Nevada
Environmental
Restoration
Project

DOE/NV--814

Corrective Action Plan for Corrective Action Unit 490: Station 44 Burn Area, Tonopah Test Range, Nevada

UNCONTROLLED

Controlled Copy No.: _____

Revision: 0

April 2002

Environmental Restoration
Division

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

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CORRECTIVE ACTION PLAN FOR CORRECTIVE ACTION UNIT 490: STATION 44 BURN AREA, TONOPAH TEST RANGE, NEVADA

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

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CORRECTIVE ACTION PLAN FOR CORRECTIVE ACTION UNIT 490: STATION 44 BURN AREA, TONOPAH TEST RANGE, NEVADA

Approved by: _____ Date: 4/22/02
Janet L. Appenzeller Wing, Project Manager
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Approved by: _____ Date: 4-22-02
Runore C. Wycoff, Director
Environmental Restoration Division

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ACRONYMS AND ABBREVIATIONS

BN	Bechtel Nevada
CADD	Corrective Action Decision Document
CAP	Corrective Action Plan
CAU	Corrective Action Unit
CAS	Corrective Action Site
CFR	Code of Federal Regulations
COC	Contaminant(s) of Concern
DOE	U. S. Department of Energy
DOE/NV	U.S. Department of Energy, Nevada Operations Office
EPA	U.S. Environmental Protection Agency
FFACO	Federal Facility Agreement and Consent Order
ft	feet
FTA	Fire Training Area
JHA	Job Hazard Analysis
m	meters
m^3	cubic meters
MS/MSD	matrix spike/matrix spike duplicate
mg/kg	milligrams per kilogram
NAC	Nevada Administrative Code
NDEP	Nevada Division of Environmental Protection
NEPA	National Environmental Policy Act
NNSA/NV	U.S. Department of Energy, National Nuclear Security Administration Nevada Operations Office

ACRONYMS AND ABBREVIATIONS (continued)

NTS	Nevada Test Site
OSHA	Occupational Safety and Health Administration
PAL	Preliminary Action Level
PID	Photoionization Detector
REOP	Real Estate/Operations Permit
SSHASP	Site-Specific Health and Safety Plan
SSY	Sandia Service Yard
TPH	Total Petroleum Hydrocarbons
TTR	Tonopah Test Range
yd^3	cubic yards

EXECUTIVE SUMMARY

Corrective Action Unit 490: Station 44 Burn Area is identified in the Federal Facility Agreement and Consent Order (FFACO, 1996). Corrective Action Unit 490 is located on the Tonopah Test Range and consists of four Corrective Action Sites (CASs). This Corrective Action Plan provides the methodology for implementing the approved corrective action alternatives as listed in the Corrective Action Decision Document (U.S. Department of Energy, Nevada Operations Office [DOE/NV], 2001) for Corrective Action Unit (CAU) 490. CAU 490 includes the following four CAS:

- Fire Training Area (CAS 03-56-001-03BA)
- Station 44 Burn Area (CAS RG-56-001-RGBA)
- Sandia Service Yard (CAS 03-58-001-03FN)
- Gun Propellant Burn Area (CAS 09-54-001-09L2)

Site characterization activities were performed in July and August of 2000. Investigation results indicated that the only contaminant of concern is total petroleum hydrocarbons (TPH). No other contaminants of concern were detected above Preliminary Action Levels at any of the four CASs (DOE/NV, 2001). Concentrations of TPH exceeded the Nevada Division of Environmental Protection regulatory Action Level of 100 milligrams per kilogram (mg/kg) (Nevada Administrative Code 445A.2272) at two of the four CASs. These CASs are the:

- Fire Training Area, CAS 03-56-001-03BA, which had 5 of 18 samples that exceeded the 100 mg/kg Action Level for TPH as diesel range organics
- Sandia Service Yard, CAS 03-58-001-03FN, which had 7 of 55 samples that exceeded the 100 mg/kg Action Level for TPH as gasoline range organics.

The four CASs that comprise CAU 490 will be closed as follows:

- Station 44 Burn Area, CAS RG-56-001-RGBA. No corrective action will be taken.
- Gun Propellant Burn Area, CAS 09-54-001-09L2. No corrective action will be taken.
- Fire Training Area, CAS 03-56-001-03BA. Clean closure by excavation and disposal of impacted soil.
- Sandia Service Yard, CAS 03-58-001-03FN. Clean closure by excavation and disposal of impacted soil.

Clean closure of the two CASs involves the excavation and disposal of TPH-impacted soil. All TPH-impacted soil will be transported to the Nevada Test Site and disposed of in the Area 6 Hydrocarbon Landfill. Upon completion of excavation, soil samples will be collected from the

excavated areas and submitted for laboratory analysis to verify that all TPH-impacted soil with TPH levels greater than the NDEP Action Level of 100 mg/kg have been removed. After confirmation sample results are received, the excavated areas will then be backfilled with clean fill and restored to natural grade. Post-closure care will not be required because this is a clean closure.

1.0 INTRODUCTION

Corrective Action Unit (CAU) 490, Station 44 Burn Area, is located on the Tonopah Test Range (TTR) (Figure 1). CAU 490 is listed in the Federal Facility Agreement and Consent Order (FFACO, 1996) and includes four Corrective Action Sites (CASs):

- Fire Training Area (CAS 03-56-001-03BA)
- Station 44 Burn Area (CAS RG-56-001-RGBA)
- Sandia Service Yard (CAS 03-58-001-03FN)
- Gun Propellant Burn Area (CAS 09-54-001-09L2)

The site history for CAU 490 is provided in the Corrective Action Investigation Plan (U.S. Department of Energy, Nevada Operations Office [DOE/NV], 1999b). Briefly:

CAS 03-56-001-03BA; Fire Training Area: This site was used for fire training exercises in which tires and wood were ignited with diesel fuel and extinguished with water or carbon dioxide. This was done within the boundaries of a 4.6-meter (m) (15-foot [ft]) diameter ring structure until sometime between 1982 and 1987. Since that time, the site was used as an open storage area. During a 1998 visit, the site was found to be clear of any stored materials and there was no evidence of any steel ring or surface soil staining (Figure 2).

CAS RG-56-001-RGBA, Station 44 Burn Area: This site was used for fire training exercises from approximately 1980 to1984. The burn area consisted of two wooden structures that were filled with tires and wood which were ignited with diesel fuel and extinguished with only water. The site is currently flat and sparsely vegetated with disturbed areas containing small pieces of metal and charred debris on the surface (Figure 3).

CAS 03-58-001-03FN, Sandia Service Yard: This site was used as a temporary storage yard between 1979 and 1993 which included tires, cables, pallets, electronic equipment, drums containing oil, grease, diesel, and polychlorinated biphenyls. This site is currently flat and sparsely vegetated with portions of the yard being graded over and a dirt road has been routed through the center of the yard (Figure 4).

CAS 09-54-001-001-09L2, Gun Propellant Burn Area: This site was historically used to incinerate deteriorated explosives, including artillery gun propellant, solid-fuel, black powder, and Comp C-4. Activities were conducted at the site from the 1960s to 1980s. This site is currently sparsely vegetated and has two dirt roads that run through the center of the yard (Figure 5).

