Are weedy annual plants present? If yes, are they a problem?	✓		Not a problem
e. Are seeded plant species found on site?	✓		
f. Is there evidence of plant mortality?		✓	
5. Photo Documentation			
a. Has a photo log been prepared?	✓		
c. Number of photos exposed (7)			

D. FIELD CONCLUSIONS			
1. Is there an imminent hazard to the integrity of the unit? (Immediate report required)		✓	
Person/Agency to whom report made:			
2. Are more frequent inspections required?		✓	
3. Are existing maintenance/repair actions satisfactory?	✓		
4. Is other maintenance/repair necessary?		✓	
5. Is current status/condition of vegetative cover satisfactory?	✓		

6. Rationale for field conclusions: The cover is in excellent condition. The fence and signs are in good condition. No issues or concerns were noted.

E. CERTIFICATION

I have conducted an inspection of the Cactus Spring Waste Trenches, CAU 426, at the TTR in accordance with the Post-Closure Monitoring Plan (see Closure Report) as recorded on this checklist, attached sheets, field notes, photo logs, and photographs.

Chief Inspector's Signature:	Printed Name: ALISSA TIBESAR
Title: TECHNICAL LEAD	Date: 11/9/04

CAU 427: AREA 3 SEPTIC WASTE SYSTEMS 2 & 6, POST-CLOSURE INSPECTION CHECKLIST

Inspection Date: 11/9/04	
Responsible Agency: NNSA/NSO ER	NNSA Project Manager: Janet L. Appenzeller-Wing
Date of Last Inspection: 7/16/04	Reason for Last Inspection: Semi-annual
Inspector (name, title, organization): ALISSA TIBESAR, TECH. LEAD, BN-ER	
Assistant Inspector (name, title, organization): Shaugh Burnison, Task Manager, BN-ER	

A. GENERAL INSTRUCTIONS

1. All checklist items must be completed and detailed comments made to document the results of the site inspection. The completed checklist is part of the field record of the inspection. Additional pages should be used as necessary to ensure that a complete record is made. Attach the additional pages and number all pages upon completion of the inspection.
2. Any checklist line item marked by an inspector in a SHADED BOX, must be fully explained or an appropriate reference to previous reports provided. The purpose of this requirement is to provide a written explanation of inspector observations and the inspector's rationale for conclusions and recommendations. Explanations are to be placed on additional attachments and cross-referenced appropriately. Explanations, in addition to narrative, will take the form of sketches, measurements, annotated site maps.
3. The site inspection is a walking 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.
4. A standard set of color 35 mm photographs (or equivalent) is required. In addition, all anomalous features or new features (such as changes in adjacent area land use) are to be photographed. A photo log entry will be made for each photograph taken.
5. This unit will be inspected biannually with formal reporting to the Nevada Division of Environmental Protection to be done annually. The annual report will include an executive summary, this inspection checklist with field notes and photo log attached, and recommendations and conclusions.

B. PREPARATION (To be completed prior to site visit)	YES	NO	EXPLANATION
1. Site as-built plans and site base map reviewed.	✓		
2. Previous inspection reports reviewed.	✓		
a. Were anomalies or trends detected on previous inspections?		✓	
b. Was maintenance performed?		✓	
3. Site maintenance and repair records reviewed.	✓		
a. Has site repair resulted in a change from as-built conditions?		✓	
b. Are revised as-builts available that reflect repair changes?		✓	N/A

C. SITE INSPECTION (To be completed during inspection)	YES	NO	EXPLANATION
1. Adjacent off-site features within watershed areas.			
a. Have there been any changes in use of adjacent area?		✓	
b. Are there any new roads or trails?		✓	
2. Security signs.			
a. Displacement of site markers, boundary markers, or monuments? (disturbed by man or natural processes?)		✓	
b. Have any signs been damaged or removed? (Number of signs replaced: 0)		✓	
c. Were all subsurface markers detected? (i.e., using a magnatometer or equivalent)	✓		

CAU 427: AREA 3 SEPTIC WASTE SYSTEMS 2 & 6, POST-CLOSURE INSPECTION CHECKLIST

3. Soil/aspharlt cover.	YES	NO	EXPLANATION
a. Is there evidence of settling?		✓	
b. Is there cracking?		✓	
c. Is there evidence of erosion near use restriction boundaries?		✓	
d. Is there evidence of animal burrowing?		✓	
e. Is there vegetation?		✓	
f. Do natural processes threaten to integrity of any cover or site marker?		✓	
g. Is there evidence suggesting unauthorized excavations have taken place?		✓	
e. Other?		✓	
4. Photo Documentation			
a. Has a photo log been prepared?	✓		
c. Number of photos exposed (6)			

D. FIELD CONCLUSIONS			
1. Is there an imminent hazard to the integrity of the unit? (Immediate report required)		✓	
Person/Agency to whom report made:			
2. Are more frequent inspections required?		✓	
3. Are existing maintenance/repair actions satisfactory?	✓		
4. Is other maintenance/repair necessary?		✓	

5. Rationale for field conclusions: The site is in excellent condition. No issues or concerns were noted.

E. CERTIFICATION

I have conducted an inspection of the Area 3 Septic Waste Systems 2 & 6, CAU 427, at the TTR in accordance with the Post-Closure Monitoring Plan (see Closure Report) as recorded on this checklist, attached sheets, field notes, photo logs, and photographs.

Chief Inspector's Signature: [signature]	Printed Name: ALISSA TIBESAR
Title: TECHNICAL LEAD	Date: 11/9/04

CAU 453: AREA 9 UXO LANDFILL, POST-CLOSURE INSPECTION CHECKLIST

Inspection Date: 11/10/04	
Responsible Agency: NNSA/NSO ER	NNSA Project Manager: Janet L. Appenzeller-Wing
Date of Last Inspection: 7/16/04	Reason for Last Inspection: Semi-Annual
Inspector (name, title, organization): ALISSA TIBESAR, TECH LEAD, BN-ER	
Assistant Inspector (name, title, organization): Staughn Burnison, Task Mgr, BN-ER	

A. GENERAL INSTRUCTIONS

1. All checklist items must be completed and detailed comments made to document the results of the site inspection. The completed checklist is part of the field record of the inspection. Additional pages should be used as necessary to ensure that a complete record is made. Attach the additional pages and number all pages upon completion of the inspection.
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4. A standard set of color 35 mm photographs (or equivalent) is required. In addition, all anomalous features or new features (such as changes in adjacent area land use) are to be photographed. A photo log entry will be made for each photograph taken.
5. This unit will be inspected biannually with formal reporting to the Nevada Division of Environmental Protection to be done annually. The annual report will include an executive summary, this inspection checklist with field notes and photo log attached, and recommendations and conclusions.

B. PREPARATION (To be completed prior to site visit)	YES	NO	EXPLANATION
1. Site as-built plans and site base map reviewed.	✓		
2. Previous inspection reports reviewed.	✓		
a. Were anomalies or trends detected on previous inspections?		✓	
b. Was maintenance performed?		✓	
3. Site maintenance and repair records reviewed.	✓		
a. Has site repair resulted in a change from as-built conditions?		✓	
b. Are revised as-builts available that reflect repair changes?		✓	N/A

C. SITE INSPECTION (To be completed during inspection)	YES	NO	EXPLANATION
1. Adjacent off-site features within watershed areas.			
a. Have there been any changes in use of adjacent area?		✓	
b. Are there any new roads or trails?		✓	
c. Has there been a change in the position of nearby washes?		✓	
d. Has there been lateral excursion or erosion/deposition of nearby washes?		✓	
e. Are there new drainage channels?		✓	
f. Change in surrounding vegetation?		✓	
2. Security fence, signs.			
a. Displacement of fences, site markers, boundary markers, or monuments?		✓	
b. Have any signs been damaged or removed? (Number of signs replaced: 0)		✓	
c. Were gates locked?		✓	NO lock

CAU 453: AREA 9 UXO LANDFILL, POST-CLOSURE INSPECTION CHECKLIST

3. Waste Unit cover.	YES	NO	EXPLANATION
a. Is there evidence of settling?		✓	
b. Is there cracking?		✓	
c. Is there evidence of erosion around the cap (wind or water)?		✓	
d. Is there evidence of animal burrowing?	✓		small around fence
e. Have the site markers been disturbed by man or natural processes?		✓	
f. Is vegetation present?	✓		
g. Do natural processes threaten to integrity of any cover or site marker?		✓	
h. Other?		✓	
4. Photo Documentation			
a. Has a photo log been prepared?	✓		
c. Number of photos exposed (2)			

D. FIELD CONCLUSIONS			
1. Is there an imminent hazard to the integrity of the unit? (Immediate report required)		✓	
Person/Agency to whom report made:			
2. Are more frequent inspections required?		✓	
3. Are existing maintenance/repair actions satisfactory?	✓	~~✓~~ A/M	
4. Is other maintenance/repair necessary?		✓	
5. Is current status/condition of vegetative cover satisfactory?	✓		

6. Rationale for field conclusions: The unit is in excellent condition. No issues or concerns were observed.

E. CERTIFICATION

I have conducted an inspection of the Area 9 UXO Landfill, CAU 453, at the TTR in accordance with the Post-Closure Inspection Plan (see Closure Report) as recorded on this checklist, attached sheets, field notes, photo logs, and photographs.

Chief Inspector's Signature: [signature]	Printed Name: ALISSA TIBBAR
Title: TECHNICAL LEAD	Date: 11/10/04

CAU 487: THUNDERWELL SITE, POST-CLOSURE INSPECTION CHECKLIST

Inspection Date: 11/10/04	
Responsible Agency: NNSA/NSO ER	NNSA Project Manager: Janet L. Appenzeller-Wing
Date of Last Inspection: 7/16/04	Reason for Last Inspection: Semi-Annual
Inspector (name, title, organization): ALISSA TIBESAR, TECH. LEAD, BN-ER	
Assistant Inspector (name, title, organization): Shaughn Burnison, TASK MGR, BN-ER	

A. GENERAL INSTRUCTIONS

1. All checklist items must be completed and detailed comments made to document the results of the site inspection. The completed checklist is part of the field record of the inspection. Additional pages should be used as necessary to ensure that a complete record is made. Attach the additional pages and number all pages upon completion of the inspection.
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3. The site inspection is a walking 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.
4. A standard set of color 35 mm photographs (or equivalent) is required. In addition, all anomalous features or new features (such as changes in adjacent area land use) are to be photographed. A photo log entry will be made for each photograph taken.
5. This unit will be inspected biannually with formal reporting to the Nevada Division of Environmental Protection to be done annually. The annual report will include an executive summary, this inspection checklist with field notes and photo log attached, and recommendations and conclusions.

B. PREPARATION (To be completed prior to site visit)	YES	NO	EXPLANATION
1. Site as-built plans and site base map reviewed.	✓		
2. Previous inspection reports reviewed.		✓	N/A
a. Were anomalies or trends detected on previous inspections?		✓	
b. Was maintenance performed?		✓	
3. Site maintenance and repair records reviewed.	✓		
a. Has site repair resulted in a change from as-built conditions?		✓	
b. Are revised as-builts available that reflect repair changes?		✓	N/A

C. SITE INSPECTION (To be completed during inspection)	YES	NO	EXPLANATION
1. Adjacent off-site features within watershed areas.			
a. Have there been any changes in use of adjacent area?		✓	
b. Are there any new roads or trails?		✓	
c. Has there been a change in the position of nearby washes?		✓	
d. Has there been lateral excursion or erosion/deposition of nearby washes?		✓	
e. Are there new drainage channels?		✓	
f. Change in surrounding vegetation?		✓	
2. Security fence, signs.			
a. Displacement of fences, site markers, boundary markers, or monuments?		✓	
b. Have any signs been damaged or removed? (Number of signs replaced: 0)	N/A	✓	NO signs are present

CAU 487: THUNDERWELL SITE, POST-CLOSURE INSPECTION CHECKLIST

3. Waste Unit cover.	YES	NO	EXPLANATION
a. Is there evidence of settling?		✓	
b. Is there evidence of animal burrowing?	✓		Minor
c. Have the site markers been disturbed by man or natural processes?		✓	
d. Other?		✓	
4. Photo Documentation			
a. Has a photo log been prepared?	✓		
c. Number of photos exposed (8)			
D. FIELD CONCLUSIONS			
1. Is there an imminent hazard to the integrity of the unit? (Immediate report required)		✓	
Person/Agency to whom report made:			
2. Are more frequent inspections required?		✓	
3. Are existing maintenance/repair actions satisfactory?	✓		
4. Is other maintenance/repair necessary?	✓		signs will be hung
5. Is current status/condition of vegetative cover satisfactory?	✓		
6. Rationale for field conclusions: The unit is in good condition. Use Restriction signs need to be hung on the monuments.			

E. CERTIFICATION

I have conducted an inspection of the Area 9 UXO Landfill, CAU 453, at the TTR in accordance with the Post-Closure Inspection Plan (see Closure Report) as recorded on this checklist, attached sheets, field notes, photo logs, and photographs.

Chief Inspector's Signature: [signature]	Printed Name: ALISSA TIBESAR
Title: TECHNICAL LEAD	Date: 11/10/04

APPENDIX D

FIELD NOTES

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7 July 04

TTR Post Closure Inspections

Brad Jackson, Kevin Cobble, Ted Z

1410 - CAV 407 - Minor erosional rills are present on the cover margins. Some sparse vegetation is present and is definately better established than previous inspections. The fence is intact and is in good condition. One red-posting sign on the southwest area of the site is beginning to fade and should be replaced at some point in the future when fading effects legibility. Work to fix areas of erosion and revegetation was discussed with NNSA/NDEP. Work will be scheduled for late FY04 - early FY05 based on funding availability. The cover is well over the 2' construction requirement so the erosion has not compromised the integrity of the cover design. A good vegetative cover will minimize the erosion problem in the future.

1444 - CAV 404 - The cover, fence, and signs are in good condition. Vegetation is healthy and well established. Some minor burrows of small animals are present along the fence and cover margins. No noticable erosion was observed on the cover.

1505 - CAV 400 (Bomblet Pit) - Fence and signs are in good condition and vegetation within the fence is in good condition. Vegetation within the fence is not as well established as that outside the fence. Numerous bomblet fragments and halfs are present outside the fenced area.

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DISCLOSED TO AND UNDERSTOOD BY	DATE	WITNESS	DATE

1515 - CAV 400 (Five-Points LF) - Extensive flooding has occurred at the site at some time after the Dec 03 inspection. Flowing water has entered the fenced area on the east side of the site via a deep channel and water filled the main area of the site along the adjacent road. The road has damaged the natural flow of water at the site. Mud has covered the vegetation which now appears dead. The fence on the east side of the site has an approximately 50' section that is washed out. Work to repair the damaged fence and revegetate the site were discussed with NNSA/NDEP, and will be scheduled in conjunction with work at CAV 407. Work will be scheduled for late FY04 or early FY05, based on funding, availability.

1535 - CAV 453 - fencing, signs, monuments, and landfill covers are in good condition. No areas of erosion or subsidence were observed on the landfill covers. A few small animal burrows were present along and within the fenced area. A large rabbit was present within the fenced area.

1553 - CAV 424 (A3-2) - landfill monuments and signs are in good condition and no areas of erosion, subsidence, or unauthorized use were observed.

1607 - CAV 424 (A3-1) - landfill monuments and signs are in good condition. Some burrows present. An area of potential settling was reviewed with NNSA-NDEP. It is unknown if this is due to settling or is a pre-existing artifact from site closure. The elevation difference is minimal but will be filled in conjunction with work planned at CAVS 400 and 407.

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CAU 424 (A3-1) - Continued
Work to fill the apparent low area will be scheduled for late FY04 or early FY05 pending funding availability. The work may be done by Westinghouse. We will check on this.
1621 - CAU 424 (A3-5) - Landfill monuments and signs are in good condition. No areas of subsidence, erosion, or unauthorized use were observed. Some small animal burrows.
1647 - CAU 424 (A3-6) - Landfill monuments and signs are in good condition. No areas of erosion, subsidence, or unauthorized use were observed. Some small animal burrows are present.
1707 - CAU 424 (A3-8) - A portion of the site including two monuments are present within a fenced area posted as an RMA. One at-grade monument was visually located within the RMA and the second could not be located due to surface debris. All other monuments were located and are in good condition. No areas of erosion, subsidence, or unauthorized use were observed.
1718 - CAU 424 (A3-4) All landfill monuments and signs are in good condition. Some small animal burrows are present. An area of potential settling was reviewed with NNSA-NDEP. It is unknown if the low area is due to settling or is a pre-existing artifact from site closure. The elevation difference is minimal but will be filled in conjunction with other work planned for CAU 400, 407, & Cell A3-1. Work will be scheduled for late FY04 or early FY05 pending funding availability. Will also check to see if Westinghouse could assist with this work.

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1732 - CAV 424 (A3-3) All above-grade and at-grade monuments were in good condition including signs. No evidence of subsidence, erosion, or unauthorized land use was observed.

1758 - CAV 426 (Cactus Spring Waste Trench) - Fencing and signs are in good condition. The cover and vegetation were also in good condition. No erosion, subsidence, or unauthorized land use was observed.

1845 - CAV 427 (Septic System 2 & 6) - All subsurface leachfield markers were verified by the presence of red rock. Two markers were covered with ground and vegetation mixed material, which is expected at the time of the inspection. All signs were in good condition.

* Discussion with NNSA-NDEP indicated that CAV 423 should be added to the list for inspections since waste is closed in place with LVRs.
* CAV 487 was not inspected at the direction of NNSA-NDEP. This site will be included in future inspections.
* Inspection results, and proposed work were reviewed with NNSA-NDEP and no issues resulted. Work will proceed as planned.

EOR
7/7/04

SIGNATURE			DATE
			07 JUL 04
DISCLOSED TO AND UNDERSTOOD BY	DATE	WITNESS	DATE

11/9/04

Personell- Alissa Tibesar (TL)
Shaughn Burnison (TM)
Brad Jackson (Tech. Mgr.)

Visitors- Ted ~~Zaferatos~~ (NDEP)
Kevin Cabble (DOE)

Equipment - digital camera

weather - cloudy, 50's

SOW- perform Inspections of CAU 400, 404, 407, 423, 424, 426, 427, 453, 487

1:00 pm- ~~Departed~~ Bn Field Office

1:10 - Arrived at CAU 424 Area 3 Landfill Cell A3-3
- Walked the site & observed the integrity and condition of the monuments, signs, and cover area.
- All 9 monuments (6 at grade and 3 above grade) ~~are~~ AJT are in good condition. Brass markers are in good condition
- All signs are in good condition and legible.
- No subsidence or erosion is present
- Sparse vegetation is present along the fenceline
- Some vegetation growing on SW corner of the unit.

1:38 - Arrived at CAU 424 Area 3 Landfill Cell A3-8
- Walked the site to observe integrity & condition of the 4 at-grade monuments and cover.
- 3 of the 4 monuments were located and are in good condition. The fourth is covered by rubber tires
- A great amount of debris is present in the fenced area.
- No erosion or subsidence is observed.

Work continued to Page 31

SIGNATURE			DATE
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1:50 - Arrived at CAU 424 Area 3 Landfill Cell A3-4
- Walked site to observe integrity and condition of the monuments, signs, and cover.
- Depressed/low areas are observed with no change since the last inspection
- These areas will be filled to grade before the end of calendar year 04.
- Five above-grade monuments and one at-grade monument were located and inspected
- All signs are in good condition and legible
- All monuments are in good condition
- Vegetation is present on the cover, but not as well established as on the adjacent areas.

2:00 - Arrived at CAU 424 Area 3 Landfill Cell A3-6
- Walked the site to observe the condition of the 4 above-grade monuments, signs, and cover.
- All signs were legible and in good condition.
- All monuments are in good condition.
- no evidence of subsidence or erosion was observed.
- The unit is in good condition overall.

2:10 - Arrived at CAU 424 Area 3 Landfill Cell A3-2
- Located ~~and~~ AJT all four (4) above-grade monuments
- All signs were legible and in good condition
- All monuments are in good condition
- Sparse vegetation is present on ~~the~~ cover
- The overall condition of cell A3-2 is good.

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			11/9/04
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2:20 - Arrived at CAU 424 Area 3 Landfill Cell A3-1
- Walked the site and observed the condition of the 7 above-grade monuments, signs, and cover
- A depressed/low area is present in the NE corner of the site. The area will be filled with clean fill to grade before the end of December 04.
- All signs and monuments are in good condition.
- Sparse vegetation is present on the cover.
- The overall condition of the cover remains good.

2:35 - Arrived at CAU 424 Area 3 Landfill Cell A3-5
- Walked the site and located all 4 above-grade monuments
- The vegetation on the cover appears to be consistent with the adjacent area.
- All signs are legible and in good condition.
- All monuments are in good condition.
- No evidence of subsidence, erosion, or cracking is evident.
- The overall condition of the cover is good.

2:45 - Arrived at CAU 423 Area 3 Underground Discharge Point
- One sign and one at-grade monument were observed and are in good condition.
- Vegetation is present that is consistent with the adjacent area.
- The unit is in good condition
- No issues or concerns are noted.

Work continued to Page 33

SIGNATURE			DATE
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3:00 - Arrived at CAU 427 Area 3 Septic Waste Systems 2 & 6
~~2 & 6 A11~~ (Septic Tank 33-5)
- 5 underground markers SE of Bldg 0367 and one sign were located and found to be in good condition.
- 4 underground markers were located west of Bldg 0367 and one sign on the west wall of Bldg 0367 were located and found to be in good condition. (Pre-1965 Leachfield)
- Remaining 12 underground markers around Bldg 0370 were located and found to be in good condition. (Abandoned Leachfield, Leachfield A, and Leachfield B.).
- The 3 signs posted on Bldg 0370 were legible and in good condition.
- No issues or concerns were noted.

