Corrective Action Plan for Corrective Action Unit 261: Area 25 Test Cell A Leachfield System, Nevada Test Site, Nevada

Revision: 0

August 2000

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CORRECTIVE ACTION PLAN FOR
CORRECTIVE ACTION UNIT 261:
AREA 25 TEST CELL A LEACHFIELD SYSTEM,
NEVADA TEST SITE, NEVADA

Prepared for
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Nevada Operations Office
Work Performed Under Contract No.
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August 2000
CORRECTIVE ACTION PLAN FOR CORRECTIVE ACTION UNIT 261: AREA 25 TEST CELL A LEACHFIELD SYSTEM, NEVADA TEST SITE, NEVADA

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Date: 8/24/00

Approved by: Runore C. Wycoff, Director Environmental Restoration Division

Date: 8/25/00
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<th>Definition</th>
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</thead>
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<tr>
<td>AWLP</td>
<td>Acid Waste Leach Pit</td>
</tr>
<tr>
<td>BN</td>
<td>Bechtel Nevada</td>
</tr>
<tr>
<td>CADD</td>
<td>Corrective Action Decision Document</td>
</tr>
<tr>
<td>CAP</td>
<td>Corrective Action Plan</td>
</tr>
<tr>
<td>CAS</td>
<td>Corrective Action Site</td>
</tr>
<tr>
<td>CAU</td>
<td>Corrective Action Unit</td>
</tr>
<tr>
<td>COC</td>
<td>Constituent(s) of Concern</td>
</tr>
<tr>
<td>CR</td>
<td>Closure Report</td>
</tr>
<tr>
<td>DOE/NV</td>
<td>U.S. Department of Energy, Nevada Operations Office</td>
</tr>
<tr>
<td>EPA</td>
<td>U.S. Environmental Protection Agency</td>
</tr>
<tr>
<td>FFACO</td>
<td>Federal Facility Agreement and Consent Order</td>
</tr>
<tr>
<td>FMP</td>
<td>Field Management Plan</td>
</tr>
<tr>
<td>gal</td>
<td>gallon</td>
</tr>
<tr>
<td>L</td>
<td>liter</td>
</tr>
<tr>
<td>mg/L</td>
<td>mg/L</td>
</tr>
<tr>
<td>NAC</td>
<td>Nevada Administrative Code</td>
</tr>
<tr>
<td>NDEP</td>
<td>Nevada Division of Environmental Protection</td>
</tr>
<tr>
<td>NEPA</td>
<td>National Environmental Protection Act</td>
</tr>
<tr>
<td>NTS</td>
<td>Nevada Test Site</td>
</tr>
<tr>
<td>OSHA</td>
<td>Occupational Safety and Health Administration</td>
</tr>
<tr>
<td>pCi/g</td>
<td>picocuries per gram</td>
</tr>
<tr>
<td>PPE</td>
<td>Personal Protective Equipment</td>
</tr>
<tr>
<td>SSHASP</td>
<td>Site-Specific Health and Safety Plan</td>
</tr>
<tr>
<td>REOP</td>
<td>Real-Estate/Operations Permit</td>
</tr>
<tr>
<td>RWP</td>
<td>Radiological Work Permit</td>
</tr>
<tr>
<td>TPH</td>
<td>Total Petroleum Hydrocarbons</td>
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</table>
EXECUTIVE SUMMARY

This Corrective Action Plan (CAP) has been prepared for the Corrective Action Unit (CAU) 261 Area 25 Test Cell A Leachfield System in accordance with the Federal Facility and Consent Order (Nevada Division of Environmental Protection [NDEP] et al., 1996). This CAP provides the methodology for implementing the approved corrective action alternative as listed in the Corrective Action Decision Document (U.S. Department of Energy, Nevada Operations Office, 1999).

Investigation of CAU 261 was conducted from February through May of 1999. There were no Constituents of Concern (COCs) identified at Corrective Action Site (CAS) 25-05-07 Acid Waste Leach Pit (AWLP). COCs identified at CAS 25-05-01 included diesel-range organics and radionuclides.

The following closure actions will be implemented under this plan:

- Because COCs were not found at CAS 25-05-07 AWLP, no action is required.
- Removal of septage from the septic tank (CAS 25-05-01). The distribution box and the septic tank will be filled with grout.
- Removal of impacted soils identified near the initial outfall area.
- Upon completion of this closure activity and approval of the Closure Report by NDEP, administrative controls, use restrictions, and site postings will be used to prevent intrusive activities at the site.