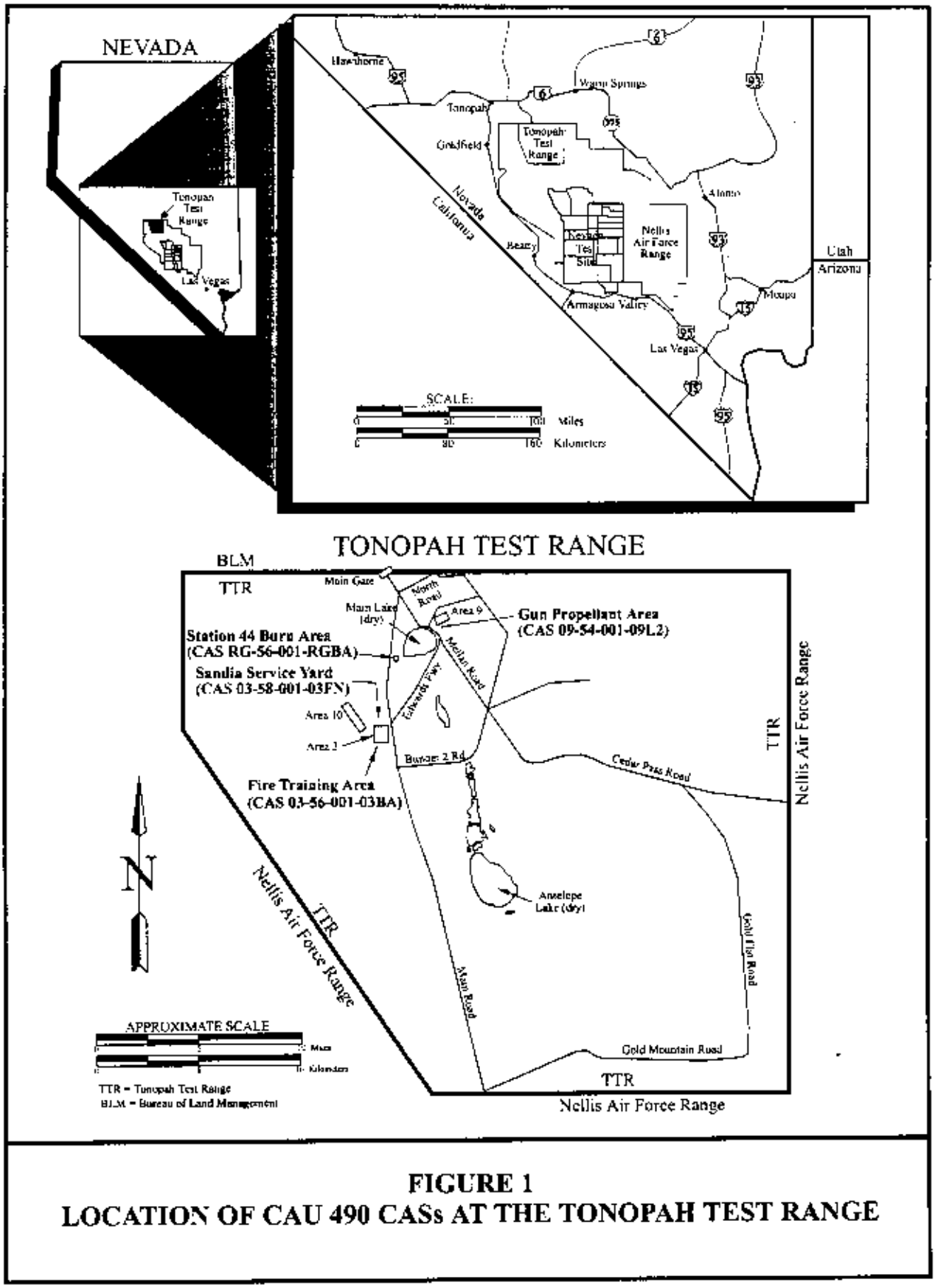
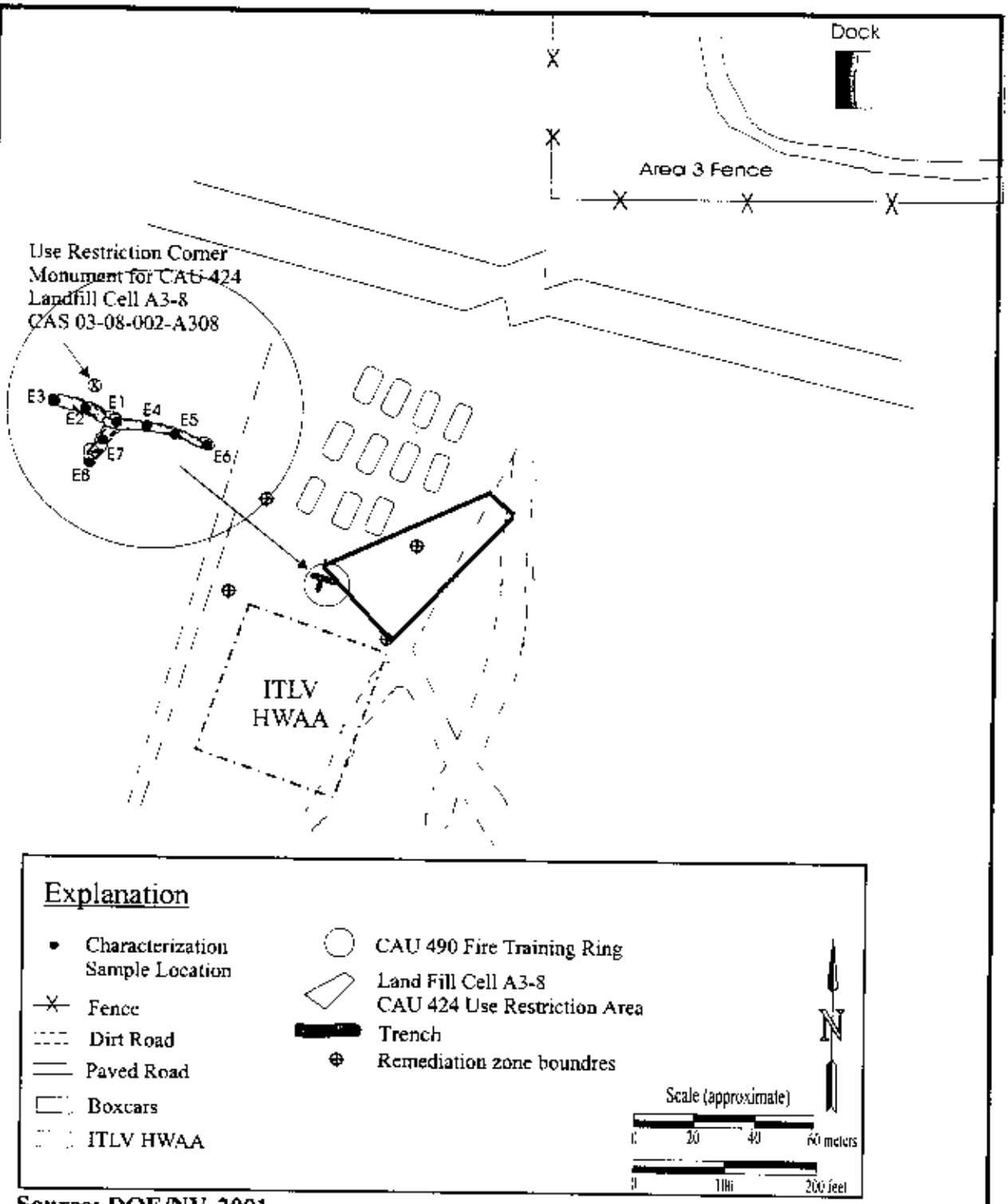
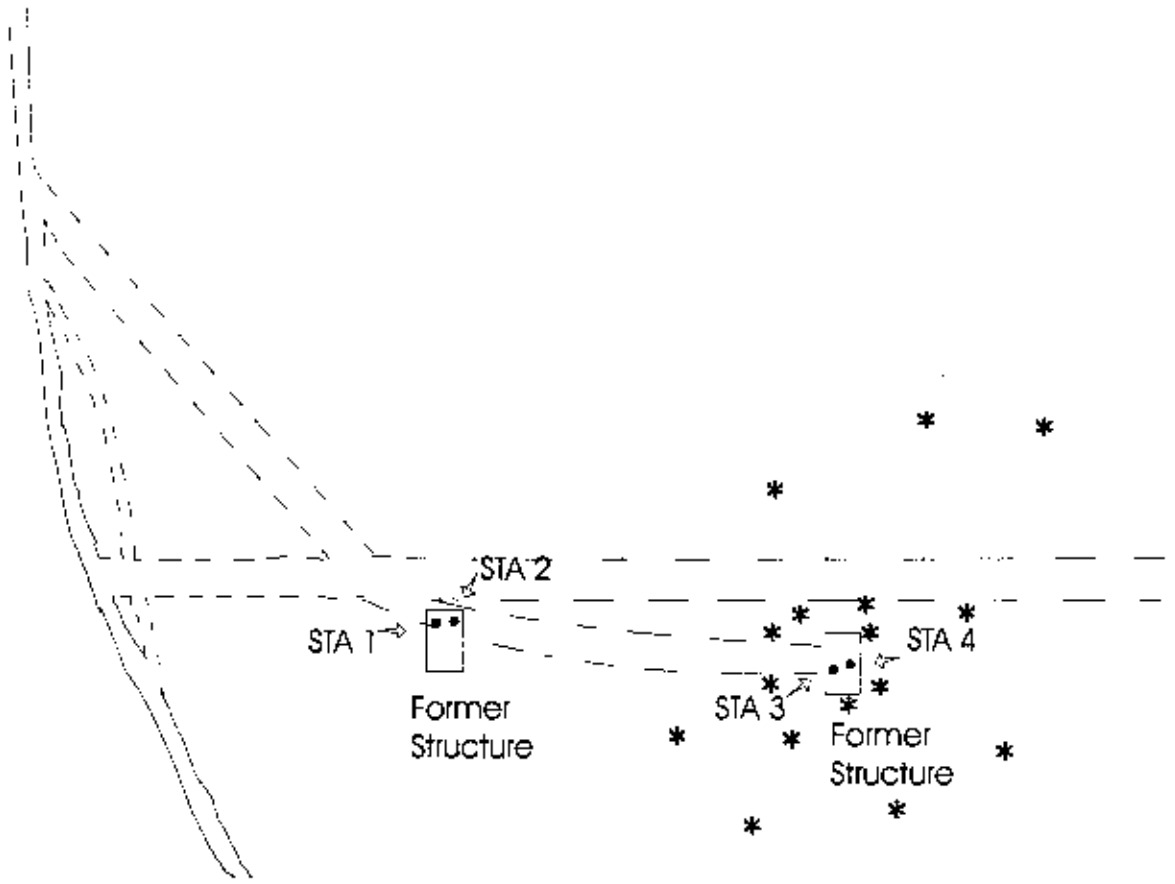