3:25 - Arrived at CAU 426 Cactus Spring Waste Trenches
- The fence was walked, and the condition of the fence, signs, and cover was observed.
- Several small animal burrows and horse droppings were noted outside the fence
- The fence is in excellent condition and the wire mesh has not been breached by animals
- The signs are legible and in good condition
- The vegetation is healthy and has successfully prevented any erosion to the soil cover.
- No subsidence, erosion, or cracking is evident on the cover.
- The overall condition of the unit is good.

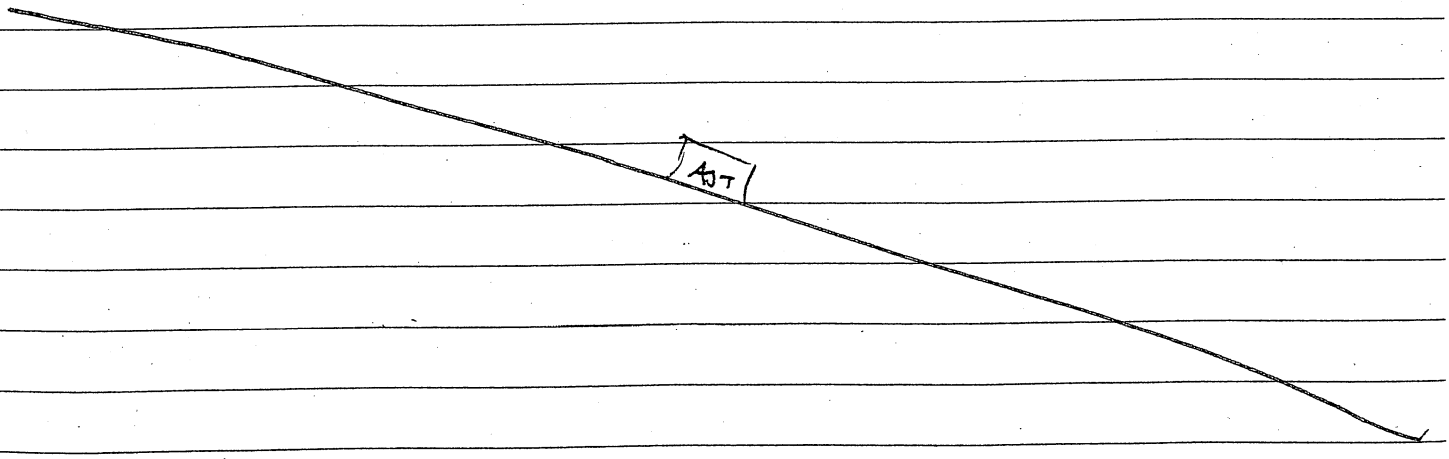
Work continued to Page 34

SIGNATURE			DATE 11/9/04
DISCLOSED TO AND UNDERSTOOD BY	DATE	WITNESS	DATE

3:55 - Arrived at CAU 407 Roller Coaster Radsafe Area
- Walked the fence to observe condition of the fence, signs, and cover.
- Erosion rills along the cover margin are present. There is no significant change since the last inspection. The rills will be filled in with clean soil and the cover will be re-vegetated to prevent further erosion. The repair will take place in CY 04.
- The fence and signs are in good condition.
- No subsidence was observed on the cover.
- Evidence of small animals and horse droppings are present outside the fence.

4:10 - Arrived at CAU 404 Roller Coaster Lagoons & Trench
- Walked the fence to observe condition of the unit.
- Vegetation on the cover is good and healthy.
- The fence is in good condition
- The signs are legible and in good condition
- Some animal burrows are present outside the fence.
- The overall condition of the unit is good.

4:30 - Not enough light was available to continue taking photographs



Work continued to Page N/A

SIGNATURE			DATE 11/9/04
DISCLOSED TO AND UNDERSTOOD BY	DATE	WITNESS	DATE

11/10/04

Personell - ALISSA TIBESAR (TL)
SHAUGHN BURNISON (TM)
BRAD JACKSON (Tech. Mngr)

Visitors - Ted Zaferatos (NDEP)
KEVIN CABBLE (DOE)

Equipment - DIGITAL CAMERA

WEATHER - partly Cloudy, 40's

SOW - Finish post-closure inspections at CAU 400, 453, 487

9:15 - Arrived at CAU 400 Bomblet Pit
- Walked fence to observe condition of fence, signs, and soil cover.
- Horse droppings and animal burrows present outside the fence
- Some evidence of small animal instrusion beneath the mesh chicken wire.
- Several half shells of bomblets are present outside (east of) the fence, in the road, and in surrounding area.
- Vegetation is growing on the cover, but is not as established as the surrounding areas.
- The barbed wire fence and T-posts are in good condition.
- No subsidence, erosion, or cracking is evident on the cover.
- The overall condition of the unit is good.

10:10 - Arrived at CAU 400 5 Points Landfill
- Walked the fence to inspect the condition of the fence, signs, and cover.
- Vegetation in the ~~center~~ west end (MT) of the cover is dead, and the ground is dry and cracked. This is a basin area fed by the wash
- The fence has been washed out at the entrance to the wash

SIGNATURE			DATE
			11/10/04
DISCLOSED TO AND UNDERSTOOD BY	DATE	WITNESS	DATE

- coyote tracks were noticed in the soft sand within the wash
- ~~tire~~ tracks were evident as being driven over the collapsed fence into the fenced area.
- the cover will be re-seeded, and some form of water diversion will be employed before the end of calendar year 2004.
- several animal burrows are present inside and outside the fence.

10:45 - Arrived at CAU 453 Area 9 UXO Landfill
- walked site to inspect chain-link fence, signs, monuments, and soil cap.
- The fence is in excellent condition.
- The signs are legible and in good condition.
- The vegetation on the cover ~~is~~ is healthy & established
- No evidence of animal intrusion onto the cover was observed.
- No subsidence, erosion, or cracking is observed.
- The 16 above-ground monuments are in good condition
- A few minor burrows are present on the original borrow pit.

11:15 - Arrived at CAU 487 Thunderwell Site
- The site was walked to observe the condition of the monuments and cover.
- No signs are currently present on the monuments. The signs will be hung before the end of 2004
- The site is otherwise in good condition
- Some standing water is present at the construction landfill

Work continued to Page 37

SIGNATURE			DATE 11/10/04
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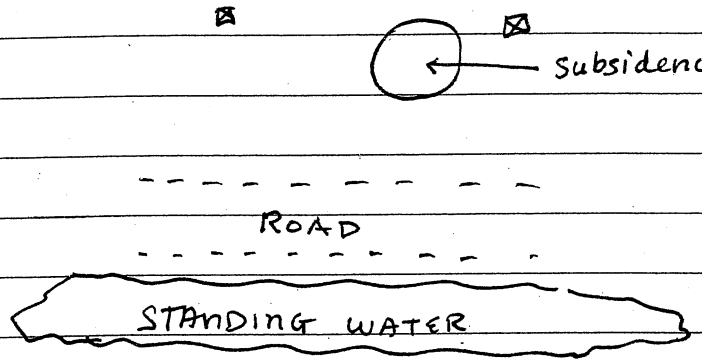
- Subsidence and cracking on the sides of the road is present at the construction landfill
- Debris at the construction landfill needs to be picked up
- It is recommended that the area of subsidence be filled and the soil cover sloped away from the site to prevent standing water from accumulating



AJT

SIGNATURE			DATE 11/10/04
DISCLOSED TO AND UNDERSTOOD BY	DATE	WITNESS	DATE

170 **PROJECT NO.** CAU 407 **TITLE** CAU 407 REPAIRS 30-NOV-04

BOOK NO. 1 **Work continued from Page** NA

29-NOV-04

PERSONNEL - SHAUGHN BURNISON (TM)

WILLIAM TEMPLETON (SUPER)

CHARLES LINGENFELTER (LABOR)

KELLEY STILLWELL (LABOR)

TOM SEAVER (OPERATOR)

SCOTT ROADHOUSE (RCT)

DAVE ANDERSON (BIOLOGIST)

VISITORS -

EQUIPMENT - 3 CU YD LOADER (PROVIDED BY WESTINGHOUSE)

CAT GRADER W/ STARFIRE RIPPER (PROVIDED BY WESTINGHOUSE)

HANDTOOLS (RAKES, SHOVELS, T-POST POUNDER)

KAWASAKI MULE WITH CHAIN DRAG HARROW

& MOUNTED SEEDER

WEATHER - COLD, 5°-20° F, CLEAR, SLIGHT BREEZE

CAU 407:

SOW - REPAIR EROSION RILLS ON COVER SIDE-SLOPES BY ADDITION OF CLEAN FILL & TAMP AS POSSIBLE WHILE WORKING ENTIRELY FROM COVER SURFACE, RIP THE TOP 4 INCHES OF COVER, THEN TILL & HARROW, RESEED COVER TOP & SIDES. LAY OUT EROSION BLANKET TO PROTECT COVER. IRRIGATE AS NECESSARY TO ENSURE REVEGETATION.

CAU 400: ANCHOR BALES IN WASH (SEE PG 172) CAU 487: MOUNT 16 SIGNS (SEE PG 172)

0700 AM - WORK PARTY MEETS AT AREA 3 OFFICE. SAFETY BRIEFING & WORK SCOPE OVERVIEW. REVIEW WORK PACKAGE, RWP, & PTHR.

07:45 - TM MEETS WITH GERRY ELLISTON TO ARRANGE EQUIPMENT & REVIEW PROGRESS.

Work continued to Page 171

SIGNATURE			DATE 30 NOV '04
DISCLOSED TO AND UNDERSTOOD BY	DATE	WITNESS	DATE

CONTINUED...

PROGRESS NOTES: CAU
424 A3-1, ½ completed } filling subsidence
424 A3-4, completed }
400 FENCE REPAIR, completed
487 SUBSIDENCE / STANDING WATER DISCUSSED; WILL REVIEW W/ TTR SUPER.

08:00 - 08:~~50~~ VERIFICATION OF RWP ISSUES WITH RADCON PRIOR TO DEPARTURE FOR SITE.
(FULL PPE REQ'D WHILE ON COVER, WITHIN FENCE LINE.)
RCT BRIEFING OF STAFF WORK CREW.

09:00 ARRIVE ON-SITE. GRADER & LOADER STAGED ON SITE.
RESEEDING & IRRIGATION STAGED ON SITE.
CIRCUMVENT SITE TO REVIEW SOW.

09:15 to 10:25 OPERATOR DRESSES OUT, BEGINS MOVING FILL. MECHANICALLY FILLS & (TYVEK SUIT, GLOVES, BOOTIES) USES THE BUCKET TO DRAG UP THE SLOPE TO TAMP FILL INTO RILLS & SMOOTH SURFACE.

10:25 to 11:00 OPERATOR PARKS LOADER, BEGINS RIPPING UNDER DIRECTION OF SUPERVISOR & BIOLOGIST → (ALSO DRESSED OUT TYVEK, GLOVES, BOOTIES)
11:00 RCT Surveys out GRADER, BIOLOGIST & OPERATOR DOFF PPE
11:10 ~~BEGIN~~ ~~TRA~~ GATE CLOSED - DEPART FOR LUNCH.

12:15 REGROUP AT OFFICE - UPDATE R.B. JACKSON BY PHONE ON THE DAYS PROGRESS
DAVE ANDERSON HAS DETERMINED THE FUEL PUMP ON KAWASAKI MULE HAS FAILED. ARRANGEMENTS FOR REPLACEMENT ARE IN PROGRESS.

Work continued to Page 172

SIGNATURE			DATE
Shaughn A Burnett			30-NOV-04
DISCLOSED TO AND UNDERSTOOD BY	DATE	WITNESS	DATE

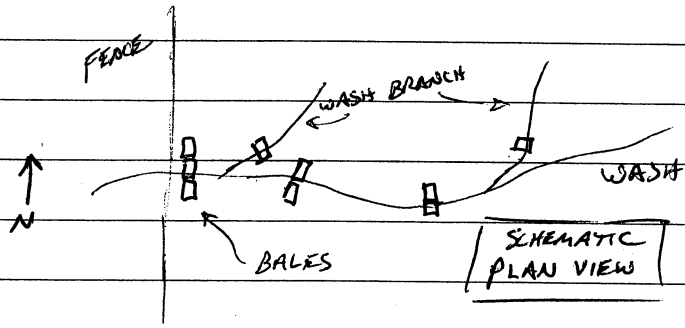
172 **PROJECT NO.** CAU 400 & 487 **TITLE** CAU 400 & 487 MAINTENANCE

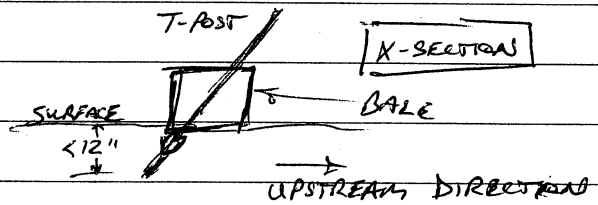
BOOK NO.

Work continued from Page 171

12:40 DEPART OFFICE FOR CAU 400 – FIVE POINTS LANDFILL

12:55 ARRIVE CAU 400. WALK SITE TO VERIFY LOCATION OF BALES, PRESENCE OF T-POSTS. PROCEED TO ANCHOR STRAW BALES AS CHECK DAMS IN THE WASH ENTERING FENCED SITE FROM THE EAST. HAND T-POST POUNDER USED, + SLEDGE HAMMER. CARE TAKEN TO LIMIT PENETRATION TO ≤ 12" (VERTICAL). T-POSTS POUNDED AT STEEP ANGLE THROUGH BALES.





2:00 – 2:20 DEPART CAU 400; ARRIVE CAU 487 THUNDERWELL

2:20 – 2:45 MOUNT SIGNS: USE HILTI COMPRESSION DRILL 1/4" & POWERED BY HONDA GENERATOR TO DRILL TWO HOLES/SIGN.

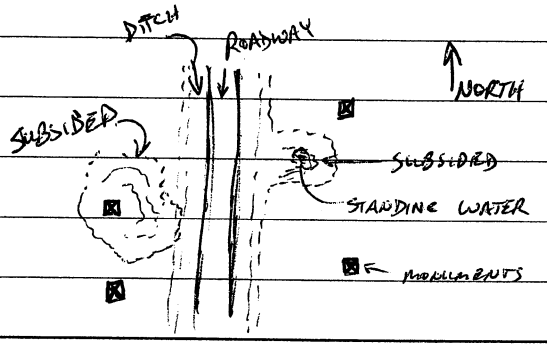
2:50 – 3:10 ATTACH WITH EXPANDING FASTENERS. TWO SEPARATE LANDFILL SITES, 4 MONUMENTS EACH.

AT LANDFILL BISECTED BY ROAD, ONE MONUMENT SITS (NW) IN A SUBSIDED AREA.

NOTE: OFFSETS OF SUBS'D MONUMENT NEEDED.

4 x 25' OFFSETS STAKED N, S, E, W

CAU 487 THUNDERWELL (CONSTRUCTION LANDFILL)



Work continued to Page 173

SIGNATURE			DATE 30-Nov-04
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3:30 - ~~5:00~~ PM Work at office - finish notes - write Daily Field Report

Tomorrow's activities: drive by CAU 424 Area 3 - 4 landfill site to view completed subsidence repairs.

... discuss CAU 487 subsidence repair options with Westinghouse staff

... obtain photographs of CAU 400 site if possible

... obtain photographs of CAU 424 site if possible

... place whisker rails at CAU 487 site offset stakes. Flag stakes

... ensure progress on reseeding - replacement fuel pump is on the way & will be here in the morning.

... get photographed & badged.

... return to NTS.

SIGNATURE			DATE
DISCLOSED TO AND UNDERSTOOD BY	DATE	WITNESS	DATE 30-Nov-04

APPENDIX E

PHOTOGRAPHS

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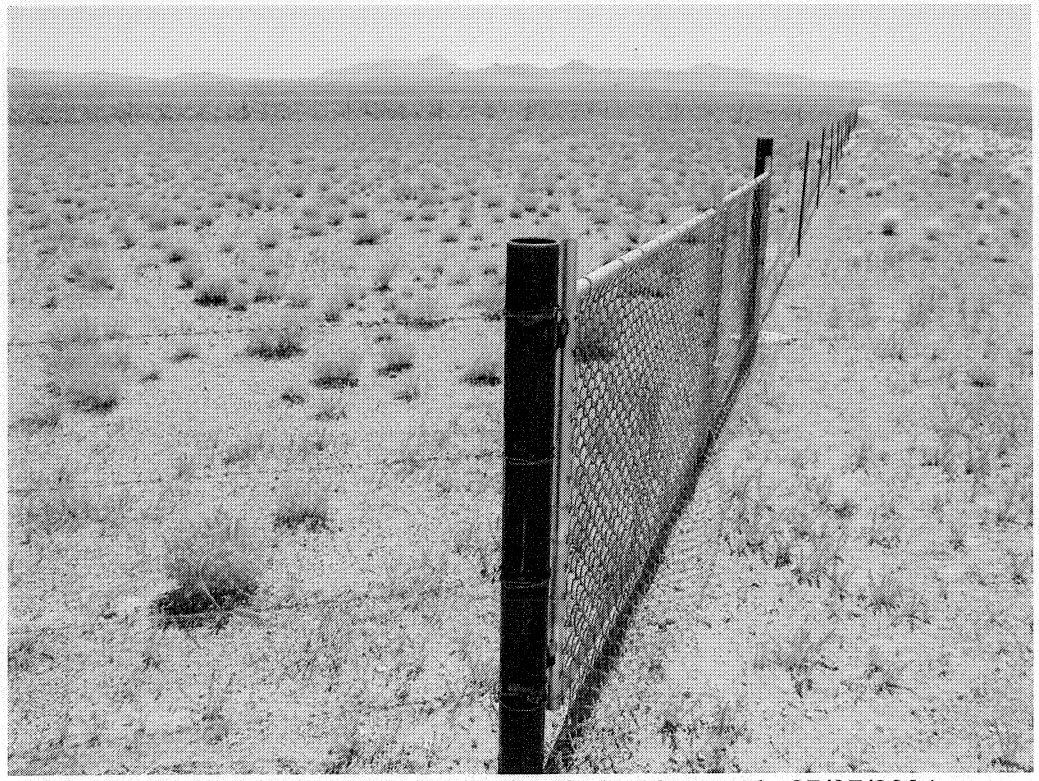
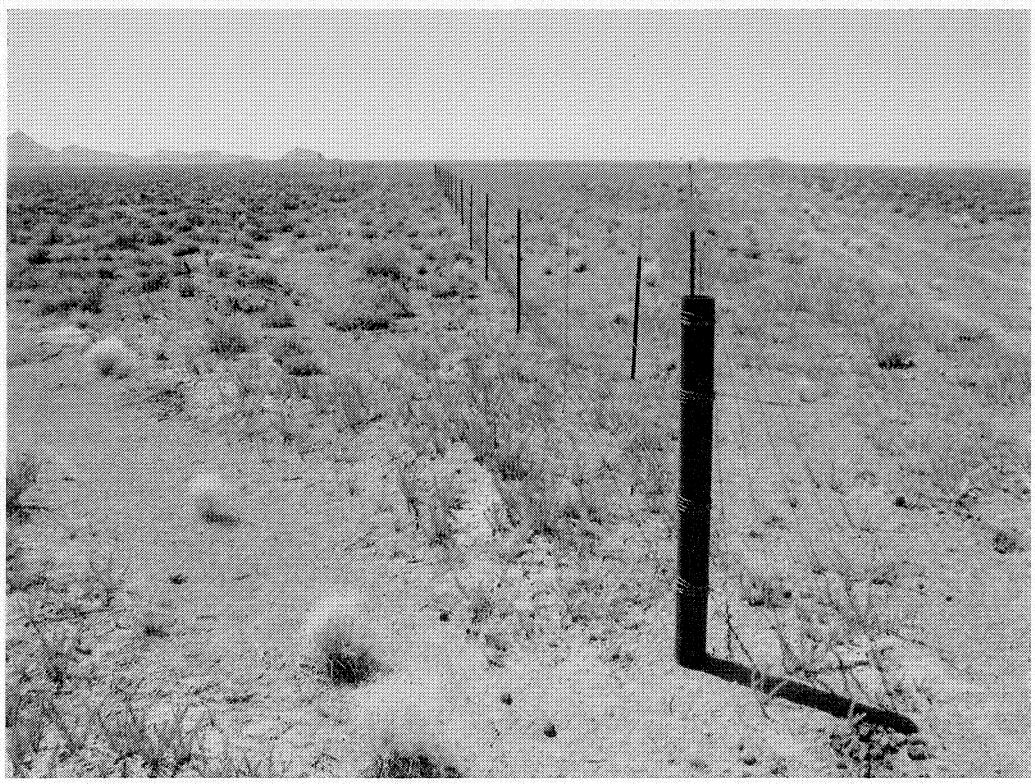
PHOTOGRAPH LOG		
Photograph Number	**Date**	**Photograph Description**
1	07/07/2004	CAU 400 Bomblet Pit, looking north
2	11/10/2004	CAU 400 Bomblet Pit, looking north
3	07/07/2004	CAU 400 Bomblet Pit, looking south
4	11/10/2004	CAU 400 Bomblet Pit, looking south
5	07/07/2004	CAU 400 Five Points Landfill, looking east
6	11/10/2004	CAU 400 Five Points Landfill, looking east
7	07/07/2004	CAU 400 Five Points Landfill, fence damage, looking east
8	11/10/2004	CAU 400 Five Points Landfill, fence damage, looking east
9	11/16/2004	CAU 400 Five Points Landfill, Reseeding
10	11/16/2004	CAU 400 Five Points Landfill, Reseeding
11	11/16/2004	CAU 400 Five Points Landfill, Reseeding
12	11/16/2004	CAU 400 Five Points Landfill, Reseeding
13	07/07/2004	CAU 404, looking east
14	11/09/2004	CAU 404, looking east
15	07/07/2004	CAU 407, looking east
16	11/09/2004	CAU 407, looking east
17	07/07/2004	CAU 407, Erosion rills on the east side of the cover
18	11/09/2004	CAU 407, Erosion rills on the east side of the cover
19	11/30/2004	CAU 407, Erosion Repair
20	11/30/2004	CAU 407, Erosion Repair
21	12/01/2004	CAU 407, Reseeding
22	12/01/2004	CAU 407, Reseeding
23	12/01/2004	CAU 407, Erosion Blanket
24	12/01/2004	CAU 407, Erosion Blanket
25	07/07/2004	CAU 423, looking east
26	11/09/2004	CAU 423, looking east
27	07/07/2004	CAU 424, Landfill Cell A3-1, looking northeast
28	11/09/2004	CAU 424, Landfill Cell A3-1, looking south
29	07/07/2004	CAU 424, Landfill Cell A3-2, looking north
30	11/09/2004	CAU 424, Landfill Cell A3-2, looking north
31	07/07/2004	CAU 424, Landfill Cell A3-3, looking north
32	11/09/2004	CAU 424, Landfill Cell A3-3, looking east
33	07/07/2004	CAU 424, Landfill Cell A3-3, looking north
34	11/09/2004	CAU 424, Landfill Cell A3-3, looking north
35	07/07/2004	CAU 424, Landfill Cell A3-4, looking north
36	11/09/2004	CAU 424, Landfill Cell A3-4, looking north
37	07/07/2004	CAU 424, Landfill Cell A3-5, looking southeast
38	11/09/2004	CAU 424, Landfill Cell A3-5, looking southeast
39	07/07/2004	CAU 424, Landfill Cell A3-6, looking northwest
40	11/09/2004	CAU 424, Landfill Cell A3-6, looking northwest
41	11/09/2004	CAU 424, Landfill Cell A3-8, looking west