Closure verification for the initial outfall area and the septic tank will be done by confirmatory sampling. Once the septage has been removed and the septic tank given a high pressure rinse, the rinse waters will be sampled. COCs identified in the septage include cesium-137, americium-241, strontium-90, and diesel-range organics. Therefore verification sampling will consist of gamma scan and isotopic plutonium. The only COC identified at the initial outfall area is cesium-137. Therefore, verification sampling will consist of a gamma scan.

The proposed monitoring consists of annual (yearly) visual inspections of the signs to verify that signs are in-place and readable, and that use restrictions are maintained. 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/repairs for a given year will be addressed in a single report submitted annually to the NDEP.
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1.0 INTRODUCTION

This Corrective Action Plan (CAP) has been prepared for the Corrective Action Unit (CAU) 261 Area 25 Test Cell A Leachfield System in accordance with the Federal Facility and Consent Order (FFACO) (Nevada Division of Environmental Protection [NDEP] et al., 1996). This CAP provides the methodology for implementing the approved corrective action alternative as listed in the Corrective Action Decision Document (CADD) (U.S. Department of Energy, Nevada Operations Office [DOE/NV], 1999).

CAU 261 is located in Area 25 of the Nevada Test Site (NTS). The NTS is approximately 65 miles northwest of Las Vegas, Nevada (Figure 1). CAU 261 is located on the east side of Test Cell A (Figure 2). CAU 261 includes two Corrective Action Sites (CAS), CAS 25-05-01 (leachfield) and CAS 25-05-07 (Acid Waste Leach Pit [AWLP]). CAS 25-05-01 consists of Test Cell A operated during the 1960s and 1970s to support the Nuclear Rocket Development Station. Various operations within Building 3124 resulted in liquid waste releases to the leachfield and the AWLP.

Investigation of CAU 261 was conducted from February through May of 1999. There were no Constituents of Concern (COCs) identified at CAS 25-05-07 AWLP. COCs identified at CAS 25-05-01 included diesel-range organics and radionuclides (Figure 3).

1.1 PURPOSE

The purpose of this CAP is to provide the methodology for closing CAU 261 as proposed in the CADD (DOE/NV, 1999).

1.2 SCOPE

Detailed information of the site history and results of the investigation activities can be found in the Corrective Action Investigation Plan (DOE/NV, 1998). The following closure actions will be implemented under this plan:

- Because COCs were not found at CAS 25-05-07 AWLP, no action is required.

- Removal of septage from the septic tank (CAS 25-05-01). The distribution box and the septic tank will be filled with grout.

- Removal of impacted soils identified near the initial outfall area.
FIGURE 1
CAU 261 LOCATION MAP
FIGURE 2
CAU 261 VICINITY MAP
Upon completion of the this closure activity and approval of the Closure Report (CR) by NDEP, administrative controls, use restrictions, and site postings will be used to prevent intrusive activities at the site.

1.3 CORRECTIVE ACTION PLAN CONTENTS

This CAP is divided into the following sections in accordance with the approved FFACO CAP outline:

Section 1.0 - Introduction

Section 2.0 - Detailed Statement of Work

Section 3.0 - Schedule

Section 4.0 - Post-Closure Monitoring Plan

Section 5.0 - References

The appendices of this document have been modified from the approved FFACO outlined. The following FFACO outline appendices have not been included or revised as indicated below:

- APPENDIX A-1 Engineering Specifications and Drawings
  This appendix is not including because this closure does not require design work.

- APPENDIX A-2 Sampling and Analysis Plan
  This appendix is not included because it has been adequately addressed in Section 2.4.

- APPENDIX A-3 Project Organization
  This appendix is identified as Appendix A.

The appendices included in this document are provided as follows:

- APPENDIX A Project Organization.

This plan was developed using information and guidance provided from the following documents:


2.0 DETAILED STATEMENT OF WORK

2.1 APPROVED ALTERNATIVE IMPLEMENTATION

Based on the site characterization results (DOE/NV, 1999), the CADD recommends the following:

- No further action for CAS 25-05-07 AWLP.

- Closure in place of the CAS 25-05-01 leachfield septic tank and distribution box (Figure 3). Prior to closure in place the septage from the septic tank connected to the leachfield will be removed. Both the septic tank and distribution box will have their inlets and outlets grouted closed followed by filling with inert materials (grout) following Nevada Administrative Code 444.818 (1998). Additionally the impacted soils identified near the initial outfall area will be removed. A detailed discussion of the closure strategy follows.