FIGURE 1
LOCATION OF CAU 490 CASs AT THE TONOPAH TEST RANGE



Source: DOE/NV, 2001

FIGURE 2
FIRE TRAINING AREA (CAS 03-56-001-03BA)
SITE CHARACTERIZATION SAMPLING LOCATIONS
AND PROPOSED SITE LAYOUT



Explanation

- Characterization Sample Location
- Existing Antenna
- Former Structure
- Paved Road
- Dirt Road

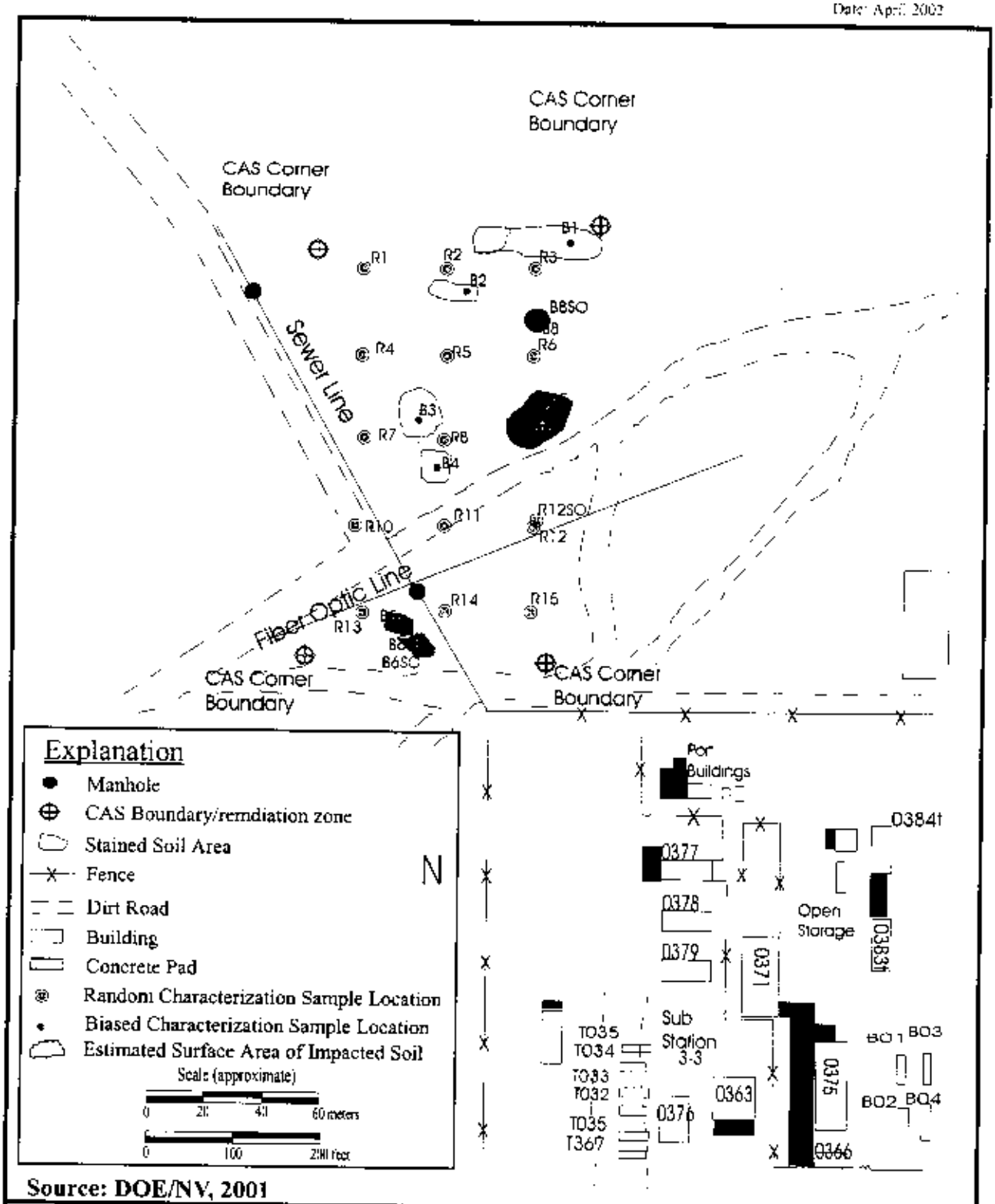
Note:

Roads are Field Located
Not to Scale

N

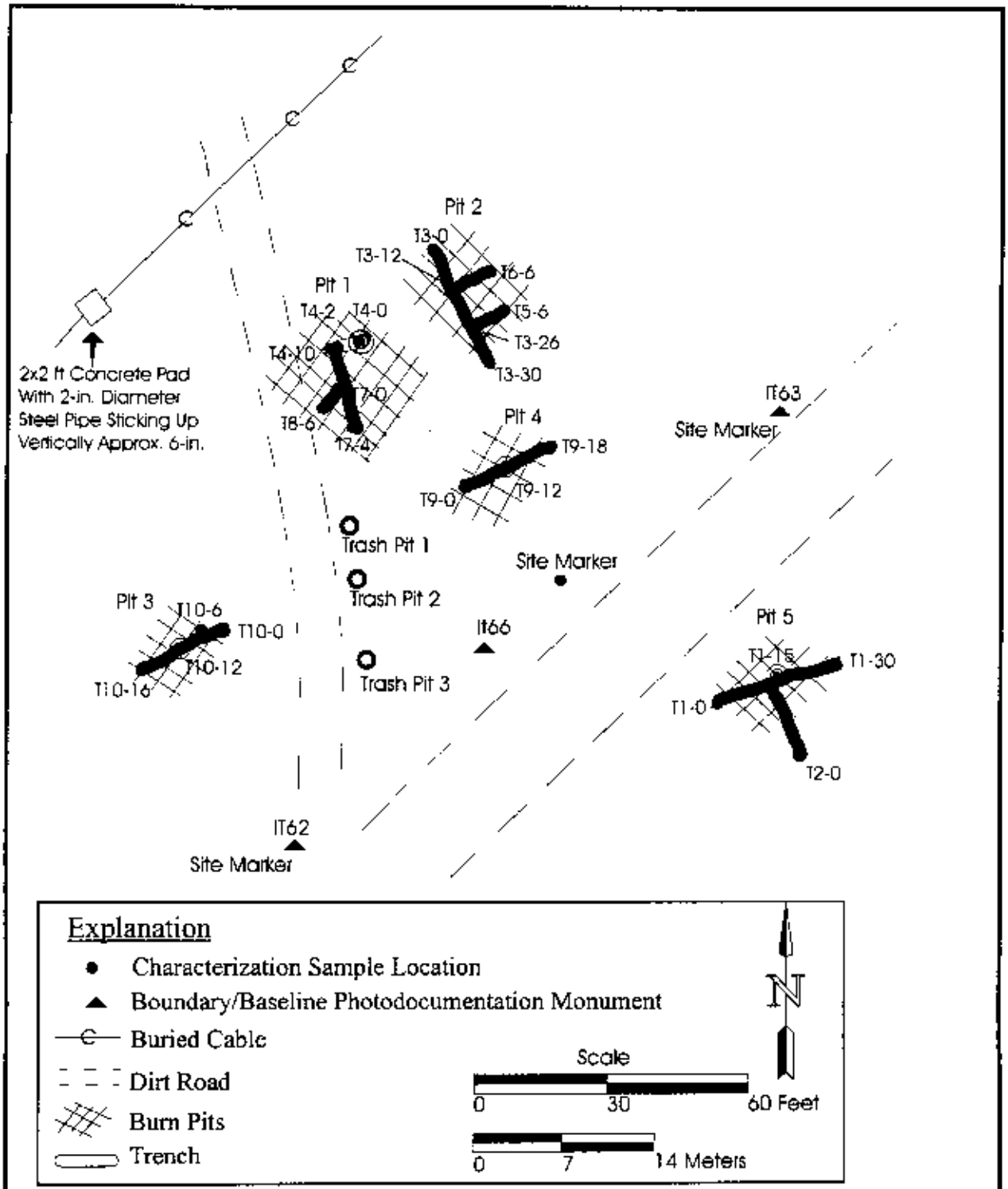
Source: DOE/NV, 2001

FIGURE 3
STATION 44 BURN AREA (CAS RG-56-001-RGBA)
SITE CHARACTERIZATION SAMPLING LOCATIONS
AND PROPOSED SITE LAYOUT



Source: DOE/NV, 2001

FIGURE 4
SANDIA SERVICE YARD (CAS 03-58-001-03FN)
SITE CHARACTERIZATION SAMPLING LOCATIONS
AND PROPOSED SITE LAYOUT



Source: DOE/NV, 2001

FIGURE 5
GUN PROPELLENT BURN AREA (CAS 09-54-001-09L2)
SITE CHARACTERIZATION SAMPLING LOCATIONS
AND PROPOSED SITE LAYOUT

1.1 PURPOSE

The purpose of this Corrective Action Plan (CAP) is to provide the strategy and methodology to close CAU 490. The four CAS that comprise CAU 490 will be closed by implementing the approved closure alternative as listed in the Corrective Action Decision Document (CADD) (U.S. Department of Energy; Nevada Operations Office [DOE/NV], 2001), and by following all state and federal regulations and the FFACO (1996).