PHOTOGRAPH LOG		
Photograph Number	**Date**	**Photograph Description**
42	11/09/2004	CAU 424, Landfill Cell A3-8, looking west
43	07/07/2004	CAU 426, looking north
44	11/09/2004	CAU 426, looking north
45	07/07/2004	CAU 427, looking north
46	11/09/2004	CAU 427, looking north
47	07/07/2004	CAU 427, looking south
48	11/09/2004	CAU 427, looking south
49	07/07/2004	CAU 453, looking west
50	11/10/2004	CAU 453, looking west
51	11/10/2004	CAU 487, A-17 anomaly, looking west
52	11/10/2004	CAU 487, A-8 anomaly, looking west



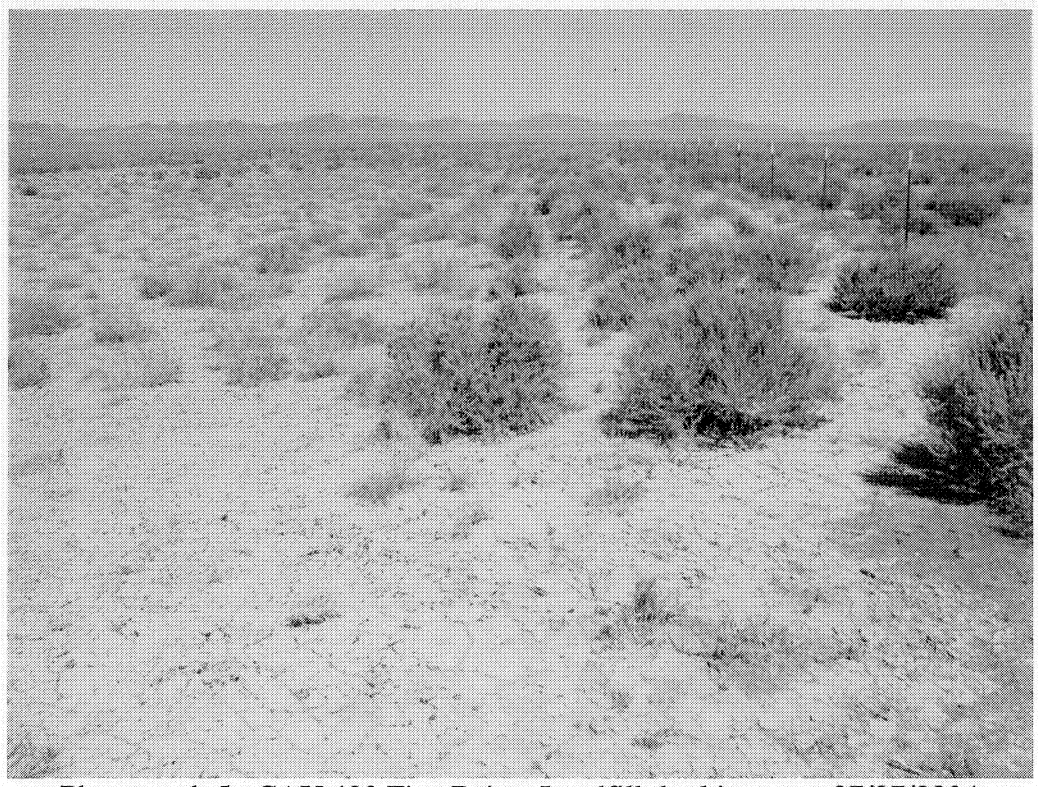
Photograph 1: CAU 400 Bomblet Pit, looking north, 07/07/2004

Photograph 2: CAU 400 Bomblet Pit, looking north, 11/10/2004



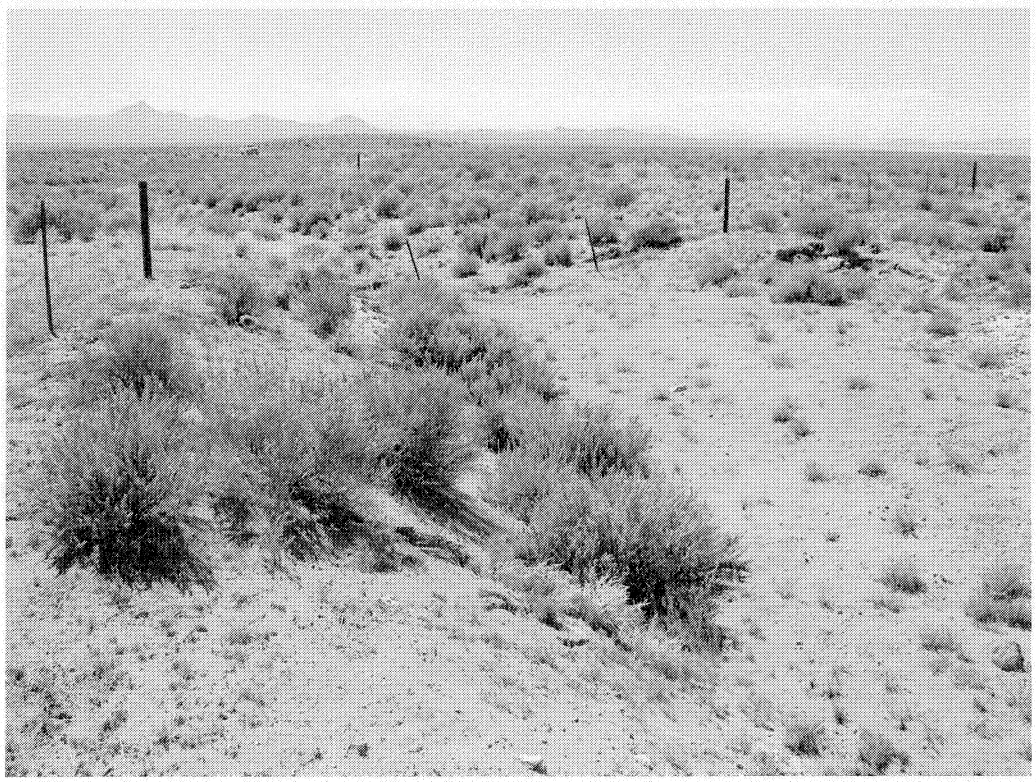
Photograph 3: CAU 400 Bomblet Pit, looking south, 07/07/2004

Photograph 4: CAU 400 Bomblet Pit, looking south, 11/10/2004



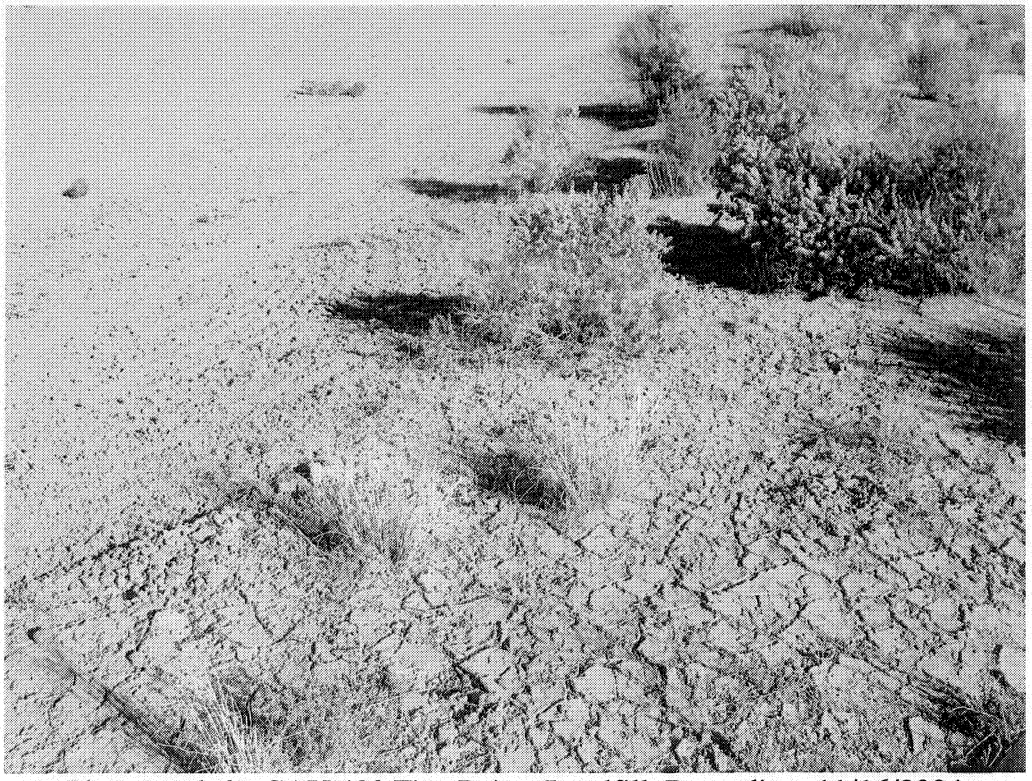
Photograph 5: CAU 400 Five Points Landfill, looking east, 07/07/2004

Photograph 6: CAU 400 Five Points Landfill, looking east, 11/10/2004



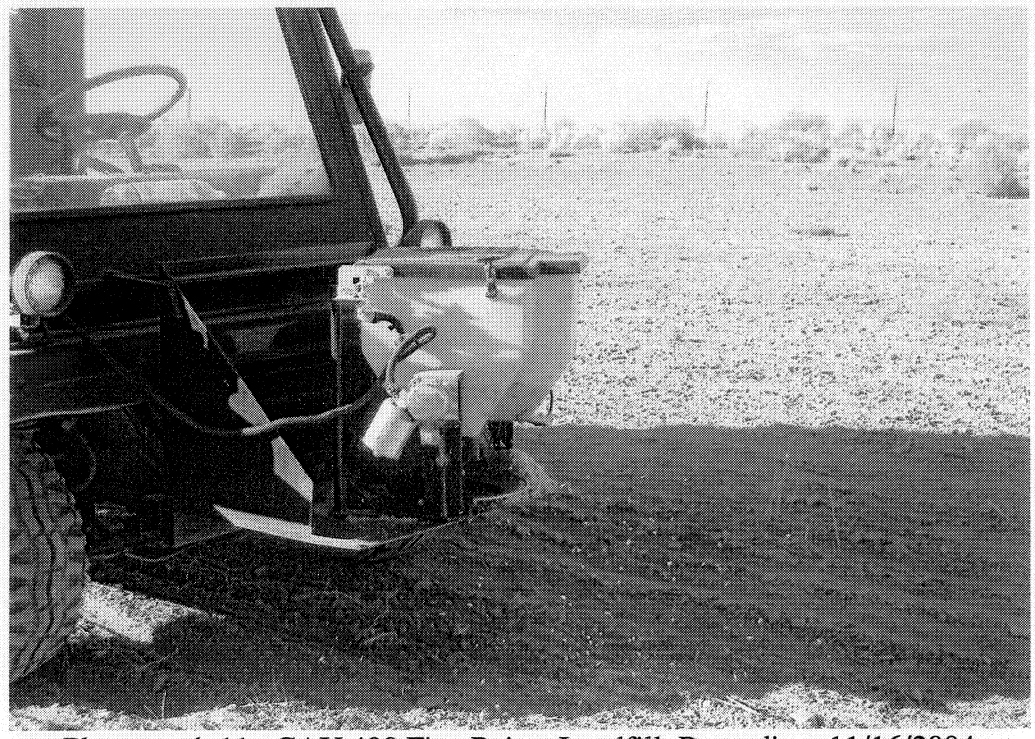
Photograph 7: CAU 400 Five Points Landfill, fence damage, looking east, 07/07/2004

Photograph 8: CAU 400 Five Points Landfill, fence damage, looking east, 11/10/2004

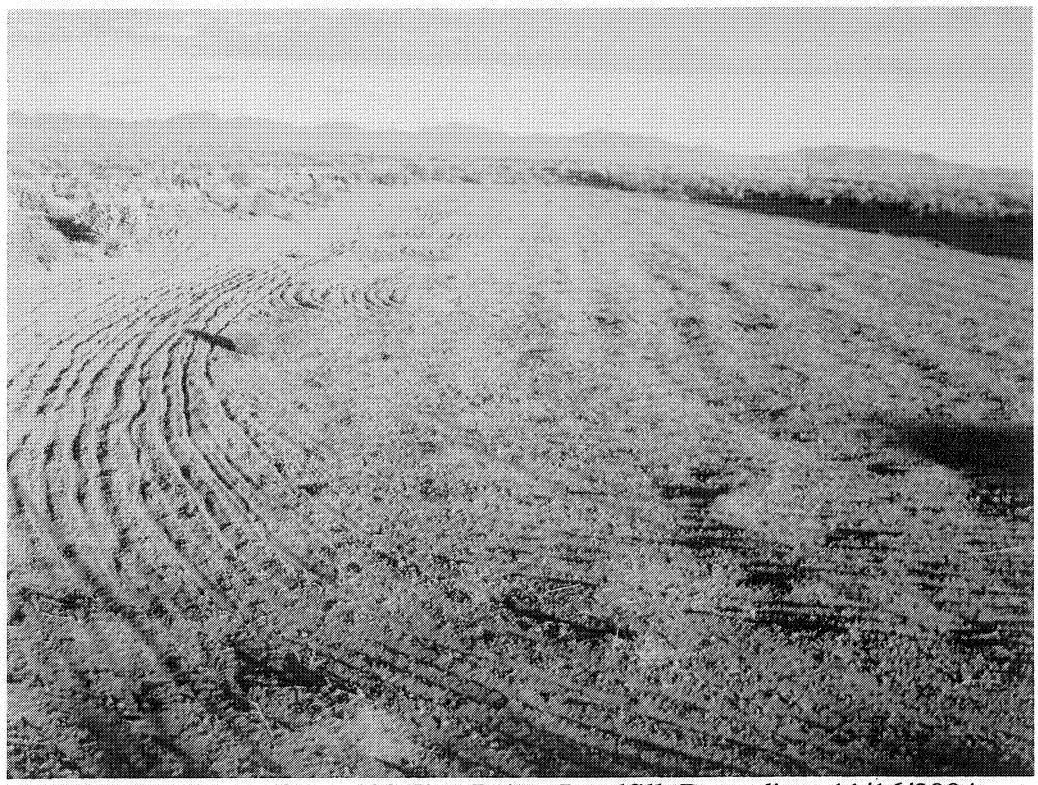


Photograph 9: CAU 400 Five Points Landfill, Reseeding, 11/16/2004

Photograph 10: CAU 400 Five Points Landfill, Reseeding, 11/16/2004



Photograph 11: CAU 400 Five Points Landfill, Reseeding, 11/16/2004

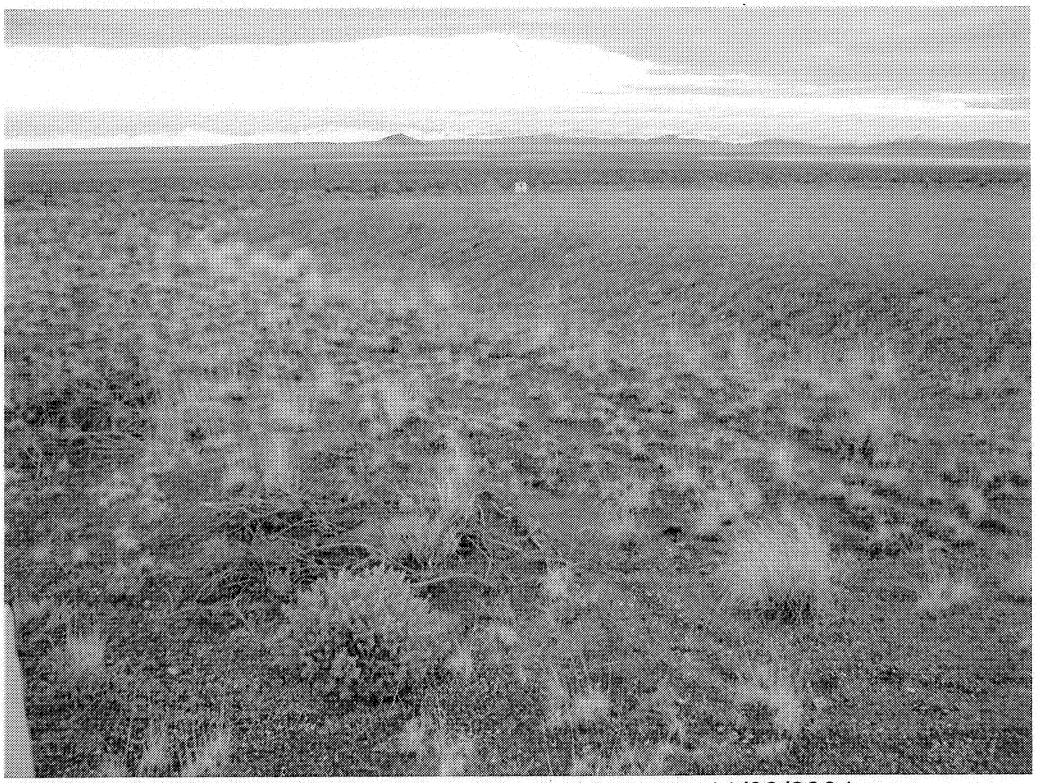


Photograph 12: CAU 400 Five Points Landfill, Reseeding, 11/16/2004

Photograph 13: CAU 404, looking east, 07/07/2004

Photograph 14: CAU 404, looking east, 11/09/2004

Photograph 15: CAU 407, looking east, 07/07/2004



Photograph 16: CAU 407, looking east, 11/09/2004

Photograph 17, CAU 407, Erosion rills on the east side of the cover, 07/07/2004

Photograph 18, CAU 407, Erosion rills on the east side of the cover, 11/09/2004

Photograph 19: CAU 407, Erosion Repair, 11/30/2004

Photograph 20: CAU 407, Erosion Repair, 11/30/2004

Photograph 21: CAU 407, Reseeding, 12/01/2004

Photograph 22: CAU 407, Reseeding, 12/01/2004

Photograph 23: CAU 407, Erosion Blanket, 12/01/2004

Photograph 24: CAU 407, Erosion Blanket, 12/01/2004

Photograph 25: CAU 423, looking east, 07/07/2004

Photograph 26: CAU 423, looking east, 11/09/2004

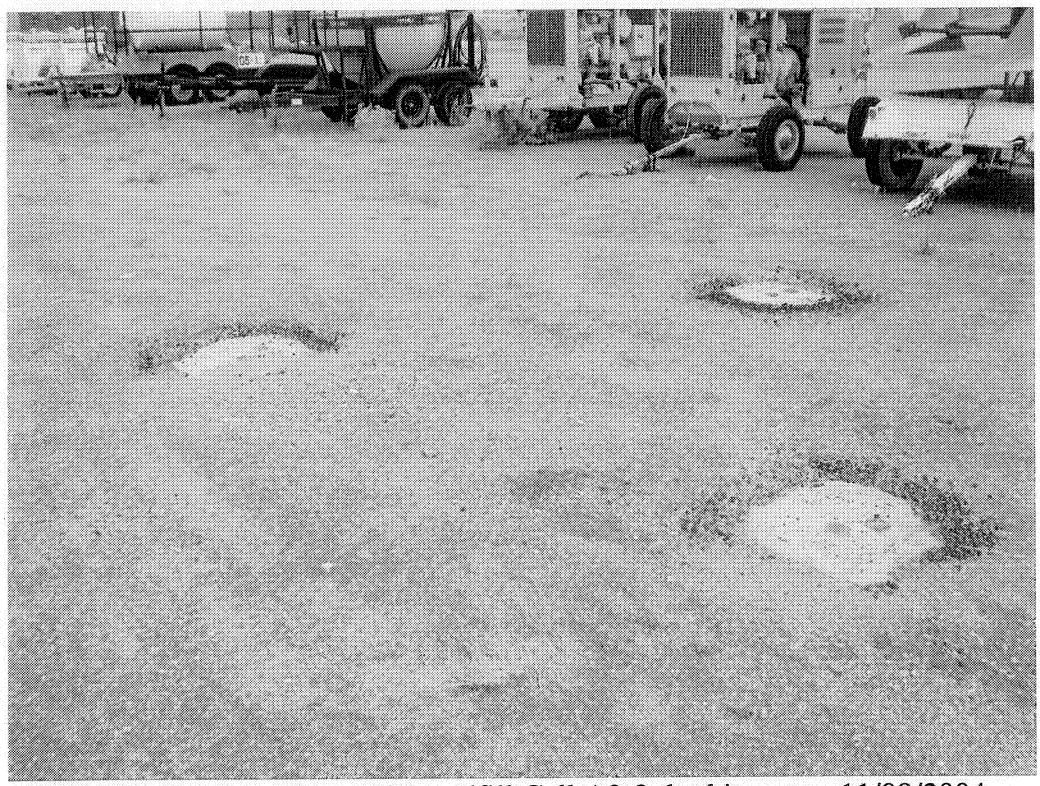
Photograph 27, CAU 424, Landfill Cell A3-1, looking northeast, 07/07/2004