2.1.1 Preplanning and Site Preparation

The closure of CAU 261 will include preplanning and site preparation before closure activities begin:

- Collection of septage sample for waste profiling purposes.

- Preparation of planning documents such as the Site-Specific Health and Safety Plan (SSHASP), Real Estate/Operations Permit (REOP), National Environmental Policy Act checklist (NEPA) and the Field Management Plan (FMP).

- Site preparation including utility clearance and work permits.

- Identification and approval of a water source for dust suppression and other construction activities.

- Scheduling and coordination of the closure work.

2.1.1.1 SSHASP/Hazard Analysis

A SSHASP and Hazard Assessment will be prepared. A task kick-off meeting will be held to discuss the scope of work and prepare the preliminary hazard analysis. A copy of the SSHASP will be kept on-file in the Bechtel Nevada (BN) Environmental Restoration and the BN Environment, Safety, and Health Division Offices in Mercury, Nevada. The original document will be kept by the site supervisor at the work site. The SSHASP will be available on-site for
review and signature by all workers prior to the beginning of work at the site. The SSHASP will provide a detailed, job-specific plan covering protection against accidents or exposure of workers to contamination.

2.1.1.2 FMP

A FMP will be prepared for the closure activities. The plan will outline how the work will be accomplished and provide a detailed schedule for the project. In addition, it will identify the responsible parties for each aspect of the project and determine how decisions will be made. A copy of the FMP will be placed on file at the BN Environmental Restoration offices in Mercury, Nevada, and a copy will also be available at the project field site.

2.1.1.3 NEPA Documentation

A NEPA checklist will be completed. Information from a biologic survey will be used to report on the condition of existing vegetation and wildlife immediately adjacent to the area which may be affected by construction activities, equipment and material storage areas, and access routes.

2.1.2 Closure Field Activities

Standard construction equipment will be used for excavation and closure activities. Equipment will consist of, but will not be limited to, a backhoe and septage pump truck.

2.1.2.1 Removal of Septage

The contents of the septic tank will be removed using a vacuum truck. Prior to sludge removal high-pressure water will be used to loosen the sludge. Once the tank contents have been removed, the septic tank will be rinsed with clean water until rinsate appears to be visibly clean. Verification samples will be collected from the rinsate to determine if all COCs have been removed (Section 2.4). The contents of the septic tank will be packaged in overpack 322-liter (L) (85-gallon [gal]) following BN Organization Procedure OP-215.1.304, “Radioactive Waste Tracking, Handling, and Management at the NTS,” (BN, 1999) and stored temporarily in a waste management area (Figure 3) to await disposal following Section 2.3 of this CAP.

2.1.2.2 Grouting Closed the Inlets and Outlets

Following septage removal the inlet and outlet ports, both the septic tank and distribution box will be grouted closed. Once this has been done the septic tank and distribution box will be filled with grout following NAC 444.818 (1998).
2.1.2.3 Removal of Impacted Soils from the Initial Outfall Area

Soils identified in the CADD (DOE/NV, 1999) from the initial outfall area will be removed. Soils will be excavated to a depth 1 meter (3 feet). Approximately 0.76 cubic meters of soil (1 cubic yard) will be removed. Excavated soil will be managed as low-level radioactive waste. Impacted soil will be placed in 55-gal drums following BN Organization Procedure OP-2151.304, “Radioactive Waste Tracking, Handling, and Management at the NTS,” (BN, 1999) and stored temporarily in a waste management area (Figure 3) to await disposal (Section 2.3). The excavated area will be surveyed with a hand-held Electra to identify radiological impacted areas. Verification soil samples will be collected after all impacted soil is believed to have been removed. Sampling will be done following Section 2.4 of this CAP. The excavation will remain open until the results of the verification samples show that clean-up levels have been met and additional excavation is not required.

2.1.2.4 Site Restoration

After confirmatory sampling indicates that the site is clean, the excavated areas will be refilled with clean soil to return the site to its original grade.