Site characterization was completed during July and August 2000. Soil samples were collected using a direct-push method and a backhoe, and submitted to an off-site laboratory for analysis. Soil sample results indicated that the only contaminant of concern (COC) detected above Preliminary Action Levels (PALs) was total petroleum hydrocarbons (TPH) as diesel range organics. This COC was detected in five samples from CAS 03-56-001-03BA, the Fire Training Area, and in seven samples from CAS 03-58-001-03FN, the Sandia Service Yard. There were no COCs detected at CAS 09-54-001-09L2, the Gun Propellent Burn Area or the CAS RG-56-001RGBA, the Station 44 Burn Area. TPH concentration levels were observed at ranges up to 6,300 milligrams per kilogram (mg/kg) at the Fire Training Area and up to 12,000 mg/kg at the Sandia Service Yard. These exceed the Nevada Division of Environmental Protection (NDEP) regulatory action level for TPH which is 100 mg/kg (Nevada Administrative Code [NAC] 445A.2272). The characterization samples analytical results are reported in the CADD (DOE/NV, 2001).

The four CASs that comprise CAU 490 will be closed as follows:

- CAS RG-56-001-RGBA, the Station 44 Burn Area: No COCs were detected above PALs, therefore, no further corrective action will be taken.
- CAS 09-54-001-09L2, the Gun Propellant Burn Area: No COCs were detected above PALs, therefore, no further corrective action will be taken.
- CAS 03-56-001-03BA, the Fire Training Area: This site will be clean closed by the excavation and disposal of impacted soils.
- CAS 03-58-001-03FN, the Sandia Service Yard: This site will be clean closed by the excavation and disposal of impacted soils.

Clean closure of the site involves the excavation and disposal of impacted soil. All TPH-impacted soil will be transported to the Nevada Test Site (NTS) and disposed of in the Area 6 Hydrocarbon Landfill. Upon completion of excavation, soil samples will be collected from the excavated areas and submitted for laboratory analysis to verify that all TPH-impacted soil with TPH levels greater than the NDEP Action Level of 100 mg/kg have been removed. The excavated areas will then be backfilled and regraded to the original site contours. Post-closure care is not required because this is a clean closure.

1.2 SCOPE

The approved corrective action alternative was chosen in the CADD (DOE/NV, 2001). The approved alternative is clean closure by excavation and disposal. The scope of the approved corrective action alternative consists of the following activities:

- Preplanning and site preparation.
- Excavating and removing TPH-impacted soil and any associated debris.
- Collecting verification soil samples.
- Confirm verification soil sample TPH results are below NDEP regulatory action level.
- Backfilling the excavation to surface grade with clean fill.
- Disposing of excavated materials following applicable federal, state, and U. S. Department of Energy (DOE) regulations as described in Section 2.3 of this CAP.
- Performing best management practices on clean sites.
- Preparing a Closure Report to document the closure activities described above.

1.3 CORRECTIVE ACTION PLAN CONTENTS

This document 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 Plan
- Section 5.0 - References

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

- Appendix A1: Engineering Specifications and Drawings

  This appendix is not necessary for this site as there are no construction or engineered cover requirements for site closure.

- Appendix A2: Sampling and Analysis Plan

  The sampling and analysis requirements for this site are detailed in Section 2.4, "Clean-up Verification," therefore, a separate sampling and analysis plan is not included as an appendix.

- Appendix A3: Project Organization

  This appendix is identified as Appendix A.

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2.0 DETAILED STATEMENT OF WORK

2.1 CORRECTIVE ACTIONS

This section describes how the approved alternatives will be implemented at the CASs that comprise CAU 490. The approved alternative includes clean closure by excavation and disposal of impacted soils, verification sampling, backfilling, and regrading of the site. In addition to field activities, planning and site preparation are also required.

2.1.1 Preplanning and Site Preparation

Prior to beginning excavation activities, the following planning and preparation activities will be accomplished:

- Preparation of planning documents such as the Site-Specific Health and Safety Plan (SSHASP), Job Hazard Analysis (JHA), Field Management Plan, National Environmental Policy Act (NEPA) documentation, and a Real Estate/Operations Permit (REOP).
- Site preparation including utility clearance, work permits, and delineation of excavation boundaries.
- Identification and approval of a water source for dust suppression and other construction activities.
- Scheduling and coordination of work.

2.1.1.1 Site-Specific Health and Safety Plan/Job Hazard Analysis

A SSHASP and JHA will be prepared. 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 Health and Safety Officer or designee at the work site. The SSHASP will be available on-site for review and for all workers to sign prior to beginning work at the site. The SSHASP will provide a detailed, job-specific plan covering protection against accidents or exposure of workers to contamination. It will also discuss weather/air monitoring, accident reporting, emergency procedures, and physical and environmental hazards. The work will also be performed following the appropriate BN Company Directives as listed in the SSHASP. In addition, Material Safety Data Sheets will be available on-site.

2.1.1.2 Field Management Plan

A Field Management Plan will be prepared for the closure activities. The plan will identify the responsible parties for each aspect of the project and determine how decisions will be made. A copy of the Field Management Plan 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 National Environmental Policy Act Documentation

A NEPA checklist will be completed prior to beginning excavation activities at the site. If necessary, a follow-up survey will be performed and will report on the condition of existing vegetation, cultural resources, sacred sites, and wildlife immediately adjacently to the area which may be affected by construction activities, equipment and material storage areas, and access routes. Based on the findings of this survey, the excavation activities at the Fire Training Area (03-56-001-03BA) and at the Sandia Service Yard (03-58-001-03FN) will follow all applicable federal, state, and local laws; regulations; and permits for protection of the environment.

2.1.2 Closure Activities

2.1.2.1 No Further Action

No further field activities will be performed at the Station 44 Burn Area (CAS RG-56-001-RGBA) or the Gun Propellant Burn Area (CAS 09-54-001-09L2). There were no COCs above the PALs detected during the site characterization.

2.1.2.2 Excavation of Soil Containing Petroleum Hydrocarbons

CAS 03-56-001-03BA, Fire Training Area

In the worst-case scenario an estimated 95 cubic meters (m^3) (125 cubic yards [yd^3]) of soil has been impacted with TPH as diesel-range organics at the Fire Training Area (FTA) (Figure 2). The source of the TPH in the soil is believed to be caused by small volumes of diesel fuel being released over a long period of time in support of fire training activities. Vertical migration is now nonexistent since the sources have been eliminated and driving forces are not viable due to the static conditions at this CAS. The THP-impacted soil will be excavated using front-end loaders or an excavator, and verification samples will be collected after the THP-impacted soil is removed as discussed in Section 2.4 of this plan. The impacted soil will be loaded into dump trucks and/or containers and transported to the NTS Area 6 Hydrocarbon Landfill for disposal. The waste will be managed following Section 2.3 of this CAP.

CAS 03-56-001-03BA, FTA is located in close proximity to CAS 03-08-002-A308, Landfill Cell A3-8 which has been closed by Use Restriction as part of the CAU 424 closure (DOE/NV, 1999a). Due to this Use Restriction, excavation of TPH-impacted soil from the FTA will not extend beyond the southern boundary of the restricted area for CAS 03-08-002-A308.