Photograph 28, CAU 424, Landfill Cell A3-1, looking south, 11/09/2004

Photograph 29, CAU 424, Landfill Cell A3-2, looking north, 07/07/2004

Photograph 30, CAU 424, Landfill Cell A3-2, looking north, 11/09/2004

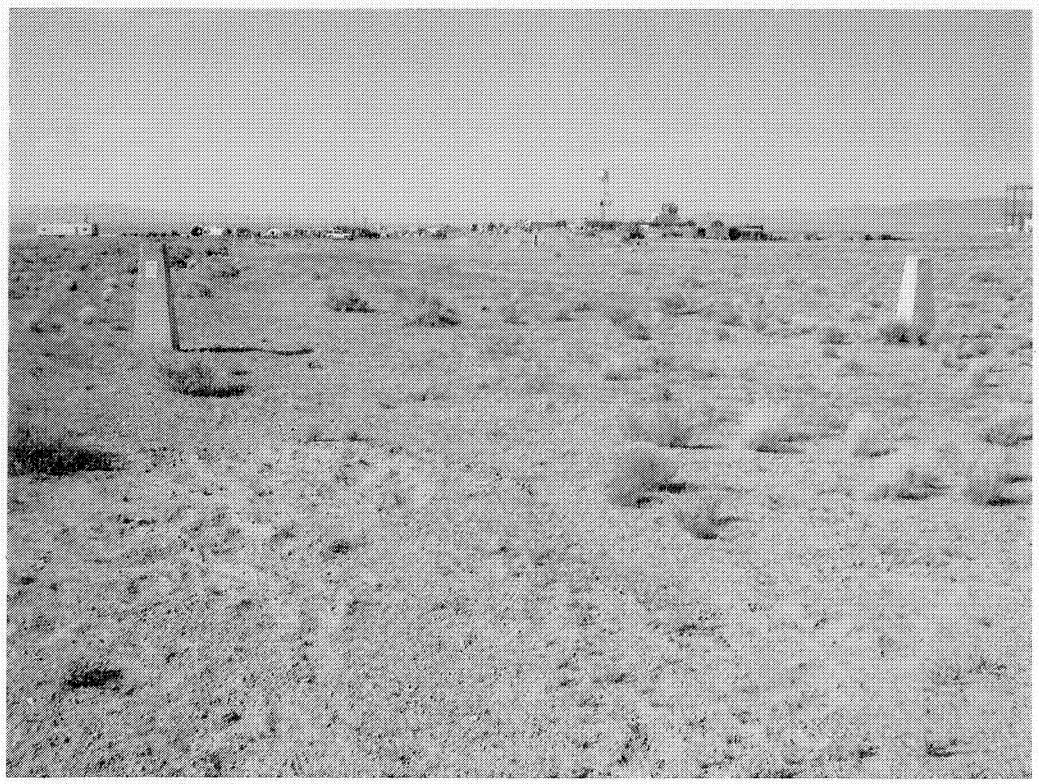
Photograph 31: CAU 424, Landfill Cell A3-3, looking north, 07/07/2004



Photograph 32: CAU 424, Landfill Cell A3-3, looking east, 11/09/2004

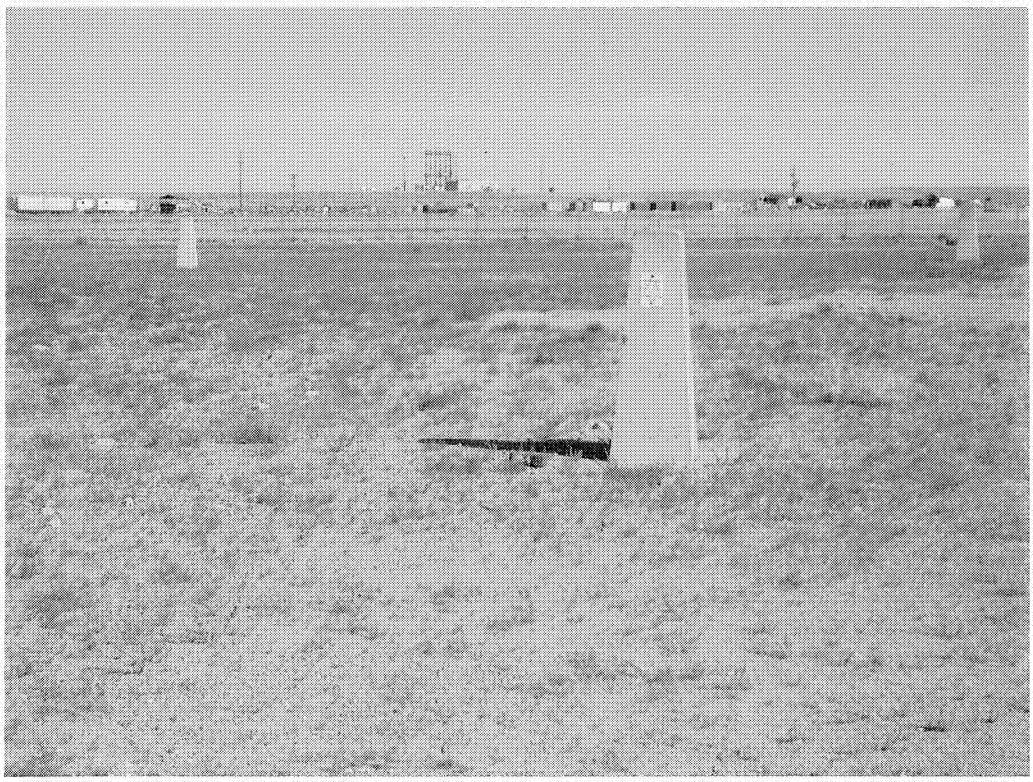
Photograph 33: CAU 424, Landfill Cell A3-3, looking north, 07/07/2004

Photograph 34: CAU 424, Landfill Cell A3-3, looking north, 11/09/2004



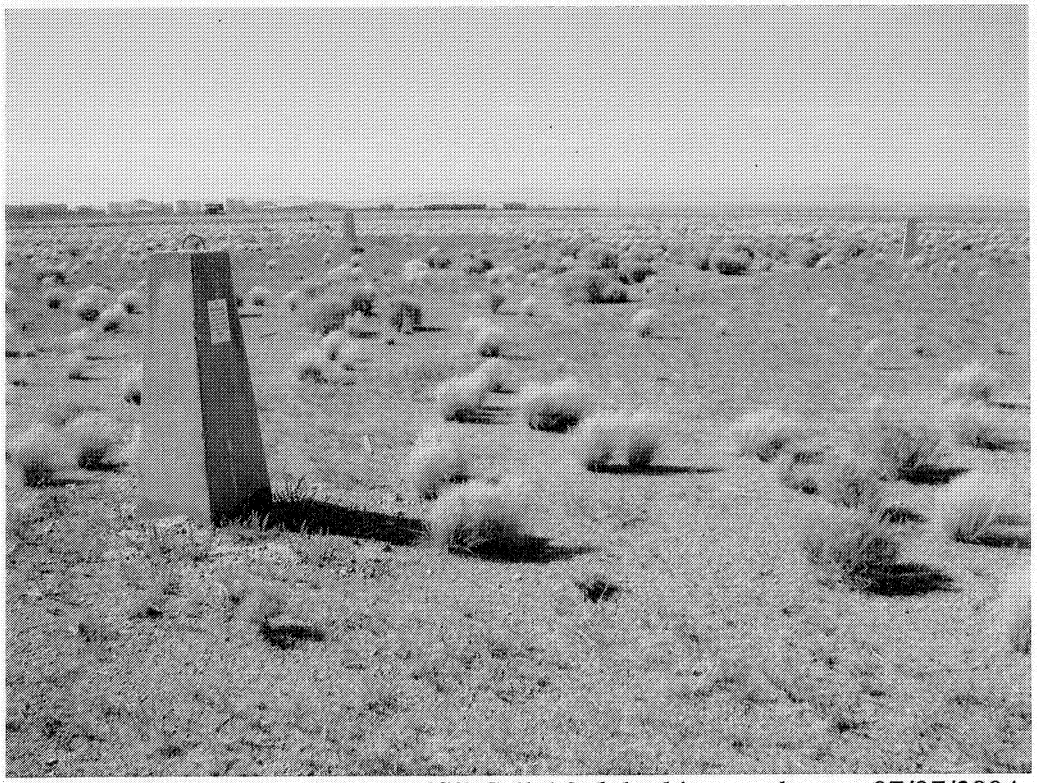
Photograph 35: CAU 424, Landfill Cell A3-4, looking north, 07/07/2004

Photograph 36: CAU 424, Landfill Cell A3-4, looking north, 11/09/2004

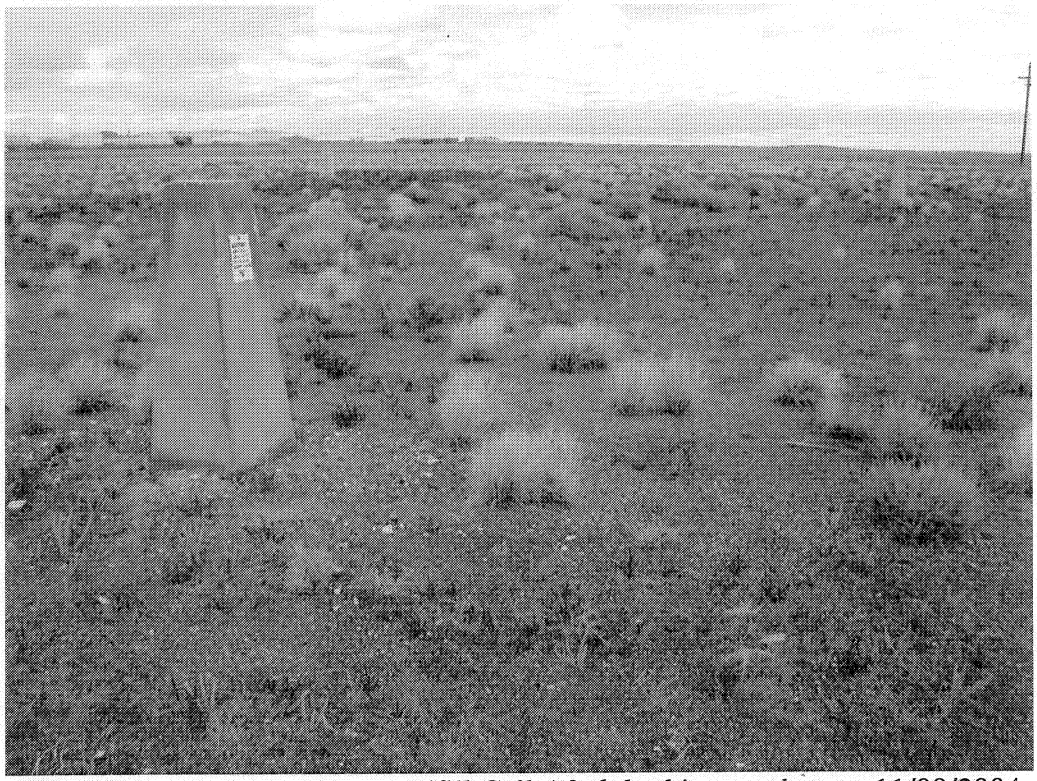


Photograph 37: CAU 424, Landfill Cell A3-5, looking southeast, 07/07/2004

Photograph 38: CAU 424, Landfill Cell A3-5, looking southeast, 11/09/2004

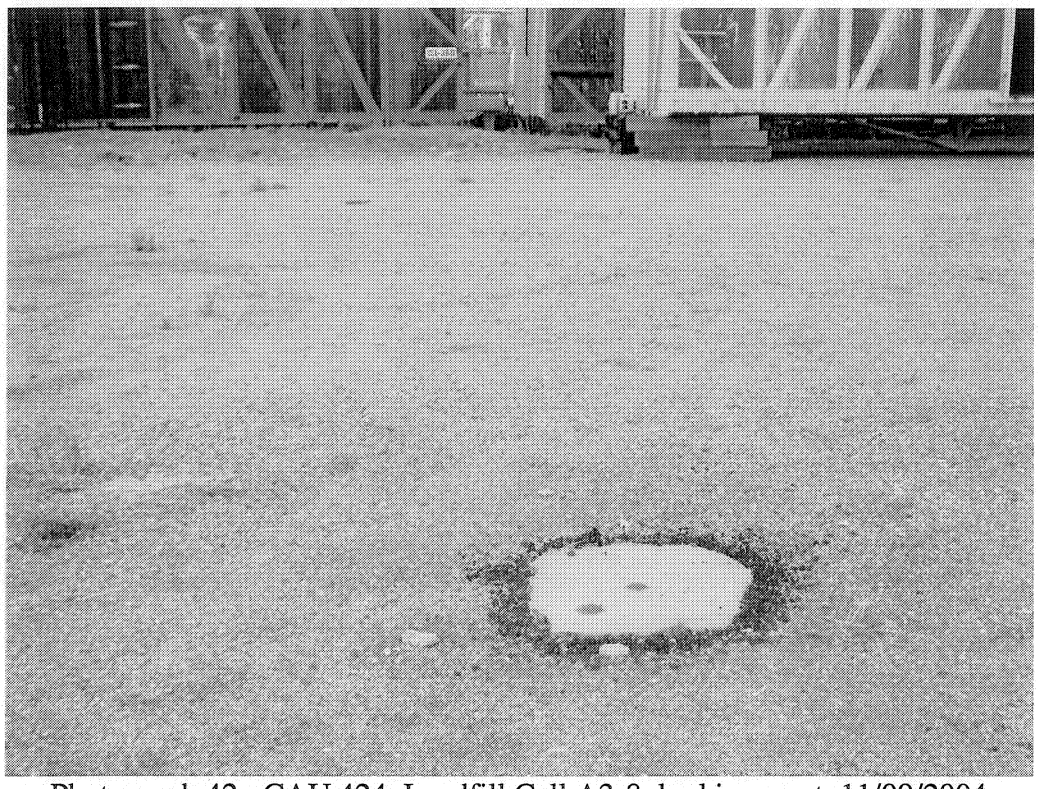


Photograph 39: CAU 424, Landfill Cell A3-6, looking northwest, 07/07/2004

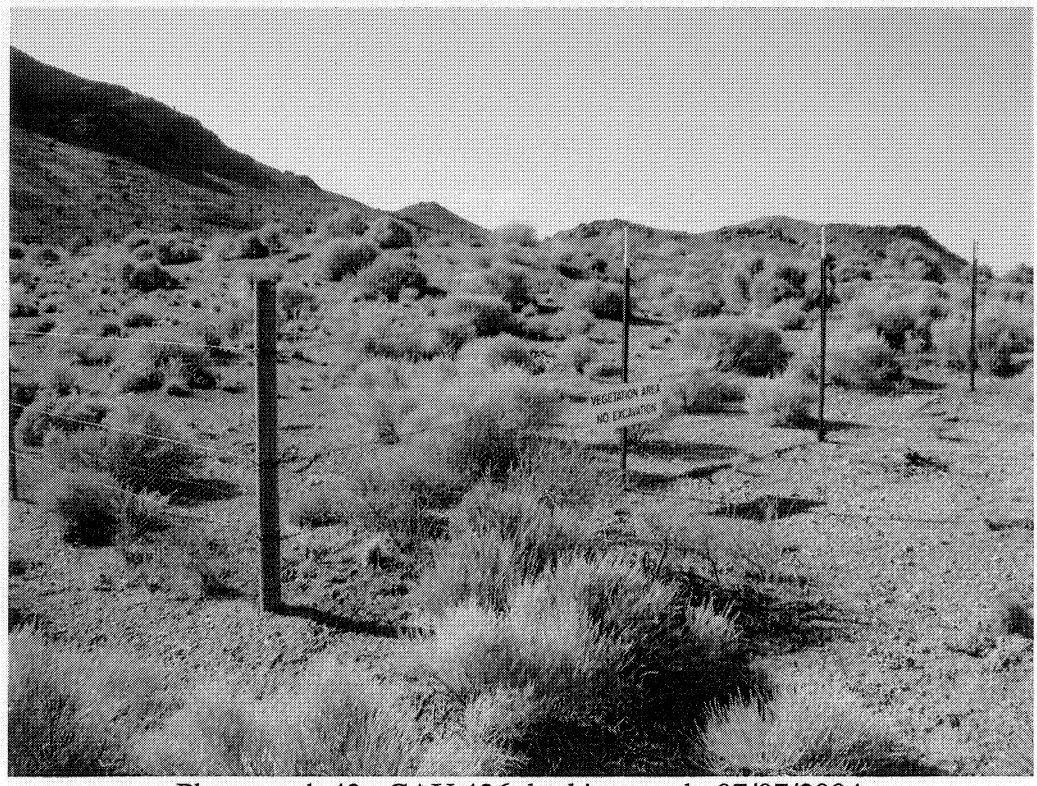


Photograph 40: CAU 424, Landfill Cell A3-6, looking northwest, 11/09/2004

Photograph 41: CAU 424, Landfill Cell A3-8, looking west, 11/09/2004



Photograph 42: CAU 424, Landfill Cell A3-8, looking west, 11/09/2004

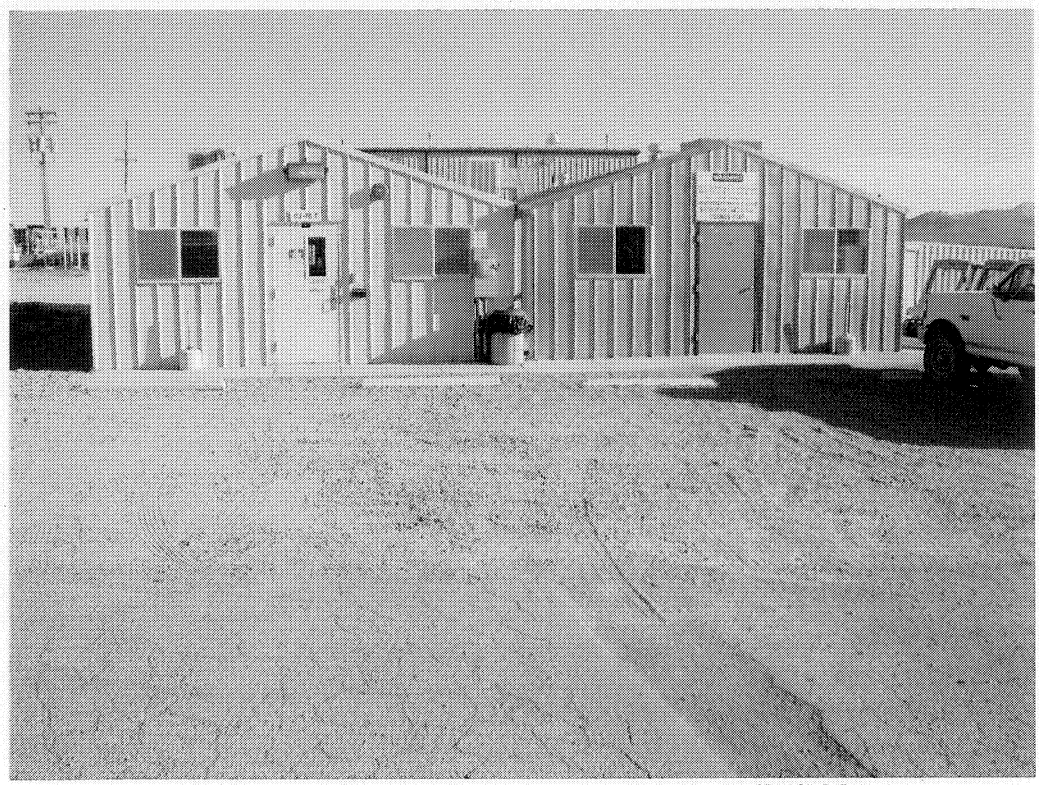


Photograph 43: CAU 426, looking north, 07/07/2004

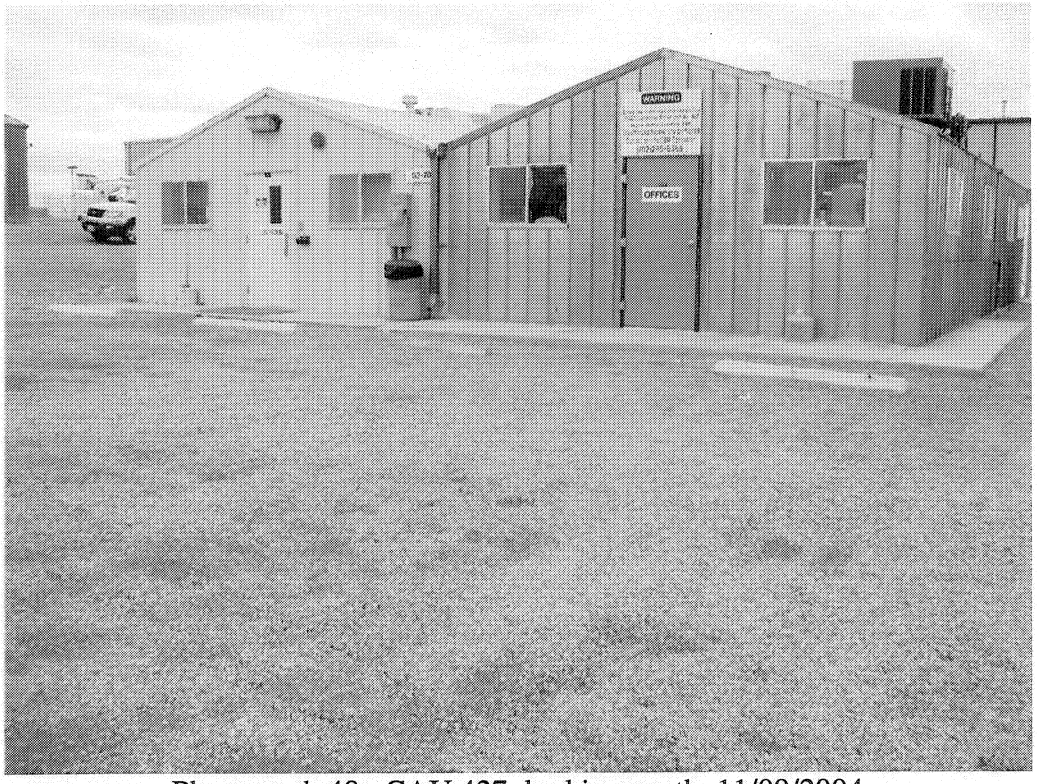
Photograph 44: CAU 426, looking north, 11/09/2004