2.1.2.5 Decontamination of Equipment

All equipment and materials used on-site will be surveyed for radiological constituents using hand-held Electras and swipe samples prior to release from the site. The decontamination rinsate that is collected will be placed in a 208-L (55-gal) drum. Any equipment that becomes contaminated during the excavation will be decontaminated on-site. For larger pieces of equipment that cannot be decontaminated over a 208-L (55-gal) drum, a decontamination pad will be established by lining a bermed area large enough to hold the heavy equipment. The equipment will be driven onto the pad and steam cleaned. Hand-held equipment will be cleaned with a solution of Alconox™ and water, and rinsed with clean water. Rinsate will be held in the bermed area and allowed to evaporate unless it is in excess of what the bermed area can hold. Excess rinsate will be pumped into drums. Any remaining rinsate at the time of final site housekeeping will be placed in containers and disposed of following Section 2.3 of this Closure Plan. The plastic liner will be placed in containers as compactable waste and disposed of following Section 2.3.

2.2 CONSTRUCTION QUALITY ASSURANCE/QUALITY CONTROL

Construction activities consist of a small amount of excavation. As a result, no construction quality assurance/quality control is required.
COC is Cesium-137...10.6 pCi/g

Boundary will be used to define the exclusion zone.

COCs Include:
- TPH (diesel)...150 mg/kg
- Americium-241...1.97 pCi/g
- Cesium-137...2.06 pCi/g

FIGURE 3
CAU 261 CLOSURE IMPLEMENTATION MAP
2.3 WASTE MANAGEMENT

Activities will generate sanitary waste and low-level radioactive waste. Sanitary waste will include uncontaminated personal protective equipment (PPE), and trash generated by personnel on the site. These wastes will be transported to an approved sanitary landfill at the NTS. These wastes may be placed in drums if the size/quantity of materials permit. Drums used at the site for waste storage/disposal will be labeled as sanitary waste. Site personnel will follow the principles of the BN Waste Minimization and Pollution Prevention Program. Table 1 outlines the management of various waste types that could be generated by this closure activity.

2.3.1 CONTAINER MANAGEMENT

All containers will be handled following BN Organization Procedure OP-2151.304 (BN, 1999) which covers the use and management of containers. All containers must be in good condition. If the container begins to leak, the contents must be transferred to a container that is in good condition without dents or significant rust. The containers must always be closed while stored unless waste is being added or removed. They must be handled in such a manner that will not jeopardize the integrity of the container.

A combination 208-L (55-gal) drums and over-pack drums 322-L [85-gal] will be used during this project. Containers will not be filled above their specified weight capacity. After a container has been filled, the container will be locked. If a container is not completely filled to capacity at the end of a work day, it will be locked and tamper-resistant tape will be placed over the container’s hinge. Additional precautions include not filling 208-L (55-gal) drums more than 7/8 full and not mixing waste types.

The majority of waste produced is anticipated to be septage and soil. Secondary containment will be used for septage. Containers containing free liquids will be placed on spill containment pallets. Appropriate labels and relevant information will be marked on each container with an indelible marker and must be legible and clearly visible for inspections. Pertinent data may be written on duct tape or a blank adhesive label that is applied to the side of the container. The following information will be included:

- Waste-Tracking Label.
- Type of waste in the container (i.e., it must be marked “Radioactive Waste”).
TABLE 1 - MANAGEMENT OF VARIOUS WASTE TYPES TO BE PRODUCED AT CAU 261 CLOSURE