The FTA consists of a maximum estimated impacted area of 4.5 m (15 ft) by 4.5 m (15 ft) by 4.5 m (15 ft) in depth. The soil and excavated area will be examined visually for stains or discoloration that may be the result of petroleum hydrocarbons discharged to this area. The soil and excavated area will be screened for TPH and organics using a photoionization detector (PID) for health monitoring. A graded screening approach will be used because of the depth of the excavation. Once the excavation reaches 1.5 m (5 ft) in depth, 25 field screening samples will be collected from the floor of the excavation using approximately a 0.9 m (3 ft) by 0.9 m (3 ft) grid system. Each field screening sample will be collected and analyzed for TPH using a PetroFLAG ® hydrocarbon test kit. If any screening PetroFLAG® samples have concentrations of TPH greater than 75 mg/kg, additional soil will be extracted and another PetroFLAG®

screening sample will be collected. Additional soil removal will be in 0.75 m (2.5 ft) lifts. Once all field screening samples are below 75 mg/kg, excavation activities will cease and verification samples will be collected as discussed in Section 2.4 of this CAP.

CAS 03-58-001-03FN, Sandia Service Yard

An estimated 437 m^3 (575 yd^3) of soil in three distinct areas has been impacted with TPH as diesel-range organics at the Sandia Service Yard (SSY) (Figure 4). Area B8 as shown on figure 4 has in estimated area of 7.5 m (25 ft) by 7.5 m (25 ft) by 1.2 m (4 ft) in depth. Area B7-R9 as shown on Figure 4 has in estimated area of 19.5 m (65 ft) by 13.5 m (45 ft) by 0.6 m (2 ft) deep. Area B5-B6 as shown on Figure 4 has in estimated area of 18 m (60 ft) by 9 m (30 ft) by 1.2 m (4 ft) deep. The source of the TPH in the soil is believed to be caused by small volumes of diesel fuel being released over a long period of time caused by spills from stored drums and equipment. Vertical migration is now nonexistent since the sources have been eliminated and driving forces are not viable due to the static conditions at this CAS. The graded screening approach will not be used because of the depth of the excavations. The impacted soil will be excavated using front-end loaders or an excavator and verification samples will be collected after the impacted soil is removed as discussed in Section 2.4 of this CAP. The impacted soil will be loaded into dump trucks or containers and transported to the NTS Area 6 Hydrocarbon Landfill for disposal. The waste will be managed following Section 2.3 of this CAP.

For the SSY Area, the soil and excavated area will be examined visually for stains or discoloration that may be the result of petroleum hydrocarbons discharged to this area. The soil and excavated area will be screened for TPH and organics using a PID for health monitoring. Once all suspected impacted soil is removed, field screening soil samples will be collected and field tested using a PetroFLAG® hydrocarbon test kit. If any screening PetroFLAG® samples have concentrations of TPH greater than 75 mg/kg, additional soil will be extracted and another PetroFLAG® verification sample collected. Once all field screening samples are below 75 mg/kg, excavation activities will cease and verification samples will be collected as discussed in Section 2.4 of this CAP.

2.1.2.3 Decontamination of Equipment

Sampling equipment will be decontaminated off-site prior to the start of field activities. Equipment will be decontaminated using Alconox™ and water followed by a deionized water rinse. Equipment will be air dried and placed into clean plastic bags.

Only the heavy equipment bucket will be in contact with the impacted soil. Therefore, if necessary, only the bucket and wheels will require decontamination. The bucket will be decontaminated by hand on-site over the impacted soil piles with a solution of Alconox™ and water, and rinsed with clean water. The amount of water used for decontamination will be minimal and will not result in free liquid in the soil piles. If excessive amounts of water are required for decontamination or if more than the bucket becomes impacted, a lined, bermed decontamination pad will be used. Equipment will be driven onto the pad and cleaned. Decontamination rinse from the heavy equipment decontamination that remains in the lined berm at the close of the project will be placed into a 208-liter (55-gallon) drum solidified and disposed of in the NTS Area 6 Hydrocarbon Landfill. The decontamination liner will be disposed of in the TTR Landfill.

2.1.2.4 Backfilling and Grading of Site

Once it has been verified that all TPH-impacted soil has been removed, the excavations will be backfilled with clean fill soil and leveled to existing grade to minimize surface obstructions, run-on/run-off, and ponding. Fill material will be obtained from an on-site borrow source.

2.2 CONSTRUCTION QUALITY ASSURANCE/QUALITY CONTROL

Construction activities consist of excavation and earth moving. Permeability and compaction testing will not be necessary. As a result, construction quality assurance/quality control is not required.

2.3 WASTE MANAGEMENT

Waste streams generated during closure of CAU 490 will include TPH-impacted soil and potentially debris, investigation derived waste such as decontamination rinsate, disposable personal protective equipment, verification sampling waste, PetroFLAG® field screening waste, and sanitary trash.

All TPH-impacted soil will be loaded as trucks or containers are available for transportation to the NTS where it will be disposed of in the Area 6 Hydrocarbon Landfill. Any rinsate produced during the decontamination of tools or machinery will be either placed in 208-liter (55-gallon) drums and solidified, or if no free liquids will be produced, dumped directly on to TPH-impacted soil to be disposed of at the NTS. TPH contaminated personal protective equipment and verification sampling waste (e.g., gloves, disposable scoops, etc.) will be containerized and placed in the NTS Area 6 Hydrocarbon Landfill. All sanitary waste, will be disposed of in the TTR Landfill.

2.3.1 Container Management

All TPH-impacted soil is anticipated to be placed directly into a dump truck and transported to the NTS for disposal. If necessary, decontamination rinsate will be placed in 208-liter (55-gallon) drums and solidified before disposal. All drums used for rinsate or PPE will be in

new condition with no dents or defects, and will be inspected before being used. Drums containing waste will be clearly labeled

2.3.2 Site Control

Where appropriate, temporary barricades (fencing, rope, warning cones, etc.) will be constructed around the work zones. A work zone is an area where remediation work is being performed, but is not an exclusion zone as defined in Title 29 Code of Federal Regulations (CFR) 1910.120 (Occupational Safety and Health Administration [OSHA], 1996). Appropriate warning signs will be posted. Only properly trained personnel wearing appropriate personal protective

equipment as specified in the SSHASP will be allowed to enter the work zones. The proposed work zones and site layout are provided in Figures 2 and 4.

2.3.3 Personnel Training

Title 29 CFR 1910.120 (OSHA, 1996) details the occupational safety and health requirements that will be followed for personnel supporting excavation activities. All personnel will be required to read, understand, and sign the SSHASP prior to working at the site. A tailgate safety briefing will be held every morning and, as needed, as activities or circumstances change. Only trained and qualified personnel will operate heavy equipment. Training requirements will be detailed in the SSHASP.

2.3.4 Waste Minimization

For the duration of the project, site workers will adhere to the BN Waste Minimization and Pollution Prevention Program. Care will be taken to segregate waste from non-waste materials, when possible, to avoid the generation of additional regulated waste.