Photograph 45: CAU 427, looking north, 07/07/2004

Photograph 46: CAU 427, looking north, 11/09/2004



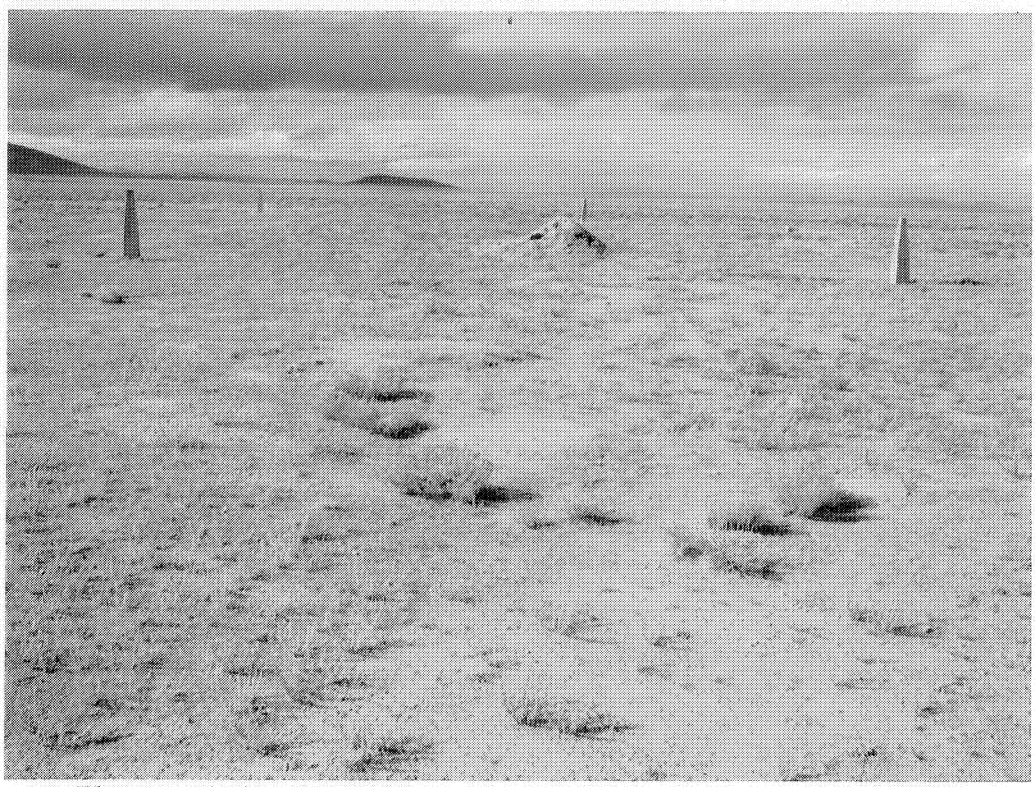
Photograph 47: CAU 427, looking south, 07/07/2004



Photograph 48: CAU 427, looking south, 11/09/2004

Photograph 49: CAU 453, looking west, 07/07/2004

Photograph 50: CAU 453, looking west, 11/10/2004



Photograph 51: CAU 487, A-17 anomaly, looking west, 11/10/2004

Photograph 52: CAU 487, A-8 anomaly, looking west, 11/10/2004

APPENDIX F

VEGETATION MONITORING REPORT

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POST CLOSURE
VEGETATION MONITORING REPORT

CORRECTIVE ACTION UNITS:

400-FIVE POINTS LANDFILL

400-BOMBLET PIT

404-ROLLERCOASTER SEWAGE LAGOONS

426-CACTUS SPRINGS WASTE TRENCHES

407-ROLLERCOASTER RADSAFE

Field Work Completed on
June 3-4, 2004

Report prepared by
Bechtel Nevada - Ecological Services

August 2004

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I. BACKGROUND

Work at Corrective Action Unit (CAU) 400, Bomblet Pit and Five Points Landfill; CAU 404, Roller Coaster Lagoons and Trench; and CAU 426, Cactus Spring Waste Trenches was completed during the summer of 1997. In the fall of 1997, these four sites were seeded with a mixture of native shrubs and grasses. Each site was mulched with straw, and the straw was crimped into the soil. The sites were protected from grazing animals (primarily horses and rabbits) by installing a four-strand barbed wire fence with two-foot high chicken wire along the base. In the fall of 2000, CAU 407, Roller Coaster RadSafe Area, was vegetated with a mixture of native shrubs and grasses. The site was mulched with a straw mulch, and the mulch was crimped into the soil. The site was fenced with several strands of wire to prevent inadvertent entry to the site and to prevent horses from entering the site.

Site monitoring began in 1998 for all the sites, with the exception of CAU 407, Roller Coaster RadSafe Area. Monitoring in 1998 was designed to determine if germination of the seeded plant species had occurred and included plant density estimates and photographic documentation. Monitoring in subsequent years evaluated plant establishment, evaluated long-term vegetation survival, and compared plant cover and density with adjacent reference areas (undisturbed sites). This report documents the results of monitoring efforts conducted in June 2004 at CAUs 400, 404, 407, and 426, all located on the Tonopah Test Range in central Nevada.

Bechtel Nevada Ecological Services staff scientists inspected the sites on June 3-4, 2004. Overall conditions related to the vegetative cover were recorded. Plant cover and density data were collected, wildlife usage was noted, and soil erosion conditions were determined. Reference areas were similarly sampled and will serve as a standard to evaluate vegetation success. Wildlife usage of the sites was determined by noting any wildlife or signs of wildlife (e.g., burrows) observed during sampling. The erosion condition of the soil over the sites in general was determined using a modified Bureau of Land Management erosion condition classification (Appendix F.3).

II. CAU 400, FIVE POINTS LANDFILL

A. Methods

Sampling was conducted along two transects, a 100-meter (m) transect that was established in 2003 as a result of flooding, and a 40-m transect in the southeastern section, which was part of the original transect and unaffected by flooding. The 100-m transect begins near the center of the eastern edge of the site. One meter square quadrats were placed at 4-m intervals along each transect beginning at the 4-m mark. The total number of individual plants located within the boundaries of the quadrat was recorded. The raw data were averaged over all quadrats to obtain plant densities, which were recorded as plants per square meter (m^2). Plant cover was estimated using an optical point projection device, or cover scope. A cover sample point was selected at four-meter intervals along the length of the transect. At each sample point, four cover points were optically projected, and the type of cover encountered was recorded. Data from the 120 cover points were summed to obtain plant cover estimates.

The starting point for the reference area transect was 10 m north of the north fence, 10 m east of road and parallel to the northern fence for 120 m. Quadrats were placed at 4-m intervals starting at the 4-m mark.

B. Results

As in 2003, cover and density data were collected from non-flooded areas. The area that was under water last year is now covered with a thick layer of sediment. A few plants were found growing in the cracks (Figure 1) of the drying mud, but most of the plants that were present before the flooding are dead. There is good plant growth in the non-flooded sections, although both plant cover and plant density declined this year compared to 2003 (Table 1). Plant density decreased to 2.6 plants/m^2 this year, the lowest recorded since the site was vegetated in the fall of 1997. The decrease in density was mainly the result of 50 percent fewer grasses. Indian ricegrass and squirreltail were the most common grasses, but this was the first year since the spring of 2000 that galleta grass was found. The number of shrubs continues to be higher on the soil cap. Fourwing saltbush is the most common shrub. No bud sagebrush was found this year; however, some young plants of winterfat were encountered. Overall density in 2004 was slightly lower than plant density on the adjacent native plant community. This is the first year plant density on the vegetated cover was lower than on the adjacent native plant community.

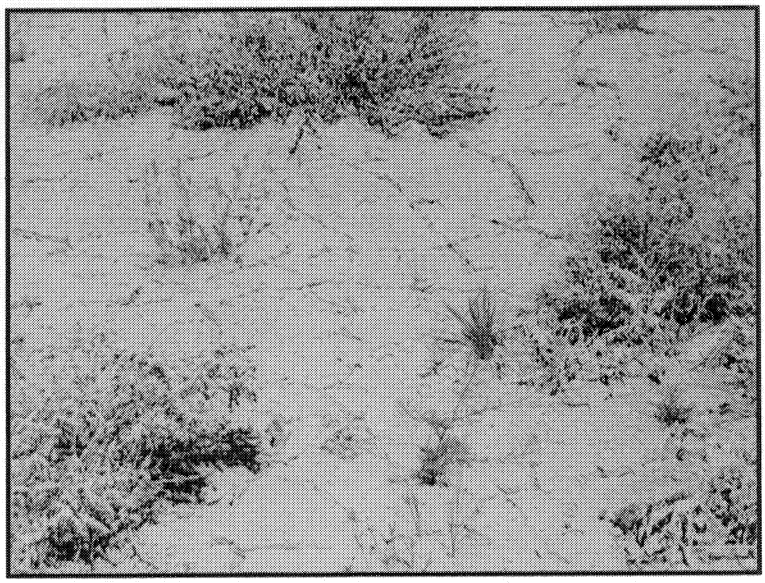

Figure 1. June 3, 2004. Close-up of flash flood damage at CAU 400, Five Points Landfill. Young plants of squirreltail grass and some annual plants are growing through cracks of sediment, while plants of bud sagebrush and fourwing saltbush are covered in mud and dead.

The biggest change in plant density this year was the dramatic increase in annual plants on both the reference area and inside the fence (Table 1). The increase in annual plant density is probably the result of increased precipitation this spring. The timing of the precipitation did not improve perennial plant growth as indicated by lower perennial plant cover this year. However, the spring precipitation did encourage annual plant growth.

Perennial plant cover is lower this year than it was last year and is about that same as perennial plant cover on the adjacent reference area. Total plant cover was actually higher on the reference area because of the increased contribution to plant cover from annual species. In previous years there have been few, if any, annual plants present in sufficient number to contribute to overall plant cover.

There were no signs of herbivory on the site. Small mammal burrows cover much of the site, although many are now covered with sediment. Concern for the eventual successful vegetation of this site relates to the flood damage last year. About one-third of the area is covered with a layer of sediment and is essentially void of vegetation. There are only a few plants re-establishing on the site. The site is susceptible to future flooding, and remedial vegetation is not recommended without alternating the drainage patterns to minimize the effect of flooding.

The integrity of the perimeter fence was comprised last year during the flash flood. About 10-15 m of the fence was washed out. There was no indication that grazing animals (horses) had been on the site, so the need to repair the fence is uncertain. The vegetation on the site appears to be well established, but plants are still small and, as noted by low density and cover this year, are still affected by the continued drought conditions. These young plants may or may not be able to tolerate the increased pressure of large grazing animals. However, if there is going to be any remedial work (e.g., reseeding, re-contouring), would be advantageous to repair the fence.

Table 1. Plant density and cover on CAU 400, Five Points Landfill

		Plant Density (# Plants /m^2)					
		Jun-98	May-00	Jun-02	Sept-03	June-04	Ref '04
Shrubs	*Artemisia spinescens*	0.1	0.0	0.1	0.1	0.0	0.0
	Atriplex canescens	2.6	0.7	1.0	1.4	1.1	0.3
	Chrysothamnus greenei	Not seeded					0.4
	Krascheninnikovia lanata	0.0	0.0	0.0	0.0	0.03	0.0
Grasses	*Elymus elymoides*	3.6	2.2	0.3	0.8	0.4	0.0
	Pleuraphus jamesii	0.0	0.0	0.0	0.0	0.1	0.0
	Acnatherum hymenoides	3.8	4.8	3.2	2.1	1.0	3.1
Forbs	*Sphaeralcea ambigua*	0.0	0.0	0.0	0.0	0.0	0.0
	Total Seeded	10.1	7.7	4.7	4.4	2.6	3.8
	# Species	4	4	6	4	5	3
	Total Non-Seeded	0.0	10.2	0.4	1.3	13.4	65.9
	# Species	0	10	4	2	12	12
			Plant Cover (Percent)				
			May-00	Jun-02	Sept-03	June-04	Ref '04
	Shrub		2.5	8.3	9.2	8.1	8.0
	Grass		13.3	23.3	10.0	3.7	3.0
	Perennial Forbs		0.0	0.0	0.0	0.0	0.0
	Annuals (not seeded)		0.0	0.8	0.0	2.2	7.0
	Total Plant Cover *		15.8	32.4	19.2	11.8	11.0
	Bare Ground/Rock		66.6	50.0	57.5	59.6	66.0
	Litter/Mulch		17.5	17.5	23.3	26.5	17.0
Erosion Classification **		Stable	Stable	Stable	Critical	Critical	

* Perennial Plant Cover only

** See Appendix F.3 for Erosion Condition Classification Chart

III. CAU 400, BOMBLET PIT

A. Methods

To estimate plant density, 1-m^2 quadrats were placed at 4-m intervals along two 80-m transects. The total number of individual plants located within the boundaries of the quadrat were recorded. The raw data were averaged over all quadrats to obtain plant densities. Plant cover was estimated using an optical point projection device or cover scope. A cover sample point was selected at 4-m intervals along the length of the transect. At each sample point, four cover points were optically projected, and the type of cover intersected was recorded. Data from the 80 cover points were summed to obtain plant cover estimates.

The reference area was sampled similarly. The transect starts about 50 meters east of the gate and parallels the east fence. Density quadrats and cover sample points were located at 4-m intervals along the 80-m transect.

B. Results

Plant density at CAU 400, Bomblet Pit, decreased to 6.3 plants/m^2 this year (Table 2). This is down from a little over 9 plants/m^2 the last two years. No grasses were encountered this year, only shrubs. The decline in plant density was mainly due to a decrease in the density of bud sagebrush, which dropped from 2.6 plants/m^2 last year to just 0.8 plants/m^2 this year. There were only three different species found on the site this year, bud sagebrush, fourwing saltbush, and shadscale. No winterfat or Indian ricegrass, two species found on the site last year, were encountered this year. As at other sites, there were more annual plants this year than in previous years.

Plant cover declined for the third consecutive year, dropping from a high of 19 percent in 2002 to 7.5 percent this year (Table 2). The composition of plant cover, like plant density, was 100 percent shrub, which is the same pattern as in the native plant community. This is the first year since monitoring began in 1998 that plant cover on the vegetated site was lower than on the reference area.

There were no signs of herbivory or erosion. Plants are establishing, and with a year of sufficient moisture, they should increase in size and contribute more to overall plant cover. Diversity decreased this year. No winterfat or Indian ricegrass were encountered this year. Both species were present last year.

The invasion of the site by halogeton, a noxious weed that dominated the area prior to closure, does not appear to be a problem. After reaching a maximum density of 27.4 plants/m^2 in 1999, the density of halogeton has declined to 0.1 plants/m^2 over the last three years.

The concern for this area, as mentioned in 2003, is the loss of grass species. In 2001 there were about 5 grasses/m^2, in 2002 just 0.15 grasses/m^2, in 2003 0.40 grasses/m^2, and this year there were no grasses encountered. The area has not experienced normal precipitation since 1998, which probably explains the scarcity of grasses on the site and the reduction in plant cover. If no grasses are encountered next year, it may be appropriate to reseed the site with native grass seed,

such as Indian ricegrass and galleta grass. In the event that some remedial action is taken in the near future, it would be important to have the fence in place for protection from herbivores.

Table 2. Plant diversity and cover on CAU 400, Bomblet Pit

		Plant Density (# Plants /m^2)					
		Jun-98	May-00	Jun-02	Sept-03	June-04	Ref '04
Shrubs	*Artemisia spinescens*	1.2	3.8	2.5	2.6	0.8	3.5
	Atriplex canescens	0.1	0.5	0.3	0.2	0.2	0.0
	Atriplex confertifolia	5.3	6.8	6.5	6.4	5.3	1.5
	Krascheninnikovia lanata	0.0	0.3	0.0	0.1	0.0	0.3
Grasses	*Elymus elymoides*	4.4	3.1	0.0	0.0	0.0	0.0
	Pleuraphus jamesii	0.3	0.0	0.0	0.0	0.0	0.2
	Acnatherum hymenoides	2.3	2.5	0.2	0.4	0.0	0.2
Forbs	*Sphaeralcea ambigua*	0.0	0.0	0.0	0.0	0.0	0.1
	Total Seeded	13.6	16.9	9.4	9.7	6.3	5.8
	# Species	6	6	4	5	3	6
	Total Non-Seeded	5.2	3.3	0.0	0.0	1.1	0.6
	# Species	2	5	1	1	4	2
			Plant Cover (Percent)				
			May-00	Jun-02	Sept-03	June-04	Ref '04
	Shrub		12.5	19.0	10.0	7.5	8.8
	Grass		0.0	0.0	0.0	0.0	0.0
	Perennial Forbs		0.0	0.0	0.0	0.0	0.0
	Annuals (not seeded)		0.0	0.0	0.0	0.0	0.0
	Total Plant Cover*		12.5	19.0	10.0	7.5	8.8
	Bare Ground/Rock		75.0	61.0	73.8	78.8	76.3
	Litter/Mulch		12.5	20.0	16.3	13.8	15.0
Erosion Classification **		Stable	Stable	Stable	Stable	Stable	

* Perennial Plant Cover only

** See Appendix F.3 for Erosion Condition Classification Chart

IV. CAU 404, ROLLER COASTER LAGOONS AND TRENCH

A. Methods

Two permanent transects were established at CAU 404, Rollercoaster Sewage Lagoons and Trench, for estimating plant density and cover. One transect is located on the soil cap. It is 50 m long and traverses the soil cap from the northeast corner to the southwest corner. The second transect starts near the entrance gate and runs northeast for 150 m. To estimate density, 1-m^2 quadrats were placed at 2.5-m intervals along the soil cap transect and 3-m intervals along the staging area transect. The total number of individual plants located within the boundaries of each quadrat is recorded and averaged over all quadrats to obtain plant densities. Plant cover was estimated using an optical point projection device or cover scope. A cover sample point was selected at 2.5- and 3-m intervals along the length of the respective transect. At each sample point, four cover points were optically projected, and the type of cover intersected was recorded. Data from the 80 cover points for the cover cap transect and 200 points for the staging area were summed to obtain plant cover estimates.

The reference area was sampled similarly. The transect starts about 25 m northwest of the entrance gate and parallels the west fence for 150 m. Density quadrats and cover sample points were located at 3-m intervals along the 80-m transect.

B. Results

Plant density is stabilizing at approximately 13 plants/m^2 on the soil cap, more than twice the plant density in the adjacent native plant community (Table 3). There is an equal contribution of shrubs and grasses to overall plant density. Shadscale is still the most dominant species. Bud sagebrush and fourwing saltbush are present but at much lower densities. Galleta grass is the most common grass. The only other grass encountered was Indian ricegrass. No squirreltail grass was found this year. Plant densities at CAU 404 are the highest of any of the CAUs monitored.

Plant cover on the soil cap remains very good this year, though there was a 5% decrease in plant cover from 2003 (Table 3). The amount of grass cover dropped from 10 percent in 2003 to about 4 percent in 2004. Shrub cover also declined by 2.5 percent. Both shrub and grass cover on the soil cap are still higher than on the adjacent native plant community. Overall plant cover on the soil cap appears to be stabilizing, and recent declines are most likely the result of the effect of continued dry conditions.

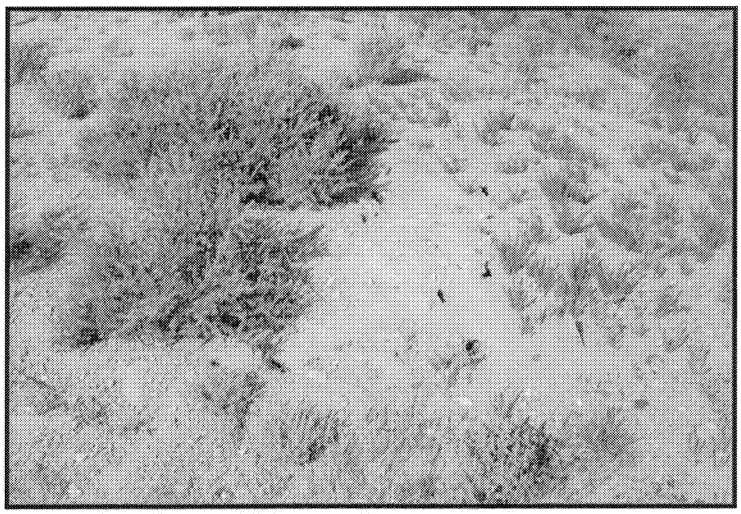

Figure 2. June 3, 2004. Small mammal burrows are frequently encountered on perimeter of the site.

The major signs of animal use at this site are the numerous small mammal burrows on the perimeter of the soil cap (Figure 2). There are no signs of rilling or channeling on the slopes of the soil cap.