<table>
<thead>
<tr>
<th>MEDIA</th>
<th>WASTE TYPE</th>
<th>DECISION</th>
</tr>
</thead>
<tbody>
<tr>
<td>Septage</td>
<td>Low-Level Radioactive Waste</td>
<td>Low-level waste will be managed in accordance with the BN Organization Procedure OP-215.304, &quot;Radioactive Waste Tracking, Handling, and Management at the NTS&quot; (BN, 1999). Waste will be solidified using Aqua-Set® or an equivalent approved solidification agent, placed into containers, labeled, and placed in the designated waste management area. If necessary, absorbent will be added. Appropriate paperwork (Package Inventory, Waste Traveler, Packaging Certification, Radioactive Material Shipping Exception Record or Radioactive Material Shipping Record, Waste Shipment Checklist, and Certification Statement) will be completed prior to shipment for disposal.</td>
</tr>
<tr>
<td>Levels Less Than Regulated Limits</td>
<td>Low-Level Radioactive Waste</td>
<td>The soil will be returned to excavation and used as backfill material.</td>
</tr>
<tr>
<td>Soil</td>
<td>Low-Level Radioactive Waste</td>
<td>Low-level waste will be managed in accordance with the BN Procedure Organization OP-215.304, &quot;Radioactive Waste Tracking, Handling, and Management at the NTS&quot; (BN, 1999). Waste will be placed into containers, labeled, and placed in the designated waste management area. If necessary, absorbent will be added. Appropriate paperwork (Package Inventory, Waste Traveler, Packaging Certification, Radioactive Material Shipping Exception Record or Radioactive Material Shipping Record, Waste Shipment Checklist, and Certification Statement) will be completed prior to shipment for disposal.</td>
</tr>
<tr>
<td>Levels Less Than Regulated Limits</td>
<td>Low-Level Radioactive Waste</td>
<td>The soil will be returned to excavation and used as backfill material.</td>
</tr>
<tr>
<td>Decontamination Rinsate and Liner</td>
<td>Low-Level Radioactive Waste</td>
<td>Waste will be managed in accordance with the BN Organization Procedure OP-215.304, &quot;Radioactive Waste Tracking, Handling, and Management at the NTS&quot; (BN, 1999). Waste will be solidified using Aqua-Set® or an equivalent approved solidification agent, placed into containers, labeled, and placed in the designated waste management area. Appropriate paperwork (Package Inventory, Waste Traveler, Packaging Certification, Radioactive Material Shipping Exception Record or Radioactive Material Shipping Record, Waste Shipment Checklist, and Certification Statement) will be completed prior to shipment for disposal.</td>
</tr>
<tr>
<td>Levels Less Than Regulated Limits</td>
<td>Low-Level Radioactive Waste</td>
<td>Waste will be allowed to evaporate or solidified, if necessary, and subsequently transported to the Area 9.</td>
</tr>
</tbody>
</table>
### TABLE 1 - MANAGEMENT OF VARIOUS WASTE TYPES TO BE PRODUCED AT CAU 261 CLOSURE (Continued)

<table>
<thead>
<tr>
<th>MEDIA</th>
<th>WASTE TYPE</th>
<th>DECISION</th>
</tr>
</thead>
<tbody>
<tr>
<td>PPE and Sampling Equipment</td>
<td>Low-Level Radioactive Waste (Based on Field-Screening Background Levels)</td>
<td>Waste will be managed in accordance with the BN OP-2151.304, “Radioactive Waste Tracking, Handling, and Management at the NTS” (BN, 1999). PPE generated in association with a hotline will also be managed in accordance with BN Local Implementation Document L-A14.107.H, “General Radiological Control Technician Field Instructions” (BN, 1998). PPE will be placed in the containers of soil to occupy any void space in the container.</td>
</tr>
<tr>
<td></td>
<td>Levels Less Than Field-Screening Background Levels</td>
<td>Waste will be managed as sanitary waste and transported to the Area 9, U10C Landfill for disposal.</td>
</tr>
</tbody>
</table>
• Location waste was derived from.
• Date accumulation begins/ends.
• If sampling is required, "Awaiting Analysis" sticker after sampling has been completed.

2.3.2 Site Control

The site is currently fenced. This fencing will be maintained during site remediation activities. A hotline will be set up (Figure 3) if an Radioactive Work Permit (RWP) is required and only properly trained personnel wearing appropriate PPE will be allowed access to the exclusion zone. All equipment and materials will be surveyed for radiation prior to removal from the exclusion zone.

A fenced waste storage area will be established outside of the work area to store material that could potentially be low-level radioactive waste or mixed waste. This will consist primarily of 208-L (55-gal) drums and over-pack drums. Figure 3 shows the planned location for the waste management area. This location may change as field conditions dictate.

2.3.3 Personnel Training

All personnel responsible for packing low-level or mixed radioactive waste will be required to read and understand BN Organization Procedure OP-215.304, "Radioactive Waste Tracking, Handling, and Management at the NTS" (BN, 1999).

Title 29 Code of Federal Regulations § 1910.120 (OSHA, 1999) details the occupational safety and health requirements that will be followed for personnel supporting excavation activities. All personnel will be required to read and understand the SSHASP prior to working at the site. A tailgate safety briefing will be conducted every morning and, as needed, as activities or circumstances change. In addition, all personnel will require 40-hour OSHA and Radiation Worker II training.