2.4 CONFIRMATION OF CORRECTIVE ACTIONS

2.4.1 Verification Sampling

Verification sampling is required for a site closure. A verification program must support the field decision that any remaining COCs are less than remediation standards and provide the regulator with confidence that sufficient samples have been collected to verify that the site has been remediated. Verification samples will only be collected when field screening indicates tha TPH levels are below 75 mg/kg. For CAU 490, the approved CADD (DOE/NV, 2001) indicated that TPH as diesel-range organics are the only COC above remediation standards. The two CASs that will require verification sampling are the FTA and the SSY. Verification samples will be analyzed for TPH as diesel using U.S. Environmental Protection Agency (EPA) Method 8015B Modified (EPA, 1996).

If the excavation does not exceed 1.2 m (4 ft) in depth, samples will be collected by hand using a decontaminated stainless steel or certified clean disposable scoop. If the excavation exceeds 1.2 m (4 ft) in depth, the samples will be collected as grab samples from the soil in the center of the bucket of the excavation equipment. All samples will be placed in the appropriate pre-cleaned sample containers.

The closure criteria will be based on the presence of hydrocarbons in the verification samples. Verification samples will only be collected when field screening indicates TPH levels are below 75 mg/kg. TPH as diesel concentration results will be less than 100 mg/kg for any verification sample. If this criteria is not met, additional excavation and verification sampling will be done. A two-week analytical turnaround time will be requested for all samples.

2.4.2 Sample Collection for Fire Training Area

The FTA is approximately 4.5 m (15 ft) by 4.5 m (15 ft) by 4.5 m (15 ft) in depth. Soil samples will be collected at random. Each wall and bottom of the excavation will be divided into approximately 3-ft by 3-ft grids. Three sample locations will be randomly selected for each wall and bottom of the excavation. Each random soil sample will be collected from the center of the grid and analyzed for TPH as diesel. A total of 18 samples will be collected including one duplicate, one equipment rinsate blank, and one matrix spike/matrix spike duplicate (MS/MSD). The actual dimensions of the FTA excavation will be determined through the field screening for TPH, but as mentioned in Section 2.1.2.2, the excavation will not violate the CAU 424 Use Restrictions currently in place for CAS 03-08-002-A308, Landfill Cell A3-8. That is, the excavation of TPH-impacted soil from the FTA will not extend beyond the southern boundary of the closed A3-8 Landfill Cell, as specified by the Use Restrictions (DOE/NV, 1999a). The grid system proposed above may be modified in the field, however the total number of verification samples will remain the same.

2.4.3 Sample Collection for Sandia Service Yard

2.4.3.1 B7, R9 Area

The SSY B7- R9 area is approximately 19.8 m (65 ft) by 13.7 m (45 ft) by 0.6 m (2 ft) in depth. Soil samples will be collected at random. Each wall will be divided into approximately 3-ft by 3-ft grids and the bottom of the excavation will be divided into approximately 3 m (10 ft) by 3 m (10 ft) grids. Three sample locations will be randomly selected for each wall and bottom of the excavation. Each random soil sample will be collected from the center of the grid and analyzed for TPH as diesel. A total of 18 samples will be collected including one duplicate, one equipment rinsate blank, and one MS/MSD.

2.4.3.2 B5, B6 Area

The SSY B5-B6 area is approximately 18 m (60 ft) by 9 m (30 ft) by 1.2 m (4 ft) in depth. Soil samples will be collected at random. Each wall will be divided into approximately 0.9-m (3-ft) by 0.9-m (3-ft) grids and the bottom of the excavation will be divided into approximately 3 m (10 ft) by 3 m (10 ft) grids. Three sample locations will be randomly selected for each wall and bottom of the excavation. Each random soil sample will be collected from the center of the grid and analyzed for TPH as diesel. A total of 17 samples will be collected including one duplicate and one MS/MSD.

2.4.3.3 B8 Area

The SSY B8 area is approximately 7.5 m (25 ft) by 7.5 m (25 ft) by 1.2 m (4 ft) in depth. Soil samples will be collected at random. Each wall will be divided into approximately 0.9-m (3-ft) by 0.9-m (3-ft) grids and the bottom of the excavation will be divided into approximately 1.5 m (5 ft) by 1.5 m (5 ft) grids. Three sample locations will be randomly selected for each wall and bottom of the excavation. Each random soil sample will be collected from the center of the grid and analyzed for TPH as diesel. A total of 17 samples will be collected including one duplicate and one MS/MSD. A summary of the number of samples to be collected and the analyses to be

performed is provided in Table 1.

Sampling activities will be recorded in a bound logbook with numbered pages and will include the following information:

- Date and time of sampling activities
- Location of sampling activities
- Sample numbers
- Physical description of samples
- Soil type
- Volume of each sample collected
- PetroFLAG® sample results
- PID head space sample results

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 number using the following nomenclature:

- For Fire Training Area - 490FTA-V1
- For Sandia Service Yard B7-R9 Area - 490SSYB7R9-V1
- For Sandia Service Yard B5-B6 Area - 490SSYB5B6-V1
- For Sandia Service Yard B8 Area - 490SSYB8-V1

Where:

- 490 is the CAU number.
- FTA and SSYB7R9, SSYB5B6, and SSYB8 is the site location.
- V1 is the verification sample number.

All samples will be cooled to 4°C (40°F) and transported to the BN Analytical Services Laboratory under strict chain-of-custody procedures (BN, 2000).

2.4.4 Quality Control Samples

One quality control sample (blind replicate) will be collected for each excavation site. It will be labeled with its own distinct sample number so that the laboratory will not be able to identify it as a quality control sample. The data packages provided by the laboratory will be evaluated by qualified personnel.

2.5 PERMITS

Permits required for this project include an Excavating and Penetration Permit and a REOP.

TABLE 1 - CAU 490 VERIFICATION SAMPLING PARAMETERS

PARAMETER	NUMBER OF SAMPLES	NUMBER OF QUALITY CONTROL SAMPLES	ANALYTICAL METHOD	SAMPLE CONTAINER
FIRE TRAINING AREA - 4.6 m (15 ft) X 4.6 m (15 ft) X 4.6 m (15 ft)				
Total Petroleum Hydrocarbons-Diesel	15 + 3 QA/QC 3 per side X 5 sides = 15	1 Blind Replicates 1 Equipment Blank 1 Matrix Spike /Matrix Spike Duplicate (MS/MSD) per sample batch	SW-846, EPA Method 8015 Modified (EPA, 1996)	One 250-milliliter glass jar per sample One 1-liter glass jar for equipment blank
SANDIA SERVICE YARD-B7, R9 AREA - 19.8 m (65 ft) X 13.7 m (45 ft) X 0.61 m (2 ft)				
Total Petroleum Hydrocarbons-Diesel	15 + 3 QA/QC	1 Blind Replicate 1 Equipment Blank 1 MS/MSD per sample batch	SW-846, EPA Method 8015 Modified (EPA, 1996)	One 250-milliliter glass jar per sample One 1-liter glass jar for equipment blank
SANDIA SERVICE YARD-B5, B6 AREA - 18.3 m (60 ft) X 9.1 m (30 ft) X 1.2 m (4 ft)				
Total Petroleum Hydrocarbons-Diesel	15 + 2 QC/QA	1 Blind Replicate 1 MS/MSD per sample batch	SW-846, EPA Method 8015 Modified (EPA, 1996)	One 250-milliliter glass jar per sample
SANDIA SERVICE YARD-B8 AREA - 7.6 m (25 ft) X 7.6 m (25 ft) X 1.2 m (4 ft)				
Total Petroleum Hydrocarbons-Diesel	15 + 2 QC/QA	1 Blind Replicate	SW-846, EPA Method 8015 Modified	One 250 milliliter glass jar per sample

2.5.1 Excavating and Penetration Permit

An approved Excavating and Penetration Permit (BN form number BN-0084) will be obtained prior to 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 cause a hazardous situation to workers. A copy of this permit will be kept at the project site by the construction superintendent.