Table 3. Plant density and cover at CAU 404, Rollercoaster Lagoons and Trench, Soil Cap							
		Plant Density (# Plants /m^2)					
		Jun-98	May-00	Jun-02	Sept-03	June-04	Ref '04
Shrubs	*Artemisia spinescens*	1.8	2.1	1.7	0.0	1.0	2.3
	Atriplex canescens	0.9	0.9	0.6	0.3	0.5	0.0
	Atriplex confertifolia	13.5	10.9	7.0	7.0	5.9	0.7
	Krascheninnikovia lanata	0.3	0.3	0.1	0.0	0	0.1
Grasses	*Elymus elymoides*	6.6	10.8	1.6	0.1	0	0.04
	Pleuraphus jamesii	0.0	8.6	4.7	4.9	5.2	1.2
	Acnatherum hymenoides	0.0	3.8	2.8	1.1	0.6	0.3
Forbs	*Sphaeralcea ambigua*	0.0	0.2	0.1	0.1	0.1	0.5
	Total Seeded	23.1	37.5	18.4	13.5	13.3	5.1
	# Species	5	8	8	7	6	7
	Total Non-Seeded	0.4	0.3	0.2	0.1	1.9	4.7
	# Species	2	2	2	1	3	13
			Plant Cover (Percent)				
			May-00	Jun-02	Sept-03	June-04	Ref '04
	Shrub		6.3	10.0	12.5	10.0	10.0
	Grass		12.5	16.0	10.1	3.8	1.5
	Perennial Forbs		0.0	0.0	0.0	0.0	0.0
	Annuals		0.0	1.6	0.0	1.3	0.5
	Total Plant Cover*		18.8	26.0	22.5	15.1	11.5
	Bare		73.8	65.0	71.3	77.5	64.0
	Litter/Mulch		7.5	9.0	6.3	7.5	14.5
Erosion Classification **		Stable	Stable	Stable	Stable	Stable	

* Perennial Plant Cover only
** See Appendix F.3 for Erosion Condition Classification Chart

The staging area at CAU 404 was one of two sites where plant cover and density did not decline significantly from 2003 levels. There was a slight decrease in density, but cover was 2.5 percent higher than 2003 (Table 4). Shrubs continue to account for the majority of the total cover. There were a few more annual plants this year than in past years, which was also observed on the reference area. The density of shadscale, the most dominant shrub on the staging area, was the same in 2004 as in 2003. The density of bud sagebrush declined slightly, as did squirreltail and galleta grass. There was a significant decline in total plant density from 2000 to 2002, but in 2003 and 2004, the changes have been smaller, indicating that plant densities are stabilizing. Even with the recent declines in plant density on the staging area, plant density is still higher than on the adjacent native plant community.

Table 4. Plant density and cover at CAU 404, Staging Area

		Plant Density (# Plants /m^2)					
		Jun-98	May-00	Jun-02	Sept-03	June-04	Ref '04
Shrubs	*Artemisia spinescens*	1.7	1.7	1.2	0.8	0.6	2.3
	Atriplex canescens	0.2	0.3	0.2	0.1	0.1	0.0
	Atriplex confertifolia	6.7	10.0	6.9	5.5	5.4	0.7
	Krascheninnikovia lanata	0.2	0.0	0.1	0.1	0.1	0.1
Grasses	*Elymus elymoides*	7.7	6.2	0.1	0.0	0.0	0.04
	Pleuraphus jamesii	0.0	0.8	0.3	0.2	0.1	1.2
	Acnatherum hymenoides	2.5	2.5	0.5	0.0	0.1	0.3
Forbs	*Sphaeralcea ambigua*	0.1	0.1	0.0	0.0	0.1	0.5
	Total Seeded	19.1	21.6	9.2	6.8	6.5	5.1
	# Species	7	8	7	7	7	7
	Total Non-Seeded	2.3	3.4	0.8	0.7	1.8	4.7
	# Species	3	4	6	1	5	13
			Plant Cover (Percent)				
			May-00	Jun-02	Sept-03	June-04	Ref '04
	Shrub		9.0	18.5	13.5	17.0	10.0
	Grass		3.5	0.5	0.5	0.0	1.5
	Perennial Forbs		0.0	0.0	0.0	0.0	0.0
	Annuals (not seeded)		0.0	0.0	0.5	0.0	0.5
	Total Plant Cover*		12.5	19.0	14.5	17.0	11.5
	Bare Ground/Rock		56.5	53.0	69.0	61.5	64.0
	Litter/Mulch		31.0	28.0	16.5	21.5	14.5
Erosion Classification **		Moderate	Stable	Slight	Slight	Stable	

* Perennial Plant Cover only
** See Appendix F.3 for Erosion Condition Classification Chart

Plant cover increased slightly from values reported in 2003 (Table 4). Although there was an increase in total plant cover, there is a concern because 100 percent of the site is shrub. There was no contribution of cover from grasses or annual plants. About 10-15 percent of the cover on the native plant community comes from grasses and annuals. Density values suggest that there are grasses on the site, but they have not gained sufficient size to contribute to plant cover.

As noted last year, there are signs of erosion at the site. Last year it was noted that during intense precipitation events, the flow of water is down the road to the site, then onto the site and around the southern edge of the site. Some channeling was reported last year, but no additional erosion was noted in 2004.

Halogeton, a noxious weed, is present on the staging area as well as in the native plant community. The density of halogeton almost doubled on both the staging area and native plant community as compared to 2003 density estimates. It doesn't appear to be a problem at this time, but the species should be monitored to ensure early detection of any problems.

V. CAU 407, ROLLERCOASTER RADSAFE AREA

A. Methods

Only observations from outside the fence were made at this site. Photographs were taken, but no field data (i.e., cover or density) were taken.

B. Results

No sampling was necessary at this site. In previous years, a few plants were observed, mainly shadscale. However this year, like last year, there are no plants on the surface of the cover. There are a few annuals, Russian thistle and halogeton, around the edges and slopes of the cover, but they are not abundant.

Erosion is the major concern at this site. Numerous small gullies off the slopes of the soil cap were first noted in 2003 (Figure 3). The gullies do not seem to be deeper than last year but are still present. There are also several animal burrows on the edges of the cover.

Figure 3. June 4, 2004. Erosion gullies along northern edge of the soil cap at CAU 407.

VI. CAU 426, CACTUS SPRING WASTE TRENCHES

A. Methods

Two permanent transects were established at CAU 426, Cactus Springs Waste Trenches, for estimating plant density and cover. One transect is located on the soil cap. It is 30 m long and traverses the site from the northeast corner to the southwest corner. The second transect starts near the entrance gate and goes northeast for 60 m. To estimate density, 1-m^2 quadrats were placed at 2-m intervals along each transect. The total number of individual plants located within the boundaries of each quadrat was recorded and averaged over all quadrats to obtain plant densities. Plant cover was estimated using an optical point projection device or cover scope. A cover sample point was selected at 2-m intervals along the length of each transect. At each sample point, four cover points were optically projected, and the type of cover intersected was recorded. Data from the 60 cover points for the soil cap transect and 120 points for the staging area transect were summed to obtain plant cover estimates.

The reference area was sampled similarly. The transect starts approximately 25 m north of the entrance gate and parallels the north fence for 60 m. Density quadrats and cover sample points were located at 2-m intervals along the transect.

B. Results

CAU 426, like CAU 404, is comprised of two areas, a soil cap and a staging area. Plant density has never been high on the soil cap relative to the other CAUs and is about the same as last year (Table 5). Ephedra and rubber rabbitbrush are the main shrubs, and Indian ricegrass and squirreltail are the main grasses. All showed a slight increase over last year's density values, but they are lower than those for the adjacent native plant community.

Plant cover on the soil cap at CAU 426 is maintaining at approximately 17 percent, which is approximately 3 percent higher than the reference area. In 2003, about 90 percent of the cover was made up of shrubs, which is different from previous years, where there was an equal contribution from shrubs and grasses. The timing of the sampling and the continued effects of the drought may have left many of the grasses dormant or dead.

Plant density on the staging area was higher this year than last year. Shrub density is about the same, but there was almost a two-fold increase in the number of grasses encountered. There is an equal contribution of shadscale, Nevada jointfir, and rubber rabbitbrush to shrub density. Squirreltail grass has been the most common grass at this site for the last three years. Galleta grass and Indian ricegrass are also present but at much lower densities.

On the staging area, cover was higher than on the reference area (Table 6). Almost two-thirds of the cover is from grasses, primarily squirreltail grass. At other CAUs, grasses make up 0-25 percent of the cover, but at CAU 426, grasses make up 40 percent of the cover on the soil cap and 65 percent of the cover on the staging area. On the native plant community, grasses make up about 13 percent of the total cover.

There were no signs of erosion on the site or the staging area. Overall conditions of the vegetative cover at this site are encouraging. Plant densities are low. However, those plants that have survived appear to be increasing in size.

Table 5. Plant density and cover at CAU 426, Cactus Springs Waste Trenches, Soil Cap							
		Plant Density (# Plants /m^2)					
		Jun-98	May-00	Jun-02	Sept-03	June-04	Ref '04
Shrubs	*Artemisia nova*	0.0	0.0	0.0	0.0	0.0	0.5
	Atriplex canescens	0.2	0.0	0.0	0.0	0.0	0.0
	Atriplex confertifolia	0.3	0.0	0.0	0.0	0.0	0.1
	Ephedra nevadensis	0.0	1.0	1.3	1.3	1.5	0.1
	Ericameria nauseosa	0.4	0.1	1.1	0.5	0.9	0.03
	Krascheninnikovia lanata	0.0	0.1	0.0	0.0	0.0	0.03
	Sarcobatus vermiculatus	0.1	0.1	0.0	0.0	0.0	0.0
Grasses	*Elymus elymoides*	1.1	1.3	0.7	0.6	0.7	0.1
	Pleuraphus jamesii	0.9	1.0	0.2	0.3	0.3	0.1
	Acnatherum hymenoides	0.0	1.4	0.7	0.4	0.0	5.4
Forbs	*Sphaeralcea ambigua*	0.0	0.0	0.0	0.0	0.0	0.03
	Total Seeded	3.0	4.9	4.1	3.1	3.3	6.3
	# Species	6	7	5	5	4	9
	Total Non-Seeded	6.8	0.1	0.1	0.4	0.1	1.2
	# Species	4	2	1	3	1	9
			Plant Cover (Percent)				
			May-00	Jun-02	Sept-03	June-04	Ref '04
	Shrub		0.0	6.6	16.7	10.1	11.6
	Grass		3.3	8.3	0.0	6.7	1.7
	Perennial Forbs		0.0	0.0	0.0	0.0	0.0
	Annuals (not seeded)		0.0	0.0	0.0	0.0	0.0
	Total Plant Cover*		3.3	14.9	16.7	16.8	13.3
	Bare Ground/Rock		85.0	78.3	80.0	80.0	69.2
	Litter/Mulch		11.7	6.7	3.3	3.3	7.5
Erosion Classification **		Stable	Stable	Stable	Stable	Stable	

* Perennial Plant Cover only
** See Appendix F.3 for Erosion Condition Classification Chart

The staging area at CAU 426 has the highest density of halogeton of any of the sites. Densities were high in 2000, decreased in 2002, increased slightly in 2003, and this year decreased to 2.4 plants/m^2. Although density decreased this year, the density of halogeton is higher than any other species found at this site. Halogeton is found in the native plant community but not at these higher densities. This site should be routinely monitored to document any trends that may lead to the dominance of halogeton or other noxious weeds.

Table 6. Plant density and cover at CAU 426, Staging Area

		Plant Density (# Plants /m^2)					
		Jun-98	May-00	Jun-02	Sept-03	June-04	Ref '04
Shrubs	*Artemisia nova*	0.0	0.0	0.1	0.0	0.0	0.5
	Atriplex canescens	0.1	0.1	0.0	0.0	0.0	0.0
	Atriplex confertifolia	0.1	0.1	0.0	0.0	0.1	0.1
	Ephedra nevadensis	0.0	0.3	0.2	0.3	0.1	0.1
	Ericameria nauseosa	0.3	0.1	0.8	0.1	0.1	0.03
	Krascheninnikovia lanata	0.0	0.0	0.0	0.0	0.0	0.03
	Sarcobatus vermiculatus	0.0	0.0	0.0	0.0	0.0	0.0
Grasses	*Elymus elymoides*	3.1	5.2	2.9	0.6	1.9	0.1
	Pleuraphus jamesii	0.0	0.2	0.1	0.3	0.3	5.4
	Acnatherum hymenoides	1.0	1.4	0.6	0.7	0.4	0.1
Forbs	*Sphaeralcea ambigua*	0.0	0.0	0.0	0.0	0.0	0.03
	Total Seeded	4.6	7.4	4.6	2.0	2.9	6.3
	# Species	5	9	7	7	6	10
	Total Non-Seeded	3.2	17.0	1.8	4.0	3.4	1.2
	# Species	1	6	5	3	7	9
			Plant Cover (Percent)				
			May-00	Jun-02	Sept-03	June-04	Ref '04
	Shrub		0.8	5.0	2.5	3.3	11.6
	Grass		5.8	12.5	6.7	10.8	1.7
	Perennial Forbs		0.0	0.0	0.0	0.0	0.0
	Annuals (not seeded)		0.0	1.6	5.0	2.5	0.0
	Total Plant Cover*		6.6	19.1	14.2	16.6	13.3
	Bare Ground/Rock		50.0	42.5	50.0	59.2	69.2
	Litter/Mulch		43.3	38.3	35.8	24.2	7.5
Erosion Classification **		Stable	Stable	Stable	Stable	Stable	

* Perennial Plant Cover only
** See Appendix F.3 for Erosion Condition Classification Chart

VII. SUMMARY AND RECOMMENDATIONS

Appendices to this report contain a photographic history of vegetated sites (Appendix F.1) and a list of scientific names and common names of plant species encountered during vegetation monitoring (Appendix F.2).

Plant densities declined at the two CAU 400 sites and at the staging area and soil cap at CAU 404 (Figure 4). The decline at CAU 404 was only 0.2-0.3 plants/m^2; however, at the two CAU 400 sites, decreases were 2-3 plants/m^2. Plant density increased at the soil cap and staging area at CAU 426. The increases were 0.2 and 0.7 plants/m^2, respectively. The two sites at CAU 426 are the only two sites where plant density is significantly lower than on the adjacent native plant community. Plant density has always been low at this site, and although there was an increase this year, plant densities are still lower than at CAU 404 and the CAU 400 Bomblet Pit. Plant densities remain high at the CAU 404 soil cap, with over 13 plants/m^2. At the CAU 400 Bomblet Pit, plant density was 6 plants/m^2, a decrease from 9.7 plants/m^2 last year. Plant density at the CAU 400 Five Points Landfill was 2.6 plants/m^2, the lowest of all sites, except for CAU 407, where there were only annual weeds on the perimeter. Plant densities appear to be stable. There have not been dramatic declines over the last three years of drought. It is anticipated that when adequate precipitation events are experienced, plant densities will increase. Plants onsite are flowering and setting seed, but under drought conditions few, if any, seeds germinate. Plant densities are not expected to increase significantly over current levels because they are equal to or greater than what is found in the native plant community.

With the exception of CAU 426 in May 2000, plant cover has been higher in the vegetated areas than in the native plant community since cover was first estimated (Figure 5). This does not include CAU 407, where there is essentially no plant cover. Plant cover on the CAU 400 Five Points Landfill, the CAU 400 Bomblet Pit, and the CAU 404 soil cap experienced the greatest decline in plant cover. Cover at CAU 400 is the lowest of any of the sites. Even at this low level, plant cover is still equal to the amount of cover on the adjacent reference area. At the CAU 404 staging area and the two sites at CAU 426, plant cover increased for the second consecutive year. Unlike plant density, it is anticipated that with an increase in precipitation, plant cover will increase significantly both on vegetated and reference areas.

The major concern noted last fall was the extensive flood damage at the CAU 400 Five Points Landfill. The exact damage could not be accurately accessed last year. However, it was obvious this year that the plants that were submerged last fall did not survive. There are a few grasses and annual plants in the flooded area, but for the most part there is very little vegetation. As noted last year, unless there is a major effort to modify the topography of the site so surface waters would flow through the site and into downstream channels, the success of any remedial vegetation would be continually threatened with similar events. Repair of the perimeter fence that was damaged would only be necessary if remedial revegetation work is conducted. The plants that are present could probably tolerate some grazing.

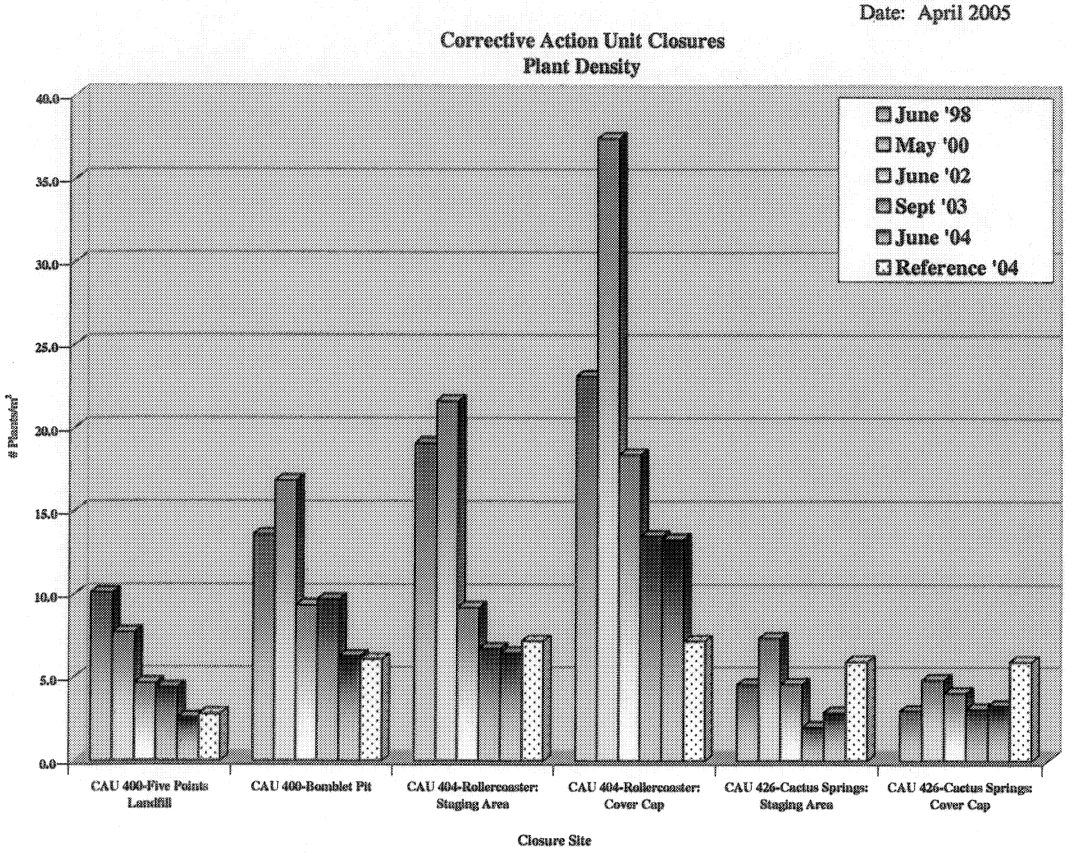

Figure 4. Plant density on all CAUs over the last six years and compared to 2004 plant densities on reference areas.

Before the CAU 400 Bomblet Pit was closed, it was dominated by halogeton, an invasive noxious weed. The concern was that halogeton would invade the site after reseeding. However, after an initial increase in 1999, when halogeton density was 27 plants/m^2, the density of halogeton has declined to less than 0.1 plants/m^2. It is important to monitor this site to ensure densities of halogeton do not increase at the expense of perennial, more desirable, plant species.

Surface erosion was noted last year at the CAU 404 staging area. Surface water has flowed down the access road and onto the site. There was some sediment accumulation noted last year, but this year the area did not show any detrimental effects. In fact, plants in the area appeared to show greater growth than surrounding areas, probably from an increase in soil moisture.

CAU 407 still lacks a vegetative cover, and erosion off the pad is severe (Figure 3). Some remedial action might be appropriate at this site. The establishment of vegetation on the cover would reduce the potential for erosion, or diversion channels could be used to direct water flow and possibly reduce the number of gullies that are forming on the cover.

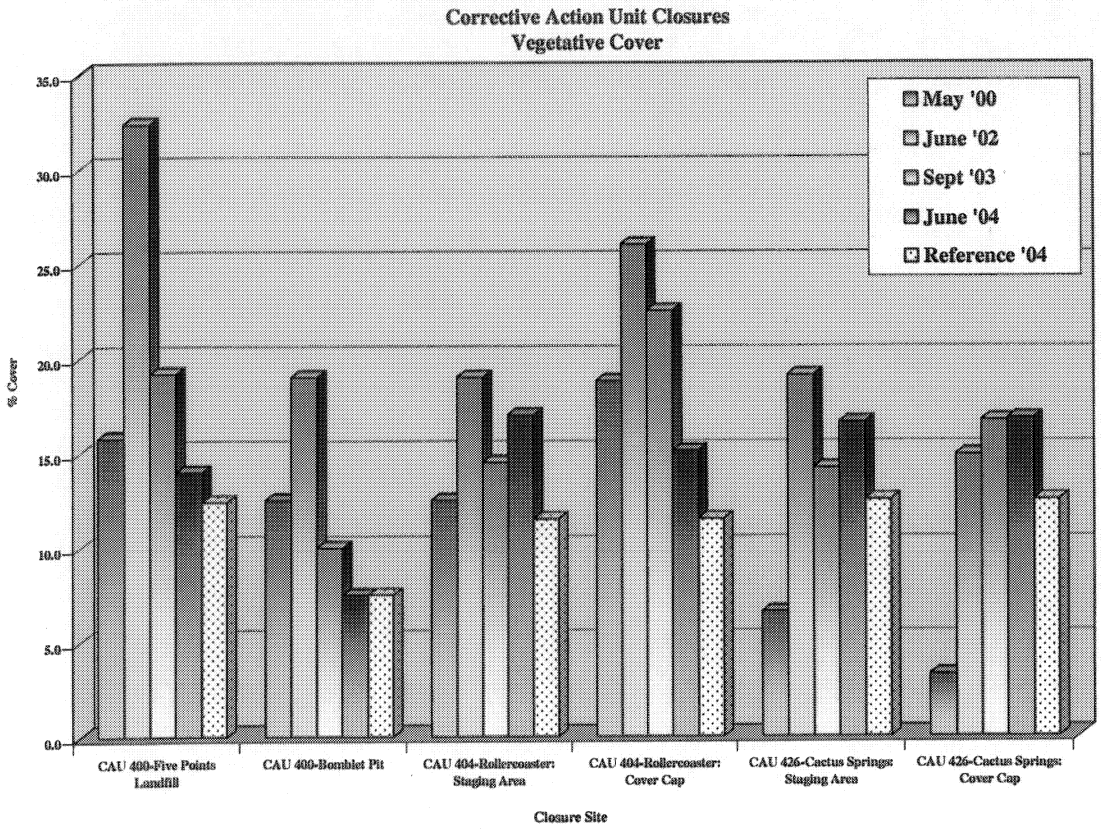

Figure 5. Plant cover for all CAUs over the last four years and compared to plant cover on adjacent native plant communities.