2.3.4 Inspections

The waste containers will be visually inspected prior to demobilizing from the site and at the time of unloading at the designated waste facility. An inspection of the areas in which the containers are stored will be conducted at least weekly if the waste containers remain on the site for more than a week. The purpose is to identify leaking or deteriorating containers due to corrosion or other factors. Unusual circumstances must be reported immediately so that corrective measures can be taken. Completed inspection forms will be maintained in the project file.
2.3.5 Waste Minimization

For the duration of the project, site workers will adhere to the principles of the BN Waste Minimization and Pollution Prevention Program. Care will be taken to segregate waste from non-waste materials if at all possible and avoid cross contamination.

2.4 CLOSURE VERIFICATION

Closure verification for the initial outfall area and the septic tank will be accomplished by confirmatory sampling. The verification program must support the field decision that COCs have been removed or are less than remediation standards and provide the regulator with confidence that sufficient samples have been collected to verify this.

A field logbook will be maintained during the sampling events. The activities will be recorded in a bound logbook with numbered pages and will include the following information:

- Dates and times of sampling activities.
- Names of sampling personnel.
- Location of sampling activities noting the sample identification number.
- Volume and description of sample taken and sample container description for each sample identification number.

Field notes will be recorded in black ink. Any errors will be crossed out with a single line and initialed. All samples will be labeled with a unique sample identification number using the following nomenclature:

TCAL-S-1

Where:

- TCAL stands for Test Cell A Leachfield.
- S stands for septic tank or O for outfall area.
- 1 is the sample number.

Once collected, samples will be cooled to 4° Celsius (40° Fahrenheit) and transported to the BN Analytical Services Laboratory under strict chain-of-custody procedures.

2.4.1 Septic Tank Samples

Once the septage has been removed from the septic tank and given a high-pressure rinse, the rinse waters will be sampled. COCs identified in the septage include cesium-137, americium-241, strontium-90, and diesel-range organics (DOE/NV, 1999). Therefore verification sampling will consist of a gamma scan and an analysis for isotopic plutonium. Isotopic plutonium analysis will be done because americium-241 is a daughter product of plutonium and indicates that it is present. Closure criteria will be based on the presence of these COCs in the verification samples.
The remaining concentration of radionuclides in the soil will be less than established background levels. The background levels for radioactive constituents have been established in the Offsite Radiation Exposure Review Project, Phase II Soils Programs report (DOE/NV, 1989). The background levels for cesium-137 and strontium are 3.0 picocuries per gram (pCi/g). Because it is a daughter product of plutonium the background level for americium-241 is the same as plutonium (0.5 pCi/g). The TPH as diesel will not exceed 100 milligrams per liter (mg/L) for the sample. The rinsate sample will be collected from the septic tank with a decontaminated long-handled polyethylene scoop and placed into the appropriate pre-cleaned sample container. Table 2 contains the specific verification sampling requirements for the septic tank rinsate water.

### TABLE 2 - CAU 261 CLOSURE VERIFICATION SAMPLING PARAMETERS

<table>
<thead>
<tr>
<th>PARAMETERS</th>
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<th>NUMBER OF QC SAMPLES</th>
<th>SAMPLEx TOTAL</th>
<th>ANALYTICAL METHOD</th>
<th>SAMPLE CONTAINER</th>
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<td><strong>SEPTIC TANK RINSATE</strong></td>
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<td>TPH-Diesel</td>
<td>1</td>
<td>1 Blind Replicate</td>
<td>2</td>
<td>SW-846, EPA(^1) Method 8015 Modified (EPA, 1996)</td>
<td>2-1L glass jar</td>
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<td>Radioactive Constituents:</td>
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<td>0</td>
<td>L-E10.601.PL (BN, 1996a)</td>
<td>1-1L Nalgene bottle</td>
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<td>Isotopic Plutonium</td>
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<td>Radioactive Constituents:</td>
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<td>1</td>
<td>L-E10.602.PL (BN, 1996b)</td>
<td>1-500 mL Nalgene bottle</td>
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<tr>
<td>Gama Scan</td>
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<td><strong>INITIAL OUTFALL AREA SOIL</strong></td>
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<td>5-500 mL Nalgene bottle</td>
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<tr>
<td>Gamma Scan</td>
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<td>1 Equipment Blank</td>
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<td></td>
<td>2-500 mL Nalgene bottle</td>
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</table>