2.5.2 Real Estate/Operations Permit

A REOP will be completed prior to starting field activities. This U.S. Department of Energy, National Nuclear Security Administration Nevada Operations Office (NNSA/NV) permit authorizes BN to possess the right of occupancy and use of the NNSA/NV real estate for closure activities.

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3.0 SCHEDULE

3.1 PROJECT SCHEDULE

Field work is tentatively planned for the fall of 2002. The schedule will require modifications if conditions exist that are outside the assumptions on which the schedule is developed. The DOE will keep the NDEP appraised of any conditions that may impact the project schedule. In the event that the project schedule requires modifications, the DOE will consult with NDEP personnel prior to making any changes.

3.2 FIELD WORK CLOSURE SCHEDULE

A tentative schedule for planned field work consists of the following:

- Prefield Activities — October 2002
- Excavation Activities — November 2002
- Waste Disposal — December/January 2003
- Verification Sampling — December/January 2003
- Final Site Restoration — January/February 2003
- Closure Report — April 2003

Field work will be done in the safest and most efficient manner possible. Sufficient flexibility has been placed in the project schedule to account for minor difficulties (weather, equipment breakdown, etc.). The schedule may require modification if conditions exist that are outside the assumptions on which the scope and schedule are developed.

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4.0 POST-CLOSURE PLAN

The clean closure of the area for CAU 490 Station 44 Burn Area, FTA-CAS 03-56-001-03BA and SSY-CAS 03-058-001-03FN, is expected to remove all COCs that exceed PALs to levels below the remediation standards. Therefore, post-closure care is not required.

4.1 INSPECTIONS

Because this is a clean closure, all COCs will have been removed to the remediation standard. Inspections will not be required following closure and the land can be released for unrestricted use.

4.2 MONITORING

Because this is a clean closure, post-closure monitoring will not be required at the FTA or SSY CASs as all COCs will have been removed to the remediation standard. The land will be released for unrestricted use.

4.3 MAINTENANCE AND REPAIR

Because this is a clean closure, no maintenance or repairs will not be necessary at the site following closure. The land will be released for unrestricted use.

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5.0 REFERENCES

BN, see Bechtel Nevada.

Bechtel Nevada, 2000. Sample Chain of Custody, OI-2152.100, Las Vegas, NV.

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

EPA, see U.S. Environmental Protection Agency.

Federal Facility Agreement and Consent Order (FFACO) of 1996 as amended. Prepared by Nevada Division of Environmental Protection, U.S. Department of Energy, and U.S. Department of Defense.

NAC, see Nevada Administrative Code.

Nevada Administrative Code, 1996. NAC 445A.2272, "Contamination of soil: Establishment of action levels," As adopted by the Nevada Environmental Commission, September, Carson City, NV.

OSHA, see Occupational Safety and Health Administration.

Occupational Safety and Health Administration, 1996. Title 29 Code of Federal Regulations 1910.120, Hazardous Waste Operations and Emergency Response, Washington, D.C.

U.S. Department of Energy, Nevada Operations Office, 1999a. Closure Report for Corrective Action Unit 424: Area 3 Landfill Complex, Tonopah Test Range, Nevada, Revision 0, DOE/NV/11718--283, Las Vegas, NV.

U.S. Department of Energy, Nevada Operations Office, 1999b. Corrective Action Investigation Plan for Corrective Action Unit 490: Station 44 Burn Area, Nevada Test Site, Nevada, Revision 0, DOE/NV--552, Las Vegas, NV.

U.S. Department of Energy, Nevada Operations Office, 2001. Corrective Action Decision Document for Corrective Action Unit 490: Station 44 Burn Area, Nevada Test Site, Nevada, Revision 0, DOE/NV--692, Las Vegas, NV.

U.S. Environmental Protection Agency, 1996. Test Methods for Evaluating Solid Waste Physical/Chemical Methods (SW-846), Third Edition, Washington, D.C.

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APPENDIX A

PROJECT ORGANIZATION

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PROJECT ORGANIZATION

The U.S. Department of Energy, National Nuclear Security Administration Nevada Operations Office (NNSA/NV) Project Manager or Task Manager will serve as the primary point of contact for all activities conducted for this project. The NNSA/NV Project Manager will be the primary point of contact with the NDEP. The NNSA/NV points of contact for this project are as follows:

NNSA/NV Project Manager: Janet Appenzeller-Wing
Telephone Number: (702) 295-0461

NNSA/NV Task Manager: Kevin Cabble
Telephone Number: (702) 295-5000

The identification of the project Health and Safety Officer can be found in the appropriate planning documents (the Field Management Plan and the Site-Specific Health and Safety Plan). However, personnel are subject to change and it is suggested that the NNSA/NV Project Manager be contacted for further information. Personnel training requirements will be detailed in the Site-Specific Health and Safety Plan.

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APPENDIX B

NEVADA DIVISION OF ENVIRONMENTAL PROTECTION DOCUMENT REVIEW COMMENT RESOLUTION FORM

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NEVADA ENVIRONMENTAL RESTORATION PROJECT
DOCUMENT REVIEW SHEET

1. Document Title/Number Draft Corrective Action Plan for Corrective Action Unit 490: Station 44 Burn Area, Tonopah Test Range, Nevada
2. Document Date March 2002
3. Revision Number 0
4. Originator/Organization Bechtel Nevada
5. Responsible DOE/NV ERP Project Mgr. Janet Appenzeller-Wing
6. Date Comments Due April 3, 2002
7. Review Criteria Federal Facility Agreement and Consent Order
8. Reviewer/Organization/Phone No. Clemens Goewert / Nevada Division of Environmental Protection / (702) 486-2850
9. Reviewer's Signature

10. Comment Number/ Location	11. Type[a]	12. Comment	13. Comment Response	14. Accept
pg. ix	M	The last word on page ix of the Executive Summary is "debris". The debris needs to be defined, and where it is located needs to be discussed.	It is not expected that debris will be encountered during the closure of Corrective Action Unit 490. All references to contaminated debris have been removed from the Corrective Action Plan.	Yes
pg. 12 Section 2.1.1.3	M	The title for Section 2.1.1.3 is incorrect. The title should read "2.1.1.3 National Environmental Policy Act"	The title of Section 2.1.1.3 has been corrected to read "2.1.1.3 National Environmental Policy Act"	Yes

[a]Comment Types: M = Mandatory, S = Suggested.

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