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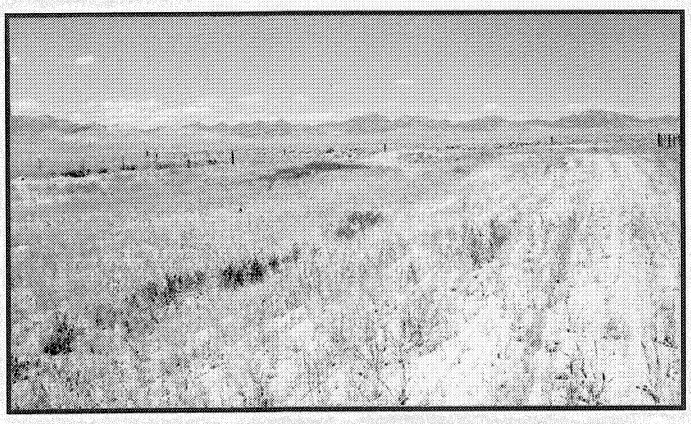
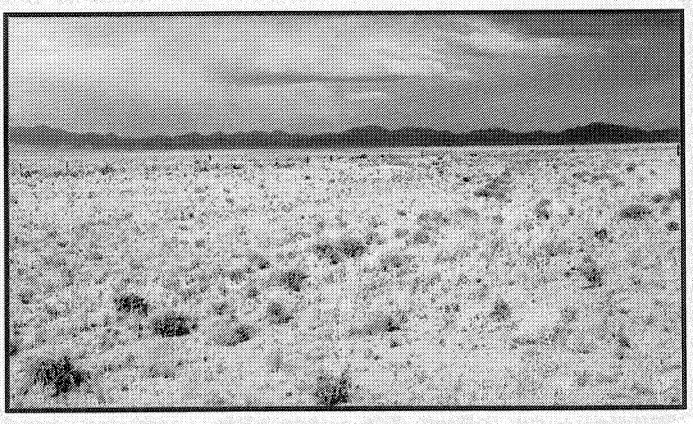
APPENDIX F.1

PHOTOGRAPHIC REFERENCE POINT

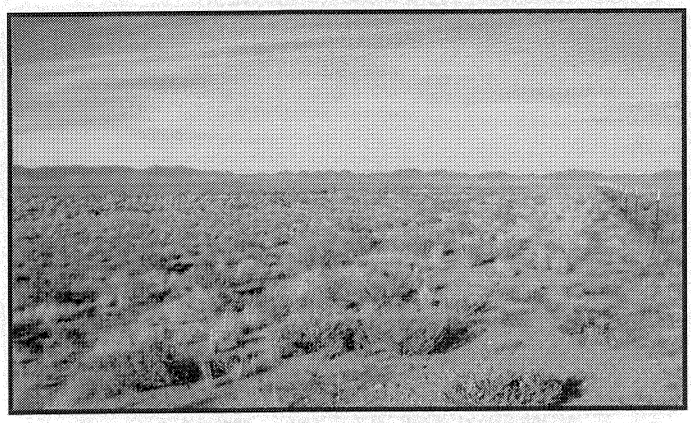
CAU 400, FIVE POINTS LANDFILL
PHOTOGRAPHIC REFERENCE POINT



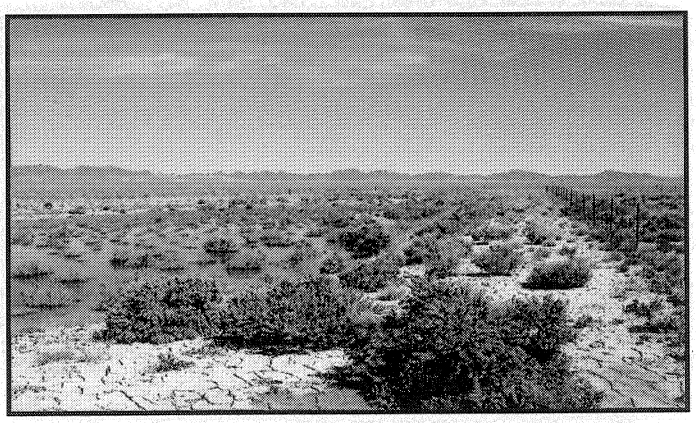
Inside fence, looking east, July 1998



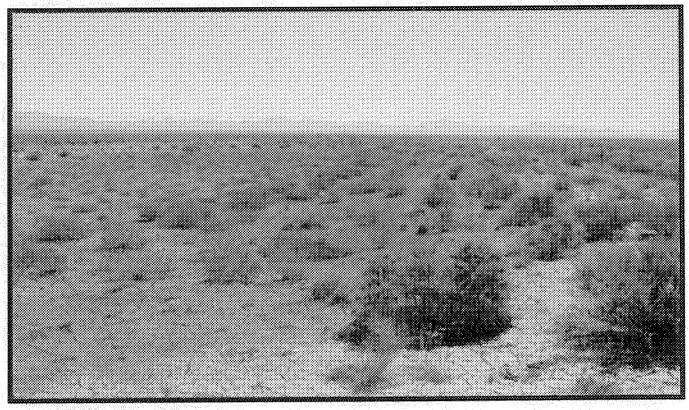
Inside fence, looking east, June 2000



Inside fence, looking east, June 2002



Inside fence, looking east, September 2003

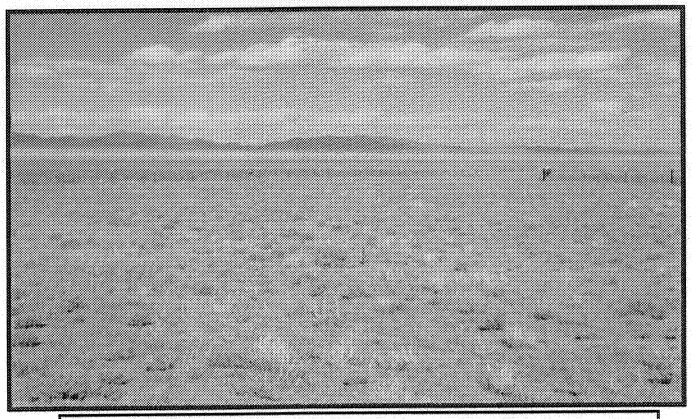


Inside fence, looking east, June 2004

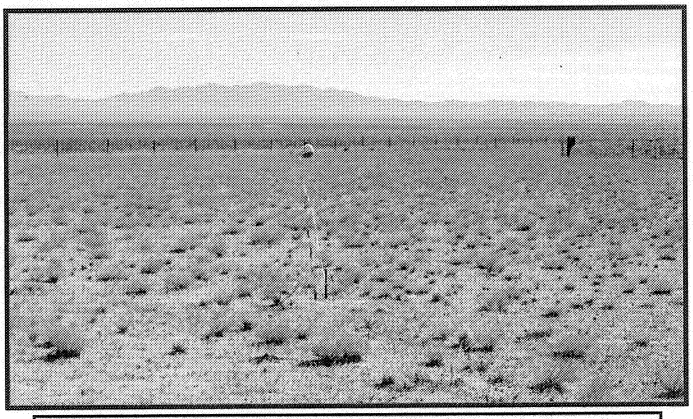
CAU 400, BOMBLET PIT
PHOTOGRAPHIC REFERENCE POINT

Inside fence, looking east, June 1998

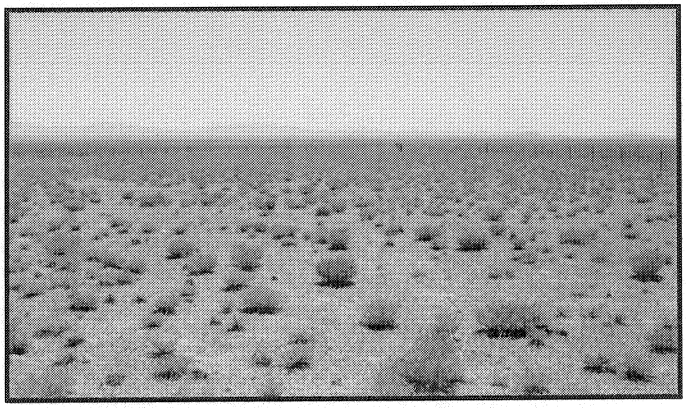
Inside fence, looking east, June 2000



Inside fence, looking east, June 2002



Inside fence, looking east, September 2003



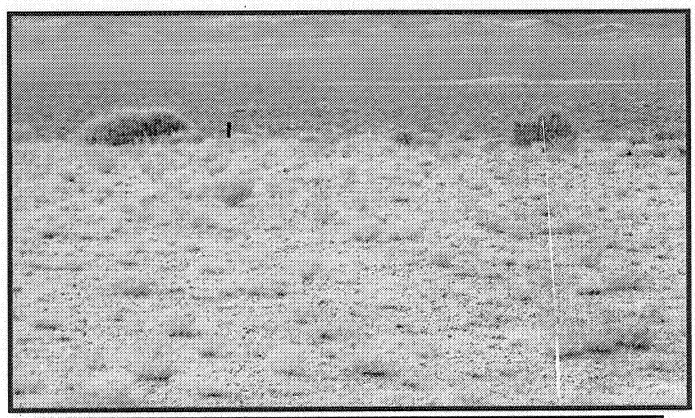
Inside fence, looking east, June 2004

CAU 404, SOIL CAP
PHOTOGRAPHIC REFERENCE POINT

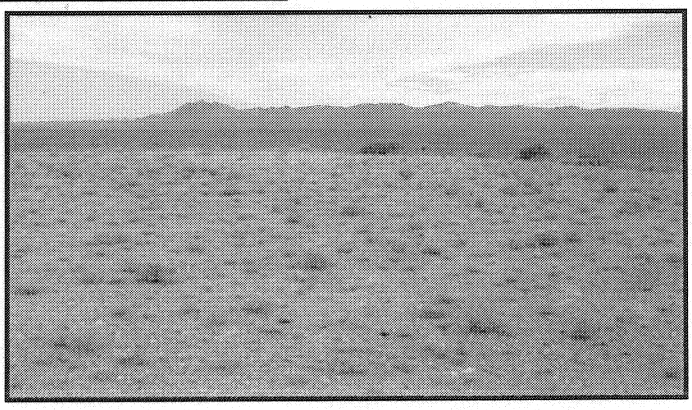
Inside fence, looking north, June 1998

Inside fence, looking north, June 2000

Inside fence, looking north, June 2002



Inside fence, looking southwest, September 2003

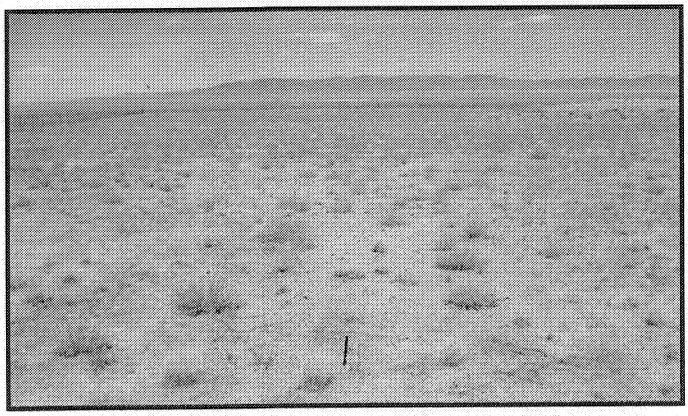


Inside fence, looking south, June 2004

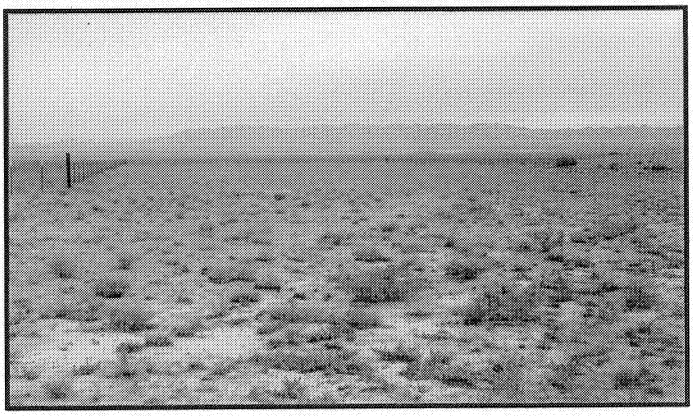
CAU 404, STAGING AREA
PHOTOGRAPHIC REFERENCE POINT

Inside fence, looking northeast, June 1998

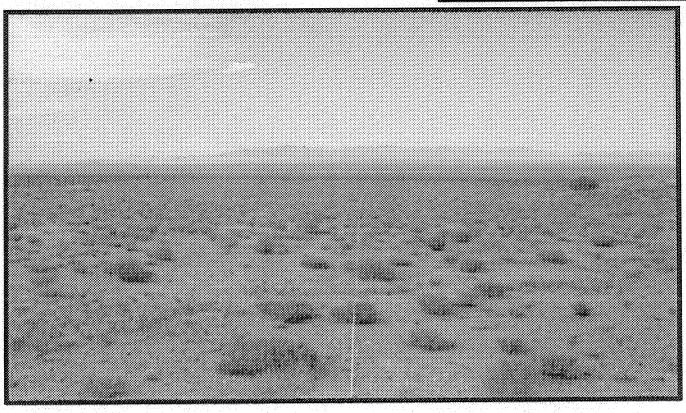
Inside fence, looking northeast, June 2000



Inside fence, looking northeast, June 2002



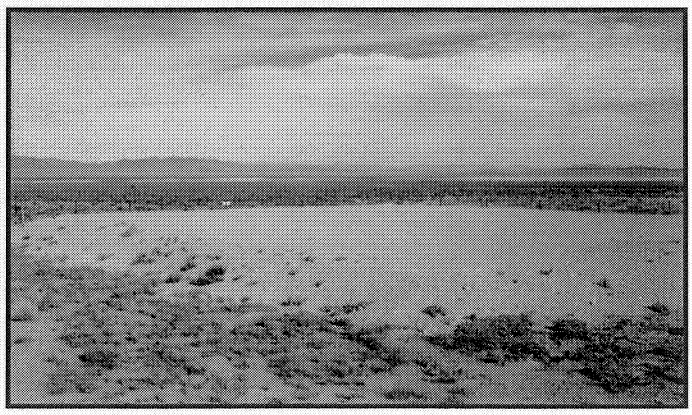
Inside fence, looking northeast, September 2003



Inside fence, looking northeast, June 2004

CAU 407-ROLLERCOASTER RADSAFE AREA
PHOTOGRAPHIC REFERENCE POINT

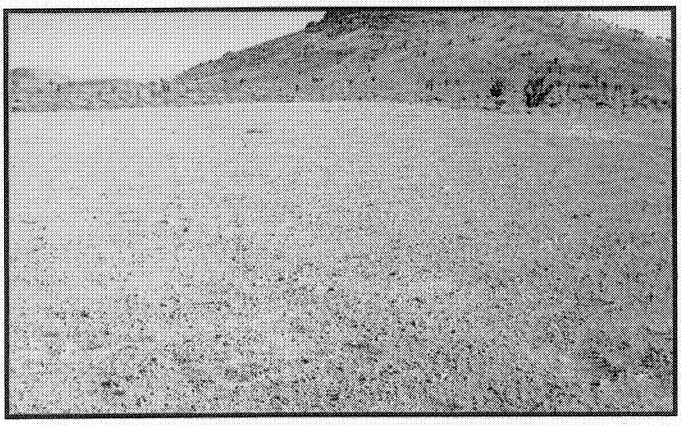
Inside fence, looking southeast, June 2002



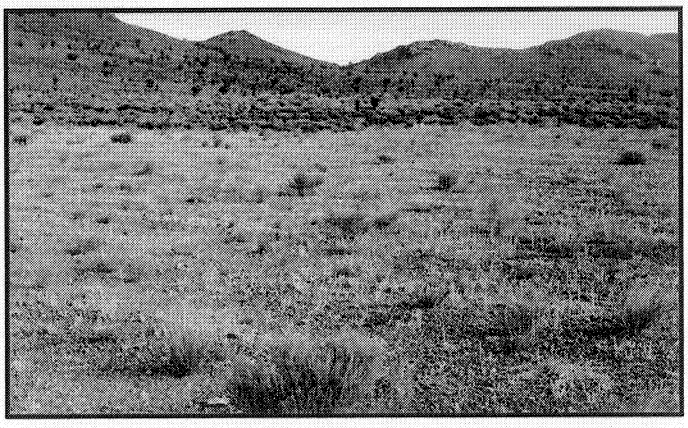
Inside fence, looking east, September 2003

Inside fence, looking east, June 2004

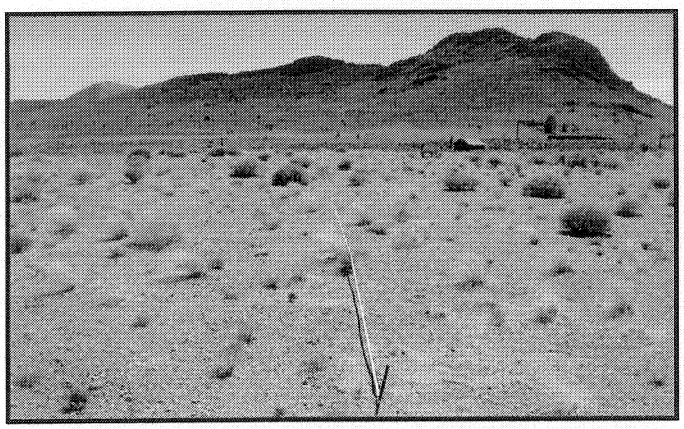
CAU 426, SOIL CAP
PHOTOGRAPHIC REFERENCE POINT



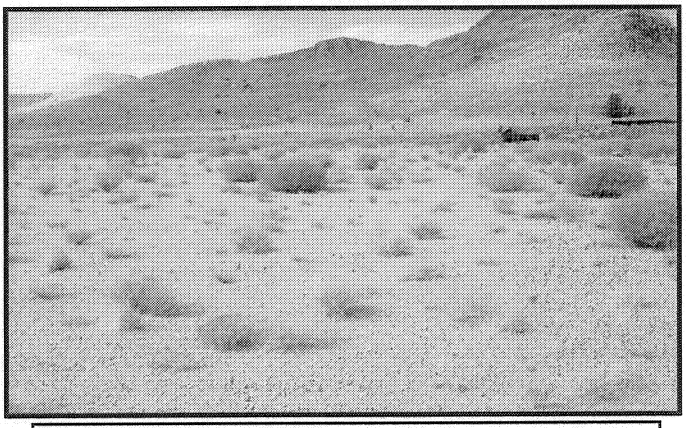
Inside fence, looking northeast, June 1998



Inside fence, looking north, June 2000



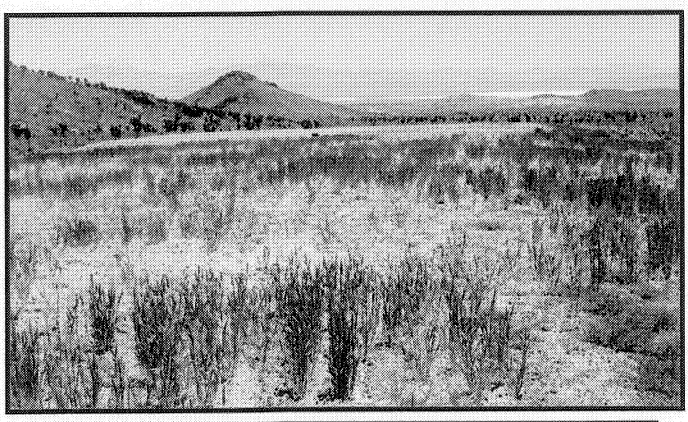
Inside fence, looking west, June 2002



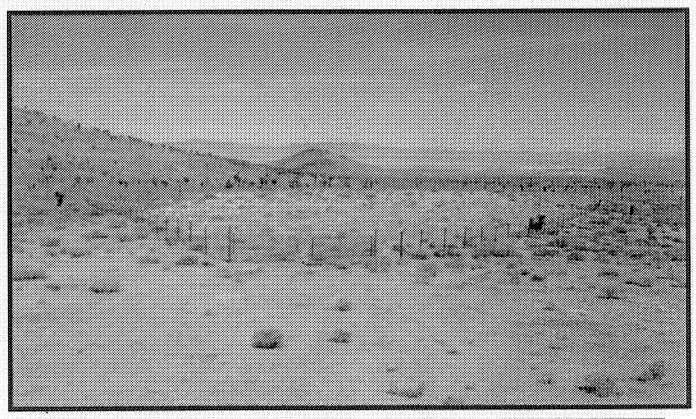
Inside fence, looking west, September 2003