\(^1\)U.S. Environmental Protection Agency = EPA

**2.4.2 Initial Outfall Samples**

COCs at the initial outfall area include cesium-137 and strontium-90 (DOE/NV, 1999) (Figure 3). Therefore, verification sampling will consist of a gamma scan. Closure criteria will be based on the presence of these COCs in the verification samples. The remaining concentration of cesium-137 and strontium-90 will not exceed established background levels. The background levels for radioactive constituents have been established in the Offsite Radiation Exposure Review Project, Phase II Soils Programs report (DOE/NV, 1989). The background levels for cesium-137 and strontium are 3.0 pCi/g. One soil grab sample will be collected from each side of the excavation. The excavation will approximate a cube and will have four sides
and a bottom. An additional grab sample will be collected from the bottom of the excavation. The samples will be collected using a decontaminated stainless steel scoop and placed in the appropriate pre-cleaned sample containers. Table 2 contains the specific verification sampling requirements for the impacted soil at the initial outfall area.

2.4.3 Quality Control Samples

One blind replicate will be taken from the soil samples collected at the initial outfall excavation. An additional blind replicate will be collected from the septic tank rinsate for TPH. The blind replicates will be labeled with their own distinct sample number so that the laboratory will not be able to readily identify them as a quality control sample (Table 2). Data validation of analytical results will be conducted by a qualified BN/Environmental Remediation employee.

2.5 PERMITS

Required permits for this project include a RWP, Excavation and Trenching Permit, and REOP.

2.5.1 RWP

An RWP has been prepared and approved to inform workers of the specific PPE necessary to protect them while performing their tasks. The workers will be required to read the permit and acknowledge their understanding of the requirements before entry into the exclusion zone. The RWP will be maintained by the radiological control personnel at the access station. All site workers will be required to be Radiation Worker II-certified while the RWP is in effect.

2.5.2 Excavating and Penetration Permit

An approved Excavating and Trenching Permit will be obtained prior to any excavation. The permit contains a justification for the trenching operation and a checklist of pertinent organizations which must inspect the site so that the trenching will not impact utilities or harm workers. A copy of this permit will be kept at the project site by the site supervisor.

2.5.3 REOP

A REOP will be obtained prior to beginning field closure activities. This permit will establish DOE/NV authorization and control to accomplish the following:

- Establish one organization as being responsible for safety.
- Identify hazards and controls associated with field operations pertinent to the site.
• Identify the hazardous material inventory, if any, located at the site for emergency response purposes.

• Ensure DOE/NV has reviewed and approved all work conducted in association with the site.

• Identify DOE/NV's responsibility to plan and schedule activities.

• Provide a mechanism to recover applicable infrastructure support costs.
3.0 SCHEDULE

The project schedule for the closure can be found in Figure 4. Flexibility has been placed in the project schedule to account for minor difficulties (weather, equipment breakdowns, etc.). DOE/NV will keep the NDEP apprised of any condition that may impact the project schedule. In the event that the project schedule requires modification, the DOE/NV will consult with NDEP personnel prior to making any changes.
## ACTIVITY DESCRIPTION

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<th>Description</th>
<th>Completion Date</th>
<th>Fiscal Year 2000</th>
<th>Fiscal Year 2001</th>
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<tr>
<td>Field Preparation</td>
<td>11/15/2000</td>
<td></td>
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<tr>
<td>Closure Activities in the Field</td>
<td>12/12/2000</td>
<td></td>
<td></td>
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<tr>
<td>Preparation of Closure Report</td>
<td>6/01/2001</td>
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</table>

**FIGURE 4**

TENTATIVE CLOSURE ACTIVITY SCHEDULE
4.0 POST-CLOSURE MONITORING PLAN

The proposed monitoring consists of annual (yearly) visual inspections of the signs and fencing to verify that the fencing is in good condition, signs are in-place, readable, and that use restrictions are maintained. Nonscheduled inspections are not required after severe weather events such as heavy rainfall, flash floods, and high winds, because the waste is buried in the subsurface. Any identified maintenance and repair requirements will be completed within 90 days of discovery and documented in writing at the time of repair.

4.1 INSPECTIONS

Inspections consist of visually inspecting the fencing and postings. Inspections will be performed once annually. Any identified maintenance and repair requirements will be remedied within 90 working days of discovery and documented in writing at the time of repair.

4.2 REPORTING

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

- Discussion of observations.
- Maintenance record.

A copy of each annual letter report will be submitted to the NDEP.