Inside fence, looking west, June 2004

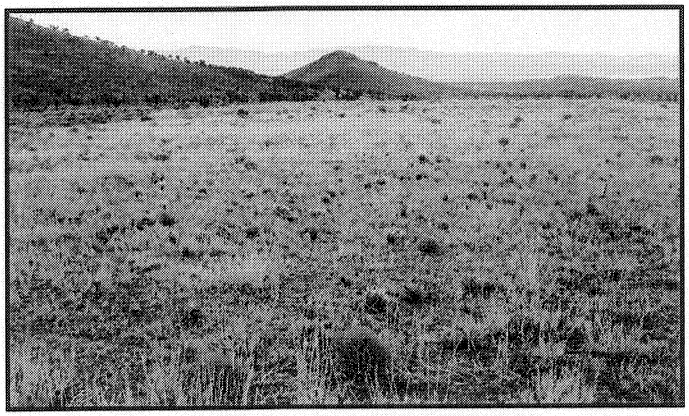
CAU 426, STAGING AREA
PHOTOGRAPHIC REFERENCE POINT



Inside fence, looking east, June 1998



Inside fence, looking east, June 2000



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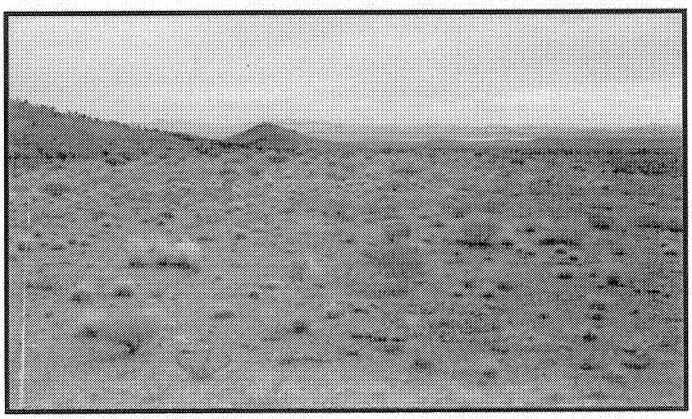

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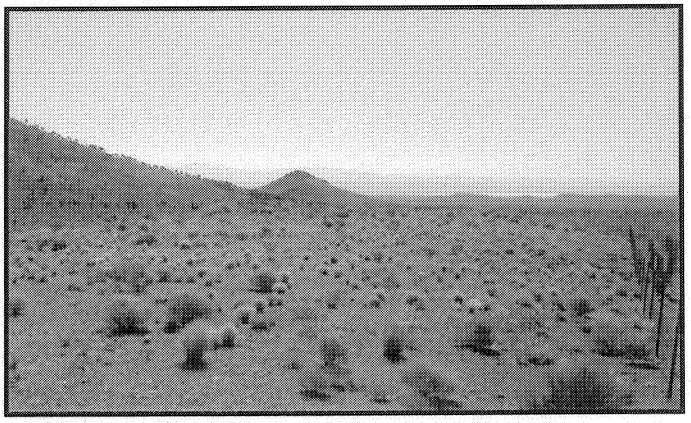

Inside fence, looking east, June 2004

APPENDIX F.2
PLANT SPECIES LIST

Lifeform	Scientific Name	Common Name
Shrubs	*Artemisia nova*	Black sagebrush
	Artemisia spinescens	Bud sagebrush
	Atriplex canescens	Fourwing saltbush
	Atriplex confertifolia	Shadscale saltbush
	Chrysothamnus greenei	Greene's rabbitbrush
	Chrysothamnus viscidiflorus	Low rabbitbrush
	Ephedra nevadensis	Nevada jointfir
	Ericameria nauseosa	Rubber rabbitbrush
	Gutierrezia sarothrae	Broom snakeweek
	Krascheninnikovia lanata	Winterfat
	Sarcobatus vermiculatus	Black greasewood
Grasses	*Achnatherum hymenoides*	Indian ricegrass
	Elymus elymoides	Bottlebrush squirreltail
	Dasyochloa pullcha	Low woollygrass
	Pleuraphis jamesii	Galleta grass
	Sporobolus cryptandrus	Sand dropseed
Forbs	*Astragalus lentiginosa* var. *fremontii*	Fremont's milkvetch
	Cymopterus species	Springparsley
	Sphaeralcea ambigua	Desert globemallow
Annuals	*Ambrosia* species	Ragweed
	Chaneactis xantiana	Xantus pincushion
	Chenactis steviodes	Steve's pincushion
	Chenopodium album	Lambsquaarters
	Cryptantha circumscissa	Cushion cryptantha
	Cryptantha micrantha	Red root cyrptantha
	Cryptantha species	Cryptantha
	Descurania pinnata	Pinnate tansymustard
	Eriastrum sparsiflorum	Fewflower woolstar
	Eriogonu deflexum	Flatcrown buckwheat
	Eriogonum nidularium	Birdnest buckwheat
	Eriogonum species	Buckwheat
	Erodium cicutarium	Filaree
	Gilia nyensis	Nye gilia
	Halogeton glomeratus	Halogeton
	Ipomopsis polycladon	Manybranched gilia
	Lepedium flavum	Yellow pepperweed
	Lupinus species	Lupine
	Macheranthera canescens	Hoary macharanthra
	Mentzelia albomarginatus	White blazingstar
	Mirabilus biglovei	Bigelow's four-o'clock
	Phacelia crenulata	Cleftleaf wildheliotrope
	Salsola tragus	Prickly Russian thistle
	Stephanomeria exigua	Small wirelettuce
	Tiquilia plicatas	Fanleaf tiquilia

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APPENDIX F.3
EROSION CONDITION CLASSIFICATION

Erosion Condition Classification Chart				
Rating	Surface Litter	Pedestalling	Rills < 9"	Rills > 9"
1	Accumulating in place	No visual evidence	No visual evidence	No visual evidence
2	Slight movement	Slight pedestalling	Rills evident at intervals >10'	Rills evident at intervals >10'
3	Moderate movement intervals	Small rock and plant pedestalling	Rills evident at 10' intervals	Rills evident at 10' intervals
4	Extreme movement	Pedestalling plants and roots exposed	Rills evident at 5-10' intervals	Rills evident at 5-10' intervals
5	Very little remaining litter	Most plants and rocks pedestalled and roots exposed	Rills evident at intervals <5'	Rills evident at intervals <5'
	Rating = _____	Rating = _____	Rating = _____	Rating = _____
				TOTAL = _____

Erosion Condition Classification	
Rating	Erosion Condition Class
0.0 - 4.0	Stable
4.1 - 8.0	Slight
8.1 - 12.0	Moderate
12.1 - 16.0	Critical
16.1 - 20.0	Severe

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APPENDIX G

TOPOGRAPHIC SURVEY RESULTS

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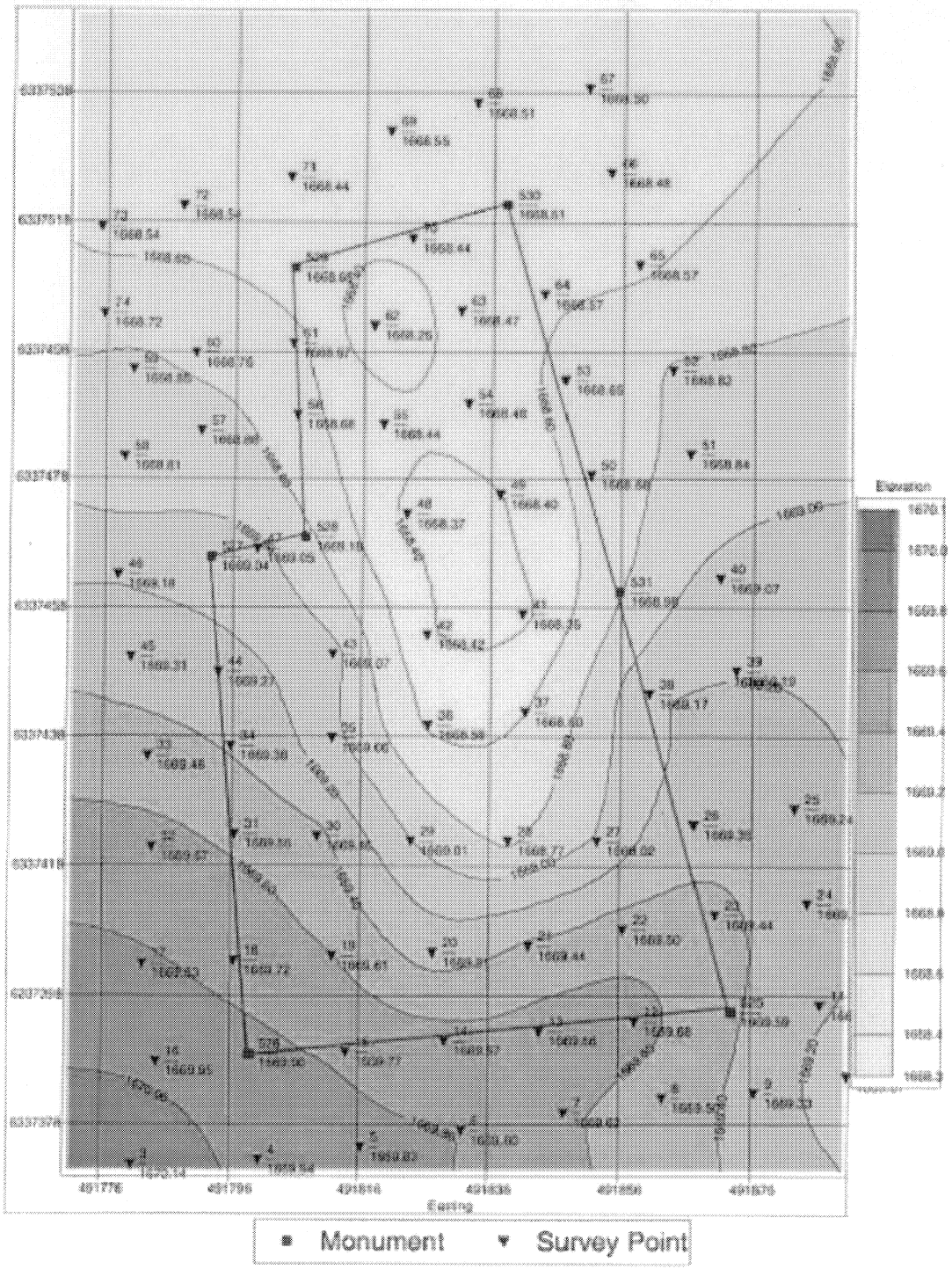
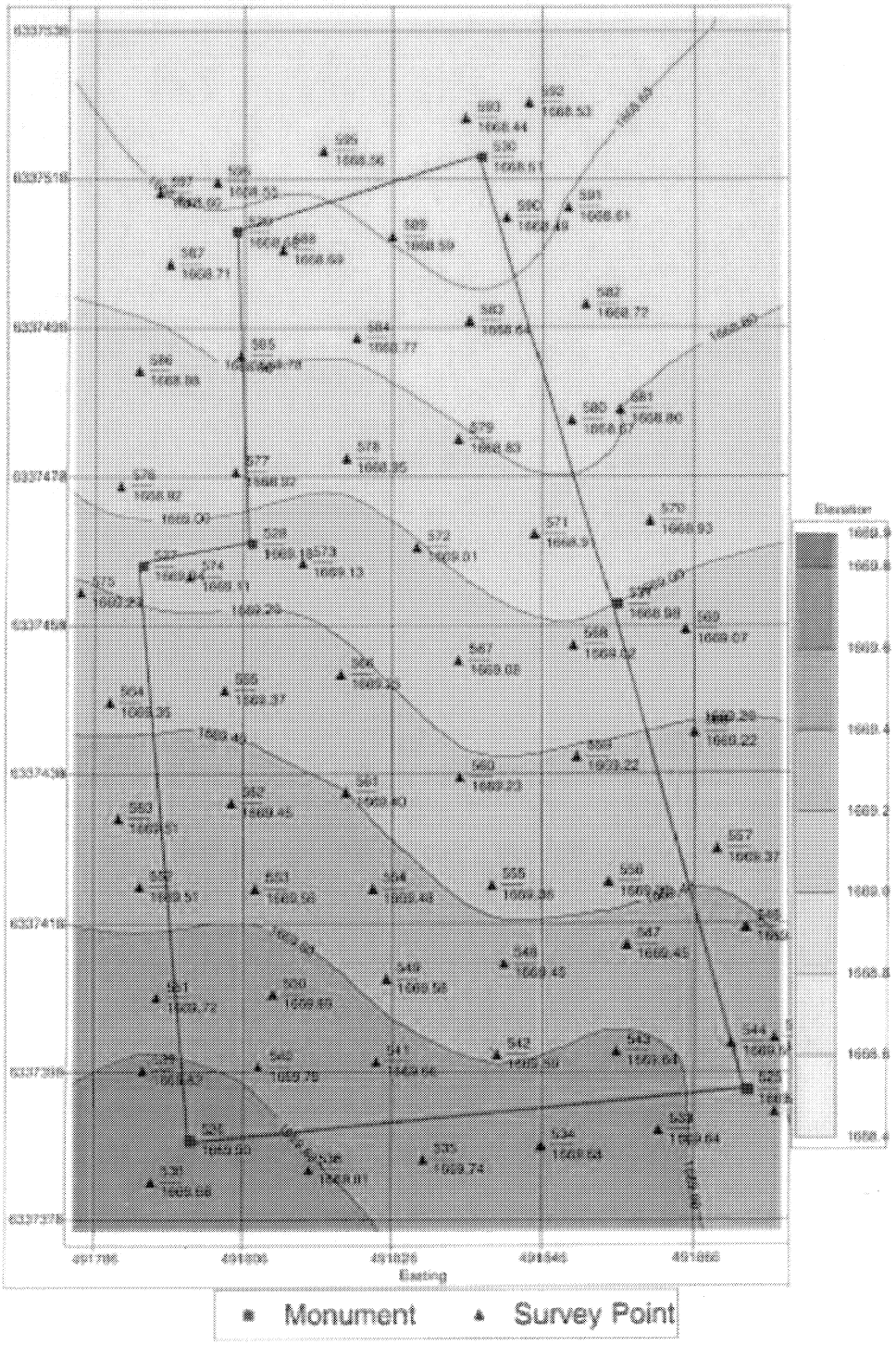
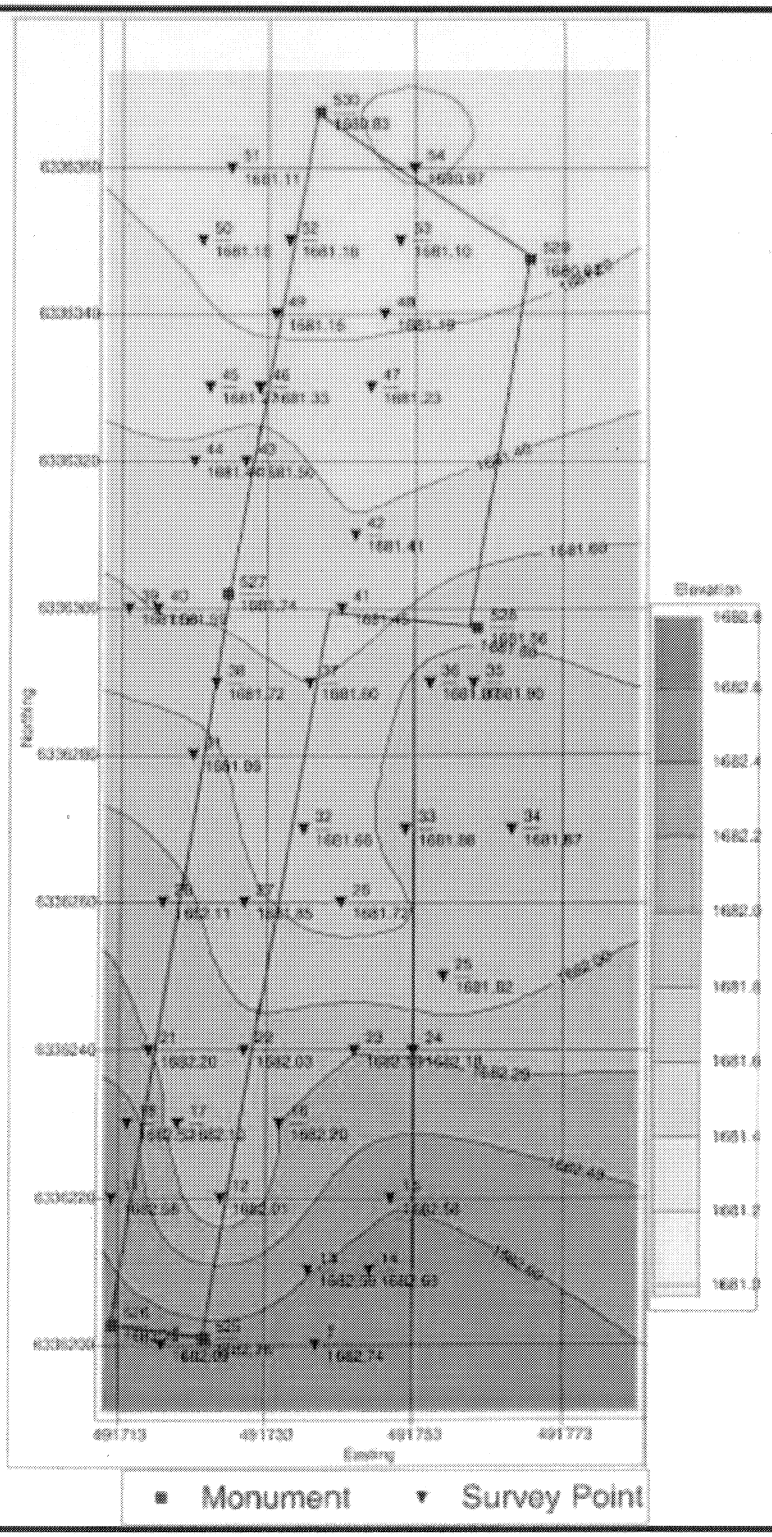


CAU 424, CAS 03-08-001-A301 (LANDFILL CELL A3-1)
TOPOGRAPHIC SURVEY RESULTS BEFORE LANDFILL REPAIR
JULY 9, 2003



CAU 424, CAS 03-08-001-A301 (LANDFILL CELL A3-1)
TOPOGRAPHIC SURVEY RESULTS AFTER LANDFILL REPAIR
DECEMBER 13, 2004



CAU 424, CAS 03-08-002-A304 (LANDFILL CELL A3-4)
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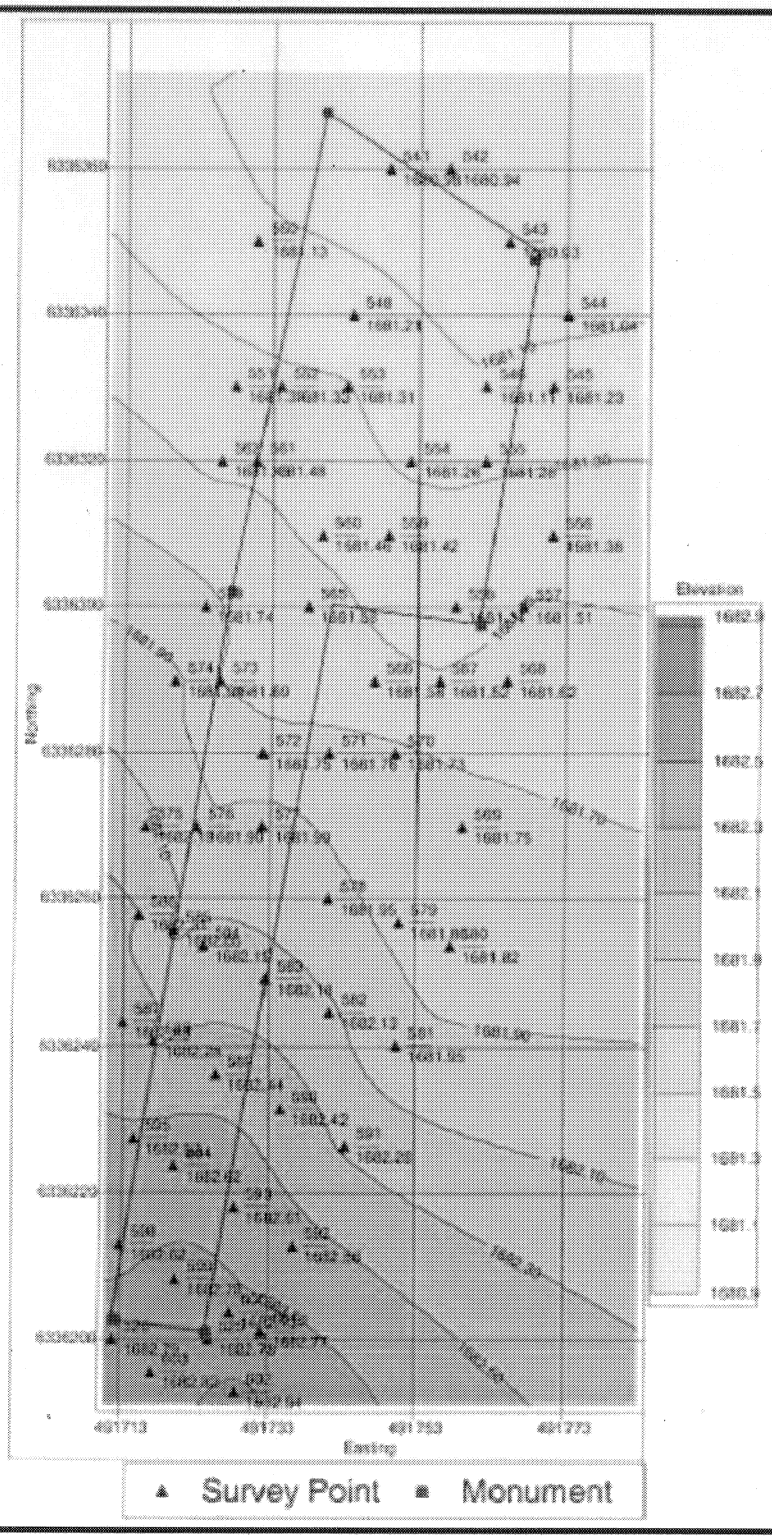
JULY 9, 2003



CAU 424, CAS 03-08-002-A304 (LANDFILL CELL A3-4)
TOPOGRAPHIC SURVEY RESULTS AFTER LANDFILL REPAIR
DECEMBER 13, 2004

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