4.3 MAINTENANCE AND REPAIR

Following the field inspection, a cover maintenance/repair will be performed if necessary. Maintenance/repair activities will be included in the annual letter report submitted to the NDEP.

4.4 LAND RESTRICTIONS

The future use of any land related to CAU 261 is restricted from any activity that may alter or modify the containment control as approved by the state and identified in the CAU 261 CR unless appropriate concurrence is obtained in advance.

The CAU Land Use Restriction form will be completed. This form includes the CAU number and site description, post-closure monitoring requirements, and survey coordinates of the unit boundaries. The information on the completed form will be added to the DOE/NV Facility Information Management System and the Central Data Repository. The original CAU Land Use Restriction from is then filed within the CAU 261 project file.
5.0 REFERENCES

BN, see Bechtel Nevada.


EPA, see U.S. Environmental Protection Agency.

NAC, see Nevada Administrative Code.

NDEP, see Nevada Division of Environmental Protection


OSHA, see Occupational Safety and Health Administration


5.0 REFERENCES

APPENDIX A
PROJECT ORGANIZATION
The following are the DOE/NV project contacts:

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Environmental Restoration Division  
U.S. Department of Energy, Nevada Operations Office  
P.O. box 98518  
Las Vegas, NV 89193-8518  
(702) 295-0250

Janet L. Appenzeller-Wing  
Project Manager  
Industrial Sites Project  
U.S. Department of Energy, Nevada Operations Office  
P.O. box 98518  
Las Vegas, NV 89193-8518  
(702) 295-0461

The identification of the project Health and Safety Officer and the Quality Assurance Officer can be found in the appropriate DOE plan. However, personnel are subject to change and it is suggested that the Project Manager be contacted for further information. The Task Manager will be identified in the FFACO Biweekly Activity Report prior to the start of field activities.
COMMENT RESPONSE DOCUMENTATION
# DOCUMENT REVIEW SHEET

1. Document Title/Number: Corrective Action Plan for Corrective Action Unit 261: Area 25 Test Cell A Leachfield Systems, Nevada Test Site, Nevada  
2. Document Date: June 2000  
3. Revision Number: 0  
4. Originator/Organization: BN  
5. Date Comments Due:  
6. Reviewer/Organization: NDEP

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<td>1. Page 19 of 23, Section 3.0, third sentence</td>
<td>M</td>
<td>&quot;...The DOE will keep the NDEP appraised...&quot; <em>The word should be &quot;apprised&quot;</em></td>
<td>The typographical error was corrected to read &quot;apprised&quot;</td>
<td>Y</td>
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<tr>
<td>2. Page 21 of 23, Section 4.0, second sentence</td>
<td>M</td>
<td>&quot;...Nonscheduled inspections are not required...&quot; <em>The correct spelling is &quot;required&quot;</em></td>
<td>The typographical error was corrected to read &quot;required&quot;</td>
<td>Y</td>
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a. Comment Types:  M=Mandatory  S=Suggested
### DOCUMENT REVIEW SHEET

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<tr>
<td>3. Page 21 of 23, Section 4.0 second sentence</td>
<td>M</td>
<td>&quot;...because the waste is buried in the subsurface...&quot; This should be reviewed and rewritten: This plan calls for clean closure. It describes how all waste has been removed to approved sanitary landfills or placed in drums, awaiting proper disposal. The only items left in the subsurface should be grout-filled septic tanks.</td>
<td>The approved corrective alternative for CAU 261 is Closure of Septic Tank and Distribution Box, Partial Excavation, and Administrative Controls. Upon completion of the closure activity and approval of the Closure Report by NDEP, administrative controls, use restriction, and site postings will be used to prevent intrusive activities at the site. Administrative controls are required to &quot;prevent inadvertent contact with COCs below the leachfield&quot; as discussed in the CADD under the approved alternative. Waste in this sentence refers to the COCs that will remain. The approved alternative is not a clean closure. In addition to the septic tank a grout filled distribution box, distribution pipe lines, impacted leachfield and Acid Waste Leach Pit will remain in the subsurface.</td>
<td>Y</td>
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a. Comment Types: M=Mandatory  S=Suggested
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<td>4. Page 21 of 23, Section 4.0, third sentence</td>
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<td>&quot;...Any identified maintenance...&quot; <em>The correct spelling is &quot;maintenance...&quot;</em></td>
<td>The typographical error was corrected to read &quot;maintenance&quot;</td>
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<td>Y</td>
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</table>

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